PLUREL

Land Use Relationships
in Rural-Urban Regions

Module 2

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D2.1.3

Quantitative classification of the major European rural-urban regions

Theoretical background & typology

Wolfgang Loibl* **Mario Köstl, Klaus Steinnocher**
AIT

*Responsible partner and corresponding author
Tel: +43(0) 50550-4587 Email: wolfgang.loibl@ait.ac.at

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SIXTH FRAMEWORK
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Contents

Abstract

This report describes some theoretical aspects to develop a typology of rural – urban regions (RUR) as quantitative classification. The findings serve as backbone for the data-driven generic rural-urban-region classification to investigate relationships between the core city regions, peri-urban regions and rural hinterland.

First we discuss purpose and scale of the typology to be delivered. Then some á priori rural – urban region classes are defined in terms of morphology and topology as well as in terms of development dynamics. The final part presents a rural-urban region typology at NUTS3 level for entire Europe 27.

The RUR typology will finally consider 4 different characteristics:

- morphology: (corce city pattern and related sub centres) monocentric / polycentric / disperse and some derivatives
- shape: (e.g. compact / linear / finger/star-like, still in discussion, related to the traffic system:)
- dynamics: (growing / shrinking trends in core cities / peri-urban sourroundings)
- planning policy systems (local/federal/centralized) (putting strong power either to the single municipality, to the region, or to the national authorities with different effects on RUR urban fabric development)

Three of these characteristics have been investigated and quantified:

- The RUR morphology typology and delineation is based on CORINE land cover classes and population numbers within urban fabric areas to define core cities and sub-centres and buffers as ranges around core cities.
- The RUR shape typology is also based on CORINE land cover classes and considers compactness and fractality.
- RUR dynamics have been observed taking the current population data for core city and the non-urban population dynamics sourroundings as activity proxy. Land use dynamics cannot be observed for entire Europe due to too coarse geometric resolution of the CORINE classification and partly missing land use data from an earlier decade for some countries.
- The planning policy system issues will be worked out by the WP 2.1.4 team (I. Tonscic and K. Lalenis). Here some aspects will me addressed presenting first attempts to achieve such a classification within PLUREL.

The 4 typology layers need not to be combined but can be applied separately as necessary for the certain issues

Introduction

This report describes some theoretical aspects to develop a typology of rural – urban regions (RUR) as quantitative classification. The findings serve as backbone for the data-driven generic rural-urban-region classification to investigate relationships between the core city regions, peri-urban regions and rural hinterland.

First we discuss purpose and scale of the typology to be delivered. Then some á priori rural – urban region classes are defined in terms of morphology and topology as well as in terms of development dynamics. The final part presents a rural-urban region typology at NUTS3 level for entire Europe 27.

The RUR typology will finally consider 4 different characteristics:

- morphology
- shape
- dynamics
- planning policy, where the last is one matter of a different work package.

1. Typologies for rural-urban regions

Spatial typologies are always a matter of purpose and thus scale: the purpose is discussed below. The scale-aspects will be explained related to our viewpoint as follows:

a) A single settlement or a nucleus within an observed entity occurs always as mono-centric.

b) A pattern of dwellings within a greater region, showing some hierarchy, will always be judged as poly-centric. It is the nature of a growing system to generate hierarchies of entities – as proved for a system of centres by W. Christaller in the 1930ies, when developing his central place theory.

Thus we have to decide about the scale we will consider and the purpose of the typology we have to carry out.

1.1 On the purpose of the typology

Referring to the purpose of the project, we have to investigate and assess relationships BETWEEN SUB-ENTITIES WITHIN a RURAL-URBAN REGION (the urban - peri-urban - rural relationships) to suggest sustainable urban region planning policies, we have somehow to ignore relationships BETWEEN RURAL-URBAN REGIONS. Therefore the typology shall e.g. not consider poly-centricity in terms of distinguishing between a metropolitan area with a cluster of interconnected core cities or a region with a single core city. Also the inner-city structure – e.g. former radial growth from one single centre or from several former nuclei now just building quarter centres within a city are not of high interest. But the growth patterns and directions and the change of relationships between the sub-regions of the RUR area due to transition of shape, topological relations and spatial characteristics of the surrounding sub-entities will be of interest, as well as the pre-conditions of growth shape in terms of transportation systems triggering accessibility and thus spatial interaction by shrinking the relative space through reduction of the travel time.

The **purpose** of the typology is to define **classes of rural – urban regions** (RUR) which show similar spatial characteristics influencing the sub-regional (the urban - peri-urban - rural) relations of the RUR and may show similar future development dynamics:

- to judge the effects of these pre-conditions in terms of certain relationships, identified as pressures on landscape
- to carry out unique generic future scenarios for those classes accessing these effects of transition - growth or decline -within the 3 sub-entities of the RUR,
- to investigate and suggest planning policies for a more sustainable development of the different RUR types.

Here we do not discuss intra-regional delineation of a RUR into urban-, peri-urban- and rural hinterland sub-regions building an entire urban rural system. This shall not affect the generic RUR typology. This delineation is a different

task, to be performed individually for the selected case study regions and some further reference regions.

The further purpose of the classification is **to relate all NUTS 3 regions to the generic RUR types**, expecting certain development patterns due to the NUTS 3 region's spatial land use characteristics, transportation lines and planning policy principles. [1]

1.2. On spatial properties for urban region classification

Two kinds of spatial properties have to be considered: *morphology and topology.*

Morphology refers to *shape and spatial structure of one spatial entity*.

Topology refers to *spatial pattern and interrelation of a set of spatial entities* within a region. (including separation/adjacency, distance and connectedness).

Both sets of spatial properties span the framework of spatial development in terms of growth of urban fabric within a wider urban-rural region. Morphology is somehow responsible for the shape of growth of the core city. Besides shape, compactness, density and size of the core cities have also to be examined as they lead to certain spatial transition patterns and shapes. Inner-city structure is not in the focus of the typology. Topology is a pre-condition shaping urban fabric growth outside the core city due to functional relationships within the peri-urban region.

To derive the typology of a settlement system the equity of spatial properties has to be examined.

To conduct a typology of urban regions for investigating urban-peri-urban-rural relationships following aspects have to be considered:

1)	The core city size, density and shape	- explicitly
2)	Number and size/density of sub-centres in the peri-urban area	- explicitly
3)	Allocation pattern and distance to sub-centres surrounding the core city	- explicitly to casually
4)	Adjacency or vicinity and size of core cities within a metropolitan area	- casually
5)	The core city (inner city) structure	- no

Ad 1) The core city size is a effect of the numbers of inhabitants and work places and thus allows to decide about the extent of the total RUR area in

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[1] By definition each NUTS region belongs to an administrative district – the majority of the larger NUTS 3 regions refer to a higher administration district - hierarchy which usually encompasses at least one RUR- region. This means that (most) NUTS3 regions contain a core city area, the peri-urban surroundings and some hinterland. But not all NUTS 3 regions comprise an entire RUR. NUTS 3 regions of some countries like Germany define single core city areas as single region, where the adjacent peri-urban – and rural hinterland area belong to separate NUTS 3 regions. In these cases we will build NUTS3 - clusters comprising one urban-rural region continuum. In the further text we do not distinguish between single NUTS 3 regions and NUTS 3 clusters. The clusters will be treated the same as NUTS 3 entities.

terms of commuting catchments, resources colonization like recreation area, food production area or waste disposal area.

Ad 2) Number and size of sub-centres within the RUR decides between mono-centricity and poly-centricity. Occurrence of sub-centres leads to more sustainable peri-urban development effects avoiding or at least mitigating urban sprawl as unstructured dwelling development.

Ad 3) The allocation pattern and the distances of the sub-centres to the core city borders are to be considered with respect to future peri-urban growth dynamics and effects on urban - peri-urban relationships – but with less weight. Small distances to the core city will affect the recreation functions and exoneration (discharge) functions decreasing the overall pollution load and the general utilisation intensity of the peri-urban area, provoking a union with the core city that might lead to larger urban fabric and less open space area within the core city's borders and its vicinity.

Ad 4) Occurrence and further adjacency or vicinity of core cities within a larger metropolitan area shows the grade of metropolitan poly-centricity of a larger area. This issue will be considered (with les effort) only to judge whether there are more core city competitors which make use of the same peri-urban area and at the same rural hinterland affecting more or less pressure to the rural areas. A single core city within a larger area has advantages for the peri-urban area and hinterland to provide these discharge functions for one city alone.

Somehow complicated is the situation for very large core cities – so-called mega cities – which build a metropolitan area certainly containing several core cities which build their own urban region catchment on a more local scale. Such a hierarchical system of cities which are all entities themselves (but with different hierarchical service and supply functions) leads complementarily to a hierarchical suburbia and urban hinterland system providing on the contrary multiple layered exoneration functions for several cities within the same hinterland extent.

Ad5) Inner-city structure is in general worth to be investigated but integrating this issue would extend the projects scope, as the projects purpose is to concentrate on the inter-relations, between the entities of a greater urban system with its regional scale flows and dynamics.

1.3. On urban - peri-urban region dynamics

It is well known that shapes of urban fabric are the effect of certain dynamics within urban regions which show somehow a urban region life-cycle: urbanisation, sub-urbanisation – counter-urbanisation, re-urbanisation. The waves of growth-decline on the different areas surrounding the city centres produce a variety of spatial forms.

Urbanisation – describes the state of growth and densification as matter of functional development of settlements as regional centres due to certain location factors and topological aspects within a region.

Sub-urbanisation is the allocation of land use and population out of the core city into the urbanized area of the urban fringe accompanied by a re-organisation of allocation of land use and population within the entire metropolitan area (Friedrichs, 1977). Sub-urbanisation of population is caused by growth of income and mobility, changes in societies values (living with nature…) with increasing of dwelling demands, as well as rent- and lot price related displacement of housing from city centres. Sub-urbanisation of industry and finally sub-urbanisation of services is triggered by growing space demands of automated production - and self service retail forms, as well as accessibility along extra-urban roads and motorways.

Counter-urbanisation was first observed by Berry (1973) in the USA as a backlash into rural regions, where the functional connections have been given up due to ubiquity of location factors and because of urban region disadvantages (high costs and environmental impact).

Re-urbanisation occurs since the 1980ies in the U.S. and 1990is in Europe. The reason is a steady growth of city-centred services (finance services, company services) as well as urban entertainment centres, further international immigration concentrating on core cities and gentrification of certain areas close to city centres due to changes in society patterns (independent wealthy single person or DINK households; Ley, 1996). New urbanism is seen as a reason for this sustainable trend, with the only disadvantage that low income households are again pushed to more remote areas along the urban fringe or in less attractive quarters within the core cities.

We have again to consider that these characteristics cannot be detected due to limitations in data at European level. E.g. identification of urban sprawl from Corine land cover 1990 and 2000 is hampered by the coarse resolution and the minimum mapping unit, i.e. areas smaller than 5 ha are not considered changes. An indirect identification will be tested in a way of "reverse reasoning": growth can be identified only for larger centres by using CLC 1990 and 2000. If those centres show no areal growth but the NUTS region shows growth higher than the core city, the peri-urban surplus of population growth can be identified as sprawl, if areal growth of the sub-centres can be observed the growth type can be identified as polycentric.

2. Definition of generic rural-urban region types

2.1 On data constraints

The data is restricted on the availability of data for the entire EU27 area: This are: Corine land cover 2000, Population numbers 2000, 2004

Thus the criteria are related to
- Land use amount and fraction of urban fabric areas 2000
- Population numbers and thus density related to dwelling areas 2000 (2004)

Data reflecting current urban region *dynamics* are missing. Just former dynamics from 2000-2004 can be considered. For most of the urban regions the former trends will be extended but there exist certain urban regions – over all in the South East Europe covering the New EU member states, which show significantly different spatial development in the last few years.

2.2 Considerations developed after the Berlin meeting referring to RUR typology

In order to avoid a large number of single types due to the combination of a list of criteria, we suggest applying a layer like classification.

Future dynamics could be classified as additional layer (see Fig. 1) considering:

+ current pattern -> morphology typology (RUR)

+ past and dynamic trends (RUR)

  core city/fringe: grow/grow, grow/decline, decline/grow, decline/decline

  future general dynamics on demographics & economy as driver (NUTS2)

+ rules on transportation system (commuting patterns/attractiveness), (RUR)
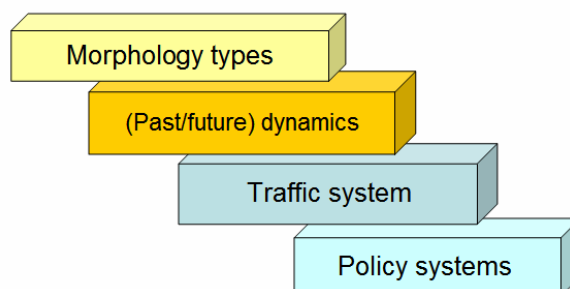
+ rules on planning policy system (NUTS1)

Fig. 1: Layer system of typology

2.3 European RUR system typology — related to morphology

The following á priori typology refers to the morphology shown above, considers the currently available datasets for classification and the necessity to define coarse generic classes in order to derive generic response functions to be investigated and parameterized for the case study regions (class numbers as used later in the report are put in parentheses).

A)   Metropolitan (1.0)
NUTS region clusters of metropolitan areas, with several large core cities or metropolitan nuclei within the metropolitan area, lacking peri-urban patterns.

B)   Urban mono-centric (1.1)
NUTS regions with one large core city within a peri-urban area with or without adjacent small sub-centres with dispersed small settlements lacking larger sub-centres

C)   Peri-urban mono-centric (1.2)
NUTS regions with one medium-size core city within a peri-urban to rural area, with or without adjacent small sub-centres, with dispersed small settlements lacking larger sub-centres

D)   Urban poly-centric: (+ Metropolitain) (2)
NUTS regions with one or few large core cities within a peri-urban area with larger sub-centres (and dispersed small settlements)

E)   Peri-urban poly-centric (3)
NUTS regions with few medium-size core cities within a peri-urban to rural area with or without dispersed small settlements lacking larger sub-centres

F)   deep rural (4)
NUTS regions without small or medium-size core cities within a rural area populated by dispersed small settlements

2.4 European RUR system typology – related to dynamics

The dynamic types are combinations of the urbanisation, sub-urbanisation, rurbanisation cycle as described above:

- **Declining/ stagnating urban fabric within the core city** as effect of sub- and counter-urbansisation

- **Declining/ stagnating urban fabric within the peri-urban region** as effect of urbanisation, re-urbanisation (supported by high lot-prices/rents or as a barrier lack of workplaces in the urban region)

- **Growth of urban fabric in the core city** along the urban fringe as effect of urbanisation either undirected or **through densification** concentrated in **certain areas** – either in the centre, or, as **linear development**, along public transport lines - as effect of re-urbanisation. A differentiation in one of those can be made by considering (rail-based) public transportation structures – the 3rd criteria discussed later.

- **Scattered growth in the peri-urban region** "sprawl" as effect of suburbanisation, (supported by low lot -prices/rents in the suburban regions, low private transportation costs)
- **Polycentric growth of the sub-centres within the peri-urban region** as effect of controlled suburbanisation, (supported by establishing public transport lines and moderate public transportation costs, high suburban lot-prices/rents, high private transportation costs)

The following á priori typology refers to the spatial dynamics, considers the currently available datasets for classification and the necessity to define coarse generic classes in order to derive generic response functions to be investigated and parameterized for the case study regions.

	Core city	Peri-urban area and rural hinterland
Type DD	Decline	Decline
Type DG-s	Decline	Growth - sprawl
Type DG-p	Decline	growth - polycentric
Type GD	Growth	Decline
Type GG-s	Growth	Growth - sprawl
Type GG-p	Growth	growth - polycentric

2.5 European RUR system typology – related to transportation structure
Transportation structure triggers spatial shape and closeness of urban development. As geodata on transportation is currently not available we cannot go into details or examine the results. It is expected, that railway and highway sections supports controlled peri-urban development either along the urban fringe or as polycentric growth of sub-centres connected to the core city by public rail based transport (or at least by a rapid bus connection). Applied data will be transportation density characteristics for the land use cells extracted form Tele Atlas geo-data.

2.6 European RUR system typology – related to planning policy
Here no information can be given in advance. What we expect is, that there will be a differentiation between community based planning responsibility and hierarchical planning policy giving responsibility for planning and zoning

decision to regional planning authorities. In the former a competition between all peri-urban municipalities can be observed, leading to uncontrolled, undirected sprawl-like peri-urban development. The latter will support controlled peri-urban development focussed on sub-centres and certain urban fringe areas. As geodata on transportation is currently not available we cannot go into details or examine the results.

2.7 European RUR system typology integration
It is planned to handle the typologies separately. Only after the data will be available tests can be carried out how to establish a fully integrated typology. But even if integration is not possible the single classification layers allow examining certain development consequences as alternatives helping to assess different spatial and policy influences as overall trends.

The following classification considers the morphology and the population dynamics in a first version. An improved classification will be possible when statistical data for population development are available for corresponding dates for all core cities as well as for the respective NUTS3 or NUTSx- entities.

3. Rural-urban region typology

3.1 Morphology based typology

Related to the concept in 2.3 the following types are to be developed for the RUR-typology. The inner circles represent cities, their size and colour indicating population and rank.

Urban mono-centric	Urban poly-centric	Peri-urban mono-centric	Peri-urban poly-centric	Deep rural
1.0, 1.1	2	1.2	3	4
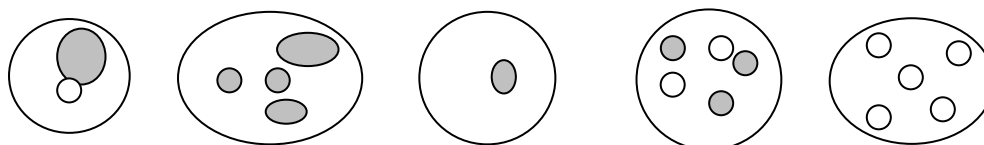
3.2 Data sources

The development of the typology is based on data sets that are available for EU 27 including CORINE land cover (CLC) 2000, population 2000 and 2004 on NUTS 3 level and on population of cities 2000 and 2006. The STEU point data are used as ancillary data set for identifying cities. CLC 2000 is provided by EEA, demographics data and STEU points are from Eurostat. Population of city areas are from regional/local sources on the internet.

CLC 2000 data were used to derive settlement morphological zones (SMZ) that represent the physical size and connectivity of urban areas. STEU points represent cities larger than 10.000 inhabitants (except for Germany and The Netherlands, where the limit is 20.000) and are used for identification and selection of settlements. These data sets were intersected resulting in one or more STEU points per SMZ and allowing to link population data to SMZs. These population data only serve for a first classification as they date back to 1991.

3.3 Developing the typology

In order to develop the final typology an intermediate classification of single NUTS3 regions is performed. This classification is based on ranking of cities by population per NUTS 3 area. Fig. 2 shows a flowchart of this process. First NUTS3 regions without cities are defined as rural, and then the size of cities is used to differentiate metropolitan areas, urban centres and smaller settlements. In the final step the number of cities is taken into account in order to distinguish mono- and polycentric structures. The result of this first classification is shown in Fig. 3.
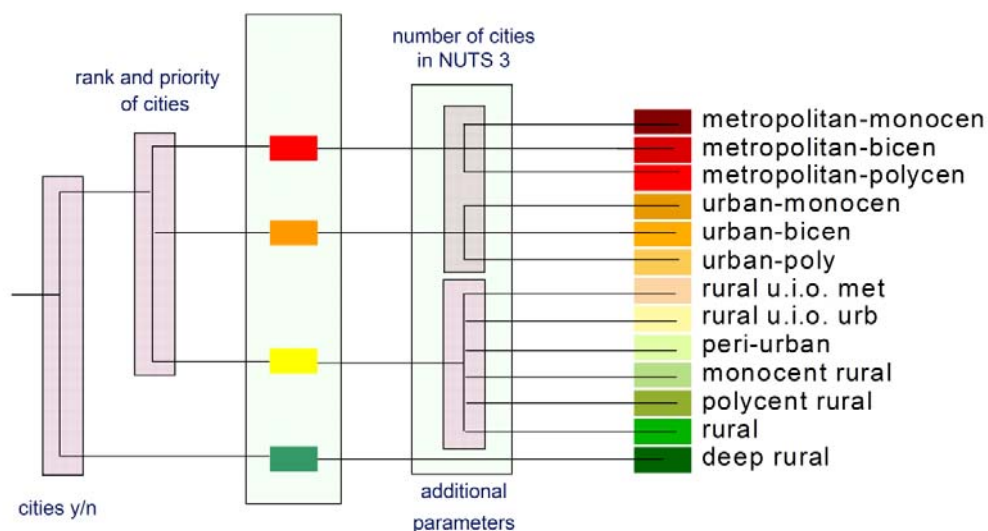
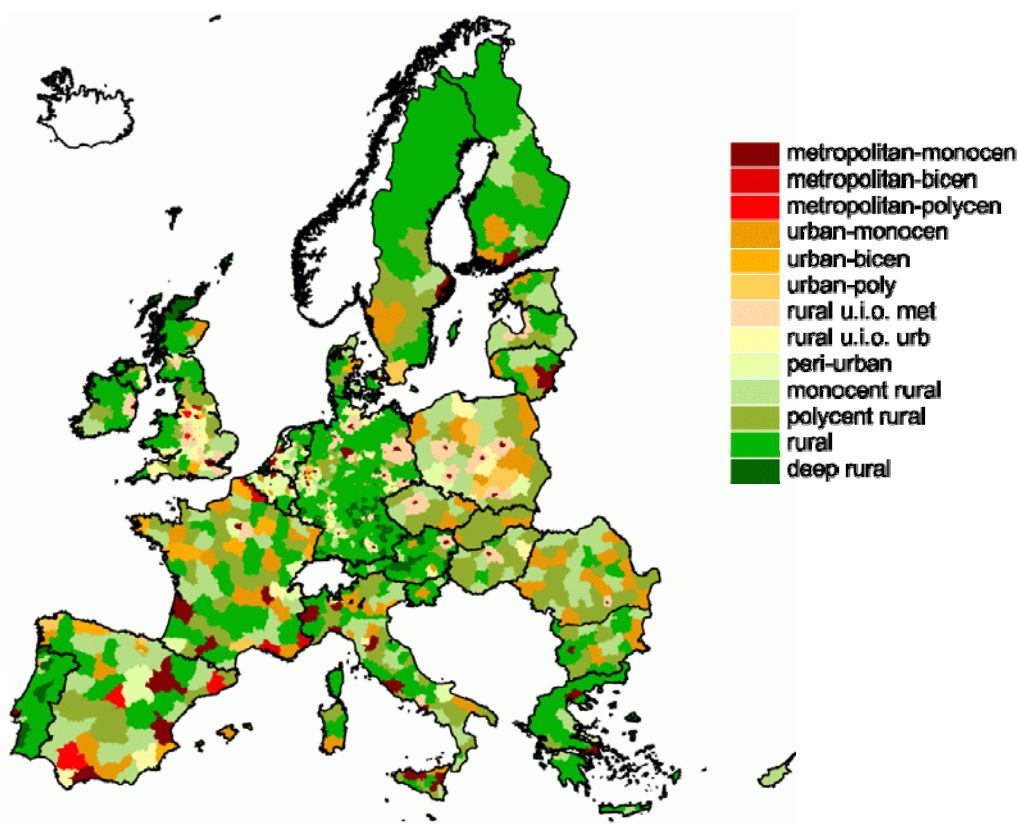Fig. 2: Flowchart of NUTS3 classification

Fig. 3: NUTS3 classification

This first classification is hampered by the varying sizes of NUTS 3 areas, which in some cases include only urban centres without surroundings (in particular in Germany where the NUTS3 areas are very small), while in other cases comprise the entire peri-urban area. Therefore spatial clustering of NUTS3 areas was performed based on the morphological zones and population of urban areas. Circular buffer zones were defined whose radius is

calculated by a logarithmic function of the population. Neighbouring NUTS 3 areas are added to the cluster if significant parts of them intersect with the buffer circle. Figures 4 to 6 show this process by means of the Leipzig-Halle cluster, with the SMZ shown in dark blue.
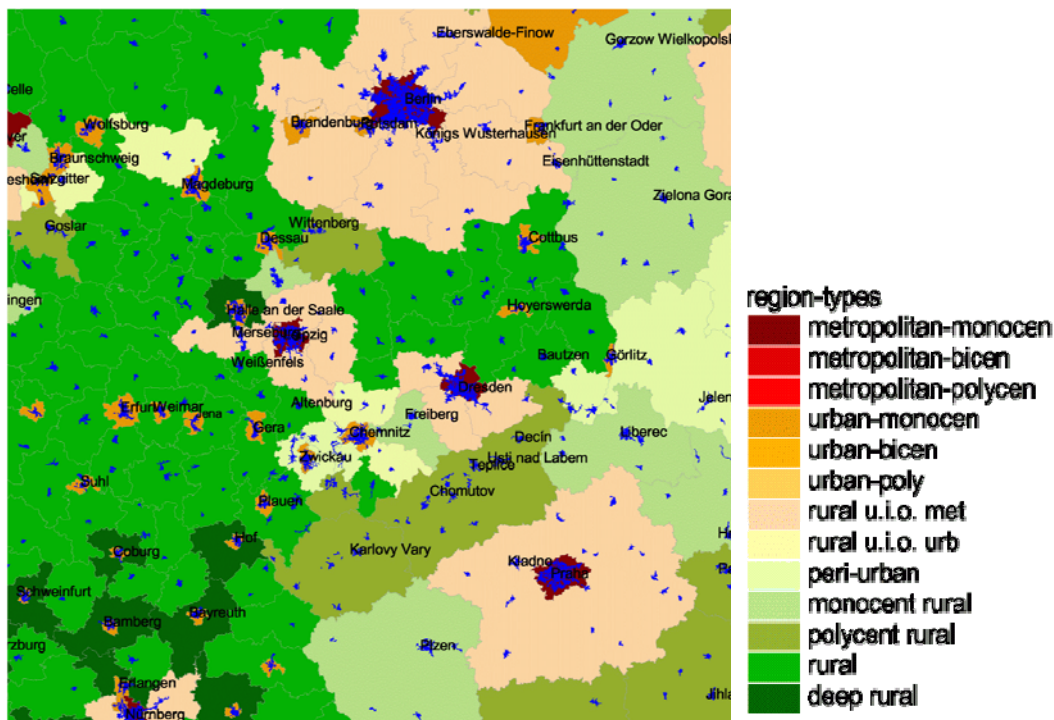

Fig. 4: NUTS3 classification with morphological zones (subset of Fig. 2)
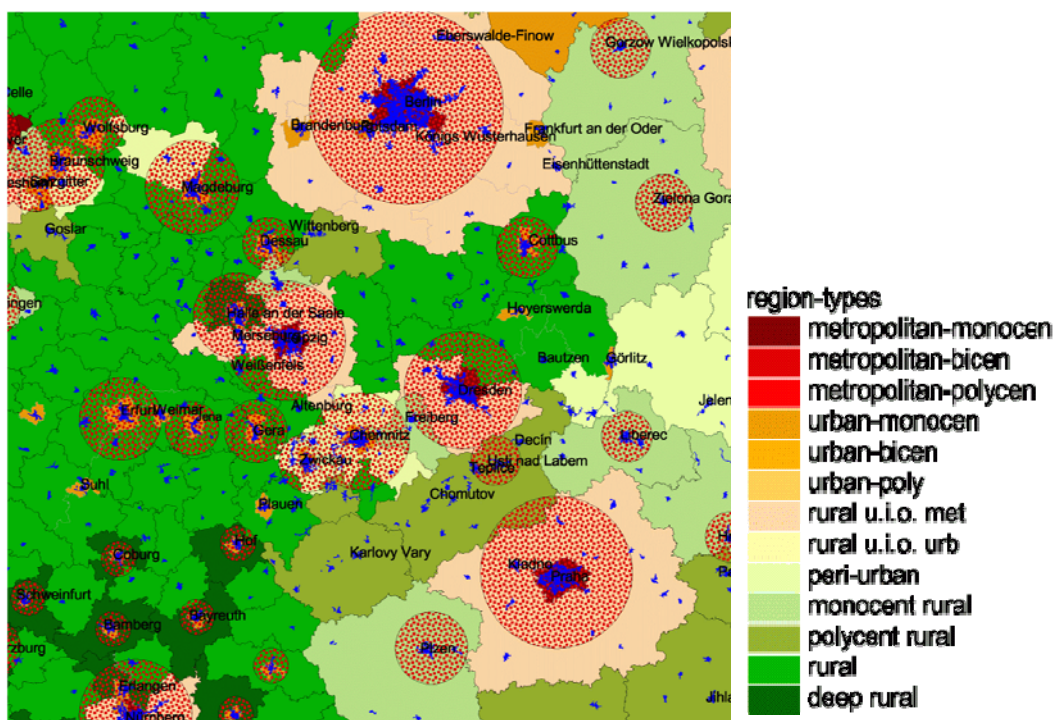

Fig. 5: NUTS3 classification with morphological zones and corresponding buffer circles
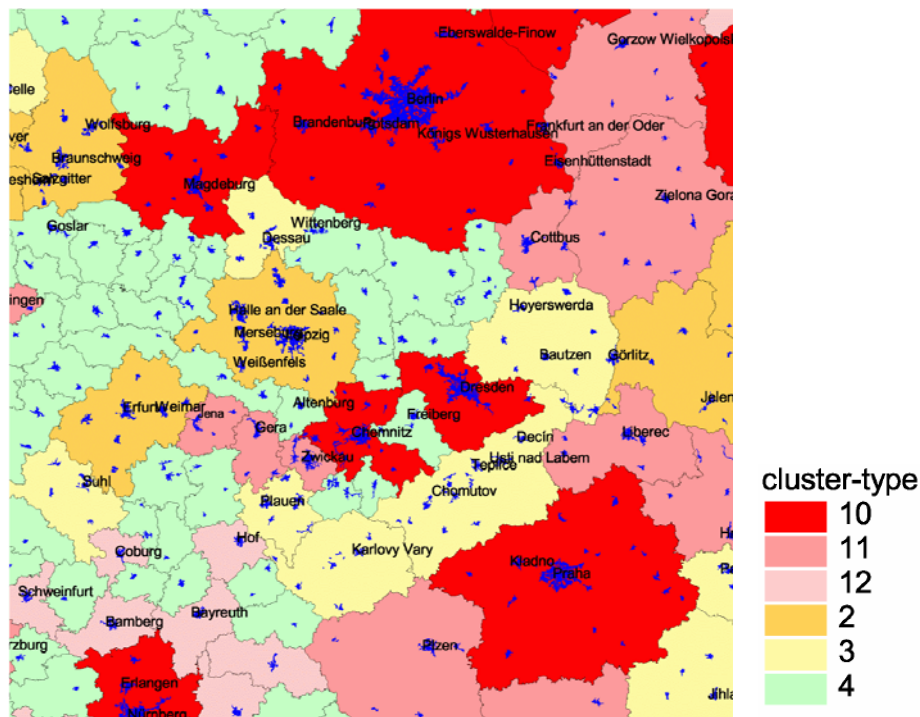
Fig. 6: Resulting RUR

With the spatial clustering of the NUTS 3 areas also the type of the final RUR is defined. Depending on the size and number of cities within the clusters and the type of the clustered NUTS 3 areas one of the final RUR types are assigned:

1.0	–	Metropolitan
1.1	–	Urban mono-centric
1.2	–	Peri-urban mono-centric
2	–	Urban poly-centric
3	–	Peri-urban poly-centric
4	–	Deep rural

In figures 4 to 6 it can be seen that Leipzig and Halle, belonging to two NUTS3 areas, are combined to one cluster of the type 2 – Urban poly-centric, whereas Berlin and its surroundings become one metropolitan cluster (1.0).

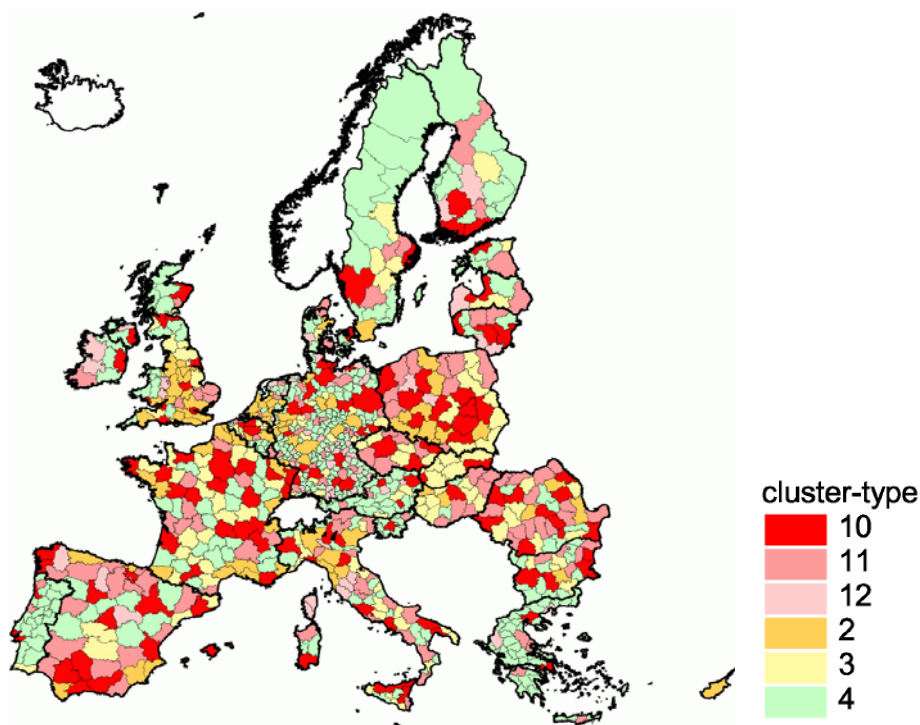Applying this typology to EU27 transforms 1278 NUTS 3 areas into 904 RURs, as can be seen in Fig. 7.

Fig. 7: Resulting RUR for EU27

3.3 Typology related to population dynamics

Based on the concept related to dynamics in chapter 2.4 the RURs were analysed with respect to their population development. For the types 1.x and 2 population dynamics of the urban centres and of the peri-urban areas and hinterland were compared, for the types 3 and 4 only the overall population dynamics were considered. While the latter was based on NUTS 3 demographic data from Eurostat for the period 2000 – 2004, the calculation of the former required additional data on population in cities. City data were acquired from internet sources, in most cases representing the years 2000 and 2006. We therefore face a temporal data inconsistency which will be solved as soon as Eurostat provides population data for 2006. Estimation of population by interpolation was not considered as we assume non-linear population dynamics in most cities and regions.

The actual calculation of the urban and non-urban dynamics for types 1.x and 2 is based on the urban population and the difference of the NUTS population and the urban population, representing the non urban population of the region. If calculated for two dates the dynamics for the urban and the non-urban part of a region can be estimated. For the typology only trends were considered, resulting in 4 possible types: decline-decline, decline-growth, growth-decline and growth-growth (with urban and non-urban being the respective units).

Fig. 8 and 9 show the input data for the typology: the relative change of population on regional level and for the urban centres. In order to keep the maps legible the dynamics are presented separately for each RUR type. Figures 10 to 13 present the population dynamics for RUR types 1 to 4 respectively.
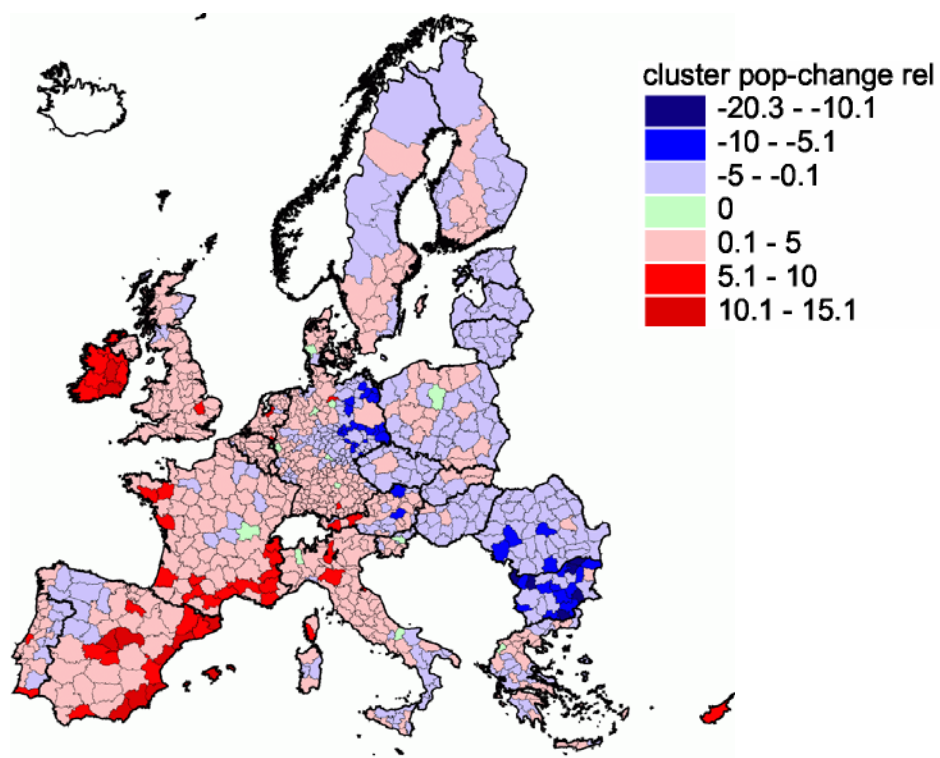
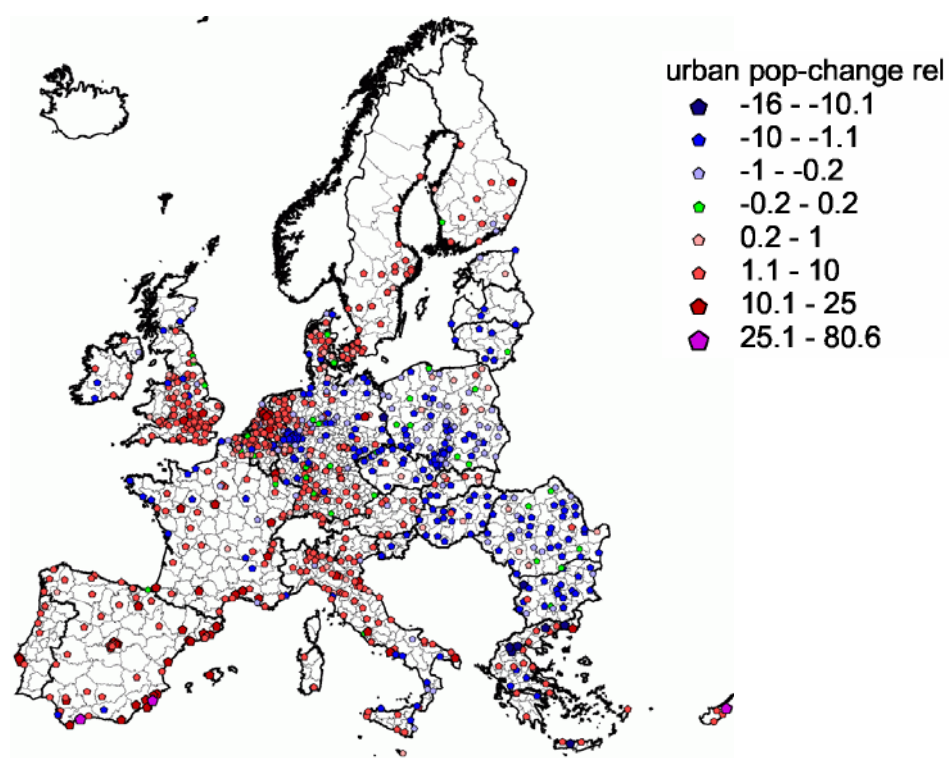Fig. 8: Relative change of population per RUR (2000/04)

Fig. 9: Relative change of population for urban centres (2000/06)
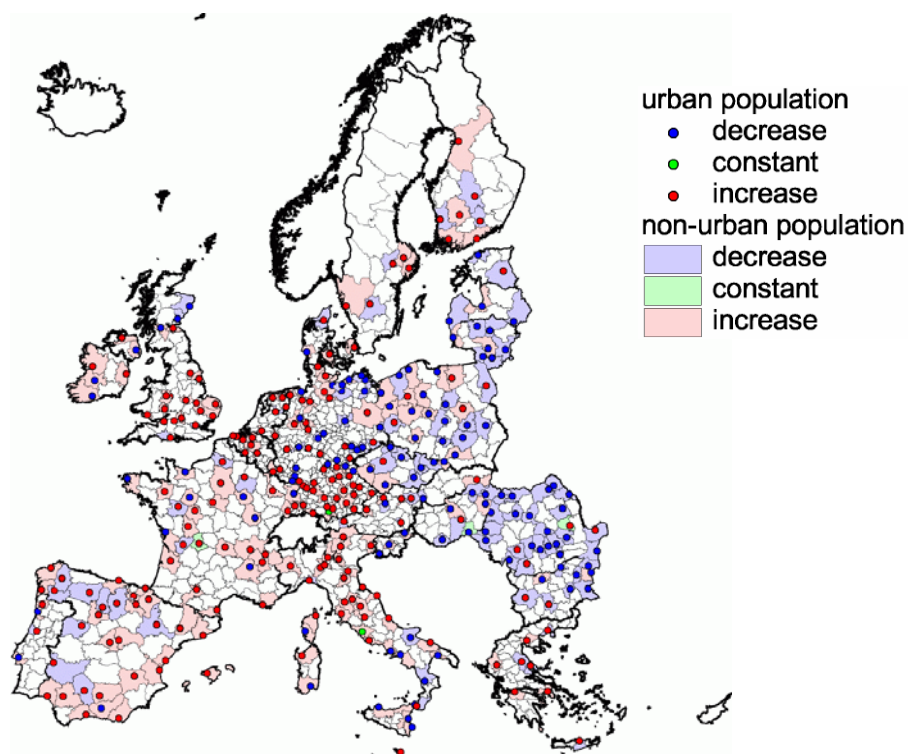
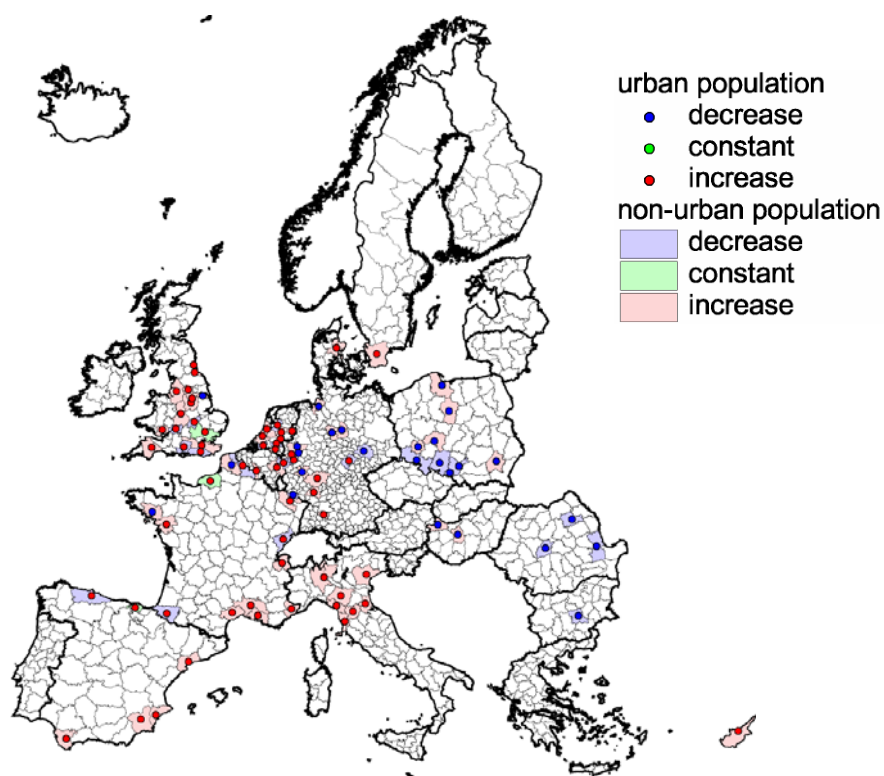Fig. 10: Population dynamics for RUR type 1 (mono-centric)

Fig. 11: Population dynamics for RUR type 2 (urban poly-centric)
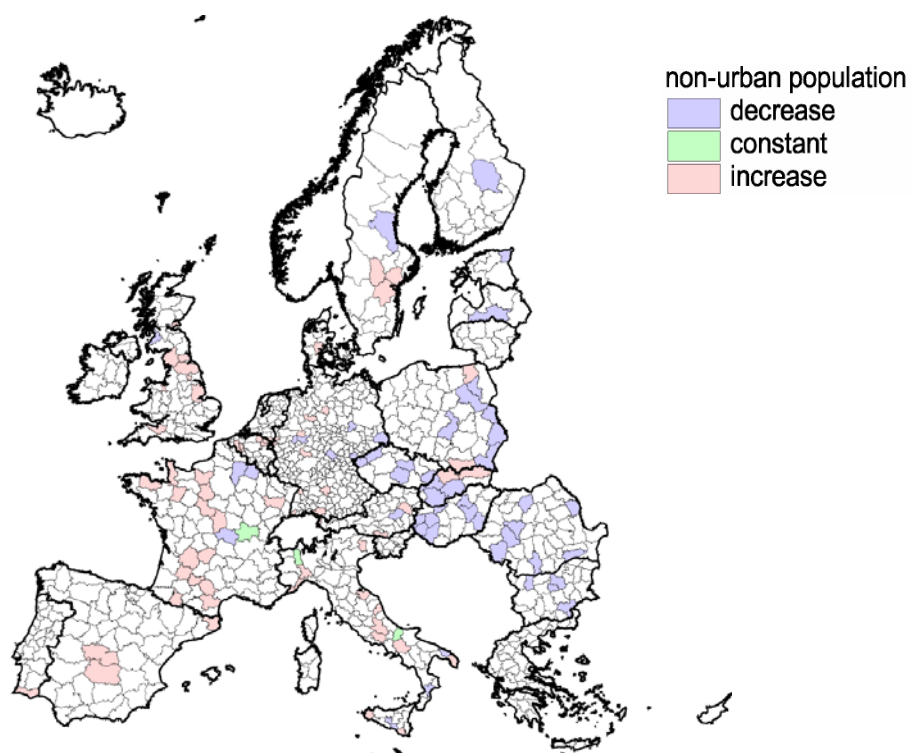
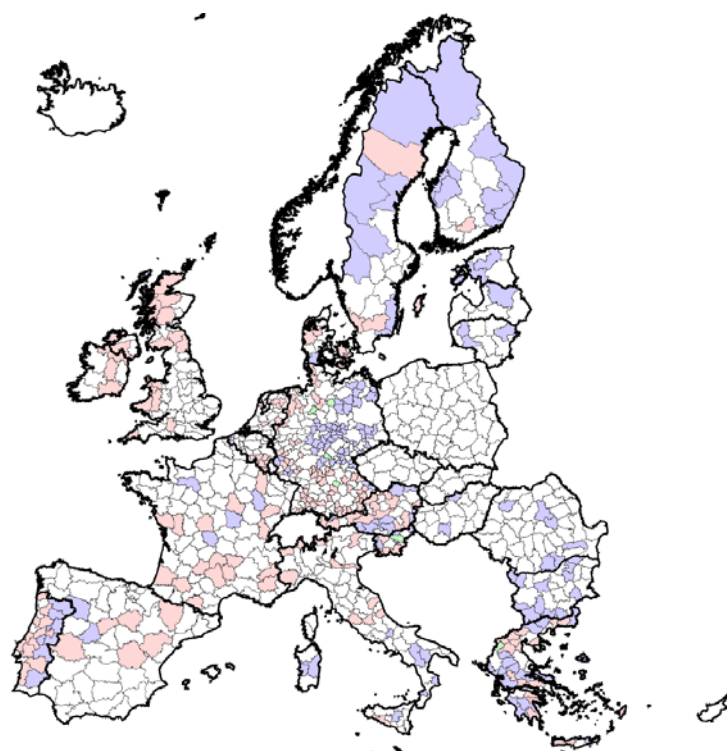Fig. 12: Population dynamics for RUR type 3 (peri-urban poly-centric)

Fig. 13: Population dynamics for RUR type 4 (deep rural)

Table 1: Population dynamics in RURs

type	No of cluster	No of cities		urb_non-urb
10	129	76	61	pos_pos
			15	pos_neg
		52	17	neg_pos
			35	neg_neg
		1	1	const-pos
11	140	83	51	pos_pos
			2	pos_const
			30	pos_neg
		57	21	neg_pos
			1	neg_const
			35	neg_neg
12	59	40	33	pos_pos
			7	pos_neg
		18	8	neg_pos
			10	neg_neg
		1	1	const-pos
2	86	60	42	pos_pos
			3	pos_const
			15	pos_neg
		26	15	neg_pos
			11	neg_neg

type	No of cluster		
4	370	198	pos
		6	const
		166	neg
3	120	66	pos
		3	const
		51	neg

Table 1 gives an overview of the dynamics of the RURs, including the number of RURs and of cities, and the corresponding trends. To give an example: the type 2 (urban poly-centric) can be found in 86 RURs, of which 60 have cities with positive population trends, of which 42 also have a positive trend in the peri-urban areas and in the hinterland.

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Friedrichs, J. (1977): Stadtanalyse. Soziale und räumliche Organisation der Gesellschaft. Reinbek: Rowohlt.

Ley, D. (1996): The New Middle Class and the remaking of the Central City, Oxford, Oxford University Press.

Attachment:

WP2.2 Governance and spatial planning

Attempts to acheive a planning system typology

Iván Tosics: „How to perform the 'cluster of regions' task?"

17 February 2008

In the „cluster of regions" task we have to give information for all the NUTS 2 regions (in all of the PLUREL countries), what is the likelihood in the future for substantial, average or very little expansion of urban land use. What we have to estimate is the willingness and the ability of the public hand (which is in decision-making position regarding land use changes) to resist the push from the market actors (the population, investors, etc.) towards increasing urban land use in ever more dispersed locations. This information will be used as a 'layer' in the model, while the magnitude of the push for more urban land use will be estimated separately, in another layer.

The decision of the public hand depends in concrete cases on many factors. In an Europe-wide model we can 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 – if the information is available – which will bring the decision-making model closer to reality.)

- The structure of government shows the potential strengths of the public hand to influence land use changes in RUR areas. For that factor the local (municipal) government and the supra-local, higher administrative levels have to be described, regarding their role in decisions concerning re-zoning of land use. Another important piece of information is the size of the decision-making unit compared to the RUR region. We can raise the following hypothesis: the closer the decisive (regarding land-use changes) administrative level is in size to the RUR region, the more power it has to influence land use changes for the RUR region.

- The type of regional/spatial planning policy shows the willingness, intentions, directions to influence land use changes in RUR areas. This 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 growth of urban land use, through concentrating development either on already used, e.g. brown-field areas or into compact areas of new development, ususally with good public transport links.

These two factors, the political and the planning power are not totally independent from each other. 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 central cities, with its substantial decision-making power, counterbalances the fact that the settlement structure of

France is the most fragmented in Europe.) On the other hand, consolidation of the fragmented local governments can substitute for the missing regional planning policy. (Example: large, consolidated local governments in Bulgaria, consisting from many, earlier independent settlements.)

How can the effects of these two factors be combined to arrive to a single indicator, reflecting on the NUTS2 level the probable responses of the public hand on the push of market actors towards more urban sprawl?

The two factors can be operationalized as follows:

- Structure of government (strength and size of that administrative level which is most decisive regarding land-use changes): small and fragmented, medium, large and consolidated.

- Type of regional/spatial planning policy: non-interventionist laissez-faire systems, medium, strong and controlled spatial policies.

Their interference, i.e. their joint effect can be hypothesized as follows:

Government deciding on land use change	Type of regional/spatial planning policy		
	a) Non-interventionist, laissez-faire systems	b) Medium	c) Strong, controlled spatial policies
A. Small, fragmented	1	2	3-5
B. Medium	2	3	4-5
C. Large, consolidated	3-5	4-5	5

The values in the table reflect the ability/power of the public hand to resist the push of market actors towards more urban sprawl, ranging from minimum (1) to maximum (5).

The outcome of our work regarding the „cluster of regions" task would be to determine this value for each NUTS 2 region, in all of the PLUREL countries. It is very likely that these figures will be determined on the basis of national level investigations into the governance systems and into the regional/spatial planning policies, which means that all NUTS 2 regions in the same country will get the same value (with potential differences only for the capital city regions).

On that basis our tasks in the near future can be described as follows. Both of us should concentrate on the issue of land-use change, more precisely on the institutional/power relationships and on the planning/policy aspects of such decisions.

- Regarding the government-power relations it has to be explored, how are such decisions taken, by which administrative level. Than the size of the decision-making level should be compared to the size of the RUR regions (cf with the work of ARC about the delimitation of RUR

regions). The outcome should be a classification of all the NUTS 2 regions into the A, B, C categories.

- Regarding the planning policies aspect (what kind of policies influence such decisions) the main issue is to elaborate whether any supra-local level policy exists which has an influence on the decisions of local governments. The outcome should be a classification of all the NUTS 2 regions into the a, b, c categories.

In both cases the work should be performed on national level, potentially making separate judgments for the sub-national units in the case of federal countries and for the capital city regions.