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The Incorporation of the Environmental Dimension into Freight Transport Policies

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EURES-Institute for Regional Studies in Europe (Freiburg/ Germany); Coordination

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EU ENVIRONMENTAL RESEARCH PROGRAMME:
Research Area II
Economic and Social Aspects of the Environment

The Incorporation of the Environmental Dimension into Freight Transport Policies

A Comparision of six countries and the EU

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Executive Summary

1 General Objectives

The main objective of the study is to inquire into the scope and the barriers for sustainable mobility in the freight transport sector. One of the preconditions for "sustainable mobility" is the incorporation of environmental considerations in the transport policy decision-making process.

The study compares the environmental objectives, the decision-making system and specific policy changes (infrastructure, taxation, deregulation) in Denmark, Germany, Italy, Netherlands, Switzerland, UK and the EU between 1984 and 1994. It analyses the preconditions for the incorporation of the environmental dimension in transport policies.

The objective of this comparative approach is to identify generalized information on the political mechanisms of the incorporation process. Furthermore international comparison offers an opportunity to discover innovative approaches towards incorporation.

The analysis helps to formulate institutional and political strategies to strengthen the respect of the environment in freight transport policies.

The objective of this comparative approach was to identify general mechanisms of the incorporation process and to discover innovative approaches towards incorporation. Moreover, the study has been designed in order to provide orientation for the formulation of institutional and political strategies. Recommendations have been formulated on how the incorporation of the environmental dimention in freight transport policies could be improved on the national and the European levels.

The study has shown that incorporation is a very useful approach, but still a diffuse one. The basic idea is quite old, but as a definite policy, incorporation is quite young. It is still understood very differently in different countries and contexts. Incorporation in European countries has made considerable progress between 1984 and 1994 and further improvements can be

expected. Nevertheless, any policy towards incorporation meets a high level of economic and political constraints. Therefore, in reality, incorporation will remain a patchwork, rather than the result of an “ecological master plan”. The study has shown that European countries could learn much from each other in this field, but those experiences cannot be simply transposed from one economic, political and cultural context into the other. Considering the still growing environmental harm caused by freight transport, a stronger reorientation of transport policies is definitely needed.

2 Approach and Methodology

Incorporation has been defined in a wide sense as the process of reconciling and mutually adjusting the objectives of any sectoral policy (in this case: transport policies) and environmental policies. It implies procedures for coordination and consultation, evaluation methods, and political decisions on priorities. Its objective is to achieve compatibility between environmental and sectoral targets.

The research is based upon a policy analysis. A first descriptive part compares the state and dynamics of incorporation. In the second analytical part, some of the most important factors determining the opportunities and constraints for incorporation have been analyzed on the basis of a “capacity theoretical” framework. The third part reconstructs the history of special cases (i.e., taxation or infrastructure policies). The fourth part consists of a systematic comparison of the three previous elements. In the fifth part, recommendations for the policy field in general and for the six countries and the EU have been formulated.

The evaluation of the state of incorporation in part 1 has been done with a common methodology. In total, this research project evaluates the state and dynamics of incorporation for eight subjects. These are shown in Table 1.

Elements of Analysis	
A)	*Policy Targets*
1	Legal requirements
2	Strategic Targets for Transport and the Environment
3	Quantitative Environmental Targets
B)	*Decision-Making Styles*
4	Organization
5	Procedures
C)	*Actions*
6	Infrastructure Policies
7	Taxation
8	Liberalization, Deregulation, Privatization

Table 1 Elements of Analysis

The evaluation focuses on the “effectiveness” criterion. It is assumed that “deeper environmental policies” may be more effective and more efficient than additive or compensation-oriented approaches (Jänicke 1986; Prittwitz 1990; Weale 1992; OECD 1992; Jänicke et al. 1992). The depth of incorporation is evaluated on the basis of a stage model, reaching from business-as-usual policies over growth oriented capacity extension to structural change and demand-side managment based upon the objectives of sustainable development.

Furthermore, it is assumed that incorporation should be both active - to realize environmental objectives - and defensive - to reduce further damage from transport policy decisions. Finally, incorporation should be comprehensive in a double sense. It should be strong for all policies (horizontal comprehensiveness) and take place during all phases of the policy-making process (vertical comprehensiveness).

The core of the study (part 2) is to analyse the determining structural factors that may explain the profile of incorporation. The objective is to find major characteristics of the economic and political system, which offer opportunities and restrictions for incorporation. This has been done by applying a "capacity theoretical approach" (Prittwitz 1990 and 1993). Capacities are defined as the resources of a system to promote or to

adapt to policy changes. Economic capacities may be described as the technological and economic flexibility to adapt to environmental demands. Political capacities may be defined as the resources and possibilities of the government to make strategic decisions. Furthermore, its responsiveness to environmentalists' demands are considered to be an important capacity (Prittwitz 1993: 346ff; Prittwitz 1990: 108f; Jänicke 1993: 25f; Jänicke 1990: 213f). The relevance of "post-material" values in a society may be an important cultural capacity, since it defines the demand for environmental protection, as well as the willingness to participate in sustainable types of consumption. This general approach has been applied to the respective transport policy field. On this basis, eight hypotheses were formulated and verified in a comparative perspective.

The most important factors analyzed were:

- the environmental pressures;
- the economic pressures, which are caused by problems of inefficiency, transport growth, and congestion;
- the state of environmental policies and the level of policy demands;
- the economic capacities to adjust to environmental constraints;
- and the general characteristics and responsiveness of the political system, especially to environmental demands and the regulatory tradition of the country;
- the perception of the government and the administration to incorporation in general, and in different fields;
- the perception and positions of interest groups and relevant institutions (i.e., scientific experts) on incorporation,
- avenues for the public to block or to modify political decisions (referendums, access to court).
- the internal capacities for incorporation by the environmental or the transport ministries (including Organization, Procedures, Resources, Scientific Forecasting);

The third part of the study - the case studies - tried to understand the incorporation of the environmental dimension in a dynamic and more “actors centered” perspective. The methodological framework was kept relatively open to the research institutes in order to adapt the analysis to the specific circumstances of their case. Most cases are in the fields of infrastructure planning and taxation.

3 Empirical Results

On the basis of the comparison of typical profiles of six countries and the EU, the degree to which the environmental dimension is incorporated in freight transport policy could be correlated with some characteristics of the political system. One can regroup the explanatory factors so that they can be related to different levels of analysis: especially policy targets, decision-making styles, and actions.

Policy Targets

As to policy targets, one can distinguish three groups of countries. First, Denmark and the Netherlands have the most ambitious principles and policy targets. Both are characterized by low social thresholds for environmental problems and a high level of popular pressure for strong environmental policies. Both have relatively strong environmental organizations and a “greened” party system. The “environmental profile” of most actors is relatively high and the governments have invested many resources into researching the environmental problems of transport and looking for options to mitigate them. Such countries have a propensity towards “active incorporation”.

On the other extreme we found Italy, which has a low profile of environmentalism. One can argue that cultural capacities for the environment are weak in Italy.

In the middle of this spectrum are Germany, Switzerland, UK, and the EU - because of different reasons: Strategic policy-making plays a minor role in the federalist countries Germany and Switzerland, although Switzerland tried to implement comprehensive financing shemes in the freight sector, covering both road and rail. Political culture is more reactive and less prospective. Comprehensive regulatory programmes are not a part of the UK´s approach, because this would not fit into the neoliberal model promoted by the government. Nevertheless, the UK has formulated some ambitious targets within its “Sustainable UK” strategy. The European Commission has chosen a cautious approach, despite of a clear concept of the environmental problems of transport growth. This may be explained by the cautious anticipation of the national preferences. A consensus on environmental transport policy changes among Member States is difficult to find.

Decision-Making Styles

The profile of the countries is different if one analyses the quality of the internal coordination and consultation mechanisms - also called decision-making styles.

The Netherlands, Denmark, Switzerland, and the European Commission have developed an advanced level of interadministrative coordination and consultation. This seems to be a typical characteristic in consensus-oriented political systems, which rely on the negotiation between different policy-networks and social coalitions. The Netherlands, Denmark, Switzerland, and the European Commission share certain capacities for long-term policy design: That means the perception of long-term trends and respective risks, as well as the formulation of long-term strategies. This seems to be an important precondition for the environmental dimension of transport to come on the agenda. On this basis, there is a certain preference of the administration towards active incorporation, which means a transport policy based upon environmental targets.

The capacities of the decison-making system are somehow weaker in Switzerland. These three countries (and the EU Commission) furthermore, share a relatively open approach to different interest groups, including

environmental interests in transport policies. Traditionally, transport policy networks are relatively closed, but in the discussion on infrastructures and taxation one can find opportunities for participation during the relatively early stages of the policy-making process.

Once more, Italy is on the other side of the spectrum, in addition to Germany and the Council of the EU. Italy is relatively open to interest groups - but the environmental profile of interest groups is low. Germany and Italy are more characterized by a competitive political culture, both within and outside the administration. Strategic capacities of the administration are low, because of the sectoralization and fragmentation of the political system. Participation in Germany offers opportunities in the later stages of the political process rather than in the early ones. Under such conditions, even defensive incorporation may be weak. On the EU level, a closed and sectoralized intergovernmental decision-making process takes place, which leaves fewer opportunities for participation or interservice coordination. This may take place on the national levels to a certain extent. The only opportunity to influence decision-making from the outside is via the European Parliament, which has recently received some rights for participation for some policy fields. In between those extremes are UK and Switzerland, which have little strategic capacity but offer some opportunities for participation.

Actions

The interesting result of the overall study is that the correlation between decision-making styles, policy targets, and actions is relatively weak. The combination of factors which have an influence on actions is different to the factors influencing targets and the decision-making system. Actions may be best explained in a capacity-theoretical context. Economic capacities play a central role in this context.

In terms of actual and planned policy changes, Switzerland has the highest level of incorporation. This could be explained by strong economic and financial capacities. The level of infrastructure investments in Switzerland is the highest in Europe. The railway network is dense and the share of

railways in freight transport is relatively high. Furthermore, politicians and the Swiss people show a high willingness to pay for the shift of Alpine transit to the environmentally friendly modes. So adjustment costs are lower and resources are higher than in other countries. Furthermore, the relative autonomy as a non-EU member state to introduce fiscal and non-fiscal incentives to reduce road transport still are relatively high. Strong popular pressure against Alpine road transit and the instrument of a popular initiative further strengthened the Swiss policy orientation towards incorporation.

As shown, a certain degree of economic autonomy was also important for the UK to introduce its fuel tax.

On the other side of the spectrum are Italy and Denmark - as well as partially UK and the EU. In those countries, the capacities for railways are low. Domestic freight transport primarily relies on road haulage. A strategy towards modal shift only would have limited environmental benefits in the short and medium term. The UK government, therefore, opted for cautious steps towards a demand-side-oriented transport policy, thus cutting down road infrastructure investments and applying taxation as an instrument.

At the EU level, the major barrier for incorporation is the preference divergence among member states and the lack of profiled leadership for a clear environmental strategy from member states. Potential leaders so far have held a defensive position against transport policies from the EU (especially in the case of deregulation, taxation, and infrastructure policies).

An intermediate position is held by Germany and the Netherlands. Railways still play an important role for a growth oriented capacity extension for all modes. The market share of railways is still relevant in Germany, because of the regulatory tradition of German transport policies, which only has been changed recently. The actions in the Netherlands may be rather explained by the strong economic pressures (congestion) and the needs to adapt to the foreign transport markets.

Conditions for Defensive Incorporation

A special case is defensive incorporation. There are several factors which may contribute to defensive incorporation: the participatory and consensus-oriented political culture of the Netherlands; strong citizen rights in Germany; sometimes the opportunity for popular initiatives (Switzerland); strong environmental legislation (i.e., Netherlands); or the new opportunities for regional participation in Italy. However, they are not sufficient. No country has established a coherent system of environmental safeguards, which prevent environmentally harmful political decisions. But most countries have a few elements for defensive incorporation, which help to modify and justify transport decisions while maintaining the prevailing growth-oriented rationale of transport policies.

Some general conclusions

Incorporation is a new and diffuse policy approach. It applies to many totally different subpolicies, including the definition of environmental objectives, new coordination mechanisms, and transport policy changes. Furthermore, an operational concept for incorporation is in its initial stages - so that little policy output can be observed. Much is still in the pipeline. There are completely different definitions and approaches for incorporation. For example, it is rather procedural in the UK. At the EU level, it is often considered as a substitute to the traditional regulatory approach, which is characterized by technical measures and “command and control policies”. In the Netherlands it must be seen as part of the participatory planning tradition and of the target-led policy approach. In Germany it must be seen in the context of the “precautionary” principle.

The comparison could confirm that economic capacities for sustainable transport policies are the most important single factor to explain policy changes. Only when new environmental priorities do not imply excessive costs to the haulier sector and to the government, are they promoted.

Institutional factors also play an important role for the preferred type of incorporation. Active incorporation requires capacities for long-term policy strategies, a well coordinated government machinery and strong popular

pressure. Defensive incorporation requires veto and intervention rights for environmental interests.

The analysis can refute some important concepts of environmental policy-making - especially the “stage model” of environmental policies. One can discover different policy paths, but not a sequence of stages. A policy approach in favour of railways can be observed in Switzerland, before technical measures have been fully implemented. The UK is an example for a demand-side-oriented policy approach, without applying a “structural change-oriented” approach beforehand. Most countries are “capacity- and growth-oriented”, which is independent from their level of environmental policies. Lastly, functionalist approaches, assuming that environmental policies react to environmental problems, can be refuted. Objective problems may be strongly perceived in one culture, whereas they do not matter in an other. Even where strong environmental problems are perceived, this does not necessarily lead to action: especially if important economic and institutional capacities are missing.

Lessons from the Case Studies

On the basis of a number of case studies on such topics as infrastructure corridors and planning systems, taxation policies, and railway liberalization, the following general conclusions could be drawn:

Infrastructure policy is a long-term policy process. A top-down planning system is not sufficient for defensive incorporation. To guarantee long-term incorporation and continuous procedures, a comprehensive monitoring system at the planning and policy levels is important. A stong participation process is usually in favour of incorporation. Top-down and bottom-up approaches have to go together. Therefore, it is necessary to integrate the regional level at very early project stages. Only a strong Strategic Environmental Impact Assessment with the inclusion of clear alternatives would be able to incorporate environmental concerns at strategic levels. Experts alone will not be able to install this type of measure. It needs a lot of political will and new attitudes towards comprehensive procedures. Furthermore, the prevailing idea that infrastructure policies have to adapt to

growing transport demand has to be critically reviewed in light of the positive feed-back mechanisms of new infrastructures on transport growth and pollution. Demand-side management must be reevaluated as an alternative policy option. An overall corridor approach for infrastructure projects is helpful to identify modal priorities. Environmental and capacity-oriented arguments are essential to clarify the necessity of the modal shift from road to rail, as long as the financial dimension is taken into consideration. EIA and local participation are strong instruments in respect to defensive incorporation. When it is possible to integrate these elements in an ongoing process, they function better, and it is less likely that these elements will lead to project delays and a loss of political will.

An early integration of the environmental and financial arguments in the discussion of adjustments in taxation can create synergies towards active incorporation. The early participation of the Ministry of Environment is useful and in favour of incorporation. A shift from fixed costs to variable costs may be seen as a first step towards active incorporation. Furthermore, it is necessary to consider the argument to internalize external costs with respect to the polluters-pay-principle.

Liberalization of the rail sector without a parallel discussion of overall active incorporation and/or overall financing schemes is a step in the wrong direction for pursuing incorporation because the opportunities for a modal shift will weaken.

4 Recommendations

On the basis of the above analysis, the research team has discussed and formulated 12 strategic recommendations, which should guide the more specific recommendations for each country and the EU. The recommendations are documented in the following section - and a full explanation will be provided in the last chapter of this report.

Recommendation 1: Incorporation requires an active diffusion and communication strategy among the long-term, problem-oriented expert community, the networks working on solutions, as well as the decision-makers and lobbyists.

Recommendation 2: Incorporation requires strong capacities for prospective, strategic thinking and policy-oriented knowledge for technically-viable and politically-acceptable solutions. Those should be built up within the administration or within closely-related institutions.

Recommendation 3: Alliances between environmental, fiscal, social, and spatial planning interests on transport should be explored more systematically, even if those interests may be ambivalent towards the environment.

Recommendation 4: Incorporation requires well-defined objectives for the transport sector as a precondition for successful coordination mechanisms. Objectives should be jointly defined by the environmental and transport administration.

Recommendation 5: Incorporation requires a powerful environmental department in the transport ministries or a powerful transport department in the environmental ministries to promote and defend environmental aspects. Coordination and consultation mechanisms should be strong and should be applied throughout the life cycle of policies.

Recommendation 6: Participation for environmental groups and experts should be strengthened during all phases of the decision-making process - both on a strategic and a technical level.

Recommendation 7: According to the subsidiarity principle, any centralization of competences in transport policies requires proof of its added-value compared to a decentralized solution. In any case, the level that decisions are made, the level of allocation of costs and benefits, and the level of environmental control and assessment systems should coincide as much as possible.

Recommendation 8: A system of mutual checks and balances between the different political levels should be developed. Local action has to respect national or international safeguards to protect global common goods. National or international action has to respect local and regional preferences to protect the environment both in an active and a defensive sense.

Recommendation 9: Strategic Environmental Impact Assessments include both a participatory planning procedure and an evaluation methodology. On both levels, more investment in knowledge and experience is necessary.

Recommendation 10: Infrastructure investments should set clear priorities on the environmental modes and capacity-optimizing technological systems, even if they do not have a major environmental benefit in the short run. A revival of the environmentally friendly modes must be seen as a long-term strategy.

Recommendation 11: As long as no consensus is found on the exact level of external costs, a gradual (but immediate) strategy should be chosen to increase road transport costs, leaving individual countries the freedom to proceed more quickly. If taxation meets strong resistance, other instruments for the internalization of environmental impacts (including regulatory ones) should be chosen.

Recommendation 12: Incorporation is not a substitute, but rather it is complementary to the improvement of environmental standards, nature protection, and air quality norms. Therefore, this traditional approach should be continued and further strengthened.

1 Introduction

The incorporation of the environmental dimension in other policies has been a major policy issue at EC level since the First Environmental Action Programme in 1973. With Art. 130r of the Single European Act a legal requirement was introduced in 1987, which states that the environmental dimension should be respected in all policies. Since then, several reports and strategic documents have been published, which emphasized the need for incorporation.

The incorporation of the environmental dimension into other policies is of strategic relevance for a precautionary and efficient environmental policy approach. It must be seen as an essential element for “sustainable development”. One can assume that the respect of environmental objectives during the early phases of the decision-making process reduces costs for compensation and repair. Coordinated and coherent policies may be more efficient than incoherent or even contradictory policies in different sectors.

The transport sector is one of the key sectors, where short-term trade-offs between environmental and economic objectives are most obvious. Increasing transport demand is a challenge to clean air and climate protection policies. New transport infrastructures create land-use conflicts with nature protection goals. Furthermore, transport growth will eventually meet internal limits: Already, congestion, the decline of the share of railways, limits of infrastructure capacity and finance, and inefficient regulation are symptoms of a wider crisis in the transport sector. Those symptoms have contributed to an intensive discussion on the reform of Europe's transport systems. The environmental dimension plays an important part in this discussion. In the long-run, one may even find synergies between the environmental and the economic objectives for the transport sector, such as proposing a strategy to reduce the specific transport needs of the economy.

Many studies have analysed the effectiveness of single policy instruments or of combinations of policies to reduce the environmental burden of transport. Stronger standards for emissions and fuel use and environmental taxes were among the most widely discussed instruments. Yet the economic, institutional, and cultural preconditions for the effective choice of such policy options were not analysed in

detail. This study starts with the assumption that the understanding of the opportunities and constraints for the incorporation of environmental policies in the transport sector is an important precondition for the successful choice of policy instruments. It will inquire into the constraints and opportunities for incorporation, and will include an international and comparative perspective.

The study must be seen in the context of a research programme on the "preconditions for successful environmental policies" (Jänicke 1990, 1993; Jänicke/ Weidner 1994). This research for the structural preconditions asks for a strategic innovation in environmental policies. It follows a “capacity theoretical” line of argument. According to the capacity theory, successful environmental policies require strong economic, institutional and cultural capacities. Therefore, a strategy improving such capacities may be as important as the right choice of instruments.

The study covers six countries (Denmark, The Netherlands, Germany, Switzerland, Italy and the United Kingdom) and the EU. Those six countries represent different and occasionally opposing types of transport and environmental policies. This will allow insight into a wide spectrum of policy options.

It will only cover “freight transport policies”. The choice relates to the EU dimension, which is more important for freight than for passenger transport. Sometimes a clear analytical separation of passenger and freight transport policies is not possible - especially in the case of infrastructure policies. In this case, both are taken into account.

Incorporation affects a wide range of activities. It includes the definition of quantitative and qualitative sectoral and environmental targets (principle decisions), changes in organization and procedures between the involved ministries (decision-making system) and a policy shift towards a less polluting sectoral dynamics (policies).

In the case of freight transport, this may include:

- the formulation of environmental objectives for the transport sector, environmental legislation (quality norms on air pollution and noise and habitat protection) and information systems to document the environmental impact of policy decisions (Environmental Impact Assessment for Projects but also for Policies, Plans, and Programmes);
- the reorganization of transport and environmental departments and the introduction of effective coordination mechanisms between them; and

- the ecological requalification of transport policy instruments, such as infrastructure policy, taxation, technical standards, social regulation, and market order.

Policy changes in those fields will be analysed during the period from 1984 to 1994. Occasionally, more recent data are taken into account. To allow comparision, a common analytical framework and common categories were established by the international research team.

2 The theoretical and analytical framework *(Christian Hey)*

2.1 A definition

Incorporation is the process of reconciling and mutually adjusting the objectives of any sectoral policy (in this case: transport policies) and environmental policies. It implies procedures for coordination and consultation, evaluation methods, and political decisions on priorities. Its objective is to achieve compatibility between environmental and sectoral targets (OECD 1991p: 5).

Technical standards for vehicles are sometimes considered to be part of incorporation - and they are important to protect the environment. Many analysts argue that the improvement of technical standards may not be sufficient to reconcile economic and environmental objectives in the transport and other sectors (i.e., Samaras 1994 for the EU; Hailbronner 1993; Höpfner u.a. 1992; Hopf u.a. 1994).[1] Therefore the focus of this study is on transport policy changes due to environmental considerations.

Incorporation in the sense of this project affects the traditional hierarchy of objectives: Traditionally, the transport sector has had a subordinate function for the economy (DIW 1994; Weber 1958: 354; OECD 1991p: 8). Environmental objectives again are subordinated to the objectives of the transport sector. Economic and environmental objectives for the transport sector have a strained relationship, which cannot be easily reconciled.

[1] The OECD - environmental ministers (1991p: 3) argue: "Conventional" environmental policy instruments" ... "are totally insufficient ot arrest and reverst adverse environemntal trends"

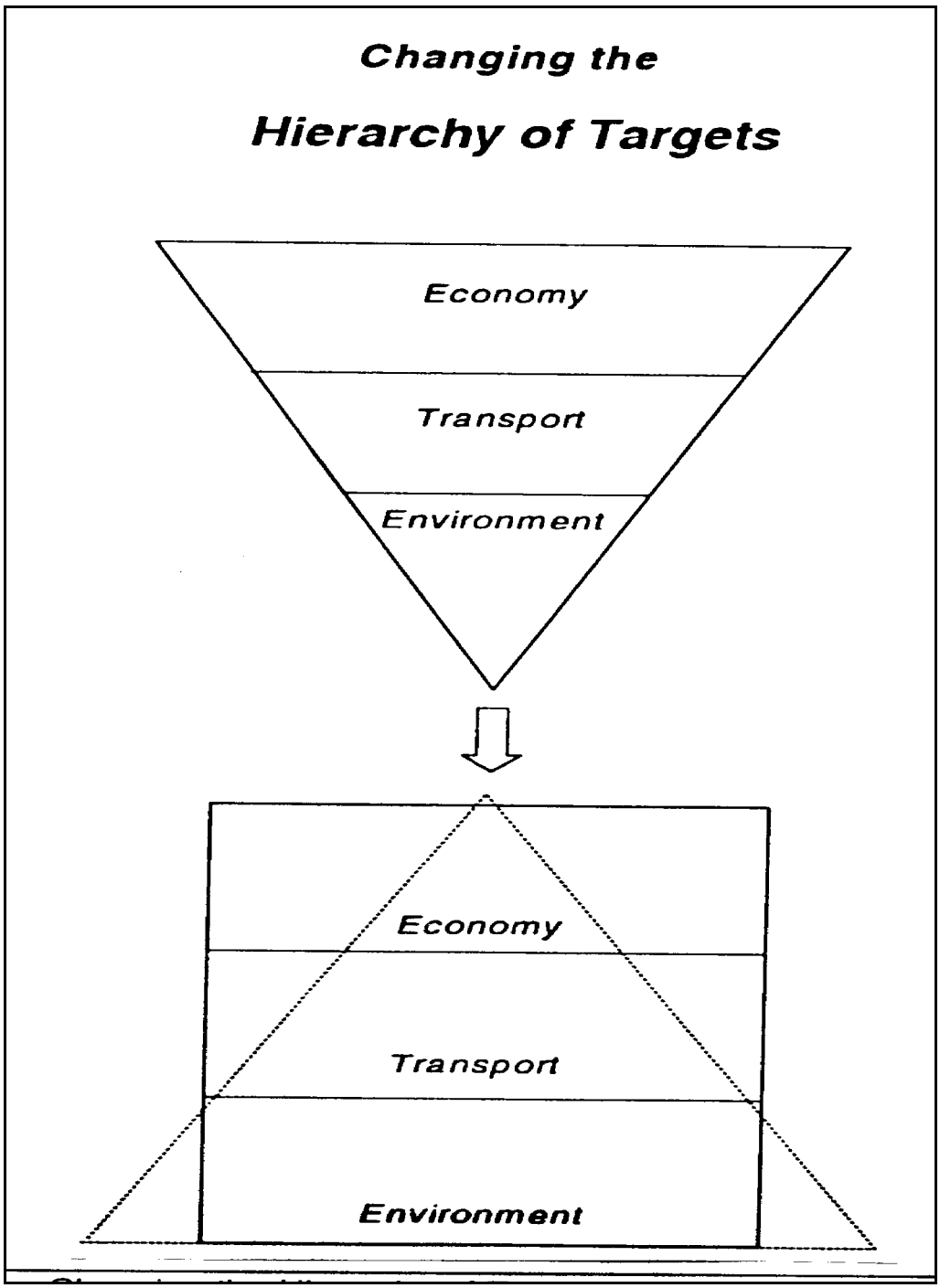

Abbildung 1 Changing the Hierarchy of Targets

In practice, trade-offs and synergies between environmental and economic objecti ves for the transport sector may be found. This double relationship can be shown in Figure 1. The traditional hierarchy may be changed towards a more balanced

approach, or in a very radical version even reversed. **Incorporation, therefore, can be more precisely defined as a process of reevaluating the traditional hierarchy of targets, which identify both synergies and trade-offs.**

One can identify three different types of incorporation:[2]

- defensive incorporation
- indirect or non-intended incorporation
- active incorporation

Defensive incorporation evaluates, compensates, or modifies policies which were initiated by transport policy makers and which follow the rationale of economic and transport policies. Transport policies are checked for their environmental risks, and measures are developed which attempt to limit possible negative side-effects. The objective of defensive integration is limited to the avoiding of or the compensating for additional environmental damage. Its function is to discover and prevent contradictions between the standards set by environmental policy and the environmental consequences of other policies (cf. Baldock et al. 1992). Its most important evaluation instrument is a kind of environmental impact study for programs and plans (cf. Jacoby/ Meinert 1992; Hübler 1992). Defensive integration results in modifications of, injunctions against, or targeted compensation for environmentally damaging activities. Compensation strengthening environmental standards usually only affects individual pollutants, and consequently may have an insufficient range of effect (cf. Prittwitz 1990, p. 58/59).

Defensive incorporation is a type of self-regulation and self-control of governmental activity. It is some kind of risk management of government policies (cf. Prittwitz 1990: 82). Governments can cause environmental damage in two basic forms: on one hand, they can damage the environment through their regulation or deregulation measures; and on the other hand, they can do so through their expenditures (cf. Rasmussen 1986, p. 46/47; Minsch 1992; IÖW 1987). Significant elements of regulation sectors are, for example, market regulation, norms and minimum standards, the distribution of ownership, and pollution rights. In the transport sector, infrastructure investments comprise the most significant expenditures.

But defensive incorporation is not only reflexive in the sense of self-control. Defensive incorporation may also be the result of "public feedback mechanisms".

[2] A similar, slightly different distinction is made by the OECD (1991p: 12): Defensive incorporation is nearly identical to "reactive", and active incorporation to "proactive". For the OECD, emission control belongs to defensive incorporation - according to the definition here, it does not.

Public intervention by environmental interest groups (Stevens/ Michalski 1993: 15) such as court decisions or referendums may contribute to delays or modifications of environmentally sensitive transport policies, especially in the field of infrastructure investments. In this case, defensive incorporation is result of an unplanned bottom-up process.

A special type of unplanned and in most cases defensive incorporation can be labelled as **"indirect incorporation"**. The term indirectly means that the motives and rationale for modifications are not environmental, but that the impact is positive for the environment. Fiscal motives may lead to an increase of taxation for mineral oils, which itself creates incentives for a more rational use of vehicles, for new technologies, or even for a slight modal shift. Financial considerations may be a constraint for infrastructure investments, which not only satisfy transport demand, but also induce new demand. Another type of indirect incorporation is a government's inability to implement its transport-oriented targets and policies, which prevent it from functioning as a dynamic destroyer of the environment (cf. Schubert 1989).[3] Sometimes insufficient government capacities may be a better safeguard against pollution than intentional instruments for self-control.

The third type is **active incorporation.** Active incorporation starts with reduction targets for certain pollutants. The implementation of such tarkets may require policy changes beyond technical standards. This may imply modifications in the organization, the composition, or even the growth rates of transport. Active incorporation is rather a planned top-down process, which defines a set of policies and instruments for the achievement of environmental targets. The most far-reaching form of active incorporation is the formulation and implementation of common objectives for "sustainable mobility", whereas such objectives do not add transport and environmental objectives but rather set clear priorities and avoid contradictions. Examples of this type of approach towards active integration can be seen in the "critical load strategy". This is evident in three examples: (1) within the framework of the Dutch national environmental plan ("National Miliuebeleidplan") (cf. Weale 1992: 39/40); (2) the realization of climate protection goals (concerning the structural policy importance of the climate issue: Loske 1990: 39/40); (3) or the sectoral development objectives formulated in the Fifth Environmental Action Programme of the EC Commission. Thus, active incorporation is distinguished from defensive incorporation, above all, in that it goes beyond avoiding additional

[3] Cf. Hey (1991) in this respect: He terms it a dilemma of federalism that the "prevention power" of the environmental protection movement is relatively great in fragmented political systems, while on the other hand, the power for active policies of the government is relatively weak, even in the case of establishing structural policy that is ecologically viable.

environmental damage and formulates more or less ambitious reduction targets. The consequence of active incorporation may be a structural change in the economy which relieves the burdens on the environment (cf. Jänicke 1992: p. 18/19). Active incorporation requires a mixture of instruments which work "synergetically", general and specific measures which are synchronized to complement one another (for freight transport, see the attempt by Hey et al. 1992; Button 1992b).

The relationship between the different types of incorporation may be shown in the following figure. The arrows in the figure signify the source and direction of the initiative. In the case of active incorporation, the initiative comes from environmental policies and has to be checked by economic criteria. In the case of defensive incorporation, the initiative comes from the economy and will be checked by environmental criteria.

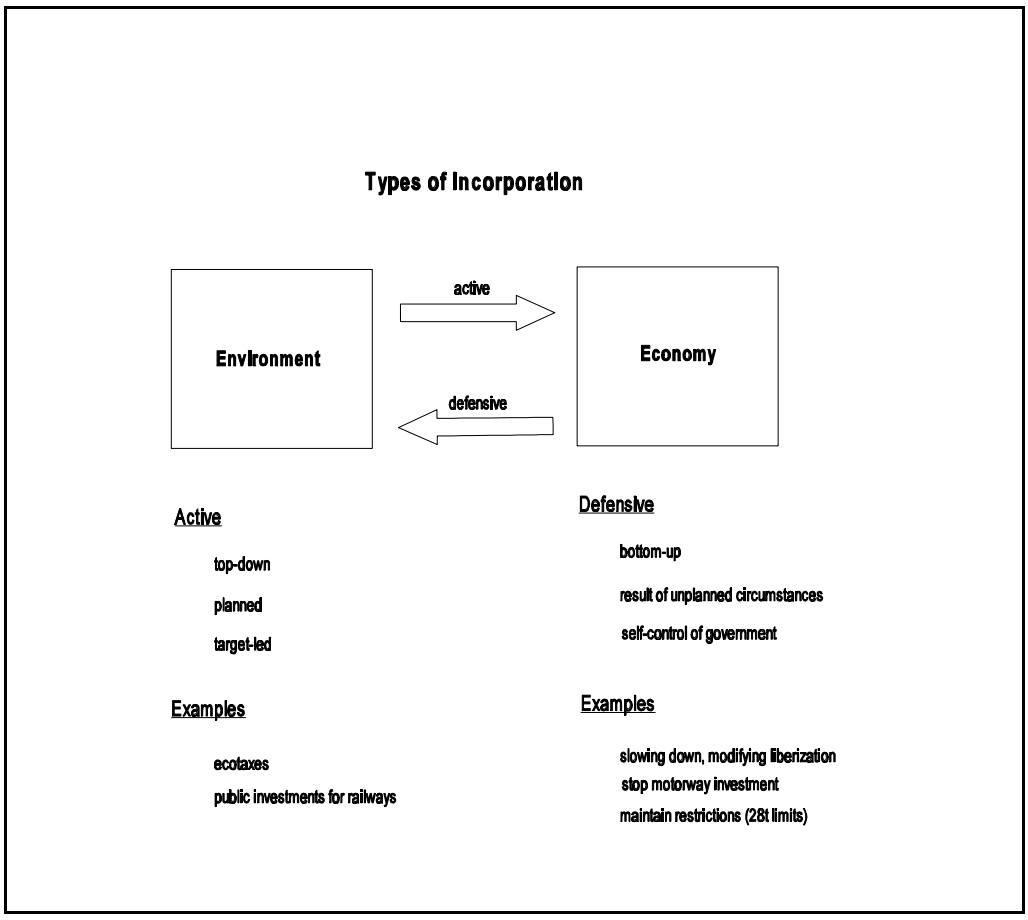

Abbildung 2 Types of Incorporation

2.2 Evaluating the State and the Dynamics of Incorporation

Incorporation in this study has been applied in a relatively broad sense. As important elements, one can distinguish:

- principle choices (= targets)
- decision-making cycles (= styles)
- policies (= actions)

Principle choices include the perception of problems as well as the search for strategic choices. They define the more general frame for specific policies. Principle choices are derived from the principles of environmental policies, as defined in the framework legislation or strategic environmental policy documents. They may be more specified in environmental legislation, which is related to the transport sector. Another source for principle choices are the strategic documents for the future of transport policies. Such principle choices define the frame for more specific actions, even if they are not fully implemented everywhere.

Such principle choices may be processed and implemented through the “decision-making system”. The study focuses on the organization and the procedures between the transport and the environmental ministries and service. Many studies (i.e., Baldock et al. 1992; Müller 1986) only focus on such internal questions of organization and management, when analysing the cross-sectoral character of environmental policies. The approach chosen here is broader to take the whole policy system into account.

The final output of the incorporation process are policy changes. This study focuses on transport policy changes, especially in the fields of infrastructure policies, taxation, and liberalization for the three land transport modes. Furthermore, some participants will analyse the impact of other policies on transport demand. Induced transport has an indirect impact on the environment.

In total, this research project evaluates the state and dynamics of incorporation for eight subjects. These are shown in Table 2.

Elements of Analysis	
A)	*Principle Choices*
1	Legal requirements
2	Strategic Targets for Transport and the Environment
3	Quantitative Environmental Targets
B)	*Decision-Making Cycles*
4	Organization
5	Procedures
C)	*Policies*
6	Infrastructure Policies
7	Taxation
8	Liberalization, Deregulation, Privatization

Table 2 Elements of Analysis

The evaluation focuses on the “effectiveness” criterium. It is assumed that “deeper environmental policies” may be more effective and more efficient than additive or compensation-oriented approaches (Jänicke 1986; Prittwitz 1990; Weale 1992; OECD 1992; Jänicke et. al. 1992). Furthermore, it is assumed that incorporation should be both active - to realize environmental objectives - and defensive - to reduce further damage from transport policy decisions. Finally, incorporation should be comprehensive in a double sense. It should be strong for all policies (horizontal comprehensiveness) and take place during all phases of the policy-making process (vertical comprehensiveness).

Those three criteria have to be explained a bit more in detail.

Depth is related to the causes of environmental degradation. Action may focus on the repair or the compensation of damages at the end of streams of waste, or at the origins of resource and energy use, such as economic structure, level of economic activity, or lifestyles. Deeper environmental policies affect the latter elements, with a number of macroeconomic, policital, and above all, cultural ramifications. Today it is widely acknowledged that “sustainable development” requires deep changes in consumers’ habits and lifestyles (EG-Kommission 1992k). Deeper environmental policies focus on the reduction of scarce inputs, thus avoiding and reducing manifold and disperse streams of waste (see: Georgescu-Roegen 1971). If environmental policies manage waste streams only at the end of the production-cycle, waste streams will become more disperse and

hence it will become more expensive to reduce them. Many policy proposals for “sustainable mobility” apply the distinction between technological improvements on vehicles, shifting transport to the environmentally most efficient transport modes and transport avoidance (VCD, 1988; Hesse, 1991; Holzapfel, 1992; Hey et al., 1992; Enquete-Kommission Klima 1994; Petersen/Schallaböck 1995; Umweltbundesamt 1995). Many analysts argue, that all strategies have to be promoted, to reduce the negative environmental impacts of transport. Others try to state a hierarchy, starting with the deepest changes - the management of transport growth. A final judgment on this question cannot be made in this research - yet it intends to contribute to the assessment of the political feasibility of those strategic options.

There have been several attempts to apply Prittwitz's stage model (1990, p. 57) of the depth of environmental policy effects to transport policy (IFEU, 1992; Blatter, 1995). A simplified and more aggregated approach is suggested in this research project:

The "business-as-usual-strategy" is characterized by the traditional economic rationale that prevails in current transport policies. Major modifications of the traditional road-biased and growth-oriented strategies do not appear to be necessary or possible. Policy-makers may be hesitant to change the status quo. It will not be argued, that environmental policies do not take place in the framework of “business-as-usual” strategies - however they are “peripheral”, additive or compensatory - not challenging the prevailing trends. Environmental policies in the framework of a “business-as-usual scenario” contain technical standards for vehicles, environmental impact assessments or compensatory or redistributive activities.

An additive and capacity-oriented strategy accepts that there is a need for policy-driven changes in past market trends. Its strategic rationale is that existing trends of road transport growth meet both economic and environmental constraints. It combines the overlapping fields of strategic interest by adapting to transport growth, but at lower environmental cost than previously. It is more efficient and redistributes transport growth to all modes. A capacity-oriented strategy avoids conflict. Its instruments are directed to strengthen environmentally-friendly modes without discriminating against the others.

A policy directed towards structural change sets priorities for the environmentally more efficient transport modes while respecting the needs of growing transport demand. This policy not only tries to change the composition of transport demand growth, but it also attempts to shift modal split. Thus, the same instruments may be

applied as in the previous strategy, however the intensity would be much stronger. The strategy would imply more conflicts since the market share of the dominant road transport would be reduced. This would imply losers and winners.

Finally, a demand-side-oriented strategy follows the new economic philosophy of sustainability. It tries to promote environmentally-friendlier modes of transport, as well as a transport-efficient economy, which, in turn, decouples economic growth from transport growth. The demand-side-oriented approach assumes that technical and modal-oriented strategies may be appropriate, yet it is not sufficient enough to meet sustainability criteria.

The study will assess to which strategy national transport policies belong. For every policy studies indicators for the different strategies have been chosen. Those are presented in chapter 4.1. A “business-as usual” strategy will be categorized as “no incorporation”, a capacity-oriented as “low”, a structure oriented as “middle” and a demand-side oriented as “high”.

The second criterion evaluates the comprehensiveness of incoporation. This may have either a vertical or a horizontal dimension. The criterion of **vertical comprehensiveness** looks at how far a policy has been developed. For instance, many policies do not reach beyond the initiation phase, or remain in the beginning stages. This includes formulating principles, holding meetings, and then creating White Papers or Action Programmes. Incorporation is seen as being vertically comprehensive when such principles and ideas are actually implemented and/or reevaluated.

In contrast, **horizontal comprehensiveness** relates to the policy fields that are inquired. Incorporation is considered horizontally comprehensive when all policy fields are reevaluated according to environmental criteria. This study will discover a structure where incorporation is stronger in some policy fields than in others. Moreover, it will discover a typical profile of incorporation that gives some indications where incorporation is most likely to achieve or fail.

Finally, this research project examines the structure of **types of incorporation**. This study defines three types of incorporation: active, defensive, and indirect. This profile provides information on the types of incorporation which have the best chances, and the type which encounters the most problems.

Taking those evaluation criteria together, each of the countries which are examined in this study is expected to show a certain profile of incorporation. The second part of the study tries to identify the most relevant structural factors that might help explain the national profile.

2.3 Structural Factors

The core of the study is to analyse the determining structural factors that may explain the profile of incorporation. The objective is to find major characteristics of the economic and political system, which offer opportunities and restrictions for incorporation.

This may be done by using the "capacity theory" (Prittwitz 1990 and 1993), which might provide a very useful concept to understand the opportunities and restrictions. Capacities are the resources of a system to promote or to adapt to changes. Economic capacities may be described as the technological and economic flexibility to adapt to environmental demands. Major economic factors include the level of productivity, its flexibility, and its resources for innovation or technological options for alternative, less polluting solutions. Political capacities may be defined as the resources and possibilities of the government for strategic decisions. Furthermore, its responsiveness to environmentalists' demands are considered to be an important capacity (Prittwitz 1993: 346ff; Prittwitz 1990: 108f; Jänicke 1993: 25f; Jänicke 1990: 213f). The relevance of "post-material" values in a society may be an important cultural capacity, since it defines the demand for environmental protection, as well as the willingness to participate in sustainable types of consumption.

According to the main thesis of the "capacity theory," environmental policies reflect more the state of capacities than the state of environmental problems. The capacity theory is an alternative explanation to environmental policies, which is in contrast to the "problem pressure thesis" (Prittwitz 1990: 103ff; 208f). This is formulated in the "catastrophe paradox": Environmental policies will not be promoted in a situation of environmental crisis, but in a situation of relief, where existing market and technologic trends already reduce the pressure on the environment. Environmental policies are pro-cyclical, meaning they do not react to the degradation of a situation, but reinforce trends of improvements. If capacities to solve an environmental problem do not exist, then decision-makers tend to ignore the problem since they do not perceive a chance to solve it successfully. If capacities are strong, decision-makers may become active, since they perceive chances for success.

One can differentiate between two factors: one, long-term, more general factors; and two, more specific factors. Both factors may have an impact on incorporation.[4] The long-term factors may explain the more general characteristics of incorporation, especially its strength and profundity. Such long-term and general factors for incorporation are:

- the environmental pressures;
- the economic pressures, which are caused by problems of inefficiency, transport growth, and congestion;
- the state of environmental policies and the level of policy demands;
- the economic capacities to adjust to environmental constraints;
- and the general characteristics of the political system especially, the responsiveness of the political system, especially to environmental demands and the regulatory tradition of the country.

Furthermore, more specific factors, which will be discussed below, contribute to the way incorporation is promoted. Such specific factors explain why different types of incorporation are more elaborated than others, and why incorporation is stronger in one field than in the others.

Most specific factors that influence incorporation are:

- the perception of the government and the administration to incorporation in general, and in different fields;
- the perception and positions of interest groups and relevant institutions (i.e., scientific experts) on incorporation, in addition to the major issues they are raising and their socio-economic position;
- avenues for the public to block or to modify political decisions (referendums, access to court). These are important factors for defensive incorporation, but rather ambivalent to active incorporation;
- the fragmentation of competences in the transport sector as a factor for defensive incorporation, but rather ambivalent for active incorporation;

[4] This differentiation is developed in the advocacy coalition approach: Sabatier 1993: 122; as well: Héritier u.a. 1994 apply a similar differentiation to explain environmental policies in a comparative perspective.

- the internal capacities for incorporation by the environmental or the transport ministries (including Organization, Procedures, Resources, Scientific Prospection);
- relative strength of the transport ministry (vis a vis the other ministries): A strong finance ministry and a relatively weak transport ministry may lead to "indirect incorporation."

The following chapters will explain the theoretical reasoning behind the choice of those variables and will formulate some hypotheses.

2.4 Structural and long-term variables

2.4.1 Environmental Pressures

It is a common fact that environmental pressures from various sources play a major role in formulating environmental policies. In countries with scarce resources and high environmental pressures, environmental standards may be stricter than in those countries where abundant resources still prevail. It is one of the assumptions of neoclassical environmental economists that environmental standards will be stronger, if "environmental resources" become scarce, or if popular preferences for the environment are heightened (i.e., Siebert 1978:114ff; Siebert 1989; Binswanger/ Wepler 1993). In other words, the neoclassical world is a functionalist world where the price for the environment (or the intensity of environmental policies) reflects the relative scarcity of the environment. In addition, policy sciences perceive "environmental pressures" as an important variable to explain environmental policies (Jänicke 1990).

High environmental pressures may be an important, however, not a sufficient factor for incorporation. Most countries with strong incorporation, therefore, will have high environmental pressures, however some countries will have weak incorpororation even though environmental pressures are high.

Hypothesis 1 The relevance of environmental pressures

However, a simple functionalist stimulus-response model does not work. One can observe environmental problems without adequate policy reaction, and one can observe active policies where environmental problems are about to be reduced by technological developments (Prittwitz 1990, 1993). One can observe a number of

barriers that show that a simple stimulus-response model does not work. For instance, the environmental problem has to be perceived and translated into the logic of the political and economic system (Luhmann 1986; Immler 1989). Their responsiveness however may be limited. There may be a lack of techological or economic resources and capacities to solve the problem. The political system or the administration may not have developed the tools, the openness, the instruments, or the authority to be responsive to the environmental problem (a comprehensive criticism in: Prittwitz 1990; 1993). Therefore, one should not expect a linear correlation between environmental pressures and political activities. This can be formulated in Hypothesis 1.

It is the objective to measure the level environmental pressures regarding air pollution, land-use and noise in general, and to emissions from freight transport in particular. The main question of the chapter is: Is there any correlation between the state of incorporation and the environmental problems in the six countries?

2.4.2 Economic and financial pressures

Environmental policy sciences so far have not inquired into economic and environmental problems that might be a factor for environmental policy-making. Traditionally, environmental policies were perceived as a cost factor, which means they created more economic problems than solving the original problem. However, it may be that "mixed motive games" may be a major factor to promote the incorporation of the environmental dimension in the case of freight transport.

Some scholars (Beck 1993; Prittwitz 1993) use the term "reflexive modernization" to characterize policies which become necessary to react to feedback mechanisms of simple modernization. Prevailing economic trends may create structural problems, which require strategic reorientation to avoid economic problems. The transport sector is currently experiencing an economic crisis, as identified in many studies and reports. Major elements of this impending transportation crisis are: congestion, financial restraints for new infrastructures, or the decline of funding, and increasing deficits in the railway sector.

Road transport is in a growth crisis, thus endangering its own comparative advantages compared to other modes. The other side of its success is the decline of other means of transport and of infrastructure capacity problems. All those symptoms may be an indicator for the present inefficiency of transportation systems due to market and state failure (Button 1992b). The resulting bottlenecks may

endanger new location strategies of enterprises, such as "lean production" or "just-in-time" production.

A lot of literature shows that in times of crisis, there are often new alliances and strategic reorientation (i.e., Jänicke 1973: 15f; Scharpf 1974: 13). Crisis is a focal point for institutional learning (Hedberg 1981). It requires a reevaluation of past politics and a redefinition of interests (Adler/ Haas 1992: 75). Concepts which offer a new synthesis for problems (such as economic efficiency and the environment) may become more powerful (Majone 1993: 97). The incorporation of the environmental dimension may lead to a policy, which may improve the economic and environmental efficiency of transport systems.

If solutions to economic crisis are simultaneously environmentally beneficial, then the incorporation of the environmental dimension becomes more significant. JÄNICKE (1979; 1986) has developed the argument that "government failure" may lead to both economic inefficiency, which is the budgetary crisis of governments and environmental decline. According to WEALE (1992: 31), "ecological modernization" reduces the trade-off between economic and environmental criteria. It breaks the old polarization between polluters and victims' interests. The term "Knappheitsökologie" (which means "ecology of scarcity") (Prittwitz 1993) implies the opportunity for new alliances between economic efficiency and environmental conservation. It may be that the driving force for the rational use of resources is less for environmental reasons, but rather for economic scarcity. OECD environmental ministers (OECD 1991p: 5) argue that the chances for incorporation are greatest when environmental targets and economic efficiency overlap. Infrastructure capacities must be considered scarce. Policies to solve economic problems (i.e., improving the efficiency of the existing transport system) may be formulated in a way that environmental considerations are also taken into account. They may have positive spin-off effects on the environment, or they may simply reduce the barriers to stronger transport growth.

However, as mentioned in the first chapter on environmental pressures, one may not expect to find a linear correlation between economic pressures and the incorporation of the environmental problem. Solutions to relieve the economic pressures may even be marketed as "solutions to environmental problems", if this seems to be more popular.[5] Most arguments (especially lack of economic, institutional, or political capacities) against a functionalist stimulus-response model may also apply to the economic pressure thesis.

[5] i.e., road pricing is "sold" as a solution to environmental problems which it is basically an instrument to reduce congestion problems

Strong economic pressures may be an important factor to explain why the incorporation of the environmental dimension came on the political agenda. It may be an important, however, not yet sufficient factor to explain first steps for incorporation. This idea is formulated in Hypothesis 2.

High economic pressures (such as high debts of railways, capacity problems of the infrastructure net, limited public finance, inefficiency of existing transport systems) may be stronger factors that push for incorporation than environmental problems. The resulting policy is capacity and efficiency oriented (containing some elements of "ecological modernization") - thus requiring less resources to maintain transport growth than in a business-as-usual scenario. However, even policies for "a more efficient transport growth" may lack implementation. Therefore, one can also observe that some countries with high economic problem pressure will not be able to change policies.

Hypothesis 2 The relevance of economic pressures

2.4.3 The State of Environmental Policies

The need for incorporation is strongly related to the state of "environmental policies". The more ambitious environmental targets are, the stronger the need for coordination and incorporation tends to be (OECD 1991p: 22). Low aspirations of environmental policies may be met by distributive, compensatory, or technical measures. They do not require any changes in the strategic orientation of transport policies.

Incorporation becomes a strategic concept in the framework of existing stage models of environmental policies. According to WEALE (1992: 22; OECD 1992:17; Prittwitz 1990: 98; Jänicke 1986), the dynamics of environmental policies can be conceived in a form of stage-model which follows different cycles of the collective learning process (see above).

Incorporation is very often defined as a strategic concept to achieve sustainability (i.e., OECD 1991p: 3). It is an interim concept between the end-of-pipe-oriented approach and structural change. Therefore, one can assume that incorporation comes on the agenda when the limits to the former approach become obvious. Such limits become obvious, if:

- environmental regulations are so strong that the potential for technical improvements is rather exploited, and if they nevertheless, do not reduce environmental pressures sufficiently;

- or if new problems emerge (such as the "greenhouse effect"), where technically-oriented end-of-pipe solutions are insufficient or inefficient;
- environmental targets are so strong that they are endangered by the promotion of polluting activities in other sectors.

In this sense the state of environmental policies has an impact on incorporation. This can be formulated in Hypothesis 3:

Incorporation is stronger in countries that have already developed an advanced level of "conventional" environmental policies, such as strict emission standards and technical measures. Countries first experience the limits to conventional end-of-pipe technologies, and then look for an approach which is more profound.

Hypothesis 3 The state of environmental policies and incorporation

Furthermore, it is a very rough indicator for the "overall" capacities for environmental policies - that means economic, political,a technical and cultural. If overall capacities for environmental policies are strong, then one can expect that there is some spill-over effect on incorporation.

2.4.4 Economic Capacities

According to the above-mentioned "capacity theory," environmental policies are only promoted, when the economic system has the resources and the flexibility to adjust to the environmental demands. Otherwise, the cost for structural change, or the friction costs, will not be acceptable.

This concept can also be applied to transport policies. Countries that have high traditional shares of the railway or shipping sector perceive more opportunities to strengthen those environmentally friendly modes than those countries that only have very low shares. Countries with a modern industrialized road freight sector may be more active to promote intermodal cooperation than those countries with a strong owner-operator structure. The introduction of new information technologies for both capacity management and environmental targets may depend on a strong industry in those fields. In other words, each country tends to promote a type of transport policy (or a type of incorporation) that takes the relative strengths and weaknesses of its transport sector into account.

The capacity thesis can be applied for transport policies: Active incorporation is strongest in countries where the transport-system can adapt best to environmental constraints. This means that the promotion of environmentally friendly modes of transport is strongest in countries that already have high shares for those modes. It is weak for those modes which are traditionally neglected. An industrialized road transport sector offers stronger opportunities for intermodal cooperation and advanced logistics than a premodern small-scale owner-operator sector. A strong railway system offers more opportunities for policies to promote a modal shift than a weak and neglected one. The same applies to a strong land-shipping sector. "Demand-side management" will be first initiated in relatively "transport efficient countries" and in countries with strong regional economic back and forward linkages.

Hypothesis 4 The "capacity thesis" explains best what happens

Concerning the incorporation of the environmental dimension in freight transport, the term "capacity" has to be further defined and operationalized. So far, "capacity" has been used rather vaguely. In this context, above all, economic capacities will be discussed, since "political capacities" coincide with the institutional dimension, which will be discussed below.

One can distinguish three types of economic capacities concerning freight transport and the environment:

- the capacities for modal change and intermodal cooperation leading to a less polluting modal choice;
- the capacities for demand-side management leading to a more transport efficient economy;
- the capacities to industrialize the logistical transport chain with the introduction of new technologies (telematics, transmodal operations by large-scale enterprises).

2.4.5 General Characteristics of the Political System

Some policy science experts agree upon the relevance of institutions for political output (Windhoff-Héritier 1991; Skopcol 1985; March/Olsen 1989). Political institutions filter interests. They define the rules for groups in order to get access to the decision-making process. They may function like a filter for some interests, while actively strengthening others. Government may be strong in terms of authori-

ty, discretionary power of execution and resources, or it may be weak and fragmented. Therefore, institutions play a major role with explaining political events.

In general, one can distinguish those institutional factors which are relevant for the political input (agenda-setting) and for political output (decision-making/implementation). Responsiveness to environmental arguments and considerations is the most important capacity for the political input. The competences and capacities of the administration, to promote and implementation (Kitschelt 1983). Environmental policy science experts identify "open" political systems as a precondition for successful environmental policies. Open political systems offer many points of access to environmental interests, and they are responsive to environmental demands (Kitschelt 1983; Jänicke 1990; Weidner 1989; Prittwitz 1990).

Policy science is more controversial on defining the role of state capacities on the output side. The capacity thesis implies that active policies require strong competences and resources by the government. It must be capable of long-term, strategic decisions - even if they raise conflicts (Kitschelt 1983). However, this must be qualified. Strong executive power may also be exercized at the expense of the environment (Jänicke 1986; Fach/Simonis 1987). Therefore, a “strong government” is only positive for active incorporation in the context of majoritarian environmental alliances.

Defensive incorporation requires some kind of veto position by those groups that are negatively affected. This may rather be the case in fragmented political systems, in which a balance of power may be applied, and where environmental interests may have multiple points of access. On the other side, fragmented political systems have a lower capacity for active incorporation, since the costs to find a consensus among the participants are high.

One can identify several general characteristics of the political system, which might have an impact on incorporation:

- The type of electoral system: Majority voting systems (the winner takes all) offer fewer opportunities for minority interests than the proporational voting system. The "Manchester type of government" (Schmidt 1993; Lijphart 1984) gives minority interest less power through the party system. A strong, centralized government is able to promote active policies. However, the access for environmental interests is so weak that the capacities of the government will not be used for active nor for defensive incorporation. Multiparty or consensus-oriented governments may be more open to environmental interests. Therefore, incorporation may have better chances in minority-friendly political systems.

- The degree of fragmentation: In federalist systems, victims' interests at lower levels have better access to politicians, and the pluralistic setting of governments provides for more pluralistic debate on issues. This rather consensus- and negotiation-oriented political arena may be useful for defensive incorporation, but it also creates problems for achieving active incorporation.

Regarding the dominant culture of regulation, one can differentiate between several types:

- Pluralist competition, which gives every interest group a chance to influence political events in a open discussion. Pluralist competition will lead to "efficient, pareto-optimal solutions, where changes only happen if no group is worse of by the measure, but some may be better of. According to the "Kaldor-Hicks Criterium," this requirement measures may also be acceptable if the groups which are negatively affected by a policy may be compensated. Pluralist competition may contribute to defensive incorporation, however its impact is slightly structural conservative (compare: Becker 1983; Offe 1990; Lehner 1991) (i.e., Switzerland).
- Exclusive corporatism tries to find a consensus and reach compromises among the major social groups and the government institutions to achieve strategic macro-economic goals. Concerning the environment, "exclusive corporatism" tends to externalize costs to social groups. The prospects for incorporation are not good (see Heinze 1981; Lehner 1991; Esser/ Fach 1981: 167f; O´Sullivan 1988: 8f) (i.e., Germany during the 1970s). A special form of exclusive corporatism is "state corporatism," which takes place when the government plays a very dominant role, and where societal groups are less important (i.e., France).
- Inclusive corporatism includes building up networks of all interested parties to formulate a consensus for common action. This type of consensus-oriented policy formulation (i.e., Netherlands) may be best suitable to bring issues for incorporation onto the agenda (Jänicke 1993: 26; Jamison u.a. 1990). According to LIJPHART (1984), this type of consensus orientation may lack implementation, while having rather ambitious targets (see as well: (Olson 1991: 100; Lehner 1991: 248; Buller/ Lowe/ Flynn 1993: 178).
- Formal rights for concerned citizens include the right to seek legal measures against a certain plan, public hearings during the infrastructure planning process, or even the possibility for referendums. Referendums may give a strong veto power to victims' interests, thus enhancing defensive incorpora-

tion. But they may also have a negative impact on active incorporation, since referendums tend to be "status-quo-oriented".

Those reflections can be summarized in the following hypothesis:

Consensus-oriented political systems with good access for minoritarian interests will have stronger safeguards for defensive incorporation than majority oriented. While the capacities of the "Westminister Type" of Political System to promote active incorporation are stronger, it is less probable that they will be used for active incorporation as long as environmentalism cannot form majoritarian alliances.

Hypothesis 5 The role of the political system

2.4.6 A synthesis: The application of the "Capacity Theory"

As explained above, economic and environmental pressures are not sufficient to explain political action. More relevant are the "capacities" to promote incorporation. There are two extreme cases which verify a conclusion from the "Capacity Theory": First, the government acts on problems where pressure is low because it can easily present a success story; secondly, a government does not act because of limited capacities, even though pressures are very high. In the first case, the "solution" looks for a problem to be solved;[6] in the second case, a problem will be ignored or not even perceived because solutions are difficult to find. In both cases, policies are "pro-cyclical," which means it reinforces existing structures. According to PRITTWITZ (1993), this can be seen as a special case of "government failure".

The results of the analysis may be summarized in 38.

[6] According to the "Garbage Can" model (March/Olson 1989: 12f; Jänicke 1979), politics do not function in a clear sequential order (from problem to problem-solving). However, solutions, instruments, actors' attention to a specific issue, and related problems may be rather independent. Sometimes existing technological solutions may look for new marketable problems. A certain problem may attract the attention of strategic actors at one moment but not at another. Therefore, proper timing and the coincidence of several independent factors may explain a successful policy more than a specific problem to be solved.

		Environmental and Economic **Pressures**	
		High	Low
Institutional, economic, and political **capacities** to adapt to environmental constraints	High	Strong Incorporation	Eventually strong Incorporation
	Low	Weak Incorporation	None

Table 3 Capacities and Incorporation (EURES 1995)

2.5 Specific Factors influencing incorporation

The type of incorporation may also be influenced by more specific factors, such as the perception of the major interest groups or the openness of the transport ministry to environmental interests. Such factors may have more of an impact on the type and the comprehensiveness of incorporation, rather than on its depth. The specific factors are more short-term and easier to manipulate than the general factors. Some of the most important factors will be discussed below.

2.5.1 Interest Groups and their positions on incorporation

Incorporation is dependent upon its social support. It will only have opportunities if strongly articulated interests for incorporation can be mobilized and alliances in favour of some policies formed. This study is unable to describe every single interest organization that is involved in transport policies.

A useful approach, however, is to group different interest groups. Very often "interests" are grouped into three categories: the "promoters", "intermediate interests",

and "polluters" (see: the advocacy coalition approach from Sabatier 1993; categories of interests: Prittwitz 1984; 1990: 198).[7] These three groups may be strongly related to different strategies: the "promoters" will favour structural change and demand-side management strategies; the intermediate groups tend to favour more capacity-oriented strategies, and the "polluters" will favour "business-as-usual" strategies. Intermediate interests may contribute to the solution of environmental conflicts because they may no longer be perceived as zero-sum games, where either the polluters or the victims lose. Their proposed solutions improve their own economic position while at the same time reducing a specific environmental problem. For example, producers of catalytic converters sell more autos if it is required by law to use catalytic converters.[8] Helpers' interests are ambivalent: They help to reduce environmental pressure, however they may create new problems at the same time. The producers of catalytic converters - like the car producers - are interested to sell more cars. This may cause further environmental problems due to increased road traffic. One can assume that the relative position and strength of interest groups are strongly linked with the above described capacities. If political and economic capacities for incorporation are strong, then the alliances for incorporation have stronger arguments.

The degree of openess and inclusion for environmental interests may be a further factor, which is relevant for the relative influence of interst groups. Even a relatively open type of government may be relatively closed to environmental interests. Therefore, one has to analyse the degree of openness of the transport policy-making network towards the networks of environmental interests. This plays a certain role for both active and defensive incorporation. Selective links of administrations to the society and scientific experts will make it easier to ignore environmental considerations than very open links. Open links towards a wider spectrum of environmental thinking, therefore, have an impact on the perception of the administration and the type of policies promoted.

[7] The difference between the two concepts is described by SABATIER, who focuses on an actors-based analysis - thus, grouping them into principal coalitions. PRITTWITZ applies the concept of "interest" - which transcends an actor analyis: one actor may have different motives - may follow different interests in different situations. The concept of PRITTWITZ therefore, is more differentiated, but for an overview on the social preferences, an actors-oriented analysis is sufficient.

[8] The case of emissions standards from cars has been recently inquired by several studies: Holzinger 1994; Arp 1991; Boehmer-Christiansen/ Skea 1991.

In principal, one can distinguish the relationship between the "environmental community" and the "economic interest groups" who are promoting cleaner solutions.

- The administrations for transport and environment may have open, participatory procedures, or be more discretionary and selective. Advisory policy networks may be pluralistic, with all interested parties or selective, involving only a few interests. Open governments tend to be more responsive to environmental interests - but they are open to other interests as well. Therefore, pluralist participation is positive for defensive incorporation, since environmental interests may exert some kind of veto power.
- The relationship between government and railways/shipping may strong or weak. Countries which have a strong regulatory tradition to control road freight transport and to protect their railways develop different political links to the railways (and formulate different policies for privatization) than countries with liberal traditions. One can assume that interests to protect railways from competition may be stronger in countries with a strong regulatory tradition, than in liberal countries. This may have an influence on the way privatization of railways is promoted. In the case of freight transport, such links might be beneficial for some type of incorporation, since railways or shipping have strong helper interests and form selective alliances with environmental interests.

The role of interest group organization can be formulated in Hypothesis 6.

Interest groups play a major role in transforming the above-mentioned structural phenomena into the political process. In every country, one can identify environmental promoters, helpers, and blockers. Promotors are typically from environmental groups, environmental science, or institutions with high public authority (i.e. Klimaenquete-Kommission). Normally, helpers are from the enterprises and federations which offer environmentally friendly alternatives: railways, shipping, logistic enterprises, telematic producers, users of non-road transport. Blockers are haulage enterprises, road building enterprises, road-transport users. Incorporation is strong, if a strong coalition between promoters and helpers emerges, and if those have more future and problem-oriented positions. If short-term interest definition and polluters' interests dominate, conditions are worse for incorporation. The relative strength of those groups are reflected in membership, issue attention, market size, and number of represented workers. It is furthermore reflected in the openness or exclusiveness of transport policy networks.

Hypothesis 6 The role of interest groups

2.5.2 Problem Perceptions in the Government and the Administration

Recent policy analysis attributes to the "world view" of the government as a crucial role to explain political events. New interpretations of reality and especially of the future may shape interests in a different way than one expects by a pure political-economic analysis. Policy decisions which take into account future development require tools for interpretation; therefore, they may have different to decisions which might be derived from economic structure (a radical criticism of interest grouptheoretical approaches is formulated by: Jachtenfuchs/Huber 1993; other criticisms: Adler/Haas 1992; Haas 1990; Héritier 1993b: 11; Majone 1986; 1993). All those approaches emphasize the role and relative independency of "ideas" from "economic interest".

Since a government has more or less autonomy from the different interests in society, it may have its own perception on incorporation. Chapter 1 has already identified the major lines of official thinking on incorporation. This analysis can be used for this chapter. One has to differentiate between the position of the environmental and the transport departments. Furthermore, it has to inquire into the following questions:

- Does the government feel there is a need for incorporation?
- How is action and non-action legitimized - and what are the different environmental and non-environmental motives?
- What type and what intensity of incorporation is felt to be necessary?

2.5.3 The Internal Capacities

This basically relates to the resources and competences of a ministry, department, or government, which has to promote an active reform policy (Mayntz/ Scharpf 1973: 139; Scharpf 1974: 3ff; Scharpf 1973: 169). "Active policy" especially requires substantial, financial, informative, and legitimate resources and personnel (Scharpf, 1974, p. 3 et seq.). This conclusion is based on the following considerations: active policy requires a long-term planning perspective in order to be able to pursue far-reaching objectives (Scharpf, 1973, p. 139). This long-term perspective is the direct result of dimensions of the problem, because the realization of far-reaching changes requires a lot of time. However, it is also the result of political considerations. A long-term perspective reduces conflicts, because it allows those affected time to adjust and future costs can be considered with less consternation

than current ones (Mayntz/Scharpf 1973: 139). The extended period of time for an active policy and its greater complexity require substantial resources to procure and evaluate information. If it is to be independent of special interests, then public administration requires its own system for identifying and solving problems and its own projection capabilities which provide it the possibility of creating its own models of the problem. Because the structures of the problem and the organization do not normally concur, and the program complexity requires the cooperation of numerous specialist departments, a great degree of cooperation is imperative.

Internal administrative cooperation structures that are capable of high-performance and an effective leadership which can distinguish strategic factors from individual cases are a basic condition. Active policy affects property rights linked to the status quo, and consequently, it may result in an increased level of conflict. While reactive and distributive policies tend to be linked to a lower level of conflict, planning which has a structural objective is predisposed to be linked to a higher level of conflict (Mayntz/Scharpf 1973: 126). Public administration is usually unable to provide the necessary legitimate resources which are required for active policy.

With respect to level of acceptance and ability to achieve a consensus, the system of political parties can be an important "transmission belt" between public administration and the society. Thus, public administration needs politics in order to withstand an increased level of conflict (Mayntz/Scharpf 1973: 133). Poorly pronounced parliamentary systems or equivalent legitimate institutions are consequently an unfavorable prerequisite for active incorporation.

The organization of the incorporation, however, may not be as important to explain incorporation as the stated political will and the consensus between the environment and the transport department. If the consensus is weak, then the institutional position of the environmentalists in the administration must be strong to prevent environmentally damaging activities or to promote environmental considerations.

2.5.4 A Model for Incorporation

The overall factors may be synthesized into a general model. Incorporation requires strong political, institutional, and economic capacities. Such capacities influence problem perception of the involved actors networks, their arguments and relative power. This is shown in the simplified model of Figure 3.

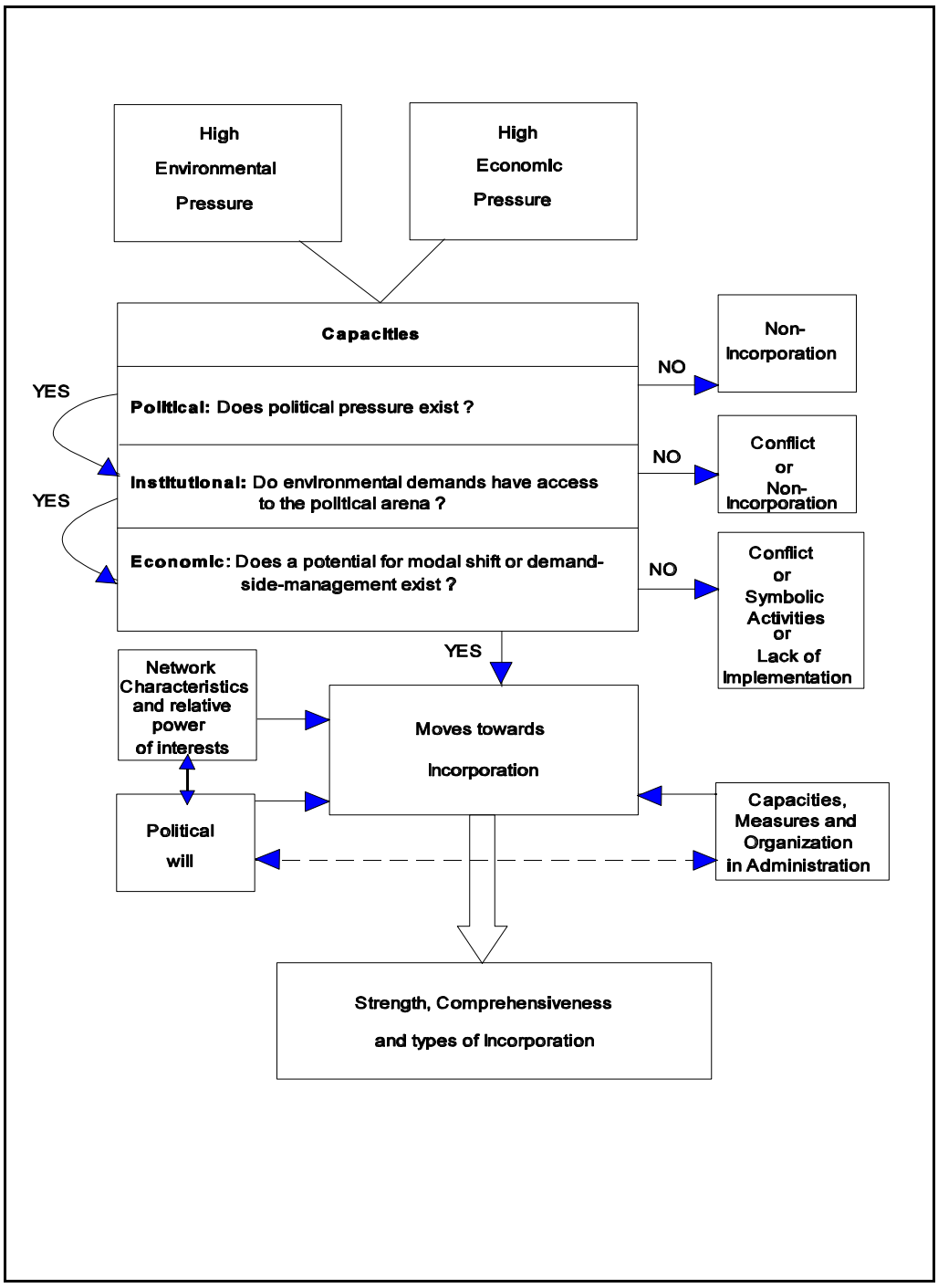

Abbildung 3 A model of the factors influencing incorporation in freight transport

To be more specific, those hypotheses have to regrouped to get an explanatory value for the three profiles of incorporation: principle choices, decision-making styles, and actions. Actors make their principle choices on the basis of different factors: They face a number of problems to be solved. But they also have to respect important constraints, such as the vital interests of powerful interest groups and existing socio-economic capacities, which determine the relative costs and benefits of any policy. Nevertheless, principle choices may still be more problem-orientated than “actions”: They have to be compatible with the economic capacities and the interests of the most powerful stakeholders. Furthermore, actions and actors are influenced by institutional characteristics, especially the electoral system and the degree of fragementation. The opportunities for successful actions therefore might become relative little.

The relationship between the variables will be shown in Table 4.

Element of Incorporation	**Influencing Factor**
Decision-Making Styles Dimensions: strong - weak active - defensive	- Political system (consensus versus competition) - Tradition of Administration
Principle choices Dimsensions: high - low rather active	- Environmental Problem Pressure - Economic Pressure - Level of Environmental Policies - Network characteristics: High environmental profile of actors - Problem Perception of Administration
Actions Dimensions: high - low indirect -active - defensive	- Economic Capacities - Network characteristics - Political System: (Electoral System/Degree of Fragmentation)

Table 4 Socio-economic factors influencing incorporation

2.6 Process-related case studies

Process-oriented case studies have two objectives: They should firstly, achieve analytical depth, which cannot be achieved by a structural analysis alone; and secondly, they shall check the viability of the more general findings of the previous analysis.

Structural analysis may only offer partial insight into the problems and barriers to the incorporation of the environmental dimension. It cannot explain why actors choose a certain strategy in a situation where multiple options exist. In addition, it cannot explain a certain policy event.

Furthermore, the in-depth insight of the prosess-oriented case studies provides for a check and a feedback for the structural analysis of Chapter 3. As shown in the theoretical introduction of this paper, structures do not determine the behaviour of protagonists; they only shape their calculations, and create incentives and disincentives. They define "opportunities", but they do not determine events.

Therefore, the process-oriented analysis provides for additional insight that might even correct some of the arguments and observations of the previous chapters.

The inquiry into the history of a decision, therefore, provides a much more differentiated understanding of the conflicts and difficulties associated with attempts for the incorporation of the environmental dimension. Actors already evaluated the chances of different strategic choices. Reconstructing their rationale offers further insight into the problems. Structural analysis offers the hard data - but only the deep insight into a special case offers the "soft" informations (this was not found in any statistics or documentation), which give another picture of the problems and conflicts for incorporation.

Incorporation must be conceived as a trial and error process to find synergies or to set priorities. Therefore, one can formulate some leading questions, such as:

- Which strategies did different groups or actors choose to promote incorporation or to defend traditional positions?
- Under which circumstances did they succeed under which did they fail?
- What is the history of a certain policy, which could be evaluated in Chapter 2 on the "state or better the dynamics of incorporation"?

The case studies focus on infrastructure policies and taxation. The partners of the research project were relatively free in the choice of methodology to describe such policy processes.

3 National and EU Case Studies

3.1 Denmark *(Mikael Togeby, Povl Skov)*

Environment is a strong word in the Danish debate. Practical all political parties support the protection of the environment. Broad majorities in Parliament have passed ambitious long-term plans concerning energy, transport and other environmental areas. In surveys, the public places “environment” as one of the most important problems for society. In the plan, *Trafik 2005,* from 1994 the goal is to bring down CO_2 emission from the transport sector in 2005 to the 1988 level (Trafikministeriet 1993). Today, it is recognized that this ambitious goal will not be reached without a radical change in the transport policy. Incorporation of the environmental dimension in transport policy is needed, but does not get much support from the important actors. The political debate is filled with environmentally friendly *talk*. *Actions* for reduced transport are few.

The transport business is important in Denmark. 7% of the economy is related to transport. Loss of employment because of competition from foreign hauliers is a strong argument in the debate. The potentials for local regulation, e.g. in cities, where competition is not an argument, are not exploited.

Active incorporation of the environmental dimension in freight transport policy is modest. The need for transport is seldom questioned and in this study transport policy is judged as *capacity oriented*. Little congestion exists on roads. The history of large investments in road capacity is continued with the construction of new motorways and bridges.

During the last decade, some steps towards incorporation has been taken. Hauliers did not pay any diesel tax before 1991. Today the diesel tax is close to the EU minimum level, corresponding to more than 100% of the fuel price before tax (the tax is 0.30 ECU per litre for low sulphur diesel). Small increases in the tax are decided for 1997 and 1998. Diesel tax is considered one of the few policy instruments leading to active incorporation, since the price signal influences all

aspects of transport – including the need for and efficiency of transport. The Strategic Environmental Impact Assessment (SEIA) – introduced in 1993 – is also seen as a (small) step in the direction of active incorporation. SEIA is a procedure to secure that relevant information on environmental consequences is available before Parliament passes new laws. The procedure covers all bills and other proposals with environmental consequences and is very flexible with only a few strict requirements. More details on SEIA in section 3.1.3.

Defensive incorporation can be found in many areas of the transport policy. Environmental Impact Assessments (EIA) take place when new roads are constructed, kilometres of baffle walls are built, and low-sulphur diesel is promoted.

Non-incorporation can be found in the deregulation of the railways and in the loose practise related to the speed control of trucks (a recent study found that 80% of trucks on motorways exceeded the general 70 km/h speed limit by more than 10 km/h).

The environmental considerations are getting more important and serious. This is probably also true regarding the question of incorporation of the environmental dimension in freight transport policy. In Figure 4 the profile of incorporation is shown. The capacity of analysis has been strongly increased during the last years. Steps have been taken to start a coordination of energy policy and transport policy. In 1995, it became official that the ambitious CO_2 goals would not be met with the existing transport policy. Soon it will be clear whether the goals will be adjusted, new policy instruments introduced – or both.

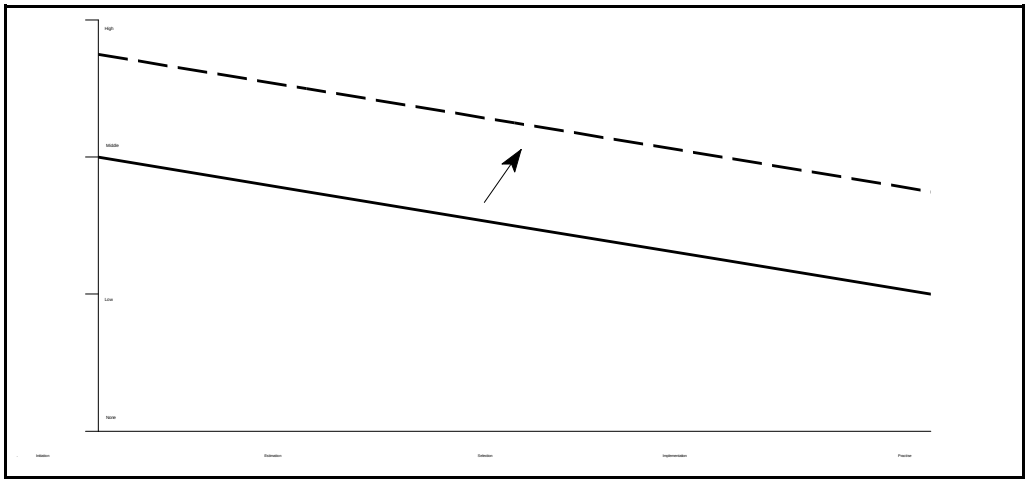

Abbildung 4 Profile of incorporation in Denmark – today and the tendency for the future

The most promising development – according to our analysis – is the bottom-up tendency: The increasing demands for “green transport”. Customers demand green products from the retail shops and companies now begin to ask for environmental friendly products. This strong tendency is spreading to the transport business as wishes and demands. This is a market-based development and it is not initiated by government policy instruments. Politicians will face the challenge to put forward policy instruments that will support this tendency.

3.1.1 The Profile and Dynamics of Incorporation

Table 5 summarizes the overall judgement of the incorporation in transport policy. The policy is divided into eight areas and five phases. Each judgement is based on a concrete description of a policy area. More details can be found in the national report. Incorporation is strongest in the initiation phase and weakest in the phases where policy turns into reality: selection, implementation and practice. “Practice” is the continued use of the policy instruments etc, e.g. the control of vehicle speed.

	General Principles			Decision-Making System		Policies		
	Legal requirements	Strategic targets	Quantitative targets	Organisation	Procedures	Infrastructure policies	Taxation and pricing policy	Deregulation
Initiation	Ž	Ž	ŽŽ	•	Ž	•	Ž/•	•
Estimation	Ž/•	Ž	Ž	Ž	Ž	Ž/•	Ž/•	•
Selection	•	•	Ž	•	Ž	•	•	•
Implementation	•	•	Ž/•	•	•	•	•	•
Practise	Ž	•	•	•	Ž/•	Ž/•	Ž/•	•
Signature:	• Low	Ž Middle	ŽŽ High					

Table 5 The level of incorporation in Denmark

General Principles

The environmental regulation in Denmark is quite extensive. The incorporation of the environmental dimension is reflected in the many environmental laws. In

relation to transport policy the strong interest organisations in the field are playing a major role and influencing the legislation procedure to a large extent. The regulation is weaker in the transport sector than in the energy sector (Andersen, 1995).

Planning has become more environmental oriented through the intention of promoting combined transport and making transport more environmental friendly, but it is still mostly oriented towards infrastructure capacity. The strategic goals of environmental policy and freight transport policy still seems to be in the initiation and estimation phase. There is uncertainty of how the goals are going to be achieved.

The government has a 20% reduction in the total CO_2 emissions from 1988 to 2005 as a target, but the ambition is lower in the transport sector where the target is a stabilization of the 1988 CO_2 level before 2005. The quantitative targets are in the implementation phase, and there is doubt about the CO_2 target being reached. Currently, it is discussed whether new policy instruments should be introduced so the goal can be reached *or* if the ambitions for the transport sector should be lowered.

Decision-Making System

The organizational changes at the ministerial level and the amount of resources spent on environmental control underline that the environmental issue – also related to freight transport – has a higher priority than before. In addition to this the amount of resources spent on research development in the environmental sector is higher than ever before. The environmental dimension is to a larger extent than before taken into consideration when different political issues are discussed and analysed (Christiansen, 1996). But when it comes to practice the result could be better. Organizational changes have taken place in the Ministry of Transport and the Ministry of Environment and Energy, probably with the intention of taking more far reaching environmental considerations than before. The organizational changes are in the implementation phase and the new mirror offices increase the possibility of incorporation.

The establishment of EIA and SEIA procedures is a step in the direction of incorporation, but both procedures have been severely criticized of only changing the physical planning and the proposals marginally, if at all. Seen in this light both procedures have a more legitimizing effect than securing environmental consideration. EIA's are often very detailed, but fundamental alternatives are often evaluated

superficially. Both EIA and SEIA can be seen as procedures to ensure “informed choices”. The consequences for the environment must be clear before a decision is made, but the outcome will reflect the political will to give priority to the environment (Transportrådet, 1994).

Policies

The Danish infrastructure policy is dominated by traditional transport policy aims (road capacity). Huge investments are made in bridges, tunnels and motorways. The environmental dimension in infrastructure policy is still in the initiation and estimation phase. Even if the environment is taken into consideration few actions are taken.

In the taxation of freight transport more consideration is shown to the competitiveness of the business than to the environment. It is an aim to integrate environmental costs in the taxation and price policy, but it is primarily in the estimation or selection phase. The new diesel tax is an exception to this.

The liberalization of the transport sector and the easier access to start a transport business are not containing any guarantee for environmental considerations. Road transport is already liberalized, while rail transport is in the middle of the process (Transportrådet, 1993). Environmental considerations do not seem to be part of this.

3.1.2 Opportunities and Barriers

Actors, Networks and Coalitions

Within environmental policy and freight transport policy, various interest groups are found. Each policy area has its own aim, and these aims are not directly compatible. Transport policy: Capacity. Environmental policy: Regulation due to environmental considerations. If these areas are to be coupled, the interests collide and by that both conflicts and coalitions emerge. The economic, political and social structures play a major part for how, when and where the actors have possibilities for influencing the processes. In this way the structures are both limiting possibilities, but also creating possibilities for the actors.

For a problem to get on the agenda, it has to be introduced. This part of the process is characterised by a struggle between the actors about *how* the problem

is to be defined (which also indirectly affects the solution to the problem). This can be characterised as a kind of campaigning made by different interests.

The actors on the transport policy scene have different power bases, depending on their various capacities. However, what is generally held to be legitimate in the society plays a part for the scope of the various power bases. It is very important whether the viewpoints of the actors win support in the public opinion and from politicians and strong interest groups. Gaining support will enhance the likelihood of success. The Danish political process may be characterised as a balance among various political interests in a consensus-oriented system. Our interviews with ten different representatives show:

- The administration lack the capacity and resources for strategic thinking and long term planning (stated by both the Environmental Agency and the Ministry of Transport).
- Business organisations (*FDE*, Organisation of Danish Export Haulage Contractors; *DV*, Danish Haulage Contractors; *ETU*, Danish Shippers' Council: representatives of the transport buyers in trade and industry) have easy access to the administration and politicians.
- The green organisations (*DN*, Danish Nature Conservation Society; *NOAH*, Friends of the Earth) are most engaged in passenger transport and have less expertise in freight transport. The organisations have access to medias, but not much formal contact with the administration or politicians. They are able to put issues on the agenda, but lack influence later in the policy process.
- The railways are met with new financial targets. However, it is unclear how to include environmental considerations in the freight-by-rail planning, e.g. questions in relation to tariffs and which freight lines to run.

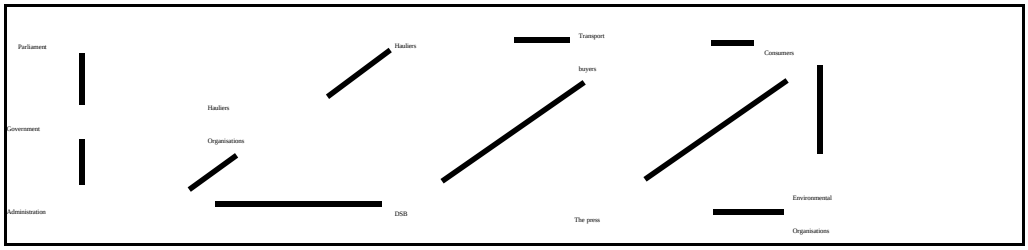

Abbildung 5 Main relations between actors in Denmark

In Figure 5 some of the important relations among actors are illustrated. Many other secondary relations may exist. The media does influence the problem perception of all actors. Both administration and government may be forced to initiate investigations or even make decisions based on campaigns run in the press.

The role of the various interest groups, and their access to the political process is important. The green interest organisations may have influence in the initiation of a policy, whereas business interests dominate in the remaining part of the process. The interest organisations of the business community evaluate that in general there is a positive attention to their demands, although this varies from case to case. The business interests hold expertise and represent large economic interests. The political system is interested in using the expertise and in clearing with these organisations, before a specific policy is announced. The government is therefore dependent on the interest organisations of the business community. The relative strength of interests involved is that polluters and soft blockers are dominating – also in the formal coalitions. The Ministry of Environment and Energy and its agencies, may pull in another direction, but the capacity of the environmental promoters is smaller than that of their counterparts. The transport policy network seems to exclude environmental interest groups. The influence of interest *does* play a major part in transforming problems into policy.

One can identify various coalitions and roles:

- The alliance of the state and the haulage contractors, i.e. the state and soft blockers represented in various policy preparations.
- The alliance of the state and the railways, i.e. the state and a helper of incorporation. Subsidies are paid to the railways. The railways, the Environmental Agency and the Ministry of Transport meet in various policy networks.
- Generally, the forwarding agents are status quo actors who neither block nor promote. However, one could also say, that predominantly they are soft blockers, insofar as they have an interest in increasing transport.
- The Ministry of Environment and Energy is a weak promoter of incorporation.
- The Ministry of Transport is a soft blocker. The situation is mixed with its Planning Office as a promoter.

- The green interest organisations are promoters of incorporation, but lack coalition partners.
- ETU (representing the transport buyers) is now a soft blocker, but have got the potential to be a promoter. This might happen in the future, where the positions might change due to upcoming environmental consciousness and pressure from the consumers (and transport buyers reacting to this).

The political institutions are filtering the interests through definition of rules for access to the political decision-making process. One main explanation of the structure of incorporation is that there is political balancing between different interest groups.

Perception of the Environmental Problems

Environmental problems *are* push factors for incorporation. However, the problems with high CO_2 emission per capita in Denmark have only led to a high level of incorporation in the overall political plans. This high level has not increased the level of incorporation in practical policy. For incorporation to take place, other factors also have to be present. Various forms of capacity must be available and the problem have to be perceived as serious by the actors.

Air pollution is limited in Denmark compared with other European countries. Denmark has few heavy industries and the power plants have maximum pollution control. Also, the steady western wind transports the pollution out of the country. Nevertheless, the CO_2 emissions per capita in Denmark rank as number two in Europe. This is partly because the electricity is produced on coal-fired power plants. The CO_2 issue is abstract and complicated. The experts disagree on the exact consequences of the greenhouse effect. Especially the regional consequences are unsure. The consequences will show in a distant future.

The different actors perceive the environmental effects from transport differently. The environmental organizations view the problem as far more serious than the business organizations. The same variation are found across the administration. The public is somewhere in between. The environmental problems are not very visible and hard to trace back to transport.

News events related to environmental problems are frequent: high mortality rates among seals, high concentration of nitrate and substances from pesticides in the drinking water (in general ground water of high quality is used in the water systems) and algae in the sea (leading to a drop in the oxygen content in the sea

and causing death of fish and lobsters). These events have made the environmental problems visible, and given occasion for new decisions in environmental policy. None of these occurrences are related to transport. An exception is a smog alarm in Copenhagen in August 1995. The local and central environmental authorities disagreed on the seriousness of this incidence. The railways have been involved in a case concerning herbicides in the ground water.

The consciousness related to environmental problems in general is high. Environment and unemployment are set as the two most important problems for the society. Households do a lot concerning energy savings, organic food and recycling of different materials like glass and paper. Nevertheless, there is very little consciousness related to environmental problems caused by freight transport. Problem perception related to transport focuses on congestion and locally on safety and noise. The amount of traffic in cities is seen as a problem by the citizens. Trucks in cities cause a feeling of insecurity by pedestrians and cyclists.

There is no scene to play on for the environmental organizations concerning problems related to transport and the environment. There is little understanding of the need of reducing the amount of transport.

A Small Country with an Open Economy

Denmark is a small country with an open economy. Competitiveness, and employment considerations are strong arguments playing an important part in the political debate. The transport business is worried about the competitive conditions among different transport modes and towards foreign hauliers. Export industries support the hauliers' view. The politicians in most parties perceive that there is a tradeoff between environmental considerations and growth. Environmental considerations are seen as restrictions and as costs. This is not always true. If the yield from an environmental tax is used, e.g. to reduce the cost of labour, few or even positive effects can be obtained, as in the case of the Danish CO_2 tax passed in 1995.

Danish companies have a small home market and are dependant on foreign trade and international transport. The Danish policy about environment and freight transport is in a complicated cross-pressure situation and has to adapt to conditions which are both national and international. Much environmental regulation takes place at the EU level, which means that the number of instruments available for the Danish Government are fewer than before. In many areas, regulating much harder than the EU level is not reasonable for an open economy.

An Important Sector with Strong Competition

The transport business is important in Denmark. 7% of the total employment takes place in the transport sector. The freight transport sector is in a hard competitive situation. The economic pressure forces the haulage contractors to compete on prices.

The political level is attentive to trades and industries. This is also illustrated by the role of the professional business organisations which – supported by Danish industry – have a bigger influence than the environmental organisations. Especially tradesmen and small companies are favoured. The company structure in Denmark is dominated by small and medium sized enterprises. Historical, cooperative undertakings like dairies, slaughterhouses and stores have been widespread. The historical bottom-up structure of the companies may influences today's positive view on business.

Consensus-Oriented Political System

Denmark (like the other Nordic countries) has a well-developed social security system and a relatively equal distribution of wealth. It is a stable society with few social confrontations. In many areas the differences among the political parties are small. In general (but not always), important issues as the yearly budget, the economic policy, foreign policy and defence are agreed upon among a large majority in Parliament.

At present, the government is a parliamentary minority, built on a broad coalition (during the last 20 years majority governments have been an exception). This results in a balance among different interests in government and parliament. The weak government and the balanced interests result in a small-step policy making. The consensus-oriented political system is reflected in the Danish negotiation tradition with many formal and informal meetings among government, administration and selected interest groups. It is considered important to maintain the networks. One part might need the other in the next round. The consensus oriented political system has not been a push factor for active incorporation, but a safeguard for defensive incorporation (Andersen, 1995; Christiansen, 1996).

When a law has been passed in Parliament a minority of more than one third of the members of Parliament can demand a referendum on the issue. This has only been used once (in 1963) since the revision of the Danish Constitution in 1953. Besides, minorities have few possibilities or legal rights. Victims' interests are not particularly strong protected. This allows for non-incorporation. In some areas the

environmental administration and regulation are decentralised to counties and communities. Not all local governments have the capacity to solve the task and decentralisation has not been a push factor for incorporation.

Capacities and Potential for Change

The study supports the perception that active incorporation could only happen when defensive incorporation has been exploited to a considerable extent. Active incorporation is associated with a high level of conflicts and such policy instruments will only be realized when the defensive instruments have shown their (limited) impact.

Modal Shift and Railway Capacity. The share of the railway in freight transport is rather small. The actual capacity of railways both nationally and internationally is too small to take over a considerable share of road transport, but domestic rail transport might be nearly doubled without major investments. Today, the alternatives to road transport are not good enough (time, price and quality) and the road sector has better conditions than the rail sector, due to the road network. The potential for domestic freight transport on rail is limited due to the short distances. In international freight transport the potential is higher, but the capacity to exploit this potential does not seem present. The Danish Railways are dependent on foreign railways and in relation to international transport better coordination among the national railways is needed. Many technical and management issues are not compatible among the different national railways.

The strategic capacity in the area of environmental considerations (especially in the Ministry of Environment and Energy) is an important factor in relation to the general level of incorporation. The central administration holds an important position in the struggle of defining the problem and possible solutions. However, on the other hand it is also *one* actor amongst others. The actual role of the Environmental Agency is primarily defensive and bound to administrative and formal tasks. The capacities in the administration of strategic policy making are weak. An exception to this general picture is recent publications from the Ministry of Environment and Energy which contain chapters about transport with a critical view on the current development (Miljø- og Energiministeriet, Energistyrelsen, 1995; Miljø- og Energiministeriet, 1995). Until now, transport has not been included in energy planning. Environmentalists do not have a strong position in the administration. The administration of transport and environment is fragmented, with mirror offices in other departments.

The economic capacity and structure of the road transport business sector is also important. The road transport business includes a lot of small haulage contractors and their ability to plan are limited. The relative few, large haulage contractors have a better possibility (capacity) for integrating environmental considerations, e.g. by investing in IT-based planning systems (Erhvervsfremme Styrelsen, Industriministeriet, 1993). However, environmental considerations and incorporation are in general given lower priority, due to a high level of competition. According to the haulage sector, however, this situation is about to change.

This study shows that problem pressure and perception, actual stage of environmental politics, capacities and policy networks *are* important when explaining (the lack of) incorporation of the environmental dimension in freight transport policy.

3.1.3 Examples

Strategic Environmental Impact Assessment Procedures

Strategic Environmental Impact Assessment (SEIA) can be seen as an attempt to incorporate the environmental dimensions at an early stage and thus as a more active form of incorporation. The reason is an EU resolution (not implemented as a requirement) to incorporate the requirements concerning protection of the environment in connection with the implementation of EU policies. Inspired by the EU, the Prime Minister's Department issued a new circular in 1993 on explanatory notes with a strategic environmental impact assessment of bills etc. The purpose of strategic environmental assessment is to incorporate the environmental dimensions in the decision-making process by establishing a procedure – based on the experience that prevention is better, i.e. cheaper and easier, than cure.

Procedural Requirements

The circular on strategic environmental assessment requires all ministries to carry out an assessment of the economic consequences (for trade and industry) and the environmental consequences of the bills etc to be introduced if the consequences are deemed to be serious. The assessment must be included in the explanatory notes to the bill. However, it is also stated in the circular that the scope and depth of a strategic environmental assessment should be limited when needed for administrative reasons and the availability of data. In addition, the assessment must be organised with a view to a smooth legislative process. The ministry responsible for the bill has the task of preparing the strategic environmental

assessment. The Ministry of Environment and Energy acts as an advisory capacity and may be consulted. Consultation is recommended in the case of a bill which is deemed to have serious environmental consequences (Miljøministeriet 1994).

A strategic environmental impact assessment involves an assessment of positive and negative changes in pollution and health, possible consequences for resources and for natural and cultural amenities. The assessment should form part of the preparatory work on legislation and be available to politicians and the public from the date on which the bill is tabled. The Ministry of Environment and Energy recommends that the strategic environmental assessment be based on a checklist covering the aspects mentioned in Table 6.

Water (surface water and ground water)
Air
Climate
Top soil, subsoil and percolation
Flora and fauna, including impact on habitats and biodiversity
Landscape
Other resources
Waste
Historical buildings
Health and welfare of the population
Safety in connection with the production, handling or transport of hazardous substances

Table 6 Checklist for SEIA (Source: Miljøministeriet 1994)

Evaluation of whether there will be serious environmental impacts can be based on whether the bill will imply environmental changes affecting people and the natural environment and whether these impacts are consonant with environmental policy objectives. A strategic environmental assessment should (ideally) deal with the issues in Table 7. The strategic environmental assessment is intended to be incorporated in the comments to the bills (Miljøministeriet, 1994).

The purpose of the bill and considered alternatives
– Whether the bill has an environmental objective
– Alternative solutions
Relevant environmental consequences
– Review of the checklist
– Direct impact on the environment of implementing the bill
– Indirect environmental impacts associated with the bill
Extent of the environmental consequences
– Description of the "zero situation" in relation to which the consequences have been calculated
– Indication of the geographical extent of the consequences
– Indication of when the consequences will emerge
– Description of the uncertainty attached to the calculation of consequences
Any environmental measures and any measuring and follow-up programmes
– Possibilities for effective countermeasures
– Initiatives for measuring and follow-up programmes
General assessment of the environmental consequences
– Assessment of whether the bill contributes towards achievement of the policy objectives or runs counter to them
– Possibility of modifying the bill to avoid negative environmental consequences
– Statement as to whether the bill should be tabled even if the environmental consequences are serious
Summary of the main conclusions of the strategic environmental assessment
– Explanation of the matters considered and alternatives investigated
– A non-technical description of the environmental consequences of the bill or proposal

Table 7 Requirements concerning Content in SEIA (Source: Miljøministeriet, 1994)

In 1993-1994 261 government bills were tabled and 35 of them were accompanied by a strategic environmental assessment in the explanatory notes. In 1993-94, there were four bills concerning the transport sector deemed to have environmental consequences. The four bills were subjected to a strategic environmental assessment the results of which appear in the explanatory notes to the bills. Two of the bills were on motorways, one was for periodical inspection of cars, and one for cooperation among road authorities.

Evaluation

Strategic environmental assessment can be seen as an attempt of active incorporation of the environmental dimension in the legislative process, but as practiced at present, it can only be described as a weak form of incorporation. Strategic environmental assessment shows all the signs of being a new instrument – which

will have to be improved with respect to both procedure and content, possibly by making a liaison with the Ministry of Environment and Energy mandatory.

One problem is that the requirements concerning both procedure and content are too lax. It is left to the ministry responsible for the bill to decide whether a strategic environmental assessment is needed, and in making that decision the ministry has to consider the need of a smooth legislative process, administrative needs and the availability of data.

A strategic environmental assessment does not in itself constitute an environmental guarantee. It is more in the nature of broadening the basis for decisions. This is illustrated in the case study of the introduction of a vignette tax. In some cases SEIA can be seen as symbolic incorporation of the environmental dimensions.

Process-Oriented Case Studies

Two Danish case studies have been included. I: The Øresund (the Sound between Denmark and Sweden) connection is an example of a large infrastructure project. The process has been long and complicated. Complications increase because of the border-crossing nature of the project. Only a small part of the whole process is included in this study. The building of a rail-only connection is seen as an opportunity for incorporation. II: The other case study is a small one. It describes the process of implementing the Euro Vignette tax in Denmark – including the alteration of existing taxes and rules. The opportunity of increasing the variable tax is an example of potential active incorporation.

In both cases the main reason behind the process is not environmental, but both “projects” have a clear impact on air pollution. The cases show the conditions for incorporation of the environment in such processes. In both cases the opportunity for incorporation was not exploited.

Case Study I: The Øresund Connection

Today, the ferries from Sweden to Denmark and Germany act as bottlenecks from Norway and Sweden to continental Europe. Across the Øresund the construction of a combined railway and motorway connection between Copenhagen and Malmö is now under way. The Øresund connection is the result of more than ten years of intensive debate where environment and economy have been central issues. The construction will be 17 km long, is estimated to cost 1.8 billion ECU (1990-prices), and is expected to be ready in the year 2000.

This process-oriented case study focusses on one aspect of the debate: *Should the connection be for railway or for both railway and motorway?* A rail-only connection would benefit trains with passengers and goods in the competition with cars and lorries (transported across the Øresund by ferries, like today). The Danish Railways, a majority within the Danish and Swedish Social Democrats and grassroots have supported the rail-only solution. A rail-only solution would reduce the expected emissions of NO_x, CO, HC and particles with 19-25% compared to the decided combined motorway-railway solution.

The case study covers the period from 1983-1991. In 1991, the Swedish and Danish Governments decided to build a combined motorway/railway connection from Copenhagen to Malmö. In Table 4 the history of the case is summarized.

The case study is selected to show how environmental issues are handled in relation to a large infrastructure project. The nature of the project is capacity and not environment, so it is a challenge to incorporate the environmental aspects. The capacity problem relates to congestion near harbours, the delay due to the mode shift (loading and unloading the ferries), and the time used on ferries.

The Actors

*Scandinavian Link***.** An important actor is the Scandinavian Link: A lobby organisation started by leading Nordic industries. An office was opened in Copenhagen in 1986 with 12 employees. The organisation is the Nordic part of the European Roundtable of Industrialists. The main objective for Scandinavian Link was to improve infrastructures from Oslo, Norway, through Göteborg, Sweden and Copenhagen, Denmark to Hamburg, Germany. This includes motorways and bridges across the Øresund (Sweden-Denmark) and the Fehmarn Belt (Denmark-Germany). The large companies (55 companies and banks) behind Scandinavian Link want better connection from Sweden and Norway to the rest of Europe. Their

point of view is mainly the transport of goods. The lobby organisation Scandinavian Link has been very professional. They have put the issue on the political agenda, have produced important reports, and have adapted to the political environment, e.g. in accepting the Great Belt connection coming first and accepting the subsidy from road to rail. The Great Belt connection was not included in the original plans from Scandinavian Link (Scandinavian Link 1987).

	Important events	Important reports
85	Ž A Swedish compensation package includes a motorway section mentioned in the Missing-Links Report. It has been suggested that an unofficial agreement concerning a motorway and railway connection across the Øresund was part of the agreement, too.	Ž An official report on the Øresund connections recommends a tunnel for railway from Helsingør to Helsingborg and a four-lane motorway bridge from Copenhagen to Malmö. In this report it is introduced that the connection must be built without subsidies from the two states. The tariffs for using the bridge must balance the investment.
86	Ž The Danish railways find that a rail-only solution is profitable for the railway companies when compared to a situation where the railway pays the marginal cost of the railway in a combined solution. Ž An agreement between the Danish Government and the Social Democrats on a combined motorway/railway connection across the Great Belt. It is part of the agreement that negotiations with the Swedish Government on an Øresund connection could begin. Ž The head of the Danish Social Democrats recommends a rail-only solution. The environment is used as a central argument.	
87	Ž Various sources judge that only a rail-only solution is politically acceptable for Denmark. Ž The Swedish Railways (SJ) propose further studies on a rail-only solution.	Ž An official report on the Øresund connections is published. Two solutions are studied: 1: Motorway connection from Copenhagen *and* railway connection from Helsingør 2: A combined motorway/railway connection from Copenhagen.
88	Ž The Øresund delegation is asked to make a study including the rail-only solution.	
89	Ž Scandinavian Link argues that it is acceptable with subsidies from road to rail.	Ž An official report comparing the motorway/ railway solution with a rail-only solution is published.
90	Ž The Swedish Social Democrats decide on a combined solution.	
91	Ž The Parliaments in Denmark and Sweden decide on a motorway/railway solution	Ž A 1,500 page report on environmental consequences is published.

Table 8 Important events and reports in Denmark

The Swedish and Danish Social Democratic Parties. The Social Democratic Parties in both Sweden and Denmark have had a strong interest in a rail-only

connection. In both countries the Social Democratic Party is the largest party. In Sweden, the party was in government in the period in question. In Denmark, the party was in opposition, but its vote was needed by the right/centre government to make a decision. The grassroots in both parties favour the rail-only solution. In Denmark the top of the party changes from the rail-only standpoint to the motorway/railway standpoint (Hedegaard Sørensen 1993).

SJ (Swedish Railways). In July 1987, SJ argues for analysis of a rail-only solution. In February 1989, SJ states that it is not interested in a rail-only solution. The argument is that ferries with trains from Sweden to Germany are expected to be cheaper than the detour through Denmark. In practise the argument is also used to lower the tariffs for trains crossing the Øresund.

DSB (Danish Railways). Early in the process the Danish railways made studies concerning a rail-only solution and worked in all the official committees. DSB never acted as a lobby organisation for the rail-only solution. Probably the links to the Ministry of Transport were still too tight for such an activity. The Ministers of Transport during the important period 1988 to 1993 came from the Conservative Party – a party in favour of a combined solution or a motorway-only solution.

Trade unions. Trade unions – mainly local offices in Copenhagen – argued in favour of the Øresund connection. They argued in that way because of the prospect of growth related to the connection. Unemployment was high and the jobs related to the construction were highly needed. Several feared that a rail-only solution would never be decided on, and influenced the Social Democrats in favour of a combined solution.

The Public. A few numbers from surveys could illustrate the opinion in the public. Early in 1991 45% was against the Øresund connection and 31% supported the idea. The resistance (in total numbers) is due to the environment (39% of the negative answers), the consequences for the affected population in Copenhagen (26%), no need for a connection (26%) and an argument saying that the resources could be put to better use for other purposes (24%). 49% asks for a referendum on the issue while 44% finds that the decision must be taken by Parliament. 83% supports the plan of using tolls to pay for the construction.

One Arena: The Official Reports

In the 1985-report two connections are recommended: A railway connection from Helsingør to Helsingborg *and* a motorway connection from Copenhagen to Malmö.

In a 1987-report a motorway-railway connection from Copenhagen is recommended. The two reports do not discuss a rail-only connection. Not until 1989 a motorway/railway and a rail-only solution are compared.

The basis for calculations of economy and environment is data on expected traffic. These data are “very uncertain” (page 64, 1989-report). Many data originated from the mid-1970s. Especially the rail-only solution has a weak basis. E.g. the expected volume of transported goods is based on the 1985 and 1987-reports. In none of these reports a rail-only solution is studied. The data is taken from the double solution with a railway connecting from Helsingør to Helsingborg *and* a motorway connection from Copenhagen to Malmö. Surprisingly, the transported volume by trucks is the same when ferries (no new connections) are compared with the rail-only solution. One could expect that a rail-only solution would improve the competitiveness of trains versus trucks so the number of trucks would decrease.

The air pollution for the three main solutions is analysed in the 1989-report. Due to the low energy economy of ferries, the total air pollution is decreased when constructing a fixed connection. The rail-only solution gives lower emissions of all substances, compared with the motorway/railway solution. If the growth in traffic exceeds the assumptions, the differences in emission diminish. Data on immissions are based on today’s technology. In the future, ferries might be more efficient. In 1995, A/S Øresund (the bridge company) starts a project that shall produce secure prognoses for the development in traffic. The old prognoses cannot be used for practical purposes.

The Final Selection of the Motorway/Railway Solution

An important argument in the phase before the decision is that the combined connection does not need subsidies, whereas the rail-only solution would need external subsidies. The subsidy from road to rail has not been seen as a problem. The subsidy from cars to railway has been mentioned to be one third of the car tariff.

In the official reports both (i) the overall social costs and benefits and (ii) the economy for the affected companies are described. The affected companies are DSB, SJ and a new “bridge company” to construct and run the bridge/tunnel. In the political debate only the question of a subsidy to the bridge company has been important. Early, it was decided that no subsidy should be paid to the company. It was also decided that the tariffs should correspond to the current tariffs for the ferries. On the one hand, business economy (no subsidies) of the connection

should be positive, but on the other hand, the tariff was decided (fixed) to be equal to today's tariffs on the ferries. It is argued (outside the official reports) that the bridge company would have higher total income if operating with lower tariffs than the ferries. Lower tariffs give a higher volume of traffic and more air pollution, too. This has not been analysed in the official reports. In future, the bridge company – if deficits occur – will argue for lowering the tariffs. If this is allowed, all calculations on the environment will turn out to be too optimistic. A lower tariff could give five times more car traffic and a bigger income for the bridge company (Falkemark & Westdahl, 1991).

Conclusion

For a long period, strong forces within the Social Democrats worked for a rail-only solution between Sweden and Denmark, but this alternative was never accepted by the administration and were only included very late in the reports from the official committees.

A rail-only solution would make the rail transport considerably more competitive compared with road transport. The effect on the regional transport pattern would have been very different compared with the combined motorway-railway solution now under construction. Not only local traffic would be influenced. A rail-only solution would increase combined transport from Norway and Sweden to the Continent.

On the one hand, the decision on the Øresund connection has been democratic:

- A considerable majority in both the Swedish and the Danish Parliament made the decision.

On the other hand,

- Some important aspects concerning the environment were first published late in the process (some after the agreement between the two Governments, but before the decisions in the two parliaments, others after the decision)
- Other important aspects were never analysed or published, e.g. reliable prognoses for traffic and the consequences for regional air pollution. Especially the high tariffs are likely to be changed – leading to a much bigger traffic volume than used in the environmental calculations.
- The rail-only solution was never analysed in detail: E.g. no official reports analyse the possibilities of cars and trucks on trains.

It was a political decision partly initiated by Scandinavian Link that the users of the road could subsidize the rail. Since this possibility only exists in relation to the combined solution, this diminished the railway companies' interest in a rail-only solution.

The decision of the Øresund connection is in several aspects a top-down procedure. The population has opposed the construction of both the Great Belt and the Øresund connection. The majority of the Social Democrats in both Sweden and Denmark has also opposed the construction of a combined motorway/railway connection. In spite of this, a majority in both Parliaments decided on the project. The decision of a motorway/railway solution can be described as a traditional capacity-oriented solution.

	Represents	**Interest (our assessment)**	**Result**
Scandinavian Link	Banks and industry (buyers of transport)	Capacity. Market-based price. Flexibility and competition between rail and road	+ Capacity for both road and rail + Competition among trucks, ferries and rail
MoT	Transport	Capacity	+ Capacity for both road and rail + Hidden subsidy to railway
MoE	Environment. Protection of aquatic environment. Reduction of local and global pollution.		+ Considerable consideration to the aquatic environment - A further 25% reduction in pollution was not achieved (possible with a rail-only solution)
DSB/SJ	Railways	More passengers and freight on rail. Income from transit traffic	+ Low price for using the connection + Improved competitiveness towards trucks - A rail-only solution would have improved the competitiveness towards trucks even more
Scandinavian Link – Nej Tak	Citizens against the motorway project	Protection of the environment	- More transit traffic. Both by road and rail

MoE: Ministry of Environment, MoT: Ministry of Transport. +/- in the result column refers to whether the result agrees with the interest or not.

Table 9 Major interest groups and the result (case study I)

The environment has played a major role in the debate. The debate has focused on marine environment and the flow of water through the Øresund. The regional air pollution has only played a minor part. The debate on the marine environment has continued years after the decision in 1991.

Case Study II: Danish Subordinate Legislation Concerning the Vignette Tax

In 1991, Germany announced the introduction of a vignette tax for lorries and announced a decrease in the weight duty for German haulage contractors. Among other things, in October 1993 this led to an agreement in the EU on a common regulation of weight duties and vignette taxes. In February 1994, within the common framework Benelux, Germany and Denmark agreed on a joint vignette tax for the five countries – the “Euro Vignette”. In most other EU countries toll has to be paid on several motorways. In October 1994, the vignette is decided on by the Danish Parliament together with other changes and compensations. Germany and the Netherlands are also lowering other duties for hauliers. The case study focuses on the period October 1993 to October 1994.

The Result

The vignette tax is 5,649/9,416 DKK (1 ECU = 7 DKK) per year for lorries above 12 tons with three/more than three axles. The weight duty has been reduced to the EU minimum and a duty on insurance has been abolished. Furthermore, the diesel tax has been reduced. These changes apply to haulage contractors. There are special rules for company vehicles and vehicles less than 12 tons. The rules for company vehicles have been tightened.

In short, the yield from the total parcel (the vignette tax and the changes in the weight duty, insurance charges and diesel duty) is practically unchanged *and* the environmental effect is close to zero. At the bottom of this, essential aspects are hidden. The parcel contains elements that are positive in an environmental connection and other elements that are negative. Technically the different elements could be carried through one at a time. By presenting the different proposals as a package solution the environmental differences are blurred:

- The positive environmental effects are due to the increased weight duty for commercial vehicles above 3 tons. Earlier, the weight duty for vehicles less than 3 tons has been higher than that of heavier vehicles. This led to the purchase

of unnecessarily big commercial vehicles. The changes are expected to result in a decrease in the diesel consumption of about 1%. It is estimated that over time 20,000 vans will be replaced by smaller vehicles due to this change in weight duty. This was a well-known tax loophole.

- The unfortunate environmental changes are attached to a decrease of the diesel duty of 0.21 DKK/l. The changes are expected to lead to an increase in the diesel consumption of about ½-1%.

The bigger the distance covered by a vehicle, the bigger the surplus of the total changes. If the distance covered is 90,000 km/yr (equivalent to a typical domestic lorry) the total expenses would be almost unchanged, while bigger distances result in a surplus. At 160,000 km/yr (equivalent to a typical export lorry) the surplus per year would be 2,000 to 6,000 DKK.

Actors and Arguments

The major actors in this process were the Ministry of Taxation, the Ministry of Transport and two haulier associations (FDE and DV). The dominant arguments have been about the haulage contractors' competitiveness. This covers partly the wish of avoiding a German solitary approach regarding the vignette tax (i.e. the EU proposal) and partly the Danish subordinate legislation.

The haulage contractors and the buyers of transport want low diesel duties. One argument – according to the Minister of Taxation – could be competitiveness, and furthermore that higher diesel duties than those in Germany could lead to an unwanted increase in the cross-border trade.

To put it roughly, future buyers of commercial vehicles of above 3 tons must pay more while export haulage contractors will pay less. The low taxation of commercial vehicles above 3 tons was regarded as a loophole in the tax legislation – and this group has not been involved in the negotiations. These users are not well organized. Typical users of those vehicles are tradesmen and farmers. Other losers are the hauliers from non-vignette countries – both in the EU and from East Europe.

The haulage contractors' strong position in this process could be connected with the fact that the government – according to a government official – attached great importance to getting the acceptance of the non-socialist opposition regarding the amendment of the legislation. In the middle of the process (autumn 1994) general elections were held. Before the election, there was a majority government led by

the Social Democrats. After the election, there was a minority government led by the Social Democrats. The latter together with the non-socialist opposition passed the bills.

The environment has not played a prominent part in the process of passing the Danish subordinate legislation. According to a circular on SEIA a description of the environmental consequences concerning all bills has to be made (unless the consequences are unimportant). In the current case, the environmental statement takes up one page out of the 15 page remarks for the bill. The Ministry of the Environment did only become involved very late in the process being asked to go through the environmental statement. A government official in the Ministry of the Environment thinks (surprisingly?) that too much has been made of the environmental statement. He emphasises that the basis of the calculations is too slender. In a draft for the environmental statement a price elasticity for diesel of 0.3 was used. After a discussion with the National Environmental Research Institute the elasticity was reduced to 0.15. In the valuation was mentioned that maybe the value should be even smaller because it is a question of a national price change. Maintaining the original value would lead to a negative environmental valuation. It does not appear whether it is a question of a long or short-term price elasticity.

According to an official in the Ministry of Transport the negotiation has passed in a calm atmosphere and most interests have been fulfilled. A sort of win-win situation. The losers were not included in the process.

	Represents	Interest (our assessment)	Result
DV	Hauliers	Lower cost for hauliers Restriction on company vehicles	+ Higher weight tax for 3-12 ton vans + More control on company vehicles
FDE	Export hauliers	Lower cost (compared to foreign hauliers)	+ Followed the development in Germany - The decrease in diesel tax came one year later than proposed by FDE
ETU	Buyers of transport *and* owners of company vehicles	Low cost on transport, few restrictions on company vehicles	+ Lower diesel tax - More restrictions on company vehicles
MoE	Environment	High variable cost of transport	+ Higher weight tax for 3-12 ton vans - Variable costs decreased
MoF	Public budget	Unchanged or increased yield	+ Unchanged yield + New
MoT	Transport	Capacity, mobility	+ Potential conflict with Germany solved
	Hauliers from non-vignette countries	Competition	- Higher cost
	Future buyers of 3-12 tons vehicles	Status quo	- Higher weight tax for 3-12 ton vans

MoE: Ministry of Environment. MoF: Ministry of Finance. MoT: Ministry of Transport.

+/- in the result column refers to whether the result agrees with the interest or not.

Table 10 Major interest groups and the result (case study II)

3.1.4 Conclusions and Strategic Recommendation

This project takes as a starting point that sustainable transport cannot be achieved without *active incorporation*, which includes a reduction in the need of transport. However, the first step in this direction might include actions of *defensive incorporation.*

Today, the overall transport policy is oriented towards capacity: Missing links, bridges and motorways are built and electronics used to reduce congestion.

Prevention of accidents is often used as an argument for capacity-oriented solutions like motorways.

When action is taken in relation to non-capacity issues, things like prevention of emission, technical and defensive measures, like better motors, cleaner fuels or baffle walls are dominating. Other examples of non-capacity oriented instruments are: General speed limits and in-vehicle speed limiters (as a new instrument) and the classification of “local” and “throughfare“ roads in urban areas. Diesel tax is also an example of a non-capacity oriented instrument. Today, the diesel tax is more than 100% of the diesel price, but less than 10% of the variable costs of transport by trucks. Both speed limits and taxes (making transport more expensive) will have an effect on reduction in the traffic volume. Since the restrictions are modest, the effect will be modest, too.

In the perspective of sustainability the capacity-oriented policy cannot continue. However, instruments of defensive incorporation like EIA, low-emission motors, hauliers planning systems and speed limits have to be the basis of a more ambitious environmental oriented transport policy. Such instruments are relatively easy to agree upon – the costs (or disturbance) for the buyers of transport are limited. These instruments should also be used in a new policy and should be developed and strengthened. This recommendation is based on the strong tendency that new regulation has to build on existing experience. The step-by-step development of policy instruments, with small changes and with the legitimacy based on the lack of results of earlier instruments, seems to go well with pragmatic policy. The use of the defensive instruments increases the legitimacy of stronger instruments.

Yet, the growth in the need of transport makes it necessary also to set up policy instruments which represent *active incorporation,* where the need for transport is questioned in the light of the environmental damage caused by transport. Increasing the variable costs of transport by *taxes* or road pricing are examples of instruments for active incorporation. A developed *SEIA* procedure can also work as active incorporation. The SEIA works at the highest political level. The SEIA procedure must be followed in relation with all new laws – including taxes. Whether this procedure will lead to a higher degree of incorporation of the environmental dimension is up to the politicians. Future will show if they continue as before.

Policy instruments like diesel taxes and restrictions on freight transport in cities are controversial. Many interests are involved, and the consequences will be painful for some parties. Based on this project some actions can be recommended to overcome some barriers for a sustainable transport policy.

Combined Bottom-up and Top-down Approach

Actions to increase the incorporation of the environment in transport policy could come from two sides: A top-down approach where government strengthens environmental rules and taxes. Or from the bottom where customers demand still higher environmental quality of the goods and services they purchase. Today it can be observed that the demands from end-users are starting to spread down along the supply chain to subcontractors and hauliers. Transport buyers have started asking the hauliers about their “greenness”.

Our first recommendation should be that governments support this tendency. The support could assume various forms: government could use green transport and could work for transport-free solutions or solutions with less transport. The government could make label schemes available and ensure that they are credible. Labelling should include energy use (or even pollution) both from production and transport. Such calculations could be made in many ways – a standard is highly needed. An initial labelling scheme could simply require some activities of the hauliers. A more complex system could track the actual transport and produce values that could be used in bench marking in environmental performance.

Government could also support the bottom-up movement with research and development and with demonstration projects. From 1996, 3,000 Danish companies must publish a green account of their activities. This will probably support the bottom-up actions. Simultaneously, voluntary environmental certification schemes (like EMAS, ISO 19001, BS 7550) are becoming more widespread. Companies should be encouraged to include transport in these activities.

Government should also be engaged in making it legitimate and accepted to question environmental issues in relation to transport. The many small hauliers are important for the overall success. Without the acceptance of the environmental concern one can expect by-passes of rules and less environmental performance. Making the environmental consequences of transport visible might help. Green accounts could have such a function.

The potential for bottom-up activities could be described as hidden capacities for responding to the environmental pressure. We find this bottom-up tendency very promising. At first, many of these activities will be symbolic, but we are convinced that real action will take place. A green account requires knowledge and consideration. Combined demands from customers and governments might develop a positive spiral.

National and Local Policy Instruments

Global problems like the CO_2 are best handled at an international level. Other more local transport problems could be handled locally. The threat of companies losing competitive power limits the scope of local initiatives. Below some local initiatives are described. The territorial principle demands that all trucks are treated equal independent of their nationality.

Restrictions in urban areas: One Danish area – where problems related to freight transport are most visible – is freight transport in cities. Local pollution, congestion and barrier effects are most serious in cities. This could ensure the legitimacy of new restrictions. Pollution has the highest consequences in urban areas because of the dense population. The regulation of freight transport in cities could be strengthened without affecting the competition among hauliers from different countries. The way of regulation has still to be investigated. The regulation could be defined from local maximum allowed immission levels.

City terminals where the last part of the transport is coordinated could be one solution. Studies have shown that considerable reduction in ton-km could lead to a 31% reduction in energy consumption by vans and trucks in the city centre. Other forms of regulation could be used. Restrictions on the time-of-day that trucks are allowed could have a negative effect, like congestion and low exploitation of the capacity.

Time-of-day regulation and other regulations in cities could be combined with special allowances for green vehicles, green drivers and green receivers. Transportation fulfilling all demands may be allowed all day. The demand could include strict emission standards (Euro 1 and 2), full exploitation of capacity (only goods for the city area), high quality fuel. Such a system is practised in several big Swedish cities (Stockholm, Göteborg and Malmö). To use such a system, national or international guidelines and technical standards are needed. Each municipality could decide when and where to use the regulation. Such a system may push for market-based city terminals: Some hauliers may specialize in serving these cities. This construction may be more flexible than ordinary city terminals.

Procedures: Denmark has three years' experience with SEIA. The SEIA rules could be clarified and strengthened. The timing of the SEIA is important. In the Danish version SEIA is related to the legislative procedure. When a new law is proposed, an SEIA must be enclosed. Sometimes this might be considered as too late if the real decision is already taken and no basic ideas will be changed. This could very much be the case if government have built a coalition before proposing

the law. In such cases the SEIA will have the same characteristics as the EIA: Focus will be on the details, on issues that can be “optimized”. In Denmark, both SEIA and EIA are considered “weak” instruments.

A strengthening of the procedures could be to guarantee minorities that real alternative solutions were analysed thoroughly. The EIA procedure includes a phase where issues for investigation must be suggested, but this could also be strengthened.

Changed diesel tax: Today, the diesel tax has two values. The low sulphur diesel (max. 0.05% S) tax is 0.10 DKK lower per litre compared with standard diesel. The use of ultra light diesel (low sulphur and a low distillation boiling point, which secures a more clean combustion) could be increased by different tax levels on the three types. Since there are no technical problems related to the use of the ultra light diesel, a shift could be achieved even with a moderate extra tax. The additional production cost of the ultra light diesel is 0.30 DKK per litre. Each filling station only has one type of diesel. Today, all stations sell low sulphur diesel. Ultra light diesel is used by bus companies and others with their own filling stations and the will to pay the extra cost.

Environmental goals for the DSB freight division. DSB is in the process of closing many small destinations. The background is new demands of improved economy. No instruction is given on how environmental issues should be addressed in the new, more profit-oriented organisation. Environmental goals could secure that the subsidy for rail transport was used where maximum environmental effect could be achieved. Railways should not be supported for all freight transport – and destinations should not be closed without the environmental issue being addressed.

Analysis and Other Actions

Capacity for analysing issues related to transport and environment: The research in transport issues has increased heavily since the Transport Council was established in 1992. The yearly budget is 20 million DKK. The capacity for analysis could be further increased. The Ministry of Environment and Energy increases its resources used for analysing CO_2 reduction in the transport sector. Still, much basic knowledge on freight transport is missing.

Qualified analyses are part of the needed capacity for change. Nevertheless, there is immediate risk that the analyses will not be used or even read. Funds should be used for communication of results. This could take the form of debate fora or consensus conferences. Denmark has a long tradition of campaigning in the area of preventing traffic accidents. The Ministry of Transport could develop its capacity by establishing a department working with policy instruments with the purpose of reducing the need for transport. This could be a parallel to the energy-saving offices in the Ministry of Environment and Energy.

Capacity held at the environmental organisations. Our interviews show that the green movements have their highest interest and expertise in areas with relation to households, especially the use of private cars and public transport. The business area does not have the same appeal for public intervention. The green movement must work hard to obtain public support for its freight transport policy if it should have hopes of being needed in the policy network related to freight transport policy. The green movement could hardly establish expert knowledge in this area without subsidies. The movement is only wanted in the network if it holds a strong position in the political debate. DN and NOAH could help consumers push for green shops. This could include green accounts, energy savings and green transport. This could increase and qualify the beginning bottom-up movement.

The ministries could use the environmental organisations more than they do today, e.g. in committees or at informal hearings. This could bring new information into the debate. A consensus-oriented process among ministries, green organisations and transport business could increase the mutual understanding. This way, later conflicts might be avoided. Such a process could also increase the environmental organisations' capacity for analysis. A capacity that could be of help to the administration.

Least cost planning: Usually, the demand and supply side of transport are not compared. What is the cheapest, a) new infrastructures or b) lower demand for transport, e.g. through a higher fuel tax? Each new infrastructure project is evalua-

ted individually. Many small and big projects add up to the realised infrastructure policy. The time scale of demand and supply is different and this is one reason why least cost planning – as in the electricity sector – is not widespread. The first step towards such an analysis is the valuation of the external effect from transport, but much more is needed.

The same is the case when comparing transport with the energy sector. A first analysis of how the CO_2 reduction target should be divided between the energy sector and the transport sector has begun within the respective ministries. To get a complete and detailed view of the problem more analyses are needed. If a CO_2 reduction obtained through higher diesel tax is more economic efficient than the least profitable actions in the energy field then a higher fuel tax should be favoured.

Summary

The concept of incorporation is a way to label and analyse the environmental policy. The recommendations made reflect the analyses in this study:

- In practise, incorporation is low.
- The continued use of defensive policy instruments is recommended as a first step towards instruments favouring active incorporation.
- The room for top-down instruments is limited due to competition from foreign hauliers. Support for the bottom-up movement must be intensified.
- A potential for local initiatives based on maximum immission levels seems to exist.

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3.2 The Netherlands *(Pieter Janse)*

3.2.1 Introduction

The incorporation of the environmental dimension in freight transport policy in the Netherlands has been the subject of this study.

The research on the situation in the Netherlands is being undertaken jointly by Centre for Energy Conservation and Environmental Technology (CE) and the Grontmij Advies en Techniek. The national study for the Netherlands received 50% from the European Commission (DG XII) and 50% from the Dutch Ministry of Transport & Public Works and the Netherlands Agency for Energy and the Environment (NOVEM).

3.2.2 State of Incorporation

Introduction

The aim of this first phase of the national study is to evaluate the degree to which the environmental dimension is already incorporated in freight transport policy, following a format that enables comparison among the six countries. To this end, each country has been requested to provide a description of the following items:

1 the legal requirements for incorporation;

2 the organizational changes towards incorporation;

3 the procedural changes towards incorporation;

4 the strategic aims in transport policy

5 the quantitative environmental targets for the transport sector;

6 infrastructure policy;

7 pricing policy;

8 competition and deregulation;

On a more aggregated level a distiction can be made between **style, targets and actions**.

The organizational changes and the procedural changes towards incorporation reflect the style of policy making in the government and administration. The strategic aims in transport policy and the quantitative environmental targets give insight

in the targets and the transport related policies for infrastructure, taxation and competition and deregulation show the actions of the incorporation.

The state of incorporation in the 8 policy fields is evaluated by answering the following specific questions:

1 To what depth is the environmental dimension incorporated in the above elements of transport policy? In practice, is policy merely 'business as usual' or is it aimed at achieving a sustainable society?

2 To what extent is the envisaged incorporation reflected in the various stages of the policy cycle?

Legal requirements

Primary (constitutional) law has principal relevance for the present study, because this gives an indication of how the State of the Netherlands is organized. In the Netherlands, alongside the competences of the central state authorities, the aim is to assign independent legislative and administrative powers to provincial and municipal authorities and public bodies, in particular the district water boards (*Waterschappen*). This has consequences mainly for infrastructure development and the Physical Planning Act.

In the second place, primary law derives its relevance from the fact that it defines the government's duty of care to protect and enhance the quality of the environment. It thus forms the 'bottom line' for incorporation of the environmental dimension in policy in other areas.

In principle, the government can be challenged by Dutch citizens to uphold its duty to protect the environment.

Dutch environmental legislation is embedded mainly in administrative law. This administrative environmental legislation defines the competences of the various tiers of government to act in the interests of the environment. In other words, it provides the government with the legal tools for executing its environmental policy.

Until 1993 legislation regarding environmental protection was fragmented, being embodied in a number of separate acts.

The sectoral character of existing legislation formed an obstacle standing in the way of realizing an integrated environmental policy, the government's stated objective since the 1980s. The administrative environmental legislation was therefore incorporated in a new 'umbrella' act, the Environmental Control Act (*Wet*

Milieubeheer), for which the Ministry of Housing, Physical Planning & Environment (VROM) bears formal responsibility.

This Act has a number of normative elements, one of the most important of which is extensive application of the 'ALARA' ('as low as reasonably achievable') principle in licensing procedures. This means that the best available technology is prescribed when this is reasonably feasible, and otherwise the best practicable means.

The Environmental Control Act describes a number of environmental policy instruments. A distinction can be made among physical regulations, and financial and administrative instruments. The physical regulations include: standard-setting, licenses, registration obligations and zoning restrictions. The financial instruments include: taxes, subsidies and damage awards. The administrative instruments include: planning and programming, and environmental impact statements.

Organizational changes

In the Ministry of Transport & Public Works (V&W) the Directorate General (DG) of Public Works & Water Management (*Rijkswaterstaat*) and the DG of Transport are most important in the context of environment.

Overall coordination of environmental policy is the responsibility of the Central Strategy Department, part of the DG of Public Works & Water Management.

In the Freight Transport Division of the Transport DG, an environmental coordinator has been appointed with divisional responsibility for environmental affairs. In the Freight Transport Division the emphasis is on endeavouring to tackle current problems and opportunities in a realistic and adequate fashion.

At the Ministry of Economic Affairs (EZ) the Regions, Industrial Environs & Environment Division is charged with promoting environmental interests in the context of economic policy relating to freight transport.

At the Ministry of Housing, Physical Planning & Environment (VROM), environmental problems have, to a certain degree, been linked to transport issues since 1986.

In 1990 the growing urgency of environmental problems led to a closer link being made with transport issues. At VROM, so-called target group managers were appointed, with responsibility for setting priorities for the various individual sectors (energy, traffic, agriculture, etc.). The Traffic target group manager was assigned responsibility for resolving the problems in the transport sector.

In the organizations of the government departments in question, organizational units have been set up with duties relating to the environment and freight transport (Ministry of VROM: Freight Transport coordinator; Ministry of V&W, Freight Transport Division: Environmental Policy coordinator).

With respect to policy development, the departments have established several joint working groups with duties in the 'environment/freight transport' field (e.g. the TRANSACTIE project; the former IMAGO project).

There is a clear division of organizational responsibilities between regulation of freight supply, regulation of choices regarding the modal split, and regulation of the potential environmental consequences of freight transport movements.

Procedural changes

A limited number of procedures have been established for decision-making processes in relation to freight transport. In the Dutch policy cycle the following five phases can be distinguished: initiation, estimation, selection, implementation and evaluation.

The Structural Traffic and Transport Plan (SVV) represents a joint policy decision, which is revised every four years and has an operational scope of max. 10 years. Revision is the responsibility of a joint working group, with a division of competences. The two ministers (V&W and VROM) hold veto powers, and can withhold their signatures. That these powers are not used in practice is due to the interdepartmental coordination at an early stage of policy development, which means that alternatives or activities that are unacceptable to one of the parties are substituted by compromise proposals.

Every four years a National Environmental Policy Plan (NEPP) is prepared. This NEPP contains a section on freight transport policy in the Netherlands, the result of consultations between the ministries of VROM, V&W and EZ.

There has been a significant change over the last 10 years from consultion to cooperation between the ministries. Furthermore the cooperation starts in an earlier phase of the policy cycle.

The Environmental Impact Statement procedure comprises four phases:

1 In the preparatory phase the project initiator prepares an initial report, which must meet a number of requirements. On the basis of this initial report and the rules for EIS preparation, the competent executive authority determine the

guidelines to be followed in drawing up the EIS. These guidelines always include the requirement to assess the most environmentally benign alternative.

2 Once the guidelines have been drawn up, the project initiator can prepare the EIS (or have it prepared). Concurrent with the EIS, the preferred decision of the competent authority is made available for public inspection. There then follows a round comprising consultation, public hearings and evaluation by the EIS Commission, a commission of independent experts (mainly academics) appointed by the minister. In their evaluation of the EIS report, the Commission makes due allowance for the results of public hearings and other forms of consultation.

3 Following evaluation by the EIS Commission, a decision must be taken. This decision may not necessarily be for the most environmentally benign alternative, but in such cases the competent authority must have good grounds for its position. Whatever the case, when presenting its decision the authority is obliged to indicate how allowance has been made for the environmental dimension and how the results of public hearings and other forms of consultation have been incorporated.

4 Finally, in due course a comparison is made between the actual environmental impact and that anticipated in the EIS. If the actual impact proves to be more severe than foreseen, the competent authority may opt to implement additional measures.

Wherever possible the EIS procedure runs parallel with the standard decision-making procedure. Preparatory work on the EIS, and the actual writing thereof, take place during the policy estimation stage.

With regard to the development of strategic policy documents (SVV, NEPP), there are elaborately specified procedures in force. These procedures guarantee that all relevant government departments are consulted on ultimate policy choices. Among the various 'tracks' of policy development, there are a number for which the environment minister (VROM) does not have veto powers.

With regard to decision-making on infrastructure and the choice of location for, say, large-scale economic operations with a clear pull on traffic (including freight transport), there are clear-cut procedural arrangements in force for weighing up any environmental effects (in many cases it is compulsory to draw up an Environmental Impact Statement.

Strategic aims

The strategic aims of the national government are elaborated in policy documents. During the 1980s and 1990s the Dutch government established strategic goals of environmental relevance in the following policy documents:

- *Indicatieve Meerjarenprogramma's Milieubeheer* [Indicative Multi-year Environmental Protection Programmes], 1984, 1985, 1986
- *Nationaal Milieubeleidsplan* [National Environmental Policy Plan], 1989
- *Structuurschema Verkeer en Vervoer II* [Second Structural Traffic and Transport Plan], 1990
- *Nota Energiebesparing* [Policy Document on Energy Conservation], 1990
- *Nationaal Milieubeleidsplan 2* [Second National Environmental Policy Plan], 1993

Over the last 15 years some changes in the approach of the environmental policy can be discovered.

- The process of tighening up the environmental targets came to an end in the SVV-II in 1990. Since then priority has been given to measurements to achieve the targets;
- The focus on "end of pipe technologies" in the early 1980s has been replaced by a broader strategy for technical improvements;
- There has been a shift from a pure technical approach to a policy mix including standards, fiscal and financial incentives, education and influencing behavior;
- Incorporation of environment into other policies

The strategic goals for the traffic and transport sector are specified in the Second Structural Traffic and Transport Plan (SVV-II):

- achieving the abatement targets laid down in NEPP;
- increasing the share of rail and shipping in freight transport;
- reducing road tail-backs and improving accessibility of mainports (Schiphol Airport and the Port of Rotterdam).

The national government endeavours to achieve the abatement targets for freight transport by means of a four-track policy:

1 technological improvement

2 logistical improvement

3 change of the modal split (shift to rail and water)

4 improvement of driving style

Quantitative targets

The quantitative targets for reducing acidification (SO_2 and NO_x) are based on levels corresponding to those appropriate in a sustainable society. For freight transport, these targets are often derived from those for the traffic and transport sector as a whole. The target for mitigating the greenhouse effect (reduction of CO_2 emissions) represents an initial step in the right direction that is also certainly desirable from the perspective of energy conservation.

The targets for noise and air quality are based on levels posing no threat to human health. Transgression of the limit value for ozone can cause damage to the respiratory system during exercise. The NO_2 limit value is the impact threshold for asthma sufferers.

Noise abatement is to be achieved by establishing source-oriented standards for trucks and application of low-noise asphalt. The standards are in line with European directives.

environmental theme	indicator	basic year	national target (for all sectors together)	target for entire transport sector	target for entire freight sector
Global warming	CO_2 emission	1989	0% in 2000 10% in 2010	0% in 2000 10% in 2010	10% in 2010
Acid rain	NO_x emission	1986	35% in 2000 75% in 2010	35% in 2000 75% in 2010	75% in 2010
Land use	area used by transport activities	km^2 or %		none	none
Noise	max. noise emission	dB(A)	79 for vans (3.5 tonnes)	81 for trucks (12 t.)	84 for trucks (38 t.)
Air quality[2]	Ozone	$\mu g/m^3$	Quality standard 240 (1h, average on max 5 days a year)	level for warning: 180 for alarm: 360	
	NO_2	$\mu g/m^3$	Quality standard 135 (1h average, C_{98})		

Sources: *Basisboek Milieukunde* 1991; *Tweede Nationaal Milieubeleidsplan* 1993; *Invloed van normstelling op het wagenpark* 1995

Table 11 Quantitative environmental targets in the Netherlands

The following conclusions can be drawn with regard to Dutch government targets:

- There are far-reaching strategic goals for pollution abatement (with the exception of CO_2 emissions).
- Far-reaching quantitative targets have been set to reduce acidifying emissions.
- With respect to reducing the CO_2 emissions of freight transport, the government is adopting a wait-and-see attitude.
- Reduction of noise nuisance by setting source-oriented standards for trucks is in line with European standards.
- The government seeks to move further towards achieving environmental targets, while maintaining and reinforcing the Netherlands' transport and distribution role.

Infrastructure policy

In making a temporal comparison of investment priorities, we have compared the infrastructure budgets for the period 1995-2000 as specified in SVV-II, Proposal (Part A; 1988) and Decision (Part D; 1990), and the Multi-Year Programme on Infrastructure and Transport[9] (1994).

Parts A (1988) and D (1990) of SVV-II mark an important change in Dutch transport policy. Part D shows that there is far greater focus on environmental goals than in Part A. According to the goals of Part D, there should be more emphasis on environmentally benign modes of transport, without this jeopardizing the accessibility of the mainports.

This is supported by the following developments:

- The budget for new road construction has decreased. The allocated budgets for the period 1995-2000 dropped by 30%-40%. This is in line with the targets of SVV-II, viz. to avoid as far as possible further fragmentation due to new roads and to reduce the growth of the number of car-kilometres by 35% in the year 2010. Relative to Part A, a number of road links have therefore been scrapped from the main grid structure.
- More funding has been allocated to new rail infrastructure. The budget for 1995-2000 increased from 19.2 billion Dfl to 35.9 billion. This is a consequence of the SVV-II target to improve the competitive position of the rail relative to the road. To this end, it is essential that railway capacity and access by rail be improved. For this reason it was decided to greatly expand the capacity of the rail network (RAIL 21).
- The funding available for inland shipping transport has remained approximately the same. This may mean that the budget is adequate for achieving the objectives, but alternatively that there is an over-emphasis on rail transport.
- The budget share for new infrastructure in the period 1995-2000 has been changed drastically. In 1988 the planned budget share for (road-rail-waterways) was 55%-35%-10% respectively; it has been changed to 35%-55%-10%.

[9] Multi-year Infrastructure Programme 1995-1999 (*Meerjaren programma Infrastructuur 1995-1999, MIT*), Ministry of Transport & Public Works, The Hague, 1994.

Pricing policy

The extent to which the environmental dimension is incorporated in Dutch pricing policy for freight transport is reflected the following issues.

- Inland shipping is exempt from excise duty and the fuel surcharge. For rail and road transport, the aggregate duty and surcharge rate is 62 and 310 ECU/1000 litre diesel fuel, respectively.
- The excise duty on diesel for road transport is slightly higher than the European average of 295 ECU/1000 litre. The present EU harmonization level is 245 ECU/1000 litre.
- Since 1987 diesel excise duty increases substantially from Dfl 0.255 to Dfl 0.635 in 1994. Diesel excises duty has been raised for the following reasons: closing budgets deficits of the national government, anticipation on the European directive on harmonization. Only once an increase was undertaken as an NEPP action i.e. on environmental grounds. The increase has been partly compensated by the decrease of the vehicle tax for trucks.
- The Dutch government has never considered the diesel fuel tax as a regulatory instrument.
- In anticipation of the forthcoming decrease in the maximum permitted sulphur content of diesel, the government has introduced a subsidy scheme for low-sulphur diesel. In anticipation of the Euro-2 standards, there was a subsidy scheme for lean-burn, low-noise trucks.
- Road freight transport also pays vehicle tax and, from 1 July 1995, a sum for the so-called Euro-vignette. The vehicle tax does not have a regulatory effect, because it is independent of the number of kilometres driven.
- The aggregate tax sum (excise duty, fuel surcharge, vehicle tax and Euro-vignette) paid by road freight transport is about 370 ECU/1000 litre.[10]

Competition and deregulation

- Environmental aspects play only a minor role in deregulation and privatization policies. The main motor behind these policies is implementation of EC regula-

[10] Compared with the external costs of road freight transport, this tax sum is low. These external costs have been estimated to be at least 0.25 ECU per kilometre (T&E, 1993). This means that road freight transport should be paying 750 ECU/1000 litre in taxes.

tions, with the EC goal of freedom of transboundary transport playing a more important role here than environmental considerations.

- An exception can be made for the privatization of the railways. Alongside European directive 91/440, the environmental dimension also plays a role. By stressing this dimension, the Dutch government hopes to minimize any environmental damage that might result from privatization.

3.2.3 Depth and Profile of Incorporation

By giving the eight specified policy fields a score for their depth of incorporation of the environmental dimension has been evaluated.

The results of evaluating the eight fields (in a score from "high" to "none") are shown in Figure 6. For each of these policy fields arguments are given below for the score assigned.

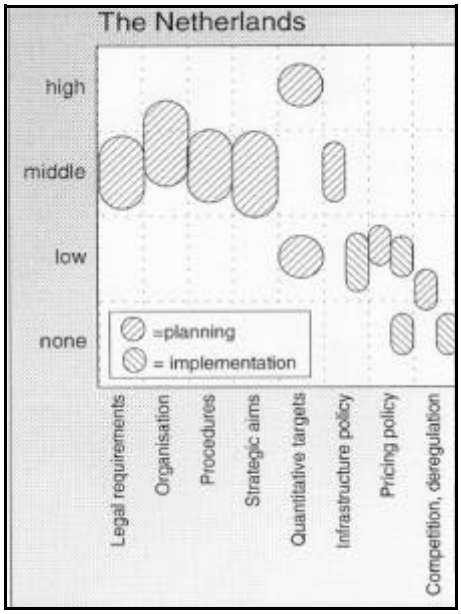

Abbildung 6 The depth of incorporation in the Netherlands

Legend

high	if policy is based on criteria of sustainability;
middle	if there are substantial changes in progress leading to greater incorporation of the environmental dimension;
low	if policy changes will only take place if they are unavoidable for other reasons;
none	if policy remains 'business as usual'.

Legal requirements

Implementation of the new 'umbrella' Environmental Control Act has resulted in a number of changes, leading to improved incorporation of the environmental dimension in policy in other fields.

One precondition for better incorporation of the environmental dimension is public participation in the decision-making process, an aspect regulated in both the Environmental Control Act and the Physical Planning Act.

Policy in the field of environmental control and physical planning is not geared to achieving a sustainable society. The legislation only supports application of environmental arguments as boundary conditions in the case of certain activities.

Organizational changes

Within the various government departments, there are a variety of organizational units working on environmental issues. There are also a number of interdepartmental working groups working in environmentally related fields. However, no clear relationship can be discerned between these forms of collaboration and effective incorporation of the environmental dimension in freight transport policy.

Procedures

There are clear procedural arrangements in place for decision-making concerning infrastructure and other major projects having land-use implications. This is also the case with policy plan development. Many procedures are geared to the organization of collaboration and some are conflict-resolving in character, for example the EIA procedures.

It is worthy of mention that the environment minister has veto powers in the Council of Ministers with regard to the development of policy measures relating to freight transport. In practice, these powers are never used.

Environmental targets

The government's strategic goals are geared to achieving a substantial reduction in environmental pollution, but not to reversing trends, as required to realize a sustainable society. In the course of the 1980s and 1990s strategic goals have been set that aim to achieve major changes in the modal split in the future. The

government is thus concerned not only with congestion problems and improving capacity.

With respect to the quantitative targets, these can all be characterized as far-reaching, except for the target for CO_2 emissions.

Infrastructure policy

Although a growing amount of research is being devoted to environmentally (more) benign forms of infrastructure and investments in new roads are being decreased, it cannot be concluded that there is any great degree of incorporation of the environmental dimension. In practice, high priority is still given to road construction.

Incorporation of the environmental dimension in infrastructure policy is still in the planning phase. Although the debate on environmentally compatible infrastructure has already been on the agenda for a number of years, as yet only a few practical choices have been made.

Pricing policy

Over the past few years there have been changes in pricing policy. All the former environmental charges have been replaced by a single fuel surcharge, subsidy schemes for low-sulphur diesel fuel and trucks meeting EURO-2 standards were in force, excise duties have been raised on several occasions, and a so-called Euro-vignette is to be introduced (as an intermediate form of road-pricing). The increase of the diesel excise duty was partly compensated by a decrease of the vehicle tax for trucks. Despite of the recent increases of diesel excise duty, environmental arguments have only played a subordinate role in pricing policy in practice.

It is acknowledged that environmental arguments should be integrated in government pricing policy and external costs should be internalized. As yet, the fuel surcharge and the subsidy schemes are the only cases of pricing policy with an environmental basis.

Competition and deregulation

In the liberalization of road and rail transport and inland shipping, environmental considerations play no role whatsoever. By bringing the environmental dimension of the various modes of transport to the attention of the parties involved, and by pursuing a policy directed towards improving the 'playing field', the government hopes that liberalization will also have positive environmental spin-off.

Road transport and inland shipping already operate on a free-market basis. In the case of rail transport, liberalization is currently in progress.

On the basis of the comparison with other European countries of the degree to which the environmental dimension is incorporated in freight transport policy, profiles have been drawn up.

Profile of incorporation

The Netherlands match the profile of: 'Good intentions, but weak implementation'.

This means that, an important feature is the great concern for the environment. This concern has resulted in environmental protection being legislatively regulated, on paper at least. The administration also endeavour to give direction to their environmental policy by setting strategic and quantitative targets for reducing environmental impact.

The Netherlands with this profile also have a comprehensive (national) environmental policy plan as well as a (national) traffic and transport policy plan. These plans have been harmonized, because consultation and consensus are part and parcel of state administrative culture.

Implementation of the plans is slow, however, taking place by small increments. The culture of consultation and consensus renders major (and abrupt) changes virtually impossible.

3.2.4 Explanatory factors

Introduction

This section of the report is aimed at identifying possible explanations for incorporation of the environmental dimension in freight transport policy. Such explanations have been sought for each policy field. To assess the correctness of the potential

explanatory factors for the degree of incorporation 8 hypotheses have been drawn up.

Hypothesis 1: Environmental problem pressures may be an important, however, not a sufficient explanatory factor

The high environmental burden in the Netherlands is an important explanatory factor for the degree to which the environmental dimension is integrated in the legislative framework, procedures and organization and environmental targets of the freight transport sector. These are the issues that determine the basic preconditions for integrating the environment in concrete freight transport policy. In the concrete elaboration of policies relating to infrastructure, pricing policy and privatization and deregulation, the role of severe environmental pollution as a co-determining factor can be discerned to a minor degree only.

Conclusion: hypothesis is valid.

Hypothesis 2: Economic-financial pressures may be an important factor, however, not yet sufficient to explain first steps for incorporation

Our study does not identify the economic and financial problems confronting the freight transport sector (road, rail, inland shipping) as an incentive for integrating the environmental dimension.

However, there is a relationship between the economic and financial state of the freight sector and environmental policy, but then in the opposite direction from that assumed in the hypothesis. Economic pressure is more a barrier for the implementation of environmental measures and for moving towards a higher degree of incorporation. Measures implying high costs for the sector (road, rail and shipping) will meet with more rapid and vociferous opposition than measures that are neutral or economically favourable to the sector.

Conclusion: hypothesis invalid.

Hypothesis 3: State of the environmental policy

The Netherlands has a stringent environmental policy, certainly in comparison with other countries. A legislative framework has been extensively elaborated, as have

procedures and targets, providing a clear picture of the terms of the playing field to the various tiers of government as well as to the freight sector.

Nonetheless, on average the degree of integration of the environmental dimension in freight transport policy is no greater than 'middle'.

However, environmental policy does explain in part the degree of integration of the environment in the legislative framework, organization and procedures of relevance for freight transport.

Integration is especially poor when it comes to concrete policy issues. Precisely in the implementation phase, there is little integration of the environmental dimension; when concrete decisions are made, economic considerations play a key role.

Conclusion: hypothesis partly valid.

Hypothesis 4: Capacities for environmental friendly transport

In the Netherlands much of the freight transport capacity of the inland waterways remains unused, while the road and rail grids are both at the limits of their capacity. This should be a good point of departure for pursuing a high-incentive policy for freight transport by inland shipping. However, Dutch freight transport policy is currently geared to expanding the capacity of the road and railway infrastructure.

If capacities are considered broader, it is clear, that the freight transport industry is innovative e.g. in new logistic concepts, appplication of telematics, etc. In particular the large hauliers has the opportunities and the advantages of scale to improve their efficiency and to influence the shippers. The transport companies are expanding their services towards an overall logistic industry, which also include ware-housing, packing and distribution.

Conclusion: hypothesis partly valid.

Hypothesis 5: The role of the political system

The environmental dimension is incorporated in freight transport policy to a high degree in a political system that endeavours to achieve consensus and that provides scope for accommodating minority viewpoints in decision-making procedures.

In the Dutch situation, this hypothesis is valid with respect to the general trend of the explanatory factors. One of the major factors of influence on the design of deci-

sion-making procedures in the Netherlands is the tradition of coalition-forming. In combination with the limited amount of space available in the country, the virtually compels project initiators to make due allowance for minority interests. Because of this mechanism, it can be concluded that the environmental dimension is weighed up in decision-making procedures in a defensive way.

With regard to this hypothesis it must be concluded, however, that the environmental dimension is integrated in freight transport policy to a moderate degree only. Although this hypothesis is valid in terms of its general trend, then, its impact is not particularly strong.

Conclusion: hypothesis partly valid.

Hypothesis 6: Role of the interest groups

If the process of freight transport policy development is dominated by actors with a problem-solving and future-oriented attitude towards improving environmental quality, the environmental dimension will be incorporated to a high degree. This was the case in the process of drafting up the NEPP and the SVV-II.

In the context of concrete decisions relating to freight transport policy there is a kind of balance between identifiable actors and interest groups. However, situations are known in which actors with the aforementioned attitude can have a certain weight attached to their viewpoints in decision-making procedures, leading to the environmental dimension being better integrated than would have been the case without their participation. On the other hand hauliers organizations have a well organized lobby in the government and parliament. They frequently use their power to block proposals during the decision making process.

All the actors are well organized to defend their interests. In combination with the openness of the policy network the hypothesis can be considered as valid.

Conclusion: hypothesis valid.

Hypothesis 7: Problem perception in government and administration

If the policy-makers involved have a clear problem perception of the environmental bottlenecks in freight transport policy, the environmental dimension will be incorporated to a high degree.

A variety of situations (infrastructure decisions, pricing policy) can be identified in which the policy-maker in question has a clear perception of problems but nonetheless shows no sign of integrating the environmental dimension in the decision-making process. Examples in which this is most clearly reflected include the Environmental Impact Statements drawn up prior to decisions on large infrastructure projects. At the start of the procedure the project initiator is obliged to identify what, in his view, is the most environmentally benign option for the decision in question. In almost every case such an option is formulated, from which it can be concluded that the initiator is extremely aware of any environmental bottlenecks.

Nonetheless, only in a very small percentage of such procedures is a choice made for the most environmentally benign option, with economic arguments almost always playing a far more significant role.

Conclusion: hypothesis invalid.

Hypothesis 8: Institutional factors

If, during the decision-making procedure accompanying policy development, policy-makers from environmental departments have a (co-)decisive voice, the environmental dimension will be incorporated to a high degree.

There are many familiar situations from which it can be concluded that, although environmental departments have a (co-)decisive voice, environmental arguments do not predominate in the considerations on which the ultimate decision is based. Examples include the expansion of the country's national airport, Schiphol. As a result of political pressure, the environment minister eventually gave the go-ahead for this expansion. Although it was agreed with the various project initiators that any adverse environmental effects should be avoided, it is already clear that such a pledge will not (cannot) be honoured.

There is no question that the environmental dimension will be integrated more if environmental departments have a (co-)decisive voice in decision-making procedures than otherwise. We therefore conclude that the hypothesis is partly valid.

If the decision-making procedure for the issues in question has an open character and is accessible to 'environmental lobbyists', the environmental dimension will be incorporated to a high degree.

Here, the same line of reasoning holds as for the previous hypothesis. The role played by 'environmental lobbyists' in the Netherlands is not of prime importance for how the environmental dimension is integrated.

Conclusion: hypothesis partly valid.

3.2.5 Process-oriented case studies

Incorporation of the environmental dimension in freight transport policy is not a static but a dynamic process. In a society circumstances are constantly changing and with them opportunities for and potential barriers to incorporation. In the cases studies these dynamics are investigated more closely.

Two case studies have been chosen in this project:

1 Developments in diesel fuel excise duty

2 Amsterdam-Utrecht corridor study

These case studies have been chosen because the debate on diesel taxation is an issue that provides a good illustration of the process of incorporation. Changes in environmental thinking have clearly made their mark on the debate on pricing policy for freight transport and in particular diesel excise duty.

The Amsterdam-Utrecht corridor study is the first attempt in the Netherlands to prepare a Strategic Environmental Impact Assessment. The study shows how an attempt has been made to arrive at an integral assessment of all modes of transport and a balanced policy choice.

Developments in diesel fuel excise duty

From 1986 onwards environmental arguments have played a role in the debate on pricing policy (and in particular the diesel tax rate). Only in 1990 and 1991 did environmental arguments play a predominant role. In the following years the economic position of the road haulage sector, its competitive position and reduction of the government budget deficit were the main arguments. Although the environment was still an element of the debate, it was no longer decisive.

The main factors explaining the role of environmental arguments in establishing the diesel tax rate are:

1 The public and political focus on the environmental problems caused by road freight transport; in this case study, this represents the single most important factor.

  This explanatory factor does not correspond with one of the eight above presented hypotheses.

2 The importance of pricing policy as an element of environmental policy and traffic policy, as described in government policy documents (NEPP and SVV).

   Hypothesis 3, which states that a stringent environmental policy encourages integration, is thus valid in this case.

3 The influence and power of the interest groups on the decision-making process. The increasing opposition by road haulage branch organizations and the lobby organization *Nederland Distributieland* to diesel tax increases has meant that environmental arguments are now of secondary importance only. Hypothesis 6, concerning the influence of interest groups, is therefore valid for the present case study.

Amsterdam-Utrecht corridor study

Before the study was started in 1992, a so-called 'initial memorandum' was prepared. This memorandum, which is obligatory in the context of the EIS procedure, was intended to inform the parties with a direct interest in the corridor. From this document it can be concluded that the formal motivation for the study was a wish to develop an integrated, sustainable traffic and transport system in the corridor. This wish was expressed in the open-ended question quoted above.

The reason for this can be traced to the various strategic policy documents issued prior to initiation of the 'Corridor study'. Dutch Rail had already established the necessity of a doubling of track capacity. This necessity was not demonstrated on the basis of a comparison with other forms of infrastructure. Because of the weight attached to this policy document by the government agencies in question, a doubling of track capacity was taken as a fixed point of departure. That the 'Corridor study' was still executed was therefore due more to the fact that an EIS was compulsory for this doubling of capacity and that *Rijkswaterstaat* still had to demonstrate that the scheduled increase of motorway capacity was essential.

It appears that the study was conducted mainly with a view to demonstrating the desirability of increasing the capacity of the motorway link between Amsterdam and Utrecht. In addition, the two initiators anticipated that any changes to the existing infrastructure would require an EIS to be prepared; a study therefore had to be conducted anyway.

Because major changes to the infrastructure were expected, opposition from those parties most directly involved was also anticipated. In order to channel this oppo-

sition into an appropriate form, out of the various possibilities open for public participation an open procedure was opted for.

A point of interest is the way the initiators involved the various actors from the corridor in the study. An 'open' approach was opted for, in which there was scope for public participation and consultation on various occasions in the course of the study. This approach led to positive reactions from local authorities and interest groups. The general impression was that all those involved felt they were able to exert an influence on the results of the study.

The interesting thing about this study is that it demonstrates that, in the development of infrastructure projects, it is the directly tangible environmental effects that are felt to be most important. Although the study's initiators posed the question of how to develop a sustainable traffic and transport system, this question remained unanswered.

From this, the cautious conclusion might be drawn that, given the perception of all those involved, environmental arguments have been duly considered in the decision-making procedure and have been integrated accordingly.

The Amsterdam-Utrecht 'Corridor study', designed to be an initial step towards creating a sustainable traffic and transport system between the two cities, is a good example of how the environmental dimension is integrated in decision-making. It can be broadly concluded that a choice is made for a certain solution, without environmental considerations playing a role. Subsequently, an ample forum is provided for any negative environmental impacts, one motive being to streamline the decision-making procedure.

In itself, this represents an improvement on a situation in which scarcely any attention is paid to the environmental consequences of government policy, but it makes only a minor contribution to an actual sustainable development of society.

3.2.6 Conclusions and recommendations for the Netherlands

3.2.6.1 Conclusions

1 The degree to which the environmental dimension is incorporated in freight transport policy in the Netherlands can be characterized as 'middle'.[11]

[11] Four levels of incorporation are distinguished in the study:
- high If policy is based on criteria of sustainability;
- middle If there are substantial changes in progress leading to greater incorporation if the environmental dimension;

2 The degree to which the environmental dimension is incorporated in freight transport policy in government organization and relevant procedures can be characterized as 'middle' to 'high'. In the area of targets (strategic and quantitative), too, the degree of incorporation is 'middle' to 'high'. When it comes to implementation in concrete policy measures in the fields of pricing policy, infrastructure policy and privatization and deregulation, the degree of incorporation is substantially lower and can be characterized as 'low'.

3 The figures in section 4.1 review the degree of incorporation in the various countries participating in the study. It can be seen that for the elements legal framework, organization, procedures and targets the degree of incorporation in the Netherlands is clearly above average. For the component parts of freight transport policy (infrastructure and privatization), incorporation of the environmental dimension is not above average.

4 In terms of the incorporation of the environmental dimension in freight transport policy, the Netherlands can be characterized as having ambitious objectives and sound policy plans, but with concrete action lagging behind. In other words: 'nice plans, but little action'.

5 In the Netherlands the objectives of economic policy, freight transport and environmental policy are highly interrelated.

  The objective of economic policy is to stimulate freight transport as a source of economic activity (employment and prosperity). This means a policy of stimulating all modes of transport, large budgets for infrastructure and creation of competitive advantages for Dutch haulers relative to other European countries.

  These economic objectives in transport policy conflict with environmental objectives in freight transport policy.

3.2.6.2 Recommendations

On the basis of the results of this project, a number of recommendations can be made with regard to the decision-making process on freight transport policy.

Improve coordination during policy preparation

- low If policy changes will only take place if they are unavoidable for other reasons;
- none If policy remains 'business as usual'.

With regard to the design of policy preparation in the field of freight transport, there should be greater focus on coordination.

There are various paths to be followed in seeking to achieve a sustainable freight transport policy. Consequently, the required policy measures cannot be designed within a single departmental unit.

Although various integrated initiatives concerning policy elaboration are already in progress within the Ministry of Transport & Public Works, for developing an integrated strategic perspective on a sustainable transport policy it is advisable to create greater unity among the various departmental units.

Given the fact of a gulf between policy development and policy implementation with respect to freight transport policy in the Netherlands, there is a clear necessity to investigate the reasons behind this gulf. It appears that although at the national level there are sufficient internal decision-making procedures to guarantee that environmental arguments are duly weighed up during development of freight transport policy, at the regional and provincial level these procedures are not applied, or applied differently.

It is recommended to examine the way in which policy principles are incorporated in decision-making at the regional level. It might be investigated to what extent it is possible, while retaining the current political freedom of regional and provincial authorities, to better steer the decision-making process in the phase of policy implementation. It cannot be excluded that the answer is to develop policy at the national level.

Organize joint tackling of policy issues

The long-term perspective on sustainable freight transport appears to be an eminently suitable project for joint development. In pursuing such a joint approach, however, due allowance should be made for any conflicts of interest. If a common interest can be identified in developing a long-term perspective, there would appear to be a greater chance of a successful mission.

Besides the strategic perspective already mentioned, there are various other topics that could well be tackled on a joint basis. One such topic is 'the accessibility of inner cities'. A precondition for achieving (political) results is that all the parties involved, if possible with differing interests, are able to play a role in such a project.

Introduce a corrective referendum for infrastructure projects

Experience in Switzerland shows that a corrective referendum on infrastructure decisions can contribute to the incorporation of the environmental dimension. Because of the danger of policy proposals and government plans being voted down, different interests (including the environment) are explicitly integrated during the planning stage of the project.

Although the corrective referendum will not lead directly to sustainable policy decisions in the field of freight transport, it does provide a reasonable guarantee of environmental aspects being taken into account during the process of policy development.

Long-term thinking

The anticipated growth of freight transport, and particularly road transport, constitutes a potential threat to the environment and accessibility. The environmental impact of freight transport in the form of air pollution and noise nuisance will be substantially abated by means of technical measures. Because of pronounced growth of volume (and the aggregate truck-kilometres) there will be a far smaller reduction in overall emissions than necessary from the angle of environmental targets.

To a large extent, the underlying reasons for the growth in transport lie outside the freight transport sector itself. Economic developments at the global level are powerful determining factors for transport demand.

An elaborate long-term vision on the necessity and mode of freight transport will allow the environmental dimension to be better incorporated in freight transport policy. This will permit the effect of concrete policy measures to be weighed up against the achievement of the (long-term) targets.

Long term environmental targets

If the environmental targets for 2010 (NO_x and CO_2) are to be met, considerable efforts will have to be made by the freight transport sector. To an extent it is even uncertain what measures would have to be taken to achieve these targets. Tightening up the environmental targets for 2010 is not a realistic option. It will therefore probably not be an incentive for better incorporation of the environmental dimension in freight transport operations.

Setting new environmental targets for reducing the CO_2 emissions of freight transport by 2020 will probably form an incentive for such incorporation.

Infrastructure policy and EIS

A long-term perspective on sustainable freight transport policy should be developed, to enable the right priorities to be set in infrastructure policy. This perspective will have to be built around a differentiated picture of the desired mode of transport (road, rail, inland shipping, intermodal) for various categories of freight over various distances.

A long-term perspective increases the scope for incorporating the environmental dimension in freight transport in concrete projects and may result in firmer choices and cheaper solutions.

Over the past ten years there has been a change in the way the environmental impact statement (EIS) is used. In the early days the EIS procedure was used mainly by environmental groups to oppose infrastructure projects or demand mitigating measures (defensive incorporation). Increasingly, though, the EIS is now seen by the competent authorities as a procedure for streamlining decision-making and including environmental variants or technical environmental improvements in an early stage of the planning procedure. However, the EIS procedure constitutes no guarantee for ultimate adoption of the most environmentally benign variant.

The EIS procedure should be further developed as a planning instrument, by rendering the consequences of choosing a particular variant more transparent.

Use of the market mechanism is an efficient instrument for steering freight transport policy.

The subsidy schemes for 'lean-burn, low-noise trucks' and for low-sulphur diesel fuel show that pricing instruments work effectively in the freight transport field.

In the process of greening the tax system more explicit efforts should be devoted to improving the environmental performance of the freight transport sector by fiscal means.

Fiscal schemes should be applied to encourage use of 'clean' and 'efficient' technologies in trucks.

3.3 Germany *(Rainer Röder)*

3.3.1 General

The available study will describe, evaluate and explain the "Incorporation of the environmental dimension in freight transport policy" in Germany between 1984 and 1994. Recommendations are presented that will provide options for changing the observed conditions.

The summary has four parts. The first part presents the description of the history of the term "incorporation" in German environmental policy (3.3.2). The second part portrays the status of incorporation of the environmental dimension in freight transport and the results of the evaluation, which was based on an internationally standardized research framework (3.3.3). Part three names the probable reasons for the observed status of incorporation (3.3.4). Lastly, part four describes the recommendations (3.3.5). Parts one to four include the results of the two process-oriented case studies.

The incorporation of the environmental dimension into sectoral policies has a long tradition in Germany - it has been mentioned as an essential element of the “precautionary” principle since the first environmental programmes. But only recently the idea has been rediscovered for practical policies.

A typical characteristic of the German political system is its fragmentation and competitive orientation. Therefore one can observe a number of proposals for farreaching policy reform in the transport sector from different agencies advising the environmental ministry - but no comprehensive strategy by the transport ministry. The resources of the environmental ministry to monitor transport policies are relatively weak.

In practice little changes due to environmental objectives can be observed. Transport policies in Germany are “capacity-oriented” in theory - extending the capacities for all modes. However, there is some doubt whether this strategy may be realized under the prevailing unfavourable market conditions for the environmentally friendly transport modes. The farreaching railway reform is a case in point. This has been rather motivated by the increasing indebtness of German railways than by environmental reasons. Even if railway privatization offered strong starting positions from the supply side and received increased public infrastructure

funding, its future for freight transport remains uncertain due to deteriorating market prices. Taxation as a complementary policy was not increased - partly to maintain the competitive position of the hauliers sector in a liberalized European transport market.

To overcome some of the shortcomings of transport policy making - the German case study recommends improved coordination mechanisms between the environmental, the transport and other concerned ministries.

3.3.2 Term "Incorporation"

The history of the term "incorporation" is described by a brief analysis of the development of the official thinking on the "cross-sectional character of environmental protection" (Querschnittsfunktion des Umweltschutzes) and "integration" (in German: "Integration"). The latter term is used in a similar sense in both the English and the German languages. Both terms are used as synonyms here because it is the direct equivalent of the English term "incorporation", which in German is "Inkorporation". However, in the given context it is not used very often.

The analysis shows that the term "integration" can already be found in the environmental programme of 1971. The term constitutes a basic element of the socalled “precautionary principle”, which is one the fundamental objectives of German environmental policies. “Integration” was used in its actual meaning but focused on the topics of spatial planning and structural policy. After having been neglected in the period 1971-1990, the concept has won in importance. Finally, the environmental report of 1994 signals a new, integral understanding of the term "integration". It calls integration the "main focus of action especially in the 90s". However, the main ideas of the reports also show that only the first two focused on the problem of intra-governmental coordination during the 1970s, which was raised by the "cross-sectional character of environmental policy". Other reports did not refer to the problem any longer.

Several reports address the environmental impacts of transport. However, the reports cover just a small group of the environmental damages caused by transport. Of the named problems, air pollution and instruments of clean air policies play the dominant role since the first report. At the same time, attention has been given to efforts of noise abatement. Other impacts of transport, such as its importance to ground water protection and cutting through open landscape are quoted more seldomly. Recently, more attention has been given to the fact that transport adds to air pollution, especially to the CO_2 emissions.

3.3.3 Status of incorporation

The analysis of the status of incorporation includes a description of several policies as so-called "research dimensions" in addition to an evaluation. The description is based on an uniform investigation framework. Following the description, results of the evaluation are presented. The evaluation is based on specific set of criteria. The international research team commonly developed the criteria which were used to standardize the analysis and to make it internationally comparable. Both the dimensions of the framework and the criteria used for evaluation have already been described above (see chapter 2).

3.3.3.1 Legal requirements

The research dimension "Legal requirements" depicts the basic constitutional regulations and the competences of federal and state level institutions. It not only focuses on the relationship between both levels, but it also describes the legal articles which refer to transport and environmental topics as well as other related policy fields. The analyzed regulations of secondary law cover transport law, environmental law, taxation law, and regional planning law. Overall, the implementation of a great number of laws and ordinances mark the specification of the legal regulations in the investigated policy field. Most of the legal regulations specify technical standards or solutions to problems.

The analysis shows that the German constitution (Grundgesetz, GG) does not explicitly postulate an association between transport and environment. There are connections resulting from the regulation on air quality management, noise abatement, nature conservation, and others. However, in general, the incorporation of the environmental dimension into transport was not systematically outlined in the GG.

Referring to secondary law, the description made clear that several legal regulations exist which deal with either the incorporation of environmental targets into the transport and freight sectors, or are of relevance to this sector. Most of the laws and ordinances relevant to the transport sector have been changed or amended. Others, like the ordinance describing transport of hazardous goods, have been created following environmental targets, at least in the sense of the protection of human beings.

Evaluating the results of the research dimension "legal requirements" according to the criteria, this study found the following:

- measures can be found in all phases of the political process;
- the level of incorporation can be rated “low” to “middle”;
- all types of incorporation (active, defensive, and indirect) can be identified.

The phase after the German unification is of special importance. Since then, every effort has been made to allow for a quick integration of the new federal states into the economic system of the former Federal Republic of Germany. Construction of new transport infrastructure seemed to be an appropriate measure to do so. Therefore, new laws have been made to speed up planning procedures. However, they reduce environmental safeguards. Currently, a strong tendency can be observed towards a situation in which incorporation is supported by only isolated pieces of secondary law.

Referring to the type of incorporation, one can argue that various laws have been changed in accordance to previously formulated environmental targets. This basic element of active incorporation is of limited importance since attempts are made to operationalize targets by technical measures alone. Therefore, defensive incorporation seems to be the dominant mode.

3.3.3.2 "Organizational Context and Developments"

The research dimension "Organizational Context and Developments" concerns the organizational structures at the federal level that determine the integration of ecological issues in transport, especially in long-distance freight transport. The current structural and procedural arrangements of the involved organizations are described and recent developments are outlined. Altogether the administrative reality within the governmental organization is characterized by the fact that responsibility for the legal regulations is divided among various ministries. The number and importance of coordination procedures between the ministries are limited. The procedures are highly formalized.

The analysis shows that most important tasks with respect to transport are concentrated in the BMV. Essential responsibilities of environmental protection were combined in the new ministry with the creation of the BMU. However, other important tasks remain the responsibility of the individual specialist sections, including at the BMV. A comparison of BMV and BMU shows strong disparities to the extent that the two ministries deal with responsibilities of the other ministry. In the BMV,

each specialist department has a section that at least deals nominally with environmental protection responsibilities. The BMU has far fewer personnel, but they are systematically networked with one another. However, the relative significance of the sections mentioned (i.e., their power to implement policies in the respective ministries) cannot be conclusively determined yet. There is a great disparity of the financial resources that are employed in research, as well. The BMV has more financial resources than the BMU. This finding applies to research which is relevant to environmental protection, i.e., for the development of relevant methods.

There is a great disparity of the financial resources that are employed in research. The financial resources of the BMV are many times those of the BMU. According to preliminary evaluations, even the resources that the BMV devotes to research which are relevant to environmental protection (i.e., for the development of relevant methods) are greater than the corresponding resources of the BMU. Moreover, existing regulations concerning consideration of environmental issues were not completely implemented by all ministries.

There were few institutions cooperating with the ministries and the agencies under their control for a long time. This took place because already existing committees (e.g., the environment cabinet) were obviously no longer actively used. Moreover, regulations concerning consideration of environmental issues were not completely implemented in all ministries.

Since 1990 the situation changed. First, new institutional arrangements were created with the “Interministerial Working Group (IMA) CO_2 Reduction” and its study groups. They explicitly have the responsibility to overcome the limits of the sectorally-organized administrative structure. However, its actual accomplishments fall short of the far-reaching expectations that it aroused. The Nettetal Conference was a further milestone. This first common conference of the ministers and senators from the federal government and the states responsible for transport, environment, and spatial planning established a transport study group. However, its execution was delegated to the BMV. This means that the given allocation of responsibilities was strengthened.

Moreover, information exchange between BMV and BMU occurred only occasionally. The EIA procedure has been integrated into the highway planning procedure and is conducted by the BMV. The BMU has no power to veto decisions made by the BMV. Joint working groups did not exist for a long time. There are no joint projects. This is mainly due to the fact that besides some exceptions, like in the case of the BImSchG, no legal provisions have been made to ensure joint decision-making and cooperation.

Evaluating the results of the research dimension "Organizational Context and Developments" according to the criteria, this study found:

- important measures can be found mainly in the "Selection" and "Implementation" phases of the political process,
- the level of incorporation can be rated "none" to "low",
- active as well as defensive incorporation can be identified.

Referring to the type of incorporation, one can argue that changes in the organizational structure of the German government have taken place. The changes include the creation of the BMU, Federal Environmental Agency, Council of Environmental Experts, and other agencies. As far as other ministries are concerned, such as the BMV, the importance of the established mirror departments remains unclear.

Referring to the subject "procedures", the current state of research points to no evidence of active incorporation. The observed interactions intend to modify policies initiated by transport policy-makers but do not extend further.

3.3.3.3 Targets

The research dimension "Targets" refers to strategic and quantitative targets which guide the behavior of political and administrative actors in the overlap of transport and environmental policies. The section on “Quantitative Targets” names relevant data published in laws, ordinances, and political statements. The section on “Strategic Targets” presents the long-term view of the various actors. Generally, the analysis shows that differentiated systems of targets exist within each policy field. However, environmental targets are of lower importance in the target system of transport policy. Relevant environmental targets have not been specified for the transport sector.

The analysis of the quantitative targets shows that there are several legal regulations and political statements. The targets refer to problems of the global climate as well as to national environmental problems. Referring to CO_2 emissions, the cabinet repeatedly committed itself to reduce CO_2 emissions by 25% to 30% by 2005. Furthermore, greenhouse gases have been included to the programme. In the national context, European emission limits have been transferred to national law. Based on the voluntary agreement with the automobile industry, the federal government and automobile industry are discussing the possibility of more energy-efficient cars.

The analysis shows that different strategic targets exist within the federal government. Starting with the position of the entire cabinet and ending with the SRU (Sachverständigenrat für Umweltfragen), these targets can be categorized in a continous line. The federal cabinet evaluates the environmental problems caused by transport mainly from the perspective of the debate on "Germany as an entrepreneurial site" (Standort Deutschland"). Although environmentally friendly transport modes shall be strengthened and intermodal transport shall be developed the main focus is the extension of the capacities of the transport infrastructure. The BMV names identical targets, but in 1994 it introduced the target "traffic avoidance". However, the latter concept is quite abstract since it is not founded on a equivalent methodological and legal basis.

The BMU sees the problems in a more differentiated and critical way. According to the BMU, environmental problems resulting from road transport is increasingly becoming the focal point of the environmental debate. Therefore, terms like transport calming, transport shift, and transport avoidance have been used by the BMU years before the BMV did so. Recent considerations of this kind have been supported by the concept of sustainable mobility. Technical measures still play an important role within the concept.

Evaluating the results of the research dimension "Quantitative Targets" according to the criteria, this study found:

- important measures can be found in all phases of the political process;
- the level of incorporation can be rated "low" to "middle";
- defensive and indirect incorporation dominate.

Referring to the level of incorporation, one may argue that according to the criteria of the project the CO_2-target has to be rated "middle". However, targets for NO_x are missing. Moreover, it has become clear that the targets will not be reached, especially since the growth of the transport performance overcompensated the improvements by technically-oriented instruments.

Referring to the type of incorporation, the fact that quantitative targets mainly refer to technical measures implies that defensive and indirect incorporation dominate. Environmental aspects beside technical adjustments are out of scope.

Evaluating the results of the research dimension "Strategic Targets" according to the criteria, one has to assess that:

- Important measures can be found mainly in the "Selection" and "Implementation" phases of the political process;

- the level of incorporation has to be rated "middle" to "high";
- that the public debate leads to measures of active incorporation.

The evaluation of the level of incorporation reflects the German debate on the topics of demand-side management and transport avoidance. BMU and its subordinate authorities, especially Federal Environmental Agency and the Council of Environmental Experts, carry the academic discussion into the political field. Even the BMV uses the term "transport avoidance", but without making any attempt of operationalizing it. Changing the modal split is also a commonly shared goal. The evaluation of the type of incorporation refers to the extensive German debate on "sustainable mobility", which is mentioned above.

3.3.3.4 Policies for incorporation

The investigation of the policies for incorporation includes three research dimensions: "Infrastructure investment policy", "taxation policy", and "deregulation policy". The section on infrastructure investment policy investigates the relative shares of the transport modes on the investments and the project selection procedures. The section on taxation policy describes the measures that influenced the integration of environmental thinking. The section on deregulation policy analyzes the change of regulations of market access, tariffs, and railway laws. Generally speaking, the analysis of the taxation laws shows a long-term real decrease of the mineral oil tax rate and finally, a significant reduction of the vehicle tax rate for trucks. The main purpose of the introduction of highway tolls for trucks was to tax foreign trucks to offset German highway construction and maintainance costs.

3.3.3.4.1 Infrastructure policy

The analysis of research dimension "infrastructure policy" shows that the allocation of investments between the transport modes has shifted in favor of railway construction. Now there is a tendency for equal treatment of the transport modes rail and highways. The development of combined transport has been delegated to market participants. More precisely, significantly more money was allocated to road transport (i.e., highway construction) than to the environmental friendly modes rail and inland shipping by the BVWP ´85 and earlier infrastructure investment plans. With the BVWP ´92, the situation changed when nearly the same amount of money (about 40% of the total expenditures) was given to the federal highways and the railways. However, currently a reversed development can be

observed. The amount of money available for inland shipping was reduced to 6% of the budget. In relation to the overall funds spent, the money allocated for the construction of intermodal facilities is very limited. It was planned that this money should come exclusively from part of the German railway budget. Related to this topic, it is significant to note that the local, regional, and state levels are main actors. A better implementation of respective concepts is obstructed by the growing economic orientation of main actors like the privatized Deutsche Bahn AG and the privatized Post AG.

In the BVWP ´92, ecological arguments were part of the comprehensive economic evaluation procedure and the ecological risk analysis. As shown above in the first case study, it was not the environmental damages that were evaluated, but rather the anthropogenic benefits in small towns and cities that were examined. With respect to the ecological risk analysis, it became clear that this was a worthless instrument as far as influence on the progress of environmentally destructive projects.

Evaluating the results of the research dimension "Infrastructure policy" according to the criteria, this study found that:

- Important measures can be found in all phases of the political process;
- the level of incorporation can be rated "low" to "middle";
- defensive and indirect incorporation dominate.

The evaluation of the type of incorporation reflects the fact that infrastructure improvements increase the capacity and the attractiveness of certain links, and as a result, may also increase traffic and transport. Besides, investments have the tendency to reduce environmental burdens in other places. These side-effects are frequently cited and play an important role in the cost-benefit analysis of the BVWP.

3.3.3.4.2 Taxation Policy

The analysis of the research dimension "Taxation policy" laws shows improvement of the position of German hauliers. The improvement is due to a long-term real decrease of the mineral oil tax rate, and a final significant reduction of the vehicle tax rate for trucks.

There was only a small increase of the mineral oil tax rate for diesel tax during the investigation period. Nevertheless, the tax rate remains about 30% over the EC

harmonization level. However, the increase does not compensate the results of a long-term decrease of the tax rate in real numbers. The vehicle tax rate is differentiated to several emissions standards including noise emissions. The main purpose of the introduction of highway tolls for trucks was to get foreign trucks involved in the payment of German highway construction and maintainance costs. Ecological arguments were cited, but not substantiated.

Evaluating the results of the research dimension "Taxation" according to the criteria, this study found that:

- Important measures can be found mainly in the "Initiation" and "Implementation" phases of the political process;
- the level of incorporation can be rated "low";
- the presented concepts can be addressed either as active incorporation or as defensive incorporation in combination with indirect effects.

The evaluation of the type of incorporation for “taxation” reflects the discussion on the introduction of an energy tax. The discussion is dominated by environmental objectives, which are far-reaching and concentrate on non-technical instruments. For this reason, it is a good example for active incorporation. However, the energy tax will be set into a market-oriented economic regime and therefore, has to be designed adequately. Thus, it will show some characteristics of defensive incorporation as well. The other taxation policies cited above can be characterized as defensive incorporation with indirect elements.

3.3.3.4.3 Deregulation policy

The analysis of the research dimension "Deregulation policy" shows that far-reaching changes have taken place. While social regulations, licensing of vehicles, and regulations on the transport of hazardous goods remained unchanged, regulations regarding the general access to markets and the tariffs have been either changed or abrogated. Positive environmental side-effects of liberalization are cited from time to time. But until now, the ecologically negative side-effects of lower prices in the transport sector and the increased attractiveness of transport has heightened public attention.

The Deutsche Bundesbahn and Deutsche Reichsbahn (now known as Deutsche Bahn AG) have been privatized. The changed status of German railways produces a contradictory situation. On the one hand, the federal government dis-charged the railways of their former debts. On the other hand, the market conditions have not

been changed. Therefore, the competitiveness of the Deutsche Bahn AG and its contribution to environmental tasks is still unclear. Environmental arguments played an insignificant role in the respective discussion.

Evaluating the results of the research dimension "Deregulation policy" according to the criteria, this study found that:

- Important measures can be found mainly during the "Implementation" phase of the political process;
- the level of incorporation can be rated "none" to "low";
- in the best case, one can speak of indirect incorporation.

3.3.3.5 Summary of the evaluation

Table 12 pinpoints the different policies to a specific phase of the policy cycle. The depiction follows the research dimensions of the description of the status of incorporation.

The table clears two facts. First, in all investigated areas, projects, decisions, and political measures can be identified that can be understood as incorporation or have been of considerable influence on the status of the incorporation.

Second, in practically each area, different measures can be distinguished which are located in different phases of the policy cycle. Many of these measures are already in the implementation phase. However, the research does not allow an immediate declaration on the environment and political significance of the presented measures and procedures. Therefore, in a second step, the dominant type of strategy is assessed. The results are presented in Table 13.

As Table 13 shows, this study gave Germany a "low" ranking as the dominant level of incorporation. However, there are significant differences between the inquired subjects. With the exception of "organization", "procedures", and "deregulation" policies, the different subjects are no longer ranked "none". The subjects "legal requirements", "quantitative targets", and "infrastructure" are partly assessed "middle", since developments towards a substantial change have been observed. The subject "strategic targets" is the only subject measured "high".

	Initiation	Estimation	Selection	Implementation
Legal requirements		Electronic traffic guidance	Regional traffic restrictions	EIA-law
Organization			Centralized vs. decentralized execution of environmental responsibilities	Establishment of federal Ministry of Environment 1986
Procedures				IMA CO_2 Reduction; Nettetal Conference
Strategic targets	Sustainable mobility	Traffic shifts	Optimization of single transport modes	Status-quo
Quantitative targets	German proposal for exhaust emission 1999/ 2000	Limits to fuel consumption		88/77/ EWG 91/542/EWG
Infrastructure	Traffic assessment	Road pricing		Intermodal facilites
Taxation	Reduction of subsidies to traffic sector; introduction of energy tax	Rise of (diesel) fuel taxation		Vehicle taxation
Deregulation				Railway reform

Source: Own composition

Table 12 Status of different policies in Germany

Level of incorporation 6 / Policy field 9	None	Low	Middle	High
Legal requirements		X a)	X	
Organization	X b)	X		
Procedures	X c)	X		
Strategic Targets			X d)	X
Quantitative Targets		X e)	X	
Infrastructure		X f)	X	
Taxation		X g)		
Deregulation	X h)	X		

Source: Own composition

Table 13 Type of strategy in Germany

Finally, the investigated measures of the policy fields were sorted by the dominant type of incorporation. Table 14 shows the result of the assignment.

The analysis shows that one can identify forms of active, defensive, as well as indirect incorporation. However, one has to point out that the measures described as active incorporation were mainly identified with the initiation phase of the policy cycle. That is valid for three areas: taxation, strategic targets, and legislation. The transformation of the organizational structure of the federal government was assessed as active incorporation. However, this study could not evaluate the effects of this measure.

Therefore, one has to assume that defensive incorporation is the prevalent type of incorporation in Germany. Most of the time, indirect incorporation is connected with forms of defensive incorporation. A particular pattern of the distribution on the different policy field could not be identified.

Type of incorporation 6 / Policy field 9	Active Incorporation	Defensive Incorporation	Indirect Incorporation
Legal requirements	X a)	X	X
Organization	X b)	X	
Procedures		X c)	
Strategic Targets	X d)		
Quantitative Targets		X e)	X
Infrastructure		X f)	X
Taxation	X g)	X	X
Deregulation			X h)

Source: Own composition

Table 14 Type of Incorporation in Germany

3.3.4 Explanation

The explanation of political decisions in the intersection of transport and environmental policies reflects the fact that the level of incorporation is determined by the interplay of a multiplicity of factors. Only a certain number of these factors can be influenced by German political decision-makers. Others are influenced by developments at the European or even intercontinental level. Furthermore, the analysis refers to the results of the chapter on the status of incorporation. Several of the descriptive arguments presented there can be reinterpreted as explaining factors here. For instance, this is the case with the description of the cooperation among the federal ministries and their respective agencies.

3.3.4.1 International arguments

The influence of the European level on polical decisions in Germany in addition to the omission of the borders to East Europe are understood as developments outside the scope of national action.

Diverse interrelations which exist between the supranational level EU and the national level Germany, or expected regulations of the European Community have influenced the specifications of the tax rates for diesel fuel, the change of the vehicle tax rates, and the validity and specifications of tolls. However, the opposite could also be observed. One can assume that the lasting absence of a regulation on tolls at the European level contributed to the German initiative of 1989/1990.

For instance, the compromise of the European Council of Transport Ministers on a range for the diesel tax rates reflected back to German politics. The European compromise offered the political option to increase taxation. This increase became possible because the introduction of a minimum tax rate reduced the relative tax difference in the international context despite the increased German taxation, at least in comparison to the preceding condition. Further details and analysis of the European influence of the European institutions on the results of national decision-making processes and the advance of these processes are defined in the case study on the EU level accomplished in the framework of this research project also (cf. Hey 1996).

Other than these processes within the European Community, the developments initiated by the re-opening to Eastern Europe are of special importance. For example, the extension of road transport infrastructure has allowed easier passage of the borders. Thereby market access of East European hauliers has become much more convenient. The overall capacities of road freight transport in Germany have been extended as well. These factors have led to the price reduction in the road freight sector, too.

3.3.4.2 National arguments

The investigation of national factors builds on von Prittwitz's "Catastrophe Paradox" thesis. According to this hypothesis, the political system does not simply react to ecological problems, but does so only if sufficient capacities are available for the solution to the problem. Ecological and the economic pressures are analyzed during the investigation period. Capacities for solving these problems are investigated by describing and assessing the available political and economic capacities.

3.3.4.2.1 Insufficient environmental political pressures

First of all, the analysis distinguishes between the concept "ecological pressure" and the concept "environmental political pressure". The former refers to the

objectified environmental strain, the latter to the perception of the environmental strain by the people.

The analysis of international comparative studies shows that in parts of environmental policy-making, successes can be recorded, whereas in other sectors deteriorations were observed. Quantitative measurable successes are mostly reached by the shifting of pollutants from one environmental media to another. Altogether environmental political goals are being achieved only in some single cases, while a comprehensive dismantling of the ecological risk potential has not been realized.

Regarding energy consumption and pollutant output, the analysis shows that the road transport sector has become more important. Within the road transport sector the relative importance of trucks increased, which is partly caused by the strong increases of emissions. Therefore, a comprehensive valuation of ecological pressure comes to the conclusion that despite the multiplicity of environmental political measures and a considerable investment of resources, a deterioration of the environmental situation has taken place. Increasing pressure to act is especially put forth by the transport sector, namely by the observed continuity of the increase of traffic volume both of individual transport and freight transport and by the simultaneously projected future growth of transport.

With respect to the perception of problem, results of surveys show that environmental protection is one of the dominating social problem fields. As far as the different environmental problems are concerned, the reduction of air pollution is seen as the dominating political task. However, voters do not link the perceived problems to the probable causes in a systematical way. It is shown that no linear connection exists between environmental knowledge, environmental awareness, and environmental behavior. This finding is especially relevant to the transport sector.

The analysis proves that there is a basic contradiction between the existing "ecological problem-pressure" on the one hand, and the perceived "environmental political problem-pressure" on the other hand. While the ecological pressure increases, the environmental political pressure in Germany stagnates. To explain the possible causes for the patchy development, the issue remains that the environmental political pressure as an individual, (e.g. automatically subjective valuation) depends on a multiplicity of other influencing factors, such as the availability of money.

3.3.4.2.2 Difficult financial situation

The analysis investigates the development of the overall economic situation in Germany, the public finances and the economic situation of Germany's federal railway (Deutsche Bundesbahn - DB) during the investigation time period.

The indicators of overall economic development point to a period of prolonged economic growth. During the investigation time period, the export-excess was constantly positive. The gross national product (GNP) grew during the latter part of the investigation period, but eventually came down. The debts of the public institutions, especially the federal deficit, increased continuously and clearly in the investigation time period. The federal expenditures on the transport sector were kept stable at the beginning of the study. Due to the German reunification, the expenditures for railway and road construction increased quickly after 1990.

An essential aspect of the economic situation of Germany's federal railway is related to the fact that revenues from the express and freight transport decreased much more than transportation efficiency increased. The interest-load from already existing debts, the named breakdown of profits, and the decreasing federal expenditures for railways in relative numbers led to frequent and increasing yearly deficits, in addition to increased total debts of the railways. From these factors, the German government commission on the federal railways calculated a financial demand of about 417 Mrd. DM and 570 Mrd. DM respectively within a period of 10 years. The reform of the German federal railways hindered development corresponding to the trend scenario of the government commission.

Altogether one can argue that there was no pressure on environmental and transport policy from the overall economic situation during the investigation time period. The fiscal crisis at the federal level led to reduced expenditures for the railways in relative numbers, but the shares of money spent on railways and federal roads were kept stable. However, a more exact analysis of the economic situation of Germany´s federal railway shows that under the given financial and economic conditions and market requirements, the government's attempt to stick to framework conditions in 1984 had to fail. Finally, it was the absence of basic transport and political decisions that has led to a considerable pressure in Germany´s railway sector. But even after the railway reform in its current appearance, one cannot decide whether the identified problems were substantially reduced.

3.3.4.2.3 Economic capacities

The analysis investigates the capacities, utilization, and potential of the three predominant transport modes: railway, road, and inland shipping. Special attention is given to the question whether the railway is eventually able to take over a higher market share of the long-distance freight transport.

The analysis of the railway´s capacities shows that short-term capacity increases in the existing net of about 10% are possible by filling up low-peak travel times, reducing daily shunting breaks, and the end to general weekend shunting break. In a medium-term perspective, the implementation of new information processing technologies may increase the capacity by about 30-50%. In the long run, the separation of the nets of personal and goods transport as well as the further construction of new infrastructure links will lead to even clearer capacity increases. Basically the same is valid for locomotives and boxcars.

In regard to road freight transport, the analysis shows that the capacities of federal highways became considerably extended. The accessibility of all regions improved, the travel speed increased, and the so-called spatial resistance reduced correspondingly. However, one may assume that due to future capacity bottlenecks, the current performance standards may not be retained on all infrastructure links, such as corridors.

The transport capacities of the road freight transport sector increased considerably. The highest growth rates were reached by the categories of the heaviest vehicles. The analysis of the size-structure of the German goods transport industry shows a strong fragmentation of the market. Furthermore, a small number of big companies compete against a large number of small companies.

With respect to the inland shipping, the analysis shows that the German network of waterways in the Old and the New Bundesländer is structured differently, but has been fairly completed. Altogether the capacities are so extensive, that clearly, a larger transport volume could be managed without significant structural measures. The same is valid for the transportation capacities of the German inland shipping industry that has been reduced and modernized during the investigation period.

By comparing the results, one can see that all three investigated transport modes have considerable rationalization-potential capacity reserves. This statement implies that the transport market altogether could considerably increase its efficiency. The balance of the potential signifies that in the future the market shares will not have to change because of general modal specific developmental impedi-

ments. However, in the short and middle term, a further postponement of the market shares in favour of road transport and to the disadvantage of the railways may take place because the expenditures necessary to implement the increased efficiency and respective capacity are distributed differently between the transport modes. With reference to the available prognoses, the least expenses and the fastest transposition can be expected for inland shipping and in the road freight transport sector. In contrast, performance increases of railways seem to be connected to considerable investments in the infrastructures and the rolling material. However, if the investments are realized the share of railways may grow again in the long run.

The analysis also shows that cooperation among the different transport modes has not been developed in a sufficient manner thus far. Opposition to political statements which support combined transport, the extension of interfaces between the transport modes is not forced politically, but rather redelegated to the market players. Among other reasons, this attitude has led to the situation that funding most freight transport centers and transfer centers presented in the Federal transport infrastructure master plan (BVWPI) is still unsecured. A change of the situation cannot be expected in the near future. The implemented deregulation measures not only led to a reinforced price-fight between the transport modes, but deregulation also caused an extended independence of central actors, such as the DB AG. As a consequence, privatized companies now try to optimize profits. The optimum from the point of view of the national economy that would rather be attained by a stimulated coordination of the transport modes is no longer within the scope of the economic targets of DB AG.

Based on these statements and the knowledge of the effects of deregulation policy, one cannot expect to see basic changes in the transport market structures soon. The environmental friendly transport modes will not be strengthened in a way that there will be a significant reversal of the trend of the modal split.

3.3.4.2.4 Successes of environmental policy

A hierarchical and regulative policy approach and a technical orientation are the most essential characteristics of the German environmental policy. The successes of technical solutions, especially with reference to the quality of surface water and air has further strengthened this approach. In the intersection of environmental

protection and transport policy technical solutions, which is embedded in the framework of legal regulations, played a dominant role, too. However, non-technical problems, such as land-use and the cutting through landscape were not addressed. The discussion of economic instruments was of relative low importance to political practice, too. If any attempts to control the economy were discussed on a more elaborate level, they were aimed at making technolgical solutions more efficient instead of making a basic change to a different level in terms of the stage model of integration applied here.

The investigation of the existing reduction-potential shows that despite existing technical development, further essential reductions of exhaust fumes and noise emissions are attainable. This is valid for cars as well as for trucks. Technical improvements carry considerable potential for decision-makers to increase the energy efficiency of the road freight transport and to reduce the amount of pollutants. Therefore, decision-makers who favour more efficient or newly developed technologies to reduce harmful emissions are conceeded considerable freedom for the change of technical limits. At the same time, they are allowed to abstain swift and basic measures in favor of a structural change of the transport markets, too. However, at present, there is clear indication in Germany that the politically-established limits do not prompt technical developments, but rather block a quick implementation of improved end-of-pipe technologies.

3.3.4.2.5 Administration

The low standard of incorporation can be explained by the low standard of cooperation within the federal administration and the old concept of regional development. The federal administration is part of the political-administrative system. The learning processes in this system have led to a reinforced consideration of environmental tasks. That can be understood by an analysis of the organizational tasks of the ministries. Contrary to this result is the analysis of the political output and the organization of the cooperation of the ministries in pursuing transport and environmental politics. Sectoral goals dominate cross-sectoral environmental policy. A coordination on the level of goals is still missing.

Furthermore, one may emphasize that the goal "Environmental protection" is inferior to other goals of transport policy. One of the most important of these other goals is the extension of road-infrastructure. The goal builds on the assumption that a positive regional development and especially a positive development of peripheral regions depends mainly on the availability of transport infrastructure, primarily an extensive road network. Although this reasoning has frequently been

questioned, it is commonly supported by the federal Ministry of Transport and the Ministry for Economics. The dominance of the existing concept of regional development is also contrary to a continuation of the process of incorporation.

3.3.5 Perspectives and recommendations

The recommendations consider how the environmental needs in the long distance freight transport sector could be enhanced in the future. The recommendations reflect the fact that based on the analysis, it seems unlikely that there will be a short-term change of the relative importance of the named dominating goals. However, medium-term adjustments are possible. The recommendations are aligned with several criteria that have been coordinated with the other participating institutes. The recommendations are summarized below:

- They refer directly to the facts described in the study and to the corresponding analyses and conclusions.
- They are strategically-oriented. Such measures will be presented to the responsible political decision-makers. They will also suggest an attainable time frame.
- They comprise arguments with different temporal objectives. Recommendations give both short- and long-term perspectives.
- They have been adjusted with the recommendations to the other political levels and with the recommendations of the other national case studies.
- Lastly, recommendations shall clearly contribute to an improved ecological situation.

3.3.5.1 Establishment of an interministerial task force "traffic and environment"

The establishment of an interministerial task force "Traffic and Environment" within the federal government is recommended.

In the context of the competition-oriented German ministerial organization, transport policy is mainly understood as a sectoral task. The legislation procedure is exclusively oriented towards the goals of a single ministry. It does not suffice the present day demand for coordination between the sectoral targets, such as the respective ministries. Of the multiplicity of divergent goals at this point, only the federal government's CO_2 reduction goal is highlighted. In this case, it is necessary

to safeguard the orderly implementation in a foreseeable time period by the establishment of adequate organizational structures and procedures. Otherwise, the implementation will depend on the interministerial coordination as the usual procedure. However, maintaining the status-quo necessarily means making the implementation the CO_2-targets a subject of interministerial negotiations. Since the BMU is one of the weaker ministries, continuing status-quo procedures imply that the Germany´s international CO_2-obligation cannot be fulfilled.

Therefore, this study proposes the establishment of an interministerial task force (Interministerielle Arbeitsgruppe - IMA) "Traffic and Environment". It should be the main task of the IMA to develop operationable goals for the transport sector. The statements shall specify quantitative performance targets and supply limits for both individual and freight transport. In addition, it shall be specific to regions as well as to transport modes. This would become the foundation for an active transport policy.

3.3.5.2 Development of a “Transport Master Plan” for Germany

The working group would have to elaborate the guidelines for the proposed development of a “Transport Master Plan” for Germany.

Opposition to repeated political declarations, especially by the federal Ministry of Transport (BMV), this study found that there is currently no overall transport plan available for Germany. At least there is not a general transport plan that goes beyond listing technical and financial measures. Overall, Germany lacks a plan that strives for a goal-oriented and future-directed perception of the balance of societal mobility needs, socio-spatial realities, financial possibilities, and ecological necessities.

The proposed general transport plan would have different tasks. First, the general transport plan would list the socio-political goals of the federal government which shall be reached by a specific set of transport measures and policies. Goals like the minimization of the political economic expenses, reduction of resource consumption, and stabilization of the quality of life should be chosen. Furthermore, complementary goals as well as conflicting goals should be discussed.

3.3.5.3 Main focus on “Transport and Environment"

Placing the emphasis mainly on the integration of “Transport and Environment" and extension of capacities within the BMU is recommended.

This study suggests that BMU's resources should be allocated to deal with questions of freight transport policy, especially long-distance freight transport. The currently invested capacities do not correspond to the publicity, the importance, and the requirements of the topic. Even in the federal Ministry for Economics, a nominally higher number of staff capacities are available for the objective of reducing the environmental effects of freight transport. Moreover, the financial provisions made for scientific research in the BMU are significantly lower than those of the BMV. This statement is generally held, but is specifically important in the context of dealing with transport-related problems.

Therefore, it is necessary for the BMU to emphasize the cross-sectoral topic "Traffic and Environment" in the future. In the short run, this would imply a better equipment of the relevant sections. Otherwise, one can expect that the already limited power of the BMU to act and to appear as a central player in this problem field will be reduced even further in the future.

3.3.5.4 Establishment of new strategic coalitions

The BMU should use common interests to establish new strategic coalitions within the cabinet.

The stimulation and development of concepts in respect to the participation in the process of formation of concepts on the basis of own competence get practical meaning by the decision-making in political committees. Within the German federal government, the BMU is confronted with difficulties as it searches for majorities. As shown previously, the BMU is weak mainly because it has limited responsibilities. Therefore, the ministry is not able to offer package deals at negotiations with other ministries. The coalition-options of the BMU within the government remain limited.

However, the analysis pointed to several topics in the incorporation of environmental and transport policies that will possibly provide the basis of coalitions, such as the BMBau, as well as other federal departments: Ministry for Work and Social Order, Ministry for Finance, Ministry of Research, etc. This study found that the existing possibilities should be used more consequently, and the topics for which coalitions appear to be attainable should be developed with preference.

3.3.5.5 Development of BMU's own Transport Policy Initiative

This study also recommends the development of BMU's own transport policy initiative.

The federal Ministry of Transport selected the transport modes railway and inland shipping as the "environmentally friendlier transport modes" and announced the continuation of what is called the strategy of the promotion of these transport modes. However, a detailed analysis of the available money shows that the so-called “patronage” of the environmentally friendlier transport modes in fact is an equal financial treatment of the two dominating transport modes. The decision to hold on to the status-quo of the financial allocation prevents the necessary re-orientation of the transport markets. Such a policy delivers no signals to the general market and more specifically to the road freight transport sector that the federal government is interested in a basic reorientation.

Therefore, the BMU should highlight the threatening capacity bottlenecks of road and rail infrastructure. These problems should be discussed with the relevant associations. At the same time, the BMU should emphasize that the only option to reach a medium-term stabilization and long-term improvement of the situation is a clear priorization of the investments on railway infrastructure instead of constructing new roads or extending current federal road networks.

3.4 Switzerland *(Markus Maibach, Samuel Hess)*

3.4.1 Profile and dynamics

3.4.1.1 Strategies and targets

Today's Swiss transport strategy is a blend of top-down concepts and bottom-up initiatives. The top-down elements are historically derived from the Swiss Integral Concept of Transport (SICT), which was an attempt, made in the 1970s, to design a coherent transport framework, including economic, environmental and social aspects. Although the corresponding amendment to the constitution was turned down in a referendum in 1988, the spirit, the political experience and considerable know-how within the federal administration[12] have shaped Swiss transport policy till today and provide a basis for the future.

The position of Swiss government is to contain traffic growth, to co-ordinate infrastructure construction, to offer transport services in an efficient and environmentally-friendly way, and to establish cost responsibility of all modes.[13] The **Alpine Initiative** which was adopted in 1994 accelerated this pace considerably. In its original wording, anticipating the construction of the new transalpine railway axes, it required no further transalpine road construction and a complete shift of all border-to-border transiting freight traffic from road to rail within 10 years. In the phase of implementation, the focus has shifted, not least under the influence of the EU which aimed at a non-discriminatory design, to include all transalpine freight traffic and to achieve the shift with the use of market-based instruments. The implementation process has started, but depends on the ongoing bilateral negotiations between the EU and Switzerland on a number of key issues, land transport being just one of them.

An important element of Swiss freight transport policy is the **28 tonne weight limit** on roads. Originally designed as a means to reduce damage to roads and bridges, it now creates an advantage for rail and makes an investment policy favouring rail and combined transport more viable. Since the neighbouring countries Austria and France have over the years increased their weight limits, the 28 tonne weight limit leads to a diversion of a significant number of lorries to Austria and France. This

12 In the Bureau for Transport Studies.

13 Schweizerischer Bundesrat (1992a). Cost responsibility is monitored with sophisticated road and rail accounting frameworks.

effect is reinforced by a ban for lorries on Sundays and public holidays as well as during night-time in Switzerland.

The weight limit is also contained in the **Transit Treaty** that Switzerland stroke with the EU in 1993 (prior to the adoption of the Alpine Initiative). In this treaty running until 2004, the 28 tonne weight limit on the whole of the Swiss road network is accepted as a rule,[14] while Switzerland subscribed to the construction of new transalpine rail infrastructure (to be used above all for combined transport) until 2005. The construction of two new railway axes across the Alps was adopted by the Swiss people in 1992,[15] but funding has become critical, mainly due to increased budget deficits.[16] At the international level Switzerland abstained from signing the transport protocol of the **Alpine Convention**. The main reason are frictions with the economic development interests of mountain cantons who have formed a lobby organisation to bring forward their economic interests.

Environmental law rests upon a framework article[17] established in the constitution in 1972. It postulates both the precautionary and the polluter-pays principles and aims at the protection of both human beings and nature. It is the basis for the **Federal Law Relating to the Environment**[18] (1985) and subsequent **ordinances** on noise, air pollution and EIA, amongst others.[19] These ordinances define strict air quality or noise level standards, and mandate the cantons to seize appropriate measures both for stationary sources and for transport. The air quality act (**Luftreinhalteverordnung**) has had by far the most important influence on transport,[20] but not all measures deemed necessary for reaching the given targets could be implemented so far.

14 Exceptions concern goods to be set down within a certain distance from the Swiss border or from freight terminals and the case where rail capacities are exhausted. If so, a maximum of 50 lorries whose gross weight exceeds 28 tonnes per day and direction are permitted on the motorway corridor Basel-Chiasso under certain conditions (in three years, only seven such permits were issued!).

15 Based on Schweizerischer Bundesrat (1990)

16 At the time of going to press, a parliamentary group was established to work out a financing scheme for major rail investment projects.

17 Article 24septies

18 Bundesgesetz über den Umweltschutz, SR 814.01

19 Before that, the conservation of nature, habitats and national heritage (incl forests) as well as standards for water quality were mandated.

20 Air quality standards are as follows (in Fg/m^3): NO_2: 30, SO_2: 30 (both yearly averages), CO: 8 (24-hr-average), Ozone: 120 (1 hr average). Noise standards vary. In built-up areas they are 60 db(A) at day-time and 50 db(A) at night-time for road traffic.

In **international law**, Switzerland has signed and ratified a number of ECE protocols based on the 1979 Geneva Convention on long-range transboundary air pollution (**LRTAP**).

Concerning CO_2 **emissions**, Switzerland aims at stabilising overall 1990 CO_2 emissions by 2000. There is no specific target to the freight sector. Further overall reduction targets are yet to be evaluated. In general, road freight traffic and CO_2 emissions have, in the public discussion, been less linked than in other European countries.

In parallel to air quality norms, Swiss government has, in the wake of political pressure due to the “Waldsterben“, laid down, in its 1986 clean air concept (Luftreinhaltekonzept), **emission targets** for the whole economy which should lead back to the state of air quality of the 1950s/1960s,[21]

Based on a special Ordinance from 1986,[22] **emission standards** for lorries haven been, in the 1980s, similar to the ones in neighbouring countries and are to follow the values laid down in the EU directives as from now (EURO 2, 3).

Based on the Federal Law Relating to the Environment, the **EIA ordinance** lists infrastructure types which are subject to EIA and allocates these categories to a number of defined procedures (e.g. for motorways, railway lines). The Swiss EIA is detailed, but confined to projects, i.e. there is **no SEIA**. A partial substitute is the tool of a viability ("Zweckmässigkeits")study which is undertaken for large infrastructure projects (e.g. for the new transalpine railway link). This study encompasses an EIA along several steps.

Further paragraphs in the constitution are the basis for **spatial planning** and **energy conservation**. The former is important in the process of infrastructure construction, the latter has not had a large impact on freight traffic.

3.4.1.2 Organisational changes and procedures

Environment and freight transport are dealt with by a variety of federal[23] Government Offices and Services. Their role and power has undergone significant

[21] National emission targets for air pollution are as follows (base year 1984): SO_2: minus 43% by 1990, NO_x : minus 70% by 1995, VOCs: minus 57% by 1995.

[22] FAV 2, SR 741.435.2

[23] At the level of cantons, the organisational incorporation of the environment in freight transport policies is largely lacking. The bulk of the civil servants are concerned with implementing the air quality act which includes traffic-related measures.

changes between 1985 and 1994. In the **Department of Transport, Communications and Energy (EVED, Eidgenössisches Verkehrs- und Energiewirtschaftsdepartement)**, **the Federal Transport Office** (BAV) has acquired a leading role. From being a supervisory body for public transport enterprises, it has become the most powerful government office in the area of freight transport. The BAV has also witnessed an internal reorganisation, whose aim was to strenghten managerial capacities, in particular with regard to the construction of large-scale rail projects. Within the same department, the **National Highway Administration** (Bundesamt für Strassenbau, ASB) is, jointly with the cantons, in charge of coordinating, financing and constructing motorways. The **Bureau for Transport Studies** (Dienst für Gesamtverkehrsfragen; Dienst GVF) is in charge of contributing, by research (part of which is commissioned to experts) and its own strategic work, to a coherent Swiss transport policy which includes the environment. Therefore the bureau elaborated several studies concerning external costs on transportation and internalization strategies. Its birth dates back to the period when Switzerland was designing an overall transport strategy. The strenght of the Bureau lies in its long-term experience and strategic know-how. Actually the Bureau is in charge of implementing the distance and weight dependant lorry charge to replace the existing flat tax (see 3.4.1.3).

Within the Federal Department of Home Affairs (EDI), the **Federal Office of Environment, Forests and Landscape** (FOEFL)[24] unites the environmental know-how. A core unit is the **Service for EIA** (Dienst UVP) which is a major and powerful stronghold for defensive incorporation via project-related EIA. In another unit concerned with air quality, there is a special section for **transport issues**. According to its own judgement, this unit has rather limited power in shaping freight transport policy, despite the fact that its responsibility and scope are comparatively wide. In order to develop a joint position in transport issues, an internal coordinating committee on transport (Koordinationskommission Verkehr) was founded in 1994.

The **Federal Department of Justice and Police** (EJPD, Eidgenössisches Justiz- und Polizeidepartement) houses the **Federal Office for Police** (BAP, Bundesamt für Polizei) which is in charge of command-and-control type regulation (speed limits, vehicle specifications). Its main interest is to find legally conforming solutions. Finally, **Swiss Federal Railways** have an environmental department whose role is to implement environmental regulation in as much as rail is concerned (i.e. noise protection).

[24] Bundesamt für Umwelt, Wald und Landschaft, BUWAL

Swiss federal law[25] offers three main types of **procedures**. Mutual **information** alone has become the exception in the area of freight transport policy, as most issues require contributions and expertise from a number of sectorally organised Offices. **Coordination and consultation** can either take place within a Department („Ämterkonsultation"), or between Departments („Mitbericht"). One Office is declared to lead the process, while others are invited to participate. Both mechanisms are well-established, but are sometimes felt to be cumbersome and slow. Another tool are permanent or ad-hoc **working groups.** A few working groups are officially termed „interdepartmental working groups" (IDA, Interdepartementale Arbeitsgruppen), e.g. on noise abatement or on air quality. The working group with the widest scope (i.e. potentially leading to a maximum of incorporation) has so far been the „IDA Rio" which was founded after the Earth Summit and included representatives of business and NGOs. IDA Rio, however, has only weak ties to specific transport policy. **"Joint implementation"** where two (or more) government Offices are jointly responsible for a task, has been rare between 1985 and 1994. The only example is the carbon tax, where the FOEFL and the Federal Office for Energy (BEW, Bundesamt für Energiewirtschaft) were jointly preparing policy decisions. At a more general level, spatial planning offers (i.e. requires) similar cooperative efforts within the administration. Despite a good communication culture in the Administration, genuine joint implementation poses serious challenges to the Offices involved, especially when several Departments (i.e. Federal Councillors) are involved. Depending on the persons involved, however, common policies are emerging in the case of the financing of large public transport projects (e.g. new transalpine rail link). Here, the Department of Finance (EFD) and the Department of Transport, Energy and Communications (EVED) will be co-writing the message ("Botschaft") directed at parliament.

Apart from the federal level, the **cantons** play a fundamental role in implementing and framing federal policy. In clean air policy, it is up to the cantons to design a programme of measures to meet the given federal air quality targets.[26] Due to the principle of subsidiarity, there is not only a need for a horizontal coordination

[25] Bundesgesetz über die Organisation und Geschäftsführung des Bundesrates und der Bundesverwaltung, SR 172.010

[26] This cooperation was only partly successful. The Federal Council (Swiss Government) abstained from forcing laggards to do their homework, and some cantons made deliberate use of the fragmentation of the federal administration to avoid to seize unpopular measures. The contrary could be observed with speed limits. The Federal Council accepted a plea brought forward by the major motorists' association (the TCS) against lower speed limits on a stretch of motorway, although it had in principle delegated the power to seize such measures to the cantons.

between Departments and Government Offices at the federal level, but also a need for vertical coordination, i.e. from the federal level to the cantons. These traditional mechanisms are superseded by the need for another vertical coordination, namely between the federal Swiss level and the EU. EU policies affect both domestic coordination mechanisms.

3.4.1.3 Policies for incorporation

Infrastructure investment policy shows, between 1985 and 1994 and expressed in actual payments, i.e. without taking the new transalpine rail link into account, **no clear priority** for road or rail; both modes were improved simultaneously.[27] Two popular initiatives to freeze the size of road space[28] and to leave four missing motorway links unfinished[29] were turned down by a large majority of the Swiss population in 1990.[30] In the meantime, subsidies for the construction and use of combined transport have constantly risen; from some 10 mn CHF in 1985 to almost 150 mn in 1994.[31] Moreover, an ambitious Rail 2000 programme was commenced (and had to be downsized for a shortage of funds) and two new transalpine railway axes were announced. This **„de-luxe" policy** was possible because road users (at least in passenger transport) paid the bulk of the cost for motorway construction (through excise duties, a motorway tax, and through federal lorry taxes). Investment in rail was pre-financed by the tax-payer on a grant basis, but the Federal Railways were unable to pay this money back (from 1992, they have been unable to cover their operational cost).[32] **Earmarking** of excise duties on fuel for road construction and maintenance and losses of railways mainly in freight transport have towards the end of the period examined put a heavy burden on public finances. Taking the future expenses for new rail infrastructure (especially transalpine railway axes) into account, a high-ranking group of representatives of the administration and the Federal Railways came to the conclusion that a major short-

27 No separate figure for passenger and freight transport.

28 Volksinitiative „Stopp dem Beton"

29 „Kleeblatt"-Initiative

30 In the same referendum, the maximum width of lorries was adapted to the EU standard of 2.5 metres.

31 Excluding the internationally agreed piggy-backing corridor through the Gotthard and excluding the subsidies paid to motorists using the Lötschberg rail tunnel.

32 In 1995, cost coverage in freight transport was at 97%.

term **redesign of the financing schemes** was needed,[33] including a one-time temporary increase of excise duties on fuel and the partial use of the revenues from the distance and weight dependent heavy vehicle charge, which is to be introduced in Switzerland. Decisions of Swiss government are pending until a task force comprising MPs of the four coalition parties has come up with its own recommendations.

Diesel fuel is charged **VAT** (at the normal rate of 6.5%) and **excise duty** (currently at 75 centimes per litre).The last increase dates from March 1993 (before that, the rate had remained unaltered for eight years).[34] Contrary to most other European countries, Switzerland does not give any preferential treatment to diesel vis-à-vis petrol. Every vehicle exceeding 3.5. tonnes is subject to a **yearly tax** at the cantonal level (size and tax basis vary). At the federal level, a weight-dependent but otherwise **flat tax** was introduced in 1985, with the revenues going to the general budget. As from 1995, the tax was adjusted to inflation and the revenues (136 mn CHF in 1992) were earmarked for road construction, combined transport etc. In the same referendum in 1994, the principle of introducing a **distance and weight dependent HGV charge** was adopted. This charge established at the constitutional level is to include a part[35] of the external and officially approved costs of transport. A draft law for this charge was submitted to public consultation in 1995. The introduction is pending.

Fuelled by an increasing stock of debt, Swiss government wants to increase efficiency in the railways sector by reorganising Swiss Railways with effect from 1998. This „railway reform“ (Bahnreform) is being worked out at the moment. It will probably not lead to a complete privatisation, but will add to a separation of business and transport policy, a separation of investment costs and current operating costs, free(er) access for competitors, and it may entail a new organisational form (e.g. a holding with operational daughter companies). Even if private ownership were to be introduced, Government would want to maintain a substantial majority claim.

33 Arbeitsgruppe Finanzierung des öffentlichen Verkehrs (1995)

34 Approximately 1/4 of total excise duty goes into the general budget, while ¾ are earmarked for motorway construction and maintenance and for major cantonal trunk roads.

35 Based on officially recognised estimates for damages to buildings and - shortly to be published - due to traffic-related emissions, noise and traffic accidents.

3.4.1.4 Evaluation: Strengths and weaknesses

Concerning legal requirements, the environment is incorporated in freight transport policy at a medium to high level. Swiss environmental law is demanding and has led to vast activities, above all in air quality management. The EIA Ordinance is a strong instrument for defensive incorporation, and a solid block of know-how and practice has emerged since its introduction, both inside and outside the administration. Bottom-up efforts (popular initiatives and public participation) helped improve incorporation. They could profit from the legacy of the failed Swiss Integral Transport Concept.

In the area of **reorganisation** of the administration, the level of incorporation is medium**.** Although there is a strategic body (the Bureau for Transport Studies) devoted to developing a coherent transport policy, its power in the day-to-day bargaining between Government Offices is limited. The environmental experts in the transport section of the Federal Office of Environment, Forests and Landscape (FOEFL) find themselves largely in a consulting role, although organisational improvements are envisaged to strenghten the strategic capacity.

Cooperative **procedures** are well established in the Swiss administration, but joint implementation or informal contacts at high levels are (at least officially) scarce. The dominating mechanism is still to have a leading Office, with the other ones participating but not making final decisions on behalf of Government. For the Federal Office of Environment, Forests and Landscape (FOEFL) official (i.e. legally guaranteed) communication channels are particularly important, as they provide a guarantee for participation.

Strategic goals are ambitious, especially in transalpine freight traffic, where a modal shift has been sought for years, with the Alpine Initiative giving these efforts new impetus. Domestically, the strategic coherence is less clear, which is due to the lobbying power of motorists' associations and sometimes due to motorists' unwillingness to incur higher taxation.

As for **quantitative environmental targets**, Switzerland has today a medium position, after it was a pioneer in many areas in the 1980s. In clean air policy, the targets set were only partly met. The major problem are CO_2 emissions from freight transport, where no coherent strategy or targets have been formulated yet beyond the year 2000.

Incorporation in **infrastructure** policy is medium, in transalpine transport it is high, if the new railway axes are built. Investment in rail, including combined transport, has been picking up, supported by a rail-friendly voting behaviour of the popula-

tion. On the other hand, investment in road infrastructure was also made, favoured by the automatism of an earmarking system, which is based on the road accounting framework.

As it stands, incorporation in the field of **taxation** is sketchy. In diesel taxation it is comparatively high, while vehicle taxation (flat tax) has a comparatively high level, but is not yet based on environmental criteria. This may change, however, with the implementation of the distance and weight dependent HGV charge (3.2) whose size is explicitly based on external cost estimates. Finally, incorporation in competition and deregulation policies is **low**. Compared with other European countries, these policies themselves have played a negligible role between 1985 and 1994.

Overall, the environment is incorporated to a significant degree in Swiss freight transport policy, although there is a clear **gap** between domestic and transiting transalpine freight traffic, i.e. a lack of a truly coherent transport policy. In both cases, the emphasis in implemented policies has been on **defensive** elements (e.g. EIA) for most of the time, or on defensive policies which cannot be termed as "incorporation", but which have nevertheless had a huge environmental effect (vehicle emission standards, weight limit). Only in legal requirements (PPP, precautionary principle) and in the aim to internalise external costs of road freight traffic through a distance and weight dependent HGV charge has active incorporation become visible, although this approach is only partially implemented to date.

At the same time, earmarking of a majority of the funds generated in the road sector for road expansion and maintenance has led to sustained growth of the road network. By virtue of facts (and not by virtue of a coherent overall transport policy plan) this might change, however. On the one hand, the environmentally-driven desire to invest into new railway infrastructure conflicts with the poor state of public revenues; extracting more money from the road freight sector will be necessary. On the other hand, road expansion itself is threatened by the increasing maintenance costs of the existing large network, i.e. maintenance may be "crowding out" construction.

Switzerland is at the cross-roads: traditional protective and defensive policy-making (the "icon" being the 28 tonne weight limit) has, under sustained EU influence, to be replaced by market-based instruments, which should, in Switzerland's view, have similar effects in favour of the environment as the old-style defensive approach. It should not be forgotten that the dynamics towards incorporation have been considerably speeded up by the acceptance of the Alpine Initiative, which could make use of a **policy window** and filled a vacuum which had been left open by the official Swiss transport policy.

Speaking in terms of a policy cycle, most of the **new** elements of transport policy are in a state of planning or estimation and are yet to be implemented. It remains open whether it will be possible to merge the different elements to a coherent "new" transport policy which takes the environment duly into account.

3.4.2 Explaining incorporation

3.4.2.1 Influencing Factors

„Environmental problem squeeze“: After a perceived shortage of fossil fuels in the 1970s, air pollution started to have a large influence on transport policy. In 1983/84, severe damages to forests were discovered („Waldsterben“). Within a short period of time, the political system reacted to the people’s concerns and introduced, backed by public referenda, strict emissions standards for vehicles and air quality standards. Although environmental policy (in particular clean air policy) was boosted, it did not move towards incorporation, not even in the freight sector, where no catalytic converter was available to reduce specific emissions. Therefore, environmental problem squeeze was **not sufficient** for incorporation. In the **canton of Uri**, real environmental vulnerability is coupled with a strong identification of people with nature and with negative feelings towards transiting freight traffic (a feeling that was, at least for border-to-border traffic shared by a majority of the Swiss when they adopted the Alpine Initiative).

„Financial and budgetary problem squeeze“ can be expected to be push factors for incorporation, in the sense that they may lead to more efficiency and capacity oriented policies. The Swiss story is somewhat more complex. Financial problem squeezes first occurred in the construction of the **motorway network**. The need to finance this network led to a number of increases of fuel excise duties,[36] which signalled to decision makers the need for a coherent transport policy.[37] Earmarking of a part of these duties ensured that the network could be completed step-by-step.[38] The fact that cost responsibility is generally accepted facilitated the inclusion (i.e. internalisation) of external environmental and accident costs in the guise of the planned distance and weight dependent HGV charge - yet only at the constitutional level. In the case of rail, there are two trends. On the one

[36] Source: Schweizerische Politik, various years

[37] These increases were the starting point for the Swiss Integral Concept of Transport (SICT).

[38] In order to balance revenues and costs (i.e. to ensure cost responsibility), a detailed road accounting framework was worked out. As from 1984 a flat HGV charge and a motorway sticker for cars were added to cover the track costs.

hand, aggregate debts of the Federal Railways of some 9.2 bn ECU[39] and a growing structural public deficit have accelerated the pressure for a more efficient railway system (railway reform). On the other hand, the need to secure funds for the new **rail links** across the Alps may lead to using revenue generated in the road sector, contributing to incorporation (see above).[40] At the same time, however, scarce public funds threaten environmental protective measures along new or existing rail tracks or roads (e.g. noise walls).

„Refining of instruments“: Following the debate around the „Waldsterben“, Switzerland introduced, at an early stage, strict emission standards for motor vehicles; a move that was facilitated by the lack of a domestic large-scale vehicle industry. The catalytic converter which was needed to meet these targets proved to be a very effective means for environmental protection.[41] For lorries, the lack of such a device even for pollutants such as nitrous oxides or carbon monoxides accelerated active incorporation. Therefore, it is logical that the concept of charging for external costs was first applied to freight transport with the help of a distance and weight dependent HGV charge which was added to the constitution in 1994.

„Strong capacities of the transport system facilitate incorporation“: In 1992 Switzerland’s rail system had a market share in freight traffic of 39.4%, compared with road at 49.2%. In transalpine freight transport, rail's market share was 73% in 1995, compared with 82% in 1989 (GVF-News Nr. 35, 1996). Although the market share of rail freight is receding, it is, even without the planned transalpine rail links, still high compared with other countries. This is reflected at the political level. The railway sector, which consists of the Federal Railways plus some 50 smaller railway companies, is politically well organised and influential. After the number of employees has already been reduced significantly by the Swiss Federal Railways in the last years, trade unions will try to block a further cut in the context of deregulation. The traditionally strong position of rail[42] in freight traffic is based on a high density of access tracks, linking factories directly to the national rail network.

39 CHF 13.5 bn, not including the 1995 deficit which was ECU 326 mn. Source: Arbeitsgruppe Finanzierung des öffentlichen Verkehrs (1995); Neue Zürcher Zeitung, 1 March 1996.

40 A government proposal to use, for a limited period, half of the revenue of the planned HGV charge for financing large rail infrastructure projects was dropped after severe criticism.

41 In 1995 some 70% of all Swiss cars circulating were equipped with a calalyst (Source: Erdölvereinigung).

42 Until 1985 freight transport generated more revenues than passenger traffic. 1994 the contribution of freight transport declined to 40% of total rail revenue.

Problem perception of the administration: The administration's problem perception a such is probably as marked as the one of the population (although the administration's organisation is sectoral and not in terms of task forces). However, it seems doubtful that the administration's perception is a decisive factor, as a number of significant contributions come from outside (cantons and communities, lobbies, experts etc.). Moreover, the power of both administrators and government is limited due to the final decisive power of parliament and people. Compared with some other European countries, the administration is lacking to a certain extent strategic planning capacities.

3.4.2.2 On the role of the Swiss political system

1 Subsidiarity

Subsidiarity allocates problem solving to the lowest administrative level possible. This gives the cantons (and even the communities) a huge range of opportunities and political influence. The federal government depends on the cantons even to implement federal policy (e.g. clean air; see above). At the same time, subsidiarity creates a vast number of access points for (environmental) interest groups, especially in infrastructure construction.

2 Procedural rights of citizens and environmental groups

According to environmental law,[43] environmental organisations have special rights in the EIA procedure, including the cantonal level. They can take a plea up to the High Court (Bundesgericht) or to the Federal Government, which gives them a strong foothold in defensive incorporation. Attempts to weaken their position in the context of an amendment of the Federal Law relating to the environment failed in parliament in 1995. This can be interpreted as a sign that a participatory culture is firmly rooted in Swiss policy making.

3 Direct democracy

[43] Article 55 of the Federal Law Relating to the Environment (SR 814.01)

Popular initiatives[44] and referenda[45] have a large influence on the political process. Experience shows that **popular initiatives** are a powerful and creative instrument used by environmental groups to bring about a policy change. They may be proactive (Alpine Initiative, green HGV charge) or defensive (initiatives to prevent a further expansion of road space or to prevent the construction four motorway links in 1990 (see above); they may be successful (Alpine Initiative) or fail (other initiatives). **Referenda** are more often, but not exclusively, used in a **defensive** way, often accompanied by simple and catchy slogans and directed at (too) complex government proposals (unless the referenda are mandatory by law). The most important example is the refusal of the Coordinated Transport Policy (KVP) in 1988 which put an abrupt end to a fifteen year long planning process and proves that the political process may become more "random" when proposals are submitted directly to the voters. Consequently, the conclusion that „direct democracy is good for incorporation“ would not be true in this simple form. Nevertheless, media coverage and discussions prior to such referenda contribute to a rise in public sensibility and awareness towards these issue.

4 Public consultation procedures

Government proposals are, often at an early stage, submitted to public consultation, whereby all actors concerned can, in written form, give their opinion. Usually, these views are incorporated in the „message“ (Botschaft) in which government presents its proposals to parliament.

3.4.2.3 Switzerland and the EU

Switzerland is highly dependent on foreign trade. In 1994, 62% of its exports went into one of the EU 15 countries, while 80% of its imports stemmed from the EU. This becomes apparent in high import-export freight traffic volumes. The position in the geographic heart of the Common Market and the strong economic ties with

[44] At the federal level a popular initiative is a plea, signed by at least 100,000 Swiss citizens, that the constitution be amended or changed. After an initiative is checked for its internal consisteny, it is submitted to parliament which makes a positive or negative recommendation on behalf of the people who can adopt or reject it in a referendum. In a case where an initiative just consists of a general proposal, parliament prepares a more detailed text. Government can present an alternative proposal to an initiative (Gegenvorschlag).

[45] A refendum is a plea, signed (at the federal level) by at least 50,000 people, to have a vote on a law that has already passed parliament. All changes to the constitution and major international treaties are automatically subjected to a referendum.

its neighbours lead to a strong interdependence and growing volumes of transiting traffic. This is even more so since a majority of the Swiss people have turned down the adhesion to the European Economic Area in 1992 and Swiss government had to start negotiating, in a number of fields, on a bilateral basis with the EU. So far (March 1996), no agreement could be found. In land transport, a major stumbling block is how to treat the 28 tonne weight limit which Swiss government will only be ready to sacrifice when an effective alternative package based on market-based instruments is implemented.

Although the non-membership of Switzerland offers degrees of freedom for incorporation (Alpine Initiative, distance and weight dependent HGV charge), this freedom cannot be exploited fully, as long as Switzerland is interested in striking deals with the EU. A good test case for the compatibility of the Swiss and the EU view is the implementation of the Alpine Initiative. Since the EU Commission found the initiative, as it was accepted in the referendum, to be discriminatory, the federal council proposed to implement it in a market-based way. However, the charge needed for limiting the number of lorries crossing the Alps would have to be far higher than is currently the case in neighbouring countries. Such a steering charge would be difficult to implement domestically and might create a further relocation of road traffic from Switzerland to Austria and to France. The implementation problems even will increase, if 40 ton lorries are allowed to transit Switzerland. Unless these countries follow Switzerland in their taxation policies, the EU is likely to object the Swiss charge. This must concern Switzerland as long as the country is interested in an intact political relationship with its neighbours. At least in the short term, two conflicting interests have to be balanced by federal Switzerland: environmental protection and European integration. In this process, domestic environmental policy (e.g. the Alpine Initiative) is transported to the EU level (because of the bilateral negotiations), thus becoming foreign policy. From there, feedbacks (the EU's reaction to the Initiative) fall back onto the domestic level where they help to shape Swiss transport policies (the implementation of the Initiative in a way which is acceptable to the EU).

In the long run, some flexibility of both sides and a greening of European freight transport policy (e.g. along the policies suggested in the 1996 Green Paper Towards Fair and Efficient Pricing in Transport) could help to reconcile the diverging views. Ultimately, a common policy for transalpine freight traffic must emerge, regardless of whether Switzerland is member of the EU or not.

3.4.2.4 Dynamics

The major dynamic factors influencing the incorporation of the environment in Swiss freight transport policy between 1985 and 1994 are illustrated by the following diagram which attempts to synthesise the contents of Sections 3.4.1 to 3.4.2.3.

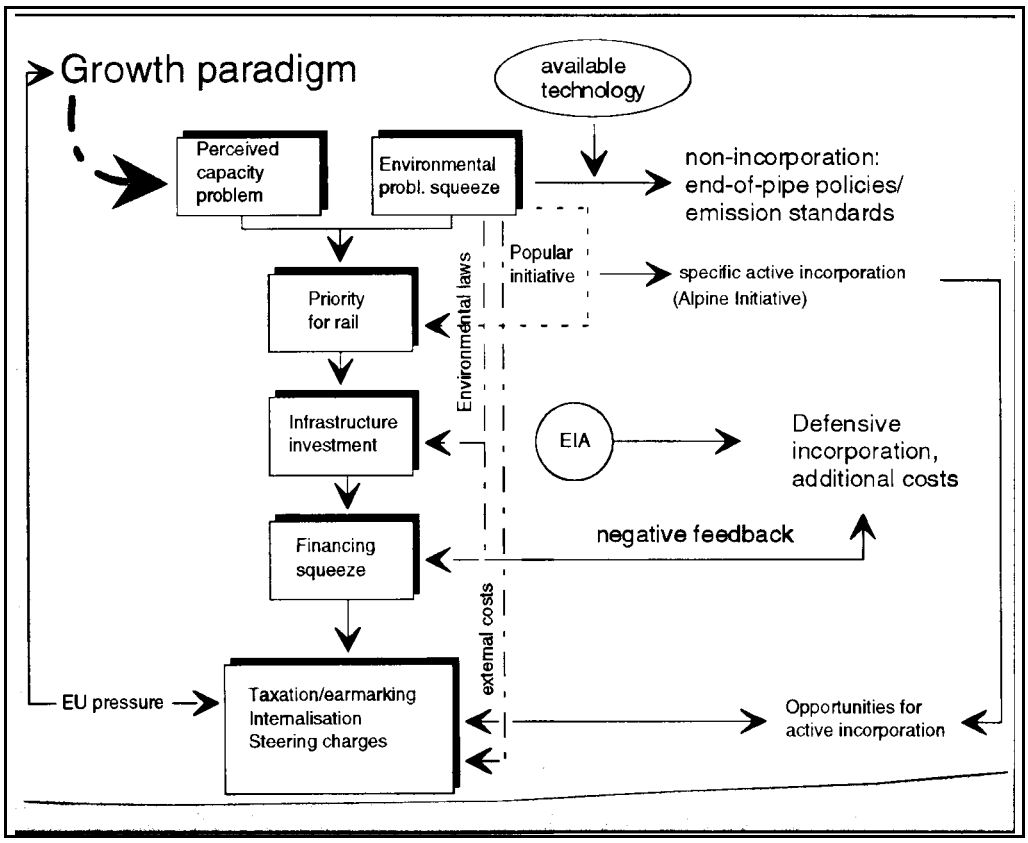

Abbildung 7 Simplified core mechanism of incorporation in Switzerland (1985-1994)

The overall „engine“ is the **perceived growth** of transport volumes which is answered by infrastructure construction. Coupled with environmental problem squeeze, this either led to a policy of technical fixes or to a policy that favoured rail to cope with the (expected) traffic volumes. The body of environmental law, being an offspring of environmental problem squeeze, requires an EIA for large infrastructure projects. This leads to strong **defensive** incorporation and includes the groups that are concerned in the political process.

Direct (active) incorporation is derived from the combination of environmental problem squeeze and the need to finance new rail infrastructure. The **EU** has a

ambiguous role. It supports the growth paradigm and demands that instruments for incorporation be non-discriminatory. This may well be a push factor for opening up policy windows towards the implementation of market-based instruments[46] (and therefore for active incorporation), but it remains to be seen which levels of incentive or steering charges are acceptable to the EU at the practical policy level. Moreover, the involvement of the EU as a „new“[47] actor adds complexity to the incorporation process in Switzerland, e.g. concerning traditional domestic vertical coordination, or because of a certain incompatibility of EU-derived coherent planning processes and direct democratic participation. The emerging „web of complexity“ tends to neglect environmental concerns, but the need to secure financial means for new infrastructure construction and environmentally friendly voting behaviour of the people can be powerful „helpers“.

3.4.3 Case studies

3.4.3.1 Alpine transit rail link

1 Background

The construction of Alpine transit links has a domestic as well as an international dimension. **Domestically**, regions struggle to obtain „their“ axis, or at least access to the nearest axis, seeking economic growth. Consequently, history reflects a constant lobbying of regions. **Internationally**, every axis through the Alps is of strategic importance. Model simulations show that some 57% of total transalpine traffic would chose the way through Switzerland, compared with only 20% today. This is the starting point for the construction of two railway base tunnels at the Gotthard and the Lötschberg.

2 Phases/ Milestones

In a **first phase** which lasted until the mid 1980s a new link was **not** deemed **urgent**. Then, the coincidence of three factors (environmental problem squeeze, EU pressure for more capacity and cantonal pressure) provoked a change of mind, and the electorate accepted a project with **two links** (Gotthard, Lötschberg) at a

[46] E.g. in the case of replacing the 28 tonne weight limit by market-based instruments which can be used for financing transalpine rail infrastructure.

[47] New in the sense that Switzerland has to negotiate with one partner who speaks with one voice, even if member countries' interests may diverge.

total cost of at least ECU 10 bn. In 1993 and 1994, the **environment** came into focus; the cantons concerned and the Federal Office of Environment, Forests and Landscape (FOEFL) demanded a high environmental protection, both within the project and as „flanking“ measures. From 1994, severe **shortages** in the federal **budget**, with other large infrastructure projects pending, and doubts on the financial viability of the rail links led to the search for a new financing scheme. Despite the fact that in March 1996 this search was still under way, it is important to stress that it was never seriously questioned[48] that the new link should be on **rail** and not on road. Rail was perceived the logical choice (and has already been considerably upgraded)[49] after road capacity is approaching its limits and the environment has become an important parameter. The cantons (who favour rail) have also played an important role. A third reason for chosing rail may simply be the investment (fairness) cycle: transalpine rail infrastructure was, by and large, neglected for almost 100 years, whereas the Gotthard road tunnel was opened in 1980.

3 Actors and Coalitions

In the course of the planning process, three main groups of actors emerged, with conflicting interests (see Figure 8).

There are three major issues around the alignment. First, there are potential conflicts between the requirements for a high speed link and space saving alignments. Second, there is a **trade-off** between an environmentally satisfying and a low-cost solution. Third finally, the financial argument does also support lower cost alignments.

The position of the **Department of Finance** has not only led to a temporary halt for the project itself, but it may lead to a more fundamental reorientation of Swiss transport policy;[50] compatible with an increasing importance of market-based instruments. The need to secure finances for a large rail infrastructure project offers the chance to bridge the gaps shown in the above triangle and to make Swiss transport policy more coherent.

48 Although motorists' organisations officially demanded a second road tunnel through the Gotthard.

49 In the guise of the "piggy-backing corridor" on the Gotthard axis.

50 The resistance of the then Finance Minister against putting the fiscal burden primarily onto the shoulders of future generations led to the mandate for the special task force „Arbeitsgruppe Finanzierung öffentlicher Verkehr“.

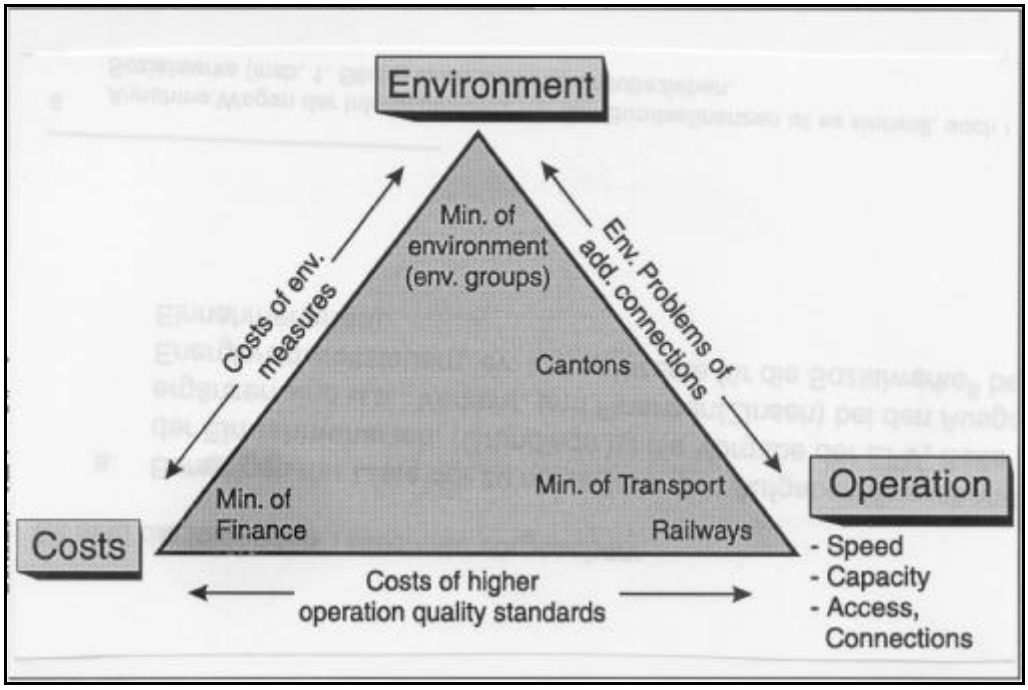

Abbildung 8 The main interest triangle in the process of selecting the alignment in Switzerland

4 Analysis of the EIA procedure as an element of incorporation

The transalpine rail links follow a new version of EIA procedure which is similar to the one for motorways. First, a **viability study** (1986-1989) had to show whether a new link was viable (technical, financial, environmental, regional) and which option was the most appropriate. This study included the **EIA, first phase**, which had to show that it would be possible to build an axis without offending environmental law and which environmental profile such an axis would have, and how it would be possible to improve this performance. Whereas the former leads to defensive incorporation, the latter is the strategic link for active incorporation via additional "flanking" measures. In a next step, the best alignment was selected, based on a number of preliminary projects. **EIA phase 2** helps to make this decision and consists of two elements: an alignment-specific EIA, analysing the project's effects, including additional measures foreseen by law, and „general topics" (noise on access racks, modal shift effects, safety matters, energy supply, impacts on spatial planning and landscape). The second phase of EIA was, under the auspices of the Federal Office of Transport, accompanied by a special **working group on environment** (WGE). This group comprised representatives of national and cantonal Environmental and Spatial Planning Offices, and environ-

mental experts of the railways. The idea was to create an informal platform for environmental matters, i.e. for **active incorporation**. During the process, however, the element of active incorporation faded, and the WGE took a defensive role. This is, inter alia, due to the fact that project management changed from the Office of Transport to the railways which feared that the influence of the environmentalists would lead to higher project costs or a postponement of the schedule. Moreover, the „general topics", being of large strategic importance, had, in the **absence of a SEIA**, only a weak legal basis. This process has revealed two things: as soon as costs become a major argument in project planning, the influence of environmentalists, i.e. defensive incorporation, is fading. Secondly, attempts for active incorporation need a strong formal basis. These frictions may have consequences in **EIA, phase 3**, which is under way. Only in this phase can objections be made, i.e. environmental influence increases the more concrete the project becomes, and the more environmental problems have been left unaddressed in the first two phases of EIA, the more likely are legal objections, i.e. pure defensive incorporation, in phase 3.[51]

3.4.3.2 Distance and weight dependent HGV charge

1 Background & Milestones

The idea to charge heavy goods vehicles (HGV) their full track costs dates back to the 1970s. It was part of the 40 theses made in **1977/78** by the Expert Group for a Swiss Integral Concept of Transport (SICT) in light of limited road capacity and large public deficits. Calculations based on the road accounting framework introduced in 1968 showed that HGVs covered only 51% of their track costs in 1970. In **1980**, Swiss government proposed the introduction of such a HGV charge (Schweizerischer Bundesrat 1980), together with a flat tax for all vehicles using the motorway network.[52] Since the 1980 proposal was watered down by parliament, the **VCS** (the green transport association) launched in 1982 a **popular initiative** which demanded the introduction of a distance and weight dependent HGV charge,[53] including **external costs**. In **1984**, a majority of the population accepted a flat HGV charge and a motorway sticker; the duration of both was limited to ten

[51] For the Gotthard base tunnel alone 230 objections were made (Neue Zürcher Zeitung, 7 March 1996).

[52] Government wanted to go ahead, instead of waiting for the legal implementation of the SICT which it presented in 1982.

[53] For a limited period, a flat charge was foreseen.

years. The level of the HGV charge adopted was much lower, and it did not include external costs. Consequently, the VCS did not withdraw its initiative. Swiss government fought the initiative, because it feared that it would endanger the vote on the Coordinated Transport Policy (the legal principles derived from the SICT).[54] In **1988** both the initiative and the government proposal for a Coordinated Transport Policy were **turned down** in a referendum. In **1992**, Swiss government made another attempt: it proposed to prolong the flat HGV charge and the motorway sticker for passenger cars and to introduce, at the level of the constitution, a distance and weight dependent HGV charge which should include certain external costs. At the same time, Switzerland was able to include the principle of full **cost responsibility** in the **Transit Treaty** concluded with the EU. In **1994**, both prolongation of the existing HGV charge and motorway sticker and the introduction of the **distance and weight dependent HGV charge** were accepted in a referendum. All revenues were now to be earmarked, mainly for road construction. At the same time, the **Alpine Initiative,** which requires a complete shift of all border-to-border transiting traffic across the Alps from road to rail by 2004, was accepted by a slim majority of the Swiss population. Under the **influence of the EU** which demanded a market-based implementation of the Alpine Initiative (see above), the HGV charge appeared to be an ideal **base charge**, on top of which a **steering charge** would be laid, so that the necessary modal shift would become feasible. In **June 1995**, government published a draft detailed law on the HGV charge, with revenues estimated to be significantly higher than under the present flat charge (ECU 490 mn p.a.). The proposal was exposed to a **public consultation**, which ended in October 1995. Its two main features are the **inclusion** of officially accepted **external** environmental and accident **costs** (which leads, for an average 28 tonne lorry, to an increase of total costs of 15% and is, for every vehicle kilometre driven, 5-10 times higher than the proposed increased EU charge), and the technical implications for domestic lorries. In order to keep track of the kilometres driven, a internationally compatible metering system based on GPS (Global positioning system) is foreseen.

2 Reactions to the proposal (actors and coalitions)

The official reactions of interest groups to the government proposal were mixed. The main arguments brought forward by the **hauliers' association** (ASTAG) and by the major motorists' association (TCS) were that the level of the charge was too

[54] Schweizerischer Bundesrat (1985)

high and that such a technical solution would only be feasible in accordance with the EU. **Centre and right wing parties** (FDP, SVP, CVP) added that remote areas and indeed the whole economy would suffer from the charge as it was foreseen. Only the **Social Democrats** (SPS) and the green transport association **VCS** (which had launched the popular initiative in 1982) actively **supported** the government proposal, adding that a stepwise increase would be wiser and that no maximum level should be fixed in the law. Despite the negative voices, Swiss government decided to go ahead with the charge, although its level and introduction pace, including the use of some revenues for the construction of new rail infrastructure projects, were still open in early April 1996 (Press release, January 1996). Newest trends in the context of the bilateral negotiations Switzerland-EU show that the proposed HGV charge will increase its importance as a possible mean to replace 28 ton limit and finance the new Alpine transit axis.

3 Analysis of the incorporation

The distance and weight dependent HGV charge is the element in Swiss transport policy which would contribute most to **active incorporation**. The remarkable **continuity** is a fruit of the SICT exercise, in the sense that considerable know-how was created and remained available both within the administration (Bureau for Transport Studies) and outside (VCS). Apart from continuity, the process also reveals considerable flexibility. The aims of the HGV charge have been modified. From **cost recovery** in the 1970s to giving **incentives** for an environmentally more benign behaviour (1980s, 1990s) and to **steering**, in the sense of serving as a basis for the implementation of the Alpine Initiative (years 2000+).

3.4.3.3 Lessons from the case studies

1 A large infrastructure project such as the new transalpine rail links needs to be flanked by appropriate measures that ensure incorporation and help to avoid a de-luxe-policy. A SEIA could be of great help in this context. Direct democracy may make up for this lack of strategy (Alpine Initiative).

2 The participation of the environmentalists has to be installed at the right level and the right point in time. Unless fundamental questions are sorted out at the beginning of the procedure, they threaten the efficient realisation and may cause additional costs by calling blockers instead of helpers to the site of action.

3 Financing needs of large rail infrastructure projects and the wish to internalise external environmental costs yield an ideal ground for active incorporation.

4 Swiss efforts towards active incorporation find their limits where the EU is unwilling or unable to implement similar instruments. The wish to find environmentally benign solutions conflict with the wish to achieve a quasi-integration into the Common Market.

5 Market-based instruments offer the opportunity to contribute to active incorporation. Although Switzerland can make use of considerable know-how accumulated in the past, there is no room and no time for perfectly streamlined concepts. The democratic system needs pragmatic, easy-to-communicate projects, and policy windows are necessary to progress with incorporation.

3.4.4 Recommendations

3.4.4.1 Threats and opportunities

The analysis made so far should have made clear that the next few years will be decisive for the degree of long-term incorporation of the environment in Swiss freight transport policy. The distinguished feature of this process is the need to balance and reconcile potentially diverging Swiss interests and their supporting policy networks, namely the "traditional" domestic transport and environmental policies, and foreign (European) and economic policy, which aim at a closer European integration (one way or the other).

This conflict shows at two levels. On the one hand, Swiss transport policy has to be coordinated with EU transport policies. On the other hand, Swiss transport policy is at least partly determined by other policy sectors. Due to the will of Switzerland to reach bilateral agreements with the EU in a number of sectors (e.g. road and air transport, research, agricultural final goods), Swiss freight transport policy has become an important element of the wider overall Swiss policy towards the EU. Due to the "parallelism" required by the EU, Swiss transport policy, although on its own consistent in transalpine transiting traffic, tends to become a bargaining chip in a complex process where the relationship between the EU and Switzerland is defined for the coming years.

Apart from these threats linked to Swiss foreign policy, there are more domestic elements as well:

- High **debts** of federal railways (exceeding ECU 9 bn in 1995), the actual shortness of government funds and the reluctance to increase the burden of public

debt for future generations (or to increase direct or indirect taxation) all endanger investment in rail infrastructure and subsidies for rail operating costs, unless revenues from the road (freight) sector can be secured.

- The **rail reform** (foreseen to be effective from 1998) will have effects which have been hardly analysed yet (increased efficiency vs. reduction of supply, especially in domestic freight transport). So far, possible effects on the environment have not been assessed at all.
- A shift from road to rail (e.g. in the context of the Alpine Initiative) depends crucially on similar investments and policies in neighbouring countries. The influence of Switzerland alone is clearly limited.

Despite these threats, there are **opportunities** which sometimes have the same factual basis as the threats:

- The shortage of public funds and the subsequent need for using revenues from road transport for rail infrastructure opens up new opportunities (i.e. policy windows) for a more coherent transport policy through taxation.
- The environmental problem squeeze in certain areas and its public perception remain strong and are likely to remain an important argument.
- Goverment and the administration still show a marked problem perception. There is a continuity of work throughout the years, especially in the Bureau for Transport Studies which can be expected to play an important role in shaping future transport policies.
- Political pressure from the EU forces Switzerland to seek solutions that are both contributing to incorporation and compatible with the logic of the Common Market. This may lead to innovative policies and instruments, e.g. using market-based instruments as a substitute for a stepwise abolition of the 28 tonne weight limit.

3.4.4.2 Recommendations

In light of the threats and opportunities some **core recommendations** can be derived. These recommendations to decision makers are intended to be long-term, reaching beyond today's political debate.

Setting **dynamic targets** and actively launching a structural change from road to rail could be recommended. Long-term strategic environmental targets (air quality, noise, energy consumption) should be communicated more openly and offensively.

Environmental implications of transport policies should be made visible and discussed against attempts towards a concept of sustainable transport. Despite a traditionally green image of rail, rail's position in the marketplace and its environmental performance should be made clear. This includes the effects of deregulation in the rail sector on the environment.

The recent shortage of public funds has shown that a **new overall financing concept** for road and rail (and possibly air) should be developed in the near future, involving the major stakeholders. The political compromise which is presently (March 1996) being sought to secure funds for large infrastructure projects (transalpine rail links, Rail 2000 etc.) should be used as a basis for this concept. Mode-specific earmarking should be limited, as it tends to lead to automatisms and to excess supply of infrastructure and to very high costs for system maintenance in the long run.

In order to react timely to new developments, a flexible **monitoring system** with key indicators should be established. This scheme has to include major aspects of the environmental dimension. A coherent planning procedure across all modes would be desirable. This procedure would have to address links to spatial planning and to financing.

No significant move in this direction is likely unless a **strategic administrative body** at high (i.e. ministerial) level is installed.This body's core task would be to sort out the complexities arising from the different underlying political aims and to mould them into a coherent long term transport policy which takes the environment and financing aspects duly into account.

The EIA process for the new railway links has revealed that procedures should be strenghtened, e.g. by a **strategic environmental impact assessment (SEIA)**, which could be very beneficial and which should be introduced, based on the experiences made in other countries (e.g. Denmark). This new instrument would have to be linked to the policy of sustainability, and it needs a formal status and an interlinkage to the monitoring instruments. SEIA could include the whole of transport policy and even new laws outside the transport sector. This would reinforce the position of the Federal Office of Environment, Forests and Landscape (FOEFL).

Despite the status outside of the EU, Switzerland should more actively coordinate its transport policy and seek **international alliances**. Towards EU-level, coordinated internalisation strategies and taxation schemes are necessary. On bilateral level (especially with neighbouring alpine countries; in particular Austria and

France), coordinated policies for the distribution of international transport flows (e.g. transit traffic) have to be strengthened.

In general, it can be recommended to follow the initiated incorporation paths (e.g. distance and weight dependent HGV charge, alpine steering charge) and to put **maximum emphasis on their implementation**. Both instruments are in favour of incorporation. Also, emission standards should be further tightened.

Possible **productivity gains** in the **railway sector** should be reaped; railways should accept that they have to play a new role in a liberated and complex transport market.

The path of increasingly tight emission standards should be adhered to strictly (air pollutants, noise, and also fuel consumption, in particular for passenger transport).

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3.5 Italy *(Filippo Strati)*[55]

3.5.1 The Dynamics and the Profile of Incorporation

3.5.1.1 The dynamics of incorporation

The major problem in the Italian transport system is its mono-modality, based on road transport. This problem effects the interrelationship between Italy, the bordering countries (Austria and Switzerland) and other the countries (i.e. Germany), which are affected by the influence exerted on their own transport systems by the Italian system.

The Italian transport system is actually in risk of collapse because of the physical impossibility of continuing to fill it up and build more and more motorways and roads which form its basis. This global vulnerability began to be apparent in the late 1980's in urban areas and along the main north-south routes. In fact the market share (tkm) held by road transport was 74.5% in 1985 (15.7% coastal shipping and 9.8% rail) and reached 76.3% in 1992 (14.4% coastal shipping and 9.3 rail). There is a limit to this model of transport growth which can be understood by comparing these data to those of 1970 when road share was 56.3% (25.5% coastal shipping and 18.2% road). This comparison shows that: (i) after a growth of 18.3 percent between 1970-1985, the road share began to stabilise, gaining only 1.8 points between 1985-1992, nearly all at the expense of coastal shipping; (ii) after 1985 a saturation point was reached in freight transport, road transport having reached its maximum physical potential in relation to railways and coastal shipping; (iii) thus, a theoretical sharp growth in the freight road market share would only be possible if large parts of the other modes physically disappeared.

To fully understand the current situation, one has to keep in mind the fact that a single transport policy has prevailed for the last 40 years. This has been characterised by:

- motorisation as the leading means of economic growth through the inter-linked cycle of production of vehicles, roads, tyres, petrol, concrete and iron, involving important sectors such as the petrochemical, cement-building, metal and mechanical industries;

[55] The Italian case study was co-ordinated by Filippo Strati with the collaboration of Donata Bianchi, Simonetta Cerilli, Mario Ferroni, Marta Franci, Margaret Jay, Sauro Partini.

- relegation of coastal shipping to a marginal role focusing on unavoidable services for islands, low value goods and bulk transport by obsolete vessels; although its market share is higher than railways;
- obsolescence of railways; which were assigned mainly to the role of a public utility service managed without market and entrepreneurial criteria; freight transport by rail became marginal.

As an effect of the motorisation policy, the growth sectors were those characterised by high consumption of natural resources and energy, while the declining ones were those with a more potentially environmentally friendly capacity. This can be illustrated by the following trends. 1960 can be considered as the real beginning of the motorisation era. In fact from 1960 to 1970 the motorway network grew exceedingly fast (+234%). From 1970-1992 the road network (motorways plus the state and provincial roads) grew by 20%, reaching 164052 km in 1992, 6289 km of which are motorways. This growth was concentrated in the decade 1970-1980 (+13%), when the rate of growth of the motorway network was +51% and the other main roads by 11%. On the contrary, in the period between 1970-1992 the state railway network showed some qualitative improvement but its extent remained more or less the same: showing only a growth of 0.24% in these twenty years (16112 km in 1992). The growth of road freight transport and the decline of railways stimulated divergent trends in transport fleets: i.e. between 1980-1991, while the railways freight rolling stock decreased (-12%), the number of road freight vehicles rose (+97%). In the period 1970-1992 energy consumption in the transport sector grew by 124%, while that of industry grew by 3% with an increase in other sectors of 52%. The quota of the transport sector, as a percentage of the total amount of energy consumption, passed from 21% to 33%, while that of industry decreased from 46% to 32% and that of the other sectors increased from 33% to 35%.

For many years environmental issues were not taken into consideration, which led to the creation of dangerous situations in many industrial sectors and local areas. Emergency actions and crisis responses were the predominant means of coping with such problems.

Historically the legislative culture concerning the environment (and therefore the legal framework) was based on the protection of cultural heritage, public health and town planning. When environmental damage and risk increased, interventions of a repressive and curative nature were generally adopted rather than preventative ones. This approach represented the logic of risk containment and did not

address causes, reflecting a fatalistic view in which it was easier to deny than to modify and improve the situation.

By the end of the ‘80s, the reactions of citizens concerned by the negative impact of freight road transport along with the political pressure of environmentalist groups and associations had created a climate of greater sensitivity to these issues.

Environmental awareness is now growing, though characterised by self-protective behaviour, and oriented strongly towards pragmatism rather than idealism. The participation that does exists is limited and tends to seek concrete objectives and immediate results. Responsibility for major problems is delegated, but without there being much faith in those institutions and their representatives in whom this responsibility is placed.

These tendencies flourish in the absence of an environmental education firmly rooted in the family and the school; and, more generally, in the absence of a broad ecological culture. This picture is still a long way from that which would be necessary to demonstrate a real commitment to sustainable development.

For years, powerful economic interest groups were on the polluter side. Nowadays, different lobbies claim to support capacity oriented transport policies with some elements of structural change. Those who promote motorisation also claim this as their aim while, at the same time asking for more and more undifferentiated infrastructural growth. Infrastructure projects are demanded in order to stimulate the economy and employment, though only structural change could reduce the current high level of logistic and transport costs both in the production and distribution (trade) sectors. This broad central nucleus is situated between and influenced by two extremes: the typical blockers (very small, marginal and fragmented haulage businesses); and environmental promoters.

Only during the last ten years have environmental groups and green parties acquired a higher profile in the political arena. Although the proportional system gave the green electorate a larger representation in terms of percentage of votes, the recently introduced majority system (1993) seems to have given them more influence and a more important role in the decision making process leading to the formation of coalitions and political alliances.

3.5.1.2 The decision making cycles: shortcomings in organisations and procedures

Many ministries and bodies operate in the fields of the environment and transport without an overall vision of problems and integrated plans. Efficiency is impeded by an institutional organisation which lacks coherence because of confusion, division, fragmentation and duplication of responsibility and functions. Some important changes were recently introduced, namely:

- in 1986 the Ministry of the Environment was created as a positive response to social pressure in favour of environmental protection;
- CIPET, an interministerial committee (created in 1991) which had the brief of co-ordinating the directing transport planning with the participation of the Minister of the Environment, was dissolved in 1993;
- in 1993 the Ministries of Merchant Shipping and Transport were unified in a single ministry, whilst the function of the protection and defence of the marine environment was transferred from the Ministry of Merchant Shipping to that of the Environment;
- in 1994 a national agency for the environment (ANPA) was created and, together with regional agencies, it should provide a useful stimulus for the clarification of legislation and the roles of various institutions.

These changes contain some contradictory features. CIPET was conceived too late and was abandoned too soon. It could have represented a point of unification for policies and transport investment. The involvement of the Ministry of the Environment could have facilitated the process of incorporation, but the attempt failed.

The merging of the two ministries (Merchant Shipping and Transport) took place only on paper and even now there are no regulations for real unification and the two administrations continue to work separately.

ANPA has had a difficult life from its inception (1994); the co-ordination and control which it should have had at national level has more or less remained theoretical. Although it began with qualified staff there were not enough personnel and they had no directives or means of operating. Thus it has not been able to even start working and is still the object of internal and external conflict.

Within this scenario, the principal participants operate without institutional reference points. There is neither an environmental culture in all institutions creating an effective co-ordination of policies, nor has the Ministry of the Environment been

given an institutional role to act as a catalyst in co-ordination, promotion, stimulation and guidance in other policy fields. The plurality of levels of decision-making and operation is an indicator of instability and fragmentation rather than an adaptation to complicated situations and problems. In fact:

- there is a permanent conflict between centralisation and de-centralisation; between fragmentation and co-ordination;
- co-ordination and participation is lacking between sectorial bodies and often within them; there are no organic links between the ministries and information is lacking in and between the agencies that deal with environmental and transport matters;
- bureaucracy increases as a result and a system based on response to emergencies tends to react in an authoritarian manner rather than with planning and programming; moreover, whenever new instruments or organisations are introduced, there is a tendency towards centralisation and red tape;
- expertise in transport and the environment exists but it is basically confined to sectorial official bodies while stable groups of experts on the environment have not been created yet within and between the ministries; thus integration of knowledge is very difficult to achieve;
- there are few examples of joint projects, working groups and joint decisions on transport and the environment;
- there is often overlap of responsibility between policy management, corporate (or project) management and control;
- these processes are usually closed to public participation.

Moreover, powers and responsibilities between the State, the Regions and local authorities are unbalanced and conflict often arises resulting in different levels of quality throughout the national territory, both in respect to the content of interventions and the time needed to perform them. In fact it is worth noting that, compared with the national legal framework, some regional experiences appear to be more sensitive and responsive to environmental issues.

Therefore an holistic organisational system and a networking strategy are far from being attained. This situation does not help the incorporation of the environmental dimension into freight transport and when more advanced principles, orientations and courses of action are elaborated or suggested, they remain at this point.

3.5.1.3 Principal choices: contradictions between aims and investments

Strategic orientations concerning transport policies and environmental issues are included in the following laws, programmes and plans:

- the General Transport Plan, elaborated twice (in 1986 and 1990);
- the 3-year Environment Programmes for 1989-1991 and for 1994-1996;
- the National Plan of Sustainable Development (1993) to comply with Agenda XXI;
- the National Programme for the limitations of Carbon Dioxide Emissions (1994);
- the ratification of the United Nations Convention on Climatic Changes (1994)

Their main aims are: to remove critical points and bottle necks in transport networks; to speed up transport; to improve freight logistics; to develop intermodality and combined transport; to rebalance the current modal split; to keep traffic moving, to limit traffic pollution, above all in urban areas; to support technological innovation both in vehicles and in traffic management as well as infrastructures.

In reality investments do not match the above mentioned strategic aims. Historically road transport has had the lions share both for infrastructure and freight vehicles with a high level of private self financing. Little was left for railways and even less for coastal shipping.

Moreover concerns about a worsening economic crisis have motivated the government to bring forward traditional infrastructure work in order to face growing unemployment (in 1994, 11.3% as a national average; 19.2% in the South, 9.6% in the Centre and 6.8% in the North) and have helped to perceive incorporation as a luxury policy.

Within this inconsistent scenario, the General Transport Plan (PGT) represented the most significant attempt to give global strategic priorities to co-ordinating investments in all the transport modalities; but sectorial investments have prevailed against a co-ordinated infrastructures policy.

However, a growing area of development can be observed in combined transport through land-based road-rail systems, with the growth in container traffic.

Recent financial laws have cut investments in all transport sectors, though more in motorways than in high speed rail links. In fact recently railways, moving towards privatisation, seem to be exercising a more active investment planning policy to modernise their network, giving top priority to high speed links.

3.5.1.4 Actions: the inadequacies of current means of incorporation

Firstly it should be underlined that the current Italian norms on EIA are very seldom used to block a project; generally they help to introduce modifications to make projects (even if environmental dangerous) less devastating. Some basic contradictory features can be underlined:

- the scoping phase (the preliminary analysis of the whole problems area related to the infrastructure) is missing;
- the phase when people from the local area can join in preliminary discussions with the local authorities and experts who assess the environmental impact of the project is weak;
- there is no integrated framework in which decisions on environmental compatibility are linked to other authorisations (e.g. on landscape restraints);
- operations for which the environmental implications have already been assessed and the addition of third lanes to existing two-lane motorways are excluded from the above procedures;
- often there is a lack of specialised information about the project, especially regarding the environment;
- consultation is often a formality and does not really embrace local opinion; red tape and procedural inefficiency do not allow for full consultation;
- dialogue between the interested parties has, as yet, no precise place in the procedural process; time for the intervention of the public is limited and there are virtually no means of organising information for these negotiations.

Secondly, it should be noted that in Italy there is no tradition of economic tools playing a part in environmental policy and even less being used to internalise the external effects of freight transport.

The use of fiscal measures in favour of the environment have been few and sporadic up till now. The modifications which have been introduced are not part of a coherent design which "recognises" environmental policy in the same way as other sectors.

It is only since the end of the 1980's that fiscal policy has been discussed in academic circles as a tool which could be used in relation to the environment, and only as a result of European initiatives in the application of "polluter pays" and "user pays" concepts.

In any case, the need for fiscal balance and control of inflation prevail along with the necessity to conform to recent European fiscal policies.

The imposition of surtax on diesel, methane and LPG vehicles was justified as an economic or fiscal measure. More recent measures freezing tax levels relative to LPG and diesel had the objective of easing fiscal pressure though in the case of LPG, it was also intended to orient demand towards less environmentally damaging fuels.

Moreover, there is no organic link between taxation and subsidies for combined traffic. In fact, while some subsidy measures deriving from national taxation policies are contradictory (i.e. the diesel tax is countered by diesel bonuses for freight transport), the few existing subsidies for combined transport have not given the hoped for results.

Regarding vehicle tax, after the 1983 reform which transformed the tax from one of use (related to the maintenance of the road surface) to one of ownership, not only the fiscal logic changed but also the arguments relating to the use of the revenue.

In fact two different criteria predominated: the contribution to the state budget, and the containment of fiscal evasion. In 1993, this tendency was confirmed as the property tax became a regional payment, in line with the most recent instances of financial autonomy on the part of sub-national government.

Following the recent reforms in the system of concessions for motorway tolls, the need for investment in infrastructure has become an important consideration in the valuation of tariffs, alongside the usual considerations of maintaining the budget balance of the organisations concerned. Also, there is evidence of a gradual response to the need to introduce demand management in order to encourage the containment of levels of congestion on the motorway and main road networks.

Additional evidence of increased environmental sensitivity is the setting of emission standard limits, but it is only very recently that attempts have been made in this direction: intentions prevail over facts, entrusting technical progress to voluntary innovation in vehicle production and use.

Finally, environmental issues are not fully taken into consideration in liberalisation, deregulation and privatisation policies. Major importance is given to corporate economic needs and complying with EU directives. However, reforms concerning railways and shipping are deemed to indirectly help a new environmental dimension since they are more environmental friendly modes of transport than road.

3.5.1.5 The profile of incorporation

All the above considerations lead to the conclusion that

- the current prevalent transport policy can be defined as a *combination of business as usual and capacity oriented strategies* with some willingness to reduce the role of road in respect to other transport modes;
- the type and depth of incorporation of the environmental dimension into freight transport can be defined as a *low defensive incorporation* whilst an additional *indirect incorporation* comes mainly from financial restraints in the state budget.

Therefore an ecological and holistic vision of freight transport is yet very far from being attained. In fact *the current profile of incorporation is influenced by*:

- the existence of serious environmental problems which however do not constitute a sufficient push factor;
- a high pressure of economic, financial and unemployment problems which are due to policies adopted so far by governments and impede strategic structural changes;
- conventional end-of-pipe sectorial measures (i.e. technical improvements and emission standards) and instruments (i.e. EIA) which prevail as attempts to cope with emergency situations, whereas most rigorous environmental policies are necessary with precise objectives and a more active approach;
- a transport system which is basically road orientated (mono-modal) with a weak economic capacity and is unable to contribute to strategic changes in policy and actions;
- the majority political system which could allow environmentally sensitive parties (especially green parties) to play a stronger role in coalitions and political alliances than in the purely proportional system;
- the weaker influence of environmentalists compared to that of opposing interest groups;
- a still low environmental culture and sensibility on the part of governments and administrations;
- decision making processes which are strongly influenced by the low quality of the administration, which is largely closed to environmental experts, scientists, etc.

3.5.2 Examples

To treat Italy as if it could be represented by an average would mean reasoning without global logic. Only stereotyped models could be presented which do not allow for the differences and the diverse potentials expressed by various local dimensions, obscuring the capacity to see the dynamics in action. Two examples may help to understand tendencies which contribute to and which could slowly modify the above state of incorporation.

3.5.2.1 Hard infrastructures

The first example shows how processes initiated by national decisions (top-down approach) can achieve different levels of re-active initiatives. Generally speaking, when national choices become local issues, they constitute problems to be solved under the pressure exerted by communities, groups and authorities concerned. If their awareness of environmental problems increases along with improved knowledge and instruments of evaluation, defensive incorporation becomes stronger.

This case concerns a motorway and a high speed railway between Florence and Bologna, showing that the process which up to now characterised *the second infrastructure* (railway) *can be judged as showing a medium level defensive incorporation, certainly higher than that of the motorway*.

Both the infrastructures were motivated by capacity oriented transport policies.

According to the Società Autostrade (Motorway Company), the importance of and the priority given to the project for a new motorway was motivated by a notable growth in the road traffic flow; therefore, it became necessary to modify a continuously congested infrastructure of such strategic importance in the communication network between the North and the South of Italy and in the European network.

Similarly, the principle reason offered by the FS SpA (national railways company) to support the construction of *a high speed railway* was the need to modernise the national railway network, to improve integration with the European network, and to expand the already saturated capacity, moving long distance passenger traffic onto the new line and conceding the traditional lines to regional and local passenger traffic and freight.

Long and complex processes accompanied both the infrastructures: it took ten years to reach an agreement (1993) after the appearance of the first signs that a new motorway was favoured (1983); it took five years to reach an agreement (1995) after the elaboration of the national plan for high speed railways (1990).

Those agreements introduced modifications to the initial projects: instead of a new trans-apennine motorway, a variation of the existent motorway was agreed upon with a spur-road running parallel (*alternative passage*); instead of a new high speed line, a doubling of the present line and the adaptation of half of it for high speeds, was accepted, as well as the development of regional rail services and rail freight transport.

These changes were determined by the confluence of: the opposition of environmental movements and parties; the reservations and strong resistance of local authorities; the participation of the local populations; the actions of the Region and the Ministry of the Environment.

Evaluations, negotiations and agreements occurred in different places, at different times, in different ways and with separated procedures, despite the fact that the two infrastructures would produce cumulative effects on the transport system of the area (the so-called central plurimodal corridor).

The effects of the two infrastructures on transport generally were not evaluated contextually nor was a contextual analysis made of the role to be given in the immediate future to the three principle transport modes: road, rail and coastal shipping. This last mode was consistently neglected in the discussions on the two projects, demonstrating the lack of an overall vision of the transport system.

There were other substantial limits to be added to those mentioned so far: there was no strategic evaluation of the environmental aspects of land-use in the relevant area, nor of the transport system or the socio-economic areas which would be affected at regional and national level; there was no environmental evaluation of the combined effects of the two projects, even though they were assessed individually.

The case of the new motorway helped to overcome the lack of legislative and organisational arrangements in environmental matters. Discussions about the project took place between 1983-1990, the years in which the Ministry of the Environment was instituted and the first norms for the EIA were introduced (1986). In that period there were uncertainties about the methodology and the procedures to apply and the roles of the various institutional actors were very unclear. Everything was approximate, in fact it was for that very reason that the convention

which drew up the project agreements, provided for the constitution of a committee which had the responsibility for the supervision of environmental protection by means of a monitoring system.

Some of what was learned from the motorway experience served as a lesson for the high speed railway project. In this case there was a legislative, organisational, and procedural frame of reference available. This project was submitted to the EIA procedure more than once in order to evaluate the modifications which were introduced throughout the negotiations. Nevertheless even in this case a committee of guarantee was set up with a monitoring system to minimise the environmental impact.

EIA had a merely justificatory role in both the projects, only attempting to contain the most potentially negative effects on the environment, thus demonstrating the limited nature of its procedures. In fact the real necessity for these infrastructures was never seriously put to the question.

As the assurances grew as to the measures to be taken to minimise the environmental impact (although carried out separately), more emphasis was given to the economic and employment advantages related to the construction of the two national infrastructures and the possibility of developing the regional transport capacity.

Factors that influenced decisions regarding the infrastructures were:

- transport capacity; in the case of the motorway, considerable importance was given to the positive effects of eliminating bottle necks in relation to the principal communication network; in the case of the high speed railway, the emphasis was put on how much could be obtained for the much needed improvements to the regional and local railway system;
- the perception of the problem on the part of the government and administration at regional, provincial and local level; these perceptions gave rise to proposals, challenges, opposition, mediation and then finally the agreements which were reached by the decision makers;
- the awareness of environmental pressure and the current weak environmental policies; this awareness grew over time and affected the social, institutional and economic interests in the area; they were urged on by events that rendered them protagonists in a social, institutional and cultural movement which spanned more than ten years;

- economic pressures which played an interesting if contradictory role; unemployment, the possibility of economic growth, the risk of the blockage of finance for the motorway etc. are all factors that pushed for the formulation of the definitive agreements.

The procedures towards agreement in the two cases were not linear, but both characterised by negotiations and mediation (both formal and informal) - with varying degrees of intensity. Dynamic alliances and coalitions were formed on the basis of a consensus oriented approach. For example, as the opposition grew and alliances enlarged the pro-infrastructure groups adjusted their positions to show more respect. New more conciliatory language was employed and an atmosphere of conflict gradually changed to one of compromise. As some agreements were reached, alliances broke up and reformed and different dynamics developed. For example, despite these agreements the opposition has not given up. Some still hope for a radical re-think and so try to create obstacles, while others try to influence the phase of agreement implementation. The maximum foreseeable outcome of this confrontation process would be movement towards high defensive incorporation.

3.5.2.2 Regional transport and environmental programming

The second example relates to regional programming. It shows that the possibilities for incorporation are greater when pro-active policies exist which attempt to integrate transport, environment and land-use within an overall coherent programming strategy.

To help to understand this tendency, a regional case study was chosen which is related to both the general national scenario and the previous example. This case study regards one of the two Regions involved in the hard infrastructure projects: Tuscany (the other being Emilia Romagna).

The national *General Transport Plan* (PGT) included the above mentioned infrastructures in its priorities. The first *Regional Integrated Transport Plan* (PRIT) of Tuscany accepted those priorities in an attempt to combine national needs with those of a regional character. Neither the PGT nor the PRIT were concerned with the need to impose a strong principle of incorporation. In the PRIT, even though EIA was considered an important tool, attention was largely focused on improving the local system of transport, integrating its modes within the industrial fabric of small and medium sized businesses which forms the regional economic structure.

The PRIT was formally approved in 1989, but discussions on it began in 1984, when the first regional law on land-use planning procedures was passed. The PRIT represented the result of a long process which started in 1976 when Regions claimed a stronger role in national transport policies. This request was underlined in 1978 during the first National Conference on Transport from which the necessity for a General Transport Plan (PGT) emerged. As already mentioned, the first PGT was approved in 1986 and updated in 1990.

Nowadays there is no sign of an updating of the PGT, whilst in Tuscany the preparation of a new PRIT has begun within a context which offers a better chance of translating environmental issues into more coherent policies than in previous periods. In fact the Region has created tools which could be regarded as *potentially orientated to active incorporation, even though still of low level, being at an early stage of implementation.*

Since its institution, the Region has tried to integrate the various sectors of economic and social activity into a coherent process of programming with investment priorities, but there have been no points of reference at central level to help in this. The bottom-up programming has not found a corresponding top-down process. The presuppositions for an efficacious combination of the two processes are missing. In fact while one is pushing to establish an organic relationship between sectors the other maintains the lack of it. Moreover the mediation between various intervention policies are affected by the only partial autonomy of the Region in vital economic sectors.

Tuscany is one of the so-called normal Regions (15) in which institutionalisation took place in 1970, very much later than foreseen by the Constitution (1948); others (5) were formed earlier, having so-called autonomous status.

During the 1970's, a cluster of responsibilities were transferred from the State to the normal Regions following long procedural processes. This was really only completed in 1977 and concerned a few transport sectors (especially passenger transport) and some other fields, i.e. agriculture, craftsmanship, trade, tourism, land-use planning, public works, protection of natural resources, professional training, health services, etc.

The present institutional system can be envisaged as a dual parallel system. The elected bodies of Regions, Provinces and local authorities (and their own administrative structures), operate alongside numerous state administrations which have a variety of levels (national, regional, provincial, sub-provincial, inter-municipal and municipal) depending on the body being considered. The State operates

to command and control the activities of the regional and local authorities, which do not have real financial autonomy (a large part of the regions' finance still comes as State transfers which often have conditions attached, while direct taxes are very limited in number).

The Region of Tuscany is one of the main promoters of proposals geared towards a national reform based on regionalism and including fiscal federalism. In fact the Region of Tuscany has always expressed a willingness and, to some extent, the capacity to programme in an unitary way. For instance, by 1974 the Region had passed the regional programme for economic growth and was ready to approve its first regional development plan (PRS) in 1979, two years after the completion of the above mentioned transference of responsibilities from the State to the Regions.

Positive experience was gained by the Region of Tuscany during the 1980's through forming programme agreements with local authorities and private actors.

In the early 1990's further important changes were introduced in the rationale of programming due to the increasing awareness of environmental issues:

- the first Regional Plan for the Environment (PRA) which was approved in 1991;
- a new law (in 1992) which defines new methods to elaborate the Regional Development Plans (PRS) fostering the participation of institutional bodies and social groups;
- the PRS 1992-1994 which applied the principle of subsidiarity;
- the second PRA which was approved in 1994 as well as the PRS 1995-1997 which is explicitly federalist.

1995 represented a very important year since laws were approved with the attempts:

- to foster the concept of sustainable development for the regulation of the areas of responsibility of the Region;
- to pursue the *incorporation* of the environmental dimension recognising its transversal nature within sectorial policies, programmes and projects, initiated either privately, or by public bodies, and for their monitoring, within an overall institutional framework based on the principle of *subsidiarity*.

Therefore, with respect to the national scenario, the Region of Tuscany nowadays presents a more coherent new legal and organisational framework based on:

- EIA regional procedures which had more strategic value than those currently operating at national level; the range of application (projects) is much wider since the environment is defined as a complex system of inter-related resources both natural and human; environmental impact is considered as direct and indirect effects, positive and negative, short or long term, permanent or temporary, single or cumulative; these effects regard humans, vegetation, fauna, land, air, water, climate, natural resources, built up areas, historical, architectural, artistic and archaeological inheritances, the countryside and the socio-economic environment; a clear commitment is stated to guaranteeing the transparency of decisions, information for and participation of citizens and the simplification of procedures for the approval of infrastructure proposals;

- a regional agency for the environment (ARPAT) which was created to provide an adequate environmental monitoring system, education and training, technical-scientific support, innovation, information and participation within the recomposition under the Provinces of all the functions concerning the environment;

- principles and means which were introduced by law in order to consider environmental factors as being an integral part of the spatial planning procedures; the aim is to direct public and private initiatives towards sustainable development; this law recognises the necessity of evaluating the environmental sustainability of actions involving changes in land use, on the basis of an overall assessment of their effects on essential natural resources;

- an overall institutional and legal framework which empowers local authorities according to the principles of subsidiarity.

Some basic factors have influenced the creation of this range of opportunities:

- problem perception on the part of the government and administration; the spirit and tradition of democracy are well established in the regional and local administrations of Tuscany; the political nature of its government (an uninterrupted succession of coalitions between the left and progressives) has created a greater sensitivity to the problems of minorities and to economic and social imbalance; although it has been governed for many years by industrial principles (as they were accepted as contributing to economic growth and progressive development), sensitivity to the problems of the population has brought about the incorporation of new principles into the system of local and regional government, thus it has questioned its own position and introduced a system of change; despite resistance and limitations the system of government and the administration have shown themselves to be open-minded and capable of

assuming the risks of governing in a situation of uncertainty covering the passage from an economy in precocious maturity to a post-industrial economy and to a social system which points the way to the post-modern era;

- more direct contact between the political system and the population; between the electors and the elected, stemming from the structure of the regional government and the local authorities;
- the active presence of environmental groups; they have gradually increased awareness of these issues in the general population and also in the regional and local government systems; it should also be remembered that with the new voting system (1995) members of the Green party take part in coalition governments at regional level (1) as well as in 3 of the 10 Provinces and in 20 of the 287 local authorities;
- an improved situation as regards institutional factors; greater contact has always been sought with the people as well as improvement in the efficiency of the regional and local administrations; together they represent one of the few Italian examples of good administration.

In conclusion, the combination of the principles of subsidiarity and incorporation of the environmental dimension within regional programming presents a forceful picture in which local actors do not wait for external solutions but elaborate and implement their own policies following a bottom-up approach.

Obviously limitations still exist. The organisational system still needs to be improved, to eliminate duplication, as do the inter-relations between public and private agencies operating in environmental and transport matters. The same may be said for the group of procedures that have been recently changed and their relation to those traditionally used.

3.5.3 Opportunities and barriers

The regional case can be likened to a student who has studied using a variety of methods and strategies. His concepts and knowledge are good but somewhat confused. He must concentrate on improving his organisation, rules and procedures in order to eliminate the contradictions and to develop interdisciplinary methods.

The national scenario can be likened to a student with little stimulus to improve himself, rather apathetic, uninvolved and not very sensitive. Therefore, he needs

to be formed and educated and his system of rules, behaviours and beliefs has to be radically reformed.

The above images represent two sides of the same coin highlighting different degrees of Strengths, Weaknesses, Opportunities and Threats (SWOT).

Only a small area of *strengths* arises at national level (i.e. objectives of intermodality, the institution of the Ministry of the Environment) while at regional level some experiences can be considered as providing a nucleus of conditions which may help to improve incorporation policies.

These conditions could form the basis of a new phase, especially those concerning the legal framework and the organisational and procedural arrangements for incorporation, based on a positive perception of the problem of the environment by regional and local governments as well as on the open approach of these bodies and the administrations to the concerns of the local populations and minority groups. However the possibility of putting into practice policies favourable to incorporation is seriously jeopardised by a combination of negative national elements (i.e. fragmentation in organisation and procedure, centralisation, the pressure of financial problems and unemployment, interest groups acting against incorporation, low sensivity in the government and administrations) and the ever present risk of regression at regional level, i.e. through an overwhelming level of bureaucracy, the loss of perception of the important role of local systems and experiences, a return to regional centralism, sectorial negotiations along and a weakening of environmental groups.

These *threats* can reduce the above mentioned *strengths*, since the fertile ground of multiple *weaknesses* exists both at national and regional level:

- at national level, the duplication and confusion within the legal framework, the low profile of the Ministries of Transport and the Environment, the limits in EIA procedures, the bureaucratic culture and decision making styles, the inadequate environmental policies (including taxation) in respect to the pressure of environmental problems, the strongly unbalanced modal split, the low level of intermodality, the low sensitivity to environmental problems shown by the government and the administration, as they are pressured by economic and financial problems; all this within a system which has a limited capacity to change policies;
- at regional level, poor co-ordination between policies, departments, functions, roles and norms, which often do not help to foster positive results from agree-

ments between national and regional authorities (as was clear from the case of the hard infrastructures previously examined).

The way out of this nucleus of *weaknesses* lies in grasping all the *opportunities* which are embedded in the complexity of present day societies. They could emerge if a whole system of traditional concepts changes and new ones come into play, such as sustainable development, natural capital, human capital, etc. These new concepts may help to stimulate communities and individuals to deal with their present and future social, economic and cultural environment. The challenge of sustainable development is that human capital manages natural capital in a correct way. This capacity depends on a combination of:

- an environmental culture which has a transversal nature, cutting across all disciplines, adding new know-hows, turning the specialist into the generalist and making traditional professions and skills green (i.e. eco-managers, eco-auditor, eco-entrepreneur, etc.);
- a culture of change in which human activities are mixed and integrated continuously evolving towards new ways of life, attitudes and behaviours, organisations and institutions;
- the confluence of top-down and bottom-up courses of action and policies, through which global and local visions are stimulated and reinforced in a coherent way.

Incorporation is an expression of this change; it is an expression of the current dynamics which concern complex institutional, economic and social systems. Therefore the following recommendations, which refer to the Italian scenario, are formulated on a basic principle: policies and instruments for incorporation cannot be transferred from one social context to another in a mechanistic way; they should be *networked*, harmonised and improved by disseminating and promoting good practice and the full exchange of experience.

3.5.4 Recommendations

3.5.4.1 Changing perceptions and policies

Strategic thinking

Only a long-term strategy can correct mistakes made over a considerable period of time by Italian freight transport policies. This necessitates a clear image of what the future should be (vision); it should provide clarity to both the principle of

reconciliation between transport and the environment and the reason for it (purpose or mission); it should stimulate the formation of objectives and actions. Therefore aims of a strategic nature must be set, i.e.: the recommended percentages for the modal split in the next few years for each mode of transport in order to correct the current imbalance; the percentage reduction in demand to be obtained with coherent land use policies, new communications technology (telematics) and an economic rebalancing between regional areas based on fostering endogenous resources to meet their own demand of goods and services (particularly in the South); the percentage reduction in environmental pollution; the level of internalisation of external costs.

Transport policy and investment priorities

The above aims could be achieved if policy priorities become: the Renaissance of coastal shipping and railways; the creation of integrated regional transport systems and transversal inter-regional networks; the development of soft advanced high technology instead of hard infrastructure, in order to improve and reshape logistics in favour of combined transport.

Opportunities to pursue these policies are presented by: promoting the updating of the national *General Transport Plan* (PGT); developing relationships among Regions which are reformulating their *Regional Integrated Transport Plans* (PRIT); developing interregional agreements between various actors (local, regional, national) with the help of the European Union (i.e. the recent Operative Multiregional Transport Programme 1994-1999, which concerns the South of Italy and represents a real change in priorities in favour of railways).

Improving knowledge

To favour incorporation, each component of the above long-term strategy should be helped to become more environmentally correct: green logistics, green railways, green coastal shipping and so on. Therefore, environmental education, training and orientation should be fostered both generally and in specific sectors, such as in transport activities (i.e. professions related to green logistics will acquire a strategic role).

Recent agreements between the Ministers of the Environment and of Education concern: updating teachers; making materials and manuals available; introducing experimental courses, etc. This practice should be further developed and extended

to specific sectors, such as transport, promoting specific courses at secondary school and university level as well as for training and professional agencies. This means that those agreements should also include other Ministers such as Transport and Labour.

In the same way, agreements between the above mentioned ministers should be promoted to foster *local environmental employment initiatives* in which innovative ways of eco-renovation in transport logistics could be experimented by means of integrated approaches aimed at improving the quality of the physical and social fabric, both urban and extraurban, both peripheral and metropolitan, both industrial and rural. Opportunities to promote these initiatives may also be found in the EU programmes (i.e. URBAN, LEADER, REGIS, EMPLOYMENT, PMI, ADAPT, RETEX, KONVER, etc.) if local actors and partnerships are supported by adequate know-how.

Therefore a wide range of opportunities exists and could be more consistently developed by a *stronger influence from environmental interest groups*. To make this possible, they should increase the exchange of ideas, principles, theories and scientific methods (including freight transport policy). If the environmental networks grow, including different disciplines and scientific and cultural ambits, this multidisciplinary mix may render the environmental approach transversal, even within political parties and traditional interest groups, thereby influencing sectorial policies and courses of action with a holistic vision of sustainable development.

Strategic alliances

An incisive pro-active policy is necessary to recuperate at least a 10% of market share over the next ten years in favour of more environmentally friendly modes of freight transport, saving energy and land use consumption and helping incorporation as a multidimensional process.

To achieve this goal, alliances should be forged between coastal shipping and rail through business agreements introducing experimental regular lines aimed at a cumulative market share. The Regions should act as promoters and facilitator of these agreements, being involved as partners. Moreover Regions should be more open-minded in conceiving their relationships with other European countries and regions. Strategic alliances can be created between environmentally sensitive Regions and localities on key aims (i.e. rail and combined transport based on ports from Tuscany to Switzerland, Austria and Germany) and to network knowledge, policies and actions. Also collective agreements (between unions and businesses)

could play a very important role if they were to include environmental training, professionalism and methods of management within the harmonisation of wages, work time, conditions and rules between haulage and other transport sectors. This may be a way to reanimate and foster the process of unification of the various categories of transport workers which started at the end of the 1970's.

Therefore, different actors, in different phases and times, could work together in a pragmatic way, even though it may sometimes seem contradictory. These actions should be supported by long term policies based on strategic alliances promoted or reinforced by environmentally sensitive associations and parties, whose role must increase from the part of representation to that of decision making. To this aim, the current proposals for *a more advanced reform of the political system* could present an opportunity if environmental interests were to be represented and take part in alliances and coalitions.

Environmental alliances might be possible in taxation, if it is clearly finalised and the outcomes monitored. People and communities should be informed, motivated and enabled to verify and control the relationship between outcomes (their standards of living) and inputs (their money). In this ambit, the reform towards fiscal federalism proposed by the Regions and the local authorities represents an opportunity to be grasped by environmentalists.

Spatial planning should become the natural home of strategic alliances. Land use programming should be supported by a new approach so that environmental issues are introduced within an overall picture of interventions, strengthening recent regional experiences, such as that of Tuscany.

3.5.4.2 Improving the decision making processes

Co-ordination (and reorganisation)

Incorporation necessitates coherent strategies and co-ordination between actors, laws, organisational systems and procedures.

More influence should be given to the environmental experts in transport administration and vice versa so that environmentalists become more knowledgeable in transport matters and transport experts become more environmentally minded. For instance, the opportunities regarding the national and regional transport plans are places where new types of team-work could be developed.

Deregulation should be introduced in areas blocked by bureaucracy whilst re-regulation should provide clear terms of reference in chaotic markets. Therefore,

laws should be reduced to essentials with maximum transparency and flexibility, substituting red tape with stable but easy communication; they should allow decentralisation in order to strengthen local capacity, and participation. For example, in the new schemes concerning the institutional assets of the Tuscan Region, a core of opportunities can be found for a more coherent use of land use, transport and environment.

Other opportunities may be identified in the current initiatives for *an incisive reform of the public administration* in order to comply with decentralisation, co-ordination and to disseminate the practice of programme agreement between the State the Regions and local authorities, with guarantees for their implementation.

Also the current policies designed to *reduce the public deficit* might represent opportunities because, in lowering the pressure of financial problems, they stimulate efficacy and efficiency of the general and the sectorial administrations. If this reorganisational process is supported by the proposed strategic thinking, the capacity for policy change will increase in transport and environmental policies too.

Participation

Regional experiences, such as that of Tuscany, demonstrate the importance of a real change in decision making style from command-and-control to joint decisions, involving interdepartmental working teams, conferring authority onto lower levels and networking, strengthening participation of economic and social representatives, associations, communities and populations. Participation requires information, communication, reducing the pressure of formal rules and roles and an opening of the decision making process. This represents the only way to influence strategic decision making: from the initial phase to that of implementation and evaluation of the results.

Participation is a fundamental social skill which should be promoted, taught and learned throughout the educational and training systems (i.e. among the various elective bodies).

As an aid to incorporation, this social skill must be diffused at least in three fundamental areas: in the relations between the general public and the organisations in charge of managing transport and environmental policies; in the relations between the people who work within such organisations; between such organisations themselves.

Of course the participatory system should encourage environmental groups and experts to become directly involved in the various phases which relate to transport and the environment both in strategic and operative terms.

Subsidiarity

An overall strategy for incorporation requires the coming together of national and regional levels. It is possible only if the current scenario, in which the State and the Regions interact playing the principal roles, becomes a place of strongly motivated collaboration with a clear orientation of aims and objectives. Opportunities to aid this process can be identified in the current proposals in favour of *a substantial reform of the relations between the State, the Regions and the local authorities* according to the principle of subsidiarity for the development of regionalism and federalism.

As already shown, this strategy has been adopted by some regions (i.e. Tuscany, Lombardia, Emilia Romagna, Marche, etc.) combining de-centralisation and co-ordination, autonomy and responsibility. Same principles have been recently used in national legal frameworks. For example the 1996 Financial Law states that further administrative functions must be transferred to the Regions, the Provinces and the local authorities in the areas of professional training, tourism, agriculture, public housing, crafts, industry, commerce, sport, local transport.

This delegation of responsibilities in transport regards all the modes of local and regional interests. Some elements of fiscal federalism were also introduced by this law giving more fiscal instruments than before to the Regions and local authorities (i.e. transferring a part of the petrol tax to them, introducing a new tax on waste, etc).

European directives should foster the principle of subsidiarity in policies geared to the improvement and creation of instruments for incorporation in a coherent way: horizontally between different courses of action, policies and bodies involved; vertically between EU, State, Regions and local authorities; internally within specific fields of actions and bodies involved; externally between institutional and social environments.

3.5.4.3 Improving the chances for specific instruments

Infrastructures and SEIA

Incorporation must be included in transport and infrastructures policies at an early stage stimulating effective co-ordination between the competent ministries and their counterparts at regional and local levels. This positive co-ordination must be supported by mandatory and on-going negotiations, whoever the project or policy proposer is.

EIA and SEIA must operate in a synergetic way in order to: include both the proposed works and the transport, environmental and socio-economic systems concerned; analyse proposals and control results by means of monitoring systems; assure information and participation. To this end, if regional innovations were fully considered and networked, they may help decision makers to also improve national instruments and structures.

In this context, the proposal of submitting the *General Transport Plan* (PGT) to an assessment of its environmental impact should be reaffirmed (as was stated in the *National Plan of Sustainable Development - Agenda XXI* - and was suggested in the revision of PGT in 1990). The *Regional Integrated Transport Plans* (PRIT) should also be submitted to this overall assessment.

Internalisation of external effects

The Italian experiences concerning fiscal policies make it unavoidable that laws and governments, in order to act as facilitators of the internalisation of external effects in freight transport, should adopt the following easy-to-understand principles:

- taxation should be ear-marked within the creation of single funds (both at national and regional levels) to gather all financing and investments in transport according to clearly defined environmental objectives; programme agreements between the State (Ministers of Transport and Environment) and the Regions should co-ordinate the above funds;
- the management of the above funds should guarantee transparency and control upon the ways in which taxes are enforced and used;
- the introduction of environmental taxes should be simplified (along with the already existing business taxes) and should substitute other taxes (especially the non-wage labour costs);
- working regulations and collective agreements should be respected in the transport sectors (especially in road freight transport);

- environmentally damaging transport activities should be limited and regulated while environmentally more friendly choices should be rewarded (i.e. in fuel consumption).

Therefore, as well as sanctions there is a need for incentives to encourage the transfer of transport from the roads to railways, coastal shipping and intermodal forms of transport.

In fact the internalisation of external effects may appear as punitive measures with a detrimental effect on improving logistics performance. On the contrary, if accompanied by subsidies for information technologies, Research & Development in the new field of eco-total-quality, businesses could be supported in the transformation of their logistics. Moreover if the principle of responsibility *from cradle to grave* is adopted in a synergetic way, it will involve suppliers, producers and consumers from the inputs, to the transformation, the outputs and the utilisation of transport. This process of co-responsibility between producers and consumers (eco-prosumerisation) might be helped if the system of eco-labelling is extended to green logistics, by means of European regulations.

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3.6 United Kingdom *(Malcolm Fergusson)*

This Summary Report is a distillation of the UK case studies. It follows the structure and directions set out in the various framework papers for the overall study programme.

3.6.1 On the State of Incorporation in the UK

3.6.1.1 Legal Requirements for Incorporation

3.6.1.1.1 Primary Law

The United Kingdom does not have a written Constitution. There is thus no question of a requirement for formal incorporation of environmental concerns through `primary law', as defined in the framework paper for the study.

3.6.1.1.2 Secondary Law

The UK legislature generally avoids encoding broad principles such as the precautionary principle in law, and adopts a more pragmatic, piecemeal approach. This leads to a greater emphasis on *operational* principles in the UK, such as pursuit of the `best practicable means'. These imply a balancing of costs and benefits, but do not attempt to prejudge the discretion of officials in applying the legislation. For these reasons, it is generally more appropriate to consider the practical manifestations of *policy* than the formal requirements of law in the context of incorporation in the UK.

Agencies and Other Quasi-Autonomous Bodies

While the direct effects of UK law upon central government transport/environment policy are limited, it must be stressed that in recent years, a growing number of central government responsibilities and functions have been devolved to other bodies. These include a range of agencies with some involvement in the transport sector.

Of particular importance is the recently-created Highways Agency. This is a so-called `Next Steps' Agency, which has operational control of the trunk (ie national) roads system. Since the Agency was not created through an Act of Parliament, it does not have specific statutory duties towards the environment, beyond those

which would generally apply. However, each Agency has a range of tasks and performance targets which are published in a framework document, and reviewed annually.

The overall aim of the Agency, as set out in the Framework Document (Highways Agency, 1994) is

> ... to secure the delivery of an efficient, reliable, safe and environmentally acceptable trunk road network.

To reflect this, the fourth of its five objectives is

> to give full weight to both the environmental and economic costs and benefits associated with the use, construction and maintenance of trunk roads and to strike a balance accordingly

Turner (1994) notes that the key environmental target for the Agency's first year is to `publish as part of the Agency's annual report a report on environmental matters'. While this is slightly amplified in the 1994/5 Business Plan, it is notable that this is one area where definite and quantified targets are absent.

Regulators

Increasingly, a number of regulators and consultative bodies associated with privatised or deregulated industries are also of relevance to UK transport operations, especially in the bus and rail industries. The activities of port authorities are also of potential importance to the transport sector.

Road freight in the UK is now almost entirely in the hands of private operators. Road haulage has been extensively deregulated in Britain, as outlined below; but licensing of operators remains the responsibility of regional Traffic Commissioners. The latter have wide powers to suspend or withdraw operating licenses from road hauliers, subject to natural justice rather than to defined operating criteria. However, they have been criticised for their leniency towards operators. Furthermore, there are no powers to impound the vehicles of those who operate *without* a license, and the Royal Commission on Environmental Pollution amongst others have criticised this weakness.

Under the Railways Act of 1993, the newly-established Rail Regulator is required to have regard to the effect of railway activities on the environment in carrying out his duties. This requirement is of course quite general, and would *not* require the

Regulator to promote rail use actively as a strategic alternative to road freight. The Regulator is however required to `promote' the use of railways in general.

The Role of Local Authorities

Local authorities play a central (and statutory) role in land use planning. Environmental protection forms an important element of these activities. In carrying out these general functions, it should be noted that local authorities are required to take account of guidance from central government. This is given primarily in the form of Planning Policy Guidance notes on a range of issues, of which PPG 13 on transport policy is of greatest relevance to this study.

Under the Road Traffic Regulation Act of 1984, local highway authorities also have powers to ban specific types of traffic (notably heavy vehicles) from certain types of road. These powers have been reinforced by the provisions of the 1995 Environment Act.

3.6.1.2 Environmental Targets for the Transport Sector

3.6.1.2.1 Strategic Orientation of Policy

Since 1990, an essentially business-as-usual approach has begun to be modified by environmental and other constraints. Urban road building has been largely abandoned as a means to tackle congestion, and there is now active interest in urban road pricing.

The 1990 White Paper

At the time of writing, an overall statement of UK transport policy is lacking, which in itself makes policy analysis more problematic. Various environmental aspects of transport policy have been considered in a range of major publications in recent years, however. These include, in particular, the 1990 environment White Paper *This Common Inheritance* (Department of the Environment, 1990) and its yearly follow-up reports; and more recently the White Paper on sustainable development, and the associated national CO_2 emissions programme (Department of the Environment, 1994a).

These documents reflect the development of the environmental dimension of UK transport policy. In *This Common Inheritance*, road transport was considered

principally in relation to carbon dioxide emissions, which were an emerging issue at that time. Other aspects are considered separately in relation to air quality, urban areas, etc.

The most important measures to be signalled by the White Paper were reducing the tax advantages of company cars, and the switch of motoring taxes from vehicle excise duty towards fuel taxes. Measures related to the freight sector primarily concern noise and emissions controls, which are determined at EC level, and a commitment to continue to support rail transport in general.

The 1994 Sustainable Development Strategy

The UK sustainable development strategy of 1994 sets transport more clearly in the context of a broad range on environmental issues, and emphasises the need for transport to contribute to meeting targets in a number of these areas. Unlike its predecessor, this strategy includes a separate and quite substantial chapter devoted to transport. The strategy itself nonetheless sets very few specific environmental targets of its own (fewer than the 1990 White Paper).

Of particular significance, however, is the implication in the strategy that a continuation of current trends in traffic and transport would not be sustainable. The introductory section of the strategy summarises future transport policy aims in pursuit of sustainable development as follows:

- influence the rate of traffic growth
- provide a framework for individual choice in transport which enables environmental objectives to be met
- increase the economic efficiency of transport decisions
- improve the design of vehicles to minimise pollution and CO_2 emissions

The National CO_2 Programme

The National CO_2 Programme is discussed in greater detail below as one of the UK Case Studies. The emphasis of policy is mainly on curbing total demand rather than on modal shift *per se*; and to date attention has been devoted primarily to private travel. There is far greater reluctance to discuss the idea of commercial traffic restraint.

The Royal Commission on Environmental Pollution

In its Eighteenth Report, the Royal Commission on Environmental Pollution (RCEP) considered the impacts of transport on the environment. The result is a detailed analysis which includes a fairly critical assessment of current UK transport policy, and outlines a strategy for the sustainable future development of transport in the UK. The report includes more than 100 specific recommendations, including a number on freight and on modal shift targets.

SACTRA Report on Trunk Roads and Generated Traffic

The Standing Advisory Committee on Trunk Road Assessment (SACTRA) is an independent advisory body of experts, which reports to the Department of Transport when requested on aspects of road scheme assessment. After taking evidence from a wide range of sources and consulting numerous witnesses, the Committee has concluded that building roads does generate traffic. An important consequence of this conclusion is that it undermines the supposed benefits of time savings from new roads, which typically constitute the determining factor in the cost-benefit analysis of schemes. The changes required in assessment methods for individual road schemes could have far reaching consequences.

3.6.1.2.2 Emission and Immission Targets

Emissions: Regulated Pollutants

Historically the UK has pursued a technology-led, vehicle-based approach to emissions, based largely on BATNEEC principles (although predating the introduction of that term). As elsewhere, emissions regulations for goods vehicles are determined by EU Directives. The same applies broadly to fuel quality standards. Specific UK measures on emissions are set out below.

The UK has not set specific *targets* on any regulated pollutant emissions from the transport sector. Overall emissions limits are implicit in the UK's commitments under the NOx, SO_2 and VOC Protocols to the Geneva Convention on Long-range Transboundary Air Pollution, but these are not specific or explicit targets for transport. The same applies to air quality standards, which are discussed below.

Emissions: Carbon Dioxide

Carbon dioxide emissions are considered in greater detail as one of the UK Case Studies for this report. Emission targets do apply to national carbon dioxide emissions, and arise from the UK's commitments under the Framework Convention on Climate Change (FCCC). The UK is in effect now committed to returning emissions to 1990 levels by the year 2000. The importance of agreeing further commitments beyond that date is officially recognised, and the UK appears likely to pursue targets within the FCCC framework.

Air Quality

The UK has a limited set of national air quality standards. Until recently, and in spite of early successes in emissions control, the UK's policy can be regarded as having been led by the Community. However, an independent expert group to advise on air quality standards (the Expert Panel on Air Quality Standards or EPAQS) was set up in 1991, following a commitment in the 1990 White Paper. It's first report (1994a) recommended an new standards for benzene, and a string of further recommendations have followed.

Air Quality Strategy

The DoE recently published a consultation paper on air quality, as a follow up to the UK Sustainable Development Strategy (Department of the Environment, 1994d). This has been followed by a major statement of future air quality management strategy. The latter proposes a strategic framework which emphasises the following new elements:

- a greater role for action targets
- possible adaptation of the framework to better accommodate carcinogens where long-term cumulative exposure is more important than short-term peaks
- flexible application of the framework to account for differences in the way that individual pollutants affect health and the environment.

Air Quality Management Plans

Also during 1995, the new Environment Act requires local authorities to review air quality in their areas and to assess the likelihood of prescribed quality objectives being met within a given period of time. Where it appears that objectives will not be

met, they are required to define the areas of non-attainment and to designate the latter as air quality management areas. For these areas they must draw up an action plan listing both amelioration measures and timetables for implementation. There is also provision for regulations to be made which will confer powers or impose duties on local authorities to restrict or prohibit vehicle access in pursuit of air quality management plans.

Other Developments

Since the publication of the UK strategy paper, further developments of note include reports from both the Department of Health (Committee on the Medical Effects of Air Pollutants, 1995) and the Expert Panel on Air Quality Standards (EPAQS, 1995) on particulates. The former draws attention to the medical problems of small particulates, concluding that there is `clear evidence' of a strong correlation between particulate levels and a number of adverse health effects. The latter document has proposed a target of 50Fg/m^3 for PM_{10}. At present this is neither an agreed standard nor a safe level in formal terms, but seems likely to be adopted for the UK. If so, this appears to put the UK in a leading position in respect of particulates and air quality.

Monitoring

Especially before recent enhancements, the national air quality monitoring network is sparse by EU standards. For example, substantive efforts to establish a nitrogen dioxide monitoring network to comply with Directive 85/203 did not emerge until 1989, when six sites were identified. Only Ireland and Luxembourg had a more limited network, while Germany by contrast established around 200 monitoring stations. Monitors were however established in twelve cities between January 1992 and January 1994, and a further twelve are planned to monitor ozone, sulphur dioxide, nitrogen dioxide, carbon monoxide and PM_{10}.

Summary

The UK lost ground during the 1980s on air quality issues, after an early start in this area. Those developments which took place could be characterised as a rather slow and minimal response to EC requirements. More recently, however, a far more dynamic and proactive phase has begun, encompassing a new strategy, air quality management plans, and new air quality targets. For these reasons, the

UK now merits a far more positive assessment than would have been the case even in the early 1990s.

3.6.1.3 Organizational Changes towards Incorporation

3.6.1.3.1 Institutional Arrangements

The concept of incorporation was central to the 1990 White Paper on the environment, and is claimed to have provided the basis for the Commission's own institutional arrangements for incorporation. The White Paper put forward several initiatives relevant to this study.

Green Ministers

Each of the nineteen government Departments has a nominated Green Minister whose job is to ensure that `environmental considerations are integrated into the strategy and policies of that Department and for following up the relevant parts of the White Paper'. The Green Ministers are therefore accountable for the environmental impact of all their Departments' programmes and policies. The Green Ministers are generally senior ministers within the Department, and in the key Departments they are of Cabinet rank. While the remit of these ministers is in principle quite broad, it has in practice been limited mainly to that of `green housekeeping'. They have not therefore been particularly effective in improving incorporation.

Ministerial Committee on the Environment

The Ministerial Committee on the Environment (referred to as EDE) was established in May 1992. It was formed from the two ministerial committees set up by the White Paper. The main purpose of the committee is to resolve major conflicts between departments on environmental matters. It does not meet on a regular basis to discuss environmental policy issues or to develop policy initiatives, however. Information on its activities appears to be very limited, and the OECD (1994) notes that `its meetings and topics of discussion are little publicised'.

Participation of non-Governmental `Stakeholders'

The UK Sustainable Development Strategy of 1994 reiterated the Government's commitment to initiatives on incorporation, and sought to develop stakeholder participation in the decision-making process. This was pursued through the establishment of a panel of five `wise persons'; a UK Round Table on Sustainable Development, and the Citizens' Environment Initiative.

The Panel noted above has recently published its first report (Department of the Environment, 1995). This notes that the Panel met formally four times during 1994, but also held other informal consultations, including some at ministerial level. The report highlights a number of issues of environmental concern, and in particular endorses the work of the Royal Commission on Environmental Pollution (discussed below) on transport.

Shadow Ministries

`Shadow' departments within ministries are a regular feature of the UK administration, although they are not necessarily known by this term. The transport and environment areas are no exception to this, but no one blueprint prevails. Relatively small groups of civil servants are involved. In the Department of the Environment, for example, the equivalent of around three policy staff are devoted to transport and land use issues.

Reorganisation of Government Regional Offices

Regional offices of the Departments of Transport and the Environment have recently been amalgamated. These offices fulfil a range of important functions in both transport planning and road construction (although some of the latter have now passed to the Highways Agency). This move offers the possibility of improved incorporation of environmental considerations into road design and broader aspects of transport policy.

3.6.1.3.2 Procedures

Departmental Reporting

The 1990 environment White Paper encouraged each Department to report on commitments placed on them in the White Paper in their annual reports. There is now a requirement on Departments to report progress annually. The Department of Transport has responded well relative to others.

Cabinet Decisions

It is a requirement that all policy papers to the Cabinet or ministerial committees must contain an assessment of environmental costs or benefits, where the policy is considered to have significant environmental effects (Department of the Environment, 1992a). As the OECD pointed out in its Environmental Performance Review of the UK (OECD, 1994), however, this information is not made available to Parliament or the general public. As a result it is not possible to assess how detailed or consistent these assessments may be, nor whether clear criteria for significant effects (including possible indirect effects) have been adopted.

Environmental Assessment of the Roads Programme

Environmental appraisal is required for all motorways and trunk roads over 10km in length (or 1km if close to an environmentally sensitive area). The impacts considered are largely local in nature (noise, air quality, visual impact). Detailed methodology is included to allow the estimation of gaseous emissions including NOx and CO_2, but this is applied primarily to air quality calculations. There is no clear mechanism to link the results to regional/national/global environmental considerations. The Department of Transport is `considering' the potential for an assessment of the `cumulative and total' effects of the national roads programme.

Interdepartmental Consultations and Joint Working

There do not appear to be any fixed and specific rules governing the nature of consultation between civil servants in different departments. Between officials, however, there is generally argued to be a `culture' of consultation which ensures that the necessary contacts take place. This appears to work well most of the time, but there are clear examples of failures of consultation between departments. There is also a largely defensive aspect to this form of integration, as it does not guarantee that early discussion will take place in order to avoid the emergence of conflict in the first place. The issues of land use, transport and carbon dioxide emissions in particular have occasioned several examples of joint working by the transport and environment departments.

Assessment of Procedural Changes

There have been numerous procedural and institutional changes in the UK in recent years, many of which could have significant impacts upon the state of incorporation. However, the workings of internal government committees are not generally open to public scrutiny. Whereas critics typically advocate a `strong' form of integration, the Government's aim to date has been the more limited one of `taking the environment into account' in decisions.

3.6.1.4 Policies for Incorporation

3.6.1.4.1 Transport Investment and Priorities

While investment in the trunk road network has doubled in real terms since the mid 1980s to around £2 billion per year, and total road spending reached £4452m in 1993/4, total rail investment has risen even faster. Rail infrastructure investment reached £2262m in 1992/3, with a further £879m spent on rolling stock (Department of Transport, 1994b).

A significant proportion of the rail investment outlined above was attributable to the Channel Tunnel project, which distorts the figures significantly. A major upgrade to the UK's West coast Main Line has recently been approved, and is expected to cost around £1bn.

Rail

Of particular relevance to the present study are two grants available to rail freight operators. The first of these is the Freight Facilities Grant, which has been in operation for nearly twenty years. Under this scheme, capital grants are offered to freight distributors to develop handling facilities which avoid the use of road transport. The primary objective of this grant is an environmental one, in that the evaluation formula specifically accounts for avoided mileage on `sensitive' roads. The second grant was established by the 1994 Railways Act. Known as the Track Access Grant, this is intended to provide transitional grants to new operators using rail freight. Up to 100 per cent of track charges may be covered by the grants.

Water

There is relatively little central government involvement in water freight facilities, as most water transport is run on commercial lines. The Freight Facilities Grant is

available for water as well as rail transport facilities. Accordingly, a few wharves have been funded on estuaries and ship canals.

Roads

Government investment in roads remains high, as indicated above. The budget has recently been significantly reduced, however, and shows signs of being cut back further in future years, as means are sought to reduce public sector spending. The programme is now to be focused more on bypasses of small towns, and widening of existing trunk roads and motorways. Options to increase private sector financing of the roads programme are being pursued, but will not significantly counteract the shortfall in public sector investment.

3.6.1.4.2 Taxation and Pricing

Fuel Taxation

The only clear link so far between transport taxation and the environment can be seen in road transport fuel duty increases. Increased fuel taxation was set down as a central element of the UK's CO_2 programme.

Vehicle Circulation Taxes

Heavy goods vehicle circulation taxes (known in the UK as vehicle excise duty or VED) are graduated steeply according to vehicle weight, in order to reflect road track costs. Average annual mileages and loadings are assumed. The Royal Commission on Environmental Pollution (1994) summarised the ratio of revenue income to track costs for each class of road vehicle. They concluded that heavy vehicles cover their track costs overall, but by a much smaller margin than that of private cars, and may not be covering their external costs.

Road Pricing

It is now officially recognised that major road developments to meet transport demand are not generally an option in cities. This has led to a range of major studies on the potential for urban road pricing as a flexible means both of managing demand and of raising revenue. No firm decisions have been made to date

because such measures are expected to be complex and controversial to implement.

3.6.1.4.3 Competition and Deregulation

Fostering competition through privatisation, deregulation and reduced government intervention are central elements of current UK policy, in the transport sector as elsewhere. In its 1994 Environmental Performance Review of the UK, the OECD commented on British privatisation and market reform policies as follows:

> "The main emphasis of the market reform programme has been to improve operational efficiency ... and competition ... The effect on environmental protection has not been explicitly expressed as a major consideration; it is secondary and often incidental."

This in itself can be viewed as a general failure of incorporation, in that environmental concerns have not been the driving force for policy, and do not appear to have been taken into account either from the outset or in a systematic way. More specific concerns over privatisation and deregulation of public transport suggest that previous mistakes are in danger of being repeated in the transport sector.

Road Haulage

Road freight quantity licensing and certain other restrictions ended in 1968, resulting in a rapid increase in road freight at the expense of other modes in the 1970s and 1980s. In its recent report, the Royal Commission on Environmental Pollution summarised evidence of lax standards. Critics argue that widespread illegality and poor enforcement have favoured the growth of road freight, often at the expense of rail transport, which is far more heavily controlled.

Rail Privatisation

Rail transport is currently being privatised, but the likely outcome remains unclear at the time of writing. The Government and other proponents of a private system argue that increased commercial freedom and entrepreneurial initiative will improve the quality of the service offered, and its efficiency. Serious concerns remain, however. Rail privatisation is discussed in greater detail in the second of the UK case studies below.

Shipping

Shipping, like road haulage, is essentially deregulated and privately owned in the UK. Port authorities act as autonomous commercial operations. The Department of Transport does not take a particularly active view of the role of shipping in the modal balance and does not see itself to have an active role in encouraging maritime freight. This is in spite of the important contribution of coastal shipping to total freight movements, and of the potential for expansion which some analysts claim.

3.6.1.4.4 Other Policies with Transport Implications

Particularly since the time of the White Paper *This Common Inheritance*, the Department of the Environment has shown a growing interest in the interrelationship between land use planning and carbon dioxide emissions. The latest Planning Policy Guidance Note on Transport (PPG 13) was issued in March 1994, jointly by the Department of the Environment and the Department of Transport. The Guidance states that

> "local authorities should encourage the carriage of freight by rail or water rather than by road wherever it can provide a viable alternative."

Lack of detailed guidance reflects the greatly diminished importance of inland waterway freight in the UK.

3.6.1.5 The Structure of Incorporation - Overall Evaluation

UK transport policy is in a state of rapid change. Many of these changes appear to be positive from the environmental protection perspective. There are also clearly some areas where incorporation is taking place, and others where it is not. It seems particularly clear that environmental considerations have not greatly influenced the decision to privatise the rail network, for example.

Incorporation, where it has occurred, is primarily of a defensive or indirect nature - that is, it has sought to mitigate the effects of transport policy rather than to change it structurally. In contrast, there is little in UK policy which could be interpreted as `active incorporation'. In particular there remains a lack of firm targets on noise, air quality, etc, or of a critical loads approach.

The overall level of incorporation in the transport sector in the UK cannot be described as very deep. However, there is a growing awareness of the scale of

the problems presented by transport demand growth, and a range of measures have been applied to modify demand and to deliver reduced environmental impact from expected levels of traffic.

Freight policy still retains most of the attributes of a `business as usual' strategy, with some elements of a more capacity-oriented approach. As the assessment above illustrates, policies in different fields exhibit different degrees of incorporation and are at different stages of implementation.

3.6.2 Factors Influencing Incorporation

This chapter is based on the structure as set out in the revised framework paper. It reflects the analysis contained in the Task 2 report (on the state of incorporation); material which has emerged from work on the process-oriented case studies; and also a much broader range of material and experience including discussions with colleagues at IEEP London, and interviews with a range of experts and other interested parties. The eight hypotheses of the study programme are addressed in turn.

3.6.2.1 Hypothesis 1 - Pressure from Environmental Problems

The Hypothesis

That acute pressure from environmental problems may be an important (but not sufficient) factor in promoting incorporation.

Discussion

There is widespread evidence that environmental problems have begun to affect transport policy. However, experience in the UK has been that *perception* of the problem, and its political *immediacy*, have been the key determinants of action, rather than simply the existence of a problem itself. In other words, the problem has been a necessary, but far from sufficient, component of change.

Thus acid rain largely failed to make an early impact because much of the UK's pollution was exported. Large national institutions (notably the Central Electricity Generating Board and the Forestry Commission) were relatively remote from public pressures or concern, and were successful in deflecting the issue for many years.

In contrast, local effects of road transport have become increasingly important, and this has translated into policy changes at local authority level. Similarly, the emotional, cultural or political sensitivity of the problem is of importance, as is demonstrated by the examples of asthma in children and damage to the English countryside respectively.

However, the environmental issues discussed above are argued to have helped to create the conditions for general provisions on incorporation. The process-oriented case study below describes in detail the role of transport sector policy in the UK climate change process. This amply demonstrates the hypothesis that pressure from a specific environmental commitment has been an important (but not sufficient) force for change. Several more specific environmental concerns have had a limited but direct bearing on the road freight sector. The most obvious of these is concern at heavy lorries using unsuitable local roads, which is the justification for Freight Facilities Grants for railheads.

Conclusions

This hypothesis appears *generally* valid, but with important limitations:

- That environmental problems have created a general pressure for incorporation, but this has only in a few cases had significant direct implications for freight transport policy;
- That the immediacy or political sensitivity of the environmental problem is at least as important as the objective magnitude of the problem itself;
- That environmental pressure is rarely sufficient to bring about change, and can be overridden by other considerations.

3.6.2.2 Hypothesis 2 - Economic Problem Pressure

The Hypothesis

That problems of financial pressures may act as forces for incorporation, subject to the capacity for implementing environmentally sound policies.

Discussion

Concerns over efficiency and the burden of taxation have increasingly led industrial interests to favour policies such as road pricing as a pragmatic way forward. There appear to be some who take the view that the effects of road pricing will be primarily to curb `unnecessary' travel by private car users, thereby freeing road space and improving the efficiency of commercial transport services.

It is now widely recognised that no plausible level of road building would be sufficient to keep pace with the forecast growth in demand. At the same time, the relatively low level of rail capacity in the UK (in conjunction with cash constraints and historically low levels of investment by Continental standards), precludes a capacity-driven solution for rail.

The abandonment of keynsian economics in favour of monetarist policies had the effect of putting a sound balance of payments and low inflation at the top of the political agenda. As a result there came to be far less impetus for the Conservative government to `spend its way out of recession' or finance major infrastructure as a means to create jobs. On the contrary, curbing public expenditure has come to be regarded as the principal route to sustained economic growth and hence secure jobs.

On the other hand, budgetary concerns have been an important driving force for the privatisation and deregulation of public transport. These moves have been at least partly driven by a desire to reduce public debt and the demands for subsidy of public transport operations. This in turn has had an unsettling effect, and may damage the ability of public transport to compete with private road transport, at least in the short term.

Concern to reduce expenditure has however led primarily to pressure to cut back spending on roads, and has clearly been a major factor in changing the emphasis of transport policy. The need to raise indirect taxation revenue has also been an important factor in encouraging the government to increase motor fuel duties. This can be regarded as a form of indirect or negative integration.

Conclusions

Financial pressures are certainly an important factor in explaining the direction of UK transport policy, particularly in conjunction with the relatively poor capacity of rail and other alternatives. The interaction of financial and environmental conside-

rations in government policy can however be regarded as opportunistic in nature. The impact on incorporation has been extremely mixed.

3.6.2.3 Hypothesis 3 - State of Environmental Policies

Hypothesis

Incorporation is stronger in countries which have already developed an advanced level of `conventional' environmental policies. These countries will be first to encounter the limitations of `end of pipe' and other traditional approaches, and will seek more profound structural changes.

Discussion

It is clear from this analysis that there have been significant developments in UK transport policy in recent years. However, progress has been piecemeal, and there is no overall transport and environment strategy. This may help to explain why some UK procedures appear quite advanced, while other aspects of policy are weak according to the criteria set out in the study framework.

Furthermore, the absence of an overall framework allows some problems to be given attention, while others are overlooked or given a lower priority. To date, in particular, most of the policy attention has focused on passenger transport, while freight operations are affected mainly incidentally by some of these policy changes. On the other hand, some developments indicate a capacity to `leap frog' the `end of pipe' phase of environmental protection policy.

Conclusion

This hypothesis appears only partly valid for the UK, and at best in a negative sense. UK experience does not support the notion of a `natural progression' or hierarchy of environmental protection strategies in the transport sector.

3.6.2.4 Hypothesis 4 - Economic Capacities

The Hypothesis

Active incorporation will be strongest in countries where the transport system can best adapt to environmental constraints. That is, environment-friendly modes will

be most actively encouraged in countries where infrastructure is already strong, and intermodal cooperation and advanced logistics will be pursued in countries with an advanced, industrialised road haulage sector.

Discussion

The weak base of existing infrastructure have forced government ministers to play down the possibilities of modal shift as a means of improving environmental performance, even where policy is intended to improve the level of service provided by non-road modes.

The UK position does not at first sight support the thesis that an advanced road haulage sector will favour intermodal solutions and advanced logistics. Intermodal arrangements in particular are still in their infancy, and are being pursued by a relatively small but committed group. The deregulated environment and fierce competition on price have encouraged a large number of small firms, some operating to low environmental standards. On the other hand, it appears to be the case that the larger firms, including some own account hauliers, have developed the most advanced use of logistics.

Conclusion

The hypothesis is largely valid, but again mainly in a negative sense, owing to the limited capacity of `environment-friendly' modes. Demand side policies have received greater attention as a result.

3.6.2.5 Hypotheses 5 - Characteristics of the Political System

The Hypothesis

Consensus oriented political systems with good access for minority interests will have stronger safeguards for defensive incorporation than majority oriented. The Westminster system has stronger capacities to promote active incorporation, but it is less likely that they will be used for active incorporation.

Discussion

The British system is the archetype of the `Westminster style'. Parliamentary elections are decided by simple majority vote in single-member constituencies in the UK. In the past decade or more this system has consistently returned solid majorities to the Conservative party. The UK does not traditionally have an open style of government, and the 1980s in particular were characterised more by confrontation than consensus in the political arena. This is not a political climate in which environmental interests could easily find expression. Furthermore, the UK has no formal system of citizens rights, and there is no declaration of civil rights in UK law. Thus victims' rights are not readily reflected in the decisionmaking process, and can be overruled relatively easily.

This situation seems to have restricted the UK's capacity for defensive incorporation during the 1980s; while more recently the decisionmaking process on rail privatisation appears to underline the power of the Westminster system to override environmental or other interests. On the other hand, there are cases in which the UK government style has allowed a degree of flexibility and innovation to create positive changes which might well have proved difficult to achieve within a more formalised (or more consensual) political system.

Conclusions

Past experience supports the hypothesis that a centralised political system can override minority interests including environmental concerns. It is probably the case that there is a stronger capacity for active incorporation. The hypothesis is therefore partly valid.

3.6.2.6 Hypothesis 6 - Interest Groups

The Hypothesis

Interest groups play a major role in transforming structural phenomena into the policy process. Incorporation is strong where there is a strong coalition between promoters and helpers. If short term and polluter interests dominate, conditions are worse for incorporation.

Discussion

- *Promoters* Environmental interest groups have enjoyed more influence in recent years as a result of a range of developments. Membership has grown as awareness of environmental issues and problems has increased, and is high by European standards. A broad range of NGOs and other groups have been influential in transport policy. Aside from the established NGOs, however, a distinctive feature which has emerged in recent years in the UK is a strong protest element using direct action techniques. Roads protests in particular have received increasing media attention, much of it positive, and that they have become well organised and effective. Their profile has been greatly increased by their activities in a number of *causes celèbres*, including Twyford Down and Oxleas Wood.

- *Helpers* Helper interests have had a relatively small influence on developments. Rail interests in particular have given financial support to the influential and effective pressure group Transport 2000; but this indirect involvement has arguably been more effective than any substantive contribution to the debate. London Transport has perhaps been more effective at consensus building in London and has worked more closely with other groups. This may in part reflect the greater degree of unanimity which exists as to the particular transport requirements of London, in that large-scale road building has for many years been ruled out except in limited cases.

- *Blockers* Since motor manufacturing is one of the few traditional industrial sectors which remains strong in the UK, motoring interests have historically exerted a significant influence on both industrial and transport policies. This was evident in the UK government's stance on the introduction of catalytic converters, for example, and was symbolised by a famous speech by the former prime minister Margaret Thatcher, in support of the `Great Car Economy'. Road construction companies in particular are generally thought to have a close relationship to the present government, and are significant contributors to Conservative party funds.

- *Other Institutions* The UK State of Incorporation report has emphasised the important influence in recent years of a range of expert groups. These include various advisory committees and commissions, of which the most influential have been the Standing Advisory Committee on Trunk Road Assessment, and the Royal Commission on Environmental Pollution. The advisory panel on air quality also have an important but indirect effect on transport policy. Their findings have been increasingly helpful to those promoting more active incorpo-

ration and an integrated transport policy framework, and have helped to undermine the arguments of some blocking interests.

Conclusions

Environmentalists have in some areas been successful in promoting active incorporation in spite of weak support from traditional helper interests. The work of expert bodies has however helped to remedy this deficiency. The influence of polluter groups is diminishing, but still obstructs strong incorporation. Even where `blockers' and other stakeholders do not agree with the solutions proffered by environmental `promoters', there is at least a strong consensus that something must change.

3.6.2.7 Hypothesis 7 - Problem Perception in Government

The Hypothesis

The problem perception of government plays an important role in the initiation of policies for incorporation - however implementation depends on other structural factors.

Discussion

However, the views of the Department of the Environment in particular do not always appear to have been influential in transport policy areas. Arguably the views of leading politicians are more important - or at least their effect is more apparent. As noted above, local influences have had a growing effect on the perceptions of some Conservative MPs in the south east of England in particular. This has not however led to strong or active incorporation in many cases, as other pressures remain powerful.

Conclusion

This hypothesis appears valid, but more so for politicians than for civil servants.

3.6.2.8 Hypothesis 8 - Specific Institutional Factors

The Hypotheses

a Defensive incorporation is strong if the environmentalists in the administration have a strong position, and if there is a strong need for negative coordination between polluters and environmental departments.

b Active incorporation is better in open formal and informal transport policy networks, where environmental interest groups and environmentally oriented science find strong points of access and resonance.

c Active incorporation has less chance in a horizontally and vertically fragmented public administration for transport.

d Active incorporation requires strong capacities in the relevant administration for strategic policy making.

Discussion

a The first part of this hypothesis in particular is not historically the case in the UK, as environmental interests do not have formalised rights, and their effective strength will vary according to circumstances. There has however been a change in the relative strength of transport and environment elements within the administration in recent years. This has been associated with a number of examples of joint working between the relevant ministries, which has led to a form of negative incorporation.

b Environmental interests have sometimes been effective in presenting their case, and in influencing the course of events, but this is not always the case. This pattern may arise partly from the informal and non-uniform nature of access to the decisionmaking process in the UK.

c Throughout the UK study references have been made to the disaggregation of policymaking for different modes. Differences in approach and contrasts in powers and resources between central and local government agencies have also been noted. In contrast, the apparently adverse effects of privatisation and deregulation upon the management and coordination of public transport modes have been emphasised, and it has been argued that the worst failures of incorporation also lie in this area.

d Reference has been made in the State of Incorporation study to the absence of an overall transport policy in the UK, or of the appearance of a strategic direc-

tion in many policy areas. Recent developments, and widespread criticism of an apparent absence of a strategy, are likely to lead to some improvements in this area. The results will however almost certainly fall far short of the types and levels of planning which can be observed elsewhere in Europe. These weaknesses have not prevented important, if piecemeal, developments in UK transport policy in recent years.

Conclusions

a This is valid only to a limited extent.

b Considerable uncertainty surrounds this hypothesis, which is probably only partly valid.

c This is clearly a valid hypothesis for the UK.

d This is valid in the negative sense for the UK.

3.6.3 Process-Oriented Case Studies for the UK

3.6.3.1 Motor Fuel Taxation from 1992 to 2000

Background

As noted above, the UK government has a strong interest in the use of fiscal instruments and the possibility of taxing environmental externalities. The post-Rio process provides an interesting case study of the process whereby fuel taxation has been increased in order to meet a specific environmental target - in this case, on carbon dioxide emissions.

UK Climate Change Policy and Carbon Dioxide Emissions

Climate change was one of the subjects (the others being acid deposition and depletion of the ozone layer) highlighted by the then Prime Minister, Margaret Thatcher, in a speech to the Royal Society in September 1988. Shortly afterwards the Secretary of State for the Environment persuaded the Government to prepare a White Paper on the environment. This included the statement that

> the government believes that this generation has a duty to act to meet the threat of global warming.

During 1990 and 1991 the UK came under increasing pressure from the EC Commission and some other Member States to bring forward its target for the year 2005 to 2000, because in October 1990 the latter was agreed politically as the target date for the EC as a whole. The negotiation of the Framework Convention on Climate Change provided further opportunity for pressure and the Government announced the change in target year to 2000 in April 1992.

Assessing the Options

In December 1992 the Department of the Environment published a consultation document (Department of the Environment, 1992) discussing how the target for the year 2000 could be met. It was estimated that a 10MtC annual reduction in emissions by 2000 would be needed relative to the `business as usual' case.

It was emphasised that freight carbon emissions would be likely to rise in future, partly because of increased use of `just in time' and other transport-intensive forms of commercial practice; and partly because relatively little scope for technical improvements in efficiency was identified. It was suggested that the Government `could try to encourage' voluntary measures, and there was little emphasis on strong intervention in the sector. Only less stringent measures were quantified in terms of their potential contribution to the overall programme - notably a 10 per cent fuel price rise, which it was estimated could save `up to 1MtC'.

Policy Selection and Consultation

Over ten thousand copies of the discussion paper were circulated free of charge, as part of this unique consultation exercise. Written responses were followed by a set of workshops convened in March 1993 to bring principal respondents together, and a national conference in May to consolidate the results. Reports on the conference workshops were themselves published by the Department of the Environment later in 1993. The workshop on business carbon dioxide emissions made some specific recommendations for the transport sector, while the fourth workshop was devoted specifically to the transport sector, and produced numerous and detailed recommendations.

In particular there was felt to be a need for a clear framework and signals from government to help bring about a more integrated transport system; the importance of land use and other long term measures was emphasised; and there was a consensus that measures would be most effective if implemented as a *package*

rather than separately. Early measures to curb transport emissions were considered essential, and it was widely feared that the tone of the discussion paper was too *laissez faire* to promote concerted action.

Policy Decision and Implementation

Details of the UK National CO_2 Programme were completed and formally published in 1994 (Department of the Environment *et al*, 1994). As a part of this process, VAT was to be imposed on domestic fuel bills and the progressive increases in motor fuel duties had already been announced in the two 1993 budgets.

Increased fuel taxation was now established as a central element of the UK's CO_2 programme. A commitment was made that duties would be raised on average by at least 3 per cent in real terms in future budgets. This was subsequently increased to 5 per cent, and this commitment has been fulfilled in subsequent years.

Outcome and Assessment

It should be noted that, owing to weakness in the pre-tax price of fuels, the total price of petrol and diesel fuel has not increased nearly as steeply as the tax element. Especially as the original price scenarios used in the CO_2 projections assumed a steady *increase* in the pre-tax price of motor fuels, the effect of tax increases to date (although larger than those initially planned) will in themselves have had less effect in reducing actual CO_2 emissions than was forecast.

One of the only clear links so far between transport taxation and the environment can be seen in the recent road transport fuel duty increases (the first case being the tax differential in favour of unleaded petrol). This policy process can be regarded as a clear (and probably unique) example of the UK government adopting a strategic approach to policy formulation in the environmental field. Thus the policy cycle incorporated at least the following distinctive elements:

- The evaluation of alternative policy options
- The incorporation of strong sustainability criteria
- A structured public consultation exercise which had a clear influence on policy

It should be reiterated that the transport element of the Programme has been the most successful in terms of implementation, and that it has attracted remarkably little opposition.

3.6.3.2 Rail Privatisation

Introduction

Rail transport in the UK has for many years been mainly in the hands of British Rail, a state-owned body. At the time of writing, the rail network is being privatised and an element of competition introduced. This process includes freight operations.

Even after the Second World War, rail remained the primary land-based mode in terms of tonne kilometres hauled. However, a steady decline in the level of traffic was accompanied from the 1950s by a rapid increase in road haulage, which led to a dramatic decline in the modal share going to rail. This general decline in rail use in turn has led to financial pressures, and a conviction in government that radical change is essential if the fortunes of the rail system are to be reversed, and growing demands for state support avoided.

Rail in a Sustainable Transport Policy

There is little evidence of a strategic view of the role of rail transport in an environmentally sustainable system, or of the best means to promote the railways as a whole. In his introduction to the Rail freight privatisation proposals, the then Secretary of State for Transport emphasised the environmental benefits of rail freight transport, and hence by implication, the advantages of the proposed policies:

> “The Government wants to see thriving, competitive rail freight businesses in the private sector offering safe, efficient and environmentally sound distribution services ...”

It remains the case, however, that no definite performance targets (in terms of market share) have been established for the privatised rail industry. Furthermore, the Rail Regulator has recently given an uncharacteristically clear warning of the dangers to levels of rail use if public subsidies are not continued after privatisation, and suggested that the government `has not come to terms with the fact'. The Royal Commission on Environmental Pollution expressed similar concerns in their 1994 report:

> “These benefits [of increased quality and market share] are unlikely to materialise if private sector operators concentrate on lucrative routes to the neglect of the rest ... and if competition between operators disadvantages passengers and freight.”

Rail Freight Privatisation Plans - an Outline of the Structures

A central feature of the plans is the separation of responsibility for land, tracks, signalling and other infrastructure from the operation of trains. The former will be in the hands of Railtrack, which will charge operators for the use of track and other services. It is planned that this will be floated on the stock market during 1996. Other services are to be split between a large number of other operating units, which will be franchised (for most passenger services) or sold off (for freight operations). The proposed structure for rail freight is outlined briefly below:

- Existing trainload freight (which constitutes by far the largest share of UK rail freight and provides 80 per cent of current revenue) was to be split into three geographically defined areas.
- In addition, new `open access' operators were to be allowed to compete directly with existing businesses.
- The smaller Railfreight Distribution business was to be split on more functionally-oriented lines (for example, with one company handling rail freight through the Channel Tunnel, another containerised freight, etc).
- Rail Express Services (operating express services principally for the Post Office) were to be floated separately as a single entity.

The Consultation Process

It is reported that during 1992 the government held consultations with `over fifty major rail freight customers and user groups'. These groups were apparently supportive in general of change, and welcomed the introduction of some competition into rail freight through the creation of a small number of competing operating companies. Environment NGOs and user groups, in contrast, expressed deep concerns as to the potential for an adverse modal shift and a declining level of rail use as a result of privatisation.

Incorporation of Environmental Policy in Rail Privatisation

The suggestion from the OECD (noted above) that environmental concerns have been addressed belatedly in the privatisation process appears to have been borne out in a meeting in 1994 between a number of NGO representatives and government officials over rail policy. It was clear from the discussion that there had been no strategic environmental appraisal of the rail privatisation process, but it

was argued by a Treasury official that this was not required because the policy was aimed at improving efficiency rather than at meeting environmental objectives *per se* (Green Alliance, 1994).

Further evidence was provided by the Royal Commission on Environmental Pollution. Their report reveals that during their inquiries the Commission had repeatedly requested from the Department of Transport an assessment of the environmental implications of rail privatisation. In essence the response was that no such assessment had been undertaken, because there was no reliable means to quantify the effects of the policy on rail operations. These experiences appear to be serious admissions, and classic failures of the mechanisms of integration.

Duties and Activities of the Rail Regulator

Under the Railways Act of 1993, the newly-established Rail Regulator is required to have regard to the effect of railway activities on the environment in carrying out his duties. This requirement is of course quite general, and would *not* require the Regulator to promote rail use actively as a strategic alternative to road freight. The Regulator is however required to `promote' the use of railways in general. The Regulator has issued a Consultation Document on environmental guidance for railway operations (Office of the Rail Regulator, 1994).

Conclusions

It remains an open question whether, in the long run, a privatised rail freight service will indeed offer services which are more competitive with the (highly deregulated) road haulage sector. In the short term at least, privatisation has created an air of uncertainty which already appears to have damaged the rail industry by inhibiting investment programmes. For rail freight in particular, this air of uncertainty could result in lasting, if not irreparable, damage to its competitive position. The long term prospects may be better, but must in part depend on how much of the existing freight operation actually survives the current uncertainty and the restructuring which will almost certainly follow.

Although the evidence is largely negative in nature, it seems clear that environmental considerations played little if any role in the privatisation policy process.

3.6.4 Conclusions

3.6.4.1 Transport Policy and Incorporation

- Lack of suitable structures and overall policies/responsibilities are likely to impede development of a coherent and integrated transport system in the UK.
- Opportunities for capacity-oriented solutions to transport problems are limited.
- Cheap and attractive transport policy solutions (eg integrated packages of measures), but are less clearly available for freight than for the passenger sector.
- There is little capacity in government for active or creative intervention in the transport sector. Instead, heavy reliance is placed upon market forces and the contribution of individuals.
- There remains a particular lack of clarity as to the role of freight transport in contributing to sustainable development.

3.6.4.2 Strategic Orientation and Environmental Targets

- There have been a number of important and positive developments in the field of UK transport and environment policy in recent years.
- There is however a general reluctance to set environmental targets in the transport sector.

3.6.4.3 Incorporation and the Policy Process

- Lack of democratic input impedes `bottom-up' incorporation in the UK.
- Conversely, political actors and groups can exert a strong influence on certain policies. This has extremely mixed effects.
- Legal requirements for incorporation in the UK are extremely limited.
- There have been numerous procedural and institutional changes in the UK in recent years, many of which could have significant impacts upon the level of incorporation. However, this is not intended to achieve a `strong' form of incorporation.

- Procedures in particular are informal and flexible in nature, and can lead to effective incorporation. Failures of process are also apparent, and these often occur at politically critical junctures at which incorporation is at its most vital.

3.6.4.4 Financial and Economic Factors

- Financial pressures can be a decisive factor in promoting environmentally beneficial policies (raising fuel tax, cutting infrastructure investment) - but may be only incidental.
- The need to raise new revenue to support investment may have undesirable and distorting effects - as it has done with the UK's (now postponed) plans for road pricing.
- The absence of hypothecation in transport funding has clearly been an opportunity for the UK government, allowing it to raise fuel taxation and to cut the roads programme simultaneously.

3.6.4.5 Liberalisation and Rail Privatisation

- While it is claimed that privatisation will deliver a more competitive rail sector, there have been few if any attempts to quantify the overall effects of the policy.
- There are coalitions in support of rail interests and which are sceptical of current policies, but they have been relatively weak and do not enjoy strong support from rail freight users, for example.

3.6.5 Recommendations on the UK Position

- It is arguable that an overall framework and clearer articulation of transport policy objectives through a white paper would assist in the incorporation process.
- Ideally this framework should include clear aims, commitments and targets. If so, progress could be monitored through annual reporting analogous to that adopted for the 1990 White Paper and the 1994 Sustainable Development Strategy. Joint reporting involving both DoE and DTI would also strengthen this process.
- A regular and independent review of developments could be established.

- The environmental statement which is required for all major policy proposals should be subject to public and parliamentary scrutiny.
- More rapid progress towards strategic environmental assessment is desirable. A simple, qualitative and incremental approach would be preferable to undue delay occasioned by methodological difficulties.
- Equally, better integration of assessment criteria across modes is needed, and enhanced techniques for area-wide and corridor studies.
- Greater attention to the duties of regulators and autonomous agencies could help to improve incorporation.
- The UK government should endeavour to take a more positive approach to an EU framework for environment-oriented taxation and pricing measures.
- Incorporation would be improved (sometimes indirectly) through better targeted regulation, and through better enforcement of existing regulations, especially in the road freight sector.

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3.7 The European Union *(Christian Hey)*

The principal finding of this analysis is that the dominant strategy of the European Union has gradually become "capacity-oriented" since 1990, and that more far-reaching attempts have met considerable resistance in the early phases. There has been a considerable delay between the dynamics of the emerging Common Transport Policies and the dynamics of common policy initiatives towards the incorporation of the environmental dimension into transport policies. This explains why "indirect incorporation" - the politics of positive, sometimes even unintended side-effects of other policies - is still the dominant form of incorporation. Meanwhile, both defensive and active incorporation are still in their initial stages mainly because member states cannot reach consensus for sustainable development. Clearly, this cannot be overcome by institutional reform alone.

The new European level playing field creates a new dilemma: (environmental) problem-solving capacity at the European level does not increase as quickly as the national capacity decreases (Scharpf 1994: 131). Some different options found in this study to overcome this dilemma are: the strict application of subsidiarity to transport policies; the strengthened formation of community-wide networks of the environmental administration in member states; the regional cooperation of the countries interested in improving incorporation of the environmental dimension; and the wider application of the territoriality principle in transport policies.

Next, this argument will be developed in following chapters. The second chapter provides a short overview on the EU’s emerging role in transport policies. The third chapter reviews some EU strategic documents, and identifies the official definitions of incorporation. The fourth chapter analyzes past and future policies. The fifth chapter examines some of the most important variables explaining the gap between philosophy and action. The final chapter provides for some conclusions and recommendations.

3.7.1 The Emerging Role of the EU in Transport Policies

Transport policy is part of the Treaty of Rome (1957). Nevertheless little progress could be made for decades (Erdmenger 1981; Mc Kay 1987). During the 1980's, a Common Transport Policy emerged rapidly. This can only be understood in the framework of a wider strategic setting of transport policies for European integration. Transport is a strategic, yet subordinate element of European integration.

From 1985 to 1994, European integration made tremendous progress. The dynamics of the Common Transport Policies (CTP) may be seen as a "spill-over effect" from progress of European integration. Many of the “package-deals” that took place to promote European integration had a major impact on transport policies. Some examples are:

- a spill-over effect from the internal market programme to the liberalization of the transport markets and the Trans-European infrastructure networks. The nationally-regulated transport sector was liberalized to complete the internal market, and a Trans-European transport infrastructure network became a prerequisite for the functioning of the internal market.
- the first package deal between the peripheral and the central regions in 1987 to compensate for the negative economic impact of the internal market by increased financial assistance to the peripheral regions. The improvement of the transport infrastructure was a strategic element to improve competitiveness of the peripheral regions;
- a second package-deal (1992/1993) between similar actors on the European Monetary System, whereas additional funds were mobilized to compensate for or to prevent economic disadvantages for the peripheral countries by the system of fixed currencies and the strict stabilization criteria.

Due to these three factors, the EU achieved legitimacy with setting infrastructure, taxation, and deregulation policies. They explain furthermore the subordination of transport policies under the wider objectives of European integration.

3.7.2 Policy Thinking and Targets

Incorporation in the EU has several points of reference. It is a requirement of the European Treaty since 1987. Furthermore, a number of documents discuss the relevance of incorporation in general since the early 1970's. In 1992 a strategic paper that focused on transport and the environment was published by the Commission. These strategic papers documented a strategic policy shift since the late-1980's toward a new approach: (1) from end-of-pipe orientation towards structural change; and (2) from a command-and-control approach towards an incentive and market-oriented regulatory approach (Jachtenfuchs u.a. 1993; Wynne 1993; Hey 1994b).

Incorporation is required in Article 130r (2), which states: "Environmental protection requirements must be integrated into the definition and implementation of other

Community Policies." This means that the environmental dimension must be integrated throughout the life cycle of every Community policy - from the definition of targets and instruments in the early stages of policy formulation to implementation. Interpretations of this controversial article have been discussed throughout the literature.[56] In summarizing this debate, one can conclude that the minimum requirement - which is stated in the treaty - is defensive incorporation. It requires procedures for Strategic Environmental Impact Assessments (SEIA) to be developed, as well as consultation-mechanisms between the Directorate General XI (Environment) and other directorates. Article 130r (2), however, lacks preciseness on the definition of "environmental requirements," and how priorities are actually set. This depends upon political decisions. Compared to the multi-dimensional and well-defined set of objectives for transport policies, the legal requirements for incorporation are seen as weak - even though some type of action for evaluation is required by Art. 130r.

Incorporation also was first mentioned since the First and Second Environmental Action Programmes of the EC (Baldock u.a. 1992). From the beginning it has been an essential element of a preventive environmental policy approach.

In the course of the past 20 years, the concept of "incorporation" has become more ambitious. Moreover, objectives and arguments for incorporation have become more clearly defined.[57]

Earlier concepts have only looked for consistency between environmental legislation and economic targets. The latest concepts now try to reconcile the requirements of sustainability with traditional economic values. This is considerably different than in the past when legislation only provided small incentives for incorporation. Hence, sustainability cannot be achieved without significant transport policy changes. The basic philosophy of incorporation can be described as a

[56] These interpretations are:
- a strong interpretation saying that this requirement is "singular" in the Treaty, and therefore gives high priority to environmental objectives (i.e., Breier/Jahns-Böhm 1992; Hailbronner 1989; Scheuing 1989; Grabitz/Zacker 1989)
- a more cautious interpretation - referring to the lack of preciseness of the Art. 130r, especially concerning the way in which priorities should be set (Rengeling 1990; Kersten/Körte 1991; Hailbronner 1993; Krämer 1993),
- and a very cautious interpretation (Krämer 1989 and 1991) argues that the requirement does not reach beyond existing environmental legislation.

[57] A number of documents, such as the five environmental action programmes, the Task Force Report on the Internal Market and the Environment, Green and White Papers on Transport and the Environment, and a recent publication on "Economic growth and the Environment" (EG-Kommission 1994c, Com (94) 465:9) are milestones in the process of a definition of incorporation.

process to reconcile economic and environmental objectives. At the same time, instruments for incorporation have shifted from evaluation to control. Consequently, it has moved from defensive incorporation to active incorporation with a broad set of instruments. This may been seen both in terms of procedures and of policies. The concept of "incorporation" in the most recent Commission documents assumes a wide potential for harmony between sustainability objectives and traditional economic objectives.

As to transport and the environment the Commission has formulated its targets in the White Paper on the "Future of the Common Transport Policy" (EG-Kommission 1992m) and a more recent Action Programme (EG-Kommission 1995g).

The White Paper contends that transport policies should promote a more efficient transport system by liberalization and more competition between the modes. This implies that non-discriminatory taxation and subvention practices will exist. It emphasizes the need to extend infrastructure capacities to meet growing transport demand. New infrastructures and the better use of the existing ones are the two elements of this capacity-oriented strategy. Furthermore, the Common Transport Policy should principally promote economic integration of the EU, especially to improve the functioning of the internal market. The environmental dimension of future road transport growth is perceived as an important constraint for transport, but not as an objective in itself (Bail 1993).

The "White Paper" (EG-Kommission 1992m) negates trade-offs between economic and environmental targets. It fundamentally relies upon the positive side-effects of the traditional transport policies. Economic efficiency of the transport system promoted by liberalization and infrastructure policies will have positive environmental side-effects (EG-Kommission 1992m: 62). The overuse of existing road infrastructure capacities and the underuse of other infrastructures leads to environmental damage (p. 35). As mentioned in the White Paper, the market-oriented regulatory framework may lead to an adjustment of over- and under capacities to demand and vice versa.

The need to internalize external costs from freight transport and Strategic Environmental Impact Assessments for the Transeuropean Networks were the most important single instruments for incorporation, mentioned in the White Paper. But unlike the previous documents, the White Paper does not define any priorities in favour of the environmentally-friendly modes. It emphasizes the need to expand infrastructures and to increase infrastructure investments (p. 56). The only approach, which has positive side-effects for the more environmentally friendly land-modes is the promotion of intermodal cooperation and compatibility. Since the

Commission only plays the role as a coordinator to guarantee the compatibility and interoperability of the national plans (p. 55f), it is reluctant to formulate substantial criteria for priorities.

The more recent Transport Policy Action Programme (EU Kommission 1995g) is more explicit on the need, to strengthen the role of the environmentally friendly modes. In this sense it proposes a strategy which has some elements of “structural change orientation”.

Nevertheless the general strategy, as discussed at the EU level, can be best qualified as congestion, or capacity-oriented. Its basic rationale is to ensure the conditions for efficient transport growth by the investment into new infrastructures, and incentives for the better use of existing infrastructure capacities.

3.7.3 The respect of the Environmental Dimension in Practice

This study found that in terms of eight subjects, incorporation was evaluated according to varying levels.

On the level of **“targets”** one can observe a “capacity-oriented” approach. Legal requirements - both in the framework of primary and secondary law - create few incentives for incorporation. The primary law does not define environmental requirements” or precedures, on how environmental and other objectives may be accomodated. Nevertheless it has been an important point of reference of a number of strategic policy documents further elaborating the idea of incorporation. In the EU context incorporation is defined as an efficiency oriented systematic search for the synergies between policy objectives. The environmental impact assessment directive does not define substantial safeguards or criteria, it relies on the "soft instrument" of "informed decisions. The habitat directive has formulated the relatively strictest substantial criteria for nature protection. Yet nature protection goals may be subordinated to prioritarian public interest. A project belonging to the TEN´s is justified by such a prioritarian interest. In total, legal requirements are low to middle.

The **strategic targets** of the Common transport policies, as documented in the White Paper, can be best described as "capacity oriented" - especially referring to the role of road pricing and taxation to reduce congestion and pollution. The overall strategic target is the improvement of the efficiency of the transport system and transport networks and operations. This means an overall increase of transport capacities to satisfy increasing transport demand. Between 1989 and 1992, an intensive strategic debate took place within the Commission, which started with

relatively high aspirations towards "structural change" and ended up with a "capacity-orientation". A policy shift towards "structural change" can be observed in a number of strategic policy documents published in 1995.

The EU has no specific, **quantitative environmental targets** for the transport sector. It has some general targets, which have some relevance for the transport-sector. From these, the CO_2-stabilization target is a major challenge for the incorporation of the environmental dimension into the transport sector, since it cannot be achieved by technical means alone.

Lastly, the three **transport policies** in general have a very low profile of incorporation.

Infrastructure policies are in general growth oriented. One can identify two major priorities of the EU: the development of High Speed Links between the major centres of the Community and investments in motorways for peripheral regions. Over 70% of the investments identified by the Christophersen Group as priority projects for the TEN in Essen in 1994 are directed towards High Speed Trains (HST). Although the development of a Transeuropean HST-net may have relative environmental benefits compared to a trend scenario, its main rationale is economic: to develop a new expanding market, based on productive and sophisticated new technologies. Motorways play a major role of the financial instruments of the Community, such as Cohesion Fund, Regional Funds and the credits of the European Investment Bank (EIB), which have a share up to 70%. CT (as the intermodal transport mode) and traditional railways play a minor role compared to the overall investments planned. The environmental potential of coastal shipping and port infrastructures has been discovered relatively late in 1995. Intermodality and Interoperability have become key words for the network philosophy of the Commission, however investment shares directed towards interfaces, nodes, and technologies are relatively low. There are strong activities towards technical harmonization of the nationally fragmented railway technology in the EU.

The basic rationale of the TENS is the improvement and acceleration of communication and trade by the reduction of spatial resistance. The promotion of CT is one of the few, but comparatively weak tools for active incorporation.

Also, "defensive" incorporation has not been developed yet. The respect of EU legislation (EIA and Habitatdirectives) is the only precisely defined safeguard, which is still not fully respected everywhere. The "environmental dimension" is mentioned in all activities, but in a very vague form. This must be interpreted as a tool, to calm down environmental concerns, while providing as much freedom as

possible to the infrastructure policy networks. The vagueness of environmental safeguards minimizes outside interference and the need for coordination.

While the Community became an important player in infrastructure policies since the late eighties, incorporation is still in its initial stages. The Commission has promised to do a SEIA for the TEN´s as a whole and some corridors, which might start in 1996. There is a considerable time-lag between the dynamics of European transport infrastructure planning and the methodological and legislative development of incorporation. Due to the fragmented character of European infrastructure policies they even lack a clear aggregated reporting system on all infrastructure investment budgets of the European Union.

The actual profile of incorporation is also low in the field of **taxation.**

Since 1987 the idea to use environmental taxes in the transport sector to counterbalance the negative environmental impact of the liberalization of freight transport has been on the agenda of the Commission. The internalization of external costs and of infrastructure costs have became a key instrument both for "active incorporation", which means achieving environmental targets, and for "defensive incorporation", or counterbalancing the negative impact of other policies. The Commission has proven its serious commitment for “fair and efficient” pricing with a “Green Paper” in 1995 and the announcement of a tax proposal in 1996.

Nevertheless a first round of decisions on taxation in 1992 and 1993 ignored the environmental dimension. The harmonization of diesel and vehicle taxation, which took place in 1992 and 1993, was a harmonization at a low common denominator. The tax compromises established a complex system of minimum and maximum harmonization for different taxes at a low level, which were exceeded by many member states.

The liberalization of the transport sector is required by the treaty. The environmental dimension was widely ignored in the case of road freight liberalization. The protagonists relied on positive environmental side-effects within the road sector, whose relevance is controversially discussed in literature.

Green taxation and subventions were instruments discussed to compensate for the negative environmental impact of liberalization to other modes. This was especially the case in the Communications of the Commission on Combined Transport, where it shared the railways companies’ arguments on distorted terms of competition between different modes (see: Com 92/230). The relationship between environment and liberalization can best be described as a form of "assymetric negative coordination". Environmental considerations should not modify the superior

objective to complete the internal market for transport services. Compensatory activities, if necessary should be delegated to other policies, such as taxation or subsidies.

3.7.3.1 "Subsidiarity" or European Integration without environmental incorporation?

There is some evidence that the dynamics of European integration creates the dilemma that the (environmental) problem-solving capacity at the European level does not increase as quickly as the national level capacity decreases (Scharpf 1994: 131).

In the case of infrastructure policies, there is a discrepancy between the dynamics that the Commission tries to assume a strategic role in financing, coordinating, managing, and initiating European transport-infrastructure policies, and the retarded European integration of an environmental strategy for the transport sector. According to interpretations within the Transport Directorate General, the incorporation of the environmental dimension follows subsidiarity, and is a national responsibility. While effective European coordination mechanisms between infrastructure planners could be built up, environmental authorities still work within a national framework. The level of strategic decisions for infrastructure planning and the level for incorporation do not coincide - which puts the environmentalists' objectives and environmental criteria at a disadvantage.

In the case of taxation, the gradual development of the territoriality principle provides some scope for different levels of taxation and a certain degree of autonomy. The taxation compromises of 1992 and 1993, however, set formal and indirect limits to autonomous tax increases. Diesel harmonization is minimum harmonization. For example, since truckers are allowed to fill up to 200 liters while driving in any given foreign country, limits to strong differences in a mobile and competitive market are set. In the case of vehicle taxation, no maximum limits are set; however, national hauliers will lose competitiveness if national taxation becomes too high. The only tax where a non-discriminatory territorial principle may be applied is the road-user charge, where the Council has defined a maximum limit.

In the case of deregulation of international freight transport, competences were shifted to the European level without providing for an adequate, non-discriminatory playing field for all modes in the EU.

3.7.3.2 Lack of Synchronization

Since most activities leading towards incorporation appear to be in their initial stages, they are in the "estimation phase," which leads to a lack of synchronization between polluting and protecting activities. Major transport-related activities have been prepared since the mid-1980's and decisions were made during the early 1990's; yet incorporation remains in its initial, or estimation phase. The internalization of external costs was mentioned since 1987 in official documents, however, a methodological work to calculate them has only started in 1994. Works on Strategic Environmental Impact Assessment (SEIA) for the Trans-European Networks have started in 1992. Further studies on methodological questions were commissioned in August and November 1994. The Commission started brainstorming with experts on transport demand-side management in 1994, leading to further studies on transport-efficiency and transport chain-analysis for companies, as well as on induced traffic by new infrastructures.

A political output from these initiatives cannot be expected until the late-1990's, years after the completion of the internal market for freight transport and after a number of infrastructure projects have been built.

3.7.3.3 Indirect Incorporation as the dominant type of Incorporation

As to the type of incorporation, one can observe that "indirect" and "active" incorporation are more relevant than "defensive" incorporation. A strong system for defensive incorporation, however, has not been established by the EU. For example, there are no environmental reporting and accounting systems which systematically evaluate the environmental impact of other policies. Furthermore, there are only a few legislative or informal safeguards that have been established, such as the Habitat Directive. Most documents of the Commission mention the environmental dimension, yet without formulating specific objectives. The environmental framework for transport policies (especially infrastructure policies) is open, voluntary, flexible and indicative, rather than binding and prescriptive.

"Indirect incorporation" is the most frequent form of incorporation that has been observed. It is often argued, that the development of the High-Speed Train Network or liberalization have a positive environmenal balance sheet, compared to a trend scenario. But - even if one can doubt if such arguments tell the full story - such positive impacts are just side effects of other considerations.

3.7.4 Major factors explaining Incorporation

This research project observed that incorporation is rather high in the field of decision-making styles (organization and procedures). It is lower, but still relevant in the field targets (legal requirements, and both strategic and quantitative), and it is weak in the field of policies (taxation, infrastructure, and deregulation). One fundamental explanation for this difference is policies in the EU take place in different arenas, which offer different opportunities to the incorporation of the environmental dimension. Policy initiation is led by the supranational institutions, especially the Commission, whereas decision-making is led by national governments. Policy initiation is rather problem-oriented, whereas decision-making is interest-led and characterized by bargaining (Héritier u.a. 1994). The characteristics of these two arenas and their impact on incorporation will be explained below.

3.7.4.1 Decision-making Styles and Targets - The Supranational World

The relatively high profile of incorporation in the field of decision-making styles and targets may be explained by three specific factors:

- the Commission services' strong problem perception;
- its privilege to initiate policies;
- relatively open and pluralistic policy network characteristics in some subpolicies.

Decision-making styles and targets are restricted by "cautious anticipation," which is characteristic of the Commission's policy approach. This may explain the "cautious leadership" towards the incorporation into the transport sector. However, leadership relies on consensus-oriented instruments, such as discussion papers, communications, and policy plans. The symbolic use of policies (in its ambivalent sense: Prittwitz u.a. 1992; Edelman 1976) is therefore, a typical characteristic of EU policies in general, and incorporation specifically.

As discussed above, "incorporation" has had a tradition in the policy-thinking of the Commission since the beginning of environmental policies in the EC. The Commission started to initiate a more integrated and structurally-oriented environmental policy approach following the final approval of technically-oriented measures in 1989. Some authors have perceived a "paradigmatic change" of fundamental perceptions towards a broader definition of "economic efficiency" (i.e., Jachtenfuchs u.a. 1993). A new regulatory approach, which is based upon market-oriented instruments toward efficient resource use, was first tested in the areas of climate

protection and energy conservation. Evaluation of corresponding measures in the transport sector are still under way.

According to KRONSELL (1995), this paradigmatic change took place under favourable external and internal conditions. She notes that different developments occurred at this time, such as heightening public expectations for environmental protection, growing criticism of the internal market because of its environmental impact, the globalization of environmental threats, and changes of the dominant regulatory philosophies (Kronsell 1995). Furthermore, the pending crisis of the transport sector coincided during the discussion on the need for a new sectoral environmental policy approach (i.e., the Task Force Report 1989, or the State of the Environment Report 1992). Long-term scenarios and prospective reports (i.e., Gruppe Transport 2000, Cellule de Prospective 1990) also alerted the Commission to the economic risk of continued road transport growth. In the early-1990s, there was a strong feeling that these trends should be changed, which was documented in the Green Paper on Transport and Environment (1992).

The EU Commission is not a traditional administration with basic executive functions. Its central role is to initiate policies. One of the privileges of the Commission is its "monopoly to initiate policies". This right is referred to the Commission in the treaty (Art. 155, 3), although in practice the Commission frequently reacts on national request (Schmitt von Sydow 1980: 187ff; Ludlow 1991: 103). The original intention of this fundamental right is to have a strong institution promoting European integration (Kösters 1994: 73). The Commission is supposed to play a "proactive" role, and function as the producer of new ideas, strategies, and programmes (Ludlow 1991: 97).

The Commissions “monopoly to initiate policies” and to play a proactive role for European integration (Ludlow 1991; Kösters 1994; Schmidt von Sydow 1980) may explain its "capacities for strategic foresightedness". Strategic policy-thinking, therefore, is one of the Commission’s strengths. Thus, long-term and global environmental impacts, as well as the politically-destabilizing potential of an internal market without a strong environmental component, were perceived soon. The tradition for “integrated policies” is closely related to this strategic policy orientation of many Commission services.

Futhermore the Commission becomes a marketplace, as well as a forum for innovations at the national levels. Because of the heterogeneity of twelve (since 1995: fifteen) national backgrounds, various arguments and ideas represent a broad spectrum of opinions and positions (Héritier 1994; Mazey/Richardson 1993: 22). For example, “incorporation” is a policy concept deeply-rooted in Dutch and

Danish environmental policies, and also finds some support in the United Kingdom (Janse u.a. 1995; Togeby 1995; Fergusson 1995).

In this sense, the Commission often assumes a leadership role for other countries. Innovative ideas may infiltrate into the Commission, who is actively diffusing policy innovations to other member states.

The other side of the story is the limited power of the Commission in the decision-making process and in the implementation phases. This requires anticipating the chances for a policy. When the possibilities for an initative are high, the Commission may fully exploit its “process-power” and influence political output. As seen below, the possibilities for incorporation are low in the Council.

The Commission has been responsive to political changes. Since 1992, the "roll-back" of environmental policies has been observed (see: Hey 1994; Hey/Brendle 1994b). This responsiveness explains why specific proposals for the incorporation of the environmental dimension was not proposed until the end of 1994. Since environmental policies came under pressure, the Commission has become more cautious with far-reaching projects. Success-oriented anticipation may explain why incorporation is the “iceberg under the surface” rather than a political event.

An other actor in the supranational arena ist the European Parliament (EP), which holds relatively progressive positions. Those often are oriented towards structural change and demand-side management. In this sense it is the more progressive allied of the Commission for incorporation. Traditionally, the EP has a minority friendly, relatively pro-environmental, and pro-incorporation role among the EU institutions. This relatively “progressive” position may be explained by the weak power of the EP in the EU’s institutional system. Therefore, the EP could play a progressive role without affecting national or private interests. This could change if the EP becomes a powerful player in the institutional system.

Furthermore the system of interest groups and the transport policy network characteristics has been analyzed. In general one can argue, that pluralistic system of lobbying groups has emerged that represents different perceptions of integration. Several environmental organizations have asked for integration at a high level. There are strong intermediate positions. For instance, the railways, the shipping, and umbrella organizations for Combined Transport represent intermediate positions in favour of environmentally-friendly modes. In contrast, the European Roundtable of Industrialists (ERT) formulates intermediate positions in favour of an efficient and capacity-oriented strategy. Lastly, industry and road-hauliers federations represent business-as-usual strategies.

Nevertheless, major differences in terms of influence and power persist among the interests groups. There is a clear assymmetry of influence at the expense of the environmental lobby.

From the network-analysis one can conclude that on an aggregate level the risk of "agency capture" in the transport sector by some interest groups does not exist at the EU level. However, at the level of specialized policy fields one can observe segmented policy networks. For instance, there is a railway network, a motorway network, or a telematics network. Social representation in those networks is not pluralistic. The most probable output from such exclusive and specialized networks are additive policy proposals, which are offering special "carrots" to each specialized modal interests without setting priorities. The environmental impact fare better with the capacity-oriented strategies than in the case of business-as-usual strategies; but integration beyond growth-oriented strategies will meet the resistance of some of the specialized networks.

From the side of the Council, so far little substantial initiatives were formulated, to strengthen incorporation. Only Denmark and Germany initiated a political discussion in the Environmental Councils during their presidencies.

So in general the supranational level offers multiple opportunities to bring issues for incorporation on the agenda. But there are much less opportunities on the level of the decision-making system.

3.7.4.2 Policies - the World of the Council

Policy-making at EU level is basically international politics. The EU should not be thought of as a homogeneous space with defined environmental problems or economic capacities. A fundamental characteristic of the EU is the difference of underlying economic and political structures and preferences. Therefore, one fundamental problem of European integration is to find consensus and to solve problems as a whole while respecting individual national structures and priorities (Scharpf 1992; Lepsius 1992). The unequal distribution of benefits and costs of a policy is a major challenge for European integration.

Four aspects contribute to the low profile of incorporation in the decision-making process: different national preferences; unclear and fragmented policy competencies and institutional settings; status quo-oriented decision-making rules; and the weakness of democratic participation.

3.7.4.2.1 National Preferences: Fragmented Alliances for Incorporation

The following synthesis of the constellations in the Council tries to identify countries into three groups:

(1) those advancing the environmental dimension into transport policies;

(2) intermediate forces;

(3) blocking forces.

From the reconstruction of national preferences, one can assume that “incorporation” in the EU probably will be “piecemeal.” One cannot identify stable coalitions of countries, which would on the basis of joint interests promote specific instruments or types of incorporation. National preferences have not been static over the review period. Some countries made considerable strategic reorientations. In a dynamic perspective one can observe a certain trend of convergence between the early antagonists of transport policies: Germany and the Netherlands. This may open new opportunities for incorporation in the future. Germany has shifted from a very regulatory to a more market-oriented transport policy approach, while in the Netherlands the environmental dimension became relatively stronger compared to the still dominant role of road freight transport. Considerable increases of taxes and railway investments may illustrate this policy shift. Public attention for the environmental impact of transport considerably increased in the U.K. recently and contributed to the revisal of the motorways programme as well as to gradual tax increases on the top of a relatively high baseline.

In the past however the national support for incorporation was weak.

In general, countries that might promote incorporation are in a minority position and are often divided over their policy approaches. In principle, the demand for environmental policies and the general debate over the need for incorporation is sufficiently strong in only four or five European countries. Even if there are overlapping environmental preferences in those countries, environmental policy styles and the transport policy agenda are different. Policy styles are more participatory in the Netherlands and in Denmark, and are more “technocratic and formalistic” in Germany. In the U.K., they are more informal.

Germany, Belgium, and more recently the Netherlands are the only countries where relatively high environmental preferences overlap with certain transport policy changes. They can be characterized as “capacity-oriented” in order to modify the modal split of transport growth. However, Germany had a rather defensive position towards EU transport policies to safeguard its national policy type.

The Netherlands is internally split between its highly profiled environmental agenda and its strong national transport lobbying groups. Due to a lack of capacities for modal shift, demand-side management plays a relatively stronger role in political thinking (less in practice) than in the other countries, such as Denmark and the U.K.

Potential alliances in the field of transport policy do not overlap with those in environmental policies. This applies especially for those countries which might take over the lead for environmental policies. Geographical, historical, and political reasons contribute to the fact that national preferences for certain modes and regulatory approaches are different.

Geographically, there is a center-periphery conflict. Countries with major industrial centers are more concerned with the consequences of transit traffic and congestion, whereas countries in the peripheral regions are more concerned with market accessibility to metropolitan areas (Woelker 1985: 40; Nijkamp u.a. 1994: 38f). The latter have a preference for road transport since their capacity for railway linkages is limited (ibid.). Geographical reasons also play a certain role for modal preferences. Continental countries (especially Germany and France) tend to prefer railways as the dominant environmentally-friendly transportation mode, while coastal countries (especially the U.K., Denmark, the Netherlands, Ireland, and Portugal) tend to prefer shipping as the dominant environmentally-friendly transportation mode (Elshols 1994: 8; Bellers 1992: 186f).

This structure is reinforced by historical reasons. Those countries with an early industrialization (except the U.K.) have a strong railway network system since the 19th and early 20th centuries. Railways were the most appropriate mode for the mass goods and basic material-oriented industrialization phase of this period. Since high road-infrastructure investments took place after 1930, those countries have a dense, multi-modal infrastructure network. Industrial latecomers, especially the peripheral countries have a mono-modal, road-biased transport system (Elshols 1994: 2f; Button 1992a: 36; Bellers 1992: 186f), which was a more flexible type of industrialization in recent decades.

Finally, one distinguishes between the "Anglo-Saxon" and the "continental" regulatory philosophy of transport policies (Button/Pitfield 1991: 7; Button 1992a: 35). The first approach is more efficient and market-oriented, whereas the second perceives transport in a wider social context and assumes market failure as a fundamental characteristic of the transport system. While Germany is the strongest protagonist of the continental approach (Bellers 1992: 185), the Netherlands and the U.K. belong to the more liberal countries.

A rough overview of the constellation of preferences in the different policy fields is presented in Table 15.

Policy Field	Potential Leaders	Intermediate	Laggards
Environment/ Clean Air/ Habitat Protection	B, DK, D, NL, (UK)	F, I, L	E, GR, IR, P
Taxation	D, I, IR, UK	B, (DK), L, (NL)	(DK) , E, F, GR, P
Infrastructure	B, NL	D, F,DK, I	E, GR, IR, P, UK
Ecologically qualified liberalization of road	D	B, E, F, I, P	DK, GR, IR, L, NL, UK
Growth oriented railway reform	D; NL, (F)	I, B, E, L, IR, P, GR	UK

Table 15 Constellation of National Preferences on “Incorporation” in the EU

Policy initiatives towards incorporation, in form of discussion-papers and draft Council resolutions, have been made by Denmark and Germany. Environmental ministers supported setting environmental targets for the transport sector. Some type of impact assessment for the Trans-European Networks was perceived to be necessary. An analysis of the state of methodology on environmental impact assessments for road transport however shows that a consensus might only be found at the local and regional levels, based upon a “distribution oriented and anthropocentric” philosophy (EURET 1994).

A broader coalition to raise diesel taxation may emerge, since most countries have raised autonomously their diesel taxes beyond EU harmonization levels. In the field of infrastructure policies, there is a major consensus to promote High-Speed linkages and Combined Transport (within limits). Only a few countries have actually invested in revitalizing conventional railway systems. There has been no consensus to redirect investment priorities. For example, a broad coalition of peripheral and some large countries intend to invest in large-scale motorway programmes in the future.

This analysis suggests that presently there is no clear basis for “environmental leadership” from member states in the field of transportation. On the other hand, those countries that have little or weak interest in the incorporation of the environmental dimension are more homogeneous in their transport structures and their underlying growth-oriented interests. They can mobilize stronger alliances with other countries in favour of a business-as-usual strategy.

3.7.4.2.2 The Institutional Setting

Incorporation takes place in a number of different institutional settings with different decision-making procedures and different rules for the participation in the European Parliament. In this respect, transport policies, in general and the incorporation of the environmental dimension take place in a extremely fragmented institutional environment.

Our comparative overview of the impact of different institutional settings on incorporation in the transport sector concluded that the position of the European Parliament (EP) in the decision-making process is vital. This study found that it was easier for the Council to ignore the environmental dimension in the cases where the EP was weak, than in the cases where the EP could influence the decision-making process. Positive examples have been the reform of the Structural Funds, the Habitat Directive or the recent conflicts on the principles for the Trans-European Networks. The profile of incorporation is weaker in the cases where the EP has a weak position, such as in the field of taxation. In addition, the position of the Commission in the institutional setting makes a difference. In the cases where the Commission had a relatively strong negotiation position vis a vis peripheral countries, it could sometimes influence the dimension (but not the priorities) of infrastructure projects.

The choice between unanimity voting and qualified majority voting so far has made little difference for the incorporation of the environmental dimension into transport policies. In the case of taxation, unanimity voting contributed to a "pareto-optimal solution", which partially respected the vital interests of the countries with higher tax levels. But with active incorporation, raising tax levels would meet considerable barriers under the "unanimity regime." In the case of deregulation, a qualified majority sometimes weakened the position of the country, which was pressing for a link between deregulation and harmonization. Sometimes it could find sufficient allied countries. In this sense, one can observe a slight bias of decision-making rules at the expense of active incorporation.

3.7.4.2.3 Multi-level Policy-making

European policy-making is characterized by issue linkages. Special sectoral problems are often linked to wider questions of European Integration (Schumann 1993). Package deals and sectoral issues often take place.

Major steps towards European integration had a significantly direct impact on transport and hence an indirect impact on the environment. Yet environmental interests did not play a role when the package deals for the major moves towards European integration were formulated. In this sense, new infrastructure funds as well as the deregulation of transport-services were part of package-deals and spill-over effects from the wider dynamics of European integration. Now they are important constraints for incorporation. For instance an ecological requalification of infrastructure policies would affect vital interests of peripheral countries, which were compensated for the negative economic impact of the internal market and the European Montary Union by the new cohesion instruments.

Multi-level policy-making may have a positive impact on incorporation if the environmental interests are represented during negotiations on questions related to European integration. While this has not been the case in the member states, it has been for non-member states, such as Switzerland and Austria. Since the early 80's, both Switzerland and Austria have shown considerable interest to join the European Community. However, Alpine transit and its impact on the environment and the local population became one of the most difficult issues during the negotiatons between the EU and those countries.

The agreements contain some safeguards against unrestricted road transport. In Austria an “Eco-point” system was introduced, to reduce NO_x-emissions from heavy vehicles by officially 60% and due to manipulations in the reference case actually by ca. 30%. Switzerland achieved a commitment from the EU, to achieve full cost internalization for road transport. Both countries agreed to extend their transalpine railway infrastructures, so that a (yet not fully effective) push-and-pull system for the environmentally friendly modes could be established.

These political results can only be understood in the context of strong popular pressure in the Alpine regions against freight transit, and the veto power in which the governments had to use during negotiations for membership to the EU.

3.7.5 Conclusions and Recommendations

Incorporation is as yet “the iceberg under the surface.” The relationship between transport and the environmental policies have been intensively discussed since 1989. Likewise, a number of policy instruments to strengthen incorporation have been evaluated, in addition to establishing a coordination system between Directorate General for the Environment (DG XI) and Directorate General for Transport (DG VII). Yet, political output appears to be rather weak. This could be explained by a dual-arena concept of European policy-making: the supranational arena is more prospective, problem-oriented, and open, while the intergovernmental arena is rather concerned with safeguarding the national status quo.

The limited problem-solving capacity of the EU raises one important question: How might the “subsidiarity principle” be applied to the incorporation of the environmental dimension?

In theory, there is a strong need for European action. Over the past years, the playing field has shifted from the national to the European level. Multiple interdependence can be observed. There is a need to define the terms of competition for freight transport, which has extremely mobile production factors, according to environmental requirements at the European level. It is also necessary for greater European action in the field of taxation, social requirements for hauliers, stronger criteria for the access to the profession, and technical harmonization. Moreover, there is a need for the coordination of national infrastructure policies in order to avoid double and parallel investments, dead-end links, and lack of interconnectivity. Furthermore, the self-control of community investments should be considerably strengthened. However, reaching a consensus to an ecological qualification of those activities is weak. A stronger European Parliament could help to bring environmental issues on the Council agenda, but certainly it would not help to overcome the prevailing “preference divergence” surrounding this issue.

Therefore, if national preferences are not to be distorted; decentralization and the application of the subsidiarity principle should play a strong role (to this debate: Zimmermann u.a. 1994; Scherer/Blatter/Hey 1994; Binswanger/Wepler 1993). Subsidiarity, however, should not be misinterpreted in the sense, that environmental measures will be decentralized, while the centralization of transport policies continues without environmental checks and balances.

This study found that it is necessary to synchronize the European integration of transport policies with the respect to environmental policies. In the field of taxation,

this means the strict application of the territoriality principle (which has been restricted by compromises in 1993), so that non-discriminatory tax increases (or other market-oriented instruments) may be promoted without endangering the competitiveness of national hauliers.

The same must apply to infrastructure policies: Community infrastructure funding should either be limited, or follow stricter environmental criteria. Present legislation is not sufficient to promote infrastructure policies compatible with environmental requirements. Any strengthening of infrastructure competencies at the EU level should be paralleled with strengthened citizens' rights at the regional and local levels to guarantee a balanced selection of projects, taking into account the diffuse global environmental interests at the European, as well as special victims' interests at the lower levels.

Finally, the EU decision-making rules should improve the opportunity structure for "environmental instruments." This study recommends that this may be achieved by further strengthening the role of the EP, as well as by opening formal and informal actors networks to represent environmental interests.

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4 Comparing the Countries

4.1 Characteristics of incorporation *(Pieter Janse)*

4.1.1 Introduction

This chapter inquires into the state of incorporation in six European countries and the EU. The state of incorporation is the primary research focus of this project. Furthermore, the state of incorporation can be taken as a starting point for a deeper investigation of the relationship between freight transport and environmental policy.

The report is structured in a way that allows the mutual differences and similarities among the countries and the EU as a whole to be identified. A framework has been designed to structure the research on the state of incorporation; the background of this framework is clarified in Section 4.1.2.

A summary of the state of incorporation in 8 policy fields is given in 4.1.3. Performance in the six countries and the EU is then compared, and the results presented in 4.1.3.1. The chapter closes with conclusions on the state of incorporation (4.1.4).

4.1.2 Framework for investigating the incorporation of the environmental dimension in freight transport policy

A framework has been drawn up to investigate the state of incorporation in 6 countries and the EU. We distinguish eight policy fields in which incorporation of the environmental dimension may be important.

Legal requirements for incorporation

Legal requirements are considered to be an important factor for the development of environmental policies and programmes. Some countries have requirements for the incorporation of the environment set out in their constitutions. Primary law may even define contradictory objectives for transport and the environment. In secon-

dary law some countries have worked out general principles (Polluter Pays principle and Precautionary principle) in a separate Environment Act or integrated such principles in other laws.

Strategic aims

Strategic aims for transport-related environmental policies exist as well as environmental objectives for transport policy. These may be complementary, or even contradictory, but some kind of mutual adjustment of the objectives by joint strategy formulation may be possible. Investigations in this field consider the various kinds of strategic aims.

- business-as-usual practice
- congestion-oriented strategy
- strategy for structural changes
- demand-side-oriented strategy.

Environmental targets

Quantitative reduction targets for emissions and immissions provide an indication of the incorporation of the environmental dimension. It is clear that the level of linkage between environmental targets and policy for the freight transport sector shows how deeply the environmental dimension is incorporated.

Environmental targets have been inventoried for:

- global warming
- acidification
- land use
- noise
- air quality

Organizational changes supporting incorporation

The cross-sectoral character of environmental policies should be reflected institutionally. Some of the government reorganization that has taken place over the past

decade must be viewed as an element of a certain policy of incorporation. Investigations in this field indicate that major organizational changes have taken place to promote the environmental dimension in departments of the environment and transport, as well as in other relevant departments (economic affairs and finance).

Organizational changes create the 'hardware' for incorporation, and due administrative capacity can be considered a precondition for incorporation.

Relevant organizational changes may take a variety of forms: for example, environmental coordinators in the (freight) transport department, transport experts in the environment department, joint projects and working groups on 'freight transport and environment'.

Procedures

Incorporation takes place via coordination procedures among government departments. The intensity of such procedures, which may be formal or informal, may be ranked according to the following criteria:

1 informative

2 consultative - asking the other departments for comments

3 coordinating - specific harmonization of activities is required.

An important indicator of the quality of incorporation may be the stage of the decision-making process at which it takes place. Incorporation is more effective at an early stage (i.e. the estimation phase) and is not effective at all after decisions have been made. In the best case coordination between environment and transport departments takes place as a process lasting from the beginning to the end of the decision-making process.

Infrastructure policy

Investment priorities are an indicator of the true orientation of transport policies. The quality of and budgets for infrastructure are a major factor of relevance, more so than the current modal split of freight transport.

Furthermore, the budgets scheduled for infrastructure give an indication of priorities and the state of incorporation.

Taxation policy

Environmental considerations in taxation policies have also been investigated, with diesel fuel tax, vehicle tax, toll fares and vignets being taken as indicators.

Competition and deregulation

In some countries freight transport is a highly regulated sector. Less regulation and more competition should make freight transport more efficient. The major question is: in what respects has environmental impact been taken into account in this process.

4.1.3 Explanation on levels of incorporation

The state of incorporation comprises not only a description of the 8 policy fields, but also an overall evaluation. Hence incorporation has been 'measured' according to its strength in the various different policy fields. The nature of incorporation may differ widely from country to country, and can therefore be explained in different ways or dimensions. It was not possible to clarify the differences on a one-dimensional scale, and in this project we have attempted to explain the degree of incorporation in two dimensions:

- depth (profoundness) of incorporation
- activeness (versus defensiveness) of incorporation.

Explanation on the depth of incorporation (low - high)

The levels of incorporation correspond to the theoretical background, which should be kept in mind when ranking the state of incorporation on the scale.

high	policy is based on criteria for sustainability
middle	substantial change leading to better incorporation of environmental aspects
low	policy changes take place only if the need to change is unavoidable for other reasons, too
none	business as usual (no change in a more environmentally benign direction)

1 Legal requirements

high	incorporation of sustainability criteria in transport policies
middle	incorporation of existing environmental targets in transport policies or a no-regret policy
low	initial (isolated) steps towards incorporation
none	no indication of how priorities are set or what criteria are taken into account

2 Strategic targets

high	demand-side management; transport avoidance
middle	targets for changing modal split
low	congestion- and capacity-oriented targets; environmental targets taken into account only marginally
none	business as usual

3 Environmental targets (quantitative)

high	targets based on critical loads and sustainability; substantial targets for the long term: reductions of at least 50% for CO_2 and 75% for NO_x
middle	strong targets; reductions of at least 20% for CO_2 and 50% for NO_x
low	targets or intentions to stabilize CO_2 and NO_x emissions
none	none of these

4 Organization

high	strong 'mirror' departments, with strong backing from the top of the ministries; strong research capacities for environmental aspects of transport policy; strong formal and informal administrative networks on transport and environment, leading to good cooperation and effective policies.
middle	characteristics as mentioned above, but not leading to good cooperation and effective policies.

low dispersed individuals working on the issue of transport and environment; some, but limited, research capacity

none incomplete or overburdened responsibilities in one ministry (transport ministry)

5 Procedures

high intergovernmental working groups active on important issues; veto powers for environment minister on crucial decisions

middle consultation with environment ministry on decisions on transport policy; strong evaluation methods; modification of plans following Strategic Environmental Impact Assessment (SEIA)

low information exchange between environment and transport ministries; SEIA aimed at legitimizing plans

none no procedures

6 Infrastructure policies

high alternative measures replace new infrastructure investments; strong priorities for 'environmentally friendly' infrastructure (rail and waterways); strong priorities for combined transport; standstill for motorways

middle considerable increase in 'environmentally friendly' infrastructure; declining budget for new motorways; budget for investments facilitating combined transport

low investments in all transport modes

none investments in motorways only

7 Taxation

high diesel tax including external costs (environmental costs) and a vehicle tax differentiated for emissions and noise

middle diesel tax including external costs (environmental costs) or a vehicle tax differentiated for emissions and noise

low diesel tax substantially above EU harmonization level (at least 30%)

none diesel tax at EU harmonization level

8 Competition, deregulation, privatization

high environmental missions for rail transport and shipping translated into favourable positions

middle environmental missions for rail transport and shipping taken into account in deregulation and privatization

low competition between road, rail and inland shipping is kept in balance

none environmental arguments play no role at all

4.1.4 The state of incorporation in six European countries and the EU

In the summaries of the national reports we have given our assessment of the depth of incorporation of the environmental dimension in 8 policy fields. Although the criteria for none/low/middle/high incorporation are clear (see above), our assessment is nonetheless to some extent subjective.

The following figures show the state of incorporation in the 8 policy fields.

a depth (profoundness) of incorporation in 8 policy fields

b in 3 policy fields we distinguish between incorporation in the planning and implementation phases[58]

c whether incorporation is streamlined and coordinated, or diffuse or fragmented[59]

A short explication of the results for one or two countries accompanies each policy field figure. An in-depth description of the results is included in the abridged version of the national studies.

[58] The planning phase is frequently taken to be the estimation and initiation phase.

[59] In the national case studies an indication is often given of whether the policy on incorporation is coordinated, diffuse or fragmented.

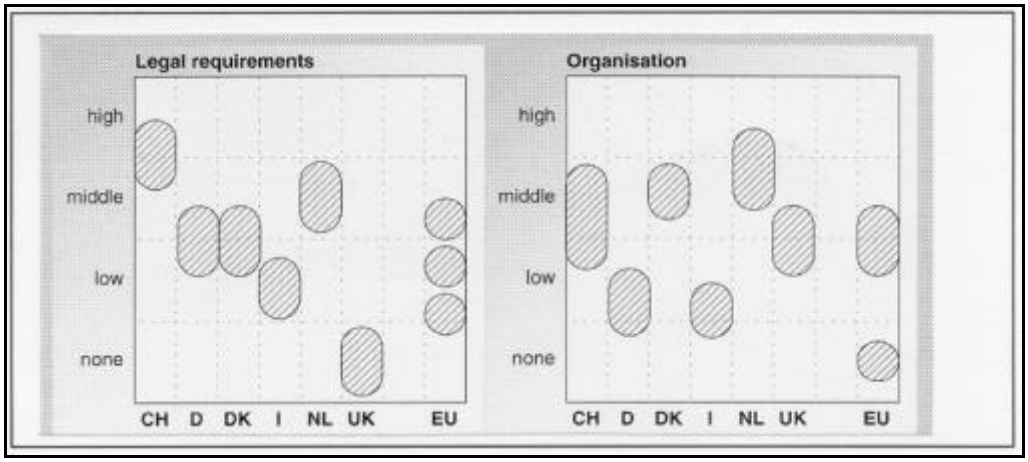

Abbildung 9 Legal requirements and organizational changes for incorporation

The incorporation in legal requirements varies greatly among the European countries. In Switzerland, the incorporation of the environment is firmly embedded in constitutional law, environmental protection legislation, energy and spatial planning policies, as well as in regulation specifically related to freight transport. The United Kingdom has no written constitution, nor does its sectoral law contain much in the way of basic environmental policy.

In Denmark and the Netherlands, the changes in government organizations over the last 10 years show that environmental issues have gained importance in freight transport policy. In both countries, the Ministry for Environmental Affairs has given more attention to (freight) transport, while the Ministry of Transport has given a higher priority to the environment. This has led to transport policy plans that expressly take into account the environmental effects. In Denmark as well as in the Netherlands, these plans were brought about through cooperation between the two departments.

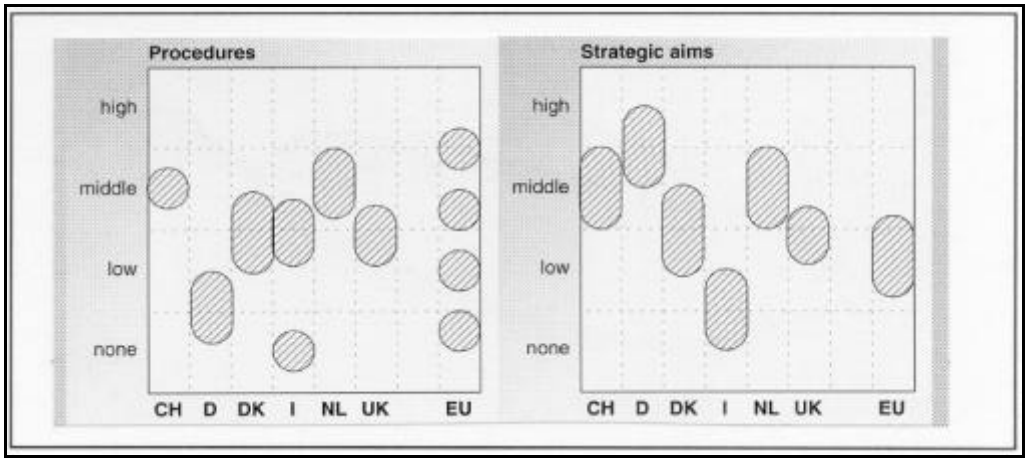

Abbildung 10 Procedures for incorporation and strategic targets

Within the European Union, the incorporation in procedures is highly fragmented. Environmental considerations are relevant in the distribution of some budgets e.g. of the Cohesion Fund, but not in all.

The strategic aims in Germany show that the incorporation of the environment in the freight transport policy has reached a high level. Targets have been set by the federal government as well as the governments of some of the federation states for shifting the “modal split” from road transport to transport by rail. Another political issue is how the demand for transport can be influenced. In Italy, no targets have been formulated to control the development of freight transport, only to reduce the nuisance caused by freight transport in and around the cities.

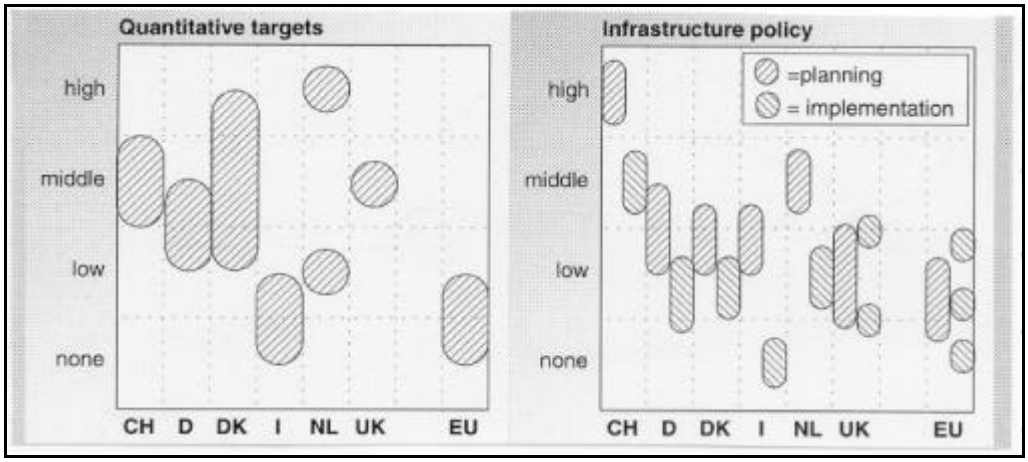

Abbildung 11 Quantitative environmental targets and infrastructure policy

The Netherlands have set a strict target for the reduction of NO_x emissions from freight transport (-75% in 2010 relative to 1986). This target is based on critical loads for the acidification policy. On the other hand, the CO_2 target is not very strict and should be considered an intermediate stage. In Denmark, the emission reduction targets vary rather in strictness. The CO_2 target for traffic is not very ambitious - stabilization in 2005 at the 1988 level -, the national target for the same period being -20%. However, the targets for the emission levels of NO_x, Volatile Organic Compounds, particulate matter and noise from traffic show rather more ambition by the Danish government.

In Switzerland, the environment plays a major role in infrastructure-related politics. The Swiss give high priority to the improvement and increase in capacity of the railway system. The plans for the new tunnels through the Alps are an example of this.

Although plans exist in Italy to improve the infrastructures for rail transport and shipping, in practice most improvements benefit the road infrastructure.

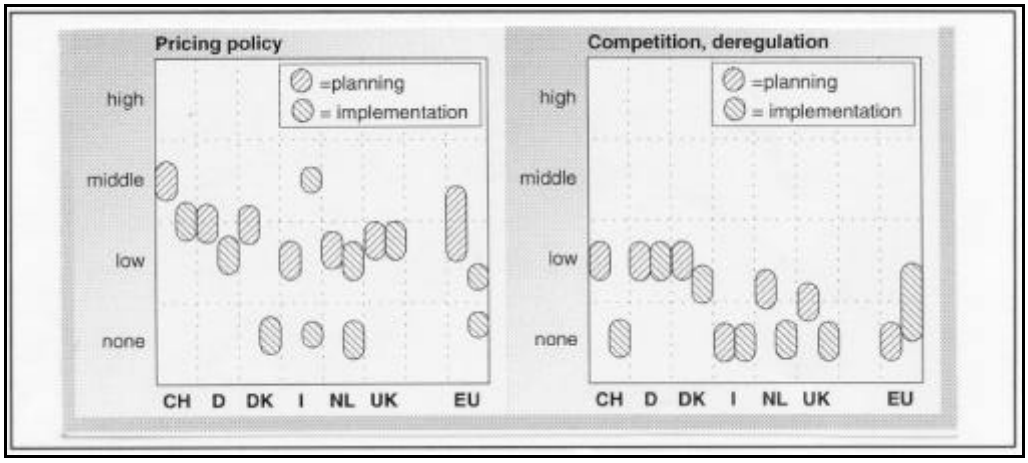

Abbildung 12 Pricing policy and competition & deregulation

In the European countries, pricing policy is only rarely considered as an instrument to control freight transport. The European Commission urges that external costs be internalized, but cannot yet enforce this policy. The harmonization level for diesel fuel excise is primarily intended to ensure equal opportunities for competition. All the present harmonization level does is to prevent extreme downward deviations from the average. So, although at the planning level the environment does play a role of some importance, as far as implementation is concerned, it is a secondary issue.

The pricing policy in the United Kingdom is remarkable in that within a short period, a substantial increase in diesel fuel excise has been effected, partly as a result of the CO_2 programme.

Regarding the fields of competition and deregulation, the level of incorporation of the environment is low in all countries. A current example is the privatization of the railways in several countries. In Germany, environmental issues play a role in this. The German government does not want the competitiveness of freight transport by rail to deteriorate relative to road transport. Whether this will indeed by a result of privatization remains to be seen.

4.1.5 Inter-country comparison at a higher level

The eight figures in the previous section give a very variable picture. When the differences are considered more closely, however, a certain pattern can be discerned. On the one hand there are countries with highly developed plans and targets, but with little concrete implementation. In other words, there is a great discrepancy between 'what they say' and 'what they do'. On the other hand there are countries geared mainly to implementation, but with a paucity of plans and targets.

We consider it useful to make an inter-country comparison at a more aggregate level, to bring to light the discrepancies between plans and implementation. We have therefore aggregated the 8 policy fields in 3 groups (style, targets and actions).

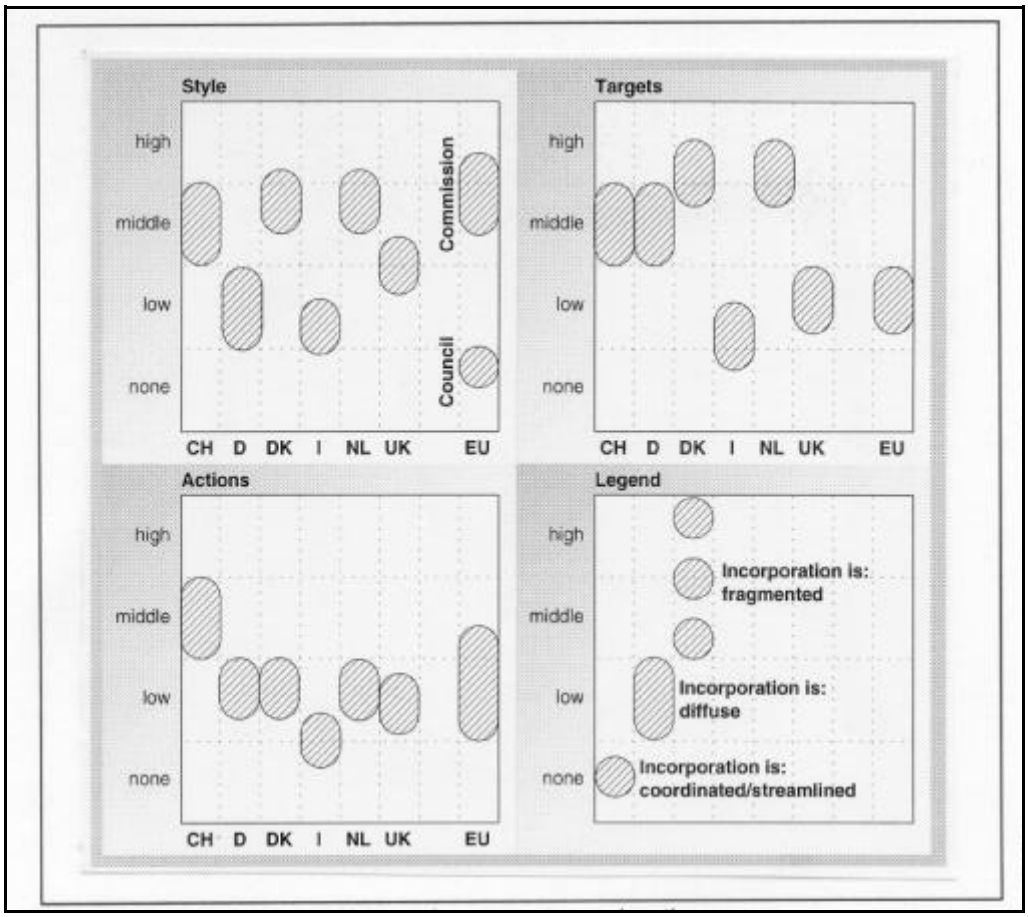

Abbildung 13 Decision making styles, targets and actions

The figure on decision-making styles reflects organization and procedures. The figure on targets shows the aggregated strategic and quantitative targets. The figure on actions shows what is the state of incorporation in infrastructure policy, pricing policy and policy on competition and deregulation.

4.1.6 Environmental policy profiles

On the basis of the comparison in Section 4.3 of the degree to which the environmental dimension is incorporated in freight transport policy, three profiles have been drawn up.

"Good intentions, but weak implementation"

An important feature of these countries is their great concern for the environment. This concern has resulted in environmental protection being legislatively regulated, on paper at least. The administrations of these countries also endeavour to give direction to their environmental policy by setting strategic and quantitative targets for reducing environmental impact.

Countries with this profile also have a comprehensive (national) environmental policy plan as well as a (national) traffic and transport policy plan. These plans have been harmonized, because consultation and consensus are part and parcel of state administrative culture.

Implementation of the plans is slow, however, taking place by small increments. The culture of consultation and consensus renders major (and abrupt) changes virtually impossible.

Denmark, the Netherlands and to a certain degree the European Union, too, match this profile.

"Concrete steps, but no overall plan"

In these countries there is major concern for the environment and the population also expresses a willingness to make sacrifices for a healthy environment.

Decision-making in these countries is a very political process. Decisions to improve environmental health are very dependent on the will of (the majority of) the body politic and the population. With a majority, there can be substantial change. Incorporation of the environmental dimension in freight transport policy therefore proceeds 'in fits and starts'. This is further reinforced by the complex and often troublesome 'vertical' coordination between the various administrative echelons, arising from the federal structure of the country.

Incorporation of environmental interests is reflected in government organization and procedures, but it does not always enjoy top priority. Another characteristic feature is the lack of an integrated policy plan for transport and environment.

Germany and Switzerland match this profile.

"No coherence; environmental policy in initial phase"

In these countries there is little concern about the environmental impact of traffic. This does not mean that there is no interest in the quality of one's own

environment. There is certainly such interest, but it stems from historical rather than environmental awareness.

Administrative culture is geared mainly to problem-solving and far less to planning. The style of government is consequently more reactive than steering and there is 'little' incorporation of the environmental dimension in government organization and procedures. Similarly, objectives and targets for environmental improvement are generally lacking.

However, when environmental problems occur (in freight transport), these will lead to concrete solutions and real changes. In such cases the problem will generally be acute, and the solution urgent. The solution chosen may be surprising and even have far-reaching consequences. The outcome of this kind of process is extremely difficult to predict, however.

Italy matches this profile and to some extent also the United Kingdom.

The environmental awareness in the United Kingdom is quiet high. In general the incorporation in the UK is low - middle, but the incorporation is not very consistent or coordinated.

4.2 Structural Factors *(Christian Hey)*

The comparative analysis of the results of the national studies will take place on two levels: First, the validity of the hypothesis will be commented in general. After a reformulation on empirical basis, the results will be compared.

4.2.1 Environmental Pressures (Hypothesis 1)

A general comment

The hypothesis has constructed environmental pressures on the basis of some objective indicators. From the national analysis, it became obvious that it was not the objective pressures but the perception of problems which play a crucial role. Cultural factors in the different countries frame the accepted “thresholds” for certain damages as well as the focus of attention.

For instance, thresholds in Denmark are very low - so the environmental impact of transport is discussed, although environmental damage caused by transport is relatively low. In contrast, the threshold is very high in Italy, despite of a high and growing level of pollution caused by transport. Unemployment and the income gap between the North and the South of the country receive higher attention in Italy.

In addition, the focus of attention is different in the countries. Forest damages played an important role in public discussion in Switzerland, Netherlands, and Germany, yet not in the others. In Italy and UK, forest damages are high but they are not a major political issue. Attention in the UK is more focused on human health questions(children’s asthma) and nature protection. Land-use questions also play a prominent role in densely-populated Netherlands.

Climate change related to transport played a strong role in the public discussion in the Netherlands, Germany and to some degree in the UK. It was as well the focus of concerns at the EU level.

Specific reasons for clear differences and paradoxes in the type of perceptions could not be analyzed systematically - yet capacities for change play a certain role: “The system only perceives those problems, which it can solve” (Prittwitz 1994).

Even perceived environmental pressures have a very ambivalent impact on incorporation. In Germany, the attention to forest damages contributed to the introduction of stricter emission standards for vehicles, but not to incorporation. In Switzerland and in the Netherlands, several approaches were chosen, such as stricter technical standards for vehicles and the formulation of air quality stan-

dards, which created some incentives beyond technical standards. In the UK, the attention on local health issues contributed to demands for bypasses and new road construction.

The reformulation of the environmental pressure hypothesis to a problem perception hypothesis creates another problem. Objective problem pressures may show relatively stable trends over the 10-year research period - yet problem perception is much more cyclical. Issues come on the agenda, but are substituted by others some time later. Problem pressure may be a “structural variable” - yet “problem perception” is very situational and actor dependent. So there are different competing problem definitions in a country and this creates difficulties to “measure” the level of problem perception.

Comparing the countries

Taking all those reservations into account, one element of the hypothesis holds true: There is no strong link between the perception of environmental problems and action. Yet there is a certain link between “targets” and problem perception. This can be shown in the following overview:

	Low		**High**
Perception of Ecological Problems	I	UK, DK	NL, CH, UK, D, EU
Targets	I	EU, CH, D, DK, UK	NL
Actions	I, UK, EU	D, NL, DK	CH

Table 16 Perception of Environmental Problems on Transport and Incorporation

The table confirms that most countries that have perceived a high level of environmental problems also have formulated ambitious environmental targets. Yet the causal relationship is not fully obvious: Issues such as the link between transport and climate change came on the agenda in Germany, the Netherlands, and the EU, after targets for greenhouse gas stabilization or reduction were formulated. Hence, the definition of environmental targets may contribute to a stronger perception of the environmental problems caused by transport.

The table furthermore confirms that the link between actual transport policy changes (actions) and the level of problem perception is very weak. Only Switzerland has a relatively high level of environmental transport policy changes.

4.2.2 Economic and Financial Pressures (Hypothesis 2)

A general comment

The underlying assumption of Hypothesis 2 was that economic constraints would create incentives towards more efficiency-oriented transport policies, which might be combined with environmental objectives. Reality is much more complex and ambivalent than that. To understand the link between economic and financial pressures and incorporation, one has to analyze the different dimensions individually.

Congestion indeed highlights the need for a more efficient use of available road capacity and a more balanced distribution of transport growth among the transport modes. This is especially the case if further road extension meets a number of political or financial constraints. In densely-populated Netherlands there is little space to fight congestion by extending road-infrastructure capacities. Therefore, a policy promoting public transport and strengthening railway freight transport has been chosen. Italy reacts by implementing the supply side-oriented promotion of combined transport infrastructure to the problems of mono-modal transport growth in this country - yet coastal shipping continues to be neglected.

Fiscal constraints are much more ambivalent. They contribute to lower infrastructure investments in many countries, especially UK and Italy. This affects roads, railways, and coastal shipping. The combination of fiscal constraints and congestion contributed to a discussion on road pricing in the UK, yet instead it became an instrument to finance new roads than to use them more efficiently. The environmental impact, therefore, is ambigous. Limited road capacities may be a constraint for road transport growth and an incentive for the use of other modes. However, the reduction of railway investments reduces their modernization capacity.

Fiscal considerations played an important role to maintain and to increase taxation for full cost infrastructure cost coverage. In Switzerland, Germany, Italy and UK a high level of taxation was linked to the needs for infrastructure investments - yet in many countries, taxes on transport were not formally hypothecated to infrastructures. The environmental ambivalence is obvious: Higher overall taxes may contribute to a more rational use of transport service - however, improved infrastructu-

res improve accessibility and average speed. This may have an impact on modal choices and transport demand. As an interesting byproduct of fiscal motivations, Switzerland has established a differentiated road infrastructure cost accounting system - which now may serve as a knowledge base for the variable heavy vehicle tax.

A relatively high level of taxation is applied especially in those countries, which have to meet a relatively low level of international competition. This is especially the case in Switzerland and the UK, but as well in Germany and Italy during the period when their transport sector was strongly regulated by minimum tariffs and quantitative restrictions.

In other countries, the economic situation of the road transport sector and the objective to strengthen their competitive position were stronger than fiscal motives. Traditionally, low taxes and subsidies have been applied as tools to strengthen the competitive position of the national road haulier sector in the Netherlands and in Denmark. In such cases, economic pressures worked against the incorporation of the environmental dimension. The hauliers could successfully mobilize the opposition against any policies which would increase their costs and affect their competitive position.

In conclusion, one can argue that in countries severely affected by international competition, fiscal constraints are often weaker than the economic pressure on the hauliers (i.e., Denmark, Netherlands). In countries with a certain degree of autonomy (UK as an island, Switzerland as a non-EU member), fiscal constraints are stronger.

Finally, increasing railway indebtness must be seen in its full ambivalence. Railway indebtedness reduces the railways capacities to invest into their modernization and therefore, are a barrier rather than an opportunity for incorporation. For some countries, railway debts were a major push factor for a radical policy change - yet in totally opposite directions. For example, the German railway reform created a new basis for a healthy capital basis and market-oriented adjustment of the enterprise. Government support is considerably lower in the UK, thus leaving the success or failure of the British railway reform much more to the uncertainties of market trends.

Hypothesis 2 therefore, requires reformulation and differentiation: Congestion may be a strong push factor for a more efficient road infrastructure use. Fiscal constraints are ambivalent, since they may reduce capacities for “active incorporation” but improve the capacities for “defensive incorporation”. Reinforced market competition is rather a constraint for incorporation. Railway indebtedness rather

weakens the railway's position - whereas radical railway reform is rather the exception.

A comparison

From a more differentiated basis, the following comparative overview on each of the countries can be provided. The countries are grouped according to different pressures and this is correlated to some transport policy changes.

From	relatively Low	to	relatively High
Economic Pressures			
Congestion	DK, CH	D	I, NL, UK (EU)
Fiscal Pressures		NL, DK, CH	UK, I, D
Competition	UK, CH (EU)	D, I	NL, DK
Actions			
Taxation	NL, DK,	D, I,	UK, CH, EU
Infrastructure Policies	I, EU, DK	UK, D, NL	CH

Table 17 Economic Pressures (Source: EURES 1996)

Table 17 shows the linkages between economic pressures and certain types of incorporation are scattered and weak. It is interesting to observe that those political levels which have a certain degree of autonomy, such as UK, Switzerland, and the EU[60] will plan, or will at least discuss, environmental taxation. Environmental taxation is a typical case for international coordination, since individual countries may face considerable disadvantages for their haulier sector if they introduce such taxes individually. A certain link between congestion changes in infrastructure policies could be observed in the Netherlands and the UK. In total, however the potential for an "ecological modernization of the transport sector", which addresses economic and environmental issues at the same time, has been discussed in theory by EU strategic documents, but the link is more accidental in practice.

[60] The relative autonomy of the EU derives from the fact that a coordinated approach may harmonize the conditions for competion. A coordinated approach would reduce distortions and disadvantages for national hauliers in the case external costs would be incorporated in taxation systems.

In this respect, the result correlates with the expectations of capacity theory: economic pressures do not explain policy changes.

4.2.3 State of Environmental Policies (Hypothesis 3)

A general comment

The stage model of environmental policies assumes a clear path towards deeper and more complex changes. It was assumed that at a certain moment incorporation becomes necessary. In practice, however, one can observe different paths rather than just one. A strong, technically-oriented environmental policy may be an alternative to incorporation in some countries. Germany and Denmark push for strict emission-norms as a substitute for incorporation. In the Netherlands and Switzerland, priority is also given to technical measures, but they are not perceived to be sufficient. As the analysis of Germany proved, there is considerable potential to continue a technological-based path, thus reducing fuel use and emissions of vehicles. One may assume that this path will be preferred to a policy change, which involves new actors and new political arenas. Switzerland was a first initiator in strong emission standards for heavy vehicles - yet active incorporation already played a strong role in the public discussion in the early seventies.

The stage model does not apply in the UK either. The UK is characterized as an early environmental policy starter, but it is late in adapting to EU clean air policies. Incorporation has been analyzed as an alternative to a clear strategic and target-led approach to the transport sector and as a tool to bypass the end-of-pipe phase. Since capacities for structural change are rather weak in the UK, demand-side-oriented policies are discussed here. The only level where the stage model has some value is at the EU. Strategic discussion on transport and the environment intensified after a first round of decisions on stricter emission standards for heavy vehicles was made. So instead of a stage model, one can distinguish different approaches to the environmental problems of the transport sector. Germany, and partially the Netherlands, and Denmark opt for technically-oriented improvements. Switzerland opts for “technical measures” and “structural change” on the basis of its relatively strong railway system. Italy still follows a business-as-usual to capacity-oriented strategy - whereas in the UK, the discussion on demand-side-oriented measures has been intensified over the last years.

Furthermore, one may have doubts if “incorporation” is really a clearly defined policy/strategy. The concept is diffuse, but sounds progressive. Implementation cannot really be controlled or evaluated. The limits of this study to find an accep-

ted evaluation criteria are a case in point. “Indirect incorporation” often could be observed. In this sense, there is well founded suspicion that the concept is used as an instrument of symbolic policies (Edelmann 1976; Prittwitz u.a. 1992). Thus, it may be rather applied in countries with a strong need for a “symbolic environmental policy approach”. This study found some empirical confirmation in the case of UK, Denmark, and the EU.

Comparing the Countries

The weak link between the state of environmental policies and the level of incorporation can be shown in Table 18.

From	relatively Low	to	relatively High
State of Environmental Policies	I	EU, UK	CH, NL, DK, D
Targets	I	EU, UK, D, CH	NL, DK
Actions	I, UK, EU, DK	D, NL,	CH

Table 18 Stage of Environmental Policies

Table 18 shows the weak correlation between the stage of environmental policies and incorporation. Some countries with advanced environmental policies have lower levels of incorporation in practice (i.e., DK, G, NL). However, one can perceive a fundamental link: countries, which have an advanced state of environmental policies tend to have advanced policy targets. But the link to actions is generally very weak. The “stage model” for environmental policies has to be falsified on the basis of this empirical evidence. As suggested above, there are different alternative paths rather than stages. A certain link only can be made for the EU - and even there it seems that a stage model is rather a construction of the promoters of incorporation (i.e., in the Fifth Environmental Action Programme) rather than a matter of action. In other words, it is rather an agenda-setting model than a model to explain policy output.

4.2.4 Economic Capacities (Hypothesis 4)

A general comment

Hypothesis 4 has been evaluated as largely valid for all countries analyzed. Economic capacities played an important role in the discussion on transport and environment in many countries and at the EU level. So the cost of change (i.e. shifting freight transport to rails) often is emphasized by the affected interest group organizations.

But one reservation has to be made: Some countries have chosen a strategy for railway or intermodal transport, despite of the fact that railways have a low share (Italy, Netherlands). So one may argue that economic capacities are not an explanatory factor for public investments, but only for measures affecting the costs of the private sector. Both countries chose this anti-cyclical investment strategy because of external reasons. Italy had to strengthen the capacities for intermodal transport because Alpine transit has high shares of combined transport due to the restrictions of the Alpine countries. The Dutch approved the BETUWE-line in order to get an additional, capacity increasing link from Rotterdam to the German railway system. In other words, transport policies and infrastructure priorities in some countries affect policies in other countries.

The comparison

Table 19 shows the link between economic capacities and transport policy choices.

From	relatively Low	to	relatively High
Capacities of railways and CT	I, DK, UK, NL, EU	I, (CT), D	CH
Actions	I, DK, UK, EU	NL, D	CH (UK)

Table 19 Economic Capacities and Incorporation

Table 19 must be treated with reservation. Due to an insufficient data base, coastal shipping has not been analyzed systematically - although it might reverse the picture of limited capacities for several countries (i.e., UK, DK, NL, I).[61] Shipping, which has a share of nearly 50% of intra-European freight transport, provides for a huge, yet not systematically discovered potential. Furthermore, most national

[61] The Communication Com (95)317 of the Commission entitled “The Development of Short Sea Shipping in Europe” could not be taken into account when drafting the national papers.

studies did not analyze the potential to improve the transport efficiency of the economy. This has only been done explicitly for UK.

Nevertheless, Table 19 provides for a relatively clear picture: The capacities of the railway sector have been evaluated “low” in Italy, Denmark, UK, and the Netherlands. Railways were systematically neglected over previous decades in the UK. Railways and Combined Transport are perceived to have some potential in international transport in Denmark and the Netherlands - but less for domestic transport. For those countries, a strategy towards a modal shift does not provide for substantial environmental relief. The case study for Germany has systematically analyzed the capacity and potential of railways. It found that most transport is concentrated on some corridors, which are already fully used. Therefore, there is less capacity in the short and medium term for substantial railway growth. This may explain the “capacity-orientation” of the German transport policies. There are fewer technological capacities for shifting transport to the railways. Furthermore, the theoretical growth potential of 30-50% may not be fully used since railways have to operate under fully commercial conditions since 1994. The market conditions for Combined Transport and rail transport however, deteriorated after tariffs and quantitative restrictions were abolished.

Switzerland has the relatively strongest railway capacities - especially on the Alpine transit axis. But the overall network is also very dense. This is a strong basis for the recent policy initiatives to shift Alpine transit to rail.

As argued above, the potential for demand-side oriented strategies has not been systematically analyzed except in the UK. As an island, the UK has a “largely independent economy, which has some capacity to absorb the financial impact of such measures“ (i.e., raising fuel taxation). Furthermore, the UK economy “remains quite strongly regional in nature”. Studies for Scotland highlighted the predominance of intra-regional traffic and the low volume of international trade. Such factors strongly explain the preference for a demand-side-oriented strategy in the UK.

4.2.5 The Political System (Hypothesis 5)

A general comment

A clear link between the political system and the level of incorporation was difficult to discover in the national studies. This is due to the fact that the evaluation of political institutions cannot be disembedded from their social environment. For instance, the same institutions may have opposite directions of impact in a strong

or a weak culture of environmentalism. However, some linkages and typical characteristics may be observed.

4.2.5.1 The Electoral Systems

A general comment

A clear link between the formal access of environmental interests to political power and the electoral system could be established. The opportunities for access are lower in majoritarian systems than in proportional systems. However, the impact should not be overemphasized: Informal rules might be a partial compensation for the formal rules. In the UK, the “bureaucracy of accommodation” offers a number of informal opportunities for environmental groups. The conservative, rural opposition to the British road building programme could form a critical electoral mass, which could have some impact on the policy decisions to cut down the motorway programme. Informal mechanisms even play a stronger role in Italy. When the majoritarian voting system was introduced in 1993, the countless small parties formed electoral coalitions to safeguard their representation in Parliament. Actually, coalition building strengthened the representation of Green parties in the Parliament.

But the link between “green” representation and incorporation is rather weak. In Germany, even Green party participation in the Parliament did not significantly influence motorway extension programmes in those regions.[62] In Denmark and the Netherlands, Green parties are weak, despite of strong environmental movements and proportional electoral systems. “Contestable political markets” contributed to the “greening” of some traditional parties, leaving little place for Green parties. A certain link, however, can be observed at the European level: The European Parliament, which can be characterized as a consensus-oriented and minority-friendly institution with relatively strong Green representation and other “greened” parties, is one of the participants promoting incorporation in the EU. In those policy fields where it could play a strong role, the European Parliament was on the side of the environmental alliances.

In this sense, the electoral systems have little impact on the type and the quality of incorporation. Hypothesis 5 must be evaluated as irrelevant.

[62] Occasionally there is a certain correlation between planned highway investments and Green party votes.

Another link could also be observed: Majoritarian systems have more discretionary power. This increases flexibility, compared to relatively slow consensus finding processes in multiparty governments. In the case of the UK, relatively sudden and surprising policy changes took place.

A comparison

The only country with a pure majoritarian voting system is the UK. As assumed in Hypothesis 5, Green parties do not play a relevant role in the UK. The formal access for environmental interests to the power game is restricted. From its strong power base, the government could exert its executive discretion to promote a number of transport policies, despite of considerable environmental concerns. In this negative sense, the hypothesis holds true. In a positive sense, the executive power of the central UK government allowed a high degree of flexibility, which occasionally was used for environmental changes (CO_2-fuel tax, Policy Planning Guide for regional planning etc.). Italy changed its electoral system from proportional voting to majority voting without a significant negative impact on green representation, and also without a significant impact on incorporation.

The other countries have strong elements of proportional voting. This offers good opportunities for environmental parties. With the exception of Denmark, they all had governments under conservative leadership during the research period. Factors other than green representation and the type of incorporation chosen must be found. The leftist government in Denmark started a highly profiled environmental policy - together with some initiatives for stronger incorporation, yet action is limited.

4.2.5.2 Federalism versus Centralism

Fragmented political systems are supposed to have preferences for defensive incorporation, whereas centralized governments may formulate more streamlined and active policies. In this simplistic way, Hypothesis 5 is not valid.

Three political systems (CH, G, EU) can be described as rather fragmented, and two (UK, NL) as more centralized. Denmark is rather centralistic but with very strong local power. Italy is in a transitional phase from weak centralism to federalism.

There are a number of counterarguments against this hypothesis:

Switzerland and Germany have a history of relatively successful motorway infrastructure programmes. In both countries, the opportunities for incorporation (i.e., Environmental Impact Assessments) are offered relatively late in the planning process. In both countries, “vertical pillarization” of the road building administrations from the local to the national levels could be observed to promote their motorway programmes. So a stronger regional representation does not necessarily lead to stronger incorporation. This depends on the vital regional interests, which are articulated in infrastructure planning. Such interests do not always have to be environmental.

On the other side, defensive safeguards are well established in the Netherlands. Even the UK government withdrew some of its motorway projects after local resistance.

Hypothesis 5 does not find confirmation at the European level either: Despite of the bottom-up character of European policy-making and the fragmentation of transport policy competences and resources, explicit defensive environmental safeguards are relatively vaguely formulated. Defensive arguments sometimes arise during the negotiations (i.e., to protect railways during the liberalization process or to avoid tax harmonization at the lowest common denominator). The Commission itself prefers “active policies” despite of the limited capacities to reach consensus for major environmental policy reforms.

So one cannot identify a strong correlation between “defensive incorporation” and the “fragmentation of the political system”.

Nevertheless, the degree of fragmentation explains a specific policy style. Federalist countries tend to have a “bottom-up type” of political planning. The political culture is more reactive. Strategic thinking finds strong limitations in the polycentric structure of the political system, which has to reconcile many conflicting interests. This may be a barrier to target-led active incorporation.

In a negative form, Hypothesis 5 finds some confirmation in the UK. Local government is often more concerned about the environmental impact of transport decisions than the national government. Yet they have few opportunities to influence national decisions.

On the other side, the less fragmented countries, such as the Netherlands and Denmark, formulated ambitious strategies for active incorporation. This is a result of the strong environmentalism in those countries, rather than of the degree of fragmentation. In practice, they have developed some elements for defensive incorporation - especially for infrastructure planning. The Netherlands has a long

tradition in spatial planning due to high population density and the land-extension and dike-building programmes. This tradition has its impact on the coordination between different ministries. Central government is characterized as streamlined and well coordinated. Large-scale national planning (both the environmental and the transport infrastructure planning) are developed in close cooperation between the environmental and the transport ministries. Therefore, the concept of “incorporation” fits well into the Dutch planning culture - both in an active and in an defensive sense.

4.2.5.3 Consensus versus Competition

The strongest relationship between incorporation and the political system can be found on the level of the informal elements of government. Consensus-oriented political systems actually have developed some defensive safeguards. This is especially the case in the Netherlands, but also partly in Denmark (physical planning). The Dutch political system has established consultation and participation procedures at early stages of the planning and decision-making process. This offers opportunities for pluralist participation and restricts policies which externalize costs. Environmental groups and victims have an opportunity to express their positions rather early in the decision-making process. On the other side, consensus-oriented political systems have developed some barriers to active incorporation, especially if it implies restrictions to the private sector.

Switzerland is an interesting exception: Swiss highway planning could be successfully implemented without major modifications. Defensive elements come late in the planning process.

Italy is a special case for participation. Access to the political system is easy - but environmental issues have a low level of public support. So opportunities for participation are only relevant for incorporation if there is a strong cultural background in favour of environmental topics.

Germany has a less participatory and more competitive orientation between social groups, parties, and even different ministries. The government tends towards hierarchical solutions. Opportunities for the participation of environmental interests at the strategic level of decision-making are rather limited. Even moreso, the government tends to reduce the safeguards for defensive incorporation. Nevertheless, some defensive elements exist - but this is less by public participation and more by legal rights of special concerned interests.

As argued above, the UK is less consensus-oriented. Nevertheless, some defensive safeguards exist, either by the culture of “bureaucratic accommodation” or by a culture of strong individual rights. Furthermore, the “executive discretion” of the government allows a degree of flexible policy changes towards more incorporation, which would be more difficult under a consensual and formalized regime.

So one can argue that consensus oriented political systems offer opportunities for defensive incorporation. But they are used only if environmental pressures are strong. Incorporation in consensus-oriented countries is incrementalist and gradual. Yet, there are “functional equivalents” to consensus, especially strong individual rights of potentially-affected victims (UK, Germany).

4.2.5.4 Citizens Rights and Direct Participation

Citizens rights play a strong role for defensive incorporation in most countries. In the Netherlands, citizens have the right for constitutional complaints. This right created incentives for the government to organize broad public debates and open participatory procedures. Citizens rights are especially strong during the early phases of the decision-making process.

In Switzerland, the popular initiative and the referendum are strong instruments for environmental interest groups (but as well for others) to bring their issues on the national agenda. Traditionally, this led to rather defensive and conservative decisions. But sometimes, especially in the case of the Alpine initiative, the Swiss people asked for active changes.

In Italy, similar rights exist - but they have not been used in the case of transport and the environment.

In Germany, citizens are relatively strong during the latter part of the policy cycle. Concerned citizens may raise a legal complaint against public infrastructure planning if they feel that their concerns are not sufficiently respected. This right has contributed to many delays in German infrastructure investment policies.

4.2.6 Interest Groups (Hypothesis 6)

A General Comment

Interest groups play a strong role in interpreting existing capacities and problems and penetrating the political system with their arguments. Yet the impact of interest

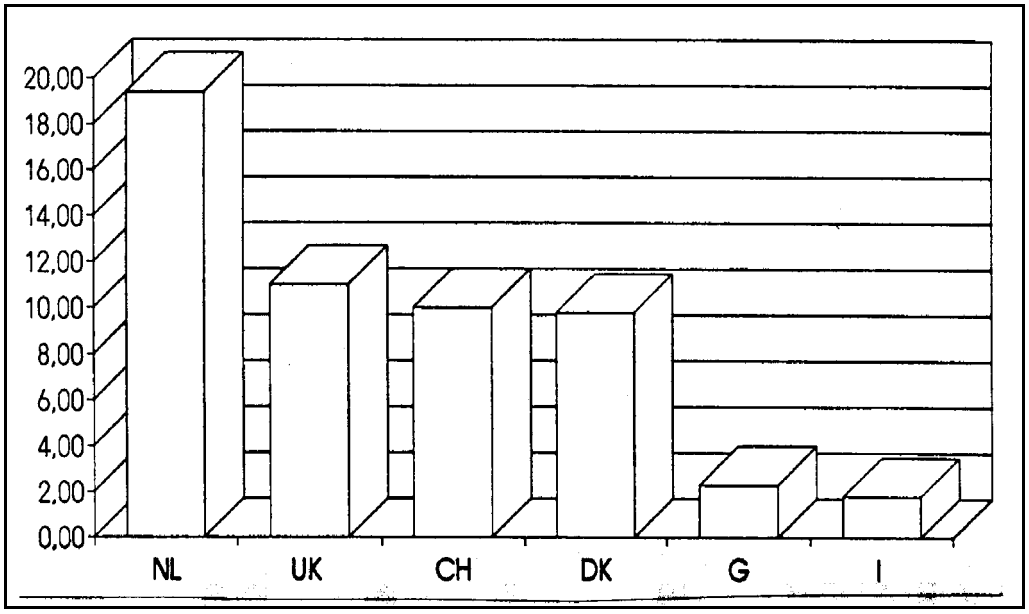

Abbildung 14 The Strength of Environmental Organizations in the EU (membership in environmental organisations in % of adult population) (EURES 1996)

groups on political output is difficult to measure. The national studies only offered a “patchwork” of analysis - which rather confirm the general hypothesis.

The comparison

The balance of power between environmental and commercial interests in the transport sector is assymmetrical in all countries. There is some doubt whether environmental groups could influence freight transport at all. Nevertheless, there are differences in the strength of environmental groups in the EU. This is shown in Figure 14.[63] The demand for environmental policies is relatively high in the Netherlands, UK, Denmark, and Switzerland, middle in Germany (more in terms of Green votes and environmentalism, than in terms of organizations), and low in Italy. Environmental groups especially won strength, expertise, sophistication, and resources in the UK. Their campaigns played an important role for the policy changes of the UK in recent years.

[63] The data are based on a questionnaire of an earlier research project (Hey/Brendle 1994) - indicating membership in environmental organizations as percentage of adult population in 1992. The data are supplemented by more recent figures from Switzerland (Hess/ Maibach 1995b) and Italy (Strati 1995b). Double counting of multiple membership could not be excluded from available data.

On the other side, the road haulier's sector is very strong in the Netherlands and Denmark. In both countries, hauliers became more sensitive to environmental issues due to the high presence of environmental concerns. So they started to reflect on improvements within road freight transport. Yet they successfully mobilized opposition against the increase of costs and other policies which negatively affected their competitive position.

In Italy and Germany, the road haulier's sector benefitted from the regulatory regimes, which prevailed until the beginning of the nineties. In both countries, there is still some pressure to maintain or to reintroduce such regimes. In Germany, the haulier sector was defeated - whereas in Italy, it is still "politically" successful.

Intermediate interests are relatively weak in Denmark, Italy, and the UK. In Italy, some transport users play a certain intermediate role, asking for a "capacity-oriented strategy", which reduces congestion and strengthens railways and combined transport. This has not been analyzed systematically for the other countries - but there are some signs that large-scale transport users express an interest in a more balanced transport growth and a more efficient use of infrastructure capacities by road pricing (i.e., European Round Table of Industrialists). On the other side, the influence of intermediate groups is stronger in Switzerland and Germany, which both have a relatively strong railway sector.

So the balance of "influence" may be shown in Table 20.

	NL	DK	CH	D	UK	I	EU
Environmentalism	**	**	**	*	**	*	*
Strength of Road Freight	***	***	**	**	***	***	***
Intermediate Groups	*	*	**	**	*	*	**
Actions	**	*	***	**	*	*	*
Legend: * = weak; ** = relevant; *** = relatively strong							

Table 20 The relative strength of interest groups

Table 20 provides for a rought balance. It shows that only in Switzerland and to a much lower extend in Germany, a relative balance of power of all three groups is given. The situation is polarized in Denmark, the Netherlands, and the UK between a strong road haulier's sector and a relatively strong environmental movement. The situation is completely unbalanced in Italy. The profile of interest group strength is strongly correlated to the profile of environmental problem perceptions on one side, and economic capacities on the other.

4.2.7 Perception of Problems in the government (Hypothesis 7)

A General Comment

This analysis is closely related to Hypothesis 1 on the "Environmental Problem Perception". Whereas Hypothesis 1 tried to find aggregate indicators for environmental pressures, this hypothesis was closely related to the public administration itself.

Obviously many studies did not discover "one problem perception" - but multiple ones. In most countries, the environmental departments interviewed (especially Denmark, UK, and DG XI in the EU) were much more concerned with the negative impact of prevailing trends. They articulated scepticism on existing policies and argued that they would not be sufficient. On the other side, interview partners from transport departments referred to the limited capacities of the transport sector and the high-costs of strong policy to redirect transport trends. For example, they had doubts on the efficiency and effectiveness of environmental taxation. In general, their arguments reflected very much the prevailing economic capacities of their national transport sector. In principle, they were optimistic on the effectiveness of prevailing policies, such as emission limit values for heavy vehicles or environmental impact assessments.

The analysis of Netherlands, Denmark, and Germany confirmed that the environmental ministries had little influence on the transport ministries. Nevertheless, the "problem perception of the administration" is relevant.

For instance, the Dutch government acknowledges environmental pressures due to transport, and has started a number of environmental policy initiatives, but this had little impact on pricing and infrastructure policies. For the UK, it was argued that the perception of politicians has a much more important impact than the governments. In the case of Switzerland, it was argued the due to the consensus model of Swiss policy-making, the government as such has limited power. Thus, perceptions of problems within individual departments may play a limited role for

the final decisions. The same argument applies for the European Commission, which only has strong powers during the agenda-setting phase.

Despite of this relatively negative result from a output-oriented and aggregated perspective, the role of entrepreneurial staff within the public administration should not be underestimated. In Switzerland and at the EU level, it could be observed that small networks of civil servants may have some scope to present new ideas and to find allies for their work. The strategic know-how for incorporation within the administration is an important resource. Even if initiatives fail, they are important because they are widening the “political space” of seriously evaluated policy alternatives. The negative confirmation of this argument is evident in Italy. The low level of environmental/ecological awareness within the Italian administration contributes to the low profile of policy initiatives.

Still, a systematic comparison of the national papers is not possible, since they focus on different aspects of the “problem perception of the administration”.

4.2.8 Special Institutional Factors (Hypothesis 8)

4.2.8.1 The veto power of the environmental departments

This hypothesis assumes that strong environmental departments are positive for defensive incorporation, because they have the power and resources to prevent additional environmental damage.

Strong environmental departments may be important, however, not sufficient to promote “incorporation”. This was especially the case for the Netherlands and the EU Commission. There might be other factors - out of the control of the environmental departments - which have a stronger impact on incorporation.

The profile of the countries is shown in Table 21.

	I	UK	D	CH	NL	DK	EU
Strength of environmental Ministry	-	- to +	-	+	++	+	+

Table 21 Strength of environmental ministry

The relative strength of the environmental ministry is weak in Italy and in Germany. It has gained strength in the UK and is relatively strong in the other countries. This

profile plays a certain role for the formulation of environmental programmes - but not necessarily for the final policy output.

4.2.8.2 Fragmentation and Strategic Capacity

In addition, this factor has been accepted to be relevant. The profile of the countries is similar to the above. More streamlined public administrations, such as the Netherlands or the EU Commission, have developed a certain strategic capacity, which has been used for policy inititatives towards active incorporation. Strategic capacity is a special strength of the European Commission, which initiated a wide discussion process on the impacts of transport on the environment and the “Future of Common Transport Policies”. It is interesting that the Commission was a policy initiator towards an integrated policy approach, despite of the fragmentation of transport policy competences and the great variation in decision-making rules. Strategic capacities are relatively weak in the federalist countries, characterized by bottom-up processes of policies. The government in Switzerland is rather reactive. Strategic capacity is especially low in Italy and in the UK, where it is part of a political programme to reduce the regulatory capacity of the government vis a vis the market.

A synopsis is presented Table 22.

	I	**UK**	**D**	**CH**	**NL**	**DK**	**EU**
Strategic Capacity	-	-	-	-	O	+	+
Fragmentation of Transport	-	-	-	+	+	-	-

Table 22 Strategic Capacities

4.2.8.3 Network Characteristics

This hypothesis assumes that open policy-networks in the transport sector are important for incorporation. Most studies did not go into depth, with this hypothesis, so that a qualified judgement is not possible. But there are occasional arguments, that “open transport policy networks” are important to respect the environmental dimension in transport policies. Often transport policies are frag-

mented, so that as regards some aspects openness may be strong (+) and in others weak (-).

The profile of the countries is shown in Table 23.

	I	UK	D	CH	NL	DK	EU
Openness of Transport Policy Nets	-	- to +	-	+	++	+-	+ -

Table 23 Network Characteristics

4.2.8.4 Conclusion

In total, transport policy-making in the 6 countries and at the EU level takes place in different institutional environments. Italy is the only country with a low environmental profile of the administration, limited strategic capacity, and relatively closed transport policy networks. Hence, incorporation in Italy is low.

The picture for the UK is less obvious. The environmental administration has gained relative strength in recent years and policy networks are occasionally opened to environmental interests. Yet strategic capacity is limited. This is reflected in the “patchwork” of isolated steps towards incorporation in a generally unfriendly policy environment.

Denmark and Germany have closed transport policy networks and a weak environmental ministry. Furthermore, the competitive culture of interadministrative coordination weakens the relative power of environmental considerations in environmental policies.

In contrast, the Netherlands has a streamlined administration with a relatively strong position of the environmental departments and relatively open transport policy networks. As shown, this offers opportunities for incorporation.

The EU is an interesting mixture. The Commission has all the cultural and political characteristics of the above countries - yet decision-making in the Council takes place in a totally different arena, which is more closed and characterized by bargaining processes - and less by a problem-solving orientation.

4.2.9 Missing Factors

Some national studies emphasized other factors, which might play an important role for the understanding of incorporation.

The study focused on some hard institutional and economic factors. Yet the analysis of cultural factors received less attention. Cultural change is more diffuse. But it may be very important, as the observation of the different thresholds and the different attention for similar objective environmental problems prove. In Switzerland, regional self-reliance is still a strong value, which perhaps contributes to the overestimation of Alpine transit traffic compared to domestic sources.

Relative autonomy of the national transport industry from international competition and relative political sovereignty have been discovered as another important factor. Switzerland, which is a non-EU country, has more leeway to design its national transport policies than the other small EU members. The island of UK also has a somewhat protected status due to geographical reasons. This is especially relevant for taxation. A national leadership role in environmental taxation would create problems to the national haulier sector. Therefore, the small EU members ask for harmonization.

Finally, the role of segmented policy arenas has not been systematically observed. For instance, in the Netherlands the early phases of identifying problems for the National Environmental Plan took place without active participation of the haulier's sector. The relatively problem-oriented networks could define far-reaching targets without major opposition. But when such targets had to be implemented, the arenas and the participants changed. At this stage, the haulier's opposition prevented the implementation of environmental target-led policies. The strongest separation between the problem-oriented and the decision-making arenas can be observed in the EU. This partially explains the difference between far-reaching targets and actions.

Lastly, the research focused on the attempt to explain a diffuse process by structural factors. Sometimes a "non-event" had to be explained. This creates difficulties. Therefore, some selective process-oriented case studies have been made to understand the dynamics behind the surface of obvious structures and policy output.

4.2.10 Modelling Incorporation

From the eight hypotheses and the available data from the six countries, several profiles could be identified, which may explain the different approaches to incorporation or non-incorporation in the respective countries.

One can regroup the explanatory factors so that they can be related to different levels of analysis: especially targets, decision-making styles, and actions.

4.2.10.1 Targets

As to policy targets, one can distinguish three groups of countries. First, Denmark and the Netherlands have the most ambitious principles and policy targets. Both are characterized by low social thresholds for environmental problems and a high level of popular pressure for strong environmental policies. Both have relatively strong environmental organizations and a “greened” party system. The “environmental profile” of most actors is relatively high and the governments have invested much research into the environmental problems of transport and the options to mitigate them. Such countries have a propensity towards “active incorporation”.

On the other extreme is Italy, which has a low profile of environmentalism. One can argue that cultural capacities for the environment are weak in Italy.

In between this spectrum are Germany, Switzerland, UK, and the EU - because of different reasons: Strategic policy-making plays a minor role in the federalist countries Germany and Switzerland. Actual political culture is more reactive and less prospective. Comprehensive regulatory programmes are not part of the UK´s approach, because this would not fit into the neoliberal model promoted by the government. Nevertheless, the UK has formulated some ambitious targets within its “Sustainable UK” strategy. The European Commission has chosen a cautious approach, despite of a clear concept of the environmental problems of transport growth. This may be explained by the cautious anticipation of the national preferences. A consensus on environmental transport policy changes is difficult to find.

Profile 1 presents the target setting in various countries and identifies specific factors that influence incorporation (Table 24).

Principle Choices			
High:	NL, DK	**Problems**	High environmental pressure/ High level of perception
		Actors	High environmental profile
	CH, D		Research and prospective capacities
Intermediate:	UK, EU		
		Problems	may be high
Low:	I	**Perceptions**	low
		Actors	relatively low profile
		Capacities	low

Table 24 Profile I: Targets (Principle Choices)

4.2.10.2 Decision-Making Styles

The profile of the countries is different if one analyses the quality of the internal coordination and consultation mechanisms - also called decision-making styles.

The Netherlands, Denmark, Switzerland, and the European Commission have developed an advanced level of interadministrative coordination and consultation. This seems to be a typical characteristic in consensus-oriented political systems, which relies on the negotiation between different policy-networks and social coalitions. The Netherlands, Denmark, Switzerland, and the European Commission share certain capacities for long-term policy design. That means the perception of long-term trends and respective risks, as well as the formulation of long-term strategies. This seems to be an important precondition for the environmental dimension of transport to come on the agenda. On this basis, there is a certain preference of the administration towards active incorporation, which means an environmental target-led transport policy.

Those capacities are somehow weaker in Switzerland. These three countries (and the EU Commission) furthermore, share a relatively open approach to different interest groups, including environmental interests in transport policies. Traditionally, transport policy networks are relatively closed, but in the discussion on infrastructures and taxation one can find opportunities for participation during the relatively early stages.

Italy is on the other side of the spectrum again, in addition to Germany, and the Council of the EU. Italy is relatively open to interest groups - but the environmental profile for them is low. Germany and Italy are more characterized by a competitive political culture, both within and outside the administration. Strategic capacities of the administation are low, because of their sectoralization and the fragmentation of the political system. Participation in Germany offers opportunities in the latter stages of the political process rather than in the early ones. Under such conditions, even defensive incorporation may weak. On the EU level a closed and sectoralized intergovernmental decision-making process takes place, which leaves fewer opportunities for participation or interservice coordination. This may take place on the national levels to a certain extent. The only opportunity to influence decision-making from the outside is via the European Parliament, which has recently received some rights for participation for some policy fields.

In between those extremes are UK and Switzerland, which have little strategic capacity but offer some opportunities for participation. The profile is presented in Table 25.

Decision Styles			
High:	NL, EU (Commission)	**Political culture**	Consensus-orientated coalitions
		Administration	Streamlined Planning, Prospective capacities
Intermediate:	CH, UK, DK	**Participation**	In early stages
Low:	I, D, EU (Council)	**Political culture**	Competition, Bottom-up
		Administration	Fragmentation, sectoralization
		Participation	In late stages

Table 25 Profile II: Decision Styles

4.2.10.3 Actions

The interesting result of the overall study is that the correlation between decision-making styles, targets, and actions is relatively weak. So there is a different combination of factors which have an influence on actions. Actions may be best explained in a capacity-theoretical context. Economic capacities play a central role in this context.

In terms of actual and planned policy changes, Switzerland has the highest level of incorporation. This could be explained by strong economic and financial capacities. The level of infrastructure investments in Switzerland is the highest in Europe. The railway network is dense and the share of railways in freight transport is relatively high. So adjustment costs are lower and resources are higher than in other countries. Furthermore, the relative autonomy as a non-EU member state to introduce fiscal and non-fiscal incentives to reduce road transport still are relatively high. Strong popular pressure against Alpine road transit and the instrument of a popular inititiative further strengthened the Swiss policy orientation towards incorporation.

As could be shown, a certain degree of autonomy was also important for the UK to introduce its CO_2-fuel tax.

On the other side of the spectrum are Italy and Denmark - as well as partially UK and the EU. In those countries, the capacities for railways are low. Domestic freight transport basically relies on road haulage. A strategy towards modal shift only would have limited environmental benefits in the short and medium term. As shown above, the UK, therefore, opted for cautious steps towards a demand-side-oriented transport policy, thus cutting down road infrastructure investments and applying taxation as an instrument.

At the EU level, the major barrier for incorporation is the preference divergence among member states and the lack of profiled leadership for a clear environmental strategy from member states. Potential leaders so far have held a defensive position against transport policies from the EU (especially in the case of deregulation, taxation, and infrastructure policies).

An intermediate position is held by Germany and the Netherlands. Railways still play an important role for a growth oriented capacity extension for all modes. The market share of railways is still relevant in Germany, because of the regulatory tradition of German transport policies, which only has been changed recently. The policy changes in the Netherlands may be rather explained by the strong economic pressures (congestion), which would endanger its role as the “port of Europe”.

The profile is given in Table 26.

Actions			
High:	CH	**Capacities**	Strong economic/ financial
		Autonomy	Non EU-members
		Geography	Alps/ island
Intermediate:	D, NL	**Rights**	Popular initiatives
		Capacities	Low
Low:	DK, I, UK, EU	**Autonomy**	Low

Table 26 Profile III: Actions

4.2.10.4 Preconditions for Defensive Incorporation

A special case is defensive incorporation. There are several factors which may contribute to defensive incorporation: the participatory and consensus-oriented political culture of the Netherlands; strong citizen rights in Germany and UK; sometimes the opportunity for popular initiatives (Switzerland); strong environmental legislation (i.e., Netherlands); or the new opportunities for regional participation in Italy. No country has established a coherent system of environmental safeguards, which prevent environmentally harmful political decisions. But most countries have a few elements for defensive incorporation, which help to modify transport decisions while maintaining the prevailing growth-oriented rationale of transport policies.

4.2.11 Conclusion

Incorporation is a new and diffuse policy approach. It applies to many totally different subpolicies, including the definition of environmental objectives, new coordination mechanisms, and transport policy changes. Furthermore, an operational concept for incorporation is in its initial stages - so that little policy output can be observed. Much is still in the pipeline. As a new dimension, decision-making can be better observed by the analysis of individual cases, than by a synoptic overview as presented in this study.

There are completely different definitions and approaches for incorporation. For example, it is rather procedural in the UK. At the EU level, it is often considered as a substitute to the traditional regulatory approach, which is characterized by

technical measures and “command and control policies”. In the Netherlands it must be seen as part of the participatory planning tradition and of the target-led policy approach.

This makes a comparative analysis which explains opportunities and barriers for incorporation extremely difficult. An attempt has been made in this study. The comparision could confirm that economic capacities for sustainable transport policies are the most important single factor to explain policy changes. Only when new environmental priorities do not imply excessive costs to the haulier sector and to the government, are they promoted.

Institutional factors also play an important role for the preferred type of incorporation. Active incorporation requires capacities for long-term policy strategies, a well coordinated government machinery and strong popular pressure. Defensive coordination requires veto and intervention rights for environmental interests.

The analysis could falsify some important concepts of environmental policy-making - especially the “stage model” of environmental policies. One can discover different policy paths, but not a sequence of stages. A policy approach in favour of railways can be observed in Switzerland, before technical measures have been fully implemented. The UK is an example for a demand-side-oriented policy approach, without applying a “structural change-oriented” approach beforehand. Most countries are “capacity- and growth-oriented”, which is independent from their level of environmental policies.

Lastly, functionalist approaches, assuming that environmental policies react to environmental problems, could be falsified. The level and type of environmental problems do not explain the level and the quality of incorporation.

4.3 Lessons *(Markus Maibach, Samuel Hess)*

4.3.1 Introduction

Within the overall framework of the study, the process-oriented case studies illustrate and prove the findings of the country studies. Therefore every country has chosen two typical examples, where the process of incorporation is shown in its dynamic context and where the different factors of influence (and success) become visible.

The analysis pattern within the case studies try to follow a common methodological framework and answer different questions:

- What is the history of the specific freight transport related issue?
- What are the actors and their interests, their influence?
- Which opinions do occur in the different networks?
- Of which type are the different networks (problem finding, solution oriented, decision making)?
- What are the platforms and processes and how did they change over time?
- Which specific findings of the structural analysis do the findings of the case study support? What are the conclusions and the lessons, as well for other countries?

Originally, the choice of the case studies did not follow prescribed issues; much more they emphasize specific countrywise incorporation dynamics. The synthesis of the individual case studies, therefore, first summarizes the conclusions of the studies and then tries to compare the findings on a very general level, in respect of the findings of the synthesis of the structural analysis.

4.3.2 Overview of the case studies

4.3.2.1 Specific issues and leading questions

The different case studies emphasize mainly two different issues:

- Infrastructure planning
- Taxation of freight transport

Infrastructure planning and procedures

Within the European context, infrastructure planning is a very important issue of incorporation, as well regarding active (strategic, as an element of TEN) and defensive (protection oriented) incorporation. Nearly every case study addresses these issues, dealing with the following questions:

- **Strategic planning:** How important are environmental aspects as a strategic argument in infrastructure planning (Choice of transport mode, change from road to rail); are there specific instruments to strenghten this incorporation, for example a coherent planning procedure or a Strategic Environmental Impact Analysis (SEIA)?
- **(Top down) - Planning and Monitoring procedures**: How strongly embedded is the specific infrastructure planning process in a general (ongoing) planning procedure? What are the links to spatial planning procedures?
- **(Bottom up)-procedures:** How strong and how successful is the participation of local or national interest groups? Which lobby levels can be distinguished? How important are other (rather erratic) elements in the decision process and how are they treated? Do specific policy windows support incorporation?
- **Defensive incorporation and protection**: How strong is the Environmental Impact Analysis (EIA) and what is the procedural integration of this instrument? To which extent are local protection aims covered?

Taxation of Freight transport

Taxation is usually linked to economic and financial pressure, either directly transport-related or in a general budget oriented manner. As above, nearly every country treats in its process-oriented case study the mutual effects between environment and taxation. For comparison, the following questions are of major importance:

- What are the concrete motives for specific changes in taxation? How strong are environmental arguments (i.e. variabilization, differenciation along environmental performance, consideration of steering effects, internalization of external costs, or financing of environmental measures)? Are there links to the financing of infrastructure (i.e. of transport infrastructure)?
- What is the role of the international dimension, esp. harmonization within the EU and first-mover problems?

- How strongly was the discussion linked to a general new framework of financing and pricing of the transport sector (including passenger traffic) on a strategic level?
- Is taxation used to a crossover financing framework between road and rail? Do policy windows help to support such considerations?

Figure 15 gives an overview of the interlinkages between the incorporation dimension and these two main issues treated in the process-oriented case studies.

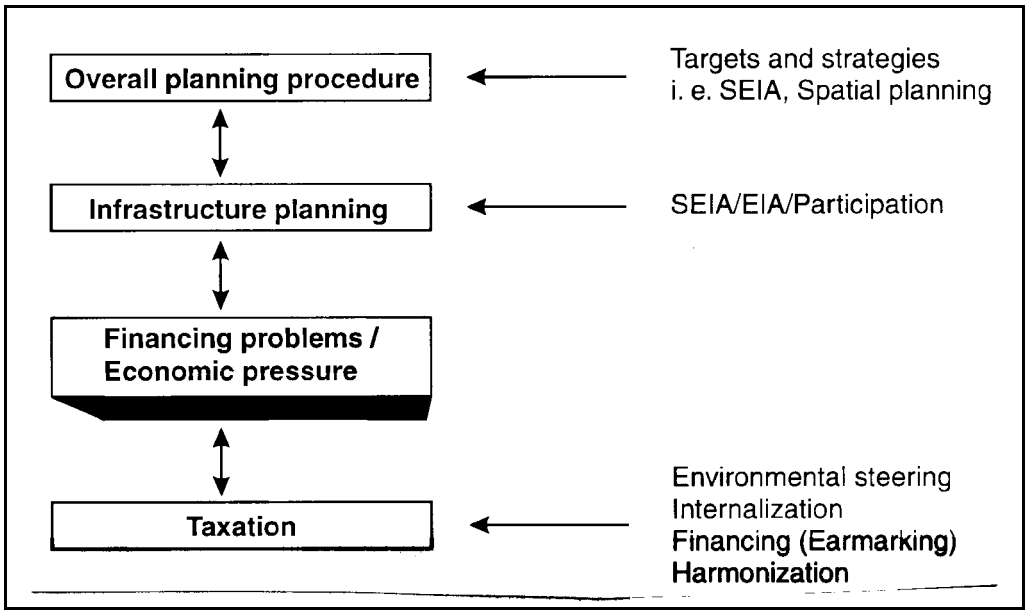

Abbildung 15 Interlinkages between the profile and dynamics of incorporation, infrastructure planning and taxation

4.3.2.2 Summary of the findings

Table 27 gives an overview of the major findings and conclusions of the different case studies.

Table 27 The most important issues, findings and lessons from the different process-oriented case studies

Case study, Issue		Findings	Lessons
a) Infrastructure planning			
DK	Oresund Bridge	- Not part of a larger transport plan including socio-ecnomic aspects - No strategical orientation - strong role of some of the interest groups - EIA only strong at defensive level (nature and water protection)	- SEIA not strongly embedded - Politics play a major role: The more actors are included (two modes two countries), the more political solutions - Environmental based railway integration lead to "De Luxe-Policy" - Corridor financing (i.e. tolling) might be in favour of incorporation - Traffic growth paradigm is still dominating
NL	Corridor study Utrecht-Amsterdam	- SEIA-application - Economic pressure as a starting point (capacity oriented) - Part of an integrated procedure (modes are linked) - Open approach	- Weak SEIA - Comprehensive planning and participation structures do not automatically guarantee incorporation - Incorporation of rail and road might lead to "De Luxe Policy" - Priorities do not occur at planning level, but might be a consequence of the financing dimension

Case study, Issue	Findings	Lessons
D Road link B 31 Ost Freiburg-Kirchzarten	- Multiplication of involved actors - Capacity oriented strategy, after opposition, but no modal discussion - Negation of induced traffic - Strong public opposition, defensive incorporation only at local protection level	- Strong opposition lead to a general discussion, but de facto „No incorporation“ (Postponement strategy) - The local level is strong - Initial Top down-procedures without feedbacks are worthless, regarding implementation and incorporation
I Regional transport and environment programming in Toscana	- Regionalisation of Infrastructure planning as a new strenght - Active link between spatial planning and environment - Coherent Top-Down planning aproach combined with a strong participation level	- Strong incorporation „on paper“ as a reaction to former weak incorporation (raised awareness) - Importance of subsidiarity - Programming as a step toward active incorporation - Discrepancy between programming and financial authority (not yet proven)
Hard infrastructure in Toscana (Bologna-Firenze)	- Independent planning procedures road-rail - Active participation of env. groups - Strong defensive incorporation at regional level - Weak transponement towards national level	- Organizational and institutional change improve incorporation - Subsidiarity leads to more incorporation - Incorporation at strategy level is difficult - Planning without financing is easy (esp. rail)
CH New alpine transit axis	- Weak integration in general transport planning and spatial planning - Strong role of financial arguments - Strong defensive incorporation due to EIA - Importance of regional elements (access versus protection)	- Strong democratic rights are in favour of missing active incorporation (missing SEIA) - Large infrastrucure projects are endangered of erratic politcal processes - As long as there is no financement, at least defensive incorporation is easy - Financial rules open policy windows for taxation

Case study, Issue		Findings	Lessons
EU	SEIA	- Multiple attempts to introduce SEIA over the last 20 years - Strong problem networks, good conceptional work - Forwarders on national level push EU-Directives	- Strong role of the EP as an element of active incorporation - Risk of Expertocracy instead of a flexible strategic instrument - Implementation of monitoring schemes are difficult
b) Taxation			
DK	Euro-Vignette	- No environmental arguments important - Political solution within the EU-context (international harmonization) - Slight move towards variabilization of tax structure failed - Weak involvment of MoE	- Competitiveness is more important than environment - Territoriality principle is good, but gives less emphasize to diesel taxation - Environmental taxation and Incorporation need more than just a general raised awareness
NL	Diesel-taxation	- Environment as a helper for (moderate) raises - Strong lobby groups - Shifts towards variabilization of the tax structure	- A general plan (NEPP) helps to emphasize environment in taxation - Shifts of taxation structure are easier than a general level increase of taxes - Harmonization arguments are stronger than environment
D	taxation policy	- Harmonization as a vehicle of variabilization of the tax structure - Financing of the railway reform as an important argument -> „earmarking“	- Shifts of taxation structure are easier than a general level increase of taxes - Financial environmental arguments improve the and chances of tax increases

Case study, Issue		Findings	Lessons
UK	Motor fuel taxation	- Strong political (and environmental) pressure, other measures (VAT) failed - Strong consultation process - Quick decision processes and introduction - Weak links to transport issues (such as financing) - Incorporation by accident (Importance of policy windows)	- A strong consultation process is a chance for incorporation - The coincidence of good ideas and policy windows are in favour of incorporation, there might be a danger of weak incorporation in the transport sector - Dynamic elements (steady increase) are in favour of incorporation
CH	Heavy duty vehicle taxation	- Integration of external costs - Strong historical links and long term incorporation - Shift from fixed to variable cost - Shifts of taxation structure are easier than a general level increase of taxes - Earmarking is an argument - Weak international coordination	- External costs as a strong argument for environmental oriented taxation - Incorporation without harmonization is a risk - Financing arguments for higher levels of taxation are important
EU	Internalization of external costs	- Strong Expertocracy and methodological struggles - Strong problem networks, weak decisions - Harmonization as a driving force of taxation	- Argument of internalization might be a link between environment and financing - At last, harmonization plays a major role -> weak effective incorporation
c) Liberalization			
UK	Rail privatization	- Financial pressure as a starting point for privatization - Weak incorporation, isolated procedure -> weakening of the railway sector - No clear performance targets	- Privatization without clear targets and environmentally driven guidelines are against incorporation - Too quickly introduced processes are usually irreversible

4.3.3 Comparison

4.3.3.1 Infrastructure planning

Comparing the different cases, one first has to state that none of the analyzed infrastructures is finished yet. In so far, the comparison has to be restricted to the planning procedures and events. The real success factors of incorporation are - from this point of view - still unclear or unsure.

Large infrastructure projects are exposed to many different aspects of policy. The more actors there are, the more complicated and the more erratic is a primarily well defined planning prodedure. The examples of Oresund, Utrecht-Amsterdam and as well the case of the Swiss alpine transit axis show this very clearly: Bottom-up elements do counterbalance the top down processes. Regarding incorporation, this phenomenon has multiple effects:

Different cases, especially NL, I, EU and as well D and CH know coherent **Top-down planning procedures**, which emphazise (as well) the environmental component. But usually, the environmental aspects are very project-related. Incorporation of strategic elements is much more complicated. SEIA as an important incorporation instrument at strategy level is still too weak. Denmark and the Netherlands who introduced this instrument were not able to emphasize environmental elements properly in the beginning of the planning phase. Important strategic elements like clear targets for a modal change, mobility levels and sustainability, or environment-oriented project financing are usually missing, although general planning guidelines do mention these elements. At the national level, the most important incorporation element is modal choice. Whereas NL, DK and especially Switzerland do evaluate infrastructure corridors and solutions with different modes simultaneously and consider environmental advantages of rail transport,[64] D and I treat different modes separately.

Another important top-down element is spatial planning. All examples show clearly that spatial planning at the national level is at best a coordination instrument, but too weak to be able to guarantee active incorporation. The Italian case however illustrates that this might be different at the regional level, where consistent planning procedures emphazise clear regional and environmental goals and give the opportunity of a general platform.

As long as real active incorporation at the strategic level (regarding infrastructure policy) does not strongly function, the financial dimension might take over this role.

[64] Unless NL doesn't consider the waterway transport in the corridor analysis.

It is interesting to see that the financial argument has not (yet) become an issue to bring policy back to clear modal priorities. The examples of Oresund and Utrecht-Amsterdam (as well Bologna-Firenze) illustrate that multimodal evaluation in corridors might lead to a so-called „deluxe“ policy: The different actors (i.e. road and rail lobbies) do help each other to promote their projects. An example is the support of the Swiss airline to promote Swiss alpine railway axes. As soon as financing is an issue, this situation might change dramatically. The only example is the Swiss case: Here it became clear that a realization is only possible with new financial means. This is the link to taxation and creates a policy window for improved incorporation-oriented tax schemes.

Whereas active incorporation is not very strong, defensive instruments are more important and more powerful. Every case faces an EIA procedure, which helped (helps) to improve environmental performance. The concerns for regional protection are on the one hand procedural, on the other hand very much influenced - through the possibilities of local/regional participation. These regional interests are usually the driving forces in incorporating environmental concerns and to rediscuss the project. Due to the fact that these **bottom-up processes** do occur not at the beginning, but at a later project planning stage this leads to time delays. A good example for this effect is the road highway in Freiburg, where local grassrooters oppose the project at several levels, so that top-down processes do not work anymore and erratic elements occur which are difficult to handle. This type of incoporation "by accident" is common regarding infrastructure projects. Only strong political will, a coherent financing and monitoring scheme and clear guidelines for environmental performance are able to solve these types of political struggles. As the Oresund project shows, these processes are not, a priori, in favour of the environment. On the other hand, the Swiss Alpine Initiative shows that strong democratic rights might help to install stringent measures to improve incorporation.

Finally, one has to state that the prevalent belief in growth paradigms is not questioned yet at the strategic level: The case studies show that new transport infrastructure is not faced with alternatives without traffic growth. The evaluation is ususally demand-oriented, not emphasizing the fact that new infrastrucure tends to induce new freight relations and to increase freight transport volumes, similar to passenger traffic. Only in the Swiss case there has been a clear priority for rail from the start. On the other hand it has become clear that the combination of "hard" and "soft" measures (i.e. for an improvement in intermodality and modal shifts from road to rail) ist very difficult at the project level. Governmental procedures are not yet able to link the building process with the definition of a clear overall transport concept.

4.3.3.2 Taxation

To give a conclusion in advance: Taxation is a classical type of indirect incorporation. Every case study points out that environmental arguments might play a role in improving the acceptability of new or higher tax levels, or of a change in tax schemes, but these arguments are not dominant at last. Harmonization at the EU level, which led to the EuroVignette, showed very clearly that arguments like environmental or external costs are useful to push forward new tax schemes which variabilize the tax structure (Germany), but political interests and national lobbies are much stronger due to their immediate political concerns. The Vignette is a classical solution at the lowest common denominator. Most important was the territorial sovereignity and the competitiveness of the national hauliers. On an institutional level, the Ministries of Environment are not (or at a very late stage) involved in the discussion of tax adjustments. Taxation is an issue between Ministries of Transport and Finance Ministries.

However, there are some specialities, not surprisingly coming from rather peripheric countries in this context. The UK example shows that the coincidence of environmental pressure and financing arguments (as a policy window) may play a dominant role to introduce real long term measures in favour of incorporation. The Swiss example on the other hand illustrates how theoretical concepts (such as the internalization of external costs) might penetrate into the political arena, as long as (European) harmonization needs do not disturb this process.

In general the case studies show that transport financing (i.e. the links between taxation and infrastructure financing or internalization) was not an important argument when higher levels of taxation were introduced. Once more, the Swiss case is an exception, where earmarking is an issue and more important than in other countries. The chances (policy windows) to combine taxation and internalization of external costs with additional capacity needs are not well-used. On the other hand, this issue will become of increased importance in the context of financing TEN, as the conclusions of the EU Green Paper on external costs and the actual discussions on road pricing show.

4.3.4 Conclusions towards the structural analysis

- Infrastructure policy is a long term policy process. A top-down planning system is not sufficient. To guarantee long term incorporation and continuous procedures, a comprehensive monitoring system at the planning and policy levels is important.

- A strong participation process is usually in favour of incorporation. Top-down and bottom-up approaches do have to go together. Therefore it is necessary to integrate the regional level at very early project stages.
- Only a strong SEIA with the inclusion of clear alternatives would be able to incorporate environmental concerns at strategy levels. Expertocrats alone will not be able to install this type of measure. It needs a lot of political will and new attitudes towards comprehensive procedures. At this stage it is as well the place to give attention to the mobility paradigm itself. Demand side management has to be approved.
- An overall corridor approach for infrastructure projects is helpful to identify modal priorities. Environmental and capacity-oriented argumentations are necessary to clarify the necessity of the shift from road to rail, as long as the financial dimension is taken into consideration.
- EIA and local participation are strong instruments in respect to defensive incorporation. The more it is possible to integrate these elements in an ongoing process, the better they function, and the less likely is the danger that these elements just lead to project delays and political dissatifaction.
- An early integration of the financing argument in the discussion of adjustments in taxation can create synergies towards active incorporation. An early integration of the Ministry of Environment is useful and in favour of incorporation.
- The more a tax adjustment changes variable costs, the bigger is the step towards active incorporation. Though it is necessary to draw on the argument of internalizing external costs with respect to the polluters-pay-principle.
- Liberalization of the rail sector without a parallel discussion of overall active incorporation and/or overall financing schemes is one step back in the concept of incorporation. The opportunities for a modal shift will weaken.

5 Conclusions and Recommendations

5.1 General Conclusions

Despite of considerable differences between the transport economies and the political systems in the different countries analyzed in this study, one can observe a number of common characteristics and trends.

Incorporation is an old idea - but a young policy

From the beginning of environmental policies in the seventies the respect of the environmental dimension in other policies has been perceived as a necessary element of any preventive and efficient policy approach. Coordination between environmental policies and other policies intends to avoid environmental damages altogether at the source, instead of repairing and compensating for environmental destruction. It is also a necessary element of an efficient environmental policy to avoid inconsistent or even contradictory sectoral and environmental policies. Nevertheless, as a policy it received special attention since 1987, when the idea of “Sustainable Development” came on the international agenda. The idea of “incorporation” still remains diffuse, with little operational definitions as to “environmental requirements” or to the required coordination procedures between sectoral and environmental policies.

In the case of freight transport, some progress has been made over the review period between 1984 and 1994.

In most countries the “culture of incorporation” has been considerably improved by reorganization of the government machinery, better coordination procedures, and increased attention to the environmental dimension. The environmental authorities are consulted on transport issues and in many countries they have the resources to comment and develop proposals, to reduce the environmental costs of transport. In some countries, quantitative and qualitative targets were set to reduce the

environmental burden due to transport. However, there is a reluctance to set targets that would create trade-offs between transport and the environment, especially in the case of CO_2 emissions. Denmark and the Netherlands are positive exceptions. Policy changes with a positive environmental impact can be observed in the case of infrastructure investments, environmental impact assessment methodology, railway reform and taxation. The discussion on instruments for an environmentally friendlier transport system was on the agenda in a number of countries.

One can expect further progress in the future.

Land-use conflicts, forest damages, and global climate change continue to be the major environmental constraints for the further growth of road freight transport. In most cases, environmental pressure is not the only nor the most relevant reason for policy changes. The crisis of the transport sector, which is characterized by the risk of congestion, limited acceptance and space to extend road infrastructures, increasing railway debts and fiscal considerations, always plays an important role for policy changes. Such problems continue to be important determinants for the future of transport policy-making. Incorporation most probably will develop as an “austerity policy”, which is characterized by budgetary constraints to expand infrastructures and fiscal motives to increase taxation, rather than as a “luxury policy” with high public spending for the environmental modes.

Nevertheless, any policy towards incorporation meets a high level of economic and political constraints.

In all the countries researched in this project, a “growth paradigm” prevails over environmental considerations. In reality, there is no “mutual adjustment” of environmental and economic aspects, but rather a hierarchical relationship. Adjustment to growing transport demand and the protection of the competitive position of the national hauliers sector receive priority treatment - whereas the environmental dimension is treated as a secondary objective. Therefore one can argue, that despite of tremendous transport policy changes during the past decade, the environment has not been sufficiently respected.

Most policy changes contribute to extend the overall capacities of transport infrastructures, either by their more efficient use or by their general extension. In most cases, they imply a conflict-avoiding strategy that would redistribute growth to all modes. More far-reaching strategies, such as structural change and active

demand-side management have not been systematically promoted, because they would negatively affect the market volume and the competitivity of road transport and therefore, mobilize strong opposition.

Economic capacities of the transport sector are an important determinant for incorporation - yet not the only one. For instance, countries with a strong railway sector do more for their railways (especially Switzerland and Germany) than those countries with a weak railway sector. But even countries with low railway shares, like the Netherlands or Italy heavily invested into railways or combined transport, to adapt to the requirements of the foreign markets. Other countries with limited capacities for modal shift are reluctant to choose such a strategy because the marginal cost would be high and the environmental benefit would be relatively low. This is the case for UK, as well for Denmark. Instead a discussion on the potential of demand-side strategies to contain road freight transport growth has been initiated. The potential of coastal shipping as an environmentally friendly transport mode in those countries only has been discovered recently. Restrictive policies against road transport only take place if the costs are born by foreigners. Switzerland is a case in point.

In some countries, “political and institutional constraints” still prevail, such as a low environmental profile of private and public actors, weak coordination and consultation mechanisms within the bureaucracy, or selective and closed decision-making processes. Improvements in the culture of incorporation by better knowledge and the diffusion of environmental values, in addition to institutional reform, may improve the conditions, but they are not sufficient. Even in countries with a high environmental profile, such as the Netherlands and Denmark, incorporation must respect the above-mentioned economic constraints.

Taking such constraints into account, “indirect incorporation” is easier to achieve than “defensive incorporation”. Similarly, “defensive incorporation” is easier to attain than “active incorporation”.

Incorporation often takes place as “indirect incorporation” - as a consequence of the rationale of other policies (see above). Fiscal motives and budgetary constraints, as well as the perceived positive side-effects of transport policies for the environment, play a major role to legitimize environmental concerns. The impacts of deregulation or of the high-speed trainpolicies are examples for such legitimation strategies.

Defensive incorporation is relatively strong when citizen's rights to participate or to intervene into infrastructure planning are strong - especially if environmental pressures (especially on the local level) are strong. This may the case in the framework of consensus oriented participatory procedures, if citizens rights to sue or to request popular initiatives are strong.

But often environmental safeguards and targets are weakly defined, so that the "negotiation power" of the environmental ministries vis a vis other ministries remains weak. The environment often does not have a sufficient "property right", which requires negotiations with other policies.

Active incorporation even meets higher hurdles. There are five preconditions necessary in order to achieve active incorporation. First, active incorporation requires a streamlined government with a high level of authority to withstand the conflicts with different vested interests. It requires a high level of consensus among the involved social groups. Therefore, active incorporation is more ambitious and thus, more difficult to achieve than defensive incorporation. Furthermore, it requires a high profile of environmental problem-orientation of the administration. The third precondition includes strong popular pressures towards incorporation. The fourth prerequisite consists of strong economic capacities to promote a modal shift or to improve the transport efficiency of the economy. Finally, technically viable and widely acceptable policy options have to exist. The coincidence of those preconditions is rather the exception than the rule.

Therefore, incorporation in reality will be a patchwork, rather than the result of an "ecological master plan".

This patchwork is defined by the changing opportunities and restrictions in the political and economic system. "Policy Windows" for incorporation open and close - and it is the task of a strategically-thinking, environmentally-oriented administration (as well to environmental organizations and respective economic interest groups) to prepare for historical constellations for incorporation in time. Such constellations are different from country to country - so the proposals must be rather country-specific.

Therefore, a mechanistic transposal of "positive lessons" from one country to another may not be possible. However, such lessons may be a source of inspiration for other countries.

Most countries may provide interesting success stories for the one or the other countries.

Switzerland assumes a leadership position in the way that it is promoting rail transport, both by “push and pull” approaches. It is presently pioneering the policy switch from an effective regulatory instrument (the 28 tonnes limit) to economic instruments. It has traditionally a high share of railway investments and a very effective railway system. Other countries started give priority to rail investments too, such as the Netherlands. The Netherlands may be a model for their consensus-oriented, participatory, and streamlined administration and their relatively ambitious policy plans - even if those approaches meet considerable opposition among the strong and economically vital Dutch transport sector. They are pioneers in Strategic Environmental Impact Assessments, which may easily be incorporated into the Dutch planning system. Denmark is closely following the Netherlands in respect to SEIA.

The U.K.was identified by its fast and flexible policy switches from being one of the strongest opponents to environmental taxation to becoming a relative leader of environmental taxation. For instance, the U.K. increased already high fuel prices and positively responded to strong popular pressures against its motorways programme by downgrading a considerable number of projects. In Italy, some interesting countermovements against a short-sighted national “culture of emergency” can be observed at the regional level. Germany has achieved a far-reaching railway reform, by creating strong conditions from the supply side of a healthy railway company with high investments and a strong capital basis. But it was not successful in fighting for non-distorting level playing field in the deregulated European transport market, thus implying sharply falling freight transport prices. Finally, the European Commission has often has been an initiator for important policy reform, such as the use of fiscal instruments or Strategic Environmental Impact Assessments - even if this did not find sufficient support from member states in the short run.

But such examples only offer some hope against an unchanged trend of unprecedented high road transport growth rates.

Most policy incentives are still procyclical rather than anticyclical. Under the present political frameworks, it is rather doubtful whether even the “capacity-oriented strategies”, which intend to shift at least the transport growth to the environmentally friendlier modes, will work. Actually, incorporation even meets difficulties to achieve a quality, where synergies between environmental and

economic targets are most obvious. This includes an inefficient use of existing infrastructures (overuse of road, underutilizaton of railways) due to market and intervention failures which coincides with a growing level of environmental impacts.

Therefore, the barriers and restrictions should be taken into account for a strategy towards incorporation as well as specific policy proposals. We propose a number of principles, strategies, and instruments to improve the conditions for incorporation.

5.2 Recommendations

5.2.1 Changing perceptions and perspectives

Interests and preferences of “actors” are bounded by the time horizon and the available choices they have. Long-term perceptions and well-elaborated choices improve the chances for incorporation, compared to short-term action. They may change interests. Finally, perceptions are influenced by the alliances for certain types of incorporation that might be mobilized.

5.2.1.1 Thinking long-term

Incorporation is strongly linked to the agenda for sustainable development. “Sustainable development” has widened the perspective of environmental policies towards global and long-term threats. It has furthermore deepened the understanding of the linkages between economic development and the environment. In this sense, it implies a shift from a short-term, trade-off perspective that calculates between microeconomic targets and the cost of environmental protection, towards the long-term perspective that considers the economic costs and risks of non-action and cost-saving potential of a resource-efficient economy. Transport trends meet considerable problems in the short run, but only long-term scenarios highlight the economic risk of unchanged transport growth. In short, trade-offs in a short-term perspective might converge into synergies in a long-term perspective. The issue of transport and environment came on the European agenda between 1989 and 1992, when long-term environmental and transport scenarios showed the risks and dangers of unchanged trends.

The art of incorporation is very much the diffusion of such long-term problem dimensions into the short-term interest perception of decision-makers. The long-term dimension may change short-term perceptions and interests. Unfortunately,

problem-oriented, policy-oriented, and decision-maker networks are rather separated from each other.

Incorporation requires a communication and discussion strategy, such as “Green papers”, round tables, expert hearings, or institution-building (i.e., the Enquete Commission for the Protection of the Earth’s Climate). This widens the actors networks which are involved, the scope of alternatives to be evaluated, and the time horizon (time frame).

Recommendation 1: Incorporation requires an active diffusion and communication strategy among the long-term, problem-oriented expert community, the networks working on solutions, as well as the decision-makers and lobbyists.

5.2.1.2 Improving Knowledge and Changing Perceptions

The center of prospective and problem-oriented knowledge normally is the public administration, which has specialized staff. Problems and solutions are discussed and reevaluated within this specialized staff long before they reach the surface of the public discussion.

Incorporation has a long-term dimension. The growth of road transport and the resulting multiple crisis have a secular character, and any policy instruments may change trends only gradually. Therefore, the relationship between transport and the environment came on the agenda when long-term scenarios highlighted the problem dimensions. Prospective capacities are therefore, an important precondition for incorporation. Forecasting and scenario and sensitivity analysis play an important role to take the long-term character of many environmental problems into account (as well as transport-related problems). Synergies may be found easier in a long-term perspective rather than in a short-term perspective.

As some case studies showed, knowledge is also a strategic resource for solving problems. The scope of alternatives considered, the technical viability and its scientific and political acceptance are important constraints for any solution and instrument. The more far-reaching any policy initiative is, the more investments in terms of research and communication are necessary to find a consensus or at least sufficient support. Strategic socio-economic research on such issues (i.e., policy options for demand-side management, alternatives to hard infrastructures) is still too weak. Building-up and strengthening the capacities to finance, direct,

and communicate such knowledge must be seen as an important capacity for incorporation.

Recommendation 2: Incorporation requires strong capacities for prospective, strategic thinking and policy-oriented knowledge for technically viable and politically acceptable solutions. Those should be built up within the administration or within closely related institutions.

5.2.1.3 Strategic Alliances

The analysis identified one insight: environmental coalitions (the public, environmental organizations, and environmental authorities) do not have the power, the resources, nor the authority to change transportation trends according to environmental criteria. They need support from other interests - the most obvious allied actors are the operators of the relatively environmentally friendly modes (railways, combined transport, shipping). Strategic alliances are only partial. The solutions of the allied actors may only partially contribute to an environmental problem. For instance inland shipping may have a very good CO_2-balance, but new waterways may create conflicts with nature protection. New alliances sometimes require farreaching and sometimes painful compromises.

Transport policy takes place in the sphere of a number of other policies: Economic policies, industrial and research policies, regional planning, European integration, social policies, or fiscal policies. The objectives of those policies are incorporated into transport policy more than environmental objectives. Some of them are of special relevance to the environmental policies.

5.2.1.4 Fiscal Interests and Constraints

Fiscal interests and constraints play an important role for the transport sector. They are related to government income and to an efficient use of expenditures. Tax increases in the past were motivated by such fiscal interests rather than by environmental ones, but they had a certain impact on transport costs and prices. Without the tax increases over the past years, road transport prices would have fallen even lower than they actually did.

Fiscal constraints always have been a major factor to restrict and cut back ambitious (road) infrastructure programmes. Fiscal considerations also played a major role for the German railway reform. A competitive and modernized railway was

perceived as a lower risk than a state railway monopoly or a private enterprise without capital basis and modernization capacity.

Fiscal constraints are ambivalent since they restrict any cost-intensive policies. Nevertheless, incorporation under the regime of fiscal austerity is possible and requires further analysis. Yet it seems that systematic coalitions between environmental and finance ministries have not been built up.

5.2.1.5 Spatial Planning

The objectives of spatial planning have changed gradually from universal accessibility towards regional differentiation. The attention to the negative feedback mechanisms of transport growth to regional “quality of life” indicators has increased over the past years. The role of spatial planning for the growth of transport has been discovered and there is a considerable potential to reduce transport by using spatial planning. In this sense, spatial planning networks have changed their position from an ally for large-scale transport infrastructure planning towards an ally for environmental interests.

5.2.1.6 Social Standards

Wages and working conditions are the most important cost factors for freight road transport. The competiveness of road freight transport depends very much on the liberal regulations (and their non-respect) for maximum driving hours and minimum standards on recreation. For instance, combined transport becomes competitive on distances where two lorry drivers are required, causing a cost jump for road transport services. Trade unions are relatively weak in the transport sector and face the counterargument of high level of competition. Nevertheless, they and social policy-makers may be an important partner for environmental policies to achieve a realistic level of road freight transport costs.

Recommendation 3: Alliances between environmental, fiscal, social, and spatial planning interests on transport should be explored more systematically, even if those interests may be ambivalent for the environment.

5.2.2 Improving the decision-making system

The decision-making system may be improved by institutional reform. This may be an important precondition for a higher profile of incorporation. Those who want to strengthen the environmental dimension in transport policies should have easy access to the decision-making process in all phases - both inside and from outside of the administration. Furthermore, the division of labour between the different political levels and the corresponding systems of environmental checks and balances requires rethinking.

5.2.2.1 Joint Formulation of Targets and Safeguards

Economic theory is reluctant to recommend specific sectoral targets because of efficiency reasons. The results of this study suggest that from a political science perspective, the definition of sectoral objectives is important for effectivity and efficiency reasons. Without clearly defined environmental objectives, safeguards, or criteria, the environmental administration has few “property rights” for negotiations with the transport and other administrations. Negotiations without equality of “weapons” (in the worst case without participation of the environmental administration) would lead to externalities which may not be acceptable on efficiency grounds.

Objectives should be jointly defined by all concerned parties to improve the opportunities for successful implementation. The formulation of ambitious targets within natural sciences or problem-related environmental policy networks may only lead to problems of acceptance within the target groups, such as the transport policy networks.

Recommendation 4: Incorporation requires well-defined objectives for the transport sector as a precondition for successful coordination mechanisms. Objectives should be jointly defined by the environmental and transport administration.

5.2.2.2 Strengthening Coordination

Organizations and departments form boundaries of interest and attention. For example, the tasks of a specialized transport department may be to promote a certain transport mode. The task of a specialized environmental department may be to monitor the emissions of a certain pollutant. Incorporation requires the

cooperation and consultation between such specialized departments. Even if one may expect that in the long run, the respect of the environmental dimension may be internalized in the value-system, interest-definition, and problem perception of every actor, such a concept would be unrealistic in the short and medium-term. Incorporation takes place by consultation, arguing, and settling conflicts between departments that represent different interests. Therefore, the “environmental dimension” requires a strong and authoritative organizational basis, which has sufficient personnel and other resources to comment on and to initiate policy proposals for active or defensive incorporation.

Different models exist to achieve this requirement: Mirror departments in the transport and environmental ministry, which may be concentrated or deconcentrated, joint project groups, informal interministerial networks or the reorganization of tasks. Concentration means that the staff which is responsible for environmental questions are concentrated in a department of the transport ministry and vice versa. Deconcentration means that they are dispersed along the different specialized fields of work. The advantage of concentration is that a center of power may be established, which has the resources to prepare policy proposals. The advantage of deconcentration may be rather seen for implementation and routine work. In any case, incorporation requires strong commitment and support from the higher levels of administration.

Coordination should take place throughout the life cycle of a policy, from the formulation of policy objectives to implementation and reevaluation. The most effective tool are joint project groups, which prepare and advance projects of common interest.

The resources and the political support for the environmentalists in the transport administrations (and the transport experts in the environmental administration) are critical factors for problem perception and policy preparation. Therefore, they should be strengthened. However, as the results of the comparative analysis suggest, a streamlined and well-coordinated bureaucracy is not a sufficient precondition for incorporation.

Recommendation 5: Incorporation requires a powerful environmental department in the transport ministries or a powerful transport department in the environmental ministries to promote and defend environmental aspects. Coordination and consultation mechanisms should be strong and should be applied throughout the life cycle of policies.

5.2.2.3 Participation

Environmental organizations and local initiatives play an important role to improve the “problem perception” . Often they articulate neglected environmental risks of a certain policy and function as an “early warning system” both for the limits to environmental degradation and the limits to public acceptance. They represent rather neglected interests of the environment and of future generations and offer counterbalancing arguments against a short-term, partial interest-led perspective. Besides, they are an authoritative source of public dissemination of arguments and may develop to important allies for a relatively weak environmental administration. They may offer contributions to all levels of the decision-making process from the discussion on appropriate instruments to proposing alternatives to environmentally damaging infrastructure plans. What some transport growth protagonists perceive as a investment barrier may lead to more sophisticated and balanced policy choices: the strengthened participation of environmental organizations.

Participation and consultation should not be a single, representative event, but rather a continuous process throughout the life cycle of transport policies.

Environmental organizations should be treated in the same way as other interest groups in advisory committees as well as on the level of formal contacts. They should be consulted on all transport policy proposals that have an impact on the environment. Expert networks should also be opened to experts from the environmental community. Advisory policy networks often are fragmented according to single modal interests. Intermodality requires that the interests of the environmentally friendly modes are heard and respected in the formulation of road transport policies.

Environmental groups should also have rights during the latter phases of policies. The respect and implementation of existing environmental legislation, for example, could be considerably improved if environmental organizations have access to courts.

Improved participation is always a challenge to the limited capacities of environmental organizations in terms of finance and personnel. They do not represent economic interests, which can make money by successfully advancing their case. Credible participation mechanisms for environmental organizations therefore, must include a financial mechanism (as it is the normal case in the Netherlands).

Recommendation 6: Participation for environmental groups and experts should be strengthened during all phases of the decision-making process - both on a strategic and a technical level.

5.2.2.4 Strengthening Subsidiarity

According to the "economic theory of federalism", the allocation of public goods should be as decentralized as possible to meet the different local preferences and to optimize allocation. The level of decision-making and the allocation of costs and benefits should coincide as much as possible. A higher level of action is only justified by positive and negative externalities. For example, positive externalities may develop in the case of economies of scale or other added-value by a more centralized approach. Negative externalities may consist of the diffusion of pollutants or by the overuse of global commons.

In the case of transport and environment, one has to distinguish between infrastructure and market order.

According to a radical interpretation of this principle, the local and regional level is the appropriate level for infrastructure investments. This applies especially for regional and urban infrastructure networks. However, if benefits of major interregional and intermetropolitan links exist, they might be better exploited by a more centralized approach. This suggests a four-level approach: (1) the local level has competencies and resources for local infrastructure; (2) the regional level for regional; (3) the national level for interregional; and (4) the European level for intermetropolitan links. Each level requires its own system of environmental checks and balances in order to avoid a shifting of responsibilities between the levels. But there must also be a control system between the levels to avoid externalities. Any centralized (national or European) approach requires strong legal positions from the local and regional level to reduce and to avoid the negative "externalities" of long-distance infrastructures and transport, or to ask for compensation. Furthermore, the lower levels should have an influence on infrastructure development at the higher levels to reach a selective approach on transport which induces long-distance links at the expense of the interregional connectivity. On the other side, any local planning should respect environmental targets for global pollutants, where spill-over effects might occur.

This may be further explained by the following argument from the theory of collective organizations: There are special interests to protect the environment (i.e., to prevent the damage of neighbourhoods, or to protect habitats of regional relevan-

ce) and there are rather general ones (i.e., to protect the climate). Special interests are normally easier to get organized and therefore more powerful than diffuse interests. Local environmental problems (i.e. noise, land-use, ozone) therefore, may be best protected by strong local citizen rights. Global environmental problems (i.e., greenhouse gases, biodiversity - protection of internationally-relevant habitats) caused directly or indirectly by infrastructure development require targetled national and international safeguards.

As to the market order, in principle, there is a need for a Community framework in the transport sector:

- to allow a "level playing field" for the transport markets, which avoids distortions to competition and which strengthens the role of the environmentally friendly modes;
- to improve the compatibility and interoperability of complex technological systems (railways, combined transport, telematics);
- to control the environmental impact of its own "interventions";
- to manage the environmental spill-over effects from transport: global or regional environmental impacts; to protect habitats of Community relevance; and to avoid externalities of international freight transport flows, etc.;
- to improve the connectivity between the major centres.

This first solution may be blocked by a lack of consensus on environmental questions at the European level (especially the case of taxation). In such cases, any step towards European integration should respect autonomy (i.e., national preferences). This means that more ambitious approaches towards incorporation at the national levels should not be blocked nor counterbalanced by the European level. The same principle applies between the regional and the national levels. In the case of taxation, this would mean the full application of the territoriality principle.

Recommendation 7: According to the subsidiarity principle, any centralization of competencies in transport policies requires the proof of its added-value solutions compared to a decentralized solution. In any case, the level that decisions are made, the level of allocation of costs and benefits, and the level of environmental control and assessment systems should coincide as much as possible.

This is closely related to the following recommendation:

Recommendation 8: A system of mutual checks and balances between the different political levels should be developed. Local action has to respect national or international safeguards to protect global common goods. National or international action has to respect local and regional preferences to protect the environment both in an active and a defensive sense.

5.2.3 Improving the chances for specific instruments

The analysis could show that any country has its own profile of weaknesses, strengths, and opportunities. Infrastructure planning and taxation are the two of most important policy fields in which instruments for active and defensive incorporation may be applied.

5.2.3.1 Strategic Environmental Impact Assessment

SEIA may be applied for transport policies and for infrastructure planning. At the moment, methodological expertise should receive the highest priority for infrastructure planning.

Infrastructure planning is a process, which implies the definition of principles, criteria, and targets for the whole network, and consequently for corridors and projects. It requires a methodology to estimate future needs and constraints, as well as the identification of costs and benefits. Finally, a systematic review of non-infrastructure policy options to achieve the given socio-economic objectives is also necessary. All this influences not only choices on the level of infrastructure investments, but also on modal and regional priorities.

Strategic Environmental Impact Assessments (SEIA's) widen the scope of this norm setting, evaluation, and selection process by addressing the environmental dimension. Its fundamental idea is to monitor strategic infrastructure decisions in the early phases of reflection and to widen the aspects and the scope of alternatives considered. Since the consideration of alternatives and the definition of the terms of reference are vital, SEIA should be done in a pluralistic setting of expertise. For instance, several SEIA´s should be made for the same plans by different experts with different professional background.

SEIA is both a participation procedure and an evaluation methodology of the environmental impacts of policies, plans, and programmes. As a participation procedure, it provides opportunities to discuss different strategic transport policy options with environmental authorities and with environmental organizations. This participatory element in the early phases of methodology development is important to find acceptable results. It is a precondition for the success of SEIA as a participatory planning tool. Without effective participation, SEIA risks to be abused for ex-post legitimation of strategic infrastructure decisions. SEIA is more successful in a consensus-oriented political culture than in a conflict-oriented or hierarchical one.

As a methodology, SEIA will focus on the long-term and global impacts of different strategic infrastructure alternatives. The evaluation of strategic decisions requires a number of assumptions (i.e., the definition of the reference case, the definition of the scope of alternatives, the timing of SEIA, etc.) which easily may be manipulated in one direction or the other. SEIA should be used as a tool to assess alternative options in a multimodal perspective (i.e., substitution effects between modes). Therefore, it should be always seen in the context with the participation procedure in order to maintain its credibility.

In the case of infrastructure planning, SEIA requires further work, especially to develop modelling tools for intermodal corridor analysis and for the impacts of infrastructure system extension. In addition, data basis require further improvements and harmonization (i.e., Geographical Informations Systems, habitat identification, transport and emission modelling). A link between SEIA results and other infrastructure planning tools (i.e., cost-benefit analysis) should be developed.

Recommendation 9: SEIA is both a participatory planning procedure and a evaluation methodology. On both levels, more investment into knowledge and experience is necessary.

5.2.3.2 Setting new investment priorities

Transport infrastructure investments are the single major public intervention into transport markets. Therefore, they are one of the most powerful instruments to strengthen the economic capacities for incorporation. Italy, for example, has invested in a number of combined transport terminals, despite of an overall dominant role of road freight transport. Compared to High-Speed Train links, infrastructure facilities for Combined Transport, intermodal cooperation and improved rail and shipping services are relatively cheap. Further public investment may help

to improve the infrastructure for transport organization and logistics (i.e., telematics, electronic rail capacity management, etc.). Even if such investments may have a low environmental impact in the short run, they gradually improve the capacities of the environmentally friendly modes. On the other side, a reduction in road infrastructure investments may create incentives for transport users to look for other options (from logistics over other modal preferences to location).

A general widening of all infrastructure capacities, however, will not improve the relative competitiveness of the environmentally friendly modes nor will it create incentives for a more rational organization of transport service to a more transport efficient economy.

Recommendation 10: Infrastructure investments should set clear priorities on the environmental modes and capacity-optimizing technological systems, even if they do not have a major environmental benefit in the short run. A revival of the environmentally friendly modes must be seen as a long-term strategy.

5.2.3.3 Getting the Prices Right

Taxation is the most prominent instrument to promote incorporation. The theoretical assumption that price signals in competitive markets improve welfare, only if external costs are fully internalized, is widely accepted. Nevertheless, taxation systems, which try to internalize environmental and social costs of transport, still meet considerable difficulties. The lack of scientific consensus on the level of external costs and the right method to internalize external costs are just two of the reasons. Since there is consensus on the principle, any action leading towards more realistic prices should be preferred to non-action. The strong political pressure of those sectors of the economy, which oppose to such measures, certainly is the strongest barrier. But it may become weaker if quality of overall services and logistics become more important than the transport of goods, or if perceptions become more long-term. Furthermore, the instrument is caught in the “joint decision-making trap” of the European Union. As long as the territoriality principle is not fully accepted, the scope for national measures to introduce such taxes is limited. At the European level, a consensus for the internalization of external costs is difficult to meet. Former tax increases were not led by environmental motives, but by fiscal ones. Tax increases did not increase transport costs because they

were offset by declining oil prices. Hence, the environmental impact was negligible.

As long as taxation meets strong difficulties, other instruments to contain the social costs of road transport should be reevaluated, such as speed limits, traffic restrictions on certain corridors, tonnage limits, fees, stricter enforcement and improvement of social standards, etc. The stick of such regulatory second best options may be necessary to find support for the first best market-oriented option. Furthermore, voluntary agreements, emission licences, and improved information tools (such as the inclusion of transport aspects into environmental audits) require further inquiry.

Recommendation 11: As long as no consensus is found on the exact level of external costs, a gradual (but immediate) strategy should be chosen to increase road transport costs, leaving individual countries the freedom to proceed more quickly. If taxation meets strong resistance, other instruments for cost internalization (including regulatory ones) should be chosen.

5.2.3.4 Environmental Standards

Incorporation is not a substitute to a dynamic improvement of traditional environmental policies. Rather, it must be seen as a long-term approach which is complementary to traditional approaches. Often technical norms (on emissions or energy consumption) are the most effective instruments to reduce damage from operational pollution in the short run. Therefore, standards should be strengthened to exploit the technological potential of pollution reduction for heavy vehicles.

Nature conservation legislation formulates clear objectives and criteria for the protection of habitats. On this basis, procedural requirements for coordination may be further strengthened. A weak point may be the conditions under which a violation of nature conservation may be accepted. Such exceptions require improved definition - especially in regards to the scope of less damaging alternatives to be examined.

Finally, policies should define new limits, as well as reduce existing thresholds for air and noise pollution. This applies especially for Ozone, VOCs, and the traditional pollutants. Furthermore, a clear and specific CO_2 target for the transport sector is required as a baseline and criterion to assess and modify transport policy impacts.

Recommendation 12: Incorporation is not a substitute, but rather it is complementary to the improvement of environmental standards, nature protection, and air quality norms. Therefore, this traditional approach should be continued and further strengthened.

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