



ESPON 2006 Programme / Urban-rural relations in Europe

First interim report

October 2002

Coordinator: *Centre for Urban and Regional Studies, Helsinki University of Technology*

Project consortium:

- *Centre for Urban Development and Environmental Management, Leeds Metropolitan University*
- *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*

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

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Annex 1: Indicators on urban-rural relationships (a separate Excel-file)

Annex 2: Cited and related literature

Introduction

The starting points of the project “Urban-Rural Relations in Europe” are the following:

- The assumption that the categories of urban and rural, as well as the relationships of urban and rural areas, can be useful in characterising the spatial dynamics operating within Europe.
- The ESDP-document pursues the development of polycentric urban system as means to improve competitiveness of the European territory. In this context the relations between urban and rural areas are to a great degree being made responsible for territorial cohesion. On the other hand the relationship between urban and rural (or less urban) areas is discussed in connection with land use pressure.
- The aim of the ESPON Programme is to support policy development, in particular in the field of Structural Funds. The issue of urban-rural partnerships is also closely connected to the tendency to move away from direct support to agricultural production towards more integrated and tailor-made rural development measures.
- The analytical frame of the project builds on the degree of urban versus rural as fundamental categories being dependent on both physical structures and functional flows.

Consensus on indicators and data needed

The attached Excel-file contains the preliminary list of indicators on urban-rural relationships. The information on the list is presented in several columns. Below, in Table 1, six columns are picked up to represent the structure of the indicator list with the help of an example concerning housing. Any indicator is by definition a partial simplification, and fails to encapsulate the whole complexity of the concept or vision it indicates. These lists of indicators aim to illuminate certain key aspects only.

Table 1: Structure of the indicator pool; an example from the list

categories of conceptual framework of bid	themes of urban-rural relationships	dimensions	indicators	time series	data availability
social structure	reorganization of urban and regional systems	housing	size of households	10 years	to be checked in detail, possible sources are EUROSTAT, DataNavigators etc.

Source: Compilation of the ESPON 1.1.2 consortium

This list of indicators links the conceptual approach (see first column) with a preliminary notion of what are relevant issues of urban-rural relationships and an assignment of optional indicators to measure the urban and rural developments and relationships. It is to be understood as a starting point which will be modified and elaborated according to further work, especially the analysis of structures underlying the urban-rural dimension.

At this point the consortium requests the listed data from EUROSTAT, as far as it is available in relevant databases. At this point it is assumed that the planned contracting between ESPON Coordination Unit and EUROSTAT on access to GISCO and REGIO databases has been successful. In addition it is assumed that SABE data on administrative borders covering all Europe has been made available on free delivery to all ESPON projects.

Analysis of the availability and comparability of data at Community level

There are two models/methods of working with GIS, both of them relying on data (statistics) although in different formats, namely the Vector data model (e.g. GISCO, SABE, SIRE) and the Raster data model (e.g. CORINE). In case of the Vector data model there is the possibility to connect statistical data (e.g. data from the REGIO database at NUTS3). In case of the Raster data model the Raster information need to be processed before providing a single value (e.g. share of arable land) for any administrative unit (e.g. NUTS3). Thus information from both models can be presented on common spatial units (administrative unit/NUTS 3). In conclusion, there is a way to integrate those different data to certain extent. The project also plans to proceed this way.

In line with the principle of data integration explained above, an appropriate way to cover the entire European territory with information could be:

- 1) to use the REGIO statistical database (comparable information, NUTS3) together with GISCO and
- 2) to use the land cover raster information from CORINE together with GISCO and to process it to finally come up with a single value for each NUTS3 unit.

Unfortunately GISCO doesn't cover CEEC countries. However it can be completed from other sources, for example Eurogeographics (provided code problems can be solved). The subcontractors ÖIR and Nordregio have also a good overview of data available in several non-EU Countries, as they have carried out the Data Navigators for CADSES countries (ÖIR) and Baltic (&Nordic) countries (Nordregio).

The consortium also acknowledges that there will be serious discrepancies in databases between European and national levels due to delays in data updates, different coding systems etc. Therefore, it will be difficult to enrich European datasets based on national sources.

The spatial level for pan-European comparable analysis relying on more recent data will probably be NUTS3. Case studies might also make use of more detailed spatial resolutions (NUTS5 and GISCO Raster data) and national statistical data indicated by the Data Navigator. National statistical data, however, will be up-to-date but often rely on different methodologies and thus might not be comparable. As the results of the Data Navigators have not yet been at the disposal of the ESPON projects, it is impossible to say precisely what kind of information they can provide for the purposes of analysis of urban-rural relationships in the European scale.

Development of the database

The database can be established as soon as the guidelines from project 3.1. in this respect have been given and as soon as it becomes clear if the ESPON projects will get REGIO and GISCO databases at their disposal.

Facilities for map-making

Based on the standard guidelines for data management established by ESPON 3.1, Mcrit will document the datasets to be used by the whole Consortium, once received by the project leader from DG REGIO. Mcrit will then organise an interactive mapping facility at Internet allowing the easy visualisation of data as well as the production of basic thematic maps. Any other dataset or information with general interest will be also integrated in this web system with the aim to facilitate an easy access.

First overview on concepts, methodology

Based on the bid and the discussions of the kick-off meeting in Helsinki the first task was to study different working definitions of the urban and the rural, as well as the urban-rural relationships. A summary of the work is presented later in the document. The work on definitions will now be used as a basis for the heuristic model that will use the different definitions as tentative findings and test them with the European-wide data. At this point it has been decided to avoid applying some final definitions of rural and urban – except in the broadest sense at the two extremes (predominantly urban/predominantly rural). The project will leave the final definition of what is rural and what is urban to the very end of the project, balancing on the two approaches:

- In order to reduce the risk of geographical determinism, it is also necessary to let the data guide to the relevant indicators. This approach will let the mapping of composite data sets indicate the typologies of areas.
- In order to reduce the risk of statistical determinism, the subjective knowledge of experts participating in the project will always validate and guide the mapping of the typologies.

The next task is to acquire and handle the data that has either been made available via ESPON or can possibly be collected from national authorities (with the compatibility problems already mentioned). The geographical division of labour of the project team will be used here. After the database is ready to be worked with, many kinds of entries will be explored in parallel.

One strand of the work will be a kind of a simulation game with the heuristic model of urban-rural definitions, examining the possibilities of different approaches with the database. Both simple and complicated approaches are welcomed. The work already done in WP1 is of direct relevance here.

Second strand concentrates on innovative methods in analysing the data to reveal key urban-rural dynamics in the European scale. Here the approach starts from the data and lets the data sets to reveal key dimensions underlying urban-rural dynamics.

Based on both working strands the indicator list, that is now used for the first data request, will be further elaborated. Especially the number of indicators related to the analysis of urban-rural structures shall be increased, as there is more information available on them than concerning the flows between urban and rural areas. The approach on flows will mainly be covered by case studies.

This work will also lead to the construction of typologies. A review of the typologies that have been tested with European data is already available via WP3. The major problem in building on this existing work is that they contain data that is only available via specific databases with restricted access (the French Geopolis as an example). The review of policies of relevance for urban-rural partnerships will also be linked to the work on typologies: the data and policy negotiations underlying the delineation of eg. Objective 1-3 areas will be explored.

The analysis of policies with urban-rural relevance will continue; as well as analysis of interesting initiatives related to urban-rural partnerships. The link of the analysis to the indicator work and typologies needs still to be emphasised.

First overview on intended results, including the use of case studies

As stated in the beginning of the report, the analytical frame of the project builds on the degree of urban versus rural being dependent on both physical structures and functional flows. In relation to intended results this means the following:

* The study of structures relies on innovative analysis of the European-wide data that will be made available for ESPON studies.

* The study of flows will mainly be carried out through case studies, as the review of urban-rural relationships as flows (see findings of WP1) shows very clearly the difficulties of making generalisations in a European context and the need for detailed analyses across a number different territories. Another reason for the use of case studies concerning flows is the main geographical level of the project and the whole ESPON context being NUTS3 – the flow studies should typically be carried out at NUTS5-level.

The detailed decisions on the selection of case study areas have not yet been made. Possible areas listed so far may include Catalonia, the Province of Rome, Ireland and Finland or a group of Finnish regions.

Briefly about workpackages

The kick-off meeting was held in Helsinki in the beginning of August. The work has proceeded in good spirit. The work-package leaders have sent information requests to the partners who have responded rather actively. The bid of the project has proved quite useful in guiding the work. However, the emphasis on the degree of urban versus rural being dependent on both on the physical structures and functional flows has to be emphasised more in the further work.

Workpackage 1

- Provides working definitions for key issues and concepts concerning urban-rural relationships that will be examined in the project. Synthesises, compares and assesses existing literature. Identifies examples of important urban-rural relationships for policy-making. -

Achievements by now:

The first report on concepts and definitions has been elaborated by Dominic Stead from the OTB. The report reviews literature (both academic literature and policy documents). The report is divided into two main parts. The first addresses definitions of urban and rural and the second addresses urban-rural relationships. An adjusted summary of the report follows later in this report.

Workpackage 2

- Consists of 1) development indicators for the analysis of urban-rural relationships and partnerships and 2) collection of data for the data base to be established. -

Achievements by now:

The first report on indicators and data has been elaborated by TAURUS team. They recommend that indicators should be assigned to three categories serving different purposes.

Step 1: basic indicators for the delineation of urban and rural regions;

Step 2: elaborated indicators for the quantitative analysis of urban and rural developments and relationships

Step 3: indicators for the qualitative analysis in case studies.

A preliminary list of indicators has been elaborated. The structure of the indicator list was based on the discussions during the kick-off meeting in Helsinki and several further discussions with many partners. The contents of the list were derived from the analysis of major national and international studies and data sources. The first study on the availability of data has also been carried out. There seem to be a lot of both open questions and dead ends in data accession. An adjusted summary of the report on WP2 follows later in this report.

Workpackage 3

- Evaluation of existing typologies and elaboration of new ones. Based on the indicators proposed in WP2. Comes up with European-wide typologies related to urban-rural relationships and urban-rural partnerships. Work supported by a GIS-platform providing the cartographic presentations. -

Achievements by now:

The data access questions are so crucial for proceeding with this WP that only a short evaluation of the existing urban-rural typologies has been carried out by CURS. As it has gradually become evident, the geographical level of the typology work shall be the NUTS3-level. This will now be used as a starting point for further work.

Workpackage 4

- Provides recommendations for policy options concerning the strengthening of urban-rural relationships in such a way that benefit both urban and rural areas. Provides recommendations concerning effective partnership building between urban and rural areas. -

Achievements by now:

The first report on policy recommendations has been elaborated by Simin Davoudi and her colleagues at CUDEM. The report identifies the key policy themes that affect urban-rural relationships and reviews selected EU policies and their implications for urban-rural relationships. The report also suggests a framework for a compendium of innovative projects addressing urban-rural relationships. A summary of the work is presented later in this report.

Workpackage 5

- Includes both scientific and technical co-ordination. Keeps the partners in close co-operation through WP leaders and represents the consortium towards the outside. -

Achievements by now:

The coordinator signed the contract with the Managing Authority in August-September 2002. Based on this contract a consortium agreement has been sent around to be signed by the project partners. Most partners have already signed and the last signatures are expected by the end of October. The coordinator has also hired three subcontractors with separate contracts. These have already been signed.

After the kick-off meeting the partners have been in contact via e-mail. A web-page has been established on CURS' homepage at the end of October. The page contains a protected part where project partners can download documents that have been saved there by the coordinator. This will make the e-mail traffic less complicated as all documents do not have to be circulated to all team members but can be easily accessed via the web-page.

The public web-address of the Urban-Rural project is:

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

The project has also got its own logo, designed by Anu Allt from CURS. The logo will be used, together with the logo of the ESPON Programme, in all reporting and public relations of the project.

Links with other projects have not been established in particular, mostly due to the hectic timetable for the first interim report, but they have evolved through common project partners. The most crucial links are with the 2.1.3. (through NIRSA as a project partner) 1.1.1. (through Nordregio as coordinator and CUDEM and OTB as project partners), as well as with 3.1. (TAURUS and Nordregio as project partners). The ESPON seminar in Luxembourg is considered as an important meeting place for further discussions about synergies between the projects. Many partners of the urban-rural project are going to attend the seminar.

WP1 – some findings

Defining urban and rural

The review done under WP1 starts from the definitions of urban and rural as they are clearly crucial to examining and understanding urban-rural relationships. The review considers various definitions of urban and rural areas from a variety of literature. It draws extensively from the recent highly relevant work carried out for the UK government on the definition of urban and rural areas (National Statistics, 2002) and research carried out for the Irish government on its spatial strategy (McHugh and Walsh, 2000).

According to National Statistics (2002), there are three main approaches to defining urban areas. These flow from the conception of a town or city as a free-standing, densely occupied, developed area with a variety of shops and services. The three approaches are as follows:

- approaches tracing the extent of the built up area (land use type)
- approaches classifying levels of population and sometimes other densities (such as employment density)
- approaches plotting the functional area of the town

These approaches are all relevant for the project.

Table 1 classifies some frequently used urban/rural characteristics, within a framework derived from a 30-year-old international overview of urban area definitions (United Nations, 1969). The particularly interesting point here is that this framework comfortably embraces almost all the criteria which were identified by the Organisation for Economic Cooperation and Development (OECD) in their cross-national comparison of rural area definitions (OECD, 1994). Moreover, the relative frequency with which the different criteria were used was also found to be very similar by the two studies. Some examples of definitions of urban areas according to these classifications are outlined below.

Table 2. Approaches to Defining Rural Areas

<i>General Approach</i>	<i>Theoretical Context and Methodologies Employed</i>	<i>Data Sources</i>
(a) Implicit definitions/ differentiation of rural areas (often policy-relevant)	Normally a consideration of different rural 'types' based on intuition, theory and existing empirical evidence – not statistically based or tested, although could serve as preliminary to subsequent empirical investigation and statistical analysis: <ul style="list-style-type: none"> • CEC (1988) – 'standard types' of rural area, based on perceived developmental challenges • OECD (1993) – urban-rural gradient differentiating between rural areas by their degree of integration with major urban centre • Marsden et al (1993) – economic, social, political and cultural 'parameters' • von Meyer (1997) – dynamic versus lagging rural regions • Copus and Crabtree (1996) socio-economic sustainability within rural areas, 3 attributes (population, density, economic activity), measurable across three dimensions (structure, performance, dependence). 	Multi-dimensional considerations based on literature review and existing empirical analyses
(b) Statistically derived policy-relevant differentiation of rural areas	Normally a classification/regionalisation conducted in an <i>exploratory</i> fashion, but with a selection of variables based on some theoretically based pre-defined criteria: <ul style="list-style-type: none"> • cluster analysis (e.g. Williams et al, 1996 – socio-economic profile) • principal components analysis (PCA) (e.g. Malinen 	Multivariate – mostly census-based variables

<i>General Approach</i>	<i>Theoretical Context and Methodologies Employed</i>	<i>Data Sources</i>
	<p>et al, 1995 – socio-economic profile; Haase, 1998 – deprivation; Hannan and Commins, 1993 – social ecology of rural areas)</p> <ul style="list-style-type: none"> • PCA and cluster analysis combined (e.g. Walsh, 1980 – agricultural regions; Lafferty et al, 1999 – agricultural regions; Cawley, 1986 – rural deprivation) • detailed spatial mapping of individual variables (e.g. Cooke et al, 2000 – deprivation analysis) 	
(c) Statistically derived index of rurality	<p>Normally a classification of areas based on <i>subjective, pre-defined</i> criteria relating to ‘rurality’:</p> <ul style="list-style-type: none"> • principal components analysis (e.g. Cloke, 1977 and 1978; Cloke and Edwards, 1986; Harrington and O’Donoghue, 1998; Mitchell and Doyle, 1996) • chi square (e.g. Hodge et al, 1996) • cluster analysis (e.g. Robinson, 1990; Mitchell and Doyle, 1996) 	Multivariate-mostly census-based variables
(d) Neutrally defined rural delimitation	<p>Normally a preliminary stage in a more detailed analysis:</p> <ul style="list-style-type: none"> • weighted population density (e.g. Craig, 1985) • population density cut-off point (e.g. OECD, 1994; Walford and Hockey 1991; Commins and Keane, 1994) • gravity model (e.g. Copus and Crabtree, 1996) 	Mostly univariate (often variations on populations density, distribution of population, or some accessibility/distance measures)

In the past, the distinction between urban and rural areas was sufficiently unambiguous for one or two familiar attributes to provide a ready basis for consistent definitions. Modern urban areas are simply too varied for such regularities to hold true, not least because some settlements (some new towns for example) have large populations who live at low densities. The result is that the categories urban and rural can only be said to each have a ‘family resemblance’ across a variety of characteristics. This ‘fuzziness’ of the urban/rural distinction has important implications for methods to delimit urban and rural areas in practice:

- no single approach can provide the ‘definitive answer’; the process of defining urban and rural is somewhat arbitrary
- the need here is for several approaches that fit reasonably each policy purpose that is studied

In the context of urban/rural relationships, some notes about the possibilities to distinguish urban and rural areas are given below:

Population size, which for present purposes can be taken as settlement size (not administrative area size), is a possible candidate to be a key urban/rural discriminator. Certainly in everyday terms, towns and cities are urban whereas villages and countryside are rural. A settlement size criterion, like any solo discriminator, could only be a ‘blunt instrument’ even if the anomalies it would create were relatively few. The actual number of anomalies will partly depend on the choice of the specific population size threshold above which settlements were deemed to be urban. The choice of population size criterion seems to be potentially more contentious in some areas or countries than others (see for example National Statistics, 2002).

The criterion of *population density* has commonly been used to distinguish urban and rural areas that it may be surprising that a recent OECD working party explicitly rejected it as a basis for defining rural areas. This decision is justified by the fact that no particular built form is either necessary or sufficient for an area to be urban or rural. Whereas a highly compact form is highly evocative of Victorian urban areas, its absence does not make a low density new town into a rural area, just as a small clustered village’s compact form does not make it urban.

The question of *land use* is crucial in defining the urban and rural. It is important to notice that physical structures (and corresponding real estate structures) are fairly inert and long-term in effects compared to functional flows that may change overnight and whose effects can be long-term as well as short-term. This aspect needs further in-depth analysis in the next phases of the project.

Economic activity criteria are clearly contingent rather than inherent to urban/rural definitions. Agriculture has for some time been far from fundamental to many rural areas. Levels of economic activity, like unemployment rates, have changed their urban/rural profile: large urban areas used to have the highest rates, but now theirs are among the lowest.

Criteria relating to *accessibility* measures (identifying, for example, which areas have certain facilities within a pre-specified distance) are questionable urban/rural indicators, as shown by the phenomenon of 'food deserts' in some large cities. These areas are definitely urban but have poor access to food outlets. If access to such facilities was crucial to an area being seen as urban then their poor access to these facilities would mean that these areas would be re-labelled as rural rather than urban.

According to National Statistics (2002), criteria relating to the *administrative status* of an area have had little relevance for the British situation for several decades (see also Royal Commission on Local Government in England, 1969). This is also likely to be the case in other European countries.

As well as a greater complexity of modern urban/rural differences in recent years is the increased availability of data, at very detailed scales, and of techniques for handling and analysing these datasets. These new options could perhaps lead to a presumption in favour of a new, very different and more complex approach to defining urban and rural areas. However, the advantages of innovation need to be balanced against those of building on well-established and recognisable precedents, particularly in the policy arena where there are strong preferences for transparency and simplicity by policy-makers.

Urban-rural relationships as flows

Whilst there is considerable literature on both rural and urban development issues, there is much less concerning the linkages between them, particularly in terms of theories and concepts (Tacoli, 1998).¹ The same can be said for spatial planning policy at various levels, which has tended to address urban and rural issues as separate policy areas.

One of the few examples of literature concerning concepts of urban-rural relationships is the work of Preston (1975) who identifies a framework for analysing urban-rural relationships in terms of different types of flows between urban and rural areas:

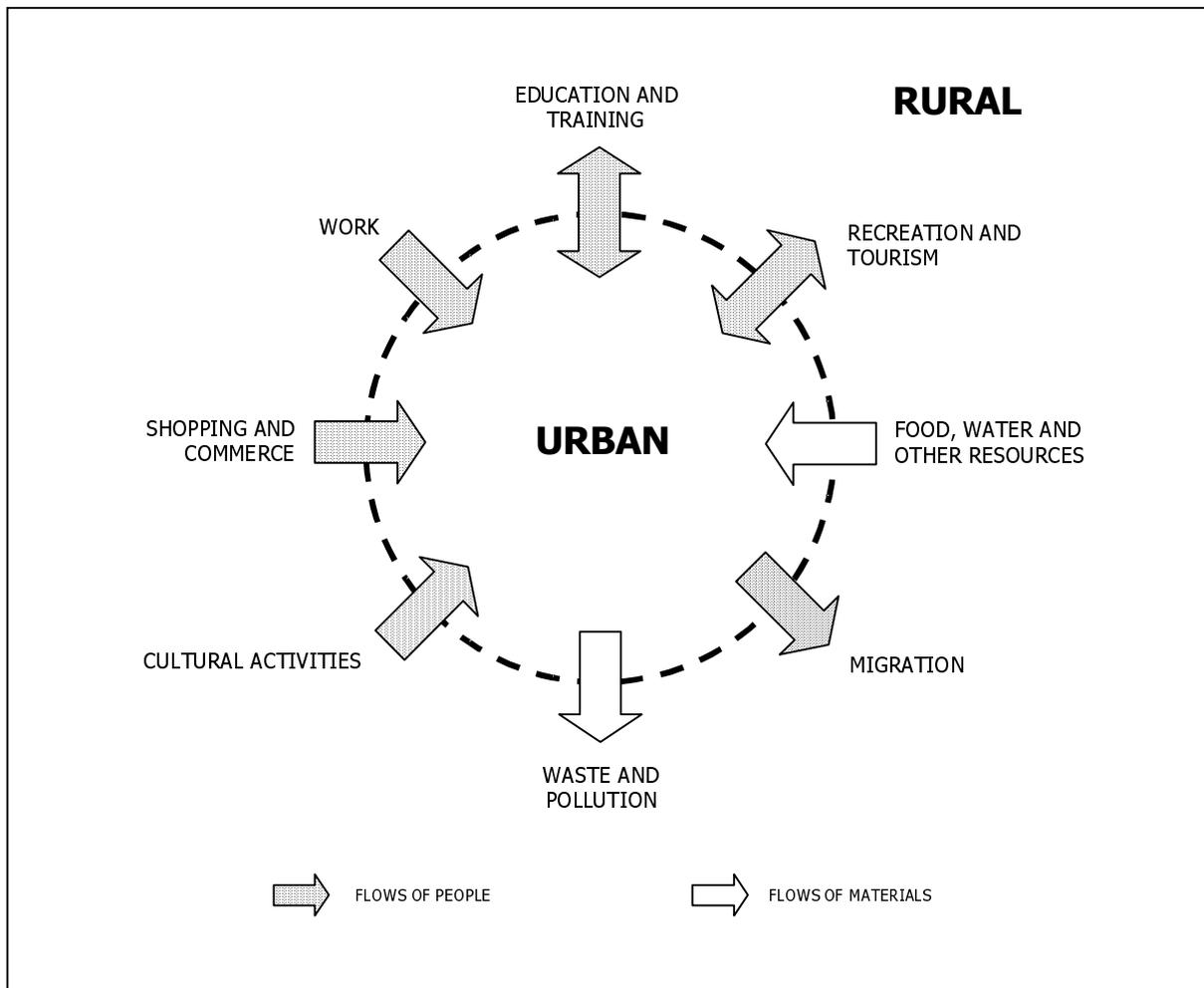
1. the transfer of people, such as commuting and migration for example
2. the flows of goods, services and energy
3. financial transfer through trade, taxes and state disbursements
4. the transfer of assets, including property rights, allocation of state investment and capital in other forms
5. the flow of information, including technical information and social ideas

Urban and rural areas are interdependent and are connected economically, politically, socially and physically through issues such as housing, employment, education, transport, tourism and resource use. Figure 1 illustrates some of the main flows of people and materials between urban and rural areas (based on some of the main types of urban-rural flows identified by Preston, 1975) in the West of England from the work of Nadin and Stead (2000). Despite limited data, the study illustrates a number of important urban-rural relationships and flows. In some cases these flows are predominantly

¹ Of the literature on urban-rural relationships, much of this concerns developing countries (e.g. Tacoli, 1998; Funnell, 1988; Preston, 1975).

in one direction (as in the case of cultural activities or waste flows), whereas in other cases there are important flows in both directions (as in the case of recreation and tourism).

Figure 1. Main Flows of People and Materials between Urban and Rural Areas in the West of England



source: Nadin and Stead, 2000

It is important to stress that links between urban and rural areas are not just physical, even though most of this report has concentrated on the physical/material links. There are also economic links, involving monetary flows between urban and rural areas, as well as information flows. It is difficult to quantify many of these flows because many of them are invisible and/or unrecorded. Urban-rural relationships have seldom been analysed in this area (nor in most other areas) and data is often scarce. This presents a challenge – how to identify and understand the relationships between urban and rural areas more fully. Although the discussion has been on a sector by sector basis, there are obviously strong interrelationships between sectors.

Examination of a number of physical flows between urban and rural areas in the west of England suggests that in some cases the main flow is in one direction (as in the case of cultural activities or waste flows), whereas in other cases there are important flows in both directions (as in the case of recreation and tourism). What is clear from these urban-rural interactions is that interaction between urban and rural areas is often because of inadequacies in urban or rural areas and not always because of a need for interaction. For example, the desire to move out of urban areas is often influenced by poor environmental quality, fear of crime or concern about education standards. A second example is the low level of provision of shops, services and facilities in rural areas, which increases their reliance on urban areas for these things.

Because many interactions between urban and rural areas involve the movement of people and materials, there is a strong transport component to this dynamic. Consequently there are a number of social and environmental implications, including social exclusion, poor accessibility, lack of affordable housing and poor environmental quality. What is clear in many cases is the need to deal with the inadequacies of urban and rural areas where they exist, rather than promoting heavier reliance between urban and rural areas, which often only exacerbates social and environmental problems. From a sustainable development perspective, there is a strong case for the effective management of interactions between urban and rural areas, which will require cooperation and integration between urban and rural players. Current policies often stress the need to strengthen the interdependence between urban and rural areas but this is not always environmentally sustainable. Policies must be careful not to promote interdependence for its own sake. The impacts of strengthening interdependence between urban and rural areas need to be considered carefully, particularly in terms of issues such as local distinctiveness, social cohesion and transport demand.

Urban-rural relationships as structures

The questions of land use and land use pressure are of specific interest concerning urban-rural relationships as structures. Land-use pressure expresses the dynamism of change and its economic rationale as well as the social and cultural attitudes to this change and its implications for the future. Construction investments in a region do not only have a direct influence by providing new facilities for various functions but they also cause prospective expectation-values and consequently strongly influence the regional price level of real estate. This in turn affects the traditional land-use and causes even previously profitable land-use to fade away, and land and buildings to be abandoned. A large-scale typical case is the abandonment of agriculture even in areas that used to be the most yielding ones. Two complementary indicators of land-use pressure can be suggested:

- land prices that indicate change of land-use and the foreseen yield of the new land-use specifically in rural areas under the influence of development,
- the degree of vacant houses and other structures, or abandoned agricultural land, in any given area (especially in regions of strong development).

These and further examples will be worked with in the next phase of the project intensively.

WP2 – some findings

As stated in the project proposal, the work on indicators and data faces the following challenges:

- developing territorial indicators and typologies capable of identifying and measuring development trends as well as monitoring the political aim of a better balanced and polycentric EU territory
- gathering of existing and proposition of new territorial indicators and data (and map-making methods) to measure and display the state, trends and impacts of urban-rural relationships
- clarifying the question of data integration (GIS and statistical data)
- checking data availability throughout Europe and the accession countries
- co-ordinating project work with other ESPON projects dealing also with indicators.

Emphasis during the first phase was on

- the development of a comprehensive list of indicators which serves as a pool for the selection of indicators according to different purposes of the study;
- a proposal for the different steps of the study which guides the selection of indicators;
- a first check of possibilities for the integration of GIS and statistical data;
- a first check of data availability.

As explained earlier in this report, an indicator pool for data requests has been established and will be further developed throughout the project. Indicators has been now assigned to three categories serving different purposes: step 1: basic indicators for the first tests of the delineation of urban and rural regions; step 2: indicators for the quantitative analysis of urban and rural developments and relationships, step 3: indicators for the qualitative analysis in case studies.

Table 2: Basic indicators for step 1

dimension	indicator	data source	threshold
Population density	density of population per km ²	REGIO	EUROSTAT ² : > 500 inh/km ² > 100 inh/km ² < 100 inh/km ²
land use cover (including built-up and non-built up areas)	built density, volume of existing buildings	CORINE	
	land use cover	CORINE	
agricultural use (including agriculture and forestry)	share of agricultural land	CORINE	
	share of forests	CORINE	

Source: Compilation of the ESPON 1.1.2 consortium

For the step 2 the whole indicator list (see Annex 1) serves as the starting point. As the list is rather comprehensive, it might be useful to cut down the number of indicators. The selection process can be done according to several criteria:

- key issues of the sphere of policy: which of the indicators is more and which one is less relevant for the analysis of urban-rural relationships (the list of key issues was used to check the indicator pool; relevant indicators were marked in green colour)

² these are the thresholds used by EUROSTAT

- another approach to the policy sphere should start from existing EU policies and plans for the post 2006 funding period, addressing rural and urban development and relationships (the report of the WP4 can be used as a basis for this kind of selection process; at this stage relevant indicators of the pool were marked in yellow colour but the selection was not based on the WP4 work yet)
- A third approach could start from an economic viewpoint and ask for the economic and demographic driving forces which shape the relationships between urban and rural regions.

In addition, one selection criterion must evidently be data availability. This set of indicators shall lead to the development of typologies and to drawing of maps for the whole European territory. So the relevant indicators have to be checked against data availability, preferably in EU data bases and for the accession countries in data bases already available through the work of the DataNavigator projects in the ESPON framework.

It will also be indicated which indicators are very useful in terms of concepts and typologies but lack data, in order to attract the attention of statistical offices to this problem.

Some of the indicators of the lists can only be used in case studies. The data availability shall thus guide the selection of themes to be incorporated in the case studies. Each partner carrying out a case study will have its own approach to solve the problems of data access. It is presumed that most of the case studies can work on a detailed level of analysis, NUTS5 or below.

As already indicated earlier in this report, it is possible to integrate GIS and statistical data for the purposes of the delineation tests, data analysis and mapping. However, there are several problems related to the foreseen sources of data:

- The SIRE data base provides data for very small units (communal level) which is a prerequisite for the analysis of urban-rural relationships. But the data are much too old.
- The REGIO data base provides more up to date data, but the spatial level is too large for the analysis of urban-rural relationships.

It seems that the work lacks an appropriate statistical EU wide data base which could provide statistical data for most of the economic, demographic and social indicators. This is one reason why the integration of GIS data is necessary. This was unfortunately not foreseen in the phase of project preparations. The tasks between the partners might have to be reorganised somehow.

In addition to the EU databases it is possible to gather data from national sources, as soon as the results of DataNavigators are available. This would require a lot of coordinated data collection that is very time consuming. Some adjustments to the work plan of the project might prove necessary.

WP3 – some findings

In the kick-off meeting a first review of the existing urban-rural relevant typologies was made. The major source in this respect (in this WP typologies refer to those that have been tested with data, whereas the WP1 reviews the different conceptual solutions) is the Study Programme on European Spatial Planning (SPESP). Simin Davoudi³ provided the following analysis of the work done in SPESP:

The typology work in the Study Programme started by reviewing a range of typologies of cities. However, it soon became clear that the work tended to emphasise particular attributes of different cities, rather than the flows between cities and their hinterlands. Therefore, the attempt to produce a Europe-wide city typology did not prove satisfactory since it became clear that:

- Typologies were set up according to the particular purposes of the analysis and hence cannot be used generically;
- Most of the sources used in the synthesis were out of date and hence did not reflect some of the major changes that had taken place since the original studies cited;
- Typologies tended to take a 'snap shot' of existing situation and did not reflect the dynamics of changes over time;
- Although in some parts of Europe, there had been considerable stability on the position of cities in relation to each other, elsewhere this was not the case.

As the Study Programme progressed, the focus shifted towards 'territory', the region within which critical relationships are carried out. A typology of regions was produced, covering 728 regions at NUTS3 level. Information about location and population size of more than 5000 urban settlements was taken from GEOPOLIS database and analysed together with information on rural population aggregated at NUTS3 level. The following "indicators of rural-urban spatial pattern of settlement" were used to classify a hierarchical ascending pattern of regional territories in Europe:

- Urbanisation ratio (share of urban population in total population)
- Density of rural population (per square kilometre)
- Average spacing of urban areas (average distance to any urban settlements weighted by population)
- Primacy index (ratio of population size of two largest cities in the region)
- Class level of the largest city (city hierarchy)

On the basis of this analysis the following territorial typology was produced:

- Regions dominated by a large metropolis (one large metropolis dominates a not too densely populated rural area).
- Polycentric regions with high urban and rural densities (many large cities dominating a dense pattern of medium and small sized towns in densely populated rural areas).
- Polycentric regions with high urban densities (where the presence of cities is still significant but within a less dense rural area).
- Networks of medium and small towns (regular network of towns scattered in rural areas with medium density).
- Remote rural areas (regions where accessibility to cities is less developed).

This approach had major shortcomings. The main issue was that the typology was based on a physical agglomeration definition (population and density and/or land use) and not a functional definition that can potentially include very complex relationships within territories. Another significant issue was the 'building blocks' or the scale of analysis. In order to capture spatial pattern in sparsely populated regions of Europe a smaller building block, for example NUTS5 region, was needed. Finally, the lack of comparable data at European level was seen as a key barrier to production of a

³ She drew on the report (DETR, 2000) which was produced parallel to SPESP and focused on the UK dimension of urban-rural relationships.

meaningful territorial typology which focuses on the complex interrelationships within territories and in particular the urban-rural relationships.

In the Helsinki kick-off meeting another typology review was done by Jim Walsh, who gave a presentation about existing rural typologies and explained the work done for the National Spatial Plan in Ireland. This input has been incorporated to the work of WP1. The principal component analysis that was used in Ireland could be tested in other case study areas as well.

Another experience with typology work comes from Lois Labrianidis (RDPRU), who has been coordinating projects related to the future of Europe's peripheral rural areas as well as the role of entrepreneurship. The projects included similar work on typologies (based on a rather extensive database and experimenting with factor and cluster analysis) as now planned in this project. Also data from non-EU countries, especially Poland, has been integrated to the database. RDPRU will provide input from this work to the Urban-rural project work before the next interim report.

Earlier experience can be gathered from the project MEDORA, which developed a model for assessing typologies and telematics usage and demand in European countries. MEDORA delivered an integrated database structured around the Eurostat NUTS3 GIS system, containing a number of parameters, grouped into three categories: geographic, socio-economic and telematic, and a set of pilot applications of both inductive and deductive typologies and MEDORA model validations for all Mediterranean countries: Greece, Italy, Southern France, Spain, Portugal, as well as for Ireland and Brandenburg. In addition a set of pilot applications of both inductive and deductive typologies were presented for some further countries, such as Czech Republic, Poland and Hungary. The problems in building on the experiences from this model are that the project was carried out already some ten years ago and it concentrated on telematics. However, some of the publications on typologies might be helpful in the further work.

Interesting work, but not with European data, comes from the US. The Economic Research Service (ERS) is the main source of economic information and research from the U.S. Department of Agriculture. Their classification scheme, the 1993 rural-urban continuum codes, distinguishes metropolitan counties by size and non-metropolitan counties by degree of urbanization and proximity to metropolitan areas. The metro and non-metro categories have been subdivided into 4 metro and 6 non-metro categories, resulting in a 10-part county codification:

Metro counties:

- 0 Central counties of metro areas of 1 million population or more.
- 1 Fringe counties of metro areas of 1 million population or more.
- 2 Counties in metro areas of 250,000 to 1 million population.
- 3 Counties in metro areas of fewer than 250,000 population.

Non-metro counties:

- 4 Urban population of 20,000 or more, adjacent to a metro area.
- 5 Urban population of 20,000 or more, not adjacent to a metro area.
- 6 Urban population of 2,500 to 19,999, adjacent to a metro area.
- 7 Urban population of 2,500 to 19,999, not adjacent to a metro area.
- 8 Completely rural or less than 2,500 urban population, adjacent to a metro area.
- 9 Completely rural or less than 2,500 urban population, not adjacent to a metro area.

This experience is kept in mind during the further review of existing typologies, together with the WP1.

The next step in the typology work is to get familiar with the categorisation of the existing typologies of policy initiatives, eg. Objective 1-3 areas.

WP4 – some findings

Key Policy Themes Affecting Urban-Rural Relationships

There is currently little by way of policy interventions that *specifically* focus on issues of urban-rural relations. Rather policy impacts on urban – or perhaps more frequently, rural – areas represent the unintended consequences of other policies, or are a reflection of an absence of consideration of urban-rural relations in policy design.

At this stage, in the absence a fully developed framework for analysis of urban-rural dynamics, the WP4 made a provisional review of relevant policy areas. This review will need reformulating and reinterpreting as the project develops. The key policy themes at this stage were:

Population and migration Settlement policy Public housing policy Accessibility and personal mobility
Land use control
Economy and employment Economic diversification Tourism and leisure Urban / rural labour market
Service provision
Infrastructure provision Road and rail Water, waste and energy
The framework of governance National level Regional/local level
Public expenditure policies

Review of Policy Development at the EU Level

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 linkages. The same can be said for spatial planning policy at various levels which has tended to address urban and rural issues as separate policy areas.

Successive Treaties (including Single European Act, Maastricht Treaty and Amsterdam Treaty) 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. Nadin (2000:6) identifies three types of EU policies that can be considered 'spatial':

- EU sectoral policies that are defined in spatially specific way such as Trans-European Networks (TEN)
- EU sectoral policies that are not expressed in spatial terms but have an influence on spatial structure and development of the EU territory such as financial instruments under the Common Agricultural Policy
- EU sectoral policies that are intended to influence or be implemented through spatial planning policy in the Member States such as the impact of the EIA Directive on national planning legislation

The ESDP also identifies a number of community policies with spatial impact on the EU territory. These include (CEC, 1999:13):

- Common Agricultural Policy
- Structural Funds
- Environment Policy
- Trans-European Networks
- Community Competition Policy
- Research, Technology and Development
- Loan Activities of the European Investment Bank

The WP4 aims to examine those EU policies and initiatives which have been most influential in their impacts on urban or rural development, and to provide an assessment of the extent to which they have addressed the issues of urban-rural relationships. The following eight policy areas and initiatives will therefore be reviewed during the course of this study. For the purpose of the First Interim Report, the focus has been on the first six areas with the intention to complete the review for the Second Interim Report.

1. EU agricultural and rural policy with specific emphasis on Common Agricultural Policy and its successive reforms
2. EU regional policy with specific focus on the Structural Funds and Priority Objectives
3. EU urban policy
4. Community Initiatives and in particular INTERREG, LEADER and URBAN initiatives
5. Article 10 Urban Projects and in particular TERRA Programme
6. EU spatial policy with particular focus on the ESDP
7. Transport Policy with an emphasis on Trans-European Networks
8. Environment policy focusing on Urban Environment and Environmental Action Programmes

In terms of policy development, organisations such as the United Nation Centre for Human Settlements were amongst the first who adopted a view based on urban-rural linkages to promote a middle position rather than a dualism between what is seen as urban and what is seen as rural (Mutizwa-Mangiza, 1999).

By contrast, the European Union (EU) has been slow in adopting an integrated approach and has only recently begun to promote the concept, mainly through its spatial policy agenda, notably the European Spatial Development Perspective (ESDP).

Overall, a review of recent policy development within the European Commission undertaken as part of the Study Programme for European Spatial Planning (SPESP) concluded that up to 2000 the EU urban and rural policy domain had remained largely untouched by the integrated approach (Bundesamt für Bauwesen und Raumordnung, 2001).

The picture emerging from the overview of recent developments in EU rural and urban policies is one of two policy domains which have been operating in parallel with little connections between them. 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. Similarly, 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.

The compartmentalization of policies into sectors and the geographical limitation of the scope of policies have worked as a barrier to the development of integrated policies at the EU level. This in turn suggests that policies targeted at rural and urban areas, which do not take into account the complex linkages between them, are unlikely to be fully effective.

However, there has been a change in perception and policy orientation in various EU policy arenas over recent years (albeit slowly) and the issue of urban-rural relationships has gained more

importance. There is an increasing understanding that firstly, the conventional view of rural areas as equivalent to agriculture is no longer reflective of the reality of either rural regions or the rural component of rural-urban relationships; and secondly that urban-rural relationships add a significant dimension to understanding the key territorial development issues and formulating effective policies to address them (Davoudi and Stead, forthcoming)

This is particularly true in the case of the framework which has been developed by the ESDP. This recognizes the city and countryside as part of one functional, spatial entity with diverse relationships and interdependencies (paragraph 92). It is shown that some rural areas near towns are under strong negative pressure and that those pressures can only be countered through suitable regional planning and integrated policies. It is also argued that the best possible conditions for development are when towns and rural areas complement each other. There is therefore a need for an integrated way of looking at towns and countryside if local problems are to be solved. The ESDP identifies a certain number of policy options which support those endeavours. These are worth mentioning here as a strong reminder of the key points on which the Policy Recommendation for this study will build upon:

- Maintenance of a basic supply of services and public transport in small and medium-sized towns in rural areas, particularly those in decline;
- Promotion of co-operation between towns and countryside aiming at strengthening functional regions;
- 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; and
- Promotion of company networks between small and medium-sized enterprises in the towns and countryside.

Framework for a Compendium of Innovative Projects Addressing Urban-Rural Relationships

The general policy context for urban-rural relations includes, as well as the commitments stated in the ESDP, various national political statements about the need to develop policies which increase our ability to appreciate and respond to the problems and potentials of urban and rural areas in an integrated way. There are also some government sponsored national agencies whose aim is to explore urban-rural issues and improve integrated responses to the 'radical transformation' affecting both urban and rural areas (Blok, 1998), such as Dutch Rural Areas Council. There are also national social/ political movements, usually responding to some rural crisis, which can raise governmental interest in addressing urban-rural relations issues. An example in the UK, the Countryside Alliance, represents a social and political movement partly dedicated to promoting rural interests within a perceived national pro-urban cultural and political bias.

Existing research on policies in spatial planning to address urban-rural relationships is limited, with SPESP being one of the key contributors. The Study research found a very wide range of policy approaches to urban-rural relationships across the EU 15. However there was an absence of detailed and consistent case study material to help identify good practice and appropriate forms of territorial governance. Further research was proposed to plug this gap and promote good policies, with a particular recommendation that research into how development packages and strategies could use hard and soft infrastructures to support and regenerate territories.

Similarly, there is no compendium of innovative policy initiatives available to draw on for this study. One of the objectives of Work package 4 is to lay the foundations for some kind of catalogue of relevant innovations. At this early stage the need is to explore sources for innovative case study material. These include, at the EU level, projects completed under INTERREG IIc and those proposed for INTERREG IIb, many of which specifically address the key theme of strengthening URR. Other sources include projects undertaken under LEADER and TERRA initiatives.

As well as these multi-region projects, there will be relevant national and regional level projects. Initial research suggests that these can be hard to identify. This is partly because URR has not previously been widely identified as an explicit aim of spatial policy and it has been largely absent from political debate. Reasons for this absence may include the geography of URR, for example the absence in the EU core of remote rural areas with distinctive issues (now being addressed at the geographic margins of the EU). Different administrative geographies can also affect the perception of the need to identify and address URR issues. In countries with a strong tradition of regionally-based government URR issues may be dealt with implicitly in terms of equality of access to public services, a geographically even distribution of public goods and integrated transport systems. This state of affairs may prevent issues of unevenness and inequalities between urban and rural populations arising and obviate the need for policies framed explicitly in terms of URR. Nevertheless, such areas may implicitly, and often effectively, be addressing URR, although their identification for this project will be problematic.

In less regionalised areas, where administrative boundaries systematically separate rural from urban, such as in the UK, issues of urban-rural tensions are both more likely to arise and require more explicit, formalised, policy responses. URR has arisen very recently as a key element of EU spatial policy, accelerated by the present crisis in EU agriculture. This is especially evident in the UK, particularly England, where the foot and mouth emergency provided a catalyst for the general agricultural crisis. A rural white paper, following a cabinet-level analysis of the implications of the crisis, has committed the government to radical measures on URR, including spatial policy measures. The recent policy responses, from EU and national level to local in England, provides an excellent laboratory for the development of innovative URR policies, which WP4 will track and report on.

At this early stage, an initial scan of relevant initiatives has been carried out. Some of the examples will form the basis for case studies of good practice, whilst other examples will be identified as the project progresses, both by this Work package and those suggested by ESPON partners. The relevant initiatives developed by INTERREG IIc projects will be explored to identify which produced innovative outcomes and have proved robust. The initiatives proposed for INTERREG IIIc are more speculative and will not produce evidence of effectiveness in time for the ESPON research process. However, interesting innovative proposals reflecting good established practice will be investigated for leads on developing policy innovations.

A proposed classification of innovative urban-rural initiatives, that will be further elaborated throughout the project, is the following:

- 1 Strategic integrated spatial planning aimed at 'regional balance' 'connectivity', 'sustainable development' and holistic approaches to URR
- 2 Physical and virtual accessibility and connectivity
- 3 Market integration and economic networks/ clusters
- 4 Cultural asset integration
- 5 Social and political networks enabling communication and network building

Annex 1: Indicators on urban-rural relationships (a separate Excel-file)

Annex 2: Cited and related literature

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indicators on urban-rural relationships

themes of urban-rural relationships	dimensions	issues	indicators	elaborated indicators	structure or flow	time series needed? length?*	covered by / related to ESPON program**	data availability***
reorganization of urban and	settlement structure	urban and rural structure and developments	dimensions of population by size of "municipalities"	urbanisation ratio (share of urban population in total population)	structure	y**** / 10 years	SPESP / ESPON 2006 1.1.1	
				density of rural population per square kilometre and growth of rural settlement		y / 10 years		
				average spacing of urban areas (average distance to any urban settlements weighted by population)		y / 10 years		
				primacy index (ratio of population size of the two largest cities in the region)		n		
				class level of the largest city (city hierarchy)		n		
				distribution after the rank-size-rule		n		
	infrastructure	transport	availability indicators and qualities	accessibility by road to population	structure	n	ESPON 2006 1.2.1, 1.2.2 , 2.1.1	
				accessibility by rail to population		n		
				accessibility by air to GDP		n		
				length of transportation network by total area		n		
				average road travel time to the next centre (22 centres)		n		
				average travel time using combined transports to all centres		n		
		water supply and sewage	availability indicator and distribution	number of waste water treatment plants	structure	n		
				water distribution system		n		
				water reservoirs		n		
		telecommunication	availability indicators and qualities	use of computers, use of internet	structure	y / 10 years		
				purpose of internet use, duration etc.		y / 10 years		
				type of internet connection		n		
				use of mobile phones		y / 10 years		
				planned capability for UMTS		n		
		energy	source of electric energy	knobs of wireless lan	structure	n		
	share of renewable energy			y / 10 years				
	regional share of energy demand			n				
	demographic structure	consumption	consumption of energy by households (Mio kWh, kWh/hab)	structure	y / 10 years			
			population size		population size in total and by administrative units	y / 10 years		
			population density		y / 10 years			
		natural	demographic ratio	population in total	structure	y / 10 years		
population by sex				y / 10 years				
population by age				y / 10 years				
			nativity		y / 20 years			

regional systems	demographic development	demographic development	population growth by total area	mortality	structure	y / 20 years	ESPON 2006 1.1.4		
				fertility		y / 20 years			
				age cohorts	under 18 /18-25/ 25-40/40-65/over 65 year old. ^{SG}			y / 20 years	
			migration between urban and rural areas		start-destination	community x to community y	flow	y / 20 years	
					phase of life	under 18 /18-25/ 25-40/40-65/over 65 year old. ^{SG}		y / 20 years	
					motivation/causes	education/jobchange/life-quality/life-style/retiring /other ^{SG}		n	
			ageing of communities	development of age cohorts	change of share of age cohorts in time	structure	y / 20 years		
	mobility	commuting/transfer of people	to work	share of commuters to employed residnets	structure	y / 10 years			
				length		n			
				frequency		n			
			to leisure activities	start and destination points		n			
				length		n			
				frequency		n			
			to shopping/needs	start and destination points		n			
				length		n			
				frequency		n			
			to education	start and destination points		n			
				length		n			
				frequency		n			
			recreational purposes	start and destination points		n			
				length		n			
				frequency		n			
				start and destination points		n			
			household oriented infrastructure	education	accessibility indicator	average distance to primary school	structure	y / 10 years	
	average distance to secondary school	y / 10 years							
	average distance to university	y / 10 years							
	availability indicator	space for pupils in secondary schools		y / 10 years					
		students per capita		y / 10 years					
	medical supply	accessibility indicator		average distance to doctor's practice	y / 10 years				
		availability indicator		number of beds in hospital per capita	y / 10 years				
	shops, banks, post offices etc.	availability indicator		number of units within a perimeter of 2Km	y / 10 years				
		accessibility indicator		average distance to town hall	y / 10 years				
	housing	households		size of household	average number of persons	structure		y / 10 years	
number of households			total amount in region/community	structure	y / 10 years				
share of household sizes			percentage of the different household sizes	structure	y / 10 years				
real estate market		offer and demand on the housing market	average price for a m ² undeveloped real estate	structure	y / 10 years				
housing market		rental tariffs	average rent for a m ² housing space	structure	y / 10 years				
tourism	touristic settlements	holiday residence/second home residence	percentage of residences/second homes	structure	y / 10 years				
	employment	tourism related employment	share of tourism related employment to totalemployment	structure	y / 10 years				

land use changes and pressure	tourism	tourist pressure/ threat on landscape and on land use	touristic development	number of overnight stays of tourists per capita per year	flow	y / 10 years			
	agriculture and forestry	marginalisation versus increasing profitability of agriculture and forestry	agricultural intensification	total employment in agriculture, hunting, forestry and fishing	structure	y / 10 years			
				agricultural use		y / 10 years			
				net value added in agriculture and forestry		y / 10 years			
			import and export of agricultural production	y / 10 years					
			ecologicalisation of agriculture	share of ecological agriculture			y / 10 years		
	soil	ecological quality (degradation and upgrading) of area and soil	presence of natural soil	share of sealed areas	structure	y / 10 years, or to be covered by case studies			
				development of share of sealed areas		y / 10 years, or to be covered by case studies			
				corrosion areas		y / 10 years, or to be covered by case studies			
				deforestation areas		y / 10 years, or to be covered by case studies			
				desertification areas		y / 10 years, or to be covered by case studies			
				sealed alluvial areas		y / 10 years, or to be covered by case studies			
				soil profile - % of A and B horizons		to be covered by case studies			
			soil quality	soil pollution by type of pollution		structure	y / 10 years, or to be covered by case studies		
	waste fields		y / 10 years						
land use	land use pressure	land abandonment, urbanisation, economical and demographic growth (in different land-use categories: natural, semi-natural areas, wetlands, water surfaces)	division of territory by land use	structure	y / 10 years				
			natural reserves	structure	y / 10 years				
			changes of designated land uses	flow	y / 10 years				
economic development	economic performance	economic strength	income	per capita income	structure	y / 10 years			
			output and productivity	GDP per capita/employee		y / 10 years			
			participation in the labour market	unemployment rate		y / 10 years			
				labor force participation rate		y / 10 years			
			establishment size	share of establishments by size groups		y / 10 years			
			sectoral structure	employment by all NACE branches - total		y / 10 years			
	net value added by sectoral unit (NACE-section)	y / 10 years							
	degree of innovation		sectoral structure resp. future orientation	percentage of R&D personnel in the active population	structure	y / 10 years			
				percentage of R&D personnel in total employment	structure	y / 10 years			
				share of employment in agricultural sector	structure	y / 10 years			
r & d investments			public and private R & D-investments	structure	y / 10 years				
	patent application	number of patent applications	structure	y / 10 years					

			diffusion of innovations	location of invention and locations of adaption	flow	y / 10 years				
			urban regional flows	flows of capital	business formation and volatility	firm formation per 1.000 employables	structure	y / 10 years		
						balance of newly founded and bankrupt firms		y / 10 years		
						total amount		structure	y / 10 years	
					business relocation	amounts by direction	flow	y / 10 years		
						origin and destination	flow	y / 10 years		
			flows of products and services	product and service relocation	origin and destination	flow	y / 10 years			
			public sector	public funding	effects of public fundings	economic, social, ecological effects	structure/flow	y / 10 years		
					objectives of public fundings	topics, hardware, infrastructure, education etc.	structure	y / 10 years		
natural and cultural assets	natural heritage	protection/ conservation of natural heritage	endangering indicators	share of area for natural reserves	structure	y / 10 years				
				number of species on red list (e.g. NATURA 2000, HABITAT)		y / 10 years				
				ecosystemic diversity		y / 10 years				
			pressure indicators	emissions of the acidifying gases	structure/flow	y / 10 years				
				water resource use	structure/flow	1980-1999				
				percentage of soils with good capacity of use occupied by urbanization		to be covered by case studies				
				percentage of aquifers' recharge areas occupied by urbanization		to be covered by case studies				
				population density on littoral areas	structure	y / 10 years				
			protection of natural resources	potential of renewable and non-renewable resources	strategic protection areas	share of area for soils with good capacity of use		to be covered by case studies		
						share of aquifers' recharge areas		to be covered by case studies		
	presence of sites with mineral-medicinal springs					to be covered by case studies				
	presence of extraction areas of non renewable resources					to be covered by case studies				
	resource flows	rate of beach/cliff area				to be covered by case studies				
		internal runoff				to be covered by case studies				
		recharge of aquifers				to be covered by case studies				
		solar radiation for potential production of solar energy				to be covered by case studies				
	cultural heritage	cultural landscapes	cultural richness indicators	presence of cultural sites	structure	y / 10 years				
				concentration of cultural sites		y / 10 years				
			tourist pressure	ratio of yearly tourist stays by total resident population		y / 10 years				
				touristicity (tourist capacity) with number of beds in hotels etc. by number of households		y / 10 years				
		waste treatment	waste flows	waste water treatment	structure/flow	1980-1999				
				municipal waste management		1980-1999				
				hazardous waste management		1980-1999				

*= The length of the time series should be seen as a suggestion.

**= Other ESPON or the SPESP are dealing with the topic too, sometimes it is there major theme, synergies should be used.

***= Data availability is already checked for some countries and for some indicators suggested, but has to be completed as soon as all DataNavigators are available and the choice of indicators has been made.

****= legend: y = yes n = no

^{SG}= Attention! Only an ideal suggestion because differences of datasets are obvious!

	policy relevant
	relevant for urban-rural relationships
	both policy and u-r relationships relevant
	basic indicator selected for step 1