FINAL REPORT

EURO-TENASSESS
Contract No. ST-96-AM.601

Project Co-ordinator:
ICCR -- The Interdisciplinary Centre for Comparative Research in the Social Sciences

Partners:  Halcrow Fox
           INRETS – Dept. of Transport Economy and Sociology
           PLANCO Consulting GmbH
           SYSTEMA – Systems Planning and Management Consultants
           Gruppo CLAS
           IVTB – Institute of Roads Transport and Road Planning
           ERR1 – European Rail Research Institute
           TRT – Transporti e Territorio

           NEA – Transport Research and Training
           NEI – Netherlands Economic Institute
           UKO – Universität Köln
           LESEC – Laboratori Estudio Socials Enginyeria Civil
           ICCR – London Ltd.
           UWCC – School of Social and Administrative Studies

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FINAL REPORT TENASSESS

POLICY ASSESSMENT OF TEN AND COMMON TRANSPORT POLICY
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Table of Contents
Partnership

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Executive Summary

The ‘Europeanisation’ of transport policy raises new issues for the scientific field of evaluation. First, the ‘add-on’ of another level to the transport policy making, i.e. of the European level, has re-focused attention on the decision-making process and on the conflicts inherent to it as a fundamental part of policy analysis. Second, it made clear that policy assessment or evaluation is distinct from project and in particular infrastructure appraisal. Third, it necessitates a comprehensive consideration of developments in the transport sector in conjunction with developments in other policy arenas.

In other words, Europeanisation has initiated a re-thinking process; the issues thus raised are not necessarily new – yet they suddenly acquire a sense of urgency and are seen in a new light. The TENASSESS project has been part of this re-thinking process. It does not provide definitive answers to all of the questions raised above, but a basis for analysing ongoing changes in the policy as well as in the evaluation fields.

In TENASSESS, the theme of policy-making has been at the centre of considerations. The study of the policy process is important for any assessment exercise that directly or indirectly deals with policy analysis. Without knowledge of how policy is made, including of the conflicting interests it entails, it is not possible to interpret the results of impact assessment exercises or understand the significance of certain impacts for specific impact groups or for policy more generally. More importantly, without knowledge of the policy process, it is not possible to provide advice to policy-makers, less so to develop decision support tools. Last but not least, knowledge of the policy process guards against the false or manipulative exploitation of research results and can thus contribute to a better interaction between science and policy.

In TENASSESS the study of policy processes had a twofold objective: the first objective was to understand these better for the reasons stated above; the second was to collect empirical material for the development of decision support tools. Two such tools were developed by TENASSESS: the TENASSESS Policy Assessment (PAM) tool; and the TENASSESS Barrier Model.

Both the TENASSESS PAM and the TENASSESS Barrier Models are tools that assist rational thinking. The TENASSESS PAM helps assess the degree of congruence between any one project’s objectives and that of transport policy from the perspective of different actors’ viewpoints – in that it provides an interface between project appraisal and policy assessment. The TENASSESS Barrier Model helps identify and anticipate barriers likely to occur during the
implementation process of any transport policy initiative. It is a dynamic model which can be used in an interactive manner to assist planning and which helps make planners and policy-makers aware of the consequences of their actions in particular planning contexts.

The main findings of the TENASSESS project can be summarised as follows:

1. Many of the problems encountered in implementing the European Common Transport Policy relate to the variation in the regulatory environments in the field of transport across Member States. The following were identified as of specific importance:

   ?? the variation in the distribution of administrative responsibility and competencies at the national level;
   ?? the variation in the degree of planning of transport policy in the form of master plans but also assessment and/or evaluation frameworks;
   ?? the variation in the degree of centralisation or decentralisation, especially with respect to the role assigned to the regions, hence the process of territorialisation, and
   ?? the variation in the degree of negotiation with relevant actors, including citizens’ movements or the public at large.

At the same time there are some general harmonising trends across all four dimensions which can, in part, be attributed to the influence of the European Union: i.e. towards greater sharing of responsibility and stronger co-ordination at the national administrative level; towards the development of a planning structure that fits the requirements of European CTP; towards the devolution of power to the regions, that is, decentralisation; and towards a stronger emphasis on negotiation at all levels.

2. Three general conflict areas which are common to all European countries can be identified. They comprise:

   ?? Conflicts about competencies: Despite the principle of subsidiarity, the borders between the four established political levels – local, regional, national and European – remain diffuse, giving rise to conflicts about competencies. Problems in co-ordination arise by the fact that the European Commission represents neither the sole, nor the first, attempt at harmonisation at policy level. Despite the fact that over the years there have gradually emerged co-ordination or consultation procedures facilitated by a narrowing down of institutional agendas be it in terms of geographical scope, in terms of mode or in terms of types of impacts
problems remain as agendas unavoidably overlap and co-ordination is itself a long process of institutional learning.

?? *Thematic conflict ‘environment vs. economic development’.* On the one hand there are policies concerned with reducing the negative impacts of traffic for the environment and society and even with reducing transport volume per se; on the other hand there are the policies to improve transport flows in order to further enhance economic development. Objectives are generally set in both directions, but the incompatibility or lack of direct congruence displayed between the two is often the source of fierce debate about effectiveness and equity in the medium- to long-term.

?? *Conflicts related to the re-structuring of the transport market.* Currently, and with very few exceptions, deregulation and the privatisation of the transport market is a generally agreed-upon policy agenda. Nevertheless a distinction can be drawn between those actors in favour of a swift transformation towards an open market system, and those supporting a slower pace and longer phase-out periods. These conflicts can for the most part be explained by considering the competition patterns among modes. The re-structuring of the transport market is also inevitably connected with some significant labour re-structuring processes.

3. It is possible to distinguish four ‘ideal type’ transport policy frameworks.

?? The *traditional transport planning approach* assumes that transport primarily is there to serve structural inequalities as reflected in particular at regional level. For this policy framework, the goals of regional cohesion and development are of particular relevance and guide transport policy-making, primarily infrastructure investment.

?? A *‘modern’ variant of the transport planning approach* emerged with the onset of privatisation. Under this approach, planning and infrastructure investment are still important, only the planner ought to be the private economic actor, less so the state for which within-sector efficiency becomes of utmost significance.

?? The *liberal market approach to transport development* considers it important to regulate the transport sector through primarily economic instruments. Pricing instruments and taxation are under this scheme of particular relevance. So is liberalisation and privatisation when associated with greater accountability and transparency in operations.

?? The *ecological approach to transport*, considers transport development at best a necessary evil. Transport is considered one main source of
pollution, therefore infrastructure investment is considered ‘bad’ – instead what is called for are measures for making it less necessary to travel and strict environmental regulation.

No one national transport policy can be mapped clearly against the above four-fold typology. This is why we talk of ‘ideal’ type policy frameworks or policy lenses and not of real policy environments. Nevertheless the above policy packages could be said to describe the main rupture points or cleavages within national transport policy environments as well as at the European level.

4. There are six main issues in the contemporary landscape of European (Common) Transport Policy at the level of implementation of major infrastructure projects:

?? The problem of the ‘missing-link’: the ‘missing-link’ concept and the TEN represented for their promoters a ‘best-practice’ model for CTP. In practice this model did not work in as straight-forward a manner as was expected. The main barrier concerns the conflicting national interests of the traversed regions. The truly relevant question in terms of implementation has therefore not been the level of ‘maturity’ of the link as such, but rather its level of maturity in each country.

?? The role of the ‘frontier’ or of borderline zones: In several cases the implementation of TEN projects highlights an inter-regional European dimension that emerges as significant through the decision-making processes. This dimension refers to the role taken up by the ‘frontiers’ that the projects are expected to traverse. There are two distinct ways of considering this specific European resource: either as an obstacle or as delineating a specific zone of opportunity.

?? The territorialisation of the decision-making process and in relation to this the role of regional authorities and the question of risk sharing and responsibility: There is bottom-up territorialisation process characterised by the regions demanding more of a say with regards the implementation of infrastructure projects. On the other hand – and this is the top-down aspect of the process – the state wishes indeed to involve regions in transport planning in order to better manage risks.

?? The issue of pricing as a strategic notion: At the level of the Common Transport Policy, the objectives of pricing measures are set in the framework of market regulation — the objective being to cover both internal and external costs. Yet such measures reflect other objectives as well. Two of these subsidiary objectives are of relevance, especially because they are contradictory if applied to the same project: one
The objective of implementing a pricing measure can be to regulate or even to restrict road traffic for the benefit of environmental protection; a second objective can be to make the infrastructure pay for itself.

The problem of financing: Obviously, financing is a very common problem for all major infrastructure projects and, as a matter of fact, for all the TEN projects. The European Union has proposed the consideration of public-private partnerships as a solution. In practice public-private partnerships are difficult to implement. Another way to approach the financing problem has been through phasing of the project or through splitting it into independent, albeit inter-related elements. Phasing or splitting is also used to restrict the ‘international’ part of the project which in turn is financed on a public-private basis.

The role of environmental appraisal: Environmental appraisal is today a part of all decision processes concerning transport infrastructures. In the majority of the cases, the concrete issue of such an appraisal is an impact study. But the positioning and significance of this differs from case to case, the differences deriving mainly from the differences in the national institutional frameworks. The positioning of the environmental appraisal procedure in the decision process shapes both the strategies of the actors involved and the solutions they reach.

5. The need for co-ordination emerges as a major issue in the implementation of major transport infrastructure projects. The resolution of conflicts of interest often requires mediation. It is this ‘mediatory’ role which is new for the arena of co-ordination and which often leads to the emergence of a principal individual agent as central to this process. The fact that individuals and not institutions are more likely to successfully assume this role of mediation and co-ordination underscore the significance of personality or charisma in the decision process. This is at the same time the weakest point of the decision process. The resolution of conflicts of interests through mediation is only effective in the long-term if it represents at the same time a process of institutional learning. Only in the latter case can the decision process properly claim legitimacy and protect itself from the pitfalls associated with over-reliance on any one charismatic individual or professional.

6. Establishing mechanisms for the participation of citizens’ in the decision process is one important element of the institutional learning dimension to transport policy. The vehicle of environmental appraisal accompanied by a public inquiry is one such institutional mechanism, yet not adequate as currently practised. The reasons are manifold: most relevant are its timing; and related to this its limited scope. It is also important to realise that trust is
an important component of any decision process. The demands for more participation are in fact the result of decreasing trust in the existing institutions and their representatives. The overcoming of this trust deficit cannot be achieved through information dissemination alone, however important the latter may be. It requires an all-encompassing reform of the decision process to take into account the new demands but also the new skills of citizens in liberal democratic societies.

7. New modes of decision-making that address the current democratic deficit can also contribute to a better appreciation of the relevance of the dimension of time in transport. Taking account of time involves a reconsideration of the relations between transport, economic growth, the valorisation of speed and social equity. For the planning of transport projects it means recognising, on the one hand, time-based differences and time-based roots of barriers to their successful realisation and, on the other, the time intensive nature of co-ordination and synchronisation of action across administrative levels and national boundaries. It entails further that we acknowledge the importance of the past and future for concerted action in the present.

The TENASSESS Final Report is organised in three parts.

Part I discusses the policy processes characteristic of West European environments in the field of transport and their contents from a comparative perspective. It pays in particular attention to the national transport policies in relation to the Common Transport Policy (CTP) (chapter 3); the problems encountered in the course of implementation of major transport infrastructure projects (chapter 4); the problematic nature of public acceptance in relation to citizen participation (chapter 5); and, the relevance of a timescape analysis for transport (chapter 6). Part I is introduced with a survey of expert opinions on the direction and challenges of contemporary transport policies in Europe (chapter 2).

Part II describes the main elements of the two decision support tools elaborated in TENASSESS, i.e. the TENASSESS PAM (chapter 8) and the TENASSESS Barrier Model (chapter 9). Part II is introduced by a brief exposition on whom these tools target or are supposed to support (chapter 7). The use made of decision support tools has implications on the decision process – they help organise it, render it more transparent and in that rationalise it. Considering what was said earlier about the nature of the contemporary transport policy landscape at the interface between project appraisal and policy evaluation in a context of conflicting interests and complex interactions, the use of decision
support tools as heuristic devices to better structure decision processes gains in significance.

The insights gained from the analysis reported in Part I and the use of the two TENASSESS models of Part II are translated into policy recommendations in Part III, chapter 10.
1 Preface

The White Paper on Growth, Competitiveness and Employment outlines the mission of the European Union towards the 21\textsuperscript{st} century as that of achieving the free movement of goods, people and capital to improve the competitiveness of its Member States in the global market as well as the living conditions of its citizens. Through the ratification of the Maastricht Treaty, which formally marks the establishment of the European Union, the European project of integration has also assumed a strong political dimension. This will have far-going implications for the development of policy.

The subsidiarity principle constitutes a cornerstone of the European project of integration: it legitimises decision-making and political action at the supra-national level in areas where the latter can claim to command the best measure of information. Transport and the environment—two closely inter-related fields—are two such areas where common European action is deemed necessary if the goals of growth, competitiveness and sustainable mobility are to be achieved.

The increasing engagement of the European Union in the field of transport policy marks a shift away from the narrow concern with transport market issues towards a more comprehensive approach that considers competition and economic growth in the framework of sustainable development and pays attention to environmental and social issues. In the field of infrastructure planning, the Trans-European Network (TEN) and, subsequently, the pan-European corridors, delineate an ambitious project of structural integration. In this latter respect, the overcoming of bottlenecks in the network is as important as the promotion of regional development and cohesion.

The ‘Europeanisation’ of transport policy raises new questions for the scientific field of evaluation. These can be summarised under three headings:

a) The role of the context of evaluation: the ‘add-on’ of another level to transport policy making, i.e. of the European level, has re-focused attention on the decision-making process and on the conflicts inherent to it as a fundamental part of policy analysis. Transport is not a conflict-free area – indeed over the last several years it has often been the stage of serious conflicts of interests: the supra-national / national dimension is only one of many; within countries the cleavages cut across parties, economic actors and citizen groups.
b) Following from the above, policy assessment or evaluation is distinct from project and, in particular, infrastructure appraisal. At the level of policy formulation, transport plans are increasingly being distinguished from infrastructure plans.

c) Developments in the transport policy field are influenced by developments in other policy fields. The question of attribution of cause and effect becomes more complicated and necessitates that more attention is paid to two- and three-way interactions. This is in particular necessary when considering long-term impacts and the distribution of costs and benefits.

It is known from psychology that frequently the entrance of a new ‘actor’ on the scene initiates a re-thinking process; the issues thus raised are not necessarily new – yet they suddenly acquire a sense of urgency and are seen in a new light. The Europeanisation process would appear to represent this ‘new actor’ in the transport field.

The TENASSESS project has been part of this re-thinking process. It does not provide definitive answers to all of the questions raised above, but a basis for analysing ongoing changes in the policy as well as in the evaluation fields.

**Box 1. Subject-matter of the TENASSESS project**

How is transport policy ‘made’ in various national contexts and what are its contents; in turn, how do these compare and what are the issues under debate within national environments and vis-à-vis the European Union; furthermore, what can the process of implementation of specific policy measures, and, in particular, of TEN-related infrastructure projects, teach us that might be relevant for transport policy analysis and implementation in the future?

In TENASSESS, the theme of policy-making has been at the centre of considerations. The study of the policy process is important, we would contend, for any assessment exercise that directly or indirectly deals with policy analysis. Without knowledge of how policy is made, including of the conflicting interests it entails, it is not possible to interpret the results of impact assessment exercises or understand the significance of certain impacts for specific impact groups or for policy more generally. More importantly, without knowledge of the policy process, it is not possible to provide advice to policy-makers, less so to develop decision support tools. Last but not least, knowledge of the policy process
guards against the false or manipulative exploitation of research results and can thus contribute to a better interaction between science and policy.

In TENASSESS the study of policy processes had a twofold objective: the first objective was to understand these better for the reasons stated above; the second was to collect empirical material for the development of decision support tools. Two such tools were developed by TENASSESS: the TENASSESS Policy Assessment (PAM) tool; and the TENASSESS Barrier Model.

Box 2. The TENASSESS Decision-Support Tools

Both the TENASSESS PAM and the TENASSESS Barrier Models are tools that assist rational thinking. The TENASSESS PAM helps assess the degree of congruence between any one project's objectives and that of transport policy from the perspective of different actors’ viewpoints – in that it provides an interface between project appraisal and policy assessment. The TENASSESS Barrier Model helps identify and anticipate barriers likely to occur during the implementation process of any transport policy initiative. It is a dynamic model which can be used in an interactive manner to assist planning and which helps make planners and policy-makers aware of the consequences of their actions in particular planning contexts.

This document is the consolidated report of the TENASSESS project. It is organised in three parts.

Part I discusses the policy processes characteristic of West European environments in the field of transport and their contents from a comparative perspective. It pays in particular attention to the national transport policies in relation to the Common Transport Policy (CTP) (chapter 3); the problems encountered in the course of implementation of major transport infrastructure projects (chapter 4); the problematic nature of public acceptance in relation to citizen participation (chapter 5); and, the relevance of a timescape analysis for transport (chapter 6). Part I is introduced with a survey of expert opinions on the direction and challenges of contemporary transport policies in Europe (chapter 2).

Part II describes the main elements of the two decision support tools elaborated in TENASSESS, i.e. the TENASSESS PAM (chapter 8) and the TENASSESS Barrier Model (chapter 9). Part II is introduced by a brief exposition on whom these tools target or are supposed to support (chapter 7). The use made of
decision support tools has implications on the decision process – they help organise it, render it more transparent and in that rationalise it. Considering what was said earlier about the nature of the contemporary transport policy landscape at the interface between project appraisal and policy evaluation in a context of conflicting interests and complex interactions, the use of decision support tools as heuristic devices to better structure decision processes gains in significance.

The insights gained from the analysis reported in Part I and the use of the two TENASSESS models of Part II are translated into policy recommendations in Part III, chapter 10.

The Technical Annex to this Report includes:

- An overview of the TENASSESS deliverables (Annex I);
- Summaries of the national transport policies (Annex II);
- Summaries of the case studies explored by the project (Annex III),
- An overview of the methods used in TENASSESS (Annex IV).
PART I.

WHAT FUTURE FOR COMMON TRANSPORT POLICY
2 By way of introduction ...

In the Fall of 1997 a questionnaire was distributed to over 200 transport experts across Europe with the request that they provide their opinion on a few major transport policy statements. The statements addressed a range of issues: the decision-making process and structure; the relation between national transport policies and European (common) transport policy (CTP); the main themes of concern in transport policies; the Tran-European Networks (TEN); the issue of pricing; the integration of environmental concerns; the social dimension; and last but not least the problematic question of financing and its implications. This questionnaire was followed by two other a year later – these sought to shed light on policy goal prioritisation and interrelations.

The answers to the questions of all three questionnaires are revealing in many respects both where they indicate convergence of opinion and where they show divergence or polarisation. Below we discuss these results as a background to the chapters in this part of the report, dealing respectively with national transport policies (chapter 3), the implementation of major transport infrastructure projects (chapter 4), the subject of public acceptance and citizen participation (chapter 5) and the relevance of the time dimension (chapter 6). Each of the tables that follow display the percentage of respondents agreeing or disagreeing with the policy statements; the last column sums together those respondents who claimed a moderate position with those who refused to answer – with two telling exceptions to be discussed below, the ‘don’t know’ answers were overall a minority and did not exceed 3 per cent.

On the subject of the decision process and structure there are two clear trends:

61 per cent of the respondents were of the opinion that the role of the regions is increasing with regards transport policies – chapter 3 discusses this process under the name of ‘territorialisation’; chapter 4 exemplifies with the help of case studies how the regional dimension is exerting a strong influence on the success or failure of the implementation of major transport infrastructure projects.

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1 The TENASSESS Delphi survey had two main objectives: to simulate discussion on transport policy – these results are summarised in this chapter; as well as survey views on the science and policy interaction – the latter findings do not form part of this consolidated final report but can be read in Deliverable 7 of TENASSESS.
75 per cent of the respondents agree that there is a lack of measures for performance in relation to transport policy objectives. In chapter 3 we show that despite the detailed formulation of transport policy and/or infrastructure plans in the majority of European countries, strategic thinking stops short of elaborating measures for evaluating performance be it in terms of efficiency or in terms of effectiveness.

On other issues, the trend is less clear. Thus while the relative majority is of the opinion that national and regional transport policy plans are important, there is still a strong minority which rejects this view and an equally strong minority which is ambivalent on the subject. The same is true of citizen participation as well as the question of the effectiveness of conflict resolution mechanisms.

Furthermore, even though the absolute majority is of the opinion that transport planning is already now incorporated in the wider framework of spatial and environmental planning, the views expressed on the subject of the effectiveness of environmental legislation (see later tables) call for a relativisation of this view.
### Decision process and structure

<table>
<thead>
<tr>
<th>Decision process and structure</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>National / regional transport policy documents carry a lot of weight as general orientation guidelines</td>
<td>49%</td>
<td>23%</td>
<td>28%</td>
</tr>
<tr>
<td>Transport planning at national level is incorporated in the larger framework of spatial and environmental planning.</td>
<td>55%</td>
<td>21%</td>
<td>24%</td>
</tr>
<tr>
<td>There is an increasing role assigned to the regions in transport policy</td>
<td>61%</td>
<td>26%</td>
<td>13%</td>
</tr>
<tr>
<td>The process of transport planning faces further democratisation with increased opportunities for citizen participation.</td>
<td>47%</td>
<td>39%</td>
<td>14%</td>
</tr>
<tr>
<td>There exist sufficient resolution mechanisms for conflicts about competencies in transport policy among different administrative levels</td>
<td>42%</td>
<td>34%</td>
<td>24%</td>
</tr>
<tr>
<td>There is a lack of performance measures to assess the success or failure of transport policies</td>
<td>75%</td>
<td>12%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Hesitancy would be the right word to describe the relation between national transport policies and European transport policy or CTP. Thus while close to fifty per cent of the respondents are of the view that national transport policies and European transport policy display similar trends and tendencies, an equivalent number does not think that CTP has a strong impact on national transport policies, transport remaining largely an issue of national concern. Indeed half of those respondents that recognise common trends in their national transport policies and in European transport policy are of this view.

The analysis reported upon in chapter 3 corroborates these findings. The implications of these perceptions for the notion of subsidiarity are not without relevance.
<table>
<thead>
<tr>
<th>National transport policies and CTP</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>National transport policies and the European transport policy display the same trends and tendencies in terms of objectives</td>
<td>46%</td>
<td>25%</td>
<td>29%</td>
</tr>
<tr>
<td>The European Transport Policy has considerable impact on national transport policies</td>
<td>41%</td>
<td>34%</td>
<td>25%</td>
</tr>
<tr>
<td>There is no Common Transport Policy. Despite efforts, transport policy remains a national issue</td>
<td>47%</td>
<td>29%</td>
<td>24%</td>
</tr>
</tbody>
</table>

The recognition of the similarities between national transport policies as well as between the latter and CTP are reflected in the clear statements on the **contents of contemporary transport policy in Europe**:

?? 75 per cent of the respondents agree with the statement that the major dilemma in contemporary transport policy is the inherent conflict between economic growth and environmental protection. Chapter 3 discusses how despite the incorporation of environmental concerns in transport policies, this conflict is still far from having been resolved. Chapter 4 shows that it is often a major barrier to the implementation of infrastructure projects, also in those countries which can claim a high level of environmental consciousness also with reference to their political culture.

?? The second major theme for debate would appear to be that of privatisation and deregulation. Even though the relative majority agrees that these are accepted policies, there is a strong minority that rejects this view. The polarisation in this field is discussed in more detail in chapter 3.

?? Striking is the agreement on the role of transport for overcoming structural inequalities at the regional level via economic development. 76 per cent of the respondents consider transport as contributing to regional and national economic development and to the welfare of citizens. All the more surprising is therefore that 50 per cent of the respondents refused to express an opinion as to whether there is a clear association between transport volume growth and economic growth.
Finally, 79 per cent of the respondents agree that a systems approach to transport is distinct from the contemporary mode-specific approach and that it is lacking in the contemporary European transport policy landscape. A clear majority, albeit a smaller one, is of the opinion that too much emphasis is placed on long-distance freight transport; less on local short-distance transport.

<table>
<thead>
<tr>
<th>General Contents of transport policies</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>The thematic conflicts within transport policy can basically be reduced to one pair of contrasting arguments: policies concerned with reducing the negative impacts of transport for the environment and society; vs. policies to enhance economic development by improving transport flows.</td>
<td>75%</td>
<td>18%</td>
<td>7%</td>
</tr>
<tr>
<td>Privatisation and deregulation of the transport market are accepted policies. There are only arguments about the pace.</td>
<td>47%</td>
<td>36%</td>
<td>17%</td>
</tr>
<tr>
<td>Transport infrastructures are vital to regional and national economic development, and thereby contribute significantly to welfare.</td>
<td>76%</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>Economic growth and wealth depend on the growth of transport volume.</td>
<td>29%</td>
<td>21%</td>
<td>50%</td>
</tr>
<tr>
<td>Transport policy (at the European level) is still oriented too much towards specific modes. A general system approach is missing.</td>
<td>79%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Transport policy focuses too much on large infrastructure development for freight long haulage, too little priority is given to the local level where most transport volume is generated.</td>
<td>53%</td>
<td>32%</td>
<td>15%</td>
</tr>
<tr>
<td>A common legislation is necessary to back up further improvement of safety standards in transport throughout Europe.</td>
<td>78%</td>
<td>12%</td>
<td>10%</td>
</tr>
</tbody>
</table>
The views on the Trans-European networks (TEN) fall on the negative side. 65 per cent of the respondents are of the opinion that the TEN are the result of a national licitation process, rather than a sound concept of government. 48 per cent are also of the opinion that regional cohesion, one of the main objectives of the TEN implementation, has not been met by the specific selection of TEN priority projects. Fewer think nevertheless that this will increase the disparity between core regions and peripheral regions. In chapter 4 we show how the degree of ‘territorialisation’ of the TEN influences, if not determines, their implementation.

<table>
<thead>
<tr>
<th>The Trans-European Network (TEN)</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>The TEN are the result of a national licitation process rather than a sound concept of government. The TEN lack a clear-cut evaluation of their economic, environmental, intermodal and integration effects</td>
<td>65%</td>
<td>11%</td>
<td>24%</td>
</tr>
<tr>
<td>Regional cohesion is supported by the development of the TEN</td>
<td>22%</td>
<td>48%</td>
<td>30%</td>
</tr>
<tr>
<td>TEN are contributing to an increasing disparity between economic core regions and peripheral regions.</td>
<td>28%</td>
<td>37%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Turning to the subject of pricing we can again observe wide-ranging consensus as to the importance of this policy goal. Indeed 64 per cent of the respondents are of the opinion that priority should be given to pricing measures over the TEN and that the user-pay principle needs to be more forcefully implemented. A majority is also of the view that the subsidising of railways is not in line with the rules for fair competition. The discrepancy between this proportion and the one on pricing more generally is indicative of the many problems being faced with the implementation of pricing measures.
On the subject of pricing

<table>
<thead>
<tr>
<th>Priority should be given to progress with fair and efficient prices in transport over the development of TEN infrastructure</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>64%</td>
<td>13%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Currently some transport users pay too much relative to their cost, some pay too little. This is not only unfair but also inefficient. The user-pay principle needs to be strengthened.

<table>
<thead>
<tr>
<th>The political and financial support of the development of the railways does not comply with the rules of fair competition between the modes</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>54%</td>
<td>36%</td>
<td>10%</td>
</tr>
</tbody>
</table>

In line with the earlier finding regarding the recognition of environment as the major challenge for contemporary transport policy developments, 69 per cent of the respondents note the necessity to elaborate clearer policy goals in this field. Only 34 per cent are of the opinion that the existing measures will achieve the goal set by the EU ministers of environmental affairs about reducing C02 emissions by 15 per cent till 1990. Two measures are recognised as important for bringing the policy debate forward:

?? First, to introduce strategic environmental assessment as a compulsory measure for the evaluation of policy programmes or infrastructure plans;

?? Second, to consider environmental taxation as a means for internalising external costs in transport.
<table>
<thead>
<tr>
<th>Integration of environmental concerns</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>The measures implemented allow to achieve the goal of a CO2 reduction by 15% till 2010 (base 1990) as agreed by EU ministers of environmental affairs</td>
<td>34%</td>
<td>45%</td>
<td>21%</td>
</tr>
<tr>
<td>The environmental impacts of transport infrastructures are not assessed sufficiently. SEA should become compulsory at an early stage.</td>
<td>66%</td>
<td>22%</td>
<td>12%</td>
</tr>
<tr>
<td>It is not that important to determine the magnitude of the aggregate externalities in transport with any great accuracy. What is important is to define clear environmental policy objectives and to gear the choice of instruments accordingly.</td>
<td>69%</td>
<td>19%</td>
<td>12%</td>
</tr>
<tr>
<td>The internalisation of externalities concerns not a general increase in taxes / charges, but a shift of emphasis towards environmental taxation</td>
<td>76%</td>
<td>13%</td>
<td>11%</td>
</tr>
</tbody>
</table>

**Equity** is next to environmental protection the other cornerstone of sustainable mobility. The majority of the respondents – 57 per cent – think that this is unlike that of environmental protection not sufficiently considered in deliberations concerning transport policy. An even greater number – 63 per cent – think that it is necessary to insist on more detailed assessment of the distribution effects of CTP.
### On the subject of equity ...

<table>
<thead>
<tr>
<th>Description</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>The issue of equity is not considered sufficiently in contemporary transport policy.</td>
<td>57%</td>
<td>27%</td>
<td>16%</td>
</tr>
<tr>
<td>Further assessment is necessary of who are the social groups winning or losing from transport policy developments in Europe.</td>
<td>63%</td>
<td>21%</td>
<td>16%</td>
</tr>
</tbody>
</table>

### Financing

Financing is one of the most important barriers to the implementation of major transport infrastructure projects – this is discussed in detail in chapter 4. European transport experts agree: 84 per cent think that the inflated influence of the Treasury on public financing is becoming a major decision criterion for the implementation of transport infrastructure projects. Even though public-private partnership is one new mode of financing, the high risks involved in infrastructure investments lead private and subsequently public investors to opt for cost efficient solutions. In chapter 4 we show that this is indeed one solution to the problem; hence also phasing or the splitting of the project.

### On the issue of financing ...

<table>
<thead>
<tr>
<th>Description</th>
<th>Agree</th>
<th>Disagree</th>
<th>Between/DN</th>
</tr>
</thead>
<tbody>
<tr>
<td>With the (forthcoming) European Monetary Union and the (national) government struggling to fulfil the convergence criteria, the Treasury has a major influence on all aspects of transport investments</td>
<td>83%</td>
<td>7%</td>
<td>10%</td>
</tr>
<tr>
<td>The availability of funds has become the main decision criterion for the realisation of transport initiatives</td>
<td>84%</td>
<td>4%</td>
<td>12%</td>
</tr>
<tr>
<td>Due to the high risks involved in infrastructure investments, private involvement will opt for cost efficient solutions and over-dimensioned projects will be avoided.</td>
<td>62%</td>
<td>23%</td>
<td>15%</td>
</tr>
</tbody>
</table>
Chapter 3 shows that despite the apparent agreement on the trends in national and European transport policies, there is a considerable degree of disagreement over the prioritisation of specific policy objectives. Transport experts across Europe were asked to prioritise a set of twelve policy objectives and also to give their perception of the latter’s prioritisation at the level of CTP. A number of interesting observations can be made:

The divergence between the own ranking of policy goals and the perceived ranking at the level of CTP is significant for seven objectives: namely, safety, intermodality and interoperability, fiscal harmonisation, the TEN, the external links (to the CEEC), and citizen participation.

Thus whilst 87 per cent of the respondents consider safety to be among the top 5 priority goals, only 29 per cent consider this to be a priority goal at CTP level.

Similar is the case for intermodality: 84 per cent rank intermodality among the top 5 priority goals, only 53 per cent think it is likewise a priority goal at the European level. The opposite is true for interoperability: 62 per cent consider this a priority goal; 76 per cent a priority goal for CTP.

At the other end of the scale, 43 per cent consider fiscal harmonisation as among the top 5 priority goals, yet 75 per cent think that this same goal is a top priority for CTP.

And while only 30 per cent view the TEN as a top priority goal, 61 per cent are of the opinion that it is a priority goal for CTP. External links are neither considered an own priority nor one for CTP; nevertheless it is interesting to observe that whilst 9 per cent would rank this as among their own top priority goals, 29 per cent think it is a top priority for CTP.

Promoting citizen participation is not a priority goal for most respondents (23 per cent) – yet even fewer (9 per cent) consider it a priority at European level.
Whereby one can read the above differences in opinion regarding the prioritisation of policy goals as an indication of the divergence between national transport policies and CTP, another factor at work could well be the lack of comprehensive information about CTP. This is important to keep in mind when elaborating dissemination strategies at European level.

Another interesting finding concerns the interrelation among policy objectives. One major problem in the development of policy assessment methodologies relates to the so-called problem of ‘double counting’ which is a result of such interrelationships. In TENASSESS European transport experts were provided with a matrix and asked to mark the two-way relationships between policy goals with a ‘3’ to indicate ‘strong interrelationship’, a ‘2’ to indicate a moderate interrelationship, a ‘1’ to indicate a weak interrelationship and a ‘0’ to indicate no interrelationship. The table below displays the average marks for each policy goal (out of a maximum of 100).

<table>
<thead>
<tr>
<th>Policy objectives</th>
<th>% think is a top 5 priority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Own</td>
</tr>
<tr>
<td>Reducing fatalities and serious injuries</td>
<td>87</td>
</tr>
<tr>
<td>Promoting intermodality</td>
<td>84</td>
</tr>
<tr>
<td>Promoting interoperability</td>
<td>62</td>
</tr>
<tr>
<td>Reducing CO2 emissions</td>
<td>54</td>
</tr>
<tr>
<td>Effecting fiscal harmonisation</td>
<td>43</td>
</tr>
<tr>
<td>Enforcing the Polluter-Pay Principle</td>
<td>45</td>
</tr>
<tr>
<td>Promoting economic development via TEN</td>
<td>30</td>
</tr>
<tr>
<td>Promoting citizen participation</td>
<td>23</td>
</tr>
<tr>
<td>Promoting establishment of external links</td>
<td>9</td>
</tr>
<tr>
<td>Promoting Public-Private Partnerships</td>
<td>12</td>
</tr>
<tr>
<td>Effecting deregulation &amp; privatisation</td>
<td>20</td>
</tr>
<tr>
<td>Moving competencies to regions</td>
<td>16</td>
</tr>
</tbody>
</table>
Depending on their degree of association, transport policy objectives could be classified in three main categories:

?? The first category includes policy goals the outcome of which influences more generally developments in transport policy and in particular the implementation trajectory of other transport policy goals. Here are included the policy goals of intermodality, fiscal harmonisation and the polluter-pay principle.

?? The second category includes policy objectives moderately dependent on others for their successful implementation – interoperability is one such goal; so are public-private partnerships, the setting of standards for reducing emissions as well as the TEN and corridor infrastructure programmes.

?? Finally, policy objectives with a low degree of interdependence are the promotion of citizen participation, the allocation of political responsibility to regions, deregulation as well as safety. These goals could be thought as horizontal or cross-sectional: the significance of the first three derives from the way in which they influence the decision process; safety is important under whatever conditions.
The degree of interdependence between policy objectives is a two-fold measure: first, it is an indicator of the difficulty in implementation of any particular goal; second, it is a measure of the intensity of impacts to be expected with regards the transport system as a whole.

An understanding of these interrelations is furthermore an important piece of strategic information. This strategic component of policies is the focus of the next chapter.
3 The ‘Europeanisation’ of Transport Policy

Transport policy has almost exclusively been a national issue in the past and despite the increasing number of common European initiatives in the field during the last several years, progress towards a common European action programme has been slow.

The legal basis for the creation of a common transport policy is provided in the Treaty establishing the European Economic Community, signed in March 1957 (Title IV, articles 74-84). Till 1985 the European Conference of Transport Ministers (ECMT) was the main institution to co-ordinate pan-European Transport policy initiatives.

In 1961 the Schaus Memorandum presented first general guidelines of a common transport policy. These were followed by an action programme for regulations, and a first outline for a Community-wide transport network. Due to the unfavourable reactions of the Member States those initiatives showed little effect. In 1975 the Commission suggested a shift from regulating the transport market to seeking a balance between market forces without interventions.

The White Paper on the Completion of the Internal Market published in 1985 put a strong focus on the market aspects of transport, as restrictions on the provision of transport services were recognised to be one of the main barriers to open trade. The removal of these barriers necessitated the intervention of the European Court of Justice upon the initiative of the Parliament; called upon to interpret the application of the directives of the Treaty of Rome in relation to transport, the European Court of Justice declared European inland freight and passenger transport open to all firms within the community without any discrimination for place of establishment. This was the first European-wide action to liberalise the access to the national transportation markets.

In the following years the Member States could agree on several actions to be launched at the Community level, including the DRIVE and the EURET programmes. Specific initiatives where prepared regarding road safety (seat-belts, alcohol), waterborne transport (1101/89/EEC), the separation of rail infrastructure and service provision (440/91/EEC), as well as the three liberalisation packages on air transport in 1987, 1990 and 1992. The majority of the measures brought forward between 1985 and 1992 aimed at eliminating regulatory barriers to the internal market.
With the publication of the *White Paper on the Future Development of the Common Transport Policy* in 1993 the common transport policy approach came to delineate a more comprehensive framework, covering a broad range of additional fields, including environmental protection and conservation, social impacts as well as the relation to third countries. In total seven pillars were identified for a successful European transport policy:

1. An efficiently working internal market, facilitating free movement of people and goods;
2. A coherent, integrated transport system using the most appropriate technologies;
3. A trans-European transport network which interconnects national networks, makes them interoperable and links the peripheral regions with the central ones;
4. Transport systems helping to resolve major environmental problems;
5. Promotion of the highest possible safety standards;
6. Social policies to protect and promote the interests of both transport workers and users;
7. Developing relations with third countries.

The Maastricht Treaty of the European Union (Title XII) underlined the importance of transport issues and in particular of the trans-European network. Furthermore, articles 75 to 81 of the Treaty extended the competencies of the European Council of Ministers in the field of transport to include:

- Establishing common regulations for international transport;
- Regulating the conditions for market access of companies in the field of transport;
- Initiating measures to increase transport safety;
- Abolishing discriminatory measures against companies from other Member States;
- Reducing customs duties and cross-border charges;
- Regulation of transport pricing;
- Abolishing subsidies.
Relevant proposals are submitted to the Council by the European Commission. Feedback must also be obtained by the Economic and Social Committee, the Committee of the Regions and the European Parliament.

Subsidiarity is the Union’s guiding principle in realising the objectives set out in its Common Transport Policy. Therefore partnerships between the Union’s institutions and the Member States are necessary at all levels, that is not only at the highest political and official level, but also among operators, users, investors and environmental organisations. In the framework established by the principle of subsidiarity, it is the Union’s task to promote the interconnection and interoperability of national transport networks as well as the access to those networks. The planning of transport infrastructure remains with the Member States, however Union priorities have to be taken into account. It is likewise the task of the Member States to decide the timing of realisation of projects and to determine financing strategies.

The Union fulfils its tasks through publishing guidelines which identify measures and projects of common interest, indicating also their priority in terms of realisation. It also issues guidelines for the technical harmonisation process of the national transport systems. All guidelines proposed by the Commission have to be adopted by the Council and the European Parliament in accordance with the co-decision procedure. In a consultation process the opinions from the Economic and Social Committee and from the Committee of the Regions are sought. Financial support is granted for feasibility studies; loan guarantees and interest subsidies are available for projects. Through the instrument of the Cohesion Fund up to 90 per cent of project costs may be funded in targeted regions.

In the course of the first months of 1994 and in accordance with Article 129 C of the Maastricht Treaty of the European Union, the Commission brought forward various policy proposals in the fields of energy and transport (COM(93)685 and COM(94)116), for interoperability of high-speed trains (COM(94)107) and for financial regulations of the trans-European networks (COM(94)62). The concept of the trans-European networks was elaborated during the formulation of the Maastricht Treaty of the European Union, which specified a network of transport corridors forming the backbone of the European transport system. Also in 1994, specifically at the Essen Council Meeting in December, the 14 TEN priority projects as suggested by the Group of Personal Representatives (Christophersen Group) were accepted. In Essen the backbone for the extension of the TEN to Central and Eastern Europe as well as to the CIS was also established. What came to be known as the pan-European corridors have recently been adopted into the relevant TEN directive of the European Commission. The Action Programme to the White Paper specifying the medium
term perspective of the transport policy actions until 2000 was adopted by the Council in July 1995.

In order to stimulate discussion regarding the environmental aspects and impacts of transport, the Commission published two Green Papers in 1995: the Green Paper Citizens’ Network and the Green Paper on Fair and Efficient Pricing in Transport. The Green Paper Citizens’ Network has an additional significance: with it, the Commission, for the first time addresses officially the problems inherent in urban and regional transport; till this time, these issues were only addressed indirectly through research carried out in the framework of the 4th Framework Programme. In 1996 another White Paper followed on the Revitalisation of European Railways, which focused on liberalising the market of railway operations in Europe. In 1997 and 1998 various communications of the Commission for promoting the actions outlined by the various policy documents were published. Among these the most important are: the Communication of the Commission on CTP (1998); the Communication of the Commission on how to promote good local and regional public transport (1998); and the Communication of the Commission on intermodal transport (1997).

Throughout the past decade, the Member States played different roles in the process of developing and shaping transport policies at Community level. Deregulation, liberalisation and privatisation were for a certain time very fiercely discussed and opposed to. Today they are broadly accepted as efficiency principles, whereby the procedures and details of implementation as well as their implications about the role of the state as regulator remain, as we will see, under debate. Certain is that the orientation of the Common Transport Policy has changed following the input of the Member States.

With the European Monetary Union Treasuries have gained a major influence on all aspects of transport investments which involve some measure of public involvement. The promotion of private-public partnerships for funding transport projects is a main issue in all countries, but very few implemented cases have been documented. The success in attracting private investors is generally still moderate. In turn this continues to strengthen the role of national governments in European transport policy-making.

**National regulatory environments in comparative perspective**

The increasing role of the Treasury in determining public investment in the field of transport is not the only reason for investigating national transport policies.
Many of the problems encountered in implementing the European Common Transport Policy relate to the variation in the regulatory environments in the field of transport across Member States. The following were identified as of specific importance:

- the variation in the **distribution of administrative responsibility and competencies** at the national level;
- the variation in the **degree of planning of transport policy** in the form of master plans but also assessment and/or evaluation frameworks;
- the variation in the **degree of centralisation** or decentralisation, especially with respect to the role assigned to the regions, hence the process of territorialisation, and
- the variation in the **degree of negotiation** with relevant actors, including citizens’ movements or the public at large.

At the same time there are some general harmonising trends across all four dimensions which can, in part, be attributed to the influence of the European Union: i.e. towards greater sharing of responsibility and stronger co-ordination at the national administrative level; towards the development of a planning structure that fits the requirements of European CTP; towards the devolution of power to the regions, that is, decentralisation; and towards a stronger emphasis on negotiation at all levels. Whether the differences or the similarities along these dimensions are more relevant for understanding the development of CTP is a subject we return to at the end of this chapter.

**Distribution of administrative competencies at national level**

In most countries, the responsibility for drawing out and co-ordinating transport policy at national level rests with a single ministry. The implementation of transport policy rests with numerous agencies or departments, some of which are independent or not under the direct jurisdiction of the ministry in charge of transport. In some countries however, notably in Italy, Spain and Austria, strategic policy planning is itself divided as a task: thus in Spain and Italy infrastructure planning is separated from transport policy more generally; whereas in Austria road and rail competencies are separated with the Ministry of Science and Transport being in charge of rail and the Ministry of Economic Affairs being in charge of road. In the latter case, the fact that the two ministers belong to different political parties tends to complicate co-ordination. Given that coalition governments are increasingly becoming the order of the day in
contemporary European democracies, such problems are not unlikely to occur in other countries as well.

As a result of the increasing emphasis laid on consensus on the one hand, and the achievement of integration across policy areas on the other, other actors come increasingly to play a stronger role in the formulation and implementation of transport policy. The most important among these actors is the ministry responsible for environmental affairs (and/or public works or spatial planning): currently this is especially the case in those countries like Denmark, Germany, Sweden and the Netherlands, where transport planning is incorporated in the larger framework of spatial and environmental planning and where, subsequently, such consultations are already part of the regular process of policy formulation.

Finally, due to the heavy involvement of public funds in transport investments, the respective national ministries of finance influence heavily the realisation of transport policies and projects. This has always been the case, only currently, it is compounded by first, the budgetary restrictions imposed on both the national and the European budgets and second, the slow pace of development of the envisaged public-private partnerships.

**Transport planning**

Most European countries have elaborated specific master plans for transport, others provide in addition very specific assessment frameworks for transport investments and policy progress. Depending on the structure of the country such master plan concepts are available for the national, regional and in some cases for the local level. Often they are accompanied by detailed infrastructure master plans. In some cases, such as in Denmark, the Netherlands, Sweden and Germany, they are embedded in a wider frame for future planning and development covering socio-economic, environmental and spatial aspects; Austria and, partly also France, are in the process of elaborating such a set of interconnections. Not surprisingly this set of countries also displays quite comprehensive environmental plans or laws that make specific references to transport.

Only two European countries, namely, Greece and Luxembourg, have no form of general transport policy documents. Spain has merely an infrastructure development plan but no transport master plan; in Italy, the general plan for transport, dating back to 1986 has shown little relevance for transport development in the past two decades.
In Belgium, transport infrastructure plans were prepared separately for the two main regions, i.e. Walloonia and Flanders respectively. In Sweden, the 1988 ten-year plan on transport is in the process of being revised; in France, the transport framework law LATI of 1982 is relevant only in relation to the annual reports on transport development CNT and in close relation to the recent enactment of the framework law on physical planning.

These overarching policy documents, where they exist, do not always carry the same weight in terms of implementation. With the exception of Denmark, the Netherlands, Germany, and Sweden, they for the most part only set general orientation guidelines or define general objectives or assessment criteria. More specific on actual instruments or measures of implementation are the infrastructure investment plans; however here also, it is increasingly becoming common practice that the goals set out are not met within the time framework originally specified.

Related to the incidence of general planning documents, but not necessarily dependent on it, is the scope of planning activities, what we call ‘planning culture’. This characterises especially France and Germany and is closely linked to a ‘technocratic’ orientation.

In those countries without general guiding policy documents, and especially in Greece, Italy and Spain, there was for several years little in the sense of a proactive approach in the field of the elaboration of transport policy. In these countries the elaboration of the European Common Transport Policy through directives has provided a lever for upgrading and/or structuring national transport policy as well as for levelling conflicts and speeding-up decision-making procedures. In other words, the non-existent or hardly elaborated national transport plans were here replaced by the Community’s Transport Acquis. The transposition of the Acquis however need not coincide with implementation: like otherwise most national transport plans, the Transport Acquis in these countries represents more a political programme for transport rather than actual policy.

**Degree of centralisation and the process of territorialisation**

The third major discriminatory variable in comparing national transport policies is the degree of centralisation, especially with regards the role assigned to the regions – hence also the process of territorialisation.
Of course, at the most obvious level, competencies among the state’s territorial authorities are distributed in different ways depending on the degree and character of federalisation as established in the respective State Constitutions. However, there is a variation according to the specific fields of application and with regards the role of the state as co-ordinator or planner of specific activities.

Typically in the transport field regions are responsible for urban as well as regional transport networks, and especially national or secondary road infrastructure, regional rail services and urban public transport. By reason of their jurisdiction over physical planning and/or land use designation, they are involved in transport planning, also for international routes. In most countries the relationship between the state and the regions is hierarchical—also regarding financing. Only in Germany and Belgium (as of recently) can the state be said to have more the role of co-ordinator.

However, there are two parallel phenomena that are in many countries, and most notably, in France, Italy and Spain, causing major re-orientations: the one is the growing demand of the regions to have more autonomy and, hence, reverse the top-down approach; the other is the wish of the state to more actively involve the regions in the financing of major infrastructure investments. Not least important is that it is today widely recognised that many problems in the transport area are caused by the uncoordinated sprawl of human activities (housing, working, education, leisure activities, shopping)—co-ordination would therefore appear necessary both at the national level and at the European level in relation to the regions.

**Culture of negotiation in decision-making**

The description of decision-making processes represents a complex task by reason of the increasing number of relevant actors. Not all of these actors are organised as lobbies or interest groups. At times and in some contexts, this renders the decision-making process informal or little transparent. Not surprisingly, this is especially the case in countries not displaying a formalised decision-planning procedure or elaborated policies in the form of documents.

Economic actors and the interests they represent play of course an important role. In the field of transport, economic actors are often institutional players who till recently represented the state, but which now are called upon to represent ‘private’ or ‘independent and market-oriented’ interests. Under the framework of liberalisation and privatisation the status of the state-owned transport industry changed: in the airline sector all flag carriers and most of the major European
airports have been transformed into public limited companies, though in all cases the state or other public entities remain the major or exclusive shareholders. The restructuration of the railways has started in some countries (Sweden, Denmark, Germany, Greece, Italy) but is still outstanding in most. Great Britain has been the most advanced on this path, having completely privatised both the air and rail transport markets in the recent past.

Apart from transport service and infrastructure operators, interest groups play a major role in transport policy. Trade unions traditionally had a strong influence on the public transport sector, but especially in Italy, France, Austria and Sweden. Representative organisations of the employers and operators are active in all the countries. Especially the supplying industry has gained major influence in transport policy, being one of the most important employers in some of the Member States.

With regards direct public participation in decision-making processes, these have evolved differentially throughout the Union: in Germany, the Netherlands, Denmark and Sweden there are structures for giving each single citizen the possibility to comment on transport infrastructure projects or policies, and the comments have to be taken into account or responded to; in other countries, such as Italy, there are such procedures only for specific types of projects, whilst in yet others, like in Austria, more emphasis is laid on encouraging citizens to become involved in decision-making processes through public hearings and information campaigns. In most countries direct public participation is not far developed: in Greece, for instance, grassroots’ movements are considered to have no political power at all.

Some prototypical models are summarised below:

?? In the Netherlands, the PKB (Planning central Decision) represents probably the most advanced system for direct public participation; the Netherlands, like Denmark and Sweden is characterised by a strong negotiation model in decision-making, involving all actors, including the public. 

?? Germany displays by far the most elaborate operationalised framework of federalism: the Länder, regions and the federal government are co-operating on the basis of the principle of subsidiarity.

?? Decision-making in Austria is characterised best as proceeding according to a negotiated compliance model, marked by the so-called ‘social partnership’, that is a decision-making procedure involving the Chambers of Labour and Commerce, trade unions and the Agricultural Chamber; all these
representatives of relevant actors comment on the government’s proposals for policy and legislation prior to their submission to the Parliament.

?? In France, decision-making has traditionally been very centralised and technocratic. However, as a result of the decentralisation laws of 1982 and 1986, there are currently serious attempts to establish a decision-making framework which is based on negotiation and decentralisation, including revisions in the structure and form of public audits. Problems still exist with regards the degree and scope of competency to be achieved by regions, especially given that the various regions have different views on this matter.

?? The transformation of Belgium into a federal state with autonomous regions from 1974 to 1995, has affected the decision-making process through the overall shift of competencies at the regional level.

?? In Italy, trade unions have a specifically strong impact on policy and decision-making. Due to the notorious instability of governments and the frequent changes of ministers and of other relevant actors at the administrative level, some actors, such as the directorate of the national railways, have a very strong influence on policy making.

?? In Greece, policy and decision-making depends very much on personal initiative, which can be considered as stronger and more important than formalised procedures.

**Conflict areas in transport policy**

Three general conflict areas which are common to all European countries can be identified. They comprise:

?? conflicts about competencies;
?? thematic conflict ‘environment vs. economic development’;
?? conflicts related to the re-structuring of the transport market.

**Conflicts about competencies**

The European Union as currently developing represents a specific form of multi-level governance. Despite the principle of subsidiarity, the borders between the four established political levels – local, regional, national and European – remain diffuse, giving rise to conflicts about competencies. Two developments are at the root of these conflicts: the rise of a new supra-national European
level, and the demand of regional and local governments for more participation in decision-making.

Disagreements still obtain regarding the extent of harmonisation – there are still serious disagreements about which issues and areas are legitimately to be dealt with at the European level. Examples include the common environmental threshold levels, safety regulations or negotiation mandates with third countries.

Regional authorities, especially in those Member States where they still have no or a low participation in decision-making, try to increase their influence within the Member States as well as directly on the European Union. The same is true of local authorities which have the least competence in transport policy, yet are often the most affected by large-scale infrastructure projects. In some cases such as in Greece and Italy the policy initiatives of the European Commission have helped levelling such problems.

Problems in co-ordination arise by the fact that the European Commission represents neither the sole, nor the first, attempt at harmonisation at policy level – the European Conference of Ministers of Transport or the International Union of Railways are two other major European institutions dealing with transport; within the European Commission the transport agenda is shared between different General Directorates. Despite the fact that over the years there have gradually emerged co-ordination or consultation procedures facilitated by a narrowing down of institutional agendas be it in terms of geographical scope (thus for instance the European Conference of Ministers of Transport dropped the TEN from its policy agenda in 1994), in terms of mode or in terms of types of impacts (see introduction to this chapter) problems remain as agendas unavoidably overlap and co-ordination is itself a long process of institutional learning.

**Thematic conflict ‘environment vs. economic development’**

The conflicts within transport policy can basically be reduced to one pair of contrasting arguments. On the one hand there are policies concerned with reducing the negative impacts of traffic for the environment and society and even with reducing transport volume per se; on the other hand there are the policies to improve transport flows in order to further enhance economic development. Objectives are generally set in both directions, but the incompatibility or lack of direct congruence displayed between the two is often the source of fierce debate about effectiveness and equity in the medium- to long-term.
What is especially interesting about this type of conflict is that it cuts vertically across all dimensions and/or levels of political decision-making or action, but also can be seen to concern the industry. This principal conflict about, essentially, the future orientation of transport, only partly overlaps with the conflicts about competencies described above; for the most part it adds on an additional dimension.

The specific instances of enactment of this type of conflict varies greatly among Member States, covering all kinds of environment-related concerns, such as noise abatement, air pollution, safety, pricing of external costs, the extension of transport infrastructure and telematics applications.

**Conflicts related to the re-structuring of the transport market**

Currently, and with very few exceptions, deregulation and the privatisation of the transport market is a generally agreed-upon policy agenda. Nevertheless a distinction can be drawn between those actors in favour of a swift transformation towards an open market system, and those supporting a slower pace and longer phase-out periods. These conflicts can for the most part be explained by considering the competition patterns among modes. The continuing direct and indirect subsidising of operators in the road, airline and railway business is not welcomed by competitors. Furthermore fair pricing for infrastructure use and service operations is claimed for all modes. Market entry for new transport operators empirically turns out to be very difficult. Conflicts about whether and how to re-regulate the transport markets have, subsequently, become more important.

The re-structuring of the transport market is also inevitably connected with some significant labour re-structuring processes. These are the seedbed of conflicts and feed into the decline of trust in the state apparatus. The liberalisation of the transport market has involved, at worst, a number of lay-off in parts of the transport industry and, at best, a status change along with the decline of job security. Along the same lines, the working conditions comprise a major source of debate as they affect the personal situation of the individual employees, but also safety and competition issues.
Transport policy or transport policies?

In this chapter we outlined the main patterns of conflicts characterising national transport policies in relation to CTP. To reiterate, these concerned: first, disagreements regarding the share of responsibilities and the distribution of competencies among the European, national and regional levels in connection to the principle of subsidiarity; second, the perceived incompatibility or lack of congruence between economic and environmental goals in the field of transport; and, third, problems arising out of the ongoing reform of the transport market, characterised by the twin processes of privatisation and/or deregulation.

We also discussed the main factors explaining the variation of the regulatory framework across European countries; this variation is itself a reason that explains the difficulties encountered in implementing CTP directives. The four discriminating variables in this connection were identified as: first, the variation in the distribution of administrative responsibilities at national level; second, the variation in the degree and scope of transport planning; third, the variation in the degree of decentralisation and fourth, the differences in the type of negotiation procedures implemented in relation to policy formulation and decision-making.

But how different are the national transport policies from each other and from what is gradually emerging as the Common Transport Policy? As we saw, despite differences in the regulatory frameworks there are also several harmonising trends. This is also shown by the survey of expert opinions through the TENASSESS Delphi, the results of which were summarised in the previous chapter: there is a significant degree of agreement on the necessity to democratise the decision-making process; on the role of regions in transport planning; on the importance of the integration of environmental concerns in transport planning; and on the significance of privatisation and liberalisation for increasing the efficiency and accountability of the transport sector.

The differences among national transport policies are reflected in the prioritisation of specific policy goals. For instance: the increase of cross-border or international traffic is a highly valued policy goal in most countries by reason of the close association between international traffic flows, trade and economic growth (cf. Knoflacher, 1995). In most countries, however, it is also important to reduce local road traffic especially in residential areas. How important this second goal is has implications on infrastructure investment and on the solutions found to deal with congestion problems: thus, in Austria, the attachment of this goal to environmental concerns has led to a practical ‘construction stop’ for new international road projects; in Germany, on the other hand, such problems are more often than not resolved through the construction
of bypasses. This is not to say that the reduction of local road traffic is not attached any importance in Germany; rather that it is not as important, or at least not as explicitly associated with environmental pollution.

The potentially contradictory nature of some or several of the CTP objectives is something which is recognised by the Commission itself when it talks about the barriers to CTP implementation (White Paper 1993). In fact, the various goals are only contradictory because they are interpreted or valued differently by different actors. Any one actor is absolutely in the position to combine these in a consistent manner and use them to guide policy making. Following this logic, it is possible to distinguish four ‘ideal type’ transport policy frameworks (cf. Ney, 1998):

?? The traditional transport planning approach assumes that transport primarily is there to serve structural inequalities as reflected in particular at regional level. For this policy framework, the goals of regional cohesion and development are of particular relevance and guide transport policy-making, primarily infrastructure investment.

?? A ‘modern’ variant of the transport planning approach emerged with the onset of privatisation. Under this approach, planning and infrastructure investment are still important, only the planner ought to be the private economic actor, less so the state for which within-sector efficiency becomes of utmost significance.

?? The liberal market approach to transport development considers it important to regulate the transport sector through primarily economic instruments. Pricing instruments and taxation are under this scheme of particular relevance. So is liberalisation and privatisation when associated with greater accountability and transparency in operations.

?? The ecological approach to transport, considers transport development at best a necessary evil. Transport is considered one main source of pollution, therefore infrastructure investment is considered ‘bad’ – instead what is called for are measures for making it less necessary to travel and strict environmental regulation.

No one national transport policy can be mapped clearly against the above four-fold typology. This is why we talk of ‘ideal’ type policy frameworks or policy lenses and not of real policy environments. Nevertheless the above policy
packages could be said to describe the main rupture points or cleavages within national transport policy environments as well as at the European level.

In all of the countries under investigation, transport policy has experienced major changes during the past five to ten years. Some countries embarked on a comprehensive (re-)formulation of transport policy objectives and measures; others have relied on the Commission’s directives for structuring their transport policies. Regardless of the degree and scope of planning, substantial changes have been embedded in a series of reforms: on the one hand, of the political and policy framework of decision-making with the trend pointing in the direction of decentralisation and greater transparency; on the other hand, of the transport market with privatisation and de-regulation setting the agenda.

With these changes a new terminology has also made its way into transport policy: the new structuring terms are sustainable transport systems, intermodality and interoperability. However, whilst the underlying objectives or general goals—reduction of negative impacts, integration of transport services—are quite clear in general terms, the pragmatic implications of these new transport concepts remain still vague or little elaborated across all levels. One difficulty in terms of operationalisation results from the fact that whilst integrated thinking is accepted as the primary point of departure, this is difficult to put into practice by reason of the still fragmented character of policy formulation within national boundaries and at the supra-national level. The absence of measures of performance relating to transport policy objectives also reflects the indecision that still reigns as to whether these objectives reflect the direction transport policy ought to take – there is still disagreement as to the role of the market; the role of the state; the role of the citizen; and not least important the value of mobility in relative terms.

It will be the answers to the above questions that will determine the direction of transport policy and in particular of CTP in the future. The choice or prioritisation of any particular mode or their systematic integration, whilst not unimportant is not significant, not least because of technological advances. Understanding this can help achieve a new way of policy formulation and implementation in the field of transport.
4 The Implementation of Major Infrastructure Projects

Over many years there was little in transport policy other than infrastructure policy. Ironically it has been conflicts surrounding major infrastructure projects, like the TEN, which have gradually brought about a re-thinking in this field. Indeed, the direction of Common Transport Policy, both in terms of contents and in terms of organisation can at present best be judged at the ‘local’ level of implementation of major infrastructure projects. It is such projects which raise increasingly the questions of equity and representation, be it of regions or of specific social groups in relation to either socio-economic advantage or environmental protection.

These conflicts highlight in addition how currently there is no one sole legitimate bearer of a measure or a project able to co-ordinate and integrate the strategies of the different players. The increase in the number of relevant actors creates a problem in co-ordination which is more than just an organisational problem – yet this does not mean that organisational problems are to be underestimated.

The problem of co-ordination makes clear three important aspects: first, that the contents of policy are closely inter-linked to the decision process; second that ‘ideology’ or the value frameworks within which decision-makers and stakeholders operate influence the operationalisation of policy goals; and third that conflict analysis is fundamental to policy analysis as much as it is to policy implementation. Co-ordination is in other words a problem because there are conflicting or contradictory goals that need to be overcome or balanced in a consistent, transparent and more importantly in a legitimate way to make implementation possible.

The need of co-ordination has created a new arena of politics: the role of the ‘co-ordinator’ or of the ‘metteur en oeuvre’ – ought not to be confused with that of the decision-maker which still remains the prerogative of the central states. This new role seems to constitute a rule of the contemporary public decisional play.

In TENASSESS ten case studies were carried out to analyse the above processes of implementation and the problems and conflicts they produce in different national contexts:

- The Øresund link between Denmark and Sweden, one of the few implemented TEN priority projects;
- The Brenner axis, likewise a major focus of the TEN – the part of the axis identified as priority, namely the tunnel, has still to be built;
- The Betuwe railway line between Germany and the Netherlands which is of potential significance for the Northern European ports in relation to the opening to the East;
- The Twente Central Canal Connection in connection with the Betuwe Line.
- The Inter-island passenger transport system, a programme approved under INTERREG which aims at establishing a helicopter network to increase the accessibility of the Greek islands;
- The Barcelona-Montpellier link, another TEN project and a major TGV project for Spain, and in particular Catalunia, which aims to effect a fast train connection between Spain and France with important implications for the port of Barcelona.
- The Lyon-Turin link Transalpine Railway Connection a project made up of numerous split projects covering the whole regional network;
- The Eastern TGV towards Lyon, a project which for the first time raised doubts about the high-speed rail project;
- The TGV PBKAL Brussels-Amsterdam/Köln the implementation of which represents a serious re-formulation of the high-speed rail towards an integration of regional concerns;
- The Skaramanga Interchange out of Athens, a project of national relevance but displaying conflicts typical of major infrastructure projects, albeit experienced for the first time in the Greek context.

The analysis has produced elements for reflection about the new order in the field of decision-making in Europe, the role of the European initiative as well as about the way in which European policy is constructed.

**Six main issues**

There are six main issues in the contemporary landscape of European (Common) Transport Policy at the level of implementation of major infrastructure projects:

?? The notion and problem of the ‘missing-link’;
?? The role of the ‘frontier’ or of borderline zones;
The territorialisation of the decision-making process and in relation to this the role of regional authorities and the question of risk sharing and responsibility;

The issue of pricing as a strategic notion;

The problem of financing; and

The role of environmental appraisal.

The ‘missing-links’ in the Trans-European Network (TEN)

The adoption of the Christophersen list (Group of Personal Representatives of the Heads of State or Government, 1995) placed the TEN on the concrete political agenda. Thus the ‘missing-link’ emerged as a key concept or solution to the problem of integration and the constitution of a European space.

The key ‘missing-links’ or priority projects were selected according to the criterion of ‘added value to the implementation of trans-European networks’ (ibid.). This criterion of ‘added value’ was operationalised as characterising those international projects involving at least two different member states. The final list of priority projects was the result of a negotiation process among the members states of the European Union. The final selection was assisted by adding another criterion, namely that of the ‘maturity’ of the proposed projects.

There are two important points to make for the present discussion:

1. The first concerns the trans-boundary character of the ‘missing links’. This reflects a specific understanding of ‘European added value’ and of subsidiarity by the Commission and the member states, namely, that ‘European’ is the level of interface or the connecting tissue between nation-states.
2. The second concerns the value attached to these connections: the ‘conquering’ of these missing links is assumed to promote integration, physically – with respect to the inter-connection of national networks – but also politically: the construction of these links requires co-operation between nation-states; in turn this can contribute to the overcoming (or bypassing) of national differences in transport policy, thus the promotion of the Common Transport Policy.

In other words, the ‘missing-link’ concept and the TEN represented for their promoters a ‘best-practice’ model for CTP. In practice this model did not work in as straight-forward a manner as was expected.

The main barrier concerned the conflicting national interests of the traversed regions. The truly relevant question in terms of implementation has therefore not been the level of ‘maturity’ of the link as such, but rather its level of maturity in each country. In turn, this is a reflection of the degree of competitive advantage as perceived by national stakeholders, including the state. In other words, the objective of integration, as reflected in the construction of the ‘missing links’, must itself be confronted with—and hopefully integrated into—the comprehensive visions of transport networks at the national level and the way these prescribe specific (other) projects or improvements.

It should come as no surprise that the Øresund Fixed Link has been among the few successful TEN priority projects. It could eventually command support from both the Danish and Swedish governments as well as by the majority of the Danish and Swedish stakeholders as a project which would accrue benefits for both sides. Under these conditions, financing did not turn out to be a major barrier.

The story of the Barcelona – Montpellier link and its connection with the French high-speed railway network has not been as successful. In this case, the Catalonian high stakes were faced with a rather cool French position at a time of a more general re-orientation of the French national transport policy away from a (strict) focus on the high-speed TGV railway concept.

Important to note in both cases is the low relevance of technical assessment studies as deciding factors. This is not to say that such studies were not made (indeed many were carried out) or were of little importance. Rather they did not substitute for a political decision which ultimately derived from the consideration of a wider set of factors than alone the criteria of efficiency of the transport system or operations.
Otherwise the TEN projects have become conducive to international decision-making processes setting the problem of their implementation at a new level of co-ordination of action. The typical way of proceeding is based on the signing of international agreements. The latter are by themselves insufficient to render the projects operational. Even if comprising a legal compulsory stage, they are not binding, for instance, with regards the setting of a time framework. Rather, they tend to be mostly of a symbolic legitimating character, representing the acknowledgement by national governments of the demonstration of involvement by other actors. They also mark the beginning of supplementary action for promoting the projects in question.

The setting up of specific structures or *ad hoc* organisations as solutions to the co-ordination problem represents a new trend. In all cases where such structures were identified they were set up explicitly for supporting the decision-making process. Such organisations are of different types, depending on the subject matter they have to cope with, the level at which they operate, the issues they bear, or the functions they fulfil. They are typically organised in relation to the international part of the cross-border project.

These structures can be broken into two categories, each corresponding to a different level of co-ordination, namely: structures for promotion and structures for operational studies.

Structures for promotion are a form of lobbying, whereby in this context they have also become a new way of defining the infrastructure problem and a means for integrating the interests related to the European dimension and the national interests, i.e. the interests of various stakeholders. Of particular significance in this framework is the action of ‘political entrepreneurs’. Political entrepreneurs represent persons, groups or institutions that become central to the co-ordination process. We return to this theme latter in this chapter.
Structures for operational studies usually come in the form of a European Economic Interest Group (EEIG). These are typically established by the operators involved in the projects in order to jointly study different financial and technical scenarios. The choice of this specific structure is significant because an EEIG can be considered as a step towards the establishment of a public/private partnership. In other words, such an entity represents also the means to demonstrate the willingness to answer to European criteria regarding the form of financing. It also represents a way to join several objectives and interests that were traditionally separated, this time at the operational level.

In some cases there is not alone a plurality of stakeholders, there is also a plurality of decision structures. This raises yet another problem at the level of the co-ordination of action, namely, that of the co-ordination of the different structures. In the Lyon-Turin cases at least four structures were set up around the project: an EEIG, an inter-governmental conference, a public interest group and a support committee of international industrialists. The multiplicity of decision structures is no guarantee for success: in the Lyon-Turin case, none of the four entities was successful in integrating the various problems relating to the project; and none could play the role of co-ordination between the different registers of action.

The European frontier: transport networks in borderline zones

In several cases the implementation of TEN projects highlights an inter-regional European dimension that emerges as significant through the decision-making processes. This dimension refers to the role taken up by the ‘frontiers’ that the projects are expected to traverse. The case studies show that there are two distinct ways of considering this specific European resource: either as an obstacle or as delineating a specific zone of opportunity (cf. Burgarella-Mattei and Furtier, 1996).

On the one hand, the frontier can be considered as an obstacle and as such the target of structural cohesion policies seeking to overcome the perceived lack in terms of regional economic development or accessibility: the Greek inter-island system of transport is typical for this category. The project which seeks to establish a helicopter network among Greek islands was inserted in the INTERREG programme which follows the procedures of the Regional Structural (and Cohesion) Funds.

At the other end of the scale the emergence on the scene of a major transport infrastructure project often provides the opportunity for the implementation of
common actions with the objective of promoting the parallel development of cross-border regions. In the Eastern TGV case, Alsace proceeded to re-organise its regional transport services according to the neighbouring German and Swiss system in order to allow for trains to serve the combined cities’ network of the region thus enabling cross-border services. In turn, this allowed the local authorities of the area to advance the argument that the Eastern TGV was the last block for completing an inter-regional network.

The territorialisation of the decision-making process

As transport infrastructure projects have to be integrated into specific spatial areas, the local authorities in charge of those territories inevitably come to play a special role linked to these. The process of spatial integration of an infrastructure project at regional or local level—which we term territorialisation (cf. Offner and Pumain, 1996; Duran and Thoenig, 1996)—comprises several dimensions.

At the level of the projects different geographical scales meet: the European one, the national one, and the regional one. These three geographical scales refer to three different systems of transport services—the arrival of a new project sets the question of the integration or combination of these three systems.

Regional and local authorities often wish to use transport as a means to construct a new legitimacy for themselves as public actors. In the field of policy formulation, all the legal or institutional frameworks ruling the procedures related to the implementation of an infrastructure project foresee the organisation of a consultation with local representatives. Regional and local authorities see this as an opportunity to take a more direct part in the decision-making process thus strengthening the decentralisation trend. Seen from this perspective territorialisation occurs through a ‘bottom-up process’.

However, there is also a ‘top-down’ dimension to the process of territorialisation. This relates to the wish of the state to bind several public actors in the implementation process through the differential allocation of competencies which, at the same time, implies a sharing of responsibility and of risk, in particular financial risk.
The bottom-up process of territorialisation

One direct consequence of the intervention of local authorities in the decision-making process relates to the definition of the project itself as exemplifying integration of regional or local transport strategies with the national and European ones.

Important for understanding this bottom-up process of territorialisation is the close examination of the different system of actors and of the underlying political relationships. It is important to question who are the territorial public interlocutors to the central governments and how they take their respective place in the decision-making process. Depending on the specific context, territorial public actors could be multiple (including communities, cities, regions, departments, etc.); they could be organised hierarchically or not; or, they could have different relative weights in the decision-making process.

A classical decision-making process characterises the Skaramanga interchange case. Here, the central administration played the main role with regards the definition of the works to be constructed. The weight of the central administration was accentuated by the fact that the main territory to be serviced by the project, namely Athens, is also the capital of Greece. The main territorial question there was where to locate the road node.

Different was the situation in the case of the Øresund Fixed Link. A rail-only solution was originally advocated by the local authorities and stakeholders in Copenhagen. Under the pressure of their Swedish counterparts some of the dominant Danish local players had to accept a combined rail/road solution. What they could nevertheless successfully bargain was the implementation of a user-paid link. This was perceived as an environment-friendly solution and secured public acceptance.

In the case of the Brenner corridor, we can observe the ‘bottom-up’ territorialisation process set against the federal framework of Austria at two levels: first, with respect to the regional and national dimensions, and second, with respect to the local and regional dimensions. The Tyrolean government used the issue of transit traffic through the environmentally sensitive Alpine region to claim ‘emancipation’ from the central government in Vienna. This same issue has been the vehicle of organised opposition of local communities against both the regional and national governments. The result has been a ‘greening’ of Austrian transport policy at all levels and the articulation of an explicit commitment towards restricting or controlling road traffic.
In the case of the PBKAL TGV to Belgium the recognition of the regional level, supported through the ongoing federalisation process in Belgium, resulted in a serious questioning of the high-speed railway concept as practised in France. The PBKAL project should serve the Belgian territory in a balanced manner, which means direct access to the link by both Anvers and Liège. Given the size of Belgium, this would in parallel imply a shift in TGV policy away from the principle of servicing big cities separated by long or medium distances. A similar situation arose with the Eastern TGV project, where local authorities were ‘compensated’ for their financial contribution by adjusting the project to allow it to connect directly to all the main Eastern city centres.

The main promoter for the Barcelona-Montpellier TGV project was the autonomous region of Catalunya. The Generalitat of Catalunya undertook all possible studies to demonstrate to the Spanish government that this was a new and necessary infrastructure for the region. The project was finally proposed as a mixed link (freight and passengers), a solution that integrates different public territorial interests: notably the modernisation of the railways and the development of the Barcelona seaports.

The Lyon-Turin TGV case presents other territorialisation characteristics. The local authorities have again been the main promoters, only their strategy in terms of co-ordination has been one of maximising benefits for all. What has emerged as a result is a grand global project which comprises a network more than a link and which seeks to integrate different elements across the territory of the actual railway extension line. The resulting project is complex being composed of different sub-projects and involves both freight and passenger transport services.

*The top-down process of territorialisation*

Constitutionally, the responsibility for the final decision to construct a big infrastructure transport project lies with the central government. This entails a high political risk due to the financial constraints involved and the increase in the number of stakeholders. The general trend is for the central governments to share these risks, notably with local authorities.

At the operational level this implies either or both of two things: first, the sharing of financial risk; second the re-thinking of the division of competencies in the field of transport policy. How these two issues are decided upon often determines the profile and scope of the decentralisation process. It is not uncommon to observe that the central government is more keen on the subject of co-financing and less so on that of competency sharing; whereas the local or
regional authorities are more keen on having a say in the decision process but less interested in committing funds. The Eastern TGV project is one case in point.

At the political level, this top-down territorialisation process often implies co-operation across political parties insofar as the leadership at the national level and at the regional or local levels may not coincide. This can, but need not, complicate the decision-making process as it introduces political considerations which have little to do with the contents of the infrastructure policy under consideration.

**Pricing as a strategic issue**

At the level of the Common Transport Policy, the objectives of pricing measures are set in the framework of market regulation — the objective being to cover both internal and external costs. As usual, such measures reflect other objectives as well. Two of these subsidiary objectives are of relevance here, especially because they are contradictory if applied to the same project: one objective of implementing a pricing measure can be to regulate or even to restrict road traffic for the benefit of environmental protection; a second objective can be to make the infrastructure pay for itself. In that latter case, it is conceivable that the tolls are calculated on the basis of maximising income, which, however, can also imply an increase in traffic.

The Øresund Fixed Link and the case of transit traffic across the Brenner axis exemplify the problems involved in this interplay of objectives of pricing policies.

The Øresund Fixed Link involves two countries which pioneered the idea of ‘sustainable development’ in the field of transport. This being the case, the original proposal to construct a rail-only link seemed the most suitable solution. By the early nineties the environmental protection issue came increasingly to be defined in technical terms and as not necessarily in opposition to economic objectives. In this context, it was then also possible to promote the mixed road/rail infrastructure solution for the link. The introduction thereafter of the user-paid principle for the road part of the project seemed initially to satisfy the demand to effect measures for restricting road traffic but also for effecting a cross-subsidising system between road and rail. On this basis it was possible to proceed with the construction of the link.

But the pricing level still remains to be fixed and the debate has re-opened. Clearly what pricing level is finally set will affect either the environmental implications of the project (restricting road traffic) or its socio-economic implications: will enough income be generated to pay for the infrastructure (whilst restricting road traffic) and if not, will this necessitate other taxation
measures? Or should instead the toll be set low in order to ensure profitability (in which case traffic can be expected to increase)?

The Brenner corridor case is similar to the Øresund Fixed Link in a number of ways. The framework is set by the transit agreement between Austria and the European Union. The eco-point system which underlies this agreement was elaborated by the Austrian government in response to the strong citizen protest against transit traffic and its negative environmental impacts. Even though it is not clear whether and for how long this system will remain in operation, and if so under what conditions, its present existence does underline the significance assigned to environmental issues in Austria, in general and specifically concerning the Alps region.

In this context, road pricing — recently introduced in the form of a motorway vignette as a general measure, but already in existence for the A4 Brenner motorway since the beginning of the seventies — is considered a measure for effecting the user-pay principle for infrastructure as well as a measure for restricting road traffic in sensitive regions. In the case of the Brenner corridor the pricing level is, therefore, under debate.

An additional element introduced by the case of the Brenner corridor concerns the earmarking of financial resources. Still pending is the decision on the building of the base tunnel which relates to the rail key-link. Despite wide acceptance, the project did not take off ground because of the lack of financial resources. The idea has subsequently arisen to connect the financing of this project to the charges collected on the A4 Brenner motorway (or from road pricing more generally). The fact that the same tolls across the A4 Brenner motorway were during the seventies earmarked to construct other motorways in sensitive regions creates a precedent. What is new is that if this idea were to materialise it would concern a case for the cross-subsidising between road and rail.

**Financing: which partnerships?**

Obviously, financing is a very common problem for all major infrastructure projects and, as a matter of fact, for all the TEN projects. The European Union has proposed the consideration of public-private partnerships as a solution (High-Level Group on PPP financing, 1997). In practice public-private partnerships are difficult to implement: the costs for major transport infrastructure projects are high and so are the risks.
Financing represents probably the biggest problem for the TGV projects. As already discussed, a new source of financing are the local authorities. In that the Eastern TGV appears to have set an example to be followed. However, since the regional budgets are restricted and partly dependent on state budgets, other partners are sought. And these will also be in the form of public financiers. Hence the partnership regarding the missing links is extended to include states, railways companies, local authorities and the European union. This specific ‘public-public’ partnership framework is quite new.

Another way to approach the financing problem has been through phasing of the project (as in Lyon-Turin case) or through splitting it into independent, albeit inter-related elements (as in the Barcelona-Montpellier case). Phasing or splitting is also used to restrict the ’international’ part of the project which in turn is financed on a public-private basis.

In most cases, the question of financing of the project is closely related to its operation. It is in this connection that the potential relation to pricing with the pitfalls discussed above emerges.

**The role of environmental appraisal**

Environmental appraisal is today a part of all decision processes concerning transport infrastructures. In the majority of the cases, the concrete issue of such an appraisal is an impact study. But the positioning and significance of this differs from case to case, the differences deriving mainly from the differences in the national institutional frameworks. Interesting to observe is how the positioning of the environmental appraisal procedure in the decision process shapes both the strategies of the actors involved and the solutions they reach.

Environmental appraisal procedures are characterised by two dimensions. The first refers to a juridical aspect: a new infrastructure will cause damages and these ought to be compensated for. The second dimension refers to a democratic aspect, namely the access to and use of expertise by decision-makers. Increasingly this second dimension gains in importance in the implementation of major infrastructure projects and in transport policy more generally.

Two main conclusions can be drawn: The first, is that the environmental issue captures a cross-cutting agenda; even if it typically emerges first at the local level, it is not alone specific to this. Especially in national contexts where the notion of sustainability is strongly anchored in the political discourse and culture, the issue can often assume a strategic dimension with the involvement also of political parties. This is already the case with the Brenner and the
Øresund Fixed Link cases; but it can indeed emerge into a strategic issue also in the case of the Barcelona-Montpellier and Lyon-Turin TGVs as well as the Greek inter-island system of transport.

The second major conclusion is that the environmental agenda raises the question of democratic participation in the decision-making process. The decision-making process characteristic of major infrastructure projects allows for the intervention of individuals (experts, political entrepreneurs) or specific organisations (ad hoc structures, citizens’ associations). This produces a re-structuring of the issues in relation to more general public policies and their linked systems of actors. The traditional mode for democratic control on public action, i.e. voting, is losing in significance as new ways of intervention and registers of actions appear. This, in turn, raises questions regarding the format of direct public debates or public inquiries, both concerning who should participate and its contents.

**Co-ordination as a new role in the decision process**

The need for co-ordination has emerged as a major issue in the implementation of major transport infrastructure projects. This is not alone the result of the increase of the number of stakeholders: the loosening of the boundaries of the decision process to include more actors has meant that today more and different interests have the chance to be articulated and heard. These are not necessarily consistent or congruent.

Conflicts of interest are no longer uncommon in the field of transport. They typically become evident with each major transport infrastructure project, but as the previous chapter showed they also characterise transport policy at the level of the formulation of objectives.

The resolution of conflicts of interest often requires mediation. It is this ‘mediatory’ role which is new for the arena of co-ordination and which often leads to the emergence of a principal individual agent as central to this process.

Two case studies in particular illustrated this well. In the case of the Øresund Fixed Link, the activities of Pehr Gyllenhammer, then a manager with Volvo and a member of the Round Table of Industrialists proved vital in integrating the international economic interests and the local concerns. In the case of the Lyon-Turin axis, Louis Besson, a representative of Rhône-Alpes region, was
successful in transforming the project into a regional long-term development programme.

A project can claim legitimacy if in the course of the decision-making process it manages to integrate the interests of the various stakeholders in a way which is acceptable to all (which need not imply a win-win solution for all). The arrival at this position necessitates co-ordination and mediation which might not be possible alone through state intervention.

The notion of ‘political enterpreneurship’ from the public policy analysis literature is the best term to describe this new role. This concept allows to identify actors whose specificity lies in their political will to support and to implement a measure on the one hand and in their ability to integrate the concerns of other actors on the other.

The fact that individuals and not institutions are more likely to successfully assume this role of mediation and co-ordination underscore the significance of personality or charisma in the decision process. This is at the same time the weakest point of the decision process: if the latter is dependent on a charismatic personality for achieving results, then it cannot be said to be robust as an institutional mechanism. Inevitably the question arises as to what happens if there are no charismatic individuals to assume this role; worse, what happens if these individuals are not independent but rather moved by ulterior motives?

The resolution of conflicts of interests through mediation is only effective in the long-term if it represents at the same time a process of institutional learning. Only in the latter case can the decision process properly claim legitimacy and protect itself from the pitfalls associated with over-reliance on any one charismatic individual or professional.

The present over-reliance on individual principal agents or political entrepreneurs at the local level of implementation of major transport infrastructure projects is indicative of the immaturity of the decision process in the field of transportation. As discussed in this and the previous chapters, contestation is new to the transport policy arena – the previously well entrenched and fixed boundaries have been shifting and loosening in order to incorporate new actors and accommodate new interests. Eventually as the new forms of knowledge are institutionalised, mechanisms for co-ordination and mediation will be established. Till that time, political entrepreneurs or individual principal agents will be important. A recognition of this fact can help stir the process in the right direction.
The Challenge of Public Acceptance

The previous chapter showed that the successful implementation of major infrastructure projects is largely dependent on the degree of public acceptance they may claim, especially considering the fact that they are frequently associated with environmental damage and land use.

Public acceptance is in itself a difficult subject to grasp, despite it being a term often used for demonstrating citizen awareness in decision-making processes (cf. Citizens’ Network, 1997). In fact, little is known about how to deal with ‘the public’ in practice. This has undoubtedly to do with a lack of political will to effect real changes in participation procedures; it is however in part also the result of a confusing discourse on the relevant notions. This chapter will hopefully shed some light on this last aspect.

Major trends

There are two relevant notions for the present discussion. One is the theme of participation; the other that of public acceptance. Both concepts will be discussed in detail in this chapter. Here suffice to note that whereas participation refers to the (active) involvement in the decision-making processes; the main precondition for public acceptance (of any project) is that it is perceived as considering and meeting the needs and interests of the population or of relevant sub-groups.

Public opinion research has identified two main trends in this connection: first, an increasing environmental consciousness; and second, a heightened demand for participation and involvement in public decisions.

Turning first to the increase of environmental awareness: the publication in the late seventies of reports which documented the contamination of the environmental media and of the cultural landscape encouraged a broad public and political debate about the environment.

Earlier, the discussion of environmental impacts was left to small ‘green’ movements. But during the seventies citizens became aware of negative environmental impacts and of risks for themselves and the next generation. Consequently it has been possible to observe mobilisation around
environmental concerns, especially among those affected by new infrastructure investments.

The demand for more participation in decision processes grew in parallel with the increased awareness of environmental impacts. This is undoubtedly also related to a new mode of reflexivity (Giddens, 1998) and a new perception of risk and responsibility (Beck, 1986); but also to a loss of confidence in political institutions, including political parties, but also in voting as a mode of representation. Confidence in scientific expertise is also on the decline, partly as a result of the elitist orientation of science, partly due to the politicisation of scientific knowledge (Wynne, 1997).

Both trends have to be considered when talking about public acceptance. Bearing them in mind it becomes clear that the acceptance of a project does not alone have to do with its economic, geographical, topographical or topological parameters. Equally important is how the project is perceived to fulfil the needs of the population; and how it fits into their more general value framework. The general perception is that the latter are not adequately considered or taken into account in the decision process.

One general need of any member of any group, community, or society, is to be informed about relevant events, processes, decisions and their implications. This is nothing new. What is new is that today citizens are more active in claiming such information. Which raises the question of the role of communication.

**What is communication good for?**

Any public project - from the first emergence of an idea to its implementation - can be seen as a communication process between those responsible for a project and the public. This is the starting point when discussing public acceptance and participation.

Each communication process consists of two dimensions, the rational and the emotional one (cf. Watzlawik et al., 1974). Thus, not only the contents of what is communicated are relevant; the way these contents are communicated, or how communication takes place, is as important. The 'how' of communication is connected to the emotional dimension.
The emotional dimension of communication has several aspects: The first is that of appreciation and respect which is associated with the feeling of being taken seriously. The second is related to participation: one needs to feel that they may voice their concerns and that these will be taken into account – one wants to decide for oneself what to do. The third aspect is related to the communication of bad news: people want to be informed about bad news in order to be able to react and avoid damage.

If the above emotional aspects are not considered appropriately, conflicts are likely to result. Indeed if these emotional needs are not taken sufficiently into account, it is more complicated to communicate on a rational basis. This is as important in the political process as it is in the process of fulfilling customers’ needs: studies show (cf. Asea et al., 1993) that the main reason for losing customers is the perceived lack of interest in the problems of the customer.

**Participation**

Much of what was said above has to do with participation. Stated simply, lack of participation de facto means that decisions are taken on issues that affect one’s life without prior consultation. As indicated above, voting can be felt as being much too general and abstract a participation process to allow a concrete dealing with issues of importance, especially between election periods.

One consequence of being excluded from decisions that affect one’s own life can, according to social psychology, be reactance; another is resistance. Before turning to discuss each of these concepts separately, it is necessary to add that the quality and the degree of being affected by a project can be steered by spatial proximity; expected immission (noise, pollution) and other disturbances, whether realistic or not; the willingness of the population to mobilise around environmental and other concerns (cf. Petty & Cacioppo, 1986); and a sense of responsibility for the common environmental system.

**Reactance**

‘When things that concern certain persons are decided without involving these persons into the decision making process, this may cause reactance’ (Brehm, 1966). More generally, every event that reduces an individual’s possibilities to decide and to act freely, i.e. that ‘leads to a loss of previously available options
of action’ is liable to cause reactance: The consequences are manifold (see also Witte 1989, or Herkner 1975):

?? The motivation of the reactant person to set the unwanted behaviour increases
?? The motivation to set similar behaviour to the unwanted behaviour increases
?? The probability that the unwanted behaviour is carried out in spite of the threat increases
?? The cognitive orientation is directed further away from the wished for behaviour
?? The expectation of further impairments of one’s freedom of choice increases
?? Hostility and aggressiveness towards the actors responsible for these impairments increase

The probability of reactance is especially high among the ‘affected non-user groups’, that is those people or groups that have no professional connection of any type to a certain project: They are neither customers, nor decision-makers, thus they ‘do not need’ the planned object.

Reactance can lead to the rejection of a project on the individual level – also by many individuals that do not know of each other – but it can also turn into resistance when people co-ordinate their reactant behaviour.

Resistance

There is a high risk that individual interests opposing a project can aggregate to become group interests, and in this case they may become a mobilising factor with the power to disturb or arrest the implementation of a project in a decisive manner.

One good example for the development first of reactance and then of resistance is the Lyon-Turin case discussed in the previous chapter. There, the citizens opposed the project by the so-called NIMBY (not in my back yard) position. Their attitude was that they had not received enough information about the planned project. In fact the public was informed about the project in a most unsystematic way. As a first act of mobilisation against the project, a group of citizens created a photocollage showing their view of the layout of the project and had this published in the press. As a second step, about one and a half
year later, the citizens started to organise themselves. There were three types of citizen groups:

?? The first comprised those who thought the project was unavoidable – the purpose of their mobilisation was to ensure compensation and thus the protection of their private interests once the project would come close to realisation.

?? The second group comprised citizens who were convinced that any dialogue would be useless. Their objective was to protest as firmly as possible and to refuse any negotiation, thus effecting a blockage of the project.

?? The third group comprised those who felt that the realisation of the project was not certain – they felt they could effect a change if they were to participate in the decision process.

The lack of systematic information on the project raised suspicions that the project proponents had something to hide. The procedure was rendered unnecessarily difficult with the ensuing demands to publicise all relevant documents and repeat procedures.

Models of participation

Insofar as the implementation of transport policy initiatives, and in particular infrastructure projects, is concerned, resistance, representing organised mobilisation against a specific project, is undoubtedly the most important factor that needs to be taken into account in transport planning. Once resistance has crystallised however, negotiation and conflict resolution becomes much more difficult. For this reason models of participation developed in various countries aim to anticipate resistance by diffusing reactance.

Environmental impact assessment has become the means for introducing and subsequently strengthening public participation in the decision process of transport infrastructure projects.² Various models are known. The examples below exemplify the most typical cases.

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² There is no similar procedure established for transport policy initiatives other than infrastructure. However in most countries the introduction of any major transport policy initiative, like road pricing, is subject to prior consultation with relevant actors, including
In **Austria** the Law on Environmental Impact Assessment (UVP_G) foresees a public enquiry for all major infrastructure projects at the planning phase. This law enables affected residents to comment on the results of the environmental impact assessment report; but also invites comments from citizens’ initiatives and non-governmental organisations more generally.

In **German** law the *Planfeststellungsverfahren* (Plan Approval Procedure for Supra Local Planning) allows the affected population and representatives of industry to comment on the advantages and disadvantages of the planned implementation in the frame of public debates. The *Planfeststellungsverfahren* foresees the evaluation of various aspects of the impact assessment, i.e. is not environment-specific.

In **Greece** environmental impact assessment is a comparatively new procedure and the law does not foresee any public inquiry. The only possibility for citizens to influence the decision is by recourse to the Constitutional Court which also means that if successful the process is delayed significantly. Likewise in **Spain** there is no law or decree that obliges the authorities to carry out a public inquiry for major infrastructure projects. However, unlike in Greece, the existing legislation refers to the necessity to promote public participation through information dissemination. Thus in Barcelona it is already a standard to inform neighbourhood associations of any planned projects; and in some cases ecological associations are integrated into follow-up committees that control the development of the infrastructure directly in the implementation phase.

The development of the public inquiry procedure in **France** exemplifies the pitfalls of the existing mechanisms. In France the first law explicitly dealing with public participation was enacted in 1983 in response to the protest movements that emerged in connection with the TGV building sites. The so-called Bouchardeau law obliged the promoters of any major project to organise a public inquiry: citizens in general, and not only affected residents, were invited to comment on the project.

In 1992 an evaluation of the Bouchardeau law was carried out. This revealed a number of problematic aspects: the administration of the authorities responsible for setting up the public inquiry had major difficulties to set up the dialogue; project managers were not used to talk to the public in an understandable way; interest representations which is also meant to provide an opportunity for indirect participation. A case study of such consultation processes in the case of road pricing can be read in Volume 2 of Deliverable 6 of TENASSESS.
the role of the commissioner in charge of the public enquiry was ambiguous; and the latter’s skills were not specified sufficiently. An important outcome of the evaluation was that the timing of the public inquiry contributed significantly to the inefficiency of the procedure and to the general discontent associated with it: the participants from all sides were of the opinion that the public inquiry was irrelevant and not worth ‘wasting’ time upon since at the time of its implementation all major decisions regarding the project in question were already taken. Many of these problems were revealed in the course of the implementation of the TGV Méditerrané project.

The evaluation of the Bouchardeau law led to a reformulated instrument of public participation, the so-called ‘Bianco circular 92-71’. The Bianco circular foresees public participation mechanisms throughout the course of implementation of the project, beginning with the conceptual phase. At that stage a preliminary debate has to be scheduled for discussing the layout of the project. A follow-up committee makes sure that this debate is carried out properly and that the information given to the public is of good quality. This same committee is entitled to check and oppose the layout studies elaborated during the planning stage if these are not in compliance with the schedule agreed upon earlier. The public inquiry takes place following the decision on the layout of the project. Finally, the Bianco circular foresees an evaluation of the project following its realisation.

The Barnier Law of 1995 effected a final change of the public participation procedures by substituting the commissioner for the public inquiry with a permanent commission of elected representatives in charge of the procedures.

**Advantages and disadvantages**

There are two standard arguments used to discredit participation. The first is that participation ‘always’ results in an increase of project costs. The second is that it significantly delays the decision process.

Both arguments are to a certain extent true, whereby – proponents of public participation would argue – the issue of costs can also reflect a narrow understanding of efficiency; and the aspect of time is only relative – a failure to obtain legitimacy for a project through public acceptance might indeed lead to its complete arrest due to increased resistance.

Arguments in favour of public participation are, among others, the following:
Public participation reflects a basic democratic principle: More transparency in the planning and the decision making process constitutes a basic rule of democratic societies which, if adhered to, leads to an increased respect of decision processes per se if not to wider and better acceptance.

Public participation helps to avoid or resolve conflicts: As discussed earlier, lack of well-balanced information tends to increase reactance and resistance by feeding latent conflicts and suspicions. Latent conflicts are more damaging than open conflicts also in terms of loss of both money and time.

Public participation provides new forms of knowledge. Expert systems of knowledge are not only elitist but also often abstracted from reality. The confrontation of this type of knowledge with local 'on-the-ground' knowledge from the local population can enlarge both and contribute to the accuracy of the implementation process.

The risk of manipulation

The lack of communication or participation does not signal necessarily that citizens’ interests are not taken into account. Rather, what it does signal is that authorities, or decision-makers more generally, assume to know, incorporate and represent citizens’ interests. It is the increased reflexivity of social relations as discussed earlier that leads us to seriously question this assumption.

However, it is also the case that the incidence of communication or participation is no guarantee that citizens’ interests are eventually integrated into the outcome of a decision process. This happens when communication is used only to transmit to the target audience the feeling or perception of information exchange but is not substantial. When this is done with the explicit goal of reducing the attention and vigilance of the communication partner, then, following the theory of social communication, we may talk of manipulation.

Earlier in this chapter we noted the importance of the emotional component of communication; here we note that communication solely for the purpose of emotional re-assurance is also no good and can at worse be taken to be equivalent to propaganda.
Acceptance

The above discussion showed that when discussing acceptance it is important to distinguish between acceptance assumed by experts and acceptance ‘measured’ in the frame of a two-way communication process. Often when acceptance is discussed (also by the media) the former rather than the latter type is meant.

In order to get valuable results concerning public acceptance, it is necessary to carry out a comprehensive analysis at several stages of the attitudes of those population groups affected by the planned infrastructure project. Attitude surveys display a number of advantages: They help give a clearer view on the correspondence of subjective impressions (of oneself, of project proponents, of decision makers, etc.) with facts. They allow to analyse the interests of those population groups which are most directly affected. They help avoid the development of hypotheses on endangered interests which are based on anxieties, prejudices and impressions rather than on facts.

It nevertheless ought to be remembered that attitudes are not necessarily consistent with behaviour, hence also the importance of exploring the motives for specific attitudes and/or behaviour (cf. Patton, 1997). Thus the attitudes towards a planned project need not correspond to those towards a project already under implementation. Also an attitude towards a certain project is not the sum of the attitudes towards the component parts of the project. Indeed attitudinal surveys can indicate which characteristics of the ‘project-product’ cause resistance.

In order to understand what influences acceptance, it is important to view this as a dynamic process – acceptance is influenced by past and present parameters as well as by future considerations. These parameters can be classified into two categories: first, there are parameters which refer to the measurable consequences of the planned project for the population; second there are parameters which refer to the wishes, needs and anxieties of the population, or to interpretations of facts concerning the consequences of implementation.

The listing of all advantages and disadvantages of a project is a natural starting point for analysing or anticipating acceptance-related issues. This includes a comprehensive discussion a) of the necessity of a project, b) of the project characteristics and c) of their consequences for different groups (including target groups). In any way it is important to launch the communication and subsequently the discussion process at an early stage, otherwise the feeling is
communicated that the discussion is of no importance since all relevant decisions have already been taken.

Acceptance studies comprising attitude surveys are likewise a good measure to avoid the abuse of the instrument of public participation or the manipulation of information. The carrying out of well planned and well organised acceptance studies within the population, including questions why citizens are against or in favour of a project (= motives) provide the possibility to distinguish between real attitudes and (erroneously) reported ones.

Conflicts of interests

Citizens are neither an abstract notion nor a homogeneous group. With reference to a transport infrastructure project they may be affected greatly or less, in different ways or not at all. In other words, it is quite reasonable to expect a range of reactions among different groups; these in turn may lead to a conflict of interests.

We distinguish between three types of conflicts of interest: a) conflicts between individuals (or social groups) and society; b) conflicts between individuals (or social groups); and c) intra-individual conflicts of interest.

Consider for instance the introduction of an environmentally-friendly policy which goes against the use of cars; the interests of the community are in this case placed above those of the individual car driver – in this case we can talk of a typical conflict between the individual and society.

Conflicts of interests also manifest themselves between different groups of citizens or individuals. This is often the case with regards the layout or routing for a major transport infrastructure project: regions might compete to either have the project situated close to them (in the case of proven socio-economic advantages), or away from them (in the case of socio-economic and/or environmental disadvantages).

Finally intra-individual conflicts exemplify the existence of contradictory or conflicting objectives or interests within the same individual or group. Thus, for instance, motorists might be willing to accept measures against their own comfort because they value environmental protection. Intra-individual conflicts are distinguished by their context-dependency. Under certain conditions one
agrees to a certain solution whereas one rejects the same solution under different conditions.

Any public inquiry needs to consider the existence of these types of conflicts and, to the extent possible, identify the groups behind each position. It should also be remembered that interests are hardly ever one-dimensional. Thus also, the ‘attractiveness’ or ‘acceptance’ of a project cannot be defined by the satisfaction of any one single interest; rather it is the outcome of several needs and/or interests being more or less satisfied at the same time.

Other aspects influencing public acceptance

The consideration of conflicts of interest; of reactance and resistance; and the necessity of empowering an open conflict rather than accepting a latent one are all factors that influence the acceptance of a project; or if not, then its rejection on solid grounds.

Some other aspects that influence public acceptance include the following:

a) The image of the project proponent: Praschl and Risser (1996) showed that the image of the project proponent is an aspect with high relevance for its acceptance and implementation. Not surprising, one way to improve one’s image is to try and get the public more directly involved in decision processes.

b) The prevailing communication climate, including among politicians / decision-makers, can also be decisive for public acceptance. Especially a lack of agreement between the national and regional levels of governance can influence the process of opinion formation within the population. A disagreement at this level tends to support the sceptical parties in an acceptance conflict (cf. Kienast, 1988).

c) Nevertheless, lack of agreement, if substantial, should not be covered up; inevitably it will come to light, the result being the damage of the credibility of the decision-makers.

d) Lack of communication is by far the worse for public acceptance. Even when anticipating problems it is better to communicate the negative message than no message at all (cf. Vester, 1991).
e) Strange communication is not a scientific term in the narrow sense, although Watzlawik et al. (1976) use it to typologise the behaviour of schizophrenic persons. Here we use it to reflect on a particular type of communication which is built around only fragments of knowledge which do not correspond to one’s own experience. Such communication might relate to non-critical events or to critical events (cf. Kotler et al., 1996) which are presented as irrelevant.

f) Finally, arrogant communication – being treated without courtesy and in a way that reflects a lack of symmetry between the proponents and the public or relevant groups – might also lead to reactance.

Conclusion

There is a range of practical recommendations which can empower citizens’ participation and help increase the public acceptance of a project or policy initiative or assist in its re-design. These are summarised in the final chapter of this report.

Establishing mechanisms for the participation of citizens’ in the decision process is one important element of the institutional learning dimension to transport policy raised in the previous chapter. The vehicle of environmental appraisal accompanied by a public inquiry is one such institutional mechanism, yet obviously not adequate as currently practised. The reasons are manifold: most relevant are its timing; and related to this its limited scope.

Finally, it is important to realise that trust is an important component of any decision process. The demands for more participation are in fact the result of decreasing trust in the existing institutions and their representatives. As hopefully this chapter has shown the overcoming of this trust deficit cannot be achieved through information dissemination alone, however important the latter may be. It requires an all-encompassing reform of the decision process to take into account the new demands but also the new skills of citizens in liberal democratic societies.
6 The Value of Time in Transport

Repeatedly in the previous chapters references were made to timely or untimely policy decisions and participation processes; the iterative nature of decisions; or the inherent contradictions between policy objectives due to, among other things, their different timescapes. This latter point is particularly relevant for the objectives of environmental protection and social / regional cohesion which together (or in opposition) with the objective of economic growth and development form the cornerstones of sustainable mobility.

This chapter deals explicitly with the theme implicitly running through many of these discussions, namely the time dimension. Making time an explicit dimension in transport policy can help innovative solutions towards sustainable mobility. In line with the more general argument of this report about the equivalent importance of both the contents of policy and its form, i.e. the decision process, we discuss time with reference to both.

Time and sustainable mobility

Transport time is tightly locked into the dominant perspective on time of industrial societies. It is irreducibly tied to a time that is globalised, standardised, decontextualised, quantifiable, and measurable. Within that time, individual modes of transport are scheduled; intermodality is planned and organised; the CTP is conceived; individual projects are executed. Moreover, transport time is inextricably tied to the economic perspective from which time is conceived as an economic good, that is, a resource with use value and a resource with exchange value that is inseparably bound to money, efficiency and the production of profit. This association of time with money and profit links, in turn, to a high value of speed. In the first instance, speed means progress as exemplified in the development of ever faster means of transport. Thus, Peter Freund and George Martin (1993, p.89) suggest that ‘speed is the premier cultural icon of modern societies’. In the second instance, speed saves time -- labour time & capital time -- and this in turn saves money. When time is equated with money, therefore, speed means not just progress but profit.

The conception changes dramatically, however, when we foreground different relations: when we understand, for example, speed with reference to the time-space relation and when we bring energy consumption into the picture. This alternative conception entails, first, an explicit acknowledgement that speed consumes not just time but space, and that speed, time and space are inversely
related. This means, the faster the transport (i.e. the shorter the time to cover distance) the more land it requires or, to express the relation differently, the higher the speed of travel the bigger the quantities of space consumed. High-speed travel, in fact, only makes sense over large distances since time and the consumption of space are inversely related. It entails secondly the explicit recognition that time and energy too are inversely related. It means, a) that the shorter the time to cover a given distance, the more energy is needed and b) that the more energy is needed, the higher becomes the proportion of non-reusable energy that is involuntarily dissipated into the environment. That is to say, the demand on energy resources increases with rising transport speeds. A number of consequences thus follow from this shift in perspective: time as tempo/speed comes to be inextricably linked to the consumption of space/land, the depletion of resources and to the production of pollution.

Experience has shown, moreover, that time saving through speed has not facilitated more profitable use of time but has encouraged instead more mobility and travel over further distances (Brog, 1996; Whitelegg, 1993 and 1997; Weizsäcker, 1994). Furthermore, since miles used (i.e. distance travelled) indicate economic activity and are taken as a measure of economic prosperity, and since there is a limit to the hours in a working day, the goal of more distance/prosperity has to be achieved through ever greater speeds with ever increasing costs to the environment. Currently, industrial societies' hope is pinned on better and more efficient technology, i.e. technology that can achieve more distance, at greater speeds and with less pollution. Thus, whilst the link between transport, speed and pollution is generally acknowledged, the issues of space consumption and resource depletion tend to feature much less in the envisaged/proposed technological solutions.

This brings us to the issue of sustainability and time and to the question what sustainable mobility and sustainable transport might mean from a timescape perspective. At the most general level, sustainability relates to the past-present-future extension of a particular process or phenomenon. In the widest sense, sustainability means meeting the needs of the present with resources evolved in the past without compromising the ability of others in distant times and places to meet their needs. Concern with sustainability thus shifts the focus from economic concern with the environment as producer of economic wealth and surplus value to the environment's re-productive capacity.

According to Herman Daly (1991, in Whitelegg 1993, p.5) a 'sustainable society should satisfy three basic time-based conditions:

?? its rates of use of renewable resources do not exceed their rates of regeneration;
its rates of use of non-renewable resources do not exceed the rate at which sustainable renewable substitutes are developed;

its rates of pollution emission do not exceed the assimilative capacity of the environment.

With respect to industrial societies’ modern transport, John Whitelegg produces a table that shows that the first and third condition are not met but that the second condition has the potential, at least, to be met. ‘It is perfectly possible’, he suggests, ‘to carry out the same set of activities but over shorter distances and to switch from environmentally damaging modes to modes which are relatively benign’ (Whitelegg, 1993, p.5). Sustainable transport, therefore, means not just a change in technology but in speed, distance, and mode of transport. From this perspective we can see that sustainable mobility and sustainable transport are not primarily a question of technology but of basic assumption/approach to time and space, speed and consumption. Moreover, no matter how amiable the general goal and specific targets, sustainability in transport cannot be achieved, for example, if the rate of emission reduction is constantly overtaken by the rate of growth in vehicle numbers and miles consumed, in the speed of the various transport modes and in the number of trips taken.

Despite this contradictory relation, this combination of speed, growth, technology and sustainability is pursued in the European Union’s CTP. In the 1993 White Paper on Transport Policy, the CTP is defined as a policy designed to ensure the proper functioning of the Community’s transport system that eliminates remaining restrictions and distortions of closed markets, improves the potential for competitiveness, financial performance and efficiency, whilst taking account of environmental challenges. The document recognises transport as a growth industry (p. 6) which is expected to continue to grow in the future (p. 20) and it views transport growth as crucial for the ‘continued health of the community’s economy’ (p.10). It acknowledges

that demand for the transport of goods and services tends to run parallel to GNP;

that economic activity is dispersed over wider social areas, thus is no longer concentrated in major cities;

and that the trend is towards reduction in shipment size and increase in frequency.

The stated, recognised impacts on the environment are:
energy consumption at 30% of total final energy consumption of EU (p. 35);

- global warming and operational pollution of air, soil, water and marine life;

- land intrusion: roads, for example, make up 1.3% of total land area of the EU;

- risks associated with transport of dangerous goods;

- and congestion associated with raised energy consumption, pollution and environmental inefficiency (p. 35).

At the same time, the document insists that the CTP will have to function in accordance with the Maastricht Agreement which means not only a transport system that strengthens the Community’s economic and social cohesion but also one that integrates environmental protection requirements (p. 13).

This balancing act is to be achieved by ‘demand management mechanisms’ (p.25) ensuring that ‘all transport users ... pay the full costs - internal and external - of the transport services they consume’ (p. 14). In order to avoid imbalances for competitiveness the charging has to be done at EU level; and through BATNEEC - best available technology not entailing excessive costs.

In this way, it is argued, the Community’s actions already contribute to both the economic prosperity associated with transport growth and the pursuit of environmental protection. That is to say, in addition to the technological developments, it is argued that the internal market and the internalisation of full transport costs; intermodal competition and complementarity; as well as interoperability and the integration of systems and networks, already address the economic, operational, social and environmental efficiency of the transport system.

Time is not absent from the document, but it is there implicitly rather than explicitly. The document takes time to be unproblematic and given. It assumes time to be merely the abstract framework within which transport is scheduled and policy developed. Assumptions about and approaches to time, therefore, are not empirically available but have to be inferred. The implicit understanding of time contained in this document can be summarised as follows:

- time is a quantity to be measured by clocks and calendars
- time is abstract, absolute, globally standardised and context-independent
- time is a personal and public resource with use value
- time is a commodity and economic resource with exchange value
time is money, time saved is profit, speed means progress and efficiency, faster means better and more cost-effective

The valorisation of speed and associated social issues related to equity in transport needs and use are of particular relevance in transport policy.

Irrespective of whether we are focusing on transport policy issues related to road, rail, water or air, speed seems to be a priority at European as well as at national level, with time saving being an unquestioned dominant factor in transport policy. The implicit stance on speed is thus as follows:

- Speed is universally valorised above all else.
- Speed justifies developments in each of the transport sectors.
- The technological developments associated with increase in speed are valued as progress.
- Speed is assumed to be inescapably tied to economic competitiveness and profit.
- More fundamentally still, the consumption and compression of distance in ever faster times is thought to be a precondition for economic growth.
- Finally, speed is implicitly tied to status: high speed and high technology equals high status -- air travel and high speed trains are prime cases in point -- and no/low-tech, slow movement carries low status as is demonstrated by the position of walking and biking on the inter/national policy agenda.

From a temporal perspective this cluster of assumptions about speed requires further exploration. There is a need to take a more critical and nuanced perspective, ask some pertinent questions and dismantle some myths about speed as socio-economic cure-all (Adam, 1995 and 1998).

First, we need to ask ‘what happens to the saved time’? Clearly, if the time saved through increased speed is quite small then it tends to be difficult to reallocate that time in a meaningful way. Alternatively, if the convenience of a new road, for example, results in more trips, then the original time saving is negated.

A study relevant to this point, conducted by Werner Brög in 1996, shows that the time spent travelling per day per person has stayed remarkably constant over time and across a large number of cultures, countries and continents. The
conclusion of Brög’s study is that the increased speed of daily transport has not resulted in more disposable time but instead has been absorbed by travelling over ever longer distances.

Second, we might ask what, apart from time-saving *per se*, has to happen for people and goods to actually get faster from A to B? Increased speed in conjunction with increased numbers of travellers brings inevitable increases in delays. That is to say, speed of and in itself does not avoid congestion, delays and waiting times. Instead it has a tendency to create these unwanted side effects. With air travel within Europe, for example, the time spent on the ground checking in and out tends to far exceed the high-speed travel time spent in the air.

Speed therefore needs to be understood not in isolation but in the wider context of complex social interactions, time-use and waiting patterns, intersections of people, technology and travel modes, as well as rhythmically patterned structures of traffic networks and flows.

Third, we need to query the universal relevance of speed. While there is no question that high-speed travel by train, for example, is preferable on environmental grounds to travel by car or aeroplane, it has disadvantages from a regional travel and haulage perspective. High-speed train travel means as few stops as possible, thus satisfying the needs of long-distance travel and haulage but not the requirements of the many people (and goods) who would like to join this high-speed service on the numerous possible intersection points along the way. This is also the reason why high-speed travel by train does not contribute to policies aiming to relieve the pressure from urban centres by promoting re-housing in suburbs or smaller cities where bigger and cheaper housing is available and where the environmental quality is better – this presupposes a reduction in commuting time which in theory is possible but which only materialises if stops are scheduled.

Fourth, we need to pay attention to the assumption that high-speed, transnational travel networks bring economic growth to local economies located along their corridors. There is much evidence to the contrary that is well documented in John Whitelegg’s (1997) book *Critical Mass. Transport, Environment and Society in the Twenty-first Century*. Economic growth in local economies, he points out, depends on a number of essential conditions to be fulfilled: trains have to stop; motorways have to have intersections; airports have to be serviced by efficient public transport; the high-speed service has to be used to come to the places rather than a convenient means to escape them. TEN may fulfil some of those conditions but economic growth of local economies can by no means be guaranteed *a priori*. 
Fifth, and closely related, we need to attend to the assumption that TEN and the capacity to travel further in less time has improved accessibility. Again, Whitelegg’s (1997) research provides evidence to the contrary. It shows that local and regional accessibility has suffered under this overall trend toward the compression of distance and time. The Swedish transport policy recognises this difficulty and, accordingly, suggests that rural needs and not the needs of the largest cities should provide the benchmark for services. Cities should be considered as special cases, the exceptions to the rule, whose needs will have to be assessed and served on a case-by-case basis.

Sixth, we need to address the myth that speed is a good thing for everyone. From the points raised so far we can already see that there is an equity issue associated with the valorisation of speed, time compression and space expansion. We need to ask ‘who benefits from high speed travel and at whose expense’?

Whilst the largest cities along main routes and priority corridors have benefited, smaller towns away from industrial centres are worse off with respect to mobility, accessibility and speed of travel now than they were at the turn of the century. In the UK, for example, rail travel times between such smaller towns have in fact substantially increased and the number of trains running has decreased (Whitelegg, 1997, p.73). In the UK, the country whose privatisation of the railway is most advanced, a number of additional matters of equity between large urban centres near main transport corridors, smaller towns and isolated rural communities have worsened: the synchronisation and time-tableting between companies and trains have suffered with the result that it is increasingly difficult to make connections between trains. Reliability and punctuality have deteriorated. The number of trains running has been rationalised and uneconomical lines closed with the results that at increased cost to the traveller there are less trains running to ever fewer destinations.

Beyond locational equity concerns, there is an equity issue about which groups of people benefit most from the high speed, high cost, long distance transport. Whilst advantaging those with business between distant cities such a service offers little to those who require good and extensive local public transport -- local commuters, children and their carers, the elderly, the disabled, the poor -- all those who do not need, want or cannot afford long-distance, high-speed transport.

This equity issue between social groups is intimately tied to temporal matters since the poorest members of society -- the unemployed, pensioners, non-earning parents/carers, people with disabilities, and children-- tend to be poor in financial terms but rich in time whilst the wealthy have money but tend to be
short on time, that is, poor in time. With respect to transport, this creates the 
following time-based social inequity: the wealthy are able to use money to buy 
time through transport - the higher the speed (time saving) the more costly 
tends to be the transport. For the poor the opposite exchange is not possible: 
their time cannot be exchanged for money to buy them access through 
transport. Thus, the pursuit of speed and its implicit valorisation benefits the 
totality of individual transport stakeholders in very unequal terms.

For societies too there is an inescapable social time-based dimension of 
inequality linked to distance and speed which is similar to the one of individual 
wealth. In the EU, the societies at the Southern periphery tend to be the poorer 
members of the community. Yet their distance from the centre in the North-West 
is the greatest which means in order to overcome the temporal disadvantage of 
distance they would need to spend extra on speed. While the wealthier nations 
are able to ‘buy speed’ this tends not necessarily to be a viable option for the 
poorer members. Such socio-temporal transport inequality therefore can only be 
actively compensated for at EU level. Similar problems can often be observed 
within country borders, the notorious North-South Italian divide being the most 
prominent example.

From a timescape perspective, therefore, the success of high-speed rail travel 
would not be established exclusively with reference to how well it competes with 
the environmentally more damaging modes of private car and aeroplane. 
Instead, it would also be assessed with reference to issues of socio-temporal 
equity. This means, a socio-temporally aware assessment would be concerned 
to ensure that a high speed rail service is not developed at the expense of the 
less profitable rural lines and the slower regional and local modes of public 
transport. This requirement should not detract in any way whatsoever from the 
important environmental considerations but it asks for a wider perspective that 
embraces issues of social equity with equal commitment.

Seventh, the issue of transport speed is further tied to changes in the culture of 
production and with it new organisational forms of road haulage. Thus, just-in-
time transport, currently the dominant form of freight transport, is inextricably 
tied to just-in-time production (cf. Martin and Schumann, 1997; Whitelegg, 
1997). This system of production entails a highly synchronised and tightly timed 
system of manufacture and an equally fined tuned system of delivery which 
reduces not just the waste of storage time but also the waste of storage space. 
This in turn transfers the warehousing onto the motorways and byways of 
society with devastating environmental consequences.

Following the time-compressing logic of time is money, the just-in-time transport 
system requires both flexibility and 24-hour cover as a precondition to achieving
the necessary sensitivity to the peaks and troughs in the market. This increase in the speed and precision of timing and synchronisation of the delivery of goods is clearly accompanied by a number of pluses and minuses.

On the positive side, there is no question that this new logic of production and delivery brings extensive savings for the producing companies; that it decreases the need for warehousing space; and that it provides a substantial volume of extra work for haulage companies.

On the negative side, we need to recognise that just-in-time production externalises company costs associated with ‘unproductive’ time and places the burden on the haulier in the first instance and on the environment and society in the second instance. Moreover, there is no doubt that this system dramatically reduces the potential for rail to provide this haulage service. This means, just-in-time transport brings with it not only an extensive increase in lorries on the road but also an equivalent rise in fuel consumption, both of which do not bode well for the environment.

The gains for business, therefore, are unambiguously tied to losses for the environment and people’s health. Clearly, this system of time compression is a powerful instigator for reactive transport policy at all levels of policy formation.

From a timescape perspective, therefore, it becomes pertinent, with respect to the valorisation of speed in general and high-speed transport in particular, not to take as given that speed per se is a good thing and therefore not to pursue the increase in speed at any cost. Who gains and looses with a proposed high-speed service becomes a pertinent consideration and not to trade one against the other an important commitment. Thus, high-speed, trans-national trains, for example, should not replace high quality local, regional and national rail and other public transport services. Equally, questions about who is and who is not catered for by a particular service should not be left out of the equation. With these issues explicitly addressed, transport policy is moving towards a comprehensive socio-economic appreciation of what effects it might have not just on the physical but the social environment.

**Time in policy**

Time is in yet another way important for transport policy, namely with reference to policy rather than transport:
Policy is about planning the future in a context of past decisions and present constraints.

It is about conceiving of change within specific or open time frames.

It is about timing and synchronisation locally, nationally and transnationally.

It is about planning schedules and the specification of target dates.

It operates with implicit and/or explicit temporal frames of reference and time frames.

It entails particular visions of the future that guide policy formation in the present.

It encompasses national self-perceptions about being ahead of partners or in urgent need of catching up.

Assessment of the success or failure of a policy can only be evaluated if it is placed in a temporal frame against which it can be compared and judged to be un/successfully implemented.

Another complicating factor is that the time planning of a government in power regularly exceeds its competency in terms of its period of election. That is to say, governments elected for 45 years and shorter put in place policies that affect their county’s future for much longer periods. Transport planning is one of those areas of governance where long-term decisions are being made which commit successor governments or involve them in very costly changes of direction.

In the absence of any body or institution responsible for the long-term future of a nation, it is essential that the public at large are extensively involved in any planning and decision-making processes concerned with policies that far exceed the mandate of the government of the day. Although not formalised in any way with respect to the time argument, the importance of public involvement in policy is gradually being recognised and ways are searched to implement it in practice.

Taking time seriously would not just involve explicit recognition of and compensation for the democratic deficit of bringing about a long-term future based on 4-5 year political mandates and associated financial decisions. It would also have to recognise that the different levels of a nation’s politics and policy making may have very different temporal concerns regarding their level-specific transport which may or may not complement each other.

A local authority, for example, may primarily be concerned with current urban traffic congestion and therefore inclined towards building ring-roads, car-free
city centres, and providing the best possible local public transport system. Alternatively, it may be preoccupied with con/serving a particular locality and environment. Such re/structuring of priorities may not fit with national and EU (long-term) emphases on high-speed trains and motorway systems that simply move through local territories in order to connect all of Europe and beyond.

The higher the speed, the larger the space involved and the longer the time frames of planning incurred and its public economic and environmental effects. With respect to the financing of transport policies and specific projects, a grave conflict is that of allocating finance over very long periods, often shared between a number of public and private institutions, and the annual budgets of national and local governments.

In Italy, for instance, the large debts incurred by previous administrations made any allocation for large-scale, long-term projects almost impossible to achieve unless there were external EU moneys available to part-fund specific and particularly expensive trans-European projects. In the Italian case, it seems, the lack of national moneys determines national transport policy and skews it in a particular direction of large, trans-European, high-finance projects, and increased future debt. TEN as a national transport policy is embraced most enthusiastically by the countries who can least afford it since the financial assistance through the Structural Fund does by no means cover all the socio-environmental costs that will be incurred.

Equally illuminating on this issue are the French and UK situation where administrations with very different political cultures and visions of the future from those of their predecessors had to make investments as a result of the previous administrations’ decisions. In such situations, it seems, governments’ policies and decisions are heavily ‘marked by the legacy of their predecessors’.

A closely related issue links to countries’ transport policy histories, that is, to their identity in relation to the past, present and future. Some member countries of the EU pride themselves in and identify with their long history of spatial planning of which transport is an important aspect. One can also conclude that the more established and bureaucratically embedded a country’s transport policy, the less likely is the country to merely fit in with the EU’s vision of a CTP and the TEN. Thus, Germany, France and the more recent members Austria and Sweden, for example, see themselves shaping rather than merely adopting EU policy. Italy, Greece and Spain, in contract, see the adoption of EU policy as an opportunity to bring about coveted modernisation of their countries’ transport system. For the former countries, their transport history forms positive part of their self-perception and identity whilst for the Italy, Greece and Spain the EU’s directives constitute the potential for a new future identity.
A further set of issues to be mentioned under the policy framework relate to the prioritising, phasing, staging and synchronising of plans and decisions of policy within and between the different levels of transport policy. The prioritisation of policies is essential in a context of scarce resources. Given that not everything is possible, in other words, choices have to be made about the order of importance. This order, in turn, is dependent on a great number of past, current and future-related matters ranging from established policies and traditions, via the political stability and bureaucratic structure, to financial resources and economic-political decisions.

Closely related is the issue of the speed of policy implementation. The speed of change has to be appropriate to the political context, the economic context, the policy history, as well as the policy and its associated projects. Due to the political and economic instability of post-war Italy, for example, some projects had a thirty year history as conceptions and plans before recent EU involvement got them off the drawing board and, in a compressed time frame, through the phases of decision making and on the path towards realisation.

Finally, most countries appear to work towards a specified time frame within which their transport plans and policies are to be effected and implemented: Austrian till 1998; Belgium 1996-2000; Denmark till 2005; Germany till 2010; Sweden till 2007; the UK till 2000. These time frames for transport policy, however, do not necessarily overlap with or match the time frames associated with respective countries’ environmental policy objectives. Yet, transport policy is meant to centrally take account of the environmental issues involved.

Moreover, these variable time frames of national transport policy clearly are not compatible transnationally and thus an obstacle to the achievement of a European-wide Common Transport Policy. The long-term nature of transport policy needs extensive future planning and this in turn requires elaborate and reasonably stable political structures in conjunction with an appropriate political culture on the one hand and the financial will and determination to honour such temporally extended investment commitments on the other, especially if they involve a change of government and therefore radically new perspectives on transport policy.

Irrespective of the existence of transport plans with time frames, therefore, effective implementation of such plans depends on a suitable economic-political context that allows for the future projection and predictability that is necessary for putting long-term policies and plans into action.
Conclusion

With respect to the Common Transport Policy, taking account of time involves a reconsideration of the relations between transport, economic growth, the valorisation of speed and social equity. For the planning of transport projects it means recognising, on the one hand, time-based differences and time-based roots of barriers to their successful realisation and, on the other, the time intensive nature of co-ordination and synchronisation of action across administrative levels and national boundaries. It entails further that we acknowledge the importance of the past and future for concerted action in the present:

- the variable history of knowledge and skills;
- the differences in priorities, objectives and goals;
- the inequity in the power to define what is real, relevant and valuable.

And it entails, finally, that in our plans, policies and assessments we allow for the spatial and temporal disaggregation of impacts, or as Anthony Giddens (1990) calls it, their time-space distantiation. That is to say, with respect to plans, policies and appraisal, we need to consider that the impacts of transport policies and projects (positive, negative and indifferent) have effects that are dispersed in time and space and thus do not display a direct cause-and-effect relationship. It means those processes and their potential effects cannot be understood and/or evaluated adequately through classical linear models.

With a temporal focus and a timescape perspective therefore, we make the implicit explicit. We complexify transport theory, research and practice; and we engage to a large extent with the qualitative dimension of the subject matter of transport. The temporary, processual, emergent nature is emphasised and its contextuality highlighted. We acknowledge that there is

- no single time but multiple times;
- no space without time;
- no territory without a past, present and future;
- no consumption of distance and time without a social and environmental price to pay.

Taking time seriously, therefore, entails that we recognise its subtle structuring of transport theory, practice and research. For a Europe-wide Common
Transport Policy, this means extending the planning of space, territory and spatial mobility to encompass temporal mobility, time planning and a time politics as precondition to achieving a sustainable and equitable transport future.
Part II

Policy Assessment & Decision-Support Tools
7 Whom or What to Support?

Part II of this report describes the elements of the two main decision-support tools developed by TENASSESS, namely, the TENASSESS PAM Model and the TENASSESS Barrier Model. Both tools aim at assisting the policy-maker in the wider sense with decision-making. Before we proceed with the description of the tools, it is important to clarify who are the potential users of these tools.

The target of the policy assessment decision-support tools is generally defined as the policy-maker. The ‘policy-maker’ or ‘decision-taker’ are abstract categories to refer to actors or groups of actors. Often in transport research and in the framework of the European Commission, the ‘policy-maker’ is used to refer to the actor in charge of elaborating or taking decisions, i.e. the political level of any government.

In TENASSESS we have intentionally taken a different perspective building on the findings of the analysis reported in the previous chapters. The decision process is no clear-cut linear process, but rather diffuse and circular. Even in the framework of what is today considered the classical decision-making model there are numerous actors with stakes or influence on decisions in different functions:

?? At the conception stage when opportunities and risks are considered and weighted, technical experts are called in to provide their views on the costs and benefits of any particular proposal or programme: thus the scientific community has an influence on the decision-making process, even if not necessarily directly. At this stage also relevant are various lobbies representing specific interests: for instance, economic actors, social actors, regions etc., depending on the type of project under consideration.

?? The influence of the afore-mentioned actors continues throughout the planning process when specific proposals are elaborated for charting objectives against technical means. At this stage the administration also begins to play an active role in the decision process. In fact they are at this stage the most important actor as they are those that have the overview and are expected to integrate different concerns into one solution.

?? The stage that follows is the decision stage: how fast and efficient this stage turns out to be depends ultimately on how well prepared the proposals are and on the extent to which co-ordination has worked effectively during the previous stage. Needless to say it also depends on
how contested the issue is – this in turn, will influence the degree of lobbying at the decision stage.

?? Traditional theory has us expect that once any specific project has been decided, there is nothing that stands on its way to implementation. Policy analysis and real-life experiences teach us otherwise. As shown in chapter 4, even at the implementation stage there are possibilities to at best delay, at worse reverse decisions. If the latter happens, then the whole process is likely to start again; more usual is that implementation is delayed necessitating yet another planning stage for changing the details of specific parts of the one project selected in order to meet conflicting demands or newly arising concerns.

There is no doubt who the decision-maker is – undoubtedly the responsibility for any decision rests with the political level of governance. However, what decision is taken by the political level is influenced by a wide range of factors and actors, and not least by the administration, even if by the mere fact that the administration is the one responsible for preparing all background documents that make a decision possible.

In recognition of this fact the decision support tools developed in TENASSESS target not the political level of governance alone, but more generally the decision process as such. In fact they are tools meant to assist in co-ordination. The reader will surely recall from part I that co-ordination is a new role in the decision process characterising the implementation sphere. The increased significance of co-ordination marks a new phase of institutional learning. The TENASSESS decision support tools back this process.

The TENASSESS PAM and Barrier Models share a similar understanding of the decision process which includes the recognition of the significance of transparency – both tools are best used as heuristic devices to explore variation in outcomes resulting from changing conditions, be it with respect to the prioritisation of policy objectives or with respect to types of conflicts or barriers.

Otherwise the two tools are complementary. Whereas the TENASSESS PAM is useful for assessing the effectiveness of different measures or projects under the CTP umbrella; the TENASSESS Barrier Model deals with the question of how to manage the process of implementation more efficiently. The reader will recall from Part I that both effectiveness and efficiency are important success indicators for CTP: to do the right thing (effectiveness) is as important as to do the thing right (efficiency).
The TENASSESS Policy Assessment Model

Notwithstanding that decision-making processes are complex, it is still possible to consider these in a systems approach as still representing a form of rational planning which can be assessed with reference to its key elements, namely, objectives and alternative courses of action.

This was the viewpoint taken in the development of the TENASSESS PAM. The latter seeks to define (or re-construct) the decision-making process as a form of project appraisal, the objective being to use rational and linear processes to arrive at the 'best' option for the pre-defined set of objectives, or at least to render the decision process transparent and of integrity.

Theoretical considerations

Considering decision-making as a form of rational planning, implies the evaluation of alternative courses of action in order to identify which best achieves a set of given objectives (Hill, 1968).

The implication of this framework is that the objectives form the evaluation criteria, the benchmarks, against which the performance of each option is measured. Objectives form a statement of need; evaluation measures the extent to which needs are likely to be fulfilled by each option. Hence objectives and evaluation form two sides of the same coin.

This decision model reflects a standard, systems approach, to planning. It is designed to ensure that the projects remain focused upon their objectives, and that their success or failure is measured and expressed in terms of the particular needs driving the project. The fundamental role of the classic decision model is to make explicit the basis for selecting one particular project ahead of another and to demonstrate precisely where socio-political influences have over-ridden an analytical appraisal. In other words, the model makes explicit, either, how the selection of a project fulfils stated objectives; or where such a decision deviates from objectivity and submits to socio-political influences. In either case, the quality and integrity of decision-making is improved.

The principal focus of the classic decision model is the appraisal method. The goals achievement matrix (GAM) represents one of the most comprehensive, policy-oriented yet also project focused, as well as practical appraisal methods.
This method was the one chosen for the development of the Policy Assessment Model in the framework of TENASSESS.

**Key features of the Goal Achievement Matrix**

The key features of the TENASSESS PAM are as follows:

a) The assumed starting point for both objectives and transport projects (which include infrastructure projects, pricing proposals and regulatory proposals) are the various national, regional and local policies.

b) For each policy or set of policies, i.e. policy area (for instance, the environment, safety etc.) an objective or set of objectives is imputed with reference to policy documents or using expert judgement. For each objective, a definition of success and failure is produced. These definitions help to operationalise objectives by making explicit the point at which a project can be judged to have made a significant impact.

c) Measures of performance provide an explicit linkage between project impacts and objectives. They measure the extent to which an objective is achieved as a result of implementing a new project. These may be quantitative or qualitative measures.

d) A comprehensive range of impacts must be identified for the projects addressed by the methodology. These include economic, environmental, social, financial and regional development impacts, as well as the implications of projects for public opinion. Impacts are represented within a structured framework, a so-called Group Impact Framework.

e) A weighting system allows decision-makers to apply their own values to various parts of the appraisal methodology. Weights may be applied to particular policy objectives, or to particular sectors, or to particular impacts. The main feature of the weighting system is its transparency. This is entailed in the fact that it forces decision-makers to explicitly think about but relay their priorities or values. In that the weighting system can be used as a monitoring tool for mapping ‘difference’ in opinion or dynamic changes (like change of governmental orientations etc.)
f) Results are presented in a variety of ways, involving an array of scores against policy areas, at each level of the hierarchy; summed scores across all policy areas and hierarchical levels; and sensitivity tests involving the application of alternative weights.

Policy objectives and measures of performance

Chapter 3 of Part I noted that whilst there is overall agreement as to the main policy areas in transport, there are differences at the national level regarding their prioritisation and that contradictions are frequent and also reflected in the characteristic absence of quantitative or qualitative measures of performance for measuring the success or failure of policies.

It is still nevertheless possible following careful contextual and institutional analysis and through discussions with policy relevant actors to arrive at measures of performance for each main policy area. Such a set is necessary for standardising and subsequently operationalising the policy assessment tool.

The following policy areas are considered in the TENASSESS PAM. These were derived by analysing the national transport policies.3

1. Environment;
2. Fair and efficient prices;
3. Improving a particular mode of transport;
4. Accessibility and regional development;
5. Harmonisation and common market;
6. Avoiding traffic / reducing the need to travel;
7. Reducing the ‘price’ of transport to the user;
8. Restriction of (road) transport;
9. Transport safety;
10. Deregulation, privatisation and liberalisation;
11. Financial acceptance
12. Public acceptance

3 See Working Papers 1 to 16 of TENASSESS that were annexed to Deliverable 1.
The above policy areas are aggregate. They can be further specified by considering policy objectives under each. At the level of specific policy objectives overlapping is typical. Thus, for instance, a change in modal split can well be a specific policy objective for the third policy area above (improving a particular mode of transport) as well as for the eighth policy area (restriction of road transport). It is for this reason that the broader grouping of policies or policy objectives provides a more transparent format for the construction of measures of performance.

Environment

The ultimate aim of policies focused in this area is the reduction of atmospheric pollutants. Success (i.e. a score of +5 within the Policy Assessment Model) and failure (a score of -5) in the field of environmental pollutant reduction is a direct function of the targets adopted at different levels in the decision-making hierarchy - in many cases this is in line with European level policy, but some Member States adopt more stringent targets.

The pollutants considered within the TENASSESS PAM are strategic rather than local pollutants (reflecting the strategic nature of the assessment tool) and their breadth is delimited by the individual pollutants covered in the IWW / INFRAS study (1995) – namely CO\textsubscript{2}, NO\textsubscript{x}, C\textsubscript{x}H\textsubscript{y} and particulates. Some countries do not have specific targets for these pollutants (in these instances, EC and UNECE targets have been adopted) and other have specific targets for other pollutants. This core set is, however, maintained throughout the TENASSESS PAM on the grounds that it provides a broad brush, cross-project, cross-border set of assessment criteria - it is not intended to replace detailed project analysis, including a full EIA.

Targets are dynamic in the sense that the achievement of a given target is a function of where pollutant levels lie now and by how much they have to be reduced, year-on-year, in order to reach the specified target at a given point in the future. This is operationalised in the model with reference to observed and forecast background pollutant trend data.

The percentage contribution of the project to the achievement of each pollutant target is calculated and scored accordingly. Individual scores are then combined to produce an overall project score in lie with the relative damage of each pollutant.
Fair & efficient pricing

Policies under the heading ‘fair & efficient pricing’ are all aimed at changing the relative prices of different modes, usually in an attempt to internalise the (negative) external costs of transport. It should be noted that this definition is not strictly in line with that adopted in the Commission’s Green Paper (1995) on this subject, insofar as it is focused on the internalisation of externalities and does not consider the coverage of infrastructure costs.

Success is defined as the actual (user) costs of a particular mode equal its ‘true’ costs following the implementation of a given project. Actual costs are defined as the ‘out of the pocket’ expenses associated with undertaking a particular journey, i.e. fare paid or fuel / operating costs. The ‘true’ costs of a transport mode are defined as the sum of actual (monetary) costs and external costs, with the external costs (by mode) being derived from values contained in the IWW / INFRAS study (ibid.). Failure is defined as the situation where a project widens the gap between actual and true costs for a given mode of transport. The neutral point (a score of zero) is when the project has no impact upon cost internalisation or the relative prices of transport modes.

A special case for this policy area in the context of toll motorways was incorporated. In these instances, the toll charge itself may internalise some of the external costs of road transport - i.e. if the toll more than offsets the benefits to the user in terms time and operating cost savings. Thus, whilst the aim of the project is not to influence relative modal costs, some degree of external cost internalisation may be achievable.

Improving a particular mode of transport

Whilst the previous policy area was aimed at influencing the relative prices of different modes of transport, this policy area is directly aimed at boosting the mode share of a specified mode - through pricing or other means such as direct investment.

4 For transport services the actual user costs include the disbenefits associated with a journey (for instance the time spent on the journey).

5 It is perfectly possible for the user cost (‘the price’) to equal the true cost when the external cost is not zero, by the government altering taxes on the price paid by an appropriate amount.
Success for the policy area rests upon the existence of explicit modal split targets - achievement of the desired mode split within the corridor in question denotes success, a worsening of the mode split (i.e. away from target percentages) denotes failure and no change represents zero.

In many countries, explicit mode split targets do not exist and an implicit assumption has been made that the aim of policy in this area is to stem the growth in road based passenger and freight traffic that can be observed in every Member State of the European Community. On this basis, success represents a reversal of the long-term trend towards increased road modal share and failure represents a continuation or ‘worsening’ (i.e. increased growth in the modal share of road transport) of existing trends.

Input data requirements are the before and after traffic volumes by mode, together with either explicit modal split targets, or implicit targets derived from background data trends.

**Accessibility & regional development**

Policies aimed at general economic growth and / or regional development are grouped under this policy area. It implicitly also incorporates many of the Commission’s aspirations in the field of regional policy, such as economic and social cohesion – the interpretation here being that the policy area implies that certain regions of the Community should be encouraged to grow at a faster rate than others in order to minimise regional inequities in income and wealth distribution.

The measure of performance initially developed to examine this issue was based on the ‘public capital’ hypothesis of Aschauer insofar as the project economic rate of return (compared to some benchmark values derived from World Bank data) was deemed an appropriate tool for the purposes of this study.

The role of infrastructure in stimulating economic growth is a controversial field. Many years of research in the field of regional science has not proved a conclusive link - there is a strong school of thought that suggest that transport infrastructure provision may indeed work against peripheral /disadvantaged regions. It is acknowledged that the measure developed here is only one potential way of analysing regional development impacts. As with all impact measuring tools utilised in the TENASSESS project, this indicator is merely
used to show how the method can be operationalised and not a statement of the ‘best’ impact measurement tool.

The case study testing phase of the project has, however, indicated that the measure of performance originally developed did not adequately fulfil the needs of projects in all areas of the Community, particularly in the less developed regions.

The use of the project economic rate of return as a proxy for economic growth tends to overstate the regional accessibility benefits of projects in the highly developed European core (high values of time and large traffic volumes will tend to give projects strong rates of return) relative to projects in less developed regions (lower values of time and low initial traffic volumes serving to produce low economic rates of return). The purpose of many projects in less developed regions is to stimulate development that does not already exist - in other words, a poor (relative to the specified benchmarks) economic rate of return does not necessarily imply poor development potential.

A two part indicator was therefore developed - one part is the original ERR criterion, whilst the second looks at average forecast travel time reductions between towns and cities in the project corridor. Both are compared to benchmark values that suggest how a project should perform if it is to foster economic growth and accessibility improvements. A variable weighting factor can be applied to each component to examine the impact of placing more emphasis on the ERR criterion or on the travel time reduction criterion.

The reduction in average travel time component is a form of accessibility indicator. It is used in preference to indices that are derived from a series of journey times because of its simplicity (i.e. it needs less data and uses a model which feeds other measures of performance), and because it is well suited to infrastructure projects that tend to be of a linear nature. Alternative accessibility measures based on more than journey time, for example populations within certain journey time catchments, tend to suffer from the same bias as that of ERR, discussed above. They are also highly sensitive to planning forecasts, which are particularly uncertain in areas of low existing development.

One suggestion for the ‘accessibility and regional development’ policy area is some form of ‘cohesion index’ which relates the forecast change in regional GDP stemming from the project to changes in the regions ranking in the ‘EU GDP league tables’. One potential problem with this indicator, which is an issue that equally applies to any proposed measure of performance, is that the requisite project impact data may not always be available. Estimation of likely
impacts of a transport infrastructure project upon regional GDP are a particularly difficult aspect of project benefits to quantify. In all instances, a balance needs to be struck between the depth and quality of the measure of performance and the availability of the project impact data that is required in order to operationalise it.

Harmonisation & common market

This policy issue is of most relevance to the European Commission level within the decision making hierarchy and is broadly aimed at increasing European integration by stimulating intra-EC movements of both goods and citizens.

In terms of the measure of performance both goods and passenger movements are considered - by focusing on changes in total vehicle kilometres.

The inputs to the measure are changes in total national and total international vehicle kilometres (in percentage terms) induced by the project. The benchmark against which the measure is compared is the impact of the integration of Portugal and Spain into the European Community during the 1980’s where annual international traffic grew at a rate of nearly 40%, compared to a European average increase in traffic movements of 3.6% per annum.

The accession of countries to the European Community should be viewed as the historic maximum that can be achieved in terms of boosting cross-border flows relative to national ones - a link that improves access between two existing Member States will never have such an effect as other barriers to cross-border movement were also removed such as customs arrangement, different legislation and formalities. This rate of increase is, therefore, viewed as the maximum that is possibly achievable (a score of +5). The European average is viewed as the norm (a score of 0). Adopting this rationale allows the benchmarks to be applied across all the countries of the European Union.

Avoiding traffic/reducing the need to travel

Traffic avoidance and policies aimed at reducing the need to travel are in a sense very long term policy aims which can be achieved through a variety of transport and, in particular, land-use planning policy instruments. The central aim is to effectively break the link between economic growth and traffic growth
that is a feature inherent in the vast majority of developed nations around the world. Put another way, the key variable is the level of transport intensity within the economy of a given country.

In order to measure traffic intensity, a common measurement must be chosen for passenger and freight traffic alike - this has been defined as a transport unit. Following the methodology utilised in the IWW / INFRAS (1995) study, one transport unit (TU) equals one passenger or 200kg of freight. Transport intensity has then defined as the relationship between TU’s in the economy and GDP.

From this definition, a picture has been constructed of transport intensity trends in different EU Member States and for the EU as a whole. The analysis also deals with either increasing or decreasing long terms trends in transport intensity. In the former case, success is defined as stabilising or reducing the long-term trend, failure as an increase in the long term trend and the neutral point being where a particular project has no influence on the trend. For the case of decreasing long-term transport intensity, success is a greater reduction in intensity than the long-term trend, zero as in line with the trend and failure any increase in transport intensity (relative to the trend) following the implementation of a project.

The case study analysis of this policy area tends to suggest that individual projects are rarely of such a scale to influence overall transport intensity to any significant degree. This tends to fit with the essentially long-term nature of the policy area - it is only through the concerted combination of a large number of individual projects (transportation initiatives combined with complementary land-use planning projects) that a reduction in transport intensities will be realised. Having said this, it is an important area of policy in many countries which merits its presentation within the TENASSESS PAM.

Reducing the ‘price’ of transport to the user

This policy area represents the ‘traditional’ rationale for investment in transport infrastructure - to relieve bottlenecks, alleviate congestion, increase speeds - all of which provide time and operating cost savings to the user of the system and, consequently, benefits to society as a whole.
In terms of the measure of performance developed for the TENASSESS PAM, a similarly traditional route has been followed insofar as the cost-benefit ratio is used as the building block for the analysis.

Whilst the bulk of the benefits associated with transportation projects (in developed countries at least) are comprised of time and operating costs savings, other benefits are evident, such as environmental, developmental and safety. Whilst important, these benefits are not part of the calculation used for this measure of performance - we are essentially focusing on the private benefits to individuals as users rather than collective benefits for society as a whole or non-users.

The assessment of the efficiency of a transport project was derived from the German Federal Transport Investment Plan which is considered to be the most comprehensive cost-benefit analysis framework package currently in use in Europe. Savings in economic costs (i.e. savings to the user) generally account for around 73% of total scheme benefits. Comparing this figure to the annualised scheme investment costs, a measure of performance was created – using the current German cost-benefit decision criterion (of over 3, given existing funding constraints) as the decision rule.

Success is defined as a project meeting this decision rule whereas failure is a result of 0% - i.e. scheme benefits are insufficient to produce anywhere near the required ratio of benefits to costs.

**Restriction of (road) transport**

In a number of European countries, physical restriction of road transport or its restriction through pricing or regulatory initiatives is becoming an important area of transportation policy.

This policy area is operationalised into a measure of performance by comparing the forecast impacts of the project on road traffic growth with the long-term trends witnessed in the country/countries of relevance to the project.

Success is defined in terms of the project achieving the stated target objectives - either the specified reduction in total road vehicle kilometres or the specified reduction in the rate of increase of road vehicle kilometres. Conversely, failure is an increase in road traffic away from the stated objectives.
Transport safety

This policy area covers a collection of individual policies that are all aimed at reducing the numbers of traffic related deaths and injuries.

Most European countries have explicit targets for road safety improvements. Success is defined as the achievement of these aims (in percentage terms within the project corridor) following the implementation of the project and failure is an increase in accident rates. Targets can be specified in one of two ways. Either a reduction in the absolute numbers of accidents can be defined or a reduction in the accident rate can be specified - as long as the targets are consistent with the project impact input data, there is no need for any change to the measure of performance specifications.

Deregulation, privatisation and liberalisation

The policies grouped under this heading are in many senses a very diverse set of policies. In the context of the measure of performance developed here, the broad aim is to expand the set of private sector opportunities in order to reduce the burden of transport projects on the public purse. It is, however, acknowledged that policies aimed at deregulation and liberalisation entail far more than the increased involvement of the private sector in project sponsorship and / or operation. In fact this policy, unlike the others, is mainly to be achieved through legislative or organisational changes. The argument employed here is that projects, in particular infrastructure projects, cannot be ‘designed’ to improve the degree of deregulation and liberalisation - the two terms are effectively end states insofar as something is either deregulated, partially deregulated or regulated - an alternative project design will not change this situation. The same is true of liberalisation policies.6

Following from the discussion above, the critical indicator for private sector participation in project design, construction, ownership and operation is essentially the financial return that the project will generate for the private sponsor - as measured by the Internal Rate of Return (IRR). The IRR in this context is the narrowest possible measure, insofar as it should consider only the direct project costs (construction, maintenance and operating cost changes) and revenues - no wider set of costs and benefits are considered in this private

6 Considering that legislative and/or organisational reform do not fall within the TENASSESS PAM scope, the use of one single measure of performance for all three policies is considered adequate given that what is really at issue is financial viability.
sector financial decision. A minimum IRR was specified as a benchmark against which to test projects. This benchmark (estimated at between 12% and 20%) is based upon the experience of Halcrow Fox in the field of private finance initiatives within the European Union and in other locations around the world. Given the potential funding support opportunities available from the European governmental institutions for strategic transport projects in Europe, we have adopted the lower end of this range as the benchmark for the TENASSESS PAM.

A project is, therefore, successful (+5) in the model if the IRR is greater than twice the specified minimum - in this instance, the +5 score is achieved at IRR’s of 24% or more. Failure (-5), in terms of private sector interest, is achieved at IRR’s of less than 12%.

The potential availability of public funds, in one form or another, tends to complicate this picture of private sector involvement in transport service / infrastructure provision. In order to address these issues a project IRR’s both with and without funding were prepared. The basic principle to be adopted has, however, been to report the IRR of the project in its own right - this approach has the benefit of clearly identifying a deficiency in this respect and focuses the attention of the decision maker on a potential problem if private finance is viewed as a critical aspect of the project’s case.

The adopted 12% benchmark value is intended to represent a default value which can, if required, be amended by the user to reflect local conditions and assumptions.

**Financial acceptance**

Whilst it is acknowledged that transport projects generally have wider benefits associated with them than those that are captured in a purely financial project appraisal, pressure on public finances throughout Europe are making financial project constraints a major issue in project assessment.

Concept such as public/private partnerships (PPP) from Commission policy and Private Finance Initiatives (PFI) as witnessed in the UK, tend to suggest that project design is already being affected by the desire / necessity to fund projects from purely private financial sources or via a mixture of public and private sector sources.
The measure of performance developed to assess the ‘financial acceptability’ of transport projects essentially addresses issues that are crucial if private finance is to be attracted in sufficient volumes to advance the scheme in this manner. It in effect expands upon the IRR assessment criterion discussed in preceding sections of this chapter.

Whilst not a substitute for a full financial acceptability study (cf. APAS, 1996), a measure of performance on a scale of -5 to +5 will give an insight into whether the project under assessment is liable to encounter significant problems in this area of project decision-making. Clearly, cut-off points are likely to be implied within the range used, indicating a finite ability to distinguish between similar options. Other assessment methods would provide a finer level of resolution, in conjunction with the TENASSESS PAM.

The measure of performance would ideally be constructed around the following areas of information: Project Net Present Value (NPV); Project Internal Rate of Return (IRR); Returns on Equity (ROE); Debt Service Coverage Ratio; Debt to Equity (Gearing) Ratio; Distribution of financial impacts; and Financial risk and uncertainty surrounding the project.

From the above, it is evident that the IRR criterion appears in more than one measure of performance – i.e. it is also used in the deregulation measure of performance. This does not necessarily present a problem for the proposed approach - as long as the measures of performance are understood and transparent, the user always has the option of weighting down individual policy areas.

**Public acceptance**

Whilst financial acceptability can be crucial to the advancement of a project, many financially and socio-economically sound projects can be delayed, modified or, indeed, abandoned through lack of public acceptance.

The decisions about large infrastructure project implementations is the task of politicians and of decision makers. ‘To decide’ means that all relevant parameters are considered. There are, on the one hand, more technical parameters - economic ones, geographic ones, network related ones, etc. - and there are more subjective ones, concerning life quality and needs of different population groups who are affected by the project or who are expected to use
the infrastructure project. The latter variables can be summarised under the head-line ‘acceptance aspects’.

Criteria for measuring acceptance are on the one hand technical data of the planned project (route, position of a new terminal, track, etc.). On the other hand, subjective aspects may become relevant. What level of acceptance does a planned project meet? What attitudes do different individuals or groups have towards planned new projects? Often different societal groups have different and sometimes contradictory interests. Often, political or community objectives are inconsistent with individual interests. Individual interests can aggregate to become group interests, and in this case they may become a political power.

As with issues surrounding project financial acceptability, a full analysis of public acceptability concerns lied outside the scope of the TENASSESS project. Having said this, a measure of performance (on a scale of -5 to +5) was constructed based on a series of sample questions that can give an early indication of the likelihood of problems in this area.

**Impact assessment**

In the TENASSESS PAM a Group Impact Framework (GIF) was designed to manage the measurement and prediction of impacts. The GIF summarises the impacts of projects, the groups on which they fall (from here onwards, this is termed ‘incidence groups’) and, most importantly, the techniques required to quantify them.

The framework distinguishes three major groupings of impacts:

- socio-economic impacts;
- public acceptance;
- finance.

Socio-economic impacts, in turn, include:

- investment/maintenance costs of infrastructure;
- economic costs;
?? safety;
?? quality;
?? employment;
?? environment;
?? regional planning; and
?? social impact.

Some of these impacts are said to be efficiency impacts, like the economic costs, safety and quality. Regional planning and social impact are regarded to be equitable, i.e. distribution between regions and incidence groups is of importance. Employment and environment have efficiency and distributive implications.

More generally, when considering possible impacts of infrastructure it is important to consider which groups are involved, as different groups may be afflicted or involved in different ways, and there also might be grounds for conflict between groups. The following incidence groups are distinguished:

?? Users; the users of the new infrastructure.
?? Operators; the potential service operators.
?? Providers; the potential (non-governmental) providers of the new infrastructure.
?? Non-users; persons that are not potential users of the new infrastructure, but are directly faced with the impacts of it.
?? Government and Society; the government is the granter of subsidies and a possible provider of infrastructure; society represents the tax payers and the bearer of externalities.

Below we outline how each of the main socio-economic impacts are measured by the TENASSESS PAM.

**Investment/maintenance costs of infrastructure**

The investment category is very important due to the fact that most of the other socio-economic impacts are connected with the investment sum. There is a trade-off between the invested sum in new infrastructure and the extent and
quality of other impacts. For example, by tunnelling part of a new railway near some populated areas the investment costs will be higher, but travel time may be lower because of less congestion; quality in terms of security or even ambience may be higher; environmental impact, in terms of noise pollution, land-loss and landscape value, may be very positive; public acceptance may improve. Besides the initial investment in infrastructure, its maintenance is an important issue. Maintenance ensures the extent and quality of impacts in the long term, and thus enables the long term effects.

The investment cost impact of an infrastructure project is directly related to the service operators and infrastructure providers. The infrastructure providers are affected, in economic terms, only by the investment sum.

The service operator is affected, in the economic sense, by the investment through the subsequent maintenance costs. The maintenance costs will be approached by life-cycle replacement costs. Life-cycle is defined as the period during which the whole (physical) infrastructure is replaced through yearly maintenance. The total life-cycle replacement costs are defined as the present value of all maintenance expenditures in the economic lifetime period.

The investment sum are known from project planning. The life-cycle replacement costs can be derived through relating the investment sum to the expected economic lifetime of the new infrastructure, and thus deriving a yearly percentage of investment costs as expected maintenance costs. As there will be no discounting, the present value of the maintenance expenditures equals its sum, and thus investment costs.

**Economic costs**

The economic costs are approached through travel time and user (operating) costs. This is a narrower definition of economic costs than is usually adopted in project appraisal. It does not include accidents and environmental damage – the latter are defined outside this category in order to more closely reflect the linkages of project impacts to policy objectives.

In traditional cost-benefit analysis travel time savings are generally one of the most important benefit components of an infrastructure project. In the TENASSESS PAM travel time is approached as a short term impact with potential long-term effects (for instance in employment levels or choice of house location). Main components of travel time are: off-vehicle time; access and
egress time; waiting time; transfer time and in-vehicle time (including congestion). The precise definition of total travel time thus depends on the characteristics of the trip: mode(s) involved; amount of segments (per mode); access and egress characteristics;

User costs can be defined as the operating costs for the user of the infrastructure, consisting of fixed costs, associated with (possible) ownership of the transport mode, and variable costs, associated with use of the transport mode. This classification already illustrates the mode dependency of user costs.

Safety

Safety is dependent on a large set of variables, but especially on traffic volume and speed behaviour. The general approach to safety in the TENASSESS PAM concentrates on traffic volume, additional attention is paid to speed behaviour.

Safety has relations to the users and the service operators of infrastructure. Users are directly affected by accidents. Service operators are affected directly and indirectly - directly when employees of the operating company are involved in accidents and indirectly when safety issues in general have repercussions on operator income through decreasing use of the infrastructure it operates. Given the strategic nature of the TENASSESS PAM assessment framework only the direct impacts are considered.

The measurement assesses the contribution of the new infrastructure or other transport initiative to policies concerning safety. Safety expressed in fatalities, injured and damage is considered to be linearly related to kilometre volumes (passenger kilometres with reference to vehicle kilometres and number of persons per car or tonne kilometres). The linear relationship applies within unchanged safety policies. Safety is also considered to be mode dependent.

Quality

Quality of infrastructure is another important component of mode choice in passenger and freight transport. Four elements of quality can be identified: comfort; reliability, security and ambience.
Comfort relates to passenger transport and says something about the convenience of the journey and the facilities available on board, entities that are expressed in qualitative terms.

Reliability, defined as the measure to which set time schedules are reached, is also an important quality aspect in both passenger and freight transport. Reliability obviously is closely related to congestion. There is evidence for high experienced reliability for short distance train trips, and lower for road trips, and for converging reliabilities across modes on longer distances.

Quality is directly dependent on the investment in infrastructure, thus within the framework there is a trade-off between, among others, quality which has an impact on users and investment which has an impact on service operators and infrastructure providers. The financial part of this trade-off is dealt with in the finance block – a higher quality specification for a project will be reflected in higher investment costs.

Security relates to both passenger and freight transport, and might be the most important of the three quality elements when it comes to mode choice. Security could be approached in a quantitative way, for example by defining the percentage of trips considered secure by passengers or freighters through interviews, or by measurement with accidents in relation to transport volume as a security indicator. To apply this approach on EU scale would require an enormous effort, especially because the framework must administrate changes. In the TENASSESS PAM a qualitative approach was instead taken.

A much more difficult entity to approach is ambience, but it certainly has to be reckoned with. One could describe ambience as being related to the image of a transport mode, a part of consumer’s perception of the infrastructure or mode which falls beyond comfort. It seems obvious that ambience is difficult to quantify, thus it also is approached in qualitative terms.

Concluding from the above, the three elements of quality identified above all are approached qualitatively. The impact of new infrastructure on quality can then for example be expressed in terms like: a positive (+) change in comfort; a very negative (--) change in ambience; a very positive change (++) in security; no quality change (Ø). Quality is approached qualitatively, and changes in quality are expressed as: very positive (++) or 5; positive (+) or 3; neutral (Ø) or 0; negative (-) or −3; very negative (--) or −5.
The change in quality as an impact of new infrastructure, must be scored on a scale as proposed above. This could be total quality or its three elements. If quality is measured for each of the three elements, the question remains how to aggregate to total quality change. The three elements are rather heterogeneous, leading to the conclusion that where possible they should be considered separately. It is difficult to hold that all elements are equally important, but it is impossible to attach objective and relevant weights to the elements on which to aggregate in all instances. The straightforward approach chosen is to consider all equally important, and thus, to attach equal weights to all three elements.

**Employment**

The employment impacts of new strategic infrastructure investments are potentially of utmost importance, as employment is a very dominant policy issue throughout Europe, at all policy levels. The paragraphs below document one possible approach to examining and measuring this impact. What follows may, therefore, be supplemented and amended if a more suitable (in terms of analysing observed policy objectives) method of analysis is deemed necessary.

The measurement of the employment impact of larger infrastructure projects is approached very pragmatically, through: mode specific investment ($i^M$); change in added value through the investment; and labour productivity changes.

In mathematical format the change in employment can be approached through:

\[
\begin{align*}
I^M & \quad added \ value \quad ? \quad employment \\
? & \quad ? \\
added \ value & \quad labour \ productivity \\
per \ ECU & \quad changes \\
\end{align*}
\]

Mode specific investment, through added value per invested EURO figures leads to total added value, and through the added value to changes in employment, taking into account labour productivity changes.

In terms of computing these project impacts a suitable regional economic model is required - the German BVWP provides some interesting examples of potential approaches to the forecasting of employment impacts. Depending
upon the focus of policy objectives, the forecast change in employment can include either the temporary increase in employment during construction or the projected longer term employment effects created by the accessibility enhancements conveyed by the project.

Environment

The environmental impact of new infrastructure has a variety of aspects, some of them connected with the infrastructure itself (land-loss; endangering of ecosystems; loss of perceived environmental value) and some with the accompanying (de/increase in) traffic volume.

The environmental impacts of new infrastructure which will be considered here are those related to traffic volume, primarily noise and air pollution.

Total noise due to traffic is a complex relation between road traffic for example, traffic intensity and composition, driving behaviour, average speed, structure of soil and type and amount of preventive measures. The impact of noise is also linked to the location of the new infrastructure, especially the proximity to housing areas.

A more pragmatic approach to noise would be:

\[ ? \text{ noise} = \sqrt[3]{\log (? \text{ vehicle kilometres})} \]

This takes into account that the relation between noise and vehicle kilometres is logarithmic, and that the diffusion is some third power function. Whilst not a replacement for a detailed project noise impact study, for the purposes of the assessment being performed by the TENASSESS PAM, it is probably sufficiently robust to give an initial indication of a scheme’s impact in this area.

Air pollution, expressed as emissions of pollutants, depends primarily on driving behaviour, and thus amount of cold starts, average speed, speed changes, congestion, type, age and technical condition of car, type of fuel, type and amount of preventive measures. In the TENASSESS PAM only CO\(_2\) and SO\(_2\) emissions are considered although other strategic indicators can be incorporated later if deemed important.
For other modes, estimates based upon energy / fuel consumption apply in manner akin to that described above.

Integrating all the factors that are necessary to accurately determine changes in environmental impact goes far beyond the actual ambition level of the TENASSESS PAM assessment framework. At a more pragmatic strategic level, it can be assumed noise and air pollution in all events increase with traffic volume.

There is a variety of very complicated models for assessment of noise and air pollution, especially concerning their dispersion. Alongside these models, various more pragmatic approaches have been developed to assess the impact of noise and air pollution, like: decrease in land/house value in near proximity infrastructure; costs of preventive measures; percentage of inhabitants exposed to noise levels in excess of some defined limit; noise contours, number of affected people within several defined noise-classes.

Within the TENASSESS PAM noise and air pollution are directly related to traffic volume through key figures based on mode/trip characteristics and traffic composition relevant for the actual scale of analysis. Besides this, modal split changes are taken explicitly into account, as the pollution levels may differ enormously between modes.

**Regional planning**

In the TENASSES PAM regional planning impacts of new larger infrastructure projects are considered in a qualitative manner.

The general impact of infrastructure on regional aspects is strongly connected to the concept of accessibility. New infrastructure is assumed to improve accessibility to opportunities for all segments in society, for example accessibility of: regions (and people) in general; labour markets and employment opportunities; potential markets for goods (consumers) and supplies.

Thus the regional impact depends on measures of accessibility, aspects to be taken into account would be for example: size of output markets; size of input markets; interregional distances; cost of labour; availability of labour; urbanisation; regional policy.
Regional planning impacts of infrastructure projects are considered to be: long term; distributive in nature; and related to land-use factors. Short term impacts lead to changes in factor costs and these changes induce the long term impacts like regional development.

New infrastructure, when assuming that it improves accessibility, increases the radius within which the interaction between for example working and living, producing and selling takes place. Through this increase the relative attractiveness of areas will change, and people or firms might choose to relocate housing, working, producing or selling.

Potential regional development is approached qualitatively, and changes in development will be expressed as: very positive (+++) or 5; positive (+) or 3; neutral or 0; negative (-) or –3; very negative (---) or –5

Various methods and approaches are available for assessing some of the elements of regional development. For example the change in attractiveness of a region for firm establishment can be approximated through the change in land price of business areas in that region. The same approach could be applied to housing areas.

In the TENASSESS PAM the method for measurement is very pragmatic and straight-forward. Based on changes in projected GDP growth per region and expert opinion on overall regional development, the impact of the infrastructure will be scored in accordance with the scheme above.

**Social impact**

The social impact of infrastructure is, comparable to regional development, closely related to the concept of accessibility. The accessibility of and within regions is a prime condition for social integration.

Different social impacts can be identified: social cohesion; European integration; income distribution; integration of minorities.

Social cohesion is about integration between social groups within regions. European integration deals with the cohesion or integration between regions or countries. Income distribution and minority (e.g. ethnic, disadvantaged) issues
can be seen as special cases of social cohesion, but are mentioned apart because they are often addressed in special policy objectives.

Social impact will be approached qualitatively, and changes will be expressed as being: very positive (++) or 5; positive (+) or 3; neutral or 0; negative (−) or −3; very negative (−−) or −5.

The assessment of social impact changes includes all four integration elements specified above.

Usually social cohesion is measured through income distribution, the impact of a project through changes in the distribution. This is a useful approach and GDP per capita changes can be estimated at the regional level.

European policies also aim at social integration between regions. This integration could be approached through changes in the number of interregional job occupation.

A similar approach can be applied to the integration of minorities, by assessing the impact of a project on the number and quality of jobs occupied by policy target groups.

The combination of these impacts implies a qualitative scoring mechanism. By their very nature, many of these impacts will be specific to individual projects and a detailed analysis of the potential social impacts will be required. Even at the EU level, many social impacts will only be relevant for projects in certain geographic areas.

**Public acceptance**

Public acceptance was conceptualised following the theoretical principles outlined in chapter 5 of this report. For the purpose of impact assessment attention was focused on acceptance as relating to non-user and user-groups. To reiterate what was discussed in detail in chapter 5: The probability of reactance (= lack of acceptance and preparedness for resistance) is especially high among non-user groups that have no direct advantages to expect from a certain project and who feel either misinformed or not adequately informed. With reference to users, in order to ensure a successful implementation of a project and to guarantee the use of it, reasons for making, or not making use of
services offered have to be detected. If the project does not meet the interests of the target groups, use and returns will be lower than expected and public budgets will be strained.

Acceptance cannot be measured directly. To get an idea of the actual acceptance situation acceptance studies are necessary that critically examine the project technical characteristics in relation to the interests of target groups, but also the attitudes of non-users. Detailed acceptance studies involve surveys and survey data analysis next to the expert assessment of the technical characteristics of any project. Less detailed acceptance studies can rely on expert interviews and/or focus group discussions.

Based on the outcome of such studies it is possible to assess the degree and scope of public acceptance and to measure it on a scale.

**Financial acceptance**

Three aspects of financial acceptance have been identified: an assessment of financial viability; an analysis of the distribution of financial benefits; and an assessment of risk. These are summarised below.

*Financial Viability.* An investment should yield a stream of returns over future periods. Whether a project is financially viable depends upon these cumulated financial receipts. The Net Present Value (NPV) of a project is one measure of financial feasibility. If the Net Present Value of a project is positive, then it is financially viable, otherwise it is not.

The Internal Rate of Return (IRR) of a project is the discount rate \(r^*\) at which its Net Present Value equals zero.

The Return on Equity (ROE) is the likely return offered by a project to shareholders in a venture. Such returns are in the form of the potential flow of dividends that such shareholders are likely to benefit from. Given that shareholders provide equity for the implementation of a project, the magnitude and probability of a sufficient return must compare favourably with alternative investments for the providers of these inputs of finance. If a project does not look attractive enough to potential shareholders, then it is unlikely that it will attract the finance for it to be implemented.
The Debt Service Coverage Ratio is the ratio of the cash-flows available every year from the project to service debts incurred in implementing a project, to the sum of the annual debt repayment and interest charges. This ratio therefore shows the ability of the annual cash flows generated by a project to service the debts incurred by it. As a measure of the security offered to lenders, the Debt Service Coverage Ratio is also an indicator of a project’s financial viability.

The Debt to Equity Ratio is the ratio of the sum of outstanding long-term debts, to the equity at the end of each year. This is a measure of the attractiveness to lenders in terms of security. A low ratio indicates that equity financing is important relative to debt, revealing that project sponsors are highly committed to a particular project. However, a higher emphasis on equity financing means that more cash-flows have to be distributed to shareholders when dividends are to be paid, or that available cash-flows must be spread over more shareholders.

The distribution of financial impacts among various groups and stakeholders can, under certain circumstances, dictate the overall viability of a project - irrespective of the economic or financial returns. This 'equity' effect is becoming increasingly relevant as private sector participation within project design, promotion and funding grows. In short, some projects require that all key stakeholders benefit to a certain extent if they are to proceed.

The need for financial equity within a project largely reflects the possibility that schemes may be blocked where key stakeholders are likely to lose financially. In this sense, financial equity is a project constraint - a condition which must be overcome if the scheme is to proceed. Ideally, successful projects should seek to optimise this impact by ensuring that financial benefits are spread widely amongst all key parties.

Key tasks in the determination of financial equity are as follows: a) identification of the affected parties; b) classification - as to whether each party is a potential 'promoter' or 'constraint'; c) measure of financial performance - specification of how the financial impact upon each party is to be defined; d) prediction - forecasting of the scale of impact upon each party.

Identification requires that all potential stakeholders in the project be identified. These are likely to include the potential operator(s), financiers, planning authorities and developers. Classification requires that stakeholders be separated out into those most likely to promote the project (operators, financiers); and those who impose constraints - conditions which must not be violated (planning authorities, competitors).
The recommended measures of financial performance are: in terms of costs, the revenue ratio (discounted at a nominal rate, say 10%, for each party) – a simple measure of profitability; the rate of return by stakeholder (i.e.: return on stakeholders investment); and a description of other, intangible, impacts (publicity, effects on related interests, etc.). Prediction requires that the above performance measures are forecast over the life of the project.

Finally, the results of the analysis must be interpreted and presented in order to assess the overall level of financial ‘fairness’ of the project. The most straightforward summary measure is the threshold percentage net gainers from the project, where a score of 100% indicates that all stakeholders benefit to some extent; and 0% indicates that no party gains. A more sophisticated system allows particular parties to be weighted.

Financial Risk in Strategic Transport Projects. Risk and uncertainty are major constraints upon the successful implementation of projects. The long-term nature of transport projects, through both a long construction phase when revenue is not being generated, to long pay-back periods for project finance, both serve to introduce elements of risk and uncertainty.

Traffic forecasts produced from transport models that are used to predict likely usage of potential transport projects are based on numerous assumptions and predictions regarding future economic and policy developments. Any variation in one or more of these assumptions or predictions is likely to alter the forecasts and consequently the viability of the project. Variations may concern any one of a number of factors including different rates of economic growth, different levels and mix of land use activity and different assumptions regarding the availability of competing transport schemes, to name just a few.

If the future could be predicted with absolute certainty, it would be possible to define traffic levels associated with particular socio-economic or development scenarios at specific points in time, thus providing an accurate picture of potential revenues at all points in time in the future. As this is clearly not the case, even with the best estimates of future travel patterns, based on sophisticated land use and transport modelling techniques, the future cannot be predicted with certainty.

As uncertainty cannot be avoided in project assessment, decisions can be greatly informed by quantifying risk, in order to identify a range in which the ‘most likely’ traffic levels will fall. Risk analysis essentially builds a range of uncertainty around some central set traffic (and revenue) forecasts, in order to assess the likely levels of risk that will be associated with a particular project.
These procedures take into account a number of causes of traffic level variation and, for specified years in the future, produce a probability distribution which indicates the complete range of possible outcomes and the level of uncertainty associated with this.

The results of a risk analysis are used to design risk management measures within a project. These include setting the IRR or ROE to reflect levels of risk, or changes to the project design. The greatest source of risk and uncertainty generally concerns revenue projections, and allowance for risk therefore focuses on the revenue side of projects.

**Weighting systems**

Weights allow decision-makers to express preferences and values within the analysis outlined above. They also enable the sensitivity of the results to changes in the scoring system to be assessed, or to changes in the perceived importance of different objectives.

Weights are used to multiply the scores (performance measures) allocated to each policy area or set of policy objectives within the TENASSESS PAM. They are, essentially, a measure of importance. Hence, the score (+5 to -5) indicates the extent to which a policy objective is furthered or constrained by a particular project, as estimated by the measure of performance; the weight indicates the importance of the policy objective. The product of these two factors indicates the value score for that particular performance measure. This value score is carried forward to the final interpretation stage.

The concept of ‘the importance of policies’ can be applied in several ways:

- importance of one or more specific policy areas (environment, safety, etc.);
- importance of a particular Member State’s policies (Germany, Finland, etc.);
- importance of policies at a particular level of the hierarchy (local, regional, national, EU).

The single, over-riding principle governing the design of a weighting system is that it be transparent. In particular, that the application of weights be visible for all to inspect and question, and that it be open to audit.
The proposed weighting system is based upon the above concept of ‘importance of policies’. Three parts to the system are proposed, concerning specific policy areas; policies of particular States; and policies at particular hierarchical levels.

Weights are applied by the decision-maker. The default weight will accord the same level of importance to all policies and between different levels in the decision-making hierarchy.

The process for applying weights is a manual addition to the processes of the model. The procedures are relatively simple to undertake and can be quickly implemented. Hence, sensitivity tests can be undertaken with relative ease by varying weights.

The weighting system adopted so far comprises a decimal scale of 0.0 to 3.0. This could be re-specified as a percentage scale, though this would create considerably larger scores for which there does not seem to be any particular advantage.

It should be stressed at this point that the adoption of a scoring system from -5 to +5 and a weighting system of 0 to 3 is only one way of expressing the output. The scoring scale corresponds broadly with commonly used ranking system such as ‘very dissatisfied’, ‘dissatisfied’, ‘indifferent’, ‘satisfied’ and ‘very satisfied’. The weighting system has the advantage of keeping the resultant numbers to a small overall size and also allows for an irrelevant policy coupled with negligible project impact to score zero in the model. It also allows the number ‘1’ to be the unweighted scores, as multiplying score by one reproduces the score.

The scores signify the following:

0.0 - no importance attached to the policy. This will result in a score of zero attached to the policies in question.
3.0 - very high importance attached to the policy, which is accorded maximum importance in the analysis.
2.0 - moderate importance attached to the policy.
1.0 - the default weight.
If no weights are applied, a default weight of 1.0 is given across all policies and also between different levels in the hierarchy and between different geographic bodies.

The weights specified in the model are then applied to the project ‘scores’ in the following manner.

In order to facilitate comparison between the base (unweighted) scores and the alternative policy scenarios and sensitivity tests, the concept of a ‘standardised score’ has been adopted. The standardised score is basically the raw score (i.e. between +5 and -5) that is produced by the measure of performance, multiplied by the default weight of ‘one’ divided by the number of policy areas.

If a project scores +5 against a particular policy objective and there are 15 different policy objectives, the standardised score would be 1/15 * 5 or 0.33. What this process does is merely factors all the raw scores by the same number to produce an identical distribution - i.e. the relative magnitude of the scores are unchanged, although the resultant number is different.

The reason for undertaking this intermediate step is merely to allow subsequent differential weighting systems to be compared to the base (unweighted) result.

This weighting system allows the user of the spreadsheet to apply different levels of emphasis to certain policy areas without the need to go through a lengthy series of pairwise comparisons. For example, if a particular policy objective was deemed to be twice as important as all the others, applying a weight of two rather than one would produce a standardised score of 2/16 * 5 = 0.625, with all other objectives have a score of 1/16 * score. In other words, the denominator is always the sum of the individual weights.

If one policy area is of utmost importance, the decision-maker can place a higher weight on it (in the system adopted here, this would be +3.0) leaving all other policy areas at the default weight. In the example quoted above, a score of +5 would become 3/17 * 5 = 0.88 whereas all other scores would become 1/17 * score. In other words, the ‘important’ policy becomes a large number and the ‘less important’ policy areas become smaller numbers.

Whilst the distribution of the policy scores is the most informative type of exercise when using a tool such as the Policy Assessment Model, the summed weighted scores can, in themselves, provide interesting insights into how the
relative importance of different policies can aid the identification of politically robust projects. This type of analysis is of particular benefit when the tool is being used to screen a large number of projects.

In general, high weights placed on negative individual scores tend to make negative overall scores more negative and positive ones less positive. The reverse is true of high weights on positive scores. Whilst this process at it’s simplest level is a trivial exercise, it becomes a powerful analysis tool when used to test individual policy weights within a complex set of policy objectives. It also highlights the benefits of adopting a simple standardised weighting system such as the one outline above, insofar as the summed scores are internally consistent.

**Background data**

The final component of the TENASSESS PAM is the background data that has been collected as part of the model development phases.

Such information is required if the model is to be dynamic in its structure:

- projects may not reach completion until several years in the future;
- policy is often expressed as ‘reaching a certain level by a certain date’; and
- historic background data is required in order to operationalise several of the measures of performance described in an earlier section.

A wide variety of historic and forecast data has been collected from a variety of sources (although EUROSTAT data has been the single largest source). Where necessary, this data has been extrapolated (linearly in the absence of more robust estimates) to 2010.
Examples

Measures of performance

In order to fully understand the process involved in deriving a measure of performance that operationalises a policy objective, the following example from the IC5/IC25 Portuguese case study is presented.

The accident rates on the Portuguese road network is currently one of the worst in Europe. A policy target of the Portuguese government is, therefore to reduce the accident rate per $10^6$ veh x Km on the road network (national) - obtaining a decrease of 24% between 1995 and year 2000;

Most of the accidents observed occur on the existing network, so new motorway schemes, with their grade separated junctions and segregated carriageways are expected to deliver reductions way in excess of the 24% overall target, as accident rates on existing roads will continue to be relatively high.

Successful achievement (+5) has, therefore, been defined as a project achieving a decrease of the rate of accidents greater then twice the average decrease planned ($2 \times 24\% = 48\%$) in the corridor that it serves. Failures has been defined as a decrease smaller (twice as small, at least) then the average.

The **measure of performance** is, therefore, defined as:

\[
\text{Formula: score} = \begin{cases} 
-5 & \text{(if } x = 0.5) \\
10 \times x - 10 & \text{(if } 1 = x > 0.5) \\
5 \times x - 5 & \text{(if } 2 = x > 1) \\
5 & \text{(if } x > 2) 
\end{cases}
\]

\text{decrease of the rate of accidents in the project’s corridor} \\
\text{Average decrease planned in the network (1995 / 2000)}

This formulation is basically saying that if “x”, which is the ratio of the project induced decrease in accident rates to the average target reduction in the accident rate, is equal to 2 or more (i.e. project rate = 2 * accident rate) then a score of +5 is recorded. If the ratio lies between 1 and 2, a positive score between 0 and 5 is recorded. If the ratio lies between 0.5 and 1 (i.e. below the average), a negative score between -5 and 0 is reported. If the ratio is less than
0.5 (i.e. the project reduces the accident rate by less than half the average target), a score of -5 is recorded.

To operationalise this measure of performance, the *minimum inputs* are:

?? rate of accidents (*in Portugal*) per type of road;
?? average decrease planned for the network (1995/2000);
?? distribution of the traffic per type of road, in the projects corridor (*before and after the construction of the project*).

The project *impacts* and *background data* identified are as follows:

?? estimates of temporal changes in accident rates stemming from improved vehicle design - i.e. improved technologies on their own will improve safety towards the targets;
?? traffic distribution (by road type) in study corridor before and after introduction of IC5/IC25 motorway, including induced traffic;

This information is then used to produce the following estimates:

\[
\begin{align*}
X_1 & \text{- accidents in corridor before project (1995) = } 4.21 / \text{day}; \\
X_2 & \text{- accidents in corridor after project (2000), redistribution only = } 3.49 / \text{day for Scenario A and 3.47 / day for Scenario B}; \\
X_3 & \text{- accidents due to induced traffic (2000) = } 0.07 / \text{day for Scenario A and 0.08 for Scenario B}.
\end{align*}
\]

These changes translate into the following accident reduction rates in the corridor over the period 1995-2000:

Scenario A = 15.98%
Scenario B = 16.35%
Target reduction rate = 24%

The ratio of the actual forecast reduction to the planned reduction gives the scores for the project: -3.34 for Scenario A and -3.19 for Scenario B.
These results show that, whilst the IC5/IC25 does bring about significant reductions in accidents, the figures achieved do not perform well against the benchmark target - hence the negative scores.

Application of weightings

The following example (table 8.1) uses results from the Decin-Praha-Breclav Rail Upgrade in the Czech Republic. It demonstrates the transition from raw scores to weighted scores and more aggregated results. In each case the project is assessed from the perspectives of three key national states: the Czech Republic, Austria and Germany.

The raw scores are those derived from measures of performance. In several cases they are the same for the three national states. The final row is the sum of these scores for which a weighting has been applied. In this case the sum has been divided by 60 = 12 policy areas multiplied by a maximum score of 5, so ensuring that the overall score is within the range -1 to +1. The raw scores indicate that the Czech Republic should not be in favour of the project, but the other two states should be. However the scores take no account of the states policy priorities.

Some test weighting are shown, which seek to reflect policy priorities. All three countries give policy areas of 'accessibility and regional development' and 'harmonisation and common market' high priority. The weighted scores are the product of the raw score and the test weight, factored so that the test weights do not effect the absolute size, just the size relative to the unweighted score and scores for other policy areas.

For example the 'raw scores' implicitly have weights of one for each policy area, and the sum of the weights is 12, because there are 12 policy areas. The sum of the weights for the Czech Republic are 13.5. Therefore the weighted scores of the Czech Republic are factored by 12/13.5, so that the raw and weighted scores are comparable. Therefore the weighted score for the Czech Republic for the Environment policy area is -4.4. This is the product of -3.3 and 1.5 and 12 and 1/13.5.
Table 8.1. PAM Example of Scores and Weightings – Czech Rail Upgrade

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Raw Score Czech Republic</th>
<th>Raw Score Austria</th>
<th>Raw Score Germany</th>
<th>Weights Czech Republic</th>
<th>Weights Austria</th>
<th>Weights Germany</th>
<th>Weighted Score Czech Republic</th>
<th>Weighted Score Austria</th>
<th>Weighted Score Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-3.3</td>
<td>-1.9</td>
<td>-2.2</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>-4.4</td>
<td>-1.6</td>
<td>-1.8</td>
</tr>
<tr>
<td>Fair &amp; Efficient Pricing</td>
<td>0.19</td>
<td>0.1</td>
<td>0.1</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Improve Transport</td>
<td>5</td>
<td>0.9</td>
<td>1.1</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td>Accessibility &amp; Regional Development</td>
<td>-0.9</td>
<td>-0.9</td>
<td>-0.8</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>-2.3</td>
<td>-1.5</td>
<td>-1.3</td>
</tr>
<tr>
<td>Harmonisation &amp; Common Market</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>13.3</td>
<td>8.6</td>
<td>8.6</td>
</tr>
<tr>
<td>Traffic Avoidance</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
<td>-4.3</td>
<td>-4.3</td>
</tr>
<tr>
<td>Reduce “price” of transport</td>
<td>-0.7</td>
<td>5</td>
<td>5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>-0.9</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Restrict road transport</td>
<td>3.3</td>
<td>3.3</td>
<td>3.3</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Improve Safety</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deregulation, privatisation &amp; liberalisation</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>-6.7</td>
<td>-4.3</td>
<td>-4.3</td>
</tr>
<tr>
<td>Financial acceptability</td>
<td>-5</td>
<td>0</td>
<td>0</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>-6.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Public acceptability</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>5.3</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Overall Score</td>
<td>-0.04</td>
<td>+0.11</td>
<td>+0.11</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-0.04</td>
<td>+0.15</td>
<td>+0.15</td>
</tr>
</tbody>
</table>
Testing and refinement through case studies

General

Six case studies were undertaken as part of the testing and refinement of the TENASSESS PAM. The projects were as follows.

- IC5 / IC25 motorway, Portugal;
- Igoumenitsa - Volos / Lamia motorway, Greece;
- TGV Nord High Speed Railway, France;
- Decin-Prague-Breclav Rail Corridor Upgrade, Czech Republic;
- Twente-Mittelland Kanal, Germany; and
- Amsterdam Ring Road, The Netherlands

A summary of these case studies can be read in Annex II of this report. The selection of these projects was driven by several factors:

- adequate modal coverage in the context of Trans-European Transport Networks;
- adequate geographic coverage to reflect projects in all areas of the Community;
- adequate demonstration of the functioning of the Policy Assessment Model;
- the ability to assess the impacts of projects at various stages of the planning process, ranging from early feasibility stage right through to ex-post project appraisal;
- a degree of compatibility and overlap with the other case studies undertaken in the framework of TENASSESS;
- adequate coverage of a wide range of policy issues as identified in previous work within the TENASSESS project, namely, that relating to the overview of national and European transport policies; and
- coverage of Trans-European Transport Network scale projects that also address issues of pricing and regulation.

Whilst the six case studies undertaken within TENASSESS do not represent a comprehensive range of projects, the selection process has ensured that they
address a wide range of issues of relevance to strategic transportation projects in Europe.

**An example – TGV Nord**

This section focuses on the TGV Nord High Speed Rail project in northern France, completed in 1993 as an example of the use of the TENASSESS PAM. The available data allows both an ex-post and ex-ante assessment of the project within the context of the Policy Assessment Model.

Ex-ante and ex-post evaluations, comparing an evaluation of the chosen scenario, undertaken by SNCF in 1987, and the actual impacts of TGV Nord, obtained from appropriate authorities were studied. Alignment alternative evaluations, comparing four of the different route options examined in an influential document known as the ‘Rudeau Report’.

All evaluations were based on an important hypothesis adopted by SNCF and the ‘Rudeau’ reports of 1987. This hypothesis considers that the impact of TGV Nord should be examined against the scenario where the Channel Tunnel is operational with through services running between the UK and Northern Europe, employing existing, but upgraded infrastructure and new, but lower specification rolling stock.

The TGV Nord links Paris (pop 8 million) with Lille (pop 1 million), Calais and the Channel Tunnel. The line was opened to passengers in 1993, at a cost of Ff. 18.5 billion, (approximately 3 billion ECU - 1993 values), funded by both National and Regional Governments. The rail link is the third ‘Ligne à Grande Vitesse’ (LGV) to be constructed in France, after TGV Sud-Est (Paris-Lyon, serving the Alps and the Mediterranean ) and TGV Atlantique (Paris-Le Mans, serving Bordeaux and Nantes).

**National Context**

The TGV Nord is 333 Kilometres in length, with seamless new infrastructure extending from the outskirts of Paris, through the centre of Lille, and through to Calais and the Channel Tunnel. Between Paris and Lille, a LGV spur extends from the mainline to connect the town of Arras and the larger towns of Lens and Béthune via the existing network. A large part of the new line, between Paris and Lille, parallels the existing A1 autoroute. Dedicated new TGV stations have been constructed at Gare Picard (a park-and-ride station on the A1 autoroute,
mid-point between Paris and Lille, serving the region of Picardie), Euralille (a new station, also acting as a key interchange node for other European high-speed services and national TGV services) and Calais Fréthun.

Similar to the previous two TGV projects, the TGV Nord is a dedicated high-speed-railway, (i.e. only TGV services operate along its length) permitting a consistent operating speed of 300 kph and allowing a consequentially high service frequency. Significant time savings can be made compared to services provided by the conventional railway network, as shown in Table 8.2, below.

Regional Connectivity

The TGV Nord not only benefits those towns served by a new TGV station, but also connects other towns in the Pas-de-Calais region, employing links between the LGV and the conventional network. In this manner, the towns of Lens, Béthune and Hazebrouck, are served by direct TGV services to Paris, connecting to the LGV south of Arras. Similarly, Douai, Valenciennes, Dunkerque and Tourcoing are served directly. Most of these towns have population catchments of between 200,000 and 400,000. However, some of these towns are served with only a few direct TGV services per day, therefore, benefits are arguably more psychological than economic and have been provided for complex political objectives.

Furthermore, a new high-speed-rail ‘Paris-bypass,’ connects the TGV Nord to the TGV Sud-Est and TGV Atlantique, with new TGV stations at Disneyland Paris and Roissy-Charles de Gaulle Airport. This link permits TGV services from Lille and beyond to Nantes, Bordeaux, Lyon and Marseille.

Table 8.2: Travel Time Savings, National Context

<table>
<thead>
<tr>
<th>Link</th>
<th>Before TGV Nord</th>
<th>After TGV Nord</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris – Lille</td>
<td>1h59</td>
<td>1h00</td>
</tr>
<tr>
<td>Paris – Arras</td>
<td>1h25</td>
<td>0h50</td>
</tr>
<tr>
<td>Paris – Calais</td>
<td>2h48</td>
<td>1h45</td>
</tr>
<tr>
<td>Lille - Roissy Charles de</td>
<td>2h30 minimum,</td>
<td>0h53</td>
</tr>
<tr>
<td>Gaulle Airport *</td>
<td>of Paris</td>
<td></td>
</tr>
<tr>
<td>Lille - Lyon*</td>
<td>4h23</td>
<td>2h53</td>
</tr>
</tbody>
</table>

* Via TGV ‘Paris Bypass’
European Context

The decision to build the TGV Nord was spawned largely on the back of the decision to build a fixed rail link between the UK and mainland Europe. However, the TGV Nord also provides a crucial first step towards creating what was historically known as 'PKAB' (Paris, Köln, Amsterdam, Bruxelles) and later 'PKABL'. In this respect the TGV Nord represents the first true TEN rail project which will significantly promote transit between member states.

Travel time savings between Paris and London and Paris and Bruxelles allow international services to compete effectively with the airlines. The section between Lille and the Channel Tunnel is also employed by London - Bruxelles Eurostar services. Furthermore, as has been seen by the effect Eurostar, fierce inter-modal competition, in the absence of a truly de-regulated airline environment, has helped to significantly reduce average fares.

Completion of the Belgian LGV between Lille and Bruxelles (to open 1998), and the British Channel Tunnel Rail Link (to open 2002) will reduce trans-state travel times even further. Dedicated high-speed-rail links between Bruxelles and Amsterdam and Köln are planned to be complete early in the next century. However, TGV services now operate between Paris and Amsterdam, via Bruxelles, employing the TGV Nord. Table 8.3, below demonstrates the international travel time savings between principal European Cities, comparing the base case without TGV Nord, the inauguration of TGV Nord, and the completion of the PKABL network.

Table 8.3: Travel Time Savings, European Context

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paris - London</td>
<td>5h12</td>
<td>3h00</td>
<td>2h30 *</td>
</tr>
<tr>
<td>Paris - Bruxelles</td>
<td>2h25</td>
<td>1h58</td>
<td>1h20 **</td>
</tr>
<tr>
<td>Paris - Amsterdam</td>
<td>5h23</td>
<td>4h46</td>
<td>2h50</td>
</tr>
<tr>
<td>Paris - Köln</td>
<td>5h00</td>
<td>5h00</td>
<td>3h05</td>
</tr>
<tr>
<td>Bruxelles - London</td>
<td>4h59</td>
<td>3h15</td>
<td>2h30 / 2h00 ***</td>
</tr>
</tbody>
</table>

All are fastest times

* 2002, after opening of British Channel Tunnel Rail Link
** 1998, after opening of Belgian LGV
***1998, 2h30 after opening of Belgian LGV, 2002, 2h00 after opening of British Channel Tunnel Rail Link
Significant ‘generalised time’ benefits also accrue from the provision of such high-speed-rail services, relative to the air alternative. The components of such benefits include relatively less onerous access, egress and ‘at-terminal-time’ components, improved quality of ‘in-vehicle-time’, and a significant enhancement of total ‘air + rail’ capacity. Where high-speed-rail services are provided on routes with limited airline competition, airline fares are likely to fall.

**Decision Making Process**

The decision making process, leading from the project’s conception, the examination of alternative options, through to the determination of the chosen alignment involved significant conflicts and motives which are invaluable to the study of TGV Nord in this context. The project was subject to political interest within the French National government, other nearby European nations and, significantly, in the two northern French regions of Picardie and Pas-de-Calais.

During the process leading to the start of construction, several alignment alternatives were examined, leading to significant national and regional political interactions. Primarily, four route options were identified:

- **Route option ‘A’**: Western alignment, via Amiens, splitting south of Béthune, providing thereof, two separate alignments, on towards the Channel Tunnel the other towards Euralille (the central Lille station).
- **Scenario ‘A’**: Alternative western alignment, via both Amiens and Euralille, without split alignments.
- **Scenario ‘B’**: (chosen route option) Central TGV alignment, paralleling the A1 motorway corridor, via Euralille, and incorporating spur to Arras.
- **Scenario ‘C’**: Eastern Alignment via St. Quentin and Euralille.

There were other alignments based on the above route options. Route options ‘B’ and ‘C’ were studied with alignments via Roissy Charles-de-Gaulle airport. Initially, route option ‘B’ was studied with three alternative approaches to Lille.

The ‘Sud de Lille’ option, where Paris-London services split from the main TGV Nord North-South Axis at Arras, with a direct alignment towards Bruxelles, bypassing Lille to the East. Lille bound services would be obliged to use the traditional network, using the existing ‘Lille Flandres’ station. This option would form a ‘triangle’ of new infrastructure to the south-west of Lille.
The ‘Plaine de Flandres’ option, without a split in infrastructure at Arras, but with the Bruxelles and London bound infrastructures splitting to the south of Lille. Again, Lille bound services would be obliged to use the traditional network, using the existing ‘Lille Flandres’ station.

The ‘Plaine de Flandres’ (chosen) option, but with the new infrastructure passing through the centre of Lille, and TGV services using a new dedicated station at Lille.

The Influence of the City of Lille

The city of Lille sought to ensure that the TGV Nord alignment would pass directly through the centre of Lille, involving the construction of a new, dedicated TGV station in proximity to, in their opinion, an area of immense development potential. SNCF and the national government did not initially support the provision of a central station and TGV alignment through Lille. This was due to significant civil engineering constraints, imposing high costs onto the project. Furthermore, it was anticipated that a 10 minute delay would be imposed on Paris-London traffic, significantly affecting revenues.

The decision to allow TGV Nord to pass through the centre of Lille, was therefore governed by negotiations between SNCF and the regional government. It was agreed that all additional infrastructure costs above those required to link the Channel Tunnel and Brussels should be paid for by the regional government of Pas-de-Calais. A significant proportion of these costs were incurred by tunnelling through Lille, and the provision of Euralille station, rather than bypassing the centre of Lille and having TGV's terminating at the existing Lille Flandres station. The excess cost of approximately 1 Billion Francs was divided between the French state, the region and the city of Lille itself. The region was not liable for the loss of revenue incurred by the 10 minute increased journey time between Paris and London.

‘Irrigation’ of TGV Nord Services in the Pas-de-Calais Region

In order to provide regional political consensus towards the expenditure of a direct alignment through the centre of Lille, it was proposed that through TGV Nord services would be provided to smaller towns such as Dunkerque, and Valenciennes. The region was also accountable for the provision of these largely non-economic services.
Irrigation of services serves to benefit the whole region, therefore, the region was amenable to contributing capital towards infrastructure through the centre of Lille. Although such irrigating services are not economic, they provided consensus to the whole region, enabling inter-regional harmony, supporting the Euralille project, which, it has been suggested, provides considerable economic benefit to the Lille conurbation. Without the direct TGV services to smaller towns in the region, Euralille may not have been supported within the region, creating a loss of economic potential to the city of Lille.

**Final Route Alignment Choice: Conflicts between the Pas-de-Calais and Picardie Regions**

Following negotiations with SNCF, it was decided that Lille would be provided with a TGV Nord alignment through the centre of the town. However, further studies (notably the Rudeau Report) centred on the choice between alignments `A', `A'' B and C, with alignments A and C benefiting the region of Picardie.

No regional consensus was evident in the efforts Picardie undertook towards ensuring that the TGV Nord alignment traversed the region. Internal regional conflicts between the Picardie towns of St. Quentin (which would be served by the eastern alignment proposal `C') and Amiens (which would be served by the western alignment proposal `A') rendered such interregional harmony impossible. Combined with the aim of the central government to maximise the regional acceptability of the project, such conflicts damaged the prospects of the Picardie region towards ensuring either of alignments `A' or `C'. Trade-offs are therefore manifest on both regional and national political levels between regional development objectives and regional equality.

Following the `Rudeau Report', the decision was made to construct TGV Nord along route option `B'. This was identified as the most economic option (aside from regional politics), involving a direct alignment to Lille, with infrastructure provided parallel to the A1 motorway corridor.

**Concessions and Compensation**

As a small token to the region of Picardie, a regional TGV Nord station was provided mid-point between Paris and Lille along the A1 motorway. This was provided as a Park-and-Ride station, serving towns without a TGV service. Amiens was assured that further studies would be undertaken to explore the future possibility of a second TGV Nord alignment via the city.
Following the commencement of TGV Nord services, many national and international services which had previously passed through towns in the region of Picardie would no longer be provided. In order to minimise any further conflict between the Picardie region and the central Government, it was agreed that the original service frequency along the traditional network would be maintained.

Summary Findings

The TGV Nord case study provides an interesting test of the TENASSESS PAM in terms of appraising an ex-ante and ex-post set of project data, together with different ex-ante route alignment forecasts.

Additional ‘French specific’ policy objectives regarding ‘promotion of French technical ingenuity’ and ‘regional acceptability’ have been included in order to ensure adequate coverage of French transport policy issues.

The ex-ante and ex-post assessments of the model produce very different scores within the TENASSESS PAM, with the ex-ante results in all respects bar one being more optimistic. These differences are largely due to the overly optimistic demand forecasts contained within the 1987 SNCF /Rudeau reports, taken in conjunction with the underestimation of projects costs by some 400 MECU.

Changing policy preferences over the past 10 years have, to an extent, diluted the overall ‘score’ associated with the TGV Nord project. Whilst the project still scores positively, the magnitude of the scores against individual areas of policy is, in many instances, diminished. One of the most important areas where performance is not as envisaged is in the bottom-line financial indicators, where the project has served to worsen the overall financial position of SNCF.

The ex-post and ex-ante model results are presented in Figure 8.4 below. This clearly indicates the issues discussed above.

The results derived from the TENASSESS PAM support the actual choice of route for the project, if the caveat of the (non-strategic and hence non-modelled) environmental concerns associated with route C (and the associated cost increases to circumnavigate these issues) is taken into consideration.

The main mode choice decision in the corridor associated with TGV (and the Channel Tunnel) is between air and rail. Many of the measures of performance
within the TENASSESS PAM are, however, associated with road to public transport policy issues. This is a direct reflection of the policy preferences expressed in the policy documents that have been reviewed as part of previous Tenassess Deliverables. It should not be forgotten that pressures on air transport capacity within Europe are becoming an ever more important issue on the political agenda. A modified version of the TENASSESS PAM may be required in order to fully address the implications of these issues.

Figure 8.4: Comparison of unweighted ex-post and ex-ante scores for the TGV Nord project
Refinements

The measures of performance developed for the TENASSESS PAM have, on the whole, performed well during the case study testing phase. A number of modifications were, however, required.

The initial specification of the TENASSESS PAM envisaged an all encompassing set of nine core measures of performance into which all aspects of transport-related policy would fit. As the case studies progressed, it became increasingly clear that individual countries often required additional specific measures of performance in order to reflect peculiar circumstances. In all cases, this does not invalidate the core set of performance measures, although not all are relevant in all countries.

The measure of performance that operationalises the ‘accessibility and regional development’ policy area was subsequently subdivided into two components. It now encompasses a ‘reduction in average travel time component’ as well as an ‘economic rate of return’ criterion. This change stems from the need to accurately represent the development potential that projects in the less developed parts of the Community convey. An ERR based measure of performance tends to underestimate the potential impacts as the project may traverse a relatively unpopulated region with the aim of fostering development here. Additionally, values of time (time savings are the main project benefit of many projects) in these areas may be low.

Linked to the preceding point, the relative weight applied to the two components of the ‘accessibility’ indicator is related to the location of the project. In densely populated areas of northern Europe, the ERR component is more relevant (for TGV Nord, all emphasis was placed upon this element), whereas the travel time element is more relevant in other areas (a 50/50 split was adopted for the Portuguese case study).

A number of ‘benchmarks’ exist within the TENASSESS PAM. One conclusion to be derived from the case studies is that these benchmarks are not common across all European countries. It needs to be borne in mind that these benchmarks may not be accepted norms everywhere throughout Europe and at every level in the decision-making hierarchy. The model can address such issues through the initial checking of background data and assumptions which the user is instructed to carry out. Alternatively, as a further extension of the models structure, the model itself can be used interactively thus allowing the user to choose the benchmark and sensitivity test the implications of his/her choice.
The initial construction of the measures of performance largely focused on road / public transport issues, in line with findings of much of the policy objective analysis. An amendment to the mathematical functioning of a number of the measures was required in order to adequately handle issues of rail versus air modal competition.

**Conclusions**

The TENASSESS PAM and its application exemplifies that a Goal-Achievement-Matrix is indeed an appropriate policy assessment tool. It fulfils a variety of criteria, both in terms of the user’s needs and the internal consistency of the method. It is flexible insofar as it is amenable to a wide variety of policies at a range of hierarchical levels; it is versatile, an advantage demonstrated by its ability to assess policies from a variety of sectors; it is transparent and promotes transparency also by way of compelling all weighting to be explicit; it can be used as an analytical tool and a means of generating understanding; and, finally, but not least, it is designed as complementary to other forms of assessment.

We could summarise the findings of the application of the TENASSESS PAM as follows:

1. The range of policy areas identified through the overview of national transport policies across Europe and of CTP which were used as the baseline in the model have proven to be appropriate in most cases. This supports the argument already advanced in Chapter 3 of this report that harmonisation is already more advanced than what would appear at first sight.

2. Still, it is the case that occasionally it is necessary to add additional, country-specific, policy areas to complete the national policy hierarchies. Furthermore, prioritisation of goals and objectives still differs remarkably. Most notable in this respect is the difference in policy objectives between northern and southern/eastern European countries but also between larger and smaller countries. In the more densely populated regions of northern Europe, issues surrounding the negative sides effects of road transport tend to dominate the policy debate. In southern, eastern and other peripheral regions, economic growth with the associated increases in (largely road) traffic is the most important issue on the political agenda.
3. This core/periphery policy divide has several implications for individual areas of policy. The most transparent of these is the treatment of the environmental externalities associated with all forms of transport. The relevance of these issues to the policy debate is a direct function of the level of development of the basic transportation network.

4. The flexible use of the weighting system in the TENASSESS PAM makes explicit the disparities in the relevance of different policy issues. However, it also underlines the importance of improving both impact assessment (through other tools) as well as forecast data (which in conjunction with impacts are necessary for the operationalisation of the measures of performance). Specifically with respect to impact assessment, the element of distribution (as opposed to aggregation) is most significant.

5. Finally, if the policies of the European Commission are taken in their entirety, a number of potential policy conflicts present themselves. The recognition of several broad thrusts to Community level policy does, however, explain these perceived conflicts. For example, policies aimed at economic growth and social cohesion are, in the main, focused in peripheral regions, whereas the more ‘restrictive’ policies of say, fair and efficient pricing and sustainable mobility are aimed largely at the core of the Union. In this, Commission policy is very much in step with the picture that emerges from an assessment of national or regional policies. Again, however, this underlines the importance of focusing on the spatial distribution of impacts rather than on the aggregate level.

Finally and once again, one point that should be stressed regarding the TENASSESS PAM is that the tool is not intended as a replacement for a full, detailed project assessment. Many of the project impacts that feed into the model are derived from more detailed aspects of a project assessment such as the social cost-benefit analysis and the environmental impact assessment. In a sense the TENASSESS PAM can be viewed as a high-level screening tool for projects which if used in a comprehensive manner can contribute to not only policy assessment but also as a baseline for policy development.
The TENASSESS Barrier Model

The TENASSESS Barrier Model is a decision-support tool which helps detect and anticipate barriers in the implementation of transport infrastructure projects or non-infrastructure specific transport initiatives relevant to the Common Transport Policy (CTP).

A ‘barrier’ is defined as a problem or conflict that delays (or arrests) the development and/or realisation process of an infrastructure project, a policy initiative or any measure selected in order to implement CTP or which leads to a significant re-design of the project at hand.

The TENASSESS Barrier Model was developed on the basis of a systematic study of the implementation environment characteristic of major transport infrastructure projects through a series of case studies. The main findings of these case studies are described in Chapter 4 of this Report.

Even if the development of the Barrier Model relied primarily on the study of the implementation context of infrastructure projects, an attempt was made to elaborate a model which is applicable to both infrastructure projects and other policy-guided initiatives. The applicability of the model to these ‘new’ situations was tested through a second set of case studies briefly summarised in this chapter and in more detail in Annex II of this report.

Theoretical considerations

The working definition of the term ‘barrier’ in the TENASSESS Barrier Model – as that which causes a significant delay in the development / realisation process of an infrastructure project, a policy initiative or any measure selected in order to implement CTP – differs from the implicit use of the term ‘barrier’ in the White Paper on Transport (1993). There, barriers describe bottlenecks, missing links, lack of interoperability and interconnectivity in the infrastructure provision as well as hampering factors in the regulatory systems that prevent the successful implementation of the CTP.

The two definitions stem from different levels of consideration. In the White Paper, the focus of the attention is the level of formulation of strategic goals regarding policy; there the reference to barrier is practically the sole recognition of contradictions inherent in policy formulation, including that of the CTP. These
inherent contradictions, the reader will recognise, were dealt with in both chapters 3 and 8 of this report.

The Barrier Model deals with what we refer to as the ‘local’ level of implementation, i.e. implementation on the ground which inevitably also involves a larger number of local actors, i.e. regional or local authorities, citizen movements etc.

Chapter 4 discussed in detail the characteristics of this local level of implementation and in doing so revealed its multi-dimensionality and indeed its complexity. It showed that policy assessment does not end with the passing or enacting of laws or conceptualisation of policy measures – in order that it is comprehensive, policy assessment has to consider what happens in the time between the conceptualisation of a measure to the time of its implementation. What happens in this period often determines the success of any particular policy measure and of the policy programme it is part of; and can influence their contents.

The Barrier Model shares the theoretical and methodological premises and relies on the conclusions of Chapter 4. The objective of the Barrier Model has been to incorporate these conclusions in a decision-support tool. This involved developing an analytical framework that captures in a systematic and user-friendly way the complexities characteristic of this decision level with particular attention to the interactions between types of conflicts or types of actors. It also has sought to add a dynamic element to this by considering the time dimension (see chapter 6). The heuristic device that emerged is an innovative expert system.

**Functional specifications**

**Structure and classification of barriers**

Barriers can occur for different reasons, at different stages of the planning and development and/or realisation process, with different actors playing different roles in their emergence.

Besides the identification of actual or potential barriers the purpose of the TENASSESS Barrier Model has been to structure those barriers according to a
few core dimensions. This structure helps to detect the ‘nature’ of the barriers which is important for the identification of feasible solutions for overcoming them.

We distinguish between three core dimensions. These dimensions describe respectively:

1. the phase of the development and/or realisation process at which barriers occur – this dimension is known as the ‘stage’ parameter of the barrier;

2. the type of actor to whom the barrier can be traced back – this is known as the ‘arena’ parameter of the barrier;

3. the type of problem area to which the barrier relates – this is known as the ‘field’ parameter of the barrier.

Classification by stage

Following the classical literature on project/programme development and decision processes, we distinguish four phases: the conceptual phase, the planning phase, the decision phase and the implementation phase. The operational phase is not part of the model.

The conceptual phase describes the very early stage of a project or programme during which the idea of a project or programme comes up. The conceptual phase itself can be seen as comprising three sub-stages: (i) the perception of a certain need (i. e. the recognition of problems and opportunities), (ii) the definition of a demand (i. e. the balancing of benefits and costs in a preliminary assessment), and (iii) the formulation of the preliminary project's design. This phase sets the general framework for the project and thus requires the coordination of various opinions.

The planning phase is the actual design phase of a project. It comprises the elaboration of strategic plans as well as of detailed proposals for the project's design. The public administration is the dominant actor in this phase. At the end of the planning phase the final proposal of the project's design is presented.

The decision phase entails the process of the approval of the plans and the steps necessary to render these ready for realisation. This phase is
characterised by a plurality of actors, all of whom wish to integrate their interests into the final design. If no decision is taken due to opposing views and a redesign of the project is necessary to achieve consent, the process is set back and has to pass through the former stages again.

The implementation phase covers all actions that occur during the realisation of the plans, i.e. the construction of the infrastructure for projects and the undertaking of the necessary institutional changes for policy measures.

The last phase, the operation phase, is not part of the model due to the fact that the majority of the case studies which provided the empirical material for the development of the Barrier Model had not reached this phase at the time of completion of this work. We describe it briefly in order to give a complete overview of the development and/or realisation process: The operation phase deals with the timespan after the project or programme has been implemented. Even after the implementation of an infrastructure project or a policy initiative, barriers can occur that prevent the project or programme to work as intended.

Classification by arena

Four different arenas for describing types of relevant actors are distinguished: the arena of informal politics; the arena of official politics; the arena of the public administration; and the arena of legislation.

Informal politics comprises the fields of barriers that arise in a less institutionalised context. The underlying conflicts make their way mainly through lobbying and pressure on the players in the official political process. Here mainly citizens’ movements, grassroots movements, interest associations as well as aspects of public acceptability are concerned.

In contrast, the field of official politics entails barriers that appear in established political institutions, like parliament, political parties, trade unions, regional and local authorities as well as the European Commission. This arena comprises all institutions that have a formal involvement in the policy development and/or realisation process.

The public administration as already noted in the introduction to this part of the report is one which is often ‘forgotten’ in policy analysis, at least explicitly, despite its importance. The administration is typically the one responsible for commissioning as well as for filtering project proposals but also policy
recommendations for policy-makers; it is frequently in charge of implementation and often is granted the role of co-ordination among relevant actors.

The legislation arena describes barriers related to all regulations or laws established or operational in a specific national context that are either directly or indirectly relevant for the project in question. Part of the legislative framework are regulations concerning technical standards, e.g. differences in technical systems (e.g. gauges or voltages of railways), guidelines and standards (e.g. design, management, vehicle operation, environmental standards concerning the planning of transport infrastructure), technical problems, as well as discrepancies between planning and execution possibilities.

The ‘informal politics' and ‘official politics' arenas have to do with convictions, attitudes, preferences or objectives of the involved players or institutions and can be summarised as comprising the ‘socio-political value framework’. The administrative and legislative arenas delineate the ‘regulatory framework’.

**Classification by field**

Barriers can occur in one or several of the following fields: the field of financing; the field of technical requirements or standards; the field of environmental assessment; the field of regional responsibilities and the field of socio-economic assessment.

*Barriers in the field of financing.* These barriers are primarily related to the question of who will pay and how much. Shortages in the public budget primarily on national level, make it more and more important to establish alternative modes of financing particularly for large-scale infrastructure projects. These alternative modes involve private financing, Public-Private-Partnership and a participation of the regions in financing schemes. With reference to the ‘how much’, the issues that often lead to the emergence of barriers concern the distribution of costs and benefits among partners – an issue of particular relevance in public-private-partnerships or for cross-border projects involving two or more states; and the problem of free-riding: in a number of cases relevant actors, in particular at the regional level, wish to have a stake in the project but do not assume financial responsibility. Barriers in the field of financing also include questions raised about the scope of external funding (especially from the European Union); and questions about pricing, especially where the latter is used as a pay-back instrument for investment.
**Barriers in the field of technical standards.** Different technical standards but also different modes of procedure within administrations or different regulations may create barriers for project or programme implementation. Purely technical barriers occur on the conceptual phase and the planning phase and have to be solved before the decision phase. Examples are manifold: different gauges for railway tracks, for instance between France and Spain; different requirements concerning the technical equipment of road transport, for instance between South-Eastern Europe and the Central European countries; different assessment methodologies in different countries.

**Barriers in the field of environmental assessment.** This field comprises all barriers due to environmental reasons and restrictions. They mainly appear in two ways: First, environmental restrictions are institutionalised in standards, regulation or legislation; second, environmental issues are introduced by certain actors who lay emphasis on environmental protection. Environmental conflicts of the latter type appear across the stages in all arenas and are typically significant barriers.

**Barriers in the field of multiple governance, in particular with reference to regional authorities:** Infrastructure projects and transport policy initiatives have impacts on various sectors and at different spatial levels. This aspect, in conjunction with the consolidation of partnerships for financing and the territorialisation process analysed in Chapter 4 of this report, has rendered multiple governance and the problems associated with this active in the field of transport. Who is responsible for the implementation and to what extent? More importantly who carries the political responsibility in the case of failure? These are some of the problematic issues currently faced at the local level of implementation and the source of barriers. Competencies are often not clear cut leading to the emergence of controversies. These may hamper the planning and development and/or realisation process. A barrier of this type also occurs, when different administrative entities do not concede the same level of importance to a project. Nevertheless, the most important aspect within this field is the co-ordination between the different administrative entities, which is often not effective and delays the development and/or realisation process. Such barriers occur across stages.

**Barriers in the field of socio-economic assessment.** This field comprises barriers that arise due to competition between national economies, regional economies and/or different branches of the economies and/or social groups. The plurality of actors and their different sets of objectives leads to conflicts of interests. These conflicts of interest entail a strong distributive element: ultimately it is about the distribution of costs and benefits or winners and losers.
Functional interdependencies: the rule set of the model

In order to be in the position to track down future barriers, which are likely to occur, it is necessary to determine the typical pattern of interdependencies between barriers, mainly across stages and fields.

In the course of the development and/or realisation processes barriers are enclosed in a system defined by both the regulatory framework and the strategies of the main actors involved. There are three types of interdependencies:

1. *No interdependencies*: Some barriers just occur at a certain stage of the process in a certain arena without any correlation or interdependency to other barriers;

2. *Complementary barriers*: some issues form a necessary condition for the occurrence or the strength of an other barrier. If one succeeds in avoiding or overcoming one barrier the depending barriers will likewise disappear.

3. *Substitution barriers*: Overcoming or avoiding a certain barrier can create another barrier which would otherwise not have occurred.

The above types of interdependencies can be exemplified with reference to the case studies discussed in Chapter 4 of this report.

An example of interdependency involving ‘substitution’ across fields is provided by the Lyon-Turin Transalpine railway connection discussed in that chapter. The reader will recall that in this case the financial constraint in conjunction with the wish to satisfy the needs of a plurality of actors led to phasing the project in a way which produced numerous other ‘split-up’ projects. The project was thus divided into sub-projects to be implemented in sequence. The phasing of the project strengthened the role of the regions in the process, leading to a barrier in the field of multiple governance. In parallel, the competition over financial resources with reference to the prioritisation of each of the sub-projects led to a barrier in the field of socio-economic assessment.

The Brenner axis tunnel project, also discussed in chapter 4, exemplifies a case of multiple interdependency involving ‘substitution’ and ‘complementarity’. In that case the tunnel was proposed as a solution to the problem of environmental degradation associated with high road transit traffic, a concern which involved active mobilisation from the population in the Tirol alpine area.
This led to an increase of costs. Despite the willingness of the European Commission to contribute to the construction of the tunnel, this problem could not be resolved; indeed the possibility of multiple funding raised the issue of responsibility for the risk inherent in situations of multiple governance.

Similar is the situation with the measure of eco-points along the Brenner axis. Even though this measure was likewise implemented for resolving the environmental conflict, it did not lead to the disappearance of the latter, since it proved to be neither efficient nor effective for this purpose.

Another case exemplifying the re-appearance of the same type of barrier at a later stage is the case of the Twente-Mittelland-Canal. One main barrier occurred in the planning phase in the technical field and concerned the assessment methodology to be applied for assessing the project's impacts. This was overcome with a short-sighted compromise but not really settled (i.e., no consensus for a common assessment methodology was found). Consequently the barrier re-appeared in the decision phase and caused the implementation process to stop.

Solutions to barriers

The emergence of functional interdependencies between fields of barriers in a certain process depends, to a large extent, on the solutions found to overcome these barriers. In order to cover the interdependencies comprehensively, these solutions have to be integrated in the model.

General options to solve barriers include:

1. *Re-design*: the barrier can be solved by the redesign of the project or programme. This solution is likely to cause interdependent barriers, since the re-design implies that the process returns to the planning stage. A re-design is likely to cause rising costs.

2. *Consent*: If a barrier is solved by negotiations between the actors involved which results in a consent, the barrier is solved entirely without interdependencies to other barriers.

3. *Compromise*: Negotiations that lead to a compromise can solve the barrier entirely only if they sufficiently address the base conflict. If not, the barrier is ‘solved’ at the current phase but is likely to re-occur at a later stage.
4. *Ignore / no solution*: Some barriers can be ignored at specific stages. This is often the result of a political decision to go ahead with a project despite opposition against it from various quarters. Unless the benefits of a project make themselves felt early on and outweigh the disadvantages, ignoring a barrier does not resolve it. More likely is that this same barrier re-appears at a later stage.

The programme also offers the possibility to erase a barrier. This is however no real solution but only a technical one in case the user would like to ‘undisturbed’ observe or experiment with the pathway of one specific barrier and no other.

With reference to resolving a barrier in the field of financing, three other supplementary solutions are offered:

1. *Split-up project*: The project is phased and in that split-up in sub-projects, each of which are financially feasible.

2. *Share costs*: Sharing costs through a public-private partnership or a partnership with regions is one other way to resolve the financial barrier. This can however lead to an increased role of these other actors, including the regions, in the decision process which in turn can lead to conflicts or barriers in the field of ‘multiple governance’.

3. *Allocation of additional funds*: If available, the positive revision of the financial package is usually the best solution to a financial barrier.

**The Barrier Model Visualiser**

The application of the Barrier Model is done by a computer program—the ‘Barrier Model Visualiser’—which is oriented towards the different actors involved in the planning process. The programme is structured as experimental gaming to be used in an interactive way. The user can simulate the development and/or realisation process of a certain project or programme, thus placing himself or herself in the position of being able to detect where possible barriers are likely to occur and to understand where to concentrate efforts to ease the project development and realisation process.

The Barrier Model Visualiser is programmed according to the three dimension structure discussed earlier in this chapter and it incorporates the rule set of functional interdependencies and solutions outlined above. If a spatial view is applied the dimensions form a cube where single barriers can be located as
those blocks formed by the combination of the policy arena and field criteria in a selected stage.

In theory the Barrier Model Visualiser cube would allow for 80 barriers to be described. However, through case studies (see next section) it was possible to reduce the number of possible barriers down to just over 40. Figure 9.1 displays the structure of the Barrier Model.

**Figure 9.1. The Barrier Model**

![Possible Barriers Diagram](image)

**Testing and refinement through case studies**

The Barrier Model was validated through application to the case studies compared and discussed in Chapter 4. It was then tested and refined through a second set of case studies. These were:
- The railway line Mid Zeeland – Femer Belt, an infrastructure project in the conceptual phase displaying financial and environmental barriers.

- The new Athens airport which has been on the agenda for several years and which since 1991 is once again seriously being discussed towards implementation.

- The TGV Acquitaine, one of the TEN priority projects which foresees the extension of the TGV network in the Southwest of France towards Madrid; this is an infrastructure project in the decision phase displaying numerous problems of multiple governance with a strong involvement by the regions.

- The European directive for the technical harmonisation of truck sizes / weights.

- The case of road pricing in Austria.

The case studies were selected in such a way as to ensure that projects at different stages of realisation would be studied; that they would include as a set both infrastructure and non-infrastructure projects; and that in the case of infrastructure different modes would be assessed. For the purpose of collecting relevant empirical material and guiding discussions with relevant actors a questionnaire was elaborated. This can be read in Annex III of this report. This questionnaire has also proved helpful as a self-assessment guide for reviewing whether all the information relevant to a decision process characteristic of any particular project or initiative is available to the participant actors.

The case studies which are described in Annex II of this report confirmed the usefulness of the Barrier Model as a heuristic device for understanding and mapping the decision process characteristic of any project; for predicting barriers; as well as for experimenting with the implementations of various solutions.

The case studies revealed the following types of problems regarding the application of the Barrier Model.

a) Some ‘new’ barriers and ‘new’ forms of interdependencies emerged in the case studies that were not foreseen by the model. The most interesting of these ‘new’ barriers were that displayed an increasing role of the informal sector in the debate on financing; as well as the increasing level of contestation at the planning stage – this was in particular the case with transport initiatives other than infrastructure.
b) Some of the predictions of the model regarding the emergence of barriers as a result of a specific type of solutions were not found in some of the case studies.

c) The generic character of the barriers cannot cover the detail of some of the observed barriers which is insofar problematic when under the same category two distinct types of conflict occur.

d) The Barrier Model is based on a very precise definition of the stages of the decision process and assumes a linear process – often however the realisation process is rather iterative, circular and incremental. In the particular case of a splitting-up of a project an additional problem emerges with the changed terms of reference or context.

The problem of ‘new’ barriers could easily be dealt with by introducing new types of barriers and an additional set of interdependencies in the model. The problem of iterations could also be resolved by introducing feedback procedures which allow moves backward, i.e. from the planning phase back to the conceptual phase or from the decision stage back to the planning stage.

Where projects are split or phased, this might in some cases necessitate running the model several times, i.e. separately for each sub-project.

That the barrier model predictions are not always relevant or correct was expected. The barrier model does not claim to be precise in its predictions; rather it outlines possible outcomes.

Finally the problem of over-simplification or over-generalisation leading as it may to the loss of detail is indeed a problem inherent in any analytical framework or tool. The naturally complex realisation processes are often not easy to structure according to the demands of the model. This partly relates to the different perceptions – among researchers and policy actors – of the current phase of the process; or of the relevant policy arena. The informal and the official policy arena are often interlinked and the transition from one to the other can be fluent; the same is the case with the conceptual and planning stages of the decision process.

Still the use of such tool – also in full appreciation of its part reductive tendencies – can assist the researcher on the one hand to structure the
empirical material; and the policy actor on the other to devise options for action and to remain aware of the possible consequences of these actions.
PART III

RECOMMENDATIONS
10 Conclusions and Recommendations

... for the formulation of CTP

The comparative analysis of national transport policies in relation to CTP have demonstrated a series of bottlenecks and loopholes in the process of policy formulation. The following recommendations are given with the view to assist the re-formulation and advancement of transport policy to meet the contemporary and future challenges.

1. Transport policy is still organised according to modes; policy initiatives other than infrastructure are often treated as strategic issues and assigned to different departments within the same ministry or distributed across ministries. The overarching goal of sustainable mobility requires a more integrated approach to transport policy.

2. This can however only be realised if accompanied by organisational reforms – these will partly involve restructuring and partly greater co-ordination. In this connection, it is important to clarify not only fields of responsibility but also procedures for strategic co-ordination.

3. This re-organisation has also to consider the role of the regional authorities and more generally the complex issue of multiple governance: in this connection a more in-depth discussion of the relevance of the issue of subsidiarity in the field of transport is necessary.

4. Transport plans tend still to be much too general especially for issues other than infrastructure. It is important to distinguish between transport policy and transport infrastructure plans.

5. Transport policy plans must go beyond the stating of general goals. They ought to specify measurable objectives and measures of performance with respect to both efficiency (do the thing right) and effectiveness (do the right thing). When considering efficiency the national economy goals ought to be distinguished from the sector specific economic goals.
6. Transport infrastructure plans need to show a closer consideration of strategic policy goals – one way to operationalise this is through strategic (environmental) assessment.

7. Transport policy needs to be better co-ordinated with environmental policy and in this connection take a more comprehensive account of the time dimensions. Currently environmental standards are perceived as ‘barriers’ to the implementation of transport policy goals or as long-term visions – both of these mental schemata distract attention away from innovative solutions.

8. Little reference to the CTP and specifically to the Transport Acquis is made in national transport policy plans. This needs to change. A more detailed discussion of the interfaces would reveal the inconsistencies between national and European perspectives or within the national and/or European perspective and help to overcome them.

9. Despite wide-ranging similarities in terms of proposed policy packages and the underlying logic of transport policy, national transport policies still display differences with regards the successful implementation of specific policies and countries with regards the quality of their transport network. The variation partly derives from a difference in the starting positions. It is also however the result of the different transport ‘ideologies’ with which policy-makers operate. These ideologies are often implicit and need to be made explicit. Rendering them explicit would contribute to resolving the inconsistencies mentioned above and would provide momentum to their integration and subsequently their implementation.

10. The existing models of citizen participation in transport policy leave much to be desired. In most cases the formal procedures are by far more elaborated than their objectives or contents. This is the main problem for their failure to produce results also in terms of lending democratic legitimacy to the decision process. Recommendations on how to do this are provided below.
... for the implementation of TEN & CTP

Many of the barriers in the implementation of the TEN and more generally of the CTP have emerged by way of the problem of financing. It would therefore seem suitable to start the recommendations with reference to this issue.

1. The precise costs and benefits of a project can undoubtedly only be set after the layout and route of the project (or alternatively its operational plan) has been defined. It is not uncommon that at the planning stage various options will be considered. Where this is the case it would appear important to treat the question of costs and benefits and that of financing (in terms of who will pay) separately. Otherwise the question of who will pay is likely to bias the selection procedure.

2. Having said that, assessment exercises carried out by technical experts ought not alone consider the costs and benefits of the project in relation to the user requirements but also the financial requirements through discussions with potential financiers.

3. If only one option is considered for a specific project or policy measure and the financing barriers are so great that the project is practically arrested; one way to bring the decision process forth is to open the latter to a wider audience and tender for alternative options.

4. Phasing of a project is one possible solution to a financial problem. Where the decision process includes many actors, particularly regions, this might at the same time lead to an enlargement of the project (whereby for instance the technical specification for one sub-project no longer merely includes the small part of the original project but also its backbone network components). Thus a project becomes quickly integrated in a regional network which is likely to increase (public) support for it. Such a ‘win-win’ approach is however also likely to lead to an increase of costs and needs to be accompanied by a strategic environmental assessment. It can also lead to a conflict among regions regarding the prioritisation of the various sub-projects.

5. Partnerships for the purpose of sharing the financial burden of an infrastructure project are becoming increasingly important: these can be of a public-private nature or of a public-public nature and involve different countries. In all cases it is important to clarify the issue of sharing of risk and not only that of sharing the costs. Failure to do this can be
detrimental to the co-ordinated project’s implementation and might result in a significant increase of costs throughout implementation.

6. **A financial constraint at the early stage of project planning resolved through compromise resulting in a reduction of funds available is likely to endanger the environmental assessment** of the project leading to resistance from the population (especially if organised) or to reactance; it is also likely to aggravate the discussion on the costs and benefits of the project and their distribution.

7. **Increasing the funds allocated to an infrastructure project is no panacea solution.** Where available it should not substitute for a thorough assessment and assignment of risk and responsibility to the various partners.

8. Resistance from the population or interest groups tied to environmental concerns early in the decision process of the project will if strong necessitate a re-design of the project, with implications for finances. A solution involving recompensation, if relevant, will have the same effect. **None is however a guarantee that the environmental issue does not re-emerge at a later stage.** This has different reasons: one is that the environmental agenda (and with it environmental consciousness) is itself not a fixed agenda; related to this is the second reason, namely the protean character of the environmental agenda – this is also exemplified by the comparative easy way it has been incorporated into the political discourse: hence a project can be ‘sold’ as environmentally friendly but at the same time involve environmentally damaging components which arrest its implementation.

9. **Ignoring these concerns** (an approach which might be tempting in countries where environmental consciousness is generally not high) **is most likely to lead to a re-emergence of the conflict at a later stage.** Indeed it is likely to feed reactance and lead to resistance and active mobilisation.

10. The same is true for conflicts involving major stakeholder groups – for instance the automobile industry; or the trade unions. The level of both internal and external organisation of these groups is proportional to their lobbying strength. Major transport infrastructure projects or initiatives are likely to call forth mobilisation on the part of those groups which have interests or stakes to defend. **The building of alliances in either way is emerging as a major lever in the struggle for political influence.**
11. There is an increased need for co-ordination between levels of decision-making, relevant actors or stakeholders as well as the stages as such of the implementation process. The co-ordinator’s role is a new one, is tied to a person but potentially entails elements for a new form of institution (or institutional change). The task of the co-ordinator is akin to that of a mediator but with the power to also influence political decisions. The internationalisation and/or territorialisation of transport policy renders it increasingly difficult to assign this role to the public administration. The co-ordinator must command legitimacy through both independence and professionalism.

12. The role of the administration has likewise increased and this is evidenced by the more direct participation of the administration in conflicts or their resolution. The new solutions typically carry implications either with respect to organisational matters or with respect to the re-drawing up of the technical parameters of various aspects of the project’s or initiative’s design. The responsibility for implementing these lies with the administration. The expert knowledge and organisational skills required by the administration are thus also greater. The failure to deploy such skills or expert knowledge can aggravate if not create barriers in the implementation of CTP. The complexities of the issues addressed also requires a greater degree of networking and co-ordination within the administration and a clearer allocation of responsibilities.

... for enhancing acceptance via citizen participation

The communication with the public should be left to an organisation which is not involved into the decision process, i.e. to an institution that neither consists of decision makers nor of representatives of affected target groups. This increases the credibility of the process of seeking public participation for enhancing acceptance.

Moreover, such an organisation should focus on the communication with public representatives in the neighbourhood of the affected target groups. It has been underlined that spatial proximity enhances direct contact with the population and thus the general feeling towards the project can be better assessed.

Ideally the discussion of a project should begin as soon as the option for the construction of the project becomes realistic. Open rather than latent conflicts
ought to be sought. The crucial point in any way is the style of communication.

There are three ‘golden’ rules to communication: first, information should be given in any case – even confusing or negative information is better than no information; second, information should be trustworthy; third, information should be communicated politely.

How to inform

1. **Describe the project thoroughly**: include thorough descriptions of all stages and all sites of the project. Use, if possible a geographic information system (GIS) to maps effects; or relate the planned implementation to earlier projects

2. **Specify in detail for which persons and/or groups the project will provide advantages and for which disadvantages**

3. **Describe the advantages and disadvantages**: show what needs and interests are satisfied by the project and discuss which ones may be endangered

4. **Check if a priority list can be developed** that refers to different degrees or intensities of benefits and disadvantages for different individuals and groups

5. Discuss how different needs and interests will be satisfied, and think about what ‘old’ measures and solutions are replaced by the ‘new’ project (Praschl, 1995, called this "active substitution")

6. Are there other ‘new’ projects that could replace the new project one is dealing with, in direct and indirect competition (‘passive competition’)

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**FINAL REPORT TENASSESS**

155
Information becomes motivation

In order to make information turn into motivation, the following rules can be established (cf. Windahl et al., 1992; Risser & Clark 1995):

1. Everything takes time - so give the citizens enough time to digest information (e.g., information campaigns should be on for a sufficient time span)

2. If you want long term effects (e.g., that people should remember what you told them) do not think you can achieve that without resources and without longer lasting and systematic efforts

3. Information should be given at the right time - i.e., when people need it and want it - which is often difficult to decide. Rather generally if there is some doubt about the right time, it should be given at an early stage

4. Consider that perception and acceptance of information is steered by interests and motives (most important for all arguments used in the information process)

5. Information of immediate interest should be given in a different way from general information and separately

6. Information should have a character that it is difficult to be distorted when forwarded from one person to the other (support reliability)

7. Nobody wants to be stupid - so if you inform somebody make sure he/she does not feel stupid

8. Ideally, information should be available whenever one wants or needs it BUT: Cold "Hotlines" are a shame (they are in some way a systematised lie)

9. Give credible information = the information presented should be true and reliable
10. **Give two-sided information** = pro- and contra arguments for the project should be given. Actors who only underlie the advantages of their position will not be credible in the end. Furthermore additional information should be given how to mitigate the disadvantages of the project.

11. **Avoid contradictory information (unless you can explain contradictions)** = contradictory information reduces ones credibility

12. **Give complete information** = the information given should as far as possible cover all aspects and consequences of the project

13. **Information should be problem oriented** = it should be included which kind of problems will be dealt with the implementation of the project (e.g., the construction of a tunnel helps to solve existing time-consumption-problems, etc.)

14. Information should be given in an **understandable way** = information should not consist of technocratic terms, but of terms used in ‘common language’

15. **Give redundant information** = repeat important information on main issues and aspects

16. **Eliminate unnecessary information** (though difficult to decide) = this provokes boredom

17. Information should be made perceivable by using high-tech-information systems = the population should be able to estimate the impacts of the project, because life quality will be affected by such parameters
Select Bibliography

Note: The following list does not include the various policy documents reviewed with reference to specific national transport policies or infrastructure projects. A list of these can be found in the TA of Deliverables 1 and 3 of TENASSESS.

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ANNEXES
Annex I. TENASSESS Main Deliverables & Working Papers

Main Deliverables


TENASSESS Deliverable R(2), \textit{Modelling Module}, 1996


TENASSESS Deliverable R(4) – Volumes 1 & 2, \textit{Volume 1: The TENASSESS Policy Assessment Methodology (PAM); Volume 2: Demonstration Case Studies} [The Amsterdam Ring Road; the Twente-Mitteland Waterway; the TGV Nord; the IC5/IC2 Toll Motorway Portugal; the Igoumenitsa Volos/Lamia Motorway Greece; the Decin-Praha-Breclav Rail Upgrade Czech Republic], 1997


TENASSESS Deliverable R(6) – Volumes 1 & 2, \textit{Volume 1: The TENASSESS Barrier Model; Volume 2: Demonstration Case Studies & Amendments to the Barrier Model} [Road Pricing in Austria; Harmonisation of Weights; The Femer Belt; the TGV Aquitaine; the Athens Airport], 1998 & 1999


Working Papers


TENASSESS Working Paper (6), *National Transport Policy Italy*, 1996
TENASSESS Working Paper (8), *National Transport Policy Denmark*, 1996
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TENASSESS Working Paper (19), *Case Study TGV Belgium*, 1997
TENASSESS Working Paper (20), *Case Study The Greek Inter-Island Passenger System*, 1997
TENASSESS Working Paper (21), *Case Study The Oresund Fixed Link*, 1997
TENASSESS Working Paper (22), *Case Study The Skaramanga Interchange*, 1997
TENASSESS Working Paper (23), *Case Study The High-Speed Railway Connection between Barcelona-Montpellier*, 1997
Annex II. Summaries of National Transport Policies

**Austria**

The Austrian Transport Policy has been elaborated in various documents. Important milestones comprise: a) the Austrian General Transport Concept of 1991; b) the Regional and Local Transport Concepts 1991-1996; c) the Transport Master Plan 1999; d) the National Environmental Plan 1995; e) the Agreement on Freight Road and Rail Transit with the European Union of 1995.

The main patterns of conflict concern the allocation of competencies and funds among territorial authorities; public acceptance; issues of efficiency and equity; allocation of funds, subsidies and related market shares to different modes; strategic priorities in long-distance and local transport; as well as environmental objectives and economic development.

The primary goal of Austrian transport policy is to achieve sustainable transport solutions by reducing the negative impacts of transport modes. The conflicts concern mainly disagreement over the effectiveness and efficiency of specific measures. Turning to the evaluation of specific important policy measures, we may note the following:

The construction of additional infrastructure (missing links of motorways, high performance railway tracks, freight terminals) or the introduction of organisational reforms are still in the developing phase.

With regards the reduction of negative environmental impacts, and specifically of CO₂ emissions, it is difficult to judge whether Austria is in line with the goal of the Rio Summit. Taking these as premises, the Federal Ministry of the Environment has made a forecast, according to which, there will be only a slight decrease of CO₂ emissions in the period between 1993 to 2019. Forecasts of the Ministry of the Environment paint a different scenario where a further increase of transport related CO₂ emissions can be expected for Austria.

The increasing of road transport safety is another major policy objective. In absolute terms, the number of fatalities caused by road transport has remained constant.
Regarding the success of modal shift the following preliminary conclusions can be drawn: The attractiveness of combined transport remained low mainly due to a lack of reliability and low capacity. Furthermore only 19 of the planned terminal networks have so far been realised; the degree of utilisation of those that were completed remains as of today low.

A binding Master Plan should have been published by 1996. Due to several difficulties it was only published in 1999.

The re-organisation of the Austrian transport industry is underway. So is the privatisation of the Austrian Rail.

The overarching goals of transport policy are widely accepted even with interest groups both from the usually confronting poles of the road and environmental lobby. The main criticism concerning the objectives of transport policy is that there is too much focus on long-distances and too little on the local transport, where most of the transport volume is induced. The objective of introducing fair and efficient prices is partly contradictory to the support railways get in their revitalisation process in the view of these actors.

A major concern is that there does not exist one single ministry with responsibility for the whole transport sector. Also the co-ordination among the transport planning departments of the Laender is considered as not being sufficiently formalised. Furthermore the lack of co-ordinating between regional development, land-use designation, and transport policy is deemed to be one of the major factor jeopardising to achieve the objectives in transport policy. The intermodal co-ordination has been pointed out as a weak point by interest groups and transport operators, as actors are hardly invited for consultation on issues concerning other modes than the one they are primarily involved with.

**Belgium**

The state reform of 1988 has had a direct influence on the share of transport competencies between the federal government and the regions. Parallel to this federalisation, public companies underwent deep reforms and the structure of the market changed sensibly. The former national companies responsible for urban and interurban public transport underwent a deep statutory restructuring.
At the national level, the law of March 21, 1991 created autonomous public transport companies, among which the national railway company (SNCB/NMBS), the national telephone company (BELGACOM), the Post and the air ways state-owned company (Régie des Voies Aériennes, Regie der Luchtwegen) responsible for the maintenance and the operation of Brussels National Airport.

The Federal State is primarily responsible for the railways, the air transport and the inland shipping. It is also in charge of the co-ordination of policies with respect to financing, infrastructure and the environment and has the right to intervene in certain regional matters. Because of separate responsibilities the transport policy is less homogeneous than in other countries.

The policy objectives are mainly global, the goals are usually not specified with respect to quantities and the year that they have to be achieved. Therefore the policies mainly indicate the direction the government wants to go. Also the policies mention the most important measures that will be taken, e.g. the biggest investments in infrastructure that will be made.

The orientations of the policy of the Federal Ministry of Communications and Infrastructure are expressed in seven political actions presented in the note of general policy of the Ministry of Communications and Infrastructure for the financial year 1996. These comprise: guaranteeing mobility; promoting market access; competition policy; safety policy; environmental policy; defence of Belgian interests; and the improvement of accessibility of services.

In many of the above areas the competency of the Ministry of Communications and Infrastructure is more formal than real. The exceptions are perhaps those actions with reference to the promotion of market access, the increase of competitiveness of Belgian firms and related to this the defence of Belgian interests against the background of the European integration specifically and globalisation more generally. The limited means for concrete actions in other fields is partly to be explained by the extreme degree and scope of the federal model in Belgium.

The main objectives of the Flemish regional transport policy are described in a document produced by the Flemish Minister of Public Works, Transport and Country Planning in 1995. These objectives consist in eight fields of action: reinforcement of urban territories; preservation and reinforcement of under-developed areas; targeted and selective development of transport systems; guarantee of a basic mobility; restriction of environmental pollution; improved
safety; complementary development of the Flemish harbours; and making Flemish airports more profitable.

In the Transport and Mobility Plan of Wallonia three policy areas are identified as priority fields; these are: a) quality improvement, especially with respect to the regional transport systems through a better modal integration, including modal transfer to ensure environmental sustainability, and with special attention to the issue of safety; b) improvement of the transport market operation – the achievement of an optimal modal equilibrium and of a fair inter-modal cost allocation are recognised as strategic orientations for the future development of the transport sector; and c) the integration of the region of Wallonia in the system of European transport networks – this relates to increasing accessibility and especially in relation to the north route of the high speed train in the direction of Germany and the city of Cologne.

**Denmark**

„Traffic 2005“ is the most important transport policy document in Denmark especially in connection with long-term goals. The Danish transport policy can be characterised by two main objectives:

?? mobility (in order to achieve economic growth and direct welfare by enabling the citizens to fulfil their transport needs);

?? reduce the negative impact of transport, especially with regards the environment and safety.

These two objectives are encompassed in the term ‘sustainable mobility’. In „Traffic 2005“ it is stated that a new balance between economic development and environment should be created through the principle of sustainable growth.

The difficulties of combining these objectives, which very often are inherently conflicting, is not discussed in a comprehensive way as it is assumed that it is possible to achieve both the necessary level of mobility and at the same time improve environmental and safety aspects.

The Danish transport policy includes also the implementation of EU-directives. In many cases these directives are related to one of the above mentioned objectives and thus there is no particular conflicts between the implementation
of EU policies and ‘national’ policies other than the conflict related to the dilemma between environmental concerns and economic growth. This conflict is, however, also implicit in the EU regulation.

Three main areas have been identified as most representative of the policy agenda in contemporary Denmark in the field of transport. These are:

- **environment and safety** and related to this the action areas of transport taxation structure, emission standards, traffic safety, the promotion of public transport and local traffic calming,

- the field of **infrastructure investments** and related to this especially the subject of the motorway network and of fixed links, and

- the issue of **deregulation, ownership and financing** in the fields of rail transport, commercial road transport as well as ports and sea transport.

The Danish Ministry of Transport is the main responsible actor for the preparation, formulation and implementation of the transport policy and related instruments or measures. The decisions on national transport policy issues are taken by the parliament. This is the principal structure. Although the Ministry of Transport is one of the main actors, there are many other actors also involved in the process. The division of the responsibilities can be described along two dimensions:

- **first**, with regards the type of policy, like pricing, regulation and investment: pricing and part of regulation issues are within the responsibilities of other ministries; for instance taxation related measures of relevance to transport are under the responsibility of the Ministry of Taxation.

- **second**, with regards the spatial level, where the responsibility is divided between national, regional or local authorities. Insofar as issues relating to physical planning are primarily under the responsibility of regional and local authorities, the national influence on the transport issues are thus more indirect.

With reference to different modes the following could be noted: a) the administration of the road network is divided among national, regional and local (municipal) authorities; b) the railways are mainly administered by the state owned railway company or by small private railways; c) for both sea and air
transport, the infrastructure is provided either by state or municipal owned ports or airports; d) infrastructure is publicly-owned while the operators are mainly private apart from rail, public bus transport and air traffic; e) finally, about sea transport, it should be noted that this is defined not to include the ferry services, which are important in Denmark.

Germany

The main objectives of the general transport policy in Germany are

?? to achieve a ‘sustainable’ mobility for the members of the community and for commerce and industry. This takes into consideration the gain of importance of transnational inter-linkages especially in West ? East directions,
?? to minimise environmental impacts and
?? to raise traffic safety.

Main tasks are

?? the provision of a modern and co-ordinated infrastructure network to provide appropriate access to all regions. European networks are considered in this framework.
?? to promote and to secure a functional competition between all transport modes both on the national and the European level; that means to harmonise technical, economical and financial conditions for the transport industry and particularly for medium-sized and small enterprises.
?? to strengthen the position of railway and inland waterway transport,
?? to effect a closer co-operation between the transport modes through modern technologies,
?? to promote transport modes and new technics to reduce impacts on environment and to increase traffic safety.

The most important institution providing transport infrastructure is the Federal Ministry of Transport. As the representative of the Federal Republic of Germany this Ministry is responsible for the ‘national transport infrastructure’. It is owner of transboundary regional roads and highways, inland waterways and the railway network of the Deutsche Bahn AG. The Ministry of Transport performs the demand oriented planning of transport infrastructure within the Federal...
Republic of Germany in the framework of the ‘Bundesverkehrswegeplanung’ (Federal Transport Investment Plan, FTIP).

All proposals, considered in the FTIP, are a matter of an economic evaluation in the form of macro economic cost-benefit-analysis. Planning requirements of the EU are considered but are not binding. Infrastructure transport planning as a sector policy is an element of the spatial planning system in Germany. Spatial planning is concerned with the planning of rules for the rational utilisation of space (area). In the case of spatial planning, responsibilities are shared among the federal government (Bund), the federal states (Länder) and the regions (Regionen). These co-operate on the basis of the principles of subsidiarity. General national and Federal States ("Länder") interests are co-ordinated, but they can differ on the project level. Spatial planning tries to co-ordinate the integration of sectoral policies through a strong territorial component.

The macro-economic evaluation of FTIP requires a comparison of all project-related advantages and drawbacks (project effects). The qualification, determination, and evaluation of the different effects are based upon the comparison of a case with project implementation and a case without project implementation. The case with project implementation differs from the case without project implementation in that it includes the traffic route investments to be evaluated. For the FTIP '92 as well as in the FTIP '85 and its other predecessors the general decision was taken to quantify project effects as far as possible in market prices (benefit-cost analysis).

Positive or negative effects on nature and landscape may influence the conditions of human welfare and have to be taken into account with regards the decision making procedure. At FTIP level it will as a rule not be possible to decide on the environmental compatibility or incompatibility of a project: for instance, in the case of complex environmental problems of special importance for which no promising remedial measures exist, downgrading of the project to the lower priority class ‘Additional Requirements’ or even abandonment of the project is envisioned.

Instead of a macro-economic evaluation of ecological effects, an ecological risk analysis is carried out. The risk analysis considers, at the level of the FTIP, all projects on new roads of more than 10 km length as well as all projects on new waterways. The analyses comprise information on characteristics of the space to travel through, on use and functions touched within the planning space as well as especially on areas of conflict like protection of species and biotopes, water, appearance of landscape, recreation and culture. In addition, one finds references on other detailed analyses as well as on secondary effects.
For all new German railway plans, ecological considerations of sensitivity were executed regarding the new construction sections. The investigations contain analyses and descriptions of the space in question as well as determinations of possible conflicts. Furthermore, concluding recommendations on further planning were elaborated.

To integrate urban effects in the decision making, a procedure for ‘urban development evaluation’ was developed, which is subsequently applied to major projects involving important shifts in built-up areas, for which significant urban development effects were to be expected within the scope of the planned measure resulting in a traffic reduction of at least 30% or increase of at least 50%.

For decisions related to traffic road planning a series of further aspects are considered allowing all relevant interests to be verified and estimated. They include: Interdependencies between main sections of the BAB network and the main discharge sections of the German motorways as well as between national roads and tram sections in agglomerations; The connection of combined traffic (KV) systems as well as of freight traffic centres (GVZ); Adopted positions, political commitments and agreements with European neighbouring countries; Projects of vital importance such as single operational connections (international, agglomeration areas, city states), connection of harbours and airports, bridges and tunnels as well as ‘advance planning’ for long-term system designs.

In view of the differences of individual criteria, allocative and distributive, monetary and qualitative, no consolidation to one single criterion is possible which would describe sufficiently the value of a planned project. Instead, the individual criteria are shown in a summary decision matrix. This matrix gives an orientation for the final political decision. It cannot substitute such a decision.

**Spain**

Spain has some 500,000 square kilometres of surface area and nearly 40 million inhabitants, of which over 20 per cent are concentrated in the large metropolitan areas of Madrid and Barcelona. Nine Spanish cities surpass half a million inhabitants. It is in these areas that problems of traffic congestion and demand for public transport are concentrated. Other cities that are less important but nevertheless surpass the 100,000 inhabitants mark, are provincial centres and their centralising functions also complicate traffic and accessibility.
Spain, therefore, with a territorial dispersion of its inhabitants toward the periphery and the great centre at Madrid, presents all at the same time, an unequal traffic flow and problems related to the quality in the offer of transport and environmental quality derived from such uneven flows of traffic.

The process of substituting the railway by the road network as a basic transport system, common to all West European countries, started in Spain about halfway through the fifties and experienced greatest growth during the boom years of development during the sixties and the beginning of the seventies. During these years there was a rapid growth in demand that was mostly absorbed by roadways (private and public transport).

The general policy for finance and infrastructures characteristic of this era favoured this modal change. Although the road network was still seriously lacking in many areas, it was the object of important improvements (Road Network Plan of 1962, REDIA Plan, National Motorway Plan). In the meantime, railway policy was guided along the lines of rationalising exploitation and financial healing, including the first closing of non profitable lines. Tourism, that also contributed to road expansion, brought with it an increase in the potential number and capacity of the airports. Airborne national traffic also experienced a significant growth during this period.

The crisis of 1973 opened up a period of moderation in the growth in demand, a decrease in the rhythm of investment and a worsening of the economical situation of transport companies, bringing to light the deficits in the transport system that had been consolidated during the previous time of development.

Halfway through the eighties, one witnessed a re-activation of economic activity, and the corresponding expansion in transport demand. Simultaneously the State started to develop a new policy for infrastructures, specified in ambitious sectoral plans, among which the 84/91 General Road Plan and the Rail Transport Plan can be highlighted – both implied surprising levels of investment never known before.

The response of different modes of transport to the stretch in demand has been unequal. The road, in spite of its limitations, has shown itself to be once more, capable of assuming a considerable capacity for channelling traffic.

The railway, on the other hand, has continued to languish into a dead-end as refers to its own traffic in the midst of increasing deficits. With the exception of short distances around the large cities and the corridor Madrid-Seville served by
the High Speed train it would seem that what the railways offer, both for passengers and for goods, is becoming less and less adequate to the growing demands with regard to price and quality.

Air transport has once more recuperated a speedy rhythm of expansion, and has consolidated an important share of the national demand for medium and long distances, due in part to the deficiencies in the railways offer.

On the level of modal co-ordination, the deficiencies of the system are obvious. The planning scheme for infrastructures for each mode have traditionally been done separately, without keeping in mind the complexity of the system itself, where modes supported by completely different technologies and organisational structures, may provide services that are similar in some cases and complementary in others. This appears to be the reason why, up to very recent times, practically no attention was paid to supporting technological infrastructures.

It is not easy to assess global efficiency of the system, that is, to what measure does it satisfy the transport needs of the economy and the society in Spain, and against what social cost it does so. In any case, without being able to state that there is a deficiency in general capacity, it would appear to be obvious that there is a demand that is badly fulfilled insofar as the conditions of cost and time that users require today, whether for passengers or goods, are concerned.

The 'Infrastructure Guiding Plan' (IGP) constitutes the framework that must be consulted in order to study transport policies in Spain. It was compiled in 1993 as an adaptation of the general guidelines of transport policy proposed by the European Union.

Spanish legislation has progressively adapted to European Union directives. This is the case for both transport and environmental policy which in Spain are closely related by reason of the fact that until recently environmental issues were the responsibility of the Ministry of Public Works, Transport and the Environment. The competencies for environmental issues were only recently assigned to a separate Ministry, now the Ministry of Environment.

The adaptation of Spanish legislation to EU policies has been done at all levels of public administration, that is to say on the national level, the regional level and the local level. The most important policy actors or 'owners' are:
the Ministry of the Environment, which as indicated above only recently took over the responsibilities for the environment inherited from the previous Ministry of Public Works, Transport and the Environment;

the Ministry of Civil Engineering which is currently the main responsible in matters of transport;

the Department of Territorial Policy and Public Works that takes on this responsibility in the construction of infrastructures.

on a regional level those Agencies and Councils of the Autonomous Governments whose responsibilities are laid out in the different Autonomous Statutes and in the Law;

the Town Halls on the local level – in the case of transport these are particularly relevant in the case of urban transport.

France


Les deux premières lois citées sont des lois d’orientation. En conséquence, elles définissent de grands principes sur lesquels fonder toute action publique dans le domaine concerné. Les services de l’État ont donc le soin de définir les modalités pratiques de mise en œuvre de ces lois d’orientation. Les autres lois comportent des champs d’application obligatoires mais laissent également une marge d’initiative à ceux qui les mettent en œuvre.
Nous avons classé les institutions impliquées dans la politique des transports selon deux dimensions : un premier classement répertorie les institutions qui relèvent du niveau de l'État central de décision, le plus souvent par secteur d'activité ; un deuxième classement liste les institutions qui concernent un niveau spatial de décision. Très grossièrement, nous caractériserons en effet le système de décision politique français lié aux transports selon un mode de fonctionnement qui combine des compétences sectorielles et des compétences territoriales.

Le ministère des Transports partage ses compétences selon des Directions par mode ou par groupe de modes de transport. Au niveau central, on trouve : la Direction Générale de l'Aviation Civile — DGAC ; la Direction des Transports Terrestres — DTT ; la Direction des Routes ; la Direction des Ports et de la Navigation Maritimes — DPNM.

Outre cette organisation par mode de transport, le ministère comprend des directions transversales au secteur des transports comme la Direction des Affaires Économiques et Internationales — DAEI —, la Directions de la Recherche et des Affaires Scientifiques et Techniques — DRAST —, la Direction de l'Architecture et de l'Urbanisme — DAU —, la Direction de l'Habitat et de la Construction — DHC —, ou encore la Direction du Tourisme. La DAEI, par exemple, en association avec le Service des Études Économiques et Statistiques du ministère et l'INSEE, élabore notamment les comptes de la Nation pour le secteur des transports.

Hormis les ministères classiquement impliqués dans toute politique publique, comme les Finances, le Budget, le Travail ou la Fonction publique et la réforme de l'État, nous mentionnerons deux autres ministères qui jouent un rôle particulier. Le ministère de la Ville et de l'Aménagement et du Territoire conduit la mise en œuvre de la loi « Pasqua ». Le ministère de l'Environnement a en charge notamment tous les dispositifs réglementaires qui concernent l'enquête d'utilité publique. Depuis le conflit du TGV Méditerranée, l'élargissement de la consultation du public lors de projets d'investissements de transports est une préoccupation qui déborde le seul ministère de l'Équipement. Depuis l'arrivée de Corinne Lepage à la tête du ministère de l'Environnement (mai 1995), les transports sont devenus une préoccupation de cette administration, qui a multiplié ses actions dans ce domaine — loi sur l'air, réflexions sur le débat public.

Une direction de mission, directement rattachée au Premier ministre, s'intéresse aux transports : La Délégation à l'Aménagement du Territoire et à l'Action Régionale (DATAR), qui conduit le processus d'élaboration du schéma
d’aménagement du territoire, en liaison avec les directions sectorielles compétentes (DGAC, DTT, Direction des Routes, DPNM).

Rattaché également au Premier ministre, il faut ainsi souligner l’existence du Commissariat Général du Plan. Le Plan reste un lieu de réflexion important dans le sens où nombre de groupes de travail, composés d’experts et de professionnels selon les cas, contribuent à asseoir la reconnaissance d’un certain nombre de problèmes à résoudre (quels que soient les domaines politiques) et à avancer des propositions de solution. Parmi les tout derniers travaux, nous pouvons citer les résultats des groupes présidés par Christian Stoffaës sur les réseaux, le groupe de Marcel Boiteux sur l’harmonisation des méthodes d’évaluation des projets d’investissements, le groupe d’Alain Bonafous sur la question de la tarification des transports, que nous retrouverons par la suite. Il faut aussi mentionner le Conseil économique et social.


Les autorités locales élues se composent de trois échelons territoriaux : régional, départemental, communal. Les Régions sont d’existence récente (lois de décentralisation). Elles présentent la particularité d’être constituées d’assemblées où aucun parti politique ne possède de réel poids majoritaire, du fait du mode de scrutin proportionnel. Dans certains cas de décisions relatives aux transports, les écologistes (au sens large) sont parfois amenés à peser dans la balance des choix. C’est ainsi par exemple qu’au changement de présidence du conseil régional d’Alsace (1996), le nouveau président s’est fait élire avec le soutien des Verts en échange d’un point de vue particulier sur le projet de TGV Est.

Les conflits les plus importants sont: a) Les conflits sociaux liés aux processus de libéralisation du marché des transports et b) Les conflits liés à la politique d'investissements en infrastructures.

**Greece**

Greece is a small country in the periphery of the European Union. Located in the edge of the Balkan Peninsula, is a significant nodal point for the transport routes to and from Eastern Europe and Far East.

The institutional framework of the Greek Transport Policy is characterized by the absence of a central policy scheme that follows a top-down approach. Instead of an officially approved master plan on transport, several studies or plans exist which are elaborated by transport consultants for specific Ministries or policy makers.

The Greek Transport policy is decided and implemented at national, regional, and local level from the competent state authorities. The policy makers at national level are the Ministries and the state owned organizations and services. The main competent Ministries are the Ministry of Transport and Communications, (responsible for the transport policy for the land and the air sector), the Ministry of Mercantile Marine (responsible for the maritime policy), the Ministry of Environment, Physical Planning & Public Works, (responsible for the environmental policy and the construction of all public transport infrastructure works, except railways) and the Ministry of Aegean, (responsible for the development of the Aegean islands). Many other Ministries are indirectly involved in the formation/implementation of the Greek Transport Policy, such as the Ministry of National Economy (responsible for the financial issues of the transport policy), the Ministry of Foreign Affairs (responsible for the external dimension of the transport policy).

At regional level, the competent authorities are the General Secretaries of Regions and the Heads of the Prefectures which are responsible for the implementation of the transport policy. A recent (1995) State Law for the autonomy of local administration has transferred many of the powers/authorities of the General Secretaries of Regions, -in transport related matters- to the heads of Prefectures. At local level the responsible authorities are the Heads of municipalities and communities (Mayors and Presidents respectively).
Greek legislative framework on transport issues includes State laws, Presidential Decrees and Ministerial Decisions. Most of them are issued for the harmonisation with EU directives while the rest are the outcome of a governmental initiative.

The main priorities of Greek transport policy is the implementation of the transport infrastructure network, and the promotion of the accessibility to central European markets/cities.

Road sector in Greece is characterised by poor alignment design and safety standards. Priority is given to the completion of important motorways such as PATHE (Patras-Athens-Thessaloniki-Evzoni) and “via Egnatia” (the motorway linking Alexandroupolis/ Ormenio with Igoumenitsa) as well as the reduction of technical and bureaucratic barriers at national borders.

Maritime sector is characterised by important state intervention, while an oligopoly existed in maritime services. The trend leads to the deregulation of the sector. Cabotage will be free from 1999 except for shipping services to islands. These restrictions apply until 2004.

Air sector: In spite of its size, Greece has 44 airports and several heliports. The air transport network is based on the Hub-and-spoke system. The liberalisation of the market is in progress. The state has control over the air pricing system. State’s objective is the development of air transport network which includes the under construction airport at Spata and the construction of an airport or a heliport on each Greek island.

Rail sector in Greece is characterised by the existence of two different gauge systems (metric gauge in the Peloponissos and normal gauge in the rest of Greece), which put a severe limitation mainly for cargo but also for passenger traffic flows. The country’s priorities are the development of new rail lines, the upgrading of the existing rail infrastructure and rolling stock, the deregulation of the rail sector and the promotion of the combined transport.

The main areas where the conflicts occurred are the large public works (having effects on archaeological sites, environment, etc), the pricing system (mainly the competition between air and maritime sectors) and the deregulation in the maritime sector. The conflicts among different parties in Greece are not so severe. Even when a conflict arises, there are no strong reactions. The reasons for this attitude is twofold: First the policies of certain Ministries/Organisations are (in many cases) in symmetry with the interests of the associated strong
lobbies. Second the majority of interest groups does not have enough power to influence the formation of the transport policy.

The EU Transport Policy is of major importance for the formulation of the Greek Transport Policy, mainly due to the absence of a coherent national policy framework and the obligation for harmonisation of the country’s legislation with the EU directives, which is a prerequisite for the funding of Greek projects. In general EU objectives for the transport sector are in harmony with Greek goals - not only as a concept - but also in the way that Greece implements them.

**Finland**

Finland's international business environment and transport situation have changed considerably with Finland's access into EU and the changes in the former Soviet Union. It is the current goal for Finland to stay at the forefront of economic and technical development in Europe and to become a gateway for foreign customers trying to establish themselves in other markets.

The main responsible actor in Finnish transport policy is the Finnish Ministry of Transport and Communication. Other important actors are: The Finnish National Road Administration, the Finnish Rail Administration, the Finnish Maritime Administration and the Civil Aviation Administration. The institutional framework has undergone a major change as the Finnish transport administrations and a number of institutions have been restructured during the 1990s to introduce inter alia state owned enterprises and profit centres.

Finland's transport policy gives priority to efficiency. The transport infrastructure plays a key role in securing sustainable development. Efficient, ecological planning is aimed at in order to eliminate unnecessary travel and achieve: a regional structure which benefits the community; a safe traffic environment; pleasant and functional city centres; improved public transport and cycling; functional and safe transport for all population groups; functional travel links between different modes; competitive transport systems.

Finland supports the objectives of EU to achieve a uniform traffic network covering the whole of Europe and including all forms of integrated traffic, in the trans-European networks, including the Nordic Triangle connecting the capitals of Finland, Sweden, Norway and Denmark.
Italy

Italian transport policy can not be found in a single document that sets project priorities, resources, regulations or pricing principles. The situation is far more complex, the actors are many and in several cases the role of some institution is not well defined, apart from that it changes from one government to the other. To understand the situation of Italian transport policy two general socio-political phenomena must be taken into account: first, the high political instability of Italian governments; second the national debt constraint.

The first and only attempt to formulate a strategic planning scheme for transport policy in Italy was the General Plan for Transport (GPT) of 1986. The main innovation of the GPT was that all the lobbies of the transport sectors where asked to submit proposals to a technical committee that had to evaluate them and to set the final document. The final document had three deficiencies. The first major deficiency was that the final report comprised mainly a list of infrastructures -- regulation problems were not sufficiently considered; this applied to regulation of road transport, market access with regards ports, and the increasing deficit of the railways’ monopoly. The second problem with the GPT was that it did not set any priority among the infrastructure investment projects, nor did it indicate were the resources should derive from. Finally, the GPT was approved only as an administration document and not as law of the State. The document was renewed in 1990 and 1993; it ought to have been renewed again in 1996, but was not, since it proved to have very little impact on Italian transport policy.

The current policy environment has returned to the situation of 1986: several different ministries, parliament commissions and national institutions are involved in the decision making process. The four most important ministries involved in decision making in the transport policy sector are The Ministry of Transport and Navigation, The Ministry of Public Works, the Ministry of Finance and the Ministry of Environment. Together with the ministries several parliamentary or inter-ministerial commissions have a strong role in the formulation of transport policy. There are four different commissions that are very important for transport policy. The inter-ministerial ‘Economic Planning Commission’ (CIPE) produces the budget law and approves any expenditure of the government. At the parliament level any transport law must be approved by the ‘Public Work Commission’ of the Senate and by the ‘Transport Commission’ of the Chamber of Deputies. Those laws which involve a change of powers or competencies within the political system must be approved by the ‘Commission of Constitutional Affairs’. Finally the ‘Permanent Conference of Regions and Independent Provinces’ co-ordinates the relationships between the national government, the parliament and the regional governments.
From a general point of view the main inefficiency of the overall transport policy framework in Italy lies with the complexity of the decision framework and the degree of political instability that characterises the national as much as the regional and local levels of public administration. There are alone at the national level twenty-one institutions involved in transport policy, both political or administrative. The level of conflict between them is very high because the relevant officers or ministers belong to different parties. Next to this, there are very strong lobbies in Italy, especially trade unions, that can often with their actions blackmail the government authorities and thus obstruct the implementation of specific policies or measures. The situation is aggravated by the lack of state funds for the financing of specific projects. The budgetary constraints make medium-term planning uncertain and long-term planning investment on large infrastructure projects practically impossible.

The identification of transport policy with infrastructure policy has also been one reason behind the inefficiency characterising transport policy in Italy. Only recently has this approach began to change – it is in fact in those areas that are not directly related to infrastructure that Italian transport policy can be said to have scored some successes.

Following long years of discussion some of the major reforms in this area have finally entered or are about to enter the implementation phase. This is the case of the reform of ports from a monopoly system to an open market system. The same is true for air transport, where the opening of the market is showing positive results in term of tariffs and market access. Also the rail reform is proceeding rather fast comparing it to previous standards. On the other side the reform of road transport has so far been a total failure.

It is of absolute importance to underline that the main lever of success for those reforms that are finally coming to be implemented has been the action on the part of the European Union. These reforms were made possible through the various EU directives (but also the various decisions of the Court of Justice) that have provided a momentum but also a legitimisation basis for the enactment of reforms. It can be said that European action has provided the rules that were missing (rail, air), enforced the implementation of European agreements (ports) or backed up private actions of European interest (Malpensa airport, High speed train network).
The key-words in relation to the history and development of the Dutch traffic and transport policy are water and trade. The water being both an enemy and a friend forced the Dutch to organise themselves into District Water Boards (Waterschappen). The main goal of these organisations was (and is) to ensure ‘dry feet’. This goal can only be achieved by a common approach. As a result of this there is a long term tradition in land-use planning.

On the other hand the abundance of water made it easy to travel and to trade. The location of the Netherlands at the estuary of the rivers Rhine and Meuse brought much prosperity. In this light it is clear that free and unobstructed travelling always has been a main issue.

In the post-war reconstruction period both items came together in the first comprehensive ‘Policy Document on Physical Planning’ (1966). This plan deals not only with land-use and town planning but also agricultural planning, conservation policy, energy distribution, and traffic and transport plans. The Highway Scheme (Rijkswegenplan) in which many new connections were envisaged was part of this plan. In later versions of the Policy Document on Physical Planning separate sector plans were developed. The plan containing the traffic and transport policy is called the ‘Structure Scheme for Traffic and Transport’.

Both plans were adjusted several times according to the changing views on the goals to be achieved. Following a period of intensive emphasis and work on creating new settlements and infrastructure, there followed a period of urban development; gradually the issue of environmental protection became an issue, leading to the formulation of the ‘National Environmental Policy Plan’.

The most recent versions of the national policy plans covering or affecting the field of traffic and transport are: 1) the Fourth Policy Document on Physical Planning; 2) the Second Structure Scheme for Traffic and Transport; and 3) the National Environmental Policy Plan Plus. These three plans comprise the backbone of the Dutch traffic and transport policies and provide the main direction for more detailed plans at the regional and local levels.

Characteristic for the Dutch situation is the fact that the national traffic and transport policy is handled by two ministries. These are:
the Ministry of Transport, Public Works and Water Management which is also responsible for the formulation and implementation of, currently, 'The Second Structure Scheme for Traffic and Transport; and

the Ministry of Housing, Physical Planning and the Environment, which is specifically responsible for the implementation of currently 'The Fourth Policy Document on Physical Planning' and 'The National Environmental Policy Plan Plus'.

'The Policy Document on Physical Planning' is detailed in a number of regional plans elaborated by the provincial administrations. The regional plans are further detailed in municipal zoning plans. Zoning plans are the only plans with legal effect. Consequently no new infrastructure can be realised unless the municipality has decreed a proper zoning plan. In case of conflict with higher level plans the municipality may be forced to adopt their plan, but this legal power is rarely used.

The same applies also for any infrastructure plan proposed in the framework of 'The Structure Scheme for Traffic and Transport'. The phasing of the actual construction of infrastructure is laid down in a yearly updated 'Long Range Plan Infrastructure and Transport'. This yearly update also indicates the legal status for each project.

Some aspects of 'The Structure Scheme for Traffic and Transport' are elaborated in separate policy documents, such as 'The Long Range Plan for Traffic Safety'. In addition to 'The Structure Scheme for Traffic and Transport' some updates on specific topics have been issued, among others, 'Join forces on accessibility', 'Transport in balance', and 'Randstad and Groene Hart'.

Regulations on traffic and transport policy and on environmental policy are laid down in laws and governmental decisions as far as necessary. Most legal regulations deal with transport and traffic safety (including hazardous goods), labour conditions and licensing procedures.

National transport policy sets the following priorities:

- enhancing quality of life, especially in connection with environmental protection;
- guiding and restricting mobility;
- promoting accessibility;
economic growth, and traffic safety.

The main problem within Dutch transport policy remains finding the right equilibrium between environment and accessibility. Most people agree that something has to be done to improve the environment, but almost no one really accepts the consequences. Therefore in the last few years the budgets for motorway construction and for rail infrastructure have changed dramatically. Despite of this the (private) car mileage increased more than the use of the public transport system. Up to now politicians failed to find a way out of this deadlock.

Within this framework problems are worsened by lack of attuning between governmental bodies on different levels or places. At the national level this concerns the Ministries of Transport, of Physical Planning and of Economic Affairs. Also many conflicts of interest exist between national and regional or local authorities. For the latter employment implies prosperity, and therefore accessibility overrules other interests. But in the case of new rail connections, for instance, there is no local benefit, and the environment is defended by all means.

**Sweden**

The main responsible actor in Swedish transport policy is the Ministry of Communication. In early 1995, the Swedish government appointed a parliamentary committee under the permanent under-secretary of the Department of Communication with the task of devising a national plan for communications in Sweden. This Communication Committee includes representatives from all the political parties and is currently the focal point for the development of Swedish transport policy and the involvement of the main actors. The objective is to develop a comprehensive plan, with the aim of contributing to the accomplishment of an environmentally compatible transport system, promoting at the same time traffic safety, welfare, long-term maintainable growth and regional balance, as well as a competitive economic life.

The main objectives considered in Swedish transport policy are: a) Transport policy should support economic growth and employment; b) Transport should provide good accessibility; c) Transport should be environmentally sustainable; d) Transport systems should be safe and socially acceptable.
A comprehensive work is carried out in preparation of the new transport policy, including not only analytical approaches but also a long and very open public debate. Also all relevant authorities, interest groups and organisations are involved in the preparation process. The approach comprises a very ambitious analysis of the socio-economic feasibility of suggested transport policy measures. At the same time, however, it is made clear that this approach has to be supplemented by other considerations such as regional aspects which cannot be captured by the socio-economic methods. Some main results from the on-going process are that a larger share of investment means will be allocated to operation and maintenance than was previously the case, and that principles for road traffic taxation will take a starting point at the internalisation of external costs based on the rural situation, whereas urban traffic problems are envisaged to be solved by local measures.

**United Kingdom**

During the period of Conservative rule, the main thrust of transport policy has been: to liberalise and deregulate transport markets; to privatise transport operations, such as the national railway, municipal bus services, ports, and the national airline and airports; and to encourage market-type operations in all aspects of transport.

This policy direction must be seen against a pre-1979 background of historic low capital investment by Government in public transport of all modes, chronic operating inefficiencies, and rigid labour practices. The purpose of this policy direction, it has been hoped, is to change the situation to generate higher capital investment levels and new operating efficiencies, while reducing public expenditure by the state.

However, one aspect of the liberalisation programme was something of a strategy and policy vacuum in transport. This is not by accident, but represented the purposeful withdrawal by government from intervention in the emerging transport market. During this period of 1979 to about 1995, the very idea of a national integrated transport strategy, or even strategies for individual modes of transport, was anathema to Government. Literally, words such as 'planning', 'integrated' and 'strategy' were not to be uttered by Government or by civil servants in the Department of Transport during the period.

The situation began to change, even before the Labour election, for two reasons. First, Government had to respond to an emerging crisis in road
congestion, and the political disquiet of even its own supporters, when it became obvious that new road building could not solve the congestion problem. The immediate congestion of a new, six lane ring motorway circling outer London served as a vivid reminder.

Second, under a perceptive Secretary of State for the Environment, the British Government became genuinely concerned about global warming. This resulted in a major research programme and policy initiative on the linkage between land use, transport and emissions. That a fundamental policy shift was underway was indicated by a speech by a senior, Conservative Minister expressing commitment to "strategic transport planning".

The policy direction of the new Labour Government is building on this re-discovery of the benefits of national transport planning. This is indicated by first major document of the new government, *Developing an Integrated Transport Strategy*, issued in August, 1997.

Both periods of British transport policy are instructive for a European audience. During the first phase, Britain perhaps went furthest of European countries in adopting market solutions to transport requirements. The benefits and costs of this radical, market-based approach are there to be examined a dispassionate manner.

British transport policy during this current, second phase is may also prove instructive. Britain will be "marrying" the market approach to a re-discovery of the advantages of a degree of integration, co-ordination and state guidance in transport policy and strategy. The appropriate balance, and functional divisions, between market and state in effective transport provision is an issue of concern for all countries.

The main institution in the field of transport in the U.K. is the Department of Environment, Transport and the Regions (DETR). The DETR carries responsibility for most aspects of transport policy, administration and preparation of legislation and regulation, under a Secretary of State, with the exception of responsibilities devolved to the Scottish, Welsh and Northern Ireland Offices. The department's statutory responsibility for land use planning and development control has an increasing interface with transport due the influence of statutory Planning Policy Guidance which emphasises the importance of integrating land use and transport planning systems to benefit the environment. Adjudication of contested planning decisions by Planning Inspectors and, and some instances, by the Secretary of State for the Environment, is giving increasing authority to planning authorities to link
permission for development to requirements for transport, for example, to curtail car parking availability in urban areas and promote the use of public transport.

In transport terms, under the two tier arrangement, County Government is responsible for regional land use (structure) planning and regional transport planning, with District-level local governments responsible for non-trunk road and pavement maintenance. Under the single tier, the unitary councils enter into 'voluntary arrangements' with surrounding local authorities to carry out regional functions, and the individual units also have authority over non-trunk road maintenance, and cycling and walking. They can exert some control over public transport arrangements through provision of stations, bus stops and modal interchange points, bus lanes, etc. However, as more than 70 per cent of local tax revenue is taken into, and then rebated from, Central Government under strict control of public expenditure, opportunities for transport innovation (and waste of resources) by local authorities is limited. Some additional funding has been available to some local authorities under 'challenge funding' schemes, by which they can apply for additional central funding for specific transport projects, and by the establishment of joint ventures to establish light rail schemes. The latter, however, require Parliamentary approval by a Board of Commissioners.
Annex III. Summaries of Case Studies

In TENASSESS case studies were carried out at three distinct stages of the project:

a) first, for testing the TENASSESS PAM;

b) second, for exploring conflicts in the implementation of major transport infrastructure projects for providing input to the development of the TENASSESS Barrier Model;

c) third, for testing the TENASSESS Barrier Model.

The first two sets of case studies were carried out in parallel in the year 1997; the last set was carried out in the year 1998. The results and findings from the case studies were reported upon in Deliverables 3, 4 and 6 (and their Technical Annexes). Below we summarise these.

The IC5/IC25 Toll Motorway - Guimarães / Chaves Border, Portugal

The IC5 / IC25 is classified as a complementary itinerary, linking Guimarães to the Chaves frontier. This itinerary has two possible corridors: Corridor A linking Guimarães to Cabeceiras de Basto and then shifting to the Northeast, directly to Chaves, in an extension of 102 Kms; and Corridor B linking Guimarães to Cabeceiras de Basto and to Vila Pouca de Aguiar, in a transversal West / East axis, and then going up to Chaves, in an extension of 109 Kms.

The two corridors are common between Guimarães and Cabeceiras de Basto, and between Chaves and the Spanish frontier. Between Cabeceiras de Basto and Chaves, corridor A crosses an undeveloped region, with no significant traffic demand at present, while corridor B follows the EN206 corridor to V. P. Aguiar, and then the EN2 corridor to Chaves. In this alternative, the IC25 is common to the IC5 between Cabeceiras de Basto and V. P. Aguiar, and common to the IP3 between V. P. Aguiar and Chaves (frontier), while corridor A will represent an independent (from IC5 and IP3) itinerary, thus implying in global terms an additional network extension of 46 Kms.
This itinerary is presently planned as a tolled motorway, although the initial study (1995) was done considering both tolled and untolled alternatives. The IC5 / IC25 will be included in a package of tolled motorways (in the North region) that will be soon concessioned to a private group for construction / operation.

The motorway will comprehend 10 interchanges (11 interchanges in corridor B) and includes a section of 6 Kms, between Guimarães and Paçô Vieira interchanges, which is classified as IP9 / IC5, and a section of 19 Kms between Chaves and the Spanish frontier, classified as IP3 / IC25. The global cost of the motorway is estimated as follows (1995 ECU prices): for corridor A tolled at 506 KECU and non-tolled at 457 KECU; and for corridor B tolled at 535 KECU and non-tolled at 527 KECU. Additionally it should be noted that the IC5 / IC25 is a set of two itineraries, with some common sections.

While the IC5 can be considered as having functions appropriated to a complementary itinerary, the IC25 was not initially planned, and appeared basically to allow a good connection between the Porto metropolitan area and the Spanish frontier, in the direction of central Europe. In fact, the 1985 Highway Plan considered that this connection should be given by the IP4 (Porto - Bragança), but two major reasons ("a posteriori") have made it necessary to find a better alternative: first, the Spanish Highway Plan privileges the Chaves frontier (Verin), with a direct link to a motorway network that represents the shortest route to Europe; second, the IP4 has a bottleneck near Porto, because of two unidirectional long tunnels, which makes it very difficult to increase its capacity in the future (having already a traffic demand that causes some capacity problems).

The IC25, as an alternative route to the IP4, and apart from the good connection between Porto and Europe, also has the advantage of diverting a significant part of the existent traffic demand in the IP4, thus enlarging its capacity reserve. It will also relieve the traffic demand on the A3 (Porto / Braga) which also suffers from capacity problems.

The motorway in question (IC5 / IC25, between Guimarães and the Chaves frontier) was also a response to strong regional aspirations, in terms of the requirements of the Chaves region and its need to improve road links with Porto.

In both aspects (international connection and regional links to Porto), corridor A appeared to be the most favourable, both to the Portuguese National Highway Authority (JAE) and to regional highway and local authorities (CCRN and Chaves Municipality), although with the need to add 46 kms of motorway to the
network, as noted above. However, corridor B showed itself as being the best solution in all technical aspects studied (traffic demand, economic viability and environmental impact) and now looks the most probable solution to be implemented.

This project, as all other transport infrastructural projects in Portugal, is seen as being a favourable option to allow economic development of the country, and its regions. In fact, Portugal has not yet completed the basic preliminary highway network (IPs and ICs), and there are few doubts that this is a necessary and beneficial step towards a successful and balanced development. Environmental doubts, and consequent conflicts of interest between different groups, have only appeared, so far, in very particular cases, and when these impacts were considered significant (as in the Tagus second crossing, or in the IP1 / IC4, in the Algarve), but even then, the question was of choosing a different alternative route, and not of giving up the project.

As already noted this motorway (IC5 / IC25) will be tolled, and concessioned to a private group. This concession will include other motorways in the North region, in order to make an attractive package for the private sector, as traffic demand in this motorway will not be sufficient to generate a good IRR on its own.

**The Igoumenitsa - Volos/Lamia Motorway, Greece**

This new corridor is located at the regions of Thessaly and Sterea Hellas. More specifically, the corridor consists of two 2X2 lanes closed motorway branches, with a reversed Y-shape. Its single northern end is the Panagia interchange, located at the north-west border of Thessaly region, providing connection with the Egnatia motorway. The two branches ends are located in the vicinity of Lamia, providing connection of western and central Thessaly with PATHE towards Athens and southern Greece, and Larisa, providing connection of western and central Thessaly with PATHE towards the port of Volos and the rest of northern Greece.

Various alignment schemes have been investigated, of which four have been most favourable and all of which have a common section between Panagia interchange (connection with Egnatia motorway) and Kalambaka. Four alternatives have been analysed in terms of reconnaissance alignment.
Alternative 1: The route consists of a branch towards Lamia, running at a north-south direction, very close to the mountainous area of Pindos, west of the cities of Trikala and Karditsa, and a branch towards Volos, at an east-west direction, ending at the area of Girtoni north of Larissa, providing connection with Volos via the Girtoni - Velestino section of PATHE.

Alternative 2: The route consists of a branch towards Lamia, running at a north-south direction, across flat terrain areas (farmlands), east of the cities of Trikala and Karditsa, and a branch towards Volos, at an east-west direction, starting at the area of Karditsa - Palamas and ending at the area of Nikea south of Larissa, providing connection with Volos via the Nikea - Velestino section of PATHE.

Alternative 3: The route consists of a branch towards Lamia in a north-south direction, running further to the east of the previous alternative across flat terrain (farmland), east of the cities of Trikala and Karditsa, and a branch towards Volos, at an east-west direction, starting at the area of Doxaras and ending at the area of Moschochori south of Larissa, providing connection with Volos via the Moschochori - Velestino section of PATHE.

Alternative 4: The route consists of a branch towards Lamia, as described in Alternative 1, and a branch towards Volos, at an east-west direction, from the area of Kallithiro that ends at the area of Velestino, on the Velestino - Volos existing road.

Within the currently completed feasibility study, the first two alternative schemes have been selected for further investigation, in terms of detailed socio-economic feasibility and environmental impact assessment (A’ stage – preliminary approval of alignment). This selection has been based on a preliminary concise analysis of their spatial characteristics and the existence along the route of schemes 3 and 4 of low level areas that become flooded in the winter, along with extensive irrigation networks crossed. These features imply the need to construct of significant number of structures and bridges, thus extending the level of disruption to human activities and implying higher total cost. It is schemes 1 and 2 which have been assessed as part of the present case study.
TGV Nord, France

The case study focused on the TGV Nord High Speed Rail project in northern France, completed in 1993. Ex-ante and ex-post evaluations, comparing an evaluation of the chosen scenario, undertaken by SNCF in 1987, and the actual impacts of TGV Nord, obtained from appropriate authorities were studied. Alignment alternative evaluations, comparing four of the different route options examined in an influential document known as the ‘Rudeau Report’.

All evaluations were based on an important hypothesis adopted by SNCF and the ‘Rudeau’ reports of 1987. This hypothesis considers that the impact of TGV Nord should be examined against the scenario where the Channel Tunnel is operational with through services running between the UK and Northern Europe, employing existing, but upgraded infrastructure and new, but lower specification rolling stock.

The TGV Nord links Paris (pop 8 million) with Lille (pop 1 million), Calais and the Channel Tunnel. The line was opened to passengers in 1993, at a cost of Ff. 18.5 billion, (approximately 3 billion ECU - 1993 values), funded by both National and Regional Governments. The rail link is the third 'Ligne à Grande Vitesse' (LGV) to be constructed in France, after TGV Sud-Est (Paris-Lyon, serving the Alps and the Mediterranean) and TGV Atlantique (Paris-Le Mans, serving Bordeaux and Nantes).

The TGV Nord is 333 Kilometres in length, with seamless new infrastructure extending from the outskirts of Paris, through the centre of Lille, and through to Calais and the Channel Tunnel. Between Paris and Lille, a LGV spur extends from the mainline to connect the town of Arras and the larger towns of Lens and Béthune via the existing network. A large part of the new line, between Paris and Lille, parallels the existing A1 autoroute. Dedicated new TGV stations have been constructed at Gare Picard (a park-and-ride station on the A1 autoroute, mid-point between Paris and Lille, serving the region of Picardie), Euralille (a new station, also acting as a key interchange node for other European high-speed services and national TGV services) and Calais Fréthun.

The TGV Nord is a dedicated high-speed-railway, (i.e. only TGV services operate along its length) permitting a consistent operating speed of 300 kph and allowing a consequentially high service frequency. Significant time savings can be made compared to services provided by the conventional railway network.
The TGV Nord not only benefits those towns served by a new TGV station, but also connects other towns in the Pas-de-Calais region, employing links between the LGV and the conventional network. In this manner, the towns of Lens, Béthune and Hazebrouck, are served by direct TGV services to Paris, connecting to the LGV south of Arras. Similarly, Douai, Valenciennes, Dunkerque and Tourcoing are served directly. Most of these towns have population catchments of between 200,000 and 400,000. However, some of these towns are served with only a few direct TGV services per day, therefore, benefits are arguably more psychological than economic and have been provided for complex political objectives.

Furthermore, a new high-speed-rail ‘Paris-bypass,' connects the TGV Nord to the TGV Sud-Est and TGV Atlantique, with new TGV stations at Disneyland Paris and Roissy-Charles de Gaulle Airport. This link permits though TGV services from Lille and beyond to Nantes, Bordeaux, Lyon and Marseille.

The decision to build the TGV Nord was spawned largely on the back of the decision to build a fixed rail link between the UK and mainland Europe. However, the TGV Nord also provides a crucial first step towards creating what was historically known as ‘PKAB’ (Paris, Köln, Amsterdam, Bruxelles) and later ‘PKABL’. In this respect the TGV Nord represents the first true TEN rail project which will significantly promote transit between member states.

Travel time savings between Paris and London and Paris and Bruxelles allow international services to compete effectively with the airlines. The section between Lille and the Channel Tunnel is also employed by London - Bruxelles Eurostar services. Furthermore, as has been seen by the effect Eurostar, fierce inter-modal competition, in the absence of a truly de-regulated airline environment, has helped to significantly reduce average fares.

Completion of the Belgian LGV between Lille and Bruxelles (to open 1998), and the British Channel Tunnel Rail Link (to open 2002) will reduce trans-state travel times even further. Dedicated high-speed-rail links between Bruxelles and Amsterdam and Köln are planned to be complete early in the next century. However, TGV services now operate between Paris and Amsterdam, via Bruxelles, employing the TGV Nord. Table 6.2, below demonstrates the international travel time savings between principal European Cities, comparing the base case without TGV Nord, the inauguration of TGV Nord, and the completion of the PKABL network.

Significant ‘generalised time’ benefits also accrue from the provision of such high-speed-rail services, relative to the air alternative. The components of such
benefits include relatively less onerous access, egress and ‘at-terminal-time’ components, improved quality of ‘in-vehicle-time’, and a significant enhancement of total ‘air + rail’ capacity. Where high-speed-rail services are provided on routes with limited airline competition, airline fares are likely to fall.

The decision making process, leading from the project’s conception, the examination of alternative options, through to the determination of the chosen alignment involved significant conflicts and motives which are invaluable to the study of TGV Nord. The project was subject to political interest within the French National government, other nearby European nations and, significantly, in the two northern French regions of Picardie and Pas-de-Calais.

During the process leading to the start of construction, several alignment alternatives were examined, leading to significant national and regional political interactions. Primarily, four route options were identified:

Route option ‘A’: Western alignment, via Amiens, splitting south of Béthune, providing thereof, two separate alignments, on towards the Channel Tunnel the other towards Euralille (the central Lille station). Three scenarios were considered: (A) Alternative western alignment, via both Amiens and Euralille, without split alignments; (B) (chosen route option) Central TGV alignment, paralleling the A1 motorway corridor, via Euralille, and incorporating spur to Arras; and (C) Eastern Alignment via St. Quentin and Euralille.

There were other alignments based on the above route options. Route options ‘B’ and ‘C’ were studied with alignments via Roissy Charles-de-Gaulle airport. Initially, route option ‘B’ was studied with three alternative approaches to Lille, namely: (a) The ’Sud de Lille’ option, where Paris-London services split from the main TGV Nord North-South Axis at Arras, with a direct alignment towards Bruxelles, bypassing Lille to the East. Lille bound services would be obliged to use the traditional network, using the existing ‘Lille Flandres’ station. This option would form a ‘triangle’ of new infrastructure to the south-west of Lille. (b) The ‘Plaine de Flandres’ option, without a split in infrastructure at Arras, but with the Bruxelles and London bound infrastructures splitting to the south of Lille. Again, Lille bound services would be obliged to use the traditional network, using the existing ‘Lille Flandres’ station; and (c) The ‘Plaine de Flandres’ (chosen) option, but with the new infrastructure passing through the centre of Lille, and TGV services using a new dedicated station at Lille.

The city of Lille sought to ensure that the TGV Nord alignment would pass directly through the centre of Lille, involving the construction of a new, dedicated TGV station in proximity to, in their opinion, an area of immense
development potential. SNCF and the national government did not initially support the provision of a central station and TGV alignment through Lille. This was due to significant civil engineering constraints, imposing high costs onto the project. Furthermore, it was anticipated that a 10 minute delay would be imposed on Paris-London traffic, significantly affecting revenues.

The decision to allow TGV Nord to pass through the centre of Lille, was therefore governed by negotiations between SNCF and the regional government. It was agreed that all additional infrastructure costs above those required to link the Channel Tunnel and Bruxelles should be paid for by the regional government of Pas-de-Calais. A significant proportion of these costs were incurred by tunnelling through Lille, and the provision of Euralille station, rather than bypassing the centre of Lille and having TGV’s terminating at the existing Lille Flandres station. The excess cost of approximately 1 Billion Francs was divided between the French state, the region and the city of Lille itself. The region was not liable for the loss of revenue incurred by the 10 minute increased journey time between Paris and London.

In order to provide regional political consensus towards the expenditure of a direct alignment through the centre of Lille, it was proposed that through TGV Nord services would be provided to smaller towns such as Dunkerque, and Valenciennes. The region was also accountable for the provision of these largely non-economic services.

Irrigation of services serves to benefit the whole region, therefore, the region was amenable to contributing capital towards infrastructure through the centre of Lille. Although such irrigating services are not economic, they provided consensus to the whole region, enabling inter-regional harmony, supporting the Euralille project, which, it has been suggested, provides considerable economic benefit to the Lille conurbation. Without the direct TGV services to smaller towns in the region, Euralille may not have been supported within the region, creating a loss of economic potential to the city of Lille.

Following negotiations with SNCF, it was decided that Lille would be provided with a TGV Nord alignment through the centre of the town. However, further studies (notably the Rudeau Report) centred on the choice between alignments A, B and C, with alignments A and C benefiting the region of Picardie.

No regional consensus was evident in the efforts Picardie undertook towards ensuring that the TGV Nord alignment traversed the region. Internal regional conflicts between the Picardie towns of St. Quentin (which would be served by the eastern alignment proposal ‘C’) and Amiens (which would be served by the
western alignment proposal ‘A’) rendered such interregional harmony impossible. Combined with the aim of the central government to maximise the regional acceptability of the project, such conflicts damaged the prospects of the Picardie region towards ensuring either of alignments ‘A’ or ‘C’. Trade-offs are therefore manifest on both regional and national political levels between regional development objectives and regional equality.

Following the ‘Rudeau Report’, the decision was made to construct TGV Nord along route option ‘B’. This was identified as the most economic option (aside from regional politics), involving a direct alignment to Lille, with infrastructure provided parallel to the A1 motorway corridor.

As a small token to the region of Picardie, a regional TGV Nord station was provided mid-point between Paris and Lille along the A1 motorway. This was provided as a Park-and-Ride station, serving towns without a TGV services. Amiens was assured that further studies would be undertaken to explore the future possibility of a second TGV Nord alignment via the city.

Following the commencement of TGV Nord services, many national and international services which had previously passed through towns in the region of Picardie would no longer be provided. In order to minimise any further conflict between the Picardie region and the central Government, it was agreed that the original service frequency along the traditional network would be maintained.

**Decin-Praha-Breclav Rail Upgrade, Czech Republic**

The project involves up-grading 453 km of existing infrastructure in order to allow faster running speeds, employing new, tilting rolling stock. The line forms the central segment of the proposed Central European Axis from Berlin (pop. 3.4 million) to Wien (pop. 1.5 million) via Dresden (pop. 0.5 million) and Praha (pop. 1.2 million).

The Berlin - Praha - Wien corridor has been given top priority within an accord, signed in June 1995, between the Czech, German and Austrian Transport Ministers. The project is likely to be completed by the end of the year 2000 and is seen as a key to greater integration between western and central Europe.
In 1994, the total investment cost of upgrading the central segment within the Czech Republic was estimated to be Kc30.7 bn (ECU 880m), of which Kc6.0 bn will be invested in new rolling stock. Funding has been secured by central Government, and a variety of external sources, including the European Investment bank (ECU 125m) and the European Bank for Reconstruction and Development (ECU 42.6m). Export-Import Bank and four other Japanese banks are providing an ECU100m loan to the Czech national railway company, 'Ceske Drahy' (CD). The EU's PHARE programme was to provide ECU 350m between 1995 and 2000 for the upgrading of Czech Infrastructure, including the Berlin - Praha - Wien main line. However, there are indications which suggest that cost overruns in the Czech Republic are likely to be in the order of 30% to 60%.

The nature of the provision of infrastructure for this project is quite distinct from that of the TGV Nord. The decision was made to upgrade the existing infrastructure for high speed running (160 kph), rather than to construct a new, high specification alignment. The onerous terrain of the corridor, as well as the economic circumstances of the Czech Republic with respect to a Western European country such as France, makes the construction of a brand new railway prohibitively too expensive. Moreover, the upgrading of the traditional network allows benefits to freight traffic, which can also use the new infrastructure.

In order to obtain service speeds of 160 kph, it has been decided to replace much of the existing fixed equipment. The project will entail track relaying, curve realignments, new signalling, telecommunications and train control, and the electrification of the remaining 18% of the corridor for which trains are currently diesel-powered. However, crucial for the attainment of higher speeds, particularly where onerous terrain restricts expensive re-alignment, will be the provision of tilting passenger rolling stock.

The Czech Republic has a total population of 10.3 million. The Decin - Praha - Breclav corridor serves a total potential market of approximately 2 million inhabitants. As well as the capital, Praha, the region of Northern Bohemia is traversed, serving towns with a total population of 190,000. To the east of Praha, the corridor passes through Mid and East Bohemia, providing access to towns such as Pardubice, Hradec Kralove and Ceske Budejovice, with a total market catchment of 200,000 inhabitants. However, after Praha, the town of most significant size, served by the route is Brno.

The town of Brno is located in the region of South Moravia, in proximity to the Austrian border, and has a population of 370,000. With the provision of upgraded infrastructure, and new tilting trains, the journey time between Praha
and Brno will be reduced from the current 3h06 to 2h14. Service frequencies will also be improved significantly.

Although the corridor upgrading will primarily provide benefits to passenger services, freight services will also benefit. The Czech government is keen to minimise the mode shift of freight traffic towards the roads as the country transforms towards a western market economy. Moreover, the rail-freight business in the Czech Republic is potentially highly profitable, due to the geographic location of the country with respect to central Europe.

For the complete Berlin - Praha - Wien corridor, the section between Berlin and Dresden is being re-built to provide a service speed of 200 km/h. The aim is to cut Berlin - Praha journey times from 4h40 to 3h00 and Praha - Wien from 4h50 to 3h30.

The corridor under study is the first in a proposed incremental upgrading of the Czech railway network, and is referred to as 'Corridor 1.' Three other corridors have been identified for upgrading to 160 km/h, with the provision of tilting trains. The accord signed in June 1995, between the German, Austrian and Czech Transport Ministers also paved the way for the upgrading of the Praha - Nürnberg and Praha - Linz corridors. These form part of corridors 3 and 4 respectively. Corridor 3, forming an east - west axis is also proposed to link the main Praha - Nürnberg corridor with München, and to extend corridor 1 eastwards towards Ostrava and the Polish border. Corridor 2 is proposed to link Breclav, near the Austrian border, on the alignment of corridor 1, with corridor 3 at Prerov, thus improving access to the north-eastern town of Ostrava and enhancing cross-border traffic between Austria and Poland.

**Twente-Mittelland Kanal, Germany - The Netherlands**

The planned waterway should - as an additional part of the European waterway-network - contribute to the elimination of certain bottlenecks as well as to the reduction of the overall transportation times. It will connect the Twente-Kanal in the Netherlands and the German Dortmund-Ems-Kanal a few kilometres north of the junction of the Mittelland-Kanal. Besides the existing connections via Rhine and Ems it would be a further connection between the two countries national waterway-networks.
The project represents a 90 kilometre short cut on the existing route, which takes a large "U-shaped" route to the south, although the existing route is almost totally upgraded to current optimum design characteristics (in terms of depth, etc.).

Traffic originating from Rotterdam currently has to travel some distance upstream on the Rhine at 8 kph (vs. 16 kph downstream). This implies that there are significantly larger time savings to be obtained from the Dutch side as opposed to traffic originating the German side.

The canal will have little regional development impact - the main project impacts will be time and operating cost savings to long distance barge traffic. The existing route has several locks to negotiate (an average delay of one hour is considered reasonable per lock) whereas the TMK will only have two, although the connecting point at the German end has been specified as being to the north of Rheine which entails the negotiation of two further locks before entering the Mittelland Kanal itself.

The project, although only at initial feasibility stage, has been ranked as very high priority by the Dutch as it substantially improves the hinterland connections of Rotterdam. The main downstream traffic on the Rhine is coal and iron ore whereas the upstream traffic (which would benefit most from this project) is container traffic - there is a heavy Dutch influence in this industry. PLANCO have undertaken a study of lock traffic on the German/Austrian border and found that 40% of the traffic was of Dutch origin - this gives some indication of the size of the industry concerned. The TMK connection also gives strategic access to Berlin and other eastern areas of Germany.

The apparent one-sided nature of project promotion is not so surprising. The poor CBA score of under 1.0 arrived at by the German planning authorities is a direct reflection of the lower strategic benefits, lower time savings and lower operating cost savings for traffic originating in Germany - given the ability to achieve speeds of 16 kph for nearly half of the distance on the existing "U-shaped" route which is 90 kms longer in terms of distance. Thus, overall, the relatively high benefits to Dutch traffic, when combined with the low benefits to German traffic do not sum to a level which offsets the costs of the project to a high enough degree.

The previous sections also highlights an interesting point regarding the spatial distribution of project benefits. Whilst economic assessments have been undertaken from both a Dutch and a German perspective, the results are reported for the project as a whole, which hides many potentially interesting
features. The perceived benefits to traffic originating in The Netherlands are wholly dependent upon the whole project being in place. The costs of the project are to be divided by the number of kilometres in each country, rather than in relation to who is getting the bulk of project benefits. This is a critical issue to cross-border projects that is often a barrier to progress.

An important factor in favour of the project is its location in a border region. The map of the waterway networks in this part of Europe clearly shows a "missing" section that crosses the Dutch-German border. This, as is the case in many instances of "missing links", is a consequence of past national policies focusing on the development and completion of the national network as a priority over cross-border links, which would serve as better routes when looking at the geography in a regional context. The benefits to the region, as opposed to the economies of The Netherlands and Germany respectively, are, therefore, likely to be significantly greater.

It is possible that an East-West link such as this could make inroads into the hinterland of the port of Hamburg. In terms of container traffic to the Central European hinterland, the current ranking is Rotterdam, Hamburg, Bremerhaven then Antwerp. The construction of the Twente-Mittelland will tend to increase the advantages of Rotterdam over Hamburg and Bremerhaven. A study conducted by PLANCO for the city of Bremen analysing the impact of the (E-W) Betuwe freight railway link did show some cost advantage switching to Rotterdam, so some similar shifting in response to the TMK link might be expected.

**The Amsterdam Ring Road, The Netherlands**

The Ring Road (A10) as a whole is 32 kilometres in length and interchanges with 15 city roads and 5 national highways. The road is characterised by numerous bridges and flyovers, two road tunnels and two train tunnels.

The whole Ring Road is dual carriageway, with the Coentunnel being dual 2 lane. The remainder is at least dual three lane, with four lane sections in parts.

The most expensive section to be constructed was the Zeeburger shore connection, Zeeburger tunnel and Zeeburger bridge, which connect the eastern and northern sections of the Ring Road. Total cost of this section was 250m Guilders. The road to the west of the Coentunnel was already in use during the
1960’s. The remaining sections to be constructed have been subdivided into six distinct sections.

Between Europaboulevard and Johan Blokerweg, a large number of flyovers and bridges occur over the Amstel River. Between 1987 and 1989, a second bridge over the Amstel was constructed, with a railway bridge sandwiched between the two road carriageways. The section between Johan Blokerweg and Middenweg was built between 1987 and 1993, with traffic being handled at 3 levels in some places. A moveable bridge over the Weespertrekvaart forms part of the Gooise Knoopp - a three level traffic interchange with two national highways and a water crossing. The period 1988 - 1989 saw the completion of the Ring Road between Middenweg and the Amsterdam-Rijn Channel. Between the Amsterdam-Rijn Channel and Zuiderzeeweg are located the Zeeburgertunnel and Zeeburgerbridge, completed in 1989 and 1990 respectively. All hazardous traffic is transported over the bridge, whichever direction it is moving in. This was the final link to be completed in September 1990. The section between Noorderhollands kanaal and the A8 to Alkmaar was opened to traffic in 1988.

During the construction phases of the Ring Road, several problems had to be surmounted. Financial setbacks were a continuing problems - in the 1970’s several unfavourable choices were made concerning the Ring Road due to pressure on central government finances. In 1981 the collection of road tax was extremely low, which put the completion of the highway in doubt for some time.

Technical problems were encountered due to the clay, sand and peat based earth in the Amsterdam region. When the western part of the Ring Road opened in 1975, it passed close to many houses. Once completed, traffic levels were such as to create noise problems for nearby residents, necessitating expensive sound proofing to adjacent properties and subsequent alignment changes to later sections of the road.

When finally completed in 1991, Amsterdam was freed from some of its worst bottlenecks and traffic jams - the A9 (widened as an interim measure prior to completion of the Ring Road) was freed of congestion, traffic on the N10 (city road) heading north was much reduced and to the west of the Coentunnel, the traffic jams became shorter and "rat running" through surrounding districts was reduced.

It has, however, become clear that the Ring Road, so long in the planning and construction process, has been overtaken by time and congestion now regularly
occurs on certain sections during peak hours. The construction of a half outer circle is already taking place, aimed at providing more capacity for through traffic on the national highways. The opening date for this Westrand road is planned for 1998, although a second Coentunnel will be required.

The Lyon-Turin Transalpine Railway Connection

The transalpine Lyon-Turin connection is among the fifteen European key links that the European Commission listed on the master plan of European high-speed network on 17 December 1990. In addition, in France, it is one of the projects selected by the master plan of high-speed railway network which was approved by the government decree of 1 April 1992.

It has been ten years since the Transalpine railway between Lyon and Torino is a project. Planned to connect the two regional capitals in one hour and a half, this line has become realistic as studies and concertations about its implementation has been carried out. The Lyon-Turin project is interesting because it is a good illustration of last years’ transformations in the way France conceives a TGV policy; generally it informs on the evolution of how France deals with major investment projects.

The will to integrate a large number of actors and a variety of stakes has been constantly leading to a redefinition of the project. From a line to a network project, from very high speed to high speed, the project has progressively become more complex and costly. Moreover, this re-definition leads to a paradox : the more complex the project is the more its to be completed. Thus, while integrating financial problems and territorialisation’s wills, the Lyon-Torino protagonists have progressively decomposed then recomposed a project that can be seen today as a set of four sub-projects articulating the regional, national and international stakes of the Transalpine line. Following the phasing principles, the sub-projects have ‘realistic’ dimensions and allow to consider the infrastructure’s global realization : to build ‘a part’ is a way to engage oneself for ‘the whole’ insofar as the realization of a section will be perceived as the beginning of the works on the whole connection.

First defined as the missing link between the French and Italian network, the project has progressively been changed so as to meet the requirements and concerns of the different partners. If the reduction in travelling time of passenger transport remains one important issue, other aspects of the project seems to take on as much - or even more - importance now. For instance, goods
transport - considered as a means of relieving the Alps valleys from the current road traffic - progressively comes up as the fundamental stake of the project, in particular from the environmental point of view. The project which is displayed should ‘improve the traffic flow across the Alps and fight pollution.’

The current project of a ‘Transalpine railway connection’ combines passenger transport and goods carriage. It connects the axis of the French Sillon Alpin to the international axis crossing the Alps, and in addition, tries, to combine international, national and regional connections. Integrating a rising number of different concerns and stakes, the project of ‘the Lyon-Turin Transalpine railway connection’ has become more complex and, at the same time, has remained globally consistent thanks to the coordinating system implemented.

The master plan of the Lyon-Turin transalpine connection includes two sections now: an exclusively French section between Lyon and Montmélian and an international section between Montmélian and Turin, called ‘international link’. Every section includes sub-projects.

The international link is made up of three sections: a French section from Montmélian to Saint-Jean-de-Maurienne; an international section (from Saint-Jean-de-Maurienne to Bussoleno) including exclusively the base tunnel and its access; an Italian section from Bussoleno to the Turin rail junction.

**The Brenner Axis**

As part of the corridor from Munich to Verona the Brenner rail axis has been identified as one of the trans-European network priority projects by the group of national representatives of the heads of states (Christophersen group). The Agreement on Transit Traffic between Austria and the European Union was signed almost exclusively because of the Brenner corridor.

This case study reveals which kind of barriers have been substantially influencing the progress of the transport initiatives related to the Brenner axis, with a specific focus on the barriers involving conflicts of interest among the various actors in the field. The decision-making process is analysed according to three different but equally important scenes of debate for the development of the situation of transit traffic on the Brenner axis:
The construction of a railway/intermodal key-link as part of the trans-European networks

The eco-point system, a quota restriction for transiting trucks based on NO\textsubscript{x} emissions, which is the core part of the Agreement on Transit Traffic between Austria and the EU

Road pricing, both specific road charges on the Brenner motorway and the general motorway toll in Austria.

Additionally, the case displays a very distinct process of territorialisation with the involvement of regional and local actors, including a wide spectrum of citizens’ movements.

The thematic division is necessary as the decision-making process in the three areas has shown different patterns: the actors involved have followed different strategies on each, forming different alliances with other actors, and being involved in different conflicts. Nevertheless there is an important interaction between the three scenes of debate and it is necessary to draw all the aspects together to understand and identify the barriers to policy implementation in this case.

The Eastern TGV Project

The Eastern TGV project was declared as of public interest on 14\textsuperscript{th} May, 1996. In the file of the public enquiry it was described as comprising a new high speed line, from Vaires (Île-de France) to Vendenheim (Alsace) (see the map on the previous page). This new infrastructure has a length of 406 km and is entirely dedicated to passenger traffic. With the rolling stock able to run at 350 km/h (as already announced in 1994), travel time between Paris and Strasbourg would thus be reduced to less than 2 hours. The project was also composed of branch-lines, aimed at serving the interconnection in île-de-France and the main cities in the Eastern part of France, namely, Reims, Châlons-en-Champagne, Metz, Nancy, Strasbourg. It also aimed at allowing services to Sarrebrück.

Originally foreseen were also 3 new stations in Champagne-Ardenne, Meuse and Lorraine — « gare-bis » — located outside the city centres. However, the commission of enquiry recommended that these be not constructed prior to assessing the local impacts and how they would be integrated in regional development plans.
The public enquiry commission recommended also the upgrading of existing lines, specifically, the electrification of lines in the Vosges region; the improvement of the commercial speed between Metz and Luxembourg; and the improvement of the commercial speed between Strasbourg and Kehl (Rhine crossing).

In the case of the Eastern TGV profitability was from the beginning questionable. For the State and the SNCF, following along the lines of their common policies till then, more important was that the route adopted for the project would include certain geometrical characteristics that would facilitate technological progress (i.e. the attainment of a commercial speed of 350 km/hour). The argument in favour of these characteristics was that the connection to Germany thus achieved would, in the medium- to long-term, provide the basis for profitability.

The decision-making process which characterises the elaboration of the Eastern TGV project offered an original case study for several reasons: it is marked by mobilisation outside the SNCF, originating from regional and international players, a fact which gave a significant impulse of possibly a prototypical character; it involved the call for the financial contribution by the local authorities affected by the Eastern TGV; it involved the application, for the first time, of the 91-61 circular, which seeks to organise the different stages of studies and consultation up to the public enquiry and the first works; the application, likewise for the first time, of the 92-71 circular, which aims at reinforcing transparency in the decision-making process; and, finally, the setting up of a steering committee for the studies, as a means of co-ordination among the different co-financing actors.

The lack of financial resources induces an uncertainty about the construction of the Eastern TGV. Hence, the search for funds has acquired an almost symbolic significance, becoming a resource that the players use to negotiate the basis of their own and others’ commitment. As a matter of fact, it has been a question of defining the degree and scope of commitment(s) to a project which has always been considered a ‘political’ one, i.e. a project developed not necessarily according to the commercial logic of the SNCF, but in order to satisfy other interests, and, specifically collective and territorial interests. Against this background, legitimation for the project has been sought by reference, on the one hand, to the European dimension—and, specifically, the European high speed network and notably the links with Germany—and, on the other hand, the national territorial planning policy and the need to improve the interregional links, with Paris as well as between regional towns.
The main system of players which explains the decision-making process linked to the Eastern TGV project is composed of three major groupings (or interest groups): the French State, the SNCF and the local authorities, all three likewise involved in the financing of the project.

Two specific debates concerning the Eastern TGV are of particular importance. The first concerns financing, the second the modes of territorialisation.

The issue of financing is at the centre of all concerns and all negotiations. It is, in turn, composed of two dimensions: that of the allocation of the financial burden to the various partners to the project, and, related to this, the issue of phasing. How the project is to be phased is, in turn, considered by the government as the best means to contain and manage the financial burden.

The second scene is about the modes of territorialisation of a project dedicated to interregional and international services, that is, the way through which it is appropriated by the territorial authorities along their own geographical scales of skills. This issue is again made up of two dimensions: first, the question of binding the local authorities to the decision through the setting up of a steering committee to co-ordinate the studies and the procedure more generally; second, the question of regional planning, through the physical, functional and institutional introduction of the project in their territories.

The TGV Brussels – Amsterdam/Cologne (PBKAL)

Parmi les liaisons trans-européennes de transport, le projet de ligne ferroviaire à grande vitesse entre Paris - Bruxelles - Cologne - Amsterdam et Londres (PBKAL) est l’un des plus importants, à la fois par son histoire (il réactualise un projet d’ « Europolitain » conçu au début des années 70), par sa taille (plus de 700 km de voies nouvelles à construire et près de 175 km de lignes ferroviaires à aménager), par son coût (estimé globalement à environ 13 milliards d’ECU), par ses implications techniques, commerciales et sociales pour les entreprises de transport (interopérabilité des réseaux appartenant à cinq pays différents), ainsi que par les enjeux territoriaux qu’il recouvre (renforcement des liens physiques entre la Grande-Bretagne et le continent avec le couple TGV/tunnel sous la Manche, ancrage de l’agglomération parisienne sur l’espace dit de la « banane bleue » européenne, affirmation de la position bruxelloise, desserte de secteurs géographiques comptant parmi les plus densément urbanisés, situés au centre économique de l’Europe de l’ouest).
Projet européen, symbole de la construction d’une politique communautaire des transports (il a été le premier projet du réseau européen de trains à grande vitesse pour lequel un accord a été conclu entre les différents gouvernements concernés, le 21 novembre 1989), la conduite du projet PBKAL est également fortement empreinte de logiques et de styles nationaux. La présentation adoptée dans le rapport du groupe de travail CHRISTOFFERSEN (1995) en est d’ailleurs révélatrice car, si les auteurs insistent sur la cohérence européenne du projet « it is crucial to treat PBKAL as a single project », ils ajoutent aussitôt : « As political, technical, administrative and financial matters differ significantly in the Member States concerned by the PBKAL, this description is made country by country ». De fait, les rythmes différents d’inscription du projet sur les agendas politiques des pays concernés et les décalages temporels dans la réalisation des différents tronçons qui composent la ligne à grande vitesse, témoignent de l’importance des contextes nationaux. Ainsi, par exemple, en 1993 étaient ouverts les 363 km de ligne nouvelle du TGV-Nord en France alors que les 88 km qui composent la branche ouest du TGV en Belgique, entre la frontière française et Bruxelles (incluant des tronçons de voies aménagées), n’entrent en service qu’à la fin de 1997. Les autres opérations prévues pour compléter le PBKAL que ce soit en Belgique, en Angleterre (CTRL), aux-Pays-Bas et en Allemagne ne devraient aboutir qu’à l’horizon 2000/2006 si des retards ne viennent pas en perturber la réalisation.

L’enchevêtrement croissant des politiques européennes et nationales rencontre également l’affirmation plus ou moins prononcée des niveaux infra-nationaux. Le rôle des régions, en particulier, tend à s’affirmer. Ainsi, dans le contexte français, nous avons montré comment le TGV-Nord pouvait aussi être considéré comme un vecteur d’identité régionale alors que le milieu technico-politique du Nord-Pas-de-Calais a été en mesure de bâtir, de porter et de faire aboutir un projet collectif touchant au tracé de l’infrastructure et aux services à effectuer sur son territoire, projet distinct de celui de la SNCF, qui a été négocié avec l’entreprise sous la forme d’une convention globale. L’objet grande vitesse s’est ainsi révélé porteur d’enjeux qui dépassent celui des politiques sectorielles : affirmation d’une expertise technico-politiques locale, promotion de l’image de l’élu manager capable de mobiliser des ressources pour créer les conditions d’une dynamisation du territoire, mais également, valorisation de la figure de l’élu protecteur garant de l’équilibre territorial à l’échelle régionale. Le travail effectué par M.OLLIVIER-TRIGALO sur le TGV-Est traduit également cette montée en puissance des collectivités locales dans un contexte où elles sont de plus en plus sollicitées pour participer directement au financement d’une l’infrastructure qui ne répond pas à la logique commerciale de la SNCF.

Poursuivant les travaux menés sur le thème des relations entre l’organisation spatiale des réseaux, la politique sectorielle de la grande vitesse ferroviaire et la place des échelons locaux dans la conduite des processus décisionnels, nous
nous intéresserons cette fois au terrain de la Belgique. Une analyse du projet TGV menée sur ce pays présente d'emblée plusieurs singularités dont on fera l’hypothèse qu’elles impriment des modalités et un rythme propre à la réalisation du TGV :

Du point de vue territorial, l’évolution institutionnelle que connaît le pays est marquée par une fédéralisation croissante. Celle-ci a débuté dans les années 70, à travers un processus original ne visant pas à rassembler des entités autonomes (comme ce fut le cas en Suisse ou aux États-Unis), mais à décentraliser un État unitaire autour de trois régions (la Wallonie, la Flandres et la Région Bruxelloise), doublées de trois Communautés à vocation culturelle (française, flamande et germanophone). La réforme fédérale qui s’est précisée au début des années 80 (loi du 8 août 1980) a connu une forte amplification dans les années 88/89 (extension des compétences, du poids politique et des ressources des régions). On peut alors s’interroger sur le rôle de l’entité régionale en Belgique face à la réalisation d’un projet de transport ferroviaire qui reste une compétence de l’État national, soutenu par une entreprise nationale (la SNCB) chargée d’exploiter le réseau. Comment la Région intervient-elle pour pousser, freiner ou modifier la mise en œuvre du projet TGV ? Quels sont ses intérêts devant l’évolution du réseau, comment les exprime-t-elle, quels sont ses leviers d’intervention ?

Du point de vue sectoriel, la logique de la grande vitesse, telle qu’elle s’est développée en France, ne peut guère avoir de sens pour la Belgique. En effet, la petite taille du pays rend sans objet le modèle du « shunt » qui a présidé à la mise en service des premières lignes à grande vitesse sur le territoire français. Les dessertes de point à point effectuées à près de 300 km/h entre de grandes agglomérations distantes de plusieurs centaines de kilomètres, ne peuvent constituer une référence pour un État dont le territoire est à peine aussi vaste que celui de la région Bourgogne. Le modèle allemand, moins sensible aux performances de vitesses, mais ouvert à la circulation des marchandises, plus soucieux d’une intégration entre réseau ferré classique/infrastructure nouvelle, et conçu pour desservir des d’agglomérations éloignées seulement de 100 à 150 km en moyenne, constitue-t-il alors un modèle pour la réalisation de lignes à grande vitesse en Belgique ? Si certains éléments incitent à répondre positivement, d’autres en revanche, comme la réalisation de nombreux tronçons permettant des circulations à 300 km/h, la spécialisation des voies nouvelles ou (dans un premier temps au moins) la préférence accordée à la technologie ferroviaire issue du TGV sur celle de l’ICE allemand, conduisent à faire l’hypothèse de la définition d’un référentiel original pour l’action publique lié à la mise en œuvre de la grande vitesse en Belgique, sorte d’hybridation issue des deux cultures ferroviaires voisines que la situation géographique charnière de ce pays, dans le cadre du projet PBKA, tendrait à accréditer. On peut alors se demander si les décalages temporels dans la réalisation du TGV en France
et en Belgique ne proviennent pas aussi d'une difficulté à faire émerger et partager ce référentiel particulier dont nous chercherons à qualifier le système de valeurs qui l'oriente.

The Øresund Fixed Link

Close to 16 km long, the Øresund Fixed Link will connect Malmø in Sweden with Copenhagen in Denmark. The coast-to-coast crossing time will be approximately 10 minutes for cars and five minutes for high-speed trains. The so-called KM 4.2 alternative was chosen. This represents a combined motorway and railway connection and is a combined tunnel and bridge connection.

In the case of the Øresund Fixed Link, the configuration and actions of the most relevant players can be best analysed using the concept of ‘coalitions of players’. Three such coalitions may be identified, each representing different viewpoints, providing the politicians with different arguments and following different strategies.

The local pro-coalition consists of players who promote the local perspective, namely that it was desirable to create a Copenhagen-Malmø growth centre, both culturally and economically, with a population of 3.2 million inhabitants (including the surrounding area). This is the traditional perspective in the sense that it has existed since 1953, when for the first time the proposal for constructing a fixed link entered the political agenda.

The international pro-coalition does not primarily see the link as a local and regional asset, but as a means to improve the general international mobility for goods and persons, hence as a way to improve the conditions for trade between Scandinavia and Europe. The Øresund Link is thus seen as a part of a wider overall transport system—quite contrary (yet not necessarily contradictory) to the arguments advanced by the local pro-coalition. The Øresund Link is thus seen as a part of a wider overall transport system. This is the ‘new’, or modern (as opposed to the traditional) perspective. It complements the arguments advanced by the local pro-coalition.

The environmental coalition opposed the KM 4.2. solution claiming that it would impair the local environment and cause increased traffic and CO₂-emissions. The coalition questioned the basic rationale for the link and favoured a tunnel-rail solution (or no link at all).
The international pro-coalition was by far the most influential. This was partly due to its good organisational strategies through which it managed to first get access to and then thereafter gain acceptance by important political and administrative fora. This influence was, however, only possible because of the political context: against the background of the process of European integration and the creation of an internal market, and, more generally, of globalisation and the wider focus on international issues, it was much easier to gain the attention of both the national and the European political representatives.

Seen from a European perspective the Øresund link may be considered an exemplary case: Two well functioning countries, which have many cultural and political values in common and which work in countless ways together in everyday life, agree on a common project. They establish a regulatory framework (new organisations to carry out new duties), they take formal decisions and they get the decision implemented almost entirely and according to the overall time schedule. The conflicts have been solved along the way - and the price for it has ‘only’ been some minor delays and some extra construction costs.

Seen from a national bi-lateral perspective almost the same ‘success’ story can be told. With the exception of mainly the subject of the timing of the construction of the Link (with Sweden pushing for an earlier date but having to wait till the Danish Great Belt Link was decided upon in Denmark in 1986), there have been no major explicit conflicts between the two countries. The public debates focused around value conflicts rather than on issues of national interest. Indicative of this is, for instance, how both Swedish and Danish environmental groups co-operated to oppose the proposals and opinions of both the Swedish and Danish industries (and vice versa).

From a societal perspective the Øresund decision making process can be characterised as rather problematic in the sense that many different players forwarded different viewpoints and it was not in all cases possible to reach a compromise. The most problematic issues and remaining conflicts are the environment on the one hand and the modal split.

**The Skaramanga Interchange / Greece**

The Skaramanga Interchange (I/C) is to be constructed at the major junction of the Athens-Korinth-Patras Motorway (AKP) with the Athens Peripheral Motorway through Egaleo Western, whose construction is almost
completed (6.5 km). The I/C is a road construction work and specifically, a road node which ranges between 2.5 km in the Athens-Korinth-Patras Motorway and 3 km in the Athens Peripheral Motorway. The forecasting traffic volumes from additional relevant studies are 75000, 112000 and 166000 vehicles per day for 1996, 2006 and 2016 respectively. An EIA was prepared for the I/C which played an important role in the decision-making process for the construction of this new project.

Today, due to the concentration of heavy industries and other polluting activities in the vicinity of the I/C, this area has been degraded and with many environmental problems (air pollution, noise, etc.). Also, in the area where the I/C is to be constructed lies the Koumoundourou pond, which is the only pond of western Athens area, and a site of historic importance. The influence zone of the project is located within the Attiki Region and is under the Municipality of Western Attiki. The I/C crosses the boundaries of Haidari (with a population of 50.000 residents) and Aspropirgos (with a population of 20.000) districts, respectively. Within the zone of direct influence of the project is the Skaramanga Community, that is under the Haidari district and includes the regions of Skaramanga, Ano Afea and Kato Afea.

The main part of the economically active population is occupied in Industry/SME's, while the rest of the population covers the sectors of construction (including hotels, restaurants), transportation (transport, storing), as well as "administrative" services (Banks, Communications, Insurance).

The main elements of the project are as follows: The Echos hill; the Skaramanga mountain; the Koumoundourou lake which has been downgraded and has many environmental problems due to the concentration of heavy industries and other polluting activities in the area; the Elefsina bay, a resort in its early days but a severely polluted bay today, which can no longer preserve the 'coastal' profile that used to characterize the esthetic of the Skaramanga region; the Skaramanga community, which is constructed with no specific order and whose main characteristics are the offer of a low home-building coefficient and the increased percentage of third-grade activities (hotels, shell shops, etc.); the Afea community, which preserves its cultural heritage has a population living at poverty level; the shipyard installations, which tend to be the main characteristic of the region, as they cover a major part of it; the Xirogianni military campus, that covers the lowland of the basin of the Koumoundourou Pond, degrading the area esthetically and ecologically (main pollution source from petroleum products).
The Greek Inter-Island Passenger System

In the past helicopters were mainly used for military operations and rarely for activities relating to Civil Aviation. There were quite a few military heliports and the landing/take off procedures were performed within the existing airports, football grounds, Hospital areas and generally within any field that was free of obstacles. During the last decade the use of helicopters has been expanded due to the advantages it offers in urgent air transport (transport of patients, supplies, etc.).

Greece's air transport system is being supplemented by the development of a heliport network. This network will be integrated in terms of geographical coverage and operational needs. The main development directions of this network are:

a) the extension of the heliport network in the Aegean Sea, through the construction of heliports on some islands and the completion of existing heliports with means necessary for their safe operation;

b) the completion of the heliport network of the INTERREG program (borderland areas), through the construction of continuously operating heliports on the basis of international standards;

c) the construction of heliports on isolated islands and areas not included in the Aegean and INTERREG programs;

d) the construction of heliports in cultural areas of international interest;

e) the development of five rescue bases for helicopters in coastal areas, in order to ensure the provision of search and rescue services in the Greek seas, according to international conventions; also, the construction of a maintenance base for helicopters;

f) the construction of heliports within the area of certain hospitals in large urban centers (according to an appropriate spatial distribution) serving transport needs in cases of emergency;

g) the construction of heliports in large ski resorts;

h) the procurement of a sufficient number of helicopters, including at least ten all-weather helicopters, to serve the rescue bases and emergency cases in general, under adverse weather conditions;

i) the creation of a body competent for the organization and operation of the whole network, the maintenance of land infrastructure and of air means, and the overall management of the helicopter - heliport system.
The concept of the establishment and operation of a heliport network in Greece was initially introduced during the 1970s. Over the next decade the key objective was to cover social needs, mainly in the Aegean area. The support of the population, the development of exploitation of resources and tourism in the border-underdeveloped regions and islands, played a secondary role in the completion of the Greek heliport network. According to the country's transport policy, air transport infrastructure will be supplemented by the development of 88 heliports which are intended to cover special needs or provide access to small islands. The programs concerning the heliports' network will include: A Program for the Aegean Islands (21 heliports); A Program for the border regions (34 heliports). Twenty of these heliports are funded by the INTERREG program. Among them, 10 heliports are located in the Aegean region (additional to the above mentioned 21 Aegean heliports); A Program of 7 heliports for the rest of Greece; A Program for heliports of cultural interest areas (5 heliports); A Program of 5 heliports for rescue bases; A Program for hospitals (2 heliports).

The construction of the heliports funded by INTERREG Program aims in the short-term at satisfying the needs (emergency medical service, etc.) of the border-underdeveloped regions as many of the Aegean islands are and in the long-term at supporting the population, and developing the exploitation of resources and tourism in these regions.

**High-Speed Line Barcelona-Montpellier**

The construction of the high speed line between Barcelona and Montpellier - European gauge and mixed traffic between Barcelona and Perpignan - is one of 14 TEN priority projects in Europe. The reasons for its choice are the following:

Its profitability in the economic and social areas that is a product of the suppression of the historical barrier constituted by the different gauges of Spanish and European lines. The prolongation of the UIC gauge to Barcelona for goods and to Madrid and Seville for passengers, comprises one of the fundamental elements for improving the cohesion of the European space. Both Catalunya and the French region of Languedoc-Roussillon are currently in a railway “cul de sac”. They will leave that situation thanks to the construction of the new railway infrastructure. Both regions, effectively separated by the difference in gauge, will no longer be so thanks to the high speed line. They will become a passage zone for trail traffic between the Iberian Peninsula and the rest of Europe,
Its interest in matters of the large reduction in time for the voyage, both for passengers and goods, that allows the modal distribution to be improved as well as optimising existing infrastructures,

Its impact on the territories and regions it passes through because it facilitates the revitalisation of Southern Europe. Effectively, and relating to the French part of the high speed link, the TGV Languedoc-Roussillon contributes in a substantial way to territorial planning in the region, not only because it implies the creation of a new infrastructure as refers to railways, but also, because of the characteristics of the French rail network with only one gauge, this high speed line with connect to the classical network that will contribute particularly to returning the balance between the East and West of France. This additional advantage, that is to say the connection of the high speed line with the conventional network, is not possible in Spain because of the difference in gauge of the conventional and high speed networks. In any case, the increase in the number of exchanges between Spain and France that is foreseen, will provide an increase in the relationships between cities on both sides of the border, which will contribute considerably to the regional development of these frontier areas.

**Mid Zealand - Femer Belt**

The Mid Zealand - Femer Belt Railway Line runs from the City Ringsted in the middle of the island Zealand to the coastal town of Rødby on the southern end of the island Lolland and passes via the island Falster. The three islands are connected to each other by way of bridges serving both road and railway transportation. Almost the entire railway line is located in the Storstrøm's County which consists of 24 municipalities populated by 257,776 inhabitants.

The project is in the conceptual phase of the development process and the project's outline is not very well defined. Part of the reason is the ongoing distribution struggle between regional areas in Denmark. Storstrøm's County tries to redesign the project by splitting the railway line into a northern and a southern part arguing that upgrading of the northern part should be carried out as soon as possible not awaiting the Femer Belt Link decision-making process. Also Storstrøm's County, along with some of the municipalities and some interest organisations, is active in confronting the administration with the issue of fund allocation. The Ministry of Traffic and the Scan Rail Company (national infrastructure) relate the improvement of the entire railway line closely to the possible establishment in the near future of a fixed link between Denmark and Germany across the Femer Belt. Therefore, for the time being they are reluctant
to involve themselves too much into the process on the railway line project. The same is the case for the government as a whole.

**TGV Aquitaine**

The Aquitaine TGV project belongs to the 14 European projects listed in Essen, 1994. Its priority status was build on its European objective to link Madrid (from Paris and Europe) alongside the French Atlantic coast. In 1998 it was at an early stage in the decision-making process; the latter could be described as ‘hesitant’ composed of stop and-go-periods. Seemingly, the legitimation of the Aquitaine TGV project was not clear and the actors involved in the decision-making process encountered difficulties to build it. Co-ordination was missing. The Aquitaine TGV project was additionally the first to be managed through new ministerial proceedings which foresaw a greater degree of public participation.

**Road pricing**

Ever since the late 1980s and early 1990s, two general questions have occupied the Austrian transport policy community: first, how to finance the construction and maintenance of roads in the face of ever-increasing demand for road transport and, second, how to control or at least curb this increase in demand. Road Pricing in Austria has evolved in a high iterative, circular, and incremental fashion. As a result of this disjointed and (moderately) polyarchic policy process, it is difficult to make out one definitive Road Pricing scheme in Austria: rather, there seems to be three ‘virtual’ road pricing projects. The first foresees a distance-related toll on all motorways covering both private motor vehicles and HGVs (the original idea). The second (the proposal currently on the agenda) envisages tolling HGVs only on Austrian motorways. The third ‘virtual’ project concerns the tolling of private motor vehicles on Austrian motorways. The road pricing project can be considered to be in the planning phase.

The issues dealt with concentrate on the field of socio-economic assessment. This issue has two facets: One side is the aspect of equity and fairness, which would be harmed by the introduction of road pricing putting burden especially on the lower income groups. The other aspect is the distribution of costs and benefits brought forward by the regions.
Another barrier could be detected in the field of environmental assessment. It is supposed that the introduction of road pricing would relocate the traffic on secondary roads causing congestion, pollution and an increase in car accidents. The actors in this field belong to the informal and official policy arena.

**Technical harmonisation of sizes and weights within EU**

From the end of the ‘60’s the European Commission has been striving for harmonisation of sizes and weights of commercial road vehicles that are used in international transport. The main objective of the European Commission with respect to the harmonisation of sizes and weights of trucks and buses is to ensure that the vehicles can easily cross borders between the member states without the risk of being stopped because of deviating sizes and weights.

The policy assessment led to the definition of maximum sizes and weights of buses and trucks with an empty weight of over 3.5 tons. The admitted maximum weights are the totals of the empty weights and the loads. The regulations have been laid down in the Directive 96/53.

**The new Athens Airport**

The idea of building a new airport in Athens to replace the existing one has been mooted for many years. A site at Spata, 25 km north-east of the city, was selected in 1974. As a result of political and economic difficulties, the project was shelved for many years.

It was not until 1991 that the Greek authorities revived the project to replace the existing airport as a result of the growing congestion of infrastructure that is difficult to extend because of the small size of the existing airport site. Since, in addition, the airport is situated within the urban area, the increased noise to which the inhabitants are subjected as a result of the growth in air traffic militates in favour of constructing a new airport further away from the city. Athens with the new airport, will significantly contribute to the ground access of the airport and to the overall development of the area. A significant portion of the suburban railway line is foreseen along the central reservation of Elefsina-Spata motorway.
Annex IV. Method

The TENASSESS used a combination of methods for collecting and analysing empirical material.

For the survey of national transport policies and CTP, we relied primarily on two methods: first, **desk review of relevant policy documents**; second on **expert interviews with relevant policy actors**, stakeholders and citizen organisations in each country and at European level. The review and expert interviews were carried out with the objective of identifying the general goals of transport policy as well as the more specific measurable objectives relating to each. For each set of objectives a list of policy measures was compiled. In turn for each measure we explored the progress in implementation and inquired into their effectiveness and their efficiency as well as to the existence or not of conflicting interests with reference to their implementation.

**Case studies** comprised a major element of the TENASSESS method. Three set of case studies were carried out at three distinct stages of the project:

- **d)** first, for testing the TENASSESS PAM;

- **e)** second, for exploring conflicts in the implementation of major transport infrastructure projects for providing input to the development of the TENASSESS Barrier Model;

- **f)** third, for testing the TENASSESS Barrier Model.

The objective of the first set of case studies for testing the TENASSESS PAM was to **collect data on the impacts of the projects** (as reported in various feasibility and/or implementation studies) and technical information for estimating impacts where no information on the latter was available. These were then compared via the PAM with the measures of performance characterising different policy objectives as identified by the review of national transport policies.

The second set of case studies carried out for providing input to the development of the TENASSESS Barrier Model focused on **the decision process** characterising the implementation process. The method employed here drew from **the field of political sociology and the sociology of organised action**. It was based on the concept of ‘concrete systems of action’
which allowed to characterise the decision process through the institutional actors involved, their objectives, strategies and alliances, paying particular attention to their interplay over time. A guiding principle was to explore conflicts and how these constituted the definition and implementation of the project.

Finally, the third set of case studies were carried out with the objective of testing the Barrier Model. For this purpose a standardised questionnaire was elaborated for collecting information on the barriers to the implementation of CTP and the context surrounding these. This questionnaire is reproduced at the end of this Annex.

Another major method employed in TENASSESS was the Delphi survey. The latter is an instrument for simulating policy discussions among experts in a longitudinal perspective. Input from the results of one wave are used to construct the questionnaires for subsequent waves. In TENASSESS the Delphi survey was also used to collect information and discuss barriers to research exploitation. The four questionnaires used in this survey are reproduced in Deliverable 7 (see Annex I). All questionnaires were made available in four languages, i.e. next to English, in French, German, and Spanish.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDITORS</td>
<td>2</td>
</tr>
<tr>
<td>CONTRIBUTORS</td>
<td>2</td>
</tr>
<tr>
<td>PARTNERSHIP</td>
<td>5</td>
</tr>
<tr>
<td>EXECUTIVE SUMMARY</td>
<td>6</td>
</tr>
<tr>
<td>1  PREFACE</td>
<td>13</td>
</tr>
<tr>
<td>2  BY WAY OF INTRODUCTION ...</td>
<td>18</td>
</tr>
<tr>
<td>3  THE ‘EUROPEANISATION’ OF TRANSPORT POLICY</td>
<td>31</td>
</tr>
<tr>
<td>NATIONAL REGULATORY ENVIRONMENTS IN COMPARATIVE PERSPECTIVE</td>
<td>34</td>
</tr>
<tr>
<td>CONFLICT AREAS IN TRANSPORT POLICY</td>
<td>40</td>
</tr>
<tr>
<td>TRANSPORT POLICY OR TRANSPORT POLICIES ?</td>
<td>43</td>
</tr>
<tr>
<td>4  THE IMPLEMENTATION OF MAJOR INFRASTRUCTURE PROJECTS</td>
<td>46</td>
</tr>
<tr>
<td>SIX MAIN ISSUES</td>
<td>47</td>
</tr>
<tr>
<td>CO-ORDINATION AS A NEW ROLE IN THE DECISION PROCESS</td>
<td>58</td>
</tr>
<tr>
<td>5  THE CHALLENGE OF PUBLIC ACCEPTANCE</td>
<td>61</td>
</tr>
<tr>
<td>MAJOR TRENDS</td>
<td>61</td>
</tr>
<tr>
<td>WHAT IS COMMUNICATION GOOD FOR?</td>
<td>62</td>
</tr>
<tr>
<td>PARTICIPATION</td>
<td>63</td>
</tr>
<tr>
<td>ACCEPTANCE</td>
<td>69</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>72</td>
</tr>
</tbody>
</table>
6 THE VALUE OF TIME IN TRANSPORT 73

TIME AND SUSTAINABLE MOBILITY 73
TIME IN POLICY 81
CONCLUSION 85

7 WHOM OR WHAT TO SUPPORT? 88

8 THE TENASSESS POLICY ASSESSMENT MODEL 90

THEORETICAL CONSIDERATIONS 90
KEY FEATURES OF THE GOAL ACHIEVEMENT MATRIX 91
POLICY OBJECTIVES AND MEASURES OF PERFORMANCE 92
IMPACT ASSESSMENT 103
WEIGHTING SYSTEMS 116
BACKGROUND DATA 119
EXAMPLES 120
TESTING AND REFINEMENT THROUGH CASE STUDIES 124
CONCLUSIONS 134

9 THE TENASSESS BARRIER MODEL 136

THEORETICAL CONSIDERATIONS 136
FUNCTIONAL SPECIFICATIONS 137
TESTING AND REFINEMENT THROUGH CASE STUDIES 145

10 CONCLUSIONS AND RECOMMENDATIONS 150

... FOR THE FORMULATION OF CTP 150
... FOR THE IMPLEMENTATION OF TEN & CTP 152
... FOR ENHANCING ACCEPTANCE VIA CITIZEN PARTICIPATION 154

SELECT BIBLIOGRAPHY 158
ANNEX I. TENASSESS MAIN DELIVERABLES & WORKING PAPERS 164

MAIN DELIVERABLES 164
WORKING PAPERS 164

ANNEX II. SUMMARIES OF NATIONAL TRANSPORT POLICIES 166

AUSTRIA 166
BELGIUM 167
DENMARK 169
GERMANY 171
SPAIN 173
FRANCE 176
Greece 179
FINLAND 181
ITALY 182
NETHERLANDS 184
SWEDEN 186
UNITED KINGDOM 187

ANNEX III. SUMMARIES OF CASE STUDIES 190

THE IC5/IC25 TOLL MOTORWAY - GUIMARÃES / CHAVES BORDER, PORTUGAL 190
THE IGOUmenitsa - VoLOS/LAMIA MOTORWAY, GREECE 192
TGV NORD, FRANCE 194
DECIN-PRAHA-BRECLAV RAIL UPGRADE, CZECH REPUBLIC 198
TWENTE-MITTELLAND KANAL, GERMANY - THE NETHERLANDS 200
THE AMSTERDAM RING ROAD, THE NETHERLANDS 202
THE LYON-TURIN TRANSALPINE RAILWAY CONNECTION 204
THE BRENNER AXIS 205
THE EASTERN TGV PROJECT 206
THE TGV BRUSSELS – AMSTERDAM/COLOGNE (PBKAL) 208
THE ØREsUND FIXED LINK 211
THE SKaramanga INTERCHANGE / GREECE 212
THE GREEK INTER-ISLAND PASSENGER SYSTEM 214
HIGH-SPEED LINE BARCELONA-MONTPELLIER 215
MID ZEALAND - FEMER BELT 216
TGV AQUITAINE 217
ROAD PRICING 217
TECHNICAL HARMONISATION OF SIZES AND WEIGHTS WITHIN EU 218
THE NEW ATHENS AIRPORT 218
Questionnaire for Collecting and Structuring Empirical Material as Input to Barrier Model

In completing the questionnaire the following ought to be noted:

1) The questionnaire can often not be completed by talking to only one actor. By reason of the scope of the topics addressed and the explicit recognition of the plurality of actors, it is important to talk to various involved parties.

2) The questionnaire talks about projects, but applies also to the study of other transport initiatives. In any case, once the project or initiative to be explored has been identified, the questionnaire ought to be ‘personalised’ to refer always to the specific project or transport initiative.

3) The questionnaire is geared towards the identification of conflicts or debates. A barrier is a conflict that leads to the stop of a process or to a significant delay (which in turn can often only be overcome by re-designing a project). In other words, what distinguishes a conflict from a barrier and vice-versa is a matter of degree or shading. That is why at the end of each relevant section, the respondent ought to be asked whether he or she thinks that the conflicts reported upon are likely to stop or delay the process of project implementation. In the case of projects that have yet to be implemented, the policy analyst ought not to forget that these are just subjective assessments and need not always be realised in one or the other way. This underlines the importance of talking to many relevant actors but also of noting the interdependencies between conflicts: often those issues that display many interdependencies are those that result to barriers; especially those conflicts involving competition (socio-economic assessment) alone or in interdependent relation to other issues result into barriers.

4) The testing of the Barrier Model has shown that the most complicated theme to obtain information upon is that of the phase of the project. The four-fold phase classification used by the Barrier Model which is a functional one is often not easily understood by the relevant actors by reason of the iterative circular development of any project in real time. This is why this revised version of the questionnaire does not repeatedly ask the respondents to assign the problems identified to the various phases. Nevertheless, it is important for the analyst to pay attention to the chronological development of the project and to the state of its actual functional specification process in order to then be able to structure the empirical material in the way suitable for entry into the Barrier Model.
5) The Questionnaire is written for exploring any project at the phase it is currently found. It can of course be used to explore how past and completed projects were implemented. In the latter case, the phrasing must change and the chronological questions need to be expanded to cover the past.
Introductory Section

A. Short Description of the project

♦ Objectives

♦ Technical information

♦ Chronological Process of Implementation
B. Institutional Actors

♦ Which actors (institutions, persons, etc.) initiated this project / initiative?

♦ To which needs and/or opportunities should this initiative be responding to according to its initiators?

♦ Which other actors was consulted at what phase and for what purpose? (if relevant, please distinguish between departments within the same institution, as well as between national, regional and European actors; refer also, if relevant, to citizen actions or movements).

♦ Is it foreseen to incorporate other additional actors in the consultation process?

♦ Which other actors, among those not consulted, could be of relevance?
C. Existing Studies

♦ Which studies, if any, were already carried out and at what stage in the chronological development of the project?

__________________________________________________________________________

__________________________________________________________________________

♦ By whom were these studies commissioned and by whom were they carried out?

__________________________________________________________________________

__________________________________________________________________________

♦ If relevant studies were already carried out, please state their assumptions, main objectives and conclusions.

__________________________________________________________________________

__________________________________________________________________________

♦ Are any (other / additional / first-time round) studies being planned, and if so which ones and for what purpose?

__________________________________________________________________________

__________________________________________________________________________
D. In which stage or phase would you say the project is in? If the project is already quite advanced, please specify also chronologically the different phases

- Conceptual Phase From: To: [commission feasibility study]
- Planning Phase From: To: [opening of public inquiry]
- Decision Phase From: To: [official choice of one option]
- Implementation Phase From: To: [operation or stop of process]

The identification of the phase in which the project is to be found is not always clear-cut and easy. We suggest you use the following definitions:

The **conceptual phase** describes the very early stage of a project or programme in which the idea of a project or programme comes up. The conceptual phase itself can be seen as comprising three sub-stages: (i) the perception of a certain need (i.e. the recognition of problems and opportunities), (ii) the definition of a demand (i.e. the balancing of benefits and costs in a preliminary assessment), and (iii) the formulation of the preliminary project's design including definition of preliminary financial requirements. **Important for identifying the conceptual phase, is the amount of studies available; at best by this stage one has commissioned (but not carried out) a feasibility study.**

The **planning phase** is the actual design phase of a project. It comprises the elaboration of strategic plans as well as of detailed proposals for the project's design, which framework has been determined in the previous phase. It is dominated by the administration, who is in charge of the elaboration of plans and estimation of costs. At the end of the planning phase the final proposal of the project's design and costs is presented. **Important for identifying the planning phase, is to note the level of activity at the level of getting expertise; a preliminary decision is at this point taken to in-detail study the proposed project — thus there follows the detailed analyses.**

The **decision phase** comprises the process of the approval of the plans and the steps necessary to make the final decision that the plans approved in the planning phase will be realised. This phase is characterised by the plurality of actors, who wish to integrate their interests into the final design. If no decision is taken due to opposing views, the process is set back and has to pass through the former stages again. The decision phase characterises the time prior to the official declaration that the project will go ahead in one format or another, i.e. the official decision marks the end of this phase. The beginning of this phase is often the opening of the project to public inquiry as the latter is currently organised.
The **implementation phase** encloses all actions that take place during the realisation of the plans, i.e. budgeting and the construction of the infrastructure for projects and the undertaking of the necessary institutional changes for policy measures. The implementation phase is that which follows the official decision to go ahead with a project under a specific specification format (whether this will prove successful or not is not a relevant question).
E. Actual and potential barriers to the Implementation of the project

The following set of questions will concern barriers or conflicts that might become relevant in the course of the different stages until the implementation of the project under consideration (from the conceptual phase down to the implementation phase and thereafter). The following questions are meant to help you identify or analyse such possible barriers in the different fields.

Prior to each set of questions, the definition of the barrier field is given. At times you will be asked to further identify which institutional actor is particularly active in the debate underlying a particular barrier field. We refer to institutional actors as falling into one of the following categories or policy arenas of contestation:

- **Informal politics** comprises the fields of barriers that arise in a less institutionalised context. The underlying conflicts make their way mainly through lobbying and pressure on the players in the official political process. Here mainly citizens’ movements, grassroots movements, interest associations as well as aspects of public acceptability are concerned.

- **Official politics** encloses established political institutions like parliaments, political parties, legislative bodies of different regional levels (national, regional, local) etc. It comprises all institutions that are directly involved in the policy decision making process that lead from the pure desire of doing something to the final decision.

- **Administration** comprise administrative entities with different ideas, education, productivity, skills, and abilities, on different regional and responsibility levels.

- **Legislation/regulation** describes all regulations or laws established or operational in a specific national context that are either directly or indirectly relevant for the project in question. Part of the legislative framework are regulations concerning technical standards, e.g. differences in technical systems (e. g. gauges or voltages of railways), guidelines and standards (e. g. design, management, vehicle operation, environmental standards concerning the planning of transport infrastructure), technical problems, discrepancies between planning and execution possibilities etc.
Socio-economic conflicts and barriers

Definition: This field comprises economic competition between national economies, regional economies and/or different branches of the economies as well as the unequal distribution and/or assessment of the benefits and costs of a project or programme by the different stakeholders.

1. Does the project, as currently proposed, designed or under implementation, display (or might display) an uneven distribution of costs and benefits (tick as appropriate)? (DO NOT READ OUT; PROMPT IF NECESSARY).

- Yes, between states
- Yes, between regions
- Yes, between the supra-national and national levels
- Yes, between the supra-national and regional levels
- Yes, between different actors in the economic / industrial sector
- Yes, in terms of international and regional traffic
- Yes, in terms of transport modes
- Yes, in terms of public acceptability
- Yes, for specific social groups
- Yes, but none of the above, ... instead ...
- No, there are no opposition / competition patterns (go to question 2)
Answer the following questions 1a to 1e for each type of conflict identified above. Use additional pages if necessary.

1a) Does this uneven distribution of advantages and disadvantages (or of costs and benefits) between ..... [check entry above] ... currently involve a conflict of interest or likely to produce one?

- Yes
- No

1b) If yes, who are the main representatives of the opposition positions? Please try to identify in which policy arena the conflict is played out. (READ OUT)

- The conflict involves mainly actors of the official policy arena
- The conflict involves mainly actors of the informal policy arena
- The conflict is played out at the level of the administration

1c) Which is the most likely solution for this conflict (READ OUT; PROBE)

- Compromise is reached at this phase
- A consensus is achieved at this phase
- The conflict results in the re-design of the project and a return to an earlier stage (i.e. from decision to planning, or from implementation to planning)
- The conflict results in alternative financing which however can be agreed upon at this phase
- The conflict is ignored at this phase

1d) Does this conflict necessitate the passing of specific laws or regulations or the adoption of specific organisational or technical measures? (PROMPT TO PRECODES)

- Yes, in terms of the adoption of organisational measures, also through law
- Yes, in terms of the adoption of organisational measures, albeit informally
- Yes, in terms of the adoption of laws on standards (technical, environmental, etc.)
- No, no such measures are necessary
1e) Are any conflicts expected in this respect, currently or in the future?

- Yes, currently
- Yes, in the future
- No

2) Which one of the conflicts you have identified above (see question 1) would you say are likely to contribute to the delay of the project implementation (or even stop or regress the process)? Please rank in order of importance.

The following question should only be answered for those projects that are only past the planning phase:

3) Did any of the above conflicts or others of similar nature occur in the past, and if so, how were they resolved? Please elaborate your answer.
Conflicts and Barriers in the Field of (Regional) Distribution of Competencies

This field deals with impacts and responsibilities of ministries and administrations in various sectors, e.g. transport, environment, spatial planning, on different regional levels, i.e. national, regional, local. Furthermore the supra-national level within the EU becomes part of the process.

4) At the federal or national level: Are competencies or responsibilities regarding the implementation of the project or initiative divided between various actors? (please tick as appropriate) (READ OUT; PROBE)

- In the official policy arena
- At the administrative level

Answer the following questions 4a to 4b for each type of conflict identified above. Use additional pages if necessary

4a) Does this organisational structure function well, or is it rid with conflicts?

- Yes, it functions well
- No, it is rid with conflicts

4b) How are the conflicts or barriers being resolved (READ OUT; PROBE)

- Compromise
- Consensus
- Re-design of project leading to a return to an earlier stage
- Alternative financing without necessity to return to earlier stage
- Ignore
5) What role, if any, have the regions in the implementation of this project? (DO NOT READ OUT; PROMPT IF NECESSARY)

☐ The regions have no competencies and maintain a neutral position
☐ The regions have no competencies, but they mobilise through lobbying in favour of the project.
☐ The regions have no competencies, but they mobilise through lobbying against the project.
☐ The regions have no competencies, but mobilise through lobbying – some are in favour of the project, some are against.
☐ The regions must agree to the implementation of the project or initiative, they are however not expected to contribute financially; no conflicts are expected.
☐ The regions must agree to the implementation of the project or initiative, they are however not expected to contribute financially; conflicts are nevertheless expected.
☐ The regions must agree to the implementation of the project or initiative and must also contribute financially to it; no conflicts are expected.
☐ The regions must agree to the implementation of the project or initiative and must also contribute financially to it; conflicts are expected.

Please elaborate your answers. Specify which are the mobilising actors (administration; citizen movements; interest representation movements etc.) What is the content of the conflicts?
Answer the following questions 5a to 5b for each type of conflict identified above. Use additional pages if necessary.

5a) If there are conflicts or barriers deriving from the involvement of regions in the implementation of the project or initiative: at what level do these conflicts or barriers become explicit? (READ OUT; PROBE)

- In the framework of the official policy arena
- In the framework of the informal policy arena
- In the framework of the administration
- In the framework of laws and regulations

5b) How are the conflicts or barriers being resolved (READ OUT; PROBE)

- Compromise
- Consensus
- Re-design of project leading to a return to an earlier stage
- Alternative financing, without necessity to return to earlier stage
- Ignore

6) Which one of the conflicts you have identified above (see questions 4 and 5) would you say are likely to contribute to the delay of the project implementation (or even stop or regress the process)? Please rank in order of importance.

The following question should only be answered for those projects that are only past the planning phase:

7) Did any of the above conflicts or others of similar nature occur in the past, and if so, how were they resolved? Please elaborate your answer.
Environmental Assessment

Definition: This field comprises all issues due to environmental reasons and restrictions. Environmental restrictions are institutionalised in standards, regulation or legislation and environmental issues are introduced by certain actors who lay emphasis on the environment.

8) How would you evaluate the ‘greening’ of political culture and policy in your country in general? (READ OUT)

☐ High, environmental consciousness among the population is high and this is also reflected in the political discourse
☐ Moderate, environmental consciousness is emerging, also at the level of party politics, yet it could not yet be said to be defining political discourse, policy or values more generally.
☐ Low, environmental consciousness is low or just emerging and environmental problems are not taken seriously at the level of political discourse or policy.

9) Does the project as currently designed affect regions or areas which could be said to be environmentally sensitive Yes (which ones?) or No? (PROBE)

☐ Yes (How? Which regions?)

☐ No

10) Is there environmental opposition to the project, either from the side of the population or from the side of the political parties or both?

☐ Yes, from the side of the population (specify if organised)
☐ Yes, from the side of political parties? (specify)
☐ Yes, from both
☐ Not applicable

For each environmental problem, please elaborate your answers providing information on the specific actors in each case
11) Do these forms of oppositions cause conflicts or barriers?

☐ Yes

☐ No

Answer the following questions 11a to 11d for each type of conflict identified above. Use additional pages if necessary

11a) If yes, in which of the following arenas is this conflict played out? (READ OUT; PROBE)

☐ In the framework of the official policy arena

☐ In the framework of the informal policy arena

☐ In the framework of the administration

☐ In the framework of laws and regulations

11b) How is this conflict being resolved (READ OUT; PROBE)

☐ Compromise

☐ Consensus

☐ Re-design of the project leading to a return to an earlier stage

☐ Alternative financing, without needing to re-design

☐ Ignore

11c) Does this conflict necessitate the passing of specific laws or regulations or the adoption of specific organisational or technical measures? (PROMPT TO PRECODES)

☐ Yes, in terms of the adoption of organisational measures, also through law

☐ Yes, in terms of the adoption of organisational measures, albeit informally

☐ Yes, in terms of the adoption of laws on standards (technical, environmental, etc.)

☐ No, no such measures are necessary
11d) Are any conflicts expected in this respect, currently or in the future?

- [ ] Yes, currently
- [ ] Yes, in the future
- [ ] No

12) Which one of the conflicts you have identified above (see question 11) would you say are likely to contribute to the delay of the project implementation (or even stop or regress the process)? Please rank in order of importance.


The following question should only be answered for those projects that are only past the planning phase:

13) Did any of the above conflicts or others of similar nature occur in the past, and if so, how were they resolved? Please elaborate your answer.
Financing

Definition: This field is related to the system of financing (public financing, private financing, public-private-partnership and participation of the regions or external funding e.g. EU contributions) and the question who pays, how much.

14) Is the issue of financing already on the agenda, i.e. has the problem of who pays how much been resolved?
   - Yes, public-private partnership (which one?)
   - Yes, public-public partnership with regional involvement
   - Yes, public financing
   - Yes, private financing
   - Yes, but none of the above, instead ....
   - No, the problem has not yet been resolved

   If yes, please specify how.

   ________________________________

   ________________________________

   ________________________________

   If no, please state why the financing problem has not yet been resolved.

   ________________________________

   ________________________________

   ________________________________

15) Did the subject of financing produce any conflicts or debates? Or is it expected to do so?
   - Yes
   - No
15a) At what level do or will these conflicts become explicit? (READ OUT; PROBE)

- In the framework of the official policy arena
- In the framework of the informal policy arena
- In the framework of the administration
- In the framework of setting or implementing laws or regulations

15b) How will the conflicts been resolved, or how are they expected to be resolved? (READ OUT; PROBE)

- Compromise
- Consensus
- Re-design of project leading to a return to an earlier stage
- Alternative financing
- Ignore

15c) Does this conflict necessitate the passing of specific laws or regulations or the adoption of specific organisational or technical measures? (PROMPT TO PRECODES)

- Yes, in terms of the adoption of organisational measures, also through law
- Yes, in terms of the adoption of organisational measures, albeit informally
- Yes, in terms of the adoption of laws on standards (technical, environmental, etc.)
- No, no such measures are necessary

15d) Are any conflicts expected in this respect, currently or in the future?

- Yes, currently
- Yes, in the future
- No
The following question should only be answered for those projects that are only past the planning phase:

16) Did any of the above conflicts or others of similar nature occur in the past, and if so, how were they resolved? Please elaborate your answer.
Technical Barriers

Definition: deals with different technical standards.

17) Is harmonisation or change of technical standards an issue for the project?

☐ Yes (in which way?)
☐ No (why not?)

Please elaborate your answer ...

Answer the following questions 17a to 17d for each type of conflict identified above. Use additional pages if necessary

17a) Do these issues, if relevant, lead to conflicts, or are they likely to lead to conflicts in the future?

☐ Yes
☐ No

17b) At what level do these conflicts become explicit (or are likely to become explicit)? (READ OUT; PROBE)

☐ In the framework of the official policy arena
☐ In the framework of the informal policy arena
☐ In the framework of the administration
☐ In the framework of setting or implementing laws / regulations
17c) At what spatial level does the conflict become explicit (or is likely to become explicit)? (READ OUT; PROBE)

- At the national level
- At the cross-national level
- At the European level
- At the international level

17d) In which way is the conflict resolved (or is likely to be resolved)? (READ OUT; PROBE)

- Compromise
- Consensus
- Re-design of the project
- Alternative financing
- Ignore

18) Is it necessary to revise the technical specifications of the project to reduce negative environmental impacts or externalities? (tick as appropriate)

- Yes, in relation to construction options
- Yes, in relation to logistics
- Yes, in relation to alignments
- Yes, in relation to modal choice
- Yes, in relation to pricing or financing
- Yes, but at another level, namely ....
- No, was till now not necessary but will become necessary in the future ...
- No
19a) Does the above necessitate the passing of specific laws or regulations or the adoption of specific organisational or technical measures? (PROMPT TO PRECODES)

☑ Yes, in terms of the adoption of organisational measures, also through law
☑ Yes, in terms of the adoption of organisational measures, albeit informally
☑ Yes, in terms of the adoption of laws on standards (technical, environmental, etc.)
☑ No, no such measures are necessary

19b) Are any conflicts expected in this respect, currently or in the future?

☑ Yes, currently
☑ Yes, in the future
☑ No

20) Which one of the conflicts you have identified above (see question 17) would you say are likely to contribute to the delay of the project implementation (or even stop or regress the process)? Please rank in order of importance.

The following question should only be answered for those projects that are only past the planning phase:

21) Did any of the above conflicts or others of similar nature occur in the past, and if so, how were they resolved? Please elaborate your answer.
F. Interdependencies

In the process of implementation of a project, barriers tend to have interdependencies. For instance, financing might come to relate to the subject of regional responsibility with reference to the project; or the overcoming of negative environmental impacts might be tied with technical assessment etc. This interdependencies can occur in each stage of the project and might expressed by the following definitions:

1. **No interdependencies**: Some issues just occur at a certain stage of the process without any correlation or interdependency to other issues;

2. **Complementarity**, i.e. one issue forming a necessary condition for the occurrence or the strength of an other issue.

3. **Substitutionality**: Avoiding a certain issue can create affect another issue which unless would not have been one.

1) Please indicate for the conflicts identified above, how they are interdependent at the current stage of the project.

2) Independent from the stage of implementation how are any of the above mentioned fields related to each other? please tick below on the following matrix as appropriate using the following scale:

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