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Planning Scenarios

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Instruments and strategies for sustainable land use in peri-urban areas

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Abstract

Objectives

The objective of this deliverable report D3.3.10 is to integrate the results of PLUREL modules M2 (Land use relationships in Rural-Urban Regions) and M3 (Governance and strategic planning scenarios), give an overview about the role of government systems, planning, financial and sectoral policies and governance processes, and draw conclusions relating to the government and governance aspect in management of the peri-urban land-use change.

Methodology

This report is an integrating effort aiming to analyse and compare the results of PLUREL deliverable reports on a) government systems and planning policies; on b) financial systems, sectoral policies and regulatory tools, and finally on c) governance processes.

The formal government and planning systems have been reviewed for all 27 EU countries on the basis of national reports. The financing and taxation systems, sectoral policies, and tools to steer the land development process (called together 'further instruments' influencing urban sprawl) have been studied mainly concentrating on the PLUREL case study regions, extended with some other regions in order to cover all categories of the typology prepared in D2.2.1. Finally, also the analysis of the informal, governance type processes concentrated on the case study regions.

Results

The results of the studies on government systems, planning policies and governance processes underpin the hypothesis that a weak potential control level by the formal government institutions and planning systems over market processes is hard to overcome by regulations and policies (even if the willingness exists among the public actors) or by bottom-up governance policies. On the other hand, a high potential for control by the formal systems may or may not be used entirely, depending on the intentions of the public bodies in power. In the case of strong formal institutional and planning framework the role of governance relationships might be bigger to achieve changes towards more sustainable development, avoiding unnecessary urban sprawl.

It must be added, that the power, policies and tools of the public sector is only one side of the game; the other is the strength of pressures towards urban sprawl, due to demographic change, economic development and other factors. This means that even in regions with strong public control sprawl can occur, if the pressures are very strong.

The government and governance analysis explored two extreme types of countries from the perspective of public control over urban sprawl processes in peri-urban areas. On the one hand there are a few countries (among the case study countries the Netherlands, UK and France) where the potentially strong control assured by the formal government

system and planning policies over RUR processes seems to be underpinned by the financial, taxation and sectoral policies and regulatory tools which are used in practice. These countries have good chances to control peri-urban developments and avoid urban sprawl – especially if also informal governance agreements can be reached among the partners into this direction.

The other extreme is those group of countries (mainly the new EU member states) where the formal government institutions and planning policies are weak and do not allow sufficient control over the RUR processes. In these countries neither the practically used financial, taxation and sectoral policies and regulatory tools, nor governance processes can assure such a control, thus the public sector is from all aspects weak to control peri-urban development. The most likely consequence is extensive urban sprawl.

The present PLUREL government and governance analysis highlighted the importance of effective formal institutions, planning, financial and sectoral policies on the RUR level, especially targeted to the peri-urban areas. In the absence of such formal systems the more informal (governance) processes can only achieve very limited results in the control of urban sprawl. The PLUREL Policy Brochure raises some hypothetical models how the European level could contribute to the strengthening of the basic formal elements of the public control over peri-urban processes.

Popular science description

In the market-dominated economies of Europe spatial processes around large cities are largely determined by economic investors (developers of industries, offices, retail units, housing) and by the population in their decisions to choose where to work and where to live. The free-market logic of new development usually leads to urban sprawl, as investment decisions are based on short-term considerations, in which green-field sites are preferred against more problematic brown-field sites. Besides, also the costs of creating public infrastructure (such as public transport) are left out from the calculations of the developers.

From the perspective of sustainable development, new investments in the Rural-Urban Regions have to be controlled regarding spatial location, in order to avoid extensive urban sprawl. This control can be effectuated by the public sector through the government institutions and/or formal planning policies, but also the financing frameworks, sectoral policies and regulatory tools play an important role. Finally, the processes and outcomes might largely influenced by more flexible and informal governance arrangements.

In this report we summarise the results of three reports on the different possibilities of public intervention mentioned above. Some of them were studied on the national level in all EU countries, while others on the regional level in the PLUREL case study regions.

The results show, that a strong and effective government and planning system is a good and necessary basis of any successful control over peri-urban land-use developments. If this is underpinned by public policies and regulations and informal governance arrangements leading into the same direction, the regions have good chances to control peri-urban development and avoid urban sprawl. However, a high potential for control by the formal systems is in itself not enough, the potential may or may not be used entirely, depending on the financial and sectoral policies of the public bodies in power and on the outcomes of governance arrangements. An important result of the governance analysis was that is not at all sure that the policy arrangement procedures will achieve positive

results – either because of the inability of the partners to agree or simply because the physical structure of the metropolitan area makes the desired sustainability outcomes impossible or very hard to reach.

Thus the region-wide formal government and planning systems, the financial and sectoral policies, and the governance-type flexible policy arrangements are all needed to handle the very complex and delicate problems of sustainable development of RUR regions, especially in their peri-urban areas. The former assure the decision-making and enforcement structures while the latter are indispensable to develop the content, the compromises to keep development on sustainable path and avoid unnecessary urban sprawl.

On the other hand it is important to understand that a weak potential control level by the formal government institutions and planning systems over market processes is hard to overcome by regulations and policies, even if the willingness exists among the public actors, or by bottom-up governance procedures. The belief that informal governance arrangements can solve all the gaps and problems of formal structures, did not prove to be valid according to PLUREL results.

Keywords

government, spatial planning, governance, land-use change, public control

Classification of results/outputs:

For the purpose of integrating the results of this deliverable into the PLUREL Explorer dissemination platform as fact sheets and associated documentation please classify the results in relation to spatial scale; DPSIR framework; land use issues; output indicators and knowledge type.

Spatial scale for results: Regional, national, European	Regional (case study regions)
DPSIR framework: Driver, Pressure, State, Impact, Response	Response
Land use issues covered: Housing, Traffic, Agriculture, Natural area, Water, Tourism/recreation	Not specific
Scenario sensitivity: Are the products/outputs sensitive to Module 1 scenarios?	no
Output indicators: Socio-economic & environmental external constraints; Land Use structure; RUR Metabolism; ECO-system integrity; Ecosystem Services; Socio-economic assessment Criteria; Decisions	none
Knowledge type: Narrative storylines; Response functions; GIS-based maps; Tables or charts; Handbooks	Texts, assessment
How many fact sheets will be derived from this deliverable:	1

Introduction

In the market economies of Europe spatial processes are determined by the location choices of the “moving actors” (households, industry/businesses, retail/leisure centres). The free-market logic of land development usually leads to urban sprawl, as decisions are usually based on short-term considerations, the costs of public infrastructure and the external effects (e.g. growing travel times and car use) are rarely taken into consideration.

To achieve sustainable development, new developments in the RURs – especially in the peri-urban areas – have to be controlled by the public sector. This might happen through the formal government system and planning policies; through financing and taxation systems and sectoral policies. The local and higher level governments have also direct tools to steer the land development process with regulations applied on new land developments in general and with concrete decisions on larger land development projects in particular. Finally also informal, governance type processes might lead to better control over market processes.

PLUREL context

The current deliverable report D3.3.10 is a common deliverable of PLUREL modules M2 and M3.

Within module M2 (Land use relationships in Rural-Urban Regions), the work packages WP2.2 and parts of WP2.4 feed into this deliverable. WP 2.2 (Typology of EU national governance and spatial planning systems) aimed to give a systematic overview of EU government and spatial planning systems with emphasis on urban development and peri-urban areas. It produced two deliverables: D2.2.1 (The national spatial planning policies and governance typology) and D2.2.2 (Review of further instruments with indirect effect on regulation of peri-urban land uses). Within WP 2.4 (Spatial development strategies and scenarios), deliverable report D2.4.1. gave a review of policy options of how to control rural – peri-urban – urban relationships in order to steer the development of Rural-Urban Regions, and about which instruments are used to conduct planning on a spatially explicit level of Rural-Urban Regions.

Within module M3 (Governance and strategic planning scenarios), work package WP3.3 (Analysis and assessment of regional and local government and planning strategies) and especially its deliverable report D3.3.8 (Assessment of European regional governance and government approaches to maintain green open space in the urban fringe) provides important output to this report.

The results of this deliverable report form part of the two deliverables in WP5.4, as they will serve as the basis of one chapter in the book and also a part of the policy brochure.

Objectives of the deliverable

The objective of this deliverable report D3.3.10 is to integrate the results of PLUREL modules M2 (Land use relationships in Rural-Urban Regions) and M3 (Governance and strategic planning scenarios), give an overview about the role of government systems, planning policies and governance processes, and draw conclusions relating to the government and governance aspect in management of the peri-urban land-use change.

Structure of the deliverable

The report consists from the following parts:

- Planning policy and government system – based on deliverable report D2.2.1
- Interests and instruments of the public sector – based on deliverable report D2.2.2
- Governance processes – based on deliverable report D3.3.8
- Conclusions

1 Planning policy and government system

The basis of this chapter is deliverable report D2.2.1 The national spatial planning policies and governance typology (Tosics, Lalenis et al. 2009)

1.1 Issue

In the market-dominated economies of Europe spatial processes around large cities are largely determined by economic investors (developers of industries, offices, retail units, housing) and by the population in their decisions to choose where to work and where to live. The free-market logic of new development usually leads to urban sprawl, as investment decisions are based on short-term considerations, in which green-field sites are preferred against more problematic brown-field sites. Besides, also the costs of creating public infrastructure (such as public transport) are left out from the calculations of the developers. From the perspective of sustainable development, new investments in the Rural-Urban Regions have to be controlled.

In this report we had to estimate the ability of the public hand (being in decision-making position regarding land-use changes) to control and regulate the competing interests of various actors in the land development market.

The decision of the public hand depends in concrete cases on many factors. In a Europe-wide model we could only take into account the two most general, nation-wide factors: the structure of government and the type of regional/spatial planning policy. In more detailed models additional factors can also be taken into account (see chapters 2 and 3).

The **structure of government** shows the potential strength of the public hand to influence land-use changes in RUR areas. For that factor the local (municipal) government and the supra-local administrative levels had to be described, regarding their role in decisions concerning land use and changes in zoning. Another important piece of information is the size of the administrative units with decision-making power over land-use changes, compared to the RUR region. We raised the following hypothesis: the bigger share of the RUR is covered by such a decisive administrative unit and the less such administrative units cover the whole RUR, the more is the chance of RUR-level interests to be reflected in land-use change decisions. (In this regard all cases where the decisive administrative level is larger in size than the RUR region can be handled equally.)

The type of **spatial planning policy** (on supra-local, i.e. regional or national level) can range from non-interventionist, laissez-faire systems (where local governments have total freedom to take their land use change decisions) to controlled systems, where land-use changes have to be in accordance with higher level plans and/or pre-set conditions (e.g. new residential developments are only allowed along public transport axes). Here the most simple hypothesis could be the following: stronger regional/spatial policies aim at minimising the uncontrolled sprawl of urban land use, through concentrating development either on already used, e.g. brown-field areas or into compact areas of new development, usually with good public transport links.

These two factors, the structure of the formal government system and the planning system are not totally independent from each other. On the one hand, strong regional policy can in principle substitute for the missing consolidation of the local government structure. (A good example for that is the 'communauté urbaine' in France: the compulsory settlement association around cities, with its substantial planning and

decision-making power, counterbalances the fact that the municipal structure of France is the most fragmented in Europe.) On the other hand, consolidation of the fragmented local governments can substitute for the weak regional planning policy.

As the outcome of this task the potential strength of public regulation over land use change has been determined for each of the EU-27 countries. These figures were determined on the basis of national level investigations into the formal government systems and into the regional/spatial planning policies.

The review on European national governance and planning systems at national scale has been developed for all 27 EU countries on the basis of national reports and is expressed through a qualitative matrix at national scale (marks 1-7, determining the potential level of public control over land-use changes). The functioning of the government system (fragmented/consolidated) and the planning policy system (strong/weak control through regional, national government level) are the two dimensions. The typology provides a generic approach for the understanding how the RURs relate to the level where land conversion decisions are taken within the administrative and planning system of a given country. The typology relates the RURs to the system of territorial governments: the size of the different units (local municipalities, supra-local entities) the power and the basic functions they perform, and the planning competencies ascribed to each NUTS level.

1.2 Methodology

1.2.1 Typology of territorial government systems

To arrive to a draft typology to be used in the PLUREL project, the typology of the basic, municipal units has to be analysed together with the dynamic changes regarding the 'middle tier', i.e. the sub-national level(s) of government.

Decentralization from the central to the local level has a somewhat different meaning in integrated versus non-integrated administrative systems: the positive elements of decentralization, e.g. the subsidiarity aspect, can only fully be utilized in a system where local governments are sufficiently large, being able to develop the institutional systems required for exerting their delegated powers. Considering the various models of public administration in different European countries, there is a clear connection between these models and the type of local governments in terms of integrated versus non-integrated system.

In order to arrive from the processes and reforms analysed so far to a useful typology, describing the different outcomes, the following aspects have to be examined within the unitary countries:

- How many intermediary levels exist
- How strong these are (governmental elected by citizens, administrative with general competence, administrative with limited competence)
- To what extent are the basic, local government units integrated.

Thus the main difference between the subcategories of the unitary states is in the relative power of the local and the sub-national (regional) levels of government.

On the basis of these distinctions the following draft typology can be established regarding the forms on the basic, local government tier of the governmental system and the different patterns of sub-national governments structures.

Table 1. Draft typology of territorial governmental systems in the EU27+2 countries

Government structure	1. Classic unitary countries	2. Centralized unitary countries with strong, but non-integrated local authority level	3. Centralized unitary countries with strong, integrated local authority level	4. Decentralized unitary countries with strong local and strong regional level	5. Regionalized unitary countries	6. Federal states
EU-15 and EFTA countries	Greece Ireland Luxembourg	Portugal	Denmark Finland The Netherlands Sweden Norway	France United Kingdom	Italy Spain	Austria Belgium Germany Switzerland
New Member States		Bulgaria Czech Republic Hungary Romania Slovakia Cyprus Malta	Estonia Latvia Lithuania Slovenia	Poland		

Based on Tosics-Dukes, 2005, with alterations based on ESPON 3.2

This suggested typology is based on the joint analysis of the two aspects, the link between the form and content of decentralization and the integrated/non-integrated character of the local administrative system.

From Table 1 it can be seen that within the group of EU-15 and EFTA, the countries with a strong local authority (type 3) are those, where local authorities are the most integrated. This connection, however, does not apply to all the new Member States: while the Baltic States, Slovenia and Poland have relatively large local government units, in the other countries decentralization was strong even if the local governments were small, non-integrated (their average size varies between 1600 and 3200 population in the Czech Republic, Slovakia and Hungary). This resulted in the latter group of countries (type 2) in a fragmented local government system, with high relevance of regional issues, as in these countries a new, 'regional' level of government is needed to make real decentralization of power from the central government feasible.

1.2.2 Country reports

In the process to estimate the value of the potential strength of public regulation over land-use change, the values of the two factors (government and planning) have to be estimated separately. This has been done in the following way:

- Regarding the government factor, first it had to be explored, how are land-use change (re-zoning) decisions taken, by which administrative levels of government. Then the size of the decision-making levels (the local level and the most important supra-local level) had to be compared to the size of the RUR regions (for the latter see WP2.1 of PLUREL, Loibl-Köstl-Steinocher, 2007). The outcome is a classification of the countries into different categories along the government factor.
- Regarding the planning policy aspect (what kind of regional/spatial policies influence such decisions) the main issue is to elaborate whether any supra-local policy exists which has an influence on the land-use change decisions of the local government level. The outcome should be a classification of all the countries into categories based on the potential strength of these policies.

The structure of the country reports has been prepared at the WP2.2 workshop in Kavala (June 2008). The reports are mostly based on existing literature and databases, but we tried to keep them as up-to-date as possible. Every country report consists of three main parts:

- Description of the government structure (from the land-use decisions perspective);
- Description of the spatial planning system;
- A summary table summarizing the main points of information and containing the evaluation according to the two dimensions described in the previous chapter.

The government part concentrates on the territorial and institutional organization and responsibilities of the local administrative level, the multi-level government structure and the trends affecting the development of the government system.

The planning part includes the style of planning, the planning hierarchy (institutions and instruments) as well as a more detailed description of the plans which influence the RUR level.

Most of the country reports have been checked by local experts (PLUREL partners from the given country if available, or other professionals from relevant institutes), whose comments and suggestions were taken into account when updating the reports.

1.2.3 Creation of a joint evaluation system (government and planning)

The delineation of RURs (Rural Urban Regions) in the PLUREL project was created by the researchers of ARC (WP2.1 of PLUREL, Loibl-Köstl-Steinocher, 2007). Their delineation was based on the NUTS3 administrative map, covering the whole territory of Europe. In Europe there are 1278 NUTS3 regions, while the RUR system suggested by ARC contains 904 units (2/3 of which contains one single NUTS3 unit, while 1/3 is a conglomerate of more NUTS3 units).

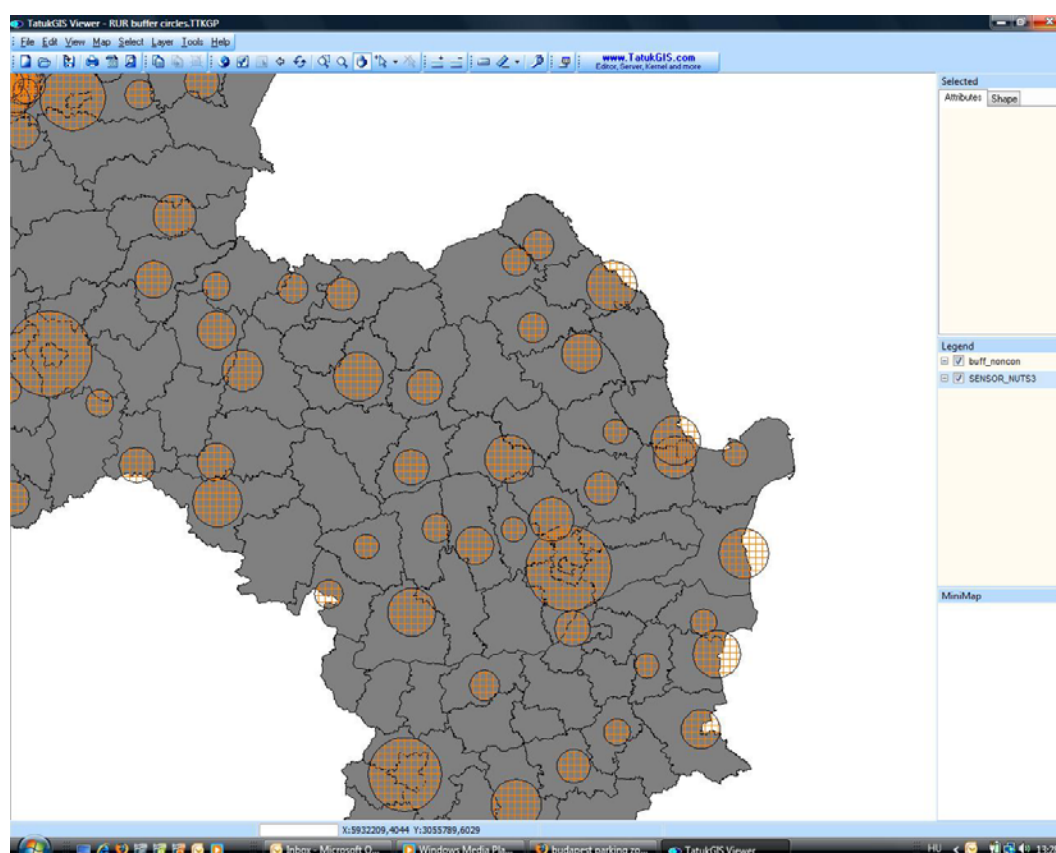
Incorporating the experience of the two previous research projects on European polycentricity – that of ESPON 1.1.1 and 1.4.3 – we found that for our purposes (government and spatial planning aspects around large cities) it would be more useful to work with RURs that are neither based on the administrative border system nor cover the whole territory of Europe.

Thus for our purposes we defined RURs as such interconnected – and interdependent – rural-urban regions, where the urban core city has a population of at least 100.000. This definition emphasized the urban character of the RURs, and was tangible, applicable European-wide. This definition was based on a previous stage of development by the ARC team, where they had delineated all cities belonging to this category based on the data provided by Eurostat, and delineating the urban area around the cities with concentric circles (RUR buffer circles) around the core cities with a radius corresponding to the size of the given city. From this phase of their work good visual representation was available, enabling us to work with it.

After finding a concise and applicable definition for the RURs, our work continued on a country by country basis. Following a 5-step process we tried to determine the exact position of the RURs within the administrative and planning system of a given country, understanding how the RURs relate to that level where land conversion decisions are taken.

1. Determination of the number of RURs in a given country. Based on the map prepared by ARC (delineating the urban area around the cities with over 100 thousand inhabitants with concentric circles with a radius corresponding to the size of the given city), the determination in each country of the number of RURs.

Map 1. Part of the map, showing RUR buffer circles and NUTS3 borders in Romania and neighbouring countries



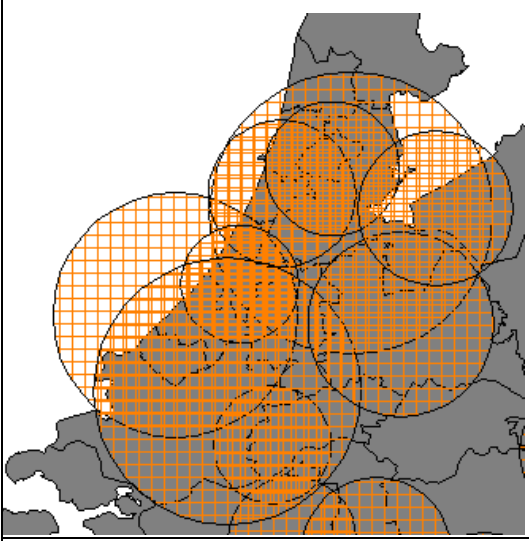
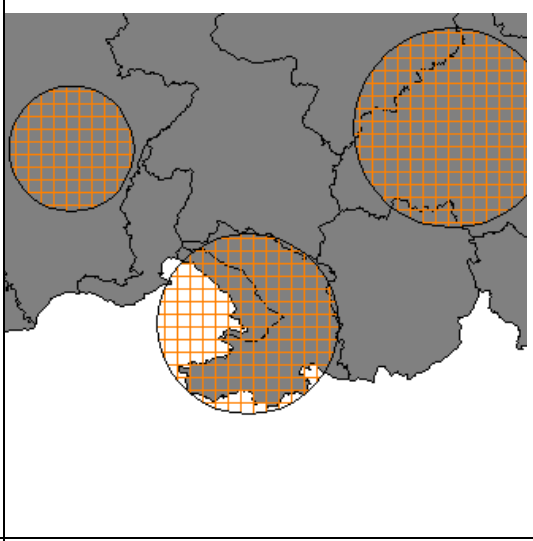
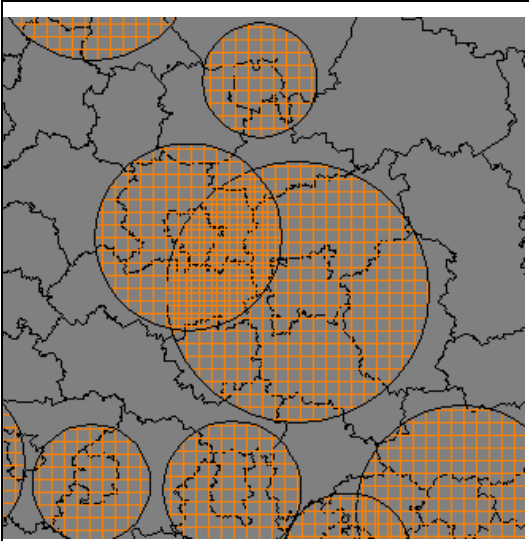
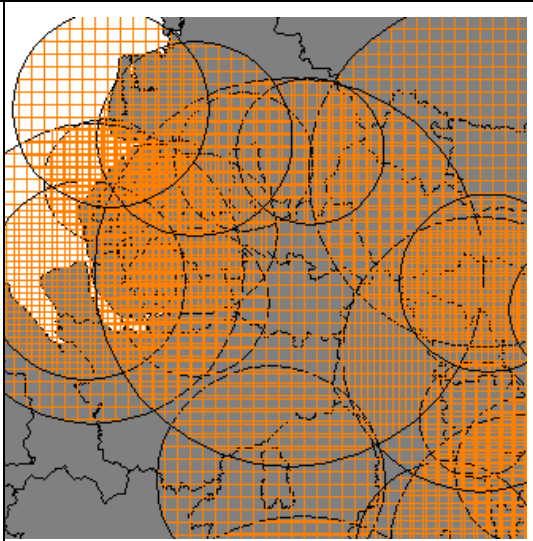
2. The description of the system of territorial governments: the size of the different units (local municipalities, supra-local entities such as counties, regions), the

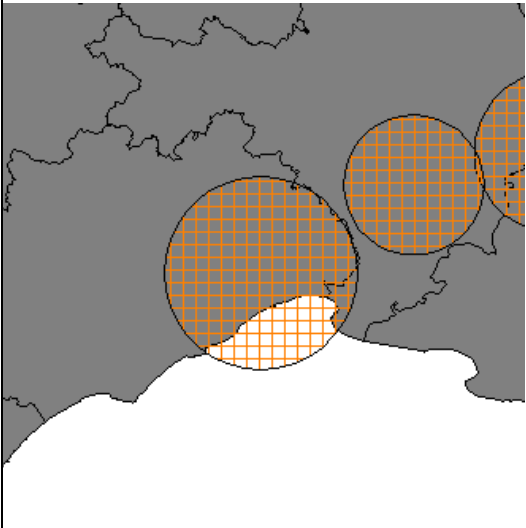
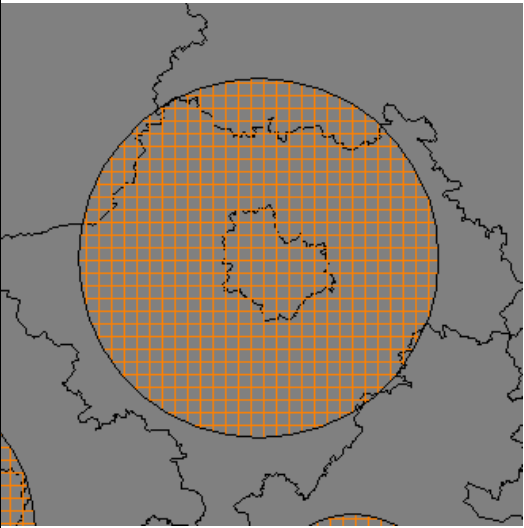
power that rests with them, the basic functions they perform, and the planning competencies ascribed to each NUTS level. The underlying question is which levels play the most important role in land-use changes. (In most cases the local municipalities are in major decision-making position, but the balance between the powers of the local and supra-local levels might differ across the countries.)

3. Comparison of the size (population number) of the RURs with the size of the administrative levels which have decisive role in land-use change. According to our hypothesis, the bigger share of the RUR is covered by an administrative unit and the less administrative units cover the whole RUR, the more is the chance of RUR-level interests to be reflected in land-use change decisions. If the RURs are much larger than the decision-making entities, RUR-wide considerations and interests usually fail.

The following table shows on the example of the PLUREL case study regions how this step would be working in principle:

Table 2. Example of the case study regions

Haaglanden	Koper
	
<p>The RUR of The Hague itself does not exceed the territory of the Province of South Holland. However, the city is part of a larger conurbation, the Randstad (also including Rotterdam, Amsterdam, Utrecht and several smaller cities), which includes large areas of more provinces.</p>	<p>Koper – because of its small population – does not form a RUR region itself, but can be seen as part of the Trieste cross-border RUR region. This covers the entire Province of Trieste of Italy and Coastal Karst statistic region of Slovenia. <i>(Croatia is not included in the map.)</i></p>
Leipzig	Manchester
	
<p>Leipzig can be seen as the main centre of the Leipzig-Halle Rural-Urban Region. It covers many districts (Kreise), and reaches into two states (Länder), but covers only small parts of each.</p>	<p>The RUR of Manchester itself covers many NUTS3 units; basically the southern part of the region North-West England, but also parts of East and West Midlands. The city forms part of a larger area also including Liverpool, Sheffield, Birmingham and numerous smaller cities.</p>

Montpellier	Warsaw
	
The Montpellier RUR covers a part of the Department Hérault.	The RUR region of Warsaw covers 2 of the 5 NUTS3 units of the Masovian Voivodeship. This means the RUR is considerably smaller than the voivodeship, but covers many of its 42 counties (powiats).

The strict implementation of this step would require the comparison to carry out for all the RURs in the country (and that for all countries). Instead of that, to simplify the procedure, we decided to use as proxy variable the combined size measure of these administrative units in the RUR region (average population numbers in parentheses):

Table 3. Government system dimension

		Size of the local level		
		large (>30)	medium-sized (10-30)	small (<10)
Size of the most important supra-local level (land-use change perspective)	Large (>1M)	L/l	L/m	L/s
	Medium-sized (0.5-1M)	M/l	M/m	M/s
	Small (<0.5M)	S/l	S/m	S/s

This simplified method means that the level of fragmentation of the administrative government system regarding land-use changes has been expressed as the function of the size of the local and those supra-local level which has a role to control such decisions. This corresponds to the simplified definition of the RUR regions, the size of which also depends on the size (number of population) of the central settlement.

4. Determining the strength of the spatial planning policy by the assessment of how strong influence the supra-local levels have on land-use changes (by means of e.g. spatial planning on this level, sanctification of local plans or veto power on local decisions). The type of regional/spatial planning policy can be:
 - A. weak level of control;
 - B. medium level of control;
 - C. strong and controlled spatial policies.
5. Finally, based on the careful consideration of the issues discussed so far (and other relevant information from the country report), the territorial government system and the strength of the spatial planning policy are integrated into one evaluation system. The following table summarises the potential combinations of the above described factors, with some simplifications. (These result from the assumption, that if the supra-local levels are very weak, their size does not influence the strength of the system, while if they are very strong, the size of local authorities loses importance as their competence is limited and they are well controlled.)

Table 4. Values assigned to the categories according to the two dimensions

Control mechanisms from supra-local levels of the planning system	Most important supra-local level (from land-use change perspective)	Local level	Value
C) strong, controlled spatial policies	Large (>1M)	any	7
	Medium-sized (0.5-1M)	any	6
	Small (<0.5M)	any	5
B) medium level of control	Large (>1M)	large (>30)	6
		medium-sized (10-30)	5
		small (<10)	4
	Medium-sized (0.5-1M)	large (>30)	5
		medium-sized (10-30)	4
		small (<10)	3
	Large (>1M)	large (>30)	4
		medium-sized (10-30)	3
		small (<10)	2
A) weak level of control	any	large (>30)	3
		medium-sized (10-30)	2
		small (<10)	1

The values in the table reflect the potential power of the public hand to resist the push of market actors towards more urban sprawl, ranging from minimum (1) to maximum (7). The values are based on professional estimates.

This can also be displayed in the form of a matrix, where the functioning of the government system (fragmented/consolidated local and meso level) and the planning policy system (strong/weak supra-local control) are the two dimensions.

Table 5. Values assigned to the categories in a matrix form

	Control mechanisms from supra-local levels of the planning system		
Territorial government system	C) strong, controlled spatial policies	B) medium level of control	A) weak level of control
L/I	7	6	3
L/m	7	5	2
L/s	7	4	1
M/I	6	5	3
M/m	6	4	2
M/s	6	3	1
S/I	5	4	3
S/m	5	3	2
S/s	5	2	1

As a result, a mark is given to the country on the scale of 1 to 7, where 1 means a highly fragmented government system with little supra-local control over land-use changes via spatial planning policy, while 7, as the other extreme, a consolidated government system with high level of supra-local influence and control over land use changes via a strong spatial planning policy.

1.3 Results

Based on the results of the country reports, the countries under investigation can be classified as follows according to the two main dimensions of our analysis.

Table 6. Classification of countries according to the two dimensions

Control mechanisms from supra-local levels of the planning system	Most important supra-local level (from land-use change perspective)	Local level	Countries
C) strong, controlled spatial policies	Large (>1M)	any	
	Medium-sized (0.5-1M)	any	Portugal
	Small (<0.5M)	any	Cyprus, Greece, Lithuania
B) medium level of control	Large (>1M)	large (>30)	Denmark, The Netherlands, United Kingdom
		medium-sized (10-30)	Belgium, France, ¹ Germany
		small (<10)	Italy, Spain
	Medium-sized (0.5-1M)	large (>30)	Ireland
		medium-sized (10-30)	
		small (<10)	Austria
	Small (<0.5M)	large (>30)	Sweden
		medium-sized (10-30)	Finland
		small (<10)	Estonia, Latvia, Luxemburg, Malta ²
A) weak level of control	any	large (>30)	Bulgaria
		medium-sized (10-30)	Poland, Slovenia
		small (<10)	Czech Republic, Hungary, Romania, Slovakia

According to this table and the values assigned to each category, the potential strength of public regulation over land use change in the different countries can be quantified as follows:

¹ While local governments in France are very fragmented, the Urban Communities cover most cities and their agglomerations

² For Luxemburg and Malta the results may be misleading due to the small size of the country

Table 7. Results of the evaluation

Value	Countries
7	
6	Denmark, The Netherlands, Portugal, United Kingdom
5	Belgium, Cyprus, France, Germany, Greece, Ireland, Lithuania
4	Italy, Spain, Sweden
3	Austria, Bulgaria, Finland
2	Estonia, Latvia, Luxembourg, Malta, Poland, Slovenia
1	Czech Republic, Hungary, Romania, Slovakia

The results show a high diversity of government and planning systems in the EU countries from the perspective of land-use change. Regarding the **potential control resulting from the national government and planning systems**, Northern European countries (e.g. Denmark, the UK and the Netherlands) show higher levels mostly because of their consolidated local government systems, while Southern European countries showing a higher potential (such as Cyprus, Greece or Portugal) have more fragmented local government systems, but stronger planning control by supra-local levels. Most new member states show a weak control potential, with the notable exemption of Lithuania (where the tradition of strong planning is based on the presence of the former Western Soviet planning institutions) and to a certain level Bulgaria (with a consolidated local government system).

The results show different values regarding the potential control resulting from the national government and planning systems. However, **these values don't show the real strength of the public control over land-use change**, as in practice these powers can be effectuated in different ways. Because of this, these values **should be seen as a potential resulting from the government and planning systems**. A weak potential control is hard to overcome even if the willingness is given, while a high potential may or may not be used entirely, depending on the intentions of the public bodies in power.

2 Financial and sectoral policies and regulatory tools of the public sector to steer peri-urban land market processes

The basis of this chapter is deliverable report D2.2.2 Review of further instruments with indirect effect on regulation of peri-urban land uses (Tosics, Gertheis 2010)

While deliverable report D2.2.1 gave a broad overview about government and planning systems in all EU member states, developed a common typology and summarized the results of the analysis in the form of a qualitative matrix at national scale (indicating the potential maximal level of public control over land-use changes), the deliverable D2.2.2 aimed to present a deeper view on interests and tools of the public sector to control urban sprawl. With this analysis the potential level of public control over land-use changes (D2.2.1) could be refined towards the actual level of control the public sector is able to exert over land-use changes (D2.2.2).

The deeper analysis of D2.2.2 has been performed only for a limited number of regions from selected countries (representing the categories of the typology developed in deliverable report D2.2.1), namely the PLUREL case study regions and some other RUR regions, selected in order to cover all categories.

2.1 Issue

When analysing the process of urban sprawl it is useful to make a distinction between two types of actors:

- moving actors in the RUR: households (low-middle-high income), industry/businesses, retail/leisure centres;
- non-moving actors in the RUR: key actors in the development process (landowners, developers); local and supra-local governments of the RUR region (doing planning, regulating, financial influencing, investments/taxing).

Based on this differentiation (which has been elaborated in the URBS-PANDENS project) we concentrated on the local and supra-local governments of the RUR region. Although most of the land might be in private ownership, as Larsson (2006:19) put it: ownership rights do not mean development rights, which need approval in former plans. “Most Western countries nowadays consider it a power of the local authority to decide if, where, when and how a development may take place.”

Thus the local and supra-local governments are in key position to influence land development in the RUR region. We analysed

- a) which factors are determining their interests and
- b) what tools they have to fight urban sprawl, through influencing the decisions of the moving actors.

The public (government) actors can determine the conditions for new developments and through this to influence the suburban and periurban processes. There are differences between countries, how the decision-making power is allocated across the different levels of governments in the RUR area. For the subsequent analysis the emphasis is laid on those government levels, which are smaller – regarding their territory – than the RUR area. The sub-areas of the RUR, belonging to different governments with different regulations, might easily find themselves in competition with each other to attract the moving actors.

On the basis of more detailed information acquired from PLUREL partners during the Koper workshop it can be summarised, that in an optimal case the interests of the different actors in the land development process have to be clear, the value of land before and after development has to be known, and transparent procedure should be in place (with a leading role of the public sector). This would allow clear decisions to

- allow or not the development
- share the benefits (land value increase)
- share the costs (infrastructure development).

2.2 Methodology

2.2.1 The financial, sectoral and regulatory factors analysed

Local governments are embedded into the national regulations on public sector financing, taxation and sectoral policies. These regulations and policies are usually not studied in details when discussing the dynamic processes in the RUR areas, although they might strongly influence the motivations, the „behaviour” of local governments.

Based on a literature review, a number of factors have been identified as influencing the government actors in their decisions about peri-urban land use, and also a number of possible – and often innovative – tools have been found which could in an optimal case allow the government actors to follow a more flexible and at the same time more sustainable land-use policy.

a) Factors influencing the interests/motivations of government actors in RUR area processes

Among the factors influencing the interests/motivations of the government actors in regard to the processes in the RUR area, the following have been discussed in details:

- the local government financing system (from where and according to which parameters the local governments receive their revenues);
- the taxation system (the existence of different types of taxes the local governments are allowed to levy and the spatially relevant consequences of these taxes).

a1: Financial transfer system

There are large differences across European countries regarding the local government financing systems, determining from where and according to which parameters the local governments receive their revenues. From spatial (metropolitan, urban-rural) point of view there are two questions of interest. One is the regulation along which transfers from supra-local (central, regional) levels are directed towards the local governments. The other is the level of independence given to local governments to raise their own revenues – this will be discussed in the next point, dealing with taxation systems.

Once the total amount to be distributed in a given year to the local governments is determined, allocations among local governments are typically made in four ways: by returning shares to the jurisdiction from which the taxes were collected (derivation principle); by formula (which can vary from very simple models -- considering just the number of residents -- to more sophisticated models -- taking into consideration some expenditure needs); ad hoc or by reimbursing costs.

According to the level of the autonomy of the local government which will use the transfers there are unconditional (or general purpose) and conditional transfers or grants. In the case of unconditional transfers local governments have full control over the use of the money, while in the case of conditional transfers the purpose of the use of the money is strictly defined ex ante. There are also so called block grants that can be freely used by local governments but in a certain defined area of local government services.

In the higher-level financing of public services it is of crucial importance, to what extent the real net costs (deducting fees collected for the service) of the services are covered by these transfers. If the centrally given normative support only covers e.g. 2/3 of the real net costs of providing the given service, the rest has to be assured from the budget of the local government which runs the service.

The grant allocation principles influence the behaviour of local governments to a great extent. If the share of general purpose transfers and/or grants calculated by a simple formula (number of residents) are high, this creates interest to increase the number of population in general. Regarding the conditional transfers which are service-related, local governments have more “positive interests” in those services which are to a great extent financed by the higher level transfers. On the other hand, this interest is much lower in the case of the centrally less financed services.

Some public services have spillover effects (or externalities) on other jurisdictions. Examples are pollution control (water or air), inter-regional highway, education and social services, recreation facilities, etc. The spatial consequences are clear: local governments are the less ready (eager) to run a public service the larger share of the real net costs has to be financed from their own budget. If a public service gets little higher-level financing, the interest of the local government is not to run this service but convince the population to use this service in another settlement. In this case the population is using the service as “free rider” in the other settlement (as they are not resident there, thus they do not contribute with their taxes, etc, to the general budget of this settlement).

As a consequence, families moving out from the city to suburban settlements often face the lack of services – especially of those services which are less financed by higher level financial transfers. In such cases suburban families are forced to use these services in the city from where they moved out, contributing to the increase of suburban traffic and to the increase of financial difficulties in the core city budget.

To solve such problems metropolitan-wide programmes can be set up for the delivery of local public services with inter-jurisdictional spillover effects. This is, however, only possible if a higher level law makes this compulsory (see e.g. the French intercommunal associations or the German Transport associations) or the municipalities of the area

cooperate with each other. A financial agreement has to be reached, in the framework of which the municipalities where such services are not offered, contribute to the costs of the municipalities which run these services, proportionally to the number their residents (the free riders) who use the services.

a2: The local taxation system

Although most productive revenue sources are assigned usually to the central government, as part of fiscal decentralization a certain portion of financial sources can be assigned directly or indirectly to local level. There are some arguments for levying taxes at lower level of government:

- Provision and financing of services at a local level might induce improvement in attitude to taxation.
- Higher local tax revenue might reduce the dependence on state budget support.

The share of financial sources which are assigned directly or indirectly to the local level indicates the level of financial independence of the local governments. Needless to say, there are huge differences in this regard across Europe, ranging from 60-70% share of local taxes in the revenue of the municipalities (Denmark, Sweden) till only 25% share (England).

Benefit taxation refers to tax systems in which taxpayers are taxed according to the benefits they receive from public expenditures. In the alternative “nonbenefit” tax systems there is no link between taxation and local government services (one form of this is “ability-to-pay” taxation). According to the economic “rules of thumb” sub-national governments in order to control their own revenues and to be able to act responsibly when making their own policy choices, should rely as much as possible on benefit taxation of mobile economic units, including individuals and mobile factors of production. To the extent that local governments make use of nonbenefit taxes, they should employ them on a tax bases that are relatively immobile across local jurisdictions (Oates 1996, 36).

Property taxes and/or personal income taxes are economically and socially most justified at lower level of government. The property tax is a stable form of revenue, allows only limited tax exportation. It acts as a rough form of benefit charge as well: the value of real estate is strongly influenced by the level of local services. Nonetheless property tax is an unpopular form of taxes because it is a visible tax burden therefore citizens directly confront it. Property taxes levied on plots and buildings discourage investment in improvements. The other important and frequently used form of local taxation is levying a personal income tax generally in the form of a surtax on the national income tax base.

It is a general opinion that taxes on business are very weak on efficiency grounds and are strongly criticized for distorting location decisions. Even so, such taxes are widespread and generally popular by the politicians (as being easy to collect and might result substantial revenues) and by the population (as not they have to pay) as well. (Bird, 1999)

In Europe local taxation is based on property taxes in the United Kingdom, France, Spain or Poland. On the other hand all Scandinavian countries provide good examples for local tax systems where personal income tax plays a dominant role. In that countries local tax revenues amount to even 30-40 percentage of national tax burden.

From the point of view of PLUREL the most important question regarding local taxes is the topic of tax-competition within the RUR region. According to Goodspeed (1998) tax competition results “... when the tax system of one government entity affects the tax system of a second governmental entity, usually through an effect on the second entity's

tax revenues.” If the settlements within the RUR region are entitled to levy a certain type of local tax, and can also determine by themselves the parameters of this tax (within the framework the taxation law allows), the result is usually tax competition: some settlements will lower the percentage in order to become more attractive towards the mobile actors.

It is easy to assume that tax competition between the municipalities of a RUR area is harmful as it distorts the location decisions of mobile actors. However, economic literature shows that this is not always the case. Analysis shows that horizontal (i.e. between local governments) tax competition can result in an efficient allocation of resources if the taxes used are benefit taxes. According to Goodspeed (1998) in such cases “... firms and individuals will sort themselves among jurisdictions to obtain their most preferred tax-expenditure package in the same way that individuals shop in the private market. Benefit taxes reflect social marginal cost and therefore lead consumers and firms to choose jurisdictions efficiently. If taxes do not reflect benefits, however, externalities are created so that tax prices diverge from social marginal cost. This creates incentives for inefficient location decisions. ... Consequently, one cannot gauge the level and effects of tax competition simply by analyzing differences in tax rates.”

On the basis of this overview RUR regions should survey the local taxation systems applied across their settlements. Exploring these taxes the major question is to find out, which of these create horizontal tax-competition within the region and how strong this competition is (to what extent is it influencing the location decisions of the moving actors). In order to estimate the real effect of this competition on the functioning of the RUR region the given tax should be analysed, to what extent it can be considered as benefit tax, i.e. to what extent is it levied on the basis that benefiting businesses should pay for the benefits they receive from local public services? Finally, the chances/discussions of higher level regulations (e.g. in order to limit such competitions) should be explored.

b) Sectoral policies

Among the sectoral planning, policies, regulations and subsidy systems the following have been selected for more detailed examination:

- infrastructure and economic development;
- transport;
- housing.

It is clear that there are many more sectoral policies with huge effects on peri-urban development. Some of these, especially those linked to the environmental sector, are discussed elsewhere in PLUREL. The three sectors picked for more detailed examination give in any case an overview about the spatial consequences of sectoral policies in RUR areas.

b1: Economic development and infrastructure

Economic development and infrastructure is usually planned parallel on different government levels. While national plans and policies deal with macro-regional aspects (such as international competitiveness and regional inequalities), the regional and sub-regional ones are more concrete and territory specific.

From the perspective of the development within the RUR area it is of crucial importance, on what level decisions are taken about economic and infrastructure development. If such decisions are taken on regional, or any other administrative level which cover the RUR area, there is a high chance that the sustainability aspects of development will be taken into account – new economic investments will be in accordance with the other infrastructure conditions for development, taking also environmental and social aspects into account. The chance for unsustainable development is much larger when these decisions are decentralized to the local government level – especially if the local government system is fragmented, consisting of many small, non-integrated local governments (i.e. preference is given to local autonomy over the efficiency aspect of service provision).

If the strength of supra-local administrative levels to steer economic development processes is weak (e.g. limited to drawing non-compulsory structural plans, regional economic development concepts), the real decisions to attract economic investors are taken at the local level. Local governments can decide about the level of local taxes, as discussed in the previous chapter, but also about direct or indirect subsidies (e.g. in form of subsidies to infrastructure development) given to investors, in order to attract new developments to their territory. Agreements between the local governments and the investors might be kept secret referring to it as private business matter. In the lack of higher level regulations the municipalities do not even have to take into account the interests of the surrounding areas (whether the planned investment will cause any harm to other municipalities through increased traffic, pollution, etc). In extremely decentralized systems probably the only regulation to be taken into account is the EU competition legislation which forbids giving too much subsidies to investors which would distort the functioning of the free market.

In the national patterns of the development of infrastructure similar differences can be seen across Europe. Also here the most problematic case from the perspective of sustainable development is the strongly decentralized systems with the almost total control of the local government over new infrastructure investments. In such cases not only the RUR-level coordination is difficult but even to achieve concerted actions between neighbouring municipalities.

b2: Transport

According to a recent summary on transport problems (European Commission, 2009) urban areas pose the main challenges to transport policies from both sustainability (CO₂, air pollution) and competitiveness (congestion) viewpoints. Urban traffic and congestion is expected to grow as a consequence of increased urbanisation and greater urban sprawl. Congestion reduces the logistic efficiency of deliveries. Besides the obvious problems of urban transport, also international and inter-regional transport will more and more suffer from the ‘last mile’ problem (virtually all transport tasks/routes start and end in dense urban areas).

Cities may not be able to accommodate much larger volumes of private cars as infrastructure space to drive and park may be limited. Many cities might have to find radical ways of dealing with congestion. From the European Commission report many important statements and suggestions can be derived regarding the future of transport, i.e. on the required direction of changes:

- Urban places are the main nodes in the transport system of larger areas. In these nodal points the links between the different transport providers (local and suburban transport companies vs. long distance transport providers) of different size and ownership have to be optimized. Coordination and multi-modality should enable the access to public transport and reduce the need to use the car to

approach the urban core. Thus “co-modality” should be achieved in such a way that the share of private car use should decrease. i.e. steps towards modal shift should be done.

- Financial regulations, such as taxes, charges and emission trading systems should under no circumstances create incentives for car use. Just the contrary: such tools should ensure the internalization of external costs of transport, while keep the free choice of users regarding transport modes. Only real prices, which fully reflect costs, can lead to economic efficiency.
- In the case of new developments (commercial, industrial, office, housing, etc.) above a certain size, the planning process should include as a compulsory element the preparation of a mobility audit, the results of which should be taken into account in the locational decisions, within the framework of strict land use policies.
- On the top of all these measures, in the most dense urban areas – besides the improvement of public transport services – the application of special mobility management tools, such as green zoning and urban road pricing should be considered. These measures should contribute to the behavioural change of transport users without decreasing the mobility options.
- Public authorities have an essential role in providing the planning, the funding and the regulatory framework for a complex system such as that of transport. They should also act as catalysers in city-region wide public transport associations.

For PLUREL transport is of key importance as RUR regions include territorial units with very different densities, ranging from high-density core urban areas through medium density residential, office and commercial parks to very low density peri-urban areas. These units have usually very different dominant transport modes, ranging from high-capacity fixed track rail-metro-tram systems through buses till the individual cars.

The big challenge for the RUR regions is to find the optimal way to connect these transport modes to each other, ensuring very different aims at the same time: avoid congestion in the dense urban areas, assure mobility options even in the low density areas while control for the sustainability of transport and the reduction of urban sprawl for the whole area.

The good organization of transport across the RUR area, based on public transport association for the denser urban areas and extended by good opportunities provided for changes between different transport modes (P+R, etc) can become one of the strong identity elements in the strengthening of the RUR cooperation.

b3: Housing

In the development of RUR regions housing is one of the important aspects. It is in direct connection with the spatial moves of households and in indirect connection with those of the business actors.

American surveys clearly show how the process of suburbanization of the households was followed by the suburbanization of retail, office and all other business investments. In Europe, however, there are different patterns of these processes observable. In the case of Germany, for example, Fassmann has shown the opposite sequencing: it was the capital which went out from the cities first. As an additional process, the western capital investments into the eastern part of Germany were directed to the suburban areas instead

of the cities themselves. However, the German example is special, connected to the enormous state subsidies given to all kinds of capital investments in Eastern Germany, without, unfortunately, to control the spatial consequences of these subsidies. In the other post-socialist countries such subsidies were not given to investors, thus suburbanization processes are closer to the American pattern, i.e. in the beginning the movements of the households played the more important role. (The early suburbanization of the capital was also hindered in these cities by the fact that suburban locations had very underdeveloped infrastructure.)

The mobility of the households is in a natural way very closely linked to housing policy. Both the market processes and the public interventions (subsidies, regulations of the different construction and renovation forms, available financial means) have to be surveyed in order to be able to explore and explain the spatial consequences they cause in the movement of households.

In the development of the RUR areas housing policy (and in a narrower sense the cooperation of municipalities in the planning of housing) might play a double role. On the one hand, housing might have strong 'regulatory' functions. Residential locations largely influence the environmental and social conditions in an area and they also influence the spatial allocation of wealth and poverty through the taxation aspect. Cooperation between the municipalities of a given area in land-use and housing policies might help to avoid urban sprawl and its non-wanted negative externalities, such as traffic congestions, air pollution, social segregation. In this regard territorial cooperation (based on jointly accepted regulations) in housing policy issues might efficiently contribute to a more balanced, cohesive and sustainable functioning of the RUR areas.

On the other hand, housing has also links to the 'positive', win-win agenda of the economic development oriented, broader territorial cooperation aiming at stronger competitiveness. If housing is included into multi-sectoral strategic planning, this might help to establish strong link between the development of residential and working places in the RUR area, which is necessary to avoid the increase of traffic demands. Furthermore, housing is one of the main aspects of 'Quality of Life', thus it is an essential condition for the improvement of the economic competitiveness of the RUR area (without good quality housing supply no good quality workforce can be attracted) and it also connects directly to economic functions (building industry).

Consequently, the housing sector can potentially play an important role to strengthen both the cohesion-sustainability and the competitiveness aspects of the development of RUR areas. This is a strong argument to control the housing sector by public considerations from a higher territorial level, such as the functional urban area or the RUR area. If agreements can be reached on territorial housing policy cooperation (controlling access to and distribution of housing development possibilities, such as developable land, infrastructure), this might ensure the environmentally and socially sound functioning of the broader areas. Moreover, new housing development strategies agreed for larger areas, if well connected to economic development potentials, might contribute positively to the competitiveness of the RUR area.

The spatial, distributional effects of new housing investments might easily create conflicts between the housing and urban aspects. Without any public intervention the affordability aspect requires the construction of new housing in outside, more remote areas (with lower land values), which, on the other hand is increasing transport demand and is therefore in clear contradiction with the basic principles of sustainable urban development. The conflict is also obvious in the opposite direction: any prescriptions for more sustainability in housing (e.g. zero-emission construction) makes housing more expensive and therefore less affordable.

To handle this contradiction there are different public interventions possible. On the one hand, it is possible to ensure the affordability aspect for a substantial part of new housing

which is built according to the principles of sustainability. The method is to prescribe by law the minimal share of social (affordable) housing in all new developments. The PLUREL case study regions include examples on this approach.

On the other hand, it is possible to ensure the sustainability aspect for a substantial part of new housing which is built according to the principles of affordability. This can be achieved through creating links between new social housing and spatial planning decisions (e.g. put new social housing close to public transport); through public interventions into the land market, such as land banking and selecting investors for the construction of new housing on the land sold by the municipality by the criteria that in the new housing project both sustainability and affordability principles have to be applied.

European countries apply different models where to put decision making power in housing issues. In the majority of countries housing matters belong to the exclusive rights of local municipalities. In some countries, however, housing matters are transferred totally or partly to a supra-local level.

The UK and Netherlands are just two examples where decisions about the number of units to be built are taken „above” the municipalities. In this model interesting contradictions have to be solved. In the Netherlands, for example, “housing” is the task of the city-region, regarding production and allocation, while to set up visions for the future is the task of municipalities. These aspects, however, are difficult to separate in this way therefore the city-region starts informal discussions on housing visions of the future, in which all municipalities participate.

Another potential way to influence the housing market is to issue compulsory guidelines about the spatial allocation of new housing construction. In some UK regions there are ordinances about the minimal share of new housing to be built on brownfield land, while in the Netherlands for the share to be built within the existing borders of developable land of municipalities. In France there is an attempt to link housing development plans to the areas where public transport infrastructure is being developed. Germany introduced nationally funded urban renewal programmes for city centres in Eastern Germany, and there are integrated regeneration programmes which also include the demolition of unnecessary housing stock (from 2002).

c) Tools for the public sector to steer the land development process

Among the tools the public sector has to steer the land development process (through influencing the parameters of new developments which determine the interest of the moving actors), the following preserve most attention:

- regulations applied on new land developments in general, such as sectoral requirements attached to permitting larger new land developments (balance between jobs and homes, transport services, physical and social infrastructure requirements) and financial regulations, such as taxes on green field investments, subsidies for brown field redevelopment;
- rules applied in the case of concrete decisions on larger land developments: possibilities for the public sector to recapture some part of land value increase when re-zoning a piece of land is allowed or at the moment when building permission has to be issued for the planned project.

c1: Regulations applied on new land developments in general

Jorgensen et al (2007, see WP2.4) give an overview about the possible regulatory tools to manage urban growth. European practices are very much concentrating on „... restricting urban growth through land use regulations that hinder or forbid urbanisation in certain parts of the urban fringe or the peri-urban areas ... urban growth boundaries, various forms of zoning, green belt protection, or the like. These strategies are thus connected very strongly to protection of land from urban development rather than attracting urban growth to the more densely built up areas.”

In the USA strict planning tools used in most European countries (zoning regulations, clear limits of developable land, etc.) are not universally applied. Instead, there are many local attempts to control the otherwise quite un-regulated urban development and from these interesting and innovative ideas can be learnt. Many of the American attempts can be summarized under the heading of “smart growth techniques” which aim to achieve more sustainable development through economic incentives and disincentives, rather than strict planning regulations. “Economic incentives comprise several instruments: development impact fees that internalise infrastructure costs via a fee on new development corresponding to the infrastructure services cost, transfer of development rights (TDR) from some areas to others in a sort of quota organisation, and tax reductions in areas that meet certain requirements (density, nearness to public transport) and direct support for denser and socially mixed neighbourhoods as well as for infill and revitalisation.”

Some special versions of smart growth techniques (applied in certain especially innovative US cities) are the following:

- maintaining balance between jobs and homes: larger office developments are required to pay contribution to the fund of the city from which affordable housing is being built (Santa Monica)
- maintaining a minimal level of physical and social infrastructure services: as a result of new private developments (office, retail, housing) the level of public services should not decrease below a certain threshold – if this would be the case, the private developer has to contribute to the development of the public service or has to postpone the development (Boulder) until the public sector increases the level of service
- maintaining a minimal level of transport services and/or opportunities: as a consequence of large developments transport possibilities usually deteriorate – in Palm Beach county a plan about future road congestion is prepared and if the outcome shows significant deterioration, the private developer has a choice to contribute to road development or wait until the public sector is able to do this. In many European cities private housing development schemes are obliged to contribute to the establishment of links to the public transport system.

A special version of these techniques is that of Transit Oriented Urban Development (TOD), addressing the relationship between transport infrastructure and urban development. “TOD implies that the link between urban development; functions; and public transportation is designed at the project level or through targeted policies. In the US TODs are part of the “Smart Growth” agenda and are promoted in different ways, depending upon the city or state in question (zoning regulation of use, parking, and possibly ‘density bonuses’) ...”.

Among the European versions of the TOD approach the Dutch ABC-location principle and the idea of VINEX locations for residential development is well known. In Denmark the general principle of proximity to train stations is applied to the location of intensive land uses. The Montpellier SCOT plan defines different urban densities, with special regard to

increased urban densification around new tram stops (as part of priority for urban renewal in a strip of 300 m along the tram lines).

It is an important lesson to be learnt from the American examples, that “...local growth management programs without a state-wide framework have negative consequences, such as regional traffic congestion, increased housing affordability problems, income segregation, etc. ... therefore growth management need to be practised at regional or state level.” This observation is equally valid for the more traditional planning tools, such as zoning: restrictive measures only have real effects if introduced for a sufficiently large area, otherwise the development power goes just outside the restricted area, causing even more trouble, than in the case without the restriction.

A seemingly easy and direct way to influence the spatial allocation of new construction into sustainable direction is to introduce a differentiated taxation policy: to levy a tax on greenfield investments, while introduce subsidies (negative tax) for brownfield redevelopment.

Jorgensen et al (2007:18) give the following analysis about this tool. “The taxation of new developments on the fringe is generally judged to be effective in reducing urban sprawl. Such taxation was included in the policies being modelled in the PROPOLIS as well as in the SCATTER project. According to the models, the effects of putting a tax on all new developments is hard to distinguish from zoning and urban growth boundaries and is likely to be just as efficient as such more direct measures of control. Similar results have been found in the USA (Turnbull 2004). There are questions, however, to the spatial precision of such (dis)incentives for sprawl. Also the problem of distributional effects (the affluent would be able to afford higher taxes) emerge so such a policy may not only reduce sprawl but also be likely to generate affluent suburbs and thus segregation by income.”

c2: Rules applied in the case of concrete decisions on larger land developments

Besides the discussed general regulations applied on new land developments, there are two situations, when local governments have key role to play in the process of land development. The first is the case of land-use change, when the planned development requires a decision on re-zoning a piece of land. The second is the moment when building permission has to be issued for the planned project.

In both cases the value of the land increases substantially as a result of the public action and the local government aims to capture some part of the value increase. This is part of the more general topic of “value capture”, which “... refers to a type of innovative public financing in which increases in private land values generated by a new public investment are all or in part “captured” through a land related tax to pay for that investment or other public projects.” (Wikipedia).

The gap between the agricultural value of land and the residual value of it (when it becomes urbanised) can be very substantial amount: according to a brochure of TCPA (2007) agricultural land in England has a market value of 8-10 th GBP/hectare, while this value increases to at least 800 th GBP/hectare, when the owner is given planning consent for new housing (industrial or commercial uses result in somewhat smaller value increase).

In a more precise analysis the land value increase should be considered to consist from two parts. The first relates to the decision on re-zoning the piece of land, which, however, does not create yet building rights, to which also the second decision, to give building permission to a concrete project idea, is needed. At the time of the decision to give

building permission to a concrete project idea also another financial issue emerges: the share of the costs needed for infrastructure development. Given the fact that the building permission contributes to the further increase of the land value, the local government might try to raise as condition for the building permission that the developer contributes to the costs of the necessary infrastructure developments. Of course there are very different conditions existing across the EU countries for such negotiations between the local governments and developers.

Although it would be essential to distinguish between the re-zoning and the building permission phases, this became impossible due to the lack of enough detailed and precise information. Thus we look to the question, how the local government can re-capture some portion of the land value increase due to either parts of the land development process.

The analysis of Wolff (2007) shows that at least four actors are in competition with each other to get the largest possible share of the plus value, created by re-zoning or building permission: the landowner, the developer, the owners of the new homes and the public hand. The latter has in principle several tools to get a share of this increase: „having the land owner pay for or take care of some measures, by following an integrated land development procedure, entering into an agreement, levying a tax or obligating the land owner to in kind contribution.” (Wolff, 2007).

These options, however, are not easy at all and depend on the legal system of the country. The brochure of TCPA (2007) describes the four attempts of the UK government to ensure a share for the public sector from the land value increase. The first attempt was in 1947 when landowners were obliged to obtain permission from local authorities for any land development. This and the following two government attempts were unsuccessful, the measures introduced by the Labour government were usually withdrawn by the subsequent Conservative governments. The last attempt is the 2004 Labour proposal to introduce a Planning Gain Supplement to impose a charge, levy or tax on the increase in the development value of land attributable to the grant of planning consent. The outcome is not decided yet, even if the government only aimed to introduce this measure at a modest rate.

Austria is another country where the re-capture of the value increase of re-zoned land is difficult. According to a decision of the High Level Court in Austria it is forbidden to combine public and private law – thus zoning cannot be connected to taxation... Therefore the only possibility for the public actors is to be more active in the land market, as the public sector can only get back money if participating in the process as part of a development company.

The history of the Dutch regulation is described in Wolff (2007). After long debates the outcome is a new regulation, which allows the local municipality to capture some part of the land value increase – however, not as a „profit tax”, but in a regulated process to force the landowner to pay for the quite broadly defined costs the public sector has in connection with the development. Because of the many possibilities left open by the law, the system allows more than simple cost recovery. The process is made transparent, insofar the public costs have to be reported and proved that they are used for the area and improve spatial quality.

In Hungary the legal possibilities for value increase taxation are missing. Recently a flexible tool has been introduced in the building law, that of “development agreement”. This allows the local government to negotiate with the developer the financial conditions for new developments, in case municipal decision is needed because of re-zoning of land or giving building permission for the project. Even if such development agreements allow to some extent to clarify the situation, they clearly do not compensate for the lack of any value-increase taxation. Neither is solved the problem of lack of territorial cooperation between the municipalities. The development agreements are by purpose very flexible, there is no prescribed content. This is a reaction to the well known fact that municipalities

use very different methods to calculate the required financial contribution from the developers.

As a consequence, in Hungary a competition situation emerges between the municipalities, who offer better circumstances to the developer. This logically leads to the fact that developers will determine the place and the sequencing of their developments according to the financial criteria the different municipalities raise. In this way the financial circumstances and not the logic of the development determines the location decision. (As a further problem the municipalities usually do not have enough highly trained officials to hammer out correct development agreements with the developers – and also the danger of corruption is high.)

The contractual relationship between the local municipality, the landowner and the developer is broadly used in European countries. The content of the development agreements differs across countries, and besides the economic and financial conditions in many cases also the timing is specified: in some countries after a given number of years the land can be expropriated by the municipality on before-development value if the developer does not perform its duties (Larsson, 2006:59).

The British system is based on cases, not rules. Although the size of local governments is large (not fragmented, as in France or Hungary), they are not independent in their decisions, the influence of the central government is substantial through the development agencies. The procedure can be highlighted by the example of Royal Woolwich Arsenal, which belongs to the poorest parts of Easter London. The task of development of a former military area was given to the London Development Agency. After a general plan has been passed by Greenwich authority, the main developer is selected in a competitive bid. The developer has to get the building permissions for each block separately. Until that the value of the plot is not decided yet. 30% of the new flats have to be affordable, the social infrastructure and also the preservation of the heritage values have to be covered by the developer. As a result, in the final evaluation the price of the plot can even be zero, as the developer has many public tasks to perform. However, if a profit is achieved (above a given limit) this has to be shared with the local government.

2.2.2 Collecting information from different types of regions

The detailed analysis of D2.2.2 has been performed only for a limited number of regions from selected countries, namely the PLUREL case study regions and some other RUR regions. The additional regions have been selected in a way to ensure a reasonable coverage of each category of the typology developed in deliverable report D2.2.1. Regions in bold in the table below are those to which the questionnaire (regarding public sector regulations, policies and tools with effects on the peri-urban land uses) has been distributed.

All 6 PLUREL case study regions and all 3 additional regions provided valuable information, which formed the basis for the further analysis.

Table 8. Country coverage of the questionnaire in the typology developed in D2.2.1

Government structure	1. Classic unitary countries	2. Centralized unitary countries with strong, but non-integrated local authority level	3. Centralized unitary countries with strong, integrated local authority level	4. Decentralized unitary countries with strong local and strong regional level	5. Regionalized unitary countries	6. Federal states
EU-15 and EFTA countries	Greece Ireland Luxembourg	Portugal	Denmark Finland The Netherlands Sweden Norway	France United Kingdom	Italy Spain	Austria Belgium Germany Switzerland
New Member States		Bulgaria Czech Republic Hungary Romania Slovakia Cyprus Malta	Estonia Latvia Lithuania Slovenia	Poland		

According to the factors identified (see chapter 2.2.1) concrete questions have been formulated, and a questionnaire has been sent to the selected (case study and additional) regions. The aim of the questionnaire (see the questionnaire in the first part of the Appendix) was to gather concrete information about the selected factors in the selected regions.

2.3 The results of the analysis

2.3.1 Qualitative overview of the case study answers

Financial transfer system

When analysing the financial transfer system of the different countries, the main question is whether the transfer system makes the municipalities interested in raising their population. In most of the regions this is the case, as a high share of revenues allocated from higher levels of government is strongly population-proportional; in most cases the amount of grants from national level is directly connected to the population number of the municipalities. Manchester is an exemption, as there the government grants are mostly connected to specific public services (schools etc.), and the share of directly population-proportional revenues is low.

The other specificity of the Manchester system is that the costs of these services are fully covered by the specific government grants, and thus no inter-municipality spillover

effects occur. This is also the case in Haaglanden. In other regions (Koper, Warsaw, Budapest, Thessaloniki) a large share of these services is partly financed by the municipalities where the service is located. This creates incentives for ‘free rider behaviour’ for other (generally suburban) municipalities, who can raise their population and revenues without increasing their expenditures on services, at least on the short term (as their new residents still use these services in other, generally urban municipality). These effects can, however, be tackled by equalisation mechanisms (Montpellier) or agreements between the municipalities (Bologna).

There are also some other special financial subsidies which might strengthen urban sprawl (as the subsidy to preserve cultural landscapes in Koper) or, in contrary, weaken it (as the ISV subsidy for urban renewal in Haaglanden).

The local taxation system

The local taxation system is strongly connected to the financial transfers, as part of the broader local government financing system. The basic question here is the existence of tax competition within the rural-urban region; if this is too strong, it can lead towards unsustainable land-use patterns not reflecting the regional sustainability perspective.

The negative effects of tax competition usually occur in cases, where the share of local taxes is high and municipalities have a broad freedom to set the conditions of local taxes. This is the situation in Budapest (with the local business tax) and Leipzig (with the income and corporate taxes). In most countries there is an effective control about the rates from a supra-local level, which limits the tax competition (e.g. in Warsaw, Manchester, Montpellier and Thessaloniki). In France tax competition is possible, but only between RURs and not within them. There are also regions where tax competition is nonexistent, because the share of local taxes is very low (Koper, Bologna) or they are calculated according to standard rules (Haaglanden).

As in the case of financial transfers, there can also be special taxation forms influencing the sprawl phenomena. In Haaglanden the transfer tax can be seen as such, while in Koper the lack of a tax on vacant urban sites is regarded as strengthening urban sprawl.

Economic development and infrastructure

Economic development policies can widely influence the site choice of new or relocating businesses. From the point of view of peri-urban land use it is important whether an uncontrolled competition exists between the municipalities of the RUR for the investors – which easily results in a scattered, sprawled, unsustainable land-use pattern –, or the development policy follows a broader, regional-level perspective. In most regions there are strong regional-level players in this field (Haaglanden, Leipzig, Warsaw, Manchester, Montpellier, Thessaloniki), or there is also an effective inter-municipal cooperation (Haaglanden). On the other hand, in some regions (Koper, Budapest, Bologna) economic development policies fall under the an exclusive competence of the local level, or the supra-local control is very weak.

Subsidies to economic development and infrastructure may also strengthen urban sprawl, as it is the case in Manchester, Montpellier, Budapest and Bologna. In other regions no such subsidies have been identified, or even the subsidies tend to support the restructuring of existing business sites (Haaglanden) or the demolition of surplus infrastructure in the special case of Leipzig (as a shrinking city).

Transport

Transport policy has also an important effect on land-use; while car-based cities tend to be sprawling, a more compact urban form is suitable for public transport or walking/biking. Transport and land use policies are interdependent. Among the regions only Budapest can show a relatively high (but decreasing) modal split, i.e. high share of public transport; in the other regions car-use is dominant even within the urban core areas.

While the support of public transport usage by public subsidies is a general feature in all regions, the “negative incentives” aiming to discourage car-use are much less common. In Haaglanden the internalisation of external costs is done by environmental taxes, and there are also some incentives in Montpellier, but otherwise no such interventions exist, mainly due to the local political difficulties to get them accepted (in Manchester congestion charging has just been voted down by the population).

Car-use is even more dominant in suburban and peri-urban areas. Travel-to-work by car gets some sort of tax deductibility in most regions (Koper, Leipzig, Warsaw, Montpellier, Budapest), even if in some cases this is limited (Haaglanden). In Manchester the problem is the tax-deductibility of business car purchase. In the meanwhile, some regions feature an integrated RUR-level public transport system, where the services are commissioned by a transport association (Leipzig, Manchester, Thessaloniki, Bologna) or by another regional-level body (Haaglanden).

Housing

The supra-local control or effective municipal cooperation would be as important in housing as in the case of economic development. However, only a few regions feature a strong national/regional housing policy and/or an effective municipal cooperation in this field: namely Haaglanden, Manchester and Montpellier.

Besides higher-level policies, also housing subsidies can have an impact, depending on whether they prefer new greenfield developments (as in Manchester where VAT is levied on the restoration of old buildings but not on new ones; in Montpellier and in Budapest) or urban renewal (as the urban renewal programmes in Leipzig or city centre redevelopment subsidies in Thessaloniki).

Tools to steer new land developments / Rules of concrete decisions on new developments

Traditional and new, innovative planning tools are available for the public sector to steer land development, but the inventory is different according to the legal system of the specific country.

Regarding the planning system, it is important whether the municipalities are autonomous in planning, or RUR-level authorities have a real influence in practice. The former is the case in Haaglanden and Budapest, while in most other regions the supra-local interest can be incorporated in the planning either by a strong planning system (Koper, Leipzig, Manchester, Thessaloniki, Bologna) or by effective cooperation between the different actors (Warsaw, Montpellier).

Public actors can also try to recapture the land value increase resulting from the rezoning into developable land. This can be done either by active land-market interventions (land

banking), as it is exercised in Haaglanden, and possibilities exist in Koper, or by a tax on the land value increase, which is the case in Koper, Leipzig, Thessaloniki and Bologna.

There are also ways of involving the private developers in financing public infrastructure, either related to their development or in general. The method can be to charge a fixed share of the investment costs (Koper), to raise investment obligations into e.g. green spaces (Haaglanden) or signing agreements between the municipalities and investors about specific contributions by the latter (Leipzig, Manchester, Budapest).

2.3.2 Quantitative analysis of the results

The answers delivered by the selected regions were also analysed in a quantitative way, using a methodology to quantify the information with the help of dummy indicators. The method is described in the second part of the Appendix. As an outcome, we got values (0 or 1) for each answer. Calculating the average of these values, for each topic the regions can have a value between 0 and 1 (higher values meaning less interest/motivation for urban sprawl and/or more control over it). The results are shown in the table below.

While presenting the results it must be emphasized that there are high uncertainties due to the limited number of regions analysed and the very diverse accuracy of the data delivered by the regions.

Table 9. Quantified answers by the regions

	Haaglanden	Manchester	Montpellier	Leipzig	Koper	Warsaw	Thessaloniki	Budapest	Bologna
Financial transfer system	0.67	1.00	0.67	0.67	0.00	0.33	0.00	0.33	0.67
The local taxation system	0.67	0.67	0.67	0.33	1.00	0.67	0.67	0.33	1.00
Local government financing systems	0.67	0.83	0.67	0.50	0.50	0.50	0.33	0.33	0.83
Economic development and infrastructure	1.00	0.50	0.50	1.00	0.50	1.00	1.00	0.50	0.00
Transport	0.83	0.67	0.50	0.50	0.17	0.33	0.67	0.50	0.50
Housing	1.00	0.67	0.67	0.33	0.33	0.33	0.33	0.00	0.33
Sectoral policies	0.94	0.61	0.56	0.61	0.33	0.56	0.67	0.33	0.28
Tools to steer new land developments / Rules of concrete decisions on developments	0.75	0.50	0.50	0.75	1.00	0.25	1.00	0.25	0.50
Tools to steer development	0.75	0.50	0.50	0.75	1.00	0.25	1.00	0.25	0.50

2.3.3 Analysis of the results along the main topics

The results can be summarised and evaluated along the three main topics of analysis in the following way.

Table 10. Summary of the results

	Haaglanden	Manchester	Montpellier	Leipzig	Koper	Warsaw	Thessaloniki	Budapest	Bologna
Local government financing systems	0.67	0.83	0.67	0.50	0.50	0.50	0.33	0.33	0.83
Sectoral policies	0.94	0.61	0.56	0.61	0.33	0.56	0.67	0.33	0.28
Tools to steer development	0.75	0.50	0.50	0.75	1.00	0.25	1.00	0.25	0.50

Regarding the **local government financing system** in some regions (e.g. Haaglanden, Manchester, Montpellier, Bologna) the system does not motivate directly the municipalities to increase their population (which would lead to urban sprawl), while in other regions (e.g. Leipzig, Koper, Warsaw, Budapest, Thessaloniki) such motivations are created by the financing system.

Regarding **sectoral policies** Haaglanden stands out as very few of its analysed policies has a sprawl-oriented territorial impact. (This doesn't mean that high demand or other pressures don't have such impacts.)

Regarding the **regulatory tools**, in some regions (e.g. Koper, Thessaloniki, Haaglanden, Leipzig) the municipalities are equipped with a broad range of tools which they can use to steer private developments.

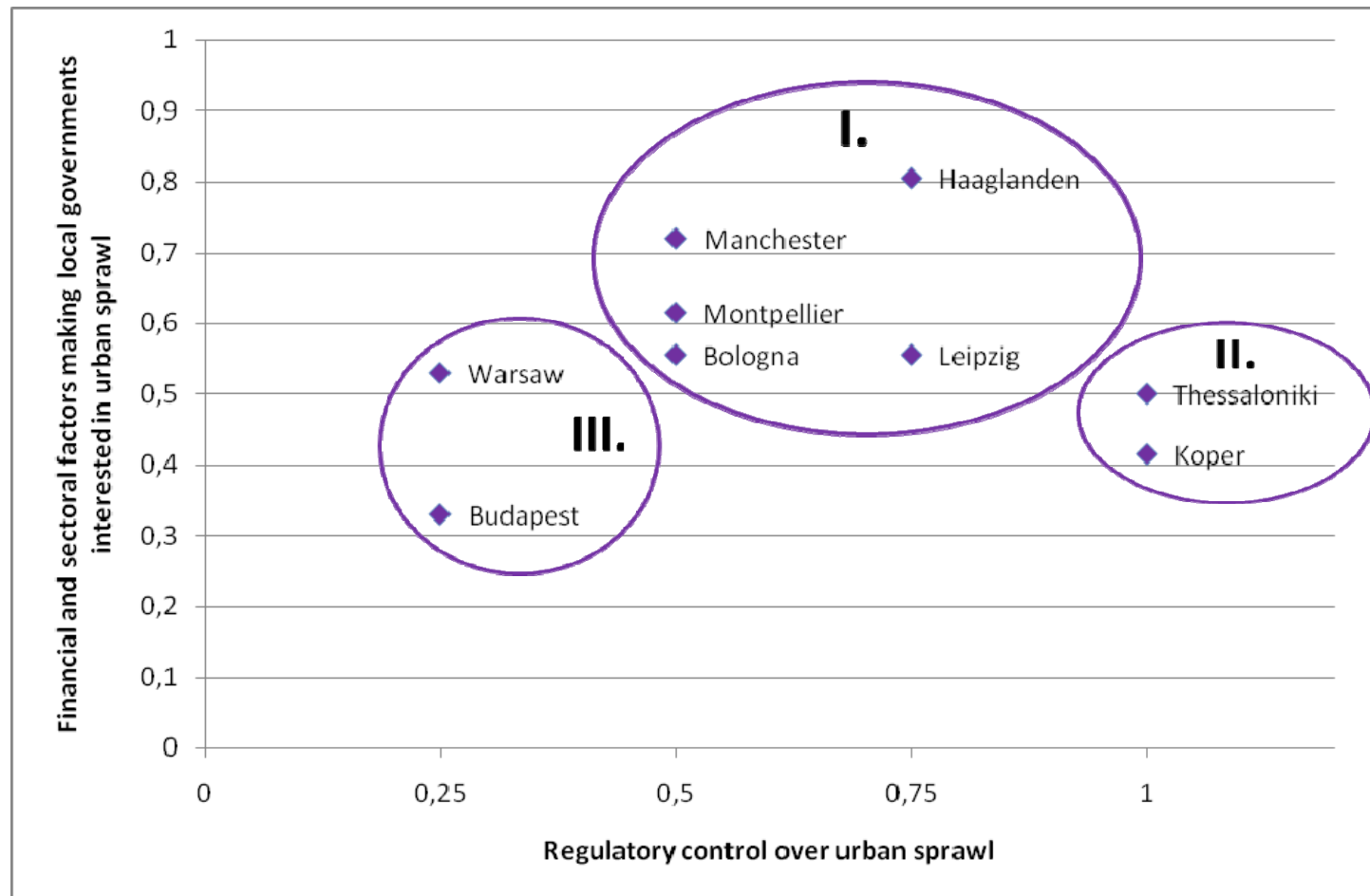
2.3.4 Analysis of the results according to the regions

On the basis of these results the analysed regions can be evaluated in the following way.

In the case of **Haaglanden** and **Manchester** a strong potential control can be seen parallel to moderate municipal interests to increase population. This suggests a high probability for an **effective control over peri-urban land-use**. **Leipzig**, **Montpellier** and **Bologna** seem to be in a less favourable, but still **manageable situation**.

Koper and **Thessaloniki** show a potentially strong, hierarchical government and planning system, while municipalities are strongly interested in expansion (due to the financial, sectoral and regulatory background), which can lead to **conflicts in the land-use** decisions. **Warsaw** and **Budapest** have much weaker government and planning framework, while the financial and sectoral policies and regulations make the municipalities interested to expand urban land-use. In these regions the public control over land-use does not seem to be efficient.

Figure 1: Clusters of regions according to the main dimensions



From the figure it can be seen that **the analysed regions can be clustered into three types:**

- I. Haaglanden, Manchester, Leipzig, Montpellier and Bologna can be considered as **potential “anti-sprawl” regions**, where the financial systems and sectoral policies do not create high interest among municipalities towards urban sprawl, while the regulatory control over urban sprawl (through the regulation of new developments) is potentially strong.
- II. Koper and Thessaloniki show a **mixed picture**: the financial systems and sectoral policies create high interest among municipalities towards urban sprawl. This is, however, confronted with a potentially strong regulatory control over urban sprawl.
- III. Warsaw and Budapest can be considered as **“sprawl” regions**, where the financial systems and sectoral policies create high interest among municipalities towards urban sprawl, while the regulatory control over urban sprawl is weak.

While the first and the third clusters seem to be more or less clear, the second raises interesting question: can a strong regulatory system outbalance the strong financial and sectoral policy interests of local municipalities towards sprawl? Also the case of cluster IV (for which we did not find cases) would be interesting, where such interests only weakly exist, but the control over urban sprawl is also weak.

It must be added, that the interests and tools of the municipalities and the broader public sector is only one side of the game; the other is the strength of pressures towards urban sprawl, due to demographic change, economic development and other factors. This means that even in regions with strong public control sprawl can occur, if the pressures are very strong.

2.3.5 Confronting the regional results with the national frameworks

The results of the analysis can be compared to the outcomes of the deliverable report D2.2.1 (see chapter 1.3), which provided **a quantitative scale showing the potential strength of public regulation over land-use change** in the all EU countries. In the table below the analysed regions are written with capital letters, also indicating, to which cluster they belong to.

Table 11. Comparison of the government and planning system evaluation and the evaluation of further instruments

Value	Countries
7	
6	Denmark, The Netherlands (I) , Portugal, United Kingdom (I)
5	Belgium, Cyprus, France (I) , Germany (I) , Greece (II) , Ireland, Lithuania
4	Italy (I) , Spain, Sweden
3	Austria, Bulgaria, Finland
2	Estonia, Latvia, Luxembourg, Malta, Poland (III) , Slovenia (II)
1	Czech Republic, Hungary (III) , Romania, Slovakia

The table shows relatively strong connection between the national and regional level of analysis. In countries with weak control potential (values 1-2) the analysed regions face financial and sectoral policies which usually create favourable conditions towards urban sprawl. At the same time local authorities in these regions (with the notable exception of Koper, Slovenia) have only very limited tools to control urban sprawl. Thus the deficiencies of the formal government system and planning framework are further strengthened by the public sector financial and sectoral policies and all indicate the weakness of the public sector to control market processes, leading to urban sprawl.

On the other hand, in countries with high control potential of the formal government system and planning framework (values 5-6) regions are subject of financial and sectoral policies which are potentially against urban sprawl. At the same time local authorities in these regions (with the exception of Thessaloniki, Greece) have strong tools to control urban sprawl.

3 Governance patterns and performance of regional strategies in peri-urban areas

The basis of this chapter is deliverable report D3.3.8: Governance patterns and performance of regional strategies in peri-urban areas (comparative analysis of seven case studies in Europe and China) (Aalbers, Eckerberg 2010)

The RURs and especially the urban fringe can be characterized as areas with fragmented jurisdictions affected by multiple-level policies both vertically (across government levels) and horizontally (between governments at same level, across sectors and among public-private actors). There are usually many problems of implementation deficits with sector-based strategies and of fragmented institutionalization. These problems could, in principle, be counter-balanced with increased co-ordination and integration mechanisms.

For this reason it is important to extend the analysis of the formal government systems and planning policies (Chapter 1) and of the financial systems, sectoral policies and regulatory tools (Chapter 2) with the more informal governance processes, which are the subject of the present chapter.

The governance of regional and local strategies for peri-urban land use raises the following questions: What role does government play in relation to private interests to steer the development of these areas? To what extent is it possible to detect patterns of governance that may control such developments? How can policies for the urban fringe be improved to foster sustainable outcomes?

The different strategies in peri-urban areas for dealing with land use planning and policy in the urban fringe are analysed on the empirical basis of the PLUREL case study regions.

3.1 The problem

The different strategies in peri-urban areas for dealing with land use planning and policy in the urban fringe are analysed on the case of the seven case studies from the PLUREL project.

In particular, five different types of strategies are examined: (1) dealing with comprehensive land use planning at regional level, (2) to strengthen agriculture in the urban fringe, (3) to protect biodiversity areas at risk, (4) to reduce housing/industrial building pressure and (5) to integrate tourism and recreation in the development.

3.2 Methodology

Multilevel governance allows decision makers to adjust the scale of governance to reflect heterogeneity. Governance and government are two intertwined but distinct elements of the process of governing. The combination requires the active engagement of local civil society combined with the commitment, leadership and steering by local, national, governments and international authorities.

The multilevel governance processes are analysed through the lens of policy arrangements. Tatenhove et al (2000) define environmental policy arrangements in terms of policy coalitions, policy discourses, rules of the game, and resources. They have analysed how the organization and substance of environmental policy has developed due to the process of policy change. They join Giddens' structuration theory which conceptualizes organizations as social systems, being sets of agents that are nested in structures of rules and resources (Giddens, 1984). In this, the three main dimensions of organization can be distinguished: agents (coalitions), rules and resources. The second aspect of the policy arrangement concept, substance, is operationalised in terms of 'policy discourse' (compare: Dryzek, 1997; Hajer, 1997).

The analysis of peri-urban policies will be guided by these variables to distinguish different patterns of policy arrangements which, in turn, also relate to the two types of multilevel governance. Based on Tatenhove et al, a short explanation to the variables will be given in the following, with some initial thoughts on how they apply to, and affect, our analysis of the outcomes and process of urban fringe policies.

1. Rules of the game. National legislation and institutional structures provide for different planning cultures in the different national contexts, including both formal and informal institutions that involve organizational as well as value patterns. Those differences in terms of spatial planning have been explored and described in a separate report (Tosics et al 2009). In principle, this categorization distinguishes between different types of territorial governmental systems – from unitary to federal states – and between strong and weak local governments. An indicator is created to measure the potential strength of the public hand in spatial planning across the national settings, which can be used to distinguish different emphasis of (state) government versus (private) governance arrangements. The rules of the game can also be examined specifically for the different types of strategies, for example to what extent Type I (vertical multilevel) or Type II (flexible) governance dominates for the different issue areas. The rules determine by which procedures, which allocation of tasks and division of competencies the strategies are to be formed. They further delimit which actors are meant to be involved, how agendas are set and decisions are supposed to be made. The rules of the game may include both formal and informal institutional patterns.

2. Financial and land resources. The allocation of power over land and the mobilization of resources are central to explain how agents maintain and transform their social or physical environment. The ability to achieve particular outcomes also depends on the autonomy and relations between actors, and interrelations between state, market and civil society, which in turn may be classified as state-centred, corporatist, or liberal arrangements where the state agencies are dependent on companies and non-government organizations to create sufficient support and legitimacy for particular policies. For urban fringe policy, it is relevant to investigate what the broadening of policy coalitions (see next) mean for the allocation of financial and land resources, and who takes over power from a potentially withdrawing state.

3. Policy coalition development. A policy arrangement can be characterized by certain coalitions of players (agents) who share interpretation of a policy or resources, identify similar policy goals and mobilize to reach those goals. Some policy coalitions may support while others may challenge a particular strategy. Studying the development of policy coalitions tells us something about how some actors' strategic conduct succeeds while others do not. It also provides evidence on the strength of public versus private governance networks. Empirical observations on the ways in which policy coalitions link between local, regional, national and supra-national levels, and across policy sectors, may also inform about the nature of multilevel governance structures and about to what extent and in which contexts certain coalitions may be successful in achieving its aims. Questions of democratic legitimacy and accountability may also be asked in this context.

4. Policy discourses. A policy discourse refers to a shared way of apprehending the ways in which the problems are defined, reproduced and transformed in particular sets of practices. It provides assumptions, judgements and contentions for interpretative schemes by which meaning is given to environmental (or other) problems, and which form the basis for the design of policies. The mobilizing capability of different policy discourses may be investigated, as well as variations in predominant discourses across countries and different policy coalitions. Such discourses may also provide statements and positions on the role of the state and the nature of interactions among actors in policy coalitions. Further, the nature of policy discourses may reveal patterns of ‘branding’ of policy – i.e. how successful policies are motivated and conceived among actors.

The comparison of assessments in the seven case study areas is made according to the above-mentioned variables on outcomes and processes of peri-urban policies and strategies. Since all case studies did not involve assessment of all types of issue areas, the comparison will pertain to what information was gathered. The impacts of the different strategies have been assessed by both practitioners and researchers. Since such assessments contain inherent uncertainties in time and space we will refrain from making final conclusions on the outcomes for different aspects of sustainability of green open space in the region. Rather, we will present indicative findings based upon observations from the case study research under the heading of ‘performance of the strategy/policy outcome’, which may then be related to the characteristics of policy arrangements for each strategy.

3.3 Results

The D3.3.8 report first delivers summaries of the case study regions which is followed by observations from the case studies on governance and policy arrangements. The concluding part of the report first summarises the comparative findings along the four aspects of environmental policy arrangements, which is followed by the general conclusions.

Governance arrangements

More sustainable development of urban fringe areas that serve the residents of both urban, fringe and rural areas will require first of all that the peri-urban areas are recognized in their own right, rather than merely that of a spill-over area. Inevitably, different interests will clash and need to be resolved, and this will require strong government intervention. Traditional regional and local authority green belt policies have proven successful in quantitative terms in many west European countries. Areas have been preserved as green areas. The quality of these green areas in terms of biodiversity and recreational value (Green Heart / Green Belt in the Netherlands and the United Kingdom) are however contested. Also, the development of the areas has been neglected.

And a wider trend underlies the urban rural balance. Social capital is decreasing as the young and talented are leaving their rural homes for the urban development cores, as observed in Koper (until recently), Leipzig region, Warsaw region, the Netherlands (De Jong, et al. 2009). This is a worldwide trend as demonstrated by UN population data which predict that in 2050 6 of 9 billion world citizens will be living in urban areas. Poor rural come to gain an income, and the successful ones leave the urban cores as soon as they can afford it, in search for a more green, more quite, more healthy environment, if not for themselves, then for their children. Policies of further densification of existing urban fabric, such as in the Hague, are expected to further decrease the availability of

green open space, might even go at the cost of green open space for those urban dwellers that have less political influence.

Montpellier Agglomeration, a highly attractive region, acknowledges the importance of green infrastructure at all scale levels and has chosen for more spreading of its future population, but with density building, accompanied by public transport provision. Concerning the foregoing of the development capacity of rural areas, the Hangzhou region authority (Municipality of Hangzhou, 13,000 km²) applies preferential financial policies to the rural areas and to polycentric development. This investing and spreading is considered an important contribution to the social wellbeing in those areas that are exempted from economic growth opportunities.

The sustainable spreading of land use obviously demands jurisdiction at the higher hierarchical level. Partnerships between public and private stakeholders can provide opportunities for new alliances, investments and innovative thinking, but require statutory agreements to avoid ad hoc building permits that further environmental deterioration of the peri-urban areas.

We note in our case studies that the role of government is changing: previous strict policies and state intervention to protect green areas are loosening up in part of the case study countries (Slovenia, Poland, Netherlands) and leaving room for increased discretionary judgements when faced with multiple development interests.

Several aspects connected to democracy and accountability of decision-making concerning peri-urban areas may be discussed here. First, there is the issue of how the constituency is defined. In most of our studied areas, public elections of regional politicians are absent. Functional urban regions in Montpellier, the Hague region, Leipzig region, and Greater Manchester surpass the regional or provincial authorities. And most peri-urban and rural parts of the urban regions are politically weak due to their fewer residents/voters. The question may be posed whether the democratic system allows for taking into account the interlinkages between urban and rural areas. In the Hague Region, for example, the local authority of Midden Delfland is a green area, without any urban settlement and thus less voting power. Therefore, former small municipalities have deliberately merged into one entity in order to obtain a stronger position against the adjacent towns.

A second reflection concerns the issue of the short horizon of policy making with frequent changes of local governments according to election periods, sometimes paired with the limited scale of budget and financial powers, which largely constraints the scope of action. Both Warsaw and Koper suffer considerably from such risks. In such situations, it may be quite understandable that local politicians are subject to great pressure from developers who offer immediate economic benefits that are more easily grasped than those of long term investments in 'green' sustainability values. Here, we note that the term of office in Montpellier for elections of communes politicians is six years, as compared with four years in the other European countries. The longer term in office might provide politicians with longer time to wait for positive results from otherwise unpopular decisions.

As may be expected, different governance patterns can be discerned when comparing the Eastern Europe (and Chinese) situation with that of Western Europe. Public-private partnerships and voluntary action is commonplace in the west (as described for Great Britain, France, The Netherlands and Germany), but rarely, if at all, occurs in China, Slovenia and Poland where the state dominates the policy-making of peri-urban areas. Having said that, however, it is also noted that much of the planning is piecemeal and non-coordinated, and that private investors have ample opportunities to lobby and buy out land for economic profit.

The case studies suggest that considerable regional governmental power is needed to steer developments and to balance development in terms of economic, environmental and

societal needs. Weaknesses in performance of well-intended strategies tend to be explained either by missing legal force or control on the land resource, in combination with lack of financial means, inadequate culture of spatial planning or cooperation at regional level. Montpellier region seems to have overcome most of these difficulties.

Similarly, in the Parthe floodplain in the Leipzig area the three municipalities successfully combine legal jurisdiction through local land use plans, involvement of all essential partners including land owners with the development of a discourse that enjoys the support of environmental NGOs and the general public. Such cooperation is absent in Warsaw Metropolitan area and the Mazovian region, but seems badly needed there in order to resolve the current inertia in public planning for sustainable development.

The role for new governance actors – including environmental groups, neighbourhood groups, and local business and farmers – is stressed in many of the case studies. These groups can, although at times competing with public interest, contribute to innovative thinking and development of new options and solutions. Examples were given by a Dutch developer in the Hague Region who provided a new development perspective for Scheveningen harbour, while in the Koper area the port of Koper supported the restoration of Skocjanski zatok nature reserve, initiated by nature NGO DOPPS/Bird Life. Environmental groups were active in several of the case studies, contributing to promoting public awareness and political pressure for the local governments to prioritise the preservation of green areas and biological diversity. And farmers' organizations helped promote diversification of the rural economy through, for instance, Rural Forums in Manchester and the Farming for Nature project in the Hague region.

The role of planners in promoting comprehensive planning

Institutional knowledge is central to achieving sustainable policy outcomes, which stresses the role of professional planners in juxtaposing the divergent interests into legitimate comprehensive planning. Several of the case studies emphasize how planners might contribute in this regard. In the Montpellier region, skilled internationally and nationally recruited planners were attracted to create the necessary institutional capacity to succeed with the collaborative SCoT planning exercise, including those of consultancy firms who contributed with standards and spatial solutions for buildings and infrastructure. The expertise and argumentation skills of local planners were also deemed decisive for the strategy's performance in the Leipzig Parthe floodplain protection.

Practitioners in Manchester region, however, observe 'short institutional memories' despite over thirty years of experience in rural development, leading to inconsistencies and poor quality performance in applying the Green Belt policy. Planners from Koper municipality, Mazovian Region, Warsaw Metropolitan Area also have clear ideas that could contribute to more sustainable and coherent land use developments in their region. The political weight behind these ideas must still be 'conquered.'

Social aspects of peri-urban development

There is considerable variation among the case studies as to which social groups tend to prefer the peri-urban fringe as their priority for residence and what specific areas they select. In the highly dynamic region of Mazovia, for instance, demographic processes are shaped to a large extent by migration (Grochowski, 2008, 23). The Warsaw Metropolitan Area displays the strongest urban pressure in municipalities with the best environmental conditions; the municipalities with open spaces, forests, valuable land for agricultural production are the most attractive for potential settlers/newcomers (Grochowski 2008, 6). There, interviews showed that residents are in search of quiet,

open green, safe areas to live, where they feel at home. Warsaw is judged by them as crowded, with traffic and noise. Warsaw is considered more attractive by people who are looking for specialized services (culture, leisure, recreation, education) or attractive jobs. (Grochowski 2008, 57-58). The Koper case study teaches us that 75 per cent of the Koper population prefers to reside rural or peri-urban. In Montpellier housing preferences have changed and now families and high income groups prefer to live in the peri-urban areas.

In Greater Manchester the population has dropped with 0.5 million over the last 40 years and is caught between inner decline and outer growth. In some inner areas, social indicators of ill-health, crime, unemployment and pollution all overlap (Ravetz 2008, 26). In Greater Manchester the affluent and mobile communities even leap frog the Green Belt in search for quality of living environment near – and sometimes within – the Green Belt (Ravetz, 2008, 30). They accept long commuting times to do so. Also in Leipzig there is demand for residential areas outside the city, rooted in the desire to realize new lifestyles outside the inner city. Sprawl has accelerated in response to improved transportation links and enhanced personal mobility. Or, couples with double incomes have to live in one city and work in the other (Sinn et al, 2010, 14) and contribute to mobility. We can interpret this as a development that shows that the urban regions have reached a level of prosperity that enables people to combine a better environmental quality of life while having a decent income from working in the core area. In probably all recently accessed EU countries these trends can be observed. But it is an indicator of the fact that quality of living environment in the urban cores does not respond to the wishes of a large number of citizens. And, as suggested by the Warsaw case study, there lies an important task for the spatial planners and policy makers.

The role of identity

As noted earlier, cultural heritage and traditional land use practices may foster the notion of local identity for residents in the peri-urban areas. Identity of a local group, like in Land van Wijk en Wouden (Westerink) can be a source of organization of residents and of support to initiatives of rural development. Identity contributes to values of real estate (Brueckner). It can help attract tourists and generate incomes and economic development (Jianjiun, 2009). Identity seems connected to sense of place, and the willingness to preserve both the social and physical environment. Not only for shrinking regions the social organization is important for the provision of services that the authorities do not provide. Social development provides alternatives to economic development (Oswalt, shrinking cities 2006) and may support the empowerment of less favoured groups provided that economic conditions are not counteracting. Evidence of such social developments were discerned in community-based initiatives in the declining estates of Hulme and Langley in greater Manchester. A dense network of neighbourhood activity, community organizations and mutual self-help was identified (Ravetz, 2008, 26).

In Hangzhou, the protection and utilization of valuable historical and cultural resources are equally part of an innovative urban management concept, employed in Xixi and Zhuantang districts. The created cultural quality is appreciated by residents and tourists alike and provide benefits to the local population. In Koper the landscape scenery and presence of the coast contributed to tourist values and rural population benefits from tourism by selling traditional farming produce (olive oil, etc.) and crafts. Similarly the protection of the Parthe floodplain was fostered by a feeling of ownership by the involved actors in a clearly defined green area. This illustrates the importance of the role of identity of place for preservation and development, if integrated in a win-win approach.

Ravetz mentions the processes of metropolism or metropol-ization in Manchester region. It comprises the rapid conversion of small towns and rural areas to urban-based economies, social patterns, physical infrastructure and global networks (Ravetz, 2008, 6). This characterization of urban development contains a dimension of a change towards

urban identity. Another aspect of identity, place attachment, is shown in the Warsaw case study. It mentions that residents that live longer at a place are more positive about the place. Also, the more green open space was present, the more decisive the opinions of the respondents that such places needed protection.

Poly-centric development

Polycentric development, spreading prosperity over a larger region, as well as spreading urban pressure seems preferable. Koper and Warsaw planners aim for this approach. It is expected to provide a more sustainable spreading of land use. In Koper the polycentric development on the one hand allows development, construction of housing and business areas. On the other hand, it allows an integration of environmental quality for residents, preservation of valuable ecological areas. It reduces pressure on the coastal zone (Perpar, 2009a, 21) and responds to peoples' wishes to live in peri-urban and rural areas while to work in Koper agglomeration. The semi-circular spatial development concept provides for radial axes that provide room to transport between the core area, the port, and the more rural areas where polycentric development is planned along axes with availability of green structure. It is expected to counter the unbalanced development (Perpar, 2009a, 25).

Also, Hangzhou has chosen to divert pressure (Jianjun, et al 2008, 15) and to develop in a polycentric way (p. 30). And Montpellier SCoT as well supports the spatial spread of density developments in a green environment that is considered as an asset for regional development and attractiveness.

The combination of polycentric spreading, collective transport, and more space for green infrastructure seems largely preferable in comparison to further densification in view of preserving rural areas and trying to further concentrate population in areas with a living environment that they do not like. This is clearly demonstrated by the reactions of the developers in the Netherlands in response to the Dutch Randstad 2040 plan in which they will not build high-rise buildings in the Hague or Rotterdam, because "people do not want to live there" and consequently the developers would not be able to sell them.

However, the density of the population in relation to the available space clearly puts limits on what development is feasible. Ideas of mobility, proximity and sustainability can not be realized in a too congested area. In our view the Communauté d'Agglomération de Montpellier, Koper municipality, Hangzhou municipality represent perimeters and availability of green open spaces that make it realistic to plan for sustainable development in a comprehensive manner. The SCoT develops a new approach, 'drawing the country side to reinvent cities' (Buick et al, 2009,p7). Such an approach demands for a certain amount of country side availability that is absent for example in the Hague Region. The exact perimeter for enabling such an approach is however hard to define (Buick et al, 2009, p7). We observe that Montpellier, Koper and Hangzhou areas are growing regions, attracting tourists and new residents with their landscape attractiveness and heritage. People like the peri-urban areas for housing. For the Hague Region these peri-urban areas are rare and can not be built upon without losing the qualities of these open areas.

Summary

The analysis of governance processes in the case study regions has lead to several interesting results. On the basis of these results it is clear that governance processes can be effective if they are based on a solid formal government and planning system – without that they have only very little potential to modify the strength of control over market processes in peri-urban areas. It is highly unlikely that informal policy agreements can be reached without strong backing of the formal government system and the financial and

regulatory processes. Thus the correct setup of the formal institutional systems, policies and regulations is of prime importance to fight urban sprawl, and governance processes can become useful extensions, but cannot substitute for these in the RUR regions.

Having said this, the governance procedures and the policy arrangements between local governments in policies or regulations which would not be compulsory according to the formal systems, are of crucial importance. Such arrangements constitute the essence of cross-sectoral and cross-territorial integrated development, as these are the most important content-elements of the functioning of the formal government and planning system.

4 Conclusions

The results of the three studies which were subject of this analysis underpin the hypothesis raised in deliverable report D2.2.1 that a weak potential control level by the formal government and planning systems over market processes is hard to overcome by regulations and policies (even if the willingness exists among the public actors) or by bottom-up governance policies. The latter are of course possible even in regions with weak formal institutional structures but the chances that the sustainability policies, developed in the course of policy arrangements, can be implemented, are very low. On the other hand, a high potential for control by the formal systems may or may not be used entirely, depending on the intentions of the public bodies in power. In the case of strong formal framework the role of governance relationships might be bigger to achieve changes towards more sustainable development. An important result of the governance analysis was that is not at all sure that the policy arrangement procedures will achieve positive results – either because of the inability of the partners to agree or simply because the physical structure of the metropolitan area makes the desired sustainability outcomes impossible or very hard to reach.

Thus the region-wide formal government and planning systems, the financial and sectoral policies, and the governance-type flexible policy arrangements are all needed to handle the very complex and delicate problems of sustainable development of RUR regions, especially in their peri-urban areas. The former assure the decision-making and enforcement structures while the latter are indispensable to develop the content, the compromises to keep development on sustainable path and avoid unnecessary urban sprawl.

The government and governance analysis explored two extreme types of countries from the perspective of public control over urban sprawl processes in peri-urban areas. On the one hand there are a few countries (among the case study countries the Netherlands and UK) where the potentially strong control assured by the formal government system and planning policies over RUR processes seems to be underpinned by the regulatory tools and planning policies which are used in practice. These countries have good chances to control peri-urban developments and avoid urban sprawl – especially if also informal governance agreements can be reached among the partners.

The other extreme is those group of countries (mainly the new EU member states) where the formal government system and planning policies are weak and do not allow sufficient control over the RUR processes. In these countries neither the practically used regulatory tools and planning policies, nor governance processes can assure such a control thus the public sector is from all aspects weak to control peri-urban development. The most likely outcome is growing urban sprawl.

The PLUREL government and governance analysis highlighted the importance for effective formal institutions, policies, regulations on the RUR level, especially targeted to the peri-urban areas. The Policy Brochure raises some hypothetical models how the European level could contribute to the strengthening of these basic elements of the public control over peri-urban sprawl.

5 References

Bird, R. M. (1999): Rethinking Subnational Taxes: A New Look at Tax Assignment. IMF Working Paper, 99/165.

Buick, J., J-P Chery, F. Jarrige (2009) Assessment report of strategies, Montpellier case study. D.3.3.9 PLUREL

ESPON 1.1.1 Potentials for polycentric development in Europe. Project report. March 2005. www.espon.eu

ESPON 1.4.3 Final report. April 2007. www.espon.eu

ESPON 3.2 Spatial Scenarios and Orientations in relation to the ESDP and Cohesion Policy. Final Report. October 2006. www.espon.eu

European Commission, 2009: Focus Groups' Report on The Future of Transport, 20.02.2009

Goodspeed, Timothy, J: Tax competition, benefit taxes, and fiscal federalism. In: National Tax Journal • Sept, 1998 • Symposium: What Do We Mean by "Taxpayer Relief"?

Grochowski, Miroslav and Marek Pieniazek (December 2008) Analysis of regional spatial planning and decision making strategies and their impact on land use in the urban fringe. Case study: Warsaw Metropolitan Area, Poland. PLUREL

Jong, A. de en C. van Duin (2009). Regionale prognose 2009-2040: vergrijzing en omslag van groei naar krimp. Bevolkingstrends, 4e kwartaal 2009.

Jorgensen, G – Sick Nielsen, Th – Mikél Jensen, J, 2007: Urban growth management. PLUREL D2.4.1 (manuscript)

Larsson, G, 2006: Spatial planning systems in Western Europe. IOS Press

Oates, W. E. (1996): Taxation in a Federal System: The Tax-Assignment Problem. *Public Economic Review (Taiwan)*, Vol. I., pp. 35-60.

Sinn, Annette, Dagmar haase, Anne Walde (2009) Analysis of regional spatial planning and decision making strategies and their impact on land use in the urban fringe. D 3.3.6 Leipzig. PLUREL

TCPA, 2007: Planning and land value creation. Great Britain. http://www.tcpa.org.uk/downloads/20070531_planningandlandvalue.pdf

Tosics, I – Dukes, Th, 2005: "Urban development programmes in the context of public administration and urban policy" In: TESSG – Tijdschrift voor Economische en Sociale Geografie, Journal of Economic and Social Geography, Vol. 96 (2005), No. 4 pp.390-408

Wolff, Hermann de, 2007: The new Dutch Land Development Act as a tool for value capturing. ENHR conf. www.enhr2007rotterdam.nl/documents/Wo9_paper_Wolff.pdf

WP2.1 of PLUREL, Loibl-Köstl-Steinocher, 2007

6 Appendix

6.1 Case study questionnaire

The questions were the following:

Financial transfer system

1. What types of grants exist in your country? What are the main grant allocation principles (derivation, formula, reimbursing cost, etc.)? What is the approximate share of general purpose vs. conditional grants? How does the grant allocation system influence the behaviour of local governments?
2. Are there any differences in your country in the share of higher level normative financing of the different local public services – i.e. how much of the real costs of one elementary school student, of one place in kindergarten, etc. is financed from the central budget? How does the grant system in your country treat the services with inter-jurisdictional spillover effects?
3. Is it in the interest of the local governments of the RUR region from financial point of view to increase the number of their population? Why?
4. Are there any other financial subsidy forms in your country which have the effect to strengthen urban sprawl?

The local taxation system

1. Usually how big share of the local budget is covered by revenues from local taxes?
2. What are the main types of the allowed local taxes? Which are the types most favored by local governments and why?
3. What are the spatial consequences of the local taxation system – which of the local taxes create tax competition between municipalities of the RUR region?
4. Are there any higher level public regulation efforts against tax competition? If yes in what forms and how efficient these regulations are?
5. Are there any other taxation forms in your country which have the effect to strengthen urban sprawl?

Economic development and infrastructure

1. Do supra-local administrative or functional bodies exist regarding the control over economic development and the development of infrastructure within the RUR area? What powers do they have?
2. To what extent local governments within the RUR area compete with each other for economic development opportunities? What are the usual means applied to attract investors to their territories?
3. Are there any other public subsidies in your country, given to infrastructure or economic development, which have the effect to strengthen urban sprawl?

Transport

1. What is the share of public transport use in the urban, peri urban and rural areas?
2. What is the share of user fee payments in the total budget of public transport? Are there any other special public subsidies given to encourage the use of public transport?
3. Are there any other transport-linked public subsidies in your country which have the effect to strengthen urban sprawl, e.g. encouraging the use of individual car traffic (such as tax deduction of travel-to-work costs)?

4. To what extent is the RUR area covered by public transport associations? How are the areas outside of these associations connected, how is co-modality organized?
5. What kinds of interventions are considered to ensure the internalization of external costs of transport?
6. What kinds of mobility management tools are considered in the most dense urban areas in order to reduce congestions and improve the environmental conditions of transport? Are there any steps forward to achieve the behavioural change of transport users?

Housing

1. Are there supra-local (regional, national) ordinances or prescriptions regarding housing policy? To what extent do they control local governments?
2. What are the reasons for these limitations of local decisions making independence and how can the real effect of be evaluated?
3. Are there any special housing-linked public subsidies in your country which have the effect to strengthen urban sprawl?
4. Is there any cooperation between the municipalities of the RUR area (or smaller subsets of it) regarding housing policy? What are the aims and tools of this cooperation and how successful it is?
5. How is the conflict between affordability and sustainability be addressed in the municipalities of the RUR region?

Tools for the public sector to steer new land developments in the RUR area

6. What are the land ownership relationships across the RUR region: what share of developable (already re-zoned) and potentially developable (agricultural, which could easily be rezoned if demand increases) land is in the ownership of the public sector in different parts of the RUR region, i.e. in the urban core, in suburban areas, in peri-urban areas?
7. Are any of the listed non-planning tools applied in the RUR region or any smaller part of it? Are there any discussions on the efficiency of these measures compared to traditional planning tools against urban sprawl?
8. Are there differences between the sub-parts of the RUR region in the approach to the different tools (e.g. the more flexible economic incentive tools applied in areas wanting economic growth)?
9. Are there any significant „boarder effects” observable? Are there any discussions to apply the successful tools on higher administrative level with relevance for the whole RUR area?

Rules applied in the case of concrete decisions on larger land developments

2. To what extent can local governments re-capture value increase from private actors, due to rezoning of land or issuing building permission?
3. How fragmented is the system: to what extent can local municipalities be influenced by higher level public actors in their decisions regarding rezoning of land or issuing building permission?

6.2 Qualitative analysis: calculating indicators

Analysing the answers received from the selected regions on the questionnaire, a limited number of indicators has been elaborated to quantify the qualitative information gained from the descriptions.

Each indicator is a dummy variable, the value of which can be 0 or 1. The table below shows the description of how we evaluated the information received from the case studies regarding each indicator.

Table 12: Quantification of qualitative answers

Financial transfer system	0	1
Local government finance	<p>The high share of population-proportional local revenues or the population-proportional grant system motivates the municipalities to raise their population.</p> <p><i>Consequence: direct interest to raise population.</i></p>	<p>The share of population-proportional local revenues is low and the grant system is not population-proportional.</p> <p><i>Consequence: no local government direct interest to increase population.</i></p>
Financing of public services	<p>Local public services are at least partly financed by the municipalities where the service is located, and there are no effective measures to tackle the inter-municipal spill-over effects.</p> <p><i>Consequence: inter-jurisdictional spill-over effects exist.</i></p>	<p>Upper level financing fully covers the costs of public services, or the spillover effects are tackled effectively (e.g. municipal share has to be covered by the municipality of residence).</p> <p><i>Consequence: no inter-jurisdictional spill-over effects.</i></p>
Special financial subsidies	<p>There are financial subsidy forms with the effect to strengthen urban sprawl, and there is no financial subsidy form with the effect to weaken urban sprawl.</p>	<p>There are no financial subsidy forms with the effect to strengthen urban sprawl or there are financial subsidy forms (e.g. for urban renewal) with the effect to weaken urban sprawl.</p>

The local taxation system	0	1
Taxation system	Important share of local taxes and broad local government freedom to set the conditions of local taxes. <i>Consequence: tax-competition exists.</i>	Low share of local taxes and/or weak local government control over the conditions of local taxes. <i>Consequence: no or very little tax competition between neighbouring municipalities.</i>
Special taxation forms expressing public values	There are specific taxation forms with effect to strengthen urban sprawl.	There are no taxation forms with effect to strengthen urban sprawl.
Correction policies	There is no efficient supra-local control on tax competition, while it would be necessary.	There are efficient upper level public regulation efforts against tax competition, or it is not necessary.
Economic development and infrastructure	0	1
Supra-local control	There is no or very weak supra-local control concerning economic and infrastructure development in the RUR region.	Supra-local administrative or functional bodies control economic development and the development of infrastructure within the RUR area
Public subsidies	There are specific public subsidies which have the effect to strengthen urban sprawl	No public subsidies given to infrastructure or economic development, exist which have the effect to strengthen urban sprawl

Transport	0	1
Modal split	The share of public transport use in the urban, peri-urban and rural areas is low (car use is dominant even in urban areas)	The share of public transport use in the urban, peri-urban and rural areas is high (in urban areas public transport is dominant)
Public transport subsidies	Public transport is not subsidised	Public transport is subsidised
Travel subsidies	There are transport-linked public subsidies which strengthen urban sprawl (such as tax deduction of travel-to-work costs by car)	There are no transport-linked public subsidies which strengthen urban sprawl
Transport associations	No or functionally very weak transport association on the RUR level	The RUR area is covered by public transport associations (or PT is organised by other RUR-level institutions)
Internalisation of external costs	No instruments directly aiming the internalisation of external costs	There are efforts to ensure the internalization of external costs of transport (environmental taxes, congestion charging etc.)
Mobility management	The range of mobility management tools used to ease congestion and improve the environmental conditions of transport in urban areas are limited	Wide range of mobility management tools (e.g. pedestrian zones, public transport priority measures, parking space management, intermodal nodes, P+R, cycling promotion) are considered to ease congestion and improve the environmental conditions of transport in urban areas

Housing	0	1
Supra-local control	No or very weak housing policy on the supra-local level	There is strong supra-local (regional, national) housing policy
Housing subsidies	There are housing-linked public subsidies with the effect to strengthen urban sprawl (e.g. preferring greenfield developments)	There are no housing-linked public subsidies with the effect to strengthen urban sprawl
Municipal cooperation	There is no municipal cooperation regarding housing policy	There is cooperation between the municipalities of the RUR area (or smaller subsets of it) regarding housing policy
Tools to steer new land developments / Rules of concrete decisions on developments	0	1
Land ownership	Most of the developable land in the RUR region is in private hand	Across the RUR region a substantial share of developable (already re-zoned) and potentially developable (agricultural, which could easily be rezoned if demand increases) land is in the ownership of the public sector
Land value increase recapturing	Value increase due to rezoning is the benefit of the land owner	Local governments can recapture some portion of land value increase due to rezoning of land or issuing building permission, from private actors (e.g. via a specific value increase tax or via land banking)
Public development obligations of investors	Developers have no obligation to contribute to the public infrastructure connected to their projects, it is fully financed by the public sector	Developers have to contribute to physical and social infrastructure development connected to their projects (e.g. fixed share of the investment costs, development contract etc.).

Supra-local control	Municipalities are completely free in their land use planning decisions, there is no effective means to take supra-local interests into account	Local municipalities can be influenced by higher level public actors in their decisions regarding rezoning of land or issuing building permission (either by hierarchical planning system or by effective cooperation in practice)
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Finally, these values are summarised in a way that for each topic the regions can have a value between 0 and 1.