Achieving sustainable transport and land use with integrated policies

R. Macário[1,2], D. Carvalho[1] & J. Fermisson[1]
[1]*TIS.PT, Consultores em Transportes, Inovação e Sistemas, SA, Lisbon, Portugal*
[2]*CESUR -Lisbon Technical University, Portugal*

Abstract

With almost 80% of the citizens of the European Union living in urban areas, most transport related environmental and health problems occur in cities and surrounding areas. The spatial separation of human activities (namely through "zoning plans") creates the need for travel and goods transport. On the other hand, the transport system determines the accessibility to places making them more or less attractive for the location of business, leisure, shopping activities, housing, services etc. This complex set of inter-relations, that leads to the current unsustainable trends, is the main reason that justifies integrated LUT policies. Neither land use policies nor transport policies alone are sufficient to tackle current problems of urban mobility.

However, achieving a pattern of sustainable transport and land use is a "puzzle" that politicians and others involved in the LUT decision making process may solve by combining various elements: sound planning approaches and implementation of integrated land use and transport measures; identification and removal of barriers which hinder the implementation of those measures and the realisation of sustainability goals; adequate consideration of citizens' and stakeholders' views through participation. Learning from good practice experienced elsewhere and assessing the transferability of this to their own cities may help those who deal on a day-to-day basis with LUT issues to solve this puzzle.

This paper highlights the main results from the TRANSPLUS project, which provide a synthetic overview on the main issues shaping LUT integrated policies in a range of 25 European cities, in the EU and acceding countries and have been compiled in the format of quality management guidelines.

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1 Introduction

With almost 80% of the citizens of the European Union living in urban areas, most of transport related environmental and health problems are occurring in cities and the surrounding areas. Although early discussions on land use and transport (LUT) sustainability focused on environmental damage, due to heavy use of the automobile and suburban sprawl, matters of particular concern include now the disparity in choices available to different social groups for housing, accessibility to jobs, services, green areas, and the social and economic costs associated with transport congestion, delay and unpredictability.

Our thesis is that integrated LUT policies implemented through a range of instruments and measures can help to enhance economic competitiveness, to improve the environment and to augment social cohesion by:

- Reducing the need to travel;
- Reducing car dependency and motorised individual transport;
- Reducing the development of greenfield land;
- Reducing the disparities and imbalances in the costs of living, travelling and providing public services, without hampering the growth of urban and regional economies;
- Reducing the transaction costs in a number of city marketplaces: by widening the range of accessible land plots and buildings available on the real estate market; by facilitating the accessibility of employees to a wider range of employment options on the local labour market; by improving mobility and accessibility to local retail services for a wider range of customers (including visitors as well as residents); and finally by promoting new transport markets (e.g. through licensing of flexible transport services).

Although there is a strong consensus between stakeholders that LUT policies require an integrated approach, the practice shows that **implementation is often difficult** due to various reasons:

- Different time scales of land use and transport and/or different planning cultures and objectives;
- Separate institutions and procedures within and across authorities and/or spatial competition between local authorities;
- Separated financial sources and / or lack of funds;
- Lack of integrated tools.

Herewith we will cover the main issues shaping LUT integrated policies, as they were observed in the TRANSPLUS case studies, focusing the results and recommendations in terms of:

- How can LUT policies be defined;
- How to select from a menu of LUT measures;
- Integrating planning and implementation steps into a policy decision making life cycle;
- Participation and communication in LUT;
- Learning from and with others experiences: transferability of practices;
- Conclusions on the impact of LUT policies.

2 How can LUT policies be defined

A land use and transport strategy consists of a combination of policy measures. A "policy measure" is any tool which can be used to overcome problems and achieve objectives, and it may include transport as well as land use policies. (This definition has been firstly adopted in PROSPECTS project, accessible through the web-site www.lutr.net)

Indeed, while a first assumption behind policy integration is that the objectives can in principle be achieved more effectively by using packages of policies, this should not be seen as being the end of the process. A strategy is not simply identifiable by a list of policy measures. More importantly it involves a selection of an integrated package of actions that reinforce one another in meeting the objectives and in overcoming barriers to the successful output and outcome of the policy.

An effort of co-ordination in several directions over time and space, of complementary measures in the same field of intervention as well as of measures of same nature across the different government tiers is thus the key to the development and implementation of integrated policies. The full policy integration of LUT often requires organising new forms of purpose oriented processes and strengthening the links between different institutions with open and dynamic forms of co-operation.

TRANSPLUS case studies show the complexity of the institutional structures and dynamics, thereby helping to identify some possible solutions:

- Through the re-organisation of institutions;

Possible solutions	What does it means
Co-operation	Working together: implies shared commitment to action
Co-ordinating body	The creation of a new institution set up to co-ordinate the actions of bodies at a lower level, while these bodies remain independent.
Public-private partnerships	A relationship between public and private actors, used to implement existing or new instruments.
Aggregation	Removing the division between conflicting bodies, amalgamating them or absorbing one body within another.
Separation	Division of competencies, hence probably changes of instruments.
Rationalisation	The removal of layers of authority or dissolution of institutions and/or institutional relationships.

- Through the adaptation of instruments;

Possible solutions	What does it means
Realignment	Conversion or re-orientation of one aspect in line with another so that the two are no longer in conflict.
Technical legislation	Adaptation of existing, or introduction of new, legislation relating directly to the LUT sectors.
General legislation	Adaptation of existing, or introduction of new, non-land use and non-transport related legislation.

Financial restructuring	Adaptation of existing financial structures or creation of a new financial structure.
Readjustment of policy packages	Adjustment of the integrated policy packages within the given contingent institutional context.

- By a combination of instruments, institutions and territories.

Possible solutions	**What does it means**
Concerted initiative	A specialised form of co-operation, where the collaboration or co-operation is more localised within the context of a specific initiative.
Covenants and agreements	A solution on a more general level between individual authorities with their respective competencies regarding the general treatment of individual conflicting and/or complex situations.
Compromise	A solution arranged between conflicting parties.
Creation of a metropolitan/ regional authority	A more comprehensive version of the co-ordinating body, in which a new territorial unit and competency is expressly formed and where the constituent bodies hand over competencies to a legally established 'new' all-embracing authority.

3 How to select from a menu of LUT measures

The cities' experiences analysed in the context of the TRANSPLUS project are considerably different with regards to both the planning approach and the kind of measures applied to solve their problems. However, two major approaches to define and implement integrated LUT planning have been identified:

- land use policies aiming to reduce the need to travel – these are mainly 'forward' policies (or "**city of tomorrow**" policies) which create new centres or regenerate brown-field sites, changing the urban fabric and limiting the sprawl of dwellings, workplaces etc.;
- transport policies aiming to improve accessibility with a wider range of transport alternatives – these are mainly 'backward' policies (or "**city of today**" policies) taking the existing urban fabric as a datum, and changing the transport system in order to improve accessibility by alternative transport modes (public transport, walking and cycling, flexible transport services, car sharing etc.) and stimulating the revitalisation of high-density and mixed-use neighbourhoods within the city.

Both approaches are needed, and a way should be found to integrate them into comprehensive strategies, but, in practice, no TRANSPLUS case study shows such comprehensive strategies fully in place. On the contrary, there are many single practices that point in this direction, and in most of the TRANSPLUS case studies there is also a clear understanding about the negative effects that uncontrolled growth in mobility can have on their attractiveness and liveability.

Although there is a broad variety of possible policy combinations, the analysis of integrated LUT policies within TRANSPLUS focused on three different LUT policies:

- public transport (PT) oriented development. This includes several mechanisms to intensify the density of housing and other activities near urban rail, light rail, subway and tram stations. This may take place in the inner cities as well as in the metropolitan area to catch commuter flows;
- short distance structure development. It aims to create a pedestrian and cycling friendly approach to site development, and to facilitate "door-to-door" travel without using the car, encouraging the use of alternative transport modes. Short distance structure development can be an important pre-requisite for the successful promotion of walking and cycling;
- car restriction oriented development, aiming to limit the intrusion of cars into the urban environment, and reduce by this way their negative impacts on noise, air quality, safety and aesthetics of towns and neighbourhoods. Restrictive measures may have a low priority in political agendas since they are not very popular among car users. The combination of push and pull measures (the so-called "carrot" and "stick" approach) is, thus, the main approach to implement projects aiming at car restriction.

These "policies" may be seen as ways to seek integration of LUT policies taking respectively PT, walking and cycling, and regulation of car use (including the space for cars in the city) as pivotal elements.

4 Integrating planning and implementation steps into a policy decision making life cycle

Although the range of defining characteristics of the city is very complex (urban form, public transport system, economic and social profile, etc.), there are common issues linking the urban agendas in order to achieve sustainable development.

The evidence from TRANSPLUS case studies has shown several examples of key mechanisms influencing implementation of policy. A normative approach is to be recommended to link planning, implementation and evaluation steps into a **policy decision-making life cycle**.

However, **the real challenge is to maintain the global coherence of this process over a long time period**, including the different decision makers at neighbourhood, city, regional and national level, as well as ensuring the participation of relevant stakeholders and the civil society in urban decision making, and the implementation and evaluation of policies.

4.1 Setting up a LUT planning

Integrated LUT planning is considered to be one of the key instruments to reduce car dependency in European cities and regions. The case studies selected in TRANSPLUS showed it is widely acknowledged that there is a transport problem and that integrated LUT is needed to make a city sustainable in the longer term. However, there are considerable differences among cities concerning their perspective on LUT integration. Below some general aspects are discussed.

- Choosing between monocentric or polycentric strategies:

Broadly, monocentric development strategy puts the focus on revitalisation or strengthening of the city centre while polycentric development strategy concentrates investments in the development of well-located sub-centres. The choice between monocentric or polycentric strategies depends however on the city size. For smaller cities the monocentric urban form is much more sustainable than a polycentric urban form. Smaller cities that opt too early for the polycentric urban model are in fact encouraging urban sprawl. On the other hand, larger cities that pursue the monocentric urban model, focusing all attention on the city centre, might lose control over developments at the periphery. Uncontrolled urban sprawl will be the result, when a polycentric strategy could limit this tendency. Thus, harmonisation of city strategies should be pursued depending on the context. This in particular requires effective spatial planning at the regional level and coordination of the web of policies typically promoted in each region of Europe by a great variety of national, regional and local institutions, with different responsibilities, covering different issues at different scales.

- Assessing the effectiveness of integration:

We can only affirm that integration is realised when it is applied to policies, planning methodologies and organisation of processes or structures.

Integration is a multidimensional task. Not only do different policies need to be integrated, but the supporting tools and the supporting organisational structures of town planning and transportation engineering also need to be integrated. Often the strongest integration is found at the policy level. Most cities in Europe try to initiate integrated policies like PT oriented development. However, integration of the supporting models, monitoring indicators and institutional structures is much less developed.

- Which strategies to consider:

Policy packaging must consider different kinds of interrelated measures, that is combine "push-and-pull" strategies. "Pushing" residents from excessive car use through restrictions such as parking management and at the same time "pulling" users towards environmentally friendly modes by providing an efficient public transport system and favourable conditions for walking and cycling. This has been recommended by many EU research projects and examples of good practice. However our case studies confirmed that in reality there is an emphasis on stimulating pull-measures, while restrictive push-measures have a lower priority. Much attention is given to softer measures such as information and communication to influence mobility behaviour. The applicability of LUT policy packages depends on all kinds of urban characteristics.

4.2 Key factors influencing the implementation of LUT measures

TRANSPLUS case studies illustrate important processes and key factors of success for integrated LUT implementation strategies as well as the main types of barriers and ways to avoid or overcome them. The basis for such results includes:

- the presence of a broad strategic concept for the city which integrates sectoral policies in a comprehensive strategy;

- a high relevance given to co-operation between the different administrative departments within the city and across different tiers of government (municipal, regional, in some cases even national), and increasingly between public and private actors;
- the involvement of stakeholders and inhabitants in the development of a vision for the City of Tomorrow or into planning processes.

The following aspects synthesises the main findings on how to improve the implementation process of LUT policies:

Be aware of the barrier 'problems' and take the initiative to find solutions

The accurate specification of a problem may sometimes allow attention to be focused on the kind of solution that might be used. Search for solutions able to remove barriers that are contingent (i.e. they can be removed) and hinder the implementation of the policy (output barriers) or the realisation of the sustainability goals (outcome barriers). TRANSPLUS cases shown that most of barriers are interconnected and may not be immediately identified explicitly. However, the identification and recognition of the existence of a barrier constitutes the first step towards a solution.

Adopt a progressive implementation

Often relevant policy changes cannot be implemented at once in the whole city. This may be caused by a number of reasons, and thus frequently a **step-by-step implementation process** seems to be an effective way to proceed. Usually, measures can be limited to a specific area where more favourable circumstances enable (or more stringent needs require) the implementation of LUT integrated concepts.

A positive aspect of a step-by-step implementation process is that it prevents stakeholders from being confronted with extensive projects that disrupt their used patterns of mobility and, thus, does not threaten acceptance.

5 Participation and communication in LUT

According to the case studies analysed within the TRANSPLUS project, effective involvement of citizens and stakeholders in LUT planning can be considered as a major factor for success. Especially in cases where opposition exists or conflicts are very likely to occur, sound approaches to stakeholder participation can help to avoid conflicts and to build consensus. A well-conceived and well-implemented public involvement program can bring major benefits to the policy process and lead to better decision outcomes.

Nevertheless, communication and participation processes also create some risks and, if organised 'wrongly', may create extra problems. Therefore, it is important to find the 'right' balance between 'open' planning processes and 'fixed' planning objectives. It is important to build confidence that the results of the participants' input will have some impact on the planning process as well as to allow for 'justified rejection' of results where this is needed for the common good.

According to the empirical evidence from the TRANSPLUS case studies, the benefits of promoting participation in LUT planning processes overcome the drawbacks that could be foreseen. The development of citizen's ideas, and the greater transparency of the processes are major advantages. The main drawbacks are related to the delays caused by the participation. Nevertheless, consultation and participation are now becoming more widespread and expected as part of normal procedures in planning, development and implementation of integrated projects.

5.1 Setting up a successful participatory strategy

Every communication and participation exercise must be brought in line with the specific situation, however the following set of recommendations can be intended as a valuable means to improve the effectiveness of participatory approaches in LUT planning processes.

- within each participation and communication exercise, it is crucial to first think about ***what*** the basic objectives and issues of public involvement are. To avoid misunderstanding and later disappointment, preconditions must be defined before involving stakeholders so that the limits of consultation activities can be clearly shown to the participants at the outset
- it is important to clarify ***who*** is supposed to be participating.
  Citizens must be regarded equally, but may have different abilities to participate according to social position, knowledge, experience in using communication tools and so on. To organise communication processes fairly, these inequalities must be resolved through corresponding "unequal" communication opportunities. Attention must be drawn to the accessibility and comprehensibility of the information
- these aspects have a major influence on ***how*** the communication process is organised and which methods are used. Therefore, after it is clear what the communication exercise is about and who should be reached, a corresponding communication concept must be developed in which single methods fit in an organisational and chronological frame; this strategy must be integrated in the overall planning process from an early stage. A plan is recommended indicating how the communication is organised with internal (administrations and politicians) as well as external target groups (citizens, interest groups and organisations); how communication is organised with the media; and who is responsible for each task.

As well, the selection of communication types and tools will vary from case to case. However, some basic requirements to enable successful strategies include:

- Adoption of an open response to participation

This is crucial to stimulate the involvement of a wide range of stakeholders. Although formal guarantees are not possible since final decision-making will be in the hands of elected representatives, there should be some guarantee that authorities will seriously and openly consider (if not necessarily follow!) the results of participation.

- Providing a 'starting document'

As public involvement must not be an end in itself but should result in visible impacts, a starting document should contain a clear description of the process, the goals and the means available as well as of the responsibilities and tasks within the project. Apart from a clear project structure and indication of instruments used, a realistic time schedule and solid financial resources for all activities planned are crucial.

- Avoiding 'consultation fatigue'

Participation opportunities must focus on subjects that are of interest and importance to the stakeholders. Thus, the scope of the exercise has an influence on the success of participation. If expectations of participants are not met, this may cause disappointment and prevent future participation. Moreover, no participation process should be initiated without checking what can be taken from previous or parallel participation exercises. By this means, synergy effects can be used and resources saved.

- Preparing citizens for the process - 'Capacity-building'

As not all citizens are equally prepared and skilled to take part in 'active involvement', they should be backed up by processes preparing them for such engagement. Those skills can be developed within single capacity-building training projects and supporting measures. Initiatives such as Citizens' Juries enable a select group of Citizens to benefit from capacity building to enable them to act as representatives of the other citizens in a technical debate.

6 Conclusions

Learning from other cities may be considered a policy formulation process in which planners and decision-makers of a receptor city search for good practices implemented in other cities (originator cities), analyse those practices and may decide to implement the good practice noted elsewhere.

Transfer of experience should involve all the policy makers and practitioners at national, regional or local level in a **governance in multiple levels decision making** exercise. The multi-governance perspective is required in particular to address sustainability issues related to LUT policies, which often have a wide 'footprint' or area of impact (up to the global scale) as well as strong local impacts.

This **transferability of innovation is desirable in practice because the risks and costs involved in developing the first example of a solution can be avoided by adopting a proven approach**. However, transferability is also difficult because each country and each city has its specific features. In general, transferability between different countries is particularly complex as legislation, planning systems, the economic structure, living standards and social expectations are often significantly different.

Nevertheless the TRANSPLUS case study analysis has proven that practices can be successfully transferred, between cities and from one country to another. A mechanistic model of transferability cannot be defined, but it is clear that once a new concept has been identified, a thorough look at the 'originator city' as well

as the 'receptor city' is required. If there appears to be compatibility between the demonstration site and the target site, the project sponsor should consider the existence of potential barriers, and the likely achievement of factors for success which may be needed. Experience can be gathered through a range of mechanisms for seeking information. In addition to published data sources, networks, co-operative projects, skills exchanges, and various NGOs all provide access to new ideas.

The TRANSPLUS case studies provided only little evidence of the impacts of the LUT measures illustrated above. Partly this is due to the fact that the case studies focused on innovative policies which are new and as yet unproven. However, even in these cases, the main difficulty was that **often there is not a full monitoring and evaluation scheme in place, and it is therefore difficult to assess present or future impacts**.

Notwithstanding this lack of clear-cut before and after results, experiences seem to confirm what has been observed in several other studies, that **land use policies to increase urban density or mixed land-use without accompanying measures to make car travel more expensive or slower have only little effect on car mobility**. (EC, TRANSLAND.) However, these policies are important in the long run as they provide the preconditions for a less car-dependent way of life in the future.

References

[1] Macário, R., Carvalho, D., Fermisson, J., López I. (2003). TRANSPLUS Guidelines – Achieving Sustainable Transport and Land Use with Integrated Policies. TRANSPLUS Deliverable 6
[2] TRANSPLUS, Final Report for Publication, EC-DG Research, 2004
[3] LUTR (Land Use and Transport Research cluster): http://www.lutr.net
[4] TRANSPLUS: http://www.transplus.net/ (include reports)