

ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Executive Summary

August 2003

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<http://www.hut.fi/Units/Separate/YTK/research/ur/index.html>



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EXECUTIVE SUMMARY

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In addition to the Executive Summary at hand the Third Interim Report includes:

Map Set 1: Maps selected for presentation purposes

- for high-quality printing available as eps-files on a CD-rom
- for a quick overview compiled in one pdf-document

Map Set 2: Maps used for analytical purposes

- compiled in one pdf-document to accompany the reader of the report (versions for high-quality printing: please contact CURS/HUT)

Map Set 3: Examples of other resulting maps

- compiled in one pdf-document to accompany the reader or the report
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Part One

- **Short presentation of concepts, methodologies and typologies used/developed**
 - **Application of Common Platform and Crete Guidance Paper:** all points required by the document "Guidelines for Interim Report in August 2003" from the CU, including
 - Integration of points raised in CU response on IR from March 2003
 - Networking undertaken towards other TPG
 - SWOT analysis
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Part Two a)

1 European wide maps and analysis

Part Two b)

- 2 Profile of the functional and physical characteristics in the urban-rural interface**
 - 3 Presentation of typologies of urban-rural relationships revealing risks and potentials**
 - 4 Development of tools for the processing of the new data base, indicators and map-making**
 - 5 Systems for the monitoring of new trends of territorial developments**
 - 6 Conclusions and concrete ideas for policy responses**
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Annexes

- A) Data for the ESPON database
- B) Graphs related to rank-size study
- C) Graphs related to performance of regions
- D) Graphs related to the study of land cover

In addition, the following working documents that have been summarised in this Interim Report, are available via the project's own webpage:

<http://www.hut.fi/Units/Separate/YTK/research/ur/index.html>

- WP1 Working Document (pdf)
- WP2 Working Document (pdf)
- WP4 Working Document (pdf)

EXECUTIVE SUMMARY

1 Policy frame

In the European debate on urban-rural relations, there seems to be a presumption that these relations have a history of polarisation and conflict, and that the basic goal of any decent policy would be to bridge the historical gap between town and country. This idea of opposition is probably traceable to the effects of the emerging industrialism of the early 19th century and the legacy of Romanticism, which easily attributed antagonistic characteristics to urban respectively rural life. Part of the initial carrying ideas of the 19th century labour movement was to bridge this alleged antagonism. In recent European policy documents, the idea of antagonism is pursued by the persistent demand for redeeming the conflict: one basic goal of European integration is to promote “urban-rural partnership”.

In the main European document with regard to spatial development of the EU, the ESDP (European Spatial Development Perspective), the spatial development of Europe should be based on the equally important ideas of social cohesion, economic development and environmental considerations. The objectives with respect to spatial development of the continent is outlined in altogether 60 so-called policy options, covering the following issues

- polycentric spatial development and a new urban-rural relationship,
- parity of access to infrastructure and knowledge, as well as
- wise management of the natural and cultural heritage.

Concerning the development of rural areas, urban-rural partnership, and the creative management of cultural landscape, the ESDP argues in favouring of

“Strengthening small and medium-sized towns in rural areas as focal points for regional development and promotion of their networking.” (Option 14.)

“Maintenance of a basic supply of services and public transport in small and medium-sized towns in rural areas, particularly those in decline.” (Option 19.)

“Promotion of co-operation between towns and countryside aiming at strengthening functional regions.” (Option 20.)

“Integrating the countryside surrounding large cities in spatial development strategies for urban regions, aiming at more efficient land use planning, paying special attention to the quality of life in the urban surroundings.” (Option 21.)

“Promotion and support of partnership-based co-operation between small and medium-sized towns at a national and transnational level through joint projects and the mutual exchange of experience.” (Option 22.)

“Promotion of company networks between small and medium-sized enterprises in the towns and countryside.” (Option 23.)

“Preservation and creative development of cultural landscapes with special historical, aesthetical and ecological importance.” (Option 53.)

“Enhancement of the value of cultural landscapes within the framework of integrated spatial development strategies.” (Option 54.)

“Improved co-ordination of development measures which have an impact on landscape. (Option 55.)

“Creative restoration of landscapes which have suffered through human intervention, including recultivation measures.” (Option 56.)

In conclusion, the options of the ESDP reflect the idea that *there is a need for supporting centres of the rural regions by developing or maintaining basic services and transport, and integrate these regions functionally through the means of strategic work and planning. Co-operation and networking between territorial units, between private companies as well as through public-private partnership should be promoted, and the landscape should be preserved, enhanced or restored.*

From the point of view of research a whole set of questions is actualised by the policy options of the ESDP:

1. If urban-rural relations are going to be studied, how to define “urban” as apart from “rural”?
2. Urban-rural relations obviously imply a connection that has emerged historically during centuries. How to conceptualise urban-rural relations in a time perspective?
3. The policy options of the ESDP formulate functional as well as environmental aims. What are the essential components of urban-rural relations and how could they be conceptualised both in terms of functional relations as well as in terms of environmental relations?
4. In a study covering a whole continent, the problem of scale is essential. How to define urban-rural relations on various geographical scales, from continental to local?
5. The various geographical levels of study require the application of a whole set of different methodologies. How to uncover essential traits of urban-rural relations within the limits of available data and accomplished research?
6. Improved governance is seen as a means for promoting urban-rural relations. What objectives can, however, be realistically improved by public policies?

2 Conceptual remarks

The ESDP is not specific on what is meant by the concepts of “urban” and “rural”. The text of the ESDP implies a notion of a European centre and a periphery. In the policy options “rural” is connected particularly to “small town and medium sized towns”, in general terms the periphery, although also the relation between large cities and their countryside is addressed. Historically there is, however, a bond between the most urbanised areas of Europe and extensive farming. Countryside is not equal to periphery. The support of towns in the initial phase of European urbanisation all the way to industrialisation presupposed agricultural surplus, which in almost all cases was accumulated locally. Extensive farming and developed urbanisation is then, consequently, closely linked up in Europe. This means there is a huge need for defining the basic categories as well as the notion of “relationship” in a diversified manner.

The existence of urban-rural relations implies the idea that there is something that can be called “urban” and “rural”. It is the nature, characteristics and functions of the counterparts in a given context that determine their relations. However, “urban” and “rural” are not entities that exist regardless human practice and particular interests: rather the nature and character of these categories are dependent on how they are defined. By *defining* the concepts “urban” and “rural” we actually define some major traits of their interconnections.

In this study, we assume that the concepts of “urban” and “rural” can be defined in a variety of ways. Chosen definitions must be operational in the sense that they have to be related to some particular interest of knowledge. In defining “urban” as apart from “rural”, any definition has to reflect the *operational interests* underlying the chosen definition. This requirement is enhanced by the fact that empirical evidence in order to demonstrate the clear-cut distinction between the two categories seems to get more arbitrary as time goes on. More than being proper names of given settings, “urban” and “rural” seem to be dimensions or characteristics of any given environment. These

concepts represent sets of associations that can be attributed to a whole range of types of environments.

Any relationship is dependent on the counterparts, and their functions in a given context. Referring to systems theory, one could say that any relation within a given system reflects the internal processes or the dynamics of that system. The system itself is characterised by a certain degree of inertia, which is the structure that constitute the system itself. With respect to urban-rural relations, our point of departure is a distinction between *structural and functional relations*.

Structural properties refer to those characteristics of any physical environment that are comparatively stable over time and in most cases have emerged as a result of human endeavour spanning over centuries of time. Such structural properties are established land-use patterns, settlement structure, distribution of population, etc. Functional properties refer to the factual use of the physical environment such as various forms of production, consumption, communication, entertainment, etc. We assume that “urban” and “rural” can be defined according to various structural and functional *properties*. In this sense the two categories can be defined according to for instance population density, land-use patterns, economic activities, and functions in a given system.

We also assume that urban-rural *relations* can be defined in terms of structural as well as functional relations. Urban-rural structural relations are determined by the way the physical environment is *constituted and shaped* while their functional relations are determined by the way the physical environment is *utilised*. Over time, particular functions of any given setting change as production and consumption patterns change. An effect of this is that also the physical setting is reworked over time. From this point of view all urban-rural relations are part of a perpetual reshaping process over time. Structural relations are, however, characterised by a certain degree of stability because the physical world cannot be rebuilt over night. Functional relations on the other hand can be changed over night, given the flexibility of the physical setting to house a multitude of various activities as well as the flexibility of various functions to adapt to various physical settings.

3 European research on urban-rural relations

The prephase of ESPON, the SPESP (Study Programme of European Spatial Planning) was an initial attempt to address the issue of urban-rural relations on the European level by research. The SPESP paid a considerable attention to urban-rural relations, and the main theme of the summary of the research programme actually dealt with this issue.¹ As a result of the work, the *main trends* affecting urban-rural relations were defined. Listed were the changing nature of economic activities and their spatial consequences, dynamics of innovation and learning, changing demographic profiles, social change and differentiating lifestyles, new basis for culture, identity and citizenship as well as environmental sustainability as a motivating concept.

An attempt to identify types of territories on a scale urban-rural was based on urbanisation rate, rural population density, the degree of contrast in the distribution of settlement size, average distance to any urban settlement, the primacy of the largest city as well as the size of the largest city. A *typology of regions* was elaborated according to which the territory of the EU was grouped in six classes:

- regions dominated by a large metropolis,
- polycentric regions with high urban and rural population densities,
- polycentric regions with high urban densities,
- rural areas under metropolitan influence,
- rural areas with networks of medium-sized and small towns, and
- remote rural areas.

With reference to *urban-rural relations*, it was concluded that there is an urgent need for data on the flows between the urban and rural areas of a region. This conclusion is certainly pertinent, but it implies a difficulty of scale. How could the internal urban-rural relations on NUTS3-level be rendered

¹ Nordregio R2000:4

on a European level? The structural relations between urban and rural areas was not in focus in the SPESP, which means that this part of the research issue of the study at hand cannot be founded on the results of the SPESP.

The focus of the SPESP was on *partners* involved and the nature of their relationships. A distinction was made between *actually operating, functional linkages* between urban and rural areas on the one hand, and on *initiatives to formulate, adapt and implement an integrated policy* on the other hand. Consequently, priority was given to factual activities on the one hand and on regional governance on the other hand. A typology of urban-rural relationships was outlined:

- home-work relationships,
- central place relationships,
- relationships between metropolitan areas and urban centres in rural and intermediate areas,
- relationships between rural and urban enterprises,
- rural areas as consumption areas for urban dwellers,
- rural areas as open space for urban areas,
- rural areas as carries of urban infrastructure,
- rural areas as suppliers of natural resources for urban areas.

Although this list indicates functional relations, it is clear that structural relations like land use patterns, settlement structure and population density directly affect the listed functional relations. This is actually one of the crucial questions of this study: to analyse the correlations between functional and structural relations in terms of regional characteristics. More particular functional relations have to be dealt with in a set of case studies, which are chosen in a way that all the various regional characteristics are covered.

In the SPESP, a huge amount of case studies were analysed but the choice of these were not based on a systematic study of regional differences. What was lacking was a regional typology indicating the character of all the various regions in Europe according to their structural characteristics and functional relations on a urban-rural axis. The objectives of the SPESP-study on urban-rural partnerships concerned

- settlement structure and improved accessibility particularly in regions with relatively high population density,
- diversification of the economy in a wider urban-rural context,
- conservation and development of natural resources and heritage, as well as
- promotion of natural and cultural heritage in economic development strategies.

Urban-rural partnerships were quite different both in form and composition. They could be formal as well as informal, and involve just public actors or various combinations of public and private actors. According to the SPESP, constraints to co-operation and partnership turned out to be a weakly developed sense of common purpose between the various actors in the regions themselves. Four specific policy areas were pinpointed for particular attention:

- accelerating agricultural restructuring and diversification of the economy in rural areas,
- mobilising and enhancing endogenous resources not least through valuing natural and cultural amenities,
- developing the economies of small and medium-sized towns,
- promoting sustainable development in metropolitan and other highly urbanised regions.

The SPESP stresses the need to distinguish between urban-rural relationships on the one hand and urban-rural partnerships on the other hand. The focus of the study at hand is of course on urban-rural relations, but the policy implications of these relations concern partnerships as well as other kinds of co-operation and governance. The investigation of the structure of European Functional Urban Areas (EFUAs) is stressed by the SPESP because the prevailing increase of functional urban regions is supposed to reduce the "traditional dualism" between city and countryside. Therefore, it is necessary to have better links between policies addressing urban areas and policies addressing rural areas. A current problem, however, is that about one quarter of the countries included in the study at hand have got data and research on functional urban regions that would render comparison possible on a European level.

4 Urbanisation as the context of the study

The idea of something called “countryside” certainly requires its opposite, the “town” and the “city”. The theoretical understanding of urban-rural relations that gives primacy to the urban side has far-reaching implications for the understanding of urbanisation. In this view, urbanisation is not something that is solely connected to towns and cities, but it involves the countryside as well just from the start.

Urbanisation actually encompasses the whole range of human life, which means that the countryside and rural life are not seen as residual factors of urbanism but an equally important counterpart in a relationship between urban and rural settings, and more generally speaking, urban and rural life. In this study, the concept of urbanisation is understood in this broad context, and urbanisation is conceived as a crucial concept for understanding and conceptualising urban-rural relations further. Three concepts of urbanisation are often distinguished, that is urbanisation as demographic development, as structural changes in the economy and as ideas, images and behaviour of people.

Urbanisation in terms of *demographic changes* usually refers to the growth or decline of urban settings of a certain size (population size 200 persons, 1000 persons, 2000 persons, 5000 persons, etc.) depending on national classifications and interest of knowledge. Furthermore, these urban settings are often classified according to rank size, and a study of urbanisation would then include a study of the changes in the various parts of the hierarchical urban system for instance on the national or regional level. Usually such studies are carried out by defining an urban system in a way that the delimitation of the system makes sense, that is, it constitutes an integrated entity.

Of course one can study very large territories that are not composed of only one integrated urban system. Europe as a whole is an example of a territory that is not composed of only one integrated system, due to historical reasons, but includes various national and regional subsystems. The political aim is, however, to promote European integration in all aspects, and this will in due time lead to an enhanced integration between the current national and regional urban systems of Europe. The eventual result may be an integrated European urban system. It is important to realise that the effects of globalisation are not uniform in urban systems of different types. Some effects of globalisation may have a uniform impact on the whole of Europe, others may effect the various subsystems in very particular ways depending on the maturity of urban system in question. Therefore it is important always to study the effects of European integration and globalisation in clearly defined local, regional and national contexts.

In terms of demography, urbanisation indicates relative population changes between urban and rural settings. In this sense, urbanisation may proceed even if the urban population decreases in absolute terms, providing the rural population decreases even more. It is the *relative shares of population* in the two categories that counts. Now, the problem is of course to define “urban” apart from “rural”. Any territory under scrutiny must be classified into two distinct categories. Traditionally this was not a problem as settlements of a certain size, say bigger than 1000, 2000, 5000 or 10 000 persons would be classified as urban while residual population would be classified “rural”. Traditionally also the size of a settlement corresponded fairly well (albeit not always) to its legal status as a town or country, which meant that the total town population (in legal terms) of a country would correspond to the total urban population of that country.

As an effect of suburbanisation and reforms in the structure and classification of territorial units, in particular the continued practice in many countries to enlarge the size of local units by merging municipalities (Sweden being an example in point), the division in town and country has in many regions disappeared altogether or got quite blurred. Consequently, it is increasingly difficult to assess demographic changes on an axis of urban-rural. At the European level, the problem is getting more pronounced because the various European countries have fairly different ways of classifying “urban” and “rural”. With regard to empirical studies of urban-rural relations at the European level, it is of course essential to reach a classification of “urban” and “rural”. At the European scale this cannot be made on the NUTS5 (municipal) level for practical reasons, and

therefore a classification must be carried out on the level of NUTS3 (national subregions), which means that each NUTS3 unit must be classified according to a chosen set of criteria indicating degree of urbanity respective rurality.

Urbanisation in terms of *structural changes* in the economy relates to the movement of people between various sectors of the economy, some of them significantly rural (agriculture) and others mainly urban (commercial services). In some of the European countries this is taken into account in the national classifications of urban and rural population. The difficulty with this conception of urbanism is that it seems to be more and more difficult to assign particular economic activities solely to urban or rural settings. Industries are relocated from urban to rural settings on a grand and global scale. R & D activities are increasingly located in attractive semirural/semiurban environments. Even corporation headquarters are not necessarily any more situated in the centre of cities. Agriculture is carried out in an increasingly industrialised fashion, which means that traditional environmental values connected to rural environments are disappearing. An increasingly important factor in deciding the location of new establishments is the supply of qualified labour, which gives pronounced priority to environmental qualities in terms of pleasant living environment for the employees and “a good address” for the company as well as good accessibility. Such settings are increasingly to be found in rural areas close to international communication nodes.

A major, still relevant criterion for choosing location sites for different activities are the space requirements. Huge, bulky and land consuming activities are preferably located in places where land is comparatively cheap, i.e. semiurban or, if possible, rural settings. Locational patterns are of course a function of planning regulations and practices in various European countries. In countries like UK where land-use is strictly controlled and the exploitation of rural land very restricted, land-use patterns take a different shape than in countries like Finland with a more liberal planning policy and simply more space available. A case of its own are countries and regions like the south of Italy where unauthorised development is commonplace.

An important question related to structural changes of the economy concerns value of land. This issue is much studied, but not so much in the overall context of urbanisation. The importance of the issue must be underlined, however, with reference to its importance for the changing urban-rural relations (see Part Two for a detailed explanation).

The third concept of urbanisation is related to *behavioural patterns and lifestyles* as well as images and ideas related to these. In the tradition of Romanticism, such images are exaggerated, but the images of urban and rural lifestyles are also commodified and traded on the market in the mode of various tangible and intangible objects, sports and entertainment, housing preferences, etc. Already in the 60s, the French philosopher Lefebvre coined the notion “rurban”, indicating the merge between urban and rural lifestyles. According to prevailing housing preferences in the densely populated parts of central Europe, rural dwellings are by far more appreciated than urban settings.² The main casual reasons given for this is that rural environments provide more stable and secure social relations and more nature and space. In urban literature these arguments are ridiculed as being biased and untrue.³ On the contrary, urban life is casually connected to creative and diffusion aspects. The modalities and causes of this innovative function of urban life are said to be numerous and well-known.⁴ High population density is thought to facilitate contacts, and therefore lead to accelerated flows of information. The heterogeneity of urban activities leads to attempts to adopt or apply solutions already used in other sectors. In addition, a variety of educational activities and institutions is thought to promote the reflective mind, and lack of conformism would nurture original individuals. Much of these images have little or no bearing when the history of innovations are studied, but all the same prejudices concerning urban life seem to be taken for granted in urbanisation literature. Taken into consideration the potential of information and communication technology, the sources of knowledge seems to be at hand for anybody, regardless where he or she lives.

² Built Environment 28(4)

³ Valentine 2001

⁴ Bairoch 1981, 68

5 Urban-rural typology

5.1 Short analysis based on the typology work

The task was to develop a typology of urban and rural areas in Europe on NUTS3 level. This typology would not as such address the question of urban-rural relations, but would characterise all the regions across Europe in terms of their urban respective rural features in a comparable way. Indirectly, this typology would of course render a picture of how the various kinds of regions are distributed across Europe. In this sense, the typology gives an idea about urban-rural *spatial relations* in Europe, i.e. in what ways regions of different character locate in relation to one another in the European space. The typology can and will be used for further analyses, for instance in defining whether the character of regions in terms of urban-rural features correlate with socio-economic or population peculiarities, or to any other features of interest when studying urban-rural relations.

An urban-rural typology of Europe represents a static cross-section of the situation at a given time. Now, such a rendering could be blamed for lacking the dynamism needed for understanding our current European predicament in a changing world. A dynamic rendering can, however, be developed in two ways. On the one hand, the logic of the typology can be reproduced for other time sections, either with regard to past time sections, or *for* the future (a scenario), or *in* the future, which means the method can be reapplied in order to get a sequence of comparable pictures. On the other hand, the typology can be provided with dynamism by relating it to the context of urbanisation across Europe, which is a constantly ongoing process and allegedly marked by a predictable set of sequences. Current urbanisation theory would then provide tools for a dynamic interpretation of the regional typology in terms of urbanisation prospects. In this context, urbanisation is considered a phenomenon that influences urban as well as rural settings, which means that rural settings are not just a residual part of urbanising Europe, but of equal importance with regard to the dynamic picture of development.

The idea of elaborating an urban-rural typology is based on the assumption that regions can be characterised according to degree of “urbanity” or “rurality”. The complexity of such a classification system is of course dependent on the number of criteria applied and the number of classes implemented for each criterion. For reasons of analyses, the system of criteria and classes should be complex, because in this way a diversified picture of Europe can be gained. For purpose of cartographic rendering, and comprehension altogether, the system should be as simple as possible in order to reduce the number of types within the typology to a minimum. Therefore, any elaborated typology has by necessity to be a compromise between these two requirements. There is also the possibility to use a complex typology for the purposes of analyse, and a simplified version for purposes of illustration.

What is meant by “urban” and “rural”? It would be comparatively easy to construct a typology for the whole of Europe providing there would be a common understanding as to the meaning of the two concepts. This is, however, not the case. One of the very few criteria that seems globally relevant is population density (e.g. number of inhabitants per square kilometre). In the context of OECD, a border between urban and rural would be a population density of 150 per sq.km. In the context of EU, population density 100 is much used. However indicative this criterion is, it does not address the fact that “urban” regions can be sparsely populated, and “rural” regions very densely populated. Each of the considered 29 countries has got a national classification of urban and rural settings on the local level. The national criteria are, however, very diverse, and cannot easily be combined into a coherent picture of Europe. The work with the typology started, however, by investigating the national classification systems and by producing Europe-wide renderings based on national classifications. Then it was continued by developing a set of harmonised criteria in order to elaborate a typology where the national variations could be comparable at the European level.

National, diverse classification systems

The national criteria for defining urban and rural population represent a huge variety of cases (see Part Two, Chapter 3):

- Firstly, the criteria may be conceptual or based on government decisions. The latter could as such be based on a conceptual framework as well. It is significant that in the EU 15, the criteria are conceptual whereas government decisions seem to be the basis for the definition of urban and rural population in the accession countries.
- Secondly, in all EU 15, except Belgium, the criteria include population data in terms of size of centre, size of spatial unit or population density. This is an important factor in some of the accession countries as well. The variation of criteria applied is very huge indeed.
- Thirdly, other criteria are (non-)agricultural share of workforce, commuting, central place function as well as legal decisions. The last one is the case particularly in the accession countries.

Because of different criteria applied, the urbanisation rates that are defined according to the national definitions are not comparable, and the variations across the countries are indeed huge. Among the EU 15, Belgium has got the highest urbanisation rate (urban: 100 percent, rural: 0) and Ireland the lowest (urban: 58, rural: 42). Belgium, however, defines these shares in a way that is completely different from the Irish one. In the case of the accession countries the extremes are Malta (urban: 91, rural: 9) and Slovenia (urban: 51, rural: 49).

There is no chance whatsoever to harmonise the concept of urban and rural population based on the existing national classifications. Still it was considered interesting to elaborate a few maps that would render a picture of the whole European territory based on these national criteria. These maps should, however, be viewed as a compilation of national maps, because they essentially picture the situation within each country according to national criteria. They give a picture of how the different nations comprehend the distribution of urban and rural populations within their country. A harmonising factor of the maps is that the criterion of population density has been applied in absolute figures. Consequently, an absolute scale (population density) is applied, and this gives a picture of the relative position concerning urban and rural population across Europe, but the definition of what kind of population is considered to be urban or rural, is based on national classifications.

The map (see Map Set 2, Map 1) that shows the *Urban population density based on national classifications* corresponds to the standard picture of Europe, with a strong concentration in the “blue banana” as well as in the regions of the national capitals, and scattered around in a few other places. Another map (see Map Set 2, Map 2) shows the *Rural population density based on national classifications*. This map is of great interest because it indicates the rural character of huge parts of the accession countries as well as the importance of rural population in the “blue banana”. The map shows that overall high population density also normally include high rural population density. This means that the periphery of Europe, determined according to distance from the traditional gravity point of population density (Rhine valley), is not necessarily more “rural” than the centre when judged by rural population density. In this picture, the central and south of Britain, the North Sea coast, the eastern Baltic coast of Germany, the central and south of Poland, the south of Italy, the northern coast of Portugal, scattered areas in Germany, and the central parts of Romania seem to be the centres of European rural population.

A further step in the direction of harmonising the European picture is taken by combining the national classifications (share of rural population per country in three classes in relation to the country average) and population density (three classes). The map (see Map Set 2, Map 3) called *Urban-rural population in Europe based on national classifications* is thus a combination of harmonised criteria (population density) and national criteria (share of rural population in relation to

country average). The map gives a fairly diversified picture of the territory under scrutiny in terms of the urban/rural character of the various regions in Europe. It is, however, to be read as a compilation of national maps that are not entirely comparable with each other. Amazingly huge parts of Britain are rural according to the national classification system, but of course very densely populated. Other parts that are rural according to national standards but densely populated are parts of the Netherlands, the south of Italy as well as tracts of Poland, the Czech Republic and Hungary.

In using these renderings it is important to keep in mind that they do reflect the national understandings of where urban and rural populations are to be defined, but the map is not coherent. It is rather a compilation of national maps.

European, harmonised classification systems

In trying to find harmonised criteria for the classification of regions on a urban-rural scale, three objectives were considered:

- Firstly, it is important to realise that the character of a region is depending on the degree that the physical environment is transformed by human intervention. There are two major kinds of interventions, one concerns agriculture and the other building. The first one is in essence “natural” although human-dependent, the other one is completely “artificial”. A third category would of course be land unaffected by human hand, a kind of residual “wilderness”. To what degree wilderness exists at all in the world of today is disputable, but for the purpose of analyse such a category may be introduced. In conclusion one could argue, that degree of “urbanity” is directly relative to degree of land transformed by human hand, and relative to the degree of artificial land in particular. “Wilderness” would then decrease with increasing “urbanity”. The category “agricultural land” is interesting in this context. It is obvious from current experience, that agriculture as such does not necessarily imply a “rural” style of life apart from an “urban” one. Nor does it as the national classification systems indicate necessarily correspond to low population density, or a low degree of built land for that matter.
- Secondly, population density is obviously a factor that influences the degree of “urbanity” versus “rurality”, and most national classification systems take this into consideration directly or indirectly. A problem is, however, that population density must be measured against a given territory. If all the population of a region lives in urban settings, but the territory of the region is huge and includes many unpopulated areas, the population density of the region is of course low. But low population density does not by necessity indicate “rurality”. Nor does high population density by necessity correspond to urban life styles, industrial production or an abundance of commerce. What it does indicate is the potential of extensive markets, but that is all. In order to integrate the urban-rural aspect into the issue of population density, the concept of functional urban regions could be introduced. This means that a given share of the population within a given territory is commuting on a daily basis to places of work that are located within the territory in question. This share of the population would then be “urban” in a sense that they contribute to the urban economy within a larger territory of functional integration. There is, however, no particular reason why functionally integrated areas are labelled “urban” and not for instance “rural”. Actually many of the functionally integrated urban regions of the sparsely populated northern regions of Europe are fairly “rural” in character albeit integrated into a territorial economy labelled “urban”.
- Thirdly, regional or national urban systems, or the emerging European urban system for that matter, are composed of a hierarchy of urban nodes spanning from centres of local, regional, national or international to global importance. A mature urban system, regardless scale, is often supposed to correspond to the idea of rank-size. The various urban centres are supposed to be of a particular size according to their position in the overall hierarchy of urban centres in the system. Two issues arise from this. On the one hand, the maturity of a system is indicated by the balance of its rank-size. On the other hand, at a higher level of scale larger urban systems emerge as a result of spatial integration, but although the various

sub-systems may be in balance, the overall system may not be balanced. What we can see in Europe as a result of the emerging integration is an adaptation of the regional and national urban systems into something that in due time may be called a European urban system. To distinguish the hierarchical levels and name the nodes of this emerging European urban system may be premature, but an attempt is made in ESPON project 1.1.1. This hierarchy can then be applied in differentiating all the European regions on a scale according to their respective degree of “urbanity” or “rurality”.

It was decided to attempt a urban-rural typology that would be based on all the three approaches explained above, i.e. land cover, population data as well as the character of urban centres in each region. A test based on correlations between factors determining both the structure and the functional relations between urban and rural settings was carried out (see Chapter 3.1 in Part Two). This test actually confirmed the sensibility of the idea.

Land cover

The land cover of Europe is available from 1990 based on the CORINE remote sensing data, which have been transformed into statistics on the NUTS 3 level. Available data does not cover properly all parts and categories of Sweden and Norway. The data of a second survey made in 2000 will be available by the end of 2003, and will provide the possibility to compare the land cover of the early 90s with that one decade later. At this stage, only the 1990 data has been available for the project.

After carrying out a series of test concerning agricultural land, forests, semi-natural areas, pasture, artificial land, etc. (see Map Set 2, Maps 4-6 as examples), it was decided to base the land cover typology on the three basic categories in the CORINE, i.e.

- *artificial land* indicating built up areas and other artificial surfaces like roads, harbours, quarries, etc,
- *agricultural land* indicating all the various forms of natural land cover transformed by humans for their own purposes,
- *wilderness*, which is the residual group of natural land covers less touched by human hands (with the exception for forest cover, which at least in the Nordic countries are almost entirely a result of human intervention).

A map (see Map Set 2, Map 7) was elaborated that showed the share of artificial surface as percentage of the total area (European average 3.74 percent). The parts of Europe with the most extensive cover of artificial surface corresponds fairly good to the most densely populated parts in Europe. Again the “blue banana” is traceable. This result was to be expected because the share of artificial land must relate to the intensity of land-use.

When the share of artificial land is related to number of population, the picture changes surprisingly much (see Map Set 2, Map 8). There is formed an almost continuous corridor of high exploitation per capita, stretching from the south-east of Europe through Bulgaria, Romania, Hungary, Slovakia, Czech Republic and eastern Germany up to Denmark and Sweden. Other countries with heavy exploitation per capita are Belgium, France and Latvia. Britain and the Netherlands, which have an extensive coverage of artificial surface, do not face heavy exploitation measured per capita. The map could be considered an indicator of factual environmental measures in the countries across Europe, because construction is considered to be the most important single cause of decreasing biodiversity. It is significant how national borders seem to structure the picture, indicating various *de facto* environmental approaches at the national level. This stands in stark contrast to outspoken policy aims for instance with respect to Denmark and Sweden in particular.

The share of agricultural land in Europe (European average 52.48 percentage) indicates a concentration in the north-west of Middle Europe and tracts of land scattered around. The share naturally decreases in mountainous and northern areas. The share of forest and semi-natural areas, here called “wilderness”, increases where farming is sparse. Of course huge parts of forested areas

are not “wild” in the sense that they would be untouched by humans. Actually only minor parts of the Northern forests are not actively cultivated. But with respect to landscape and character, they are labelled “wilderness”.

The task was to combine the three main categories (artificial surface, agricultural areas, the rest = “wilderness”) into an overall picture of European land cover. A practical problem was to elaborate a classification that would be simple enough to render an overall picture of Europe, and be comprehensible in terms of the delimitation of classes. Three main categories of land cover were considered and each of them was divided into two classes according to if whether one or two of the three main types of land cover were above European average. On the top of the map was indicated by raster the regions with a population density above European average (107 inhabitants per sq.km). The picture (see Map Set 1, Map I) produced shows a remarkable resemblance with the general image of Europe with an urbanised core and more rural periphery. What is peculiar, however, is the strong share of agriculture in the core regions. Another peculiarity is the prevalence of artificial surfaces in some east European countries. The picture also shows that in some countries, notably in Poland, Italy and partly Spain, regions dominated by agricultural land are still very densely populated. Also some regions with a land cover share of “wilderness” exceeding the European average are densely populated, such as parts of Spain, Portugal, Italy, France, Switzerland and Austria.

Population density and functional urban areas

Population density is one of the main criteria for differentiating regions according to degree of urban respective rural character. A picture of Europe (see Map Set 2, Map 9) where all the NUTS 3 areas are divided into four classes of approximately equal size, indicate the densely populated core on a north-south axis (or crescent). What is striking, however, is the large tracts of sparse populated land in the interior of France and the Iberian peninsula, which in size almost correspond to the sparsely populated north.

Based on the figures produced by the ESPON project 1.1.1, the share of population within functional urban regions in each NUTS 3 was calculated. It turned out to be inaccurate, however, as the data only concern “plus-commuting” (the centres of functional urban areas where day-time population exceeds night-time population) but not “minus-commuting” (the periphery of functional urban regions where night-time population exceeds daytime population). This is a statistical problem in metropolitan areas where the catchment areas (FUA = the functional urban area) are larger than one NUTS3. A map was produced where population density and the share of population encompassed by FUAs were considered by establishing four categories (Map 10 and Map 11) according to population density (above/under European average: 107 inhabitants per sq.km) and share of FUA population (above/under European average: FUA population 48.5 percent out of total population). It was supposed that the four classes would express the degree of urbanity in a falling sequence. Because of the difficulties with data concerning the extension of FUAs and NUTS 3 divisions, it was supposed that the all NUTS 3 areas with a population above average would also be integrated into functional urban areas. In this way the number of classes was reduced to three: population density above average, population density below average but FUA population share above average, population density and FUA population share below average.

A further problem with the NUTS 3 division in relation to population density and the shares of FUA population was the small NUTS 3 areas of Germany, the Netherlands, Belgium and the UK. A map was elaborated on the bases of NUTS 2 in these countries, except for the UK where the step to NUTS2 did not have the pursued effects (i.e. with respect to the London region).

Urban hierarchy

The hierarchical ranking of functional urban areas (FUA) according to the role of the centre is elaborated on the basis of the ranking of ESPON project 1.1.1. The classification was somewhat simplified in order to reduce the number of classes because of the demand to combine this ranking with other categories, explained above. The NUTS 3 regions (NUTS 2 in Germany and the Benelux-countries) were ranked in four classes according to the presence of one or more FUAs of global/European, transnational/national or regional/local importance, or of no centre of importance.

When the FUA-hierarchy (4 classes) is combined with population density and share of FUA-population (3 classes), the theoretical number of regional types would be 12. If the aspect of polycentricity is taken into account the two middle categories of the FUA-hierarchy would double and the total amount of classes would reach 6. This would lead to a typology of 18 types. Two were, however, non-existing and consequently a map with 16 types of regions emerge (Map Set 2, Map 12). This map gives an indication of the urban/rural features of the various NUTS 3 regions across Europe according to population density, degree of urban integration (share of FUA population) and urban hierarchy. This map is in a sense purely functional, and disregards the actual land cover and land use. It is, however problematic because the FUA-population recognised was “collected” to the centres as the day-time population of the core and left the areas where people commute to the centre (e.g. the region of Paris) without population. The problem is that the NUTS division does not comply with the factual functional urban regions. A correct rendering presupposes that the NUTS-division encompasses whole FUAs. Therefore, a simplified functional categorisation was elaborated with only 9 types (Map Set 2, Map 13).

The final typology

The criteria of surface (6 classes) were combined with population density and degree of urban integration (4 classes). The number of types was then 24 (Map Set 2, Map 14). As some of the types were represented by only a few regions, it was thought pertinent to combine some of the types in order to gain a better overview (Map 15). At the end, number of types was reduced to ten (Map Set 1, Map III).

The ten final types are:

1. Only the share of artificial surface above average, population density (and possibly share of FUA population) above average.
2. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density (and possibly share of FUA population) above average.
3. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density below average, share of FUA population above average
4. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density below average, share of FUA population below average
5. Share of agricultural land (and possibly “wilderness”) above average, population density (and possibly share of FUA population) above average.
6. Share of agricultural land (and possibly “wilderness”) above average, population density below average, share of FUA population above average
7. Share of agricultural land (and possibly “wilderness”) above average, population density below average, share of FUA population below average
8. Only the share of “wilderness” above average, population density (and possibly share of urban population) above average.
9. Only the share of “wilderness” above average, population density below average, share of FUA population above average
10. Only the share of “wilderness” above average, population density below average, share of FUA population below average

In order to make the comprehension of the ten types easier. They are in the following named:

High share of artificial surface only

1. Urban, densely populated and high urban integration

High share of artificial surface and agriculture or "wilderness"

2. Urban-rural, densely populated and high urban integration
3. Urban-rural, not densely populated but high urban integration
4. Urban-peripheral, not densely populated and low urban integration

High share of agriculture only or agriculture and "wilderness"

5. Rural-urban, densely populated and high urban integration
6. Rural-urban, not densely populated but high urban integration
7. Rural-peripheral, not densely populated and low urban integration

High share of "wilderness" only

8. Peripheral-urban, densely populated and high urban integration
9. Peripheral-rural, not densely populated but high urban integration
10. Peripheral, not densely populated and low urban integration

On the top of the regional typology, the various categories of urban centres are integrated into the maps. Two maps were produced, one with the major urban centres (Map Set 1: Map IV) and the other with minor urban centres (Map V). The typology as a whole then integrates the obvious variations in the physical environment as indicated by the primary colours used (urban: red, urban-rural/peripheral: brown, rural-urban/peripheral: green, peripheral-urban/rural: blue). The choice of colour then illustrates the degree of human intervention (red: most, blue: least). The strength of the shade of each colour indicates the degree of urban integration. Thus the typology integrates the various dimensions outlined previously, and illustrates the position of various classes of urban centres on the top of that.

It is notable, that the reference to land coverage helps to differentiate the peripheral regions from the rest as "wilderness" is a feature of mountain regions as well as the most peripheral regions of Europe providing the centre of population gravity in central Europe as taken as the point of reference. The application of land cover also helps in differentiating urbanised regions within the European core. An outstanding feature is that agriculture is not a sign of peripherality as such, on the contrary, there is a strong connection between agriculture and urbanism. This can of course be explained by historical reasons. The originally rural Europe could sustain an urban, dense population only in regions where agriculture was intensive and the yield was high.

Another interesting insight is that extensive building and urban integration do not necessarily coincide. The maps indicate extensive construction in many places, notably in some of the east European countries, where the degree of urban integration is low. This indicates environmental attitudes where land is "wasted" compared to the European average. In some other countries, like Italy and Poland, the situation is the other way around. Regions are densely populated and integrated in terms of urban functions, but land is sparsely used.

The typology will be used in studying variations in terms of population profiles, migrational patterns, economic performance, etc. In doing so, conclusions may be drawn with regard to the spatial dynamics in terms of regional characteristics and a variety of performances and attractions that can be *located*. One should, however, keep in mind that the various types of the elaborated typology are not evenly distributed across Europe. This means that regional performances and attraction are not

only to be related to certain regional types, but that every particular type of region within the typology is unevenly distributed across Europe. This means that the types as such do not “cause” e.g. a particular economic performance. Rather the various types locate in a particular way within the territory and the factual factors causing e.g. “development” are something beyond this study. The typology just indicates an overall functional and physical pattern of Europe, but should not be interpreted as possessing explanatory power as such.

In the philosophy of science, there is sometimes made a distinction between *causa* and *ratio*, where *causa* stands for the “real cause” and *ratio* for the “explanations”. In this context, the typology belongs to the latter. The causes of development, attraction, etc. are to be found in history, in politics, etc. but not in the spatial distribution of particular entities. Effect should not be taken for cause, (and might not for right).

Comparison between national and harmonised views

The harmonised criteria on which the typology is based render a much more diversified picture of Europe than the map based on national classifications concerning the distribution of urban/rural population despite the fact that both maps have almost the same number of classes. Overall, there are many similarities between the two maps, but there are some important differences as well. According to national classifications, a major part of Britain is rural, but in the harmonised European context, a major part of Britain is urban. The same remark is valid for parts of Germany and the Netherlands as well as for the south of Italy. Actually Italy is a very interesting case as the quite sophisticated national system for classifying the distribution of urban/rural population causes a very clear divide between the north and the south of Italy. According to the harmonised typology, these differences are still traceable but blurred and the whole picture is more diversified. In the case of Poland, the pictures rendered by the two maps also differ to a great degree.

It may be premature to draw very long reaching conclusions from the comparison of the map expressing non-harmonised-national views and the elaborated harmonised typology. A thorough analysis needs some complementary studies. It is clear, however, that for the purpose of getting an overview of Europe in terms of urban-rural relations, the elaborated typology represents a good start.

5.2 Performance of regions

The intention is to investigate *urban-rural relations* by studying various issues within the context of the elaborated urban-rural typology. The research method is to investigate significant features at NUTS 3 or NUTS 2 levels (depending on data availability) of the various regional types in terms of socio-economic and population characteristics as well as net-migration and comparable available data of relevance for urban-rural relations. Such statistical analyses can be made on the European level, e.g. by calculating European averages per regional type, or by calculating national averages, or by a combination of these by presenting the averages per regional type within each considered country. A few test calculations were made concerning GDP per capita (NUTS 3) and migration (NUTS 2).

GDP per capita

The distribution of GDP per capita in the various ten regional types (see Graph 1 in Annex C) indicate comparatively huge regional inequalities, where the best-off regional type (Nr. 1: Urban, densely populated and high urban integration) has a GDP that is 4,7 times bigger than that for the “poorest” regional type (Nr. 4: Urban-peripheral, not densely populated and low urban integration). The distribution of average GDP per capita among the regional types is of course not only related to the particular characteristics of each type, but related to the fact that the various regional types are unevenly distributed across Europe. It is, however, notable that the average GDP per capita very clearly falls in relation to degree of urban integration in the two main categories signified by a high

share of artificial land cover. Then it jumps up in the next overall category where the land cover is dominated by agriculture and/or wilderness (within a variation from approximately 12 100 euros per capita to 17 300 euros per capita). Generally speaking, regions with a population density below European average and with a degree of urban integration (share of FUA) below European average are not performing as well as more integrated regions of the same character in terms of land cover. An exception is type nr. 5 (rural-urban, densely populated and high urban integration), which does not perform as good as less populated regions of the same overall category. Except for this, there seems to be a tendency that population density and degree of urban integration increases economic performance in all main land cover categories.

When GDP per capita is studied separately for each region in each country (see Graph 2) a number of conclusions could be drawn:

1. Firstly, not all types of regions are distributed evenly across the various countries. Only France has got all the ten regional types represented within its borders. The particular existence of types in each country could of course have an effect on the distribution of GDP per capita in the various countries.
2. Secondly, the graph shows clearly that the main explanatory factor of regional economic performance is actually the country where the region is located. There is a huge difference especially between EU15 and the accession countries.
3. Thirdly, in most countries the most urban type of region represented in the country has the best economic performance. In the cases of Greece and Portugal, the highest economic performance is found among the second most urbanised regions. Only in the case of Lithuania, the situation is different, but there the two highest urban regional types are actually lacking altogether.
4. Fourthly, the regional variations are comparatively small in some countries (e.g. UK) and quite huge in other (France, Finland). Each country displays, however, its own profile, and interpretations need backing from additional studies. The overall impression persists, however, that the degree of urban integration correlates with a comparatively good economic performance.

Net-migration

Net-migration can be studied only at NUTS 2 level due to available data (via project 1.1.4.). In order to interpret the results correctly, one should realise that the map of Europe looks quite different at NUTS 2 level (see Map Set 2, Map 16) compared to the NUTS 3 level.

The overall picture of the European situation within the 9 types represented (on NUTS 2 level type 10 is not represented!) shows some fairly interesting features (Graph 3):

Firstly, all regional types have a positive net-migration performance for the period from 1996 to 1999 with the exception of type nr. 5 (rural-urban, densely populated and high urban integration), a type that is predominant in Sicily and Northern Ireland, and strongly represented in Poland. The types nr. 4 and nr. 7 in the graph are no averages as both types are represented by only one NUTS 2 region. The general impression is that there is an out-migration except for peripheral regions characterised by "wilderness" land cover. In this sense the migration does not seem to flow necessarily from poorer regions to richer ones. On the contrary, in terms of the most urbanised parts of Europe, the tendency seems to be the reverse.

The national variations are huge (see Graph 4). In some cases there are clear tendencies of counter-urbanisation (UK) whereas in other there is a very migratory flow to the most urbanised part of the country (Finland). Each country would need particular attention when conclusions are drawn. The NUTS 2 level is most probably too rough for this kind of studies at the national level. At the European level NUTS 2-based renderings could be of some interest.

6 Conclusions and policy recommendations

6.1 Policy implications of the European-wide maps and analysis

The elaborated maps show that a huge majority of regions represents contexts where both urban and rural environments and modes of life are present simultaneously. This statement is valid for the densely exploited centres of Europe as well as for the peripheral areas. It means that urban-rural relations are - more or less - everywhere present on the regional level. The variety of regions is huge, however, and the situation in various parts of Europe very different. Consequently, policies addressing urban-rural relations must be diversified. These policies have to take into account differences in population density and degree of urban integration, the character of the region in terms of its urban centres as well as its overall physical landscape and its potentials. The elaborated maps give an account of all these variables and their distribution across Europe.

A successful policy (with respect to political support) is a rephrasing of processes actually already happening. The case of the ESDP-options concerning urban-rural relations seem to match that pattern: the options actually review tendencies that are already in full swing. Three examples:

1. Firstly, *medium and small size functional urban areas are already over-represented* when compared to the ideal rank-size graph. This reality is rephrased as policy options in the ESDP (nr 14 and 20).
2. Secondly, the major overall tendency of urbanisation in Europe is actually *counter-urbanisation*, i.e. a flow of people down the urban ladder from larger to smaller urban settings. This tendency actually underpins ESDP policy options (nr 19 and 21). However, important exceptions to the rule exist in several countries.
3. Thirdly, in the long run *the number of functional urban regions seem to decrease while the size is increasing*. This actually fuels ESDP policy options (nr 22 and 23).

Factual trends shaping urban-rural relations that are already in full swing thus support all the ESDP policy options concerning the *functional relationships* between urban and rural settings. What is not supported, are the ESDP policy options dealing with the *qualitative aspects of environment* (options 53, 54, 56). From this point of view, what is really needed are the design and implementation of policies that would effectively address the current degradation of the social and physical environment. Such policies are, however, very risky for politicians to pursue, as it would not be about mere rephrasing of current trends. On the other hand, environmental qualities are gaining more and more attraction on the behalf of the well-situated strata of society, and the promotion of environment-related policies are soundly based on economic prospects, which may increase the political interest for these matters. This could have implications for the further work of this project.

An important basis for policy design is the recognition of the particular character of each region, and the comprehension of *environmental factors in terms of assets, not in terms of restrictions*. Here a conceptual distinction must, however, be made. In practical terms, environmental restrictions can turn out to be economic assets in the future. Restrictive environmental policies are actually conserving assets for future generations, and economic exploitation of such assets can in many cases be the best way of protecting these assets. Here the touristic aspects of well-preserved historical cities and natural parks serve as good examples. The combination of environmental and cultural aims on the one hand with the demand for profits on the other is not a question that can be solved by theoretical reasoning, it is a practical one, the solution of which requires "prudent management" as stated in the ESDP.

The project at hand relates the discussion about urban-rural relationships to the process of urbanisation and to the challenges of managing vs. inducing growth as the different phases of

urbanisation and business cycle follow each other. This is also what motivates the review of diverse European, national and regional level policies/initiatives that can have effects on the urban-rural relationships. It is obvious that the scope of urban-rural partnerships as fostered by the ESDP must remain realistic in their scope. In applying the ESDP the policy community must also be sensitive to the critique that the concept of urban-rural partnership has received from several corners of Europe. It relates both to the above mentioned aim of “prudent management” and to the messages coming from those European corners where the spatial development trends show to a direction other than the European mainstream. As the summary of the policy review shows below, the serious promotion of urban-rural partnerships faces also many institutional challenges. A set of recommendations is provided to start with.

6.2 Results of the policy review

EU policies affecting urban-rural relations

Over the last 40 years various EU policies, communications and initiatives have directly or indirectly affected the development of rural and urban areas across Europe. These policies and their impact on urban and rural development have been subject to numerous, well-documented critical analysis and studies. However, little attempts have been made to study the outcome of these influences on urban-rural linkages⁵.

Successive Treaties have increased the influence of territorially significant sectoral policies of the EU on the development and implementation of national and regional spatial policies and the dynamics of urban and rural linkages. Drawing on the ESDP and other sources, it has become clear that the following EU policies have had significant impacts on urban and rural dynamics and, up to some extent, on urban-rural relationships.

1. Agricultural and rural policy particularly the Common Agricultural Policy
2. Regional policy particularly the Structural Funds with their Priority Objectives
3. Community Initiatives and in particular INTERREG, LEADER and URBAN initiatives
4. Article 10 Urban Projects and in particular UPP and TERRA Programme
5. Transport Policy particularly the Trans-European Networks
6. Environment policy especially the Urban Environment and Environmental Action Programmes

A comprehensive review of these policy areas was provided in the First and Second Interim Reports. The Second Interim Report also highlighted the key strengths and weaknesses of each policy area and put forward a preliminary list of recommendations for each. Drawing on those analyses, this executive summary provides key recommendations for improving the EU structural and sectoral policies in such a way that they become more effective in promoting a beneficial relationship between urban and rural areas in Europe.

ESDP and urban-rural partnership

Drawing on a range of socio-economic factors and environmental sustainability priorities, the ESDP highlighted the functional interrelationships of urban areas with their surrounding countryside and the need to move away from the compartmentalisation of policies. It called for a re-evaluation of the relationships between city and countryside, based on the integrated treatment of the city and countryside as functional and spatial entities with diverse relationships and interdependencies. More importantly, it strongly argued for the development ‘urban-rural partnerships’. As presented above in

⁵ Davoudi, S, and Stead, D., 2002, Urban-Rural Relationships: an introduction and a brief history, *Built Environment*, 28(4) pp. 269-277

Chapter 1), ESDP put forward a set of policy options supplemented with some more specific framework for implementation.

If these options are to be implemented, it is imperative that the key weaknesses of EU sectoral policies, as listed below, are addressed and the following policy recommendations are taken into account following the review of Structural and Cohesion policies in 2006.

What are the key weaknesses of EU structural and sectoral policies with regard to urban-rural relationships and partnerships?

The review of the relevant EU policies and the analysis of their key weaknesses and strengths, undertaken in Interim Reports 1 and 2, have made it clear that:

1. There is no explicit and pro-active (as opposed to permissive) EU policy measure which promotes complementarities and integration in urban-rural relationships
2. As regards EU Community Initiatives, with the exception of INTERREG III, there is hardly any recognition or promotion of urban-rural linkages
3. Lack of integration between different EU structural and sectoral policies can act as a barrier to the development of territorially integrated policies at the national and local levels and to the promotion of urban-rural relationships and partnerships
4. The existence of separate measures for 'urban' and 'rural' policies is a key obstacle for development of integrated urban-rural initiatives at the EU level. The narrow definition of geographical boundaries of areas that are eligible for funding limits the development of a wider spatial perspective and the inclusion of neighbouring urban and rural areas within the policy space
5. The lack of dedicated financial support (through EU funding) for strengthening and building institutional and local community capacities hinders the effective implementation of urban and rural partnerships in the context of EU policies and initiatives
6. The cumbersome and inflexible procedures of most EU funding programmes inhibits wider participation of rural partners in EU initiatives

What can be done?

In order to overcome the above shortcomings there is a need to:

1. Promote urban-rural complementarities and partnerships in all relevant EU policies

Example: Introduction of a specific objective in the regulations of EU policies with significant territorial impacts (Transport, CAP, Environment etc.), pertaining to the development of synergies between urban and rural areas.

2. Promote the territorial / spatial dimension as a way of integrating and coordinating measures for urban and rural issues in structural policies and widen and consolidate the geographical delineation of eligible areas for EU funding

Example: introduce and mainstream a new type of *Horizontal Priority* in Objectives 1 and 2 Structural Funds, possibly based on functional urban regions, which requires the promotion of complementarities between urban and rural areas and promote sub-regional strategies for consolidated boundary delineations that are based on functional urban-rural areas under the Structural Funds Programmes

3. Integrate the existing measures for urban and rural areas in Community Initiatives

Example: merge Community Initiatives 'Urban' and 'Leader+' into a single programme which allows the coverage of both urban and rural areas

4. Streamline and simplify the complex and cumbersome administrative procedures

Example: current procedures for Structural Funds Programmes require highly skilled and well resourced partners and hence disadvantage less experienced groups including rural partners

5. Promote partnership and development of effective institutional infrastructure at the sub-regional / inter-municipal scale

Example: make the establishment of partnership arrangement between neighbouring urban and rural areas (often at a sub-regional scale) a key criterion for the assessment of applications for EU funding

6. Dedicate ring-fenced resources for the development of local community capacity building in the relevant EU funding programmes

Example: within the different EU policies and programmes, allocate specific financial support for building community capacities to enable effective participation of often less experienced rural communities in the development of urban-rural projects

National policies affecting urban-rural relations

Chapter 1 (see WP4 Working Document) on national policies affecting urban-rural relationships begins by providing a review of the existing policies in member states which affect urban-rural dynamics in European countries. This was elicited from a questionnaire survey conducted during the first half of 2003⁶. The objective of the survey was to *collect examples of current national and regional policies in Europe that address the issue of urban-rural interdependencies directly or indirectly*. The results of the survey are fully analysed in the form of summary tables and comments and illustrated by charts and figures. In addition, brief summaries of selected case study examples of national policies are presented.

An analysis of the results of the survey demonstrates how the national policies vary, both in the degree to which they explicitly address urban-rural relationships and the desired effect of the policy. Some were primarily interested in regulating the development pressures from urbanisation on rural areas (Denmark, Austria, the UK and Germany to a certain extent) others at strengthening the economic structure of declining rural areas through various measures (Hungary, Slovenia, Portugal, Bulgaria and Italy to different degrees). The report explores the diverse means by which these objectives are pursued and considers the specific issues addressed by other countries. These include respecting an existing policy of demarcation of rural and urban areas, but relaxing it to allow urban dwellers better access to rural areas for leisure and recreation (Netherlands). Another (Ireland) involves preventing mass movements of rural populations to urban areas by stimulating the development of smaller urban areas/towns to hold rural communities together and distribute population growth more widely.

⁶ Individual acknowledgements to the respondents, who made a representative sample of 65% of EU counties possible (for both the urban-rural policies and initiatives), are given in the main report.

The policies	The rationale
Urban and Rural Zoning: The Planning Act (Denmark)	Stop urban into rural sprawl, make a boundary between the two with complementary, but specific functions. Develop services for the hinterland from the cities.
Sectoral Planning (Salzburg) (Austria)	Establish a spatial planning policy to limit industrial development and housing to certain areas and to avoid urban sprawl.
National Development Plan National Spatial Strategy (Ireland) Ensuring the Future – A Strategy for Rural Development *	* Address the issues of economic and social underdevelopment in rural areas and improve the conditions and role of smaller urban centres.
Environmental defence and territorial development for overcoming territorial imbalance (Brescia) Territorial plans of Chieti, Napoli, Siena* (Italy)	* Assure the permanence of the traditional rural landscape structure.
Working Group on Urban-Rural Interaction (Finland)	Create new kinds of links between urban and rural areas.
Joint regional planning Berlin-Brandenburg * Policy for Regional Planning (Germany) Joint programme for the improvement of the regional economic structure	* Make urban areas attractive for inhabiting and renew brown field sites. Limit land consumption and reduce impact on nature, but develop the landscape spatially.
Policy for strengthening the economic structure of declining rural areas (Bulgaria)	Improve agricultural economies efficiency by diversification, better links between urban and rural, but reduction of migration.
Policy for Granting Urban Status (Hungary)	Give rural communities opportunity of town status to gain more services, so improve centre periphery relations.
Strategy of Regional Development of Slovene (Slovenia)	Ensure differences between regions do not increase, preserve minimum density of settlements, forge urban rural partnerships.
Spatial Diversity (The Netherlands)	Restrict development in rural areas, safe-guarding demarcations, but invest in good recreational space and accessible nature reserves.
Reduction of the Asymmetric and Promotion of the Regional Dynamics * (Portugal) Interventions of the Central Administration Regionally Deconcentrated (Zones) ~	* Alter the basis of agricultural regions, sustain water provision and increase rural tourism. ~ Relieve congestion in urban areas and improve accessibility in remote areas.
Urban White Paper* (The UK) Rural White Paper	* Use physical means, spatial planning etc. to improve quality of life in declining urban areas.

Thus while there are hardly any EU policies that promote complementarities between urban and rural areas, the situation in member states is more promising. It is, however, still far from ideal. In over 50% of cases, policies were classified as subsidiary. They were directed at policies such as regional development, transport, industry, agriculture, spatial planning, environment and urban development. These had an indirect impact on urban-rural relationships, but the latter objective was not the major focus. So although this indicates a growing recognition of urban-rural interdependencies amongst EU member states, it still points to a major problem of compartmentalisation of policy. The key reasons are:

- The lack of understanding about the exact nature of urban-rural interdependencies among policy makers and professionals.
- The perception of urban – rural linkages as a simple linear process of rural food supply to urban dwellers and urban supply of manufactured goods to rural population (which fails to recognise the existing complex flows of people, goods, capital, information and services which criss-cross the boundaries of urban and rural).
- The urban-rural dichotomy continues to dominate people’s perception of urban and rural areas.

All policies that focused on urban-rural relations (URR) as their major purpose were all relatively recent in conception; most had been developed and adopted in the last five years. Almost 70% were initiated by national governments, however in all cases implementation involved a partnership approach, usually consisting of national, regional and local level agencies in some combination, sometimes with private or voluntary sector involvement. In over 50% of cases the URR policy covered the whole country, though in some instances only urban or rural regions were covered by the policy. If there is a wide variety of priorities stated in the policy sets, there is an even wider variety of approaches taken to implementing those policies. The largest category favoured the use

of established spatial planning hierarchies from national to local level as the main instrument to achieve the policy set (Denmark, England and Ireland). Others preferred hard restrictions on growth of rural settlements or rural infrastructure improvements. A similar diversity was found in assessment of the key themes addressed by the policies, with tourism, recreation, the environment and settlement planning all significant. However, it could be said that the economic development and employment represent the most influential element in the urban-rural policy sets examined in this report. As the policy sets described here are largely recent introductions and more than half had not yet received any formal evaluation, it is unsafe to draw strong conclusions about their effects. However these findings are useful in 'signposting' the likely direction of URR policy effects. Unfortunately the signs are pointing in several directions at once, with the main themes being;

- improving the relative viability of rural locations vis-à-vis more robust towns and cities
- building stronger links, complementarities and interdependencies between urban and rural places
- restricting either urban or rural growth to advantage either rural or urban places

The next stage of the study will help to clarify and resolve these apparent contradictions in policy direction.

Finally the chapter closes by examining respondents' assessments of the achievements of the policies in their impact on URR and provides six⁷ detailed policy case studies (from Bulgaria, Denmark, Finland, Germany, The Netherlands and the Spanish case).

Urban-rural initiatives

Chapter 2 (WP4 Working Document) on urban-rural initiatives in Europe deals with the second part of the survey. This aimed to *collect examples of urban-rural initiatives / projects / actions which involve joint working of local authorities (with or without other partners) in urban and rural areas*. This part of the survey did not receive as high a response as the previous section. Nonetheless a coverage rate of 40% was achieved and some interesting case studies presented. The results of the survey are fully analysed, supported by textual comments and illustrated by figures and charts. In addition, summaries of selected examples of urban-rural initiatives are presented in the forms 'pen portraits' of eight national cases. The final section of this chapter provides examples of INTERREG projects that address the urban-rural dynamics.

Almost all of the initiatives were very new; none were more than 8 years old. A majority of the projects were involved in trying to develop interdependence between urban and rural areas through building complementarity of services and the marketing of products. With regard to the practical details, in most cases local authorities were the key partners. Funding was drawn mainly from national sources, there was some EU support and limited regional backing. When asked to list the strengths of the initiative, about half noted that at least urban and rural municipalities had started to talk and that the project had required active partnership between the two. A couple of others pointed out that a common point of interest had been found, for example tourism, on which to build a relationship. In three cases an important weakness was that more was likely to be gained from the initiative by the urban than by the rural parties. In instances where an EU programme was the main source of funding, concern was expressed about the future of the initiative. The following tables provide a typology of strengths and weaknesses of the urban-rural initiatives:

⁷ The other six will be completed in the next phase of the project.

Strengths	Comments
Common vision	<ul style="list-style-type: none"> Seeking solutions to problems together
Integrated actions	<ul style="list-style-type: none"> Recognising the need to ensure co-operation Allowing the development of an integrated mobility Possibilities for rural municipalities to develop their economy and social integration
Complementary activities	<ul style="list-style-type: none"> Local players recognise that the area as whole has more attraction than its individual parts
Balanced development	<ul style="list-style-type: none"> Achieving balanced development of activities in Sofia and its surrounding area Coherent objective on settlement forms

Weaknesses	Comments
Limited scope/ boundary	<ul style="list-style-type: none"> Greater Dublin does not cover many rural areas with land available to waste disposal Emphasis on cooperation with suburban municipalities may reduce the benefits for the rural edge
Lack of awareness of URR	<ul style="list-style-type: none"> Too much emphasis on the 'urban' with limited acknowledgment of urban rural interdependencies
Lack of political commitment	<ul style="list-style-type: none"> Rural urban interaction seems to fall into the gaps of 'this is a good thing but organisation is not responsible for it'.
Inadequate and short term resources	<ul style="list-style-type: none"> Uncertainty about the continuation of initiative after completion of EU projects Weak financial capacity

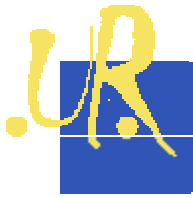
One of the summaries of the selected initiatives is The Town and Country Compacts (TCC) Initiative in the UK. Given that 40% of local authorities in England are partners in at least one urban-rural initiative, it was considered useful to provide a longer profile of TCC. Moreover, the Initiative has been subject to an evaluation by researchers in University of Birmingham. This allows further analysis to be drawn from this case. TCC was launched by the UK Local Government Association in September 1999 to provide a 'joined up' perspective to the two separate White Papers addressing Rural and Urban Development. The focus was on the need for local authorities (municipalities) and other organisations to jointly address spatial planning and management issues that affect both urban and rural areas. An evaluation of the initiative includes assessment of the benefits and constraints of joint working. One positive outcome was that this new holistic approach to development issues made it easier for local authorities to address the new 'well-being' agenda that they have been charged with. For instance in Case Study 10 bringing healthy affordable food from rural areas to their neighbouring deprived inner city areas. Joint working between urban and rural areas also acknowledges that many parts of the country are a mixture of urban and rural and not quite urban or rural enough to fit into compartmentalised policies and funding opportunities. These areas, regions or sub-regions, are polycentric and lend themselves to collaboration building across all parts of their area. 15 individual case studies which were selected for more detailed investigation are then outlined together with recommendations for policy makers. Those specific to urban-rural initiatives are shown below.

Recommendations for rural-urban initiatives
<input type="checkbox"/> Encourage wide participation and commitment from a variety of organisations
<input type="checkbox"/> Work hard to overcome cultural differences between types of organisations which can be exacerbated by rural or urban specialisms
<input type="checkbox"/> Identify key results for different partners
<input type="checkbox"/> Develop a shared vision such as economic development, which is always popular, and think long-term
<input type="checkbox"/> Try and ensure an early outcome in order to sustain momentum
<input type="checkbox"/> Be prepared to adapt the partnership as external factors change over time
<input type="checkbox"/> Gain political support and monitor to ensure further funding can be justified

Following this, eight other case studies have been summarised and presented to provide full coverage of the countries which responded to the questionnaire. Out of these, the following five cases emerged as potential 'good practice examples'. However, these are quite new and it will only be possible to provide a more objective and thorough analysis of them after they have had the time to begin to fulfil their objectives.

- Specialised programme 'Creation of Thematic Park "Poletto" (The Green Field) (Bulgaria) *'Interlinking urban and rural by creating a shared 'leisure space' between them'*
- The Development Council for Vendsyssel with specific reference to the initiative 'Sustainable Rural Districts' (Denmark) *'Creating a division of labour between urban and rural, thus increasing interdependency'*
- Initiative for strengthening of inter-municipality co-operation in the city of Győr (Hungary) *'Involving outlying rural areas in decisions made by the city'*
- Strategic Planning Guidelines for the Greater Dublin Area (Ireland) *'Re-directing development from overcrowded urban areas to new town centres in rural areas'*
- Integrated study of Mobility and Systems of Transport in Municipalities of the association of Medium Tagus (Portugal) *'Bringing together rural and urban through improvements in mobility and transport systems'*

Finally selected examples of INTERREG IIIb projects, which most closely focus on urban-rural interdependencies are charted. These are divided by region in order to identify any common trends operating by the particular geographical and urban/rural composition of that area. The Atlantic Arc projects appear to show an orientation to the rural, with the urban being seen somewhat as a resource to help rural areas in difficulty. With one clear exception (Bridge IT) the North Sea projects most directly address both urban and rural. The North West projects address urban and rural by creating linkages between the two types of area. A few Interreg IIC programmes are also considered, but receive less attention as most were aimed either at urban or rural areas.



ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Map Set 1

August 2003

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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report
August 2003

MAP SET 1: Maps selected for presentation purposes

Map I : European land cover and population density

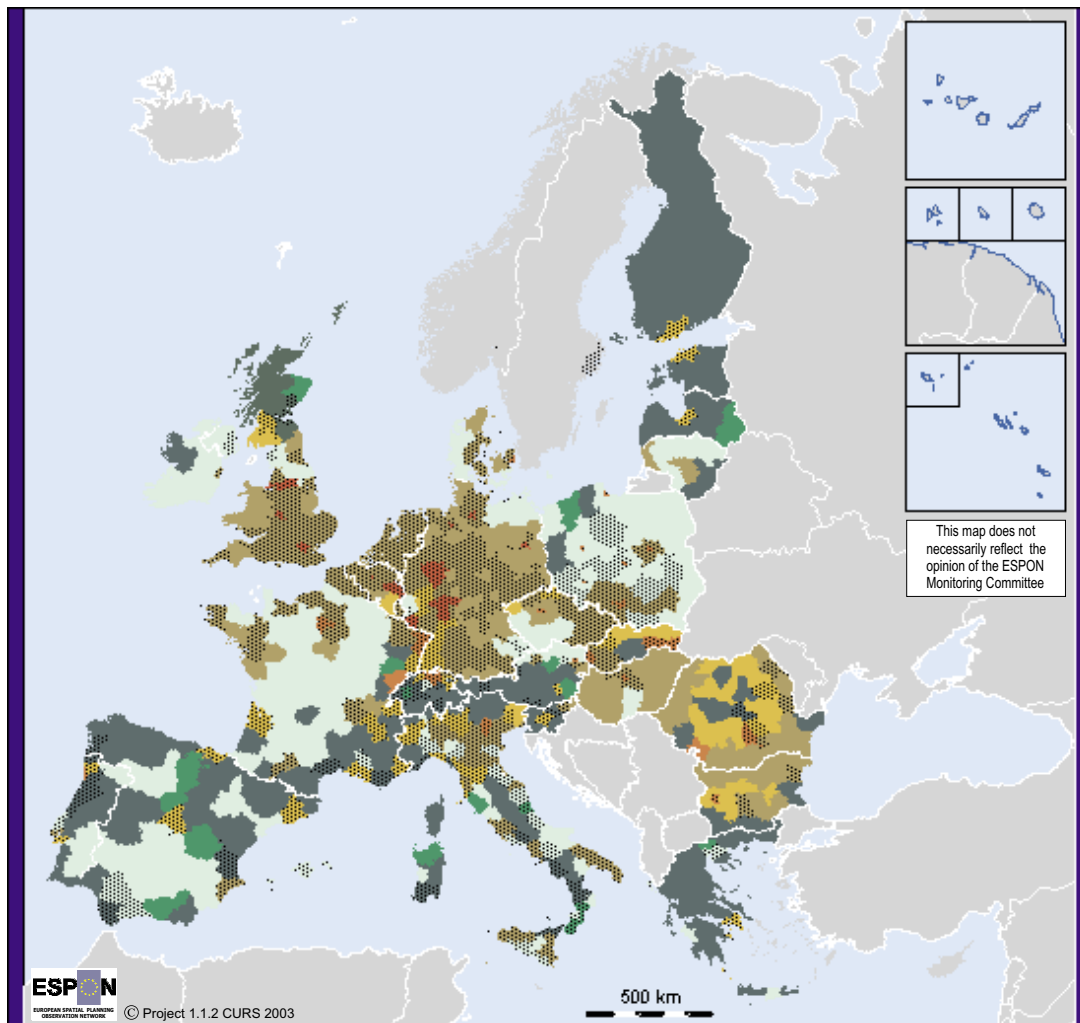
Map II : Population density and the share of urban population / three categories

Map III : Urban-rural typology

Map IV: Urban-rural typology and major cities

Map V: Urban-rural typology and smaller cities

Map I: European land cover and population density



Shares of land use types and population density in relation to EU average

- Only the share of artificial surface above average
- Share of artificial surface and agricultural land above average
- Share of artificial surface and "wilderness" above average
- Only the share of agricultural land above average
- Share of agricultural land and "wilderness" above average
- Only the share of "wilderness" above average
- Population density above or equal to average

Average values in Europe are:

Share of artificial surface: 3,74%

Share of agricultural land: 52,48%

Share of "wilderness" : 43,78%

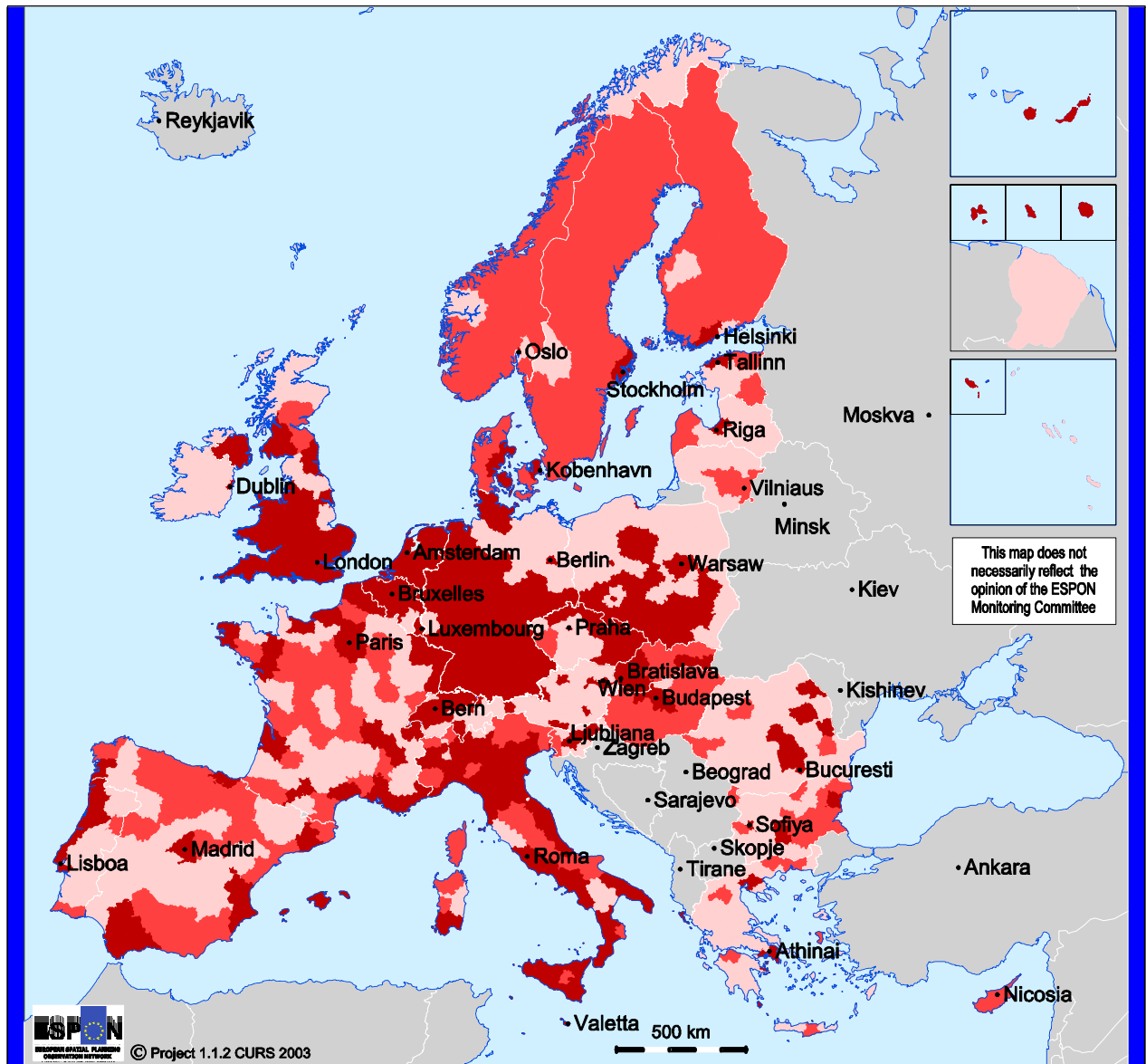
Population density: 107 inhabitants/km²

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Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

Map II: population density and the share of FUA population

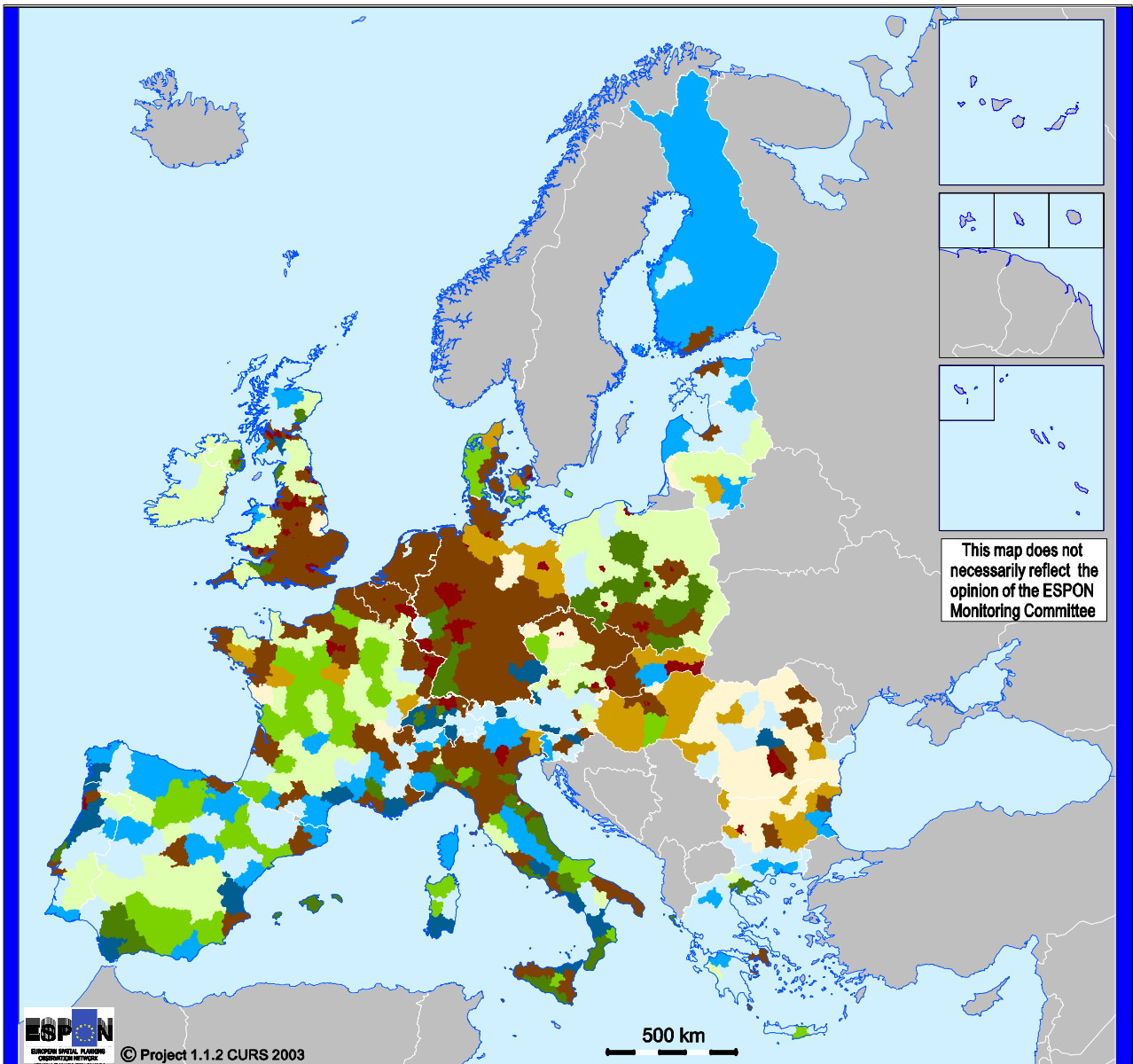


Typology of population density and FUA population

- 1. Densely populated and high urban integration
- 2. Not densely populated but high urban integration
- 3. Not densely populated and low urban integration

Source: ESPON Data Base

Map III: Urban-rural typology



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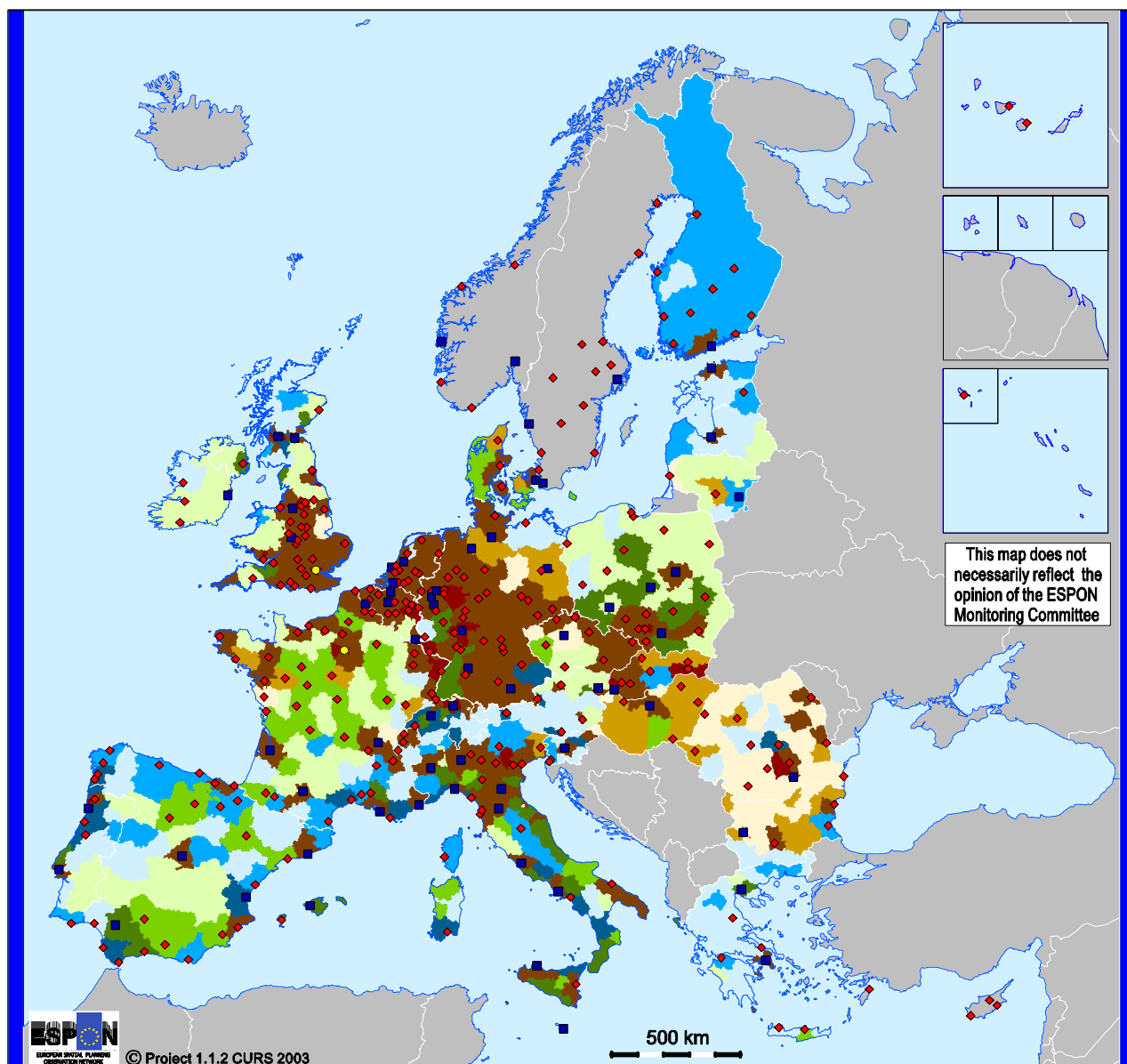
Typology of land use, population density and FUA population

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

- 1. Urban, densely populated and high urban integration
- 2. Urban-rural, densely populated and high urban integration
- 3. Urban-rural, not densely populated but high urban integration
- 4. Urban-peripheral, not densely populated and low urban integration
- 5. Rural-urban, densely populated and high urban integration
- 6. Rural-urban, not densely populated but high urban integration
- 7. Rural-peripheral, not densely populated and low urban integration
- 8. Peripheral-urban, densely populated and high urban integration
- 9. Peripheral-rural, not densely populated but high urban integration
- 10. Peripheral, not densely populated and low urban integration

Map IV: Urban-rural typology and major cities



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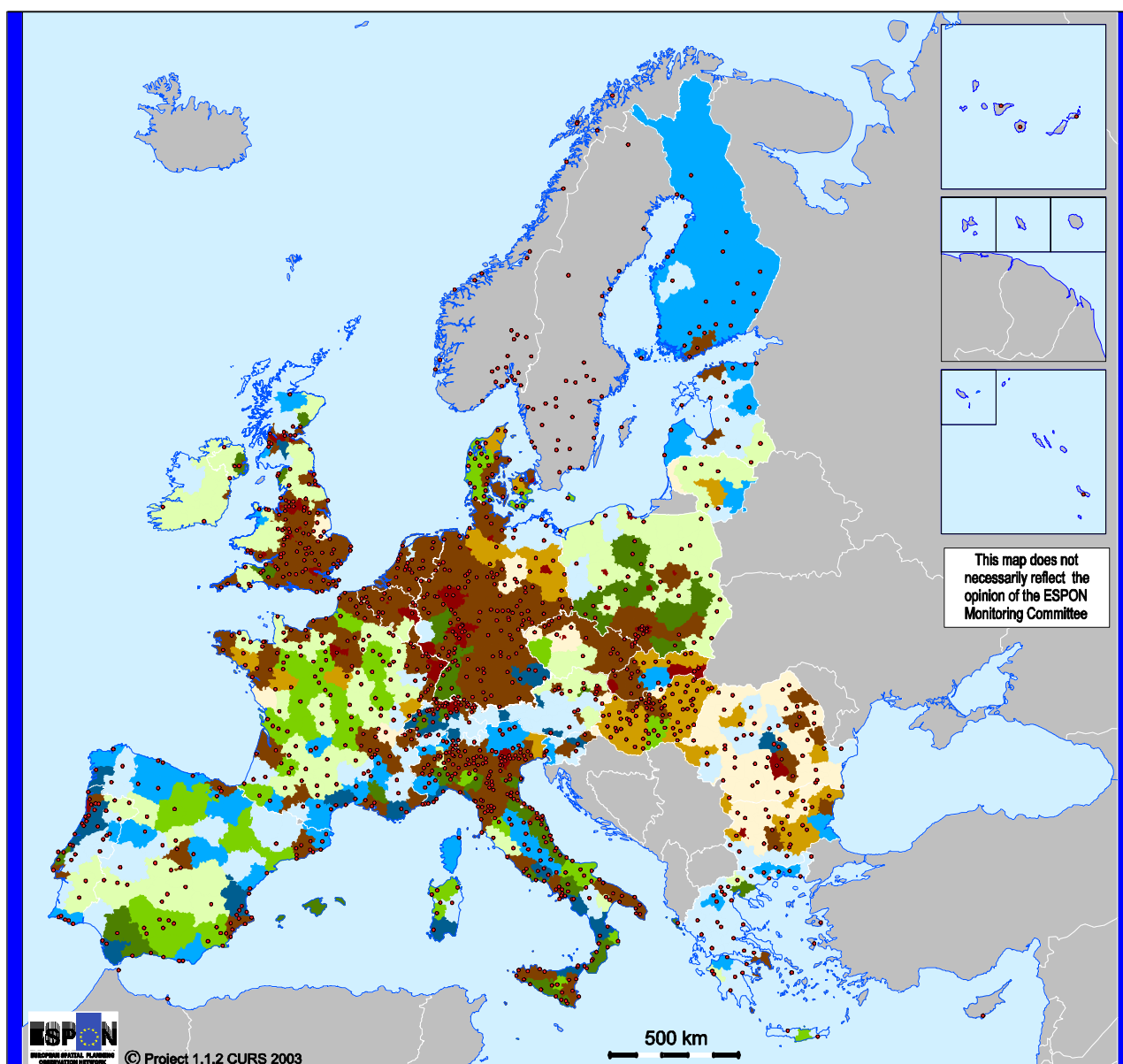
Typology of land use, population density and FUA population

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

- 1. Urban, densely populated and high urban integration
 - 2. Urban-rural, densely populated and high urban integration
 - 3. Urban-rural, not densely populated but high urban integration
 - 4. Urban-peripheral, not densely populated and low urban integration
 - 5. Rural-urban, densely populated and high urban integration
 - 6. Rural-urban, not densely populated but high urban integration
 - 7. Rural-peripheral, not densely populated and low urban integration
 - 8. Peripheral-urban, densely populated and high urban integration
 - 9. Peripheral-rural, not densely populated but high urban integration
 - 10. Peripheral, not densely populated and low urban integration
- ◆ National or transnational level FUA
 - European level FUA
 - Global level FUA

Map V: Urban-rural typology and smaller cities



Typology of land use, population density and FUA population

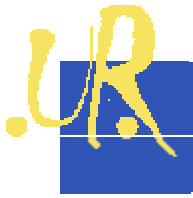
- 1. Urban, densely populated and high urban integration
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- 3. Urban-rural, not densely populated but high urban integration
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- 5. Rural-urban, densely populated and high urban integration
- 6. Rural-urban, not densely populated but high urban integration
- 7. Rural-peripheral, not densely populated and low urban integration
- 8. Peripheral-urban, densely populated and high urban integration
- 9. Peripheral-rural, not densely populated but high urban integration
- 10. Peripheral, not densely populated and low urban integration

● Regional or local level FUA

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Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base



ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Part One

August 2003

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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report August 2003

PART ONE

• Short presentation of concepts, methodologies and typologies used/developed

The basic **conceptual frame** of the project was put up in the bid of the project: the purpose of the project is to study urban-rural relations in a context where the degree of urban versus rural is dependent on the character of both physical structures and functional flows. This is where both the further development of the conceptual base (WP1) and the identification of the information needs of the policy making (WP4) started from. They were then linked to data access (WP2) for the typology work (WP3) and other kind of analysis (WP2+WP3), again feeding the concept and policy workpackages.

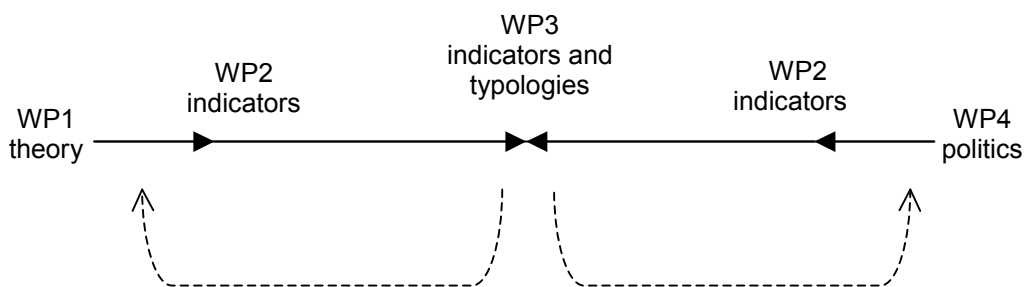


Figure 1: Links between the different workpackages

In addition to the requirements spelled out in the contract addendum, the contacts with the stakeholders, especially with the European Commission, have clearly shown how they see the project connected to a **special task**: to show the existing and increasing interactions between urban and rural areas. This should be done to support the development of more integrated policy approaches at the Community level, taking into account the whole urban-rural scope and enabling weak rural areas to benefit more from growth impetus that would originate from urban areas. The interest would be in illustrating the level and dynamics of urban-rural relationships and showing the nature and impact of urban-rural partnerships, if/where such exist.

The project has done its best to respect both the original analytical frame and the European policy mission. However, some expectations are unrealistic and the reasons need to be clarified: only a few issues illustrating urban-rural relationships can be studied at the European level, with European-wide maps. Also, it is not possible to take a policy assumption of the increasing interaction as a starting point that would now just have to be proved somehow. The process will have to go through a conceptual development to empirical evidence and resulting policy recommendations.

Before studying urban-rural relations, one would have to **define urban and rural** first and thus fix a lot of the possible relationships at the same time. Without the definition it is only possible to study those relations within regions where urban and rural can supposedly be found. If the borders (and not just their population) of functional urban areas could have been delineated on the European map for more than five countries, it would have been possible to study spatial relations within those areas,

with or without specifying which are urban and which rural areas within each region¹. As the typology work shall proceed at NUTS3-level, one would have to assume that each NUTS would contain urban and rural areas, which does not make sense either. Thus one has to first see how the urbanity and rurality are related to each other in different NUTS3-areas. Unfortunately work with NUTS5-level data is not possible at European level (there is nearly no European-wide NUTS5-data indicating anything related to urban or rural available).

In the project the identifying of the degrees of urbanity and rurality in NUTS3 Europe-wide was started by the WP1 review of existing urban-rural definitions and by studying the national classifications (see Chapter 1 in Part Two, or WP1 working document). It became very obvious that the variety of urban-rural divisions was great. It was also a striking exercise to relate the share of agricultural areas to the population density on the European map (Map Set 3, Map A). The Pentagon could to a very considerable degree be classified as highly urban (through densities) and highly rural (through agricultural land) at the same time! This is why it was increasingly obvious that the urban-rural typology would have to pay attention to the underlying land cover, as well as population density.

From the beginning it was also emphasised that the link with the project 1.1.1 and their work with the **functional urban areas** was a crucial link. The urban system indicates both physical structures and functional flows at the same time: on the one hand it has been noted by several studies how the system is characterised by persistence of the initial distributions². On the other hand the urban system is in constant flux, the speed of change depending on the current process/phase of urbanisation (see Part Two for a comprehensive discussion).

The possibilities and limitations of analysis at different spatial scales can clearly be seen when analysing the growth of the labour market areas, the increasing average commuting distances. The question as such is one of the key issues of European significance, but due to practical reasons the degree to which the phenomenon can be grasped through European level analysis is low. However, through **case studies** it is possible to show changes in the actual **urban-rural relationships** and highlight possible examples of **urban-rural partnerships** that have proven to be influential in managing the change in a sustainable way. Respectively it is of interest to analyse situations where no spatial planning frame has tried to manage the same phenomena.

The work with the case studies got also other motivations. It is in direct dialogue with the findings of the Europe-wide analysis. Important motives come from the **data gaps** identified on the European level (data on tourism, land prices, natural and cultural heritage and governance for example). There is also the need to complement the NUTS3-analysis, which is often too coarse-grained. Case studies are also a way to get in more of the perspective of the accession countries. Case studies have a **common frame** taking into consideration the scale of study (national, regional, local), type of region (according to the developed typology) national phase of urbanisation as well as the conceptual division between structures and flows (see Part Two).

As there is no European-wide data available on labour markets or commuting, the project has to work with the urban system as such, taking for granted that each and every identified **FUA is in interaction** with its surroundings. As described in detail in Part Two, the project has carried out analyses which have tried to capture those NUTS3-regions which contain areas that are likely to be weakly benefiting from (possible/potential) growth impetus of the urban areas.

The main task of the project at this stage has been the construction of a European wide **urban-rural typology**. The process is documented comprehensively in Executive Summary and Part Two. Here it should be sufficient to show how the key elements of the main typology were combined (Fig. 2) and how an alternative approach highlighting functional aspects was built (Fig. 3).

¹ another alternative would be to study spatial relations between the delineated functionally integrated areas and the residuals

² eg. Batty 2001, Eaton & Eckstein 1997

INPUTS	OUTPUTS
urban-rural landscape / land use (artificial surfaces vs. agricultural land vs. "wilderness") X population density and functional integration / urbanisation of the population (share of people living in FUAs)	High share of artificial surface only <ul style="list-style-type: none"> • Urban, densely populated and high urban integration High share of artificial surface and agriculture or "wilderness" <ul style="list-style-type: none"> • Urban-rural, densely populated and high urban integration • Urban-rural, not densely populated but high urban integration • Urban-peripheral, not densely populated and low urban integration High share of agriculture and/or "wilderness" <ul style="list-style-type: none"> • Rural-urban, densely populated and high urban integration • Rural-urban, not densely populated but high urban integration • Rural-peripheral, not densely populated and low urban integration High share of "wilderness" only <ul style="list-style-type: none"> • Peripheral-urban, densely populated and high urban integration • Peripheral-rural, not densely populated but high urban integration • Peripheral, not densely populated and low urban integration

Figure 2: Elements of the urban-rural typology (Map Set 1, map III)

INPUTS	OUTPUTS
population density X functional integration (share of population living in FUAs) X rank of the highest FUA	European level FUA * population density above average * share of FUA population above average Transnational/national level FUA * population density above average * share FUA population above average * population density and share of FUA population below or equal to average Regional/local level FUA * population density above average * share of FUA population above average * population density and share of FUA population below or equal to average No FUAs * population density and share of FUA population below or equal to average

Figure 3: Elements of the typology focusing on the functional characteristics (Map Set 2, Map 13)

As the main typology (Map Set 1, Map III) was finalised, the project continued by **analysing spatial dynamics** with several variables according to the developed typology. The degree that they correlate with different types might give reasons for updating the original typology, at least by adding subcategories to certain types, eg. pointing to the regions with high significance of tourism, but this has not yet been spelled out at this stage of the process.

The socio-economic data that has been available for the project has typically been used for analysing spatial differentiation of territories on the **centre-periphery axis**. In today's Europe it would be ridiculous to start to detect the urban and rural as if they were synonyms to centre and periphery, the more developed areas and the less developed areas. **Indirect links** are interesting, though, and it would be interesting to see how the accessibility influences the urban-rural relations. Within our project accessibility was studied in connection with the **ICON-work** undertaken by project 1.2.1., processed by Mcrit also for the purposes of locating periurbanisation pressure (Map Set 3, Map B – F). During the second year of the project it can be linked to the work exploring the share of discontinuous urban fabric that was started and now cover Italy and Finland at NUTS5-level (see Part Two).

The project has tried to identify dynamic **datasets** that, overlain with the typology, could highlight the different dynamics of each type of regions. In addition to the data provided by 3.1. it was agreed that data from **national sources** should be collected, although the work with non-harmonised data was known to be difficult. This has again become very evident through the more sector-specific projects of the ESPON which have had to first go through a comprehensive data collection exercise. As even many sector-specific projects did not manage to provide much data with full European coverage for the ESPON database, in time for our purposes, our project tried to be self-sufficient and to collect data on certain topics. The results are reported in detail in the WP Working document.

The report at hand links the findings to the discussion about **governance of urban-rural relations**, both to the ESDP and the findings of SPESP. In addition a comprehensive review of the European policies affecting urban-rural relations has been carried out, as well as analysis of selected national policies and regional/local initiatives. Results are discussed under conclusions and policy recommendations (see also SWOT in this part of the report).

• **Application of Common Platform and Crete Guidance Paper** (including all points required by the document “Guidelines for Interim Report in August 2003” from the CU)

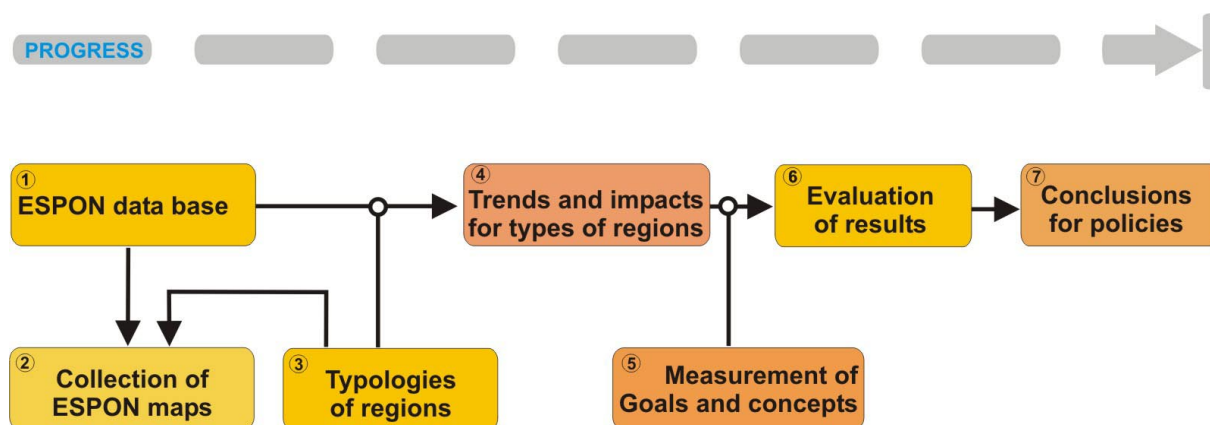


Figure 4: Structure of the Crete Guidance Paper

- Core list of indicators and typologies and the list of ESPON maps has been commented several times as requested by the TPG 3.1. Several corrections were proposed. The project also offered to gather additional data (eg. on tourist arrivals) and to provide maps in ESPON layout for the map compilation.
 - The first typology “urban and rural population according to national classifications” was provided for all TPGs prior to Crete seminar. Common efforts regarding typology of urban and rural areas have been undertaken with the project 1.1.1., as requested in the Crete Guidance Paper.
 - The datasets that have already earlier been sent to the ESPON Database, are the following:
 - o Urban-rural population according to national classifications (9 types or areas)
 - o Relative rurality
 - The datasets that are provided in this interim report (Annex A) are the following
 - o Developed urban-rural typology (10-type classification) referring to Map III
 - o Land-use classification (6-types) referring to Map I
- Further classifications/typologies tested can be requested from CURS/HUT. Other datasets (on tourism, immigration and education) can be made available during September, as soon as their quality has been tested (see WP2 Working Document).

- The maps provided in the ESPON layout format include all maps in Map Set 1 and 2 plus some in Map Set 3. As a possible entry to the ESPON map collection (with the requested two-page layout) the project will provide, in early September, the developed urban-rural typology. Other maps can certainly be provided any time, upon request.
- For measurement of policy concepts several approaches have been proposed. To measure the change in urban-rural spatial relations in Europe, a simple method would be to reproduce the urban-rural typology map regularly according to the current criteria. This can partially be done during the project, as the CLC 2000 becomes available soon. The case study frame presented in Part Two can also be considered as a qualitative measurement tool, providing a framework for evaluating the possibilities to influence urban-rural relations through policies or partnership arrangements.
- The relation of analytical results to goals and concepts: As reported in the Executive Summary, conclusions on the relationship between identified urban-rural relations and the policy aim of urban-rural partnership have been proposed. The review of policies has also provided insights to the current recognition of urban-rural relations in policy making on different spatial levels.
- Performance of types of regions: The different types of regions in the urban-rural typology were measured in their performance in relation to:
 - o GDP per capita (NUTS3-level)
 - o Net migration (NUTS2-level)
 In addition the performance will be evaluated in relation to thematic maps produced with the data compiled from national sources (tourism, immigration and education), as well as further selected 3.1./2.1.3. material (employment in agriculture, agricultural output etc.).
- The subcontractor Mcrit has provided the project with a web-based interactive platform. It enables on-line map-making, including studying performance of regions, and observing correlations between the different datasets in the form of graphs. Currently it is only accessible to the set of projects that the subcontractor takes part in.

- Integration of points raised in CU response on IR from March 2003

The links between the different parts of the project have been explicitly addressed in the Executive Summary and above: hopefully this clarifies the picture for the reader. The content matters claimed to be missing from the SIR are also provided. Now also the criteria for and selection of case studies is presented comprehensively, as well as some results already available from the case studies. The policy responses are also given much space in the report.

The data for the key indicators has been made available for the analysis as far as it is possible at the European level. The collection of data from national sources proved to be only partly satisfactory. The topics of key importance not covered by other TPGs (in time from our perspective) were touristic arrivals and overnight stays, educational level of the population and number of immigrant arrivals. More information on the data collected can be found in the WP2 Working document.

- Networking undertaken towards other TPGs

A joint workshop with the project 1.1.1. was held in connection with the project meetings in Leiden, the Netherlands, in July 2003. The key issue was to find out possibilities to benefit from the common interests and the available data. Exchange of ideas has continued all summer, resulting in some approaches, common attempts to overcome key problems.

Data on the migratory balance was kindly provided by the project 1.1.4. to measure the performance of the regions according to the identified urban-rural typology. The results of the NUTS2-level analysis are concluded in the Executive Summary.

Some of the mapping results dealing with CORINE land cover were provided for other projects upon their request.

The results of the other projects using the first urban-rural typology (based on national classifications) have been observed since the typology was provided for the TPGs. Especially the project 2.1.3. needed typologies to start assessing the impacts of CAP.

Through the subcontractor taking part in several ESPON projects it has been possible to see some results that can potentially be processed further through joint efforts. An example of such a study is the calculation of the ICON-indicator on accessibility to transport terminals (project 1.2.1.) and its implications for the urban-rural typology (see Part Two).

• SWOT analysis

1) In the light of the policy aims of the ESDP: What are the main **strengths** identified by your TPG?

ESDP PO 20: *A relatively strong urban-rural integration can be found in most of Europe. The extent of peripheral areas with low urban integration is thus quite limited. The sphere of influence from the major cities covers also large areas outside of Pentagon. Parts of Nordic, Mediterranean, Atlantic and eastern European fringe areas lack major cities but in some of those areas a network of regional/local level cities exists instead.*

2) In the light of the policy aims of the ESDP: What are the main **weaknesses** identified by your TPG?

PO 20: *In the areas of low urban-rural integration the socio-economic performance of the regions is, in general, far lower than in the areas of high integration. However, national and regional variations are huge, and the national aspect decisive with regard to the absolute level.*

PO 22: *The frame conditions for building urban-rural partnerships are far from ideal: the present mainstream policies, both sectoral and spatial in nature, under which the problems of urban and rural areas are addressed separately, do not support the broader regional perspective on territorial cohesion.*

3) In the light of the policy aims of the ESDP: What are the main **opportunities** resulting from the identified frame conditions?

PO 19 & 53: *The rural areas with low urban integration, having preserved natural and cultural heritage, could provide for new sources and forms of economic diversification.*

Several POs: *Innovative examples of urban-rural partnerships exist in various parts of Europe.*

4) In the light of the policy aims of the ESDP: What are the main **threats** resulting from the identified frame conditions?

PO 21: *The increase of urban-rural integration causes high land use pressure and rising land prices in accessible areas, leading to longer commuting distances as people search for affordable housing in the rural. In the absence of spatial planning schemes and efficient public transportation this may work against the principle of sustainability. In the regions with high GDP per inhabitant the lifestyle choices of the population may add to the housing pressure in the rural areas – increasing the land use pressure further.*

PO 14: *Although agricultural policy is gradually changing into rural development policy, the economic system of rural areas based to a large extent on its fabric of smaller and larger urban centres, is still hardly targeted.*

PO 21, 24, 54: *Policies aimed at urban areas do not view cities and metropolitan areas as part of complex regional systems which include rural areas. Hence, cities are often viewed in isolation from their regional context.*

PO 20: *Understanding the complexity of urban-rural relations in Europe is needed if the urban-rural dimension shall play a key role in supporting territorial cohesion. If the urban-rural is used as a buzzword only, not connecting to the urban-rural diversity of Europe, it is unlikely to gain wider acceptance.*

5) Looking back on the questions 1) to 4): What are the 3-4 driving forces dominating the thematic sector?
Please explain each driving force in one or two paragraphs.

In historical perspective the development of urban systems and urban-rural relationships highlights the linkages with the different land use categories. The degree of urbanity and rurality highly depends on the different exploitation systems that have existed in different national and regional contexts, stressing also the explanatory power of political variables. The different spatial planning and development systems, as well as endogenous resources of the regions, can to a certain degree try to influence the effects that major contextual trends (such as globalisation) have in different parts of urban-rural Europe, but the expectations from eg. urban-rural partnerships should be realistic.

In the areas of increasing urban-rural interaction the different functions affecting the land use and visa versa become increasingly contested as different actors want to be present and claim access to the use of land. Respectively, in the increasingly marginalised areas, were they urban or rural, the costs of abandonment can be high, as earlier investments go down the drain.

The rank-size curve of European FUAs seems to indicate, that the small and medium-sized cities are “over-represented” in Europe. The study of net migration figures points to their further strengthening through counter-urbanisation. The conclusion is, that the respective policy aims of the ESDP are factually realised and that the ESDP policy aims seem to reflect these ongoing processes.

6) Commencing from these driving forces please develop a typology which can be used to classify the European regions.

The comprehensive approach related to the main urban-rural typology should not be presented here, but is reported in the Executive Summary.

A simple measure to locate “the contested countryside” is to overlay analytical layers: share of artificial surface and share of agricultural land (both indicating present structures and potential urban sprawl) with GDP per inhabitant (indicating past and probable future economical growth that can encourage urban sprawl). Especially in the areas where at least two of the values are high, the urban-rural integration is mostly high, as is the contestation between the different functions and land uses.

7) Please map the spatial pattern emerging from this typology of main driving forces.

See Map Set 1, Map III for the final urban-rural typology.

See Map Set 3, Map A) for the simple map.

8) Please prepare a data set which contains the data of the driving forces and the regional classification.

The data of the above mentioned maps and typologies is provided for the ESPON database in Annex A of this report.

9) Refer to the concept of sustainable development and regional competitiveness: Please describe on a half page how the spatial pattern and developments (or innovative elements of policies in your sector) outlined above relate to sustainable development and balanced competitiveness as overall aims in the field of spatial development and EU policies.

Sustainable development: The parts of Europe with the most extensive cover of artificial surface corresponds fairly well to the most densely populated parts in Europe. When the share of artificial land is related to number of population, the picture changes surprisingly much. An almost continuous corridor of high exploitation per capita stretches from the south-east of Europe through Bulgaria, Romania, Hungary, Slovakia Czech Republic and eastern Germany up to Denmark and Sweden. Other countries with heavy exploitation per capita are Belgium, France and Latvia. Britain and the Netherlands, which have an extensive coverage of artificial surface, do not face heavy exploitation measured per capita. The map could be considered an indicator of factual environmental measures in the countries across Europe, because construction is considered to be the most important single cause of decreasing biodiversity. It is significant how national borders seem to structure the picture, indicating various de facto environmental approaches at the national level. This stands in stark contrast to outspoken policy aims for instance with respect to Denmark and Sweden in particular.

Balanced competitiveness: In most countries the most urban type of region represented in the country has the best economic performance. In two countries the highest economic performance is found among the second most urbanised regions. Only in the case of Lithuania, the situation is different, but there the two highest urban regional types are actually lacking altogether. The regional variations are comparatively small in some countries (e.g. UK) and quite huge in other (France, Finland). Each country displays, however, its own profile, and interpretations need backing from additional studies. The overall impression persists, however, that degree of urban integration correlates with a comparatively good economic performance.

10) Please name for both aims the three or four most important indicators you use to measure and assess these trends

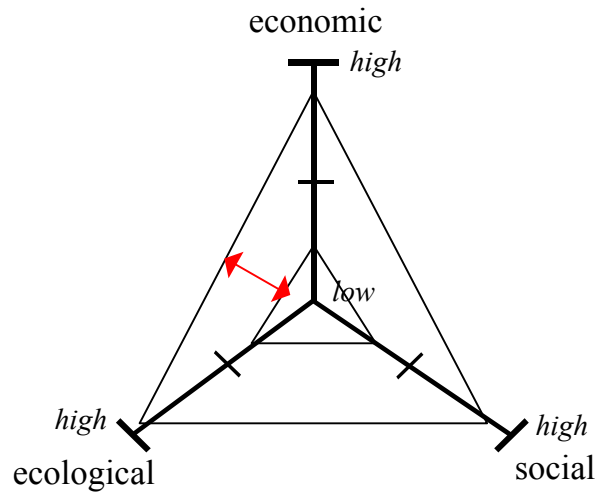
Sustainable development:

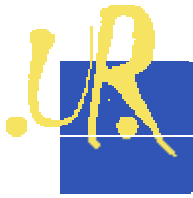
- the share of artificial land compared with the artificial land per capita in NUTS3 regions
- the share of discontinuous urban fabric of all artificial area at NUTS5-level

Balanced competitiveness:

- GDP per capita
- net migration

11) Refer to sustainability and its economic, social and ecological dimension: Please give an intuitive assessment to what degree the spatial patterns in your sector comply with the three dimensions of sustainability. (*smaller triangle refers to the present situation, the bigger to the ESDP expectations – the gap to bridge (red arrow) provides the space for policy implementations*)





ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Part Two a)

August 2003

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The content of this report does not necessarily reflect
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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report August 2003

PART TWO

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Part
Two b)

PART TWO a)

The Part Two of this Third Interim Report is structured according to the requirements spelled out in the Addendum of the Project Contract.

1 European wide maps and analysis

1.1 Existing spatial structure of urban-rural diversities

The task was to develop a typology of urban and rural areas in Europe on NUTS3 level. This typology would not as such address the question of urban-rural relations, but would characterise all the regions across Europe in terms of their urban respective rural features in a comparable way. Indirectly, this typology would of course render a picture of how the various kinds of regions are distributed across Europe. In this sense, the typology gives an idea about urban-rural *spatial relations* in Europe, i.e. in what ways regions of different character locate in relation to one another in the European space. The typology can and will be used for further analyses, for instance in defining whether the character of regions in terms of urban-rural features correlate with socio-economic or population peculiarities, or to any other features of interest when studying urban-rural relations.

An urban-rural typology of Europe represents a static cross-section of the situation at a given time. Now, such a rendering could be blamed for lacking the dynamism needed for understanding our current European predicament in a changing world. A dynamic rendering can, however, be developed in two ways. On the one hand, the logic of the typology can be reproduced for other time sections, either with regard to past time sections, or *for* the future (a scenario), or *in* the future, which means the method can be reapplied in order to get a sequence of comparable pictures. On the other hand, the typology can be provided with dynamism by relating it to the context of urbanisation across Europe, which is a constantly ongoing process and allegedly marked by a predictable set of sequences. Current urbanisation theory would then provide tools for a dynamic interpretation of the regional typology in terms of urbanisation prospects. In this context, urbanisation is considered a phenomenon that influences urban as well as rural settings, which means that rural settings are not just a residual part of urbanising Europe, but of equal importance with regard to the dynamic picture of development.

The idea of elaborating an urban-rural typology is based on the assumption that regions can be characterised according to degree of “urbanity” or “rurality”. The complexity of such a classification system is of course dependent on the number of criteria applied and the number of classes implemented for each criterion. For reasons of analyses, the system of criteria and classes should be complex, because in this way a diversified picture of Europe can be gained. For purpose of cartographic rendering, and comprehension altogether, the system should be as simple as possible in order to reduce the number of types within the typology to a minimum. Therefore, any elaborated typology has by necessity to be a compromise between these two requirements. There is also the possibility to use a complex typology for the purposes of analyse, and a simplified version for purposes of illustration.

What is meant by “urban” and “rural”? It would be comparatively easy to construct a typology for the whole of Europe providing there would be a common understanding as to the meaning of the two concepts. This is, however, not the case. One of the very few criteria that seems globally relevant is population density (e.g. number of inhabitants per square kilometre). In the context of OECD, a border between urban and rural would be a population density of 150 per sq.km. In the context of EU, population density 100 is much used. However indicative this criterion is, it does not address the fact that “urban” regions can be sparsely populated, and “rural” regions very densely populated. Each of the considered 29 countries has got a national classification of urban and rural settings on the local level. The national criteria are, however, very diverse, and cannot easily be combined into a coherent

picture of Europe. The work with the typology started, however, by investigating the national classification systems and by producing Europe-wide renderings based on national classifications. Then it was continued by developing a set of harmonised criteria in order to elaborate a typology where the national variations could be comparable at the European level.

National, diverse classification systems

The national criteria for defining urban and rural population represent a huge variety of cases (see Part Two, Chapter 3):

- Firstly, the criteria may be conceptual or based on government decisions. The latter could as such be based on a conceptual framework as well. It is significant that in the EU 15, the criteria are conceptual whereas government decisions seem to be the basis for the definition of urban and rural population in the accession countries.
- Secondly, in all EU 15, except Belgium, the criteria include population data in terms of size of centre, size of spatial unit or population density. This is an important factor in some of the accession countries as well. The variation of criteria applied is very huge indeed.
- Thirdly, other criteria are (non-)agricultural share of workforce, commuting, central place function as well as legal decisions. The last one is the case particularly in the accession countries.

Because of different criteria applied, the urbanisation rates that are defined according to the national definitions are not comparable, and the variations across the countries are indeed huge. Among the EU 15, Belgium has got the highest urbanisation rate (urban: 100 percent, rural: 0) and Ireland the lowest (urban: 58, rural: 42). Belgium, however, defines these shares in a way that is completely different from the Irish one. In the case of the accession countries the extremes are Malta (urban: 91, rural: 9) and Slovenia (urban: 51, rural: 49).

There is no chance whatsoever to harmonise the concept of urban and rural population based on the existing national classifications. Still it was considered interesting to elaborate a few maps that would render a picture of the whole European territory based on these national criteria. These maps should, however, be viewed as a compilation of national maps, because they essentially picture the situation within each country according to national criteria. They give a picture of how the different nations comprehend the distribution of urban and rural populations within their country. A harmonising factor of the maps is that the criterion of population density has been applied in absolute figures. Consequently, an absolute scale (population density) is applied, and this gives a picture of the relative position concerning urban and rural population across Europe, but the definition of what kind of population is considered to be urban or rural, is based on national classifications.

The map (see Map Set 2, Map 1) that shows the *Urban population density based on national classifications* corresponds to the standard picture of Europe, with a strong concentration in the “blue banana” as well as in the regions of the national capitals, and scattered around in a few other places. Another map (see Map Set 2, Map 2) shows the *Rural population density based on national classifications*. This map is of great interest because it indicates the rural character of huge parts of the accession countries as well as the importance of rural population in the “blue banana”. The map shows that overall high population density also normally include high rural population density. This means that the periphery of Europe, determined according to distance from the traditional gravity point of population density (Rhine valley), is not necessarily more “rural” than the centre when judged by rural population density. In this picture, the central and south of Britain, the North Sea coast, the eastern Baltic coast of Germany, the central and south of Poland, the south of Italy, the northern coast of Portugal, scattered areas in Germany, and the central parts of Romania seem to be the centres of European rural population.

A further step in the direction of harmonising the European picture is taken by combining the national classifications (share of rural population per country in three classes in relation to the country average) and population density (three classes). The map (see Map Set 2, Map 3) called *Urban-rural population in Europe based on national classifications* is thus a combination of harmonised criteria (population density) and national criteria (share of rural population in relation to country average). The map gives a fairly diversified picture of the territory under scrutiny in terms of the urban/rural character of the various regions in Europe. It is, however, to be read as a compilation of national maps that are not entirely comparable with each other. Amazingly huge parts of Britain are rural according to the national classification system, but of course very densely populated. Other parts that are rural according to national standards but densely populated are parts of the Netherlands, the south of Italy as well as tracts of Poland, the Czech Republic and Hungary.

In using these renderings it is important to keep in mind that they do reflect the national understandings of where urban and rural populations are to be defined, but the map is not coherent. It is rather a compilation of national maps.

European, harmonised classification systems

In trying to find harmonised criteria for the classification of regions on a urban-rural scale, three objectives were considered:

- Firstly, it is important to realise that the character of a region is depending on the degree that the physical environment is transformed by human intervention. There are two major kinds of interventions, one concerns agriculture and the other building. The first one is in essence “natural” although human-dependent, the other one is completely “artificial”. A third category would of course be land unaffected by human hand, a kind of residual “wilderness”. To what degree wilderness exists at all in the world of today is disputable, but for the purpose of analyse such a category may be introduced. In conclusion one could argue, that degree of “urbanity” is directly relative to degree of land transformed by human hand, and relative to the degree of artificial land in particular. “Wilderness” would then decrease with increasing “urbanity”. The category “agricultural land” is interesting in this context. It is obvious from current experience, that agriculture as such does not necessarily imply a “rural” style of life apart from an “urban” one. Nor does it as the national classification systems indicate necessarily correspond to low population density, or a low degree of built land for that matter.
- Secondly, population density is obviously a factor that influences the degree of “urbanity” versus “rurality”, and most national classification systems take this into consideration directly or indirectly. A problem is, however, that population density must be measured against a given territory. If all the population of a region lives in urban settings, but the territory of the region is huge and includes many unpopulated areas, the population density of the region is of course low. But low population density does not by necessity indicate “rurality”. Nor does high population density by necessity correspond to urban life styles, industrial production or an abundance of commerce. What it does indicate is the potential of extensive markets, but that is all. In order to integrate the urban-rural aspect into the issue of population density, the concept of functional urban regions could be introduced. This means that a given share of the population within a given territory is commuting on a daily basis to places of work that are located within the territory in question. This share of the population would then be “urban” in a sense that they contribute to the urban economy within a larger territory of functional integration. There is, however, no particular reason why functionally integrated areas are labelled “urban” and not for instance “rural”. Actually many of the functionally integrated urban regions of the sparsely populated northern regions of Europe are fairly “rural” in character albeit integrated into a territorial economy labelled “urban”.
- Thirdly, regional or national urban systems, or the emerging European urban system for that matter, are composed of a hierarchy of urban nodes spanning from centres of local, regional, national or international to global importance. A mature urban system, regardless scale, is often

supposed to correspond to the idea of rank-size. The various urban centres are supposed to be of a particular size according to their position in the overall hierarchy of urban centres in the system. Two issues arise from this. On the one hand, the maturity of a system is indicated by the balance of its rank-size. On the other hand, at a higher level of scale larger urban systems emerge as a result of spatial integration, but although the various sub-systems may be in balance, the overall system may not be balanced. What we can see in Europe as a result of the emerging integration is an adaptation of the regional and national urban systems into something that in due time may be called a European urban system. To distinguish the hierarchical levels and name the nodes of this emerging European urban system may be premature, but an attempt is made in ESPON project 1.1.1. This hierarchy can then be applied in differentiating all the European regions on a scale according to their respective degree of “urbanity” or “rurality”.

It was decided to attempt a urban-rural typology that would be based on all the three approaches explained above, i.e. land cover, population data as well as the character of urban centres in each region. A test based on correlations between factors determining both the structure and the functional relations between urban and rural settings was carried out (see Chapter 3.1 in Part Two). This test actually confirmed the sensibility of the idea.

Land cover

The land cover of Europe is available from 1990 based on the CORINE remote sensing data, which have been transformed into statistics on the NUTS 3 level. Available data does not cover properly all parts and categories of Sweden and Norway. The data of a second survey made in 2000 will be available by the end of 2003, and will provide the possibility to compare the land cover of the early 90s with that one decade later. At this stage, only the 1990 data has been available for the project.

After carrying out a series of test concerning agricultural land, forests, semi-natural areas, pasture, artificial land, etc. (see Map Set 2, Maps 4-6 as examples), it was decided to base the land cover typology on the three basic categories in the CORINE, i.e.

- *artificial land* indicating built up areas and other artificial surfaces like roads, harbours, quarries, etc,
- *agricultural land* indicating all the various forms of natural land cover transformed by humans for their own purposes,
- *wilderness*, which is the residual group of natural land covers less touched by human hands (with the exception for forest cover, which at least in the Nordic countries are almost entirely a result of human intervention).

A map (see Map Set 2, Map 7) was elaborated that showed the share of artificial surface as percentage of the total area (European average 3.74 percent). The parts of Europe with the most extensive cover of artificial surface corresponds fairly good to the most densely populated parts in Europe. Again the “blue banana” is traceable. This result was to be expected because the share of artificial land must relate to the intensity of land-use.

When the share of artificial land is related to number of population, the picture changes surprisingly much (see Map Set 2, Map 8). There is formed an almost continuous corridor of high exploitation per capita, stretching from the south-east of Europe through Bulgaria, Romania, Hungary, Slovakia, Czech Republic and eastern Germany up to Denmark and Sweden. Other countries with heavy exploitation per capita are Belgium, France and Latvia. Britain and the Netherlands, which have an extensive coverage of artificial surface, do not face heavy exploitation measured per capita. The map could be considered an indicator of factual environmental measures in the countries across Europe, because construction is considered to be the most important single cause of decreasing biodiversity. It is significant how national borders seem to structure the picture, indicating various *de facto* environmental approaches at the national level. This stands in stark contrast to outspoken policy aims for instance with respect to Denmark and Sweden in particular.

The share of agricultural land in Europe (European average 52.48 percentage) indicates a concentration in the north-west of Middle Europe and tracts of land scattered around. The share naturally decreases in mountainous and northern areas. The share of forest and semi-natural areas, here called “wilderness”, increases where farming is sparse. Of course huge parts of forested areas are not “wild” in the sense that they would be untouched by humans. Actually only minor parts of the Northern forests are not actively cultivated. But with respect to landscape and character, they are labelled “wilderness”.

The task was to combine the three main categories (artificial surface, agricultural areas, the rest = “wilderness”) into an overall picture of European land cover. A practical problem was to elaborate a classification that would be simple enough to render an overall picture of Europe, and be comprehensible in terms of the delimitation of classes. Three main categories of land cover were considered and each of them was divided into two classes according to if whether one or two of the three main types of land cover were above European average. On the top of the map was indicated by raster the regions with a population density above European average (107 inhabitants per sq.km). The picture (see Map Set 1, Map I) produced shows a remarkable resemblance with the general image of Europe with an urbanised core and more rural periphery. What is peculiar, however, is the strong share of agriculture in the core regions. Another peculiarity is the prevalence of artificial surfaces in some east European countries. The picture also shows that in some countries, notably in Poland, Italy and partly Spain, regions dominated by agricultural land are still very densely populated. Also some regions with a land cover share of “wilderness” exceeding the European average are densely populated, such as parts of Spain, Portugal, Italy, France, Switzerland and Austria.

Population density and functional urban areas

Population density is one of the main criteria for differentiating regions according to degree of urban respective rural character. A picture of Europe (see Map Set 2, Map 9) where all the NUTS 3 areas are divided into four classes of approximately equal size, indicate the densely populated core on a north-south axis (or crescent). What is striking, however, is the large tracts of sparse populated land in the interior of France and the Iberian peninsula, which in size almost correspond to the sparsely populated north.

Based on the figures produced by the ESPON project 1.1.1, the share of population within functional urban regions in each NUTS 3 was calculated. It turned out to be inaccurate, however, as the data only concern “plus-commuting” (the centres of functional urban areas where day-time population exceeds night-time population) but not “minus-commuting” (the periphery of functional urban regions where night-time population exceeds daytime population). This is a statistical problem in metropolitan areas where the catchment areas (FUA = the functional urban area) are larger than one NUTS3. A map was produced where population density and the share of population encompassed by FUAs were considered by establishing four categories (Map 10 and Map 11) according to population density (above/under European average: 107 inhabitants per sq.km) and share of FUA population (above/under European average: FUA population 48.5 percent out of total population). It was supposed that the four classes would express the degree of urbanity in a falling sequence. Because of the difficulties with data concerning the extension of FUAs and NUTS 3 divisions, it was supposed that the all NUTS 3 areas with a population above average would also be integrated into functional urban areas. In this way the number of classes was reduced to three: population density above average, population density below average but FUA population share above average, population density and FUA population share below average.

A further problem with the NUTS 3 division in relation to population density and the shares of FUA population was the small NUTS 3 areas of Germany, the Netherlands, Belgium and the UK. A map was elaborated on the bases of NUTS 2 in these countries, except for the UK where the step to NUTS2 did not have the pursued effects (i.e. with respect to the London region).

Urban hierarchy

The hierarchical ranking of functional urban areas (FUA) according to the role of the centre is elaborated on the basis of the ranking of ESPON project 1.1.1. The classification was somewhat simplified in order to reduce the number of classes because of the demand to combine this ranking with other categories, explained above. The NUTS 3 regions (NUTS 2 in Germany and the Benelux-countries) were ranked in four classes according to the presence of one or more FUAs of global/European, transnational/national or regional/local importance, or of no centre of importance.

When the FUA-hierarchy (4 classes) is combined with population density and share of FUA-population (3 classes), the theoretical number of regional types would be 12. If the aspect of polycentricity is taken into account the two middle categories of the FUA-hierarchy would double and the total amount of classes would reach 6. This would lead to a typology of 18 types. Two were, however, non-existing and consequently a map with 16 types of regions emerge (Map Set 2, Map 12). This map gives an indication of the urban/rural features of the various NUTS 3 regions across Europe according to population density, degree of urban integration (share of FUA population) and urban hierarchy. This map is in a sense purely functional, and disregards the actual land cover and land use. It is, however problematic because the FUA-population recognised was “collected” to the centres as the day-time population of the core and left the areas where people commute to the centre (e.g. the region of Paris) without population. The problem is that the NUTS division does not comply with the factual functional urban regions. A correct rendering presupposes that the NUTS-division encompasses whole FUAs. Therefore, a simplified functional categorisation was elaborated with only 9 types (Map Set 2, Map 13).

The final typology

The criteria of surface (6 classes) were combined with population density and degree of urban integration (4 classes). The number of types was then 24 (Map Set 2, Map 14). As some of the types were represented by only a few regions, it was thought pertinent to combine some of the types in order to gain a better overview (Map 15). At the end, number of types was reduced to ten (Map Set 1, Map III).

The ten final types are:

1. Only the share of artificial surface above average, population density (and possibly share of FUA population) above average.
2. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density (and possibly share of FUA population) above average.
3. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density below average, share of FUA population above average
4. Share of artificial surface + other types of surface (agriculture or “wilderness”) above average, population density below average, share of FUA population below average
5. Share of agricultural land (and possibly “wilderness”) above average, population density (and possibly share of FUA population) above average.
6. Share of agricultural land (and possibly “wilderness”) above average, population density below average, share of FUA population above average
7. Share of agricultural land (and possibly “wilderness”) above average, population density below average, share of FUA population below average
8. Only the share of “wilderness” above average, population density (and possibly share of urban population) above average.
9. Only the share of “wilderness” above average, population density below average, share of FUA population above average
10. Only the share of “wilderness” above average, population density below average, share of FUA population below average

In order to make the comprehension of the ten types easier. They are in the following named:

High share of artificial surface only

1. Urban, densely populated and high urban integration

High share of artificial surface and agriculture or "wilderness"

2. Urban-rural, densely populated and high urban integration
3. Urban-rural, not densely populated but high urban integration
4. Urban-peripheral, not densely populated and low urban integration

High share of agriculture only or agriculture and "wilderness"

5. Rural-urban, densely populated and high urban integration
6. Rural-urban, not densely populated but high urban integration
7. Rural-peripheral, not densely populated and low urban integration

High share of "wilderness" only

8. Peripheral-urban, densely populated and high urban integration
9. Peripheral-rural, not densely populated but high urban integration
10. Peripheral, not densely populated and low urban integration

On the top of the regional typology, the various categories of urban centres are integrated into the maps. Two maps were produced, one with the major urban centres (Map Set 1: Map IV) and the other with minor urban centres (Map V). The typology as a whole then integrates the obvious variations in the physical environment as indicated by the primary colours used (urban: red, urban-rural/peripheral: brown, rural-urban/peripheral: green, peripheral-urban/rural: blue). The choice of colour then illustrates the degree of human intervention (red: most, blue: least). The strength of the shade of each colour indicates the degree of urban integration. Thus the typology integrates the various dimensions outlined previously, and illustrates the position of various classes of urban centres on the top of that.

It is notable, that the reference to land coverage helps to differentiate the peripheral regions from the rest as "wilderness" is a feature of mountain regions as well as the most peripheral regions of Europe providing the centre of population gravity in central Europe as taken as the point of reference. The application of land cover also helps in differentiating urbanised regions within the European core. An outstanding feature is that agriculture is not a sign of peripherality as such, on the contrary, there is a strong connection between agriculture and urbanism. This can of course be explained by historical reasons. The originally rural Europe could sustain an urban, dense population only in regions where agriculture was intensive and the yield was high.

Another interesting insight is that extensive building and urban integration do not necessarily coincide. The maps indicate extensive construction in many places, notably in some of the east European countries, where the degree of urban integration is low. This indicates environmental attitudes where land is "wasted" compared to the European average. In some other countries, like Italy and Poland, the situation is the other way around. Regions are densely populated and integrated in terms of urban functions, but land is sparsely used.

The typology will be used in studying variations in terms of population profiles, migrational patterns, economic performance, etc. In doing so, conclusions may be drawn with regard to the spatial dynamics in terms of regional characteristics and a variety of performances and attractions that can be *located*. One should, however, keep in mind that the various types of the elaborated typology are not evenly distributed across Europe. This means that regional performances and attraction are not only to be related to certain regional types, but that every particular type of region within the typology

is unevenly distributed across Europe. This means that the types as such do not “cause” e.g. a particular economic performance. Rather the various types locate in a particular way within the territory and the factual factors causing e.g. “development” are something beyond this study. The typology just indicates an overall functional and physical pattern of Europe, but should not be interpreted as possessing explanatory power as such.

In the philosophy of science, there is sometimes made a distinction between *causa* and *ratio*, there *causa* stands for the “real cause” and *ratio* for the “explanations”. In this context, the typology belongs to the latter. The causes of development, attraction, etc. are to be found in history, in politics, etc. but not in the spatial distribution of particular entities. Effect should not be taken for cause, (and might not for right).

Comparison between national and harmonised views

The harmonised criteria on which the typology is based render a much more diversified picture of Europe than the map based on national classifications concerning the distribution of urban/rural population despite the fact that both maps have almost the same number of classes. Overall, there are many similarities between the two maps, but there are some important differences as well. According to national classifications, a major part of Britain is rural, but in the harmonised European context, a major part of Britain is urban. The same remark is valid for parts of Germany and the Netherlands as well as for the south of Italy. Actually Italy is a very interesting case as the quite sophisticated national system for classifying the distribution of urban/rural population causes a very clear divide between the north and the south of Italy. According to the harmonised typology, these differences are still traceable but blurred and the whole picture is more diversified. In the case of Poland, the picture s rendered by the two maps also differ to a great degree.

It may be premature to draw very long reaching conclusions from the comparison of the map expressing non-harmonised-national views and the elaborated harmonised typology. A thorough analysis needs some complementary studies. It is clear, however, that for the purpose of getting an overview of Europe in terms of urban-rural relations, the elaborated typology represents a good start.

1.2 Urbanisation patterns in Europe

In a scientific context, the study of urban-rural relations need to be conceptualised, which underpins the need for a theoretical framework. Here, we argue that theories of *urbanisation* could be such a framework, and the following text attempts to put this idea forward in a relatively simple manner. Urbanisation as an intellectual context has got the advantage of referring to the dynamism of urban-rural relations, and in this respect it suits the requirements of the ESPON-programme to provide policy-makers with research knowledge as the basis for policy work.

The text starts with some remarks concerning the concept of urbanisation, then continues with some comments on the theory frame. Thereafter follows a review of some historical processes of interest for the post-war phase of urbanisation in Europe. Functional urban regions and FUA rank-size are discussed, and the text ends with an account of urbanisation in eight European countries.

Conceptual remarks

The idea of something called “countryside” certainly requires its opposite, the “town” and the “city”. The theoretical understanding of urban-rural relations that gives primacy to the urban side has far-reaching implications for the understanding of urbanisation. In this view, urbanisation is not something that is solely connected to towns and cities, but it involves the countryside as well just from the start.

Urbanisation actually encompasses the whole range of human life, which means that the countryside and rural life are not seen as residual factors of urbanism but an equally important counterpart in a relationship between urban and rural settings, and more generally speaking, urban and rural life. In this study, the concept of urbanisation is understood in this broad context, and urbanisation is conceived as a crucial concept for understanding and conceptualising urban-rural relations further. Three concepts of urbanisation are often distinguished, that is urbanisation as demographic development, as structural changes in the economy and as ideas, images and behaviour of people.

Demographic change

Urbanisation in terms of *demographic changes* usually refers to the growth or decline of urban settings of a certain size (population size 200 persons, 1000 persons, 2000 persons, 5000 persons, etc. depending on national classifications and interest of knowledge) in relation to growth or decline of rural settings. Furthermore, these urban settings are often classified according to rank size, and a study of urbanisation would then include a study of the changes in the various parts of the hierarchical urban system for instance on the national or regional level. Usually such studies are carried out by defining an urban system in a way that the delimitation of the system makes sense, that is, it constitutes an integrated entity.

Of course one can study very large territories that are not composed of only one integrated urban system. Europe as a whole is an example of a territory that is not composed of only one integrated system, due to historical reasons, but includes various national and regional subsystems. The political aim is, however, to promote European integration in all aspects, and this will in due time lead to an enhanced integration between the current national and regional urban systems of Europe. The eventual result may be an integrated European urban system. It is important to realise that the effects of globalisation are not uniform in urban systems of different types. Some effects of globalisation may have a uniform impact on the whole of Europe, others may effect the various subsystems in very particular ways depending on the maturity of urban system in question. Therefore it is important always to study the effects of European integration and globalisation in clearly defined local, regional and national contexts.

In terms of demography, urbanisation indicates relative population changes between urban and rural settings. In this sense, urbanisation may proceed even if the urban population decreases in absolute terms, providing the rural population decreases even more. It is the *relative shares of population* in

the two categories that counts. Now, the problem is of course to define “urban” apart from “rural”. Any territory under scrutiny must be classified into two distinct categories. Traditionally this was not a problem as settlements of a certain size, say bigger than 1000, 2000, 5000 or 10 000 persons would be classified as urban while residual population would be classified “rural”. Traditionally also the size of a settlement corresponded fairly well (albeit not always) to its legal status as a town or country, which meant that the total town population (in legal terms) of a country would correspond to the total urban population of that country.

As an effect of suburbanisation and reforms in the structure and classification of territorial units, in particular the continued practice in many countries to enlarge the size of local units by merging municipalities (Sweden being an example in point), the division in town and country has in many regions disappeared altogether or got quite blurred. Consequently, it is increasingly difficult to assess demographic changes on an axis of urban-rural. At the European level, the problem is getting more pronounced because the various European countries have fairly different ways of classifying “urban” and “rural”. With regard to empirical studies of urban-rural relations at the European level, it is of course essential to reach a classification of “urban” and “rural”. At the European scale this cannot be made on the NUTS5 (municipal) level for practical reasons, and therefore a classification must be carried out on the level of NUTS3 (national subregions), which means that each NUTS3 unit must be classified according to a chosen set of criteria indicating degree of urbanity respective rurality.

Urbanisation in terms of demography (i.e. population change) depends on two factors, natural growth (birth rate viz. death rate) and migration (including emigration and immigration). Two distinct sections in time are often considered important. The first one refers to a point in time when *the birth rate of urban settings exceeds their mortality rate*. By then, the towns and cities are not any more dependent on in-migration for growth, but natural population increase causes growth. The second one refers to a point in time when *the natural population increase of urban settings exceeds that of rural settings*. Urbanisation turns autonomous as the urban settings gain population growth relative to rural settings even without rural-to-urban migration.¹

Structural change

Urbanisation in terms of *structural changes* in the economy relates to the movement of people between various sectors of the economy, some of them significantly rural (agriculture) and others mainly urban (commercial services). In some of the European countries this is taken into account in the national classifications of urban and rural population.

The difficulty with this conception of urbanism is that it seems to be more and more difficult to assign particular economic activities solely to urban or rural settings. Industries are relocated from urban to rural settings on a grand and global scale. Research and development activities are increasingly located in attractive semirural/semiurban environments. Even corporation headquarters are not necessarily any more situated in the centre of cities. Agriculture is carried out in an increasingly industrialised fashion, which means that traditional environmental values connected to rural environments are disappearing. An increasingly important factor in deciding the location of new establishments is the supply of qualified labour, which gives pronounced priority to environmental qualities in terms of pleasant living environment for the employees and “a good address” for the company as well as good accessibility. Such settings are increasingly to be found in rural areas close to international communication nodes.

A major, still relevant criterion for choosing location sites for different activities are the space requirements. Huge, bulky and land consuming activities are preferably located in places where land is comparatively cheap, i.e. semiurban or, if possible, rural settings. Locational patterns are of course a function of planning regulations and practices in various European countries. In countries like UK where land-use is strictly controlled and the exploitation of rural land very restricted, land-use patterns take a different shape than in countries like Finland with a more liberal planning policy and simply

¹ Nilsson 1989, 27

more space available. A case of its own are countries and regions like the south of Italy where unauthorised development is commonplace.

An important question related to structural changes of the economy concerns *value of land*². This issue is much studied, but not so much in the overall context of urbanisation. The importance of the issue must be underlined, however, with reference to its importance for the changing urban-rural relations.

Value of land as expressed in sales *prices* is determined by the prospective yield of land. Here two aspects must be noticed. On the one hand, land can be used productively (for any purpose) and thereby yielding return on the investment. On the other hand land can yield return on the investment even though it is *not* used productively in any way. This increment of value may be unearned in the sense that it can occur without any particular investments on the part of the owner. The reason for the increment of value are investments (or prospective investments) around the particular piece of land under discussion. All land speculation is based on this very simple principle. Sometimes it is more profitable to buy land and give up the traditional productive use (e.g. agriculture) than to continue with the old function, because the value of the land (prospective sales price) is rising all the time without any productive activities or investments in the land on behalf of the owner.

Land speculation is of course a phenomenon directly related to urbanisation. In the process of urbanisation, urban settings are reshaped and extended. Old structures are knocked down and replaced with new ones in order to *increase the exploitation rate of land* (e.g. sq. metres of floor area per area of land). In the rural surroundings of towns and cities, agricultural land is taken for building purposes. In practically all urban settings of Europe one can find abolished plots of land inside the urban fabric (old industrial and harbour areas in particular), waiting for new and more profitable exploitation, or abolished farming land around the cities, waiting for new investments.

Real estate speculators would then buy up plots of land or real estate where the current exploitation of the property does not match the presumptive one, which causes the prospect of profits (with or without further productive investments). Likewise land speculators would buy up large tracts of farming land cheaply around cities in order to gain profits in case that land is likely to be exploited for building purposes. Successful real estate speculation is then very much dependent on swift and accurate timing with regard to the various phases of the business cycle.

The prospective productivity of real estate (and thereby sales prices) is of course based on the various systems existing in different kinds of societies for allocating the future use of land. The main mechanism for determining future land use is in most societies land use planning. The essence of present day land use planning is the allocation of economic values, because the plans determine the future yield by defining the nature and volumes of exploitation. Consequently, real estate speculation and land use planning are closely related activities. Huge speculation profits can be gained by getting land cheap, providing it is allocated for low grade exploitation, and then having it upgraded for heavier exploitation. A piece of agricultural land can gain in price one hundred times over when allocated for heavy exploitation.

Real estate speculators are of course keen on influencing land use planning in order to have their possessions upgraded. In order to counteract speculation, most countries apply sets of rules and regulations to hamper real estate speculation. Actually planning legislation is a token of this. On the other hand, in most countries speculation is common and even an integrated part of land development. Due to the filthy lucre of speculation, loose money is in circulation and, from time to time, key persons are easily bribed. This brings an element of uncertainty and particularity to the whole urbanisation process:

1. Firstly, urbanisation is not only a way for the society to adopt to new functional and economic requirements, but an economic activity in its own right, which involves landed interests, credit institutions, producers of construction materials, developers, construction firms, real estate

² Bengs, C. 1993

agencies, purchasers of dwellings, etc. Urban-rural relations are dependent on prospects for lucrative investments, and those vary over time and according to the national and local context.

2. Secondly, the nationally and locally developed systems of land exploitation and real estate markets are crucial in understanding urbanisation in any particular place, and even at the national level. Huge tracts of European territory are under huge pressure of developers (e.g. the Mediterranean coast line) where the process of urbanisation is fostered, changing the traditional balance between urban and rural in a crucial way.

Behavioural change

The third concept of urbanisation is related to *behavioural patterns and lifestyles* as well as images and ideas related to these. In the tradition of Romanticism, such images are exaggerated, but the images of urban and rural lifestyles are also commodified and traded on the market in the mode of various tangible and intangible objects, sports and entertainment, housing preferences, etc. Already in the 60s, the French philosopher Lefebvre coined the notion “rurban”, indicating the merge between urban and rural lifestyles.

According to prevailing housing preferences in the densely populated parts of central Europe, rural dwellings are by far more appreciated than urban settings.³ The main casual reasons given for this is that rural environments provide more stable and secure social relations and more nature and space. In urban literature these arguments are ridiculed as being biased and untrue.⁴

On the contrary to rural life, urban life is casually connected to creative and diffusion aspects. The modalities and causes of this innovative function of urban life are said to be numerous and well-known.⁵ High population density is thought to facilitate contacts, and therefore lead to accelerated flows of information. The heterogeneity of urban activities leads to attempts to adopt or apply solutions already used in other sectors. In addition, a variety of educational activities and institutions is thought to promote the reflective mind, and lack of conformism would nurture original individuals. Much of these images have little or no bearing when the history of innovations are studied, but all the same prejudices concerning urban life seem to be taken for granted in urbanisation literature. Taken into consideration the potential of information and communication technology, the sources of knowledge seems to be at hand for anybody, regardless where he or she lives.

Theoretical remarks

Among professionals and researchers there is currently a prolific discussion on migration patterns and urbanisation as an effect of globalisation. On the macro level, urban hierarchies are supposed to be revised, and on the micro level, decisions by firms and various organisations as well as by individuals are thought to reflect changing conditions. The underlying assumption seems to be that global trends influence urbanisation patterns and associate decisions by actors involved, regardless place and country. For instance, the advance of communication and information technology is gathered to imply a certain kind of logic in rearranging urban matters.⁶

Surely, some of the present day features of urbanisation (or counter-urbanisation) are caused by overall trends related to development in technology, demographic change and globalisation of markets. But do the effects of these measures occur in a uniform way? The answer is probably negative, since various parts of Europe are in different stages of urbanisation, which is rendered obvious by comparing the evolving changes in a national context. In countries with a long history of centralised government (U.K., France, Sweden), the (mono-centric) national urban system has evolved differently from the situation in (poly-centric) countries where a central government is more

³ Built Environment 28(4)

⁴ Valentine 2001

⁵ Bairoch 1981, 68

⁶ Brotchie et al. 1991; Talvitie, J. 2003

recently established (Germany, Italy).⁷ Other factors of interest are the age of the now existing settlement patterns and the age and pace of industrialisation history as well as population density.

In order to grasp the diversity of a very complex phenomenon we simply label “urbanisation”, we need intellectual tools for appropriating the diversity of the phenomenon under scrutiny. Such tools would indicate the necessity of a set of concepts, founded on theory of urbanisation, being broad enough to encompass the wide variety of European settlement structures and migration patterns. Such a theory could be the so-called *differential urbanisation theory*.⁸

Differential urbanisation

Any urban centre can be said to fulfil two functions: to serve as a centre for its rural surroundings and as a mediator of interaction within a larger context. The size of its *hinterland* is determined by competition from business and other functions of surrounding urban centres, while its *sphere of influence* can reach beyond the hinterland or beyond nearby cities. In this respect, towns and cities do not compete, but activities (firms, services, etc.) located in them do.

In pre-industrial locations, the built-up areas of an urban centre would ideally be strictly confined to the clear delineation of the urban core, leaving a clear-cut border between urban and rural land. This *border zone* is increasingly broadened and blurred by *urban sprawl*. The population of the hinterland, or within the sphere of influence of the urban centre, is subjected to cover a certain *distance* in order to reach the centre. This distance can be viewed in objective terms, such as measured physical distance or travelling costs, or in subjective terms related to individual experience of moving to and from the centre. The resistance implied by movement results in distance decay.

According to the central place theory, a *hierarchy of central places* may evolve over time and the attraction of these centres can be studied as a function of supply as well as of demand.⁹ There are, however, also non-central places that get founded as a result of *location constants*, irrespective of the current settlement structure. Location constants could be related to natural resources, defence, religion, historical reasons, or foreseen positional advantages. Any settlement could be viewed in terms of a hierarchical organisation of focal points, clusters of focal points, clusters of clusters of focal points, and so on. Any such hierarchy can be related to size of centre or to specified supply and demand, etc.

According to the theory of differential urbanisation, any city system undergoes ideally various *phases* in its development, passing through a complete cycle of urbanisation (polarisation), polarisation reversal and counter-urbanisation. In general terms, urban evolution seems to undergo the same phases all over the world, ranging from the establishment of urban settlements to a differentiation phase when larger urban settlements are formed, often at the expense of smaller ones.

According to the differential urbanisation theory, the initial *polarisation* phase of an urban development cycle includes the growth of large cities (“early prime city stage”, “intermediate prime city stage”, “advanced prime city stage”). The *polarisation reversal* implies the growth of intermediate sized cities (“early intermediate city stage”, “advanced intermediate city stage”) and the *counter-urbanisation* phase corresponding to the growth of small cities (“advanced small city stage”). Ideally according to the theory, the growth of prime cities would correspond to the decline of small cities. Eventually this relation is supposed to turn the other way around as small cities grow while prime cities decline. The growth and decline of intermediate cities would fit in as a medium stage between the extremes.

The various stages of urbanisation has also been conceptualised in terms of *urbanisation* (population increase of the core), *suburbanisation* (increase of the ring, decrease of the core), *disurbanisation* (decrease of core and ring), and reurbanisation (increase of core, decrease of ring).¹⁰

⁷ See Champion 2002; Pumain 2002; Kalbro & Mattsson 1995; Gans & Kemper 2002; Petsimeris 2002

⁸ Geyer & Kontuly 1993

⁹ The supply approach has been elaborated by Christaller, the demand approach Lösch. See Haggett 1972, pages 286 – 294.

¹⁰ Klaassen & Scimemi 1981

Early stages of urbanisation is often associated with *premature urbanisation*, resulting in something called over-urbanisation or a state where the urban centre gains an excess population that cannot be integrated within the formal structures of the urban centre. This would be a situation typical to developing countries, while polarisation reversal would be linked to more advanced developing countries, and counter-urbanisation to highly developed countries.

For the purpose of studying urban-rural relationships in Europe, the differential urbanisation theory could be useful as it can be applied at various scales and as it render possible to grasp the diversity of urban systems in Europe. These have evolved very differently in the various countries over time. The effects of European integration and globalisation on the different national urban systems could be very diverse, and the theory provides some basic concepts for grasping and articulating this diversity.

The individual variations among the European states with respect to degree of urbanisation have cultural and political as well as economic reasons. Above was stated the fact that centralised nation states have promoted mono-centric urban structures while late centralisation has caused polycentric structures. The particular stage of urbanisation (prime city stage, intermediate city stage or small city stage) in any country is of course to some degree an effect of industrialisation, which can be rendered in terms of when it got started (e.g. less than 50 percent of the labour force employed in the primary sector), when it was close to finished (e.g. less than 15 percent employed in the primary sector), and the duration of this period. But degree of urbanisation is also a function of overall conditions such as population density, which implies remarkable differences among the various European countries.

During the last decades, the effects of *information and communication technology* (ICT) have been much discussed. The economic rationale of these changes should be clearly stated. ICT implies a tremendously improved *productivity* in the storing and processing of information and in communication, which means *saving of time*. The growth of productivity indicates of course the rising value of time. This means that the more time is saved, the more it gains in value. This relationship actually completely destroys the fairly naive argument claiming that enhanced productivity would render more “free time” for non-productive activities. As a matter of fact the logic of enhanced labour productivity seems to be widely applied on leisure time as well. Spare time is actually getting more and more efficiently organised and utilised in an increasingly productive manner.

Like all improvements in productivity, the probable effect of ICT is concentration of economic activities. World cities are gaining in centrality because ICT improves their competitiveness and allows for their economies to attract even more related economic investments. The new information and communication technology forms the backbone of current structural transformations in the European economy because it serves as a vehicle for the creation of a new functionally interrelated global economic system. As ICT helps to compress space and time, societies are supposed to be increasingly fragmented. ICT is, however, not necessarily supposed to diminish the importance of face-to-face interaction. The very contrary may be the case. The effects of ICT on urban-rural relations are still open for debate.¹¹

In relation to ICT, there are indications of a new *fifth economic sector*, which serves as a vehicle for information, education, entertainment and intellectual curiosity. The total share of manual labour and office work are supposed to be reduced to some 30 – 40 percent of the total employment in the US by the year 2010.¹² The knowledge-driven economy is supposed to have an effect on the entire range of actors in the global economy, the corporate sector manipulating the market and the unskilled individuals at the bottom being manipulated. Again, the impact on the urban setting and urban-rural relations is still open for debate.

Migration

¹¹ Talvitie 2003

¹² Geyer 2002, page 69

In pre-industrial, rural Europe, the land and labour were the two roots of wealth.¹³ Warfare was rational action as a means for grabbing agricultural land and precious land-bound resources, and emigration was rejected on the ground that the nation state would be weakened by loss of manpower. Mercantilism implied a body of thought, developed from the mid-sixteenth to the late seventeenth century, recognising the growing power of the national economy and favouring the intervention of the state in economic activity in order to maximise national wealth.

Starting by the end of the 18th century, industrialisation and economic liberation brought about large-scale migration from rural to urban areas. This process has, however, been very different in various European countries. Urbanisation has been enhanced by migrants who over-estimated employment opportunities in the urban sector, which resulted in *over-urbanisation*, unemployment and emigration. As happened previously in Europe during the Industrial Revolution, primary centres in the developing world have become over-populated with subsequent unemployment and hardship.

In the post-war era, decentralisation and the introduction of the concept of *growth poles* were applied in order to counteract polarisation and create economic development in peripheral areas. Emphasis was placed on the industrial development of intermediate-sized towns and their adjacent regions in order to divert migration away from large cities. The continuing polarisation despite these measures has in some countries led to the discrediting of the growth centre concept as a development instrument. The concept of *place prosperity* has thus been substituted for the concept of *people's prosperity*. In this view, the top-down approach is substituted for a bottom-up perspective and the mean value prosperity is replaced by a diversified understanding of the situation among various population categories.

According to the *neoclassical migration theory*, the migration from urban to rural areas will continue until imbalances in the productivity and income levels between agriculture and industry have been eliminated. This theory has been much criticised for being exceedingly macro-scale economically oriented and for overlooking socio-anthropological explanations. The theory of *relative deprivation* regards the economic position of a household in its own community, and states that the degree of one's relative deprivation corresponds to one's likelihood to migrate. Thus communities with relatively equal income distribution will generate less migration. Migration also relates to envisaged long-term advantages as a result of education possibilities. The young generation is also attracted to major metropolises and their diverse supply of entertainment and lifestyles.

The degree of mobility among various social strata seems to correlate with the degree of empowerment among the different groups. Industrialisation has resulted in the deepening of core-peripheral differentials. In developing countries, a polarisation between a westernised elite and the traditional rest has emerged. In the view of the *world systems theory*, capitalism expands outwards from the core nations to the rest of the world and labour in the developing countries get displaced. International migration is fuelled by an increasing polarisation of the global economy. Migrants from the developing countries are accommodated in the least attractive and insecure employment sector in an increasingly segmented labour market. In the lagging countries, labour is regarded as an export commodity to improve their own capital-labour ratios and to gain foreign capital through international remittance. Core areas, with low fertility rates, act as magnets on peripheral areas with high fertility rates and poverty.

Migration patterns are distinguished according to population streams between various locations. *Mainstream* migrations indicate dominant patterns while *sub-stream* and *counter-stream* migration are movements in opposite direction, part of which are return migrants. The rationale behind migration patterns are of course associated with the incentives of the migrants, which can be very diverse. *Productionism* refers to driving forces of an economic nature while *environmentalism* would refer to the need to improve one's actual living environment. In a lifespan perspective, the former enables a person to achieve the latter. In the upper strata of a segmented labour market, productionist and environmentalist incentives would fuse as professionals are inclined to seek for good living conditions in combination with an attractive job.

¹³ Cowen 1998

Both on the individual level and the institutional level, migration involves *risks and cost* that are either *direct or indirect*. The sought after benefits may not be achieved even in the long run. Life changes may involve investment in education and professional skills that pay off only over a considerable period of time, which make it harder for older people as these have less time to compensate for financial and social losses.

In the context of a core-periphery relationship, huge discrepancy in terms of economic opportunities and environmental assets would favour migration. Conversely, when differences are reduced, the migratory patterns get more varied and complex, and less predictable over time. Normally, migration patterns correlate with the *business cycle*. Booms enhance polarisation while recessions would decrease it. Migration patterns are further modified by the core-peripheral framework, which can be differentiated vertically in terms of their relative level of development, and horizontally in terms of scale and location.

One of the major overall contexts of migration is *demographic change*. Fertility rates fell below the replacement level of 2.13 live births per woman in Europe for the first time in the mid-60s, which was followed by the rest of the developed world some ten years later. Falling fertility rates in combination with rising life expectancy levels has had a significant impact on the demographic picture. Family sizes are decreasing, family members are aging, and single parent families or “new family” combinations are increasing. Changing needs and mobility result in diverging redistribution trends. For instance elderly migration has had a significant impact on overall migration trends. Those in their early retirement move to desired locations. When minor disabilities appear, they tend to move to locations where assistance is present.

Another major migration trend in the central parts of Europe is the striving for the rural. Sub-urbanisation is not only a characteristic of households with children, but increasingly so with regard to single-person households as well.¹⁴ There seem to be a prevailing preference for rural dwelling.¹⁵ Actually: “*This cultural construction – the ...rural idyll – is actively mobilized and reproduced through the marketing and commodification of the countryside for urban consumption on multiple scales from the local to the national.*”¹⁶ The driving forces behind this is supposed to be twofold. One the one hand, the rural is conceived as “close to nature”. On the other hand, the rural context is supposed to imply an enhanced feeling for community in terms of comprehensible social relations.

The current high concentration of immigrants in large metropolitan areas in Europe could set in motion the next phase of counter-urbanisation. Those that cannot make a living in the metropolises are obliged to join the higher income groups of the earlier phase of counter-urbanisation. This could change the core-periphery concept from a regional to a local phenomenon, indicating a deepened social polarisation characteristic to third world countries.

Historical remarks

Prototypes of urban settings emerged in the Levant some 10 000 years ago, matching the arising Neolithic revolution including agriculture and pottery. The standard explanation sees the surplus generated by enhanced production capacity as the basis for sustaining an urban population involved in other activities than producing food. This explanation causes a fundamental question: why would groups of people suddenly engage themselves in producing surplus as the prime idea of mankind till then was *not* to produce a surplus, i.e. to keep in balance with the carrying capacity of the environment by applying active measures to control population numbers? An alternative view on the emergence of urbanism claims that proto-urban settings emerged already before agriculture, and that these communities forced the surrounding peoples to engage in agriculture in order to subdue them

¹⁴ Heins, S. et al. 2002

¹⁵ Built Environment. Volume 28, Number 4, 2002.

¹⁶ Valentine 2001, page 257.

by making them sedentary and taxable.¹⁷ According to this view, *urban life was a forerunner of agriculture and thus, to put it bluntly, the “country” emerged out of the “town”*.

The relations between towns and countryside have not always, however, been antagonistic in history, and towns and cities have not always played the primary role. Historical evidence displays a multitude of variations with regard to urban-rural relations.

Perhaps unjustly disregarding the Minoan and Mycenaean civilisations, one could claim that European urbanism started with the emergence of the Greek *polis* in the 8th century BC. The *polis* was more than simply the buildings, it was the *citizenship*, those resident in the town and surrounding countryside. These city-states were characterised by governance by law instead of arbitrary rule, and the organisational model of the *polis* (assembly, council and magistrates) still constitutes the model for municipal as well as state organisation (parliament, government, public administration) in most countries. An innovation of tremendous importance was the administrative and political reforms (508 BC) of Kleisthenes in Athens, which turned a tribally based social organisation into a territorial one and opened up for democratic rule.¹⁸ In the Greek *polis*, the city proper and the surrounding countryside and smaller villages and hamlets were integrated into a harmonious, political entity, further enhanced by the particular situation of temples and religious rituals that integrated all parts of the territory into one harmonic entity. This is probably the best example we can find of “urban-rural partnership” in the history of Europe!

The Greek understanding of the particular qualities connected to the *polis*, e.g. the rejection of mass society in favour of scale comprehensible for each individual, included the idea of controlling growth. Possible population expansion would not be consumed by the original *polis* but directed into the foundation of new colonies that would maintain close relations to the mother *polis*, but would be organised according to the *polis*-model and act independently. In this respect, population growth was not integrated locally but canalised into additive units. Constant warfare was of course also in effect a means for population control.

The Roman Empire was more or less ruled according to the city-state model with Rome as the *cora*. Strictly organised, rational survey and division of land (*centauratio*) in combination with the foundation of new urban centres formed the organisational basis for Roman territorial expansion. Already Alexander the Great had successfully applied city foundation as a means for securing the control of the conquered large territories, thereby exporting Greek civilisation. With reference to Tacitus' *Germanica* one could claim that the Romans had no illusions concerning the true nature of their civilising, that is urbanised mode of life based on civic manners, public amenities for personal hygiene, etc. The purpose was simply to subdue the conquered people. Towards the end of the Roman Empire, the point of gravity switched from urban to rural settings. The cities and towns lost in influence and power, and the elite would withdraw to their country estates. “Ruralisation” or counter-urbanisation preceded the fall of the Roman Empire.

After the ruin of urban life in Europe during the last centuries of the Roman era and the first centuries of the Middle Ages when urban life practically disappeared, urbanisation took swing and the present day settlement structure of most parts of Europe was established by 1350 AD. The basic traits of the European landscape including urban-rural structural relations, is of medieval origin. In regions within the borders of the old Roman Empire, the Roman legacy was of importance. In other parts, urbanisation was a more or less original endeavour. Within the feudal context and manor based subsistence economy of Europe, urban markets and emerging capitalist relations constituted an awkward phenomenon, the peculiarity of which is illustratively summoned in the slogan: “Stadtluft macht frei!”

The establishment of centralised power in countries like England, France and Spain caused the foundation of new towns for mastering large tracts of land with unstable power relations. Founded towns form a considerable part of medieval urban settlements, usually regular in shape. Also founded

¹⁷ Soja 2000, Short 1996

¹⁸ Thornby 1996

towns of the German colonisation of Slave and other territories east of Elbe resulted in regularly shaped town plans. The idea that medieval town plans of a more free shape would have resulted from organic growth has recently been contested by the argument that large scale geometric patterns seem to underlay such towns as well. Consequently, initial European urbanisation seems to have been less haphazard and more orderly accomplished than used to be thought.

Towns were strange elements, out of place in the feudal context, but interesting for mundane and clerical lords to found and control as they generated revenues through the conduct of commerce. Until the liberalisation of the economy in most parts of Europe in the 19th century, urban-rural relations were underpinned by the urban strive for hegemony in trade and all kinds of commerce, which actually caused active measures to restrict trade by the peasantry in the countryside.

There was a dramatic disruption to European population brought about by the Black Death, but the urban population and its distribution seems to have remained remarkably stable or to have reconstituted itself by 1500. In the early 14th century, there was 125 cities of 10 000 or more inhabitants, and for cities of about 100 000 inhabitants. In 1500, the corresponding figures were 156 and still four huge cities. Italy alone claimed 28 percent of these cities, and three of the four cities with over 100 000 inhabitants. Then began an era of expansion in economic and demographic life that was to last until the middle of the 17th century. The number of cities with more than 10 000 inhabitants grew to over 200 before a succession of reversal set in. This reversal hit the Mediterranean countries by 1600, and central Europe a few decades later, which brought about an actual contraction in the number of cities with 10 000 or more inhabitants¹⁹.

A second wave of expansion began slowly and gained momentum after 1750. By 1800, the number of cities with 10 000 or more inhabitants reached 363, and each decade thereafter brought major gain. The 19th century witnessed a pace of urban growth altogether different from the previous centuries. The percentage of Europe's population living in cities of at least 10 000 inhabitants displayed a relentless upward pressure, climbing from 5.3 percent in 1500 to 9.4 percent in 1800.

The setback of the early 17th century, while affecting the number of cities, had less effect on the size of urban population, which indicate a usual situation where a large-scale demographic contraction apparently had much less effect on the urban population than it had on the size of the rural population. As a consequence, the urban percentage continued to climb, which actualises the question of concentration of urban population.

The distribution of settlements by size shows regularity, usually referred to as the *rank-size distribution*. In large systems of cities, the second largest city is likely to be half of the largest, the third largest city one-third as large, etc. It follows from this that proportionate growth throughout the relevant range of city sizes will generate a series of rank-size distributions over time that preserve the same overall configuration. To achieve this constancy, there must exist a long-term balance between the growth of the component cities and the growth of the urban system as a whole, which means the introduction of new cities into the system.

What does the rank-size distribution of European cities and towns during various centuries tell us? In 1500, the largest ten cities were smaller than "predicted" according to rank-size distribution. This was particularly evident in Middle Europe, where only Paris was distinctively larger than the rest. This could be considered as an evidence of a lack of integration of the various regions of Europe. The summation of many small and relatively autarkical urban systems is likely to generate a rank-size distribution where the upper part of the system is under-represented.

By 1600, the rank-size curve of Europe was approaching the ideal one, suggesting that Europe had progressed in the direction of an economic integration of its regions and an associated development of an hierarchy in the system of cities. Particularly in Middle Europe, the huge cities gain growth, and by 1650 London, Paris and Amsterdam were already dominant cities. One of the driving forces behind this development was probably the state-building effort particularly in France, England and Spain that

¹⁹ deVries 1981

had the effect of undermining the independence and autonomy of many cities and of subordinating their economic interests to those of the centralised states.

In addition, the Reformation's impact on Cathedral towns in newly Protestant lands had the cumulative impact of undermining the viability of many cities at the same time as certain cities gained enormously in growth potential being the administrative centres of the new monarchies (Madrid, London, Paris, Stockholm) or being the economic handmaidens of imperial ambition (Genoa, Augsburg). As a group, European cities saw their distinctive municipal culture dismissed by right-thinking servitors of the modern state as a medieval relict.

In the period from 1600 to 1750, among the cities that declined markedly none were capitals, a category, which together with ports were conspicuous among the rapidly growing cities. Administration, the military, and the legal apparatus provided a major expansion of urban employment. Powerful economic forces were speeding the abandonment of cities as locations for many of the most labour-absorbing industries. Proto-industrialisation in the form of the spread through the countryside of the putting-out system was stimulated by changes in relative prices, colonial markets, demographic change and the politics of cities. Industrial labour could be recruited without withdrawing it totally from the agricultural sector, and the heavy burden of capital investment associated with urban growth could be avoided.

A conclusion is that *urban growth in the period from 1500 to 1750 was heavily concentrated in the large cities and was not characterised by the birth of numerous new cities*. In the course of the 17th century, the relative share of the Mediterranean population of the European total dropped from half to one third. The entire net growth was concentrated in Middle and Western Europe. *After 1750*, the process of urbanisation as reflected in the rank-size distribution changed fundamentally. Now *smaller cities grew disproportionately and numerous new cities emerged* while the largest cities were conspicuous for their lethargic growth relative to the rest of the cities. This is particularly evident in Middle Europe, while Southern Europe joins in during the first half of the 19th century. An obvious factor of urban growth was simply the rate of overall population growth.

The early stages of the industrial revolution tended to be played out in relatively small cities and in rural locations. Although the industrial revolution of the 18th century was primarily a British phenomenon, yet the growth of small cities was much more widespread. The universality of small-city growth in the period 1750-1850 (in 1800-1850 in the Mediterranean region) can be accounted for by the increase in agricultural incomes and the expansion of farm production. Regional marketing and administrative centres expanded their employment bases as the volume of marketed farm output grew. The retailing and service sectors grew with the increase in landlords' rental incomes. Although it is apparent that modern urbanisation is characterised by urban population concentration in large cities, it was obviously preceded by an interval in which the opposite was the case, and in which Europe for the first time since the Middle Ages received a sizable fusion of new cities.

The development of the city-system of pre-industrial Europe could be described as the destruction of an old urban structure and its replacement by a new one, but with the proviso that the constituent cities of these two structures remained the same. The individual cities were largely concerned with their search for a place in a new urban environment. The new urban structure was not primarily an administrative hierarchy or a central market system, but the outcome of a commercialising economy and come to be dominated by competitive mercantile centres.

A curious phase of urban-rural structural relations occurred in the 17th and 18th centuries when the rural landscape outside towns was appropriated by aristocrats and nobles who *en masse* founded landscape gardens of magnificent dimensions. In fact the visual appropriation by far overrode the actual size of the gardens as visual focal points were established in the landscape at crucial nodes. These structures were produced in the hundreds all over Europe, especially in residence towns and their surroundings. The scale of these elements was surpassed only by 20th century urbanisation and the proliferation of large-scale infrastructures. The Baroque aesthetic reshaping of the countryside represents a kind of "staging" (German "Inszenierung") of the landscape that in scale has a parallel only in the current concern for conservation of historical and rural landscapes types. The example

indicates the *importance of visual attitudes in the appropriation of landscape in terms of symbolic (or currently: economic) gains*.

Industrialisation and liberalisation of the economy altered urban and rural settings and life in a fundamental way. Industrialised production has affected all sectors of the economy, primary as well as secondary and tertiary sectors as well. Urban industries have altered townscapes in a fundamental way. The industrialisation of agriculture has caused huge changes in rural settlement and land-use structures. As a result, large scale migration has been commonplace and the process of urbanisation was strongly fuelled in the 19th and 20th centuries by the restructuring going on in the economy as well as the liberalisation of the economy, which caused urban settings to lose their favoured position. It is, however, *false to attribute industrialisation to the urbanised world and to conceive recent urbanisation only in terms of industrialisation*.

In England, where the initial industrialisation took place, the old towns appear at the head of the hierarchy as spectators in the process of industrialisation, and it is assumed that rural industries increased relative to urban industry. Actually it is supposed that the process of industrialisation proceeded ahead of urbanisation in 18th century England.²⁰ In Russia a similar pattern is to be found. In 1902, still 61 percent of the total employment in factory industry was located outside the cities. Almost all the countries that had an early industrial take-off (England, France, Belgium, Switzerland) had rather low levels of urbanisation while many of the late comers were highly urbanised (Spain, Italy, Netherlands, Portugal). Actually the industrial revolution is supposed to have started first in agriculture. In England, the agricultural revolution preceded the industrial upheaval by 40 – 50 years.

There is a peculiar relation between agricultural production and the relative size of urban settlements in a given territory. The linkage between the huge progress achieved by agricultural productivity since the industrial revolution and the jump in the level of urbanisation is evident. The most advanced agricultural techniques in the 18th century still had to mobilise some 70 to 75 percent of the labour force just to produce food and raw material, mainly textiles. In the absence of massive food imports, the urbanisation level could not be higher than some 20 percent.

Only small countries with exceptional resources could (by mobilising low food surplus of large regions) import large shares of their food consumption, which was the case in the Netherlands in the 17th century where the share of urban population was some 40 percent. This could be achieved only by importing huge quantities of cereal, which rendered it possible for some 55 to 70 percent of the population to be employed in non-agricultural sectors. In other European countries with no exceptional commercial orientation, the proportion of non-agricultural labour had never exceeded 20 – 30 percent before the industrial revolution, and the percentage of urban population was never greater than 12 – 15 percent. On the macro-regional levels (Europe, large countries of Asia) the proportion of the non-agricultural labour force had never exceeded 15 – 20 percent, and the proportion of city dwellers 10 – 13 percent.²¹

For the 19th century, the links between economic development and levels of urbanisation is obvious. In Europe from the 1850s, differences in the level of economic development can explain some 60 to 70 percent of the differences in urbanisation levels. After 1930 and even more so after 1960, the relation between economic development and urbanisation becomes less strong.

Technical innovations arise and are diffused more often in urban than in rural settings. This is allegedly a proven fact. The argumentation goes that higher population density facilitates contacts, and therefore leads to accelerated flows of information. The heterogeneity of urban activities leads to applications in other sectors. In addition, the city is traditionally the seat of educational activities and the city is in contact with other cities. The size of the city is supposed to play an important role in the spatial diffusion of innovation. In conclusion then, the city leads to more, particularly technical innovation, and favours the spread of these innovations thereby being a factor of economic development.

²⁰ Diederiks 1981, 7-8.

²¹ Bairoch 1981, 65 –66.

How could then the agricultural revolution of the countryside have preceded the industrial upheaval of towns and cities? The Dutch example shows that advanced urbanism did not by necessity generate productivity increase in farming. An answer could be that “hyper-urbanisation” or “over-urbanisation” (Spain, Portugal, Italy, the Netherlands in the 18th and early 19th centuries) indicate a level of urbanisation and the presence of large cities, which no longer corresponded to the original economic functions of urbanisation. In many third world countries this is the prevailing situation. It is supposed that over-urbanisation has limited the possibilities of productive investments especially in new sectors. Consumption demand from cities or even construction needs have absorbed a too large share of resources. Over-urbanisation also implies urban under-employment, low productivity and an enlarged tertiary sector.

In the beginning of the industrial revolution, the two major innovations of this period had important fall out on agriculture. Firstly, the production of iron instead of wood, which led to a sharp fall in iron's price, and brought a sizeable improvement in terms of trade of agricultural product versus iron manufactures. This and other technical innovations allowed a widened use of iron in traditional agricultural implements and the development of entirely new ones, which resulted in increased agricultural productivity. Secondly, the mechanisation of spinning led to the disappearance of rural textile activities, which in its turn often led to the total withdrawal from agricultural activities on land of low productivity, and an increased devotion to land of high yield, i.e. an increase in average agricultural productivity.

The second agricultural revolution started around 1840 – 1870, and its main component was the introduction of artificial fertilisers and of real agricultural machinery. The development of fertilisers stemmed directly from progress in science. In mechanisation, rural inventors could play a more important role, but at a very early stage, production and improvement of equipment became an urban activity. Further improvement in productivity is later on brought about by the introduction of pesticides and herbicides as well as further mechanisation, genetic manipulation, improved communication and logistics. In spatial terms, there is a global shift in agriculture from Europe to the temperate zones of America and Oceania. In Europe, there is going on a regional concentration and specialisation in production. Urbanisation relates to the restructuring of agriculture by having a positive impact on the flow of agricultural goods. The increased demand for food without an increase of active population on the land is both a cause and effect of progress in agricultural productivity.

An important issue with regard to urbanisation is the market size for industrial goods. During the 16th and 17th centuries, there was an increase in the size of urban markets without fundamental change of technology whereas in the 19th century technology developed more substantially than urban markets. It is argued that technological evolution probably led to sharper increase in size of the market needed by industry than the increase in average city size. Consequently, it appears very unlikely that the city improved its role as an outlet for industries, and by this very reason became a more important factor of development. The growth of city size has not been an important factor for the outlet of the industrial sector. If such a growth, however, would not have taken place, rationalisation and the introduction of new technologies could have been harder. The urban component does not seem to have been the leading one.

Post-war urbanisation in Europe

The 20th century has been characterised as having seen an urban civilisation without cities.²² The main feature of European urbanisation is supposed to be its diversity of origin, degree of dispersal or concentration, and level of urbanisation.²³ The economic system of Europe has, however, become increasingly integrated, which should have an impact on the development of the national urban systems, particularly on border regions and on migration patterns.

²² Berry 1978

²³ Drewett & Rossi 1981

The urbanisation rate was investigated for all 29 countries included in this study for the period from 1950 to 2000, expressed as urbanisation rate average in five year periods (see Map G in Map Set 3). The overall impression is the slow-down of urbanisation towards the end of the period. The early 90s seems to have been a period of stagnation where 6 countries (Bulgaria, Czech republic, Estonia, Italy, Latvia, Slovenia) out of 29 countries even experienced counter-urbanisation (negative urbanisation rate). Partly this is probably due to international migration patterns.

Except for Portugal and Norway, the geographical western part of Europe seems to have had a more even and balanced urbanisation than the eastern part. In the case of Portugal, the urbanisation during the whole period was strong, in particular after the fall of the Salazar-regime, in the 80s and 90s. The Norwegian urbanisation was particularly strong in the 50s. In countries like UK, the Netherlands and Belgium, urbanisation was marginal during the period. In most of the eastern European countries, urbanisation got momentum after the war and has slowed down gradually after that. In the case of Finland and Czech republic, however, there are some peculiar swings of irregularity in the 60s and 70s. In the Finnish case the swings are probably caused by the influence of international economic fluctuations, because of the small size and open character of its economy.

The urbanisation rates also in many cases indicate the level of economic performance and urbanisation at the beginning of the period and the pace of restructuring during the period. Countries with a high degree of urbanisation already at the beginning of the period show a more balanced pattern than those with a lower initial urbanisation. Strong fluctuations indicate political changes and/or dependence of international business cycles.

In-depth studies of growth performance of European functional areas during the period 1950 – 1975 show that the 50s and 60s were characterised by rapid growth, which slowed down in the latter part of the period (except for e.g. Sweden and Austria). Growth rates were not related to the population size of the country or to the extent of the national urban system. The majority of towns with over one million inhabitants found themselves in the disurbanisation phase.

Patterns of growth performance of urban zones during the period 1950 – 75 show that the cores of functional urban areas decreased irrespective of country, size of population and city system or time period. In terms of country performance, the suburbanisation was particularly strong in the Netherlands, Sweden, Italy, France, Switzerland and Denmark. It was less evident in Britain and Belgium where the suburbanisation had moved on to a stage of population decentralisation from both the core and the ring.

The position of towns had clearly shifted in the course of the years. In the 50s, 37 percent of the towns were in the urbanisation phase. In the 60s and early 70s, the percentage of suburbanising towns had increased from 59 to 84 percent. The earlier stages of absolute and relative centralisation were predominantly a feature of Eastern Europe (e.g. Bulgaria, Hungary, Poland, Yugoslavia) with many cities still experiencing an absolute centralisation of population. The countries lying in an intermediate position between centralisation and decentralisation were Denmark, Sweden, Austria, France and Italy. The countries with cities absolutely decentralising or declining were found in a region stretching from Switzerland and West Germany, through Belgium and the Netherlands to Great Britain.

Growth performance of smaller towns of the period 1950-75 indicates that growth rates of urban population inversely relate to size. In countries like Austria, Belgium, Denmark, Great Britain, the Netherlands, France, Sweden, Switzerland and West Germany, from 70 to 100 percent of the population growth during 1950-75 took place in towns with less than 50 000 inhabitants. An exception was Italy, where the share of the middle and smaller towns in the total population increase has been less than 40 percent. In 7 out of 10 Western European countries examined, net migration represented a very important component of the demographic growth of the middle sized and smaller towns. High immigration correlates, however, with high natural change rates. In a majority of cases, migration seemed to be a result of suburbanisation. In this kind of urbanisation, it is presumed that residential preferences assume a leading role.

It is apparent though that population change is closely related to employment change and the restructuring of the economy. Population deconcentration is therefore related to employment deconcentration. Large organisations are expanding their influence and city-interdependencies are growing more complex because of intra-organisational linkages. During a period of population deconcentration the control mechanisms have been centralising and shaping a pattern of economical and spatial inter-dependencies in the system.²⁴

If urbanisation, i.e. urban-rural relations, is viewed as a whole, it is obvious that people's judgement is based on a multitude of decision elements such as employment opportunities, wage levels, housing, schools, medical amenities as well as cultural amenities. The whole settlement pattern of Europe shows a process of declining rates of urban growth. Different-sized cities seem to be affected in different ways. Adequate policies addressing urban-rural relations would then have to be designed in compliance with the dynamic and diversified characteristics of urbanisation as all towns appear to be subjected to an autonomous wave-like movement of growth and decline.²⁵

Functional integration and rank-size of urban centres in Europe

The relative share of population living in functional urban areas (FUA) out of the country total was calculated for all the countries studied. The material was received from ESPON project 1.1.1. (see Figure 2 and Annex B for the produced graphs). The basis for this calculation was the theoretical assumption that *share of FUA correlates positively with the degree of urban-rural integration*. The material was not, however, good enough for such conclusions to be drawn with absolute certainty, because the statistical NUTS-division, which the population data are based on, does not match FUAs very well in all individual cases (FUAs are sometimes larger than the NUTS 3 area). The method as such for estimating degree of urban integration seems pertinent enough, but the empirical basis should be improved.

The share of FUA population varied from 100 percent (Malta) to 34 percent in Poland. Other very low FUA-shares could be found in Austria (36 percent), Romania (37), Ireland (39) and Lithuania (41). Also the FUA-share in the UK was surprisingly low (51). These low percentages could be explained partly by geographical matters or low degree of integration into urban economies, which means that dys-integration in these cases would be real. In the UK-case it could be explained by the fact that the country is very densely populated and that a considerable part of the rural areas are integrated into urban economies but these are of a size too small to be recognised in the FUA-sample. This explanation may be valid for some of the other countries with low FUA-shares as well.

The famous proposition that the size distribution of cities in an integrated national urban would follow the so-called rank size rule, has been discussed extensively in literature on urban systems. For the first time it was proposed by Auerbach²⁶. The straightforward statement of the rank-size rule is that the population of a given city tends to be equal to the population of the largest city divided by the rank of the given city. This is very often referred to as the Zipf's Law, as Zipf²⁷ added that the distribution would follow Pareto function (having a shape parameter, Pareto exponent) equal to 1. An extensive amount of studies have tried to test the proposition empirically²⁸. Some studies have also tried to find correlations between the distribution of cities and different statistical variables²⁹, even some causal relationships from the patterns³⁰. On a graph having logarithmic scales, the size distribution of an integrated urban system would, according to the rank-size rule, result in the form of a direct line.

²⁴ Drewett & Rossi 1981

²⁵ van den Berg et al. 1981

²⁶ Auerbach 1913, cit. in Soo 2002

²⁷ Zipf 1949, cit. Soo 2002

²⁸ Allen 1954, Rosen & Resnick 1980, Pumain 1982 etc., cit. Guérin-Pace 1995

²⁹ Berry 1961, Parr 1985, cit. in Guérin-Pace 1995 and Soo 2002

³⁰ Gabaix & Ioannides 2003, Eaton & Eckstein 1997

A recent attempt with rank-sizes calculated for 75 countries³¹ found out that in most European countries the size distribution is more even than countries in Asia, Africa or South-America systems. The dominant role of the largest city, the primate pattern, is more common in the developing countries and in small-sized countries than in big and complex states.³² It can thus be said that the primate distributions typify the impact of a few rather strong forces³³. The persistence of the shape of the city size distribution and of its spatial distribution has also been highlighted³⁴. The stability can, however, cover the instability of the position of each city within the hierarchy.

Slightly different results are obtained according to the urban criteria and the population thresholds in use. One should consider how much the results would differ if data on urban centres would be used instead of the functional urban areas³⁵. If there is evidence of a move from concentration to deconcentration³⁶, it might partly be distortion and only reflect the decrease in population in the traditional core areas of major cities, while at the same time the concentration to the major urban agglomerations might have continued.

In the project at hand, the *rank-size* for all the countries as well as for each country was calculated. The purpose for this was to render of picture of the relative balance of each national urban system, and for Europe as a whole. Altogether 1608 FUAs were included into the calculations. The assumption was that a rank-size where the factual urban system is close to the theoretical ideal would indicate an integrated and balanced urban system whereas deviations from the ideal would indicate a lower or higher degree of dis-integration and/or unbalance in the system under scrutiny. Such an assumption is false in the European case as it is not correct to view the European rank-size in terms of an integrated urban system. The same comment is valid for a number of individual countries that have changed their borders after the Second World War (e.g. Poland) and thereby coming to encompass (or lose) parts of urban systems, which have had to develop in a new context during the post-war time.

The rank-size of considered FUAs in Europe indicate a considerable imbalance in the urban system: the medium and smaller parts of the FUAs in particular are strongly overrepresented compared to the size of the twenty or so largest FUAs. With regard to urban-rural relations, the European rank-size hierarchy could, however, provide an excellent point of departure for enhancing and improving the quality of life in rural and peripheral parts of the continent. As discussed above, migration patterns indicate a long-term trend of strengthened semi-rural or rural conditions in terms of the population basis.

When taking a closer look at the national variations it is obvious that certain “family-resemblances” can be detected. The clear category are countries where the functional urban area of the *prime city is overweighted*. Such cases are UK, France, Portugal, Greece, Austria, Latvia, Estonia, Denmark, Ireland and Finland. In some of these cases, the historical importance of the capital in early centralised, vast nations is obvious (UK, France). In some cases, the country has lost some of its territory, and the prime city is turned over-sized in comparison with the reduced territory (Austria, Denmark). In other cases, the prime city has emerged in a much larger urban context where the country in question for a considerable time was a part of another state (Estonia, Latvia). The explanation could also be over-urbanisation due to fact that the urbanisation phase of the prime city stage is still going on, or just the relative smallness of the national economy (Finland, Ireland, Portugal, Greece).

Another clear category are countries with a relative over-representation of small and medium-sized towns (Belgium, the Netherlands, Italy, Germany, Poland, Slovenia). Some of these have a fairly recent history as centralised states (Germany, Italy, Belgium, the Netherlands) and in some cases a political structure of federalism.

³¹ Soo 2002

³² Allen 1954, Parr 1985, Soo 2002

³³ Parr 1985, cit. Guérin-Pace 1995

³⁴ Guérin-Pace 1995

³⁵ Guérin-Pace 1995

³⁶ Parr 1985

A third category are countries with a balanced rank-size graph, such as Spain, which has a history of strong centralisation but currently a political system of federalism. Other countries with balanced rank-sizes are Switzerland and Lithuania.

The rank-size exercise shows the variety of urban systems in Europe and a few conclusions could be drawn:

1. Firstly, the urban systems of the European countries must be analysed in the context of political history, which seems to explain much of the characteristics of the individual urban systems.
2. Secondly, the political turbulence of Europe during centuries, and during the 20th century in particular, has caused situations where urban systems are “displaced” into new political and sometimes cultural contexts. This means that the urban systems have not grown “naturally” within stable political and/or socio-economic frames for very long periods of time.
3. Thirdly, with the relative decrease of the influence of the respective nation state on the urban system of each country, the urban configuration of Europe is about to change once more, and adjust to enhanced European integration. The effects of integration are, however, likely to hit the various urban systems in very different ways depending on size, attractiveness, accessibility, etc.
4. Fourthly, urban-rural policies should be designed and implemented in order to take advantage of the high quality of urban life in Europe, which is a matter where Europe differs in a positive way from the situation in some other parts of the world. From this point of view, the relative over-representation of small and medium-sized towns could be seen as a European advantage.

The comparison of data sets where data on both cities and agglomerations has been available³⁷ showed that the national curves for agglomerations are steeper than for cities proper. When looking only at the European rank-size figures for FUAs and for cities proper, the first impression would be against that: the distribution is less unequal when using the data on urban agglomerations (graphs made by Michael Wegener³⁸ for European urban nodes only in the project 1.1.1., using the database of IRPUD). The graph on urban nodes shows a pattern following rather precisely the rank-size rule. The FUA curve would then reveal the higher number of big European centres and could be used as evidence of the currently low degree of integration within the European urban system, as described above.

³⁷ Soo 2002

³⁸ Wegener 2003

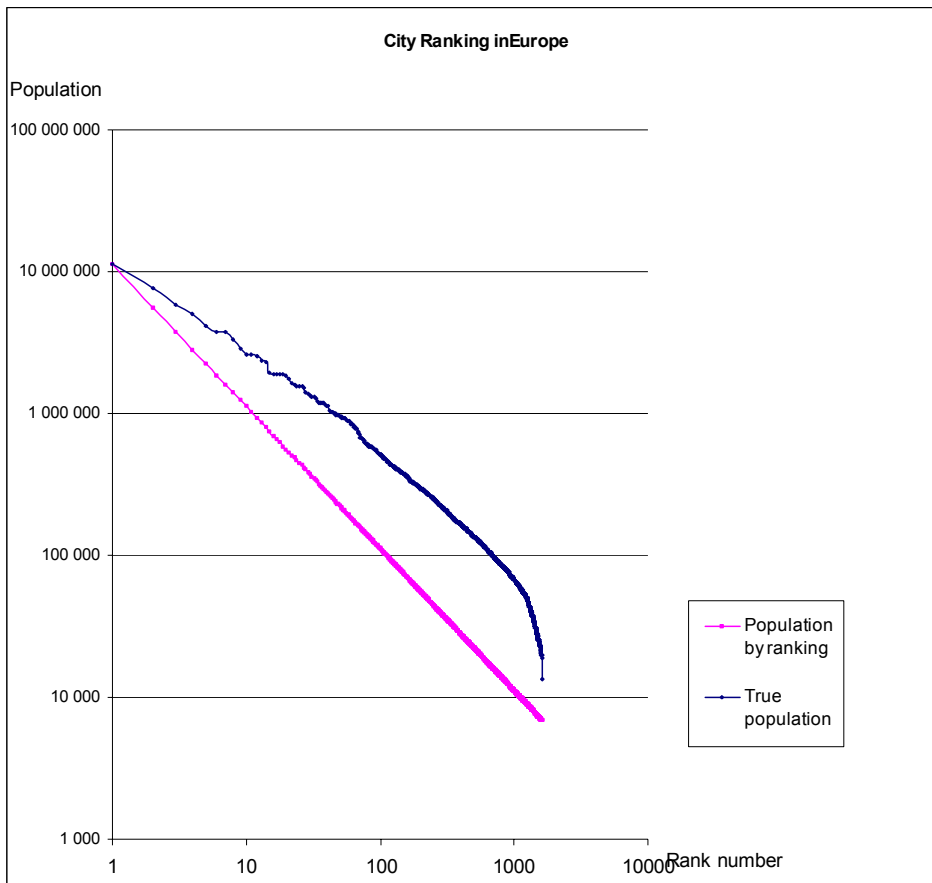


Figure 1: Rank-size graph of all European FUAs (pink colour showing the value expected according to Zipf's Law, blue colour showing the true population on a logarithmic scale) (Source: Project 1.1.1.)

Respectively the smooth top of the European curve would thus indicate steeper curves in some individual countries, as the size of the biggest FUAs might through the functional definition grow really big in relation to the rest of the national nodes. This is the case for eg. France, where the dominance of Paris rises (rank of FUA number 1 in Europe, rank of city proper only 5), and for Greece, where Athens ranks 8th among FUAs and but with population below one million rather low among urban nodes. A review of the national rank-size graphs would partially be rather strong contrast to the European one and support the findings of higher inequality of the size distribution between FUAs than between urban proper. This would be a simple consequence of the growth of cities having taken the form of suburbanisation, showing up as increasing concentration in larger cities when using FUA criteria.

The sample size should also be kept in mind when viewing the European graph. As the selection criteria of the FUAs could not follow any strict criteria³⁹: fixed number of cities, fixed size threshold or size above which the sample accounts for some given proportion of a country's population. This is why only the upper half of the European rank-size curve can be used for interpretation. When comparing the national graphs with each other, one should pay attention to the variations presented in Fig. 1 .

³⁹ Cheshire 1999, cit. in Soo 2002

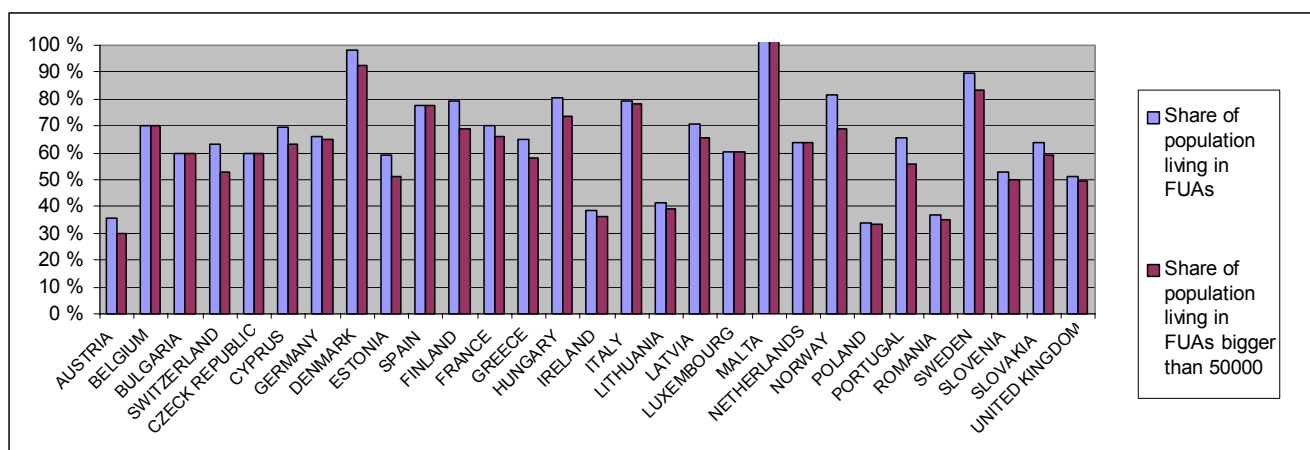


Figure 2: Share of people living in FUAs in comparison with people living in FUAs bigger than 50 000 (Source: Project 1.1.1. & Eurostat/ESPON database)

A comprehensive European analysis of urbanisation and urban-rural relations through the rank-size distribution would only be possible if long time series for both urban nodes and urban agglomerations would be available. The changes, even small ones, in the shape of the rank-size curve would indicate changes in the relative shares and growth rates. One could also try to connect the rank-size figures to the differential urbanisation theory, the different growth patterns of the stages. A move from stage three to four (Fig. 3 on net migration according to the settlement size), to a kind of hill-shaped pattern of the growth curve, would correspond to a trend reversal in certain countries⁴⁰. The non-Pareian behaviour of medium-sized cities (eg. a slower growth on the top of French urban hierarchy in the 1980-90s⁴¹) would thus be an indicator of a certain stage in urbanisation. Similar tendency in Italy in 1990s⁴² could suggest that present-day Italy would find itself in the intermediate city phase of the model on differential urbanisation, characterised by polarisation reversal.

In the absence of time series for FUAs, the data on the change of urban population during the last fifty years (Map G) would support the impression about a slower general pace of urbanisation in the already highly urbanised parts of Europe and correspond with the hill-shaped growth curves. However, the effects of immigration and increasing international mobility of people, goods and capital might contribute to further concentration of strategic activities in major cities⁴³. This could mean a continuation of suburbanisation outside of the strategic cities, an effect that might not be captured by the graphs if the FUA delineations vary too much between countries.

If the globalisation introduced different patterns at different levels of the urban hierarchy or according to the integration to the global circuits, could not this favour some nodes and leave the rest of the nodes follow the old or at least partly separate patterns in the persisting national contexts? For the study of urban-rural relations the message is clear: *the traditional relationships between city centre and periphery are being accompanied and overlapped by a hierarchy of networks, where the interdependencies are far more complicated than the relationship to the nearest higher node*⁴⁴. This might mean that the rank-size curve gets more and more unpredictable. On the other hand there is not much evidence of the correlation between economic variables and the rank-size curve; the political economy variables seem to play a larger role in explaining variations than economic geography variables such as scale economies⁴⁵ (see Graphs in Annex B) .

⁴⁰ Parr 1985

⁴¹ Guérin-Pace 1995

⁴² Bonifazi & Heins 2001

⁴³ see eg. Sassen 2002

⁴⁴ eg. Dematteis 1995

⁴⁵ Soo 2002

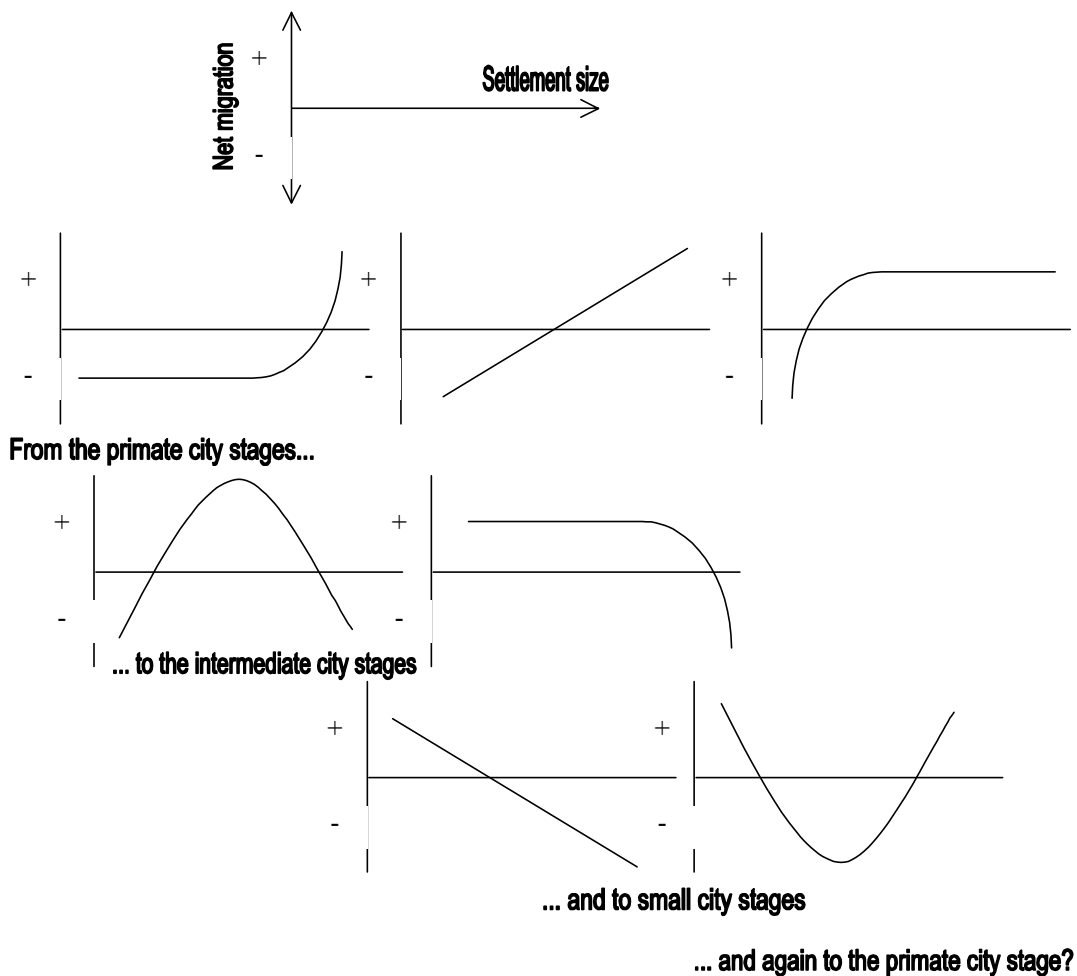


Figure 3: Shapes of growth curves during the cycle of urban development⁴⁶

Country-cases of urbanisation

Because of the huge diversity of urban systems in Europe as well as degree and history of urbanisation, the cases of eight countries are presented in the following. The selection includes the populous parts of central Europe (U.K., France, Germany, the Netherlands), the Mediterranean region (Italy), the ultimate periphery (Finland) as well as the former socialist countries of eastern Europe (Poland, Romania).

Great Britain⁴⁷

Britain was the first country in the world to undergo mass urbanisation. 34 percent of the population of England and Wales was already living in urban areas at the time of the first Census in 1801. The proportion had risen to 54 percent by 1851 and reached 78 percent by 1901. Thereafter the growth of urban municipalities has been only marginal, rising to 80.8 percent in 1951 and dropping slightly since then. Data based on administrative areas is of limited validity in the context of the burgeoning sub-urbanisation of the 20th century, and therefore counts have been made of the population physically defined as urban areas. The census put the urban share at 89.6 for Great Britain as a whole in 1991. Since 1951, it is very unlikely that any significant level of net rural-to-urban migration has occurred, which means that with regard to the last 50 years the emphasis must be on the changing distribution of the already urban population.

⁴⁶ Geyer 1996, cit in Bonifazi & Heins (2001)

⁴⁷ Champion 2002.

A second fundamental point is the stability of the settlement system. The vast majority of the basic nuclei around which the country's urban system has evolved have been in existence as settlements for over a thousand years. The Town and Country Planning Act of 1947 did not only serve to freeze the inherited physical pattern of settlement, but it placed a virtual prohibition on the physical extension of the smallest settlements in the countryside. Rural-urban land conversion has never returned to the peak levels recorded in the 1930s. In recent years, around half of all new house building has been taking place on recycled urban land.

Forces affecting the British urban system since 1950 include:

Counter-urbanisation, which means population redistribution down the urban hierarchy, peaked in the 70s and has since then been a clear dimension in terms of overall population change and especially internal migration.

- De-industrialisation has involved a massive shake-out in manufacturing and mining employment.
- Urban employment de-concentration reflects the effects of large-scale de-industrialisation, new location patterns and housing preferences.
- Decline of employment in traditional rural industries is partly due to long-term decline in the farm-related population.
- Net immigration from outside the UK has emerged as a major element of national population growth (over 50 percent) in contrast to the net-emigration of the 50s.
- A socio-economic transformation, in particular rising female participation in the work force, and changes in the household composition.
- Improvements in transport and telecommunication permits greater flexibility offer the potential for more economic activity away from a fixed workplace.
- The rise of the conservation movement brought to an end mass clearance and redevelopment in British cities during the 70s and has steadily been increasing its influence on the planning of more rural areas as well.

These forces are supposed to have been produced major changes to the national settlement system in terms of place characteristics as well as in the functional relationships existing between and within the separate units that make up urban Britain:

- The reinforcement of the North-South divide within Britain, such that London region is often considered "another country".
- More marked variations between urban regions within macro regions, with faster relative population growth for certain types of towns (resort, retirement, universities, high-tech industry, business services).
- Gentrification of neighbourhoods in the inner parts of big cities, and small-scale redevelopment elsewhere.
- Long-term transformation of inner city areas from white working class areas to ethnic minority areas.
- More general economic decline and net domestic out-migration from inner city areas prompted by the changing geography of work.
- Strong increase in number of jobs in the suburban and outer areas of large conurbations.
- Massive growth in cities and towns lying beyond the green belts of the major metropolitan areas, which are developing their own growth dynamics aided by proximity to transport nodes.
- Rapid growth of the more rural districts that comprise the countryside, particularly in the most accessible areas around cities and towns, but also smaller urban centres and rural settlements in regions relatively remote from the major metropolitan centres, added by a rural gentrification.

Britain has been consistently in the grip of counter-urbanisation since 1951 albeit varying in its intensity over time and space, accelerating in the 50s and the 60s and then falling back substantially in the 80s. Strong decentralisation of population was, however, taking place within the Functional Regions (FR) in the 80s as well: cores lost population while rings gained people and outer/rural areas recorded an even higher overall rate of growth. This tendency was found at all size hierarchy.

Population change rate displayed a very negative relationship with FR size, but there is no similarly strong growth-size relationship for the rings and outer rural areas. The largest FRs are distinctive in that, despite high losses from their cores, their outer zones did not appear to benefit proportionately. In particular, there was a large net shift of families (aged 30-44, and 1-15) from the cores to the rings of all types of FRs, and major spill-over from the dominants to other types of FRs. The outer and rural areas of all FR types were found to have recorded net gains of all age and sex groups in nearly all cases. There seems to be, however, no simple spill-over from one level to the next, but each level of the hierarch seems to receive net in-migration from all levels above it and losing net migration to all levels below it.

The age group 16-19 years are particularly prone to net migratory movement up the urban hierarchy, moving to the bright city lights. The highest proportion of down-hierarchy moves are for the retired and the self-employed (most commonly near retirement age), while the lowest ones are for students and unemployed. Non-white populations do not fit the general pattern quite to the same extent as whites, which may in part be attributed to their youthful age structure. Among various socio-economic characteristics of people of net out-migration from Britain's major conurbations, professionals and managerial occupations were over-represented.

London is a class of its own as it was back in surplus in the 80s and built very strongly on this in the 90s. Till 1999 it captured almost one-quarter of the UK's total population growth according to the official estimates. Since the 70s, the UK has switched from net loser to net gainer of international migrants, with the main beneficiaries being the conurbations in general and London in particular, which added over 100 000 a year to the UK population. The total volume of net migration loss from the conurbations to the rest of UK was at just over 90 000 a year for 1991-99, and official population projections indicate the same tendency of continuing population de-concentration, but a gain for the con-urbanised England.

At a national level, two clear tendencies are then obvious: the North-South drift and the urban-rural shift. The urban North has proved the weakest element while the rural South has grown the fastest. The London metropolitan region and the rest of the South are becoming increasingly intertwined as long-distance employment de-concentration from the core has followed the earlier residential exodus. The South is distinct in capturing the majority of the UK's increase in high-skill work, reflecting London predominant, global role. The increasing scarcity and rising price of housing in the London region forms a powerful deterrent to in-migration from the rest of the UK, and the same factor is a major stimulus for the outward movement of families in search of cheaper housing.

The green belts designed to restrict the lateral growth of the largest cities have forced their overspill populations to relocate further away than would otherwise have been the case, while the tightness of development controls generally has provided an extra centrifugal push into more remote rural areas.

France⁴⁸

The origin of French urbanism goes back to Roman times, but the present day settlement structure is of medieval origin. An accelerated urbanism started during the Industrial Revolution in the 19th century. The diffusion of industrial technology was, however, uneven within the country with a dividing line (from Le Havre to Marseille) dividing the industrialised North-East from the less industrialised South-West. The average annual growth rate of the urban population during the 19th century was only about 1 percent in France whereas it was the double in the UK. The decline of urban growth started before the end of the eighteenth century, and this was allegedly linked to the agricultural prosperity of the country at the time. The urban population only exceeded the rural population around 1930, compared to 1850 in the UK and 1880 in Germany.

After the Second World War, urbanisation in France was intense. The growth rate of the urban population increased cyclically reaching a maximum of 1.8 percent in the 60s, and declining

⁴⁸ Pumain 2002.

afterwards. From 1954 to 1975, the annual average growth rate was almost 1.5 percent per year, but dropped to less than 0.5 percent between 1975 and 1999. The overall urbanisation rate grew from 54 percent in 1950 to 73 percent in 2000. Measured in terms of daily urban systems, the country's level of urbanisation reached 76 percent at the end of the last century. The cyclical aspect of urbanisation relates to the post-war baby boom and the following decrease in fertility starting from the mid-60s.

People living in urban areas at the local level have been de-concentrating since 1975. This process started a bit earlier in larger cities. The process started with the decrease of the population in urban centres and an increase in their suburbs and rural peripheries. The share of the urban population in the peri-urban ring is still increasing. It increased from 17 to 21 percent in the 90s. When differentiated according to the urban centres, traditional suburbs and the outer ring, the demographic evolution remains very consistent since the migration turnover in 1975. The further away from the centre, the higher is the average growth rate. During the 90s, a slowing down of the urban sprawl was observed. Since 1982, the negative population change of urban centres has become less important and lately turned positive whereas the growth rates of suburbs and of the outer ring are decreasing. At the end of the last century, there was a convergence towards a mean growth rate in all the parts.

De-concentration tendencies may be attributed to the encouragement of clever housing estate traders, to the rejection of the urban way of life or a marked preference for country lifestyles. The spatial distribution of new housing around the main urban centres indicates, however, a strong attachment to these centres. De-concentration correlates with a rise in spatial standards of housing. France is a country where the main stage of peri-urbanisation occurred rather late during the 70s and 80s, but the process of urban sprawl has allegedly had a more profound impact than in the case of Spain or Italy. The French state maintains a strong indirect effect on urban sprawl through its general housing and transportation policies.

With about 10 million people, Paris is the largest European city and remains enormous as the head of the French territory with a legacy of political and administrative centralism. A ratio exceeding 7 between the population size of the first and second city has remained unchanged for at least two centuries, and this is allegedly the only example of an urban system with such a strong primacy among the large developed countries.

When the question of urban concentration is considered in terms of (the restricted definition of) urban agglomerations, the historical data show a trend of increasing concentration since at least 1950, with a clear reversal from about 1975 onwards. But if the notion of *aires urbaines* (corresponding to functional urban areas) is used, the result is quite different and there is clearly a tendency of increasing concentration of urban population. Although larger urban agglomerations seemed to grow less rapidly than the smallest ones, when observed in the context of daily urban systems the trend is in the favour of the large urban centres.

Basic manufacturing activities including steel industry and mechanics were booming first in the 50s, followed by the automobile industry, aeronautics and electrical supplies in the 60s. In a second phase of development, the electronic industry and tertiary sector provided most of the new employment whereas retail activities were losing jobs. Foreign immigration became an important factor during the first decades after the war. After the mid-70s, the demand for low-skilled jobs practically got extinct, the economy slowed down and new jobs required higher-skilled labourers. Agriculture was deeply transformed from family based poly-cultural products towards more specialised and business oriented farming. The share of services in total urban employment was less than 50 percent in 1954. Currently the figure is around 70 percent. Jobs in the manufacturing of final consumption goods have decreased less than jobs in basic industries. The retail trade sector has lost its importance compared to public, business and financial services.

Paris has maintained its advantage in the transformation process while the situation between other cities has not changed much. Within a centre-periphery framework, a first growth impulse that occurred in regions along the west and south of Paris during the 60s was linked to public support of industrial decentralisation. A second diffusion of development impulses from the centre towards the periphery occurred hierarchically, and was set in motion by public policy designed to modernise and

develop a list of eight designated “*métropoles d’équilibre*” (Lyon, Marseille, Lille, Toulouse, Nantes, Bordeaux, Nancy-Metz, Strasbourg) in 1964.

Since the middle of the 60s a relative and sometimes absolute decrease in population and an absolute loss in the degree of their specialisation is significant to most cities of the northern and eastern regions of France. Despite active policy measures, continuing streams of out-migration are indicative of these regions where the level of education and female participation are among the lowest in the country.

The booming South or the attraction of the sun-belt has been reinforced by the in-migration of hundreds of thousands of people from Algeria during the early 60s. Cities, which had an academic tradition and a bourgeois society like Montpellier or Toulouse, were favoured. Smaller and more industrial towns with a working class society like Nimes and Béziers were relatively neglected. Another interesting trend with strong spatial implications is the development of technopolises, which indicate the strong links between high tech industries and research institutes.

When population redistribution through migration is considered, mobility continuously increased in France between 1964 and 1975 and then slowed down. Long distance migration is mainly associated to change in profession whereas short distance migration is more frequently related to marriage and births. The highest mobility rates are observed for population in their 20s. The overall mobility level is of the same magnitude as in Other European countries, i.e. some 10 percent changes in housing per year.

Two major regional shifts have occurred since the 50s. First, the region of Paris drew as much as 25 percent of the population increase through migration in the 60s, but lost some of its attractiveness in the 70s, which may be interpreted as a centre-periphery reversal in spatial terms. Paris has, however, kept a positive migratory balance for the mobile age group (age 20-29). The largest losses were primarily people in retirement age, and secondary, families (age 35-39). The second shift was the reversal of attraction of Northern and North-east France. At the same time regions of the south and west have become increasingly attractive. In the 90s, 5.5 million people changed their places of residence. Only 15 percent of interregional migration contributed to an effective modification of the spatial distribution of population. In the case of cities and towns, the ratio between net migration and total migration (measured in numbers of in-migrants plus out-migration) was some 10 percent. The lion share of migration from one city to another is simple substitution where in-migrants come and occupy the position left by the out-migrants.

The spatial pattern of social groups in migration flows almost entirely follows the spatial pattern of social categories in urban agglomerations. If migrations reproduce the spatial division of labour, they reinforce the segregation by age groups between cities. Migration tends to reinforce the aging of cities whose populations are already older on average, especially along the Mediterranean coast. Dispersed nodes in the urban network are rejuvenated in the process. A distinction has to be made between migrations according to age, which are selective, and migrations according to occupation, which are more adaptive.

The diminution of the mean size of households, the increase in the number of second homes and in new building stock in the urban outskirts, are contributing to development in the urban fringe. The general participation of women in the labour force, longer life expectancy, the growing instability of couples, structural unemployment or the proliferation of less stable modes of employment may also cause a growing demand for new housing. The expansion of built-up areas depends more on the spread of journeys and on the accessibility of cities than upon their demographic growth. The possible impact of new technologies on spatial development is much discussed. It seems that among location factors, a good connection to information and communication technology (ICT) was less important than the price for renting offices and accessibility to a central position. ICT plays an important role for the organisation at work but not as much for location. There is no evidence of a substitution of physical transport of people for telecommunication. The contrary prevails: the more people own telecommunication tools, the more they move.

Germany⁴⁹

Germany is a relatively young national state. Before 1871, Germany was largely regarded as a linguistically and culturally defined community with strong regional identities. This has resulted in an extraordinarily wide variety of regional city types in terms of historical heritage, function and size. The legacy of the historically based territorial organisation is present in the federal structure of Germany (Länder), which provides relatively positive prospects for Länder capitals. Despite the post-war transformations, the urban system of Germany today is based on two epochs: the initial period of medieval urbanisation, and the period of industrialisation of the 19th century.

The relation between rank and size of the larger German cities indicate an almost ideal distribution. The urban systems of the Eastern and Western parts of the country are, however, neither functionally nor spatially balanced, and Berlin with a population of 3.5 million inhabitants cannot be regarded as a prime city yet. The cities of West Germany show a relatively even distribution between Hamburg in the north and Munich in the south. There are two areas with an exceptional concentration of cities, one along the river Rhine and the other from west to east along the zone between the low mountain range and the North German lowlands. In East Germany, the urban agglomerations are more concentrated in the south. The settlement structure displays more pronounced regional disparities between rural areas and urban agglomerations than in West Germany.

The structure of larger urban agglomerations in Germany is typically either mono-centric (Berlin, Hamburg, Munich) or polycentric (Rhine-Main, Rhine-Neckar, Rhine-Ruhr conurbation). The largest conurbation (Ruhr) has more than 11 million inhabitants and consists of several fused but differently structured city regions (Bonn, Cologne, Düsseldorf, Duisburg, Essen, Dortmund).

Industrialisation corresponded with the increase in urbanisation. The proportion of population living in cities with at least 100 000 inhabitants amounted to 4.8 percent in 1971, but increased to 21.3 percent in 1910 and reached 31.6 percent by the beginning of the Second World War. Rural population declined in municipalities of less than 2000 inhabitants. Consequently, the intensive industrialisation corresponded to spatial concentration. The urban growth pattern was caused by natural population growth, urban coalition and particularly migration gains.

West Germany

After the war, West Germany received more than 10 million refugees and expellees between 1945 and 1950 from the areas east of the Oder and Neisse rivers and from other East European states. In the census of 1950 a total of 20 percent of the entire population were refugees. The spatial distribution of these people was characterised by regional disparities. The rural areas of Schleswig-Holstein, eastern Lower Saxony and eastern Bavaria attracted most of these people. Due to war damage, a substantial part of the urban population was evacuated to rural regions during the war. The population of large cities decreased by more than 3 percent despite the fact the total population of West Germany increased between 1939-1950 from 40 to nearly 50 million.

During the 50s, the de-urbanisation of the war period was followed by a new round of urbanisation, accompanied by reconstruction. Many displaced persons and refugees were resettled within the country. After the erection of the Berlin wall in 1961, there emerged a shortage of unskilled labour, which was alleviated by guest workers from the Mediterranean countries. The immigration figures for the period 1968-73 was 2.4 million. In the early 60s, foreign immigrants moved to southern Germany, then to metropolitan areas of West Germany, and eventually to the northern Germany and West Berlin. Despite the inflow of foreign migrants to Germany, the population stagnated during the period between 1970-1987. By the late 80s, the situation changed again due to the dramatic political events at the time. In 1989, nearly 400 000 persons moved from East to West, and many ethnic Germans from eastern European countries came to Germany. By 1996, the latter category totalled 2.6 million. Controlled resettlement assured an even redistribution within the country.

⁴⁹ Gans & Kemper 2002.

It is estimated that from 1970 to 1990, West Germany was transformed from an industrial to a service-dominated economy. The proportion of the workforce in the secondary sector rose from 43 percent in 1950 to 48 percent in 1970. During the 70s and 80s, de-industrialisation gained momentum beginning with heavy industry. By 1991, the population of the secondary sector declined to 40 percent whereas the tertiary sector had risen from 33 percent in 1950 to 43 in 1970, and 56 percent in 1991. Rural areas also lost large numbers of agricultural workers resulting in a decline in the percentage of the primary sector from 25 percent in 1950 to 5 percent in 1980.

The post-war urbanisation is signified by distinctive phases. During the first period till 1950, the population was relocated from destroyed cities and urban agglomerations to more sparsely populated regions. This de-urbanisation was followed by re-urbanisation caused by the subsequent recovery where urban agglomerations and urbanised regions gained population through migration. In 1970-87, industrial activities were de-concentrated and the tertiary sector expanded in large cities. Urbanised regions showed a marginal over-all gain of population, and also rural regions showed some increase whilst urban agglomerations began to stagnate. From 1987 to 1990, the population increase in the country was evenly distributed. Population of the intermediate sized city regions grew faster after 1961 than other city categories. A comparison between the population shares of various types of regions (agglomerations, urbanised regions, rural regions) show a remarkable stability, which is supposed to be a general feature of the West German urban system as a whole.

Despite the stability, relocations occurred within the different groups of regions. The de-urbanisation in the 40s and urbanisation in the 50s were accomplished by corresponding shifts between cores and suburban rings. In the 60s, the growth for core cities fell behind the growth in suburban areas. In the 70s and early 80s, core cities lost in population, and large cities faster than smaller ones. West Germany is therefore characterised by sub-urbanisation after the 60s, and later by inter-regional de-concentrations of de-urbanisation. Intra-regional de-concentration with population losses in the core cities and gains in the suburban zones have shifted to losses in the agglomerations overall while rural regions gained population.

Internal in- and out-migration in West German Länder after 1980 show an initial phase (1980-83) of intra-regional as well as inter-regional de-concentration, typical of the counter-urbanisation process. During the late 80s, the pattern changed and the migration balance now turned negative in urbanised and rural regions while in-migration exceeded out-migration in metropolitan areas. Gains in metropolitan areas were not uniform, however, and re-urbanisation trends were significant to southern Germany. The years after were characterized by a more even gain in all the regions of West Germany.

The transition from an industrialised to a post-industrial society seems to be accompanied by spatial de-concentration. De-concentration occurs at two levels, intra- and inter-regionally. While sub-urbanisation has been documented in detail, the more recent inter-regional de-urbanisation and polarisation reversal deserve particular attention. A group of explanatory factors relates to economic restructuring and a new regional division of labour. There seems to be proportionally more employment opportunities in many of the rural areas in the secondary sector than in the metropolitan areas. This corresponds with the thesis of a new spatial division of labour, which is partially responsible for counter-urbanisation. Routine work has been shifted to rural areas, or to other countries with low wages.

There is also a process of re-industrialisation, where advanced technologies based on flexible economics of scope locate themselves in regions, which offer a combination of good accessibility and high quality human capital and amenities like the southern parts of West Germany. Residential preferences for low-density housing, more rural residential areas and attractive landscapes are also responsible for de-concentration. The relation between production-related and environment-related migration obviously changes during the life course. It seems, however, that in recent times more people are trying to combine both factors in their choices of location for work, housing and family life. Migration relates also to the business cycle as there is a general positive relationship between the growth rate of the GDP and the degree of internal migration. Inter-regional de-concentration is made

possible by strong investments in infrastructure, and centre-periphery models do not necessarily possess much explanatory power.

East Germany

From 1939 to 1950, the number of inhabitants in East Germany increased by 1.6 million, corresponding to an increase of 9.6 percent in population. From then on until the unification in 1990, the country lost population annually. Emigration was never replaced by fertility. The effects of the war, i.e. de-urbanisation between 1939 and 1950, corresponded to the trends of the West. In the second half of the 50s, the population redistribution turned into urbanisation because cities with more than 100 000 inhabitants registered the smallest losses of all settlement sizes. After 1961, the urbanisation process gained momentum with regard to settlements with over 20 000 inhabitants. After 1970, the total population of the country declined but core cities registered an increase, and larger cities were favoured until the opening of the border in 1989. It seems as if the post-war population redistribution pattern in East Germany, i.e. weak de-concentration 1950-70 and concentration since then, can be ascribed to the initial economic conditions after the war, contrasts in the settlement structure between the south and the north, and on the political and economical system of the country.

The East German government endeavoured to reduce the country's economic dependence, particularly on the West Germany. An international port on the Baltic coast and large-scale industrial projects were established. Not only were the regional disparities reduced between south and north by these projects, but also the urban-to-rural migration. Development in central places was supported by the government in order to even out regional imbalances and to improve the supply of goods and services in sparsely populated rural areas. The decrease in regional disparities until the mid-70s was less associated with development plans than with centrally controlled economic planning. District (Bezirk) administration played a pivotal role in the centrally controlled economic planning. The aim of these districts as functional areas was the minimisation of transport cost, which gave rise to economic specialisation and the creation of regional mono-structures. Existing regional centres did not become district centres because they represented a non-socialist civil society.

In the 70s, regionally balanced development was abandoned because the re-establishment of industries in rural areas turned out to be economically unviable. The government started the promotion of population centres by favouring the concentration of investments in cities, in district capitals and in Berlin. The positive relationship between settlement size and the balance of migration within the country indicate step-wise migration from small municipalities through county and district capitals to East Berlin as the capital. The living conditions of the rural areas degraded relatively to those of the cities. Berlin recorded migration gains from all over the country. Smaller district capitals also experienced exceptionally high growth rates due to in-migration from the district, but also stagnation or decline took place. With regard to emigration during the 80s, large cities and district capitals lost most. It seems as if emigrants assumed that their needs could not be met within the country because the cities represented the highest standard of living.

The conditions of the united Germany show that Berlin has got a rather unbalanced composition of business services. It is over-represented in employment in science, education, art and the media whereas it has shortcomings in finance, insurance, legal services and wholesale trade. Similar features can be traced in Dresden and Halle/Leipzig. In the West, the situation is more balanced, but some degree of specialisation prevails, and Germany, therefore, has several regional metropolises each specialising in certain areas, but no one completely dominates the urban system. The population of West Germany increased by almost 3 percent from 1989 to 1991. The influx applied to metropolitan as well as rural regions, and big cities as well as small settlements. Even cities in old industrial districts gained migrants. In this sense re-urbanisation turned out to be a temporal phenomenon linked with the political upheaval in Eastern Europe at the time.

Urban development in East Germany during the 90s occurred differently. At the beginning of the 90s, all regions recorded migration losses and these were particularly high in the rural regions. From November 1989 to March 1990 about 370 000 persons or 2.3 percent of the total population left the East. In 1994 it was still 168 000 persons, but the growing counter migration from the West started

increasingly to offset earlier migration losses of the East. The following years densely inhabited suburban counties in the agglomeration areas and the urbanised regions started to show a positive migration balance while core areas and rural regions lost population. The period after 1995 is marked by strong intra-regional de-concentration tendencies with suburban areas gaining significantly more migrants than had been seen in the West before. Tax reductions have promoted investments in the suburban rings of core cities. In contrast to the West, rural regions lost population through internal migration and medium-sized core cities recorded losses as well.

West >Germany had by 1992 returned to its regular internal migration patterns of intra-regional and inter-regional de-concentration. Rural regions also started to gain population again, and peripheral regions slightly faster than more densely populated counties. In both parts of the Federal Republic, an intra-regional de-concentration process has been observed after the mid-90s. In East Germany, a larger percentage of the new buildings are blocks of flats than in the West, and many of them were built by West German investors due to tax regulations. Many of these complexes are now empty and not in use at all.

In conclusion, it seems as if movement towards post-industrialism is linked to moderate forms of de-concentration. Despite all of the political upheavals of the 20th century, the German urban system has remained remarkably stable. If current population trends continue, east-west demographic differences will deepen. According to forecasts, the West will register population gains until 2015. Losses in the East will hit urbanised regions with old industries and sparsely populated rural areas. The West will follow the trend of de-concentration and the rural regions will record the highest population gains. In the East, only suburban rings of metropolitan areas will have rising population figures whereas the big cities will show the highest decrease. The structure of the population will age, in particular in the cities of the East. By contrast, in many West German urban agglomerations the current pattern of higher average age in the core cities and young suburban populations will change to the opposite, and the proportion of immigrants and their descendents will rise. In both parts of Germany, economic growth is more concentrated to the south.

Italy⁵⁰

The origin of urbanism at the Italian peninsula has a history of three millennia, and the Antique legacy is still strong although the current settlement structure bears strong evidence of medieval resettlements as well. The Italian urban system is highly heterogeneous, and the processes of urban diffusion are for this reason very different in the various regions. Italy is subdivided into 20 regions and four macro-regions, which are the North West, the North East, the Centre and the South, also known as *Mezzogiorno*. The intermediate administrative level is the province (107 units) that includes the main city (*capoluogo*) and the administrative hinterland. The basic administrative unit is the *comune*.

During the period 1951-99 Italy's population grew from 47.5 million to 56.7 million. In 1951 there were 24 cities with more than 100 000 inhabitants, a figure that nearly doubled by 1991 (46 cities), including 25.5 percent of the Italian population. During the same period Italy has experienced significant growth and has become one of the most important industrialised nations. In the same period, Italy was also transformed from a country of out-migration into a country of in-migration. The massive interregional and interurban migration from the poorer southern areas to the North (mainly Milan and Turin) ceased as well.

The urban form of the Italian cities shows strong uniformity in the periphery (high rise housing), functional and social heterogeneity in the peri-central quarters with a mix of building types, and heterogeneity in the rings with the coexistence of apartment houses, single family housing, industrial buildings and the remains of farm buildings.

⁵⁰ Petsimeris 2002

Milan, Turin and Genoa form the industrial triangle of Italy. Inter urban, core-hinterland and intra-urban mobility have greatly affected the economic and social geography of the three metropolitan areas. In stark contrast with the wealthy North is the *Mezzogiorno* that in terms of resources as well as social, political and economic organisation constitutes the less developed part of Italy. The characteristics of *terza Italia*, i.e. the central and North-eastern part of Italy is that it has never experienced Fordist development based on big industry and on large metropolises. This region is marked by the presence of a dense urban network formed by medium sized cities (former medieval *comuni*) with a tradition of autonomy and handicraft skills. In this area there was a new socio-economic organisation based on a flexible work force and family firms, and specialisation in sectors like textile, fashion, furniture, shoes, ceramics and mechanics. This variety of economic and social organisations corresponds to different models of production of urban space and of urbanisation processes in terms of concentration and de-concentration as well as in terms of centralisation and decentralisation.

At the regional and provincial levels, the concentration process increased throughout the period from 1951 to 1999, but after 1981 the rate of increase slowed down considerably. During the period 1951-71 seven regions increased their concentration, all of them in North or Central Italy except for one, and three of them including the three main Italian metropolises. After 1971, the regions that experienced concentration were now facing de-concentration. The majority of the Southern regions increased their population concentration at a lower but continuous pace. At the level of *comune* the concentration increased continuously until 1971 and has since then stabilised.

Analyses of Italian regions show the complexity of de-concentration processes in the various Italian regions. These are the result not only of the inherited urban network, but also of the impact of industrial Fordism and the rural exodus towards the main cities. The correlation between population growth and size of settlement is very different in the North, the Centre and the South. In the North, the counter-urbanisation processes are stronger and they started earlier. In Tuscany the de-concentration process is not as important as in Piedmont, and in the South there is a continuation of the concentration processes even if their rhythms are not as strong as during the seventies and the eighties. In the large cities of the North, net migration cannot compensate for the huge losses in terms of natural balance, while in the South, a part of the population growth is due to the positive natural balance.

When investigating the metropolitan areas (*Genova, Milano, Napoli, Roma, Torino*) of Italy, the cores showed strong growth between 1951 and 1971 but lost population since then. The five cities gained 2.4 million inhabitants during 1951-71, but lost one million over the next twenty years. By contrast, the rings showed a continuous pattern of growth. After 1981, however, the rings were not growing sufficiently to compensate for the losses of the cores, which indicates factual de-urbanisation. The decline of the Northern metropolitan areas slowed down, however, during the 90s. The decline is also affecting the majority of the cities with a population of more than 100 000 inhabitants. At the same time there is an increase of population in the outer suburban areas, the linear conurbation of *Via Emilia*, along the eastern and western coast and the regions of flexible economy.

There are neither processes of re-urbanisation in terms of growth in the cores of the large metropolitan areas nor has there been a turn-round in terms of an increase in the population of the remote rural areas and the small settlements. The medium sized cities that experienced most growth during the 70s and 80s were mainly those belonging to the metropolitan areas. Urban de-concentration does not mean decentralisation. There is rather a selective centralisation of function in the metropolitan cores accompanied by a process of socially selective in-migration and working class out-migration: an important increase of managers and huge decline of employees and blue collars.

The Netherlands⁵¹

In the year 1500, the Netherlands consisted of 17 provinces that had emerged from the Roman Empire. New towns grew up along the Dutch waterways during the Middle Ages, and from the 13th century onwards, Dutch fishing, shipping and trading showed rapid growth. The Eighty Years War (1568-1648) led to the independence of the Republic. Already on the 16th century Amsterdam took a leading position as the most important financial and trading town of Holland. At the end of the century, colonial expansion started.

In 1622, almost 60 percent of the Dutch population, which numbered 400 000 people, lived in cities. This was something quite exceptional even on a global scale. By then, 33 cities already existed. In 1670, Amsterdam had a population of approximately 200 000 people, which corresponded to about half of the total population of the country. In certain areas even the countryside was urbanised and especially the Zaan region near Amsterdam developed into an important industrial area. Foreigners were attracted by Dutch prosperity, and in 120 years between 1580 and the beginning of the 18th century about half a million immigrants settled in the Republic. At the same time a corresponding number of people was emigrating to the colonies or started working on ships. During the 17th and 18th centuries Amsterdam and Rotterdam, and to a lesser extent, The Hague and Utrecht, expanded strongly. A pattern of several large towns, a number of medium-sized towns, and many small towns emerged. In 1849, more than 40 percent lived in these towns. By 1930 this percentage had risen to 65.6, but it gradually dropped to just below 53 percent in 1970.

An important factor for the post-war migration and urbanisation in the Netherlands is population growth. Between 1950 and 2000, the population increased from 10.11 million to 15.86 million people, and the population density increased from 309 persons in average per square km in 1950 to 468 in the year 2000. The post-war period showed an emigration surplus in the Netherlands, which peaked in 1952. Immigration has risen since 1960 with a small decline in the 80s. By 1990, the country had approximately 640 000 foreigners, which equalled 4.3. percent of the total population.

The largest population concentration has always been in the west of the country, where the four largest municipalities are located: Amsterdam, Rotterdam, The Hague and Utrecht. Interregional moves show that people move to the west of the country. The agricultural province of the North and South-west are normally confronted with a surplus of people wishing to move away. The eastern and southern parts of the country fluctuate generally around the neutral line. If density in the west becomes too high, sprawl from the Randstad to the next ring may take place, but this is just a case of ongoing urbanisation with the Randstad still as the functional socio-economic heart of the Dutch economy.

Strict land-use zoning has favoured concentration in the bigger agglomerations while suppressing unlimited expansion of villages in the western part. This has led to a poly-nuclear structure of the western part of the country marked by intense network connectivity between the medium-sized and large cities in a circular form as the green belt around the Green Heart of the Randstad. Along with measures of deregulated land-use planning and a larger responsibility for local authorities, a more selective dispersal of settlement patterns has been foreseen. Places located on accessible infrastructure links may become the fastest growing places in the near future.

Finland⁵²

Being the utmost periphery of Europe, Finland got urbanised very recently, and the post-war structural changes in the economy and settlement patterns are dramatic by any standard. At the end of the Middle Ages, the area had only six towns, all of the located by the coast. The urbanisation of inland Finland started only in the 17th century. The country was one of the last to get industrialised. In 1940, the proportion of population working in primary production was still 64 percent, which dropped to 13 percent by 1980. The lateness and speed of change are exceptional, and was accompanied by fast

⁵¹ Nijkamp & Goede 2002.

⁵² Heikkilä & Järvinen 2002

urbanisation as well as immigration to Sweden in particular. 63 percent of the population lived in cities in 1995. Around the end of the 60s and early 70s, migration trends changed away from urban agglomerations to smaller-sized towns. Around 1977 large cities started to lose population in absolute terms, but gained momentum again in the 80s. A new migration wave emerged from the north to the south, and intra-regionally, from rural areas to regional centres. At the same time regional convergence increased. Internal migration within municipalities led to sub-urbanisation and the development of new sub-centres within cities. In the 90s, the volumes of migration decreased and most migration gains of the urban regions occurred in the adjacent municipalities of urbanised districts. In conclusion, the Finnish urbanisation could be described as still being in its initial phase.

At the turn of the millennium, Finland witnessed a dramatic decrease in birth rates in combination with strong migration. The main migration stream was directed to regions of knowledge-based production and to administrative centres of the south, a process that has been accomplished by significant losses in several of the smaller towns. Net migration losses were particularly severe in industrial towns and in provincial centres. In 1996, only nine out of 85 functional urban regions experienced migration gains.

Migration has widened the gap in income between regions, and it is more selective than before having an increased influence on the population of areas losing people. The economically active population seems to get more and more concentrated within the country. Young people tend to prefer growth centres and birth rates are decreasing in peripheral regions.

Because the options of work and place of residence are increasing, it is becoming important for regions to improve their images in order to attract different educational and occupational groups. In areas of great population loss more females than males leave the area, which has got a significant impact on birth rates.

The smallness of the country and its dependency on foreign trade makes it vulnerable to internationally caused swings in the business cycle. Various phases of the business cycle influence the volume of migration in a way that booms cause migration to cities while slumps have the opposite effect. The impact of the very strong economic depression of the early 90s was enhanced intra-urban migration, but on the national level a migration from urban to rural areas, while the trend was reversed during the late 90s.

Because of selective migration, Helsinki, Tampere, Oulu and their neighbouring municipalities are the only true growth centres in the country. Forecasts indicate that Helsinki (together with Lisbon) will be one of the fastest growing capital regions of Europe. Even university cities like Turku, Jyväskylä and Joensuu are losing highly skilled people. Unemployed who moved during the boom period improved their chances of employment by nearly 50 percent compared to those who stayed where they were. Men's success in getting jobs depends on the region of destination, while the size of the labour market seems to be more important with regard to female employment.

The state policy is to increase the balance in migration nation-wide by establishing a national growth centre network of 30-40 regional centres in order to promote the interaction between the countryside and the cities. The goal is to have at least one regional centre in each county. The welfare concept, which indicated regional "fairness" is, however, losing ground, and many administrative centres in rural areas that used to provide welfare services are now in difficulties.

Poland⁵³

The first groups of settlements in Poland date from the 10th century. Although originally tribal, they were transformed into the seats of a strongly integrated military, political and ecclesiastical organisation imposed by the ruler. These centres underlay the original boroughs subsequently developed into urban nodes. A dense network of towns developed during the period of internal

⁵³ Rykiel, Z. & Jazdzewska, I. 2002

colonisation from the 12th to the 16th century, and most of them exist still today. The direction of emerging settlements was from the southwest to the northeast. This succession was caused by two forces shaping urban development in Central Europe: one is the declining gradient of development decreasing in intensity from the Rhine valley towards the east, the other was the decreasing number of mineral resources and fertile soil from the south to the north.

The capitalist transformation of the original feudal network formed the second phase of urban development, lasting from 1796 to 1914 during the period of the divided Poland. The re-integration of the Polish urban system after the restitution of the statehood in 1918, formed the third phase, which can be divided in the post-war period, the communist period and the capitalist period after 1989.

The definition of the term “town” in Poland is an entirely legal matter, depending Royal Charter or later governmental regulations. A population size of roughly 1000 has been regarded as the lower size limit of towns, while non-agricultural villages up to 5000 inhabitants can be found throughout the country, especially in metropolitan areas and in the south. Polish urban agglomerations were regional rather than national centres since their hinterlands coincided more with the regions in which they were located.

The development of the Polish urban system after the Second World War was dependent on two macro-structural processes. One was the reintegration of the urban system after the interim stateless period of the 19th century. The other one was a significant shift of the national boundary towards the west after the war. The standard prime city structure was, therefore non-existing at the time. The shift triggered a movement to the western parts of the country. Poland’s urban population increased from 38.4 percent in 1950 to 61.9 percent in 1998.

Centralised plans were adopted until the mid-80s. Political cycles overlapping with planning cycles seem to have been more important in the post-war development. The contradiction between the expectations for planned development on the one hand, and the aspirations of the people in improving their living standards on the other hand was manifest in urbanisation (i.e. provision of housing) versus industrialisation. The level of industrialisation kept pace with urbanisation in the south, but not so in the north. This is supposed to have been a basic factor behind many of the revolts.

For political and ideological reasons, large metallurgical complexes were developed near large urban centres of national culture and religious importance. Because the communities in these cities strongly opposed the new regime, the aim of the development was to improve the local social structure of the cities. Centralisation involved an increase in bureaucracy, which was one of the reasons for urban growth in regional centres. These centres never attracted ideologically meaningful concentrations of the workers class, and therefore industrial development of these places was an important ideological objective in order to increase the share of the workers class.

Nationalisation of commerce in the late 40s resulted in the complete collapse of the economic base for small towns. Industrialisation was the only way in which development could be achieved. Attempts to stimulate their economies were a permanent feature of government policy, but with various results. It was only after the restoration of local self-government in 1990 and the revival of the local economic initiatives that small towns began to prosper again.

The massive migration of people to the largest cities, especially Warsaw, resulted in an urban crisis. To solve the problems of the housing market, the government simply applied bureaucratic restrictions on the migration of people to the cities. These restrictions worked socially selective in two ways. Informally, people that were not allowed to register formally in a city would live there illegally or register in the suburban zone, which produced a constant statistical overrepresentation of *de facto* population growth of small suburban towns. Formally, people “indispensable for the functioning of the city” gained access. The selection depended on the social stratification in the communist society and was largely independent of income. The administrative restrictions on migration to cities resulted in the reduction of out-migration from the city simply because those who succeeded in getting to the city were unlikely to leave.

Generally speaking, Poland was closed for foreign emigration, but the Polish-West German agreement of 1975 made it possible for Polish citizens to reunite with relatives in Germany. This hampered to some extent the growth of cities in Silesia.

Few traces of counter-urbanisation are available. The landscape in itself does not provide a variety to cause a significant degree of counter-urbanisation. The large disparities between urban and rural living conditions that persisted for a long period were responsible for mainstream migration up the urban hierarchy rather than down. In the 90s, rural-to-urban migration has started to decline as a result of industrial re-structuring, which is accompanied by a slow but permanent increase in urban-to-rural migration.

Since the war, there has been no period where prime cities dominated the urban system. From the late 50s until the mid-70s both large and middle-sized towns developed rapidly and thus this period resembles the advanced prime city stage. The early intermediate city stage is supposed to have begun in the mid-70s and lasted till 1980. The towns that gained new administrative functions shifted up the urban hierarchy: eight new large and sixteen middle-sized towns appeared while thirty small towns disappeared. The population of small towns declined and migration to them decreased. After 1980, economic crises, social unrest and the Martial Law of 1981 caused a rapid decrease in migration to large and middle-sized towns while small towns began to increase. Since 1993, net migration to the three size categories started to decrease. The process of migration from one hierarchical level of urban areas to the next seems to be relatively easy, resulting in the establishment of functional urban regions. This tendency is clearly related to improvements in the transportation system and thus to the diminishing of the friction of distance.

While mainstream migration in Poland was directed upwards the urban ladder, sub-stream migration down the urban hierarchy has been composed of four parts:

- migrants that failed in the metropolitan or large urban labour market. migration to small satellite towns within large urban agglomerations,
- migration to specialised centres, and
- random moves related to family relations.

Sub-stream migration has been, however, locally oriented. It occurs in a wider spectrum of urban hierarchies and represent more traditional patterns of migration. Some of the long-distance sub-stream pattern may be a result of kinship links following the post-war resettlement pattern.

Romania⁵⁴

The urban system of Romania originates in already in the Hellenistic period. The most prominent Transylvanian towns date back to the 12th and 13th centuries. Today, the Romania urban system has 266 towns in total. Because of arbitrary criteria still in use, distinguishing rural settlements from towns remains a challenge. Due to the effects of the two world wars, the pace of urbanisation in the first half of the 20th century was extremely slow. At the end of the communist period in the late 80s, over 50 percent of the total population lived in towns.

If one compares the capital city to the rest of the Romanian urban system, there are two distinct sections in the hierarchy: a number of undersized cities in the order after the prime city obviously lag behind while the intermediate cities appear to be relatively oversized. as a result of the demographic explosion that occurred in county-seats and certain specialised centres after 1968. The lower part of the hierarchy consists of a relatively small number of small towns that appear undersized.

The urban system's regional configuration needs to be defined to determine the geographical confines of functional subsystems within the hierarchy. Seven levels of urban development have been distinguished. Apart from Bucharest, first-rank cities serve as gravity points in Romania's historical

⁵⁴ Ianos 2002

provinces (Iasi, Cluj-Napoca, Timisoara, Constanta, Craiova). In addition, two other big predominantly industrial cities (Brasov, Galati) serve as gravity points outside the historical spheres of influence of the other large cities. Second-rank cities include the county-seats with more than 150 000 inhabitants. The remaining county capitals are classified as third-rank cities. Fourth-rank towns generally have more than 30 000 inhabitants, and the rest are smaller. The smallest category of towns marks the transition from rural to urban settlements, and they are insufficiently developed to polarise activities in the areas that they are supposed to serve.

Administrative centres are extremely oversized compared to second-rank cities. Bucharest of over eight times larger than the second-rank city (Ploiesti). The gap between the first and the second-ranking town in all regional systems seems, however, to be narrowing. Regionally, urban systems differ in terms of their complexity and in terms of their distinct levels of urbanisation and growth rates.

While interwar urban polarisation had centred around the tertiary sector, it was the industrial sector that was given priority after the Second World War, and it outgrew the commercial, cultural and social sectors in these centres. During the period 1950-65 the development of county-seats as the first growth poles, became a priority task. After 1968, the country opted for a closed, self-sufficient economy, with an industrial sector capable of producing everything. Large industrial units were built in county-seats and intermediate-sized towns. A third period between 1980 and 1989 was marked by the industrialisation of small-sized towns and rural settlements. The massive investments that were made in the urban economy after 1970, brought about radical changes in the structure of activities, and implicitly in the relationship between towns and the surrounding countryside from where they derived their labour force.

According to census data of 1992, over 50 percent of the economically active population in half of Romania's towns worked in the industrial sector. The farming population dominated in eleven towns only. The share of commercial activities was only 8.5 percent in the urban system as a whole, and education, culture and the arts had a share of 5.5 percent. At the beginning of the 90s, it was the large enterprises with over 1000 employees that prevailed, providing jobs for approximately 70 percent of the total work force, dominantly in machine-building factories and chemical works. The dismemberment of the CMEA system and the embargo imposed on Iraq, followed by Yugoslavia led to Romania's industrial decline. The industrial sector is no longer a major binding force between towns, and they are likely to decline steadily while the tertiary sector seems to be recuperating.

The sudden downfall of the political regime in 1989 meant the development of new self-control mechanisms to replace the old utopian ones. The abrogation of the restrictive law that had controlled migration movements was the cause of the first turbulence in the urban system. After 1970, large towns had been closed to people seeking permanent residence, except for people with specialised competencies. The large cities were the principal beneficiaries of this abrogation. In 1991, population shifts began to slow down, but not in large cities, county-seats and some industrial towns where the inflow of people continued. Legalised abortion has dropped the natural increase, which has had a significant impact on the entire urban system, which occurred with the mass migrations of the German population.

The Land Law enacted in 1991, had both direct and indirect effects on towns and the urban system as a whole. Part of the retired population, originating from the countryside, would periodically or permanently return to their native villages to work the plots of land reappropriated to them. Peasants who live in the neighbourhoods of towns also received land. This brought down commuting to less than one-third, because commuters were the first to lose their jobs as the managers would argue that they had a source of income. These factors considerably reduced the negative impact of industrial restructuring for townfolks.

Recently, people have started to leave the towns to settle in the countryside: cross-country data indicate a decrease in urban population since 1996. The economy is in transition from a centralised system to a market driven one. This means a restructuring is taking place in the urban as well as in the rural economies. The Land Law has resulted in the creation of new jobs in agriculture through the parcelling out of land. Approximately one-third of the owners live in towns.

The tough industrial restructuring has led to a labour surplus. Failing industries have reduced the means for these families to survive in town and therefore those that own land tend to return to their native villages. The urban-to-rural migration reflects altered urban-rural relations that have changed dramatically. All categories of towns witnessed the steep decline of net migration rates in 1997-98. Negative values have been recorded in all cases, and for the first time since the war, rural settlements are gaining population. These migration patterns have affected towns in the southern and eastern parts in particular. In 1999, rural net-migration reached 2.7 percent.

In conclusion, an entire cycle of urban evolution could be identified. First there was a prime city phase centred around the capital city during the first part of the 20th century, followed by a shift in importance to the regional centres, then to the inter-mediate and small towns, and finally to the revitalising countryside.

1.3 Problems and dynamics related to urban-rural relationships in different parts of Europe

The intention is to investigate *urban-rural relations* by studying various issues within the context of the elaborated urban-rural typology. The research method is to investigate significant features at NUTS 3 or NUTS 2 levels (depending on data availability) of the various regional types in terms of socio-economic and population characteristics as well as net-migration and comparable available data of relevance for urban-rural relations. Such statistical analyses can be made on the European level, e.g. by calculating European averages per regional type, or by calculating national averages, or by a combination of these by presenting the averages per regional type within each considered country. A few test calculations were made concerning GDP per capita (NUTS 3) and migration (NUTS 2).

GDP per capita

The distribution of GDP per capita in the various ten regional types (see Graph 1 in Annex C) indicate comparatively huge regional inequalities, where the best-off regional type (Nr. 1: Urban, densely populated and high urban integration) has a GDP that is 4,7 times bigger than that for the “poorest” regional type (Nr. 4: Urban-peripheral, not densely populated and low urban integration). The distribution of average GDP per capita among the regional types is of course not only related to the particular characteristics of each type, but related to the fact that the various regional types are unevenly distributed across Europe. It is, however, notable that the average GDP per capita very clearly falls in relation to degree of urban integration in the two main categories signified by a high share of artificial land cover. Then it jumps up in the next overall category where the land cover is dominated by agriculture and/or wilderness (within a variation from approximately 12 100 euros per capita to 17 300 euros per capita). Generally speaking, regions with a population density below European average and with a degree of urban integration (share of FUA) below European average are not performing as well as more integrated regions of the same character in terms of land cover. An exception is type nr. 5 (rural-urban, densely populated and high urban integration), which does not perform as good as less populated regions of the same overall category. Except for this, there seems to be a tendency that population density and degree of urban integration increases economic performance in all main land cover categories.

When GDP per capita is studied separately for each region in each country (see Graph 2) a number of conclusions could be drawn:

1. Firstly, not all types of regions are distributed evenly across the various countries. Only France has got all the ten regional types represented within its borders. The particular existence of types in each country could of course have an effect on the distribution of GDP per capita in the various countries.
2. Secondly, the graph shows clearly that the main explanatory factor of regional economic performance is actually the country where the region is located. There is a huge difference especially between EU15 and the accession countries.
3. Thirdly, in most countries the most urban type of region represented in the country has the best economic performance. In the cases of Greece and Portugal, the highest economic performance is found among the second most urbanised regions. Only in the case of Lithuania, the situation is different, but there the two highest urban regional types are actually lacking altogether.
4. Fourthly, the regional variations are comparatively small in some countries (e.g. UK) and quite huge in other (France, Finland). Each country displays, however, its own profile, and interpretations need backing from additional studies. The overall impression persists, however, that the degree of urban integration correlates with a comparatively good economic performance.

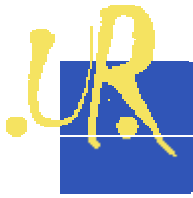
Net-migration

Net-migration can be studied only at NUTS 2 level due to available data (via project 1.1.4.). In order to interpret the results correctly, one should realise that the map of Europe looks quite different at NUTS 2 level (see Map Set 2, Map 16) compared to the NUTS 3 level.

The overall picture of the European situation within the 9 types represented (on NUTS 2 level type 10 is not represented!) shows some fairly interesting features (Graph 3):

Firstly, all regional types have a positive net-migration performance for the period from 1996 to 1999 with the exception of type nr. 5 (rural-urban, densely populated and high urban integration), a type that is predominant in Sicily and Northern Ireland, and strongly represented in Poland. The types nr. 4 and nr. 7 in the graph are no averages as both types are represented by only one NUTS 2 region. The general impression is that there is an out-migration except for peripheral regions characterised by "wilderness" land cover. In this sense the migration does not seem to flow necessarily from poorer regions to richer ones. On the contrary, in terms of the most urbanised parts of Europe, the tendency seems to be the reverse.

The national variations are huge (see Graph 4). In some cases there are clear tendencies of counter-urbanisation (UK) whereas in other there is a very migratory flow to the most urbanised part of the country (Finland). Each country would need particular attention when conclusions are drawn. The NUTS 2 level is most probably too rough for this kind of studies at the national level. At the European level NUTS 2-based renderings could be of some interest.



ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Part Two b)

August 2003

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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report

August 2003

PART TWO

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PART TWO b)

The Part Two of this Third Interim Report is structured according to the requirements spelled out in the Addendum of the Project Contract.

2 A profile of the functional and physical characteristics in the urban-rural interface

2.1 Common economic base

One of the most striking trends with respect to urban-rural relationships is the expansion of commuter catchment areas, brought about by the perpetually improved traffic systems. Thereby local labour areas are getting vaster, providing infrastructural investments are made. In peripheral rural areas “regional enlargement” (the extension of the local labour market by improved commuting) could well be a way of providing competitive labour markets and thereby attractive new locations for enterprises outside the huge metropolitan areas. The Swedish policy based on improved commuting / “regional enlargement” is the basis of regional policy of the present national government. The rationale of this policy is that enlarged local labour market areas are seen to enhance the quality of the labour market as well, as larger labour markets add to the flexibility of the system - notably in a sparsely populated areas where local labour areas are very limited and consequently inflexible. The Swedish case is thus an interesting case in the discussion about counterurbanisation in general¹, as well as when comparing the Swedish labour market areas with other Nordic countries².

At this stage the project has collected some case study material related to commuting, an example of which is the set of maps from Portugal (Map Set 3, Maps H - K) indicating urban-rural, urban-urban and rural-rural interdependencies related to commuting. These are a part of the case study material to be used in the next phase of the project.

A small Finnish case study on commuting to two cities also shows an interesting example of new kinds of interconnections and –dependencies related to the common economic base of cities and countryside. As the Map L (in Map Set 3) shows, the commuter flow from Turku (nearly 200 000 inhabitants) to Salo, the neighbouring smaller town (25 000 inhabitants), over 50 kilometres away, is very significant when measured in absolute terms. Respectively, in smaller municipalities of the western coastline and islands, the relative amount of commuting to Turku is quite high; the relative growth of commuting being even the highest in the region. That can be related to the pattern in Map M showing second homes or “summer cottages” belonging to the Turku residents. Both the Turku-Salo and the archipelago-Turku commuting can be partially explained through the attractiveness of those residential environments for certain people: some of employees of Salo’s high-tech industry concentration prefer living in Turku, that is a FUA of transnational/national significance, one of the oldest cities in the country. Respectively the western coastline is dependent on Turku labour markets but manages to not lose all population to the city, at least partially due to its natural and cultural heritage. This can quite clearly be seen in the Map N revealing the major urban-rural dynamics around Turku: pulling in people from the fringes and pushing them out to the surrounding municipalities.

In addition to the developed urban-rural typology (Map III in Map Set 1) another attempt to locate areas of high and low urban-rural integration was tested. An algorithm grouped the NUTS 3 (and NUTS2 in a parallel attempt with three countries) in several ways to altogether eight categories. They were grouped to a draft version where six categories can be characterised by high degree of functional integration and four by existence of deep rural areas. Two types of areas thus have a dual

¹ Bergström & Wiberg 2003

² Hanell & Persson 2003

character. However, the map is still being processed and has to be compared with several other maps to test the assumptions of the algorithm.

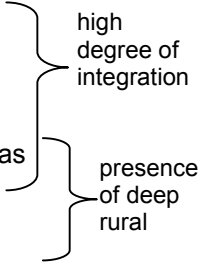
INPUTS	OUTPUTS
<p>existence of a major city: yes/no (transnat./national level FUA) + influence from a higher level FUA: yes/no + differentiating according to size of NUTS3 (threshold 1000 km²) and share of population living outside FUAs and in some cases also according to population density</p>	<p>urban areas "urban shadow" urban containing populated rural areas rural towns urban containing sparsely populated rural areas towns and populated rural areas rural towns and deep rural areas deep rural areas</p> 

Figure 1: A draft classification of functional urban-rural integration

2.2 Accessibility to transport and knowledge

It has been possible to use the ICON-work (calculated by Mcrit for the project 1.2.1.) for the urban-rural analysis. The ICON is an aggregated measure of the proximity of each place (2 km x 2 km raster cell) to the transportation networks (motorways, railway stations, airports and ports), in terms of time and utility of the connection. The indicator can provide added value for characterising urban and rural areas; not that directly in locating them, as urban-rural axis cannot be claimed to be identical with the core-periphery axis. However, the ICON can be seen as a measure of urbanisation stress, different between urban areas (continuous areas with high ICON), periurban (areas in between, medium ICON values), "rururban" (relative high ICON in a low ICON surrounding), and rural or peripheral zones (large regions with low ICON). See Map Set 3, Map B - F for the emerging patterns.

2.3 Potential complementarities with cities

Most of the major cities in Europe (referring to the European and transnational/national level FUAs) fall quite logically to the categories that can, at a European scale, be considered urban by all or at least many of the variables of the urban-rural classification (eg. type 1: region around Frankfurt, inner cities of London and Paris; type 2, 5 and 8: most of Italy and Germany, all Holland and Belgium, most of Portuguese coast, Riviera, large areas in southern Poland, Slovakia and Czech Republic).

Other types of regions that possess major urban nodes but do not meet the other urban criteria of the NUTS3/2, can be studied as a residual, as potential beneficiaries of the growth impetus expected from the urban areas. Areas with the highest *potential* "overdimensional" benefit from the urban system would thus be within the least urbanised categories 4, 7 and 10: they have relatively sparse and non-urbanised population, but surprisingly some of them still house at least one major urban node. Examples of such beneficiaries include south-western Ireland, parts of Poland, Bulgaria and Romania as well as regions with high importance of tourism: some regions in Greece and part of Algarve. The degree of growth impetus from the urban areas would certainly also depend on the economic situation of the FUAs in question. For instance it is unlikely that eg. the mentioned Romanian regions with low GDP per capita would benefit from the vicinity of the urban nodes as much as the case is likely to be in Ireland, for example.

What comes to promotion of territorial cohesion through the urban network, the policy applications

could evidently be differentiated, among others, according to degree of urban integration. A simple example of a division procedure is presented here for those NUTS3 that lack a major city (threshold transnational/national level FUA). The grouping of the regions would have to still be related to the diversification of the economic base. The data of the project 1.1.1. would be useful in such an exercise, as well as the findings of the 2.2.3.

The extensive areas belonging to types 3, 6 and 9 (high share of FUA population but no major city) would have to be divided into subcategories according to whether they have a dense network of regional/local level FUAs *instead* of the major cities (see Map Set 1, Maps IV and V):

- within peripheral-rural category 9 (containing eg. eastern Estonia, western Latvia, central part of Scottish Highlands, northern and eastern Finland, eastern Greece, parts of central Spain and Alpine Italy) one would have to separate

- * those with a network of regional/local level FUAs (most of the above mentioned areas) from

- * those without such a network (eg. northern Finland, central part of Scottish Highlands, Guadalajara in Spain).

- within rural-urban category 6 (containing eg. a couple of regions in France, Spain and Italy, western Denmark) one would again have to make the same separation (however, within this category nearly no larger areas remain without a FUA, again stressing the interconnectedness of agricultural areas and urban areas)

and

- within urban-rural category 3 (containing eg. southern Hungary and Bulgaria)

- * those with a dense network of regional/local level FUAs (most of the areas in the category) from

- * those that do not have such a network (southern Brandenburg).

Similarly, one could differentiate between the extensive areas of types 4, 7 and 10 (sparse and non-urbanised population lacking major cities) according to the same criteria:

- within peripheral category 10 (containing eg. large parts of Estonia, Latvia, Austria, Slovenia, Greece and Scotland, as well as regions in Spain, Portugal, France, Romania and Bulgaria)

- * those with a relatively dense network (many Italian, French and Greek regions) from

- * those without such a network (Caceres, Avila, Teruel and northern Aragonia in Spain, Eifel and central Mecklenburg-Vorpommern in Germany, north-western Ireland, most of Scottish Highlands, central Austria, parts of Slovenia etc.)

- within rural-peripheral category 7 (containing eg. large parts of Spain, France, UK, Poland, as well as central Ireland, southeastern Czech Republic and some parts of Italy)

- * those with dense network (some areas in France and Spain) from

- * those without such a network (parts of northern Poland, Cuenca in Spain, most of Wales, southern Scotland, central Ireland, southeastern Czech Republic etc.) - It must be noted here that the network of nodes that can be found in the category 7 is in general far thinner than in the category 6.

- within urban-peripheral category 4 (eg. region of Anhalt in Germany, and nearly half of Romania and Bulgaria),

- * those that have a dense network (Anhalt, Matra mountains in Hungary, Lincolnshire in UK) from

- * those without such a network (many Romanian and Bulgarian regions)

2.4 Potential for increasing attractiveness through rural qualities

As the urban-rural typology has already taken the urban-rural “landscape” into account, a lot of the potential for increasing attractiveness through rural qualities is already visible in the typology map. Most of the more rural categories have access to “wilderness” (many kinds of natural and semi-natural areas) and open spaces (diverse agricultural areas as parts of cultural landscapes). However, based on CORINE it is not possible to say directly anything comparable about the “rural quality” of such areas. The ESPON project 1.3.2. could probably provide for ideas of that kind of study. In the coming phase of the project it will probably be possible to make this kind of links, as well as to use the pan-European landscape typology in the analysis. A common attempt to grasp the relation with tourism could also be proposed.

A view on the urban-rural diversity gives the impression that most of the regions do have high potential of using endogenous resources for attracting development. Another story are then the planning capacities /institutional preparedness of the population to grasp the chances. These can only be approached through case studies. Through the policy review of the WP4 interesting proposals for “best practices” can also be highlighted.

As discussed in the chapter “European maps”, the size of the ecological footprint from various urban-rural patterns has striking differences across the European territory (Map 8 in Map Set 2). The high share of urban fabric per 1000 inhabitant forms an almost continuous corridor of high exploitation per capita, stretching from the south-east of Europe through Bulgaria, Romania, Hungary, Slovakia Czech Republic and East Germany up to Denmark and Sweden. Other countries with heavy exploitation per capita are Belgium, France and Latvia. Britain and the Netherlands, which have an extensive coverage of artificial surface, do not face heavy exploitation measured per capita. The map could be considered an indicator of factual environmental measures in the countries across Europe, influencing both urban and rural qualities.

2.5 Urban sprawl

It is very complicated to measure urban sprawl and indicate its causes and effects on the European level, as they are related to the dynamics of urban land and property markets. To grasp that diversity among countries and regions is a task that not even comprehensive research projects can achieve at once. The series of books from a five-country comparative research project “EuProMa” (undertaken at the University of Dortmund under the direction of Hartmut Dietrich³) provides a good sample of European frameworks and will be dealt with in the coming phase of the project. It might be possible to take on board also further areas⁴. This should be done especially as the “EuProMa” did not include any Eastern European countries in the study.

Another key source to be studied from the perspective of the urban-rural relationships is the 5th Framework research project “SCATTER”. It has reviewed the different definitions of urban sprawl and set up a research agenda, trying to come up with measures of sprawl. They consider several types of generic measures, all of which will detect different spatial/physical/geographical configurations of urban growth⁵: density, configuration, accessibility, construction and externalities, social benefits and costs. The project also tries to quantify the effects of urban sprawl by statistical methods, in case study areas, using a common definition for the metropolitan area and for structural rings inside the metropolitan area: the urban centre, the outer urban ring and the hinterland. Their ideas of measuring the extent and effects of urban sprawl can inspire the attempts to discuss the issue at European level, but the data availability (eg. on land prices) will certainly restrict the analysis.

³ Dietrich et al. 1993; Williams & Wood 1994; Acosta & Renard 1993; Ave 1996 etc.

⁴ Borges 1996; Viitanen et al. 1997

⁵ Batty et al. 2002

European-wide approach possible?

Despite the reservations related to the study of urban sprawl at European level, a NUTS3-level index of potential pressure towards sprawl should be tested based on a selection of some straightforward hypotheses and related indicators, for example:

- If prices of urban land are rising, people tend to seek for affordable housing from the fringe and/or can afford seeking high-standard housing in the accessible rural areas (available indicator being migratory balance as an indicator of the pressure).
- In the areas of high GDP, the high urban land prices push activities that need space out of the core areas (available indicators being GDP per capita, change of GDP 1995-2000; related to EU average and/or national average outside of EU15).
- Accessibility/connectivity guides the locational decisions (available indicators being the 45-minute time distance as a possible threshold for the highest pressure).
- Construction investments in a region influence the real estate prices and affect traditional land-use, causing even previously profitable land-use to fade away in the areas of strong development (available indicators being availability of abandoned agricultural land or agricultural land with low output per hectare).

The land use pressure index would only indicate the *potential* urban sprawl and would have to be related to the already existing structures (eg. to the present division between continuous and discontinuous urban fabric), and national exploitation/ planning systems. The latter is only possible via case studies and will be addressed in several of them, incorporating material from the NUTS5-level work (see next sub-chapter).

The mapping of the land use pressure indicator /urban sprawl index has not yet been tested. It is planned to be carried out as a parallel test of a Java-application developed by Dimitris Ballas in the 5th Framework Project “the Future of Europe’s Rural Periphery”, coordinated by the University of Macedonia (now partner in the project at hand). The 5th Framework project tested several approaches in producing a typology of rural regions and found especially the disaggregative approach quite promising. Instead of aggregating a number of individual regions to larger clusters based on data similarities between them, all regions were viewed as a single large group, which needs to be progressively split into sub-groups, on the basis of a number of pre-selected discriminatory criteria. One of the advantages was its flexibility and transparency. The main drawback seemed to be the lack of readily available computer software, which encouraged them to develop a simple program, written in the Java programming language.

Within our project the map-based study related to urban sprawl started from the CORINE Land Cover material. First it was evaluated if the CORINE data processed as shares of NUTS3-areas could be used for that purpose. At the first sight some of the maps (eg. Map Set 3, Maps O - P on discontinuous vs. continuous urban fabric) did not prove to be very fruitful, as some of the differences seemed to reflect only the different interpretations of the discontinuity, tied inevitably to the national contexts despite the common guidelines of the CORINE classification. However, the maps do show some points that are of interest when studying urban-rural relations and urban sprawl:

- * Despite the reservations of the European-wide comparability, it is evident that there exists a great variety in the degree of continuity vs. discontinuity. A comparison between areas belonging to the same category of the urban-rural typology (eg. categories 6 and 7) can be used as an example of the variety. Within the category 6, the clearer borders of several Spanish cities and towns with their surrounding un-built areas (eg. NUTS3-areas Valladolid, Burgos and Palencia) contrast with the more dispersed urban-rural continuum of the French areas (eg. NUTS3 containing Amiens). A similar difference is visible through the example from category 7, when comparing sparsely populated areas in southern Spain and France.

* Eastern European countries, which are characterised by a high share of artificial areas in both densely and sparsely populated areas, have, in addition, a high share of discontinuous urban fabric of the total artificial surface.

* The remarkable differences between Belgium and Netherlands can hardly be explained by possible differing interpretations in classifying CORINE data. That is confirmed by the huge differences that exist within one national context, between northern and southern Italy.

NUTS5-level study

As the NUTS3-level cannot provide enough differentiation what comes to the relation between existing urban agglomerations and the urban sprawl, a very ambitious work with the SABE-data was initiated at Sefemeq: the boundaries of NUTS5-regions have been overlain with the CORINE-data and amounts of land use classes per area have been calculated. Some surprises in the SABE data were confronted though (such as the passage of an Italian municipality to France!). The complete documentation of the data processing will include a description of the correspondence between the hierarchical levels in the two nomenclatures (SABE and CORINE).

Three examples from the overlay of the SABE boundaries on the CORINE 90 grid are provided below, with a tailored colour coding of the 42 CORINE classes. One of them is on the most fragmented NUTS3 unit: the region of Prague. Catania (Sicily) and Helsinki regions are depicted alike. The georeferencing is not very well matched, yet, because of the huge extension of the dataset. The country-wide pictures available at this point are Italy (see Chapter 2.6.) and Finland. Analysis will be continued as data and maps for further countries become available.

A major drawback with the NUTS5-data is that hardly any statistical, European-wide data can be directly linked to NUTS5, not even up-to-date population statistics(!). However, the possibilities to use further overlays with interesting layers must be explored. Data on infrastructure (roads, rails, ports) would be interesting. The work done by Mcrit with the ICON is one of the first candidates.

111	Tessuto urbano continuo	311	Boschi di latifoglie
112	Tessuto urbano discontinuo	312	Boschi di conifere
121	Aree industriali o commerciali	313	Boschi misti
122	Reti stradali, ferrovie e spazi accessori	321	Aree a pascolo naturale e praterie di alta quota
123	Aree portuali	322	Brughiere e cespuglieti
123	Aeroporti	323	Aree a vegetazione sclerofila
131	Aree estrattive	324	Aree a vegetazione boschiva ed arbustiva in evoluzione
132	Discariche	331	Spiagge, dune e sabbie
133	Cantieri	332	Rocce nude, falesie, rupi ed affioramenti
141	Aree verdi urbane	333	Aree con vegetazione rada
142	Aree sportive e ricreative	334	Aree percorse da incendi
211	Seminativi in aree non irrigue	335	Ghiacciai e nevi perenni
212	Seminativi in aree irrigue		
213	Risaie	411	Paludi interne
221	Vigneti	421	Lagune interne
222	Frutteti e frutti minori	422	Paludi salmastre
223	Oliveti	423	Saline
231	Prati stabili	511	Corsi d'acqua, canali e idrovie
241	Colture annuali associate a colture permanenti	512	Bacini di acqua
242	Sistemi colturali e particellari complessi	521	Lagune
243	Aree prevalentemente occupate da colture agrarie con presenza di spazi naturali	522	Estuari
244	Aree agroforestali	523	Mari

Figure 2: Colour coding used in the following overlay examples

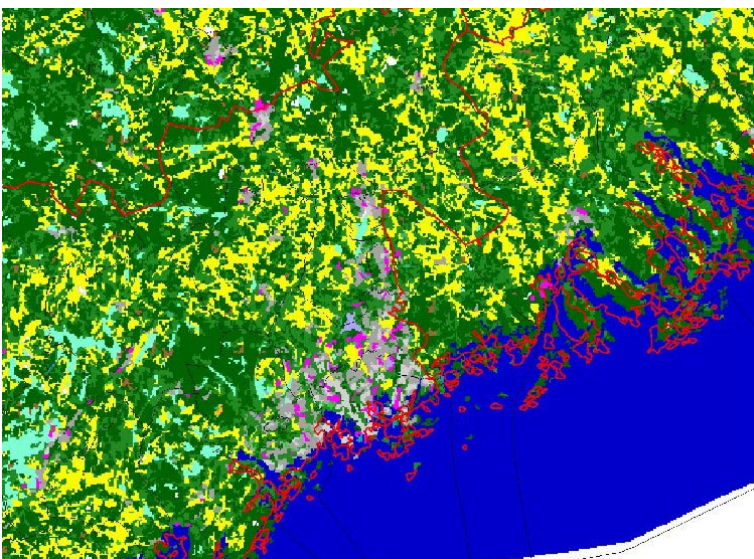
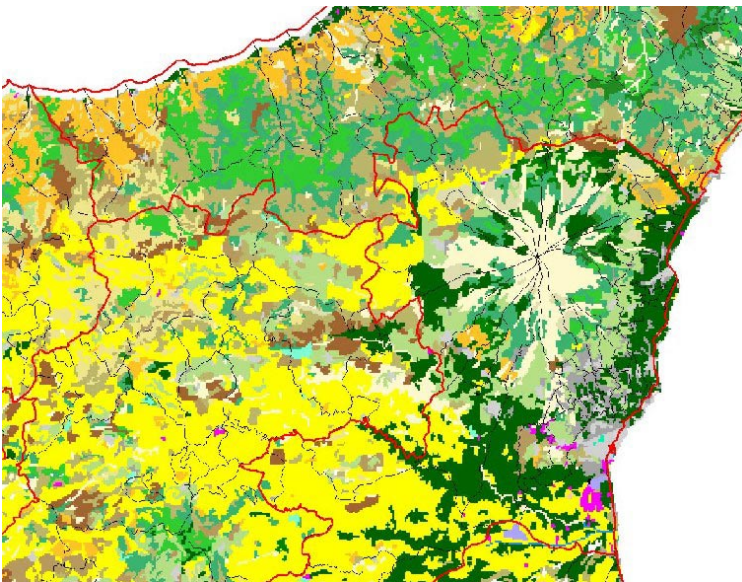
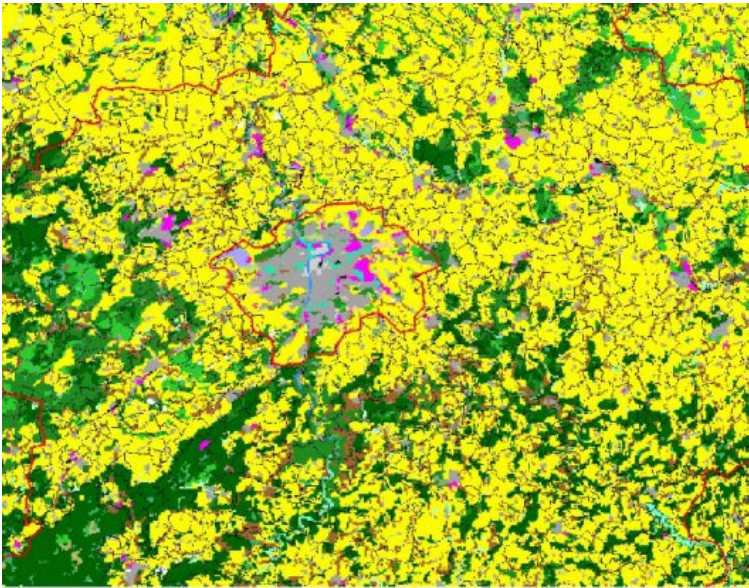


Figure 3: Examples of the overlay at NUTS5-level: regions of Prague, Catania and Helsinki (Source: Sefemeq team)

2.6 Case studies

It has become evident that the spatial dynamics of European territory can only partially be captured through the study of urban-rural relations. One purpose of the case studies is to continue testing the explanatory power of urban-rural relations and the possibilities of urban-rural governance in influencing spatial development. Another main purpose is to shed more light on the urban-rural flows, that cannot be fully conceptualised through the developed NUTS3-level typology. A common frame and some examples of existing case study material are presented below.

Case study frame

The case study frame shall be built on a model where the urban and the rural exist a) as intertwined elements in space affected by the degree and phase of urbanisation and b) as still in some respects separate entities, something that people call urban and rural. The centre of the model (see Fig 4) presents our urbanised society as a system where life is not radically different between the urban and rural areas of a country or region. To the centre of the model can be put the integrated labour markets, the provision of many goods and services etc. These result in many kinds of flows between areas, not *only* between urban or rural areas but *also* between them. Some activities need centralised locations, some need more space. Some need to reach the markets, some the areas they serve. In the historical perspective it is new that the majority of the production finds its place in this part of the model: in the rural areas agriculture is only one means of livelihood among others, and the role of the urban areas as suppliers of mass labour for the industry has changed. The enhanced mobility has played a key role here, in loosening the ties of several functions with their place on the urban-rural axis.

	Urban	Urbanised society	Rural
urban-rural interaction	potentials perceived to be endogenous to urban areas	systems resulting in flows between different kind of areas	potentials perceived to be endogenous to rural areas
urban-rural or regional governance	fostering beneficial exchange	coordination of spatial effects of different (sectoral) policies, awareness of affected urban-rural flows	fostering beneficial exchange

Figure 4: Model classifying urban-rural relations for case studies

At both ends of the model there are the resources and activities (and the resulting flows) that still incontrovertibly have their connection either with somehow distinctively urban or rural. Often these are not simple goods but more like public goods or values and needs that can be commodified to a certain degree. For example, some rural areas can be seen as producers of rural landscapes for the population or as suppliers of leisure-time options for the (urban) demand. In this sense urban-rural interaction is about exchange, often connected to recreation and leisure time. There are several phenomena that cross the borders of the sketched model. Migration, for instance, is connected to the overall (economic) system via the wage labour and the education system, but is also of major importance for the rural and the urban as separate entities: their strengths being that they can both offer high quality living environments.

Where the central part of the model has direct links with the global and national economy, the distinct urban and rural are closer to the realities of the regional level. The whole picture is thus influenced – among others - by the effects of globalisation, by the division of power among the different tiers of government and by the governance and planning capacities at the regional and local levels. How could the urban-rural relations then be thoroughly conceptualised in this context, to be still feasible for case studies? Firstly, the scope of the project being spatial planning, a lot of the urban-rural dynamics fall outside of its direct sphere of influence. The ESDP agenda stresses the coordination of spatial effects of sectoral policies but on the other hand we should not overestimate the possibilities to shape urban-rural relations through governance processes.

Possible policy interventions related to the urban-rural are many. With regard to the model, the part in the middle of the model is more about keeping the system aware of the urban-rural axis where relevant, for example, in discussing integrative labour markets. The separate sides of the model are more about exchange of endogenous for exogenous resources, eg. housing land for tax revenue etc.

The filter for choosing the flows of key relevance shall be grouped under the overall heading “Governance of urban-rural relations”. This means that we study only those flows that can to a considerable degree be influenced ed by spatial planning interventions. The other flows can provide useful information about the (national/regional) context.

The case study frame is thus like a puzzle where each partner has to put to place the flows (as listed by WP1 and/or the SPESP (2000)).

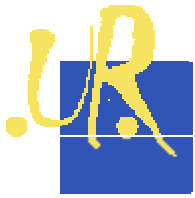
WP1

- * Residential relocation/migration
- * Business relocation
- * Commuting
- * Education and training
- * Shopping
- * Recreation and tourism
- * Healthcare
- * Cultural activities
- * Food, water and other resources
- * Waste and pollution

SPESP

- * home-work relationships
- * central place relationships
- * relationships between metropolitan areas and urban centres in rural and intermediate areas
- * relationships between rural and urban enterprises
- * rural areas as consumption areas for urban dwellers
- * rural areas as open spaces for urban areas
- * rural areas as carriers of urban infrastructure
- * rural areas as suppliers of natural resources for urban areas

In the next table there is a suggestion on how these are related to the model presented above. It is certainly evident that the categories are in many ways overlapping each other, but every case study shall deal with the overlaps as it is considered most suitable in the own context.



	Urbanised society (private vs. public sector activities)	Urban and rural (private vs. public sector activities)
<p>Theme 1: Flows of people</p> <p>eg. Residential relocation/migration Commuting</p>	<p>Enlargement of labour market and catchment areas</p> <p>The spread of housing and its consequences on eg. the transportation of population</p> <p>Land prices etc.</p>	<p>Attractive or less attractive living environments in urban or rural; periurban as a mutant growing in the middle?</p>
<p>Theme 2: Services</p> <p>eg. Business relocation Shopping</p> <p>eg. Education and training Healthcare</p>	<p>Relocation of the services</p> <p>Services complementary between city and countryside</p> <p>Role of network of small and medium rural towns</p> <p>Local administration: prospect for co-operation between rural and urban authorities</p> <p>New opportunities through transport and communication technologies</p>	<p>Rural or urban specificities as commodities a crucial factor or not?</p> <p>Flexibility in combining work and housing, leisure on the urban-rural axis according to people's preferences? Sustainability of the flexibility?</p>
<p>Theme 3: Amenities</p> <p>eg. Water and other resources Waste and pollution</p>	<p>Co-operation between rural and urban authorities</p> <p>Renewable energy production, Preservation of strategic river basins</p>	<p>Is there something specifically urban vs. rural in this matter?</p>
<p>Theme 4: Production of intangible goods</p> <p>eg. Recreation and tourism, Cultural activities</p>	<p>Planning sensitive to urban and rural qualities</p> <p>Prevention of land use conflicts in areas with heritage potentials</p>	<p>Taking advantage from natural spaces and cultural landscapes for local economy diversification</p> <p>Experiencing/celebrating rural and urban, people's roots</p>
<p>Theme 5: Production of tangible goods</p> <p>eg. Primary sector Secondary sector</p>	<p>Relocation of the industrial system</p> <p>Diversification of the productive system based on comparative advantages</p> <p>New opportunities through transport and communication technologies</p> <p>Marginalisation versus increasing profitability of agriculture and forestry</p>	<p>High quality food, certified regional products, local expertise etc.</p>

Case studies proposed					
Type of region	Flows of people eg. Residential relocation/migration Commuting	Services eg. Business relocation Shopping. Education, Healthcare	Amenities eg. Water and other resources Waste and pollution	Production of intangible goods eg. Recreation and tourism, Cultural activities	Production of tangible goods eg. Primary sector, Secondary sector
1					
2					Case study C
3		Case study A			
4			Case study B	Case study B	
etc.					

Table 1: The matrix that the case studies shall fill as far as possible.

To enable at least some kind of comparisons of the cases it is recommended that one of the tested methods/representations that have come up during the project could be applied to describe the case study areas. The alternatives are:

- Irish methodology of the National Spatial Plan (very comprehensive study!)
- Catalonia: taking the classes of the Irish typology but applying own criteria (much lighter version, allows flexibility what comes to data availability, requires a lot of knowledge of the area in question)
- Portuguese methodology on measuring commuting interaction (Maps H - K in Map Set 3)

Also the valuable maps on periurbanisation and the CORINE data processed for NUTS5-level are incorporated in the work wherever possible. The same applies to the case study material made available by the projects MOLAND and SCATTER (5th Framework). It is also possible to return to the governance examples gathered for WP4 by the partners. And last, but not least, the huge amount of work done in the Study Programme on European Spatial Planning (SPESP 2000) could be found useful.

The findings will be summarised as answers to the following questions:

* How do the urban-rural flows (vs. other flows) shape the existing structures? How do the existing structures permit/foster certain kinds of flows? How is this related to the urbanisation phase of the country in question?

* Which issues can be explained through urban and rural as distinctive categories? What is the influence of urban sprawl in this respect?

* What kind of governance processes or spatial planning instruments can support meaningful actions sensitive to urban-rural relations?

* Can you suggest more general policy recommendations for the type of region that your case study covered?

Comparisons of the key characteristics of the areas

To enable a certain comparability between the case study areas, several possibilities to describe the area in question are proposed. One of them is the methodology used for the National Spatial Plan in Ireland (see report on Irish Rural Structures which can be accessed on National Spatial Strategy website www.irishspatialstrategy.ie). Other options are also presented below.

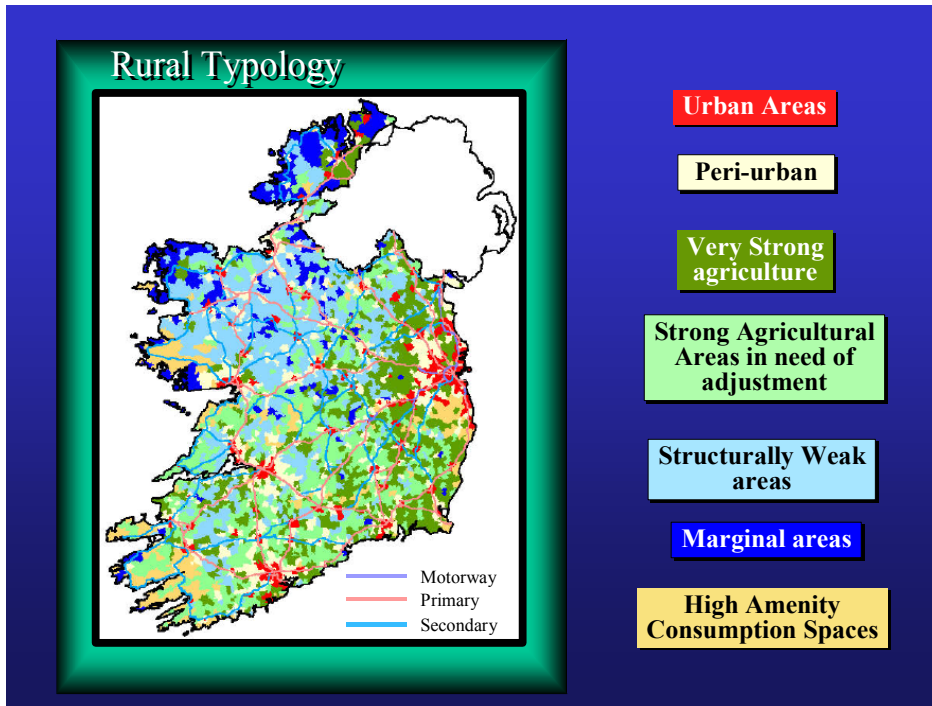
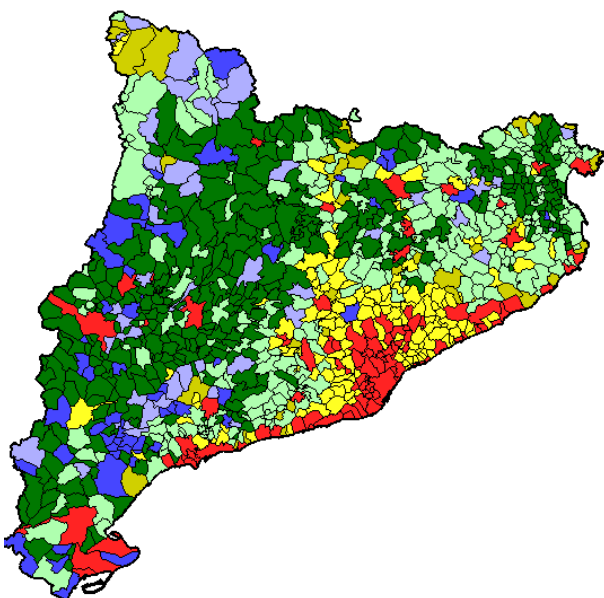


Figure 5: Typology of rural areas (prepared by Celine McHugh and Jim Walsh)



Indicators are inspired by the Irish ones, but are specifically selected based on data availability in Catalonia.

Urban (Population > 10.000 inhabitants)
 Periurban (6 counties around Barcelona)
 Strong agricultural (>20% employment in agriculture)
 Weak agricultural (5-10% employment in agriculture)
 Recreational (>5 rooms/1000 inhabitants)
 Structurally weak areas (IAEL >30*)
 Marginal areas (IAEL >35)

* IAEL is an index of social capital endowment in a given municipality which integrates all kind of public facilities.

Figure 6: Catalonian application of the same classification (Andreu Ulled & Laura Turró)

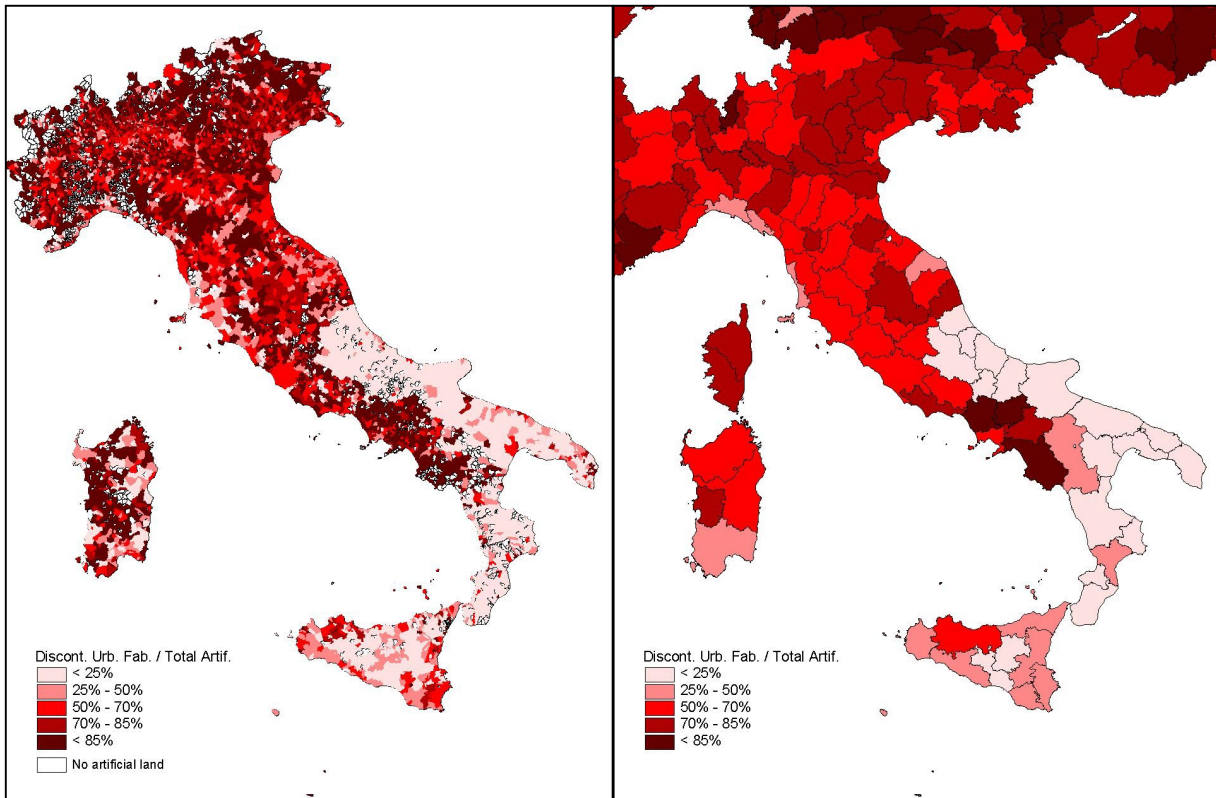


Figure 7: An example of the periurbanisation study at NUTS5 and NUTS3 –level offering case study material: share of discontinuous urban fabric of total artificial surface per NUTS5- and NUTS3-levels (Nicola Lugerì & Alessandro Locatelli)

Relation of case studies with the urban-rural typology

When looking at the key clusters of the identified types (Table 2 below) in the urban typology, one can see striking differences in the way that the possible combinations of land-use, population density and the degree of urbanisation are actualised in different parts of Europe. Only in France all classes of the typology are present within a single country. The table shows the actualisation as it is presented in the urban-rural typology map, showing the classification according to NUT3-areas in most countries but NUTS2 in three countries.

In relation to the Table 2 below, it is important that the case studies cover the following dimensions:

- combinations 1-2-4-7 in north-western Europe
- combinations 1-2- vs. 5-6-7-8-9-10 in southern and Alpine Europe

In addition, the following quite peculiar combinations should be covered:

- combination 2-8-10 in the Nordic and Baltic countries
- combination 2-3-4 in eastern Europe
- combination 8-9-10 in Romania-Bulgaria

The types that are covered by the already accomplished case studies or those that are very likely to be chosen are marked with bold numbers. They are listed in detail in Table 3.

	urban, dense and urbanised population	urban-rural, dense and urbanised population	urban-rural, sparse but urbanised population	urban-peripheral sparse and not urbanised population	rural-urban, dense and urbanised population	rural-urban, sparse but urbanised population	rural-peripheral, sparse and not urbanised population	peripheral-urban, dense and urbanised population	peripheral-rural, sparse but urbanised population	peripheral sparse and not urbanised population
B, NL, L	1	2		4						
DK	1	2	3			6				
D	1	2	3	4	5			8		10
UK, IE	1	2		4	5		7	8	9	10
FR	1	2	3	4	5	6	7	8	9	10
IT	1	2	3		5	6	7	8	9	10
A, CH, SL	1	2		4	5		7	8	9	10
PT + ES	1	2			5	6	7	8	9	10
GR		2			5	6	7		9	10
FIN, EE, LV		2						8		10
LT			3	4			7		9	10
PL	1	2			5		7			10
CZ, SK	1	2	3	4		6	7		9	
HU	1	2	3	4		6				
BG + RO	1	2	3	4				8	9	10

Table 2: Country clusters among the actualised* classes of the urban-rural typology

(*as actualised on the map where Germany, the Netherlands and Belgium were mapped at NUTS2-level – the picture at NUTS3-level would add some categories to the countries – respectively the picture at NUT2-level would reduce the number categories actualised in Europe to nine (or nearly to seven as two categories (4 and 7) would only have one NUTS2 each, see Map Set 2, Map 16)

Type	Name of the studied area	Scale	Characteristics	Thematic emphasis
UK				
4	Selby District	Local	Commuter Settlement	Economic decline coupled with a booming housing market
7	Yorkshire Dales National Park	Sub-regional	Protected rural	Strict planning regulation under significant development pressure
1,2,7	South and West Yorkshire	Sub-regional	Metropolitan	Travel and lifestyle choices
FRANCE				
1	Strasbourg	Regional	Urban	
6	To be chosen	open		
BENELUX				
2	Oldambt/ The Blue City	Regional	Rural, peripheral	Large scale agriculture, outmigration, plans of nature development and suburban housing
2	Randstad and Green Heart	Sub-national	Urban, peri-urban, rural	Problems in preventing urban sprawl; from Green Heart to Green Metropolis
2	The Maas catchment area and delta area	Cross-border, transnational	Urban and rural	Flooding problems in urban-rural setting
4	The Ardennes	Regional, local	Rural,	Leisure, tourism, carrying capacity, real estate prices
GERMANY				
2+10	Hamburg / Mecklenburgische Seenplatte	(inter-) regional	metropolitan / (remote) rural	structures and flows concerning touristic flows between Hamburg and Mecklenburgische Seenplatte
2+3	Bremerhaven	local - regional	metropolitan and periurban	structures and flows on basis of an analysis of municipality data for migration, commuting, labour market etc. of Bremerhaven
1+4	Greater Berlin ("Stadtregion Berlin")	(inter-) regional	metropolitan and periurban	city-regional linkages between Berlin and its surrounding municipalities (276) referring to commuting and migration data
All	Germany Reiseanalyse Survey	national	touristic regions from urban-metropolitan to remote rural	structure of touristic behaviour/habits of German residents, touristic flows
2	Munich			land prices
PORTUGAL				
9	Faro - Loulé - Olhão - Tavira - S. Brás de Alportel	Regional (Inter-municipalities)	Polycentric urban model	Structural changes, strong urban pressure, strong commuting flows between the five municipalities, specialization in tourism, strong pressure on the coastal area
8+10	Figueiró dos Vinhos	Local	Remote rural	Remote rural, integration depends on cultural and natural heritage; strong depopulation; importance of the secondary residence
SPAIN				
2	Periurban setting in the region of Barcelona	Regional	Periurban	
IRELAND				
2 + 7	Greater Dublin Region + county Meath	Regional	Periurban, central rural	Flows
FINLAND				
2	Helsinki Region	Regional	Metropolitan	Land prices
9	Turku & Mikkeli regions	Regional, local	Rural, Urban	Commuting, leisure time
2 + 9	Lake Region	National	Rural	Leisure: summer residents from the capital
ITALY				
2	Region of Rome	Regional	Metropolitan	Territorial plan of Rome
GREECE				
5 + 7	Region of Thessaloniki	Regional		
HUNGARY				
2	Budapest	Regional		
3	Gyor	open		urban-rural cooperation

Table 3: The case studies **most likely** to be covered by the project

Case studies proposed	Theme				
Type of region	Flows of people eg. Residential relocation, Commuting	Services eg. Business relocation, Education	Amenities eg. Water, Waste and pollution	Production of intangible goods eg. Recreation and tourism, Cultural activities	Production of tangible goods eg. Primary sector, Secondary sector
1	Strasbourg			Strasbourg	
1+2+7	S W Yorkshire	S W Yorkshire		S W Yorkshire	
1+4	Berlin				
2	Randstad	Randstad			
2	Barcelona	Barcelona			
2	Helsinki	Helsinki			
2	Rome	Rome	Rome	Rome	
2			Maas		
2(+3)	Budapest				Budapest
2+7	Dublin + C. Meath	Dublin + C. M.			
2 + 9			Lake region	Lake region	
2 + 10				Hamburg+M-P	
4	Selby				Selby
4			Ardennes	Ardennes	
5 + 7					Thessaloniki
6		To be chosen			To be chosen
8 +10				Figueiro	Figueiro
9	Turku, Mikkeli			Turku, Mikkeli	
9	Faro		Faro	Faro	

Table 4: The proposed cases on the thematic matrix

3 Presentation of detected territorial typologies of urban-rural relationships revealing risks and potentials

3.1 Additional information related to the typology work

The Chapter 3 at hand should be read like a technical complement to the typology documentation and analysis presented in the Executive Summary and in Chapter 1. It shows some material related to the national classifications and adds some notes related to the harmonised classifications.

Review of national classifications: urban and rural population in Europe

National definitions of urban and rural areas from all ESPON countries (EU27) have been compiled in WP1 Working Document and are summarised in Fig 8 below. In some countries several approaches on delimitation of urban and rural population are discussed (i.e. UK) to meet different policy needs. Here the definitions by the statistical institutes are given a priority, due to questions of data accessibility. From these definitions, a number of observations can be made (see also Chapter 1). First, one of the main criteria for defining urban areas appears to be population size. In some countries it is the sole criteria used to define urban areas within administrative boundaries (e.g. Czech Republic, Spain), whilst in other countries, population size is used in combination with another criteria: examples include the proximity of buildings (e.g. Austria, France), population density (e.g. Germany, Portugal) and settlement function (e.g. Malta, Slovakia). National definitions of urban and rural areas based on the administrative status (and administrative boundaries) of an area are frequently encountered in Europe, especially in Eastern Europe and the Baltic States (e.g. Bulgaria, Estonia, Hungary, Latvia, Poland). Definitions of urban areas based on a multicriteria approach can be found in two countries (Italy and UK). Most countries simply define rural areas as the areas that are not urban.

Some countries use the same criteria for defining urban and rural areas but the thresholds often vary. Take for example, the case of Austria, Denmark, Finland, France, Norway and Sweden which all use population size and the proximity of buildings as the criteria for defining urban areas. In Austria and France, an urban area has more than 2,000 inhabitants where the maximum distance between buildings is 200 metres. In Denmark, Finland and Sweden, an urban area has more than 200 inhabitants where the maximum distance between buildings is 200 metres. The definition of urban areas is different again in Norway, which specifies more than 200 inhabitants where the maximum distance between buildings is 50 metres. Similarly, several countries use population size as a single criteria for defining urban areas (Czech Republic, Greece, Ireland, Luxembourg, Spain and Switzerland). In the Czech Republic, Greece and Luxembourg, the threshold is a population of 2,000, whilst in Spain and Switzerland, the threshold is 10,000. In Ireland, the threshold is a population of only 1,500.

The ESPON countries base their delimitation approaches on different spatial reference units. Three main groups emerge, firstly city proper and localities (mostly accession and candidate countries), secondly municipalities or parts of it (most common case) and thirdly morphological units such as built-up areas (Austria, France, Ireland, the Nordic countries, and Portugal). Belgium is the only country applying its criterion to commuter catchment areas. In many cases a combination of spatial reference units is in use.

What makes the picture even more complex, is that the statistical delineation of the urban and rural population is not necessarily the same as what is used when drawing the outer limits of the FUAs on the map. The Nordic countries, for example, use built-up areas as a statistical definition but refer to commuting and labour market areas when delineating the FUAs (see report of 1.1.1. for detailed description of the FUA criteria).

Country	Delim. Approach		Criteria						Spatial reference unit			Population		Ref. year		
	Conceptual	Government decision	Population			Other			Administrative		Other		Urban		Rural	
			(2)	(3)	(4)	(Non-) agricultural share of workforce	Commuting/Travel-to-work	Central place function	(5)	City/town proper/locality	Municipality/commune/ward	(6)				Parishes, municipality sub-districts
Austria	X		■							■			■	67	33	2001
Belgium	X						■	■		■			■	100	0	2001
Denmark	X			■									■	85	15	1998
Finland	X			■									■	81	19	1995
France (A)	X			■									■	75	25	1999
Germany	X			■						■				85	15	2001
Greece	X		■										■	60	40	1991
Ireland	X			■					■				■	58	42	1996
Italy (B)	X			■		■	■			■				75	25	1986
Luxembourg	X		■							■				92	8	2000
Netherlands	X			■		■					■			80	20	1999
Portugal	X		■								■		■	70	30	2001
Spain	X			■						■				75	25	2001
Sweden	X			■									■	84	16	1995
United Kingdom (C)	X				■		■			■				72	28	2001
Norway	X			■									■	77	23	2002
Switzerland	X			■									■	68	32	2000
Cyprus	X							■		■				69	31	2001
Czech Republic	X			■									■	79	21	2001
Estonia	X							■		■				69	31	2000
Hungary	X							■		■				65	35	2002
Latvia	X							■		■				69	31	1998
Lithuania	X							■		■				68	32	1998
Malta	X			■										91	9	2000
Poland	X			■						■				62	38	2002
Slovakia	X			■										56	44	2001
Slovenia	X	*	*	*	*	*	*	*	*	*	*	*	*	51	49	2002
Bulgaria	X			■				■		■				68	32	2000
Romania	X			■				■		■				53	47	2002
OECD	X			■						■				-	-	-

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(1) The delimitation of urban and rural population by government decision may sometimes also be based on conceptual frameworks.

(2) Threshold 2,000 inhabitants always.

(3) Notel The following thresholds apply for different reference units. Denmark/Finland/Norway/Sweden: 200 inhabitants, Germany: around 100,000 inhabitants, France: 2,000 inhabitants, Spain 10,000 inhabitants, Czech Republic: 2,000 inhabitants, Malta: 1,500 inhabitants, Slovakia: 5,000 inhabitants, Switzerland: 10,000 inhabitants, Ireland 1,500 inhabitants.

(4) Germany: 150 inhabitants/km², Netherlands: 500 addresses/km², Portugal: 100 inhabitants/km², OECD: 150 inhabitants/km² (Eurostat modified: 100 inhabitants/km²).

(5) Cyprus: Nicosia and district towns covered by local town plans.

(6) Netherland: neighbourhoods comprising "buurten", Portugal: parishes (freguesias).

(A) Excluding Guadeloupe, Martinique, Guyane and Reunion.

(B) The list of criteria also includes active population (>14 years, women), age cohort > 14 years, average number of family members, number of private owned dwellings and penetration rate of phone contracts.

(C) Excluding Northern Ireland, Scotland and Wales. The set of criteria for England also includes ratio of active and inactive population, use of public transport and share of ethnically non-white people.

- = No data

* = Not available

Figure 8: Main components of national approaches on delimitation of urban and rural population

In order to achieve a more comparable picture based on the wide diversity of classifications, a two-step method was used:

- 1) the share of rural population in the regions was indexed with the country average; thus the index provides a measure of rurality within a national context
- 2) the total population density has been used to relate the different ruralities with each other, to provide a European-wide picture of the urban and rural population.

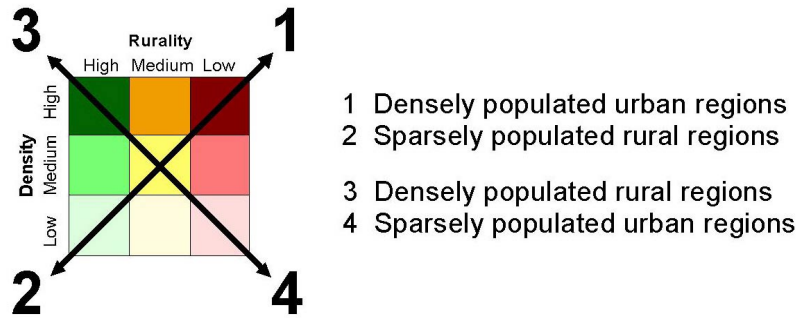


Figure 9: Extremes of the urban – rural population pattern

Four distinct extremes can be defined according to the classification based on the national definitions of urban/rural and population density:

1. high-density urban
2. low-density urban
3. high-density rural
4. low-density rural

Examples of the four different types are presented below (see also Map Set 2, Map 3).

		Rurality	
		Low (>10% below national average, based on national definition)	High (>10% above national average, based on national definition)
Density	High (>10% below national average)	High-density urban <ul style="list-style-type: none"> • Most capital cities (exceptions: Estonia, Greece, Lithuania, Norway) • Belgium (except south-east) • Randstad (NL) • Rhine corridor (NL and D) • Ruhr corridor (D) • Northern Italy (Emilia Romagna, Liguria, Lombardia, Veneto) • Côte d’Azur (Nice, Toulon, Marseille) • Saxony (D) and north-west Czech Republic • Large Iberian cities (Barcelona, Bilbao, Lisbon, Madrid, Porto, Valencia) • Balearic islands 	High-density rural <ul style="list-style-type: none"> • Central and south-east England • East Netherlands • Southern coastal Italy (Campania, Puglia, also much of coastal Sicily and southern Sardinia) • Hinterland of key Hungarian and Polish cities (Budapest, Krakow, Warsaw) • East Czech Republic • Northern Switzerland • parts of Northern Portugal
	Low (>10% below national average)	Low-density urban <ul style="list-style-type: none"> • Hinterland of some Northern European cities (Turku, Stavanger, Vesterås) • Coastal Latvia 	Low-density rural <ul style="list-style-type: none"> • Large parts of Finland, Norway and Sweden • Central France • Corsica • Ireland (except Dublin) • Central Spain (except Madrid) • Central southern Austria • Inland Portugal • Inland Greece

The largest concentration of *high-density urban areas* is in the so-called 'blue banana', stretching from London through the Benelux countries and Germany to northern Italy. Other notable high-density urban areas include the large Iberian cities (Barcelona, Bilbao, Lisbon, Madrid, Porto, Valencia) and northern European capitals/ports (Copenhagen, Stockholm, Helsinki), as well as central European cities, where the NUTS3 of the major cities are small in size (km²), and are thus small spots on the map. The largest concentration of *high-density rural areas* can be found in the same 'blue banana', in central England, the east of the Netherlands, as well as in southern Italy (including parts of Sardinia and Sicily) and city hinterlands of Eastern European cities (e.g. Budapest, Krakow, Warsaw).

As might be expected, *low-density urban areas* do not generally exist and do not feature heavily in the classification. There are only a few examples to be found such as the hinterland areas of some Northern European cities and part of coastal Latvia. Many *low-density rural areas* can be found in peripheral parts of Europe (e.g. the Baltic states, Greece, Ireland, Norway, Portugal, Spain, Sweden) but also in parts of central France and Austria.

Urban-rural typology based on a harmonised classification

The study of urban-rural relations would be easier if one could start from an existing and widely accepted definition of urban and rural. Nothing like that exists. One can also say that the theoretical framework for this kind of European study is not very well developed, nor is there much empirical work with the urban-rural relations covering the whole variety of settings present in the ESPON countries. This has made it rather difficult for the project team to formulate an accepted set of European-wide hypotheses that could be related to the urban-rural dynamics. It might be that it is increasingly tricky to get a grasp of the patchwork or rather to force the dynamics to be studied against the urban-rural axis. A framework from urbanisation theories was taken as the context of the study, in which the concepts of urban and rural are more like labels of perception and therefore meaningful themes of enquiry.

The European spatial development policy has laid a lot of weight on the concept of polycentrism, implicating in return that the urban-rural relations should enable weak rural areas to benefit more from the possible growth impetus originating from urban areas. However, it is problematic to take this as the only starting point as it can undermine the meaning of endogenous resources and ignore several forms in the interplay of local and extra-local forces⁶. Seeing rural areas as the residual, all that is non-urban, is not very fruitful either. Thus the project started studying urban-rural relations without first fixing the urban and rural on the European map. The typology formation has been about characterising all the regions across Europe in terms of their urban respective rural features. In the context of urbanisation theory, the typology gives an idea about urban-rural spatial relations in Europe, i.e. in what ways regions of different character locate in relation to one another in the European space.

The different land use categories carry with them a lot of the meanings attached to the urban and rural as categories, and former thus the basis of the work. Another alternative would have been the use of pan-European landscapes as identified by Meeus⁷. During the second half of the project it might be possible to elaborate more on that.

The second dimension of urbanity-rurality was put together of indicators of population density and the share of urban (=FUA) population, indicating the degree of urban integration according to three main categories. To a certain degree also the position of a city in the urban hierarchy could be seen to indicate the intensity of urban-rural flows within the NUTS3, as the centres continuously interact with their surroundings (that in many cases also include rural areas). The information on the orientation of the economic base can also indicate something about the interaction. Another possible point of reference is the data on accessibility. However, in order to really say something about the nature and extent of the flows, case studies are needed. The case studies are also meant to identify relationships

⁶ Ray 2002

⁷ Meeus 1995

between the structures and flows in different parts of Europe, relating to the different exploitation /planning systems. A common frame for the case studies is presented in Chapter 2.6.

Further questions

It would be interesting if it was possible to identify the outer limits of all European functional urban areas on the map. This would have allowed a comprehensive analysis of the urban-rural relations in Europe, assuming that each FUA would include both urban and rural areas⁸. As this is possible for only five countries, France and Nordic countries (see material of the project 1.1.1.), an example of a possible approach can only be proposed here. First of all, overlaying the FUA-delineations Europe-wide with the urban-rural typology would give an evaluation of the methodology used so far, in the absence of the mentioned FUA-delineations. Also the assumptions behind the Maps 12-13 (eg. that a FUAs of certain hierarchical levels could be expected to have a certain influence with the concerned NUTS3) could thus be tested. Secondly, a fully new typology could be created for NUTS3-level, maybe as simple as:

- highly urbanised regions (eg. over 90% of the area/population within FUAs)
- moderately urbanised regions (eg. 50-90% of the area/population within FUAs)
- regions with large rural areas (eg. 10-50% of the area/population within FUAs)
- regions with large rural peripheries (eg. only 10% of the area/population within FUAs)

A developed classification could then be overlaid with the land use classification. It would then be possible to differentiate between such extremes as Sweden and, let's say Spain and Poland. In the case of Sweden the extent of the labour market areas is huge, meaning that the functionally urbanised areas are large but can have very rural or wilderness-like appearance. Policy measures in such a region should evidently be rather different from the second case, Spain, where many of the urban areas and their respective labour market areas are quite compact. A further major difference would also be highlighted through comparison with Poland that has high rural population densities and far lower accessibility in most of the country.

Further possibilities to continue from here include further linkages with other projects. The links with the 2.1.3. project are of high interest. As already indicated by the analysis undertaken in the 2.1.3.-project, many of the CAP measures seem to be working against territorial cohesion. This has also direct implications for the discussion about urban-rural partnerships, as will be discussed in the Final Report of our project.

Support for typology work: parallel factor analysis

An attempt to use factor analysis in supporting the typology work was carried out in parallel to the other process of typology formation. It confirmed the strength of the conceptual model that the project has chosen. The main categories of land use did to a high degree explain variations among the chosen indicators.

First a set of 18 variables (see WP2 Working Document) was chosen from the ESPON Access Database V 2.1. It was sought to include variables that enabled to characterise the use of the land, the size of the population, the creation of wealth, the degree of mobility and the access to various infrastructures, as well as a number of indicators associated with the various territorial typologies that were previously defined by the project, as well as project 1.1.1. It must be kept in mind that the choice of variables was highly influenced by the availability of data. Despite this effort, null (0) values were used in the cases where some of the NUTS areas were lacking data, due to lack of data (e.g. data of some CORINE categories for Norway and Sweden). After the variables were chosen, a first factor analysis was carried out, allowing for the variables with the lowest degree of communality to be removed.

⁸ This is not necessarily the case, as a functionally integrated region would not have to correlate with any urban-rural dimension.

The set of variables was then reduced to ten:

1. Percentage of artificial area, 1986-1996, CORINE
2. Percentage of agricultural area, 1986-1996, CORINE
3. Percentage of forest area, 1986-1996, CORINE
4. Gross Domestic Product pps, per inhabitant, in EU average, 2000
5. Population density, 1999
6. Density of road and rail network, 2001
7. Population accessible from each NUT3 by car, in 1 hour, 1999
8. Market accessible from each NUT3 by car in 1 hour, 1999
9. Index of population centrality, 1999
10. Trips generated per person, 2001.

The second stage factor analysis, that was made with the ten best variables, produced three factors whose eigenvalues were higher than one, accounting for 71.48% of the total variance:

Factor	Eigenvalue	% Total	Cumulative	%Cumulative
1	4,304	43,041	4,304	43,041
2	1,639	16,393	5,943	59,434
3	1,205	12,048	7,148	71,482
4	0,827	8,267	7,975	79,749
5	0,530	5,303	8,505	85,052

The analysis of the factor loadings matrix reached the following conclusions:

Variables	Factor1	Factor2	Factor3	Factor4	Factor5
Percentage of artificial area	-0,812	-0,322	0,329	0,079	0,011
Percentage of agricultural area	0,027	0,884	0,232	-0,181	-0,136
Percentage of forest area	0,427	-0,457	-0,650	0,213	-0,246
GDP pps, per inhabitant	-0,647	-0,217	-0,243	-0,532	0,212
Population density	-0,725	-0,448	0,361	-0,014	-0,051
Density of road and rail network	-0,773	-0,149	0,158	0,186	-0,115
Population accessible from each NUT3	-0,824	0,225	-0,171	0,200	-0,077
Market accessible from each NUT3	-0,716	0,311	-0,169	0,165	-0,381
Index of population centrality	-0,575	0,344	-0,360	0,401	0,477
Trips generated per person	-0,631	0,103	-0,468	-0,444	-0,107
Explained variance	4,304	1,639	1,205	0,827	0,530
Percentage of Total	43,041	16,393	12,048	8,267	5,303

- In the case of factor 1, there is a strong relation between the share (%) of artificial area, GDP per inhabitant, population density, density of road and rail network and the level of trip generation (negative loading). On the other hand, the percentage of forest area seems to be related to those variables in an opposite way (positive loading). So, the areas that are denser, richer, more urbanised and more densely served by road and rail infrastructures have negative scores.

Factor 1: Urban territories	Variables	Loadings of Factor1
STRUCTURE	Population accessible from each NUT3	-0,824
	Percentage of artificial area	-0,812
	Population density	-0,725
	GDP pps, per inhabitant	-0,647
	Market accessible from each NUT3	-0,716
	Density of road and rail network	-0,773
FLOWS	Trips generated per person	-0,631
	Index of population centrality	-0,575

If we look at factor 1 in the above table, we see that the NUTS in which the number of urban agglomerations is higher stand out from the rest. Thus, the settlement structure of the various regions is clearly an important explanatory factor. Spread settlement structures, in which small and medium-sized cities are quite important (e.g., Northern Italy, the Netherlands, Belgium and Germany) the areas display a high degree of connectivity and accessibility, indicating strong relations between the various urban areas, as well as between the urban and the rural areas (NUTS in red).

When looking at the same factor on the map (Map Q in Map Set 3) one can also tell apart the following:

- NUTS in which one or a few cities predominate in the context of their region: The cities capture a significant share of the population and of the economic activity and act as powerful attractors with regard to the surrounding territories. In these cases, the intensity of the relations between the urban and the rural areas decreases along the increasing distance or accessibility; the territory is organised according to an urban-periurban-rurban-rural logic (NUTS in orange).
- Concentrated settlement structures: One single major city dominates the entire system (eg. Ireland)

As a conclusion, the factor 1 shows two relevant aspects:

- question of accessibility as an integrative element;
- question of market, also as an integrative element.

Factor 2 shows an opposition between the agricultural land and forests (Map R). With high positive scores we have NUTS dominated by agriculture and with negative scores those where the forest cover is more dominant and which are less densely populated. The factor 2 indicates that there is a relation between urban and agricultural areas, as can be seen when comparing the maps of factor 1 and 2, especially in the traditional core areas of Europe. These are also the areas in which the levels of accessibility, connectivity and urbanisation are the highest, which, of course, cannot be dissociated from the fact that the average area of these NUTS 3 is smaller.

4) Development of tools for the processing of the new data base, indicators and map-making

Data access: key indicators

The WP2 was mainly responsible for checking data availability of the chosen indicators, that were considered suitable to describe and characterize urban-rural relations, and for making the data operational for the analysis. For FIR the first data availability and comparability checks for NUTS III-level at national Data Navigators was made, as well as checking the sources of EUROSTAT, EEA etc. The WP2 also suggested a set of hypotheses to be tested with the analyses. Most importantly it sent the data requests to the 3.1. and initiated and coordinated the data requests at national statistical institutions covering Europe 29 and data organising as basis for data processing. All project partners and subcontractors took part in the WP2 coordinated by Taurus Institute.

The work on indicators was based on the outcomes of the previous study programme (SPESP) with an extensive and detailed list of indicators for the identification of the structure and the flows between urban and rural regions. Main dimensions that subdivided the pool of indicators refer to settlement structure, infrastructure, demographic development, mobility, services, housing, tourism, agriculture and forestry, soil and land use, economic performance, urban regional flows, public sector, natural heritage, protection of natural resources and cultural heritage.

The comprehensive indicator list (see WP2 Working Document) was intensively discussed in the project meetings, referring the indicators to the theoretical base. Additionally, a literature review on recent publications and articles enriched the selection procedure and built a part of the theoretical backbone. Another significant aspect in the development of territorial indicators were the information

needs that the development of policies addressing urban-rural relationships would have. Therefore, a review of policies affecting urban-rural relations was conducted at different spatial levels (WP4).

Processing

A series of conventional quantitative methods and more ambitious GIS-methods have been used by the project during its course. The approach of the typology work that started from the conceptual frame had a parallel, more data-driven, exercise including eg. factor analysis.

In processing various classifications/typologies the project will still test a Java-application developed by Dimitris Ballas in the 5th Framework Project “the Future of Europe’s Rural Periphery”, which used several approaches in producing typologies of rural regions. They found a flexible and transparent disaggregative approach quite promising; only readily available computer software seemed to be missing. Thus they developed a simple program, written in the Java programming language, and have now made it available, to be tested by the 1.1.2.-project.

Map-making

In addition to the GIS-platform at CURS/HUT, the project has been using the web-based interactive system, provided subcontractor Mcrit. The web-system enables on-line map-making, including studying the performance of regions, and observing correlations between the different datasets in the form of graphs.

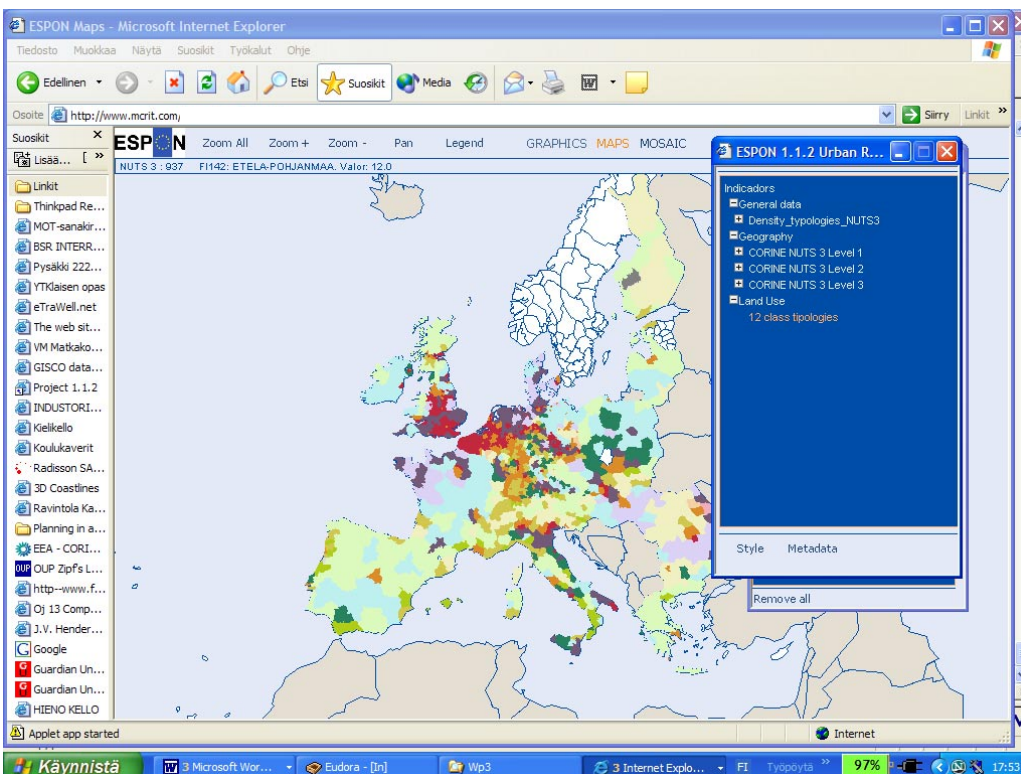


Figure 10: An example of a possible interactive map

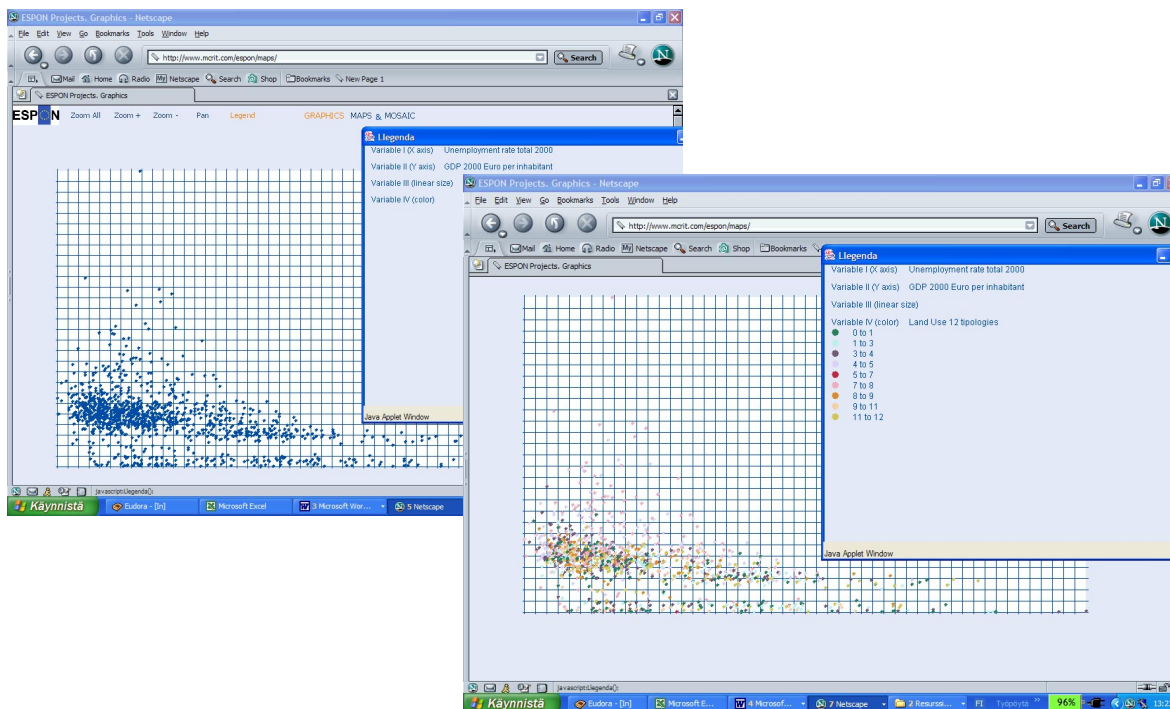


Figure 11: Examples of possible interactive graphs; test-version of a typology according to selected criteria

When processing the CORINE-data along the three main dimensions (artificial areas, agricultural areas and the rest), it was also attempted to use a ternary diagram to plot the different combinations of the data (NUTS3) and to use the triangle as the basis of classification for the underlying land-use typology. Due to the lack of time the approach was not yet fully carried out but will be returned to in the next phase of the project. An example of the possibilities to work with the diagram are provided in the Annex D.

5) Systems for the monitoring of new trends of territorial developments

To measure the change in urban-rural relations, a simple method would be to reproduce the urban-rural typology map regularly according to the current criteria and to update the study of performance of regions. This can partially be done during the project, as the CLC 2000 becomes available soon. The presented case study frame can also be considered as a qualitative measurement tool, providing a framework for evaluating the possibilities to influence urban-rural relations through policies or partnership arrangements.

The efforts with the overlay of CORINE and NUTS5-level boundaries are currently being carried out to detect urban sprawl. As soon as the CLC 2000 data is available, a monitoring of the changes between the two CORINE datasets can be made possible, at least for some countries.

What comes to the real comprehensive monitoring systems, there is naturally no point to start to monitor something as complicated and as ambiguous as urban-rural relations with some fixed systems. Far more important would be to invest in the collection and organising of harmonised European data that can then be made available for research projects such as ESPON.

6) Conclusions and concrete ideas for policy responses

Policy implications of the European wide maps and analysis

The elaborated maps show that a huge majority of regions represents contexts where both urban and rural environments and modes of life are present simultaneously. This statement is valid for the densely exploited centres of Europe as well as for the peripheral areas. It means that urban-rural relations are - more or less - everywhere present on the regional level. The variety of regions is huge, however, and the situation in various parts of Europe very different. Consequently, policies addressing urban-rural relations must be diversified. These policies have to take into account differences in population density and degree of urban integration, the character of the region in terms of its urban centres as well as its overall physical landscape and its potentials. The elaborated maps give an account of all these variables and their distribution across Europe.

A successful policy (with respect to political support) is a rephrasing of processes actually already happening. The case of the ESDP-options concerning urban-rural relations seem to match that pattern: the options actually review tendencies that are already in full swing. Three examples:

1. Firstly, *medium and small size functional urban areas are already over-represented* when compared to the ideal rank-size graph. This reality is rephrased as policy options in the ESDP (nr 14 and 20).
2. Secondly, the major overall tendency of urbanisation in Europe is actually *counter-urbanisation*, i.e. a flow of people down the urban ladder from larger to smaller urban settings. This tendency actually underpins ESDP policy options (nr 19 and 21). However, important exceptions to the rule exist in several countries.
3. Thirdly, in the long run *the number of functional urban regions seem to decrease while the size is increasing*. This actually fuels ESDP policy options (nr 22 and 23).

Factual trends shaping urban-rural relations that are already in full swing thus support all the ESDP policy options concerning the *functional relationships* between urban and rural settings. What is not supported, are the ESDP policy options dealing with the *qualitative aspects of environment* (options 53, 54, 56). From this point of view, what is really needed are the design and implementation of policies that would effectively address the current degradation of the social and physical environment. Such policies are, however, very risky for politicians to pursue, as it would not be about mere rephrasing of current trends. On the other hand, environmental qualities are gaining more and more attraction on the behalf of the well-situated strata of society, and the promotion of environment-related policies are soundly based on economic prospects, which may increase the political interest for these matters. This could have implications for the further work of this project.

An important basis for policy design is the recognition of the particular character of each region, and the comprehension of *environmental factors in terms of assets, not in terms of restrictions*. Here a conceptual distinction must, however, be made. In practical terms, environmental restrictions can turn out to be economic assets in the future. Restrictive environmental policies are actually conserving assets for future generations, and economic exploitation of such assets can in many cases be the best way of protecting these assets. Here the touristic aspects of well-preserved historical cities and natural parks serve as good examples. The combination of environmental and cultural aims on the one hand with the demand for profits on the other is not a question that can be solved by theoretical reasoning, it is a practical one, the solution of which requires "prudent management" as stated in the ESDP.

The project at hand relates the discussion about urban-rural relationships to the process of urbanisation and to the challenges of managing vs. inducing growth as the different phases of urbanisation and business cycle follow each other. This is also what motivates the review of diverse European, national and regional level policies/initiatives that can have effects on the urban-rural

relationships. It is obvious that the scope of urban-rural partnerships as fostered by the ESDP must remain realistic in their scope. In applying the ESDP the policy community must also be sensitive to the critique that the concept of urban-rural partnership has received from several corners of Europe. It relates both to the above mentioned aim of “prudent management” and to the messages coming from those European corners where the spatial development trends show to a direction other than the European mainstream. As the summary of the policy review shows below, the serious promotion of urban-rural partnerships faces also many institutional challenges. A set of recommendations is provided to start with.

EU policies affecting urban-rural relations

Over the last 40 years various EU policies, communications and initiatives have directly or indirectly affected the development of rural and urban areas across Europe. These policies and their impact on urban and rural development have been subject to numerous, well-documented critical analysis and studies. However, little attempts have been made to study the outcome of these influences on urban-rural linkages⁹.

Successive Treaties have increased the influence of territorially significant sectoral policies of the EU on the development and implementation of national and regional spatial policies and the dynamics of urban and rural linkages. Drawing on the ESDP and other sources, it has become clear that the following EU policies have had significant impacts on urban and rural dynamics and, up to some extent, on urban-rural relationships.

1. Agricultural and rural policy particularly the Common Agricultural Policy
2. Regional policy particularly the Structural Funds with their Priority Objectives
3. Community Initiatives and in particular INTERREG, LEADER and URBAN initiatives
4. Article 10 Urban Projects and in particular UPP and TERRA Programme
5. Transport Policy particularly the Trans-European Networks
6. Environment policy especially the Urban Environment and Environmental Action Programmes

A comprehensive review of these policy areas was provided in the First and Second Interim Reports. The Second Interim Report also highlighted the key strengths and weaknesses of each policy area and put forward a preliminary list of recommendations for each. Drawing on those analyses, this executive summary provides key recommendations for improving the EU structural and sectoral policies in such a way that they become more effective in promoting a beneficial relationship between urban and rural areas in Europe.

ESDP and urban-rural partnership

Drawing on a range of socio-economic factors and environmental sustainability priorities, the ESDP highlighted the functional interrelationships of urban areas with their surrounding countryside and the need to move away from the compartmentalisation of policies. It called for a re-evaluation of the relationships between city and countryside, based on the integrated treatment of the city and countryside as functional and spatial entities with diverse relationships and interdependencies. More importantly, it strongly argued for the development ‘urban-rural partnerships’. As presented above in Chapter 1), ESDP put forward a set of policy options supplemented with some more specific framework for implementation.

If these options are to be implemented, it is imperative that the key weaknesses of EU sectoral policies, as listed below, are addressed and the following policy recommendations are taken into account following the review of Structural and Cohesion policies in 2006.

⁹ Davoudi, S, and Stead, D., 2002, Urban-Rural Relationships: an introduction and a brief history, *Built Environment*, 28(4) pp. 269-277

What are the key weaknesses of EU structural and sectoral policies with regard to urban-rural relationships and partnerships?

The review of the relevant EU policies and the analysis of their key weaknesses and strengths, undertaken in Interim Reports 1 and 2, have made it clear that:

1. There is no explicit and pro-active (as opposed to permissive) EU policy measure which promotes complementarities and integration in urban-rural relationships
2. As regards EU Community Initiatives, with the exception of INTERREG III, there is hardly any recognition or promotion of urban-rural linkages
3. Lack of integration between different EU structural and sectoral policies can act as a barrier to the development of territorially integrated policies at the national and local levels and to the promotion of urban-rural relationships and partnerships
4. The existence of separate measures for 'urban' and 'rural' policies is a key obstacle for development of integrated urban-rural initiatives at the EU level. The narrow definition of geographical boundaries of areas that are eligible for funding limits the development of a wider spatial perspective and the inclusion of neighbouring urban and rural areas within the policy space
5. The lack of dedicated financial support (through EU funding) for strengthening and building institutional and local community capacities hinders the effective implementation of urban and rural partnerships in the context of EU policies and initiatives
6. The cumbersome and inflexible procedures of most EU funding programmes inhibits wider participation of rural partners in EU initiatives

What can be done?

In order to overcome the above shortcomings there is a need to:

1. Promote urban-rural complementarities and partnerships in all relevant EU policies

Example: Introduction of a specific objective in the regulations of EU policies with significant territorial impacts (Transport, CAP, Environment etc.), pertaining to the development of synergies between urban and rural areas.

2. Promote the territorial / spatial dimension as a way of integrating and coordinating measures for urban and rural issues in structural policies and widen and consolidate the geographical delineation of eligible areas for EU funding

Example: introduce and mainstream a new type of *Horizontal Priority* in Objectives 1 and 2 Structural Funds, possibly based on functional urban regions, which requires the promotion of complementarities between urban and rural areas and promote sub-regional strategies for consolidated boundary delineations that are based on functional urban-rural areas under the Structural Funds Programmes

3. Integrate the existing measures for urban and rural areas in Community Initiatives

Example: merge Community Initiatives 'Urban' and 'Leader+' into a single programme which allows the coverage of both urban and rural areas

4. Streamline and simplify the complex and cumbersome administrative procedures

Example: current procedures for Structural Funds Programmes require highly skilled and well resourced partners and hence disadvantage less experienced groups including rural partners

5. Promote partnership and development of effective institutional infrastructure at the sub-regional / inter-municipal scale

Example: make the establishment of partnership arrangement between neighbouring urban and rural areas (often at a sub-regional scale) a key criterion for the assessment of applications for EU funding

6. Dedicate ring-fenced resources for the development of local community capacity building in the relevant EU funding programmes

Example: within the different EU policies and programmes, allocate specific financial support for building community capacities to enable effective participation of often less experienced rural communities in the development of urban-rural projects

National policies affecting urban-rural relations

Chapter 1 (see WP4 Working Document) on national policies affecting urban-rural relationships begins by providing a review of the existing policies in member states which affect urban-rural dynamics in European countries. This was elicited from a questionnaire survey conducted during the first half of 2003¹⁰. The objective of the survey was to *collect examples of current national and regional policies in Europe that address the issue of urban-rural interdependencies directly or indirectly*. The results of the survey are fully analysed in the form of summary tables and comments and illustrated by charts and figures. In addition, brief summaries of selected case study examples of national policies are presented.

An analysis of the results of the survey demonstrates how the national policies vary, both in the degree to which they explicitly address urban-rural relationships and the desired effect of the policy. Some were primarily interested in regulating the development pressures from urbanisation on rural areas (Denmark, Austria, the UK and Germany to a certain extent) others at strengthening the economic structure of declining rural areas through various measures (Hungary, Slovenia, Portugal, Bulgaria and Italy to different degrees). The report explores the diverse means by which these objectives are pursued and considers the specific issues addressed by other countries. These include respecting an existing policy of demarcation of rural and urban areas, but relaxing it to allow urban dwellers better access to rural areas for leisure and recreation (Netherlands). Another (Ireland) involves preventing mass movements of rural populations to urban areas by stimulating the development of smaller urban areas/towns to hold rural communities together and distribute population growth more widely.

The policies	The rationale
Urban and Rural Zoning: The Planning Act (Denmark)	Stop urban into rural sprawl, make a boundary between the two with complementary, but specific functions. Develop services for the hinterland from the cities.
Sectoral Planning (Salzburg) (Austria)	Establish a spatial planning policy to limit industrial development and housing to certain areas and to avoid urban sprawl.
National Development Plan National Spatial Strategy (Ireland) Ensuring the Future – A Strategy for Rural Development *	* Address the issues of economic and social underdevelopment in rural areas and improve the conditions and role of smaller urban centres.
Environmental defence and territorial development for overcoming territorial imbalance (Brescia) Territorial plans of Chieti, Napoli, Siena* (Italy)	* Assure the permanence of the traditional rural landscape structure.

¹⁰ Individual acknowledgements to the respondents, who made a representative sample of 65% of EU counties possible (for both the urban-rural policies and initiatives), are given in the main report.

Territorial plans of Chieti, Napoli, Siena* (Italy)	
Working Group on Urban-Rural Interaction (Finland)	Create new kinds of links between urban and rural areas.
Joint regional planning Berlin-Brandenburg * Policy for Regional Planning (Germany) Joint programme for the improvement of the regional economic structure	* Make urban areas attractive for inhabiting and renew brown field sites. Limit land consumption and reduce impact on nature, but develop the landscape spatially.
Policy for strengthening the economic structure of declining rural areas (Bulgaria)	Improve agricultural economies efficiency by diversification, better links between urban and rural, but reduction of migration.
Policy for Granting Urban Status (Hungary)	Give rural communities opportunity of town status to gain more services, so improve centre periphery relations.
Strategy of Regional Development of Slovene (Slovenia)	Ensure differences between regions do not increase, preserve minimum density of settlements, forge urban rural partnerships.
Spatial Diversity (The Netherlands)	Restrict development in rural areas, safe-guarding demarcations, but invest in good recreational space and accessible nature reserves.
Reduction of the Asymmetric and Promotion of the Regional Dynamics * (Portugal) Interventions of the Central Administration Regionally Deconcentrated (Zones) ~	* Alter the basis of agricultural regions, sustain water provision and increase rural tourism. ~ Relieve congestion in urban areas and improve accessibility in remote areas.
Urban White Paper* (The UK) Rural White Paper	* Use physical means, spatial planning etc. to improve quality of life in declining urban areas.

Thus while there are hardly any EU policies that promote complementarities between urban and rural areas, the situation in member states is more promising. It is, however, still far from ideal. In over 50% of cases, policies were classified as subsidiary. They were directed at policies such as regional development, transport, industry, agriculture, spatial planning, environment and urban development. These had an indirect impact on urban-rural relationships, but the latter objective was not the major focus. So although this indicates a growing recognition of urban-rural interdependencies amongst EU member states, it still points to a major problem of compartmentalisation of policy. The key reasons are:

- The lack of understanding about the exact nature of urban-rural interdependencies among policy makers and professionals.
- The perception of urban – rural linkages as a simple linear process of rural food supply to urban dwellers and urban supply of manufactured goods to rural population (which fails to recognise the existing complex flows of people, goods, capital, information and services which criss-cross the boundaries of urban and rural).
- The urban-rural dichotomy continues to dominate people's perception of urban and rural areas.

All policies that focused on urban-rural relations (URR) as their major purpose were all relatively recent in conception; most had been developed and adopted in the last five years. Almost 70% were initiated by national governments, however in all cases implementation involved a partnership approach, usually consisting of national, regional and local level agencies in some combination, sometimes with private or voluntary sector involvement. In over 50% of cases the URR policy covered the whole country, though in some instances only urban or rural regions were covered by the policy. If there is a wide variety of priorities stated in the policy sets, there is an even wider variety of approaches taken to implementing those policies. The largest category favoured the use of established spatial planning hierarchies from national to local level as the main instrument to achieve the policy set (Denmark, England and Ireland). Others preferred hard restrictions on growth of rural settlements or rural infrastructure improvements. A similar diversity was found in assessment of the key themes addressed by the policies, with tourism, recreation, the environment and settlement planning all significant. However, it could be said that the economic development and employment represent the most influential element in the urban-rural policy sets examined in this report. As the policy sets described here are largely recent introductions and more than half had not yet received any formal evaluation, it is unsafe to draw strong conclusions about their effects. However these findings are useful in 'signposting' the likely direction of URR policy effects. Unfortunately the signs are pointing in several directions at once, with the main themes being;

- improving the relative viability of rural locations vis-à-vis more robust towns and cities
- building stronger links, complementarities and interdependencies between urban and rural places
- restricting either urban or rural growth to advantage either rural or urban places

The next stage of the study will help to clarify and resolve these apparent contradictions in policy direction.

Finally the chapter closes by examining respondents' assessments of the achievements of the policies in their impact on URR and provides six¹¹ detailed policy case studies (from Bulgaria, Denmark, Finland, Germany, The Netherlands and the Spanish case).

Urban-rural initiatives

Chapter 2 (WP4 Working Document) on urban-rural initiatives in Europe deals with the second part of the survey. This aimed to *collect examples of urban-rural initiatives / projects / actions which involve joint working of local authorities (with or without other partners) in urban and rural areas*. This part of the survey did not receive as high a response as the previous section. Nonetheless a coverage rate of 40% was achieved and some interesting case studies presented. The results of the survey are fully analysed, supported by textual comments and illustrated by figures and charts. In addition, summaries of selected examples of urban-rural initiatives are presented in the forms 'pen portraits' of eight national cases. The final section of this chapter provides examples of INTERREG projects that address the urban-rural dynamics.

Almost all of the initiatives were very new; none were more than 8 years old. A majority of the projects were involved in trying to develop interdependence between urban and rural areas through building complementarity of services and the marketing of products. With regard to the practical details, in most cases local authorities were the key partners. Funding was drawn mainly from national sources, there was some EU support and limited regional backing. When asked to list the strengths of the initiative, about half noted that at least urban and rural municipalities had started to talk and that the project had required active partnership between the two. A couple of others pointed out that a common point of interest had been found, for example tourism, on which to build a relationship. In three cases an important weakness was that more was likely to be gained from the initiative by the urban than by the rural parties. In instances where an EU programme was the main source of funding, concern was expressed about the future of the initiative. The following tables provide a typology of strengths and weaknesses of the urban-rural initiatives:

Strengths	Comments
Common vision	<ul style="list-style-type: none"> • Seeking solutions to problems together
Integrated actions	<ul style="list-style-type: none"> • Recognising the need to ensure co-operation • Allowing the development of an integrated mobility • Possibilities for rural municipalities to develop their economy and social integration •
Complementary activities	<ul style="list-style-type: none"> • Local players recognise that the area as whole has more attraction than its individual parts •
Balanced development	<ul style="list-style-type: none"> • Achieving balanced development of activities in Sofia and its surrounding area • Coherent objective on settlement forms

¹¹ The other six will be completed in the next phase of the project.

Weaknesses	Comments
Limited scope/ boundary	<ul style="list-style-type: none"> Greater Dublin does not cover many rural areas with land available to waste disposal Emphasis on cooperation with suburban municipalities may reduce the benefits for the rural edge
Lack of awareness of URR	<ul style="list-style-type: none"> Too much emphasis on the 'urban' with limited acknowledgment of urban rural interdependencies
Lack of political commitment	<ul style="list-style-type: none"> Rural urban interaction seems to fall into the gaps of 'this is a good thing but organisation is not responsible for it'.
Inadequate and short term resources	<ul style="list-style-type: none"> Uncertainty about the continuation of initiative after completion of EU projects Weak financial capacity

One of the summaries of the selected initiatives is The Town and Country Compacts (TCC) Initiative in the UK. Given that 40% of local authorities in England are partners in at least one urban-rural initiative, it was considered useful to provide a longer profile of TCC. Moreover, the Initiative has been subject to an evaluation by researchers in University of Birmingham. This allows further analysis to be drawn from this case. TCC was launched by the UK Local Government Association in September 1999 to provide a 'joined up' perspective to the two separate White Papers addressing Rural and Urban Development. The focus was on the need for local authorities (municipalities) and other organisations to jointly address spatial planning and management issues that affect both urban and rural areas. An evaluation of the initiative includes assessment of the benefits and constraints of joint working. One positive outcome was that this new holistic approach to development issues made it easier for local authorities to address the new 'well-being' agenda that they have been charged with. For instance in Case Study 10 bringing healthy affordable food from rural areas to their neighbouring deprived inner city areas. Joint working between urban and rural areas also acknowledges that many parts of the country are a mixture of urban and rural and not quite urban or rural enough to fit into compartmentalised policies and funding opportunities. These areas, regions or sub-regions, are polycentric and lend themselves to collaboration building across all parts of their area. 15 individual case studies which were selected for more detailed investigation are then outlined together with recommendations for policy makers. Those specific to urban-rural initiatives are shown below.

Recommendations for rural-urban initiatives

- Encourage wide participation and commitment from a variety of organisations
- Work hard to overcome cultural differences between types of organisations which can be exacerbated by rural or urban specialisms
- Identify key results for different partners
- Develop a shared vision such as economic development, which is always popular, and think long-term
- Try and ensure an early outcome in order to sustain momentum
- Be prepared to adapt the partnership as external factors change over time
- Gain political support and monitor to ensure further funding can be justified

Following this, eight other case studies have been summarised and presented to provide full coverage of the countries which responded to the questionnaire. Out of these, the following five cases emerged as potential 'good practice examples'. However, these are quite new and it will only be possible to provide a more objective and thorough analysis of them after they have had the time to begin to fulfil their objectives.

- Specialised programme 'Creation of Thematic Park "Poletto" (The Green Field) (Bulgaria) *'Interlinking urban and rural by creating a shared 'leisure space' between them'*
- The Development Council for Vendsyssel with specific reference to the initiative 'Sustainable Rural Districts' (Denmark) *'Creating a division of labour between urban and rural, thus increasing interdependency'*
- Initiative for strengthening of inter-municipality co-operation in the city of Győr (Hungary) *'Involving outlying rural areas in decisions made by the city'*

- Strategic Planning Guidelines for the Greater Dublin Area (Ireland) *'Re-directing development from overcrowded urban areas to new town centres in rural areas'*
- Integrated study of Mobility and Systems of Transport in Municipalities of the association of Medium Tagus (Portugal) *'Bringing together rural and urban through improvements in mobility and transport systems'*

Finally selected examples of INTERREG IIIb projects, which most closely focus on urban-rural interdependencies are charted. These are divided by region in order to identify any common trends operating by the particular geographical and urban/rural composition of that area. The Atlantic Arc projects appear to show an orientation to the rural, with the urban being seen somewhat as a resource to help rural areas in difficulty. With one clear exception (Bridge IT) the North Sea projects most directly address both urban and rural. The North West projects address urban and rural by creating linkages between the two types of area. A few Interreg IIC programmes are also considered, but receive less attention as most were aimed either at urban or rural areas.

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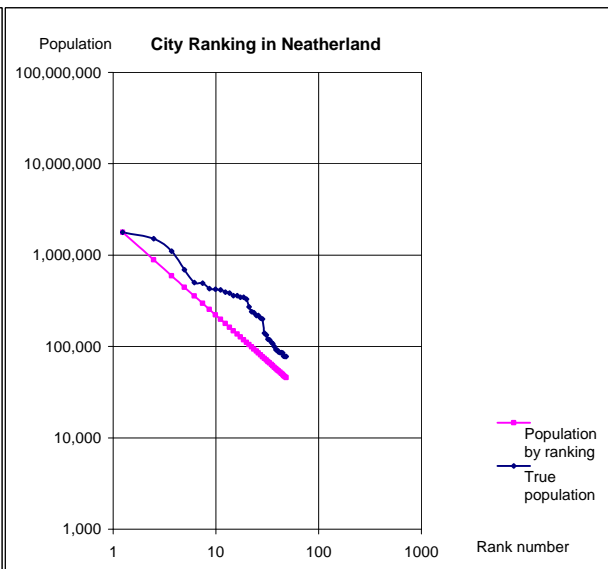
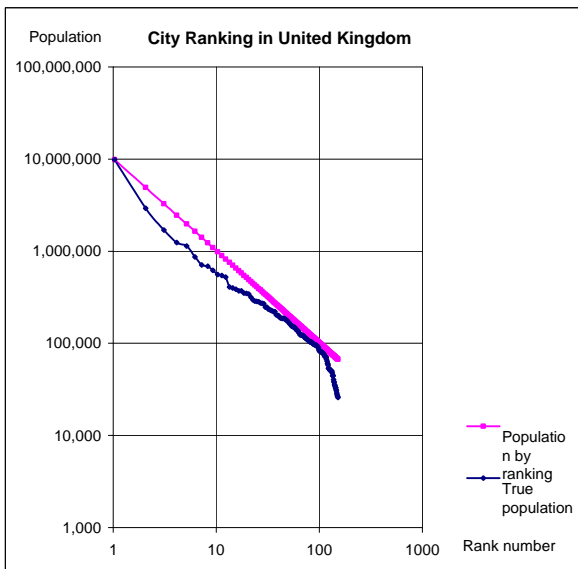
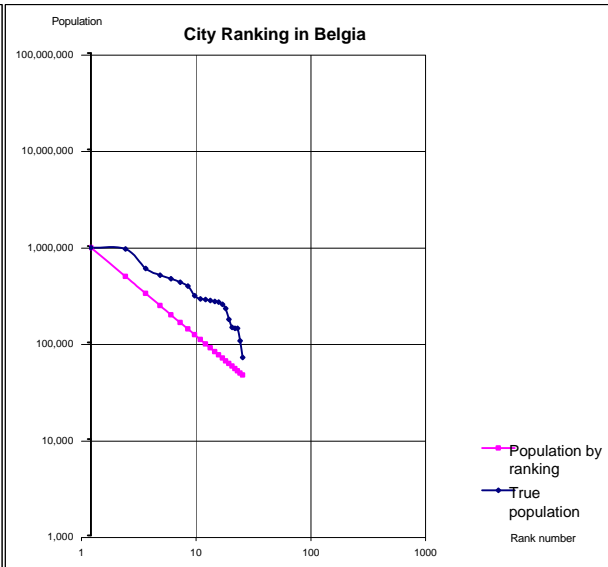
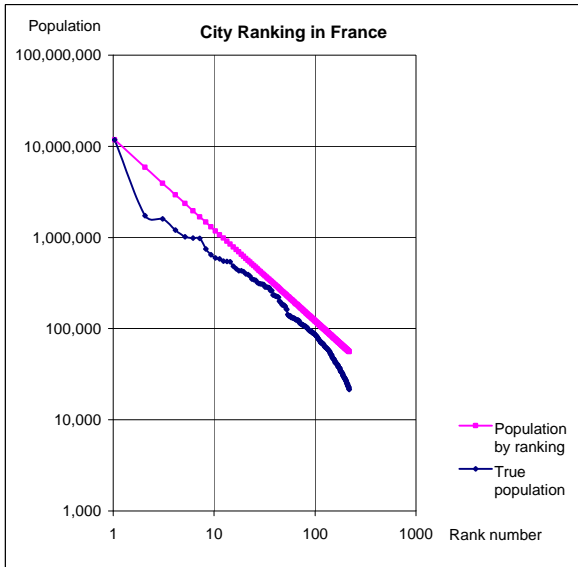
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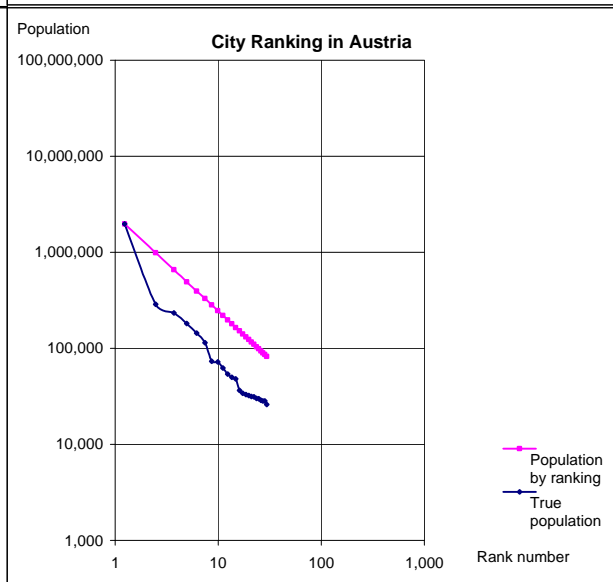
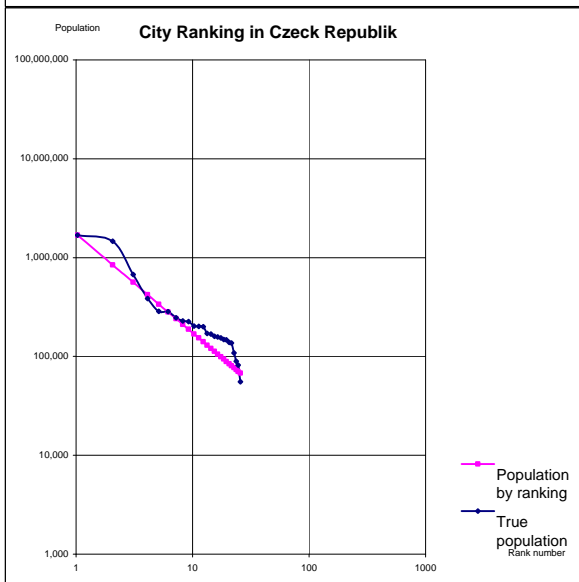
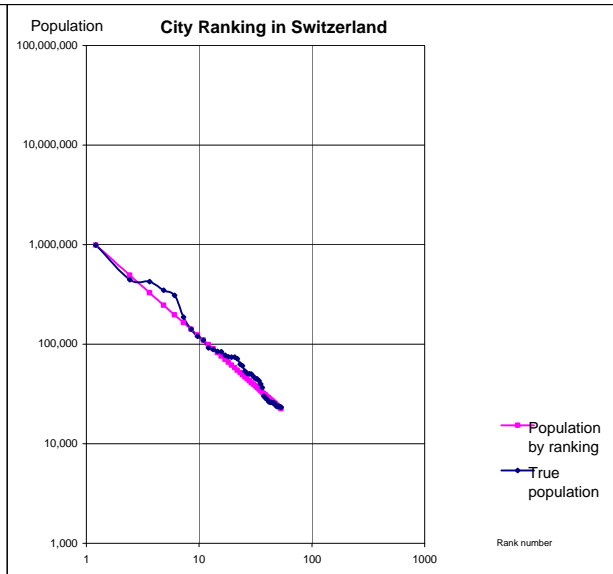
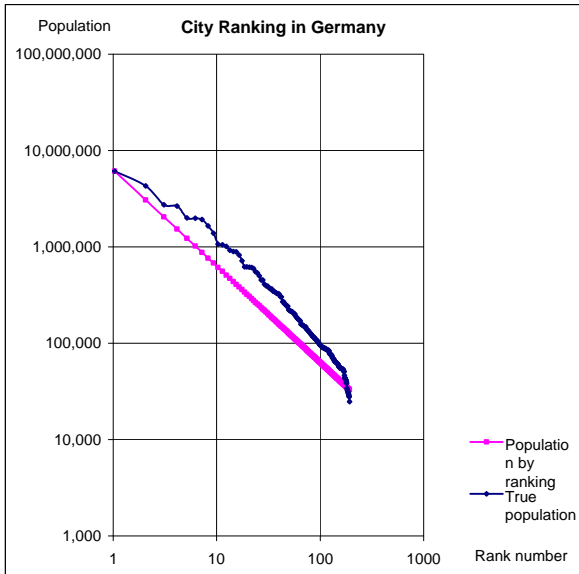
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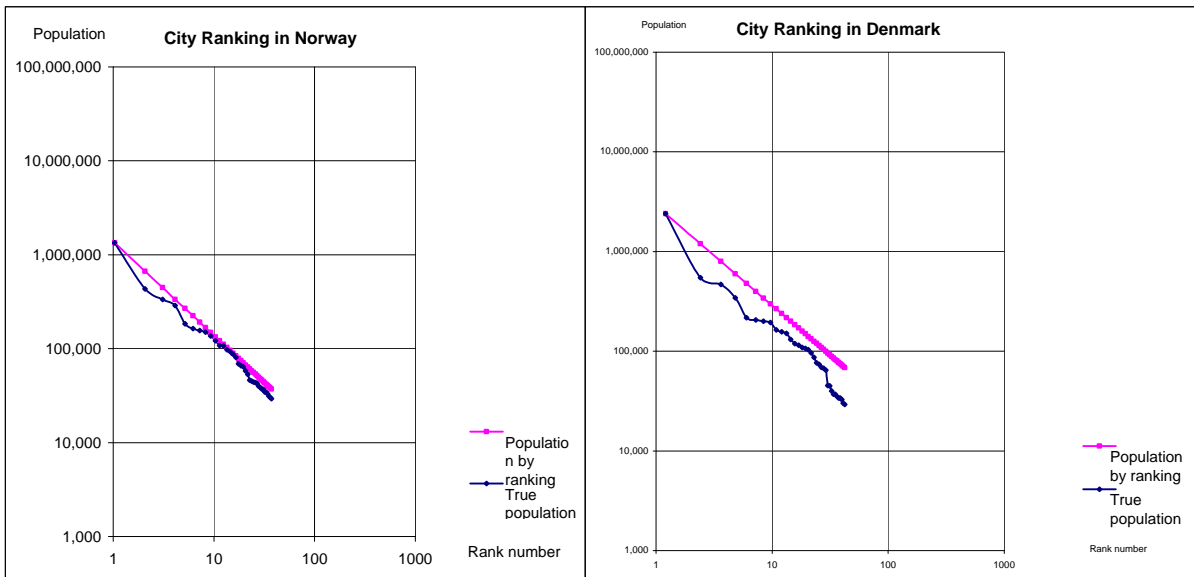
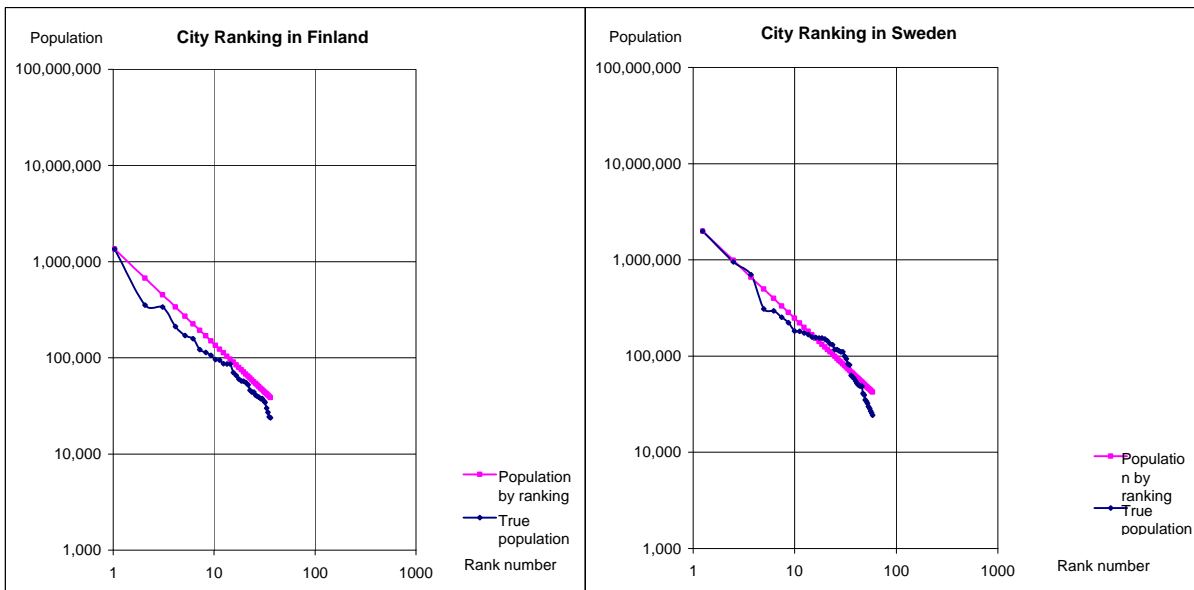
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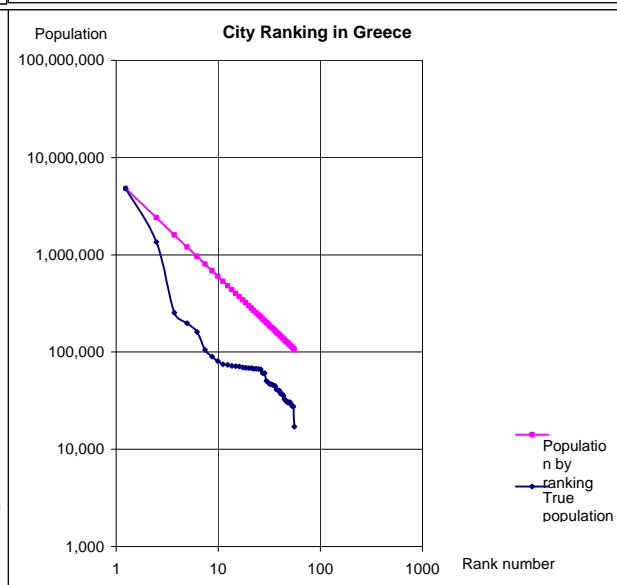
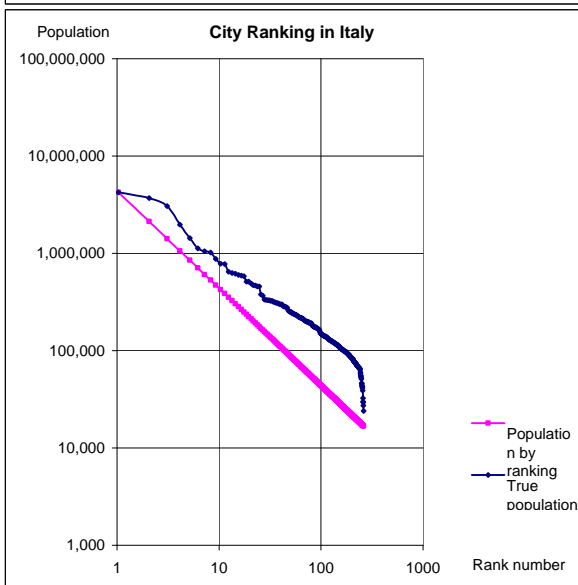
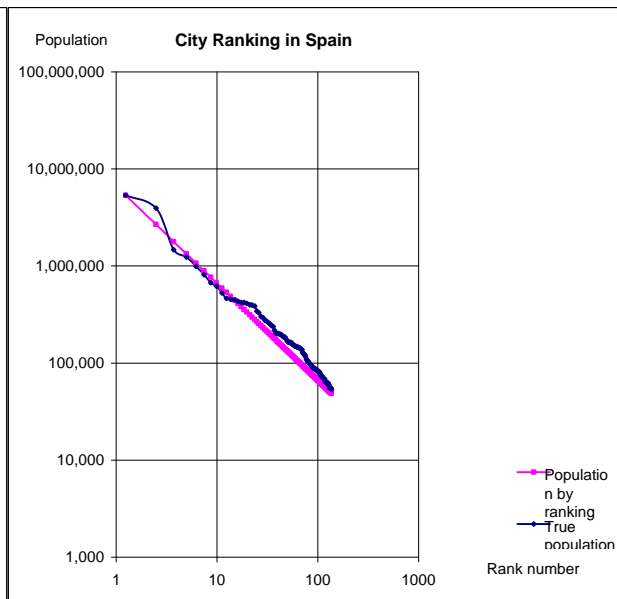
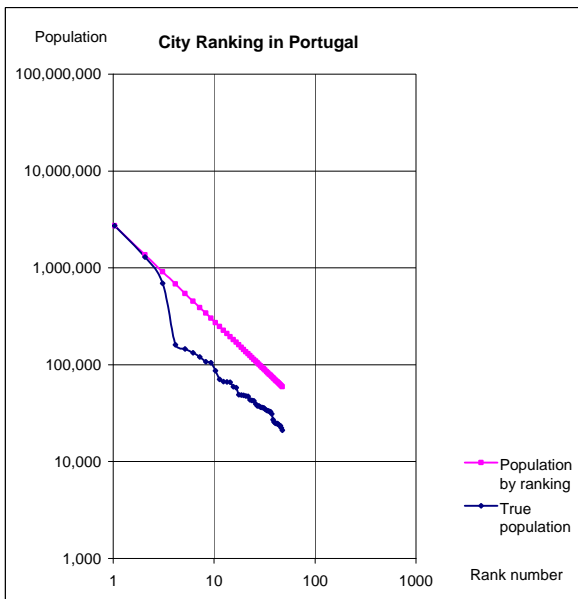
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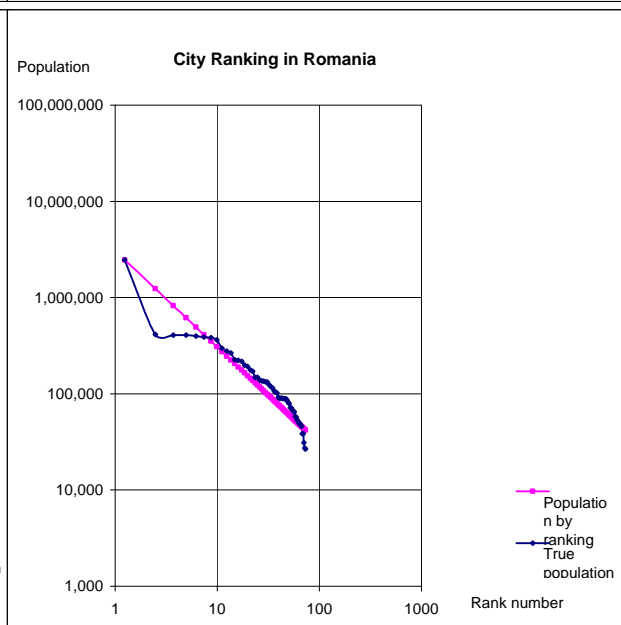
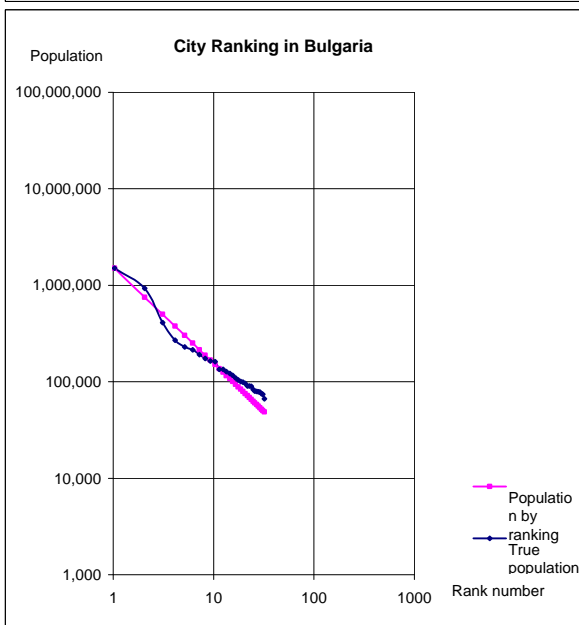
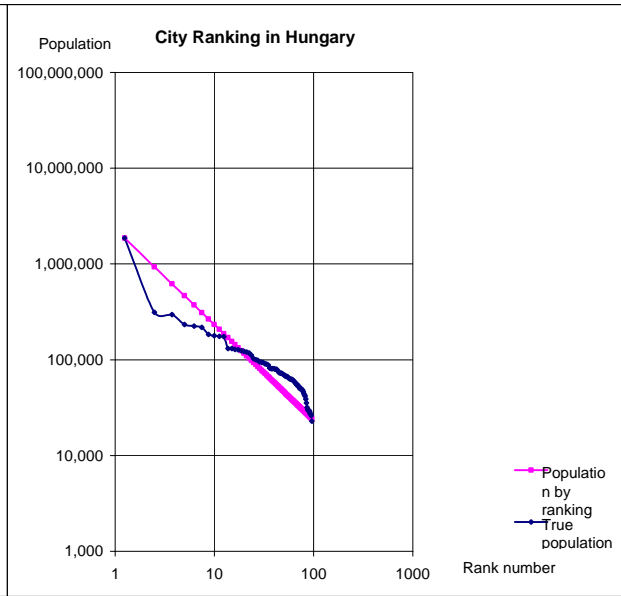
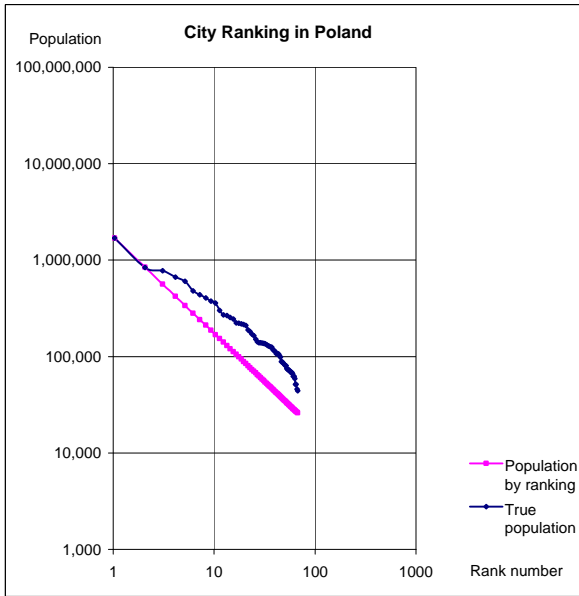
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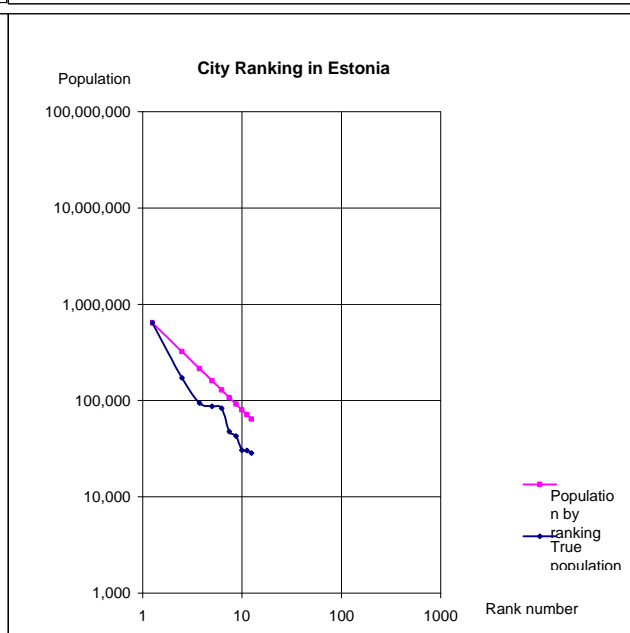
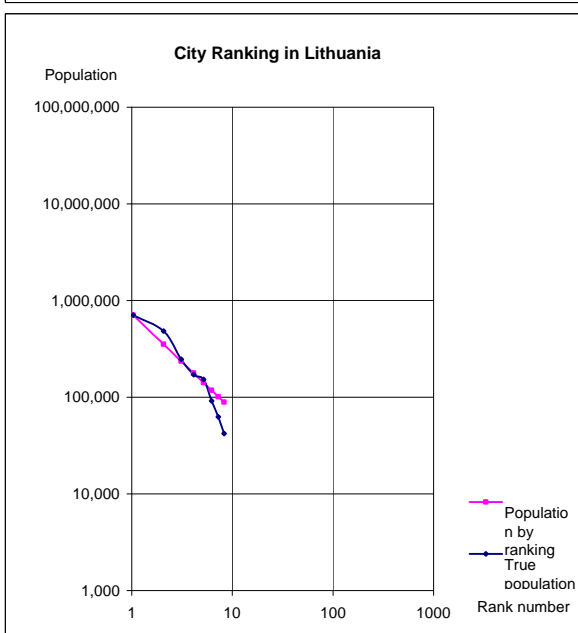
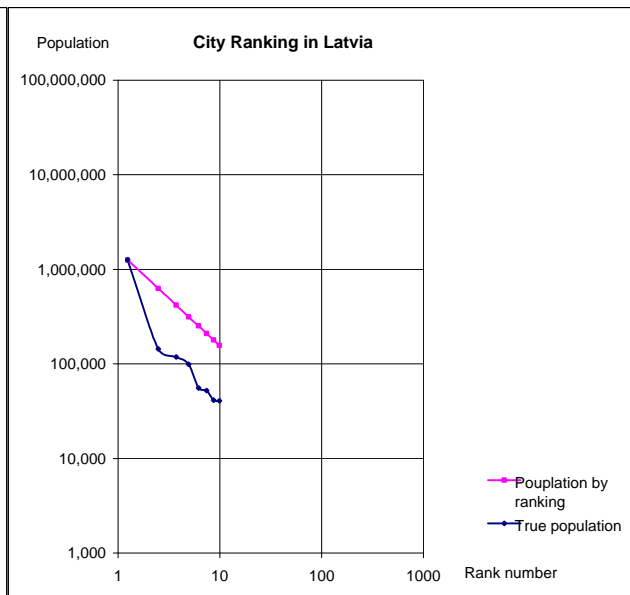
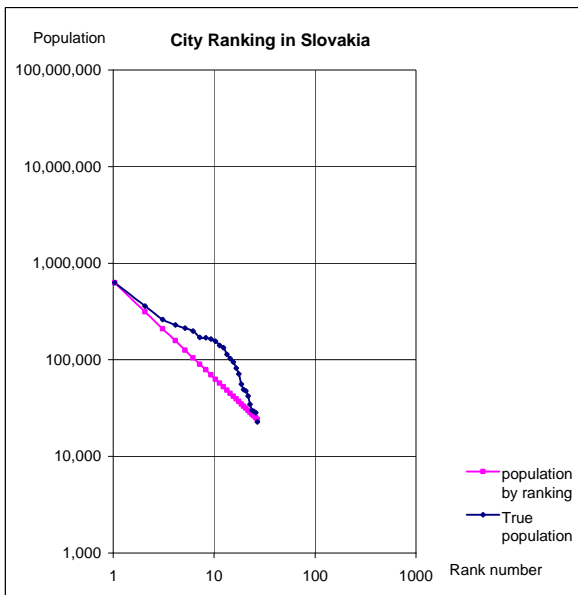


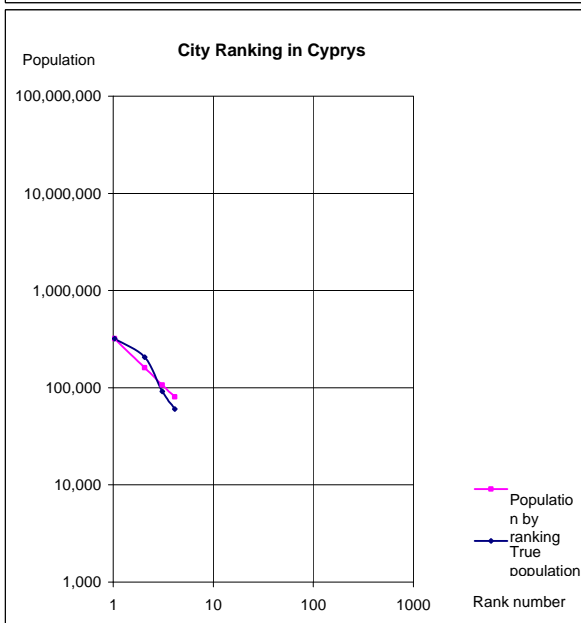
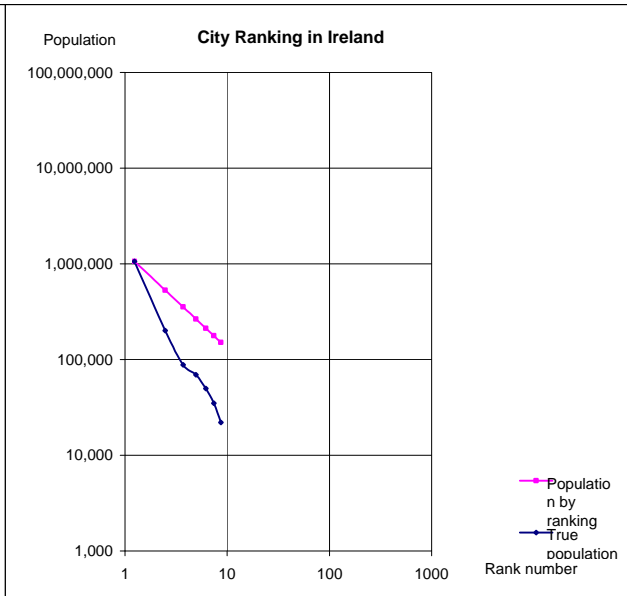
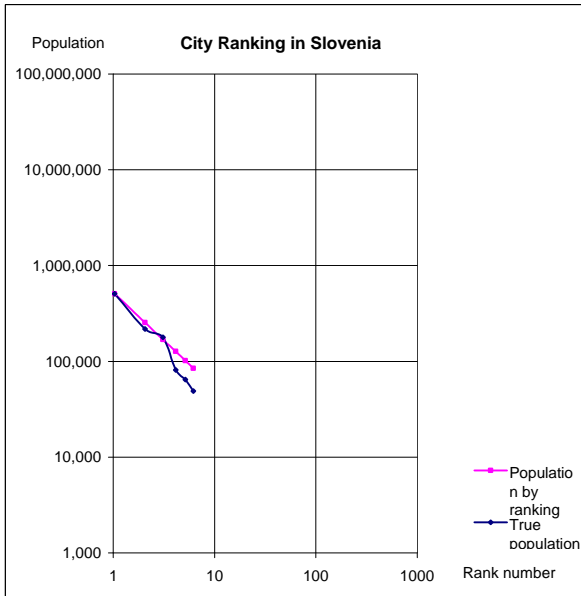


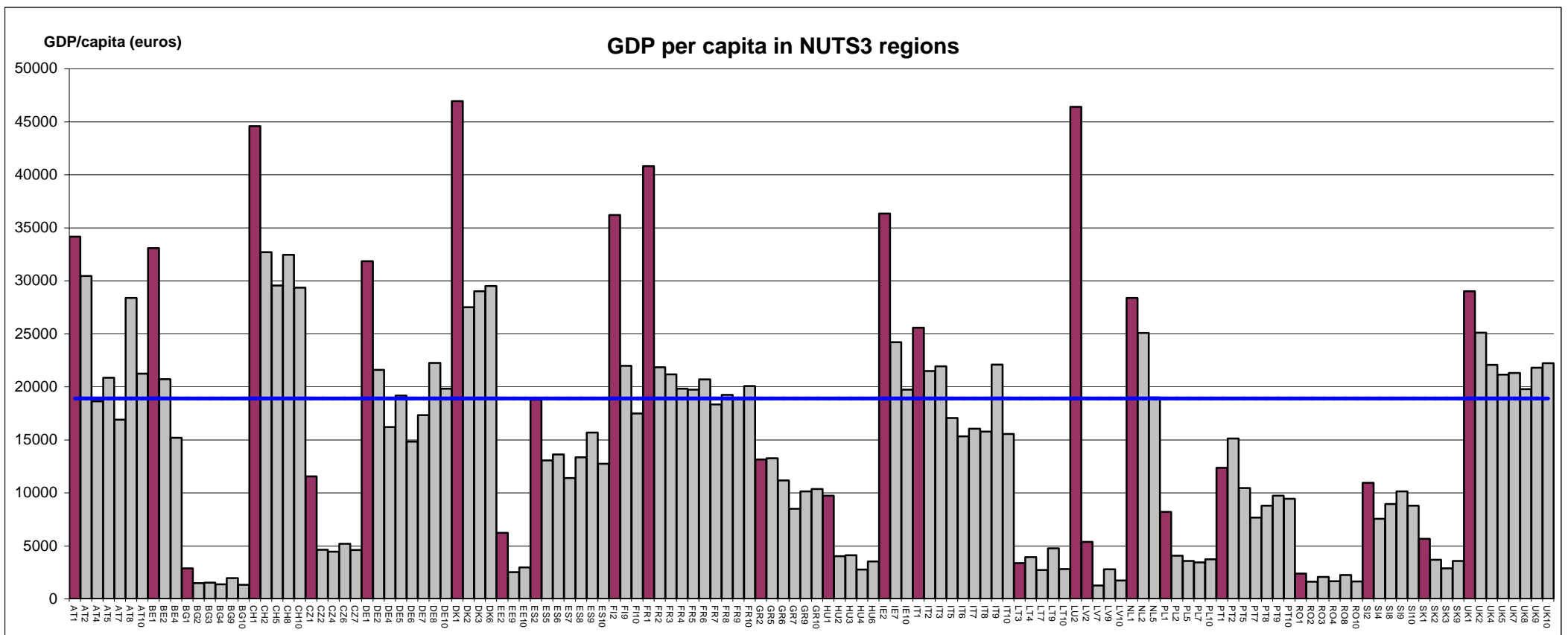






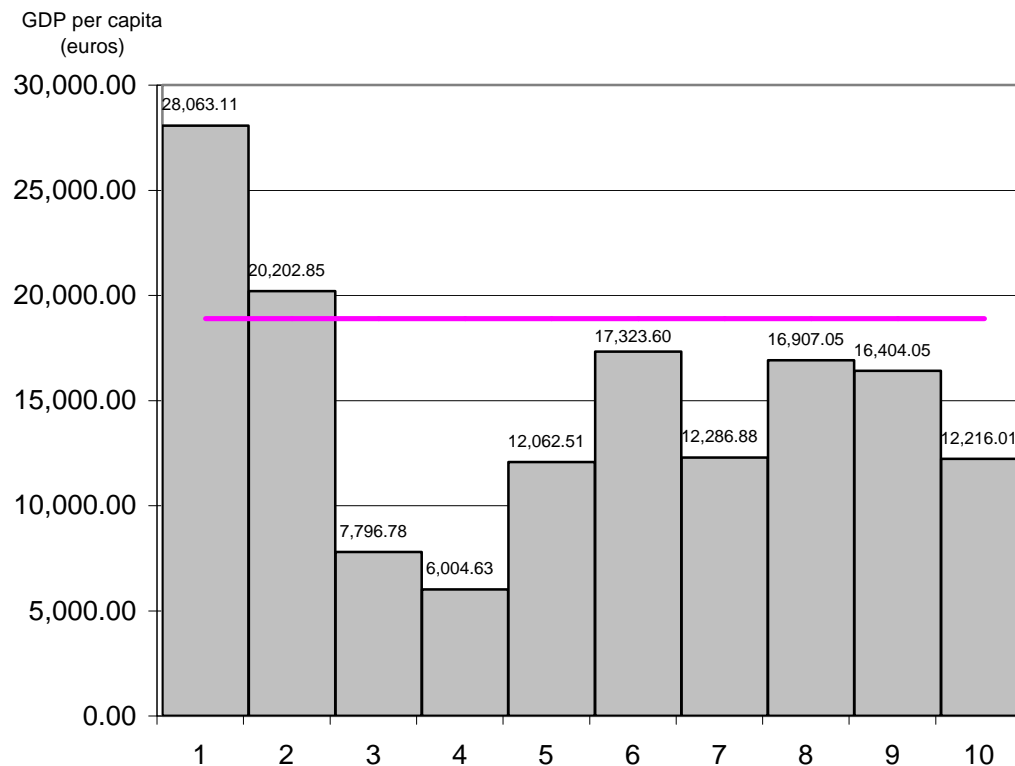






Annex C/ Graph1: Typology of land use, population density and share of urban population:

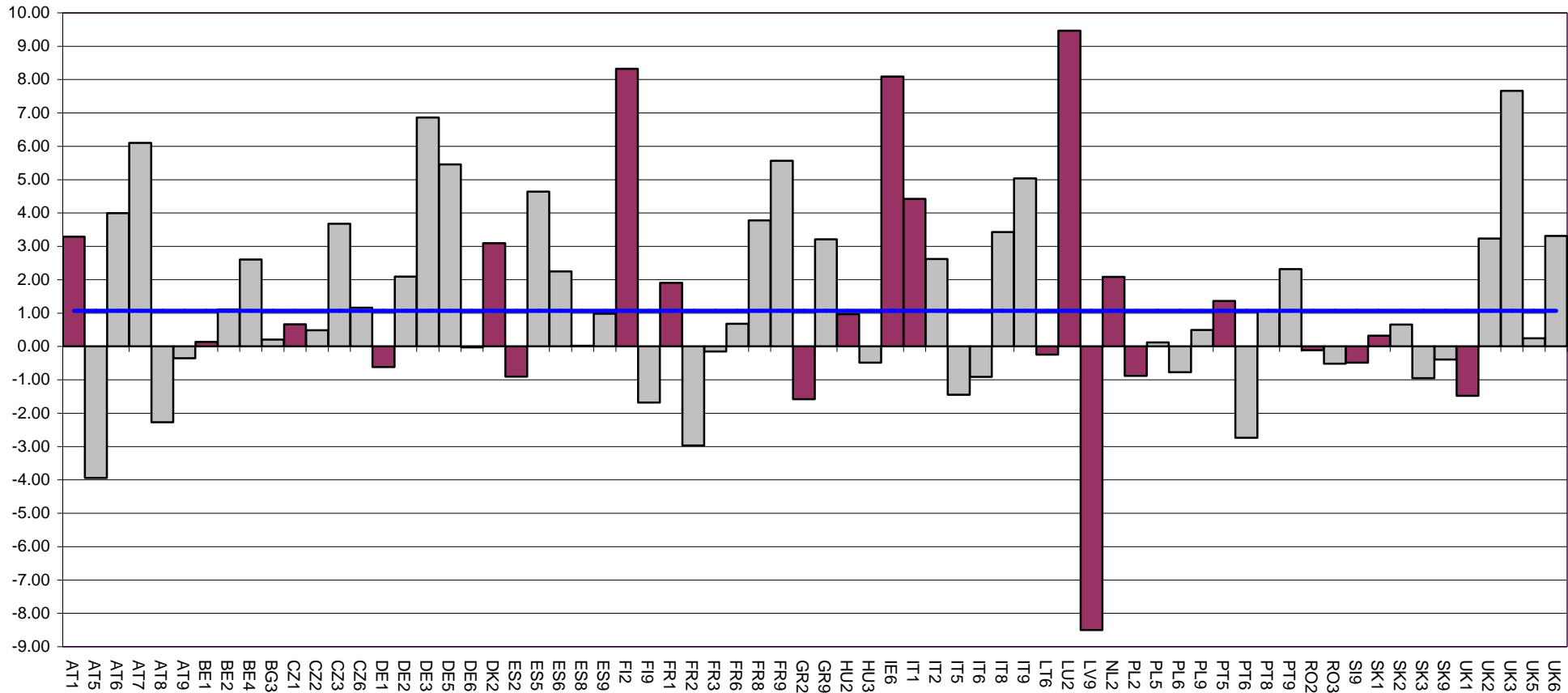
1. Only the share of artificial surface above average, population density (and possibly share of urban population) above average
2. Share of artificial surface (and possibly some other land use type) above average, population density (and possibly share of urban population) above average
3. Share of artificial surface (and possibly some other land use type) above average, share of urban population above average
4. Share of artificial surface (and possibly some other land use type) above average, population density and share of urban population below or equal to average
5. Share of agricultural land (and possibly wilderness) above average, population density (and possibly share of urban population) above average
6. Share of agricultural land (and possibly wilderness) above average, share of urban population above average
7. Share of agricultural land (and possibly wilderness) above average, population density and share of urban population below or equal to average
8. Only the share of wilderness above average, population density (and possibly share of urban population) above average
9. Only the share of wilderness above average, share of urban population above average
10. Only the share of wilderness above average, population density and share of urban population below or equal to average



Annex C, Graph2, Typology of land use, population density and share of urban population:

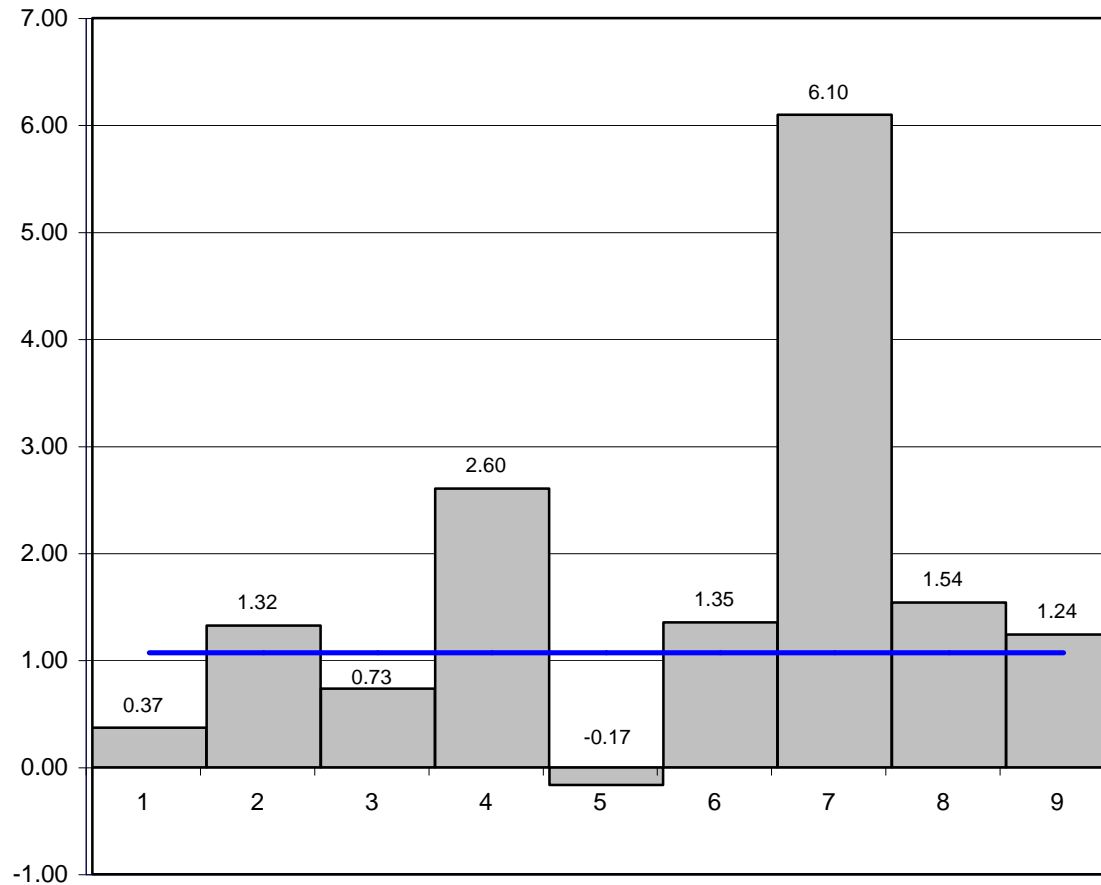
1. Only the share of artificial surface above average, population density (and possibly share of urban population) above average
2. Share of artificial surface (and possibly some other land use type) above average, population density (and possibly share of urban population) above average
3. Share of artificial surface (and possibly some other land use type) above average, share of urban population above average
4. Share of artificial surface (and possibly some other land use type) above average, population density and share of urban population below or equal to average
5. Share of agricultural land (and possibly wilderness) above average, population density (and possibly share of urban population) above average
6. Share of agricultural land (and possibly wilderness) above average, share of urban population above average
7. Share of agricultural land (and possibly wilderness) above average, population density and share of urban population below or equal to average
8. Only the share of wilderness above average, population density (and possibly share of urban population) above average
9. Only the share of wilderness above average, share of urban population above average
10. Only the share of wilderness above average, population density and share of urban population below or equal to average

Migratory balance / 1000 inhabitants



Annex C, Graph3, Typology of land use, population density and share of urban population:

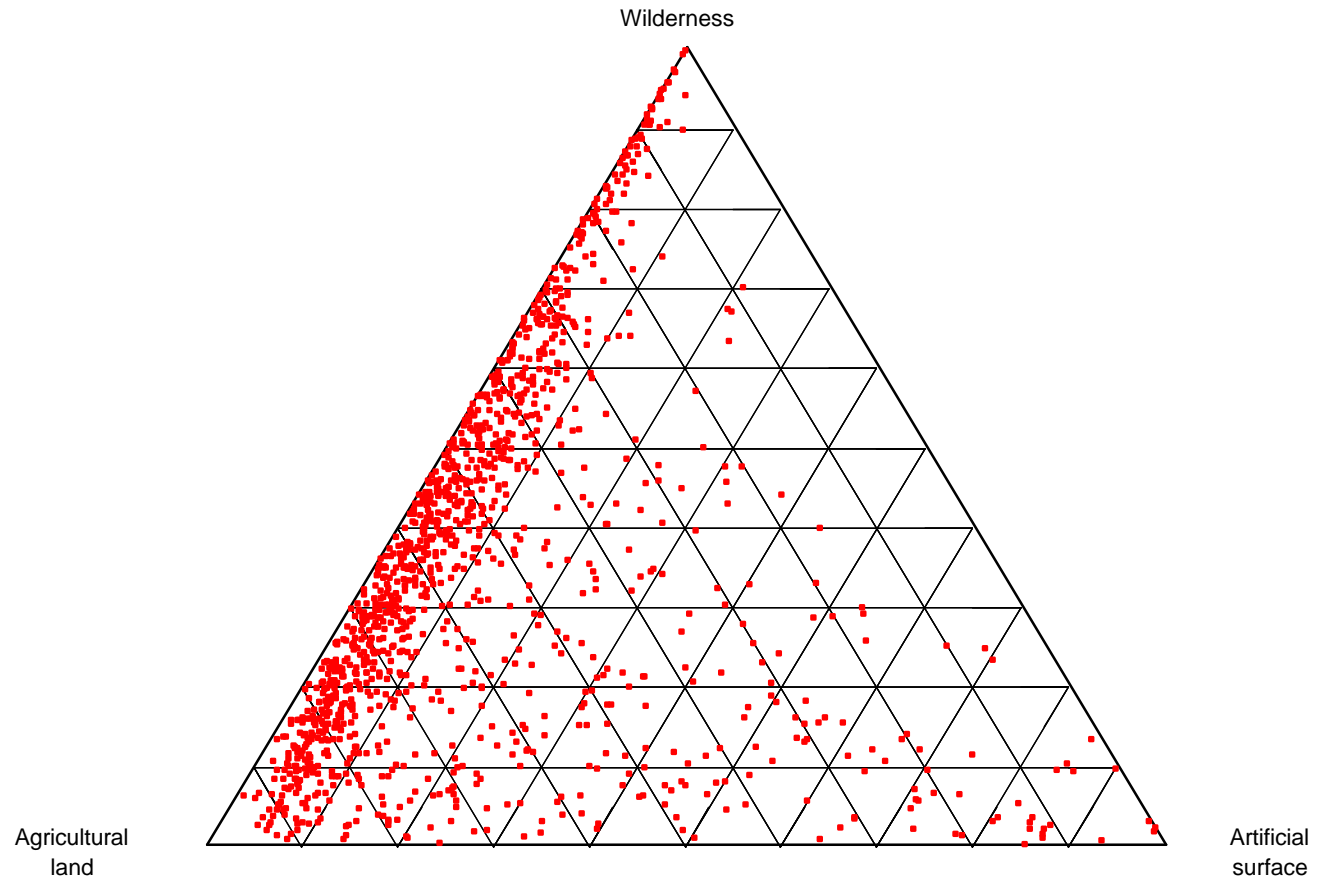
1. Only the share of artificial surface above average, population density (and possibly share of urban population) above average
2. Share of artificial surface (and possibly some other land use type) above average, population density (and possibly share of urban population) above average
3. Share of artificial surface (and possibly some other land use type) above average, share of urban population above average
4. Share of artificial surface (and possibly some other land use type) above average, population density and share of urban population below or equal to average
5. Share of agricultural land (and possibly wilderness) above average, population density (and possibly share of urban population) above average
6. Share of agricultural land (and possibly wilderness) above average, share of urban population above average
7. Share of agricultural land (and possibly wilderness) above average, population density and share of urban population below or equal to average
8. Only the share of wilderness above average, population density (and possibly share of urban population) above average
9. Only the share of wilderness above average, share of urban population above average
10. Only the share of wilderness above average, population density and share of urban population below or equal to average



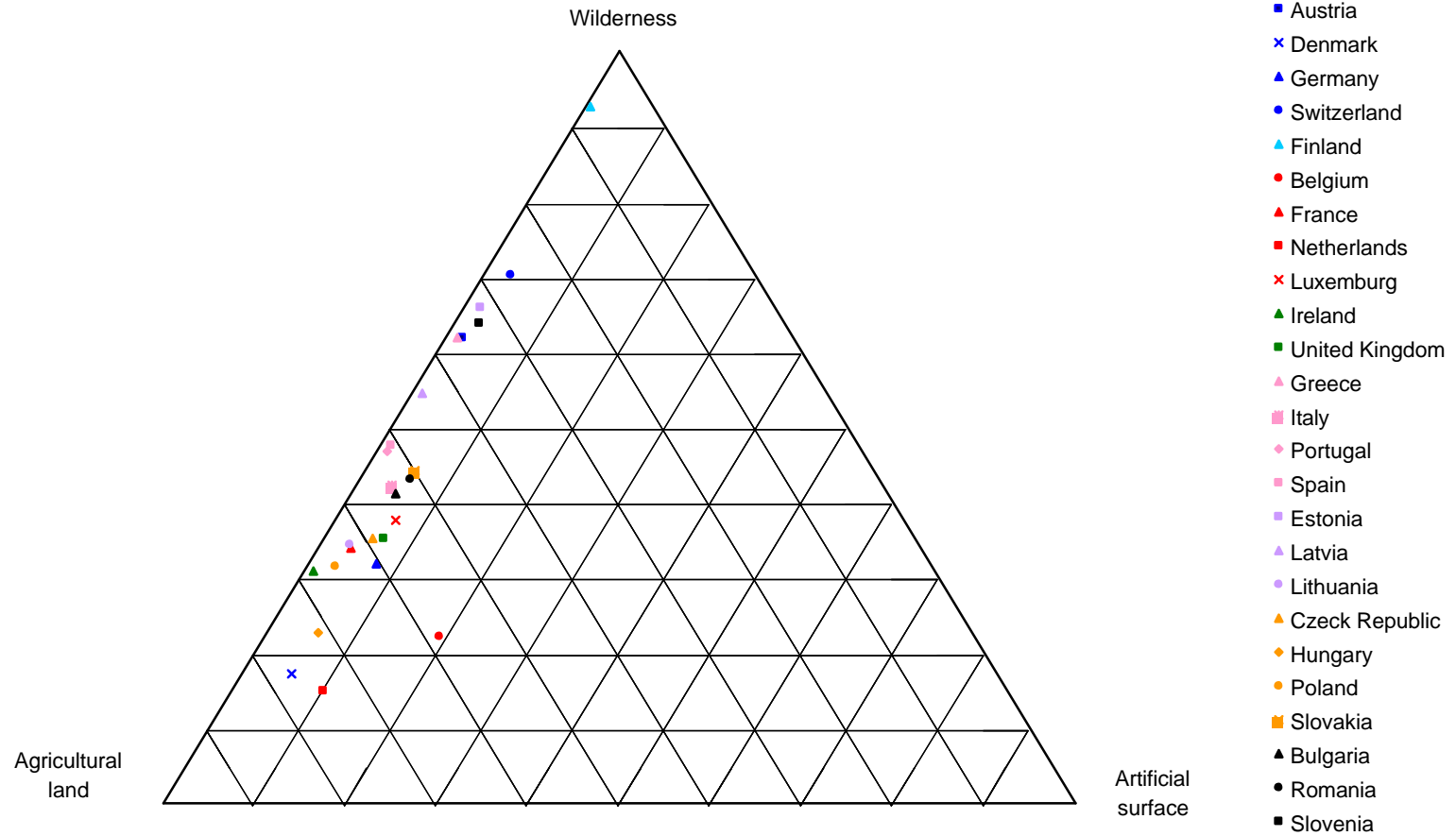
Annex C, Graph 4, Typology of land use, population density and share of urban population (Number of NUTS2 regions in the class):

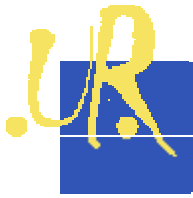
1. (21 regions) Only the share of artificial surface above average, population density (and possibly share of urban population) above average
2. (100 regions) Share of artificial surface (and possibly some other land use type) above average, population density (and possibly share of urban population) above average
3. (26 regions) Share of artificial surface (and possibly some other land use type) above average, share of urban population above average
4. (1 region) Share of artificial surface (and possibly some other land use type) above average, population density and share of urban population below or equal to average
5. (16 regions) Share of agricultural land (and possibly wilderness) above average, population density (and possibly share of urban population) above average
6. (30 regions) Share of agricultural land (and possibly wilderness) above average, share of urban population above average
7. (1 region) Share of agricultural land (and possibly wilderness) above average, population density and share of urban population below or equal to average
8. (16 regions) Only the share of wilderness above average, population density (and possibly share of urban population) above average
9. (46 regions) Only the share of wilderness above average, share of urban population above average

Division of land by land use types



Division of land use in countries





ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Map Set 1

August 2003

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- *Centre of Geographical Studies, University of Lisbon*
- *Department of Economics, University of Rome Tor Vergata*
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Subcontractors:

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- *ÖIR, Austrian Institute for Regional Studies and Spatial Planning, Vienna*
- *Nordregio, Stockholm*

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- *VATI, Budapest*

Webpage and further contact info of the project:

<http://www.hut.fi/Units/Separate/YTK/research/ur/index.html>



The content of this report does not necessarily reflect
the opinion of the ESPON Monitoring Committee

ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report
August 2003

MAP SET 1: Maps selected for presentation purposes

Map I : European land cover and population density

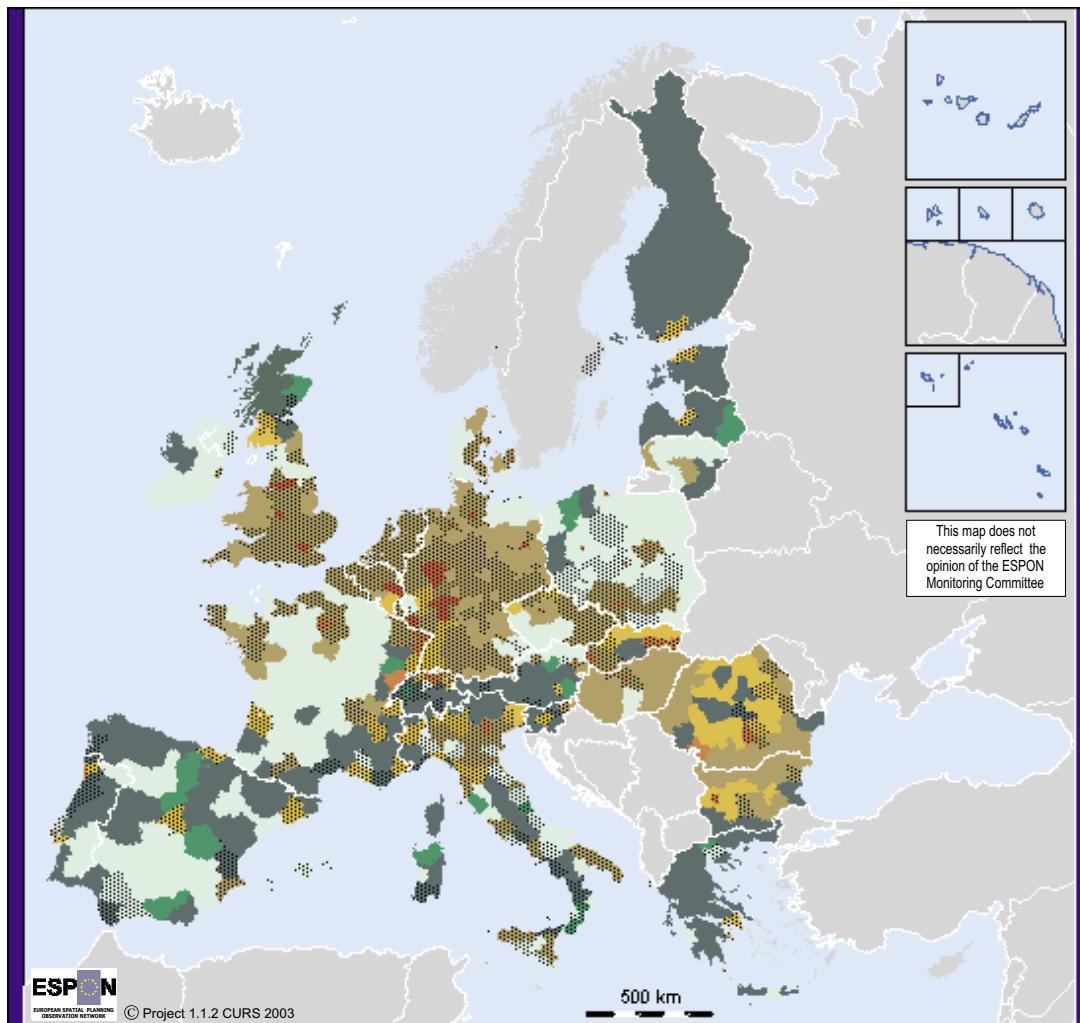
Map II : Population density and the share of urban population / three categories

Map III : Urban-rural typology

Map IV: Urban-rural typology and major cities

Map V: Urban-rural typology and smaller cities

Map I: European land cover and population density



Shares of land use types and population density in relation to EU average

- Only the share of artificial surface above average
- Share of artificial surface and agricultural land above average
- Share of artificial surface and "wilderness" above average
- Only the share of agricultural land above average
- Share of agricultural land and "wilderness" above average
- Only the share of "wilderness" above average
- Population density above or equal to average

Average values in Europe are:

Share of artificial surface: 3,74%

Share of agricultural land: 52,48%

Share of "wilderness" : 43,78%

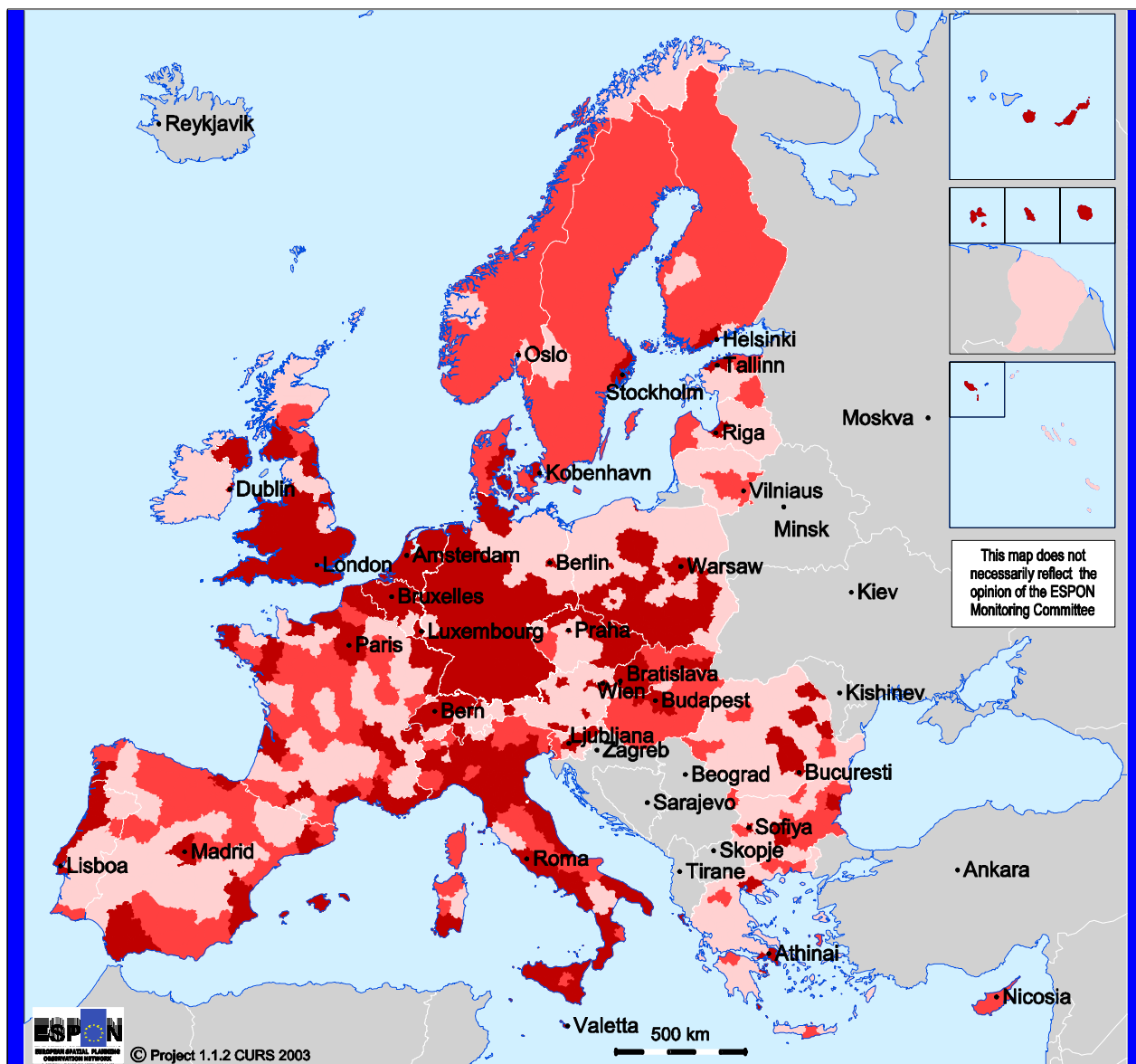
Population density: 107 inhabitants/km²

© EuroGeographics Association for the administrative boundaries

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

Map II: Population density and the share of FUA population



© EuroGeographics Association for the administrative boundaries

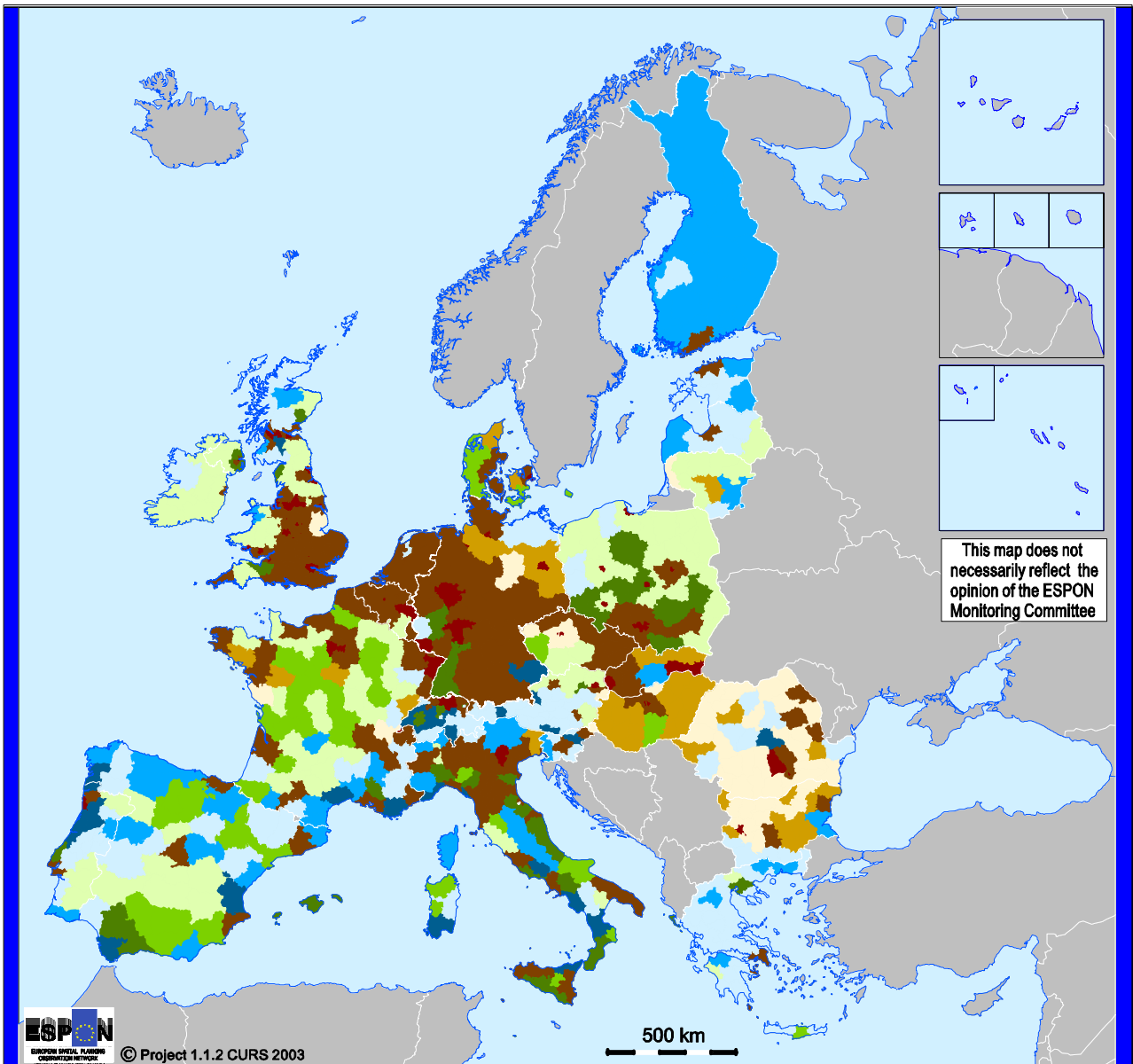
Typology of population density and FUA population

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

- 1. Urban, densely populated and high urban integration
- 2. Urban-rural, densely populated and high urban integration
- 3. Urban-rural, not densely populated but high urban integration

Source: ESPON Data Base

Map III: Urban-rural typology



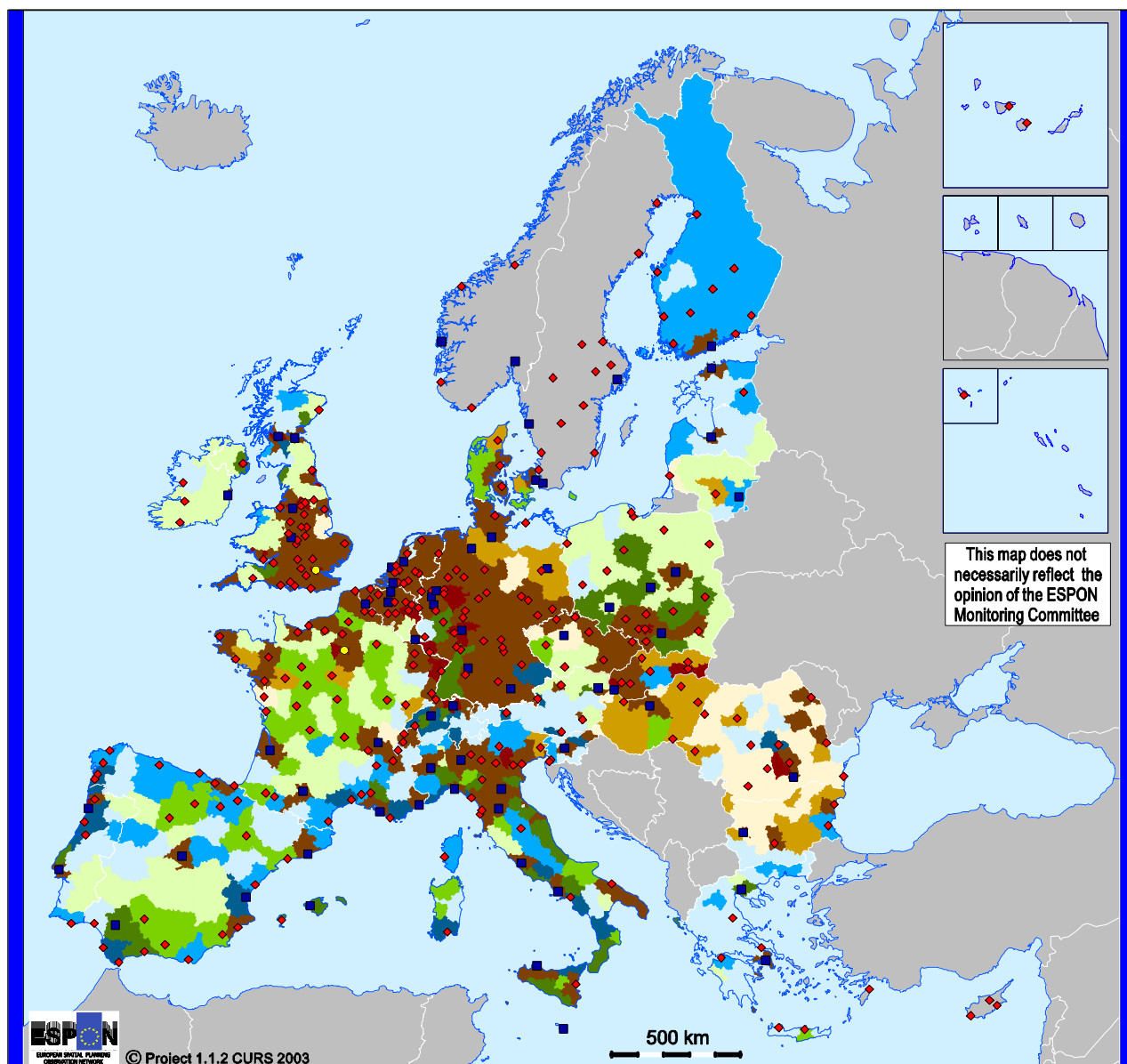
Typology of land use, population density and FUA population

- 1. Urban, densely populated and high urban integration
- 2. Urban-rural, densely populated and high urban integration
- 3. Urban-rural, not densely populated but high urban integration
- 4. Urban-peripheral, not densely populated and low urban integration
- 5. Rural-urban, densely populated and high urban integration
- 6. Rural-urban, not densely populated but high urban integration
- 7. Rural-peripheral, not densely populated and low urban integration
- 8. Peripheral-urban, densely populated and high urban integration
- 9. Peripheral-rural, not densely populated but high urban integration
- 10. Peripheral, not densely populated and low urban integration

Origin of data: EU15 and CC's: Eurostat
 Norway and Switzerland: National Statistical Offices

Source: ESPON Data Base

Map IV: Urban-rural typology and major cities



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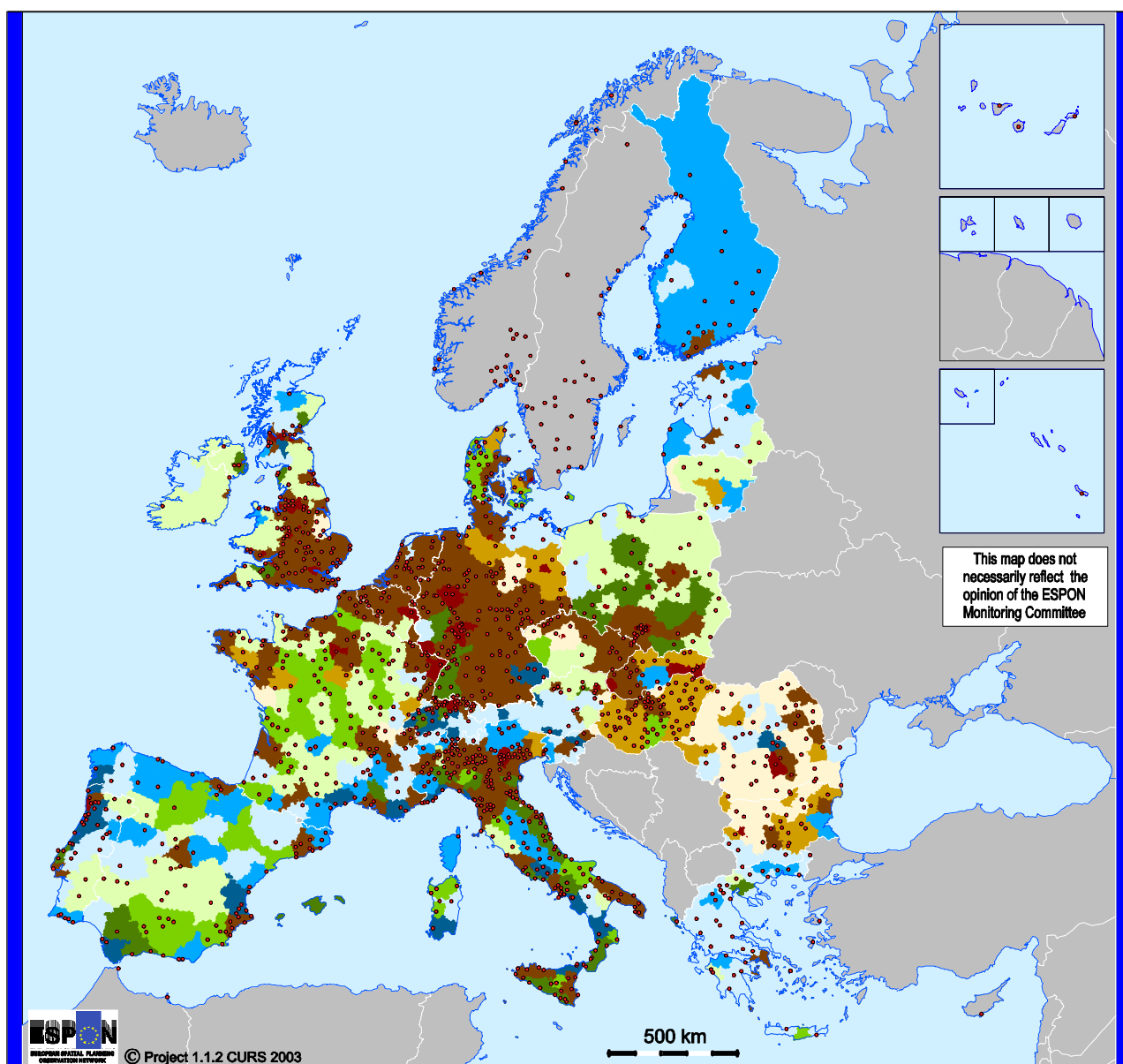
Typology of land use, population density and FUA population

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

- 1. Urban, densely populated and high urban integration
 - 2. Urban-rural, densely populated and high urban integration
 - 3. Urban-rural, not densely populated but high urban integration
 - 4. Urban-peripheral, not densely populated and low urban integration
 - 5. Rural-urban, densely populated and high urban integration
 - 6. Rural-urban, not densely populated but high urban integration
 - 7. Rural-peripheral, not densely populated and low urban integration
 - 8. Peripheral-urban, densely populated and high urban integration
 - 9. Peripheral-rural, not densely populated but high urban integration
 - 10. Peripheral, not densely populated and low urban integration
- ◆ National or transnational level FUA
 - European level FUA
 - Global level FUA

Map V: Urban-rural typology and smaller cities



Typology of land use, population density and FUA population

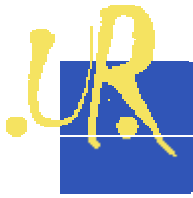
- 1. Urban, densely populated and high urban integration
- 2. Urban-rural, densely populated and high urban integration
- 3. Urban-rural, not densely populated but high urban integration
- 4. Urban-peripheral, not densely populated and low urban integration
- 5. Rural-urban, densely populated and high urban integration
- 6. Rural-urban, not densely populated but high urban integration
- 7. Rural-peripheral, not densely populated and low urban integration
- 8. Peripheral-urban, densely populated and high urban integration
- 9. Peripheral-rural, not densely populated but high urban integration
- 10. Peripheral, not densely populated and low urban integration

● Regional or local level FUA

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Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base



ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Map Set 2

August 2003

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- *Taurus Institute, University of Trier*
- *European Agency Territories and Synergies, Strasbourg*
- *Centre of Geographical Studies, University of Lisbon*
- *Department of Economics, University of Rome Tor Vergata*
- *Regional Development and Policy Research Unit, University of Macedonia*
- *The National Institute for Regional and Spatial Analysis, NUI Maynooth*

Subcontractors:

- *Mcrit sl., Barcelona*
- *ÖIR, Austrian Institute for Regional Studies and Spatial Planning, Vienna*
- *Nordregio, Stockholm*

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- *VATI, Budapest*

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<http://www.hut.fi/Units/Separate/YTK/research/ur/index.html>



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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report August 2003

MAP SET 2: Maps used for analytical purposes

Map 1: Urban population density based on national classifications

Map 2: Rural population density based on national classifications

Map 3: Urban-rural population density based on national classifications

Map 4: Share of agricultural land (% of the total NUTS3-area)

Map 5: Share of forests and semi-natural areas (% of the total NUTS3-area)

Map 6: Share of forests (% of the total NUTS3-area)

Map 7: Share of artificial surface (% of the total NUTS3-area)

Map 8: Artificial land (km²) per capita

Map 9: Population density

Map 10: Population density and the share of FUA population / four categories at NUTS3-level

Map 11: Population density and the share of FUA population / four categories

Map 12: FUA ranking, population density and the share of FUA population / 16 categories

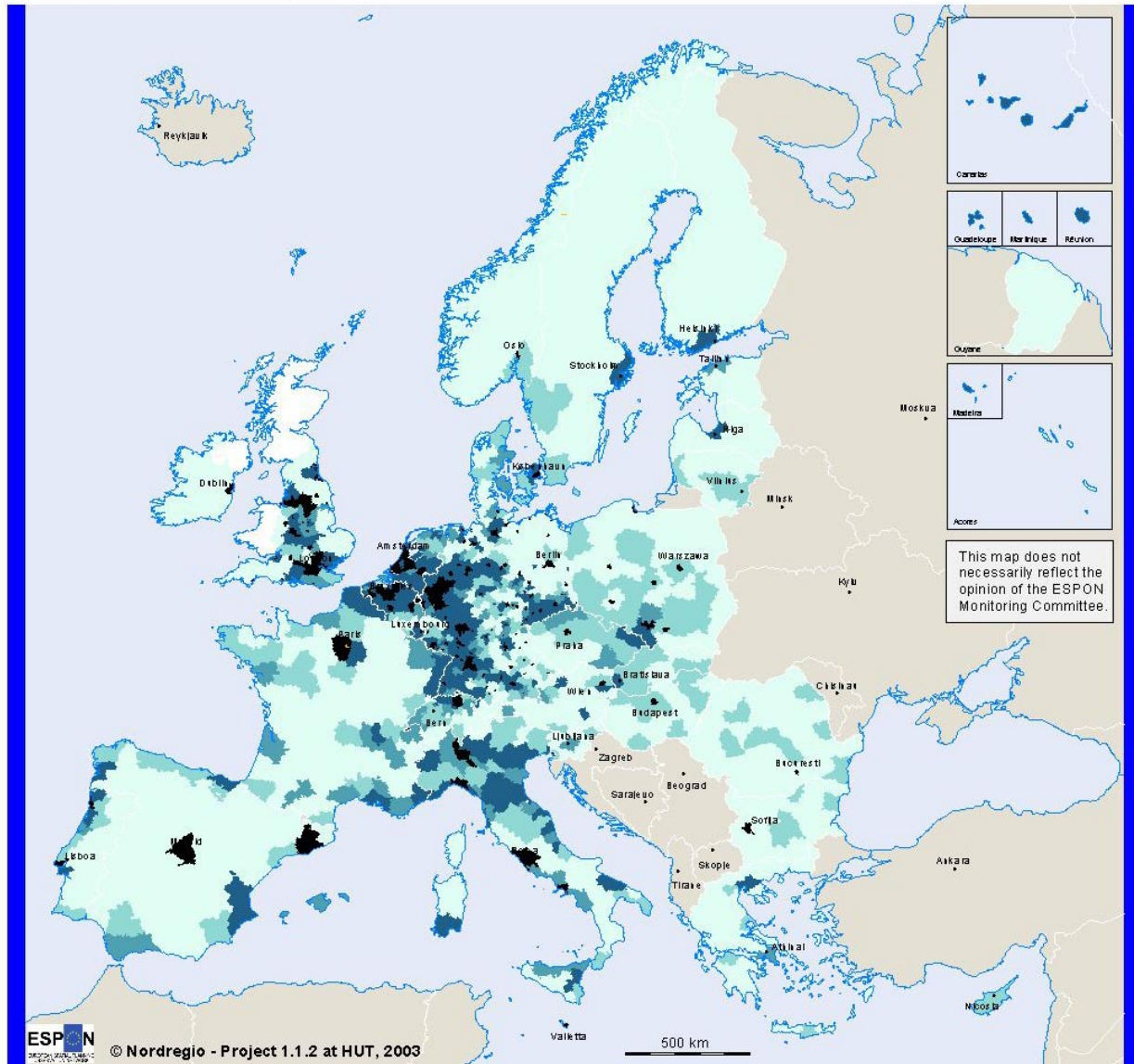
Map 13: FUA ranking, population density and the share of FUA population / 9 categories

Map 14: Combination of land use type, population density and the share of FUA population / 24 categories

Map 15: Combination of land use type, population density and the share of FUA population / 12 categories

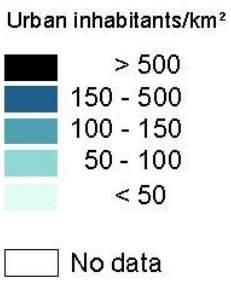
Map 16: Urban-rural typology, test version at NUTS2-level

Urban population density based on national classifications



ESPOON
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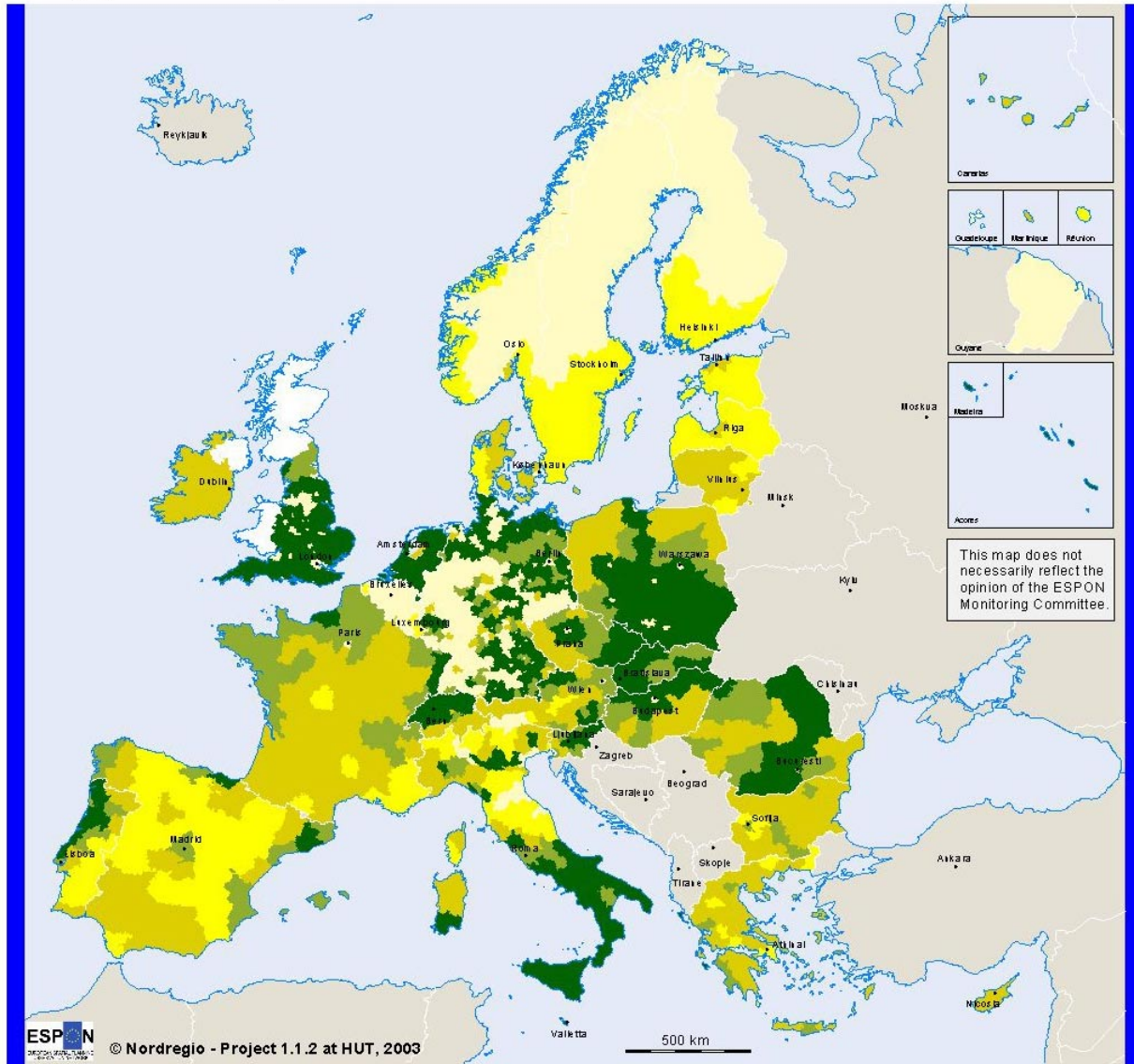


Due to data being based on national classifications, figures between countries are not comparable.

Geographical Base: Eurostat GISCO
Origin of data: National Statistical Offices
Source: Nordregio

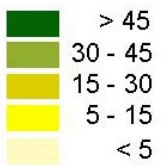
Map 1

Rural population density based on national classifications



ESPON
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Rural inhabitants/km²



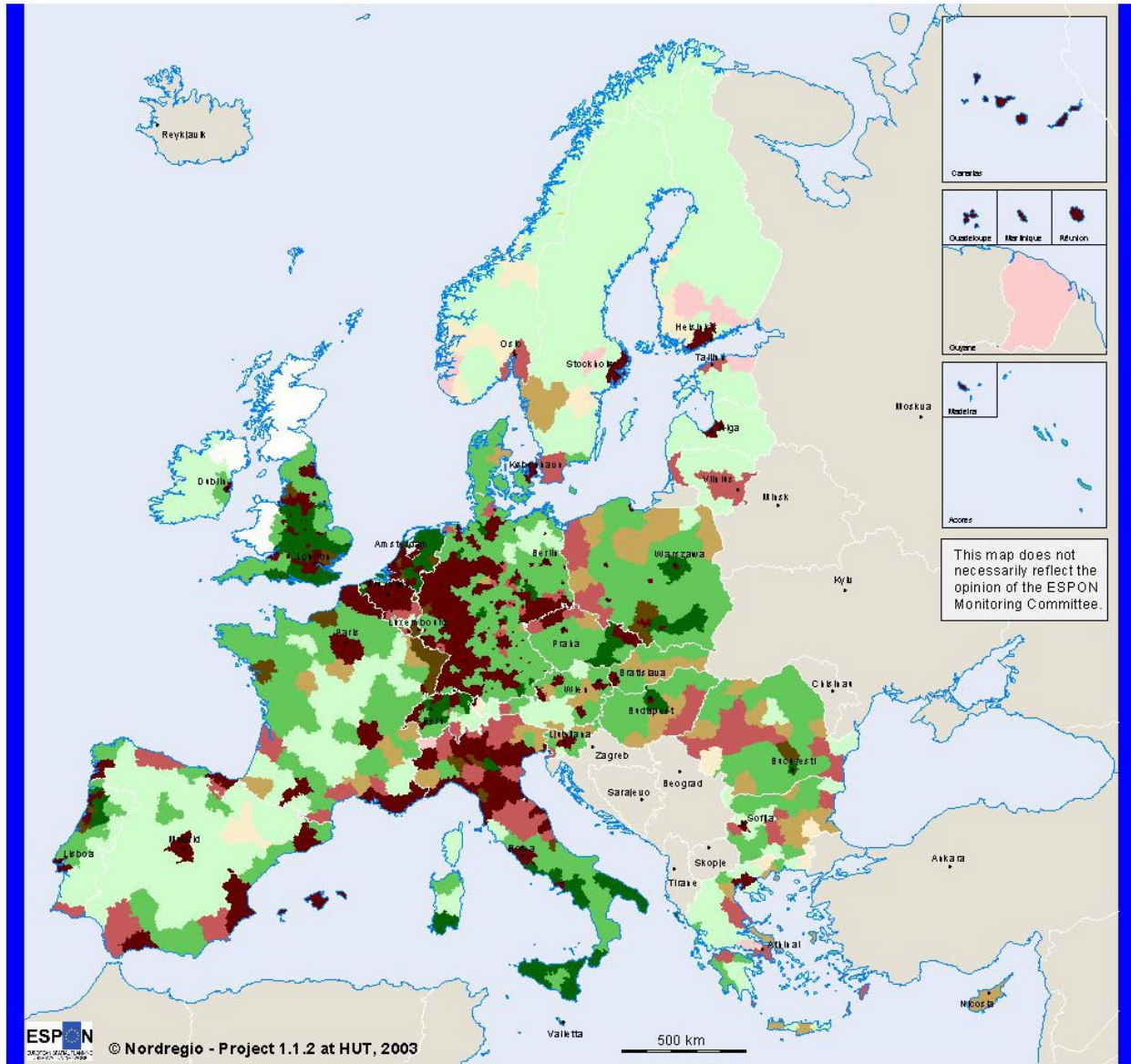
No data

Due to data being based on national classifications, figures between countries are not comparable.

Geographical Base: Eurostat GISCO
Origin of data: National Statistical Offices
Source: Nordregio

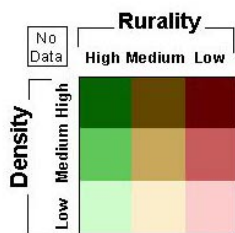
Map 2

Urban - rural population in Europe based on national classifications



ESPON
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Geographical Base: Eurostat GISCO
Origin of data: National Statistical Offices
Source: Nordregio



NUTS 3 regions:

Predominantly urban

- Densely populated
- Medium density
- Sparsely populated

Intermediate

- Densely populated
- Medium density
- Sparsely populated

Predominantly rural

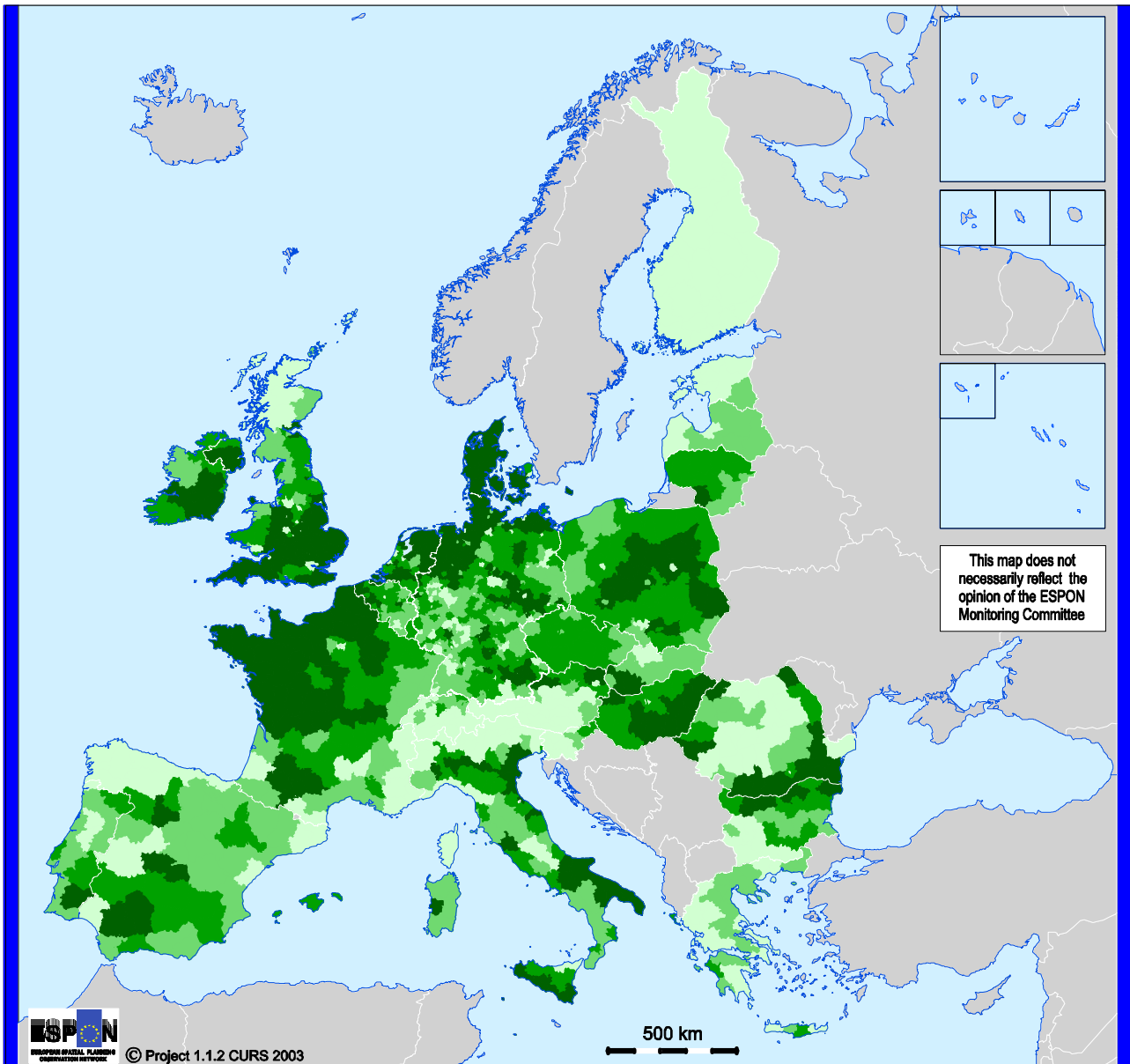
- Densely populated
- Medium density
- Sparsely populated

Rurality:
Share of rural population, index country average = 100
High: > 110, medium: 90 - 110, low: < 90

Density:
Population density (inhabitants/km²)
High: > 150, medium: 50 - 150, low: < 50

Map 3

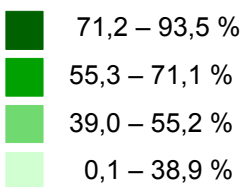
Map 4: Share of agricultural land (% of the total NUTS3-area)



© EuroGeographics Association for the administrative boundaries

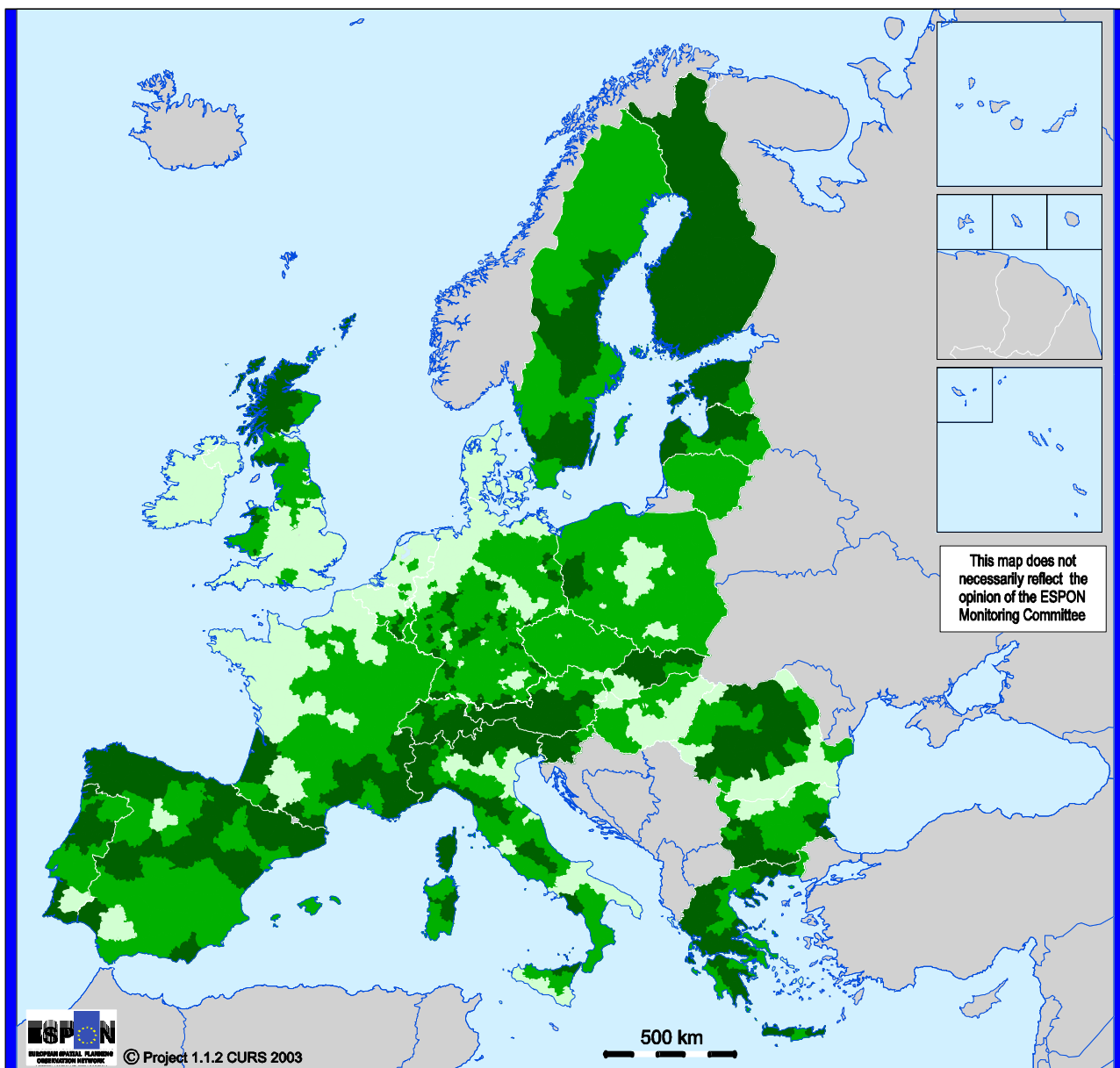
Share of agricultural land in equal count classes (% of total NUTS3-area)

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices



Source: ESPON Data Base

Map 5: Share of forests and semi-natural areas (% of the total NUTS3-area)



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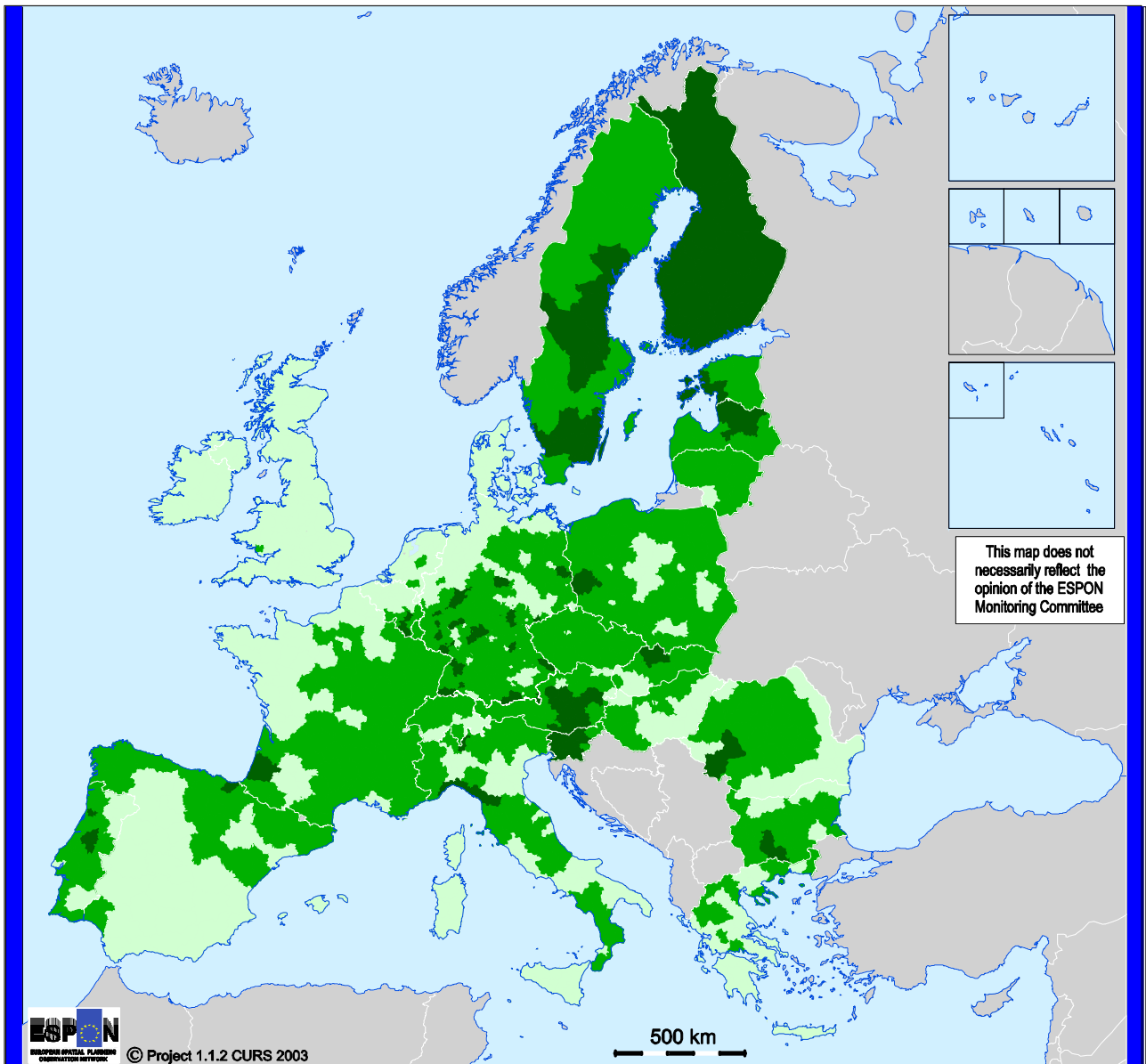
Share of forests and semi-natural areas (% of total NUTS3-area)

Origin of data: EU15 and CC's: Eurostat
 Norway and Switzerland: National Statistical Offices

- 50 – 100 %
- 20 – 49,9%
- 0,1 – 19,9%

Source: ESPON Data Base

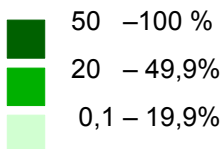
Map 6: Share of forests (% of the total NUTS3-area)



© EuroGeographics Association for the administrative boundaries

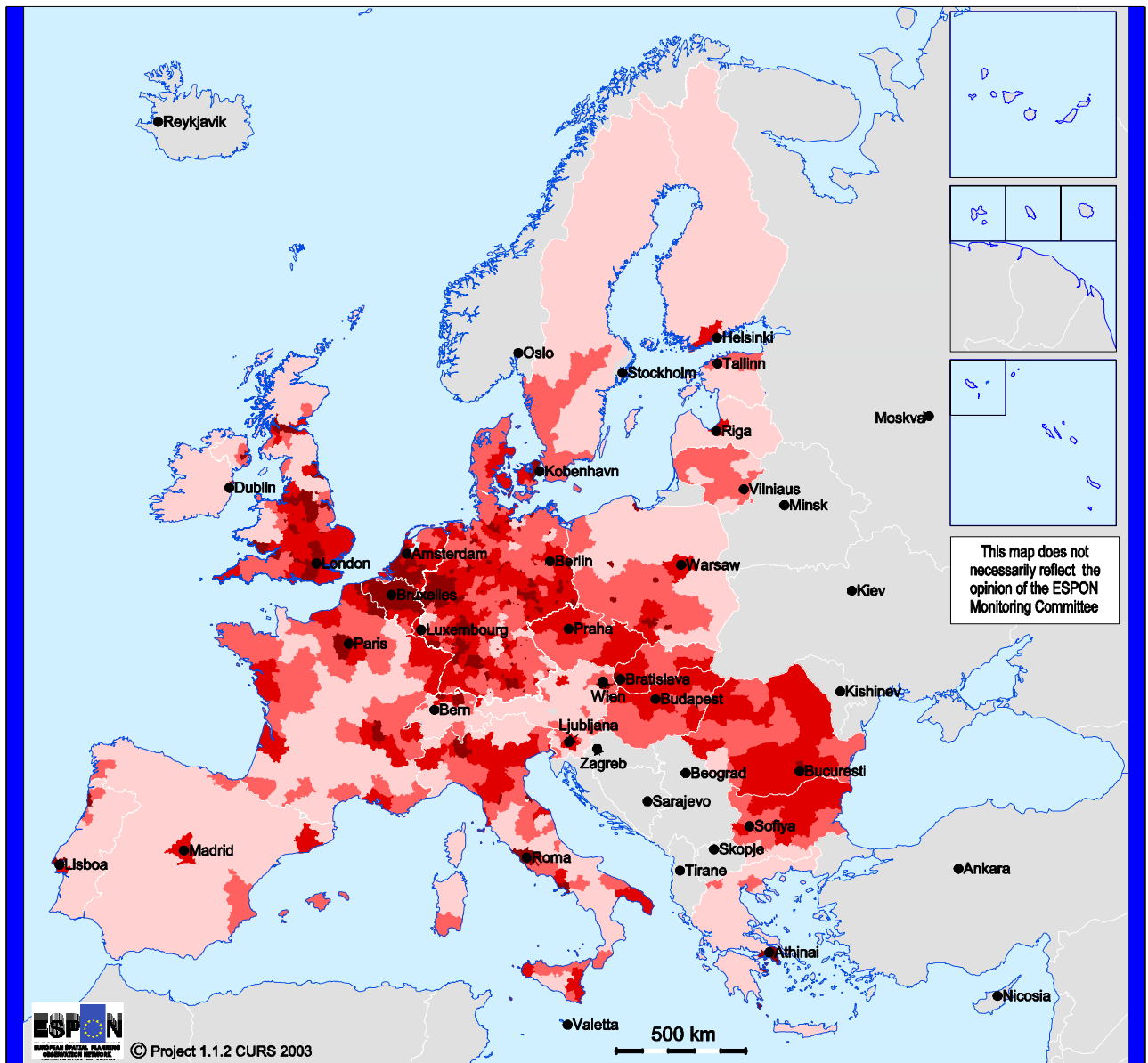
Share of forests (% of total NUTS3-area)

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National
Statistical Offices



Source: ESPON Data Base

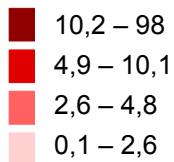
Map 7: Share of artificial surface (% of the total NUTS3-area)



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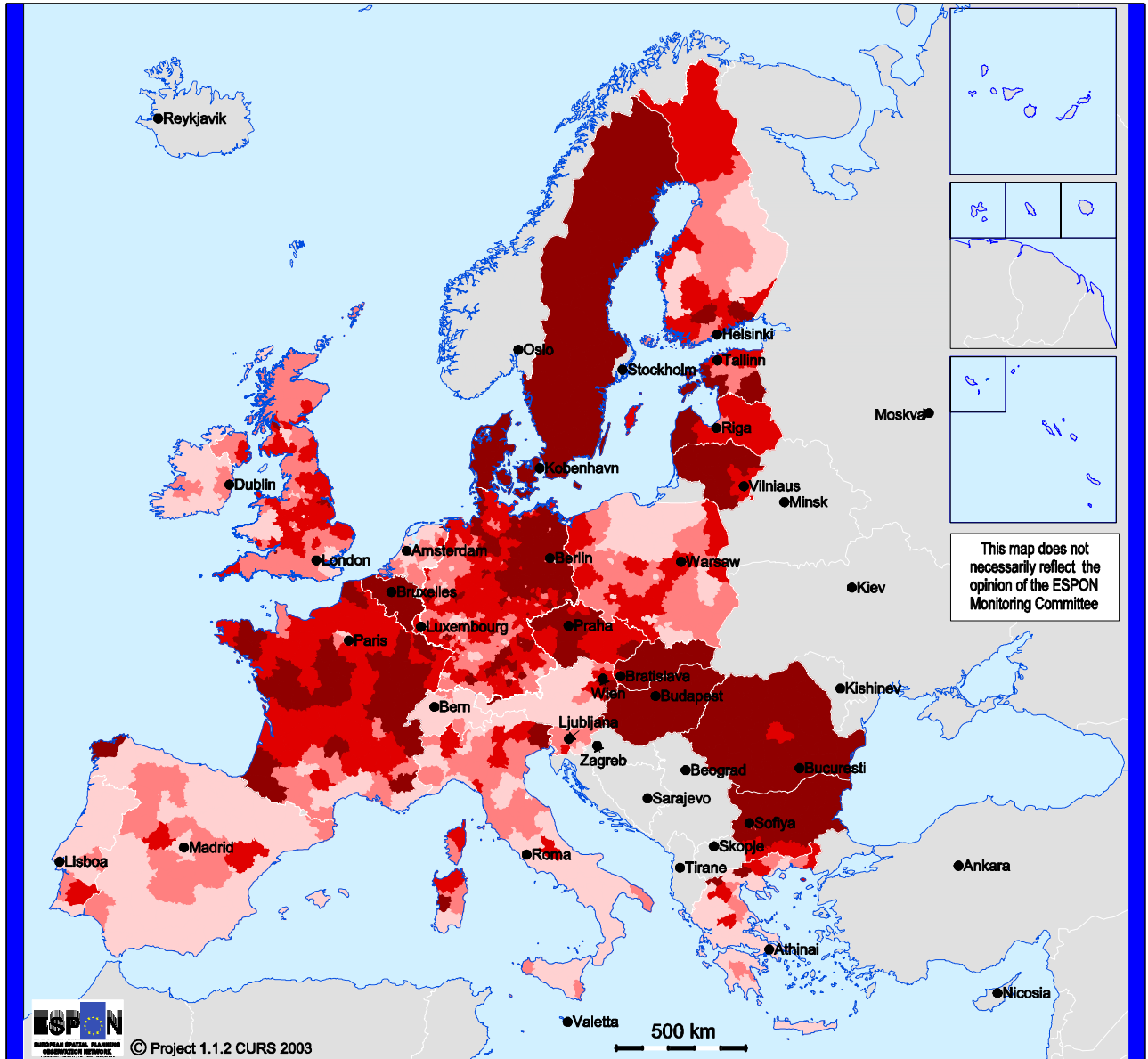
Share of artificial surface (% of the total NUTS3-area)

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices



Source: ESPON Data Base

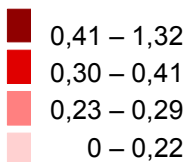
Map 8: Artificial surface per capita



© EuroGeographics Association for the administrative boundaries

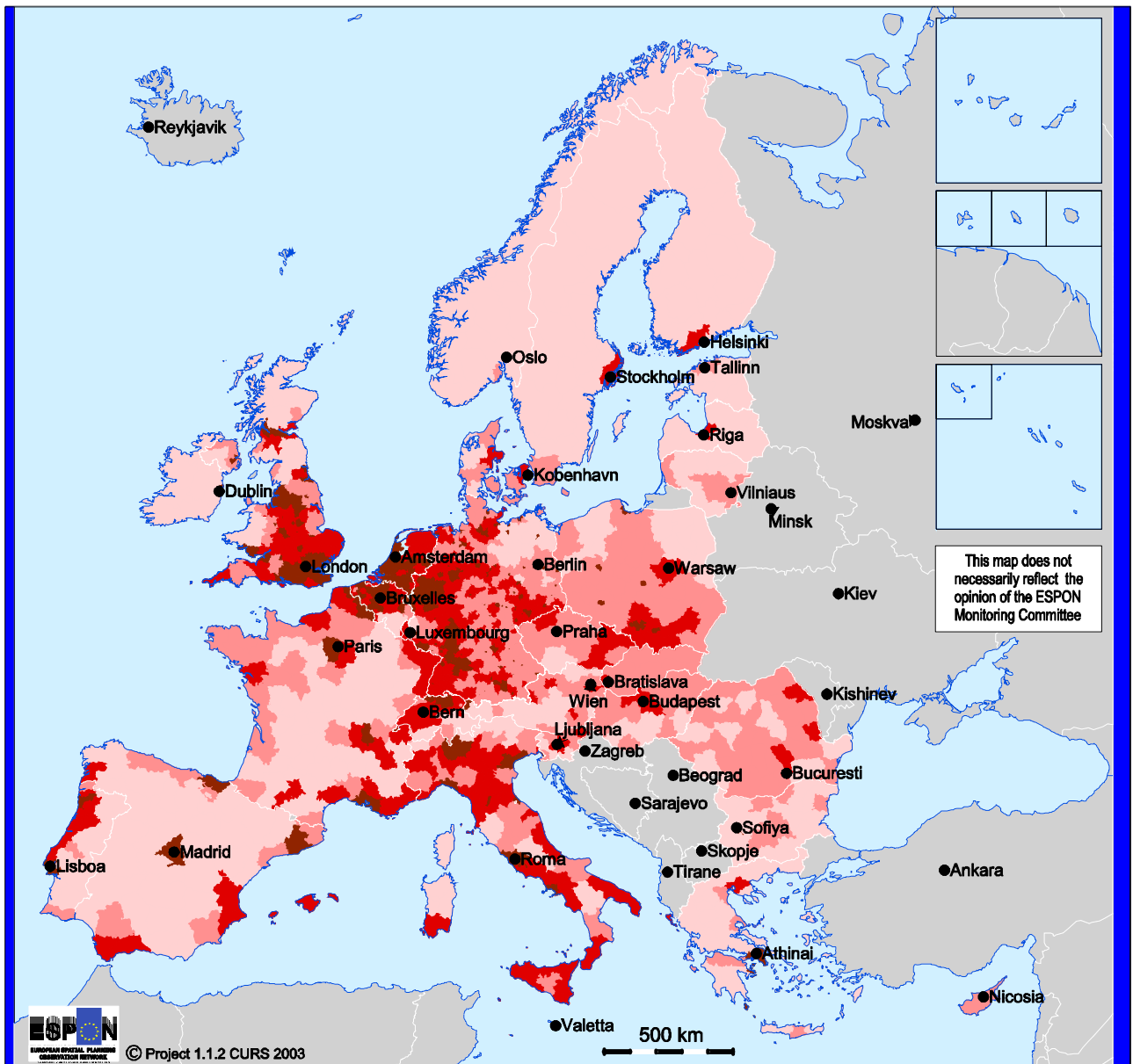
Origin of data: EU15 and CC's: Eurostat
 Norway and Switzerland: National Statistical Offices

Artificial surface per 1000 inhabitants (km²)



Source: ESPON Data Base

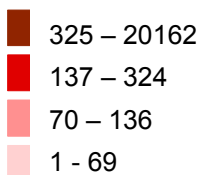
Map 9: Population density



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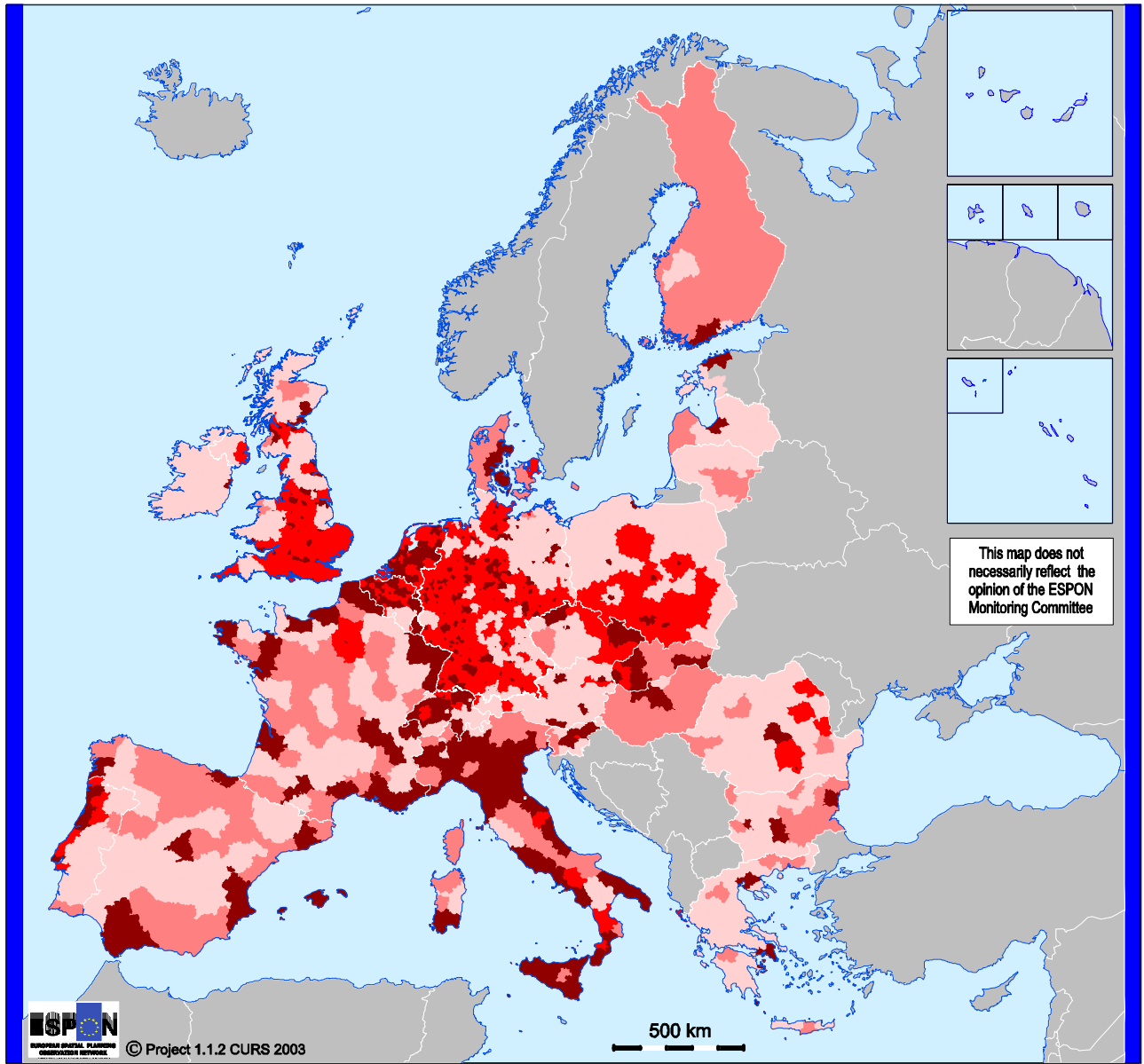
Population density in NUTS3 regions (inhabitants/km²)

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National
Statistical Offices



Source: ESPON Data Base

Map 10: Population and share of FUA population, 4 categories at NUTS3-level



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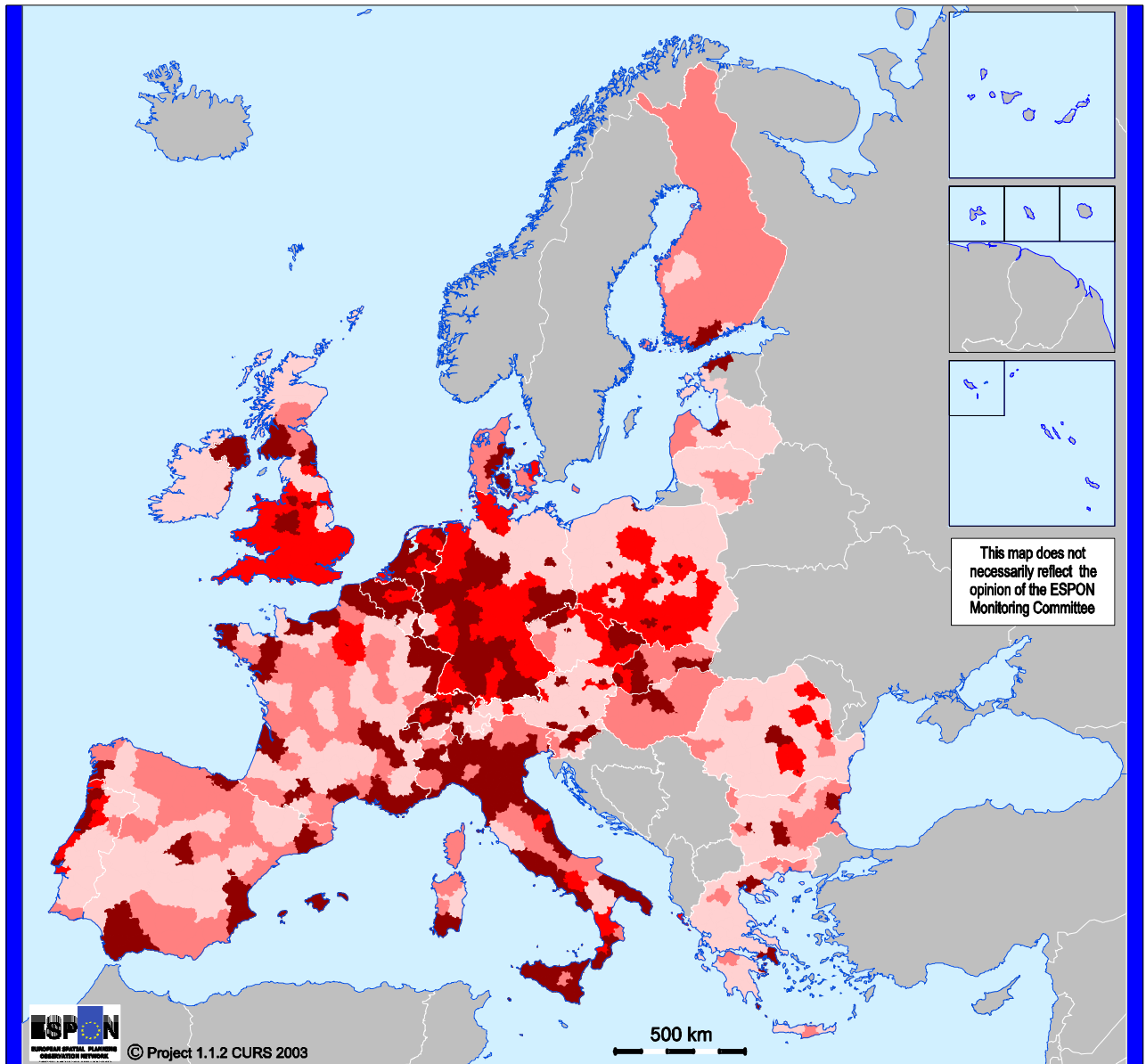
Population density and share of population living in FUAs / 4 categories

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

- Population density and share of FUA population above average
- Only population density above average
- Only the share of FUA population above average
- Population density and share of FUA population below or equal to average

Source: ESPON Data Base

Map 11: Population and share of FUA population / four categories



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Population density and share of population living in FUAs / 4 categories at NUTS3- and NUTS2-level

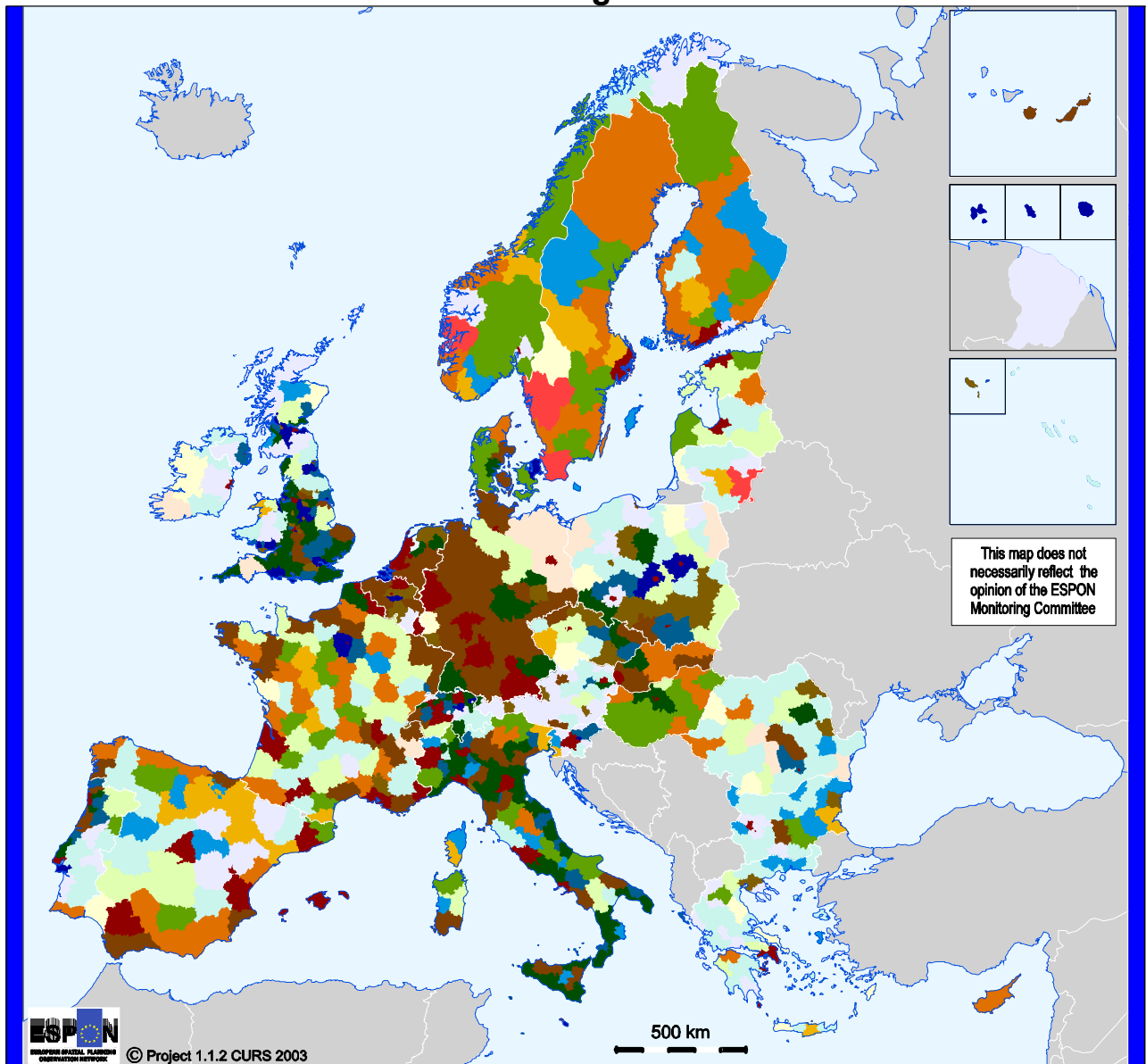
Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

- Population density and share of FUA population above average
- Only population density above average
- Only the share of FUA population above average
- Population density and share of FUA population below or equal to average

Source: ESPON Data Base

Note: in Belgium, Germany and The Netherlands the area unit is NUTS2.

Map 12: FUA ranking, population density and the share of FUA population / 16 categories



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FUA ranking, population density and the share of urban population in 16 categories

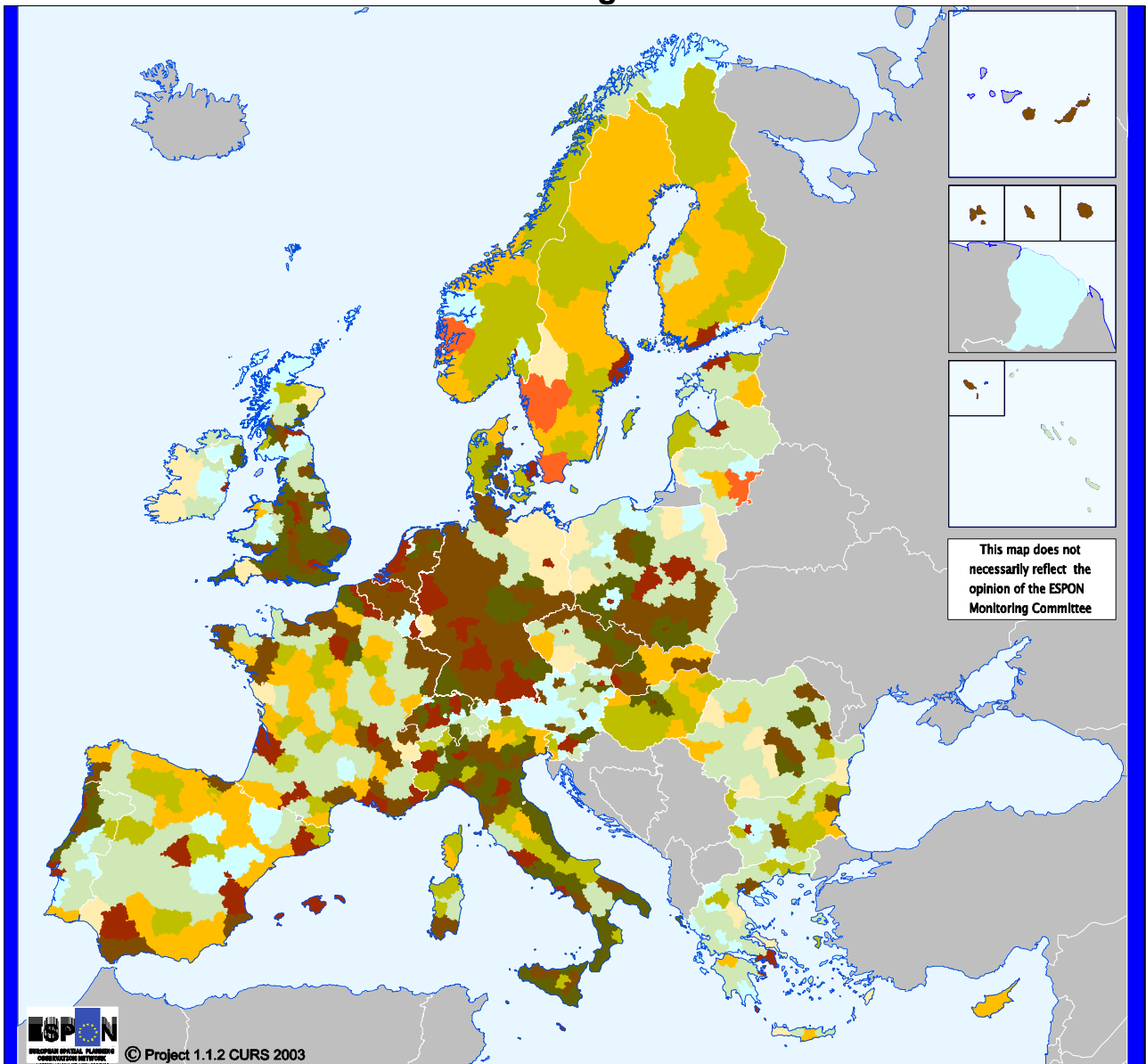
Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

- 4th level FUA, population density above average
- 4th level FUA, share of FUA population above average
- 3rd level FUA with other FUAs, population density above average
- 3rd level FUA with other FUAs, share of FUA population above average
- 3rd level FUA with other FUAs, population density and share of FUA population below or equal to avg
- 3rd level FUA only, population density above average
- 3rd level FUA only, share of FUA population above average
- 3rd level FUA only, population density and share of FUA population below or equal to average
- 2nd level FUA with other FUAs, population density above average
- 2nd level FUA with other FUAs, share of FUA population above average
- 2nd level FUA with other FUAs, population density and share of FUA population below or equal to avg
- 2nd level FUA only, population density above average
- 2nd level FUA only, share of FUA population above average
- 2nd level FUA only, population density and share of FUA population below or equal to average
- No FUAs, population density above average
- No FUAs, population density (and share of FUA population) below or equal to average

Source: ESPON Data Base

Note: in Belgium, Germany and The Netherlands the area unit is NUTS2.
The average population density in the countries included in the map is 107 inhabitants/km2 and the average share of FUA population is 48,5 %.

Map 13: FUA ranking, population density and the share of FUA population / 9 categories



© EuroGeographics Association for the administrative boundaries

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National
Statistical Offices

Source: ESPON Data Base

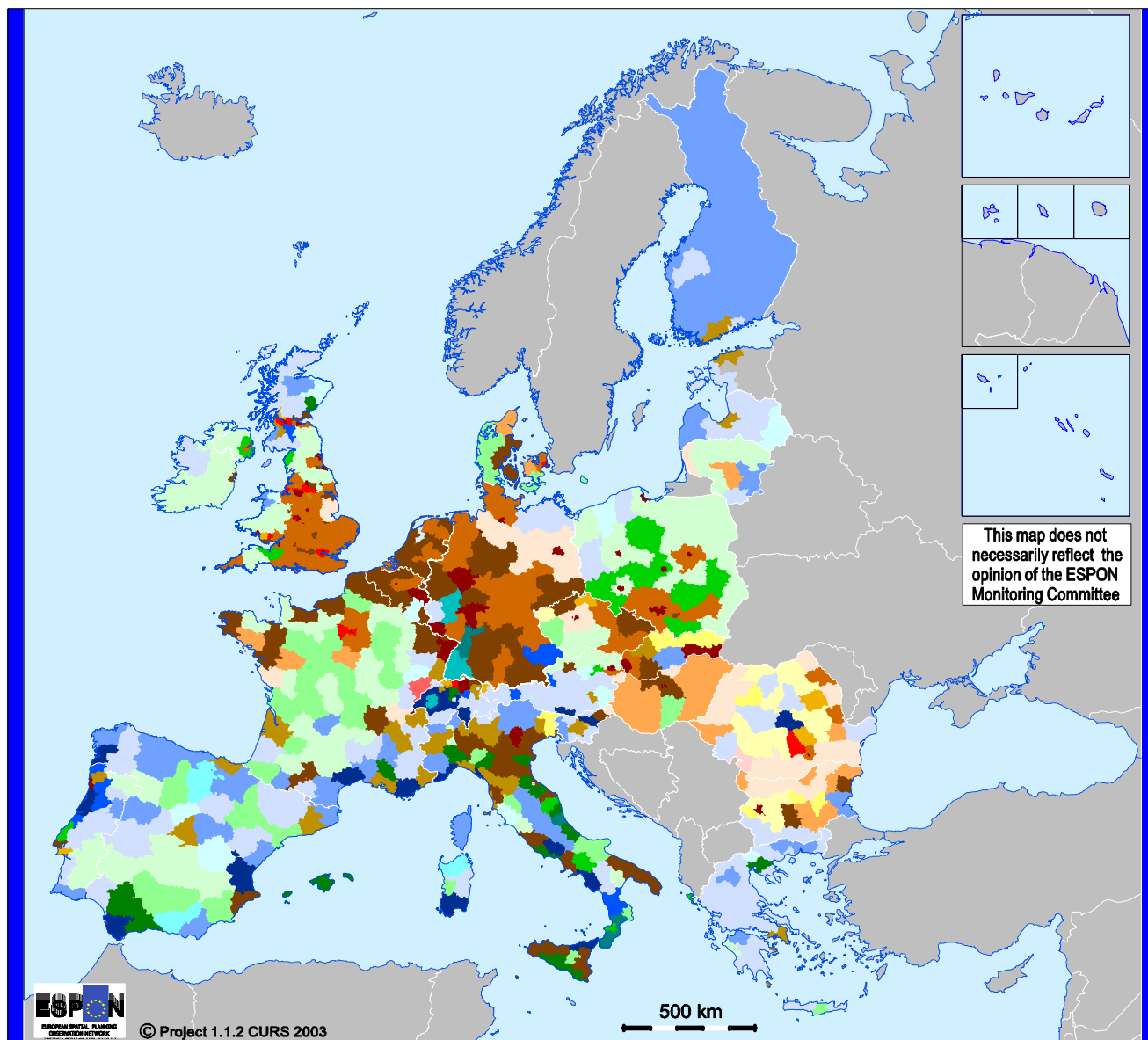
- FUA 4, population density above average
- FUA 4, share of population living in FUAs above average
- FUA 3, population density above average
- FUA 3, share of population living in FUAs above average
- FUA 3, population density and share of population living in FUAs below or equal to average
- FUA 2, population density above average
- FUA 2, share of population living in FUAs above average
- FUA 2, population density and share of population living in FUAs below or equal to average
- No FUAs, population density and share of people living in FUAs below or equal to average

Classification of functional urban areas:

- 4 European / global level
- 3 National / Transsantional
- 2 Local / Regional

The average population density in Europe is 107 inhabitants / km² and the average share of population living in FUAs is 48,5 %. In Belgium, Germany and the Netherlands the area unit used in the map is NUTS 2.

Map 14: Combination of land use type, population density and the share of FUA population / 24 categories



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

Typology of land use type, population density and the share of FUA population / 24 categories

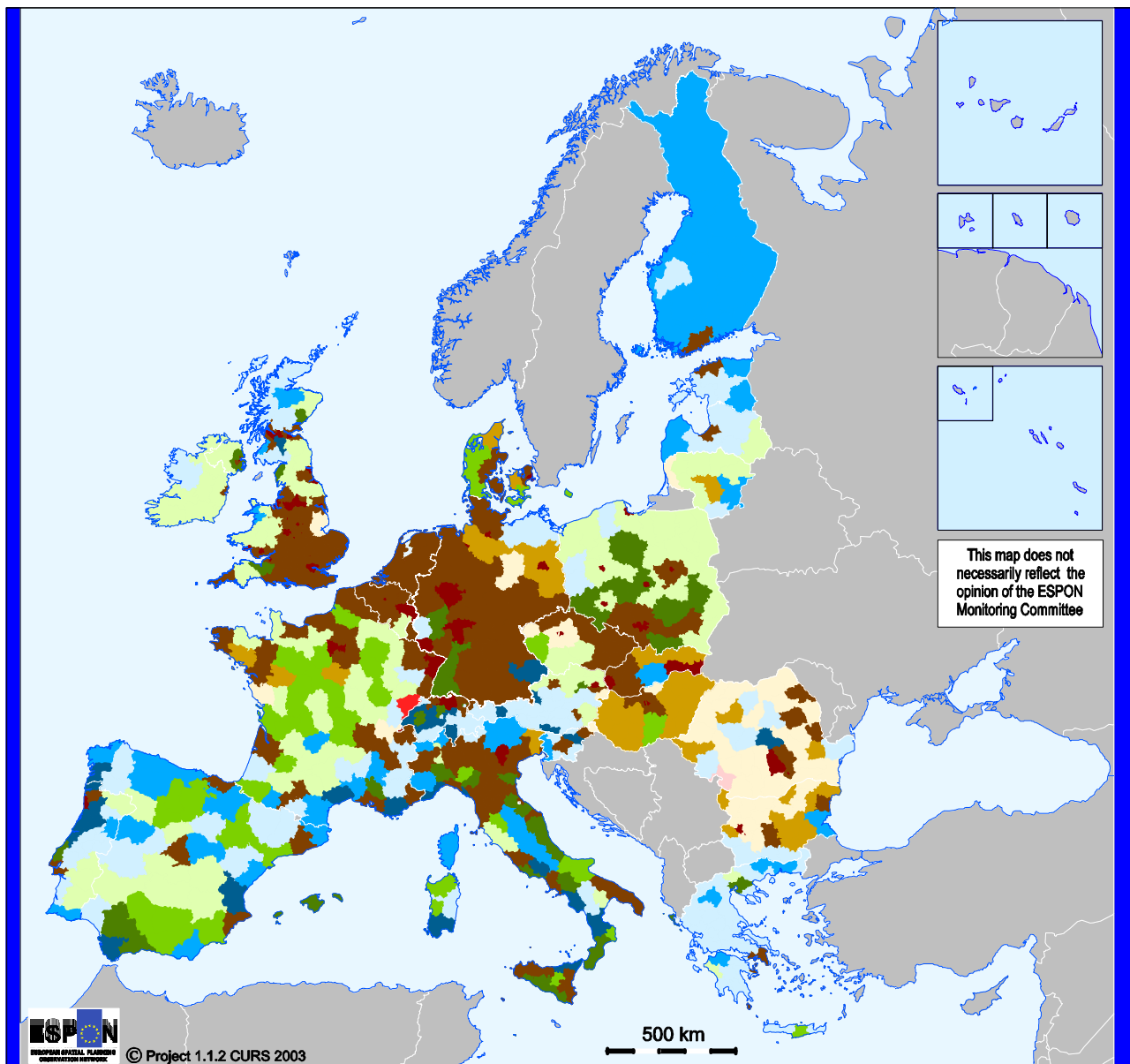
© EuroGeographics Association for the administrative boundaries

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

- Share of artificial surface above average, pop. density and share of FUA pop. above avg
- Share of artificial surface above average, population density above average
- Share of artificial surface above average, share of FUA population above average
- Share of artificial surface above average, population density and share of FUA population below or equal to average
- Share of artificial surface and agricultural land above average, population density and share of FUA population above average
- Share of artificial surface and agricultural land above average, population density average
- Share of artificial surface and agricultural land above average, share of FUA population above average
- Share of artificial surface and agricultural land above average, population density and share of FUA population below or equal to avg
- Share of artificial surface and "wilderness" above average, population density and share of FUA population above average
- Share of artificial surface and "wilderness" above average, population density above average
- Share of artificial surface and "wilderness" above average, share of FUA population above average
- Share of artificial surface and "wilderness" above average, population density and share of FUA population below or equal to average
- Share of agricultural land above average, population density and share of FUA population above average
- Share of agricultural land above average, population density above average
- Share of agricultural land above average, share of FUA population above average
- Share of agricultural land above average, population density and share of FUA population below or equal to average
- Share of agricultural land and "wilderness" above average, population density and share of FUA population above average
- Share of agricultural land and "wilderness" above average, population density above average
- Share of agricultural land and "wilderness" above average, share of FUA population above average
- Share of agricultural land and "wilderness" above average, population density and share of FUA population below or equal to average
- Share of "wilderness" above average, population density and share of FUA population above average
- Share of "wilderness" above average, population density above average
- Share of "wilderness" above average, share of FUA population above average
- Share of "wilderness" above average, population density and share of FUA population below or equal to average

Map 15: Combination of land use type, population density and the share of FUA population / 12 categories



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12-class combination of land use type, population density and the share of FUA population

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

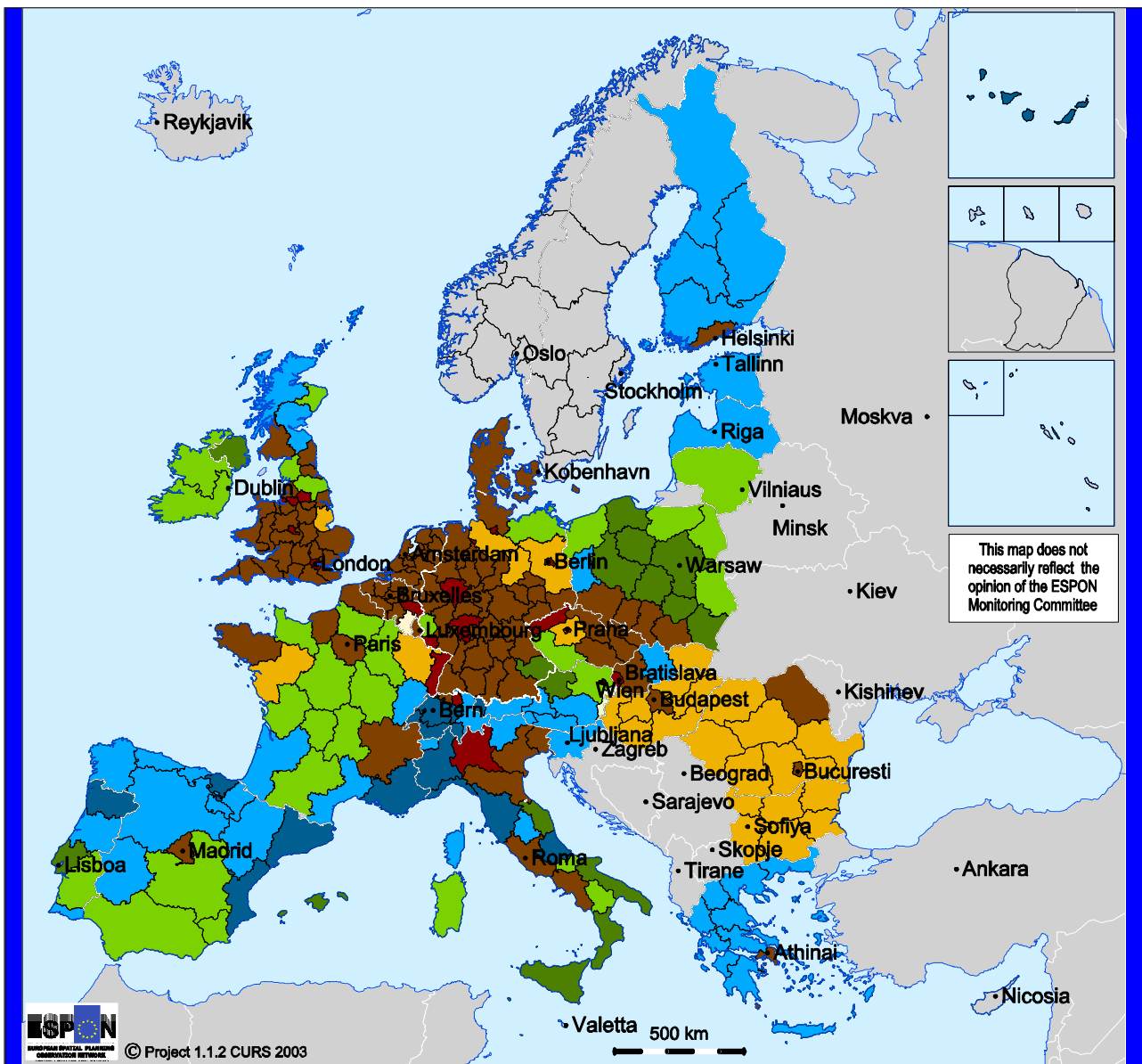
- Only the share of artificial surface above average, population density above average
- Only the share of artificial surface above average, share of FUA population above average
- Only the share of artificial surface above average, population density and share of FUA population below or equal to average
- Share of artificial surface + some other land use type (agriculture or "wilderness") above average, population density above average
- Share of artificial surface + some other land use type ("-") above average, share of FUA population above average
- Share of artificial surface + some other land use type ("-") above avg, population density and share of FUA population below or equal to average
- Share of agriculture (and possibly "wilderness") above average, population density above average
- Share of agriculture ("-") above average, share of FUA population above average
- Share of agriculture ("-") above average, population density and share of FUA population below or equal to average
- Only the share of "wilderness" above average, population density above average
- Only the share of "wilderness" above average, share of FUA population above average
- Only the share of "wilderness" above average, population density and share of FUA population above average

Source: ESPON Data Base

Note: in Belgium, Germany and The Netherlands the area unit is NUTS2.

The average values from the countries included in the map are: Share of artificial surface: 3,74% ,
Share of agricultural land: 52,48%,
Share of "wilderness": 43,78%
Population density: 107 inhabitants/km2
Share of FUA population: 48,5%.

Map 16: Urban–rural typology, test version at NUTS2-level



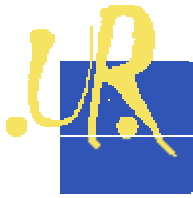
© EuroGeographics Association for the administrative boundaries

Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Test version of the urban-rural typology at NUTS2-level

- 1. Urban, densely populated and high urban integration
- 2. Urban-rural, densely populated and high urban integration
- 3. Urban-rural, not densely populated but high urban integration
- 4. Urban-peripheral, not densely populated and low urban integration
- 5. Rural-urban, densely populated and high urban integration
- 6. Rural-urban, not densely populated but high urban integration
- 7. Rural-peripheral, not densely populated and low urban integration
- 8. Peripheral-urban, densely populated and high urban integration
- 9. Peripheral-rural, not densely populated but high urban integration

Source: ESPON Data Base



ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report – Map Set 3

August 2003

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- *OTB Research Institute for Housing, Urban and Mobility Studies, Technical University of Delft*
- *Taurus Institute, University of Trier*
- *European Agency Territories and Synergies, Strasbourg*
- *Centre of Geographical Studies, University of Lisbon*
- *Department of Economics, University of Rome Tor Vergata*
- *Regional Development and Policy Research Unit, University of Macedonia*
- *The National Institute for Regional and Spatial Analysis, NUI Maynooth*

Subcontractors:

- *Mcrit sl., Barcelona*
- *ÖIR, Austrian Institute for Regional Studies and Spatial Planning, Vienna*
- *Nordregio, Stockholm*

Observing partner:

- *VATI, Budapest*

Webpage and further contact info of the project:

<http://www.hut.fi/Units/Separate/YTK/research/ur/index.html>



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ESPON 2006 Programme / Urban-rural relations in Europe

Third Interim Report August 2003

MAP SET 3: Examples of other resulting maps

Map A: Population density, share of agricultural land and GDP per capita

Maps B - F: Urbanisation pressure according to proximity

Map G: Urbanisation 1950-2000, 1st draft

Map H & I : Maps for the Portuguese case studies

Map J & K: Commuting Interaction in Portugal

Map L: Commuter flows to Turku and Salo

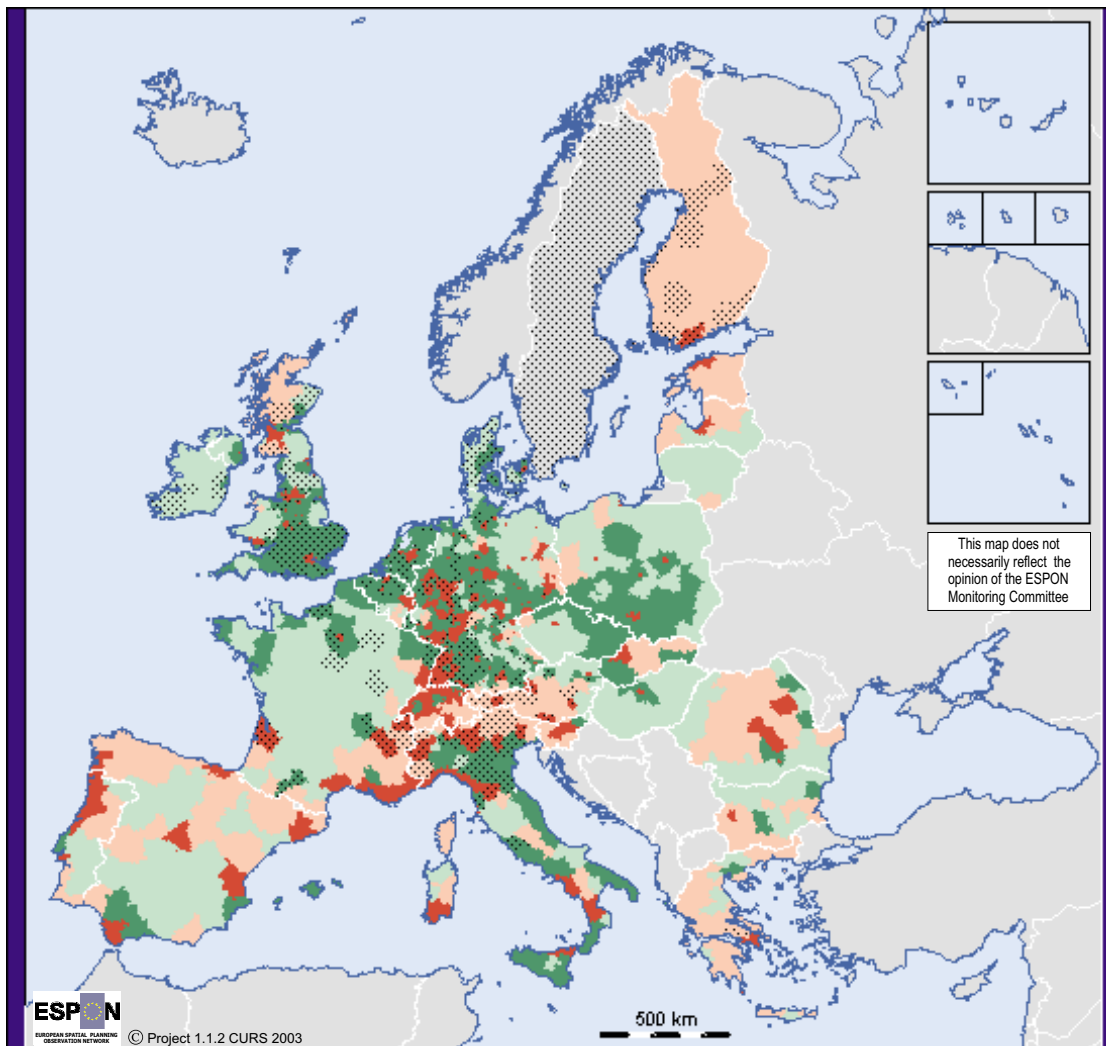
Map M: Summer cottages belonging to Turku residents

Map N: Municipalities that are losing population for Turku or gaining population from Turku

Map O: Discontinuous urban fabric

Map P: Continuous urban fabric

Map A: Population density, share of agricultural land and GDP per capita



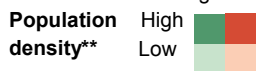
Population density, share of agricultural land and GDP per capita in relation to average values

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Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Source: ESPON Data Base

Share of agricultural land *
High Low



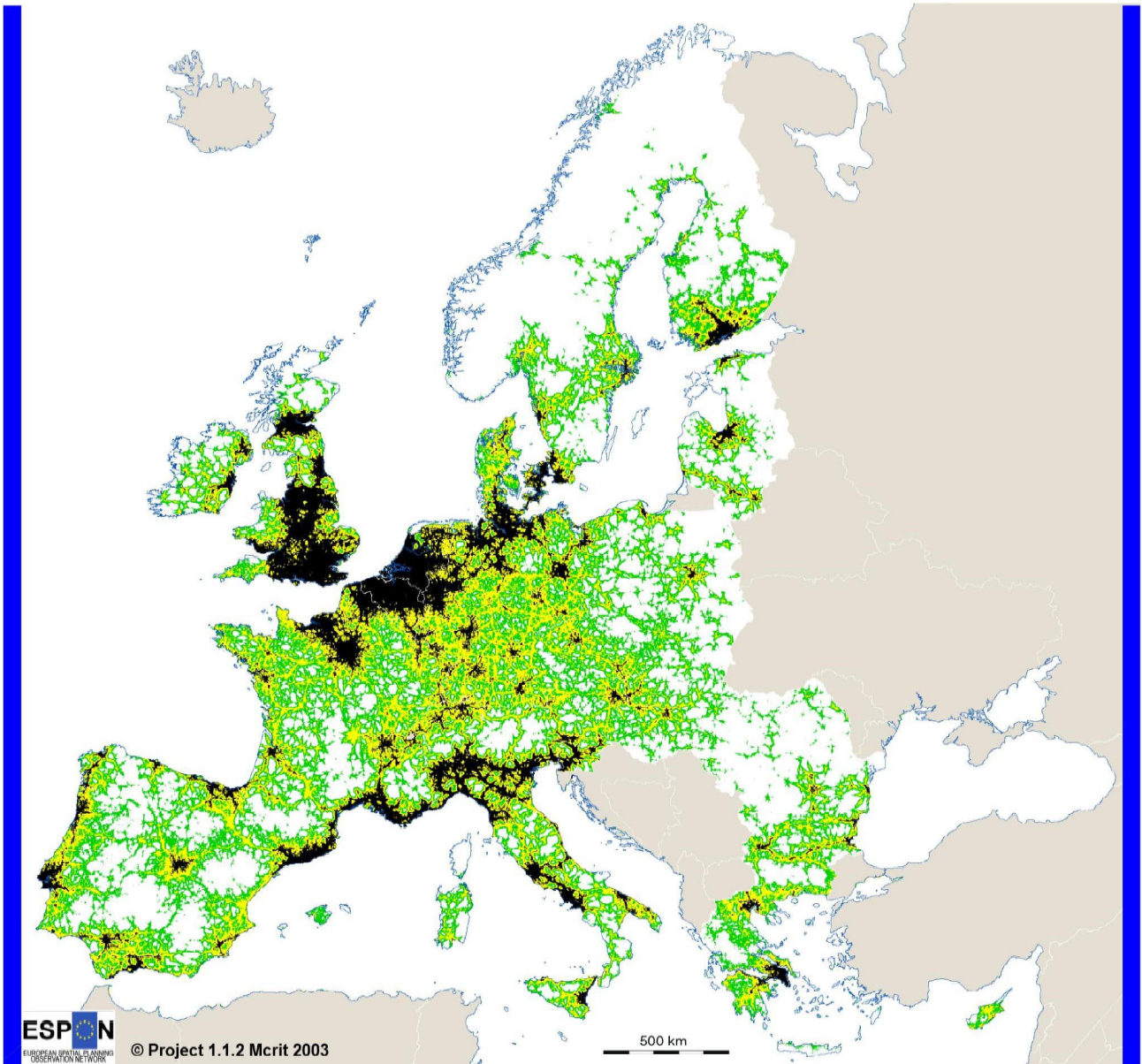
GDP per capita***


* Share of agricultural land: High = More than 50% of the total NUTS3-area
Low = 50% or less of the total NUTS3-area

** Population density: High = Above the average of countries included (107 inhabitants/km²)
Low = Below or equal to the average of countries included (- " -)

*** GDP per capita: High = Above the average of countries included (21 281 euros/inhabitant in 1999)
Low = Below or equal to the average of countries included (- " -)

Pressure for urbanisation and possible patterns, as proximity to transport facilities



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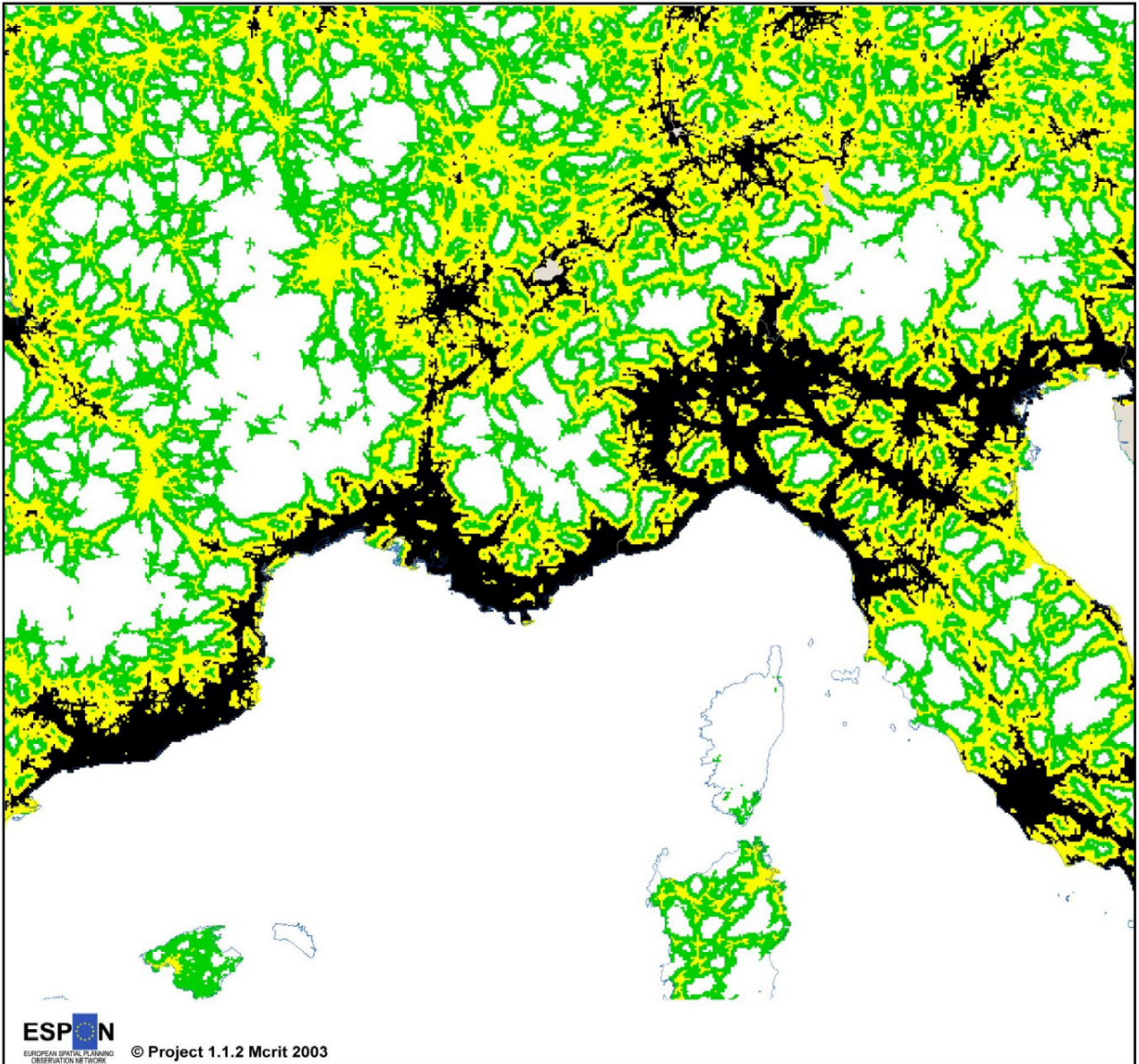
Urban-rural patterns associated to proximities

- urban (0-30 minutes)
- periurban (>30 to 45 minutes)
- rururban (>45 to 60 minutes)
- rural (>60 minutes)

Origin of data: ASSEMBLING graph
European Commission
Source: ESPON Data Base

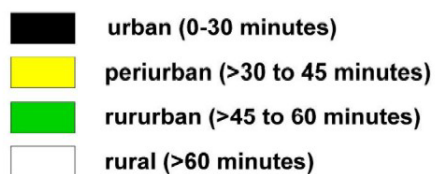
Map B: Urbanisation pressure according to proximity

Pressure for urbanisation and possible patterns, as proximity to transport facilities



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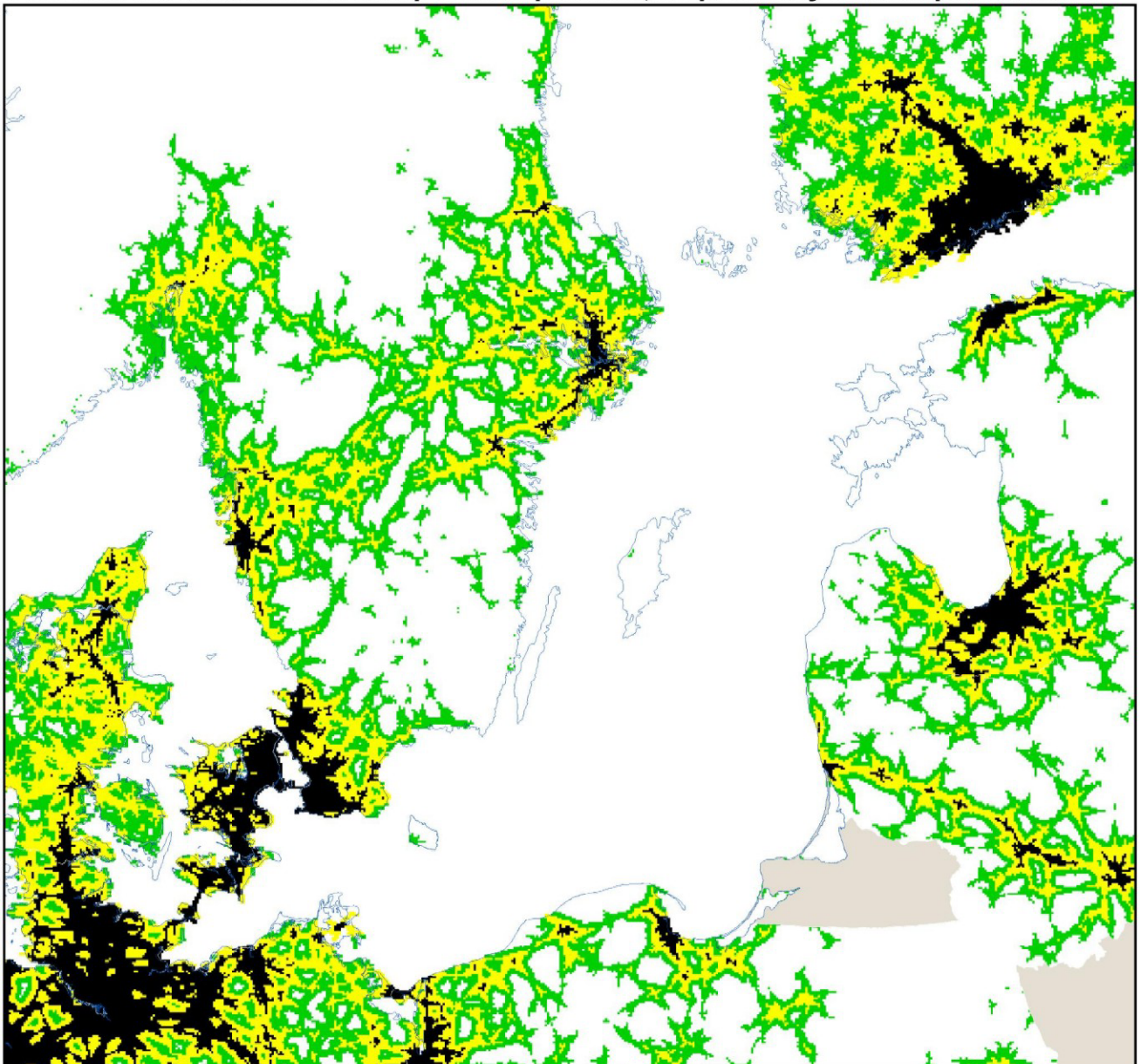
Urban-rural patterns associated to proximities



Origin of data: ASSEMBLING graph
European Commission
Source: ESPON Data Base

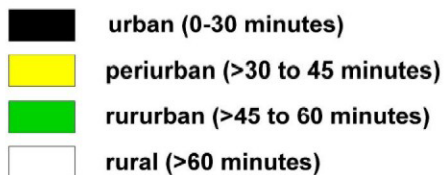
Map C: Urbanisation pressure according to proximity – Mediterranean coast

Pression for urbanisation and possible patterns, as proximity to transport facilities



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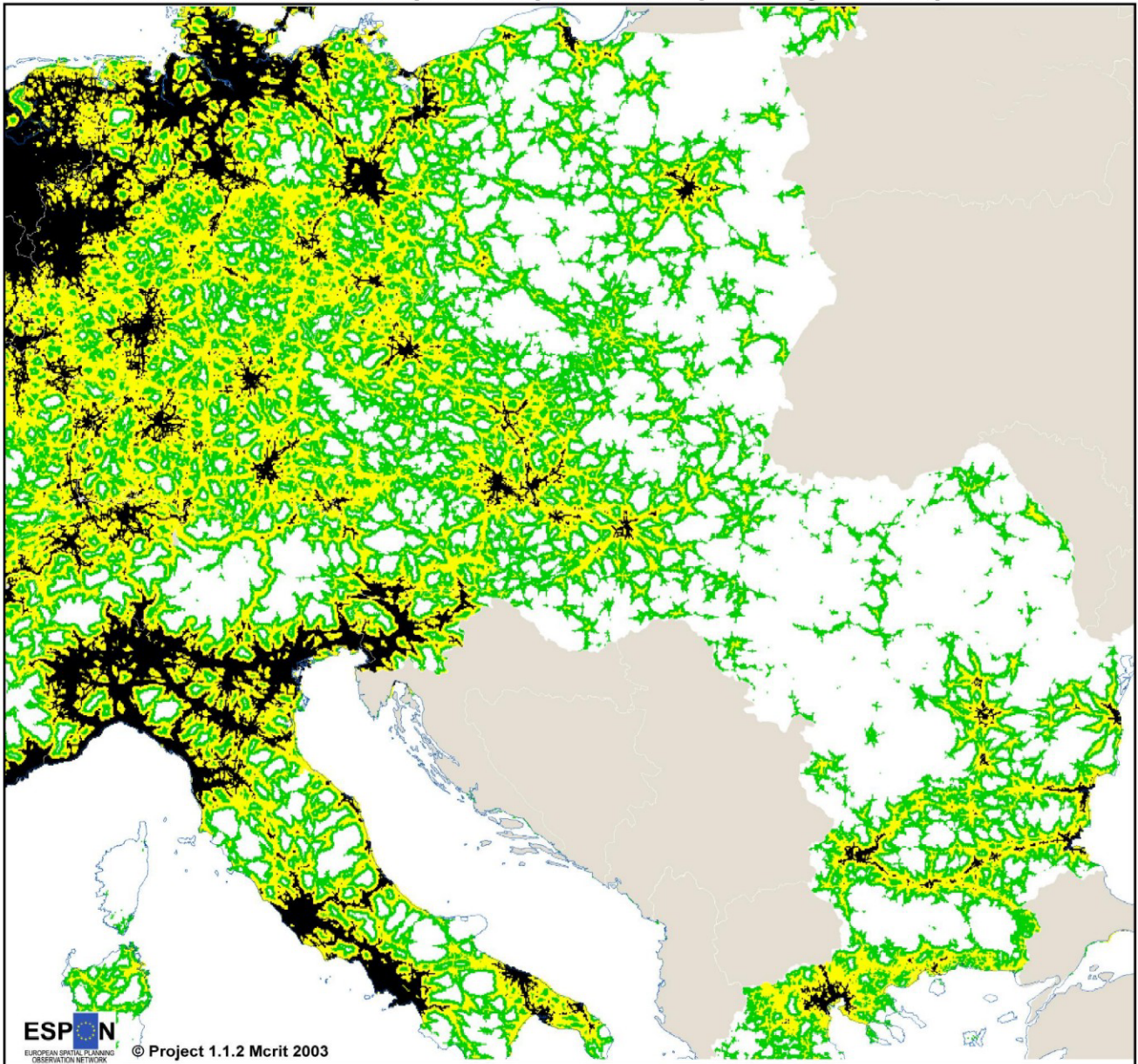
Urban-rural patterns associated to proximities



Origin of data: ASSEMBLING graph
European Commission
Source: ESPON Data Base

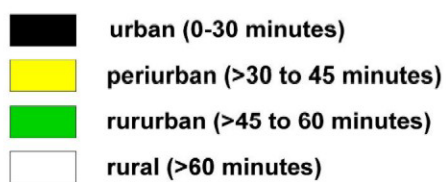
Map D: Urbanisation pressure according to proximity – Baltic coast

Pressure for urbanisation and possible patterns, as proximity to transport facilities



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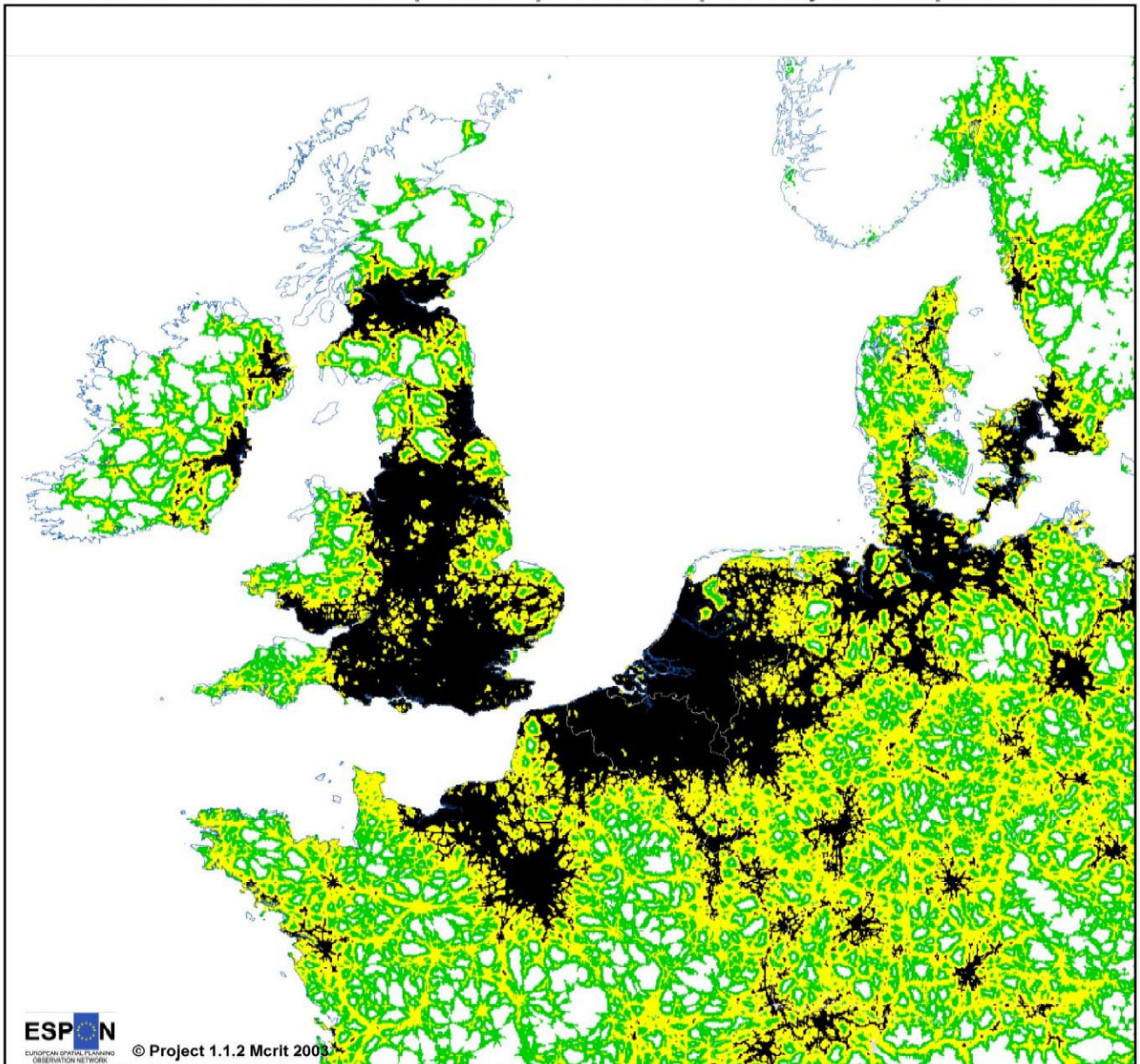
Urban-rural patterns associated to proximities



Origin of data: ASSEMBLING graph
European Commission
Source: ESPON Data Base

Map E: Urbanisation pressure according to proximity – Accession countries

Pression for urbanisation and possible patterns, as proximity to transport facilities



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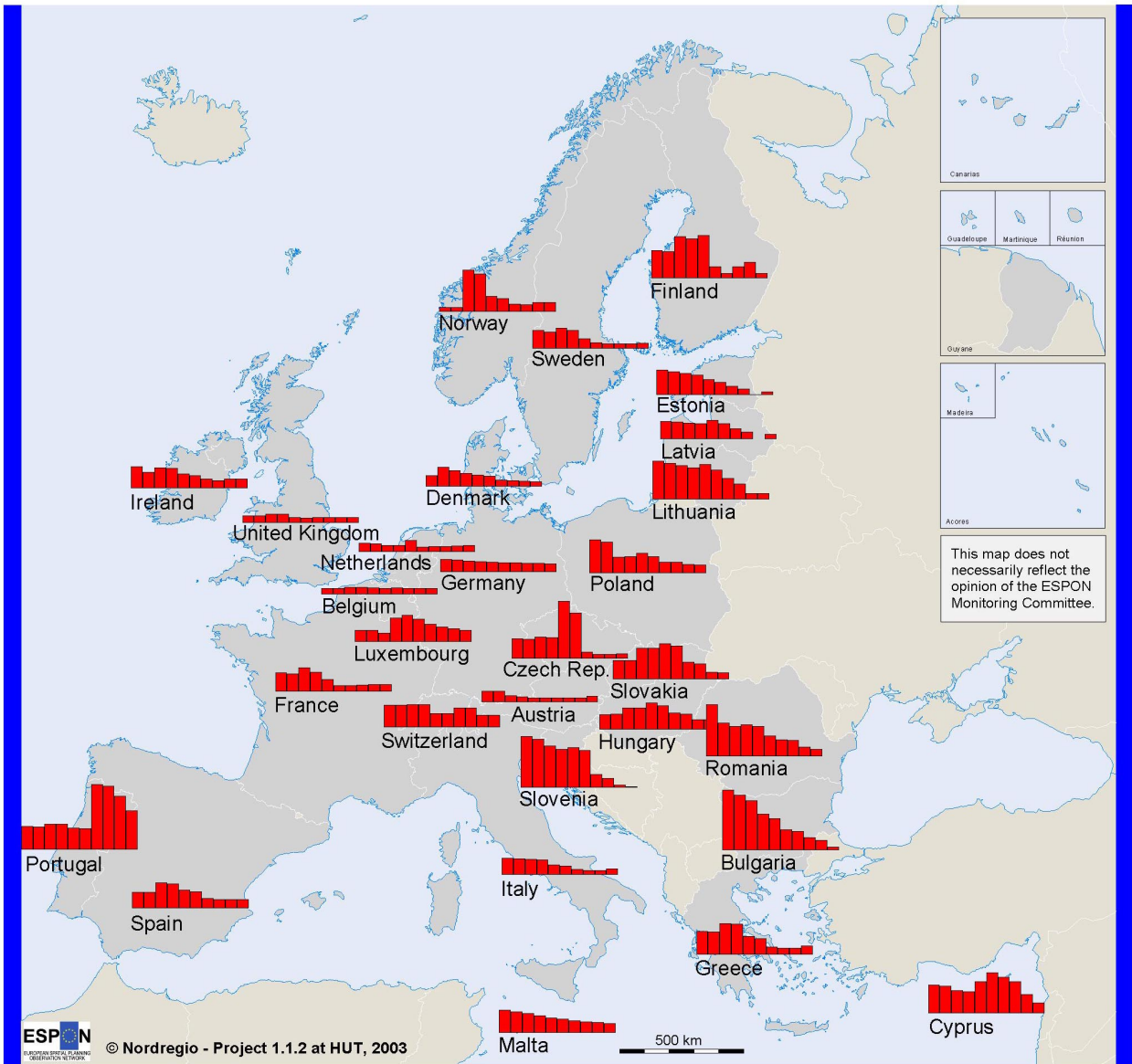
Urban-rural patterns associated to proximities

- urban (0-30 minutes)
- periurban (>30 to 45 minutes)
- rururban (>45 to 60 minutes)
- rural (>60 minutes)

Origin of data: ASSEMBLING graph
European Commission
Source: ESPON Data Base

Map F: Urbanisation pressure according to proximity – North-Western Europe

Urbanisation 1950-2000, 1st draft



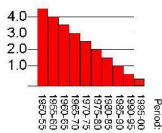
Average annual rate of change of percentage urban population 1950-2000

Geographical Base: Eurostat GISCO

Origin of data: UN World Urbanization Prospects - The 2001 Revision

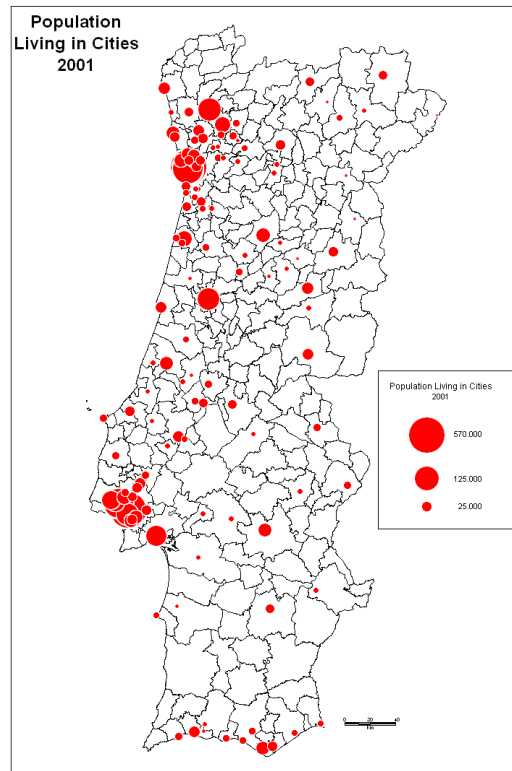
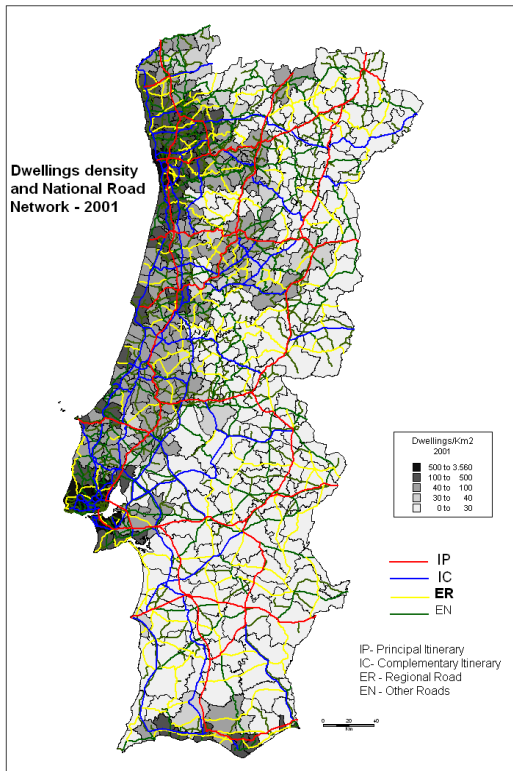
Source: Nordregio

Rate of change of % urban population:

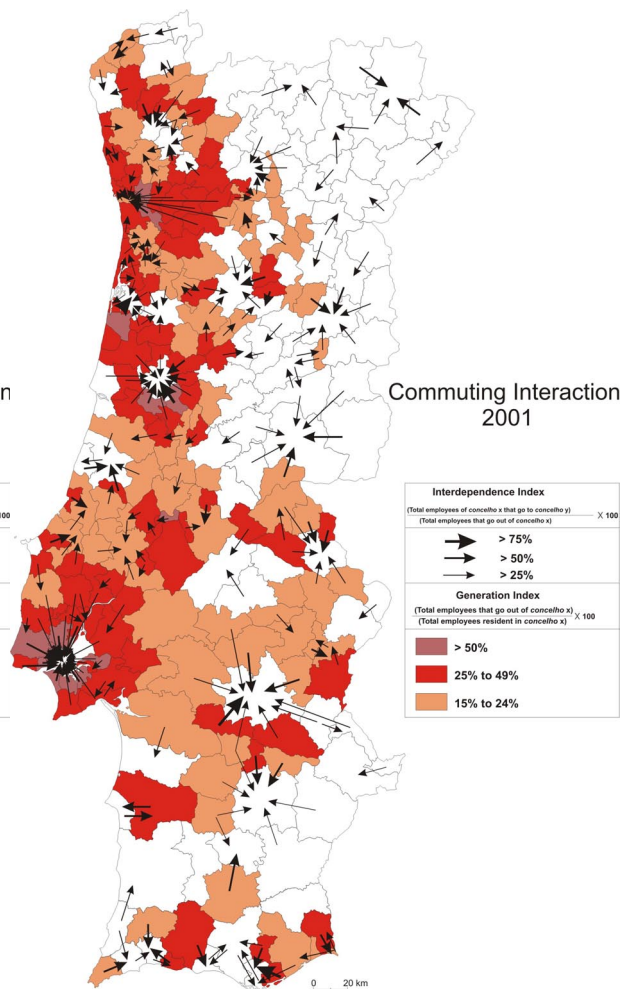
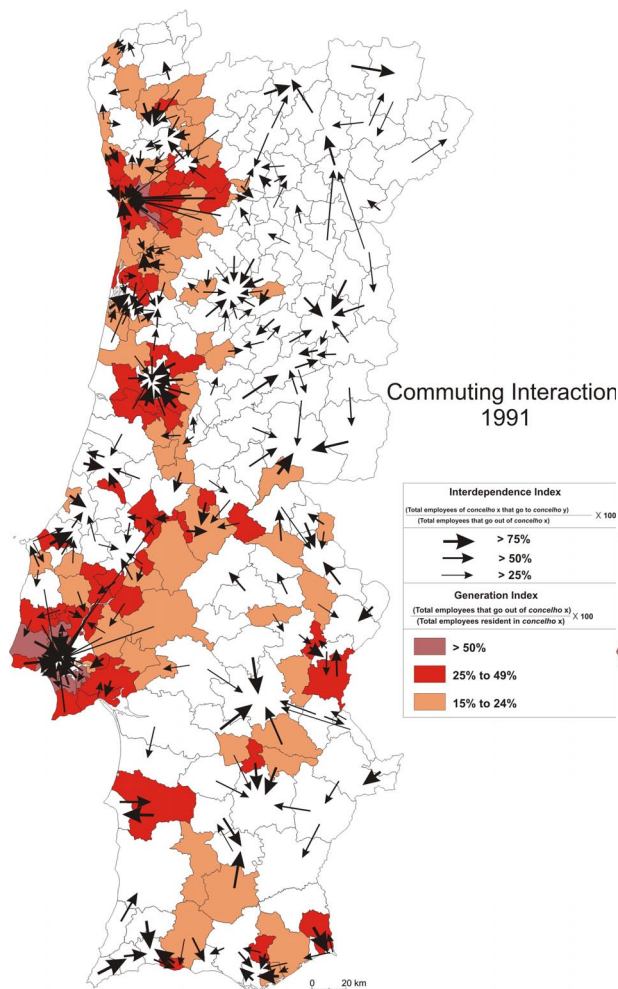


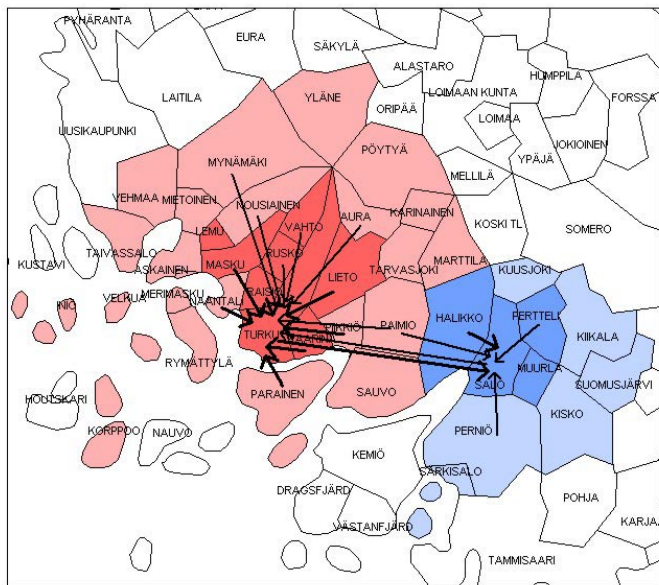
Map G: Urbanisation 1950-2000, 1st draft

Maps H & I: Maps for the Portuguese case studies (Marques da Costa & Marques da Costa 2003)

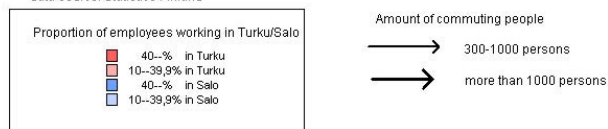


Maps J & K: Commuting Interaction in Portugal (Marques da Costa & Marques da Costa 2003)

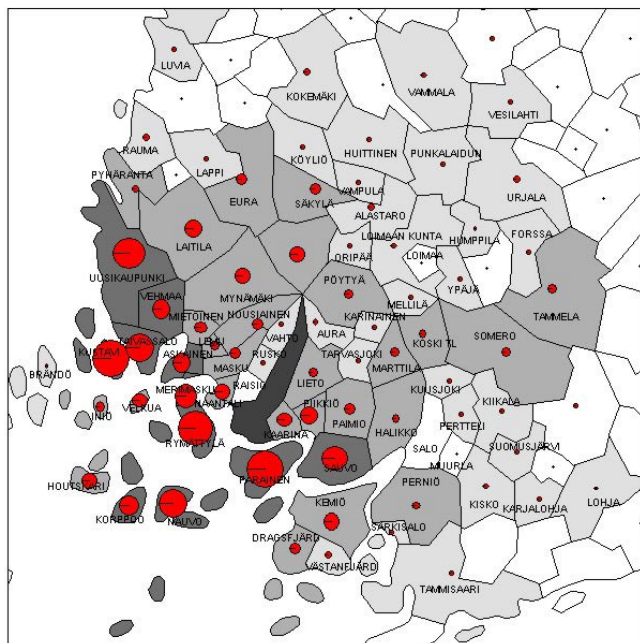




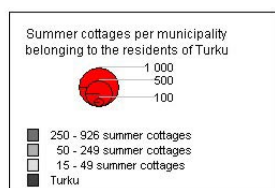
data source: Statistics Finland



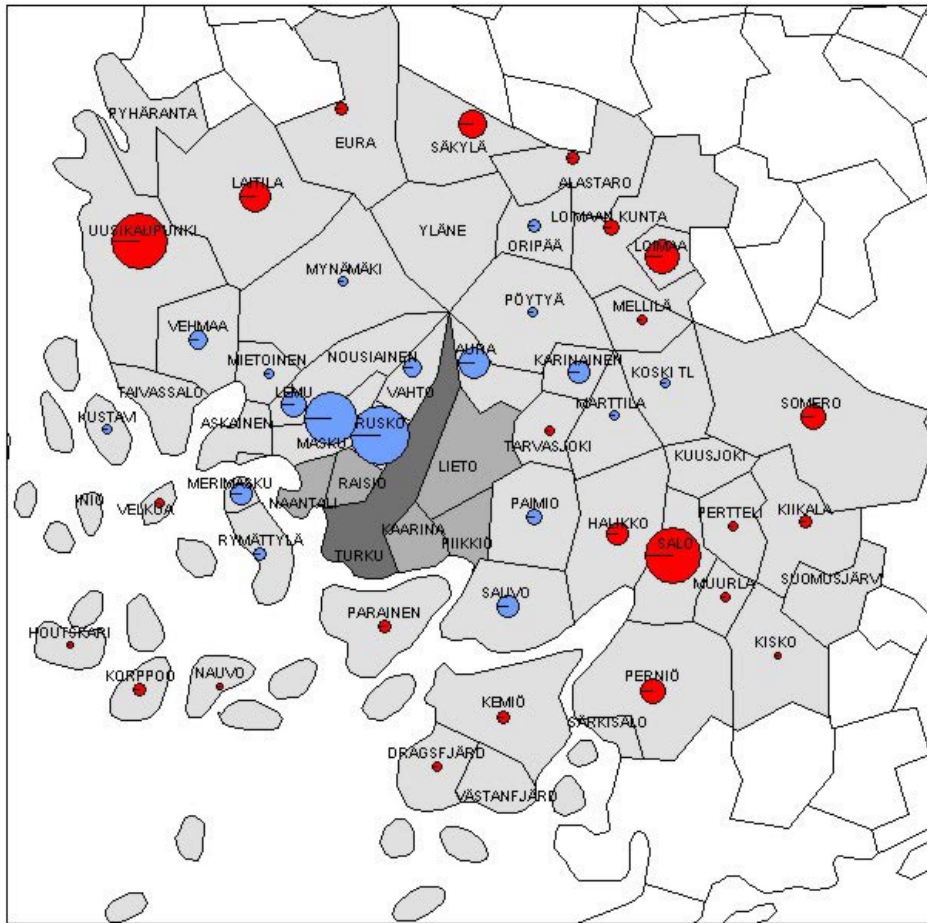
Map L: Commuter flows to Turku and Salo (© J. Hirvonen, CURS/HUT)



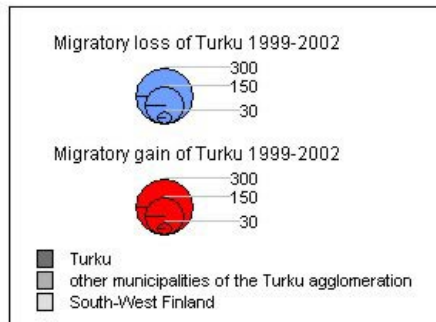
data source: Statistics Finland



Map M: Summer cottages belonging to Turku residents (© J. Hirvonen, CURS/HUT)

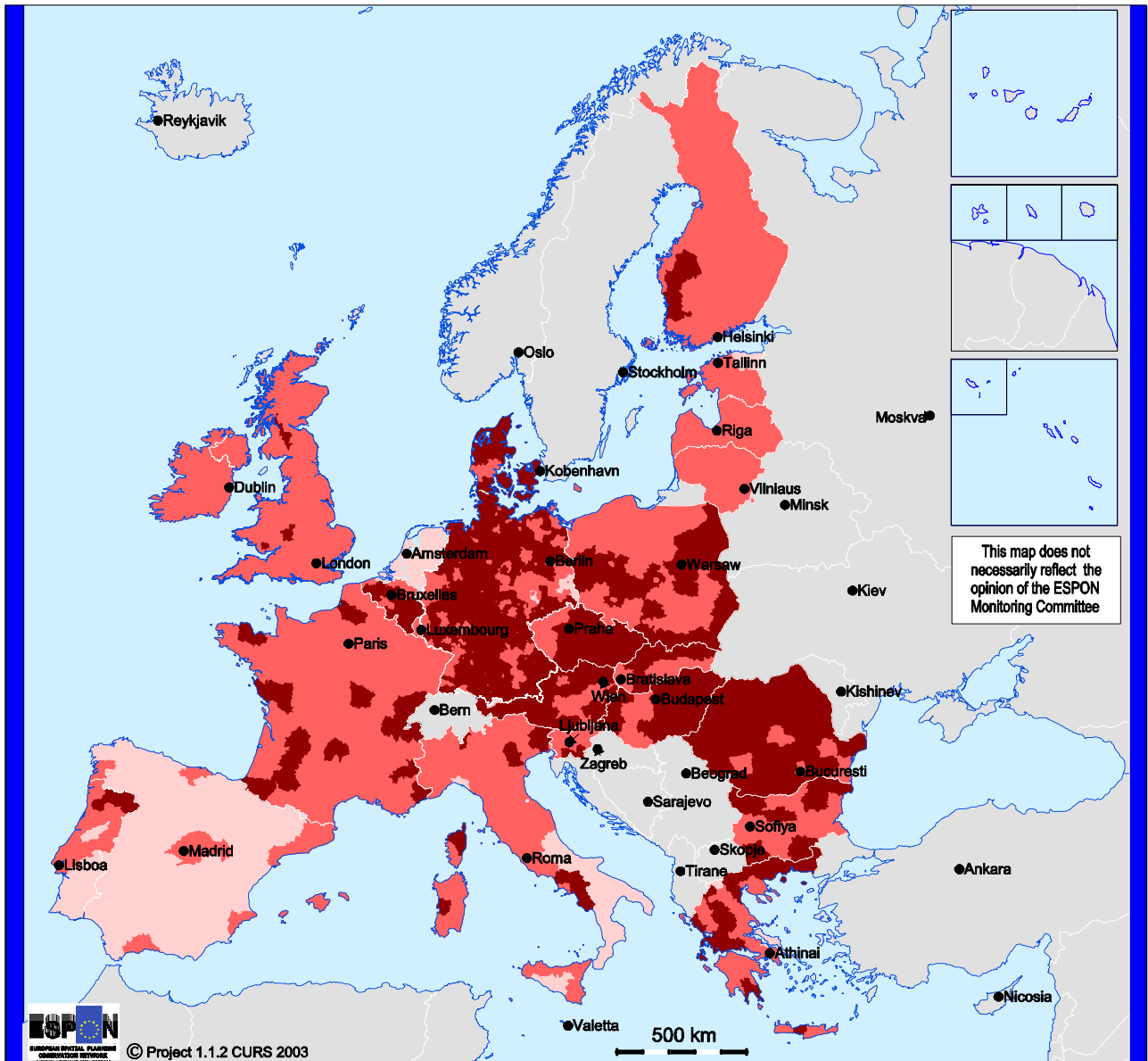


data source: Statistics Finland



Map N: Municipalities that are losing population for Turku or gaining population from Turku (© J. Hirvonen, CURS/HUT)

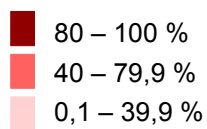
Map O: Share of discontinuous urban fabric (% of all artificial surface)



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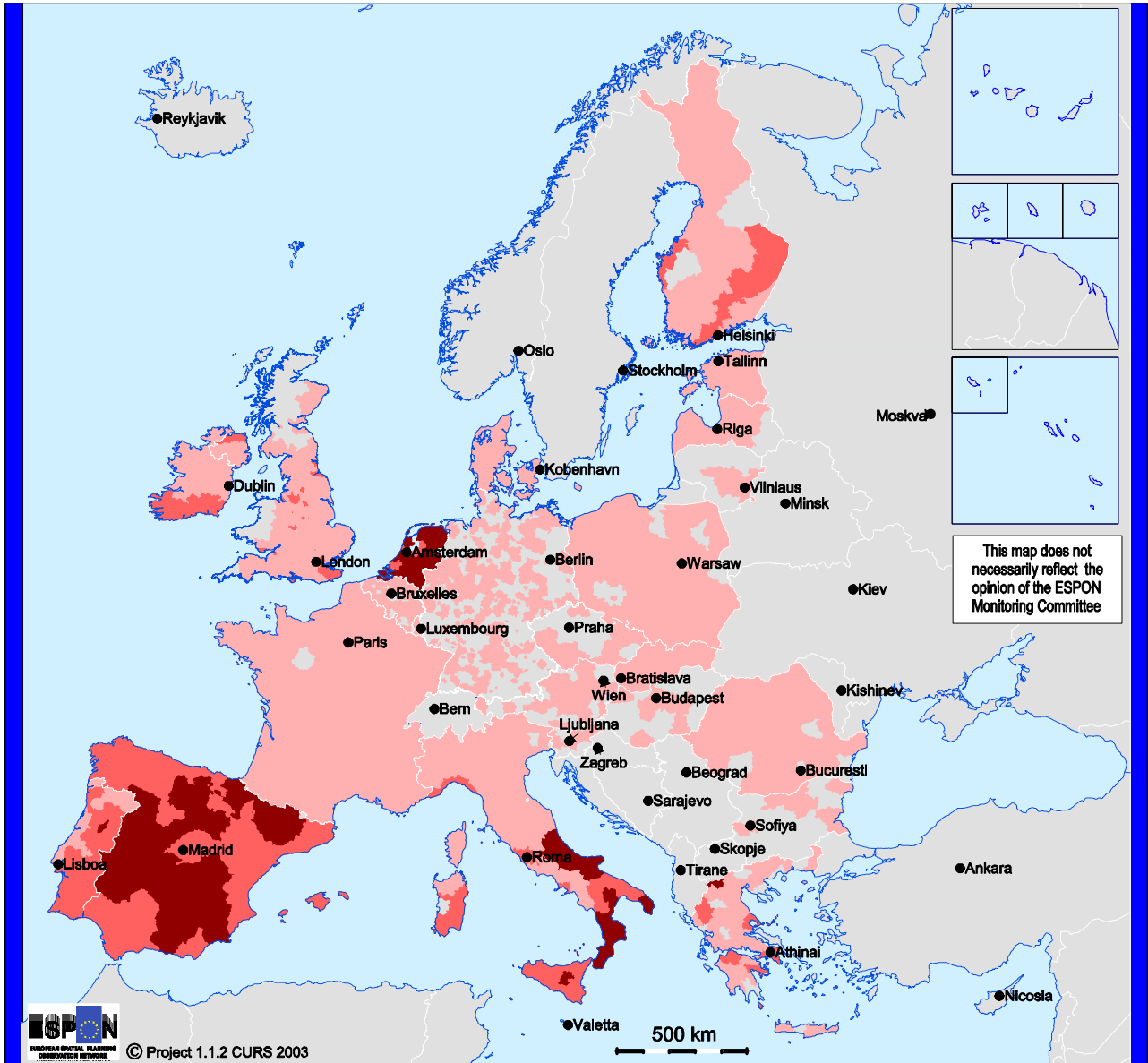
Origin of data: EU15 and CC's: Eurostat
 Norway and Switzerland: National Statistical Offices

**Share of discontinuous urban fabric
 (% of all artificial surface)**



Source: ESPON Data Base

Map P: Share of continuous urban fabric (% of all artificial surface)



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

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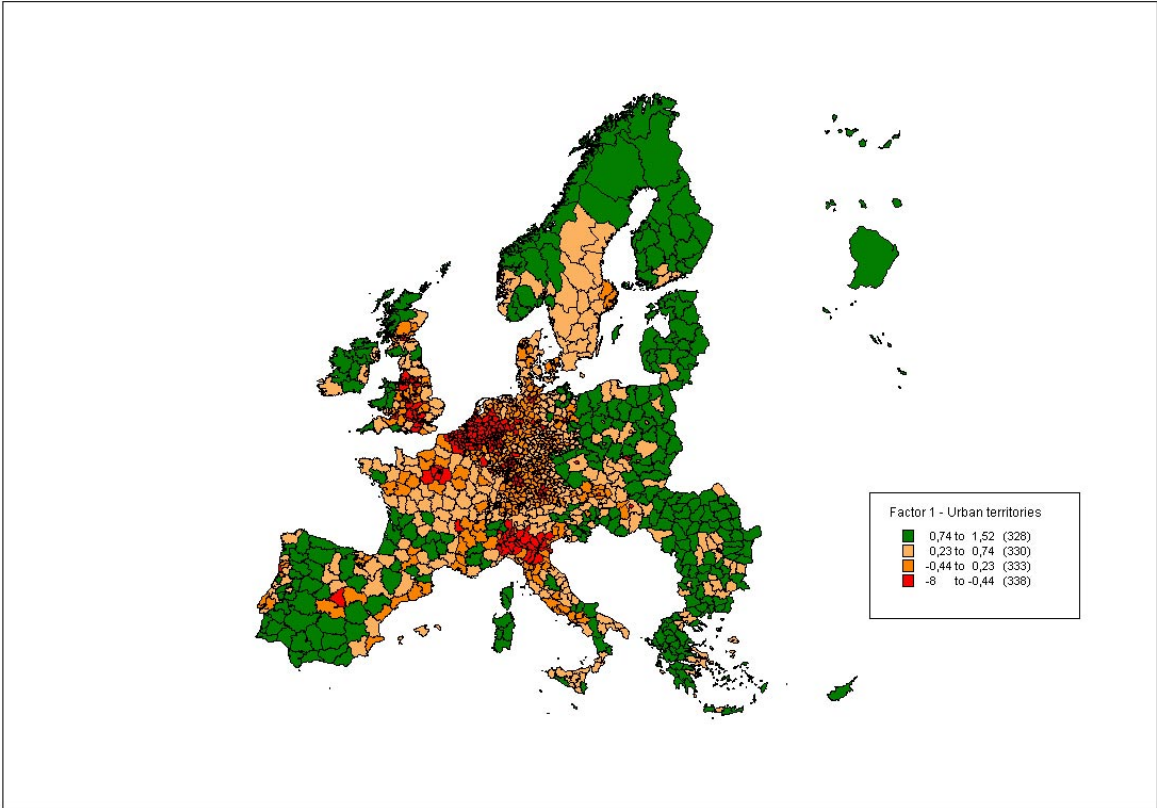
Origin of data: EU15 and CC's: Eurostat
Norways and Switzerland: National Statistical Offices

Share of continuous urban fabric (% of all artificial surface)

- 80 – 100 %
- 40 – 79,9 %
- 0,1 – 39,9 %
- 0 or No Data

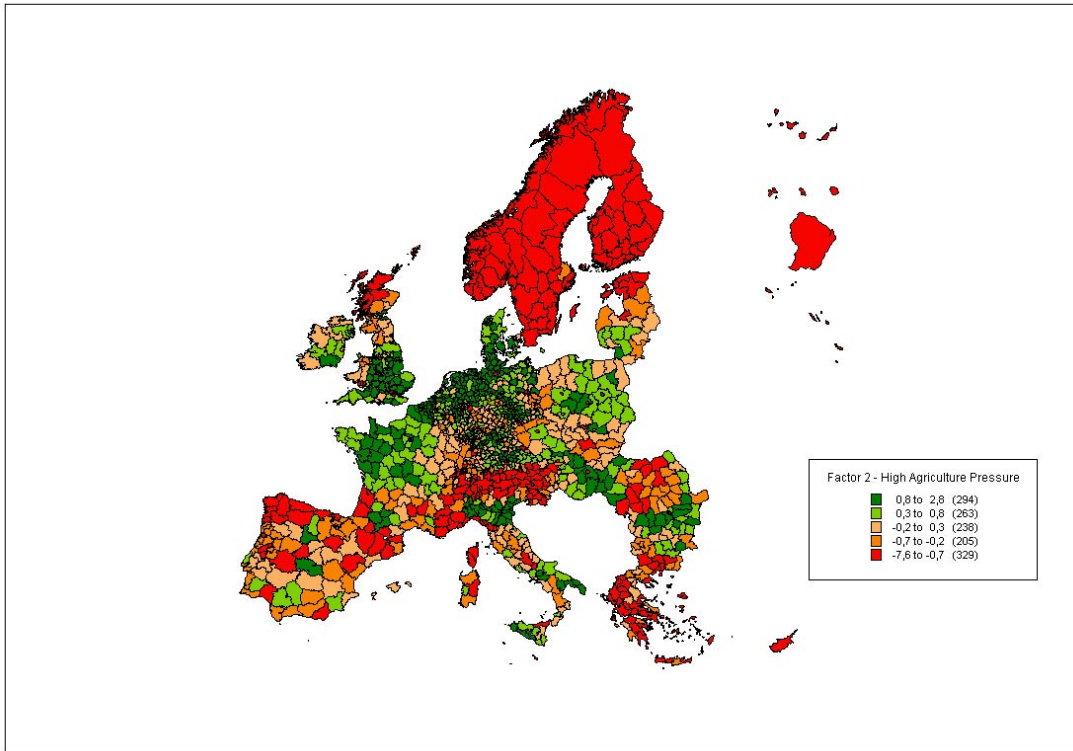
Source: ESPON Data Base

Map Q: Factor 1 – urban territories



Variables	Legend
Less urbanised territories	
↑	
↓	
More urbanised territories	

Map R: Factor 2 – pressure from agriculture



Variables	Loadings of Factor2	Legend
Percentage of agricultural area	0,884	
↕		
Percentage of forestry area	-0,457	