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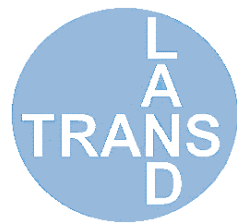
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47

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**Integration of Transport and Land Use Policies:
State of the Art**

*Deliverable 2b of the project TRANSLAND
(Integration of Transport and Land Use Planning)
of the 4th RTD Framework Programme of the
European Commission*



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Executive Summary

The EU 4th RTD Framework Programme research project TRANSLAND is a study on innovative policies and future research needs in the field of integrated urban transport and land-use planning. TRANSLAND serves two objectives. It looks backward in identifying good planning practice examples, insights from conducted research in this field and institutional conditions and barriers for integrated policy making and it looks ahead to advise on best planning practice and to recommend future research and policy development.

The TRANSLAND Deliverable 2b is part of a review on the state of the art in the theory of land-use transport interaction at the urban-regional level. The review covers both technical, behavioural and institutional issues of land-use transport interaction at the urban-regional level, i.e.

- impacts of local land use policies on the behaviour of travellers and, vice versa, impacts of transport policies on the location behaviour of households and firms within urban regions ('What');
- potentials and problems of co-ordination of land use and transport policies at the urban-regional level in different national and regional institutional contexts ('How').

Deliverable 2b focuses on the 'How' question and intends to identify potentials for and barriers to a better co-ordination and integration of transport and land-use. In this the term transport does not explicitly include the area of freight transport which is dealt with in other 4th RTD Framework Programme projects and will be treated here only in a general way.

Based on the fact that the form of urbanisation has a strong influence on the transport network and, conversely, transport systems have a structuring effect on urban development, a better co-ordination and integration of transport and land-use presupposes policies that closely link these two aspects. Co-ordination includes institutional potentials, while integration encompasses policy-related potentials.

As far as institutional potentials are concerned, the analysis of the organisation of transport and land-use planning and the co-ordination between them in different member states reveals some common characteristics in the organisation of land-use and transport planning. There is in all EU member states a hierarchical structure of spatial planning instruments which is closely related to their government structure. Based on the analysis of the institutionalised organisation of transport and land-use planning, the member states have been grouped into three categories referring to the degree of co-ordination and integration which make policies towards integration more applicable and the transfer of instruments and best practice more likely to succeed.

- Category A contains an institutionalised regional planning with binding regional plans or other forms of binding effects.
- Category B includes countries with an institutionalised regional planning without binding effects.
- Category C contains countries without regional planning and/or regional plans, with co-ordination taking place just at the local level.

The assignment of countries to these categories shows that in most member states regional planning is institutionalised and includes binding regional plans. Due to the fact that land-use and transport policies are carried out by sectoral departments and semi-public or private actors at different administrative levels, horizontal and vertical co-ordination is indispensable for temporal, territorial and sectoral cohesion. In this context a regional-planning level with binding planning instruments and sufficient authority in decision-making can facilitate the implementation of policies for a better integration of land-use and transport. Non-institutionalised forms of co-ordination also play an important role, especially in the context of participation and partnership.

As far as policy-related potentials are concerned, policies to reduce the need for travel and to make the remaining traffic sustainable through integrated land-use and transport planning have been identified. The policies have been assigned to the following policy types:

- investment and services,
- planning,
- regulation,
- pricing,
- information and informal policies.

The presentation of the policies illustrates that the objectives of land-use policies primarily relate to a reduction of the need for travel, while transport policies mainly aim at making the remaining traffic sustainable. However, especially in the long-run, transport policies affect land-use as well, and land-use policies also affect transport. Due to their complementary effects, land-use and transport policies need to be combined to reach the primary objective to reduce the need for travel and to make the remaining traffic sustainable. The combination of policies within the same policy area is important to achieve synergetic effects. To sum up, it can be concluded that all policies are important because they enter in some combination which leads to a successful implementation and a high degree of efficiency.

The implementation of the policies can be restricted or prevented by different types of barriers including resource barriers, social/political, legal and institutional barriers as well as side effects. All policy types, except information policies, face several barriers, with investment and planning mainly being restricted by institutional barriers and pricing and regulatory policies mainly facing social barriers. Information policies hardly face any barriers. Given that the combination of policies is necessary for a better co-ordination and integration of land-use and transport planning, the different kinds of barrier cannot be regarded separately in the implementation of policy packages. With respect to transferability of policies it can be shown that a policy which has successfully been implemented in one country cannot simply be transferred to another country. Especially policies that imply institutional and legal changes are difficult to be transferred to other countries. However, transferability also depends on the interest and willingness to act by the relevant actors.

Using several case studies at the national level (United Kingdom, Germany, The Netherlands and North America) and at the urban-regional level (Amsterdam, Toulouse), examples of current best practice to co-ordinate and integrate land-use and transport planning are presented. The analysis of the different approaches shows that co-ordination between different jurisdictions and sector departments on the one hand, and the integration of different policies to policy packages on the other hand, are the corner stones for the successful implementation of

policies to reduce the need for travel and to make the remaining traffic sustainable. In addition, non-institutionalised forms of urban management are important to allow for more flexibility in the planning process.

Based on the analysis of the organisation of land-use and transport planning within the EU, of different policies and barriers to implementation as well as on the case studies, successful and transferable policies can be identified. For most policies a successful implementation is closely linked with its relation to other policies and the institutional and organisational context in which it is implemented. With respect to the first aspect it can be concluded that all policies are important for a successful integration of transport and land-use because only the combination of different policies promises success. Regarding the institutional and legal framework of implementation, most policies presuppose an institutionalised regional planning to efficiently integrate land-use and transport. This is important for the transferability of policies.

Transferability depends on country-specific legal, institutional, social/political and resource barriers and side effects. According to the classification of countries, most policies are transferable. In general, policies can be transferred between countries of the same category. In addition, category A shows the highest degree of success with respect to institutional regional planning. Policies that depend on institutional forms of co-ordination at the regional level cannot be transferred to countries of category C. However, even if the institutional, legal, political, legal and social framework of different countries is similar, the successful implementation of a certain policy in one country does not guarantee a successful implementation in another country because this process also depends on special conditions regarding financial resources, social resistance and the interest or willingness to act of the relevant actors. Nevertheless, the most important issue for the transferability of policies is to analyse the institutional, legal and social framework for the implementation of a policy early enough to adjust the policies to the given framework or to adapt the framework to the designed policy.

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- Michael Wegener and Franz Fürst (1999): *Land-Use Transport Interaction: State of the Art*. Berichte aus dem Institut für Raumplanung 46. Dortmund: Institut für Raumplanung, Universität Dortmund.
- Claude Noel (1999): *Integration of Land-Use and Transport Planning: Review of Practice*. Lyon: Centre d'Études des Transports Urbains.
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1. Introduction

The EU research project TRANSLAND is a study on innovative policies and future research needs in the field of integrated urban transport and land-use planning. TRANSLAND serves two objectives. It looks backward in identifying good planning practice examples, insights from conducted research in this field and institutional conditions and barriers for integrated policy making and it looks ahead to advise on best planning practice and to recommend future research and policy development. Important activities within TRANSLAND to fulfil these objectives are:

- identifying existing good practice and its transferability;
- overviewing administrative and legal provisions influencing integrated policies;
- deriving recommendations for enhancing instruments and planning procedures and
- selecting and prioritising areas for further research and institutional development.

TRANSLAND consists of eight main work packages:

1. Outline of concept
2. Review of the state of the art
3. Inventory of current practice
4. Structured overview
5. Workshop
6. Research agenda and priorities
7. Best practice
8. Dissemination

This report is part of a four-part report ('Deliverable 2') on Work Packages 2 and 3 of TRANSLAND. The other three volumes are:

Michael Wegener and Franz Fürst (1999): *Land-Use Transport Interaction: State of the Art*. Berichte aus dem Institut für Raumplanung 46. Dortmund: Institut für Raumplanung, Universität Dortmund.

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Work Package 2 reviews the state of the art in the theory of land-use transport interaction at the urban-regional level and to develop a conceptual framework for the analysis of current practice in this area in Work Package 3. The review covers both technical, behavioural and institutional issues of land-use transport interaction at the urban-regional level, i.e.

- impacts of local land use policies on the behaviour of travellers and, vice versa, impacts of transport policies on the location behaviour of households and firms within urban regions ('What');
- potentials and problems of co-ordination of land use and transport policies at the urban-regional level in different national and regional institutional contexts ('How').

1.1 Objectives

The second part of Deliverable 2 ('Deliverable 2b') focuses on the 'How' question and intends to identify potentials for and barriers to a better co-ordination and integration of transport and land-use. The need for co-ordination and integration is based on the dialectic relationship between transport and land use.

Co-ordination and integration contribute to reducing the need for travel and to making the remaining traffic sustainable in an institutional dimension on the one hand and in a policy-related dimension on the other hand taking into account that these dimensions are closely linked to each other. While the institutional dimension contains the legal, administrative and organisational framework of co-ordination, the policy-related dimension encompasses the policy areas and policy types to better integrate land-use and transport issues. In this the term transport does not explicitly include the area of freight transport which is dealt with in other 4th RTD Framework Programme projects and will be treated here only in a general way.

From this general perspective the following objectives can be derived:

- (i) to identify institutional potentials for a better land-use transport co-ordination by analysing the organisation and the current degree of co-ordination and integration of transport and land-use at the urban-regional level in the European Union;
- (ii) to identify policy-related potentials for a better land-use transport integration by identifying policy areas, policy types and detailed policies to reduce the need for travel and to make the remaining traffic sustainable;
- (iii) to assess the feasibility and transferability of the policies within the EU by distinguishing feasibility and transferability factors and by identifying barriers which hinder an optimal implementation and transferability of the policies;
- (iv) to show successful approaches to the implementation of policies for a better co-ordination and integration of transport and land-use by analysing case studies from EU and non-EU countries with reference to TRANSLAND Deliverable 2c (Noel, 1999);
- (v) to provide a general guidance for successful and transferable strategies within the EU.

These explanations emphasise the need to analyse the institutional and legal framework of transport and land-use policies in different member states, not only to identify institutional structures and policies for a successful co-ordination and integration of transport and land use, but also to identify potentials for and barriers to the transferability of policies between member states taking account of the fact that the institutional framework shows considerable differences between the member states.

The contents of the two aspects to 'co-ordinate' and 'integrate' transport and land-use and the respective primary objective to 'reduce the need for travel and to make the remaining traffic sustainable' is explained in more detail Figure 1.1.

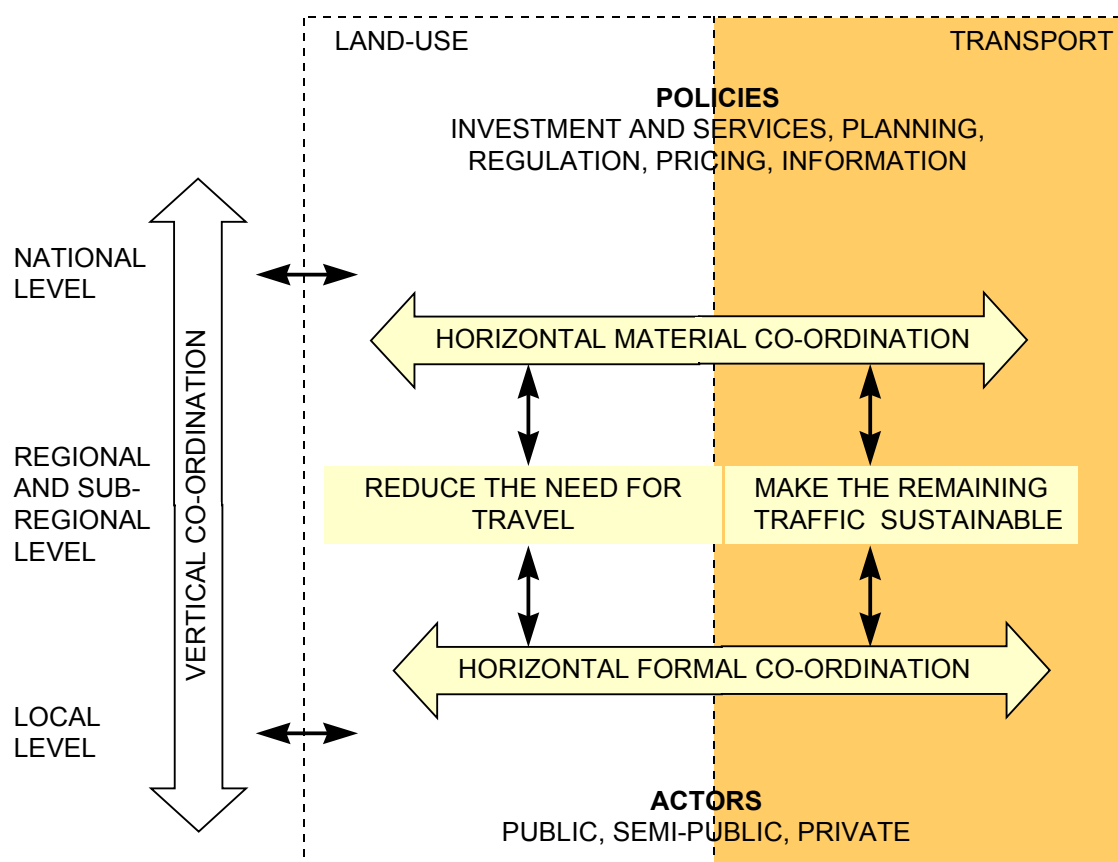


Figure 1.1. Land-use transport interaction

Co-ordination

Co-ordination circumscribes efforts to increase the coherence between sectoral policies on a vertical and a horizontal path. Vertical co-ordination means a better co-ordination and co-operation between administrative levels - national, regional, and local, while horizontal co-ordination describes the co-ordinated action between functional parties at the same administrative level, for example between different regional planning committees.

Integration

Integration of land-use and transport policies indicates the material co-ordination that includes the combination of land-use and transport policies in the policy types investment and services, planning, regulation, pricing and information in a horizontal and vertical direction. For example, land-use plans as comprehensive spatial plans represent both, horizontal integration - as they integrate objectives and policies of different sectors (e.g. land use and transport) in a territorially and temporally coherent way - and vertical co-ordination concerning the compatibility of plans between different jurisdictional levels.

Reduce the Need for Travel and Make the Remaining Traffic Sustainable

The primary objective to reduce the need for travel and make the remaining traffic sustainable is considered as a single comprehensive overall aim for the co-ordination and integration of land use and transport, in accordance with the aim of TRANSLAND to integrate these two topics. Land-use policies aim at reducing the need for travel because they primarily affect urban development and land use and therefore contribute to a reduction of distances between human activities. Transport policies aim at making the remaining traffic sustainable because they primarily influence travel behaviour and energy efficiency in the different transport modes. However, this analytical distinction of the primary effects of land-use and transport policies appears somewhat blurred in practice, especially in the long run, because transport policies as a secondary effect influence land-use as well. For instance, pricing policies such as fuel-tax increases reinforce the tendency that people move closer to their work place or to the urban centre in order to save travel costs.

1.2 Methodology

The methodological structure of Deliverable 2b (the 'How' question) was closely linked with the objectives mentioned above:

- (i) A set of criteria to analyse the organisation of transport and land-use planning in the member states was elaborated.
- (ii) Based on the analysis of the organisation of transport and land-use planning, categories to identify countries showing similarities in the institutionalised organisation of spatial planning with respect to vertical and horizontal co-ordination and integration of transport and land-use were developed.
- (iii) For a better co-ordination of transport and land-use planning, different policy types and specific policies in the area of land-use and transport were identified.
- (iv) To evaluate the feasibility and transferability of policies, factors which determine these aspects were identified and barriers to implementation of policies were analysed in relation to the policies.
- (v) Based on the analysis of the organisation of land-use and transport planning and the identified policies, a set of criteria to analyse case studies at the national and urban-regional level was developed to better co-ordinate transport and land use.
- (vi) Based on the results of national and local case studies, successful and transferable strategies applied in countries of different categories were identified and assessed in relation to the categories.

2. Organisation of Land-Use and Transport Planning

Planning gains its power through its being embedded in the legal and institutional framework of a particular country. In accordance with the distinction between institutional and policy-related potentials, the first part of this chapter contains a review of the institutional forms of co-ordination, namely the land-use and transport planning system, in order to identify institutional potentials for co-ordination and to assess the transferability of policies.

The organisation of land-use and transport planning is not always fully embedded in an institutionalised framework and often even bypasses this framework. Therefore the second part of the chapter deals with the organisation of non-institutionalised ways of co-ordination, such as deregulation, involvement of the private sector and new forms of urban management. The analysis of these discretionary forms of planning shows considerable variation in different countries and even at the city level.

2.1 Theoretical Background

Organisation and function of land-use and transport planning must be seen in the light of the ongoing theoretical discussion on the role of state planning on the one hand and market-led planning on the other hand (Scharpf, 1970; Luhmann, 1971; Mayer, 1996; Mayer, 1997; Hilber, 1997).

Various land-use demands from different agents, such as private actors and public agencies need to be co-ordinated by spatial comprehensive planning, which implies state regulation of land use at different administrative levels.

In this context, spatial planning encompasses first the definition and changes of local property rights, which is a pre-condition for action and creates the framework for markets for developable plots. Second, spatial planning develops and changes the material basis of property rights connected with infrastructure investments like streets and services. Thereby new possibilities of land use and partially new property rights can be developed for plots, considering that usually only such plots can be developed which are provided with local public infrastructure. Following the current discussion on deregulation and flexibilisation, the question arises how this intervention in the market is justified.

Welfare-Theoretical Approach

The welfare-theoretical approach is based on the hypothesis of market failure, mainly reflecting the divergence between private individual interests and public interests, for instance the occurrence of decentrally generated positive or negative external effects. In this sense planning legitimates itself through the essential interest in decisions which are different from unplanned decisions because they are made with a higher degree of reason and reflection and thereby can optimise the needs or objectives of the participants. These objectives encompass a socially justified land use, an involvement of individual projects in a comprehensive long-term urban development framework as well as a prevention of environmental pollution through appropriate land-use development. According to the above described function of planning - the definition of property-rights and the development of the material basis for land-

use - the need for state spatial planning is based on the fact that the achievement of the intended objectives is more probable with than without state planning.

The welfare-theoretical approach implies the danger of inflexibility with respect to the timely recognition of new social, technical and economic developments and the identification of appropriate answers to these developments. In addition, there is the danger that certain potentially advanced individuals or groups try to put through specific individual policies at state agencies with the attempted consequence of increasing property values based on land-use designation and infrastructure construction. As a consequence, in an economic sense, the state would not optimally use its means under the pressure of interest groups. Such inefficient planning loses its justification to replace the free market choice and to intervene in principally secured areas such as private property.

The Property-Rights Approach

The property-rights approach is based on the assumption that through negotiation between the participants results can be achieved which serve to increase the overall welfare (pareto-efficiency) at the same degree as state intervention. This would allow for a higher degree of flexibility. Under such conditions the task of the state is to provide a functioning system of property rights, to develop institutions for their control and to facilitate transactions through a decrease of transaction costs.

Production of property rights implies state planning. Above all, the definition and assignment of property rights through planning enables private acting because, first, local property rights are the basis for land transactions and for markets for developable plots. Secondly, planning changes the material basis of property rights, which enables new possibilities of land use and new property rights for distinct plots. This is important because only plots with a secured provision of infrastructure are usable for most land uses. In this context, the property rights approach cannot be used as a counter-argument against state-regulated planning.

Deficiencies of the property-rights approach include negative external effects. For instance, environmental pollution by an emitting industrial company close to a residential area represents an example of negative external effects which do not find adequate consideration in a market-led organisation of land use. Other criticisms of the property-rights approach address its lack of social justice: In pure market-orientated negotiations between the actual users of land, socially desired objectives such as socially justified land-use are hardly taken into consideration from the different interest groups. This also implies the problem that nobody can be excluded from public infrastructure, but a voluntary or co-operative cost sharing by all users is hardly imaginable. A third problem of market-led planning is its reliance on short-term strategies. The free game of market forces can lead to a situation where the most profitable land-use is established at a certain location.

An inclusion of land-use issues which are important in the long-run and an implication of single and uncoordinated projects in a comprehensive urban framework can hardly be achieved under such conditions. This would presuppose a conception of planning which sets the spatial framework for future development rather than just reacts to given conditions.

Planning

The discussion about the role of state planning for the organisation of land-use has shown that planning, interpreted as "deciding on decisions" (Luhmann, 1971) is different from unplanned decisions because planned decisions are made with a higher degree of reason and reflection and thereby can optimise the needs or objectives of the participants.

Planning reduces the risk of market failure by avoiding reciprocal restrictions through land use, especially in the sense of sustainable urban development. Principally it can be said that the earlier one can expect negative effects from the use of a certain good, the more restrictive the property rights considering this good can be defined by the state to avoid negative external effects. In addition, dealing with limited resources needs a kind of planning to overcome actual or expected shortcomings.

A significant function of state planning is the public production of accessibility as a positive external effect. For the construction, maintenance and financing of such public properties, an authority is needed that co-ordinates the interests of different property owners and distributes the costs. To achieve long-term objectives, plans are important to demonstrate that a planning authority has an instrument that encourages investment and provides spatial opportunities that match the needs of companies and developers. Empirical studies have proved that there is a higher willingness to pay for state planning which is linked with higher prices for building plots in planned areas in the same city than in areas in which free market choice is in practice. Therefore the guarantee for a certain land use produced by state planning has an economical value for the demand side.

Planning has a potentially integrative character. Spatial environments are complex systems that need very careful analysis in order to be planned efficiently. Therefore the preparation of land use plans should take account of this integrative aspect of planning which implies that planning takes place at a level above single projects, for example in regional or municipal comprehensive plans. Planning is obliged to consider common social objectives as well as the interests of minorities, and in this context participation processes increase the potential for collective acting and enlarge the area of different objectives to be chosen through collective decisions. An important factor of state planning is its democratic legitimisation through public authorities which act on behalf of the state.

Altogether, planning ensures that the desired objectives can be achieved through other actors (property owners, public authorities) with a higher probability than without planning. Therefore efficient state planning is superior to a pure market-led approach from a welfare-theoretical as well as a macro-economic and micro-economic point of view. The distinction between the welfare-theoretical approach and the property-rights approach helps to evaluate the evolution of non-institutional forms of land-use and transport planning.

2.2 Institutionalised Organisation of Land-Use and Transport Planning

The dialectic relationship between transport and land-use establishes the need for co-ordination and integration. Co-ordination of transport and land use encompasses formal co-operation, while integration of land-use and transport includes material co-ordination. The need for and contents of formal and material co-ordination are presented below.

2.2.1 Definitions and Criteria of Analysis

Formal Co-ordination

Formal co-ordination of transport and land-use policies indicates the horizontal and vertical co-operation of actors of sectoral planning, local authorities and other relevant public, semi-public and private actors. For a successful co-ordination at the regional level, an institutional framework to co-ordinate the different interests and policies is an important prerequisite. Local planning is institutionalised in all EU member states. Through institutionalised regional planning some of the duties of municipalities are transferred to a regional planning institution. That means that the planning authority of municipalities is constrained in order to allow for legitimate regional authorities with authority for planning, decision-making and policy implementation. In addition, tasks which do not have to be executed by the state can be transferred to the regional level as well, as it is often done with regional public transport management. This means that the degree of institutionalisation of regional planning is an important prerequisite for formal horizontal co-ordination.

Horizontal co-ordination of the different planning sectors is necessary to co-ordinate policies and funding programmes for a higher overall efficiency. The vertical direction of co-ordination can be described as the co-ordination between different jurisdictional levels which can be achieved if regional planning takes into account local planning objectives, while local planning has to comply with regional planning. This is known as the 'counter-current principle'. It is important for several reasons: first, because planning at the municipal level can directly influence land-use patterns and transport infrastructure development, second, because the competition between municipalities often prevents co-ordination of land-use and transport policies at the inter-municipality level, and third, because due to suburbanisation regions are increasingly becoming integrated daily mobility systems. Growing transport linkages between cities and regions and with other regions require traffic management concepts that take the present and future urban development into account. Problems of traffic congestion cannot be solved at the local level. Therefore, the organisational structure of vertical co-ordination is examined below.

Material Co-ordination

Comprehensive regional and local plans and integrated policies represent instruments for an integration of transport and land-use planning strategies to reduce the need for travel and to make the remaining traffic sustainable. This does not only concern the integration of transport and land-use policies but also the integration of policies within these two areas, for example the combination of planning policies and supporting pricing tools. Horizontal material co-ordination is necessary because land-use patterns generate traffic and transport infrastructure planning has to be in line with urban development both in the temporal and spatial dimension. Vice versa, transport infrastructure has a strong influence on the development of urban form. In addition, there is a jurisdictional necessity for vertical material co-ordination. With respect to the impact of the planning instruments, first conformity of plans in vertical direction is a key issue in the transport and land-use co-ordination. If plans of different jurisdictions (or jurisdictional levels) are required to be in conformity, policies at the municipal level can contribute to the benefit of the region as a whole. In addition, the binding effect of plans is a key factor for the implementation process because for all actors involved, the public planning

authority, private developers and the citizens, certainty and accountability of plans play a considerable role. Therefore, the binding impact of spatial plans needs to be analysed.

Criteria of Analysis

On the basis of the contents of co-ordination and integration of transport and land-use planning the following criteria to analyse the organisation of transport and land-use planning in the member states can be distinguished:

- (1) degree of formal co-ordination in vertical and horizontal direction,
- (2) degree of material co-ordination in vertical and horizontal direction,
- (3) degree of institutionalised regional planning.

First the different planning systems and the institutionalised organisation of land-use and transport planning within the EU are presented because they constitute the framework in which policies for integration are implemented. They therefore constitute an indispensable prerequisite to evaluate and compare policies and to assess their transferability.

2.2.2 Common Trends in Spatial Development

The institutional framework of land-use and transport planning as well as land-use and transport practices vary significantly from country to country, and often within countries and therefore have the effect of generating different approaches to planning. The differences are the results of a complex mixture of factors which include historical and cultural conditions, geographical and land-use patterns, the constitutional framework, levels of urban and economic development, as well as political and ideological aspirations. The variety of the organisation of transport and land-use planning renders cross-country comparisons of planning systems difficult and the differences are not likely to disappear overnight. Thus, a common European planning system is very unlikely in the near future (Newman and Thornley, 1996; van den Berg et al., 1998).

In spite of the considerable variations in the institutional framework, similarities in organisation of land-use and transport planning can be stated. First there are common trends such as decentralisation with an increased regionalism encouraged by the initiatives of the EU, growing significance of horizontal articulation and plans, and an increased impact of the EU on spatial planning. Further trends such as deregulation, flexibility and interest in public-private sector linkages are discussed in connection with the non-institutionalised organisation of land-use and transport planning (Healy et al., 1999, Newman and Thornley, 1996). In addition, common features of the different planning systems within the EU can be distinguished (European Commission, 1997; Schmidt-Eichstädt, 1995; van den Berg et al., 1998).

Decentralisation and Regional Planning

There is a tendency to create nationally controlled bodies at the regional level with specific responsibilities in the field of land-use or transport or both. The trend towards regionalism and decentralism in a number of European countries has very different motives. In response to

tendencies of fragmentation in the planning process, co-operation of the different planning sectors is regarded as necessary to co-ordinate policies and funding programmes for a higher overall efficiency. To restrict competitiveness between municipalities, which prevents co-ordinated action, is a further important aspect in this context. Another distinct common feature is that people represented at the sub-national level want greater account taken of their interests and territorial authorities are seeking greater independence in order to be able of taking action on their own account, which is essential if they are to participate actively in the development of a European Union based on the principle of subsidiarity. The ability to act autonomously, i.e. the degree of independence of territorial authorities from central government, is determined by several factors (European Commission, 1997; Whieler and Stumm, 1995):

- the territorial authority's position in the country's internal legal order (guarantees relating to legal and territorial status);
- the division of powers (legislative and administrative);
- the possibility to control available financial resources (own taxes and levies, taxes transferred in whole or in part by the central government).

Horizontal Articulation

Spatial planning across the EU in the 1980s has often been described as losing its traditional focus on integrated planning, concentrating instead on the promotion and regulation of separate, fragmented development projects. In the 1990s, however, there has been a renewed interest in the role regions and cities can play in achieving economic competitiveness and environmental sustainability through integrated planning strategies. Thus, co-ordination of sectoral policies at all levels is considered necessary.

Impact of the EU on Spatial Planning

The EU exerts influence on spatial planning in member states directly through legislation, especially through directives on various planning matters and policies and on matters with a spatial dimension such as the Trans European Networks (TEN), and through policy formulation and implementation, notably policies supported by the Structural Funds.

One example of a clear relationship between the national spatial planning system and EU funding programmes is Ireland, where Objective-1 funding has played a part in the decision to prepare a national spatial planning framework in the National Development Plan. The plan covers the same funding period as the Structural Funds (1994-1999) and identifies the priorities for major development and investment up to the year 2000. Furthermore, the establishment of eight regional authorities in Ireland partly arose from the requirement for review of Structural Funds spending.

Flexibility and Interest in Public-Private Sector Linkages

The issue of flexibility and public-private partnership is often related to the extent to which a system is indicative or discretionary. An indicative approach is one in which the permission to grant a permit for development, in theory, confirms decisions made during the approval of plans. Such a system may provide greater certainty for investors and the local community on permissible land uses. A more flexible discretionary system enables decision makers to respond rapidly to changing circumstances. There are advantages and disadvantages with both approaches. A simple dichotomy between flexibility and certainty is a gross oversimplification of the situation in Europe, as most planning systems incorporate elements of both types. However, throughout Europe there has been a move by city governments to take a more discretionary, entrepreneurial approach to attract inward investment. This has led to the formation of particular coalitions of interest which have dominated urban decision-making, and there has been a tendency in urban planning to support these interests.

Growing Significance of Plans

In many countries there have been moves to make plans weaker in content and status and introduce mechanisms for greater flexibility and deregulation which facilitate the adjustment of plans to changing circumstances - sometimes this is simply to speed up cumbersome procedures. However, deregulation and flexibility have increased uncertainty for landowners or potential buyers in many countries. Transparency, certainty and accountability are especially important for the integrity of transport and land-use strategies, since, for instance, land-use policies that support transport investment are more likely to have long-term durability. This matter will be discussed in more depth later.

2.2.3 Common Features in Spatial Planning

There is a close relationship between the structure of government and the structure of spatial planning since the division of power between tiers of administration has fundamental implications for the organisation of spatial planning. First, the structure of responsibilities for spatial planning is presented, followed by a presentation of the systems of spatial plans.

Institutional Framework of Spatial Planning: National Level

At the national level all governments have some responsibility for spatial planning except in the case of Belgium. Most countries have formal ministerial committees and administrative structures to enact national programmes and plans. The national government has sole responsibility for the planning system in Greece and is particularly important in the United Kingdom, Ireland and Luxembourg.

In the United Kingdom, central government controls the overall planning and transport objectives of local councils through Planning Policy Guidances. Ireland operates a strong centralised system of government, with local authorities highly dependent on the Department of the Environment for financial assistance. Most decentralised are the Scandinavian countries (Finland, Sweden, Denmark). In between there are Belgium, France, Spain, Italy, Portugal,

the Netherlands and the federal structures in Germany and Austria. In Italy, France, the Netherlands and Spain a strong interplay between central and local government exist with a central control over lower tiers. Belgium and Spain show an especially strong role of the regions. In Belgium there is no national responsibility of spatial planning. Development towards stronger autonomy for the regional level takes place in Spain, where town planning in general falls under the jurisdiction of the autonomous communities. However, the state retains the authority to draw up guidelines concerning land ownership and related matters. In Italy the national state co-ordinates the administrative activity of the regions, formulates policies on interregional balance, identifies planning guidelines on aspects of national interest, and formulates planning standards.

The Netherlands and France represent a more systematised version in which the array of organisation is clearly set out. In general, the national government is controlling the development pattern of regions and municipalities quite strongly. In the Netherlands, with the help of regulatory instruments, especially by so-called physical-planning key decisions, the national government sets the course for provincial and municipal physical planning. But co-ordination, consultation and consensus with the lower tiers play an important role. In Austria and Germany the written constitution plays an important role. The federal government shares much of its powers with the 'Länder' (states). In Austria, there is no national urban policy field, no federal law on spatial planning and no ministry for spatial planning. The federal government, the states (provinces) and the municipalities are represented in ÖROK, the Austrian Conference on Regional Policy, which is a permanent authority responsible for the elaboration and monitoring of the Austrian regional policy concept. It cannot pass binding resolutions, but it is empowered to issue recommendations.

Institutional Framework of Spatial Planning: Regional Level

Regional planning operates at a level below the national level but above the local municipal level. This level has witnessed considerable change over recent years. There are variations in the level to which the term 'region' is applied. In many member states there are two regional levels, regions and provinces. It is possible to describe inter-municipal co-operations as a form of regional planning. In addition, the regional administration can take different institutional forms; it may be

- an agency of central government,,
- a directly elected regional government,
- a co-operative body of local authorities.

In the following the term region will principally be applied to the different institutional forms and jurisdictional levels, specifying the relevant meaning if necessary. With respect to these different institutional forms of regional planning, there are four types of regions which can be distinguished according to their powers of decision making, fiscal and budgetary powers (Whielier and Stumm, 1995).

First, there are several member states, such as Greece and Portugal, where the national government plays the major role in the preparation of regional planning instruments. The move to decentralisation and greater regional presence are current developments in this general framework. Greece had only one level, the central one, until 1996. Regions are devolved enti-

ties of central government without an administration of their own and are headed by a commissioner, who is appointed by central government and presides over a regional council. The regional council has decision-making powers relating to the establishment and confirmation of a regional development plan. In Portugal, regions are divided into administrative regions in the mainland and autonomous island regions (Madeira, the Azores). The government prepares regional spatial plans through its regional co-ordination commissions. In Luxembourg, regional planning is a function of the national government. Regions are devolved administrative units of the government without powers of their own. A commissioner, appointed by central government, serves as liaison between the central government and the municipalities.

Second, there is a group of member states which have extensive regional planning primarily undertaken by and for the regional level, as it is the case in the federal systems of Austria, Belgium, Germany and the regional system of Spain. The once powerful sub-regional level in Belgium, the provinces, were generally downgraded by recent reforms and are now under the supervision of the regions. In these countries, the intermediate level (Länder in Austria and Germany, regions in Belgium) has in fact responsibilities that compare to those of the national governments in the unitary states. In Austria and Germany, the Länder have their own constitutions, although they have less power in Austria. The strong constitution and the federal system results in a strong regional level of planning. Regional planning policy is addressed both at the level of the Länder and at another sub-regional level. Italy and France have an established tier of large regions of a decentralised administration of central government. Italian regions also have considerable autonomy from central government. The French regions are made up of several departments and have the status of territorial authorities with administrative autonomy. The regional structure is also significant in the Netherlands with provinces including devolved administrative units of central government and an elected parliament.

Third, there are those member states where regional planning is mostly a function of local government, and is gradually undertaken for much smaller populations. The Scandinavian countries fit into this model. Scandinavian countries have probably gone furthest in decentralisation with planning at the national level reduced to a minimum and regional planning only weakly represented. In Denmark, there is no precise division of central, regional and local powers. The 'kommuner' and 'amtskommuner' share responsibility for regional planning. In Sweden and Finland the central government usually has its own agency operating at the regional level to implement national policy. In Sweden, in every county there is both a state authority led by a county governor who is appointed by the national government and a county council elected directly by the constituency of the county. County Administrative Boards are responsible for the implementation of the national policy at the county level (e.g. approval of local planning decisions), ensuring that national goals have an impact at the regional level, observing regional conditions and requirements, and controlling that planning at the local level is not in conflict with specified national interest.

The regional tier is much less important in the United Kingdom and Ireland. Ireland operates a strong centralised system of government. Regional authorities which comprise elected representatives of the constituent local authorities function as decentralised arms of central government and currently have a limited role. Their function is to co-ordinate the provision of public services in the region, implementation of European funded programmes, bringing together policies of central government ministries and the various local authorities in the region. In the United Kingdom, the counties occupy a position between the local and regional levels, although they have virtually no planning powers and no co-ordinating powers at all. With the

recent establishment of integrated regional offices of national-government departments there is a form of regional administration as a decentralised arm of central government.

In addition, there are bodies which allow for policy co-ordination and co-operation between neighbouring local authorities. These are created because local government units are often too small for effective strategic planning or the provision of expensive infrastructure projects. Hence there is a need for adjacent municipalities to collaborate in their mutual self interest. Such bodies exist, for example, in Austria with the groups of municipalities to be amalgamated into regional planning unions for more effective strategic planning, in Finland with the 'maakunnallinen liitto', in France with 'organismes de coopération intercommunale' and 'agences d'urbanisme', and in the Netherlands, where urban-regional plans for seven city regions imply close co-operation between municipalities.

To summarise, all member states have a tier of regional planning, but many have a second tier of sub-regional planning, such as Austria, Belgium, France, Germany, Italy, Luxembourg, Portugal, Spain, Sweden and the United Kingdom. Table 2.1 page presents an overview of the organisation of the regional administration and regional planning in EU member states.

Table 2.1. Typology of regional authorities

Type of region	Description	Responsible for regional planning
<i>Type 1</i> Regions with wide ranging powers	- elected regional parliament - right to levy taxes - budgetary powers - legislative powers	Belgian regions German states (Länder)
<i>Type 2</i> Regions with advanced powers	- elected regional parliament - limited right to levy taxes - limited budgetary power - legislative power	Italian regions Spanish autonomous communities
<i>Type 3</i> Regions with limited powers	- elected regional parliament - limited right to levy taxes - limited budgetary powers - substantial financial transfers from central government	Danish regions Dutch provinces French regions Italian provinces Scotland and Wales
<i>Type 4</i> Regions with no powers	- no elected regional parliament - no right to levy taxes - no budgetary power - no legislative power - substantial financial resources transferred by central government	Austrian districts Belgian provinces English counties and regional offices and Northern Ireland French departments German regions Greek regions Irish counties Luxembourg regions and sub-regional level Portuguese regions and sub-regions Spain second regional level Swedish regions and sub-regional level

Institutional Framework of Spatial Planning: Local Level

In contrast to the regional level, municipal planning is institutionalised in all member states. Local authorities have the primary responsibility for regulating land-use control and detailed plan making across most of the EU, but within a framework set and supervised by national or regional governments.

The role of local authorities is strongest in member states with a unitary government structure and with a policy of decentralisation. Denmark, Finland and Sweden come into this category. German local authorities possess a planning monopoly. In Italy, France, the Netherlands, Portugal and Spain a strong interplay between central and local government exists with a central control by decisions over lower tiers. In the Netherlands co-ordination, consultation and consensus with the lower tiers play an important role. Within Europe the role of local government is of least importance in Greece.

In a few countries, there may be more than one tier of local authority, with planning functions separated between them, as in the United Kingdom and in special cases in Germany (Planungsverbände with functions for general land-use planning).

2.2.4 Land-Use Planning

All member states have in theory some kind of hierarchical structure for spatial planning instruments with the higher tier normally controlling decisions on the tiers below it. The organisation of spatial planning is closely related to the government structure, but there is no simple correlation between the structure of government and the real locus of power and responsibility of spatial planning in practice. For example there is widespread use of non-elected bodies with specific powers, as discussed above.

Spatial planning can play a crucial role in the efficiency of governmental structures through facilitating horizontal co-ordination of the activities of different units of authorities, departments and ministries and vertical integration of policy between different levels. The organisation of spatial planning shows considerable variation in Europe, and even the term 'plan' can mean in one country an instrument which provides policy guidance, and in another an instrument which effectively gives consent for building to proceed.

Despite this variation, it is possible to identify common elements of spatial planning systems. The following activities are common to all member states (European Commission, 1997; Schmidt-Eichstädt, 1995, Newman and Thornley, 1996):

- *at the national level*: the production of a spatial planning framework which provides a central reference for the formulation of lower-tier instruments and which may co-ordinate inter-regional spatial development patterns for matters of national and international significance,
- *at the regional level*: the production of spatial planning policy which co-ordinates inter-regional spatial development patterns and provides a strategic reference for lower-tier instruments,

- *at the municipal level*: the production of spatial framework documents which set out the general criteria for the regulation of land-use change, the preparation of land-use instruments defining the type of physical development permitted at particular locations, and procedures for the consideration of proposals to develop or change the use of land,
- *at various levels*: special mechanisms to encourage the achievement of the objectives and policies expressed in spatial planning instruments, both for development and for the protection of the environment, and other mechanisms of land-use regulation, for example, taxation and duties to deal with betterment and compensation, and mechanisms which allow for compulsory purchase or expropriation of land and property.

This section presents the land-use planning systems in the member states; the transport planning systems will be presented in Section 2.1.5.

National Plans

Almost all planning instruments at this level are prepared by the government, sometimes with the help of spatial organisations or committees. National comprehensive spatial plans are important for horizontal formal and material co-ordination of land-use and transport planning. Most national planning instruments have the status of guidance, which must be taken into account in the preparation of lower-tier plans.

In several countries some instruments at this level are formally binding for the lower tiers. In general, national spatial planning includes broad development frameworks or perspectives prepared to guide spatial development patterns and lower-tier spatial plans. Such perspectives usually include a trans-national dimension where they seek to interpret the implications of wider supra-national development patterns for the nation. For example in Austria, ÖROK produces an Austrian concept of regional planning but no national spatial plan. There is no national planning instrument in Belgium. In France, Greece and Spain such plans have not been prepared yet. The central government in the Netherlands develops reports on physical planning but does not publish a land-use plan for the entire country. However, it prepares a plan for particular parts of the country. Ireland, Denmark, Finland, and Portugal have a national development plan which sets out the goals for future spatial development. Luxembourg produces two national planning documents, which are actually regional plans due to the size of the country. One document which sets very broad objectives for the economic and spatial development, while the other specifies general policies to be applied to particular areas. Britain has no spatial national plan, but planning policy guidance notes, giving very broad guidance about a range of spatial planning topics. Italy produces national policy guidance in the form of general objectives or principles the spatial planning system should pursue.

Regional Plans

In general, regional planning attempts to shape development patterns within a region through a strategy which links physical change with economic and social policy. Regional planning instruments usually are expressed in plan form but are strategic and only rarely site-specific. In many countries there is a second tier of regional planning, mostly in correlation with the regional administrative structure.

For example, in Germany the Länder prepare state development plans, while regions prepare regional plans. The same structure can be found in Austria. A different example are the Netherlands where there are provincial plans prepared by the provincial governments and regional structure plans for seven city regions. As mentioned above, regional plans are an important prerequisite for material vertical and horizontal co-ordination as they integrate spatially relevant sectoral planning like transport planning in a comprehensive way and also integrate the spatial implications and objectives of national policy with conditions in particular localities.

To ensure that national and regional planning goals are considered and implemented at the local level, the binding effect of regional planning plays an important role. In Austria, Belgium, Denmark, Finland, Germany, Italy, Luxembourg, the Netherlands, Spain and Sweden, regional planning has binding effects for the lower tiers of spatial planning. The binding effect can also be induced by the power of the regional authority to ensure conformity of local plans with higher-level plans by directives. For example in the Netherlands, the regional public body can oblige a municipality to amend its local land-use plan to comply with the regional spatial planning policy. In Sweden, regional planning has traditionally been vague. County Administrative Boards are responsible for the implementation of the national policy at the county level (e.g. approval of local planning decisions). The same is true for Finland. In Ireland, Portugal and the United Kingdom, regional plans are not binding. In Portugal regional plans have little impact on the definition of urban policy. In the United Kingdom plans at any level are not binding; regional and strategic guidances for specific areas set out in very broad terms the planning policies to which lower-tier plans have to conform.

In Greece, formal strategic regional plans have not yet been prepared, but city-region plans for the two main metropolitan areas of Athens and Thessaloniki have been published. In France, regional planning is still in preparation as well. The Directives Techniques d'Aménagement (DTA) are to be carried out by the national government in concert with the regional and local authorities (Region, Départements, Communes); there are no spatial plans at the Département level.

Table 2.2 on the following page gives an overview of regional plans in the member states of the European Union.

Local Plans

Land-use planning operates at the municipal level in order to regulate the conversion of land uses. As far as horizontal co-ordination is concerned, local land-use plans represent comprehensive plans which include all issues concerning land use, such as the future development pattern and the infrastructure. To assure vertical co-ordination, local planning instruments, in general, must conform with higher-level plans. With few exceptions, the organisation of spatial planning at the local level in the member states can be described as a two-level system. The first level is a framework instrument, the *general land-use plan*. In most member states this plan is binding, covers the whole municipality or a number of municipalities and provides a broad framework for land-use change. In the United Kingdom, these plans do not have direct binding effect, but plans must not be deviated from to obtain planning permission. The second level is a regulatory instrument, the *detailed land-use plan*. It provides for detailed regulation and/or implementation. The characteristics of the two types of land-use plan are summarised as follows:

Table 2.2. Regional plans

Country	Regional plans
Austria	State Spatial Programme (Landesraumordnungsprogramm) Regional Development Plan (Regionales Raumordnungsprogramm)
Belgium	Regional Structure Plan (Plan Regional) Provincial Structure Plan (Provinciaal Structuurplan) Provincial Implementation Plan (Provinciale Uitvoeringsplan)
Denmark	Regional Plan (Regionalplanskizze)
Finland	Regional Plan (Seutukaava)
France	Regional Plan (Directives Techniques d'Aménagement - DTA) not fully implemented yet
Germany	State Development Plan (Landesentwicklungsplan) Regional Plan (Regionaler Entwicklungsplan)
Greece	Regional Development Plan (Chorotaxiko Schedio)
Ireland	Regional Report
Italy	Regional Master Plan (Piano Territoriale Regionale di Coordinamento) Provincial Territorial Plan (Piano Territoriale Provinciale)
Luxembourg	Regional Plan (Plan d'aménagement régional) Partial Regional Plan (Plan d'aménagement régional partial)
Netherlands	Provincial Plan (Streekplan) Regional Structure Plan (Regional Structuurplan) for city regions
Portugal	Regional Spatial Plan (Planos Regionais de Ordenacao Territorio)
Spain	Regional Spatial Plan (Planes Directores Territoriales de Coordinacion) Second tier regional plan
Sweden	Regional Plan (Läns strategy) Second tier regional plan
United Kingdom	Regional and strategic guidance Local Structure Plans and Unitary Development Plans

General land-use plan. All member states use general land-use plans which are mostly in the responsibility of the local municipality (although often prepared on their behalf by consultants). The purpose of these instruments is variously described as:

- providing long-term development goals, objectives or principles; often it is required that they must be reviewed every five to ten years,
- setting out the broad land-use and infrastructure patterns across the area through zoning or land allocation maps,
- providing a framework for detailed local planning and regulation,
- providing a link between the general structure in national and regional guidance and the binding provisions of more detailed zoning and implementation plans.

Detailed land-use plan. All member states except the United Kingdom and Ireland use detailed binding planning instruments which play a significant role in the regulation of development. Such a plan, in general, serves as a basic requirement for obtaining building permissions. Planning instruments at this level are site-specific and may contain legally binding detailed provisions. The typical detailed land-use plan, which is mostly developed by the local municipality (although often prepared on their behalf by consultants),

- covers the whole part of the local authority's area,
- indicates detailed site-specific zonings for building, land use and infrastructure,
- represents a precondition for granting the right to build on or change the use of land,
- contains provisions on land use, the form and detailed design of buildings, conservation and protection of the built environment and national heritage.

Table 2.3 on the following page summarises the planning instruments at the local level in the EU member states.

In all member states, building permissions concerning construction, building regulation, change of use or sub-division is mostly linked to binding plans and regulations standards. Therefore in most member states, the decision-making authority and developers are obliged to take into account a wide variety of detailed standards when issuing or applying for building permits. Such standards may cover a broad array of issues, for example, aesthetics, height of buildings, density, access, environmental quality and health and safety.

2.2.5 Transport Planning

The distribution of responsibilities and the development procedures for transport plans are comparable to those in land-use planning. There are some exemptions. For example in Greece, the responsibility for the provision and control of public transport in both urban and interurban travel lies at the national level. In Sweden the transport system is to a large extent directed, regulated and controlled by the state. In some countries such as the United Kingdom, transport deregulation and the increasing use of private-sector resources is a key feature of transport policy. There is considerable variation in the distribution of responsibilities for different transport modes (Anas, 1998; European Commission, 1997; 1998; Pucher and Lefèvre, 1996; Salomon et al., 1993; Banister, 1994).

Table 2.3. Planning instruments at the local level

Country	General Land-Use Plan	Detailed Land-Use Plan
Belgium	Plan communal de développement (B) Algemeen plan van aanleg (F) Schéma de structure communal (W)	Plan particulier d'affectation du sol (B) Bihzonder plan van aanleg (F) Plan particulier d'aménagement (W)
Denmark	Kommuneplaner	Lokalplaner*
Germany	Flächennutzungsplan	Bebauungsplan
Greece	Geniko poleodomiko schedio	Poleodomiki meleti Praxi efarmogis*
Spain	Plan general	Programa de actuación urbanística Plan parcial* Plan Especial (PERI) Plan especial (PE)* and others
France	Schéma directeur	Plan d'occupation des sols
Ireland	Development plan	Action area plans+
Italy	Piano regolatore generale	Piano particolareggiato* Plano di lottizzazione Piano di recupero* Pianodi edilizia economica e popolare* Piano degli insediamenti produttive
Luxembourg	Plan d'aménagement général	Projet d'aménagement particulier
Netherlands	Structuurplan	Bestemmingsplan Stadsvernieuwingsplan
Austria	Räumliches Entwicklungskonzept	Flächenwidmungsplan Bebauungsplan
Portugal	Plano director municipal	Planos de urbanizacao Planos de pormenor Loteamentos (Subdivision) *
Finland	Yleiskaava	Detailed municipal land-use plan Legally binding land-use plan
Sweden	Översikstplan	Detajlan, Festighetsplan*
United Kingdom	Local Plan and Unitary Development Plan	Simplified planning zones+

* serves as implementation instrument

+ not binding

National Level

Approaches to the formulation of national transport policies vary across member states. Some countries have, at the national level, an integrated approach to national transport policy covering all or most transport modes, such as roads, rail, airports, waterways/ports etc.. These countries include Austria, Denmark, Finland, Germany, Ireland, Italy, Luxembourg, the Netherlands, and Spain. Other countries tend to formulate transport policy on a sector-by-sector basis at the national level, for example, in Belgium (partly), France, Greece, Portugal and the United Kingdom. In the United Kingdom there are no transport plans, but Planning Policy Guidances, which are in effect a regulation or law and set the framework for regional and local planning. Transport planning is still somewhat uncertain in Portugal.

Regional Level

In most member states, national transport policies are translated into regional plans and programmes. Many member states have both organisations and mechanisms to co-ordinate sectoral programmes. Very often this involves decentralisation of responsibilities to regional governments. The most regionalised approach to transport policy exists in Belgium (except for railways and for Brussel's airport) with traffic and transport plans for the regions. Not all countries follow this trend towards regionalism. In Italy, local governments have been unable to get together to form metropolitan public transport authorities. In Portugal, the United Kingdom and in Ireland, transport plans do not exist at the regional level. Metropolitan transport authorities were abolished in the United Kingdom along with metropolitan counties. Regional Planning Guidances set the regional framework for local transport plans. In many countries such as Germany, transport plans do not exist at the second level of regional planning. The Netherlands are proposing new integrated transport plans for transport regions to address regional-level aspects of transport policy. Some French regions are presently experimenting with a role of organising rail transport.

Local Level

Most member states possess local transport plans which mostly elaborate and detail the policies of the higher level, although within some member states some municipal authorities take a more proactive role than others. In general, municipal authorities are looking at ways of reducing cars in towns and cities, improving public transport and improving conditions for pedestrians, cyclists and less mobile persons. For example France, with the urban travel plans (Plans de Déplacements Urbains - PDU), and Italy follow this concept. In France, metropolitan area roadways plans (Dossiers de Voirie d'Agglomération - DVA) are used at the level of an urban area to develop a comprehensive approach of road and land-use planning. In the Netherlands, the municipalities produce traffic circulation plans (Verkeerscirculatieplannen) by which the municipality must take care that traffic and transport planning is visible in other policy documents or programmes, such as structure or land-use plans. In Ireland, there are no local transport plans. In the United Kingdom, the recent White Paper on Transport of 1998 requires local authorities to deliver local transport plans that include their proposals for delivering integrated transport over a five-year period. Table 2.4 summarises the responsibility for local public transport in the member states of the European Union.

Table 2.4. Responsibility for urban public transport

Country	National level	Regional level	Local level
Austria		Länder	Municipalities
Belgium		Regions	
Denmark		Counties	Two areas only
France		Regions*	Groups of municipalities
Germany			Municipalities
Italy		Regions	Municipalities or groups of municipalities
Netherlands	Central government		
Spain		Autonomous regions	Municipalities
Sweden		Counties	

Source: adapted from Pucher and Lefèvre, 1996.

* Some French regions presently experiment with taking responsibility for rail transport.

2.2.6 Co-ordination of Land-Use and Transport Planning

The lack of formal and material co-ordination between land-use and transport planning is still a key problem in many member states. But research into institutional management methods of these interactions are rare in Europe. The COST Action 332 'Transport and Land-Use Policies - Innovations in Institutional Arrangements for Co-ordination' (European Commission, 1998a), which aims at evaluating the effectiveness of institutional systems of co-ordination between transport and land-use planning in the different European countries, is a step in the right direction. The results shows that the degree of co-ordination of actors, policies and plans in practice varies significantly from country to country, and within countries from region to region. As already mentioned, these differences have as much to do with cultural, historical, and legal precedents in a given area as they do with distinctive political realities. Nevertheless, there is a clear recognition in many member states of the need for co-ordination and integration of land-use and transport policies and for multimodal approaches in transport policy, and that these need to be incorporated in national, regional and local plans.

The recognition that co-ordination and integration are necessary finds an expression in attempts of better ways of co-ordination between different government departments. For example in the Netherlands, national plans are drawn up in co-operation and co-ordination with the other government departments (Interdepartementaal Overleg). The decision making for spatial plans as well as for transport plans at the regional and provincial level lies in the same hands. Throughout Europe, most land-use plans represent instruments for material co-ordination of transport and land-use issues because they integrate both in a comprehensive way.

The recognition of the need for multimodal approaches is carried out by the identification and promotion of bimodal and multimodal nodes for interchanges between transport modes. For example, transport planning for roads, railways, airports, waterways and ports is often under-

taken as a number of separate sectoral policies, as in Austria, France, Portugal and the United Kingdom. Integrated transport strategies which cover the whole range of transport modes exist in several member states, such as Denmark, Finland, Luxembourg, the Netherlands and Sweden. The development of intermodal links is a key factor for countries such as France, Germany, the Netherlands and Spain.

National Level

Member states with national spatial plans, appear, at least in theory, to have the greatest degree of sectoral integration. Some countries have formal ministerial committees and administrative structures to support sectoral co-ordination at the national level. Belgium, France, Greece and Portugal follow a sector-by-sector policy.

In France the 'bureaucratic' model does not encourage communication between government departments, and everyone calls for coherence. The only public services which 'mix' questions of transport and town planning are those known as task services: the General Plan Commission, and the DATAR (Délégation d'Aménagement du Territoire et Action Régional). These bodies produce studies and give advice; they do not have decision-making authority. Portugal shows a poor co-ordination of land-use and transport planning due to the fact that the responsibilities are scattered amongst national bodies with uncoordinated policies taken by different entities all controlled by the government. In Denmark, there is no overall traffic policy and again the fragmentation of responsibility is an obstacle to the implementation of effective traffic policies since there is no authority in a position to formulate and implement co-ordinated transport and land-use planning.

In Italy, the tendency to consider transport and land-use planning as two detached processes is still ongoing in the current planning legislation. However, the national transport plan combines the different transport modes. Austria also possesses integrated transport plans. Because transport policy is mainly in the hands of federal authorities, whereas regional policy is mainly the responsibility of provincial authorities, many co-ordination problems occur. The only instrument for a minimum co-ordination is the Austrian Conference on Regional Policy (ÖROK) mentioned before. In Ireland there is no ruling or guidance from central government on regional transport plans and plans are therefore developed on an ad-hoc basis. In Finland, there is a shift from separate sectoral policies to a more integrated policy. The road planning process is closely linked to land-use planning. According to the road law, a road should not be built where it hinders the implementation of an approved regional or local land-use plan.

In the United Kingdom, as far as formal co-ordination is concerned, the situation at the national level is currently improving since the Department of Transport (DOT) and the Department of the Environment (DOE) were combined to form the Department of Environment, Transport and the Regions. In addition, the main point of the White Paper on Transport and the Planning Policy Guidances was the integration of transport and land use at all levels. In Germany, transport planning combines the different transport modes, and transport plans are integrated within state development plan. Material co-ordination takes place due to the principle of concordance of plans which means that planning of public departments at the same spatial level must not be in conflict about the same area but instead work towards co-ordinated results.

In the Netherlands plans are drawn up by each sector separately with comprehensive spatial plans being superior to sector plans. A complication in co-ordination is that decisions in the transport and land-use sector are made at different administrative levels; in general, decision-making in spatial planning takes place at a lower administrative level than in the transport sector. But there is a lot of interaction between the spatial and the sector lines, consisting of consultations with or advice from one department by the other, or by testing to see if a decision/plan by one is in conformity with the decision/plan from the other. National plans are drawn up in co-operation and co-ordination with the other government departments (Interdepartementaal Overleg). The Netherlands follow a multi-modal approach.

Spain follows a similar strategy with the Master Infrastructure Plan 1993-2007 (PDI), which goes beyond sector policies and defines an integrated policy for infrastructure and involves action in inter-urban transport, urban transport, waterworks, environmental infrastructure, and private financing and user payments.

Regional Level

The regional planning level plays an important role for vertical and horizontal co-ordination of land-use and transport planning. The fragmentation of the regional role among many organisations has been an impediment to any meaningful linkage between land-use and transport planning; often there are simply too many regional actors, none of them responsible for co-ordination. However, an increasing number of countries now have organisations and mechanisms at the regional level to co-ordinate development both horizontally across sectors and vertically between government levels.

In terms of material co-ordination, in almost all countries regional plans serve as instruments to integrate land-use and transport issues. The regional spatial plans in Denmark, Germany, Italy, the Netherlands, Portugal and Spain provide examples of this approach. In addition, the regional level usually authorises and appropriates funding for infrastructure investment at the local level and hence implies co-ordination of sectoral development programmes. A good example of material co-ordination is represented by the Netherlands. Provincial traffic and transport plans (Provinciaal Verkeer- en Vervoerplans) have to conform to the corresponding comprehensive spatial plans. In general, comprehensive plans are superior to sector plans. Furthermore, few regions have based their traffic network development on spatial regional development.

In the United Kingdom, Planning Policy Guidances place a greater emphasis on the use of land-use policies as a mechanism for reducing the need for travel, suggesting appropriate locations where travel demand can be minimised and supportive policy instruments. Regional Planning Guidance (RPG) provides guidance on the regional transport strategy and priorities and set the regional framework for local transport plans.

In France, communautés urbaines are made up of several municipalities and can group together their powers both of physical planning and of the design, construction and maintenance of city streets and of plans for urban mobility and transport. In fact they control the direction of development in the region through the Schéma Directeur, which shows the future pattern of land-use development and the provision of infrastructure. In addition, they have control over very detailed aspects of planning, including jurisdiction over the Plan d'Occupation des Sols

(POS) as well as the Plans des Déplacements Urbains (PDU). In these plans the concept of urban travel is central and integrates all modes in transport planning, including alternative modes such as walking and cycling in the hope of increasing their use. Consequently, one single agency has responsibility for both transport and land-use planning for a metropolitan region in its entirety.

In Austria, in the recent past the Länder regulations on regional policy have shifted from mere land-use plans to comprehensive regional development plans. As mentioned above, the Austrian Concept for Regional Policy (ÖROK) promotes the linkage of development to accessibility by public transport or rail or, alternatively, the reservation of rights-of-way for future railway tracks in regional and local land-use plans. The concept also includes the elaboration of comprehensive local transport concepts focusing on park-and-ride, cycling lanes and on-street parking control and better links between the various public transport systems. In Denmark, there is no overall traffic policy and the fragmentation of responsibility is an obstacle to the implementation of effective transport policies.

In Ireland, transport planning and spatial planning are poorly integrated as well. There is no ruling or guidance from central government on regional transport plans and therefore the plans are developed on an ad-hoc basis. In Germany, the position of regional planning at the Länder level is relatively weak compared to transport planning, which is privileged due to legally secured priority of transport projects carried out by the federal government or federal authorities.

In Sweden, Scania is one of four administrative regions where tests for coming organisational changes take place. The region of Scania was formed in January 1997 by incorporating a number of administrative bodies into one organisation. As a part of the regional experiment in Scania, the mandate for transport infrastructure investment has been transferred from the County Administrative Boards to the Scania region. In 1998 the first regional plan was presented. The plan calls for a high degree of co-ordination of regional planning for transport, infrastructure (financed by regional taxes) and land-use, for example promoting land-use policies which are in favour of the location of urban activities near public transport systems. Actually there are some obstacles to integrated planning of land-use and transport as the control of land-use policy remains in the hands of the 33 municipalities.

In the field of formal horizontal co-ordination, organisations and agencies to improve formal sectoral integration and co-ordinate spatial planning have been established. The Netherlands are again a good example. The planning system is built around a high degree of obligatory or voluntary consultation. There is a lot of interaction between spatial and sectoral planning. Decision making for spatial plans and transport plans lies in the same hands, the provincial, regional and municipal governments, which guarantees a high degree of cohesion. If there are two different departments, they are obliged to co-ordinate their actions. There has been an attempt to improve the institutional structure for the integration of transport planning and spatial planning at the regional level by setting up seven transport regions. They are supposed to take care of integrated transport planning by co-ordinating municipalities and public transport companies in regions with coherent mobility patterns, by preparing integrated transport plans for local and regional public transport, roads, parking, and by integrating these with other elements of spatial planning. The co-operation with municipalities outside the seven regions failed mainly due to disagreement about territorial and financial issues.

Co-operative planning has been quite successful at the regional level in Finland as well. In Spain, there exists a good co-ordination between transport and territorial organisations.

In the United Kingdom, regional conferences examine the interactions between land-use planning and transport infrastructure through consultation with interested parties before submitting advice to the Secretary of State. This advice should include broad strategic policy objectives for land-use planning and transport in the region and propose a transport strategy that best meets these objectives.

Conformity is a key issue in vertical co-ordination of transport and land-use planning. In fact, nowhere is the need for intergovernmental planning more apparent than in the area of transport planning, because transport is not easily confined within jurisdictional boundaries. Each jurisdiction's traffic congestion is a problem also for all neighbouring jurisdictions. In addition there is the problem of inter-municipality competition. Local governments might pursue self-interested development policies to the disadvantage of the region as a whole. In almost all member states there is the rule of conformity, saying that in land-use and transport planning regional plans must conform with national plans, while municipal plans have to conform with regional plans.

In the United Kingdom, there are no mechanisms to control competition between neighbouring authorities for new development. In the Netherlands, transport plans at the regional level must follow the policies set out in the national plans (Transport Structure Plan, Report on Physical Planning). The plans are not binding, but vertical co-ordination is secured through directives.

In Italy, a decree (422/1997) introduced the provision of a permanent co-ordination between regional transport planning and national transport planning through the State-Regions Conference. This is a chance to overcome the historical barrier imposed by the vertical and hierarchical bureaucratic structure on land use and transport planning. In addition, regional laws (e.g. the Lazio Regional Law 30/1998) usually call for a stronger co-operation between regional and local authorities to co-ordinate transport modes and to design an integrated mobility system. In Austria vertical co-ordination is difficult as transport policy is mainly in the hands of federal authorities, while regional policy is mainly the responsibility of provincial authorities. Authorities such as ÖROK go some way towards facilitating this.

Local Level

Also the local planning level plays an important role for co-ordinating land use and transport due to the fact that at this level most transport infrastructure projects are implemented.

In terms of vertical co-ordination, local planning, as regional planning, usually has to conform with higher-level plans and needs to be approved by higher-level authorities. Co-ordination often becomes difficult in countries where land-use planning is in the responsibility of municipalities and transport planning primarily in the responsibility of higher levels of government. In Ireland, transport plans are prepared at the regional level, whereas land-use plans are prepared at the local level. In the Netherlands there is a good vertical co-ordination with autonomy and supervision. The system is built around a high degree of obligatory or voluntary consultation. Approval of local land-use plan is in the hands of government agencies up

to the Ministry of Housing, Physical Planning and the Environment. In Germany, there is a general obligation for municipalities to adjust their plans to higher-level plans. Sectoral planning is in a strong position compared to land-use planning.

As far as material co-ordination is concerned, in most countries there are local transport plans and local general and detailed land-use plans that integrate land-use and transport issues. In the Netherlands, generally, comprehensive spatial plans are superior to sectoral plans. However, the Dutch Railways (Nederlandse Spoorwegen) make their own policy plan (currently 'Rail 21'), and local authorities take railway plans as a given fact and try to integrate their public transport with it instead of mutual consultation. A good instrument for integrating land-use and transport planning is the municipal structure plan which specifies how to achieve co-ordination and co-operation between different policy sectors. If sectoral planning is related to spatial aspects, it has to be laid down in the local land-use plan (Bestemmingsplan), the only directly binding plan. In addition, the local traffic plan (Verkeerscirculatieplan) drawn up by the municipality has to conform to the corresponding comprehensive spatial plans.

In the United Kingdom, the main point of the White Paper on Transport was the integration of transport and land-use planning at the local level. The White Paper requires local authorities to deliver local transport plans that include their proposals for delivering integrated transport over a five year period. In France, the DVA procedure integrates road planning and land-use policies at the urban level.

With respect to formal co-ordination, the local transport planning process cannot function effectively, if responsibilities for different transport modes (e.g. highways and public transport) are fragmented among different agencies. For example in the United Kingdom, there are barriers to co-ordination due to the fragmentation of planning between central government, local governments and quasi-autonomous organisations such as Urban Development Corporations (UDC). Many local authorities are extremely small and act co-operatively to provide expensive services. In the Netherlands, the local or regional public transport companies normally work together with the local or regional authorities. It can be the same department within a municipality to take care of making of a plan. If there are two different departments, they are obliged to co-ordinate their actions. A good example for formal co-ordination is Portugal where in 1994 the PROSIURB programme was created to develop urban centres. General objectives are to promote co-operation between the various institutional levels in urban development actions and to promote collaboration and partnership between different institutions and parties (public, private and associations).

2.2.7 Conclusions

The analysis of the institutionalised organisation of transport and land-use planning and the co-ordination between the two in different member states showed the considerable variation in the planning systems across countries. It can be concluded that a move to a common European planning system is impossible unless these contextual factors are changed, which is very unlikely. Nevertheless, general similarities in the structure of the planning systems and common trends in the organisation of planning processes have been identified as an important condition for the implementation of integrating policies to reduce the need for travel and to make the remaining traffic sustainable.

A first group of similarities refers to the trends of decentralisation, horizontal articulation, flexibility, growing impact of plans, the impact of the EU on spatial planning and the interest in public-private sector linkages. Another area where similarities have been found concerns the systems of spatial planning. In general, there is a close relationship between the structure of government and the structure of spatial planning. The government structure and division of powers between tiers of administration has fundamental implications for the organisation of spatial planning, especially the extent to which it may be described as centralised or decentralised. Thirdly, there were some common characteristics in the organisation of land-use and transport planning instruments. Throughout Europe a hierarchical structure of spatial planning instruments, with the higher tier normally being binding for the tiers below, has been identified. In this structure, land-use plans usually have an integrating function, while transport plans often still follow a sector-by-sector policy. However, ongoing changes in legislation contribute to a more integrative approach in many countries.

These common trends and characteristics of the planning system influence the degree of co-ordination of transport and land-use planning. There is a recognition in many member states of the need for the co-ordination of land-use and transport policies and that needs to be incorporated in national, regional and local plans. Territorial integration is often difficult because of the continuing power of the functional organisations of national governments. Additionally, where plans of different jurisdictional levels are not required to be in conformity, vertical co-ordination is difficult due to competition between municipalities and their self-interest in planning. In this context, regional plans are increasingly recognised as being of great importance to horizontal and vertical co-ordination and integration of land-use and transport planning which cannot be achieved either by individual localities acting alone or by state-wide mandate, they must be sought at the regional level.

2.2.8 Assignment of Countries to Categories

Based on the analysis of the institutionalised organisation of transport and land-use planning, the EU member states were grouped into three categories according to their the degree of co-ordination and integration of regional land-use and transport planning in order to make policies towards integration more applicable and the transfer of instruments and best practices more likely to succeed in the light of the considerable variation in administrative structures and planning instruments.

The analysis has shown that regional planning represents an important issue for co-ordinating and integrating transport and land-use planning in a horizontal and vertical direction and therefore is a key factor in the categories. As far as the local level is concerned, most member states have institutionalised municipal planning with binding land-use plans as important prerequisites for the co-ordination and integration of land-use and transport planning at the local level.

The institutional framework and related plans in the categories below constitute the potential framework for a better institutionalised co-ordination and integration. The plans indicated are the statutory instruments set out in the legislation. Ways of non-institutional vertical and horizontal co-ordination will be described in more detail later.

Category A

Formal and material horizontal co-ordination

Institutionalised regional planning with regional plans.

Formal and material vertical co-ordination

Binding effect of regional plans or binding impact through directives or guidelines. Regional planning lies in the responsibility of a regional planning authority with respective powers in planning, decision-making and policy implementation in transport and land use. The regional planning authority sets the basis for formal co-ordination as a framework for co-ordinated acting of different sectoral departments as well as of other private, semi-public and public actors. Vertical co-ordination is carried out by the conformity of municipal planning with regional planning either through binding plans or through directive powers or binding guidelines. Horizontal integration of land-use and transport planning takes place at the regional level as well as at the local level in comprehensive spatial plans.

Category B

Formal and material horizontal co-ordination

Institutionalised regional planning without binding effects at the local level. Similar to the first category, regional planning institutions are responsible for regional planning with the respective responsibility in planning and decision making in transport and land-use planning. In countries of this category regional planning cannot influence local planning through binding plans or by other means like directives. Therefore, voluntary forms of co-ordination for a the achievement of regional objectives in local plans are necessary.

Category C

Formal and material co-ordination only at the local level

No institutionalised regional planning and/or regional plans. This category includes countries where institutionalised regional planning is absent, which does not exclude voluntary forms of inter-municipal co-operation. Due to their informal character, common spatial plans do not have any binding effect on municipal planning. Therefore, municipal plans play an important role for integration.

The assignment of member states into the three categories is represented in Tables 2.5-2.7. Countries are listed in the rows, while the columns represent the plan-related criteria.

Table 2.5. Category A: Institutionalised regional planning with regional plans

Country	Regional land-use planning	Regional transport planning	Planning authority
Austria	State Spatial Programme (Landesraumordnungsprogramm)	Sector State Plans	State Government (Länder)
	Regional Development Plan (Regionale Raumordnungsprogramme)	Sector Regional Plans	State Government (Länder)
Belgium	Regional Structure Plan (Plan Regional)	Transport Plans	Regional Council
	Provincial Structure/Implementation Plans (Provinciaal Structuurplan/ Uitvoeringsplan)	---	Provincial authority ¹
Denmark	Regional Plan (Regionalplanskizze)	Transport structure plan	Regional Council
Finland	Regional Plan (Seutukaava)	Road Plans	Provincial government
Germany	State Development Plan (Landesentwicklungsplan)	State Road Demand Plan	State government (Länder)
	Regional Plan (Regionaler Entwicklungsplan)	---	Regional administration
Italy	Regional Master Plan (Piano Territoriale Regionale di Coordinamento)	Regional Transport Plan Long-Term Road Network Plan	Regional government
	Provincial Territorial Plan (Piano Territoriale Provinciale) ²	County Basins Plan	Provincial authority
Luxembourg	Regional Plan (Plan d'aménagement régional)	Sector plans	Ministry for Spatial Planning
	Regional Plan for particular regional areas (Plan d'aménagement régional partial) ³	---	Ministry for Spatial Planning
Netherlands	Provincial Plan (Streekplan)	Provincial Traffic and Transport Plan	Provincial government
	Regional Structure Plan (Regional Structuurplan) ⁴	Regional Traffic and Transport Plan	Regional Council

¹ Provincial level is very weak.

² Provincial plan is not binding.

³ Due to the size of the country, Luxembourg with nationally organised regional planning is listed in category A. Regional plans are not widely used or in preparation; Ministry of the Interior has the authority to interfere in municipal decision-making.

⁴ Regional Structure Plan does not cover all regions, only seven city-regions are affected.

Table 2.5. *Category A: Institutionalised regional planning with regional plans (continued)*

Country	Regional land-use planning	Regional transport planning	Planning authority
Spain	Regional Spatial Plan (Planes Directores Territoriales de Coordinación) ⁵	Transport plans	Regional government
	Second tier of regional planning (in progress)	---	
Sweden	Regional Plan (Läns strategy)	Sector plans	County administrative boards
	Second tier of regional planning (in progress)	---	

⁵ None or only few of the regional plans have been produced so far. No public transport responsibility at the regional level.

Table 2.6. *Category B: Institutionalised regional planning without binding effects*

Country	Regional land-use planning	Regional transport planning	Planning authority
Ireland	Regional Report	---	Regional authorities
Portugal	Regional Spatial Plan (Planos Regionais de Ordenação Territorio)	Traffic plans	National government (regional co-ordinated commissions)
United Kingdom	Regional and strategic guidance	---	Regional Development Agencies
	Structure Plans and Unitary Development Plans	---	County Councils and Metropolitan Borough Councils in England, Scotland and Wales

Table 2.7. *Category C: No institutionalised regional planning and/or regional plans*

Country	Regional land-use planning	Regional transport planning	Planning authority
France	Regional Plans (Directives Territoriales d'Aménagement) in preparation; no plans at departmental level	Regional Transport Plan	State administration in concert with regions, departments, communes
Greece	Regional Development Plan (Chorotaxiko Schedio) ¹	Sector Plans	National Government

¹ Except Athens and Thessaloniki no regional planning level; only few regional plans have been produced so far.

Tables 2.5-2.7 show that in most member states regional planning is institutionalised and linked with binding effects, as shown in Category A. While in countries such as Germany and Austria regional planning gains its strengths through its being embedded in the federal structure of these countries, in the Netherlands regional planning develops its binding effect through the directives by which the state or the regional authorities commit the municipalities to the regional or national goals. There is a similar procedure in Denmark with directives, call-in procedures and veto rights. This means that a good horizontal and vertical co-ordination of land-use and transport planning can be achieved. In the Ireland, Portugal and the United Kingdom, which represent Category B, regional planning is institutionalised but does not include vertical co-ordination because regional planning has no binding effect on municipal planning. In the countries of Category C, France and Greece, regional planning is weak or does not exist, which makes co-ordinated action difficult. Greece follows a very centralised approach, while in France regional plans are still in preparation.

Although the institutional, administrative and legal framework is important for the co-ordination of land-use and transport policies, structural changes will mean little unless effective policies are adopted. The objectives, standards and policies set out in regional and local plans have to be supported by other policies such as pricing or regulatory tools. In this context non-institutional ways of co-ordination also play an important role. Additionally, there are various barriers which can hinder the implementation process or make implementation impossible. Both aspects will be discussed below.

2.3 Non-Institutionalised Organisation of Land-Use and Transport Planning

After having analysed the institutionalised organisation of land-use and transport planning, including the trends of decentralisation and the growing impact of the EU, in this section tendencies and forms of non-institutionalised organisation of land-use and transport planning are addressed.

2.3.1 Urban Governance

Non-institutional forms of land-use and transport planning are influenced by various factors. Throughout Europe increasing competition and the priority given to economic objectives has changed the vocabulary of urban political analysis in recent years and the term 'urban governance' has become widely used.

The concept of urban governance includes deregulation and increased flexibility of the planning process and a greater involvement of the private sector both at the regional and local level. There is variation in both the degree to which this has occurred and the form it has taken, which makes a comparative analysis difficult. The variations are due to different national characteristics in culture, intergovernmental relations and politics. However, the competitive trend has generated problems with respect to accountability, strategic vision and social and environmental concerns. In the following the main aspects of urban governance will be discussed (Healey, 1999; Newman and Thornley, 1996; Harding, 1994).

2.3.2 Flexibility and Deregulation

There is a general aspiration in Europe that planning systems should become less prescriptive. This is widely recognised in many countries with a trend to make the plans less rigid and specific and to introduce mechanisms for greater flexibility and more negotiation and participation. It is argued that spatial strategy does not need to be comprehensive in its coverage of territorial relationships as it was the ambition of strategic spatial plans in the past. Instead, policy can select key strategic choices on which agreement is to be reached. A more flexible, discretionary system enables decision makers to rapidly respond to changing circumstances and issues which cannot be resolved for political reasons or which because of economic uncertainty can be left aside for future consideration. Another means by which flexibility has been introduced is through a deregulation in which plans are either weakened in content or status. Additionally, planning authorities try to persuade key players to commit themselves, rather than by direct control over investment and regulatory power. Bypassing formal processes can also reinforce the deregulatory ideology and sometimes this is simply to speed up the cumbersome normal procedures. This loosens the relationship between plans, decisions and actions and provides a wider role for the private sector being increasingly engaged in implementation. Notwithstanding the fact that each system is different, there appear to be three general types of flexible planning between plans and decision making. (see Table 2.8):

Table 2.8. Flexibility and deregulation

Country	System
Austria	Committed, strong public planning due to important role of constitutional law
Belgium	Moderate
Denmark	Committed
Finland	Moderate, speeding up of planning
France	Committed, public planning sector remains powerful
Germany	Moderate with attempts to speed up planning system (VEP)
Greece	Committed and discretionary, high level of unauthorised development
Ireland	Moderate
Italy	Committed and discretionary, high degree irregularity
Luxembourg	Committed
Netherlands	Moderate, flexible planning strategy, e.g. building permission based on development strategies
Portugal	Committed, central government plays an important role
Spain	Committed
Sweden	Committed, development agreements to increase flexibility
United Kingdom	Discretionary, high degree of deregulation, negotiation is important in the planning process

Committed Systems. In a committed system, there is little formal discretion for departure to local planning instruments, though in practice a more discretionary approach may be adopted. Examples of member states in this category include Austria, Denmark, France, Italy, Luxembourg, Portugal, Spain and Sweden. In Sweden development agreements provide a vehicle for conducting negotiations between the developer and the municipality outside the formal planning process. Similar instruments have been introduced in Italy, where recent legislation allows municipalities, with the possible participation of counties and regions, to constitute limited companies planning and implementation of urban projects in compliance with the objectives of municipal master plans. In France, the public sector remains a powerful actor in relation to urban development and planning. The central government is attempting to retain influence over sub-national levels by means of contracts with regions and communes and by encouraging inter-municipal co-operation.

Moderate System. Such systems are based on the expectation that decisions and plans should be in conformity, but mechanisms have been introduced to enable greater discretion and flexibility in decision making in practice. Examples include Belgium, Finland, Germany, Ireland and the Netherlands. In the Netherlands, it is possible since 1996 to follow a flexible planning strategy in which building permissions can be granted not only on the basis of regular plans but on the basis of politically approved development strategies. This allows to leave a plan global and to carry out single parts in a more flexible way. In Finland, the Planning Act of 1990 involved the speeding up of the system and making it more liberal through more flexible arrangements for granting exceptions. The German Project and Development Plan (Vorhaben- und Erschließungsplan - VEP) allows development to take place with a special plan the developer/investor submits to demonstrate that she is able to carry out the whole scheme, and this becomes the basis for a contract with the local authority which then produces a legally binding plan on the basis of the contract.

Discretionary Systems. In discretionary systems development proposals are considered on their individual merit with negotiation playing a crucial role. In the United Kingdom, which is the primary example of a discretionary and deregulatory system of decision-making, the practice of negotiation over planning permissions called planning gain (renamed planning obligation in more recent legislation), in which the two sides, the local authority and the applicant, are competing to win, plays an important role. These negotiations, which are usually conducted in secret, cover such matters as financial responsibilities, provision of infrastructure and whether the developer will provide certain community-oriented facilities in the scheme. There is no participation in the discretionary development control process or in the planning gain discussions.

Committed and Discretionary Systems. Finally, there is a group of countries in which the system in theory is based on the principle of committed decisions in plans, but in which in practice there is a considerable discrepancy between objectives and reality. Greece and Italy both have little apparent discretion in decision making but are characterised by high levels of unauthorised development. In Italy, the judicial system cannot cope with the scale of irregularity. The acceptance of such illegality was illustrated in the past by amnesties which were applied to such developments and therefore discouraged conformity. Presently, however, new legislation to counteract this trend is promoted by the central government. It remains open whether these efforts are successful and can overcome a long tradition of neglect of laws.

It is interesting to note that increasing complexity or rigidity in approaches to planning by no means guarantee success. There are limits to deregulation and flexibility and distinctive national reactions. Deregulation and flexibility both increase uncertainty for landowners and potential buyers in the market, which stands in contrast to economic interests looking for a stable and transparent framework to operate within rather than ad-hoc decisions about separate projects. Another problem linked with a high degree of deregulation is that decision-making at the regional and local level increasingly occurs through combinations of local, regional, national and supranational agencies and through the direct involvement of private-sector actors. This can lead to a fragmentation of planning decisions amongst a range of public, semi-public and private agencies providing an unstable context for urban planning. For example, in the United Kingdom, which is, as mentioned above, the primary example of a discretionary system of decision making, the problem of NIMBYism ('Not In My Backyard') has brought a demand for strong planning protection in some areas, and the formal importance of plans is partially restored. Transparency, certainty and accountability are especially important for integrated transport and land-use strategies, since land-use policies that support transport investment are more likely to have long-term durability. Transparency is especially important because the alternative pursuit of social or environmental objectives may involve wider groups of interests and open decision making.

2.3.3 Involvement of the Private Sector

The combination of economic change, for example the reduction in public finance for local and regional development, changes in government structures and ideology and inter-municipal competition have combined to bring forward a distinct trend towards establishing more partnership arrangements with the private sector, and the transfer of activities from government to independent agencies, with private actors taking increasingly important roles in local decision making. This openness is generally considered a positive asset for innovation and for spreading governance power rather than concentrating it in 'municipal citadels' (Healey, 1999). For example, by working together with developers, local governments can promote mixed-use, higher densities, and better linkages to public transport by entering in contractual agreements in selling or leasing public properties to private actors. As mentioned above, such agreements allow governments more flexibility than guiding development through traditional local planning. The extent to which private sector interests are involved in urban governance varies from city to city. In general, three approaches can be distinguished:

Mixed Approach

In many member states, pragmatism and realism, when faced with restrictions in public funding, have often encouraged public authorities to seek joint-working and partnership to secure development. France, for example, has a long tradition of widespread use of SEM (Sociétés d'Economie Mixte) and ZAC (Zones d'Aménagement Concerté). SEM are semi-public companies which increased since decentralisation in the 1980s, especially in implementing urban policy. Normally the public partner has a majority shareholding in the company. Thus political control is retained, while the company structure allows for greater operational flexibility free from the bureaucratic rules of the local administration. ZAC are mixed development zones in which public authorities use their powers to secure the implementation of land development frequently indicated by a private developer. The implementation of a ZAC gives

rise to an agreement between the appropriate developers regarding infrastructure provision. In many member states there is widespread use of agreements to secure acquisitions, finance and grant aid for development, often in association with the use of EU Structural Funds. Such an approach is particularly evident in Austria, Belgium, and Ireland. In Austria, the federal government and the provinces are entitled to establish private organisations (associations, corporations) to fulfil specific tasks on the regional policy agenda. In Belgium, urban development is increasingly steered by urban contracts with special duties for certain areas. These are 'hard' agreements of give-and-take, for instance a clear obligation to finance public infrastructure against receiving building permits. Such urban contracts are considered as complementary to the urban land-use planning system.

Predominantly Private-Sector Led Approach

There are two types to distinguish in the private-sector led approach. First, there are situations where the private sector leads implementation and where there is little governmental control. Second, development can be virtually all private-sector dominated, but within a strong publicly controlled framework. In this context national and local governments may play an important facilitating or enabling role in a wide range of public schemes and programmes. National schemes for specific areas require leverage funding from the private sector as an important element of the overall package. An example of this approach is the United Kingdom, particularly in the field of urban regeneration. Throughout their period in office the Thatcher government set up initiatives which by-passed the normal planning system and had their own procedures, primarily in areas where there was an interest in economic restructuring. Urban Development Corporations (UDC) and the simplified regimes of Enterprise Zones and Simplified Planning Zones covered a large number of areas. The key features of this approach to urban policy can be summarised as a greatly enhanced role of the private sector and a property-led approach to urban regeneration. For example, the effect of designating a UDC was to remove the responsibility for the regeneration of the area from local authorities to central government, which appointed business-sector dominated boards that ran the corporation, determined their finance, and arbitrated over conflicts with local authorities. In these areas the normal participatory rights of communities and individuals in the planning process were removed and local democracy, in the form of local elected councils, was ignored. However, in the 1990s a shift back to a more plan-led system has been noticed. Plans are increasingly considered as important to demonstrate that the city has a plan that encourages investment and provides opportunities that match the needs of companies and developers.

Predominantly Public-Sector Led Approach

In countries that apply a public-sector led approach, planning and implementation processes are mainly in the hands of national, regional and local authorities. For example, in Italy a plan-led system with several special public-sector implementation mechanisms enables both national and regional government to promote and undertake development through the expropriation of land. In contrast to this, in the Netherlands most land is assembled and serviced at the municipal level in accordance with approved legally binding land-use plans (Bestemmingsplannen). Public-sector intervention in implementation is quite strong and the creation of special agencies and partnerships much less pronounced, despite the priority given to urban regeneration and rural revitalisation. However, in the Fourth Report on Physical Planning,

opportunities for participation by the private sector have been explicitly provided by enabling government authorities to enter into partnerships with private companies to implement part or all of a project. For the largest projects being carried out in this way, the partnership consists of the municipality, private companies, and in addition the provincial and national governments. Denmark, Finland, Portugal, Spain and Sweden also fall into this public-sector led approach. In Sweden development agreements provide a vehicle for conducting negotiations between the developer and the municipality outside the formal planning process. These agreements are contracts between developers and the municipality to allocate the costs and responsibilities for infrastructure and public facilities. They can also cover matters such as land use, design standards, tenure, density, etc..

Increased involvement of the private sector in planning and policy implementation encourages, on the one hand, the dispersion of roles and responsibilities to new agencies. On the other hand, it makes co-ordination more difficult as it fragments planning decisions amongst a range of public, semi-public and private agencies, and it challenges the fairness and accountability of public actions. Parallel to the involvement of the private sector a move from public administration to new forms of public management can be observed. This includes an orientation of the public authority towards professional, entrepreneurial marketing, which includes a decentralisation of administrative bodies, called outsourcing, the creation of instruments and standards for efficiency and output control and an enforcement of competition in the private sector. However, it should be stressed that there is a fundamental distinction between public and private management. The public authority cannot simply be seen as a public enterprise because it must take account of the public interest and make sure that social minorities are not excluded. With the above approaches to flexible planning and the withdrawal of the public administration to single partial decisions, new public management can be of considerable importance. A comprehensive long-term planning strategy with planning ideas and perspectives for the entire region or municipality can, if embedded in a public management framework, set the framework for several similar decisions which do not have to be approved individually. Table 2.9 lists characteristics of private-sector involvement in the EU member states.

2.3.4 Summary

The main conclusion that can be drawn is that throughout Europe increasing priority is given to deregulation and flexible planning processes as well as to a greater involvement of the private sector. Additionally, there has been variation in both the degree to which this has occurred and the form it has taken. However, the competitive trend has generated certain problems. Therefore, in recent years there has been a widespread concern across Europe to find better arrangements for urban planning which lead to an increased emphasis on certainty, accountability and transparency in the planning and policy implementation process. The problems of fragmentation have led to renewed calls for a more strategic approach. Concerning deregulation and privatisation in the planning process, there has been a questioning of the dominance of economic objectives and the lack of considering social needs, leading to demands for a more direct approach to social issues and greater community involvement.

As the description of new forms of urban management has shown, planning itself can and should be an important resource for urban governance, supporting the development of flexible decentralised planning approaches. Planning is necessary to identify sites for development and to co-ordinate infrastructure.

Table 2.9. *Private sector involvement*

Country	Private sector involvement
Austria	Mixed approach; strong position of special agencies, particularly for economic development; a long tradition of public-private partnership in tourism; trend of transferring services to independent companies.
Belgium	Mixed approach; predominantly public-sector oriented, but with private input; inter-municipal partnership is important.
Denmark	Public-sector led approach; strong municipal activity; public participation is important, shift to market-oriented approach.
Finland	Public-sector led approach; some public-private partnerships, especially in combination with urban renewal schemes.
France	Mixed approach; strong tradition of public-sector led programmes, semi-public companies (SEM) often being used to achieve development objectives.
Germany	Mixed approach; many public and semi-public agencies at the regional level; at the local level urban regeneration projects often are public/private co-operation partnership arrangements.
Greece	Public-sector approach; fragmented development market provides little scope for partnership arrangements.
Ireland	Mixed approach; strong emphasis on public-private partnership and joint ventures.
Italy	Public-sector led approach; public agencies have been predominant until now, increased use of public-private partnerships.
Luxembourg	Public-sector led; central government normally leads major development programmes; partnerships between local authorities and the private sector.
Netherlands	Predominantly public-sector led; some partnership projects for large-scale urban redevelopment.
Portugal	Public-sector led approach; limited public-private partnership, most projects implemented by municipalities with significant state funding.
Spain	Public-sector led approach; private sector mostly responsible for development promotion with government providing support, incentives and control.
Sweden	Public-sector led approach; variety of policies to promote development in specific locations, which are predominantly public-sector led.
United Kingdom	Private-sector led approach; emphasis on property-led development in towns and cities. Many ad-hoc agencies and schemes to provide funding arrangements services and facilities. Strong emphasis on public-private partnerships.

A statutory strengthening of local plans would not only alleviate the problem of ad hoc deviations from the plan in implementation, but would also provide a strategic vision and greater certainty for private actors and allow to encompass issues of co-ordination and integration as well as of social and environmental concerns. But for planning it is essential that binding planning decisions do not make later decisions unnecessary or totally determine them in their contents. However, an important prerequisite is a planning culture based on acceptance and consensus in order to eliminate competition between local governments.

3. Policies for a Better Integration of Land-Use and Transport Planning

After the institutional potentials for and problems to co-ordinating land-use and transport planning, now policy-related potentials and barriers to integrate land-use and transport are identified. Land-use and transport policies are assigned to different policy types encompassing infrastructure and services, planning, regulation, pricing and information and informal policies adopted in TRANSLAND. The presentation addresses policies which are most frequently referred to in the literature and are implemented in different case studies (European Commission, 1998; Ponel, 1999; Würdemann, 1998; Apel et al., 1995; Apel, 1997; Gorham, 1998; Gertz, 1998; City:mobil, 1998; Banister and Lichfield, 1995; Berechman, 1992; Boarnet and Sarmiento, 1998; Pucher et al., 1993; Holz-Rau, 1997; Pratt, 1996). The presentation contains policy objectives, intended effects and frameworks for implementation and mainly concentrates on the regional and local levels. However, European and national regulations, such as planning and taxation laws as well as supra-regional planning instruments and programs are taken into account.

3.1 Land-Use Policies

The discussion of land-use policies follows the classification of policies into policy types investment and services, planning, regulation and information and informal policies.

3.1.1 Investment and Services

Activities in investment and services encompass work places, facilities, housing, sites or services. These policies have impacts on urban form and land use as any investment is linked to land take and other land uses and generates traffic. Thus, for a better integration of land-use and transport it is important that the decisions on investment are co-ordinated with the planned or existing transport infrastructure, especially with the public transport network. Development of high-intensity land uses such as facilities and work places and mixed land uses along anticipated public transport corridors and at planned public transport nodes should under special circumstances be encouraged well in advance of the provision of the infrastructure. Dense, mixed-use structures contribute to reduce land take and travel distances (see Wegener and Fürst, 1999). In addition, compact urban structures facilitate the efficient use of transport infrastructure. These aspects are especially important because traffic is influenced by local land use. Service facilities such as waste disposal plants generate much traffic; the location of such projects therefore plays an important role.

Investment and services are carried out by private, public and semi-public actors. Municipalities or other public authorities are responsible for providing the necessary local infrastructure such as public roads, water and sewerage systems, public spaces, health and education facilities, etc.. The planning and construction work can be contracted out to private developers, which is increasingly the case in many member states. To better co-ordinate investment decisions in land use and transport between different actors, formal and material co-ordination at all administrative levels is an important factor. Public and semi-public actors usually must follow the urban development goals set out in regional and local plans. The integration of land-use and transport planning in the public sector is therefore less difficult than co-ordination of private investors that do not necessarily follow the same interests.

3.1.2 Planning

Land-use planning policies including guidelines and binding provisions in regional and local plans have been identified in almost all member states, though there are considerable variations in the structure and contents especially of regional planning. The mostly general statements in regional plans play a co-ordinating role for local planning on the one hand, and for the integration of comprehensive spatial and sectoral planning on the other hand. Local plans, especially detailed land-use plans, are very concrete in nature and binding for implementation. Since local governments have a great deal of planning authority, it is possible for them to directly influence urban form, for instance to achieve dense and mixed-use structures. This is important because a large degree of traffic is influenced by land use. Through the distribution of land uses, a co-ordination of urban development with transport infrastructure can be achieved. Pursuing these aims, land-use planning contributes to reducing travel distances and land take and using transport infrastructure more efficiently, especially through environment-friendly transport modes and by making walking and cycling more attractive. The following description of the typical contents of land-use plans focuses on urban development, the promotion of density and mixed use and transport infrastructure (see Wegener and Fürst, 1999).

Main points of urban developments and their boundaries. Land-use policies based on the principle of decentralised concentration follow the strategy of dense, compact urban structures where sub-centres have sufficient independence and distance to the city centre to make traffic reduction policies effective. This includes a concentration of regional development in towns and cities with a certain level of density and adequate infrastructure, as well as at nodes of the public transport network. Due to suburbanisation radial connections are inadequate to relieve traffic congestion in the city centre, therefore development also be concentrated in tangential public transport connections with peripheral centres. According to the EU 4th RTD Framework Programme project OPTIMA (European Commission, 1998b), decentralised concentration is an important strategy for integrated transport planning as it can reduce the need for travel (see Wegener and Fürst, 1999). For example, Planning Policy Guidance 13 in the United Kingdom provides guidance on the location of development, especially land uses attracting many trips, such as shops and offices, near public transport nodes. However, it is not clear in practice whether a lower rate of traffic is influenced by urban form or by transport planning or other policies.

Open spaces. Along with identifying developable land, the designation of open spaces promotes the protection of the local environment and decentralised development.

Location of large-scale developments. Large-scale developments such as industrial and retail centres should be located near transport nodes and designed with less car access to reduce car use. A promising and innovative land-use strategy, which exploits the differences between companies with respect to mobility is the ABC policy in the Netherlands. The main objective of this instrument is to make abstract spatial structure concepts operational by standards and orientation criteria and to stimulate a shift in the modal split from the car to public transport (cf. Chapter 5.3 and Noel, 1999).

Minimum criteria or guidelines to development. Dense and compact development standards play an important role at the local level. There are local advantages to a dense city centre, but there is also evidence of advantages in mixed-use and compact development located near a rail line between two centres. Traffic reduction through density could be as high as 17% until

2010. Referring to the Dutch city of Groningen, potential for a greater modal shift in smaller cities can have a rate of up to 50% (Ponel, 1999).

Boundaries for urban growth. Urban development can be guided through restrictions on land to be developed. By establishing urban growth boundaries, a decentralised concentration approach with higher densities can be promoted.

Inner urban development. Development on brownfield land reserves contributes to dense urban structures through the reconversion of developed land and in-fill development rather than new development at the periphery. In many cases, brownfield sites are already well linked to public transport.

Protection of city-districts with historical and urban value. Districts or neighbourhoods with a high level of density, mixed land uses and aesthetically pleasant streets should be protected from development pressures since they give a city its character and promote a pedestrian-friendly urban form avoiding travel.

Standards or guidelines for mixed use. In order to develop settlement structures which reduce the need for travel, under special circumstances inter-municipality co-ordination of land-use planning by regional planning guidance can prevent mono-functional development like large-scale commercial or residential areas. A municipal surplus/deficit study, by which municipalities or neighbourhoods with a deficit of certain functions are identified, could serve as the basis for the siting of new developments. Local planning agencies should promote mixed-use developments which in turn promote shorter distances between sites and enable better pedestrian and bicycle access. An additional benefit of mixed-use development is that it allows for a high quality of living and adds a sense of place by creating retail areas that are also frequented after business hours. For example, Planning Policy Guidance 13 in the United Kingdom provides guidance on mixed land use including the advice that provision of retail areas in structure plans should seek to promote the vitality and viability of existing urban and suburban and rural centres.

Transport infrastructure network. Land-use plans combine transport and land-use issues at regional and urban level. It is important that urban-regional transport planning be guided and orient itself with land-use development for an efficient use of the transport infrastructure. Radial transport connections, which have strong impacts on future land-use development, should be linked by tangential connections in order to promote a more decentralised development pattern. Examples of co-ordination of land-use and transport planning in different member states have already been described in connection with the description of co-ordination of land-use and transport planning in Chapter 2.

Implementation

Land-use plans are developed at the national, regional and local level, with the local-level plans being more detailed and setting the basis for planning permission. Therefore local plans play an important role for the achievement of planning goals. Regional planning is a key factor for linking national and regional objectives with municipal planning. In addition, the co-ordination of planning instruments with regulatory and pricing policies plays an important role for the implementation of plans.

3.1.3 Regulation

Regulation policies are designed to ensure that spatial plans are implemented, which means that they promote dense and mixed-use structures and public transport access.

Expropriation or compulsory purchase. Most member states have the power of expropriation or compulsory purchase, which enables any tier of government to purchase land in the public interest, normally at market value without consideration of enhanced value. In a number of countries expropriation is a time-consuming and politically sensitive process seen as a last resort and therefore rarely used, for example in Austria, Denmark, Finland, Germany, the Netherlands and Sweden.

Pre-emption rights. A number of countries have the provision to exercise pre-emption rights which is a right-of-first-refusal for public authorities, usually municipalities, when land is sold or changed hands. Landowners must declare their intention to sell to the public authority, which then has a certain amount of time to exercise its right. After that time, landowners are entitled to sell their land on the market. In some countries, the price paid is fixed at the parcel's current (non-urban) use. It is a potentially useful tool for controlling and limiting land speculation and therefore to promote dense urban structures. The acquired land is usually used to provide public facilities, in particular local infrastructure, or to aid in the implementation of detailed plans at the local level. Countries which maintain a right of pre-emption are France, Germany, the Netherlands and Sweden.

Transfer of development rights. The concept of transferable development rights (TDR) has its origin in the United States. It rests on the strategy that property ownership is not a single right but a bundle of rights which can be separated from each other. The idea is that part of the value of land derives from its potential for development. Under this theory, each piece of land has an inherent number of development rights irrespective of how it is zoned. The owner can sell the rights he cannot use for use on another piece of property, where more intense development is permitted. TDRs allow competing land-use and transport goals to be adjusted through decentralised marked transactions rather than relying on central regulation.

Building regulation and permits. Perhaps the most basic tool for a planning authority to enforce its plans and to enforce an urban development which contributes to reduce land take is through permits. In all member states building or planning permission is required for construction, change of use or sub-division and mostly linked to binding plans and regulations. Building regulation standards usually include plot size, height of building and design issues. Permission can also be linked to accessibility by public transport. Such conditions of approval are important to reduce distances from sites to public transport stops. A regulation of building permits could also ensure that jobs and housing are developed at the same pace.

Order to build. In some member states, the local authority can issue an order to build to the owner of a developable plot of land to enforce the implementation of a plan. This also helps to avoid speculation which hinders compact urban development. In Germany this instrument is regularly used. In Austria some of the Länder have introduced new legislation which requires owners of sites zoned as building land to enter into a contract with the municipality to implement development within a specified period of time. Otherwise the building land might be rezoned to green land. The same is valid for Spain where expropriation would be the consequence.

Implementation

Regulatory policies are carried out at different administrative levels. Pre-emption rights, permits and land acquisition are usually carried out by local authorities. Expropriation can be carried out at all administrative levels, depending on the responsibility for a certain project. The co-ordination of regulatory policies with planning policies is an important issue because regulatory policies can support planning policies to better achieve the goals set out in the different level plans. That implies that responsibility for planning and regulation should be located in one administration. Negotiation plays an increasing role to achieve planning goals.

3.1.4 Pricing

Pricing policies can either be supportive or restrictive in nature. Both contribute to achieving the objectives of municipal and regional planning, either by subsidising projects (e.g. financial support for public transport infrastructure) or by restricting negative developments (e.g. property taxation to prevent speculation). Therefore they can contribute to a compact urban development with mixed use and accessibility by public transport. The effects of a successful implementation would be a reduction in land take and, especially in the case of restrictive pricing policies, a change in settlement behaviour.

Subsidies

Depending on the specific intentions of financial help, there are several possibilities to distinguish:

Economic and urban development funding. These types of subsidy serve to promote development towards local and regional goals. For example, financial support for investment can be coupled with the requirement of high density and mixed use set out in regional and local land-use plans. Building projects in the surrounding area of public transport stops or at points of designated urban concentrations could also be eligible for funding. For example, in the Netherlands, the current decree of location-oriented subsidies (Besluit locatiegebonden subsidies) is a combination of three former separated subsidies: the location subsidy, the major infrastructure subsidy and the subsidy for large building locations. They are available for developments based on policy concepts such as building at high densities, public transport accessibility, mixed land use, etc.. For example, the development of the VINEX dwelling locations goes in this direction. Many municipalities give local subsidies to companies willing to settle in the municipality, often with the motive of improving their local economy. However, it is also possible to give subsidies to companies locating with good access to public transport as in the ABC location policy (see Chapter 5.2).

Financial disbursements to regional and local authorities. Financial disbursements from state or regions to regional and local planning authorities can be coupled with requirements linked to regional and local plans and policies or projects to promote compact urban development, mixed-use structures and a better integration of land-use and transport. For example in the Netherlands, the national government lays down the objectives of future development in the national reports and expects the municipalities to act in a way which conforms to these objectives. Subsidies are the most important opportunities to stimulate the intended development

pattern. In the United Kingdom, authorities are more favoured if their local transport plans are in line with national and regional guidance. This presents a financial incentive for local authorities to develop an integrated land-use and transport policy. Trying to bind the municipalities by financial allocations can be seen as an interference in local affairs and lead to unwillingness to co-operate. However, without central co-ordination the competition between municipalities will make it difficult to implement policies of national interest.

Favourable conditions by sale or lease of publicly owned lands. The sale or lease of publicly owned properties to a developer can be subject to strict development standards such as mixed-use, higher-density development and good access to public transport. Such agreements allow governments more flexibility than guiding development through traditional local planning.

Reduced infrastructure costs. Many municipalities subsidise developments, particularly commercial, office, and industrial projects, by agreeing not to recover the full costs of infrastructure provision. This policy is often used as a tool in competition between municipalities for development. However, this policy can also be linked with density, mixed-use or accessibility standards as a flexible strategy to bring urban development in line with the objectives of regional and local plans. For example in Italy, municipalities require landowners and developers to pay a development concession the amount of which is linked to infrastructure cost recovery criteria. Among these criteria there are so far no transport-related criteria (e.g. public transport accessibility). But regions could in the future include incentives like cost reduction in case of developments located near bus or train stations. This could also apply to specific land uses (e.g. office buildings).

Tax relief. Another option which can be used to support integrated land-use and transport planning is to directly provide tax exemptions for building projects following the municipal density and mixed-use or accessibility standards. For example in the United Kingdom, there was 100% relief from local property tax and strong investment incentives through tax relief in Enterprise Zones.

Restrictive Pricing Policies

In the area of land-use planning, restrictive pricing policies, in general can have three different or complementary functions:

- (1) *Guiding function.* Property value speculation is a handicap to the orderly, planned urban development since local authorities are forced to designate additional land for development in the periphery instead of using available vacant land in developed areas. Therefore the development of vacant land to achieve a compact urban development can be promoted by raising the cost of owning undeveloped land. Such a taxation method can also prevent large industrial reserve sites to lie vacant since many industries buy reserve sites simply to generate capital.
- (2) *User Costs.* Taxes and fees can be imposed on property owners who obstruct a planned urban development for speculative interests. In addition taxes and user fees are a compensation for property values rising because of public (or community) action, including planning decisions to approve development or a change of land use.

- (3) *Financing function.* Land banking and public investment can be financed through revenues from taxes or fees as well as from increased revenues obtained from upgraded land uses. Vacant land owned by public authorities can be used for a development following the goals set by local and regional governments.

The following kinds of restrictive pricing policies are in common use:

Property tax. Property taxation can be implemented in many ways. While taxing the value of property is a common taxation method, other approaches are to impose a tax on the use of the land, on the area of the property or on the area covered by a building or another kind of unnatural surface.

Development in-kind requirements. An increasing trend for municipalities is to negotiate individual contractual agreements with developers and/or landowners instead of a fixed levy, because some jurisdictions find it easier and perhaps less expensive to simply require the developer or planning applicant to supply the necessary infrastructure. These contractual agreements allow a combination of land-use and transport issues in one contract. This has been the case in the United Kingdom (often via planning 'obligation' or 'gain' agreements) for some time where taxes on developments have been abandoned in favour of planning obligations. Planning obligations are legally binding agreements whereby the developer agrees to provide infrastructure for services at the same time the proposal is considered. Similar schemes have also been introduced in Austria, Finland, France, Germany, the Netherlands, Spain, and Sweden. In Germany special urban planning contracts known as the 'Städtebaulicher Vertrag' may be agreed according to which developers pay all costs of development. These can also be combined with a project and development plan (Vorhaben- und Erschließungsplan - VEP). In the Netherlands, there is an increasing use of 'baatbelasting' (betterment tax levy) on non-municipally owned land which addresses the trend for more land to be developed privately. Transport facilities, such as bus stops and land uses supportive of these facilities can be included as an in-kind requirement.

Developer fees. Alternatively to in-kind requirements, the municipality itself can provide or arrange for the necessary infrastructure and charge the developer a fee directly related to the costs of providing the infrastructure, as in Denmark, Germany, Italy, the Netherlands, Sweden and the United Kingdom. In Germany up to 90% of most infrastructure costs associated with a given development may be recovered from the landowners in form of a local public infrastructure recoupment charge (Erschließungsbeitrag) by the municipalities. In Italy, municipalities are also entrusted with the drafting and enforcement of concession fees ranging from 5% to 20% of total costs to pay for development rights. In France the fees are often negotiated individually with developers. In the United Kingdom local authorities can also grant planning application to developers subject to planning gain. Therefore, permission will only be granted if the developer pays money towards an additional feature as for a bus route or a redesigned junction. Developers may also be required to hand over land ownership of a proportion of the development site as a contribution to public facilities as for example in Austria, France, Greece, Portugal and Spain.

Recovery in disposition price. If the municipality is the interim owner of property in the development process, as it is always the case in the Netherlands, and frequently the case in France, Germany, Sweden and in urban renewal districts in the United Kingdom, it might recover the infrastructure costs via disposition prices - that is, the price it sells land or prop-

erty on the market. This method is also a means of financing transport facilities such as corridor lines or intermodal transfer stations.

Recouping betterment. 'Betterment' is an increase in land value arising from public (or community) action, including planning decisions to approve development or a change of use of the land. Local infrastructure provision is a special case of this type of action, but in practice, recovering the costs of infrastructure provision is often considered separately (see recovery in disposition price). Since the increase in value is created by the community, it has been argued by many governments that some or all of it should be returned to the community. Local government is in the best position to recoup that betterment. France, Germany, the Netherlands, Portugal, Sweden and the United Kingdom have formal institutions for this purpose. For example in the Netherlands, as already mentioned, most development has been on land brought into public ownership at existing value and a betterment levy is effectively charged through the selling price of the serviced land. In Italy, a fiscal tool potentially useful (but yet not concretely applied) for recouping betterment is the 'Canone sugli Spazi e Aree Pubbliche' (COSAP), a tax levied from owners whose businesses have access to public streets (shops, kiosks, condominiums, etc.) or use public space (bars and restaurants). COSAP encompasses new and old urban businesses. Tax revenues are calculated on the basis of space occupation, and municipalities could decide to increase or decrease the aliquot according to the impact of new transport developments: e.g. in the case of an improvement of a street or square, adjoining businesses would pay a higher TOSAP (as they would benefit from it), while businesses facing a street cut off by a new tram line would receive a tax break (as it would go to their detriment). Recouping betterment is also a tool for speculation control. However, land values increase in anticipation of public actions such as possible changes in planning or zoning or expected transport investments. This means that the expected value of a parcel of land drives the speculation. Therefore instruments such as a speculation tax (on property sold within a certain period of time after purchase) are necessary as well.

Public land banking. Land banking by public authorities is another option for urban planning control. It includes the acquisition of undeveloped land surrounding a city by municipal or other public or quasi-public authorities, to hold as a long-term reserve for urbanisation. Public land banking is in use in France, Germany, United Kingdom (exceptional), the Netherlands, and Sweden. By controlling the supply of land in this way, administrations seek to implement a detailed plan at the local level through phased disposals of serviced land. In the Netherlands, many municipalities have a very active land policy. They acquire the land, service it and sell or lease it to private developers or housing associations. Amsterdam, for example, owns 75% of its territory. However, restrictions on public finance and the role of the private sector have reduced land banking in many countries.

Implementation

While subsidies, in general, are carried out at all planning levels, restrictive pricing policies are carried out at the local level in most cases. Similar to planning policies, for a better integration of different funding schemes, a concentration of responsibility at the different administrative levels is necessary.

3.1.5 Information and Informal Policies

Information policies are located besides the legal and institutional area. In general, they imply a greater involvement of private companies or households. They can include information campaigns and informal organisations such as housing exchange programmes or new forms of teleworking, teleshopping, etc..

Information campaigns. Information campaigns are important to make people aware of the environmental problems caused by land take and single-use structures. This problem is of course related to the low degree of internalisation of external costs. In addition, people need to be aware of the advantages and potentials of compact settlement structures and mixed use for reducing travel time and costs, improving accessibility by public transport, and increasing the quality of living including the possibility of walking and cycling.

Informal organisations. There is an increasing demand for flexibility on the labour market. This also includes more flexibility concerning the places of residence. To avoid an increase in traffic congestion due to commuter travel, housing exchanges or housing management are promising policies to implement flexibility in the housing market. Due to the rapid innovation in telecommunications, teleworking, home-working, telebanking, teleshopping, etc., can save travel time to work places and shops and therefore show a high potential for reducing traffic. However, these developments are not likely to replace offices or shops because people have the need for face-to-face contacts and for using public spaces.

Implementation

Information and informal policies are implemented at all planning levels, however, are most concentrated at the local level because they focus on local mobility demands and involve local firms.

3.2 Transport Policies

The discussion of transport policies follows the same classification of policies into policy types as in the previous section.

3.2.1 Investment and Services

Policies in the area of transport investment contain, on the one hand, policies for an improvement of transport infrastructure and, on the other hand, policies for a co-ordination of different transport modes (bicycle, rail or bus) in order to make effective use of the transport infrastructure, to optimise traffic flows and to promote a shift to environment-friendly modes.

Transport infrastructure network. There is a growing tendency in most urban areas to change priorities by giving less of the limited road space to private cars and more to public transport, pedestrians and cyclists. In many countries there has been an active investment in improved urban public transport. In general, it can be said that in most member states the provision of roads and public transport is shared between the central government and regional and local

authorities and independent agencies. Almost without exception it is the primary responsibility of the municipality to ensure that local infrastructure provision occurs in an orderly manner and in the public interest. How this responsibility is carried out, however, varies significantly among the EU member states. In France, the infrastructure development, particularly for larger projects, might often be carried out by a consortium of public and private contractors, acting under contract from the city, groups of cities or some other public authority. In other countries, such as the United Kingdom and increasingly Sweden, infrastructure development might be a condition of planning permission to be negotiated with the developer. In most countries transport by rail is provided by one (national) company, but there is a trend to implement regional transport organisations. Further differences between countries are found in the way in which this investment is financed (e.g. through road tolls or general tax funds).

Co-ordination of different transport modes. For the co-ordination of different transport modes a crucial goal is to offer a true alternative to the automobile: that is, a public transport system which would allow a far higher level of accessibility than currently possible without a car. Especially in rural areas, throughout Europe, as car ownership has increased, public transport use and service levels have declined. Therefore a lower level of car use requires more integrated policies for public transport, cycling and walking. To improve the co-ordinated planning of transport modes and to make them more efficient, a parallel expansion of airports, road infrastructure, railway links and waterways should be avoided. For a better co-ordination the transfer points between transport modes play an important role. Park-and-ride, bike-and-ride and rail-and-bus facilities lead to a greater use of environment-friendly transport modes and transfer of goods transport to rail and waterways. A few countries have been leading in their efforts to revitalise walking and cycling as viable alternatives to motorised transport. The Netherlands have been at the forefront of such efforts and has been followed by many cities in Austria, Germany and the Nordic countries. In the Netherlands, cycling accounts for a much higher proportion of travel than anywhere else. In contrast, in the United Kingdom, policies in favour of public transport and alternative modes, and those which aim at restraining automobile use, are much less advanced.

Transport system operation. The aim of transport system operation is to give environment-friendly modes priority over the car. Systems of bicycle lanes, bus priority lanes and priority for bus and tram at traffic intersections help to increase the average speed of public transport and so make it more attractive compared to the car. Many cities in Germany and the Netherlands have constructed extensive right-of-way priorities for trams. In France about 30 urban areas currently have plans to build reserved-track public transport systems. In Austria bicycle track networks have been systematically extended so that in many cities a relatively good bicycle infrastructure is available. In Italy such policies have very limited application in only few cities. In the United Kingdom, in general, cycling is not popular. In addition to giving priority to public transport modes, transport system operation implies policies for an efficient use of the existing transport infrastructure. Car traffic, especially congestion due to individuals searching for parking space, can be reduced by traffic and parking systems. Such systems are in operation in many European cities. Lorry and delivery traffic can be reduced by identifying efficient routes through city-logistics systems.

Regionalisation of public transport. Regional public transport including provisions for financial, legal and institutional support is a key instrument to promote environment-friendly transport and to facilitate agreement on new urban developments in order to guide long-term land-use decisions. The idea of concentrating significant authority for regional transport plan-

ning, funding, and implementation in a single regional organisation has obvious appeal, although, depending on its composition and relationship to local governments, it might do so at the expense of accountability at the local level. However, since funds raised from local citizens would be placed in a pool of funds allocated by this regional organisation, local governments have a significant incentive to resolve land-use and growth issues on the basis of regional interests. In Austria, Germany and Sweden, there is widespread regionalisation of public transport. In the Netherlands new decentralisation policies are to be introduced shortly with the establishment of transport regions with a single transport authority. Some provinces have their own public transport companies. In France the responsibility for regional public transport is shared by the districts and the regions. Both may contract with bus companies and the French railways (SNCF) to set levels of services and subsidies. In interregional public transport, the free market without subsidies is the rule for both rail and air travel. In Greece, public responsibility for the provision and control of public transport in both urban and inter-urban travel is accepted as given. In Finland, railways are government-owned and operated.

Implementation

Investment and services policies are carried out at all levels by private, public and semi-public agencies. Municipalities or other public authorities are in general responsible for providing the necessary infrastructure such as public roads, park-and-ride, bike-and-ride and rail-and-bus facilities and other kinds of public infrastructure. Planning and construction work can be contracted out to private developers. Additionally, the provision of transport infrastructure is increasingly linked to planning permission in many member states, which allows for more flexibility and negotiation. To better co-ordinate investment decisions in land use and transport, formal and material co-ordination at all administrative levels are important.

3.2.2 Planning

Transport plans specify improvements of the transport network and are therefore important for integrating land-use and transport planning. Priority for public transport presupposes a co-ordination of the different transport modes in order to change the modal split use the transport network more efficiently. The different aspects of regional and local transport planning are discussed in more detail below.

Improvement of the public transport network: Plans for the improvement of the public transport network are an important prerequisite to shift the use of cars to public transport. To promote decentralised concentration, radial public transport links are connected by tangential links with the intersections representing potential points of urban development.

Combination of environment-friendly transport modes. The combination of environment-friendly transport modes is another important condition for promoting the shift from car use to alternative transport modes. This especially applies to the promotion of park-and-ride, bike-and-ride and rail-and-bus facilities which increase efficient use of existing transport infrastructure and prevent redundancy. In countries such as Austria, Germany, the Netherlands, and the Nordic countries, the combination of environment-friendly transport modes plays an important role. In the French Plans des Déplacements Urbains (PDUs), the concept of urban travel is central and integrates all modes in transport planning, including alternative modes

such as walking and cycling. The Austrian Concept for Regional Policy includes the elaboration of comprehensive local transport concepts focusing on park-and-ride, cycling lanes and on-street parking control and good connections between the various public transport systems. In Italy, the Urban Planning Program (UPP) promotes park-and-ride facilities.

Co-ordination of transport planning with urban development. As already mentioned, regional and local transport plans play an important role in synchronising urban development with transport infrastructure. In order to promote public transport and an efficient use of public transport, accessibility should be co-ordinated with residential, retail and industrial locations as well as promoting railways and waterways for goods transport at the regional and local level. Transport and land-use planning must be co-ordinated with the same time frame during implementation. For example, the Austrian Concept for Regional Policy promotes the connection of development to accessibility by public transport or, alternatively, to reserve corridors for future rail construction in regional and local plans. In the United Kingdom, the White Paper on Transport requires local authorities to submit local transport plans including proposals for integrated transport. In France the DVA integrate road planning and land-use policies at the urban level. The ABC and VINEX location policies of the Netherlands also go in this direction (see Chapter 5.2).

Implementation

The regional level plays an important role in the co-ordination of land-use and transport planning both horizontally across sectors and vertically between jurisdictional levels. While local transport plans are prepared in most member states, there is significant variation between the member states in the distribution of responsibility for supra-municipal transport planning and financing at the regional level.

3.2.3 Regulation

Regulatory policies aim at restricting car use and parking. This policy type affects travel and settlement behaviour and contributes to a change in modal split. Regulatory policies therefore play an important role for increasing the use of environment-friendly modes.

Access restrictions for motorised traffic. Temporally limited or permanent closure of certain areas for cars mainly concerns highly frequented areas of the city centre (e.g. pedestrian areas), which usually have very good access to public transport. Such policies are commonly found in all European cities, reinforced by concerns about air pollution and quality of city life. Exemptions usually are made for delivery traffic and handicapped people. Through restricted access for cars, environment-friendly transport modes are supported. Another advantage benefit retail facilities because car-free areas are more attractive to shoppers.

Travel demand management. In order to make more efficient use of transport infrastructure, travel demand management has focused on banning private cars from central city districts, parking restrictions, increases in parking fees, traffic calming in residential neighbourhoods, and high taxes on car ownership and use. A policy in use in the United States includes express lanes for high occupancy vehicles (HOV) on arterial freeways.

Trip reduction ordinance. Trip reduction ordinances require developers and employers to develop traffic impact studies to forecast the impacts of development projects on traffic volumes and levels of service on affected streets and intersections and to implement transport management policies to reduce the percentage of solo automobile trips made to company sites during peak hours. As an example, in Italy office developments larger than 50.000 square feet and residential developments larger than 250 units require such studies. Upon approval of the study and the measures included in a transport management plan, the development becomes eligible for a special-use permit. Once issued, the terms of the permit bind not only the developers but also all subsequent owners of the property. This type of special-use permit allows local planners to link land-use and transport planning goals directly with specific development projects. This shifts some of the burden of linking transport and land use to private decision makers. A frequent problem occurs when a transport management plan has been developed and good-faith efforts have been made to implement it, usually no further action or enforcement is occurs, even if the reduction goals are not met. Local jurisdictions can also require employers to prepare plans for involving employees in public transport, ride-sharing or car-pooling, etc. programmes.

Parking space management. Parking space management applies to all parking facilities in which some spaces are reserved for specific users (residents, delivery, handicapped people) by parking restrictions or fees. Parking restrictions and the provision of concentrated parking facilities at the outer fringes of residential areas makes distances from residences to cars comparable to those to public transport stops, reduces traffic congestion, and leaves more space for development. Restrictive parking policies are common in all member states. For example in Italy, the law 122/89 compels municipalities to adopt an urban parking plan that has to specify locations, dimensions, priorities and implementation schedules of parking facilities and should favour intermodality and the reduction of congestion.

Parking licenses linked to car ownership. With the obligation for car owners to present a parking permit at car registration, as it is implemented in Tokyo, efforts and costs related to the parking space are transferred to the car owner instead of charging the costs for parking space to the residence which represents a disadvantage to those households without a car.

Speed limits. Speed limits represent an important instrument to support a shift to environment-friendly transport modes as car travel becomes slower and less attractive. Another advantage of speed limits is a higher level of safety and a reduction of accidents. All member states have speed limits at the urban level and at the regional or national level. Only in Germany repeated attempts to legislate a general speed limit for the autobahns have been opposed by various interest groups and the majority of German voters.

Traffic calming. Traffic calming includes measures which support lower speeds such as narrowing streets, increasing the number of curves and installing speed bumpers. Attractiveness of public space increases as does the potential for walking and cycling. In addition, traffic noise and air pollution decrease. By reducing car travel speeds makes alternative modes of transport more attractive. Traffic calming originated in the Netherlands and has spread to other European countries from there. Today most German cities have reduced speed limits in urban residential areas to 30 km per hour.

Vehicle manufacturing and emission standards. Emission and vehicle manufacturing standards require car companies to produce safer, quieter and less polluting vehicles, e.g. equipped with catalytic converters. Such policies do not contribute to a change in modal split or to a change in travel behaviour but affect the vehicle itself.

Transport infrastructure approval. In most member states transport infrastructure construction presupposes the approval of the respective transport plans. As sectoral plans, transport plans get approval from the sectoral department. Approval can be linked with requirements concerning accessibility by public transport. This policy can contribute to promoting multi-modal transport.

Transport corridors. Transport corridors have their origin in the United States and represent legislatively defined geographic areas along a planned or existing transport facility. The formation of a corridor facilitates both planning and funding of new transport projects within the corridor. A well-mapped corridor includes not only all necessary rights of way, but also the entire area surrounding the facility that has undergone or is likely to undergo development as a result of increased accessibility. Therefore co-ordination of the timing and location of transport systems and land-use planning efforts between different levels of government (vertical co-ordination) and between different functional areas (horizontal co-ordination) is required. Corridors create fiscal benefits in several ways. First, they reduce the cost of acquiring the rights of way and to prevent land speculation. Second, corridors assist in the public recapture of the value of increased accessibility through joint public/private development. By reserving highway interchanges, multimodal connection nodes, railway stations and even air rights in these areas for public/private development, planners can channel growth more effectively and profit from rental income which can be transferred back to transport projects.

Implementation

Policies such as speed limits and car access restrictions, vehicle manufacturing and emission standards, transport corridors, and traffic calming lie in the responsibility of the public authority. Speed limits are provided at all planning levels, while vehicle manufacturing and emission standards are set out at the national level. Car access restrictions are carried out at the local level and transport corridors at the regional level. Though the policies of demand management, trip reduction ordinances, transfer of development rights also lie in public responsibility, especially at the local level, they imply a strong involvement of private actors to be implemented. Most regulatory policies can only be effective if they are consistently enforced, which, especially in the case of speed limits and parking regulations, requires constant controlling.

3.2.4 Pricing

As in land use, transport pricing policies can either be supportive or restrictive in nature. Subsidies aim at promoting co-ordination of different transport modes, improving public transport and co-ordinating transport with urban development. Restrictive pricing policies aim at restricting car use and parking. The implementation of both subsidising and restrictive pricing policies can contribute to changes in modal split and travel and location behaviour.

Subsidies

Financial help in the area of transport infrastructure or transport operation can be applied to road construction, parking information systems, bus priority lines, park-and-ride facilities, etc.. Subsidies to developers or local authorities can be connected to the goals of national, regional and local authorities including guidelines or standards to co-ordinate land-use and transport, for example by subsidising urban development at public transport stops. Subsidies are also used to support public transport operation, as for example subsidies to public transport fares such as monthly tickets (increasingly marketed as environmental tickets). Especially in Austria, Germany, the Netherlands and Switzerland, subsidised tickets have been successful in increasing passenger volumes and, in some cases, even reducing car use, albeit at the cost of more subsidy.

Restrictive Pricing Policies

Restrictive pricing policies in transport aim at increasing the costs of car operation to reduce car use. This policy type complements planning and investment policies, which is important because planning can only be successful, if the implementation is supported by restrictive regulation and pricing. Restrictive pricing instruments, in general, have three functions:

- (1) *User costs*: Setting a higher price for driving internalises external costs. Land consumption and pollution costs are charged to the driver proportional to the traffic congestion caused. Those who drive more pay more. The pricing of car use at its full economic, social, and environmental costs must be regarded as a long-term objective if improvement in urban transport is to be achieved. In general, there are two types of user costs to be distinguished. While taxing car-ownership or fuel is not limited spatially, policies such as road-pricing or creating a parking restrictions can be varied in time and space.
- (2) *Guiding function*: By making car use more expensive, a shift to other more environment-friendly modes, a reduction of overall trips and more efficient use of cars are promoted.
- (3) *Finance function*: Revenues from transport pricing policies can be used to improve public transport.

In the following, the most important restrictive transport pricing policies are described.

Vehicle tax. A vehicle tax, which is in use in most member states, can vary in proportion to the level of pollution a car produces. The advantage to such a tax is its flexible nature. However, it lacks guiding function since it is levied at regular intervals regardless of the frequency of car use. In addition, it cannot be varied by time or affected area. Even if they are not directly a vehicle tax, tax incentives to work trips by car negatively affect accessibility by public transport. A reduction of such incentives would contribute to a solution of the company car problem.

Fuel tax. A fuel tax paid in proportion to the degree of car use has a higher guiding function than a vehicle tax. Fuel taxation, which is in use in all member states, can be implemented in a short period of time and be managed flexibly. The fact that the demand for fuel becomes relatively inelastic with an increase of the tax is a problem.

Parking charges. Charging a fee for parking, the rate of which depends on time or location and usually increases with proximity to city centre, helps to reduce traffic congestion and to increase the quality of life in city centres. The policy is used in all member states.

Road pricing. Road pricing is a method to charge the use of roads with the primary goal of reducing traffic congestion. The revenues derived from road pricing mostly go back into re-financing transport infrastructure as in the case of the toll roads in Austria and France and some privately financed bridges in the United Kingdom. Road pricing also contributes to internalise some of the environmental costs of car driving. It can be charged by entering a certain area, for example the city centre, or using a certain arterial. The policy can be differentiated by time and affected area. For example the amount of traffic in Singapore decreased considerably after the implementation of a road pricing system. Road pricing is not implemented on a wide-spread basis in the EU member states. Some countries are now considering the implementation of electronic road pricing. The Netherlands have for some years investigated a possible regional road pricing scheme, and there have been proposals for road pricing in Stockholm. A similar debate has been underway in Austria and Belgium. In 1993 the British government commissioned a £3 million three year research programme on the implications of introducing electronic road pricing in London. In addition, the government recently announced its intention to pass legislation to allow all local governments to apply cordon charges for entering the city centre without special permission. In Italy, road pricing is considered as a new fashionable policy but is far from being implemented. In France road tolls are already the rule in inter-city travel. Private urban toll roads exist in Paris, Lyon and Marseilles.

Impact fees. Another pricing tool for the co-ordination between transport and land use are impact fees. These fees are assessed on the basis of the expected impact of a new development on the existing transport system which is quite complicated to forecast. Impact fees influence the location decisions of investors and strengthen the role of the public transport system in the decision-making process. For example in Italy, per municipal decree enterprises and public offices must adopt mobility plans for efficient organisation of work trips of their employees. Impact fees could be based on these mobility plans.

Implementation

While subsidising policies are located at all administrative levels and responsibility varies according to the subject and territorial size of a certain project, restrictive pricing policies differ in their administrative allocation. Fuel tax and vehicle tax are administered at the national level, while parking charges are usually implemented at the municipal level with private agencies taking a considerable role. Road pricing policies can be implemented by public, semi-public and private agencies at the regional or local level depending on the area affected (highway or inner city). In principle, restrictive pricing policies can only be implemented successfully if certain criteria are taken into account. Policies must be user-friendly, flexible and easily administered. The fees charged must be made transparent and should be based on the amount of car use and charged to those who use the infrastructure. The prevention of abuse, and the question of social equity must be taken into account.

3.2.5 Information and Informal Policies

As in the area of land use, information and informal transport policies are located besides the legal and institutional framework and can therefore usually be implemented without significant institutional and financial effort because the involvement of private companies or households plays an important role. The main goal of such policies is to restrict car use and promote a change in modal split and in travel behaviour and an efficient use of the transport network.

Information. Educational programmes and information campaigns are important to make people aware of the environmental problems caused by car traffic. Even if people are confronted with the problem of congestion, knowledge about the problems of land take and environmental pollution needs to be more widespread. This problem is of course related to the low degree of internalisation of external costs of car use. In addition, people need to become more aware of the advantages and potentials of environment-friendly transport modes on the one hand and the real costs of car use compared to public transport on the other hand.

Informal policies. A well known informal policy is car sharing. Car-sharing clubs, pioneered in the Netherlands and Germany, are organisations which consist of a pool of cars collectively owned by the members. Apart from a membership fee, club members only pay when they use the cars - that is, they pay by time and distance. Car sharing is a good example of variabilisation of costs. Car sharing, like public transport, needs a certain level of development density to have a large enough market within walking distance to make the operation cost-effective. For this reason, it is often considered a solution for central cities, but less one for outlying areas. For price-sensitive households, car sharing may offer a significant saving to influence their location decisions, and thereby influence indirectly the aggregate demand for medium- to high-density housing.

Another policy which can be called an informal policy are public transport job tickets issued to their employees by companies based on contracts with the public transport company to promote the use of public transport for commuting. This also includes the possibility for the companies to reduce the amount of parking space. This policy has increasingly become successful in Germany.

Implementation

Information and informal policies are mostly carried out at the local level. Due to their informal nature they imply negotiation with companies and private households. They can be implemented without significant financial and institutional effort in most cases.

3.3 A Typology of Land-Use and Transport Policies

The discussion of land-use and transport policies in the preceding sections was based on their contents, objectives and the potential effect of their implementation. It will now be attempted to classify the policies by their objectives and effects.

3.3.1 Policy Objectives

Policy objectives indicate the primary intention lying behind a policy, while policy effects indicate their likely outcome once they are implemented. Both policy objectives and effects are related to the primary objective of land-use and transport planning which is to reduce the need for travel and to make the remaining traffic sustainable. The description of the policies showed that the objectives of land-use policies primarily relate to a reduction of the need for travel, while transport policies mainly aim at making the remaining traffic sustainable.

However, transport policies affect land-use as well, especially in the long-run, for example by rising the costs of transport; and land-use policies can also affect transport, for example through compact urban structures that lead to a higher efficiency in the use of public transport.

Table 3.1 summarises the policies with respect to their objectives and their relation to the primary objective of land-use and transport planning.

The table illustrates the importance of co-ordination and integration, first due to the dialectic relationship of transport and land use, second because of the fact that the two policy areas depend on each other to be successful and third due to the integrating effect of land-use and transport policies. The relationship between the different policies will be discussed in more detail later.

3.3.2 Policy Effects

The discussion of the policies revealed that the policy-related potentials for a better co-ordination of land-use and transport planning are closely linked with the effects of the policies towards the primary objective to reduce the need for travel and to make the remaining traffic sustainable. While the effects reveal certain similarities within land use and within transport, they are different in the comparison of the two policy areas, as illustrated in Table 3.2.

The different policy effects emphasise the importance of co-ordinating land-use and transport planning as the two policy areas are complementary in their character and the policy types reveal some overlapping in their effects. Land-use policies contribute to reducing travel distances and land take, to changing location behaviour and to efficient use of the transport infrastructure. Transport policies affect modal split and travel and location behaviour and efficient use of the transport infrastructure. Therefore formal and material horizontal co-ordination are a corner stone of successful land-use transport integration.

This also applies to the integration of planning and investment policies on the one hand and regulatory and pricing policies on the other hand because, for example, investment and planning policies both affect a higher efficiency in the use of the transport infrastructure, but not necessarily affect location and travel behaviour, which is an important effect of pricing and regulatory policies.

It becomes clear that to achieve the overall objective to reduce the need for travel and to make the remaining traffic sustainable, a combination of the policies into policy packages is necessary.

Table 3.1. Overview of policy objectives

Policy area	Policy type	Policy objectives	Primary objective
Land-use	Investment and services	Dense, mixed-use structures Co-ordination of urban development with transport infrastructure	Reduce the need for travel
	Planning	Dense, mixed-use structures Co-ordination of urban development with transport infrastructure	
	Regulation	Dense, mixed-use structures Accessibility by public transport	
	Pricing	<i>Restrictive Pricing:</i> Dense, mixed-use structures <i>Subsidies:</i> Dense, mixed-use structures Accessibility by public transport	
	Information	Dense, mixed-use structures Co-ordination of urban development with transport infrastructure	
Transport	Investment and services	Co-ordination of transport modes Extension and densification of (public) transport network	Make the remaining traffic sustainable
	Planning	Co-ordination of transport modes Extension and densification of (public) transport network Co-ordination of transport network with urban development	
	Regulation	Restriction in car use Restriction in parking	
	Pricing	<i>Subsidies:</i> Co-ordination of transport modes Extension and dense (public) transport network Co-ordination of transport network with urban development <i>Restrictive Pricing:</i> Restriction in car use Restriction in parking	
	Information	Restriction in car use	

Table 3.2. Overview of policy effects

Policy area	Policy type	Policy effects	Primary objective
Land-use	Investment and services	Reduction of travel distances Reduction of land-consumption	Reduce the need for travel
	Planning	Reduction of travel distances Reduction of land-consumption Efficient use of infrastructure	
	Regulation	Reduction of land-consumption	
	Pricing	Reduction of land-consumption Change in settlement behaviour	
	Information	Reduction of land-consumption Change in settlement behaviour	
Transport	Investment and services	Change in modal split Efficient use of infrastructure	Make the remaining traffic sustainable
	Planning	Change in modal split Efficient use of infrastructure	
	Regulation	Change in modal split Change in travel behaviour Change in settlement behaviour	
	Pricing	Change in modal split Change in travel behaviour Change in settlement behaviour	
	Information	Change in modal split Change in travel behaviour Efficient use of infrastructure	

3.3.3 Policy Packages

Many policies, especially those that are easy to implement and effective without delay and do not presuppose complementary and additional policies can be implemented as stand-alone policies. This mainly refers to investment, planning and information policies because of their low restrictive character. However, especially in the case of planning policies, a higher efficiency in the implementation process can be achieved if policies are combined with regulatory and pricing policies.

The combination of policies can be differentiated by whether policies should be combined with other policies of the same policy area or with those of different policy areas. In general, combination implies sectoral, territorial and temporal integration, which includes that, besides the integration of land-use and transport planning in policy packages, different policy types should be co-ordinated in their time schedule and focus on a defined area to avoid side effects.

Combination of policies within the same policy area. The combination of policies within the same policy area is important due to their complementary function. This mainly refers to the relationship of investment and services and planning on the one hand and regulation, pricing and to a certain extent information on the other hand. Most planning and investment policies are necessary yet are not adequate by themselves to reduce the need for travel and to make the remaining traffic sustainable. Their implementation only promises success if additional pricing and regulatory policies create the necessary framework. Planning and investment policies are the most important means to reduce the need for travel because they influence land-use and traffic infrastructure and represent an important pre-condition to reduce travel distances and land-consumption, and to efficiently use the transport infrastructure (pull effect). This does not mean that they will be implemented as a cause. They must be flanked by pricing and regulatory policies which not only support planning and investment policies but also promote a change in location behaviour, a reduction of land take and an efficient use of the transport network (push effect). Vice versa, pricing and regulatory policies can only be implemented without too much public opposition if the urban form and the land-use structure with an attractive public transport network including acceptable fares promote a change. The EU 4th RTD Framework Project SESAME (European Commission, 1998d) showed the positive effects of an active policy in this field. Cities that apply regulatory policies such as traffic calming and central-area parking restrictions aimed at the promotion of non-motorised modes, show a more favourable modal split figures than other cities. As far as the combination of policies of the same policy type is concerned, the need to combine additional policies becomes even more evident. Land-use policies at the regional level, for example, are useless unless local plans take these plans into consideration. In the area of transport, a vehicle tax based on the amount of emissions a car produces and a fuel tax are both necessary, but spatially indifferent. For this reason spatially and temporally differentiated road pricing and complementary parking space management are necessary to be environmentally and socially acceptable. In other words, only the combination of the different policies within one type allows for a successful reduction of the need for travel and to make the remaining traffic sustainable. The use of only one policy will produce unsatisfactory results.

Combination of policy areas. Since land-use and urban form influence traffic and, vice versa, transport infrastructure is a dominating factor of urban form, it becomes clear that to better integrate transport and land-use planning, the combination of land-use and transport policies is necessary for a better overall efficiency of both policy areas. While land-use policies to reduce the need for travel can be described as a pre-condition to reach sustainable transport, transport policies represent the necessary counterpart to achieve sustainability by reducing car traffic and by strengthening public transport and other environment-friendly transport modes. Therefore the theoretical distinction between the different policy areas becomes somewhat blurred in practice. For example the concept of decentralised concentration discussed above has elements of land-use as well as transport policy. Similarly, the different policy types need co-ordination and combination into policy packages. For example the distribution of financial funding through EU programmes such as EFRE or INTERREG goes in this direction. European spatial planning concepts like the ESDP, which promote the integration of transport and land-use planning, represent important planning instruments as EU financial funding can be linked to the objectives set out in them.

Figure 3.1 gives an overview of the combination of policy types and the two policy areas land use and transport.

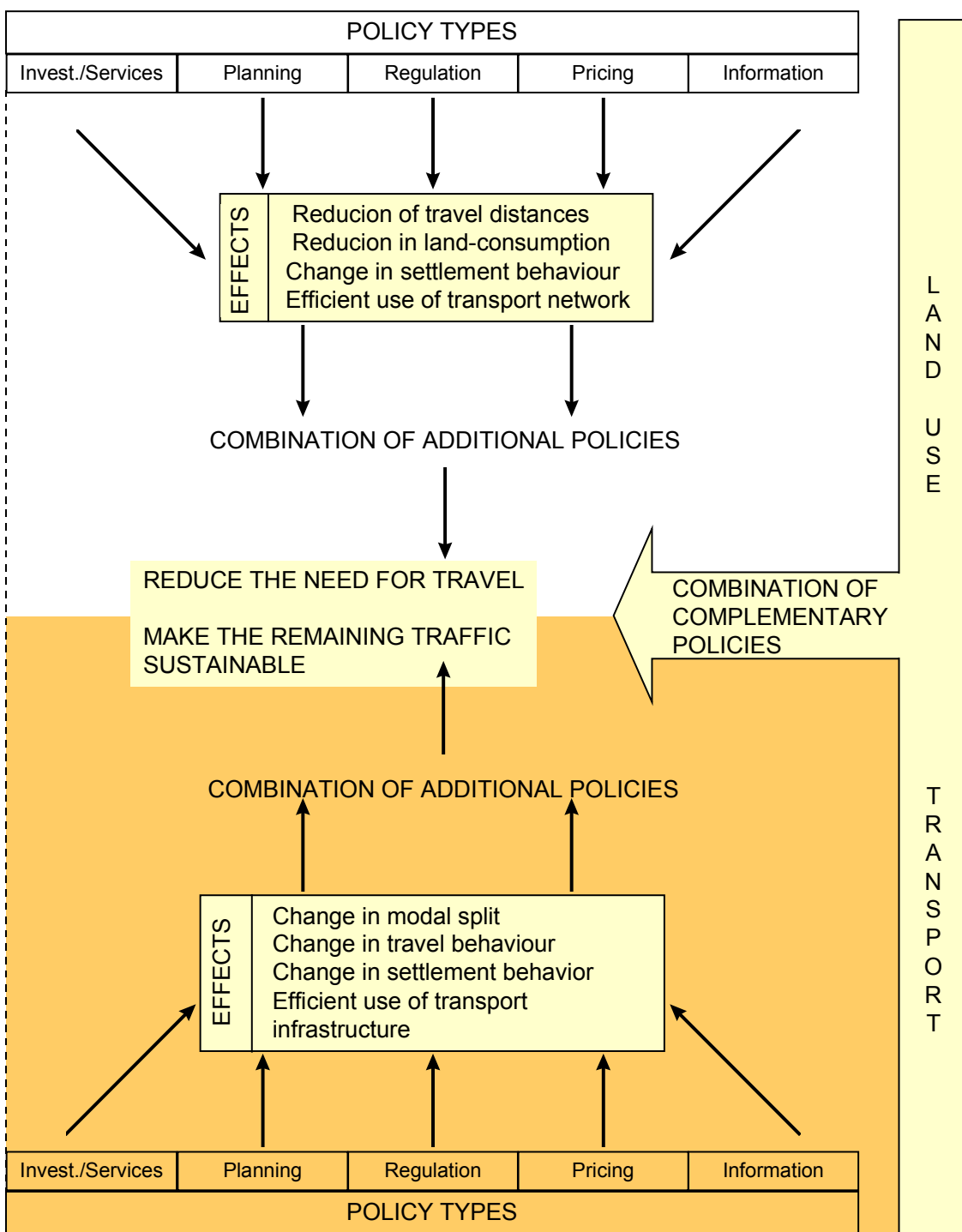


Figure 3.1. Combination of policies, policy types and policy areas

It can be concluded that all policies are important because only the combination of policy types of both land use and transport policy lead to successful implementation and a high degree of efficiency. As the policies are carried out by different departments and semi-public or private actors at different administrative levels, horizontal and vertical co-ordination is indispensable for temporal, territorial and sectoral cohesion. In this context a strong regional-planning level with binding planning instruments and sufficient authority in decision making is indispensable for a better integration of land-use and transport planning. Non-institutionalised forms of co-ordination also play an important role, especially in the context of participation and partnership.

4. Feasibility and Transferability of Policies

After the discussion of the institutional and policy-related potentials for a better co-ordination of land-use and transport, in this chapter the feasibility and transferability of policies will be addressed. Feasibility depends on legal, institutional, temporal, political, and financial conditions which facilitate or prevent implementation. Barriers to implementation are linked either to the policy itself or to other policies. Transferability of policies between countries depends on country-specific conditions of feasibility. Therefore two types of barriers to implementation can be identified: Policy-related barriers are linked to the implementation of a single policy or several policies, whereas country-related barriers play a role when policies are to be transferred to another country.

4.1 Feasibility of Policies

Various policies for a better co-ordination and integration of transport and land use have been identified, such as dense urban structures and mixed use, improving the quality of public transport, promoting environment-friendly modes and discouraging car ownership and car use. Factors determining the feasibility of such policies include:

- *Financial feasibility*: To be implemented, a policy needs, of course, appropriate funding. Policies that are capital-intensive usually are less feasible than policies that do not require much financial effort in advance.
- *Political and social acceptability*: A policy that responds to the needs of a variety of public or private interest groups may be politically more viable than one responding to the interests of only one group.
- *Institutional and administrative feasibility*: A policy that can be implemented within the current administrative context and with existing staff is more acceptable than one that requires fundamental changes. The same applies to institutional frameworks. Policies that need changes in the institutional framework or new ways of co-ordination between different planning levels and different sectoral departments may be difficult to implement compared to those that fit into the status quo.
- *Temporal feasibility*: Short-term and long-term implications play a crucial role in implementation. Policies that require long-term commitment or promise uncertain results are less acceptable than policies which can be implemented in a short period and show immediate results.
- *Legal feasibility*: Legal feasibility concerns the relationship between the proposed policy and existing laws. A policy that requires changes in national laws may be more difficult to implement than a policy using existing legislation.
- *Flexibility*: Flexibility plays a crucial role in the implementation and operation of a policy. Flexibility is the ability of a policy to be interpreted in a variety of ways depending on the needs or specific conditions of the agency applying it. Flexible policies are able to adapt to various situations, however more rigid policies have the benefit of greater consistency and predictability in their outcomes.

Feasibility factors posing problems to implementation have been described as policy-related barriers. Policy-related barriers can either reduce the potential of policies once implemented or make implementation entirely impossible. They can vary concerning the relation between policies, including such policies that can be implemented without complementary policies (stand-alone policies), policies which should be combined with other additional policies of the same policy area and policy type (push and pull effect), and combinations of policies of different but complementary policy areas. These policies do not just face barriers affecting only affect a special policy but also barriers to a combination of policies. The different kinds of barriers to the implementation of policies are described below.

4.2 Transferability of Policies

The transferability of a policy or policy package depends on the country-specific legal, administrative, political and cultural framework. This shows the complexity of transferability considering that the feasibility factors vary from country to country. That means that a policy which has successfully been implemented in one country cannot simply be transferred to another country.

The results of the EU 4th RTD Framework Programme projects OPTIMA (European Commission, 1998b), DANTE (European Commission, 1998c) and SESAME (European Commission, 1998d), which analysed policies to avoid the need for travel in different member states (for example SESAME examined 36 European cities), revealed some important aspects. Most of the analyses in these projects were carried out both at the agglomeration level and at the level of the central city. The results showed considerable differences between the cities with respect to their land-use and transport systems. However, these differences were hardly caused by national conditions. This implies that many policies are transferable between countries. But for many policies, especially those which implement institutional and legal changes, transferability becomes difficult when they are to be implemented in another country because of institutional, legal and cultural differences or frequent changes to policies.

Thus all policy-related barriers are overlaid by a possible prevention or restriction of implementation due to the country-specific legal, institutional and social/cultural framework. For example, implementation might fail in countries where regional planning is not institutionalised or where the public is highly sensitive to a certain policy, as it is the case with land-use taxation in Germany. In addition, the transferability of a potentially transferable policy can be reduced by transferability problems of additional or complementary policies.

4.3 Barriers to Implementation

Since the institutional, legal, social and political framework varies greatly in Europe, barriers to implementation may vary from country to country. Nevertheless, there are some barrier types which are common (European Commission, 1998c). The following will give an overview of major types of barriers, including resource, institutional, legal, social/cultural and policy barriers and side effects.

4.3.1 Resource Barriers

Every single decision to implement a policy has to be matched with the prospective resources; financial, human and material. This is especially true for policies which promote alternative modes of transport and policies involving physical construction.

Material resources. The lack of access to material resources occurs during the implementation process, for instance if land or equipment is unavailable or unacceptable environmental consequences arise. Examples of material resource barriers are park-and-ride facilities which require more parking space than is available, limited availability of road space to install bicycle lanes, or networks with narrow traditional streets in a city centre preventing improvements of public transport.

Financial resources. Policies that are capital-intensive or have significant long-term operational costs may be less financially feasible than policies that do not require additional capital or have smaller long-term operating costs. One of the strongest arguments against policies to reduce the need for travel through land-use planning is the fear that communities could lose their competitive advantage by restricting residential and commercial development as this would reduce their tax income. In addition, municipal planning is often constrained by financial limitations. The interest of local governments to find an investor for financing planning and urban services is often higher than its interest in an orderly development of the municipality. Uncertainty about the potential costs of brownfield reclamation and contamination prevents redevelopment of sites within urban areas and so promotes peripheral urban development. This leads to the problem that many investors prefer to build new retail and industrial sites at the periphery, which adds to the difficulty of promoting mixed-use development in the centre.

4.3.2 Institutional Barriers

Institutional barriers refer to problems with co-ordinated action between different organisations or levels of government and to problems in the implementation process itself.

Co-ordination

The greater the number and diversity of actors in the planning and implementation process, the more difficult will be the implementation of a policy or policy package. Traditional narrow thinking of sectoral planning and bad vertical and horizontal co-ordination between different departments and actors have already been identified as barriers to the implementation of co-ordinated and integrated policies. Transport planning as sectoral planning tends to see automobile transport and road infrastructure in the foreground of its discipline. Local and regional planning often fail to integrate the views of different planning disciplines due to the dominant nature of transport planning. In addition, the fragmentation of decision-making and implementation processes, which has increased in recent years in line with the trend to deregulation and private-sector involvement, constitutes a growing obstacle to the implementation of co-ordinated and integrated policies.

A further barrier occurs where co-operation between local governments is neglected in an environment where municipalities compete against each other. This is often manifested by the designation of land-uses at unsuitable locations. Many municipalities often show a higher supply of developable land of a particular type than is needed because investors prefer large single-use properties without restrictions on noise and emissions. This sort of inefficient allocation of land is adverse to inter-municipal land-use transport integration. In addition, lower property values at peripheral locations attract investors to locate there and reinvest saved capital by building even larger developments.

Implementation

The absence, fragmentation or insufficient strength of the institutional framework and planning instruments can prevent the implementation of policies. The greater involvement of the private sector and the power of private interest groups such as automobile clubs, which have a great deal of public support and influence, can also prevent the implementation of policies.

On the other hand, semi-public organisations such as transport operators and private initiatives such as local environmental groups can support policies that promote a modal shift or a reduction of travel. The importance of binding planning instruments for the vertical co-ordination has already been mentioned. For example in countries where regional planning is not institutionalised or regional and local plans do not have binding effects, the implementation of strategies for a better inter-municipal co-ordination and integration of transport and land-use strategies is difficult. In addition, changes in the institutional or legal framework can prevent the implementation of policies.

Even if it is possible for a local council to ratify policies for compact mixed-use urban development in a binding land-use plan, the actual decision as to whether such policies will be implemented mostly lies in the hands of the investors who make their decisions based on market conditions. If no investor can be found, the idea of such policies will remain a planning concept. This is especially the case in housing construction. Even where land has been designated as residential, property owners refuse to develop their properties because they wait for higher property values or for other personal reasons. The 'building land paradox' describes the problem that there is not enough developable land available in the urban centres but a large supply of available land for residential development at the periphery, which leads to the continued dispersal of cities with the result of increased traffic.

Even if instruments to reduce the need for travel and make the remaining traffic sustainable are available, they are often not used due to a lack of knowledge about the instruments or a lack of political and administrative willingness to apply them. In addition, financial funding programs, especially for economic and public housing as well as tax alleviation have little effect since the conditions of receiving financial help are not combined with planning instruments, but instead are often focused on the population of a municipality rather than based on the innovative character of a program supporting sustainable urban development. A change in conditions of financial aid requires a change in policy, which takes time and political will.

Another problem is the time necessary for implementation which can pose considerable problems. Policies which show success only in the long run are generally difficult to implement, and difficult to transfer to other countries. Especially the effect of land-use policies on

reducing the need for travel will only appear gradually because the implementation of this policy type may take tens of years. This means on the one hand that policies the effects of which are to assess are difficult to implement, and on the other hand that long-term policies in general are unsuitable for countries with frequent changing transport and land-use policies. In addition, short-term thinking frequently prevails local land-use policy. As a result, land-use policies with a long-term perspective will face a low degree of political and public support. Especially in countries with centralised and rigid planning systems, the completion of plans can become a lengthy matter due to the difficulty of adjustment to the needs of urban development and the co-ordination between transport and land-use planning.

4.3.3 Social/Cultural and Political Barriers

Social barriers come into effect where the public is resistant to the implementation of policies. All restrictive policies, such as regulatory and pricing policies, face social barriers. But social barriers are not always associated with explicit resistance of the public to implementation. Some policies are acceptable to the public in principle but are not used. The results of the EU 4th RTD Framework Programme projects DANTE (European Commission, 1998c) and SESAME (European Commission, 1998d) indicate that public opinion is becoming more and more important. In all four cities of DANTE (Enschede, Lesvos, Rome, and Zürich) public opinion restricted or even prevented the implementation of policies.

A low level of public acceptance may also result in a low level of support by politicians. As mentioned above, this can be the result of the fear that a policy has unforeseeable or unavoidable effects in the long run in other non-transport or non-land-use policy areas. For example, policies which restrict car use, such as limits on the provision of parking, parking charges or higher fuel taxes meet with resistance because car ownership and car mobility is considered to be important for the quality of life. Policies promoting environment-friendly transport modes, such as park-and-ride facilities, fail more often due to a lack of public acceptance than for financial or institutional reasons. Intermodal facilities, such as freight terminals, are often challenged by residents who oppose a concentration of lorry traffic around such nodes. Land-use policies, such as higher building densities and mixed-use standards face a low level of public acceptance on grounds of expected noise disturbance. This may eventually limit the market for high-density housing or businesses in mixed land-use areas. To own a detached single-family home is still the predominant perception of the best living standard which is in conflict with the concept of a compact city.

Besides the problem of social and political acceptance, restrictive policies face the danger of social selectivity. Equity problems may arise when an increase in fuel tax places a burden on those who have to rely on car travel, such as handicapped and elderly people or people living in rural areas. New technologies, such as road pricing, may mean increasing divergence in price, speed and time of travel, with elites, who are able to pay the charges benefiting from time savings, whereas the poor are left marginalised. Therefore, like other restrictive policies, road pricing faces social and political opposition in several countries.

Cultural barriers to implementation must also be considered. Differences in culture between countries, or even regions, can have significant effects on transferability. For example, compared to other countries, the German public is highly sensitive about taxation of ownership of undeveloped developable land as an incentive to mobilising land for development.

4.3.4 Legal Barriers

Legal barriers appear if the implementation is complicated by legal requirements or made impossible by law. This refers especially to land-use policies, the transferability of which depends much on the institutional and legal context of a country. Thus policies which presuppose a constant legal framework might be unfit for implementation in countries with frequently changing land-use and transport policies. In addition, many instruments cannot be implemented at the local or regional level because the authority for implementation lies at the state level, or because a change in the legal framework at state or provincial level is necessary before implementation.

4.3.5 Side Effects

Side effects can occur if the effects of a certain policy are not limited to the problem which was the original focus of the policy. If the implementation of a policy has serious negative side effects, this may restrict or prevent other activities to a degree that implementation becomes too complicated and not feasible.

For example, transport planning policies may cause unforeseen negative side effects on non-transport areas, especially if they pursue mere transport objectives such as rising the efficiency of car traffic, with the consequence that in the long run congestion problems might get worse. Park-and-ride facilities located too close to the city centre lead to a reduction in public transport use in the urban periphery and hence additional traffic, or even to an increased demand for second cars as the first cars of many households are in the parking lot all day. Road-pricing systems can cause route changes if their spatial coverage is too narrow. This kind of problem also applies to restrictive parking policies leading to increased parking problems in surrounding areas. Area access restrictions include the danger that people choose locations that can be reached by car, which may lead to an increase in traffic and the attraction of greenfield shopping centres, if there are no restrictive land-use policies to prevent them. Regulatory policies, such as speed limits or parking restrictions, do not automatically lead to a shift to public transport as they are often not enforced consistently.

Side effects of land-use policies are often linked to the mechanisms of the property market. For example, increasing density in spatial plans drive property values up, which has a centrifugal effect on demand associated with development pressures at the urban fringe. The result would not only be a higher degree of land take but also a shift from public transport to car. Vice versa, a shift to public transport and walking by residents of new high-density areas may release road capacity which might invite induced traffic by new drivers.

The strategy of mixed use often comes into conflict with the fact that land values on the real-estate market determine the type of land use, which tends to favour a single use. In addition, the implementation of spatial planning can be hindered by speculation. This leads to the 'building land paradox' that land for residential use is scarce in urban centres but abundant at the periphery with the result that new residential development is pushed to the periphery which generates more traffic. In addition, mixed use does not guarantee a reduction of travel since residents in mixed-use neighbourhoods may still commute to workplaces in other communities or neighbourhoods regardless of the availability of jobs in their own community. After changing jobs, workers will often keep their residences because of the needs of other

family members and so increase commuting distances. Moreover, it should be kept in mind that journeys to work comprise only 25 percent of all travel (Apel et al., 1997). Leisure, services and vacation trips and increasingly mobile life styles are not affected by mixed-use development. Leisure travel can actually increase in dense residential areas that do not offer local open spaces for recreation.

4.3.6 Evaluation of Barriers

After having presented the different types of barriers to implementation, they will now be evaluated by setting them in relation to policy types. From the overview of the policies and barriers, and also with respect to the results of the DANTE project (European Commission, 1998c), some conclusions concerning the different barrier types can already be drawn. In almost one fifth of the policies in the DANTE project resource barriers prevented implementation; the other barriers were responsible at nearly ten percent each. Many of the policies might never be implemented in certain countries, regions or cities because of insurmountable barriers.

Table 4.1 on the following page represents an overview on the different barriers in relation to land-use and transport policies. The table illustrates some clear results. The most striking aspect is that most investment and service policies and planning policies face institutional barriers. Investment and planning policies depend on an appropriate legal and institutional framework and therefore are sensitive to problems of this framework, for example missing departmental co-ordination or frequently changing policies. Weak and unreliable plans render co-ordination and implementation difficult. In addition, the implementation of investment and service policies is linked with considerable financial effort and so is frequently facing resource barriers.

Restrictive pricing policies mainly face social barriers. Due to their restrictive nature, these policies face low political support and strong rejection by the public. Subsidising policies can of course face serious resource barriers with respect to the availability of funds. According to their relatively uncomplicated implementation, pricing policies do not face strong institutional barriers, while legal barriers can become relevant where the legal framework does not allow for the combination or even implementation of a pricing policy. Side effects can pose considerable problems to pricing policies such as road pricing or parking charges since they can induce a higher level of traffic around the affected area.

Regulatory policies affecting travel and location behaviour face social barriers if they impose restrictions on personal mobility. If newly implemented, a change in the legal framework is usually required, whereas institutional barriers do not play an important role. A significant barrier to the implementation of regulatory policies are side effects. Especially policies such as area access restrictions and speed limits for cars can lead to unintended side effects, for example increased traffic congestion, if no additional policies are implemented.

Compared with the other policy types, informative and informal policies like information campaigns, car-sharing, teleworking or telebanking are not restricted by legal, institutional, social barriers or side effects and are potentially successful in the short term. Nevertheless, their implementation is linked with considerable organisational efforts.

Table 4.1. Barriers to implementation of land-use and transport policies

Policy area	Policy type	Policy	I	L	S	R	E
Land use	Investment and services	Housing, Workplaces, Facilities	-	O	O	X	X
		Services	X	O	X	X	X
	Planning	Regional plan	X	O	O	-	-
		General land-use plan	X	O	O	O	-
		Detailed land-use plan	O	X	X	O	X
	Regulation	Expropriation	O	X	X	O	-
		Purchase, pre-emption rights	-	-	-	X	-
		Building regulation, Building permits	O	O	X	-	-
		Building order	O	X	X	O	-
		Transfer of development rights	-	-	-	X	O
	Subsidies	Development funding, disbursements	O	O	-	X	O
		Tax relief	-	O	-	X	O
	Restrictive pricing	Property tax	-	X	X	-	X
		Development in-kind requirements	-	-	-	X	-
		Developer fees, recouping betterment	-	O	X	-	-
		Public land banking	-	-	-	X	O
	Information	Information campaigns, education	O	-	-	O	-
		Flat or housing exchange, teleworking	-	-	-	-	-
Transport	Investment and services	Transport infrastructure network	O	O	X	X	X
		Co-ordination of transport modes	O	O	X	X	X
		Transport system operation	O	-	-	O	O
	Planning	Regional transport plan	X	O	O	-	-
		Municipal transport plan	X	O	O	O	-
	Regulation	Transport infrastructure approval	O	O	X	-	-
		Car-use regulations (speed/access limits)	O	O	X	-	X
		Travel demand management	-	-	O	-	O
		Trip reduction ordinance	-	O	O	O	-
		Parking regulations (licenses, restriction)	-	-	X	-	X
		Vehicle, emission standards	O	O	X	X	-
		Transport corridor	X	O	O	O	-
		Subsidies	Transport infrastructure funding	-	O	-	X
	Subsidising public transport fares	-	-	-	X	-	
	Restrictive pricing	Vehicle tax, fuel tax	O	-	X	-	O
		Parking charges	-	O	X	O	X
		Road-pricing	-	O	X	O	X
		Impact fees	O	O	X	X	-
	Information	Information campaigns, education	O	-	-	O	-
		Car-sharing	-	-	-	-	-

I Institutional barriers

L Legal barriers

S Social/Political barriers

R Resource barriers

E Side effects

X Barriers with strong effects on the policies

O Barriers with medium effects on the policies

- Barriers with low effects on the policies, or the policy is indifferent to barriers

To summarise, all policy types, except information policies, face several barriers with investment and planning being restricted mainly by institutional barriers and regulatory and pricing policies mainly by social barriers. Information policies hardly face any barriers. Because for a better co-ordination and integration of land use and transport frequently a combination of policies is necessary, the different barriers cannot be regarded separately in the implementation of policy packages.

4.3.7 How to Overcome Barriers

It can be concluded from the analysis of the barriers that in many cases it is possible to overcome the barriers if the implementers are aware of potential barriers in advance. In general, barriers can be overcome either by additional policies or by changing the framework for implementation.

Measures against social barriers, which are often faced by policies that make travel by car less slower or more expensive, include public participation and public relations campaigns to make people aware of the problem and their relation to the problem, and carefully designed implementation programmes. These measures not only contribute to a better knowledge concerning traffic and its environmental impacts but also increase transparency and acceptance in policy implementation. Although getting people involved in decision making about a proposal may delay its implementation, but will eventually result in less public opposition against it.

Strategies to avoid or limit institutional barriers must be based on better horizontal and vertical co-ordination between public, semi-public and private actors at all planning levels. In many cases, a co-ordination of policies at the regional level could solve the problem of inter-municipal competition or narrow-minded pursuit of sectoral strategies. In any case, a new planning culture is necessary in which mutual information, participation and partnership as well as co-ordinated planning and policy implementation are the rule. In this context also non-institutionalised forms of transport and land-use planning play an important role. If they are embedded in a strategic planning process with a high degree of transparency and accountability, this can make the planning process faster, more efficient and more flexible.

Measures against side effects should contain carefully designed implementation programmes and complementary policies which help to avoid unintended effects. If the implementers consider possible side effects early enough in their strategy, negative effects can be avoided or limited by additional policies. For example, if shopkeepers resist the implementation of a restrictive parking scheme or a car-free inner city because they fear a loss of revenue, information campaigns showing the success of comparable cases in other cities may generate higher acceptance.

To summarise, most barriers can be overcome by appropriate additional policies, with horizontal and vertical co-ordination being a necessary prerequisite. As far as country-related barriers are concerned, the ex-ante analysis of the legal, institutional, political, and cultural framework of the different member states is very important to prevent barrier effects which can be avoided and overcome by implementing the right additional policies or by changing the framework early enough.

If decision makers are worried about the risk of large-scale decision making, a useful strategy is to take a series of smaller, relatively risk-free decisions that lead towards the intended goals. Many small actions may be more effective than a few big ones. In this sense, a willingness to experiment implies a willingness to take a risk (even political ones). Car-free areas, pedestrian zones, new forms of decentralised city service delivery – these are all elements of co-ordinated transport land-use policies where much more may be learned by actual implementation and monitoring than by predictive studies. In many ways, paralysis from fear of mistakes is the most significant barrier to effective transport and land-use co-ordination.

5. Approaches to the Integration of Land-Use and Transport Planning

Based on several case studies at the national and urban-regional level this chapter will present examples of current best practice to co-ordinate and integrate land-use and transport planning. The selection of national studies includes strategies of regional and local transport and land-use planning in the United Kingdom related to the White Paper on Transport and Planning Policy Guidances, the VINEX dwellings and ABC location policies in the Netherlands, the co-ordination and integration of land-use and transport planning at the regional level in Germany, and examples from North America. Examples from the local level include case studies of Amsterdam and Toulouse. The representation of these case studies tries to cover the variety of possible strategies for co-ordination and integration of land-use and transport planning at the urban-regional level. A more detailed analysis of a more enlarged set of case studies is provided in TRANSLAND Deliverable 2c (Noel, 1999).

The analysis of the case studies shows

- successful and promising policies or policy packages to better co-ordinate and integrate transport and land use in order to reduce the need for travel and to make the remaining traffic sustainable,
- examples of successful policy implementation including the necessary institutional framework,
- comparability of approaches to policy implementation and potentials for transferability regarding the legal and institutional framework in different member states, especially with respect to successfully implement policies at a cross-border level.

According to these objectives the analysis is based on the following criteria:

- (1) the degree of material co-ordination of transport and land-use policies in vertical and horizontal direction, especially with respect to integrating strategies, compatible policies and policy packages with special reference to the regional level as an important prerequisite for temporal, territorial and sectoral coherence,
- (2) the degree of formal co-ordination of transport and land-use policies in vertical and horizontal direction, regarding the relevant actors and administrations involved in the planning and implementation process,
- (3) the degree of transferability of policies or policy packages with respect to the varying institutional frameworks in the member states.

5.1 United Kingdom: Transport and Land-Use Planning Following the White Paper

For many years the United Kingdom has been known as a country with no formal intermediary between the nation state and local authorities. The Conservative government was opposed to any devolution of power to any unit of government in Scotland, Wales or the English regions. But new laws and guidelines have now set the framework for strengthening the regional-planning level and co-ordinating land-use and transport planning. The Labour government after its election in 1997 introduced major policy changes, partly in response to European developments. Scotland has a separate parliament, Wales an elected assembly and the English regions will have Regional Development Agencies (RDA). These agencies will not

be elected but appointed by the national government. At the national level the Department of Transport (DOT) and the Department of the Environment (DOE) were combined to form the Department of Environment, Transport and the Regions. A recent development in transport planning has been the White Paper 'A New Deal for Transport' (1998). Similar to Planning Policy Guidances (PPG) issued by the Department of Environment, Transport and the Regions, the White Paper advocates the integration of transport with land-use planning (Mackie, 1998; Guy and Marvin, 1998).

Institutional Framework

The new Regional Development Agencies (RDA) have integrated the actions of government departments whose activities impinge most directly upon cities, and one of their primary responsibility is to take control of programmes and budgets of a range of public agencies such as the government regeneration program. They are responsible for creating economic development strategies for their regions and for improving their economic competitiveness. At present, the links between the national government, regional organisations and local authorities remain uncertain (DOET, 1999).

Planning Policy Guidances

Central government policy has a strong influence on the rest of the planning system through Planning Policy Guidances which are also important for making development control decision. Central government guidance is in effect regulation or law. Many PPG advocate the integration of transport planning with land-use planning, especially commending local land-use plans which spatially harmonise domestic, leisure and working spaces. The most important PPG in this context are PPG 6, 12, and 13.

For instance, PPG 6 endorses the principle that town centres are the most suitable locations for trip attracting developments and that new retail development should be sited in locations that reduce the number and length of car journeys and consider the availability of bus or rail as well as the potential for walking and cycle access and the proximity of other travel-generating activities.

Both PPG 12 and 13 place a greater emphasis on the application of land use policies as a mechanism for reducing the need for travel, suggesting appropriate locations where travel demand can be minimised and supportive policy instruments. For instance, PPG 12 states that development should be closely related to public transport networks. Trip-attracting uses, such as shops and offices, should be located at points such as town centres which are capable of acting as nodes for public transport networks and where there may be advantages in enabling one journey to serve several purposes. Furthermore, by placing limitations on capacity or price of town-centre parking, the above-mentioned strategies could be supported.

PPG13 states that Regional Planning Guidance (RPG), structure plans and local plans should provide means for examining the relationships between transport and land-use planning at the different levels, for promoting integration and co-ordination and for developing strategies to reduce the need for travel. In general, structure plans must take account of national and regional strategic guidance (PPG or RPG) and accommodate transport projects proposed by the

ministry. They also should provide the opportunity to assess patterns of new development. Therefore they are a principal means to integrate strategic transport and land-use planning policies. Local plans should complement the policies set out in the structure plans. They need to be concerned with ways in which the precise location of development can be shaped to minimise the need for motorised travel and should seek to revitalise traditional urban centres, improve their attractiveness as places to live, work and shop, and maintain their competitiveness. Local authorities should monitor the effects of their policies to improve understanding of the interactions between land-use and transport at the local level. Altogether, there is a basis for horizontal integration of land-use and transport issues and a good vertical co-ordination between national, regional and local level by PPG and spatial plans (Guy and Marvin, 1998; Newman and Thornley, 1996).

The White Paper 'A New Deal for Transport'

The White Paper of 1998 advocates the integration of transport planning with land-use planning and has set out a need for local authorities to deliver local transport plans that should include their proposals for delivering integrated transport over a five-year period (Mackie, 1998). Central government will legislate on local transport plans in due course. However, initially, so as to introduce the new arrangements as soon as possible, local transport plans will be written on a non-statutory basis during 1999. The first plans will cover the financial years 2000/1-2004/5. The local transport plans should:

- cover all forms of transport,
- co-ordinate and improve local transport,
- set out strategies for promoting walking and cycling,
- promote green transport plans for journeys to work, school and other places,
- include measures to reduce social exclusion and address the needs of different groups in society,
- set out proposals for implementation, including bus quality partnerships, traffic management and traffic calming, proposals for road user charging and parking charges and freight quality partnerships.

In the preparation process local authorities should consult widely with local people, businesses, transport operators and community groups. Local transport plans should encourage liaison arrangements with the neighbouring authorities (both urban and rural) and at different tiers. RPG should set the regional framework for the transport plans by local authorities. The national government will use the new local transport plans as a basis for an annual block allocation to spend on transport, therefore, consistency with the local development plan and RPG will be a factor in decisions on supporting local transport plans.

Barriers to Implementation

The remarkable ambitions to co-ordinate land-use and transport planning between different departments and agencies as well as between different administrative levels set out in the White Paper and in the PPG face several barriers in practice. With respect to the deregulated approach in the United Kingdom planning system, there are barriers to co-ordination due to the fragmentation of planning between central government, local government and quasi-

autonomous organisations such as Enterprise Zones and Urban Development Corporations. In addition, at local-government level there are barriers to co-ordination across neighbouring local authority boundaries and also within local authorities between the different planning and transport departments. A strict planning and transport policy in one local-authority area may result in other neighbouring authorities being less enforcing and developers will apply to such authorities first. Economic pressures are likely to be the major barriers when trying to enforce developments including restrictions in car use or increased parking charges. For example, while PPG 6 includes the objective that new retail development should be sited in locations that reduce the number and length of car journeys, local authorities also experience pressure from developers who want to locate where access is greatest. These are often areas which are car-dependent, for example out-of-town retail parks.

Conclusions

Although their powers and resources are constrained, the RDA mark an important innovation in policy making and may create a new foundation for regional government and increased regional democracy in the future. An institutionalised regional-planning level is a necessary prerequisite for effectively co-ordinating land-use and transport planning and funding. The White Paper and the PPG set the framework to integrate land-use and transport planning. PPG and RPG are important instruments to vertically co-ordinate the different plans, especially considering the connection of funding programmes to the guidelines which bind local governments to national goals.

5.2 Germany: Co-ordination of Land-Use and Transport in Regional Planning

Germany represents an example of an indicative approach to co-ordinating and integrating transport and land-use planning. This has its reason in the German legal system based on a strong written constitution which very clearly specifies the powers of different levels of government resulting in a federal administrative approach. The central state shares much of its powers with the states (Länder), which have their own constitutions and representatives taking part in national decision making. This is, in broad terms, the legal and institutional framework in which the different forms of vertical and horizontal co-ordination between transport and land-use planning are embedded (Schmidt-Eichstädt, 1995; Kauch and Roer, 1997; Federal Ministry of Regional Planning, Building and Urban Development, 1993).

Formal Co-ordination: the 'Counter-Current Principle'

The rules of formal co-ordination between sectoral planning and comprehensive spatial planning between the different jurisdictional levels are primarily based on the compliance of lower-level plans to higher-level plans (as specified in the federal building law) and in addition on participation of lower-level planning authorities, which are obliged to comply with higher-level plans, in the higher-level planning. These two factors, compliance and participation, are the corner stones of co-ordination between different departments of different jurisdictional levels which are known as the 'counter-current principle'.

Material Co-ordination

According to the administrative structure of Germany, there are comprehensive land-use plans at the state, regional and municipal level. Material co-ordination takes place in these plans based on the principle of balanced consideration of different planning interests, including those of different sectoral planning departments as well as private and public interests. Vertical co-ordination is achieved by mutual compliance of plans between different jurisdictions.

The Role of Transport Planning in the Planning Process

Land-use plans are only partly an appropriate basis for the implementation of single policies. They are complemented by sectoral plans such as transport plans. According to the federal system, sectoral planning falls in the responsibility of the sectoral departments at the federal, state or municipal planning levels. In principle, the responsibility for federal roads falls in the responsibility of the federal government, for state (Länder) roads in the responsibility of the Länder. There is no regional responsibility for roads. Local governments (counties and municipalities) control two levels of local roads, county and municipal roads. With respect to the administrative system, there is a system of transport plans at the different jurisdictional levels, the federal transport plan, the federal road demand plan, the state road demand plan (which are laws) and at the municipal level two levels of transport development plans (which are informal in character). There is no transport plan at the regional level. The federal government is in charge of legislation for inland and coastal waterways, national railways, air traffic and telecommunication.

Co-ordination of Spatial Planning and Transport Planning at the Regional Level

In general, the contents of regional plans has the status of objectives of national and state planning and thereby binding effect. However, drawing up regional land-use plans is only required if it is of considerable benefit for the region. Regional land-use plans transform the abstract and general objectives of state planning into concrete objectives for regional planning. These objectives are binding for the regional and local planning authorities. If transport planning objectives are integrated into regional land-use plans, they obtain the function of objectives of state planning and therefore need to be co-ordinated with land-use planning. Moreover, transport planning must observe the objectives of national and state planning as binding objectives. In the reverse direction the position of regional land-use planning compared to transport planning is relatively weak. This results from the priority for projects of national planning and from the fact that transport planning has its own legislation and financial resources. Through their integrating effect regional land-use planning cannot influence transport infrastructure, which must be accepted as given.

Co-ordination of Spatial Planning and Transport Planning at the Local Level

The municipalities must accept the high-level objectives of national spatial planning and state planning as binding elements. That is a restriction of the municipal planning monopoly. However, in the context of the counter-current principle, the municipalities and other planning authorities must be given opportunity to participate in the higher-level planning.

Co-ordination at the municipal level takes place in several ways. First, municipal land-use plans have an integrative function and contain land-use and transport issues. Secondly, in the context of the counter-current principle, transport plans under development must comply with general land-use plans, while existing transport plans possess priority compared to land-use plans. Thirdly, by drawing up transport or land-use plans, the different objectives must be considered in a balanced way.

Conclusions

Regional planning in Germany is an example of good co-ordination between transport and land-use embedded in an indicative planning system having its roots in a strong written constitution. Based on the counter-current principle, regional planning enables vertical formal and material co-ordination between national, regional and local planning. Formal co-ordination at the regional and local level includes land-use and transport planning authorities as well as semi-public and private organisations, for example nature conservation groups. As far as material co-ordination is concerned, land-use plans at state, regional and local level integrate land-use and transport issues. However, compared to transport planning, the position of regional land-use planning is weak because transport planning decides on plans on the basis of sectoral legislation. Moreover, although they observe the principles of national and state planning, they are very general in contents and therefore do not contribute to solve conflicts. Finally, integration of land-use and transport issues does not always face political support due to the strong position of transport planning compared to land-use planning. Altogether, co-ordination and integration of land-use and transport planning is good in theory but poor in practice. Due to the indicative character of spatial planning in Germany, planning instruments show a high degree of accountability and reliability. However, to speed up planning processes, there is a strong call for deregulation with more flexibility in decision making.

5.3 The Netherlands: The ABC Location Policy and VINEX Housing Location Policy

The current policy of spatial development in the Netherlands, as laid down in the Amended Fourth Memorandum on Spatial Planning in the Netherlands (VINEX) and the Second National Transport Structure Plan (SVV-II), emphasises the intention to keep commuting distances as short as possible. The national government strongly controls the development of urban and rural regions. By the help of regulatory and financial supportive instruments it can impose policy concepts such as the compact city, ABC location policy or VINEX dwellings policy (Verroen and Hilbers, 1999).

Policy Objectives

One of the main goals of current Dutch transport policy is to reduce the growth of car traffic. A promising way to achieve this is to encourage the use of public transport through a better co-ordination between the planning of transport facilities and land use. The Netherlands differs from other EU member states by strong influence of the government on spatial development. Under the new VINEX policy, decisions about the number, type and location of dwellings to be built are co-ordinated with policy decisions about work locations, services and public transport. Another promising and innovative land-use strategy is the ABC location

policy, which exploits the differences in mobility needs of companies. The main objective of both policies is to make abstract spatial-structure concepts operational by standards and orientation criteria and to stimulate a shift from car to public transport.

Implementation

Within the national policy of physical planning, the spatial distribution of residential construction is the main instrument to influence spatial structure. Financial support from the central government to municipalities for the construction of houses depends on this distribution. Both VINEX and SVV-II emphasise that residential development should take place close to existing metropolitan districts and close to intersections of public transport. The intention is to keep commuting distances as short as possible and to promote public transport. To achieve these objectives, the subsidy regulations of the VINEX housing location policy are the most important instrument to stimulate a mobility-friendly development pattern characterised by high density, mixed use and good public transport access, etc.. The municipalities are explicitly obliged to enlist the private sector (investors and developers) in their spatial policy. However, the integral implementation and financial responsibility rest with the municipalities.

The implementation of the ABC location policy in urban regions is based on two classifications: one classification of locations with respect to their accessibility characteristics (the 'accessibility profile') and another classification of companies according to their mobility characteristics (the 'mobility profile'). The accessibility profile describes the accessibility of a location for employees, visitors and goods by different transport modes. Several types of locations are distinguished (see Table 5.1):

- A-type* locations are highly accessible by public transport, e.g. major public transport nodes such as central stations in the larger urban areas.
- B-type* locations are reasonably accessible by both private transport and car.
- C-type* locations are auto-oriented, e.g. near motorway exits in fringe areas with poor public transport access.
- A1-type* (a-local) locations are reasonably accessible by public transport and poorly accessible by car.
- R-type* locations are poorly accessible by both public transport and car.

Table 5.1. ABC locations: typology of locations by accessibility

	Accessibility by public transport		
Accessibility by car	Good	Reasonable	Poor
Good	A-type	B-type	C-type
Poor	A-type	A1-type	R-type

Source: adapted from Verroen and Hilbers, 1999

The Right Company at the Right Location

The mobility profile describes the mobility generated by a company in terms of work trips, visitors travel and freight transport. Given the mobility profiles of companies and the accessibility profiles of locations, the key question in the ABC planning instrument is which type of company should ideally be located at which type of location, keeping in mind the policy goals to achieve. Ideal profiles are theoretical mobility profiles that are considered to fit optimal with the accessibility profile of a location type.

The location policies are carried out through joint responsibility of the Ministries of Housing, Physical Planning and the Environment, Economic Affairs, and Transport, Public Works and Water Management. Municipalities are no longer entirely free to develop new business or office estates.

Barriers to Implementation

To implement the ABC location policy, at the moment the main concern of local and regional governments is to identify the different location types within their region. There is a huge interest in and demand for locations which have good accessibility by both car and public transport but without restrictions on car use. On the one hand, B-type locations are more popular with companies (and therefore local governments) than A-type locations. On the other hand, stimulating B-type locations is less effective because they generate hardly less car traffic than C-type locations. A-type locations might be effective but are not attractive enough. An over-supply and liberal use of B-type locations may therefore decrease the effect of the planning instrument. Furthermore, the ABC location policy presupposes co-operation which can be undermined by competition between municipalities. Therefore a new distribution of powers at the regional level is necessary. There is political opposition against the ABC location policy because it limits the freedom of decision making of companies and local governments.

Conclusions

The VINEX housing location policy has received general support and is reflected in a large number of urbanisation and infrastructure plans for the coming ten years. Horizontal and vertical material co-ordination takes place through the concentrated funding of housing projects. The VINEX housing location policy is a successful attempt to combine land-use and transport planning to reduce the need for travel by dense building structures, mixed land use, and concentrated development around public transport nodes. Formal co-ordination between different administrative levels and between private and public actors is a substantial part of the policy.

The ABC policy is a promising approach to promote a shift from car to public transport by better co-ordination of transport and land-use planning of, in particular, employment locations. The legal and institutional basis for the ABC location policy is good due to a well functioning and a communicative planning culture in the state-municipal co-operation equipped with restrictive powers. Although this policy has a high potential, its results will only become evident in the long run.

5.4 Examples from North America

North American cities are often considered to be of little relevance for planning in Europe, but they provide examples of what can happen, if the trend towards rising car-dependency is not controlled. Policies from North America regarding the integration of land-use and transport can in some cases be applied to countries in the EU. The United States do not have a federal planning law or mandates and no regional-planning level. The authority to plan and regulate development of land is usually delegated to local governments, with various levels of co-ordination of policy frameworks exercised in individual states (Banister, 1994; Virginia Transport Research Council, 1991; Gorham, 1998). In terms of the classification applied in this study (see Chapter 2), one can place the United States in Category C, i.e. among the countries having no regional plans and/or institutionalised regional planning.

Implementation of Policies at the Local Level

In the United States, the car has dominated urban transport longer and more completely than anywhere else in the world. Except for a handful of cities, public transport use is so low that it is insignificant and not considered a feasible alternative. Metropolitan areas in the United States are the most fragmented, decentralised, suburbanised and lowest-density in the world. The extensive, low-density urban sprawl of North American cities makes the automobile a virtual necessity for travel.

Subsidies, tax deductions, road construction, suburban infrastructure provision and the failure to internalise social and environmental costs of car use are examples of the crucial role of the public sector in establishing the automobile as the dominant mode of urban transport in North American cities and in making automobile ownership and use so inexpensive that they are virtually irresistible, and in establishing the single-family suburban house as the dominant form of residence. All this has put public transport at an impossible competitive disadvantage. Even massive subsidies to public transport over the past 20 years have failed to halt the increase in car use.

The absence of a regional-planning level makes inter-municipal co-ordination of land-use and transport policies at the regional level impossible. Despite of this, US American cities have in the past years been highly innovative in developing integrated land-use and transport policies, some of which could be transferred also to European cities, such as travel demand management, trip reduction ordinances, transfer of development rights, transport corridor development, jobs-housing balance, 'neotraditional' town planning, transit-oriented development (TOD), proffers, zoning controls, site planning review and ride-sharing ordinances.

The policies of trip reduction ordinances, transfer of development rights and transport corridor development have already been described in the context of regulatory policies to integrate land-use and transport in the EU member states. Due to their importance in the United States, the other policies will briefly be described in the following.

Jobs-housing balance. State-wide requirements can set quotas on communities to increase residential land use near suburban employment centres in an effort to decrease the jobs-housing imbalance, a condition in which some communities have either proportionally high

residential or industrial land uses, causing an increase in trip lengths for commuters. Another method of reducing the imbalance is by promoting inclusionary zoning (a requirement for developers to include certain activities or improvements as a pre-condition to project approval, such as the joint development of offices, retail, and housing) and density bonuses (allowing for increased densities if developers promote mixed use). Regulation of building permits ensures that jobs and housing growth occur at the same pace.

'Neotraditional' town planning. Along with increasing densities and promoting mixed-use development, site design initiatives are cited in the literature as one of the most important factors in reducing single-occupancy car use. The current debate about this initiative in the United States is centred around the concept of 'neotraditional' town planning. Neotraditional design calls for compact and dense urban structures and a return to the grid circulation system of 19th-century American towns, or at least more direct connections between any two points within a community than in the cul-de-sac layout of present suburban developments. Neotraditional plans require 20 to 25% more streets than conventional designs, however, streets tend to be narrower to reduce vehicle speeds and promote walking. Higher densities and an increase in mixed uses results in lower per-capita Vehicle Miles Travelled (VMT). Traffic models suggest that neotraditional developments produce 57% less VMT than a comparably sized conventional project. Neotraditional design promote alternatives to the car for communities more friendly to pedestrians and bicyclists. Calthorpe (1993) coined the term 'pedestrian pocket': a clustering of housing, offices and retail within a quarter-mile radius of a transit stop to promote alternatives to the car and increase public transport (Bookout, 1992).

Transit-oriented development (TOD). The main instrument towards the integration of land-use and transport planning in North America is Transit Oriented Development (TOD) including mixed-use and high-density developments at public transport stops, usually light rail lines. In the United States, TOD projects have met with some resistance by local governments and are difficult to implement without regional co-ordination and support. In many cases, more than half of the expenses for developing new lines or extending existing public transport lines were shared by the city and private developers (Cervero, 1986).

Proffers. One of the most direct ways of co-ordinating decisions between local land-use planners, private developers, and state transport planners is to use money as incentive to achieve planning goals through conditional zoning. Conditional zoning is an adaptation of traditional zoning that allows local governments to make approval of rezoning contingent on the receipt of 'proffers' from the party seeking the rezoning. The proffers can take the form of off-site improvements, such as roads or sewers, or they can be cash payments. This proffer system has not only served to co-ordinate land-use and transport decisions by linking development to transport construction, but has also provided a significant fiscal benefit to local governments.

Exception from the Rule: Portland, Oregon

An exception to the rest of the United States is the State of Oregon whose legislation requires co-ordination between local land development and state-wide planning goals (European Commission, 1992; Apel, 1997; Gorham, 1998). Although most of the state is rural in nature, the only metropolitan region of Portland has taken advantage of state legislation and created a regional planning authority, Portland Metro. Metro actually constitutes a level of government, with an elected executive office, and a council elected by districts. In fact, it is the only met-

ropolitan planning agency in the United States which is also a level of government. It is responsible for transport planning, as well as co-ordinating land-use planning amongst the 24 municipalities of the region.

Portland, like all American cities, heavily suburbanised in the 1960s and 1970s with the usual consequences in terms of traffic congestion, noise intrusion and air pollution. To stop this development, in 1995 the State of Oregon set planning objectives for a settlement pattern reducing car traffic, land management, parking restrictions, mixed-use, high-density urban development at public transport stops and improvement of the light rail public transport network and bicycle lanes and pedestrian areas.

These planning objectives have to be followed by local authorities in their local plans. The most direct means of region-wide integration is made through the definition of 'town centres', business and residential districts outside of the city centre are designated in the regional 2040 Growth Management Plan. These town centres are characterised by a high level of density and multiple light rail transport connections to the central business district and with other town centres. To support this development, an 'urban growth boundary' around the city of Portland was drawn beyond which no further development was permitted. Measures to design the city centre pedestrian-friendly, parking restrictions, bicycle networks and a light-rail public transport system with a free-of-charge central zone were implemented. The light rail system was used to direct suburban development along few high-density corridors and to discourage development in between. Several new road infrastructure projects were stopped. More than 40 % of all commuters in Portland now use public transport (European Commission, 1992).

Canada

Comparable to Portland, metropolitan regions in Canada use public transport as a lever to guide urban growth and to promote new regional 'town centres'. Canada's integrated transport and land-use policies can be explained by the emphasis on comprehensive regional planning, higher population densities (due in part to the strategic siting of high-density residential developments near transport stops), a large concentration of regional employment in downtown centres, a greater entrepreneurship among Canadian transport authorities, a strong European heritage and accordingly transport-planning traditions, the absence of a national freeway construction programme, and strict parking controls in downtown areas (Cervero, 1986). As a result, many expensive rail projects have been built in anticipation of demand and in support of regional plans.

Conclusions

The United States do not have a federal planning law or mandates and no regional-planning level which makes co-ordinated action to integrate land use and transport in long term planning instruments difficult. The extensive, low density urban sprawl makes the automobile a virtual necessity for travel. The enormous subsidies to car use put public transport in a hopelessly disadvantaged position and contributed to the single-family suburban house being the dominant form of residence.

Nevertheless, North American cities have developed innovative approaches to integrated land-use and transport planning which could be of interest to European cities. The need for inter-municipal co-operation and comprehensive spatial planning is underlined by the Portland case. Portland created a regional planning authority and enacted a regional 2040 Growth Management Plan with an urban growth boundary and suburban centres with high-density and mixed-use development at public transport stops. To support this development, several incentives and restrictive policies were introduced.

5.5 The Amsterdam Concept of the Compact City

In 1983 the city of Amsterdam attempted to implement the principle of the compact city by a structure plan (Structuurplan) 'De stad central'. The aim was to counteract suburbanisation. The new Structuurplan of 1995 continues this idea (Apel, 1997).

Since 1986 there exists in the Amsterdam region an inter-municipal informal co-operation below the provincial level, the Regional Organ Amsterdam (ROA). This co-operation drew up the relatively detailed and binding new structure plan, which outlines an integrative and comprehensive image of the region. In addition, a regional transport plan was drafted as a development plan for commuting and commodity flows in the region conforming to the urban development in the region specified in the structure plan.

The idea of the compact city aims at integrated transport and land-use planning to achieve dense urban structures, conservation of open space and a reduction of traffic through concentration of urban development at public transport nodes. Following this aim at the level of boroughs, the whole city has been analysed for possible intensive land uses based on the structure plan. The structure plan is implementation-oriented and contains the main locations of housing development in the region. The anticipated demographic, economic and urban development sets the framework for the regional transport plan. Target areas of the transport plan are improvement of public transport, a parking policy and road charges. A new ring tram (sneltram) is built on the ring road surrounding Amsterdam. The ring tram is the consequence of rail development from a radial to a interlinked network following the changing urban structure (suburbanisation) and the rising significance of suburb-to-suburb travel. The emerging intersections of the radial system with the ring tram constitute new points of urban development with excellent accessibility by public transport mainly for work and retail and visitor-intensive and mixed land uses. By the new sub-centres a higher efficiency of the use of public transport is achieved.

The case of Amsterdam shows a good co-ordination and integration of land-use and transport planning both at the planning and implementation stage. By matching the regional transport plan with the structure plan, co-ordination of transport and land use has been achieved. The concept of decentralised concentration including the development of sub-centres at the new public transport nodes is a rare example for integrated land-use and transport planning. This concept fits into the ABC location policy for companies and central locations and the VINEX housing location policy. Even if regional planning is not institutionalised, the informal co-operation (ROA) has a strong influence on the planning process.

5.6 The Agglomeration of Toulouse Highway Dossier

Background of the procedure of the Agglomeration of Toulouse Highway Dossier are two plans. The first is the Agglomeration Highways Dossier (DVA) which marks the wish of the French government to promote, over the long-term, concerted action between all the partners concerned by major public planning or infrastructure projects. The DVA, which covers 208 municipalities, was instituted in November 1991 and is led by the national government, represented by the Prefect and the Departmental Division of the Ministry of Transport. In March 1995 the Joint Planning Association for the Agglomeration of Toulouse (SMEAT) defined its Master Plan 'Toulouse Métropole' (Schreiner and Cohen, 1996). The Agglomeration Highways Dossier is linked to and part of the Master Plan.

The aim of the Dossier is to bring transport in line with urban development of the Toulouse agglomeration in order to reduce the number of trips. This involves bringing housing, employment and services closer together as expressed in the Master Plan. Therefore a process of dialogue and co-operation between the different partners to better integrate transport and land-use planning is a main objective.

The main principles of the Dossier are an attractive public transport network (metro, bus, train), improvements of the highway network (inter-sectoral link to relieve the by-pass, extension of the radial routes), urban development corridors with exclusive right-of-way for public transport and a better co-operation between complementary transport modes. The implementation of the Dossier is accompanied by a co-operation between the partners involved.

The link between the DVA and the Master Plan constitutes a good example for a successful co-ordination of transport and land-use planning because these two planning approaches contribute to dialogue and co-operation between the different partners (material co-ordination) with the overall aim to reduce the number of trips. This is achieved by the integration of urban development strategies and transport infrastructure measures in the Master Plan. However, permanent formal co-ordination which includes the co-operation of the participating actors has still to be achieved.

5.7 Conclusions from the Case Studies

In general, the examples taken from the *national* level have the common goal to co-ordinate urban development with transport. In the United Kingdom, new laws and guidelines set the framework to strengthen the regional-planning level and to co-ordinate land-use and transport planning in a horizontal and vertical direction. The government White Paper advocates the integration of transport planning with spatial planning. In addition PPG and RPG are instruments to vertically co-ordinate plans of different planning levels. With the Regional Development Agencies, regional planning is emerging. In Germany, regional planning has a long tradition based on the federal planning system rooted in a strong written constitution. Regional planning in Germany is an example of legislation and planning instruments setting the framework for vertical and horizontal co-ordination between transport and land-use.

In the Netherlands, two location policies determine the co-ordination of land-use and transport planning. The VINEX housing location policy co-ordinates decisions about residential development dwellings with decisions about workplace locations, services and public trans-

port at the level of urban regions. The ABC location policy is a promising approach to co-ordinate the planning of transport facilities and land-use, in particular of employment locations.

The studies from North America include objectives similar to those of the European studies concerning strategies to reduce traffic congestion, for example by promoting higher densities of urban structures, mixed land uses, and a concentration of urban development at public transport stops. Unlike Canada, the United States do not possess a regional-planning level; nevertheless regional planning is increasingly regarded as necessary for the implementation of policies to reduce traffic as revealed in the case of Portland, Oregon. There is much emphasis on traffic management and negotiation with developers.

Although the case studies at the *urban-regional* level show significant differences in urban structure, transport system and institutional framework, they show similarities in the strategies followed and the policies implemented to better co-ordinate and integrate transport and land-use planning. In Amsterdam, the compact city is the main planning goal. This is achieved through a completion of the radial public transport system through a ring tram and by focusing urban development at public transport nodes. The Toulouse case illustrates a co-ordination of land-use and transport planning in the context of a comprehensive land-use plan as framework for different policies. The aim is to direct urban development to the intersections of radial transport links with the ring road.

It can be concluded that in the case studies co-ordinated action and integrated policies are important prerequisites for reducing traffic. This implies co-ordination between the relevant institutions, administrations and other actors of sectoral departments and agencies (formal co-ordination) and the integration of transport and land-use strategies in comprehensive plans and policy packages (material co-ordination). In this context the important role of transport in regulating and controlling urban development is remarkable. Following the concept of decentralised concentration, in most case studies the intersections of radial transport lines with tangential links serve at the same time as places of modal interchange attracting users and rising the use of public transport and as places for urban development creating new suburban centres. This concept is usually connected with restrictive parking policies and land-use control at other locations.

The case studies showed that planning and implementation of co-ordinated and integrated policies at a supra-municipal level presupposes inter-municipal co-operation, effectively by institutionalised regional planning. This allows for a better vertical co-ordination between national and regional goals and the local level of implementation and enables a better inter-municipal co-ordination of policies and efficient bundling of programmes. Through comprehensive regional plans a better horizontal co-ordination can be achieved by integrating land-use development with the transport infrastructure.

The examples from the United States demonstrate that, besides long-term planning instruments that setting goals and guidelines for urban development, the ability of local authorities to implement these goals and guidelines by integrated funding schemes, negotiation with developers about their contribution to public infrastructure or mobility plans to reduce car-use plays an increasing role. In addition, participation of private and semi-public actors is important to achieve more partnership.

From the case studies, four common aspects can be identified for a better co-ordination and integration:

- (i) a strengthening of the regional-planning level,
- (ii) an orientation of urban development on public transport,
- (iii) non-institutional forms of urban management embedded in strategic planning including participation of and negotiation with the private sector, and
- (iv) a combination of planning, regulation, pricing, and information policies to promote an urban structure that reduces the need for travel and car use.

That these four aspects are common to different countries, is important for the transferability of policies. However, it does not necessarily mean that similar legal, institutional and political circumstances in other member states guarantee a successful transfer of policies from one country to another. Further important factors which can vary from case to case play an important role, such as social and resource barriers as well as to the actors involved in the planning process, especially their interest in the implementation of policies and their willingness to work together.

6. Successful and Transferable Policies

Based on the analysis of the organisation of land-use and transport planning in the EU member states and on the different barriers to implementation as well as on the national and urban-regional case studies, successful and transferable policies can be identified and set in relation to the classification of member states.

6.1 Successful Policies

The success of land-use and transport policies is difficult to evaluate because different policies may pursue conflicting goals. For example the construction of new roads to improve accessibility might alleviate congestion but may not make the remaining traffic sustainable. As this policy is mainly car-oriented and also induces dispersal, it may not reduce travel distances. The problem of goal conflicts cannot be solved as such.

According to the objectives of TRANSLAND, successful land-use and transport policies contribute to an optimum spatial organisation of activities and a well balanced transport system linking these activities in an efficient and sustainable way by improving accessibility and the use of space, increasing the use of environment-friendly modes (public transport, cycling, walking), reducing congestion, improving safety and reducing air pollution, noise, and visual nuisance, while developing and maintaining a healthy urban economy and ensuring social equity and transport opportunities for all social groups (ISIS, 1999).

Therefore, to measure the success of policies to co-ordinate and integrate land-use and transport, a useful means is the primary objective to reduce the need for travel and to make the remaining traffic sustainable (cf. Wegener and Fürst, 1999, Chapter 8). The success of achievement of this objective depends on the implementation of the policy and on the combination with other policies to policy packages, which, as emphasised before, is an indispensable prerequisite for the success of a single policy.

Formal vertical and horizontal co-ordination of land-use and transport planning plays an important role for a successful implementation because traffic congestion is not only a local problem and cannot be addressed by transport or land-use policies alone. Therefore regional planning is a key factor. This is especially valid because different policies are carried out by different sectoral departments and semi-public or private actors at different administrative levels.

6.2 Transferable Policies

Transferability depends on country-related institutional, legal, social and resource barriers and side effects. These barriers have already been analysed in detail. In the context of transferable policies, the institutionalised organisation of land-use and transport sets the framework. Therefore the different policies need to be set in relation to the categories to which the member states have been assigned. Policies of the same policy type, in general, do not show different results concerning transferability. For this reason the evaluation of transferability concentrates on the level of policy types.

Table 6.1 shows the different policy types in relation to the categories defined in Chapter 2: Category A: formal and material co-ordination of land-use and transport planning in horizontal and vertical direction, Category B: formal and material horizontal co-ordination and Category C: formal and material co-ordination only institutionalised at the local level.

Table 6.1. Policies by ABC category

Policy type	Category A	Category B	Category C
Investment and services	+	o	o
Planning	+	o	x
Regulation	-	-	-
Subsidies	+	+	o
Restrictive pricing	-	-	-
Information and inf. policies	-	-	-

- + Policies can be transferred to countries of this category with a high potential of success.
- o Policies can be transferred to countries of this category without too much restriction.
- The implementation of the policies is indifferent to the category.
- x Policies cannot be transferred to countries in this category.

According to the categories, in general, policies can be transferred between countries of the same category. In addition, policies which have been successfully implemented in a country of Category C can also be implemented in countries of Categories A and B. The transferability of policies shows considerable variation by policy type due to the differences in the legal and institutional framework which determine the implementation:

Investment and services. Investment policies for workplace, housing, facilities and services to a certain extent depend on regional co-ordination. Therefore these policies can successfully be implemented in countries of Category A, but also in the other categories because the decisions on investment are mainly made at the local level and therefore only have to consider local plans and regulations.

Planning. Planning policies, which influence land-use pattern, urban form and transport infrastructure including binding provisions in regional and local plans have the highest potential for a successful implementation in countries of Category A because for an efficient horizontal and vertical co-ordination institutionalised regional planning with binding regional plans is an important prerequisite. The implementation of local plans is indifferent to the categories because legally binding planning at the local level exists in most EU member states.

Regulation. Regulatory policies can be implemented in countries of all categories because they imply actions of the individual municipality. In addition, municipalities increasingly follow a more flexible negotiation approach outside the traditional administrative framework.

Pricing. Regional responsibility for pricing policies is important for an efficient distribution of financial means. In many cases financial support is connected with objectives of regional and municipal planning in order to guarantee that urban development complies with guide-

lines and standards for land use and transport planning. This means that these policies can be implemented more efficiently in countries with binding regional plans. Fiscal restrictive policies are indifferent to the categories since they are usually carried out at the local level.

Information. Similar to regulation, information and informal policies are category-indifferent because they lie in the responsibility of the individual municipality as well as of companies and do not presuppose changes in the legal and administrative framework.

The evaluation of transferability revealed that most policies are transferable, with Category A showing the highest degree of success related to aspect of institutional regional planning. Policies that depend on institutional forms of co-ordination at the regional level cannot be transferred to countries of Category C. However, even if the institutional, legal, political, legal and social framework of two countries is similar, the implementation of a certain policy which has successfully been implemented in one of them, does not guarantee a successful implementation in the other because this also depends on specific regional or local conditions regarding the interest or willingness to work together by the relevant actors.

In conclusion, all policies are important for a successful integration of transport and land-use planning because only the combination of different types of policies and the combination of land-use and transport policies promises success. This also emphasises the relation to the implementation process because many policies need to be implemented at the supra-municipal level to efficiently co-ordinate land-use and transport.

Transferability depends on country-related barriers, mainly of the institutional framework, which varies considerably within Europe. Therefore the policy types were related to classification of countries developed in Chapter 2 of this report to get an overview on the transferability of policies between the categories of countries. However, transferability of policies also depends on the specific political, social, cultural and financial conditions in the two and the interest or willingness to work together by the relevant actors. Therefore the most important issue for transferability is to analyse the institutional, legal and social/political framework for the implementation of a policy early enough to adjust the policies to the given framework or to adjust the framework to the policies.

7. Conclusions

Based on the fact that urban development has a strong influence on transport and, conversely, transport has a structuring effect on urban development, a better co-ordination and integration of transport and land-use planning presupposes policies that closely link these two aspects. Co-ordination and integration imply institutional potentials and policy-related potentials. Therefore the institutional potential for co-ordination as well as potential policies to integrate land-use and transport are to be identified.

Degree of Co-ordination and Integration

The analysis of the institutionalised and non-institutionalised organisation of transport and land-use planning and the co-ordination between these two issues in different member states shows considerable variation in the planning systems across countries. Nevertheless, general similarities in the structure of the planning systems and common trends in the organisation of planning processes can be identified.

These similarities refer to the trends of decentralisation, horizontal articulation, flexibility, growing impact of plans, the impact of the EU on spatial planning and the increasing interest in public-private sector linkages. The main conclusion is that throughout Europe the significance of economic objectives increases but the lack of considering social and environmental needs leads to demands for a more direct approach to social issues and greater community involvement.

A second area where similarities are encountered are the systems of spatial planning which are closely related to the structure of government. There are some common characteristics in the organisation of land-use and transport planning in the EU member states. There is usually a hierarchical structure of spatial planning instruments. In this structure, land-use plans usually have an integrating function, whereas transport plans often follow a sectoral policy. However, ongoing changes in legislation contribute to a more integrative approach in many countries.

Based on the analysis of the institutionalised organisation of transport and land-use planning, the EU member states have been grouped into three categories referring to the degree of co-ordination and integration which make policies towards integration more applicable and transfer of instruments and best practices more likely to succeed. Category A contains countries with an institutionalised regional planning with binding regional plans or other forms of binding effects. Category B includes countries with an institutionalised regional planning without binding effects. Category C contains countries without regional planning and/or regional plans, with co-ordination taking place just at the local level. Category A shows the highest potential of formal and material co-ordination with respect to the institutionalised regional-planning level and due to the binding effect of regional plans. Countries of Category B also show a high potential for formal co-ordination but because of the missing binding effect, vertical co-ordination is weak. In countries of Category C, where regional planning is not institutionalised, local binding planning plays an important role for policy implementation. The assignment of the different countries to these categories showed that in most EU countries regional planning is institutionalised and includes binding regional plans.

Policies for a Better Integration of Land-Use and Transport Planning

The different policies in the area of land-use and transport were assigned to the following policy types: investment and services, planning, regulation, pricing and information and informal policies. The presentation of land-use and transport policies was based on their contents, objectives and the potential effects of their implementation. The policy objectives indicate the primary intention lying behind a policy; the policy effects reveal the possible outcome of the different policies. Both are related to the primary objective of land-use and transport planning, to reduce the need for travel and to make the remaining traffic sustainable. The presentation of the policies illustrates that land-use policies primary aim at reducing the need for travel, whereas transport policies mainly aim at making the remaining traffic sustainable. However, in the long-run transport policies affect land-use as well and land-use policies also affect transport.

Due to their complementary effects, land-use and transport policies need to be combined to reach the primary objective. The combination of policies within the same policy area is important to achieve synergetic effects. This refers to the relationship of investment and services and planning on the one hand and regulation, pricing and to a certain extent information on the other hand. Most investment and planning policies are necessary yet not adequate by themselves to reduce the need for travel and to make the remaining traffic sustainable. Their successful implementation is only possible, if additional pricing and regulatory policies create the necessary framework.

Planning and investment policies are the most important means to reduce the need for travel because they influence land use and traffic and represent an important offer and pre-condition to reduce travel distances and land take, and to efficiently use the transport infrastructure (pull effect). However, they often need to be flanked by pricing and regulatory policies which not only support the planning and investment policies but also promote a change in location behaviour, a reduction of land take and support an efficient use of the transport network (push effect).

It can be concluded that all policies are important because they enter in some combination which leads to a successful implementation and to a high degree of efficiency. It was shown that the policies have different but complementary effects and are carried out by sectoral departments and semi-public or private actors at different administrative levels. Therefore horizontal and vertical co-ordination is indispensable for temporal, territorial and sectoral cohesion. A regional-planning level with binding planning instruments and sufficient authority in decision-making is most efficient for the integration of land-use and transport. Non-institutionalised forms of co-ordination also play an important role, especially in the context of participation and partnership.

Feasibility and Transferability of Policies

The implementation of the above policies can be restricted or prevented by different types of barriers including resource barriers, social/political, legal and institutional barriers as well as side effects. These barriers determine the feasibility and transferability of policies. Therefore policy-related and country-related barriers are distinguished.

Policy-related barriers can either reduce the potential of policies once implemented or make implementation entirely impossible. It can be concluded that all policy types, except information policies, face several barriers with planning and investment mainly being restricted by institutional barriers and pricing and regulatory policies mainly facing social barriers. Information policies, which are limited in their effect on reducing the need to travel, hardly face any barriers. Given that the combination of policy areas, policies and especially policy types is necessary for a better co-ordination and integration of land-use and transport, the different barriers cannot be regarded separately in the implementation of policy packages.

Country-related barriers refer to the transferability of a policy or policy package. Transferability depends on the country-specific legal, administrative, political and cultural framework. This means that a policy which has successfully been implemented in one country cannot simply be transferred to another country. Especially such policies that imply institutional and legal changes are difficult to be transferred to other countries. However, transferability also depends on the interest and willingness to work together by the relevant actors.

Evaluation of Case Studies

The analysis of different approaches for a better co-ordination and integration of transport and land-use illustrates that co-ordination between different jurisdictions and sector departments on the one hand and the integration of different policies to policy packages on the other hand are corner stones of a successful implementation of policies to reduce the need for travel and to make the remaining traffic sustainable. In addition, non-institutionalised forms of urban management are important to allow for more flexibility in the planning process.

Successful Implementation of Policies

It has become evident that for most policies a successful implementation is closely linked with two aspects. The first refers to the policy and its relation to other policies, the second to the institutional and organisational framework of implementation.

With respect to the first aspect all policies are important for a successful integration of transport and land-use because only the combination of the different types of policies and the combination of land-use and transport policies promises success. Therefore horizontal and vertical co-ordination is indispensable for temporal, territorial and sectoral cohesion, which emphasises the relation of the integration of policies to the implementation process. Most policies presuppose institutionalised regional planning to efficiently integrate land-use and transport. This is of considerable significance concerning the distribution of financial funding through EU programmes such as EFRE or INTERREG.

The examples from the United States make it clear that, besides long-term planning instruments that set out goals and guidelines for the urban development, local authority's ability to realise the goals and guidelines by means of integrated funding schemes, negotiation with developers concerning their contribution to develop public infrastructure or to adjust their projects to regional and local goals, and also the ability to organise an active land-banking policy to lead urban development in the envisaged direction, plays an increasing role.

Transferable Strategies

Transferability of policies depends on country-related legal, institutional, social/political and resource barriers and side effects. Transferability becomes more difficult if policies are implemented in combination with other policies.

In general, policies can be transferred between countries of the same category. In addition, policies which have been successfully implemented in a country of Category C can also be implemented in countries of Categories A and B. Altogether, most policies are transferable, with Category A showing the highest degree of transferability. Policies that depend on institutional forms of co-ordination at the regional level cannot be transferred to countries of Category C. However, even if the institutional, legal, political, legal and social framework of different countries is similar, the successful implementation of a certain policy in one country does not guarantee a successful implementation in another country, because this process also depends on specific conditions in the respective region or municipality regarding the interest or willingness to work together by the relevant actors.

Therefore the most important issue for the transferability of policies is to analyse the institutional, legal and social framework for the implementation of a policy early enough either to adjust the policies to the given framework or to adjust the framework to the policies.

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