ESPON project 3.2
Spatial Scenarios and Orientations in relation to the ESDP and Cohesion Policy

Final Report
October 2006

TPG members

- **Lead Partner:**

IGEAT – Institut de Gestion de l'Environnement et d'Aménagement du Territoire, Université Libre de Bruxelles (Belgium)

- **Co-leader:**

AETS – Agence Européenne «Territoires et Synergies » (France)

- **Partners:**

BBR – Bundesamt für Bauwesen und Raumordnung (Germany)
CRS- HAS – Centre for Regional Studies of the Hungarian Academy of Sciences (Hungary)
CUDEM – Centre for Urban Development and Environmental Management (United Kingdom)
DIG – Department of Management, Economics and Industrial Engineering, Politecnico di Milano (Italy)
MCRIT – Barcelona (Spain)
NISR – Ruimtelijk Planbureau (Netherlands)
NORDREGIO – Nordic Centre for Spatial Development (Sweden)
UMS 2414 RIATE – Réseau Interdisciplinaire pour l'Aménagement (France)

- **Experts:**

CUGUAT-TIGRIS – Centrul Universitar de Geografie Umană şi Amenajarea Teritoriului – Teritorii Inovante-Gestiune Regională şi Interacţiune Spaţială, Iasi (Romania)
ETH Lausanne – Laboratoire dynamiques Territoriales (LADYT), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne (Switzerland)
ETH Zürich – Network City and Landscape (NSL), Institute for Spatial and Landscape Planning (IRL), Zürich (Switzerland)
EUROREG – Centrum Europejskich Studiów Regionalnych i Lokalnych, Warsaw (Poland)
IWH – Institut für Wirtschaftsforschung, Halle (Germany)
NTUA – National Technical University of Athens, Athens (Greece)

Co-financed by the European Community through the Interreg III ESPON Programme

ESPON project 3.2
Spatial Scenarios and Orientations in relation to the ESDP and Cohesion Policy

Final Report
October 2006

Volume 6
General scientific coordination of ESPON

This basic report exists only in an electronic version.

ISBN 2-9600467-3-0

Table of Contents

Figures and Tables

1 Introduction

Project 3.2 has also had the challenging task of supporting the ESPON coordination unit in the scientific coordination of the entire programme. This included several issues:

1. The continuous update and maintenance of the ESPON Database and Map kit, as well as general data issues
2. A reflection with the CU on the best way to synthesise and present all the information necessary for the successful operation of ESPON projects, first through the so-called ESPON guidance papers, then through the ESPON binder
3. The preparation of ESPON events, such as the seminars and scientific conference
4. The preparation of ESPON publications such as the briefings, synthesis reports and final reports

Points 3 and 4 do not need to be discussed in this report. We thus concentrate on the ESPON binder and, mainly, on the data issues, before formulating some general recommendations for ESPON 2013.

It is also important to mention that several members of the team have actively contributed to the ESPON scientific synthesis report which summarises the scientific *acquis* of ESPON and launches ideas for the future. We do not wish to repeat the same outcomes here, and so only limit this section to some of the most important elements which were not taken into account.

2 The ESPON "Binder"

In the first years of the ESPON I programme a tradition evolved of following-up each ESPON seminar with a so-called "guidance paper". These guidance papers attempted to summarise the discussions, in order to give clear guidance to lead partners on issues common to all research groups, the "common scientific platform". However, they also discussed very practical issues such as, for example, the structure and presentation of final reports.

At the lead partner meeting in February 2005, several lead partners voiced a request for one centralised document that would summarise the main messages of all guidance papers and thus make it easier for a new lead partner to find important information. It was decided to realise this in the form of a binder, both in paper (for those elements where it is possible) and electronic form, allowing a flexible and constantly evolving document. This has provisionally been called the "ESPON Binder", but a new name will have to be found.

On the basis of a proposal of a table of contents provided by the project, the actual elaboration of the binder is currently handled internally within the ESPON CU.

3 Data

3.1 Introduction

ESPON is all about data. Its main aim is to collect and analyse evidence concerning the territorial structures and trends in Europe. Quantitative data is obviously the prime source of information for this task. Other sources, such as case studies, exist and are being used, but even though they sometimes allow to go deeper into the complexities of the actual mechanisms and driving forces, they do not offer the coverage of the entire ESPON space. It is, thus, logical that in a programme dealing with such a large space and a context of common policy making across most of this space, statistical indicators are the central axis around which the scientific work revolves, and this axis is represented by the ESPON database.

This database contains all the indicators collected and used in the ESPON projects. It complements Eurostat Regio data with many other sources and adds ESPON-made indicators to the lot. It is a unique collection of data at regional level across 29 states. The continuous updating and maintenance of this database was a major task for the project.

In this chapter we present the contents, structure and interface of the database in its current form. As regional data analysis often goes through mapping, the link of this data to geometrical information is of highest importance. In parallel to the database, the project has, therefore, continued the development and update of the ESPON map kit.

However, both statistical analysis and cartography at a regional scale in Europe are confronted with the problem of continuously changing definitions of indicators and administrative regions, regularly interrupting time series. As territorial analysis requires a long term perspective, this limitation is serious. The project has, therefore, developed the prototype of a solution to this issue in the form of a "long-term database". We present here the concepts behind and the implementation of this prototype.

3.2 ESPON database and Map kit – ESPON indicators

3.2.1 The ESPON Database

3.2.1.1 *Introduction*

The network structure of the ESPON programme with limited project durations required a central conception and coordination of the preparation and management of databases. Common standards had to be defined in order to secure and provide data to other project teams involved. Thus, the set-up of the ESPON database became one of the most important products of the ESPON programme. It was developed as a joint product of the transnational project groups (TPG). The conception, the maintenance and the update of the data and indicator was guaranteed by the coordination projects 3.1 and 3.2 and is continuously expanded.

The ESPON database covers regional information for the EU member states plus Norway and Switzerland and the candidates countries Bulgaria and Romania. The main task is to provide a wide thematic range of regional data as an empirical basis for quantitative comparing analyses of scientists taking part in the ESPON programme.

In general, the content of the database can be differentiated into regional statistical basic data and indicators on the one hand and specific, theme-orientated project data and computed indicators of the projects on the other hand. The basic data cover fundamental information which is needed by different projects in the context of their analyses. In order to avoid double work and the use of different data for the same indicator used in ESPON, they are centrally prepared and periodically provided to the projects as promptly as possible. These basic data e.g. refer to the population, to the labour market and to economic aspects.

Basic data for the EU member states as well as for Bulgaria and Romania are essentially originate from the Statistical Office of the European Communities (Eurostat). The information for Switzerland and Norway coming to a small part from Eurostat also (mainly related to Labour Force Survey data9; they supplemented by data from the national statistical offices for Switzerland and Norway. An adjustment and a harmonisation to Eurostat definitions and calculation methods has been done within the co-ordination project 3.2.

The estimation of data which could not be obtained on a regional level according Eurostat definitions, especially for Norway and Switzerland was on of the main challenges towards a unique and harmonised data and indicator set for the whole ESPON territory.

The lack of selected regional basic data in total for these countries does not allow trend estimations in time or on the basis of regional distributions for a given time by a earlier or later date.

To mirror the regional structure of these countries, two ways of estimation has been chosen, both related to the existence of Eurostat comparable values on a national level at least.

Most commonly the estimation of regional values according EU definitions was done by the recalculation of the regional shares of topic closely related indicators in national definitions. e.g. of the regional national income to obtain the regional GDP in Eurostat definition.

In cases in which no comparable related data were available, the estimations of regional distributions was done on the basis of the regional ranges of highly correlating indicators within the European context.

The project data are the results of the project groups and can thus be seen as the collected scientific value added of the ESPON projects. In contrast to the basic data, these numbers are based on a widespread spectrum of regional statistical sources. These are amongst others the results of regional analyses as well as the results of model calculations.

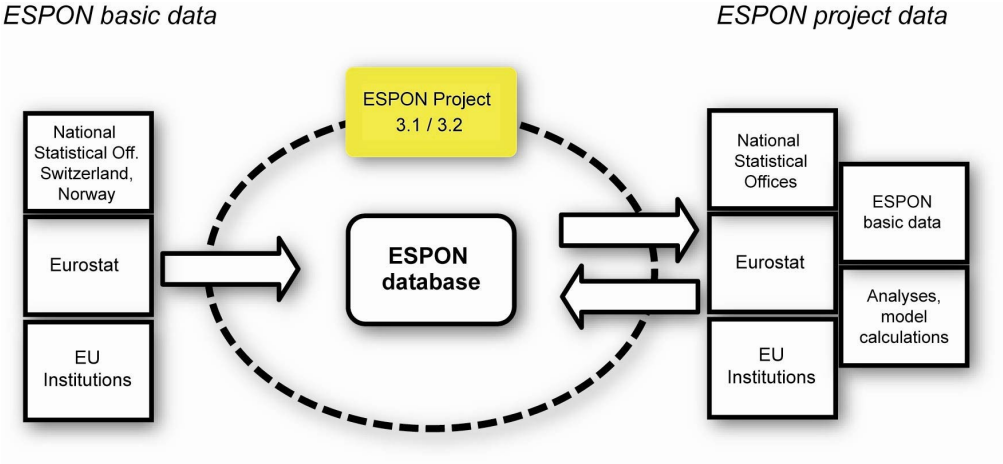


Figure 1 Flowchart input to the ESPON database

According to the program targets, the projects have to make the developed indicators available to the programme and thus to all project groups. Together with the basic updated data, the database is continuously extended during the programming period 2000-2006 and increasingly gains in importance and input with regard to the following projects.

3.2.1.2 *Existing data stock to the end of ESPON 1*

Two different kinds of data flow into the database:

- Basic data
- Project data

Eurostat is the most important data source for the ESPON programme, providing a great number of basic data like population structure, unemployment rate and gross domestic product. These data are normally provided for the regions of the EU25. The regions of Romania and Bulgaria have been recently been added to many series in the Eurostat Regio database. Their availability depends on the indicator. For the Swiss and Norwegian regions, data are available for only a short number of indicators. In these cases, project 3.2 will implement the filling-up and, if necessary, conversion by data from national statistical offices. In consideration of the problem of data harmonisation, this has to be done in the most appropriate way. Often, comparable regional distributions are calculated by fitting regional distributions from national sources to national values that are comparable across Europe.

Project data represent another kind of data delivery for the database. In the framework of their scientific work, projects are required by the CU to provide process-produced data as an outcome of their research work. Project 3.2 has the task to accept these deliveries, to check them in regard to quality, to ask for additional delivery and, if needed, to integrate them into the database.

At present, the database contains approximately 1.900 data records, i.e. approximately 620 indicators, 520 raw data and 50 typologies (status: October 2006). All data records include harmonized meta-data sets which cover extensive information on the data (description, source, calculation method, etc.).

The contents of the database are subdivided into 19 thematic categories which are further divided into subcategories. These thematic fields are based on the organization of the ESPON Data Navigator.

The most important fields of the database are the following at present: Employment and Labour Market (25%), Spatial Typologies (17%), Population (16%), Transport (14%), Land Use (6%) and Environment (6%).

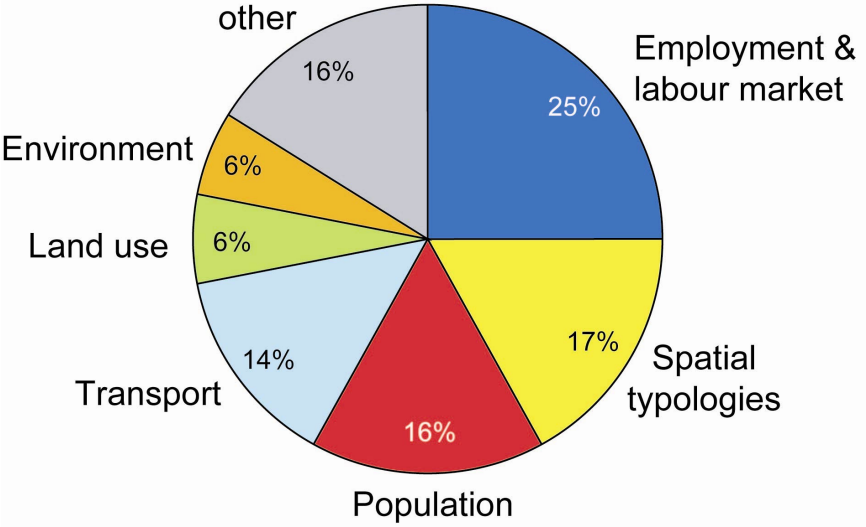


Figure 2 Content of the ESPON database by thematic fields

3.2.1.3 *The spatial reference system*

The regional reference unit based on the Nomenclature of Territorial Units for Statistics (NUTS) and is made available by Eurostat. This uniform reference system was developed for regional statistical purposes and based on the institutional territorial units of the EU member states. The hierarchical classification of the NUTS divides the Member States into the three levels NUTS 1, 2 and 3.

The NUTS systematic has been revised in 2003 and again in 2004 in some Member States. Such new national demarcations of the NUTS regions will make a territorial long-term observation more difficult in the future.

Up to now, the majority of data and indicators exist for the NUTS 2 level, which is the important level for European structural policy. For the small-scale NUTS 3 level fewer data and indicators exist. The provision of data and indicators on the NUTS 3 is an important task for the future work of the ESPON database.

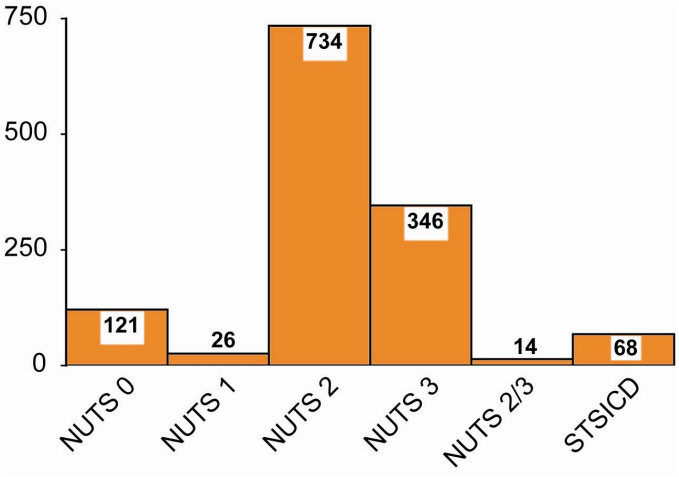


Figure 3 Content of the ESPON database by NUTS level

Integration of the new NUTS classification

In August 2004, changes were made in the NUTS classification due to the creation of new regions and the reorganisation of existing regions. In some cases, those changes only affect NUTS 2 regions, in other cases also NUTS 3 regions. The changes in regions at NUTS 2 level could mostly be reconstructed by aggregation. There are only a few exceptions like Finland and Portugal. The changes in regions at NUTS 3 level cannot be adapted so easily. Latvia and Poland, for example, did not keep the regional border but set new regional delineations, which results in breaks in the data series. Since these first changes in the NUTS, the current data from Eurostat refer to the new classification and geometries. It is the task of project 3.2 to respond to these changes in the data of the ESPON database. This means that in the future, the database will contain each indicator twice: for the old NUTS classification – the '1999 NUTS version' - and for the new NUTS classification - the '2003 NUTS version'. This does not apply to the data based on model calculations from terminated projects.

	NUTS version 1999	NUTS version 2003
NUTS 0	29	29
NUTS 1	92	94
NUTS 2	280	282
NUTS 3	1,329	1,329

Table 1 Number of regions according to NUTS version and NUTS level

In addition to the classification of the three NUTS levels, a few tables are based on a mixture of regions on different NUTS levels. They are not official and therefore marked as "NUTS_MIX - table" in the selection tool.

3.2.1.4 *Technical structure of the database – getting access*

The ESPON database is based on the software Microsoft Access. General access and use are reserved at the moment to the participants of the ESPON programme. A small selection of basic indicators and project-based indicators is available in the Internet at www.espon.eu.

The ESPON database includes two types of tables:

- data or indicator tables with a set of actual regional indicators and data.
- metadata tables with a set of meta-information and documentation of indicators and data.

The table name gives some information about theme, subtheme and abbreviation as well as period, NUTS level, NUTS version and data type (raw data or indicator) of the related indicators. The abbreviation M refers to the metadata table.

Example for table name

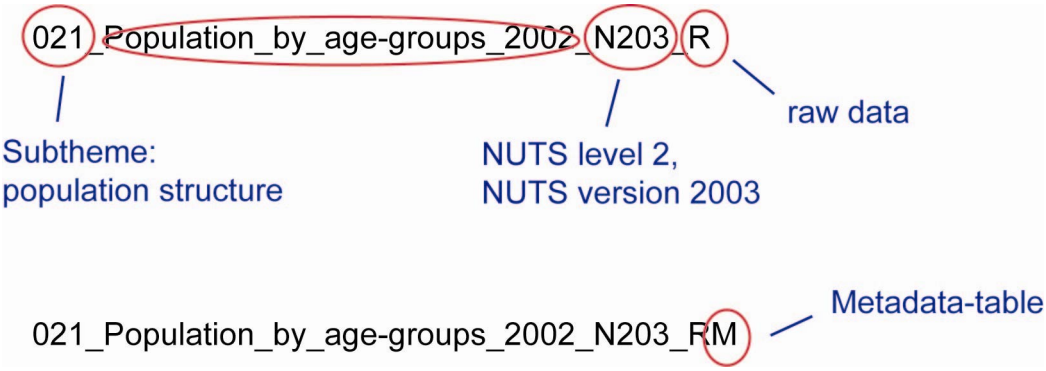


Figure 4 Example for table name

The selection tool

One of the most important aspects of the ESPON database is its usability. Simple and fast access to data should be the prior objective. Therefore, a selection tool has been developed and provided to the ESPON projects in October 2004. Through consultation with some of the database users suggestions were collected, which were considered in the completed database selection tool version.

One of the most important improvements in the selection tool is a function that makes the search of indicators more comfortable. It was considered unsatisfying that 4 out of the 18 category folders, based on the data navigator categories, were empty: 'Enterprises and Investments', 'Social Situation', 'Housing' and 'Cultural Sites', as well as 21 subthemes. Due to the fact that the structure of the data navigator categories should be kept, a technical solution was developed, which enables the user to know if a category or theme folder is filled or not.

From the "main window" the user gets access to data tables as well as to the meta-information. You can choose between the usual MS Access structure („Access table structure") and an alternative selection tool ("thematic selection"). The following figures illustrate the way how to select data by the selection tool.

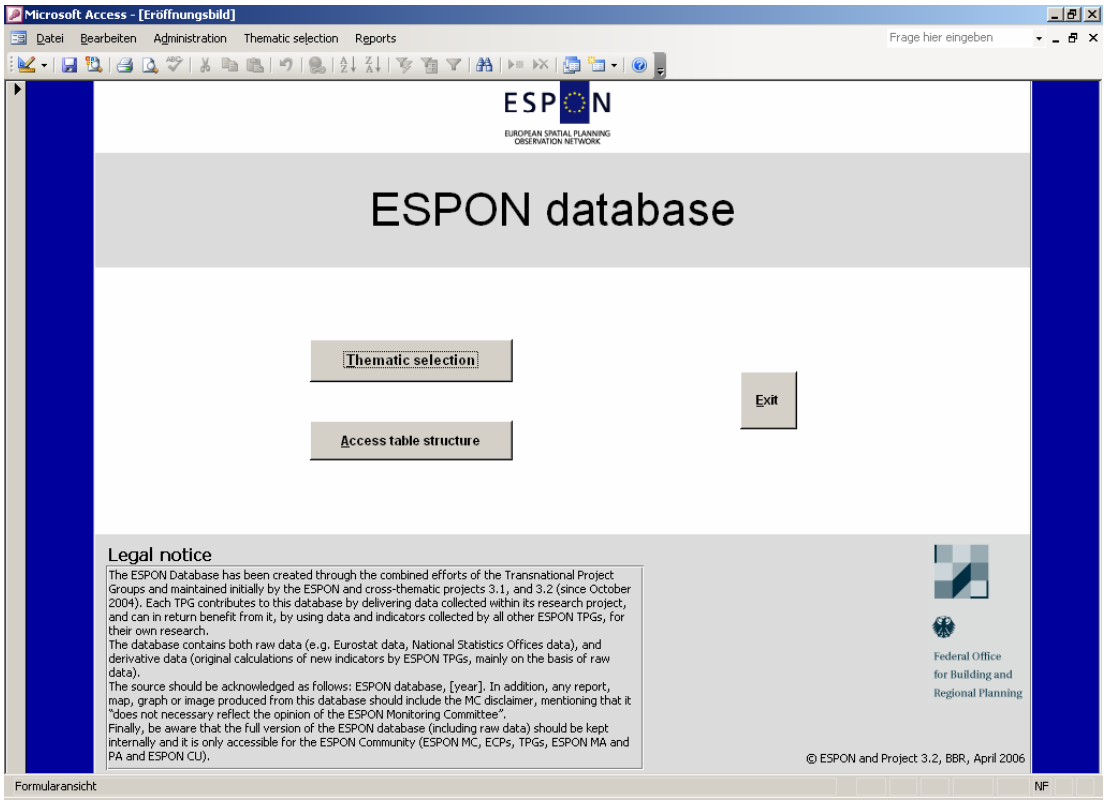


Figure 5 Main window

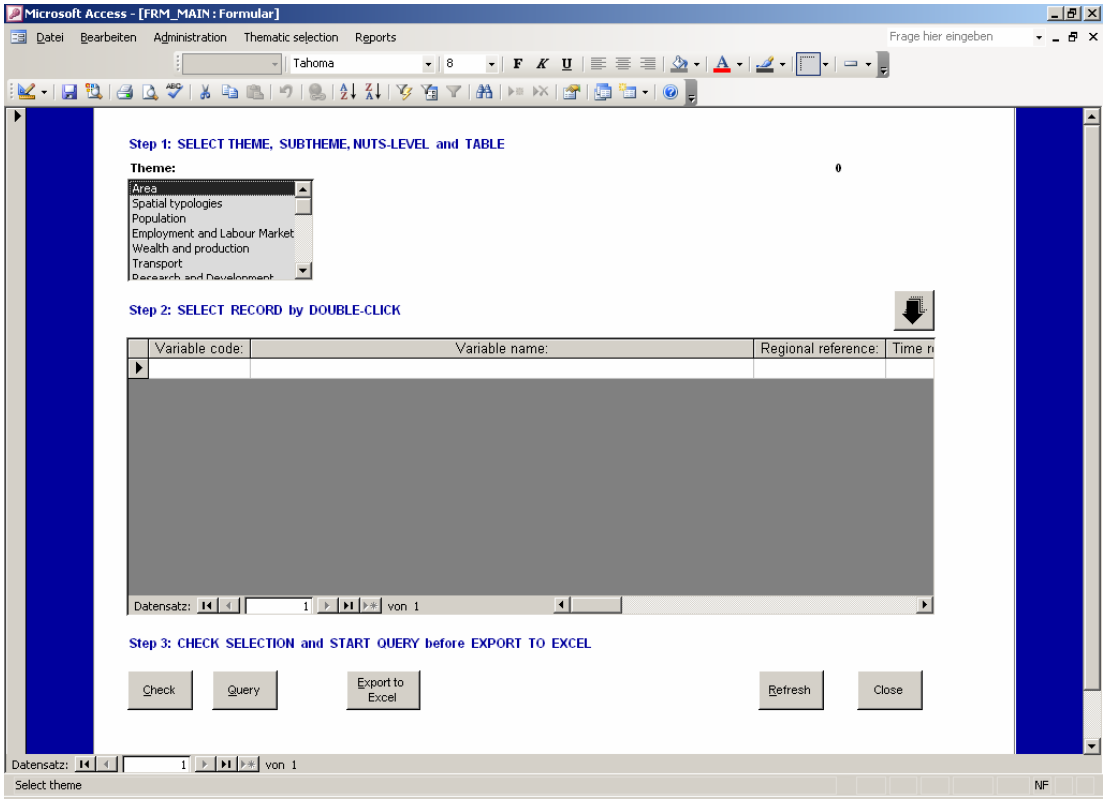


Figure 6 Thematic selection – start window

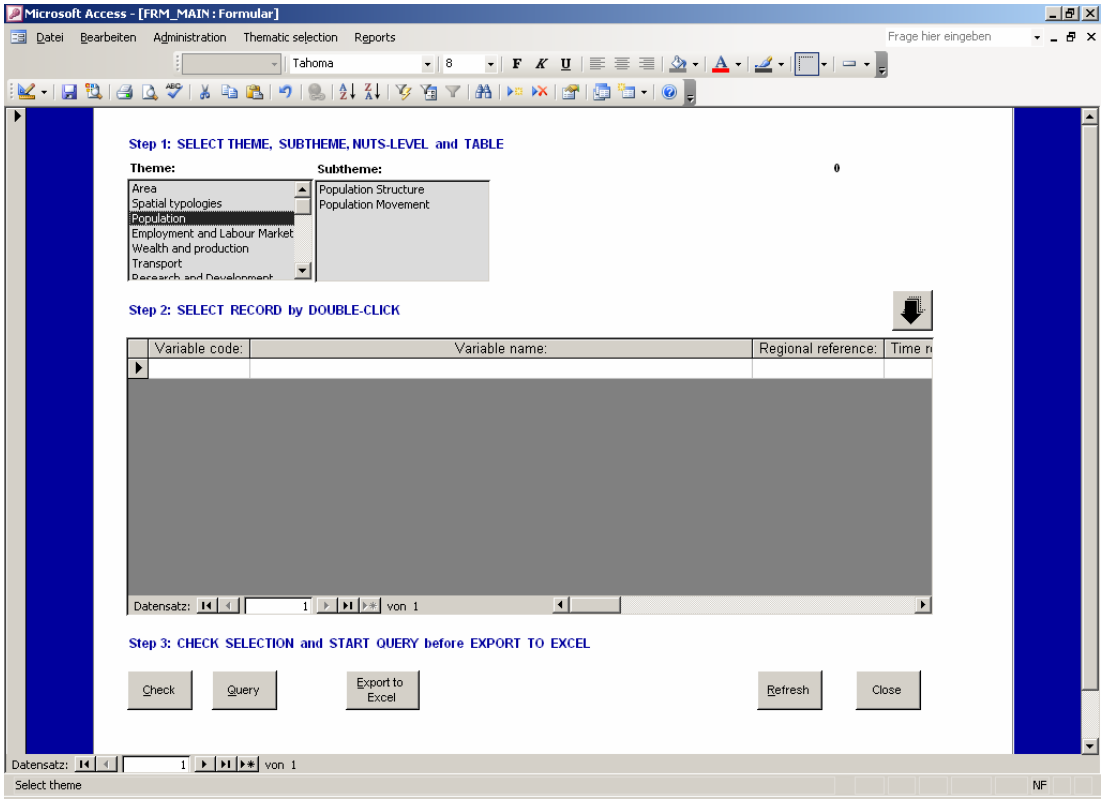


Figure 7 Thematic selection – step 1: select theme

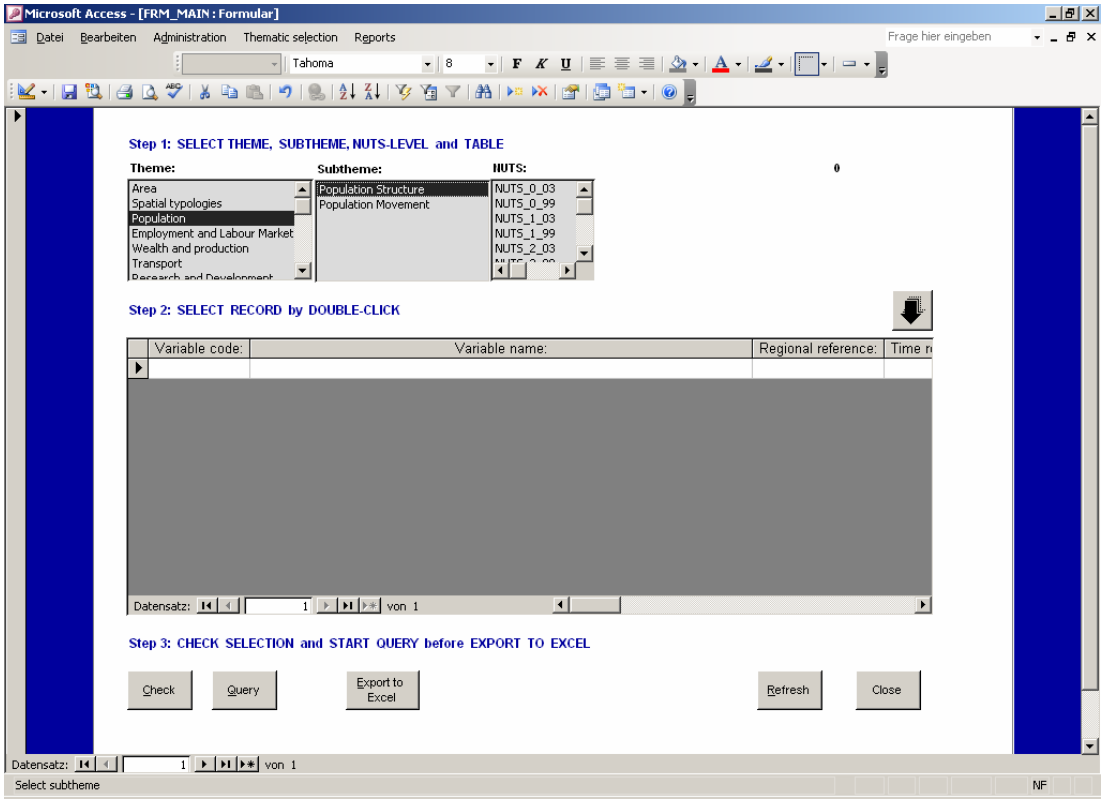


Figure 8 Thematic selection – step 1: select subtheme

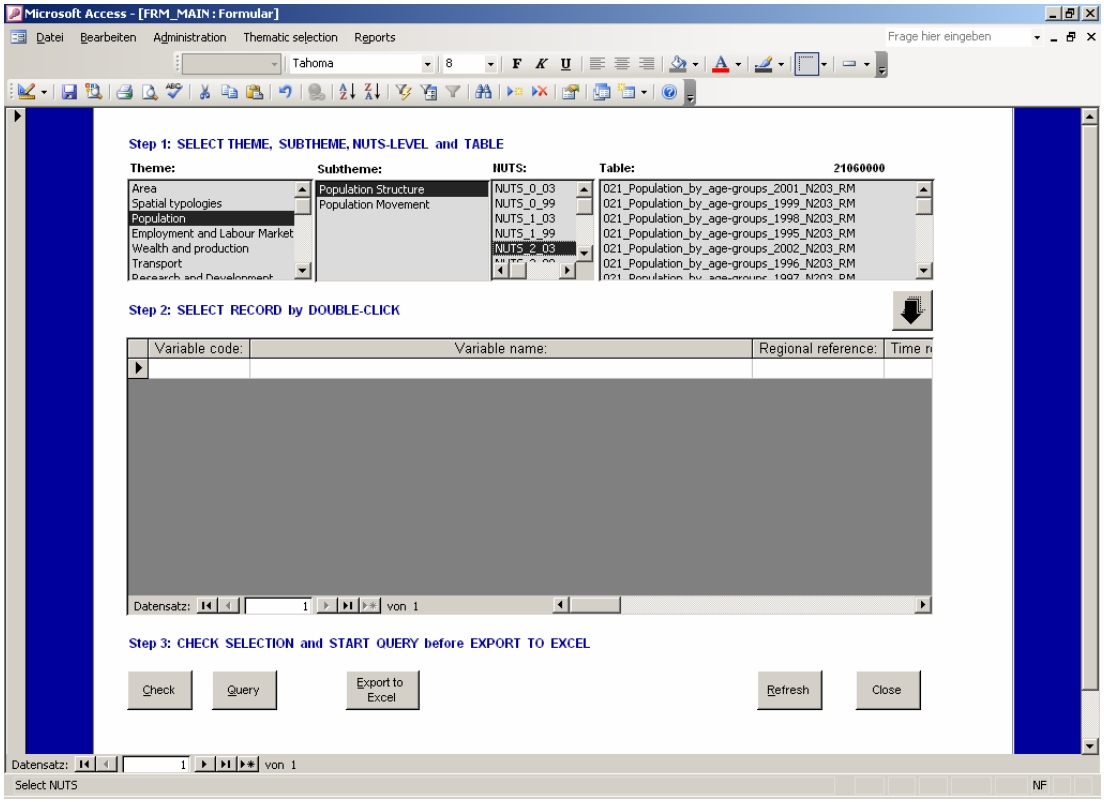


Figure 9 Thematic selection – step 1: select NUTS level

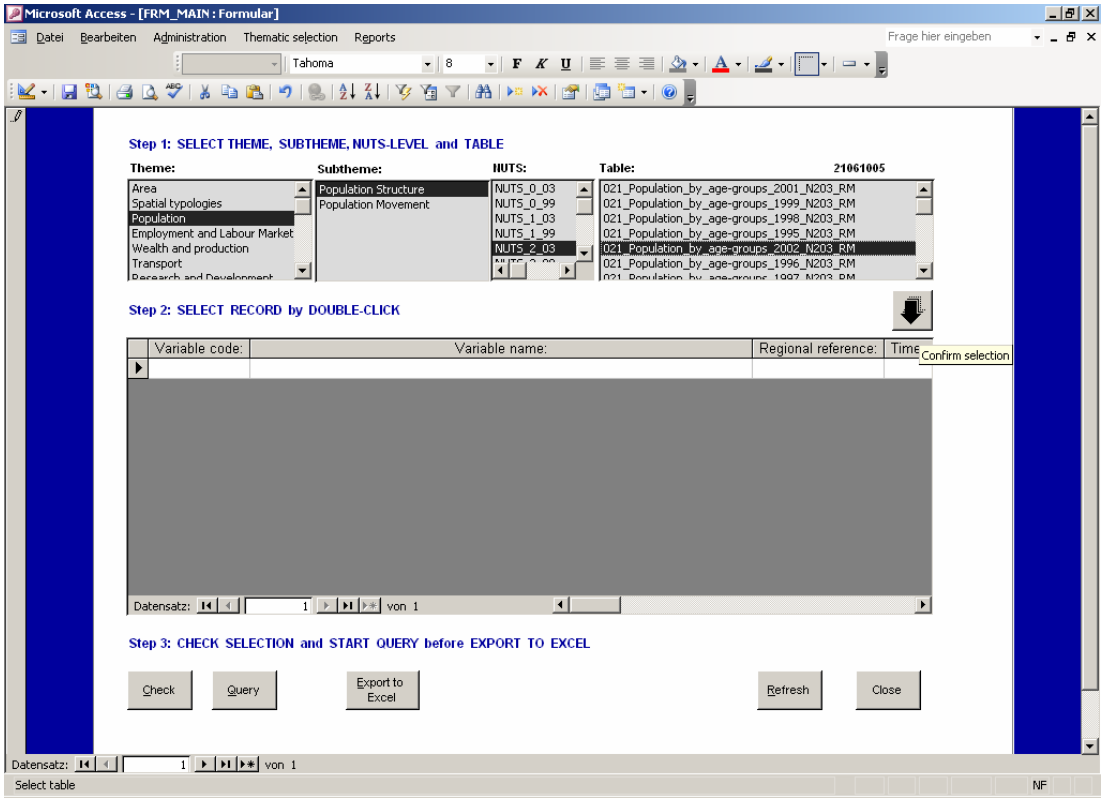


Figure 10 Thematic selection – step 1: select NUTS level

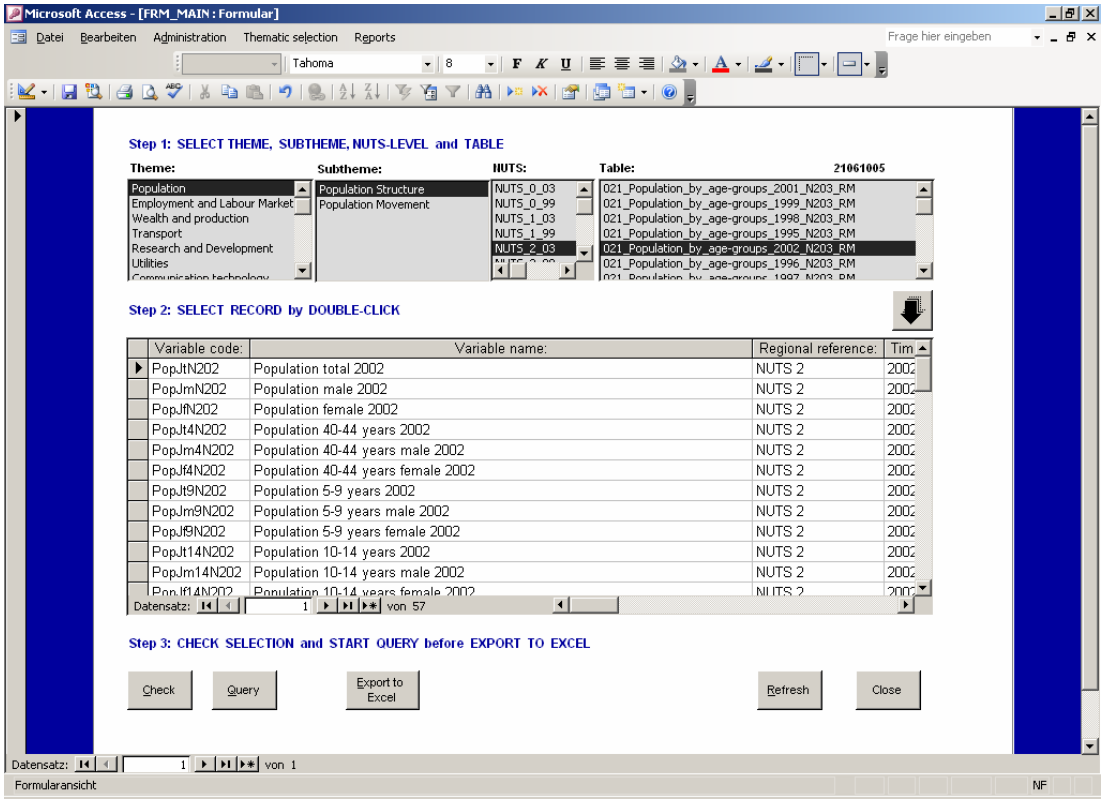


Figure 11 Thematic selection – step 2: select record by double-click

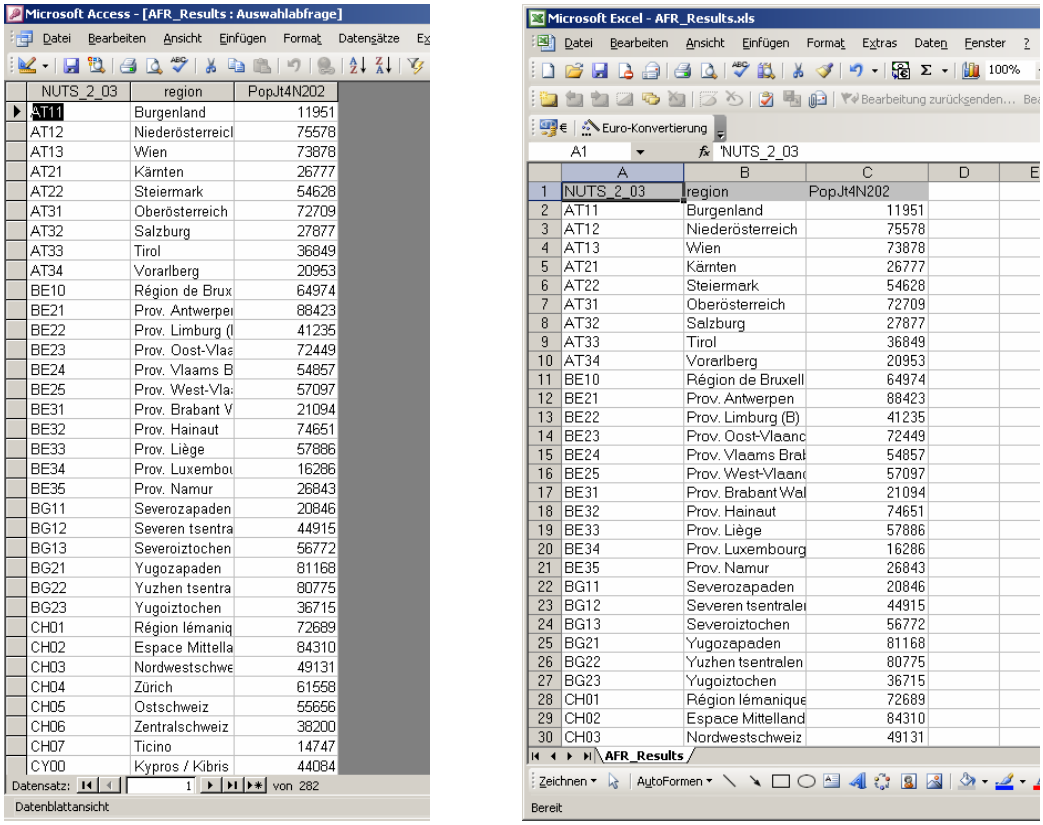


Figure 12 Thematic selection – step 3: check selection and export to Excel

For the Export to Excel function it is necessary to create an empty Excel file on the local hard disk at C:\Programme\Espon\ESPON.xls.

3.2.2 The ESPON Map Kit

3.2.2.1 *State of the art*

On the basis of the in ESPON project 3.1 agreed map design, the ESPON map kit was elaborated including shape files of all regional levels for the ESPON countries. The first ESPON map kit has been designed and distributed on the basis of the ESRI software ArcView 3.2. ESPON project 3.1 has provided all the cartographic elements and data which are necessary for the construction of a EU25+2+2 map including an ArcView 3.2 apr-file as a template.

Over the past years many users migrated to the newer ESRI ArcMap software. Project 3.2 has therefore the task to provide both, an apr-file for the ArcView user and a mxd-file for the ArcMap user.

At the beginning of the map kit shape files were based on the 1999 NUTS version. Because of the changes in the nomenclature of the European statistical regions, adjustment and renovation were necessary. Project 3.2 has integrated those changes continuously and step by step. The integration of the new NUTS geometries applied firstly to the new 2003 NUTS, appeared in November 2003. Those changes affected the NUTS 2 regions of Finland, Hungary, Italy, Poland and Portugal. In addition, NUTS 3 regions in Germany, Latvia and Poland were affected. In some cases, there was only a change in the NUTS codes. This was the case in the NUTS 2 regions of Hungary and Poland. In May 2004, when 10 new member states joined the EU, the regions became NUTS regions. After the accession, some of the new member states (Latvia, Poland and Hungary) decided on a new regional delineation. In Latvia almost all the NUTS 3 regions were affected. In Poland, changes affected the Warsaw and Slaskia regions, and in Hungary the Budapest region. Furthermore, in some countries the NUTS 1 level was introduced. Eurostat published this revision in August 2004. All these changes were considered in the new NUTS version 2003, which could replace the old NUTS 2003 from mid- January. The old NUTS 2003 version, for which no more data will be published by then, were replaced.

3.2.2.2 *New NUTS geometries*

In October 2005 Eurostat provided the new GISCO geometries. Project 3.2 has the task to prepare these new files and provide them as new shape files to the TPGs. Two new versions will be provided: The generalisation in 1:20 million. This more generalised version is suitable for mapping. The generalisation in 1:1 million. This fine generalisation is for analytical purposes. Furthermore, unprojected files will be provided as well as projected files. The latter are particularly easy to use in ArcView but not only.

Due to the fact that this new Gisco geometries do not fit to the Eurostat data in some cases (e.g. Bulgaria) project 3.2 prepared those files to fit with the Eurostat data.

3.2.2.3 *Content of ESPON map kit*

The final map kit issue for the first time includes the official geometries of the 2003 NUTS version of Eurostat. These shapes are completely compatible with the regional data offered by Eurostat for download. The map kit also still contains the geometries of the 1999 NUTS version. They are needed as a large part of the ESPON database (i.a. almost all project data) is based on these "old" geometries.

In making the new geometries available, a new folder structure was developed within the map kit. The structure will be described in the following table:

Folder			Content
ESPON_map_kit			
	ESPON_geometries		
		NUTS_1999	apr-file (ArcView) & mxd-file (ArcMap)
			Shape files for NUTS version 1999,
		NUTS_2003	apr-file (ArcView) & mxd-file (ArcMap)
			Shape files for NUTS version 2003,
	ESPON_Graphic_Base_Map		Graphic files in terms of different (political, analytical) ESPON views
	ESPON_WebCartography		Web cartography shape files provided by MCRIT
	GISCO_geometries		
		interchange_format	E00-files
		shapes_unprojected	Unprojected shape files provided by GISCO
	SABE		Shape files for municipalities

Table 2 Folder structure and content of ESPON map kit

Software requirements

The shape files in the final map kit allow to create maps with both ESRI softwares: ArcView 3.x and ArcGIS/ArcMap 8.x, 9.x

To generate a new map, the best is to use the sample project files (the sample project files only represent the narrow / analytical view). The sample project files as well as the shape files are located in the folder

"ESPON_map_kit \ ESPON_geometries \ NUTS_1999" and

"ESPON_map_kit \ ESPON_geometries \ NUTS_2003"

When using the ArcView 3.x software, please open the file "espon_nuts03.apr" to use the geometries base of the NUTS 2003 version or the file "espon_nuts99.apr" to use the geometries base of the NUTS 1999 version. It is recommended to start these files from the programme. When using ArcMap 8.x, please start the files "espon_nuts03_am8x.mxd" or "espon_nuts99_am8x.mxd". When using ArcMap 9.x, please start the files "espon_nuts03.mxd" or "espon_nuts99.mxd".

Sample project files by software and NUTS version

	ArcMap 9.x	**ArcMap 8.x**	**ArcView 3.x**
NUTS 1999	espon_nuts99.mxd	espon_nuts99_am8x.mxd	espon_nuts99.apr
NUTS 2003	espon_nuts03.mxd	espon_nuts03_am8x.mxd	espon_nuts03.apr

The NUTS version 1999

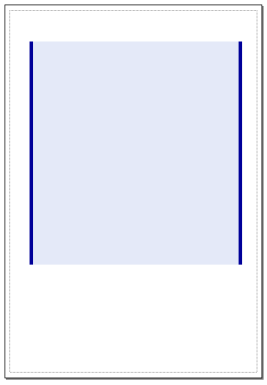
The folder "NUTS_1999" contains different shape files defining the spatial extension and the layout of the maps and being related to different views.

narrow	wide
capital_cities_narrow_99.shp	capital_cities_wide_99.shp
espon_borders_coast_narrow_99.shp espon_borders_coast_narrow_break_99.shp	espon_borders_coast_wide_99.shp
espon_nuts0_narrow_99.shp espon_nuts0_narrow_cyprus_complete_99.shp	espon_nuts0_incl_remote_wide_99.shp espon_nuts0_incl_remote_wide_cyprus_complete_99.shp
espon_nuts1_narrow_99.shp	espon_nuts1_incl_remote_wide_99.shp
espon_nuts2_incl_remote_narrow_99.shp espon_nuts2_narrow_99.shp	espon_nuts2_incl_remote_wide_99.shp
espon_nuts3_incl_remote_narrow_99.shp espon_nuts3_narrow_99.shp	espon_nuts3_incl_remote_wide_99.shp
map_background_narrow_99.shp	map_background_wide_99.shp
non_espon_space_and_cyprus_occupied_area_narrow_99.shp	non_espon_space_and_cyprus_occupied_area_wide_99.shp
remote_areas_background_narrow_99.shp	remote_areas_background_wide_99.shp
remote_areas_borders_coast_narrow_99.shp	remote_areas_borders_coast_wide_99.shp
remote_areas_non_espon_space_narrow_99.shp	remote_areas_non_espon_space_wide_99.shp
remote_areas_legend_narrow_99.shp	

Table 3 Content of "NUTS_1999"

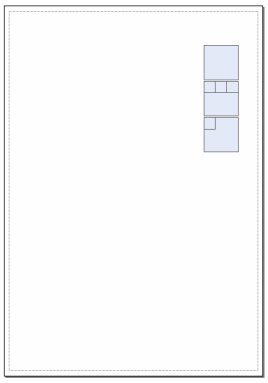
Preview & description of several shape files

map_background_narrow_99.shp:
Map background including blue margin



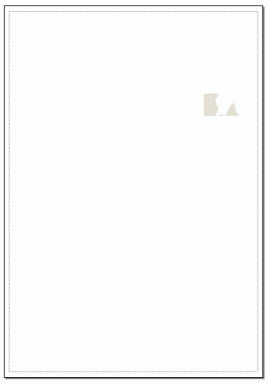
non_espon_space_and_cyprus_occupied_area_narrow_99.shp:
Countries not belonging to the EU25 +2+2 ESPON space and the occupied territory of Cyprus (white colour)

remote_areas_background_narrow_99.shp:
Box for remote areas



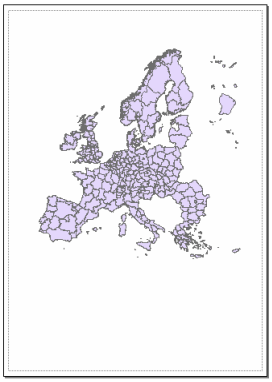
remote_areas_non_espon_space_narrow_99.shp:

Remote area countries not belonging to the EU25 +2+2 ESPON space



espon_nuts2_incl_remote_narrow_99.shp:

280 NUTS 2 regions including seven remote areas

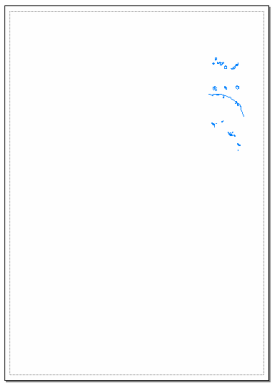


espon_borders_coast_narrow_break_99.shp:

A polyline shape showing the border and the coastlines of ESPON countries omitting the remote area background

remote_areas_borders_coast_narrow_99.shp:

A polyline shape showing the border and the coastlines of remote areas



The common map layout is the so-called narrow view. In order to create a map in narrow view including remote areas and on the basis of NUTS 2 regions, shapes similar as those shown in the screenshot below are required. Please note that the hierarchical order has to be kept.

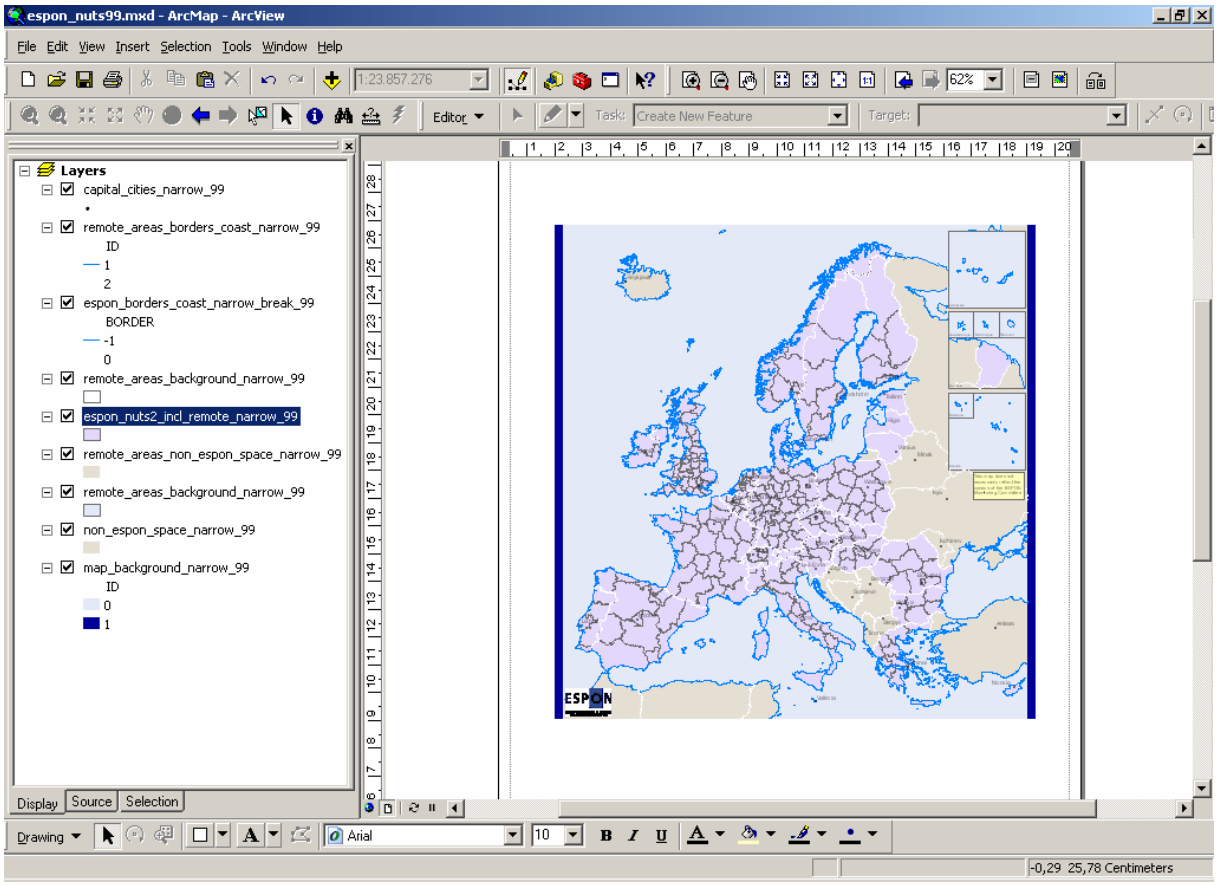


Figure 13 Sample of arranging the NUTS 99 shape files: NUTS 2 regions in the narrow view

Shape files on NUTS version 2003

The folder "NUTS_2003" contains the following shape files.

capital_cities_03.shp

espon_borders_coast_03.shp

espon_borders_coast_break_03.shp

espon_nuts0_03.shp

espon_nuts0_incl_remote_03.shp

espon_nuts0_cyprus_complete_03.shp

espon_nuts0_incl_remote_cyprus_complete_03.shp

espon_nuts1_03.shp

espon_nuts1_incl_remote_03.shp

espon_nuts2_03.shp

espon_nuts2_incl_remote_03.shp

espon_nuts3_03.shp

espon_nuts3_incl_remote_03.shp

map_background_03.shp

non_espon_space_03.shp

remote_areas_background_03.shp

remote_areas_borders_coast_03.shp

remote_areas_non_espon_space_03.shp

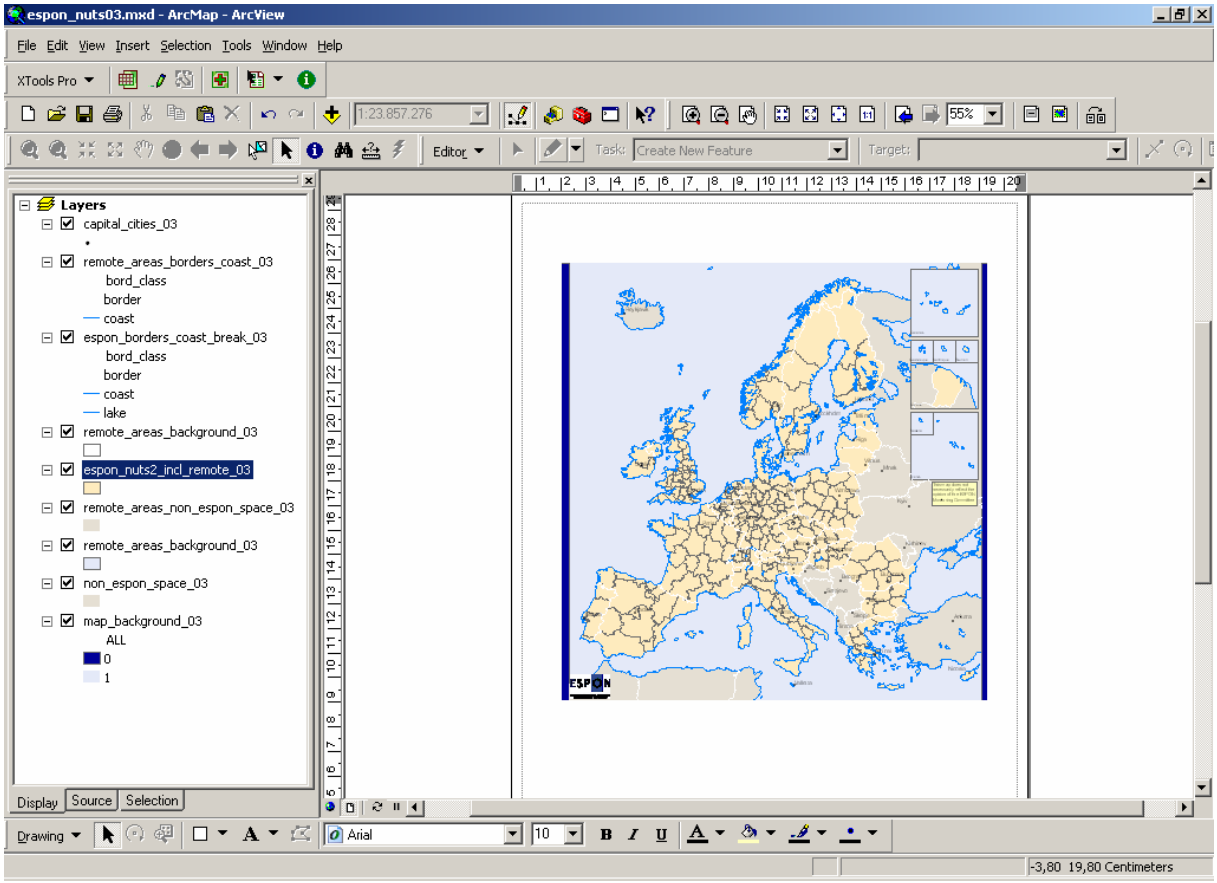


Figure 14 Sample of arranging the NUTS 2003 shape files: NUTS 2 regions

3.2.3 ESPON Indicators – Continuous Spatial Monitoring

3.2.3.1 *ESPON core indicator*

Through the different rounds of ESPON projects, thematic studies and policy impact studies as well the integrative and scenario oriented projects, the ESPON programme has laid the ground for comparative information and for analysis of spatial structures and development of the European territory, not only the EU 25 Member States, but also the Candidate countries Bulgaria and Romania as well as the neighbouring countries Switzerland and Norway.

One of the aspects within the tasks of the transnational project groups was the provision of thematic related data and indicators based on them. For a first time data was collected systematically across many different fields in this territorial coverage and, thus, the basis for a spatially oriented information system was developed. The data collected so far includes a wide range of indicators for different spatial contexts, allowing for spatial monitoring, analyses of situations and trends as well as spatial policy advice including the assessment of the achievement of political goals.

The ESPON projects resulted in a great number of indicators covering their specific thematic aspect. With the recent updates the ESPON database now includes a total number of 1060 indicators. With respect to the restricted life time of the projects and to allow further continuation and update of the most relevant information the projects 3.1 and succeeding 3.2 elaborated, on the basis of project suggestions, a list of around 100 'core' indicators (which forms part of the ESPON database) of potentially high importance within a spatial information system and the measurement of living conditions in the regions of Europe.

Building upon these efforts, the ESPON database must guarantee a continuous provision of regional and spatial information during the ESPON process and should also lay the ground for the investigation of relevant issues to be considered in the future elaboration and definition of spatial indicators. Especially thinking of the programming period of ESPON and the successive ends of the different projects, the list of ESPON 'core' indicators has a crucial role within the discussion and decision-making processes in European spatial information and regional statistic activities and is one of the fundamental outcomes of the ESPON projects.

The selection of this range of indicators will be a valuable input for the potential maintenance and updating in the future. This must not stick necessarily to the future use of an indicator as such and as it has been defined in detail within ESPON. Especially related to model calculation output this 'core' indicator could be interpreted also as indication of the development and further development of indicators representing the same thematic evidence – maybe in a slightly different algorithm – but in a comparable spatial policy related orientation.

In this respect the list of ESPON 'core' indicators should be completed including the final results of the projects and the TPG's ending in the first half of 2006.

3.2.3.2 *Spatial Monitoring*

3.2.3.2.1 Toward a short list of indicators for general spatial monitoring

In the philosophy of spatial monitoring aiming at measuring and analysing spatial phenomena, information is needed not only on the spatial structure, but also on elements that influence and change the spatial reality.

Spatial monitoring must satisfy both

I. demands for an analytical base for sound spatial analysis and

II. varying political demands enabling the evaluation of policy strategies and the assessment of the achievement of policy aims.

A policy-oriented spatial monitoring needs the sound base of a broader selection of the 'core' indicators. The freedom of choice is necessary to cover a detailed and profound demand on information arising from the need of interpretation on different regional levels and also to enable a detailed thematic evidence base.

However, a more general spatial policy-related process targeting to support the discussion of territorial issues could not be done with the complete range of spatial information as this would make the data too complex. The characterisation of the main challenges and the key factors in the context of territorial cohesion and spatial development needs a selection of a smaller number of indicators.

A limited list of indicators related to a territorial agenda - comparable to the elaboration of the short list of indicators related to the Lisbon/Gothenburg agenda - seems appropriate. As the name of this list indicated, it should be a short list. In the ideal case - but not necessarily due the thematic orientations of the ESPON in this programming period – it would represent a subset of the 'core' indicator list.

3.2.4 Further Outlook and Propositions

By the end of the ESPON I program and within a comparable short time a comprehensive information basis for regional analyses as well as for political decisions will have been created. The ESPON database will provide regional analyses and comparisons for different thematic fields. In particular spatial typologies and regional classifications of ESPON projects will become important for political participants and the spatial research community. Besides the connection to a geographical information system (GIS), it offers the possibility for further spatial analyses and to represent the results in form of thematic maps.

Due to the systematic and harmonized collection of project data and indicators in the ESPON database the continuity of the ESPON results is guaranteed. Insofar the ESPON database can be seen as the starting point for a systematic and continuous observation of regions of the European territory beyond the EU25 regions.

3.2.4.1 *Proposals: Technical conditions for an online database*

Related to a future two main aspects are of special importance:

- The technical platform of the future ESPON database
- The Connection of statistical and geographic data

3.2.4.1.1 The technical platform of the future ESPON database

The MS Access database for the ESPON indicators was chosen at the beginning of ESPON as commonly used and appreciated tool in analytical processing and statistical reporting. The combination with the ArcMap software in which the geometries can be stored as part of a database basing on MS access within a personal geo database was another important factor of this solution. The criteria correspond to a large extend with the conventions of the OGS (Open GIS Consortium).

This personal geo database solution was free of charge with low initial efforts. A structured data management was supported.

The ESPON database itself enables a suitable handling of data and indicator with also lower knowledge in MS Access and was with the additional ESPON specific programming user friendly and to update in a suitable volume of work.

A future enlargement of the database and the integration of more data and more time series will lead to the question if MS Access will we also suitable in a future perspective. Different additional demands have to considered in the design of an ESPON II database. Possible online access and data and indicator selection or decentralised data management and data integration facilities are only two aspect of a future improvement with a network of data based scientific projects.

MS Access will not be the choice as a technical platform in this context of deepening research relations. A that kind oriented solution of a database ask for a different solution. Asked in this context is a, potentially open source, professional and easy to support solution that allows a fast migration of existing databases in ESPON into the new structure at the very beginning of the starting phase of a new ESPON programme with an public as well as an restricted online access on indicators to satisfy demands of information as well as data transfer in the ESPON network.

Related to the connection of statistical data and indicators to the changing geometries of a vital geographical dataset visualisation of changes in space and time are immanent. Archive functions of different states in time must be selectable and visualisable. One solution worthwhile for further investigation could be a file based database available for free also in the future ArcGIS, which will be then available for free also and will be independent from MS Access. The connection to a new database platform at such will be part of future evaluation.

Appendix

A detailed list of indicators can be found in the Appendix, at the end of this Volume.

3.3 LTDB : a Long-Term Database application

3.3.1 General objectives

The Long-Term Database Application (LTDB) is designed to fulfill two main purposes:

1. *LTDB aims to provide a framework for **long-term storage of thematic and geometric data** for territorial units of the European area, at different resolution levels (ranging from the State level (NUTS 0) to the communes level (NUTS 5))*. The long term storage of data implies tackling several issues:
   a. **Evolutivity issues**: LTDB should rely on a flexible schema, so that new data (e.g. indicator values) and new types of data (e.g. new types of indicators) can be easily added. This should allow scientists (geographers, economists, statisticians, etc.) to use the LTDB for an extended period of time and to keep it up to date, without having to build a new database for each new application.
   b. **Data quality issues**: LTDB associate a measure of quality with data it manages. This implies keeping track of the validation of the data by organisms of statistics, of the genealogy of the data sets (information about what database these data come from, the processes by which they have been computed) and producing some mechanisms for an automatic detection of data inconsistencies.
   c. **Usability issues**: LTDB should be usable by many kinds of users, possibly as a shared resource. For that, the application should help the users in easily understanding which data are available (by using thematic and geographic ontologies), while semi-automated data acquisition mechanisms should allow to easily update the data while preserving the overall coherence of the structure. Last, but not least, the application should be designed so that performance parameters are respected even for very large data sets (as the available quantities of data are very large and grow fast), by avoiding redundancies and using performance enhancing techniques (caching, indexing, etc.).

2. *LTDB aims to provide a framework for a **reliable estimation of missing indicator values**, either for filling informational gaps or for the purpose of simulation of past or future hypothetical situations.* In order to provide this, several components should be designed:
   a. A set of **generalized estimation methods** should be created in order to make it possible to estimate missing indicator values from the available information in the database. These methods should take into account the available information at different moments in time, for different territorial units or for different indicator types, or a combination of these (for an improved accuracy).
   b. A set of **generalized estimation strategies** should be provided in order to be able to choose the most appropriate estimation method for a given situation, based on the knowledge of thematic experts.
   c. A **mechanism for evaluating the quality of the estimated data,** by taking into account the accuracy of the method and the quality of the data used for estimation. The mechanism could rely on statistical observations, on an operational application of expert geographer knowledge or on a combination of both.

Our approach in the design of LTDB is modular and incremental. It relies, on the one hand, on **independent modules**, which can evolve independently from one to another, and, on the other hand, on **basic functionalities**, with the objective of adding more advanced ones as studies progress.

3.3.2 Structure of the LTDB application

The extended LTDB is composed of four modules (see Figure 15):

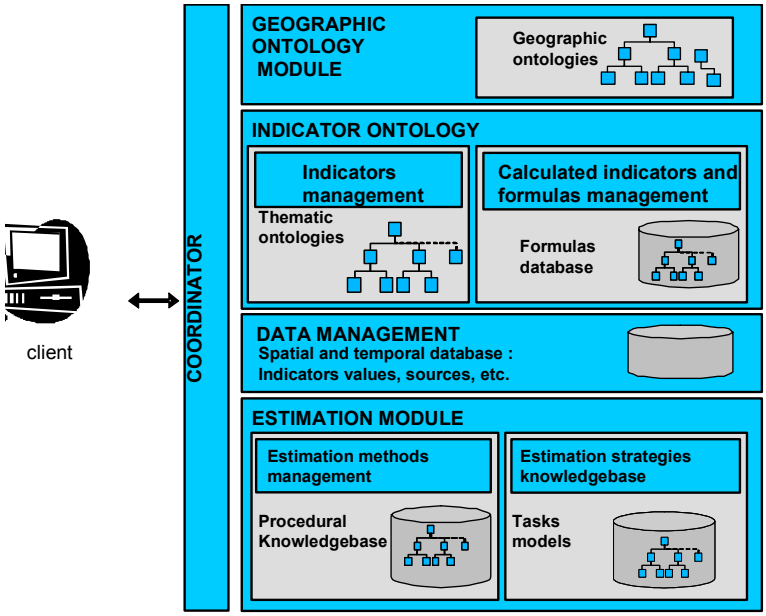


Figure 15 General structure of the application

Application Management module: This module manages a geographic ontology. This ontology is a gazetteer which contains the hierarchy of geographic entities with their names in different languages and some relations between them. The most important relations described by the ontology are the spatial and semantic inclusion ones, which lead to the hierarchical structure of geographic entities (offering support for spatial estimation methods). Also, genealogy relations allow tracing back the origins of geographic entities (offering support for more efficient temporal estimation methods). Another function of the geographic ontology is the support for eliminating ambiguities in spatial queries, by detecting exactly to which geographic entity a query refers to (it operates like a dictionary of geographic entities). Lastly, it ensures the maintenance of data consistency of the database whenever updates are done.

I**ndicator Ontology module**: This module manages a hierarchy of themes and indicators that can be found in the database, with some relations that hold between them (aggregation, broader term, etc.). This ontology contains a set of indicators considered as basic ones. They correspond to simple stocks. Basic indicators will be used in the definition of other, more complex indicators. The management of this ontology aims to eliminate ambiguities in thematic queries and to maintain data consistency on updates.

Data Management module: The spatiotemporal database is a relational database containing the whole set of geographic entities with their known indicator value

Estimation module: This module is composed of:

An indicator formulas knowledge base which contains a set of complex indicators, together with the algebraic formulas which enable to compute them from other indicators stored in the database (stocks) or in the knowledge base. These constructed indicators range from simple ratios of stocks (e.g. GDP/population) to more complex indicators like the remaining life index. It is important to notice that this knowledge base also has a normative aspect, as it contains only indicators that are meaningful for statistical and spatial analysis:

constructed indicators like "life expectancy at birth/surface", which have no practical meaning, will not be allowed. The main functionalities of this knowledge base consist in eliminating ambiguities for thematic queries and calculating constructed indicators.

A hierarchy of methods which is a classification hierarchy of estimation methods, together with their code. The estimation methods can be either one-dimensional (based on only one information dimension - spatial, temporal or thematic) or composite, consisting of successive applications of one-dimensional methods. The functionalities of this component are limited to the computation of estimated indicators starting from "real" indicators existing in the database.

An estimation strategy knowledge base which is an expert system based on a set of rules allowing the system to choose the most appropriate estimation method for a given situation. The choice of the method depends on the indicator type and on the richness and density of available data. The rules contained in the knowledge base are derived from the expertise of the thematic specialists (geographers, demographers…) and from statistical tests.

3.3.3 Database Schema

The LTDB database schema has been designed in order to support a long-term storage of spatial and thematic data concerning geographic units. This is the reason why everything concerning the structure of the geographical units can change in time: their name, their spatial representation, their position in the administrative hierarchy, their codename and their thematic part: the indicators.
The main components of the LTDB database schema are:

1. *Geographic unit*: this is the central class of the schema. It contains the identity of the geographic units (an internal identifier generated by the system). Another important attribute is its lifespan, because the existence of geographic units may be limited in time (e.g. Western and Eastern Germany).
2. *GU Spatial Representation* contains the geometrical shape corresponding to the footprint of the geographic unit (attribute *geom Obj*). It can change in time (attribute *validity interval*).
3. GU Name contains the official name of the geographic unit (attribute Name *Value*) generally accepted at a given moment: this name can change with time (attribute *validity interval*).
4. *Code nomenclature* is a class containing the codes of the geographic units. The code depends on a nomenclature (e.g. the NUTS 2000 territorial unit code system) and it is stored because for most databases the code of the territorial units is used as an identifier rather than its name.
5. *Nomenclature* is a class representing the different code systems that are used to identify territorial units in statistical databases. Nomenclatures are temporal (attribute *validity interval*) and are issued by well-known organisms of statistics like Eurostat (attribute *Institute*).
6. The *Composition* class represents the composition relations between geographic units, related to a certain hierarchy. The attribute *Level* defines the level of the composing geographic units in the respective hierarchy.
7. The *Hierarchy* class defines the set of composition relations existing between the geographic units on a certain territory for a given period of time. It can change in time (attribute *validity interval*) and it has a certain number of levels (attribute *level count*).
8. The *Similarity* association class defines different kinds of similarity/proximity measure that might be needed for a more advanced phase of the application.
9. The *Evolved from* relation allows storing genealogy relations between geographic units, necessary for some estimation methods.
10. *Indicator* is the class that defines a thematic part of the geographic units.
11. The *Value* association class allows storing the value of a certain indicator for a

certain geographic unit and for a certain period (attribute *validity interval*). Other attributes of the class allow keeping track of the production moment (attribute *Measure production date*) and of other metadata necessary for assessing the quality of the data (attribute *Meta Info*).

12. The *Source* class allows keeping track of the genealogy of the data stored in the database. The attribute *Code source* defines the code of the database from which the data were retrieved or of the process by which the data were produced.
13. The *Provider* class represents the statistical organisms from which the data were retrieved.
14. The *Validation* class allows storing information about the confirmation of the quality of the data issued by trustworthy statistics organisms.

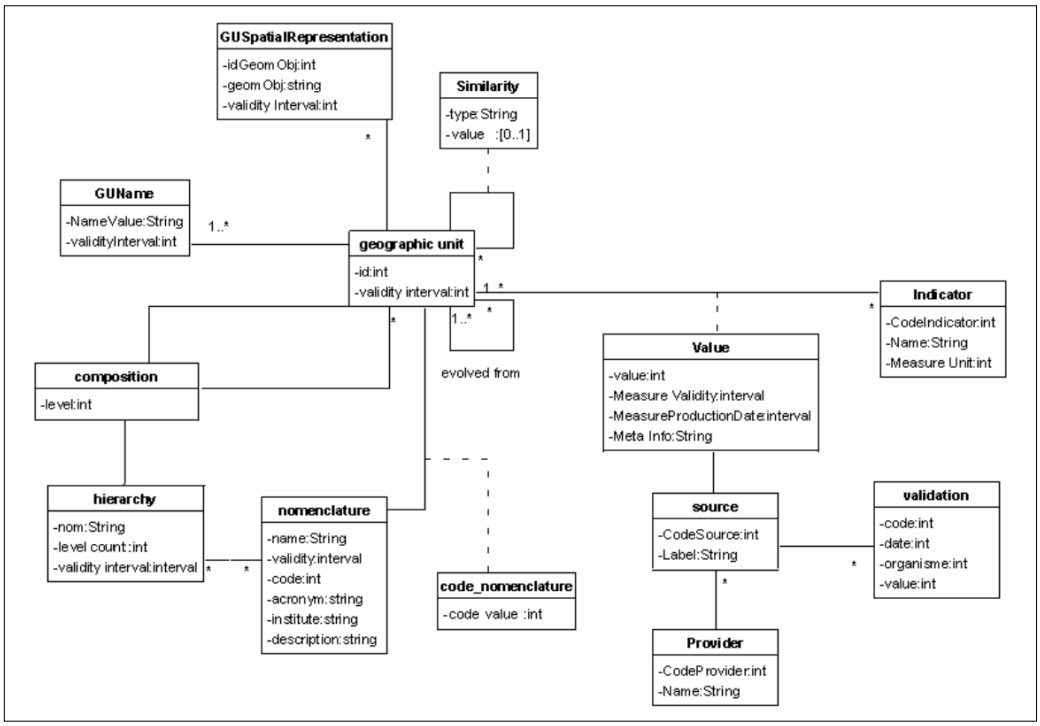


Figure 16 The LTDB database schema

3.3.4 Estimation Methods for Missing Values

According to the data schema, data in the LTDB can be characterized according to four dimensions *E*, *S*, *T* and *I* where:

(*E*) represents the spatial dimension and refers to one or several territorial units;

(*S*) represents the source dimension and refers to one or several organism of statistics;

(*T*) represents the time dimension and refers to one or several instants or/and periods of time;

(*I*) represents the thematic dimension and refers to one or several indicators.

For instance, the value 83859 could be the result of a query where *E*='Austria', *S*='EUROSTAT', *T*='1999' and *I*='Area in km^2'.

Although the query is answered a lot of implicit assumptions are made here:

- Regarding the *E* dimension, the query is supposed to refer to the territorial unit whose shape corresponds to the "official" delimitation of Austria.

- Regarding the *T* dimension, the value returned corresponds to the value provided by the 'EUROSTAT' for the period ranging from 01/01/99 to 31/12/99.
- Regarding the *I* dimension, areas of lakes and rivers in Austria are supposed to be included…

In order to help LTDB users, those implicit assumptions should be made explicit through some guide lines or help on line mechanism in the future interface.
In the previous example, a value is returned for the corresponding value of *E*, *S*, *T* and *I*, namely the tuple ('Austria', 'EUROSTAT', '1999', 'Area in km^2'). It should be noted that values of *E*, *S*, *T* or *I*, or a combination of them might be missing when formulating the query. By default, such a missing value in one or more dimensions handled by the query, should be considered equivalent to a wildcard operator "*" meaning "all values".
However, unavoidable incompleteness in the LTDB will lead to unanswered queries. This occurs when, no value is present in the LTDB, for a given tuple of values (included wildcard "*"). The objective is to overcome this case of missing value by proposing one or several estimation methods in order to compute the more probable (although not measured or sure) value and return it as an answer to the query. LTDB users should be warned when the returned value is a computed estimated value replacing a missing one.
Then, information in the LTDB can be represented as a four-dimensional hypercube with holes corresponding to missing values. Estimation methods help in filling-up these holes by considering information provided by the neighborhood of these holes.
Below is described a formalization of the principles of some of the estimation methods implemented in the LTDB.

3.3.4.1 *Notations*

Let $X(e,s,t,i)$ be a value, possibly missing (not known or not defined) in the hypercube where *e* describes one territorial unit, *s* describes one source, *t* describes one instant, and *i* describes one indicator.
For the sake of simplicity, only this elementary case is considered here. However, it can be shown that more complex cases, where *e*,*s*,*t*, and *i* are each described by set of values, can be decomposed in elementary ones.
For a missing value $X(e,s,t,i)$, estimation methods exploit known values $X(e',s',t',i')$ in the neighbourhood of $X(e,s,t,i)$. This neighbourhood can be defined according to one or more dimension among *E*, *S*, *T* and *I*. Some one and two-dimensional estimation methods are described below.
Let *child* be the operator which for a spatial unit e returns the set of all the spatial units $e_1,e_2,\ldots,e_n$ which are spatially included in *e*, at the first level of spatial inclusion.
Let *desc* be the operator which for a spatial unit *e* returns the set of all the spatial units e_1, e_2, …, e_n which are spatially included in e, at any level of spatial inclusion (transitive closure of *child*).
Let *parent* be the operator which for a spatial unit e returns the spatial units *p* which includes *e*, at the first level of spatial inclusion.
Let *ancest* be the operator which for a spatial unit e returns the set of all the spatial units $p_1,p_2,\ldots,p_n$ which are spatially include *e*, at any level of spatial inclusion (transitive closure of *parent*).

3.3.4.2 *One-dimensional estimation methods*

a) Estimation methods based on the spatial dimension (*E*)
In this case, for a missing value $X(e,s,t,i)$, *s*,*t*,and *i* being fixed, the idea is to use spatial units *e*' being at an upper, lower or same hierarchical spatial level as *e*, and for which $X(e',s,t,i)$ is known, in order to obtain information on the missing value.
Different cases are to be considered:

Case 1) if $X(parent(e),s,t,i)$ is known and if $X(e',s,t,i)$ is known for all e' so that $parent(e') = parent(e)$ and $e' \square e$ (e' is at the same hierarchical level as e and has the same parent as e), then

$$X(e,s,t,i) = X(parent(e),s,t,i) - \sum_{e'} X(e',s,t,i)$$

Case 2) if $X(parent(e),s,t,i)$ is known and if there exists at least one e' so that $parent(e') = parent(e)$ and $e' \square e$ (e' is at the same hierarchical level as e and has the same parent as e), and $X(e',s,t,i)$ is not defined then three methods can be used.

Case 2.1) Min-max

$$X(e,s,t,i) = X(parent(e),s,t,i) - \left(\frac{\sum_{e''=child(e)} X(e'',s,t,i) + X(parent(e),s,t,i) - \sum_{e'} X(e',s,t,i)}{2} \right)$$

Case 2.2) Average of children (where e'' is so that $e = parent(e'')$ and $X(e'',s,t,i)$ is defined)

$$X(e,s,t,i) = \frac{|child(e)|}{\left|\bigcup_{e''} \{e''\}\right|} \sum_{e''} X(e'',s,t,i)$$

Case 2.3) Average of the values of spatial units of the same hierarchical level (where e' so that $parent(e') = parent(e)$ and $e' \square e$ and $X(e',s,t,i)$ is defined),

$$X(e,s,t,i) = \frac{\left(X(parent(e),s,t,i) - \sum_{e'} X(e',s,t,i) \right)}{|child(parent(e))| - \left|\bigcup_{e'} \{e'\}\right|}$$

b) Estimation methods based on the source dimension (*S*)

Alternative sources of information can be used when the main source does not provide the target information. The idea here is to replace the missing value $X(e,s,t,i)$ by a known value $X(e,s',t,i)$ where s' is another organism of statistics. $X(e,s,t,i) = \square X(e,s',t,i)$ where $\square$ is a correlation factor empirically fixed.

c) Estimation methods based on the temporal dimension (*T*)

Various time interpolation methods using linear or non-linear assumption, prospective or retrospective computations of tendency can be used. Three of them are described here. The idea here is to estimate the missing value $X(e,s,t,i)$ by using two known values $X(e,s,t_1,i)$ and $X(e,s,t_2,i)$.

Case 1) Interpolation 1-1 method (where $t_1 < t < t_2$)

This method uses the two closest neighbours placed in time *before* and *after* t.

$$X(e,s,t,i) = X(e,s,t_1,i) + \frac{X(e,s,t_2,i) - X(e,s,t_1,i)}{t_2 - t_1}(t - t_1)$$

Case 2) Retrospective 2 method (where $t < t_1 < t_2$)

This method uses the two closest neighbours placed in time *after t*.

$$X(e,s,t,i) = X(e,s,t_1,i) - \frac{X(e,s,t_2,i) - X(e,s,t_1,i)}{t_2 - t_1}(t_1 - t)$$

Case 3) Prospective 2 method (where $t_1 < t_2 < t$)

This method uses the two closest neighbours placed in time *before t*.

$$\boxed{X(e,s,t,i) = X(e,s,t_2,i) + \frac{X(e,s,t_2,i) - X(e,s,t_1,i)}{t_2 - t_1}(t - t_2)}$$

d) Estimation methods based on the thematic dimension (*I*)
Alternative indicator(s) can be a value is missing for the given indicator. The idea here is to replace the missing value $X(e,s,t,i)$ by a known value $X(e,s,t,i')$ where i' is another indicator. $X(e,s,t,i) = \square\ X(e,s,t,i')$ where $\square$ is a correlation factor empirically fixed.

3.3.4.3 *Multi-dimensional estimation methods*

Multi-dimensional estimation methods are result from the combination of two or more one-dimensional methods. Generally they are more accurate and capitalize on more information

e) Estimation method (*ET*)
This method is based on a combination of a spatial estimation method (*E*) with a temporal estimation method (*T*)
Let us suppose that the value $X(e,s,t,i)$ is not known while the value $X(parent(e),s,t,i)$ is known, as well as are known the values $X(e,s,t_1,i)$ and $X(e,s,t_2,i)$of the two closest neighbours placed in time *before* and *after* t ($t_1 < t < t_2$).
We compose a spatial estimation method

$$X(e,s,t,i) = X(parent(e),s,t,i) \times Freq(e,s,t,i)$$

where

$$Freq(e,s,t,i) = X(e,s,t,i) \Big/ X(parent(e),s,t,i)$$

Yet, $X(e,s,t,i)$ is not known for computing $Freq(e,s,t,i)$but $X(e,s,t,i)$can be at its turn estimated using a temporal estimation method (interpolation 1-1)

$$Freq(e,t,i) = Freq(e,t1,i) + \frac{Freq(e,t2,i) - Freq(e,t1,i)}{t2 - t1}(t - t1)$$

3.3.5 Dataset for validation of the LTDB

3.3.5.1 *Principles*

In order to allow a first series of tests natural size of the LTDB, we will initially stick to a whole of simple indicators answering a certain number of essential characteristics for this phase:

(E) represents the spatial dimension and refers to one or several territorial units;

(S) represents the source dimension and refers to one or several organism of statistics;

(T) represents the time dimension and refers to one or several instants or/and periods of time;

(I) represents the thematic dimension and refers to one or several indicators.

- E: geographic units of observation are made compatible, either on the level of the original data, or on the level of derived information (ratios, disintegration...). The level noted initially is the Nuts hierarchy, level 2, in its geometry of 2000, compatible with the various works in progress of the ESPON project. The data available for 1980 should be brought back in the compatible geometry "2000". The estimations could be calculated

through multiscaling, with national and intra-national levels for example: it could be possible to desegregate state's level, according to the knowledge on the regional's area in the past.
- S: the variety of the sources allows a stepping and a cross validation,
- T: the dataset has two available dates: 1980 and 2000; and we could estimate some indicators for the prospective period 2015-2030.
- I: sets of themes selected are based on a restricted number of simple indicators: demography, the economy and environment.

3.3.5.2 *First indicators to be implemented*

- Economic Situation: the indicator selected is the GNP per capita.

- Demographic Data: several sources enable us to test the richness of the LTDB: we have a harmonized whole of about fifteen demographic indicators, brought back in NUTS 2-3 of 1980, for years 1960/80/88 (Decroly database). The ratios are derived from national stocks which should be recoverable. Moreover, we would have the population pyramid for the period 1997-2002, for the level NUTS 2 (Eurostat); pyramid which one can be compared to the population pyramid for the state's level at the periods 1995-2000 and 2000-2005 (United Nations). The population is complete on the level of Nuts 5 per 1990.

- Environmental indicator: an indicator of the occupation type of the ground makes possible to estimate the state and the dynamics of the environment. The ratio of forest per geographical unit seems particularly suitable being given the very great inertia of this indicator through time. This indicator gives a good idea of the "green" framework of life of Europeans. If possible, we will use Corine Land Cover data at the two available dates (whole or part).

- Mortality and births:
  - Death: we will aim the period 1998-2002 to allow to frame the population pyramid of 2000 and to smooth a little bit the accidents (crises medical, epidemics, e.g. France, August 2004...). Information is rather lacunar on the level of Nuts 3 and often round to the thousands: they will be thus difficult to work on the smallest units. The dataset will be restored on the level of the NUTS2 and NUTS 2-3.
  - Births: difficult also to obtain, but the mesh to be retained will be that of NUTS 2 (or NUTS 3).

3.3.6 Current status of the LTDB Implementation

The LTDB database schema has been implemented using the open source object-relational DBMS PostgreSQL and its spatial extension PostGIS. An interface for data acquisition from other relational sources (GIS data, .shp files, other databases and Excel sheets) has been implemented in Java. This interface allows to retrieve data from external sources and to insert them into the specific schema of the LTDB. This can be used both for the construction of the database and for updates. Some data have already been integrated into the database (demographic data for 1980 and for 1998). Other data are to be integrated from more sources (e.g. ESPON) in order to test the reliability and efficiency of the estimation methods.

The hierarchy of estimation methods has been implemented in a Knowledge Base developed with the object-based knowledge representation system AROM. This Knowledge Base has been integrated into an application that offers a basic Java API for estimating missing values in data retrieved from a PostrgreSQL database.

Experimentations for data visualization of the LTDB have been lead using the UDIG (User-friendly Desktop Internet GIS) software, an open source GIS. Since the layer creation function of UDIG is not satisfactory enough, a small Java interface has been built in order to allow users to create views of the LTDB (containing different layers), which can be visualized through the UDIG tool.

4 Recommendations for ESPON 2013

In this part, we give a few recommendations for the future scientific coordination in the ESPON 2013 programme. The main element is the handling of the data issue.

The future of data in ESPON

The team has worked on two complementary solutions for the handling of databased on two different database schemas (from a technical point of view) which is a consequence of the two different approaches (from a philosophical point of view) adopted by their respective authors.

On the one hand, the ESPON database relies on a flat database schema, and mainly serves as a repository for a huge set of European indicators grouped in different categories (population, wealth and production, transport, etc.). Each category gathers a certain number of themes (for instance, population structure, population movement, etc. for the category 'population'). Each theme is, at its turn, divided in sub-themes (indicators) and the ESPON database gives access to a set of raw values for each level (from 0 to 5) of the NUTS grid at a given census time.

On the other hand, the LTDB relies on a structured database schema designed for the import of different kinds of indicators, provided by different statistical sources (and not only European ones), concerning different grids (not only the administrative NUTS one), each defining a set of geographical units, at different census times. The main objective of LTDB is to fill-up incomplete sets of raw values by means of estimation methods which exploit the richness and diversity of various sets of indicators exported from different sources, corresponding to relevant census available and collected over time.

As a consequence, the two tools should continue to co-exist and fulfill different roles. The ESPON database should continue to be the location of the centralisation of all the data collected and used within ESPON. The very diverse data sources and different levels of rigour employed by different teams can be accommodated in the simple format of the ESPON database. However, this will always be limited to those time series which can be constructed with the available data for a given set of indicator and region definitions.

On the other hand the Long-term Database (LTDB), while allowing the elaboration of estimated time series across ruptures in the data definitions, requires a much greater rigour in the collection and preparation of this data. It will, thus, probably not be possible to integrate all of the ESPON database into the structure of the LTDB. However, the LTDB can be seen as a long-term investment which ESPON should make.

We, therefore, recommend to create a stricter system of rules for data collection and provision to the ESPON database. Some of the rules include:

1. Always submit the raw data exactly as received from the original data provider(s).
2. For each raw data set provide at least the following information (as is already more of less the case):
    a. Exact definition of original data (as given by data provider – example: number of unemployed according to ILO methodology)

   b. Exact source of data, including provider and data collection system (example: Eurostat – Labour Force Survey)
   c. Geographic units: which units, defined by whom and at which period (example: NUTS2 - Eurostat – 2003)
   d. Information about missing data (example: no data for Romania and Switzerland; only NUTS 1 data for Germany)
3. For any indicator derived from this raw data:
   a. Exact formula of calculation (example: unemployment rate = number of unemployed / total of active population between 15 and 65 years of age).
   b. Methods of estimation used for missing data (example: for France unemployment as per national (not ILO) definition)

In a supplementary report due in December this project will provide a more detailed handbook on data collection, including more detailed recommendations for the future.

But the LTDB can also serve a more immediate cause within the ESPON programme, in close interaction with the ESPON database. In fact, the LTDB can serve as a tool for completing incomplete sets of indicator values in the ESPON database, as it is the case for any other source of data. In order to achieve this goal, and since this task is manually time consuming and complex (due to the flat schema of the ESPON database), this process has to be automated in the future.

Some experiments have been led in order to extract and import some indicators from the ESPON database into the LTDB. The conclusion is that this task is not trivial and is time consuming. It deserves some expertise in the use of the ESPON database. For instance, at current time, importing into the LTDB all the set of values corresponding to a given indicator, of a given theme, of a given category, at any level of NUTS, for a given census, requires the activation of each corresponding Microsoft Access software query and to assemble each resulting Microsoft Access software table in the ESPON database.

One approach to this issue could be to build a 'wrapper' dedicated to the ESPON database. This piece of software would make it possible to automatically import incomplete sets of indicators from the ESPON database into LTDB. Then, the LTDB could fill the gaps by estimating the missing values and, possibly, estimate future values of some European indicators found in the ESPON database. This wrapper would have to rely on a complete description of the structuration of the ESPON database. It can be seen as an interface for data acquisition between the ESPON database and LTDB. The wrapper would manage the matching between the LTDB schema and a meta description of the schema of the imported source of data.

The LTDB framework imports and exports data files in different formats (Excel, *dbf*...) which facilitates the exchange with the ESPON database (which also imports and exports data in the Excel format). However, more compatibility between the two tools can be gained. The LTDB database schema has been implemented in POSTGRES, an open source and reliable database Management System (DBMS), with spatial functions provided by the POSTGIS extension. We recommend that the ESPON database migrates from the Access DBMS to a more powerful and open source DBMS, like POSTGRES.

More need is needed on the LTDB in order to adapt it even better to the ESPON realities. This is particularly true for the design of the Geographic Ontology of the Application Management Module and the Indicator Ontology Module. In particular, knowledge about the source (statistical institute) of the data will help in associating a confidence measure to these data. This confidence measure will be then integrated in the estimation methods.

At short term, the LTDB could be integrated into the HyperAtlas and HyperAdmin software. As an illustration of the benefit of this coupling, we can consider the case of the ESPON HyperAtlas, developed in the ESPON 3.1 Project which is an application relying on the

HyperAtlas software and some indicators extracted from the ESPON database. The integration of the LTDB into the HyperAtlas would allow to visualise (by simply moving a cursor on a time line, for instance) the evolution of the ratio of two indicators over any given period of time (past, present, but also future).

At mid term, in order to perform simulations that validate different scenarios, LTDB should also integrate more powerful estimation methods relying on different parameters which convey tendencies, hypothesis and assumptions corresponding to these scenarios. More research or at least scientific discussion on possible methods should be encouraged.

General recommendations for the scientific coordination of ESPON

Many of the recommendations for the future of ESPON have already been formulated at different occasions and have been integrated into the new draft programme document. We will, therefore, only mention a few points which seem fundamental:

- Ensuring the scientific solidity of results

Science is about uncertainty and about debate. Outcomes of research must be submitted to scientific critique if they are to be validated by the scientific community. As ESPON is a policy oriented programme with the ambition to deliver useful information to policy makers, such scientific scrutiny is even more fundamental. ESPON should, therefore, make a particular effort in ensuring that project results conform to international standards of research in the relevant field. This, however, also implies that the research teams should be given the time and resources, and that the scope of each project should be clearly circumscribed so as to allow the research to be conducted in a scientifically solid manner.

In order to foster a closer interaction between ESPON and the relevant research communities, ESPON should also envisage the possibility of publishing the scientific project results in an ESPON Working Papers series. This could be one of the requirements for the projects for their final reports.

- Better interaction between the scientific and the policy world

A major difficulty of ESPON has been the interfacing of scientists and policy makers. ESPON has shown considerable progress in that matter, in particular during the ESPON seminars where, over the years, a very high level of dialogue has been reached. There is, however, still room for improvement. Possible actions might include:

1. Limit the intermediate reports of ESPON to max. 20 pages. If anyone needs more information about a particular methodology, they should contact the team directly.
2. A lot has been said and written of the translation of scientific results for policy makers, but little attention has been paid to the reverse, i.e. the translation of political discourses for scientists. In order to make research results useful, scientists have to be better informed about the actual issues currently under discussion and in a form which goes beyond the simple reference to policy documents and events.
3. More thematic sessions at ESPON seminars focussing on particular policy issues, rather than on the presentation of project results. Project research should serve as the basis for informing policy makers, as no research project will ever be able to cover all required aspects.

- More scientific "freedom"

The aims of the first ESPON programme, i.e. providing a photograph of the current territorial state of Europe across the 29 countries and a vast array of thematic fields, led to fairly strong constraints to the research teams concerning the methodological aspects of their work. Teams were required to provide typologies and indicators, even where the absence of data made the elaboration of such indicators a very hazardous task, leading to sometimes very shaky scientific results. The approach was justified with the argument that any indicator is better than no indicator, but even with the political needs in mind, this seems to be a very simplistic approach.

The main aim of ESPON is to provide scientific evidence in support of policy making. Such evidence can, however, come in many different forms, and the teams should be free to chose the form they evaluate as best for answering the questions asked.

- Shorter, more targeted reports

In general, and to complement elements mentioned in the two previous points, the length of ESPON reports has seriously hampered their usefulness and their scientific dissemination. A possible solution might be to ask the teams to provide two short documents as the main outcome of their project:

  - A 10-page policy report answering the questions raised in the terms of reference
  - A contribution to the ESPON Scientific Working Papers Series (20-30) pages focusing on the scientific aspects of the projects.

- Better coordination of and a "library" for case studies

ESPON has revolved mainly around quantitative data, but such data is not everything. In order to understand territorial dynamics and their driving forces, complex interactions have to be scrutinized and quantifiable information often does not allow this. Many ESPON projects have, therefore, launched case studies at different spatial levels. However, these were rarely coordinated amongst the teams, leading to duplicate efforts and a lack of scale economies. Often, by only adding a few questions to the case study guidelines a case study could be used by more than one project. Thus, numbers of case studies could be significantly increased.

In the ESPON 2013 programme care should, therefore be taken from the very beginning to ensure a better coordination between teams launching case studies. This could be done via a page on the web site where teams can register the case study projects or via the Coordination Unit.

- Stricter rules for data collection

In the light of the proposal concerning the future of the database, teams should be submitted to very strict rules concerning data collection, in order to make the data as compatible as possible to the long-term database. This would allow ESPON to slowly grow the stock of data available in that database and thus facilitate the use of time series.

APPENDIX : overview of the complete data and indicators in the ESPON database at present

Theme	Subtheme	Variable	Type of data	Time reference	Regional reference	Project	Source of data	NUTS vers.
		Area in km2, 2003	Raw data	2003	NUTS 0,1,2,3	3.2		1999, 2003
Spatial typologies	**Spatial typologies**	Typology of lagging regions	Typology	2000	NUTS 2, 3	2.1.1/3.1		1999
		Typology of land use types base on average values	Typology	Summer 2003	NUTS 3	1.1.2.	CURS	1999
		Typology of migratory balances by age classes	Typology	1995-2000	NUTS 2	1.1.4	ITPS	1999
		Typology crossing mobility and migratory balances	Typology		NUTS 2	1.1.4	ITPS	1999
		Typology Multimodal Accessibility Potential	Typology	2001	NUTS 2,3	2.1.1		1999
		FUA's included	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Typology of functional urban area	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Number of FUA's in NUTS3	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Typology on polycentricity, 19 types	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Typology on polycentricity, 6 types	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Total popualtion in functional urban areas	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Share of population within functional urban regions in each NUTS 3	Typology		NUTS 3	1.1.1.	Nordregio	1999
		Typologies of regional specialisation and GDP per capita	Indicator	2001	NUTS 2	1.1.3	Eurostat LFS, S&W	1999
		Typologies of regional specialisation and GDP per capita	Indicator	1995-2001	NUTS 2	1.1.3	Eurostat LFS, S&W	1999
		Relative depopulation, quartiles	Typology		NUTS 3	1.1.4	ESPON 1.1.2 & 1.1.4	1999
		Type of rural area	Typology		NUTS 3	1.1.4	ESPON 1.1.2 & 1.1.4	1999
		Typology Settlement Structure (Six basic types defined by population density and situation regarding centres)	Typology	1999	NUTS 2,3	3.1		1999
		A typology of estimated levels of business telecommunications access and uptake	Typology	2002	NUTS 2	1.2.2	CURDS	1999
		An overall typology of combined household and business telecommunications development	Typology	2002	NUTS 2	1.2.2	CURDS	1999
		A typology comparing levels of household and business telecommunications uptake	Typology	2002	NUTS 2	1.2.2	CURDS	1999
		A typology of levels of household telecommunications uptake	Typology	2002	NUTS 2	1.2.2	CURDS	1999
		Urban-rural typology	Typology	CLC: 1986-1996; Pop.: 1999	NUTS 3	1.1.2.	CURS	1999
	Spatial classification	Border	Classification	2003	NUTS 2,3	2.1.1		1999
		Coast	Classification	2003	NUTS 2,3	2.1.1		1999
		Pentagon EU 15	Classification		NUTS 2,3	2.1.1/3.1		1999

		Pentagon EU 27 plus 2	Classification		NUTS 2,3	2.1.1/3.1		1999
		Primacy rate	Indicator	2002	NUTS 2-3	2.4.2	BBR	2003
		Population density of permanently populated area	Indicator		NUTS 2-3	2.4.2	BBR	2003
		Share of population in cities below 50.000 inhabitants	Indicator		NUTS 2-3	2.4.2	BBR	2003
		FUA within the region	Indicator		NUTS 2-3	2.4.2	BBR	2003
		MEGA within the region	Indicator		NUTS 2-3	2.4.2	BBR	2003
		Percent population change 1995-2000	RCE-Indicator	1995-2000	NUTS 2	3.1		1999
		Population density 2000	RCE-Indicator	2000	NUTS 2	3.1		1999
		Count of types of settlement structure with population = 0	RCE-Indicator		NUTS 2			1999
		Share of FUA-Population in NUTS 2	RCE-Indicator		NUTS 2			1999
		Region´s share of EU 27+2 population, Change 1995-2000 in percent	RCE-Indicator	1995-2000	NUTS 2	1.1.3		1999
		Unemployment rate 2001	RCE-Indicator	2001	NUTS 2	2.1.2.		1999
		Development of unemployment 1998-2001 in percent points	RCE-Indicator	2001	NUTS 2			1999
		Unemployed under 25 / 1.000 inhabitants 15 -< 25 years	RCE-Indicator	2001	NUTS 2		INKAR	1999
		Share of population in the ages over 65 in percent	RCE-Indicator	2000	NUTS 2	3.1	BBR	1999
		Labour Force Replacement: population of ages 10-19 / population of ages 55-64	RCE-Indicator	2000	NUTS 2	1.1.4.		1999
		Changes in Natural Growth Potential	RCE-Indicator	2000	NUTS 2	1.1.4.		1999
		Share of Internet users to100 inhabs regression	RCE-Indicator	2003	NUTS 2	1.2.2	CEIDT	1999
		Proportion of firms with own website regression	RCE-Indicator	2003	NUTS 2	1.2.2	CEIDT	1999
		GDP in Euro: growth 1995-2000 in percent	RCE-Indicator	1995-2000	NUTS 2			1999
		GDP in PPS per inhabitant	RCE-Indicator	2000	NUTS 2	3.1	BBR	1999
		Region´s share of EU 27+2 GDP in PPS, Change 1995-2000 in percent	RCE-Indicator	1995-2000	NUTS 2			1999
		Accessibility time to market by rail and road, half-life mesoscale (25), weighted by Population	RCE-Indicator	1997	NUTS 2	2.1.1		1999
		Accessibility time to market by rail and road, half-life makroscale (1000), weighted by Population	RCE-Indicator	1997	NUTS 2	2.1.1		1999
		Potential accessibility air, ESPON space = 100	RCE-Indicator	2001	NUTS 2	1.2.1	S&W	1999
		Potential accessibility multimodal, ESPON space = 100	RCE-Indicator	2001	NUTS 2	1.2.1	S&W	1999
		Potential accessibility rail, ESPON space = 100	RCE-Indicator	2001	NUTS 2	1.2.1	S&W	1999
		Potential accessibility road, ESPON space = 100	RCE-Indicator	2001	NUTS 2	1.2.1	S&W	1999
		CORINE natural surface in percent of total	RCE-Indicator	1986-1996	NUTS 2	3.1	BBR	1999
		CORINE artificial surface in percent of total	RCE-Indicator	1986-1996	NUTS 2	3.1	BBR	1999
		Share high educated population in percent	RCE-Indicator	2002	NUTS 2	3.1	BBR	1999
		Number of persons employed per km2	RCE-Indicator	2001	NUTS 2	3.1	BBR	1999

		Persons employed in Agriculture 2001 in percent of total	RCE-Indicator	2001	NUTS 2	3.1	BBR	1999
		Persons employed in Services 2001 in percent of total	RCE-Indicator	2001	NUTS 2	3.1	BBR	1999
		Research & Development, Expenditures, all institutional sectors	RCE-Indicator	various years	NUTS 2	2.1.2.		1999
		R&D BES personnel (in fte) per 1000 active person 2002 rsp. last year available	RCE-Indicator	2002	NUTS 2			1999
		R&D Total personnel (in fte) per 1000 active person 2002 rsp. last year available	RCE-Indicator	2002	NUTS 2			1999
		Output-Input ratio agriculture	RCE-Indicator	2001	NUTS 2	3.1	Eurostat, Regions: Statistical Yearbook 2003, data from map 2.3	1999
		Regional earthquake hazard potential	RCE-Indicator	1998	NUTS 2	1.3.1	GTK	1999
		Potential risk of radioactive contamination on NUTS2 regions	RCE-Indicator	2003	NUTS 2	1.3.1	GTK	1999
		Approximate probability of having winter storms	RCE-Indicator		NUTS 2	1.3.1	GTK	1999
		Regional average number of flood events	RCE-Indicator	1987-2002	NUTS 2	1.3.1	GTK	1999
		Number of all volcanoes in NUTS2 area	RCE-Indicator		NUTS 2	1.3.1	GTK	1999
		Oil Hazards - average of 3 standardized hazard indicators (harbours, pipeline, refinieries)	RCE-Indicator		NUTS 2			1999
		RCE: Additive combination of classified accessibility indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of classified economy indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of classified environment indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of classified hazard indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of classified labour market indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of classified demography indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Additive combination of spatial structure indicators divided by # of indicators	RCE-Indicator		NUTS 2	3.1.		1999
		RCE: Final indicator (additive combination of classified indicators)	RCE-Indicator		NUTS 2	3.1.		1999
		RCE - classified accessibility	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified demography	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified economy	RCE-Indicator		NUTS 2	2.4.2		2003

		RCE - classified labour market	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified lisbon performance	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified naturalness	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified natural hazards	RCE-Indicator		NUTS 2	2.4.2		2003
		RCE - classified technological hazards	RCE-Indicator		NUTS 2	2.4.2		2003
		GDP per capita in PPS	RCE-Indicator	2002	NUTS 2			2003
		GDPgrowth in PPS per capita 1995-2002	RCE-Indicator	1995-2002	NUTS 2			2003
		Productivity - GDP per person employed	RCE-Indicator	2002	NUTS 2			2003
		Employment rate	RCE-Indicator	2003	NUTS 2			2003
		Expenditures, R&D, all institut sectors, in %	RCE-Indicator	2001	NUTS 2			2003
		R&D BES personnel	RCE-Indicator	2001	NUTS 2			2003
		High education population	RCE-Indicator	2002	NUTS 2			2003
		Unemployment rate 2003	RCE-Indicator	2003	NUTS 2			2003
		Developm Unemployment rate 1999-2003 in PP	RCE-Indicator	1999-2003	NUTS 2			2003
		Youth unemployment 2003	RCE-Indicator	2003	NUTS 2			2003
		Labour Force Replacement:	RCE-Indicator		NUTS 2			2003
		Number of persons employed per km2 2003	RCE-Indicator	2003	NUTS 2			2003
		Employment in tertary sector	RCE-Indicator	2003	NUTS 2			2003
		Population ages 65 years and more, share of	RCE-Indicator		NUTS 2			2003
		Changes in Natural Growth Potential	RCE-Indicator		NUTS 2			2003
		Percent pop change 1995-2002	RCE-Indicator	1995-2002	NUTS 2			2003
		Artificial surface	RCE-Indicator		NUTS 2			2003
		Natural surface	RCE-Indicator		NUTS 2			2003
		Agricultural intensity	RCE-Indicator		NUTS 2			2003
		Regional average number of flood events	RCE-Indicator	1987-2002	NUTS 2	1.3.1	GTK	2003
		Approximate probability of having winter storms	RCE-Indicator		NUTS 2	1.3.1	GTK	2003
		Earthquake hazard potential	RCE-Indicator		NUTS 2	1.3.1	GTK	2003
		Change of dry spell combination with drought	RCE-Indicator		NUTS 2	1.3.1	GTK	2003
		Forest fires hazards	RCE-Indicator	1997-2003	NUTS 2	1.3.1	GTK	2003
		Oil hazards	RCE-Indicator		NUTS 2	1.3.1	GTK	2003
		Chemical plants	RCE-Indicator		NUTS 2	1.3.1	GTK	2003
		Potential Accessibility by Air	RCE-Indicator	2001	NUTS 2			2003
		Potential Accessibility by Rail	RCE-Indicator	2001	NUTS 2			2003
		Potential Accessibility by Road	RCE-Indicator	2001	NUTS 2			2003
		Time to market meso-scale	RCE-Indicator	2001	NUTS 2			2003
	City system	FUA population	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA DEMOGRAPHIC-MASS_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA TRANSPORT_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA UNIVERSITY_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA DECISION-MAKING_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA ADMINISTRATION_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA TOURISM_CODE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA manufacturing, with two sub-indicators, classification	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA AVERAGE	Indicator		FUA	1.1.1.	Nordregio	1999
		FUA CLASSIFICATION	Indicator		FUA	1.1.1.	Nordregio	1999
		MEGA_DEMOGRAPHIC-MASS_INDEX	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_COMPETITIVENESS_INDEX	Indicator		STSICD	1.1.1.	Nordregio	1999

		MEGA_CONNECTIVITY_INDEX	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_KNOWLEDGE_INDEX	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_AVERAGE_INDICES	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_DEMOGRAPHIC-MASS_SCORE	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_COMPETITIVENESS_SCORE	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_CONNECTIVITY_SCORE	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_KNOWLEDGE_SCORE	Indicator		STSICD	1.1.1.	Nordregio	1999
		MEGA_CLASSIFICATION	Indicator		STSICD	1.1.1.	Nordregio	1999
		PIA population: Number of inhabitants in municipalities included in PIA	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of PUSH areas in each PIA	Indicator		STSICD	1.1.1.	Nordregio	1999
		Rank of PIA main node according to its PUSH population	Indicator		STSICD	1.1.1.	Nordregio	1999
		Rank of PIA according to its total population (reflects changes in the urban hierarchy if polycentric regional development is developed across Europe)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Rank of PIA, comparing its total population to the PUSH population of the main node in other PIAs (reflects the effect of polycentric integration developed in this PIA only)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Extent of 45-minute Isochrones;	Indicator		STSICD	1.1.1.	Nordregio	1999
		Ratio between PUSH Area and Isochrone area;	Indicator		STSICD	1.1.1.	Nordregio	1999
		PUSH area population	Indicator		STSICD	1.1.1.	Nordregio	1999
		Ratio between PUSH area population and FUA pop	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of FUA centres included in each PUSH area;	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of ESPON countries covered by each PUSH area (identification of trans-national PUSH areas)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Proportion of PUSH area overlapping with other PUSH areas	Indicator		STSICD	1.1.1.	Nordregio	1999
		Total settlement area (in km2)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of settlement units within the PUSH	Indicator		STSICD	1.1.1.	Nordregio	1999
		Proportion of settlement area on total PUSH area (in %)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Smallest settlement area in PUSH (in km2)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Area of assigned to the PUSH using the 100 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
		Area of the 2nd greatest settlement area in PUSH (in km2	Indicator		STSICD	1.1.1.	Nordregio	1999
		Largest settlement area in PUSH (in km2)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Average settlement area in PUSH (in km2)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Standard deviation of settlement areas in PUSH (in km2)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Gini coefficient of settlement areas	Indicator		STSICD	1.1.1.	Nordregio	1999
		Average distance between all settlement areas within a push (in km)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Distance between the largest and 2nd	Indicator		STSICD	1.1.1.	Nordregio	1999

		largest settlement unit (in km)						
		Maximum standardised area concentration index (PUSH=100)	Indicator		STSICD	1.1.1.	Nordregio	1999
		2nd highest standardised area concentration index (PUSH =100)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Minimum standardised area concentration index (PUSH =100)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Area of assigned to the PUSH using the 50 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
		Average standardised area concentration index (PUSH=100)	Indicator		STSICD	1.1.1.	Nordregio	1999
		Range between maximum & minimum standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Difference between highest & 2nd highest standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Difference between 2nd highest & average standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Ratio between 2nd highest and highest standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Ratio between average and highest standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Ratio between minimum and highest standardised area concentration index	Indicator		STSICD	1.1.1.	Nordregio	1999
		Settlement structure assignment1 = Sprawl2 = sparsely populated/rural3 = monocentric4 = polycentric	Indicator		STSICD	1.1.1.	Nordregio	1999
		Settlement structure assignment (alternative)1 = Sprawl3 = monocentric4 = polycentric	Indicator		STSICD	1.1.1.	Nordregio	1999
		Generation of PIAs - first iteration. Code of larger FUA (in terms of population) with which at least 33% of the PUSH area is shared	Indicator		STSICD	1.1.1.	Nordregio	1999
		Area of assigned to the PUSH using the 10 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
		Generation of PIAs - second iteration. FUA (in terms of population) with which FUA indicated by "PUSH 39" shares at least 33% of its PUSH area.	Indicator		STSICD	1.1.1.	Nordregio	1999
		Generation of PIAs - third iteration. FUA (in terms of population) with which FUA indicated by "PUSH 40" shares at least 33% of its PUSH area.	Indicator		STSICD	1.1.1.	Nordregio	1999
		Generation of PIAs - fourth iteration. FUA (in terms of population) with which FUA indicated by "PUSH 41" shares at least 33% of its PUSH area. (Fifth iteration produces no further merges)	Indicator		STSICD	1.1.1.	Nordregio	1999
		PIA complexity - number of iterations needed to contruct the PIA (0 corresponds to PUSH areas which are not integrated into	Indicator		STSICD	1.1.1.	Nordregio	1999

		any PIA)						
		Area of assigned to the PUSH using the 5 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of municipalities assigned to the PUSH using the 100 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of municipalities assigned to the PUSH using 50%	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of municipalities assigned to the PUSH using the 10 % criterion (threshold adopted for the rest of the	Indicator		STSICD	1.1.1.	Nordregio	1999
		Number of municipalities assigned to the PUSH using the 5 % criterion	Indicator		STSICD	1.1.1.	Nordregio	1999
	Eligible areas	Part of Interreg Programme, by programme	Classification		NUTS 2, NUTS 3	3.1	BBR	1999
		"Objective 1" regions= regions situated within objective 1 regions	Classification	2000	NUTS 2, NUTS 3	2.1.1/3.1		1999
		"Objective 2" regions includes regions containing at least one Objective 2 region (partly)	Classification	2000	NUTS 2, NUTS 3	2.1.1/3.1		1999
Population	**Population structure**	Dependency rate 1995	Indicator	1995	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Dependency rate 1999	Indicator	1999	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Share of NUTS 2 area comprising NUTS 3 regions with population decline 1995-1999	Indicator	1995-1999	NUTS 2	1.1.4	ITPS	1999
		Share of NUTS 2 average population 1999 living in NUTS 3 regions with population decline 1995-1999	Indicator	1995-1999	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2000 (%) (Model A)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2025 (%) (Model A)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2050 (%) (Model A)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2000 (%) (Model B1)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2025 (%) (Model B1)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2050 (%) (Model B1)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2000 (%) (Model B2)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2025 (%) (Model B2)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2050 (%) (Model B2)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2000 (%) (Model B3)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2025 (%) (Model B3)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Population between 15 and 64 years in 2050	Indicator	2050	NUTS 2	1.1.4	ITPS	1999

		(%) (Model B3)						
		Population with 65 and more years in 2050 (%) Model A vs Model B0 relative position	Indicator	2050	NUTS 0	1.1.4	ITPS	1999
		Population with 65 and more years in 2050 (%) Model B2 vs Model C4 relative position	Indicator	2050	NUTS 0	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) Model A vs Model B0 relative position	Indicator	2000-2050	NUTS 0	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) Model B2 vs Model C4 relative position	Indicator	2000-2050	NUTS 0	1.1.4	ITPS	1999
		PSR in 2050 Model A vs Model B0 relative position	Indicator	2050	NUTS 0	1.1.4	ITPS	1999
		PSR in 2050 Model B2 vs Model C4 relative position	Indicator	2050	NUTS 0	1.1.4	ITPS	1999
		Population with 65 and more years in 2050 (%) (Model A)	Indicator	2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		PSR in 2050 (Model A)	Indicator	2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Share (%) of population in the ages 65+ 1990	Indicator	1990, 95, 99	NUTS 2/3	1.1.4	ITPS	1999
		National Total Fertility Rates 1999-2000 CODE	Indicator	1999-2000	NUTS 2	1.1.4	ITPS	1999
		Average score on indirect "ageing"/ "depopulating" indicators	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Average score on indirect "ageing"/ "depopulating" indicators, Grouped (quartiles)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population total by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 0-4 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 5-9 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 10-14 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 15-19 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 20-24 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 25-29 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 30-34 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 35-39 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 40-44 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 45-49 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 50-54 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 55-59 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999,

								2003
		Population 60-64 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 65-69 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 70-74 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 75-79 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 80-84 years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Population 85 years and more years by sex	Raw data	1995 - 2003	NUTS 2	3.2		1999, 2003
		Average Population by sex	Indicator	1990 - 2003	NUTS 3	3.2		1999, 2003
		Ageing "Labour Force" (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Ageing Population (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Aged People vs. Youth (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Changes in Natural Growth Potential (4 groups)	Indicator	2000-2020	NUTS 2	1.1.4	ITPS	1999
		"Labour Force" Replace-ment (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Post-Active Dependency (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Share of children (4 groups)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Ageing "Labour Force" (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Ageing Population (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Aged People vs. Youth (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Changes in Natural Growth Potential (indexes)	Indicator	2000-2020	NUTS 2	1.1.4	ITPS	1999
		"Labour Force" Replace-ment (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Post-Active Dependency (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Share of children (indexes)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Population density	Indicator	1995-2000	NUTS 0 - 3			1999, 2003
		Population density 1999 (EU-average = 100)	Indicator	1999	NUTS 2, NUTS 3	1.3.1	GTK	1999
		Potential Support Ratio in 2000 (Model A)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2025 (Model A)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2050 (Model A)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2000 (Model B1)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2025 (Model B1)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2050 (Model B1)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2000 (Model B2)	Indicator	2000	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2025 (Model B2)	Indicator	2025	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2050 (Model B2)	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Total fertility rate	Indicator	1990, 1995, 1999	NUTS 2	1.1.4	ITPS	1999
		Relative rurality based on national classifications	Indicator	1985-2001 varying	NUTS 3	1.1.2	Nordregio	1999
		Urban - rural population in Europe based on national classification	Indicator	1985-2001 varying	NUTS 3	1.1.2	Nordregio	1999
		Population, by sex and ageclass, high	Raw Data	1999 - 2002	NUTS 2	3.1	BBR	1999

		educational level						
		Population, by sex and ageclass, low educational level,	Raw Data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Population, by sex and ageclass, medium educational level,	Raw Data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Percentage of total population with tertiary education	Indicator	1994 - 2001	NUTS 0 - 2	2.1.2	ECOTEC	1999
	Population movement	External immigration	Indicator		NUTS 2	1.1.4	ITPS	1999
		Immigrants from EU countries	Raw data	2000	NUTS 3	1.1.2	TAURUS	1999
		Immigrants total	Raw data	2000	NUTS 3	1.1.2	TAURUS	1999
		Immigrants from non-EU countries	Raw data	2000	NUTS 3	1.1.2	TAURUS	1999
		External migratory balance	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Internal migratory balance	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Total migratory balance	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Internal mobility by region	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Mobility by region relative to national mobility	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Absolute migratory balance	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Migratory balance by regions between 1996 and 1999	Indicator	1996-1999	NUTS 2	1.1.4	ITPS	1999
		Migratory balance between 1996 and 1999	Indicator	1996-1999	NUTS 2-3	1.1.4	ITPS	1999
		Migratory balance 17.5 to 27.5 years old	Indicator	1995-2000	NUTS 2	1.1.4	ITPS	1999
		Migratory balance 32.5 to 42.5 years old	Indicator	1995-2000	NUTS 2	1.1.4	ITPS	1999
		Migratory balance 52.5 to 67.5 years old	Indicator	1995-2000	NUTS 2	1.1.4	ITPS	1999
		Synthetic cartography of migratory balances for the main age classes, 1995-2000	Indicator	1995-2000	NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) (Model A)	Indicator	2000-2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) (Model B0)	Indicator	2000-2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) (Model B2)	Indicator	2000-2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) (Model B3)	Indicator	2000-2050	NUTS 0, NUTS 2	1.1.4	ITPS	1999
		Popualtion change 1990-2000	Indicator	1990-2000	NUTS 3	1.1.4	ITPS	1999
		Popualtion change 1990-1995	Indicator	1990-1995	NUTS 3	1.1.4	ITPS	1999
		Popualtion change 1995-2000	Indicator	1995-2000	NUTS 3	1.1.4	ITPS	1999
		Population with 65 and more years in 2050 (%) Model A vs Model B0 relative position	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2050 Model A vs Model B0 relative position	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) Model A vs Model B0 relative position	Indicator	2000-2050	NUTS 2	1.1.4	ITPS	1999
		Population with 65 and more years in 2050 (%) Model B2 vs Model C4 relative position	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Potential Support Ratio in 2050 Model B2 vs Model C4 relative position	Indicator	2050	NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%) Model B2 vs Model C4 relative position	Indicator	2000-2050	NUTS 2	1.1.4	ITPS	1999
		Variation of the population 2000-2050 (%)	Indicator	2000-2050	NUTS 2	1.1.4	ITPS	1999

		vs Population with 65 andmore years in 2050 (%) (Model A) 4 categories						
		Variation of the population 2000-2050 (%) vs Population with 65 andmore years in 2050 (%) (Model A) 9 categories	Indicator	2000-2050	NUTS 2	1.1.4	ITPS	1999
		Net migration 1996-1999	Indicator	1996-1999	NUTS 2/3	1.1.4	ITPS	1999
		Natural population development 1996-1999	Indicator	1996-1999	NUTS 2/3	1.1.4	ITPS	1999
		Total population development 1996-1999	Indicator	1996-1999	NUTS 2/3	1.1.4	ITPS	1999
Employment and Labour Market	**Employment and sector structure**	Active population by sex	Raw data	1995 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Active population over 25 years	Raw data	1995 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Active population under 25 years	Raw data	1995 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Economically active population by sex 1999	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economically active population total	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economically active population with pre-primary, primary and lower secondary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economically active population with upper secondary and post-secondary non-tertiary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economically active population with tertiary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economically active population - no answer -	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Economic activity rate by sex	Indicator	1999 - 2004	NUTS 2	3.2		2003
		Average workhours from fulltime engaged economic active persons by sex	Raw data	2001 - 2002	NUTS 2	3.1	BBR	1999
		Average workhours from fulltime engaged employees by sex	Raw data	2001 - 2002	NUTS 2	3.1	BBR	1999
		Average workhours from fulltime engaged family workers by sex	Raw data	2001 - 2002	NUTS 2	3.1	BBR	1999
		Persons employed by sex	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employment rate by sex	Indicator	1999 - 2004	NUTS 2	3.2		2003
		Medium-high and high-tech manufacturing (employment as % of total manufacturing employment)	Indicator	1995 - 2000	NUTS 0, NUTS 1, NUTS 2,	2.1.2	ECOTEC	1999
	Structure of persons employed	Persons employed by sex	Raw Data	1995 - 2001	NUTS 2	3.1	BBR	1999
		Persons employed in Agriculture	Raw Data	1995 - 2001	NUTS 2	3.1	BBR	1999
		Persons employed in Services	Raw Data	1995 - 2001	NUTS 2	3.1	BBR	1999
		Persons employed in Industry	Raw Data	1995 - 2001	NUTS 2	3.1	BBR	1999
		Employed persons by ageclass and sex and nationality (EU/non-EU)	Raw data	1999-2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in all NACE	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in agriculture	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in fishing and fish farming	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in mining and quarring	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999

		Employed persons by sex in manufacturing	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in electricity/gas/water supply	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in construction	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in wholesale and retail/repairs	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in hotels and restaurants	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in transports/communication	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in financial intermediation	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in real estate/business activity	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in public administration	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in education and instruction	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in health care and welfare	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in other services	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in private households	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex in extra-territorial organisations and corporations	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons in all NACE branches	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in agriculture, hunting, forestry and fishing,	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in total industry (excluding construction)	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in industry	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in construction	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in services	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in wholesale and retail trade, ...	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in financial intermediation	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons in public administration, ..	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons by NACE branches, no answer,	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons total	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons with pre-primary, primary and lower secondary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons with upper secondary and post-secondary non-tertiary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons with tertiary education - level	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Employed persons by sex work as armed forces	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as legislators and managers	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as	Raw data	1999	NUTS 2	3.1	BBR	1999

		professionals						
		Employed persons by sex work as technicians	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as clerks	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as services and sales workers	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as agriculture/fishery workers	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as craft/related trades workers	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as plant and machine operators	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex work as elementary operators	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employed persons by sex	Raw data	1999	NUTS 2	3.1	BBR	1999
		Employees by sex	Raw data	1999 - 2002	NUTS 0, NUTS 1, NUTS 2	3.1	BBR	1999, 2003
		Family worker by sex	Raw data	1999 - 2002	NUTS 0, NUTS 1, NUTS 2	3.1	BBR	1999, 2003
		Employed persons by sex	Raw data	1999 - 2002	NUTS 0, NUTS 1, NUTS 2	3.1	BBR	1999, 2003
		Self-employed persons by sex	Raw data	1999 - 2002	NUTS 0, NUTS 1, NUTS 2	3.1	BBR	1999, 2003
		Employed persons by sex and by educational level and by ageclass	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Inactive persons by sex and by educational level and by ageclass	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
		Unemployed persons by sex and by educational level and by ageclass	Raw data	1999 - 2002	NUTS 2	3.1	BBR	1999
	Unemployment	Long-term unemployment, absolute number	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Long-term unemployment rate	Indicator	1999 - 2004	NUTS 2	3.2		2003
		Unemployed persons by sex	Raw Data	1998 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Unemployed over/under 25 years	Raw Data	1998 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Unemployment rate by sex	Indicator	1998 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Unemployment rate over/under 25 years	Indicator	1998 - 2001	NUTS 2, NUTS 3	3.1	BBR	1999
		Unemployment rate by sex	Indicator	1999 - 2004	NUTS 2, NUTS 3	3.2		2003
		Unemployment rate over/under 25 years	Indicator	1999 - 2004	NUTS 2, NUTS 3	3.2		2003
Wealth and production	**Income and consumption**	Deviation - Gross Domestic Product by Population ('euros per inhabitant) around Nuts 2's neighbours	Indicator	1999	Nuts 2's neighbours	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population 'euros per inhabitant; index Nuts 0)	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population ('euros per inhabitant; index EU-	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999

		15)						
		Deviation - Gross Domestic Product by Population ('euros per inhabitant; index nuts 2's neighbours)	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population, 'purchasing power standards per inhabitant, around Nuts 2's neighbours	Indicator	1999	Nuts 2's neighbours	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population, 'purchasing power standards per inhabitant; index Nuts 0,	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population, 'purchasing power standards per inhabitant; index EU-15,	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Deviation - Gross Domestic Product by Population, 'purchasing power standards per inhabitant; index Nuts 2's neighbours,	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'euros per inhabitant, absolut difference	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'euros per inhabitant	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'euros per inhabitant	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'euros per inhabitant, relative difference	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'purchasing power standards per inhabitant, absolut difference	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'purchasing power standards per inhabitant	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'purchasing power standards per inhabitant	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		Discontinuities - Gross Domestic Product by Population, 'purchasing power standards per inhabitant, relative difference	Indicator	1999	NUTS 2	3.1	UMS RIATE	1999
		GDP in Millions of Euro	Raw data	1995 - 2003	NUTS 0 - 3	3.2		2003
		GDP in Millions of Purchasing Power Parities	Raw data	1995 - 2003	NUTS 0 - 3	3.2		2003
		GDP in Purchasing Power Parities per inhabitant 1995	Indicator	1995 - 2003	NUTS 0 - 3	3.2		2003
		GDP in Euro per inhabitant 1995	Indicator	1995 - 2003	NUTS 0 - 3	3.2		2003
Transport	**Transport infrastructure**	Length of high speed and main rail lines (km)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of high speed and main rail lines (km)/NUTS3 population (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of high speed and main rail lines (km)/NUTS3 surface (km2)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of high speed rail lines (km)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of highroad network (km)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999

		Length of high speed rail lines (km)/NUTS3 population (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of high speed rail lines (km)/NUTS3 surface (km2)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of railway network, km (2001)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of road network (km)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of road network (km)/NUTS3 population (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of road network (km) with free speed higher than 85 km/h / NUTS3 population (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of highroad network (2001)/NUTS3 population (1999) in relation to the average value in ESPON space	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of road network (km)/NUTS3 surface (km2)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of road network (km) with free speed higher than 85 km/h / NUTS3 surface (km2)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of railway network (2001)/NUTS3 population (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of railway network (2001)/NUTS3 population (1999) in relation to the average value in ESPON space	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Length of railway network (2001)/NUTS3 surface (km2)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports (more than 0,5 millions of passenger/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports (more than 1 millions of passenger/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports (15 millions of passenger/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports (more than 5 millions of passenger/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial airports (more than 15 millions of passenger/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial seaports	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial seaports (0,5 millions of tonnes/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial seaports (10 millions of tonnes/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial seaports (1 millions of tonnes/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of commercial seaports (more than 10 millions of tonnes/year)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Number of rail stations serving high speed rail lines	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Traffic in commercial airports (in million passengers/year 2000)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999
		Traffic in commercial airports (in million passengers/year 2000)/inhabitants (1999)	Raw data	2001	NUTS 3	1.2.1	Mcrit	1999

		Traffic in commercial seaports (in million tonnes/year 2000)	Raw data	2000	NUTS 3	1.2.1	Mcrit	1999
	Passengers and goods transport	Km per person in leisure trip generated in each NUTS2, by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in leisure trip generated in each NUTS2, by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in leisure trip generated in each NUTS2, by train	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips*Km in road links in business trips by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips*Km in road links in business trips by car per total length of highroad network	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips*Km in road links in business trips by car per surface of NUTS3 (km2)	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips*Km in road links in business trips by car per total population 1999	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in obligated trip generated in each NUTS2, by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in obligated trip generated in each NUTS2, by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in obligated trip generated in each NUTS2, by train	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in visit trip generated in each NUTS2, by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in visit trip generated in each NUTS2, by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Km per person in visit trip generated in each NUTS2, by train	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Business/Obligated	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Business/Obligated, by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Business/Obligated, by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Business/Obligated, by train	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Business/Obligated	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Obligated/Business, Mode: by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Obligated/Business, Mode: by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Obligated/Business, Mode: by rail	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Vacation/Leisure	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Leisure/Vacation, Mode: by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2,	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999

		Purpose: Leisure/Vacation, Mode: by plane						
		Total trips attracted in each NUTS2, Purpose: Leisure/Vacation, Mode: by rail	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Leisure/Vacation	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Leisure/Vacation, Mode: by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Leisure/Vacation, Mode: by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Leisure/Vacation, Mode: by rail	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Visit/Personal	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Visit/Personal, Mode: by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Visit/Personal, Mode: by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips attracted in each NUTS2, Purpose: Visit/Personal, Mode: by rail	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Visit/Personal	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Visit/Personal, Mode: by car	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Visit/Personal, Mode: by plane	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Total trips generated in each NUTS2, Purpose: Visit/Personal, Mode: by rail	Raw data	2001	NUTS 2	1.2.1	Mcrit	1999
		Connectivity to transport terminals by car (hours) of the capital or centroid representative of the NUTS3	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Connectivity to transport terminals by car (minutes) weighted by surface of all NUTS3	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Connectivity to commercial airports by car of the capital or centroid representative of the NUTS3 (HOURS)	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Connectivity to commercial seaports by car of the capital or centroid representative of the NUTS3 (HOURS)	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Time (hours) to the nearest motorway access, by car of the capital or centroid representative of the NUTS3	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Time (minute) to the nearest motorway access, by car of the capital or centroid representative of the NUTS3	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Connectivity to rail stations (minutes) weighted by surface	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
		Time (minutes) to the nearest commercial seaport by car of the capital or centroid representative of the NUTS3	Indicator	2001	NUTS3	1.2.1	Mcrit	1999
	Accessibility	Daily market accessible by car in terms of GDP (MIO EUR/inhabitants*1000000)	Indicator	2000	NUTS 3	1.2.1	Mcrit	1999

		Daily population accessible by car	Indicator	1999	NUTS 3	1.2.1	Mcrit	1999
		Potential accessibility air, by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.2.1	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Potential accessibility rail by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.2.1	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Potential accessibility road by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.2.1	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Potential accessibility multimodal by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.2.1	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Potential accessibility multimodal, destinations = AC12, by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.1.3	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Potential accessibility multimodal, destinations = EU15, by EU15/EU25/EU27/ESPON/CC12	Indicator	2001	NUTS 3	1.1.3	Spiekermann & Wegener, Urban and Regional Research (S&W)	1999
		Accessibility time to market by rail, half-life makroscale / mesoscale, weighted by GDP / by population	Indicator	1997	NUTS 3	2.1.1		1999
		Accessibility time to market by rail and road, half-life makroscale / mesoscale, weighted by GDP / by population	Indicator	1997	NUTS 3	2.1.1		1999
		Accessibility time to market by road, half-life makroscale / mesoscale, weighted by GDP / by population	Indicator	1997	NUTS 3	2.1.1		1999
	Impacts of transport policys / scenarios	Impact on regional welfare for the A.. scenarios in % of GDP	Indicator	1991-2001	NUTS 3	2.1.1		1999
		Impact on regional welfare for the B.. scenarios in % of GDP	Indicator	2001-2021	NUTS 3	2.1.1		1999
		Impact on regional welfare for the C.. scenarios in % of GDP	Indicator	2001-2021	NUTS 3	2.1.1		1999
		Impact on regional welfare for the D.. scenarios in % of GDP	Indicator	2001-2021	NUTS 3	2.1.1		1999
		STIMA model Accessibility A / B / C	Indicator		NUTS 2	2.1.1		1999
		STIMA model Internet A / B / C	Indicator		NUTS 2	2.1.1		1999
		STIMA model Difference to EU Mean A / B / C	Indicator		NUTS 2	2.1.1		1999
		STIMA model GDP growth rate - A / B / C	Indicator		NUTS 2	2.1.1		1999
		STIMA model qcl31	Indicator		NUTS 2	2.1.1		1999
		Accessibility absolute growth in scenario A /	Indicator	2020	NUTS 2	2.1.1		1999

		B / C						
		Average annual growth rate of per capita GDP in scenario A / B / C, at 2020	Indicator	2020	NUTS 2	2.1.1		1999
		Internet absolute growth in scenario A / B / C	Indicator	2020	NUTS 2	2.1.1		1999
		GDP/capita (SASI model): Difference to reference scenario in 2001	Indicator	1991-2001	NUTS 3	2.1.1		1999
		GDP/capita (SASI model): Difference to reference scenario in 2021 (B1-D1)	Indicator	2001-2021	NUTS 3	2.1.1		1999
		Differences from the EU mean in per capita GDP growth rate in the scenario A / B / C	Indicator		NUTS 2	2.1.1		1999
Research and Development	**Invention and Innovation**	High-tech patents - Total number of applications per million people in population	Indicator	1995 - 2000	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		High-tech patents - Total number of applications	Raw Data	1995 - 2000	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Human Resources in Science and Technology - Core	Raw Data	1995 - 2001	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Human Resources in Science and Technology - Core As % of Total Employment	Indicator	1995 - 2001	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Patent registrations to the EPO per million inhabitants	Indicator		NUTS 2	2.4.2	BBR	2003
		EU RTD Framework Programme Participation (participations as prime contractor FP4)	Raw data	1994-1998	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		EU RTD Framework Programme Participation (participations as secondary contractor FP4)	Raw data	1994-1998	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		EU RTD Framework Programme Participation (participations as prime contractor FP5)	Raw data	1998-2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		EU RTD Framework Programme Participation (participations as secondary contractor FP5)	Raw data	1998-2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
	Facilities and Employment	R&D personnel total as a percentage of the labour force, by institutional sectors	Indicator	1995 - 2000	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		R&D personnel total in FTE (Full-time equivalent), by institutional sectors	Raw Data	1995 - 2000	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
	Finance and Expenditures	R&D - Business enterprise sector - Millions of Euro (from 1.1.1999)/ECU (up to 31.12.1998)	Raw data	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		R&D - Business enterprise sector - Percentage of GDP	Indicator	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - Government sector - Millions of Euro (from 1.1.1999)/ECU (up to 31.12.1998)	Raw Data	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - Government sector - Percentage of GDP	Indicator	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - Higher education sector - Millions of Euro (from 1.1.1999)/ECU (up to 31.12.1998)	Raw Data	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - Higher education sector - Percentage of GDP	Indicator	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - Private non-profit sector - Millions of Euro (from 1.1.1999)/ECU (up to 31.12.1998)	Raw Data	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999

		Research & Development - Private non-profit sector - Percentage of GDP	Indicator	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - All institutional sectors - Millions of Euro (from 1.1.1999)/ECU (up to 31.12.1998)	Raw Data	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
		Research & Development - All institutional sectors - Percentage of GDP	Indicator	1995 - 2002	NUTS 0, NUTS 1, NUTS 2	2.1.2	ECOTEC	1999
Utilities	**Energy production**	CO2 Emissions 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		CO2 intensity 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		CO2 per capita 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Industry 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Transport 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Households 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Commerce & others 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Solid fuels 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Oil 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Gas 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Electricity 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Renewables 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Final Energy Demand Other 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Solid fuels 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Oil 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Gas 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Electricity 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Renewables 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Net Imports Derived Heat 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999

		Electricity Prices for Industry 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Prices for Households 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Natural Gas Prices for Industry 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Natural Gas Prices for Households 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Heating Gasoil Prices for Households 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Residual Fuel Oil Prices for Industry 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Steam Coal Prices for Industry 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Unleaded Petrol (95 RON) Prices 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Automotive Diesel Oil Prices 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Solid fuels 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Oil 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Gas 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Nuclear 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Renewables 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Production Other 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Greenhouse Gas Emissions 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Emissions of Acidifying Substances Acidifying Potential 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Coal 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Oil 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Gas 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Nuclear 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Renewables 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Electricity Generation Other 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
	Energy	Energy Inland consumption 2002	Indicator	1990, 1995,	NUTS 0	2.1.4	DGET, Eurostat	1999

	consumption			2000, 2002				
		Energy Inland consumption Solid fuels 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Inland consumption Oil 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Inland consumption Gas 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Inland consumption Nuclear 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Inland consumption Renewables 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
		Energy Inland consumption Other 2002	Indicator	1990, 1995, 2000, 2002	NUTS 0	2.1.4	DGET, Eurostat	1999
Communica-tion technology	**Infrastructure, supply**	Share of Broadband penetration to population	Raw data	2002	NUTS 0	1.2.2	CURDS	1999
		CAGR 1995 01 in percent	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Cellular subscribers per 100 inhabitants	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Estimated PC per 100 inhabitants, 2001	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Internet users per 10.000 inhabitants, 2001	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Largest city teledensity, 2000	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Share of main lines connected to digital exchanges	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Main telephone lines per 100 inhabitants 2001	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Main telephone lines CAGR in percent 1995 01	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		New Internet hosts added 2000 01 CAGR in percent	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		New mobile subscribers added 2000 01 CAGR in percent	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		New telephone lines added 2000 01 CAGR in percent	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Overall country teledensity, 2000	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Proportion of households subscribing to Cable TV	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Rest of country teledensity, 2000	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Residential main lines per 100 households 2000	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Telephone subscribers per 100 inhabitants, 2001	Raw data	2001	NUTS 0	1.2.2	CURDS	1999
		Share of Internet users to100 inhabs regression	Indicator	2003	NUTS 2	1.2.2	CEIDT	1999
		Proportion of firms with own website regression	Indicator	2003	NUTS 2	1.2.2	CEIDT	1999
Household oriented Infrastructure	**Education**	Participation in life-long learning 2004	Raw data	1999 - 2004	NUTS 2	3.2		2003
		No participation in life-long learning 2004	Raw data	1999 - 2004	NUTS 2	3.2		2003
		No answer - participation in life-long learning 2004	Raw data	1999 - 2004	NUTS 2	3.2		2003
		Total sample - participation in life-long	Raw data	1999 - 2004	NUTS 2	3.2		2003

		learning 2004						
		Pupils by educational level - total	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by pre-primary education - ISCED97 0	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by primary education - ISCED97 1	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by lower secondary education - ISCED97 2	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by upper secondary education - ISCED97 3	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by post-secondary non-tertiary education - ISCED97 4	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by tertiary education - ISCED97 5	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Level of education by advanced education - ISCED97 6	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Pupils by educational level - total	Raw data	1995, 2000	NUTS 3; NUTS 2	1.1.2	TAURUS	1999
		Students with tertiary education (ISCED 5,6) in % of total students	Indicator	2002	NUTS 2	2.4.2	BBR	2003
Land Use	**Land use**	Share of artificial surfaces	Indicator	1986-1996	NUTS 3	1.1.2	CURS	1999
		Artificial surfaces per 1000 inhabitants (in 1999)	Indicator	Artificial surfaces: 1986-1996, population: 1999	NUTS 3	1.1.2	CURS	1999
		Artificial surfaces per Gross Domestic Product (in 1999) in 100 Million euros Purchasing Power Standards	Indicator	Artificial surfaces: 1986-1996 GDPpps: 1999	NUTS 3	1.1.2	CURS	1999
		Artificial territories	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Strongly artificial vegetated areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Less artificial vegetated areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Forest	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Non-wooded semi-natural areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Wetlands	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Water surfaces	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Nodata	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Sea and ocean	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Urban fabric	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Industrial, commercial and transport units	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Mine, dump and construction sites	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Artificial, non-agricultural vegetated areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Arable land	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Permanent crops	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Pastures	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Heterogeneous agricultural areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Forests	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Scrub and/or herbaceous vegetation associations	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999

		Open spaces with little or no vegetation	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Inland wetlands	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Maritime wetlands	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Inland waters	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Marine waters	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		NODATA	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Sea and ocean	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Continuous urban fabric	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Discontinuous urban fabric	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Industrial or commercial units	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Road and rail networks and associated land	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Port areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Airports	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Mineral extraction sites	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Dump sites	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Construction sites	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Green urban areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Port and leisure facilities	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Non-irrigated arable land	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Permanently irrigated land	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Rice fields	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Vineyards	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Fruit trees and berry plantations	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Olive groves	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Pastures	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Annual crops associated with permanent crops	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Complex cultivation patterns	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Land principally occupied by agriculture, with significant areas of natural vegetation	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Agro-forestry areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Broad-leaved forest	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Coniferous forest	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Mixed forest	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Natural grasslands	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Moors and heathland	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Sclerophyllous vegetation	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Transitional woodland-shrub	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Beaches, dunes, sands	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Bare rocks	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Sparsely vegetated areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Burnt areas	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Glaciers and perpetual snow	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Inland marshes	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Peat bogs	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Salt marshes	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Salines	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Intertidal flats	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Water courses	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Water bodies	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Coastal lagoons	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999

		Estuaries	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
		Sea and ocean	Indicator	1986-1996	NUTS 3	3.1	BBR (Corine)	1999
Environment	**Natural hazards**	Source of the avalance data	Indicator	2004	NUTS 3	1.3.1	GTK	1999
		Occurrence of snow avalanches	Indicator	2004	NUTS 3	1.3.1	GTK	1999
		Chemical plants hazard potential	Indicator	2001-2004	NUTS 3	1.3.1	GTK	1999
		Density of chemical plants per NUTS2 region	Indicator	2001-2004	NUTS 3	1.3.1	GTK	1999
		Number of chemical plants in NUTS3 region	Indicator	2001-2004	NUTS 3	1.3.1	GTK	1999
		Change of dry spell between present day and 2071-2100	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	SMHI	1999
		Future dry spell	Indicator	2071-2100	NUTS 3	1.3.1	SMHI	1999
		Observed climatological average of total annual precipitation	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Present day dry spell	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Present day dry spell	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Change of dry spell between present day and 2071-2100	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	SMHI	1999
		Large scale basins in Europe	Indicator		NUTS 3	1.3.1	GTK	1999
		Large scale droughts in Europe	Indicator	1904-1995	NUTS 3	1.3.1	GTK	1999
		Large scale droughts in Europe	Indicator	1904-1995	NUTS 3	1.3.1	GTK	1999
		Change of dry spell length combined with drought potential	Indicator	1961-1990 and 2071-2100, 1904-1995	NUTS 3	1.3.1	GTK	1999
		Change of dry spell length combined with forest fire hazard	Indicator	1904-1995	NUTS 3	1.3.1	IRPUD, GTK	1999
		Change of dry spell length between present day and 2071-2100 classified in 4 classes	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	GTK	1999
		Change of dry spell length between present day and 2071-2100 classified in 5 classes	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	SMHI	1999
		Large scale droughts in Europe	Indicator	1904-1995	NUTS 3	1.3.1	GTK	1999
		Regional earthquake hazard potential	Indicator	1998	NUTS 3	1.3.1	GTK	1999
		Number of Avg_pgs_ac gridpoints inside a NUTS3 region	Raw data	1998	NUTS 3	1.3.1	GTK	1999
		Pga in proportion on acceleration of gravity (with a 10% change of exceedance in 50 years) (raster data size 0.0833 degrees)	Raw data	1998	NUTS 3	1.3.1	GTK	1999
		Regional earthquake hazard potential	Indicator	1998	NUTS 3	1.3.1	GTK	1999
		Cold day	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Cold wave (7 day minimum temperature)	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Extreme temperatures	Indicator	1961-1990	NUTS 3	1.3.1	GTK	1999
		Hot day	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Heat wave (7-day maximum temperature)	Indicator	1961-1990	NUTS 3	1.3.1	SMHI	1999
		Extreme temperatures	Indicator	1961-1990	NUTS 3	1.3.1	GTK	1999
		Extreme temperatures	Indicator	1961-1990	NUTS 3	1.3.1	GTK	1999
		Change of precipitation combined with flood hazard	Indicator	1961-1990 and 2071-2100, 1987-	NUTS 3	1.3.1	IRPUD	1999

				2002				
		Regional flood hazard potential	Indicator	1987-2002	NUTS 3	1.3.1	GTK	1999
		Change of precipitation between present day and 2071-2100	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	SMHI	1999
		Change of precipitation between present day and 2071-2100 in 5 classes	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	GTK	1999
		Change of precipitation between present day and 2071-2100 in 5 classes	Indicator	1961-1990 and 2071-2100	NUTS 3	1.3.1	IRPUD	1999
		Classified biogeographic regions of Europe	Indicator		NUTS 3	1.3.1	GTK	1999
		Classified occurence of observed forest fires/1000sq. km in NUTS3 region	Indicator	1997-2003	NUTS 3	1.3.1	GTK	1999
		Forest fire hazard	Indicator	1997-2003	NUTS 3	1.3.1	GTK	1999
		Number of observed forest fires in NUTS3 region	Indicator	1997-2003	NUTS 3	1.3.1	GTK	1999
		Number of observed forest fires/1000sq. km in NUTS3 region	Indicator	1997-2003	NUTS 3	1.3.1	GTK	1999
		Sum of classified occurence of fores fires and classified biogeographic regions	Indicator		NUTS 3	1.3.1	GTK	1999
		Damage potential	Indicator		NUTS 3	1.3.1	GTK	1999
		Degree of economical vulnerability in Europe (GDP and population density in 50:50 relationship)	Indicator	1999-2000	NUTS 3	1.3.1	IRPUD	1999
		Integrated vulnerability of Europe	Indicator		NUTS 3	1.3.1	CURS	1999
		Degree of natural vulnerability in Europe (fragmented natural areas)	Indicator	1986-1995, Sweden 1986-1997	NUTS 3	1.3.1	GTK	1999
		Sum of the vulnerability indicators	Indicator		NUTS 3	1.3.1	GTK	1999
		Sum of all weighted hazard values	Indicator	2004	NUTS 3	1.3.1		1999
		Sum of all weighted hazard values classicied in 5 categories	Indicator	2004	NUTS 3	1.3.1		1999
		Sum of all weighted natural hazard values	Indicator	2004	NUTS 3	1.3.1		1999
		Sum of all weighted natural hazard values classicied in 5 categories	Indicator	2004	NUTS 3	1.3.1		1999
		Sum of all weighted technological hazard values	Indicator	2004	NUTS 3	1.3.1		1999
		Sum of all weighted technological hazard values classicied in 5 categories	Indicator	2004	NUTS 3	1.3.1		1999
		Occurrence of landslides	Indicator	2004	NUTS 3	1.3.1	GTK	1999
		Occurrence of landslides	Indicator	2004	NUTS 3	1.3.1	GTK	1999
		Potential risk of radioactive contamination on NUTS3 regions	Indicator	2003	NUTS 3	1.3.1	GTK	1999
		Classification of Oil-SUM values	Indicator	2002	NUTS 3	1.3.1	GTK	1999
		Number of oil terminals in NUTS3 region	Raw data	2000	NUTS 3	1.3.1	GTK	1999
		Number of oil pipelines in NUTS3 region	Raw data	2002	NUTS 3	1.3.1	GTK	1999
		Number of refineries and depots in NUTS3 region	Raw data	2002	NUTS 3	1.3.1	GTK	1999
		Sum of the ha, re and pi values	Indicator	2002	NUTS 3	1.3.1	GTK	1999
		Occurrence of storm surges	Indicator		NUTS 3	1.3.1	GTK	1999

		Air traffics hazard potential	Indicator	1996-2003	NUTS 3	1.3.1	GTK	1999
		Number of airports in a NUTS3 region	Indicator	1996-2003	NUTS 3	1.3.1	GTK	1999
		Sum of passangers in NUTS3 region in millions in a year	Indicator	1996-2003	NUTS 3	1.3.1	GTK	1999
		Occurrence of tsunami runups and tsunami potential areas in Europe	Indicator	Historically recoded tsunami data from 1628B.C.-2003.	NUTS 3	1.3.1	GTK	1999
		Volcanic eruptions during the last 10 000 years	Raw data		NUTS 3	1.3.1	GTK	1999
		Volcanic eruptions during the last 10 000 years	Raw data		NUTS 3	1.3.1	GTK	1999
		For tropical storms probable maximum intensity	Indicator	100 years	NUTS 3	1.3.1	GTK	1999
		Approximate probability of having winter storms and for tropical storms probable maximum intensity	Indicator		NUTS 3	1.3.1	GTK	1999
Agriculture	**Land use**	Percent of UAA which is arable	Indicator	1976 - 2001	NUTS 2	2.1.3	SAC	1999
		Percent of UAA (Utilisable Agricultural area) that is fallow	Indicator	1976 - 2001	NUTS 2	2.1.3	SAC	1999
		Permanent Crops in LFA (Least Favoured Areas)	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		Percent of total area which is UAA (Utilisable agricultural area)	Indicator	1976 - 2001	NUTS 2	2.1.3	SAC	1999
		Hectares of UAA (Utilisable agricultural area) per holding	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		Percent of UAA (Utilisable agricultural area) which is under permanent crops	Indicator	1976 - 2001	NUTS 2	2.1.3	SAC	1999
		Percent of UAA (Utilisable agricultural area) which is under permanent grass	Indicator	1976 - 2001	NUTS 2	2.1.3	SAC	1999
	Farmer Structure	Percent change in holders 1990-1997	Indicator	1990-97	NUTS 2	2.1.3	SAC	1999
		Percent change in holders 1990-1997	Indicator	1990-97	NUTS 2	2.1.3	SAC	1999
		Percent of farm holders aged <35	Indicator	1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		Percent of farm holders aged <65	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		Percent change in old farmers 1990-1997	Indicator	1990-97	NUTS 2	2.1.3	SAC	1999
		Percent change in young farmers 1990-1997	Indicator	1990-97	NUTS 2	2.1.3	SAC	1999
	Employment	Percent employed in agriculture forestry and fishing	Indicator	1977-1999	NUTS 3	2.1.3	SAC	1999
	Livestock Production	Livestock Units per holding	Indicator	1990-1997	NUTS 2	2.1.3	SAC	1999
		Agricultural Output per AWU (Annual work unit)	Indicator	1993-1997	NUTS 2	2.1.3	SAC	1999
		Agricultural Output per Hectare	Indicator	1990-2001	NUTS 2	2.1.3	SAC	1999
		Value of agricultural subsidies per AWU (Annual work unit)	Indicator	1990, 1999	NUTS 3	2.1.3	SAC	1999
		Value of agricultural subsidies per hectare UAA (Utilisable Agricultural area)	Indicator	1990, 1999	NUTS 3	2.1.3	SAC	1999

		AWU (Annual work unit) per 1000 hectares of UAA (Utilisable agricultural area)	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		AWU (Annual work unit) per holding	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		FNVA (Farm Net Value Added) per AWU (Annual work unit)	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		FNVA (Farm Net Value Added) per hectare	Indicator	1990-2001	NUTS 2	2.1.3	SAC	1999
		Value of fertilizer input per hectare of arable land from FADN (Farm Accountancy Data Network)	Indicator	1990, 1999	NUTS 3	2.1.3	SAC	1999
		Value of fertilizers applied per hectare of arable from REGIO	Indicator	1990-2001	NUTS 2	2.1.3	SAC	1999
		SGM (Standard Gross Margin) per Agricultural Work Unit	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		SGM (Standard Gross Margin) per holding	Indicator	1990, 1993, 1995, 1997	NUTS 2	2.1.3	SAC	1999
		Percent of value added from agriculture forestry and fishery products	Indicator	1995-1999	NUTS 3	2.1.3	SAC	1999
Tourism (tourists, infrastructure)	**Arrival and stays**	Number of overnight stays	Raw data	1995, 2000	NUTS 3	1.1.2	TAURUS	1999
		Number of tourists' arrivals	Raw data	1995, 2000	NUTS 3	1.1.2	TAURUS	1999
Public Sector	**Regional Policy**	Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing capital-supply-potential	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing environmental quality	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing geographical position	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing institutional conditions	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing labour market potenital	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing potential of innovation	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing regional market potential	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Percentage of regional Pre-Accession-Aid (PHARE, PHARE CBC, ISPA) addressing urbanisation&localisation advantages	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Average Annual Pre-Accession-Aid spending (PHARE, PHARE CBC, ISPA) 1998-2000	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Total Pre-Accession-Aid spending (PHARE, PHARE CBC, ISPA) 1998-2000	Indicator	1998-2000	NUTS 0, NUTS 2, NUTS 3	2.2.2	IRS	1999
		Structural Fund expenditure (A)	Raw Data	1994-1999	NUTS 2, NUTS	2.2.1	NORDREGIO /	1999

					3		MCRIT / INFYDE	
		Cohesion Fund expenditure (E)	Raw Data	1994-1999	NUTS 2, NUTS 3	2.2.1	NORDREGIO / MCRIT / INFYDE	1999
		Cohesion Fund expenditure (T)	Raw Data	1994-1999	NUTS 2, NUTS 3	2.2.1	NORDREGIO / MCRIT / INFYDE	1999
		Structural Fund expenditure (R)	Raw Data	1994-1999	NUTS 2, NUTS 3	2.2.1	NORDREGIO / MCRIT / INFYDE	1999
		Structural Fund expenditure (S)	Raw Data	1994-1999	NUTS 2, NUTS 3	2.2.1	NORDREGIO / MCRIT / INFYDE	1999
		All Structural and Cohesion Fund expenditure	Raw Data	1994-1999	NUTS 2, NUTS 3	2.2.1	NORDREGIO / MCRIT / INFYDE	1999