

TERMS OF REFERENCE

ESPON project 3.1: INTEGRATED TOOLS FOR EUROPEAN SPATIAL DEVELOPMENT TERRITORIAL (2002-2004)

(o) Political challenges for the ESPON projects

The Second Report on Economic and Social Cohesion, published in January 2001, presented for the first time a third territorial dimension of the cohesion (beside the economic and social cohesion), which calls for a better co-ordination of territorially relevant decisions. Stressing the persistence of territorial disparities within the Union, the report stated the need for a cohesion policy not limited to the less developed areas as well as the need to promote a more balanced and more sustainable development of the European territory.

The Second Cohesion Report represents in that respect a follow up of the European Spatial Development Perspective (ESDP), adopted at ministerial level in May 1999, calling for a better balance and polycentric development of the European territory.

The projects launched under the ESPON programme shall follow an integrated approach and, seen together, cover a wide range of issues, such as:

- Identifying the **decisive factors relevant for a more polycentric European territory**; accessibility of a wide range of services in the context of enlargement; integration of wider transnational spaces; promotion of dynamic urban growth centres; linking peripheral and disadvantaged areas with those centres; etc.
- Developing **territorial indicators and typologies** capable of identifying and measuring development trends as well as monitoring the political aim of a better balanced and polycentric EU territory
- Developing **tools supporting diagnoses of principal structural difficulties as well as potentialities**, such as disparities within cities and regenerating deprived urban areas; structural adjustment and diversification of rural areas; strategic alliances between neighbouring cities at transnational, national and regional scale; new partnerships between rural and urban areas; potential support from infrastructure networks in the field of transport, telecommunication, energy; etc.
- Investigating **territorial impacts of sectoral and structural policies** in order to enhance synergy and well-co-ordinated decisions relevant for territorial development within policy fields such as Structural Funds, agriculture, transport, environment, research and development; developing methods for measuring the territorial impact of sectoral and structural policies; etc.

- Developing **integrated tools in support of a balanced and polycentric territorial development**; approaches to enhance the potential of cities as drivers of regional development, new tools for integrated urban-rural development and planning, etc.

With the results of all the ESPON projects, the Commission and the Member States expect in particular to have at their disposal: **a diagnosis of the principal territorial trends** at EU scale as well as the difficulties and potentialities within the European territory as a whole; **a cartographic picture of the major territorial disparities** and of their respective intensity; a number of **territorial indicators and typologies assisting a setting of European priorities** for a balanced and polycentric enlarged European territory; some **integrated tools and appropriate instruments** (databases, indicators, methodologies for territorial impact analysis and systematic spatial analyses) to improve the spatial co-ordination of sector policies.

In this respect, the ESPON projects will serve as a strong scientific basis for the propositions of the Commission in the Third Report on Cohesion, at the end of 2003, in view of the reform of post-2007 Structural Funds.

(i) General scope and context

The priorities describing the work-programme of the ESPON 2006 Programme are structured in four strands:

1. **Thematic projects** on the major spatial developments on the background of typologies of regions, and the situation of cities.
2. **Policy impact projects** on the spatial impact of Community sector policies and Member States' spatial development policy on types of regions with a focus on the institutional inter-linkages between the governmental levels and instrumental dimension of policies
3. **Co-ordinating and territorial cross-thematic projects** represent a key component of the programme. These projects evaluate the results of the other projects towards integrated results such as indicator systems and data, typologies of territories, spatial development scenarios. The cross section projects help to thematically co-ordinate the whole programme and add value to the results and to fill gaps, which are unavoidable when different themes are dealt with in different projects.
4. **Scientific briefing and networking** in order to explore the synergies between the national and EU source for research and research capacities.

This project *Integrated tools for European spatial development* belongs to the third strand and therefore holds a key position in the elaboration of the whole programme by the preparation of the common ground for the other projects and the integration of the results of the other projects towards coordinated conclusions. Further task is to secure the consideration of the enlargement issue in all thematic and policy impact study.

As one important aspect, the analysis should not be bounded to European territory. Even if most studies will be constrained by Eurostat databases (covering EU and accessing

countries), all projects will contribute with inputs, and project 3.1 should contain a short analysis of the situation of Europe with reference to the world scale, in particular to neighbouring territories. This task should be done through a synthesis of databases available at that scale, with states as reference unit, or through databases available on a grid scale (UNEP).

ii) Specific objectives

Preparation of this project, entitled “**Integrated tools for European spatial development**”, comprises:

Support to the co-ordination on technical and scientific level of the ESPON 2006 Programme and the projects under measure 1 and 2, including data collection, development of a GIS facility and map-making, thematic coordination preparing for the cross thematic exploitation of integrated results based on all projects prepared under the programme.

The work takes place on five levels:

- Technical and analytical support and coordination (data-base, GIS and mapmaking, concepts and typologies for spatial analyses, spatial concepts)
- Territorial and thematic coordination of the ongoing projects
- Preparation for the exploitation of results of all projects
- Compilation and structuring of recommendations to further policy development in support of territorial cohesion
- Assistance in the promotion and networking of the ESPON programme

The project has its central task in offering scientific support for the achievement of the objective of the ESPON 2006 Programme. In this respect, the project will imply support to and a close co-operation with the Co-ordination Unit of the ESPON in Luxembourg, and contain the following elements:

- a) To provide a common framework for the projects prepared under priorities 1 and 2, i.e. provide common definitions and formats for the collection of a ESPON database and developing a common mapmaking tool, common framework for territorial indicators, typologies and concepts etc.
- b) To summarise and evaluate intermediate and final results of the projects under priority 1 and 2 from a technical and scientific viewpoint in order to support integrated results of the ESPON 2006 programme;
- c) To bring added value to the results of the single projects through dialogue with TPG on their results and their potential use in different contexts, such as scenarios and recommendations for policy development;
- d) To examine the achieved results in the light of the ESDP;
- e) To support the preparation of making results of the ESPON programme accessible to policy makers;

- f) To support the communication and better understanding of spatial development trends and issues of territorial cohesion within an enlarged EU;
- g) To support the elaboration of consistent recommendations to future policy development in support of a better balanced and polycentric European territory that recognises the importance of a territorial dimension.

iii) Expected results and timetable

The research undertaken during the interim reports is supposed mainly to work on the data available at the national statistical offices, Eurostat and other national and European institutions, and normally be based on existing administrative units. From 2003 until August 2004, the research should complement the missing territorial/regional data and complement tools and territorial indicators if possible beyond the NUTS classification and the NUTS 3 level.

One of the main objectives of the ESPON 2006 Programme is to focus on research with policy relevance and to contribute to the development of relevant policies. Therefore, the deliverables of the research project should be highly operational and coordinated in time, as far as possible, to fit into the relevant political agenda. The following timetable and specification of a number of important results to be achieved is reflecting this objective:

October 2002 (first interim report):

- a) Definition of common standards for the collection of data in the programme and a structure of the ESPON database and GIS suitable to deal with the variety of data to be collected and processed during the ESPON Programme;
- b) Consensus with ongoing TGP on indicators and necessary data following a precise analysis of the availability and comparability of data at Community level. In this analysis, the results of the SPESP study programme and the ESPON projects in course, should be taken into account. The task comprises as well a definition of an appropriate geographical level and the technological requirements for data collection, taking into account the availability of the data. A first detailed and comprehensive list of statistical and geographical data should be collected from Eurostat, the EEA and National Statistical Institutes and National Mapping Agencies before mid 2002.
- c) Support of networking and communication on scientific and technical matters between the research groups by the provision of inventories and the support of mutual exchange among the projects under all priorities on data, typologies and intermediate results as well as mapping.

March 2003 (second interim report):

- d) A first overview on concepts and methodology and possible results should be provided.
- e) Establishment of the ESPON GIS/database, including territorial indicators and maps developed so far.
- f) A well co-ordinated, second revised and extended request for further indicators to be addressed to Eurostat and the EEA by mid 2003 (the latest).

g) Working document being a scientific report on results so far in creating tools for the identification of potentials, weaknesses, opportunities and threats for a sustainable and more balanced territorial development. This report should cover all themes and make use of the intermediate results in a comprehensive and integrated way, and in doing so be able guide other projects for the elaboration of the third interim reports for November 2003;

September 2003 (third interim report)

- h) Identification of orientations on an implementation of territorial objectives into EU policies – from analytical tools to feasible policy measures;
- i) Compilation of intermediate results on the territorial trends and impact of policies based on the variety of studies and themes covered by the ongoing projects
- j) Working document on tentative recommendations to policy development towards the ESPDP and the Structural Funds after 2006, including possible European priorities in different part of the enlarged EU territory and the necessities to coordinate the impacts of spatially relevant sector policies.
- k) Working document to prove first steps towards the preparation of methodologies for prospective scenarios.

October 2004 (final report)

- l) Finalising the ESPON database, GIS and mapmaking facility as well as a co-ordinated, common approach to concepts and typologies for spatial analyses, including necessary technical specifications;
- m) An integrated scientific summary and main conclusions on the basis of the reports submitted by the first round of projects, including final recommendations relevant for policy development towards territorial cohesion.
- n) A final comprehensive working report including the final findings of the above-mentioned working documents, including potential scientific and technical recommendations for the follow up project 3.2 on policy scenarios.

iv) Rationale and structure

The following text has the role of shaping the mind of thinking in developing a proposal for undertaking the ESPON action 1.1.1. The text is not meant to be exhaustive, but to serve the purpose of guiding the tenderer.

As mentioned above under the specific objectives the main task are considered as follows:

First group of tasks belong to the *frame setting and coordination of the programme*

- Technical and analytical support and coordination (data-base and mapmaking, concepts and typologies for spatial analyses, spatial concepts
- Territorial and thematic co-ordination of the research projects

The second group shall provide scientific and technical support to the *exploitation* of the programme

- Preparation for the exploitation of results of all projects
- Compilation and structuring of recommendations to further policy development in support of territorial cohesion

Finally a support to the *communication and networking* task:

- Assistance in the promotion and networking of the ESPON programme

A. Frame setting and coordination

1. Technical and analytical support and coordination (data-base, GIS and mapmaking, concepts and typologies for spatial analyses - provision of a common approach for all ESPON projects)

The aim of this project is to provide a common scientific and technical structure for all projects of the ESPON 2006 Programme, encompassing:

1.1. Indicators, data and mapping

- Definition of standards for the formulation of indicators;
- Provision of a practical common architecture for the collection and integration of data;
- Definition of standards for the collection of data;
- Pooling of data and coordination of data collection for the programme;
- Definition of common minimum standards for the creation of map output;
- Development of guidelines on schematic cartography and symbolisation

For the detail definition of this task see also the part of the project described as **Technical framework for ESPON GIS support to annex 1-4 of this tender information**.

1.2. Reporting

- The project shall assist the Coordination Unit in elaborating a common approach for reporting and corporate identity of the ESPON programme;
- Provide working documents, including an iteratively updated inventory on all intermediate and final reports prepared by all projects;

2. Support for the integration of European spatial databases

Integration of European spatial databases is a core task, which will provide the basic material for all further research within the ESPON programme. Starting from the databases and indicator system suggested and compiled by the SPESP, regular contacts with National Statistical Agencies, Eurostat and European Environment Agency need to be established for a critical review of the existing material. Most European databases suffer from a lack of integration recognised by the institution responsible for their management (EUROSTAT, EEA). During 2001-2003, this task would not only result in

the creation of new databases, but also propose efficient solutions for the integration of the existing ones and for a better exploitation of their contents through the use of new tools of cartography, GIS and spatial analysis. Tasks will include the collection and exploitation of the necessary data in the priority fields of the programme (accessibility, polycentric development, environment, urban areas, territorial impact and new methods in territorial information). The CU shall be involved in matters of importance related to the financing of an ESPON database.

The results of this exercise should provide the basis for the next step to be taken by the follow up project 3.2. (2003-2006), where an integrated system of cartographical outputs ought to be proposed, which could be interactively used by policy makers and territorial planners. These data shall be collected, as far as possible, with wide geographical coverage (i.e. including neighbouring countries, Eastern and Southern Mediterranean countries) and using new territorial information methods such as satellite information and digital elevation models.

3. Territorial typologies

All projects of the ESPON programme have to develop and apply spatial typologies considering certain groups of regions and territories at risk such as e.g. the outermost regions of the EU, coastal areas, islands, mountain areas as well as areas with low population density or specific spatial potentials and advantages, such as the central urban areas. Typologies are prepared for descriptive and normative reasons, which means to simply describe spatial phenomena and their effects or to indicate potential political action. Both types of typologies are necessary for the deduction of proposals for policy development. The cross-thematic project has the important task to identify the most prominent determinants of each thematic project, to combine these determinants for more thematically complex typologies and to report these typologies for the further use in the thematic projects.

4. Clarification of spatial concepts and territory as a common framework for all ESPON projects

The ESDP includes, apart from adopted policy guidelines and aims for the development of the European territory, 4 basic elements relevant for territorial development:

- cohesion (economic and social)
- competitiveness (of different territories)
- co-operation (within larger territories, between cities and between rural and urban areas)
- preservation and development (of natural and cultural assets)

These basic elements encompass the reconciliation of economic, social and environmental factors leading to a sustainable development, which shall transcend into all programmes, projects and research related to spatial development. The ESPON Programme shall obviously support sustainable development and offers the opportunity

to employ a sustainability approach to the development of territories. A challenge for the ESPON projects lies in applying this approach.

Clarification of the concepts and definition of the indicators to measure spatial and social integration: The research carried out under the Study Programme (SPESP) built the base for the creation of unambiguous concepts of:

- "spatial integration",
- "spatial or territorial cohesion",
- "social integration",
- "territorial impact"
- "r-urban"

These concepts are in a general way already behind the ESDP and the Structural Fund regulation. However, the concepts need to be clarified and detailed and territorial indicators defined for the measurement of progress achieved towards European integration at various geographical scales. Furthermore the concepts and indicators for the measurement of the following concepts need to be elaborated:

- "accessibility", not only in terms of the various means of transport (air, water, road and rail), but also in terms of information and communications technology;
- "polycentric development" with reference to potentials and dynamics, particular in urban poles, which can be explored individually or through strategic co-operation with neighbouring cities or rural territories, and which is relevant at all geographical scales;
- "environment" in terms of the identification of sensitive sites and areas of natural and technological hazards, as well as areas being assets for spatial development;
- "urban areas" on the basis of a joint definition of "urban-ness" and the role played by urban areas in the territorial structure;
- "landscape" in terms of identification of sensitive structures and areas and the role played in a territorial and cultural development context;
- "territorial impact assessment" in terms of defining a concept, which can be used for the measurement of impacts of Community and national sectoral policies and of major infrastructure projects.

5. Coordinated approach for the thematic projects under priority 1

The project should ensure that typologies and approaches taken in the different projects under priority 1 are mutually considered for the project to be able to carry out the meta studies mentioned below in point B.1. The project should also support the coordination of projects under priority 1 with projects under priority 2: Are the territorial typologies on polycentrism or for infrastructure networks useful and applicable for the evaluation of the territorial effects of Structural Funds or the territorial effects of R&D policy?

6. Coordinated approach on the territorial impact assessment of sectoral policies under priority 2

Projects under priority 2 develop methods for the territorial analysis and assessment of sectoral policies at the EU level. The methodology should take account of the spatial concepts developed under priority 1 and prepare for priority 3. The methodology should also allow indicating different levels of policy in order to identify the relevant actors allowing for a better territorially coordinated policy. The cross-thematic project supervises the technical and scientific coordination between these project in the process of the development of an appropriate assessment methodology.¹ As a result of these efforts a general common and co-coordinated approach for assessment of the territorial impacts of each sector should be developed by the cross-thematic project, which can be applied to other sectoral policies and to other levels.

B. Exploitation, conclusions and recommendations

1. Exploitation

1.1. Cross-analysis, comparison

The results of the projects developed under Priorities 1 and 2 ought to be evaluated towards the development of integrated tools for European spatial development. This priority is more technically oriented and concentrates on the results developed under the first phase of the ESPON programme. That means, for example, to summarise the indicators suggested in those projects, and to compare and check their consistency as a whole and in relation to the existing indicators currently used in Structural Funds programmes. The results will be suitable tools for the diagnosis of territorial trends, elaboration of scenarios, policy instruments and institutional settings. A comprehensive view towards the various sectoral dimensions within the territorial view should also build on the feed back from the Member States and Accession Countries.

1.2. Reference to the ESDP

The ESDP is the first European effort on policy orientation for the development of the EU territory. It consists of overall guidelines as well as a number of policy aims relevant for the ESPON Programme. In pursuing integration and a horizontal approach, 4 basic elements are present: cohesion (economic and social), preservation and development (of natural and cultural assets), competitiveness (of different territories), and co-operation (within larger territories, between cities and between rural and urban areas). These basic elements are supposed to be applied in support of sustainable development and thereby transcend all programmes, projects and research related to spatial development. The ESPON programme offers the chance to apply these overall aims in factual research. This is actually required already in the ESDP document and for researchers it is a major challenge to support the operationalisation of this overall aim. Tenderers should include

¹ The methodology can benefit from the Commission's internal study: The impact of Community sectoral policies and the costs of non-coordination

their comprehensive understanding on the achievement of sustainable territorial development.

According to some critics, cohesion, co-operation, preservation and competitiveness are highly exclusive with respect to one another, and that opposite political claims do not represent a pertinent context of sincere research. The question is whether, or to what extent, with the territorial reference it is possible that these elements can be reconciled simultaneously towards common objectives.

Furthermore it should be investigated, whether there are visible limits of the spatial approach, and how it could be further improved. The territorial approach was put on the agenda in order to bring added value to policies through better co-ordination of their overall impact. How far can the territorial approach support economic and social cohesion and sustainable development of the EU, and how?

2. Integrated tools

“Integrated tools” covers an inventory, which should systematise the outcomes of the programme and explore the coordination, framework setting and compilation efforts under Point A.1 to 6.

- Are there typologies, which proved to be useful for the investigation of a range of thematic issues?
- Which definitions of spatial concepts proved to be most acceptable under the specific conditions of all member states?
- Which indicators do best and most comprehensively describe the spatial situation in the most important respects and could be used as a reference to a range of subjects?
- Which approaches to territorial impact assessment proved to be successful and can be recommended for further applications?

3. Compilation and structuring of recommendations on further policy development in support of territorial cohesion.

3.1. The Community interventions

Specification of potential thematic fields for Community intervention and how it could be articulated within national, regional and local policies. The Cohesion report and the ESDP policy orientations already provide references. A review of the application of those concepts, indicators and the use of new databases should be included. That could mean the evaluation of indicator systems and data pools for various purposes (Structural Funds, spatial observation, provision by Eurostat, EEA) and, in particular, in relation to the policy options of the ESDP:

- to define combining territorial indicators and socio-economic indicators, of areas with a common dynamic integration, having a European dimension and an interregional and transnational character and to establish a diagnosis of these areas; combining

territorial and socio-economic indicators in order to define European global integration zones, and the use of these zones as diagnostic tools;

- to define territories and their specific features at risk; the Cohesion report already identified such regions which should be evaluated under a wider set of indicators;
- to specify in which fields and under which sectoral and structural policies a Community intervention, as regards territorial development, could be envisaged and how this could be linked to national, regional and local policies. To specify which Community actions are to be implemented and which modifications are to be included in the current sectoral policies for a balanced development of the Community territory;
- Evaluation of mapping methods developed in the previous projects for various purposes and, on that experience, creation of new useful methods and classifications.

These results should provide the basis for the preparation of a method for spatial analysis of transnational territories. Preparation of a methodology for the elaboration of spatial scenarios should be undertaken during 2004-06.

3.2. The ESDP

Furthermore it should be investigated, which elements for improvements and recommendations derive from the projects relevant for the policy guidelines and aims as well as the scope of the ESDP : How could a further territorial differentiation of the ESDP policy aims be supported? Where do gaps exist, which need to be better addressed? Which elements should be further elaborated?

4. Further research

Finally an inventory on open questions from ongoing projects and requirements for further research should be compiled, which could provide guidance for the second phase of the programme (2004-2006) and the long-term development of the ESPON.

C. Assistance in the promotion and networking of the ESPON programme

1. ESPON web site managed by the CU

The Coordination Unit will provide information to a specific and a wider public on progress made in the ESPON programme. As example, in principle, the maintenance of the ESPON web site and the production of newsletters and briefing are the tasks of the Co-ordination Unit. All projects are requested to contribute to the periodic information via the ESPON web site of the CU. The tenderer of project 3.1. has to provide inputs by synthesizing information provided by the other projects and contribute in general to the content of those two media.

2. ESPON Briefings and conferences

The cross-thematic project plays a key role in the thematic preparation of the ESPON briefings for ESPON Contact Points and the ESPON conferences (2 per year). Both are

key elements for the co-ordination of the ESPON Program. The TPG shall provide scientific and technical support to Coordination Unit.

3. Preparation of working papers and a final synthesis report

The project takes responsibility for the preparation of working papers (on the basis of inputs from ongoing TPG) and a final synthesis report. One medium will be the Internet. As no particular printing costs are foreseen the Coordination Unit intends to further explore possibilities for printing key documents, in particular aimed at informing the political process.

4. Communication and tools for presentation

The ESPON has to be effective in presenting operational results to politicians, administrators, scientists and a wider public. In this respect, the tenderer should allocate resources and ideas for presentation of the (intermediate) results to the scientific community. These presentations shall be co-ordinated with the Coordination Unit in order to obtain mutual benefits. Ideas, which are already in discussion with the Coordination Unit, are ranging from an atlas to the interactive Internet presentation of the results. Elaboration of new communication tools can be taken only after approval by the Monitoring committee.

vi) Existing access points

The access points listed below can serve the purpose of providing the tenderer useful information for preparing a proposal. It is by no means meant to be exhaustive, but only as information that can be helpful in tracing additional useful background information.

In particular, experiences in preparing a bid for this project could be gained in the framework of the "Study Programme on European Spatial Planning" within the themes of "Geographical Position", "Spatial Integration", "Economic Strength", "Social Integration", "Land-use Pressure", "Natural Assets" and "Cultural Assets" of the strand "Criteria for Spatial Differentiation". A first cross-sectional approach related to this priority has already been implemented within the Study Programme and should be continued within the ESPON 2006 Programme.

Further access is provided by the E-ESDI (Environmental - European Spatial Data Infrastructure) project launched by the DG Environment together with the EEA, the Joint Research Centre and Eurostat now called INSPIRE. The INSPIRE project represents the starting point for a spatial database on all sectors.²

In addition, the following could provide interesting information:

² See for further information: <http://www.ec-gis.org/e-esdi/>

- The Second Report on Cohesion and the ESDP
- The Urban Audit already compiled indicators and data on cities across the EU.
- Interreg IIC and IIB projects, which can provide some practical experience on the transnational scale.
- OECD: territorial indicators and analysis
- Conference of Peripheral Maritime Regions of Europe (CPMR): Study on the construction of a polycentric and balanced development model for the European Territory. Second interim report. November 2001.
- DATAR – ingérop: Elaboration of a long term polycentric vision of the European space. December 2001.

Finally, an ESPON Data Navigator creating an overview, a handbook, giving information on principal data sources, contact points etc, is under elaboration. The Data Navigator is expected to cover, in principle, all countries in an enlarged European Union as well as neighbouring countries. The Data Navigator is scheduled to be finalised by August 2002.

Annex I to the terms of reference of ESPON Project 3.1.:

Technical framework for ESPON GIS support

Introduction

As set out in sections III.4 and III.5 of the ESPON programme document³, it will be a priority to put in place the scientific and technical infrastructure to facilitate the gathering, processing and analysis of the statistical and geographical information and other quantitative indicators emanating from the respective research themes of the Trans-national Project Groups (TPG); polycentrism, the territorial impacts of transport policy, the environment, rural development policy and the like.

In addition to the integration of a considerable volume of data and the setting up of a Geographical Information System, the project will cover a number of related coordination tasks to ensure the smooth running of this pan-European exercise. This will entail close liaison with a range of national bodies and the TPGs, with the aim of bringing together a common operational framework for their respective involvement in the overall work programme.

The ESPON GIS project will culminate in the provision of appropriate tools to offer an insight into the territorial dimension of the various sectoral perspectives, to assist in the diagnosis of territorial trends, elaboration of scenarios, policy instruments and institutional questions. The following tasks will be addressed:

1. Establishment of a Geographical Information System serving spatial planning and regional development policy

The construction, maintenance and development of a GIS site to run in parallel and be fully compatible with the systems in use within the services of the European Commission (DGs Regional Policy, JRC, Eurostat/GISCO). In this sense it will be a requirement that the contractor is in a position to employ his own fully operational ArcInfo GIS software license(s) to run on workstations and desk-top hardware (see annex II), and that he has specialised GIS know-how readily available.

The geographical and statistical databases will be structured so as to be easily updateable when new data become available. To this end, providing good metadata describing the sources, the status and the quality of the datasets will be essential.

Finally, the data model underlying this work must take account of the potential for developments which may take place affecting the Commission's own GIS environment, under the lead of the GISCO unit at Eurostat.

³ THE ESPON 2006 PROGRAMME, Art.53 ERDF

2. Coordination tasks in relation to research inputs

As well as acting as a core data server, ESPON GIS will integrate the subsequent deliverables emanating from the different research topics.

It will be a requirement to develop a common technical framework for the research work carried out in the individual thematic studies. This role will include the elaboration of a common reporting structure among the participants and will oversee the datasets and applications underlying the thematic projects. Furthermore, it will cover the methodological content of the studies vis-à-vis the choice of those modelling and spatial analysis techniques most pertinent to the scope and objectives of the topics concerned. The representation of results through surfaces and grids, rather than purely administrative (statistical) units, is likely to require particular attention.

Additionally, working closely with the project partners, it will be a necessity to develop and implement a common definition of urban (and rural) areas and related typologies, to be used as a framework for data collection and analysis. One specific theme in this context entails the elaboration of criteria on 'European functional urban areas', for example.

It will be necessary, in collaboration with third parties, the TPGs and other potential data suppliers (National Statistical Institutes and Mapping Agencies, the European Environment Agency), to critically review and define which "reference" datasets are appropriate or relevant for each study and to identify which additional data are to be obtained.

3. Data service

Annex III provides a catalogue of the main geographical datasets and statistical series held by the European Commission which are likely to be of relevance to the present project. All 15 Member States of the European Union as well as the 12 Accession Candidates are to be covered.

These data will have to be complemented with national and regional sources where necessary and appropriate. In a number of cases it will be a significant task to harmonise these datasets, through co-operation between the European and national actors in the field of statistical and geographic data. The data navigator prepared under priority 4.1. of the ESPON CIP provide important inputs.

Although leaving some flexibility depending on the scope of a particular thematic subject the general reference scale for the work will be 1:100,000 for geographic datasets and NUTS⁴ level 3 for statistics. In particular cases, data will relate to other geographical levels (e.g. municipalities), or might be available or undergo processing to redistribute them on the basis of a regular grid.

⁴ Nomenclature des Unités Territoriales Statistiques, Statistical Office of the European Communities.

For each of the respective research topics an indicative list (not exclusive) of statistical series and indicators has been elaborated, serving to illustrate the scope of the project and as a basis to elaborate the inventory of basic reference series.

3.1. Variables characterising the CAP and rural development policy (examples):

- Agricultural land use and livestock
 - Share of Average Utilised Agriculture Area (UAA) from total area
 - Indicators of agricultural land use: proportion of arable land, permanent grassland and pastures, permanent cultures, fallow land
 - Average Utilised Agriculture Area (UAA) per holding
 - Number of heads of livestock or number of heads of Livestock Units (LSU) per holding
- Farm structures and farm labour force
 - Average Economic Size of the holding : ratio of Standard Gross Margin (SGM), expressed in European Size Unit (ESU), by number of holdings
 - Agricultural Income : Farm Net Value Added (FNVA) per Annual Working Unit (AWU)
 - Productivity : ratio of SGM expressed in ESU, related to total labour force expressed in AWU
 - Average number of AWU by 100ha
 - Average number of AWU per holding
 - Share of agricultural employment
 - Evolution of the share of agricultural employment
 - Proportion of young farmers in the agricultural sector (younger than 35 years)
 - Evolution of the proportion of young farmers
 - Proportion of old farmers in the agricultural sector (older than 65 years)
 - Evolution of the proportion of old farmers
- Diversification of farm incomes:
 - Dependence on agricultural sector
 - Share of tourism employment
 - Evolution of the share of tourism employment
 - Other activities (handicrafts, creation of SMEs, tec..)
- Others
 - Quality of buildings
 - Quality of landscapes

3.2 Variables for the quantification and analysis of territorial and regional disparities in the field of research (examples)

- Research and innovation
 - “Investment in knowledge” – public and private investment in RTD
 - Scientific and technological productivity

- Innovation capacity, indicators: e.g. business expenditure on RTD, government expenditure on RTD, loan activities of the EIB, number of patent applications, share of participating SMEs
- Human resources and mobility
 - Level of education and training
 - Career possibilities, training and mobility incentives
 - Indicators: e.g. number of places in universities, percentage of the resident population who have completed tertiary education leading to a first university degree or equivalent, number of re-integration grants
- Research infrastructure
 - Access to infrastructure
 - Indicators: e.g. PC equipment, internet sites, telephone lines, etc.
 - Co-ordination of research activities
 - Indicators: e.g. number and type of networks

3.3 Variables for the quantification and analysis of the transport sector and the territorial imbalances and regional disparities in transport infrastructure (examples)

- Quantities of freight and passengers moved and the vehicles and infrastructure used
 - Total transport of goods by road, railway, inland waterways and maritime (tonne-kilometres)
 - National transport, t-km, as % of total transport of goods by road, railway, inland waterways
 - Rail transport of passengers, millions passengers and passenger-km
 - Passenger cars per 1 000 inhabitants
 - Passenger car transport. Million passenger kilometres
 - Total passengers air traffic by Member State (intra and extra-EU)
- Safety
 - Number of deaths (road, rail, aviation, maritime)
 - Number of accidents involving personal injury
- Regional dimension of transport statistics (NUTS 2)
 - Density: Road (kilometres by 100 km²), Rail (inhabitants by rail km), Cars (number of cars by 10 inhabitants)
 - Road freight transport within and between the regions of the European Union

3.4 Environmental indicators and themes (examples)

- Coastal and island regions
 - Over-concentration of population and human activities
 - Deterioration of the coast
 - Reduction in diversity and in biological quality of coastal landscapes
 - Management problems of fresh water resources
 - Coastal erosion
 - Deterioration in the quality of coastal water and reduction in marine resources
- Rural regions and mountain areas of the European Union

- Threats on forest areas
- land pressure
- Wetlands
 - land pressure
- Urbanised areas

3.5 Variables for the quantification and analysis of sectoral impacts and Territorial Impact Assessment (TIA)

- Demographic indicators
 - Population density
 - Share of population younger than 20 years
 - Share of population older than 60 years
 - Evolution of the population (average change over previous x years)
 - Migratory trends
- Regional economic strength
 - Growth Domestic Product (GDP) per inhabitant in Purchasing Power Parity (PPP)
 - Evolution of GDP per inhabitant
 - Unemployment rate
 - Evolution of unemployment rate
 - GDP/occupied person (productivity)
 - Poverty rate
 - FDI
 - Trade flows
 - Creation of enterprises
- Social cohesion indicators
 - Distribution of incomes : ratio income received by the highest earning 20% and the lowest 20%
 - Jobless households : share of households in which no member is employed
- Environment
 - CO2 emissions
 - Congestion
 - Noise pollution
- Others
 - Access to services
 - Equal opportunities
 - Degree of exchange with nearby urban areas
 - Ecological effects
 -

3.5 Variables for the analysis of polycentrism

- Territorial densities reflecting physical and functional phenomena
- SPESP⁵ criteria
 - Geographical position

⁵ Study Programme on European Spatial Planning,

- Economic strength
- Social integration
- Spatial integration
- Land-use pressure
- Natural assets
- Cultural assets
- Indicators of competitiveness (Second Report on Economic and Social Cohesion⁶)
 - Economic structure
 - Accessibility
 - Innovation capacity
 - Qualifications
- CPMR⁷
 - Demography
 - Competitiveness
 - Economic attractiveness
 - Connectivity
 - Territorial integration
- Urban-rural relationships (at three territorial levels; global economic integration zones, main development poles, urban functional areas)
 - rural areas (e.g. access to services)
 - urban areas (e.g. social exclusion, pressure on the environment, urban sprawl)
 - urban/rural; indicators for exchange between the areas
 -

4. Cartography

The contractor will draw on the work of the post-ESDP Study Programme *SPESP* in order to implement some of its findings as regards the development of techniques for schematic cartography and symbolic language serving spatial planning and regional development policy at the pan-European level.

5. Timetable

The foregoing tasks are to be operationalised as part of the first phase of the ESPON work programme, that is, by October 2004. Further development of the GIS and related data products, especially in the cartographic domain, will take place under the second phase, 2004 to 2006.

Notwithstanding the above, it will be an important responsibility of the contractor to undertake a preliminary, *rapid* review of the data, information and literature already available, and to proceed to a first round of data collection aiming at improving the availability and completeness of the main series, with a view to selecting significant

⁶ Unity, solidarity, diversity for Europe, its people and its territory - Second Report on Economic and Social Cohesion, European Commission 2001

⁷ Conference on Peripheral and Maritime Regions

material to support the preparation, by the European Commission, of the 3^d Report on Economic and Social Cohesion.

These tasks represent a tight and highly demanding time schedule. The contractor will be invited to propose (again with the advice of the programme partners) methodologies, which offer the possibility of analysing and delivering, often at short notice, initial “coarse” results (in spatial terms, say at NUTS 2 and NUTS 3). These would be improved later with more sophisticated methods combining local and detailed gridded information to enable a more detailed picture to be produced.

Annex II to the terms of reference of ESPON Project 3.1:

Considerations to be included in order to ensure that texts, data and illustrations (maps, graphics, images, geographical information etc.) prepared as part of a study can be integrated and exploited within the technical operating environment of ESPON Programme (and DG Regional Policy)

In order that the illustrative material prepared for all ESPON projects can be integrated in the technical operating environment of the ESPON programme and DG Regional Policy and with a view to possible publication of ESPON documents, the contractor shall consider the following requirements in the setting of standards:

1. Compilation of texts, tables, graphics and geographic information

The contractor shall undertake to provide to the Co-ordination Unit (on behalf of the Monitoring Committee) with the manuscript and floppy disks or CD-ROM containing the full final text of the document, including all tables, figures and graphics as well as geographic coverage, maps and related coding or programming scripts.

The text is to be prepared using WORD 2000. Any tables or graphics must be prepared using EXCEL 2000 in a Windows 98/2000/XP/NT4.0 environment. The basic and worked quantitative data used to produce the tables, graphics and/or maps should be processed in ACCESS 2000 database format and made available on the media "free of copyright". Geographic information is to be prepared in the form of ARC/INFO coverage, assuring compatibility with the latest coding conventions (nomenclatures), appropriate scales and standard projection of the GISCO reference base of EUROSTAT.

Further technical details should be obtained by contacting the ESPON CU or

or the

GIS department of
DG Regional Policy;
European Commission,
REGIO A1, GIS Dept.,
CSM2 – 1/161,
Rue de la Loi, 200,
B – 1049 BRUSSELS.

The illustrations (tables, charts, graphs, maps and geographical coverage) should be grouped logically on separate directories in the chosen delivery medium. They should be independent from the text of the document. Specific directories will contain the illustrations and underlying data. A summary of the contents of the disks or CD-ROM is to be attached to documents, indicating clearly:

- the names of the directories and files;
- the parts of the document contained in each file;

- the file format and the version and software used.

Corresponding exactly to the files on disk or CD-ROM, the Co-ordination Unit must also be given a copy of the text in its final printed form. The contractor shall undertake to create the document layout using the ESPON layout elaborated so far.

The Coordination Unit will check documents for conformity.

Documents shall be drafted in English.

2. Illustrations, maps

Maps are to be supplied in original form on paper, transparencies or film and on a magnetic medium (disks or CD-ROM) compatible with the IT equipment of the ESPON CU and DG Regional Policy. The maps in the final manuscript must be originals, not photocopies.

As regards the text appearing on each map, geographical names in a specific national territory are to be written in the language of the territory in question, while all other names are to appear in the language of the document. For example, on a map of the Community the names of the towns are to appear in their language of origin but the names of seas are to appear in the language of the document. The key must also be in the language of the document.

Cartographic work is to be carried out with the same software products used by the ESPON CU and DG Regional Policy (ARC/INFO 8.x or ARCVIEW 3.x in a Unix environment or Windows NT4.0). Please consult the 'GIS' department for further information on the ARC/INFO or ARCVIEW versions to use.

Contractors must, in all cases, deliver the computer programs (languages: AML - ARC/INFO or AVENUE - ARCVIEW), graphics files (xx.gra, ARC/INFO standard or xx.eps (Postscript New (EPS)) for ARCVIEW) and all the data (and their origin) used to prepare the maps.

3. Drawings, images

Drawings are to be prepared using the software used by DG Regional Policy (ADOBE PHOTOSHOP 5.x, ILLUSTRATOR 9.x under Windows NT4.0). Please consult the GIS department, for the latest versions to use.

Annex III to the terms of reference of ESPON Project 3.1:

Statistical and Geographical data in European Spatial Planning Summary of available datasets by theme (10 January 2002)

The principal source for the present inventory is EUROSTAT. The tables summarise potentially relevant datasets managed at the *GISCO* site along with a selection of statistical series from the *Regio* database.

For the purposes of spatial planning analyses, the listing identifies only those datasets at a nominal scale of 1:3,000,000 or better, since smaller scale information is generally too coarse to offer satisfactory compatibility in this context. For the statistical series of the *Regio* database (essentially, NUTS listings), these are identified by the notation [SERIES_NAME]. Where data are available at a given NUTS level they are implicitly aggregated to all appropriate higher levels. The listing concentrates primarily on those data available at the NUTS 3 level. Offering only the broadest of European-wide comparisons, data series at NUTS 2 have been retained data where these might serve as inputs to be modelled in conjunction with other data to support the generation of certain indicators.

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
1. Topography					
1.1	Coastlines	1:1,000,000	Digital map (vectors)	Pan- Europe	GISCO/Eurostat
1.2	Lakes	1:1,000,000	Digital map (vectors)	Pan- Europe	GISCO/Eurostat
1.3	Hydrological network at 1m	1:1,000,000	Digital map (vectors) Rivers (126,000 segments) and lakes (42,000 segments)	Pan- Europe	Bartholomew
1.4	Hydrological network at 3m	1:3,000,000	Digital map (vectors) Main rivers (6,159 segments) and lakes (2,068 segments)	Pan- Europe	GISCO/Eurostat
1.5	Hydrology: watersheds at 3m	1:3,000,000	Digital map (vectors) 240 drainage basins	Pan- Europe	GISCO/Eurostat
1.6	Altimetry: Digital Elevation model at 30m	1:3,000,000 30"Long/Latitude	Digital map (grid)	Pan- Europe	EDC, USGS
2. Political and administrative boundaries, regions					
2.1	Administrative boundaries: NUTS (10m)	1:10,000,000	Digital map (vectors) 1,402 admin units	EU15, EFTA4 and CEC10	GISCO/Eurostat
2.2	Administrative boundaries: NUTS (v7)	1:3,000,000	Digital map (vectors) 1,402 admin units	EU15, EFTA4 and CEC10	GISCO/Eurostat
2.3	Administrative boundaries: NUTS (v7)	1:1,000,000	Digital map (vectors) 1,402 admin units	EU15, EFTA4 and CEC10	GISCO/Eurostat
2.4	Administrative regions (political)	1:1,000,000	Digital map (vectors)	EU15 and CEC9	GISCO/Eurostat
2.5	Commune boundaries: SABE at 0.1m	1:100,000	Digital map (vectors) >100,000 units. AT, FI, SE at different scales	EU15 and EFTA4,	GISCO/Eurostat/ EuroGeographics
2.6	Commune boundaries: SABE at 1m	1:1,000,000	Digital map (vectors)	EU15, EFTA4 and CEC10	GISCO/Eurostat/ EuroGeographics

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
	2. Political and administrative boundaries, regions				
2.7	Area of NUTS 3 regions	NUTS3 data list	Km ²	EU15+CEC10	Eurostat/REGIOdb [D3AREA]
	3. Socio-economic statistics				
3.1	GDP (1999)	NUTS3 data list	Values/€/currency/ PPS/per capita	EU15+CEC10	Eurostat/REGIOdb [E3GDP95] [XE_GDP]
3.2	GVA	NUTS3 data list	By sector/branch NACE Rev.1, currency/€	EU15+CEC10	Eurostat/REGIOdb [E3VAB95] [XE3VABP] (MISSING!)
3.3	GVA	NUTS2 data list	By sector/branch NACE Rev.1, currency/€	EU15+CEC10	Eurostat/REGIOdb [E2VAB95] [XE2VABP]
3.4	Employment	NUTS3 data list	By sector, branch NACE Rev.1, work status	EU15+CEC10	Eurostat/REGIOdb [E3EMPL95] [XE (MISSING!)]
3.5	Employment	NUTS2 data list	By sector, branch NACE Rev.1, work status	EU15+CEC10	Eurostat/REGIOdb [E2EMPL95] [XE2EMPL]
3.6	Employed persons	NUTS2 data list	By sector, branch NACE-CLIO, work status, sex	EU15+CEC10	Eurostat/REGIOdb Cor Labour Force Survey [LF2EMP] [XLFEMP]

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
3. Socio-economic statistics					
3.7	Employment rates	NUTS2 data list	By sex	EU15+CEC10	Eurostat/REGIOdb Labour Force Survey [LF2EMPRT] [XLFEMPRT]
3.8	Active population	NUTS2 data list	By age (10-year classes) and sex	EU15+CEC10	Eurostat/REGIOdb Community Labour Survey [LF2ACT] [XLFACT]
3.9	Activity rates	NUTS2 data list	By age (10-year classes) and sex	EU15+CEC10	Eurostat/REGIOdb Community Labour Survey [LF2ACTRT] [XLFACTRT]
3.10	Gross Fixed Capital Formation	NUTS2 data list	By sector, branch NACE Rev.1	EU15+CEC10	Eurostat/REGIOdb [E2GFCF95] [XE2GFCF]
3.11	Labour force scenarios by sex age cohorts; High, low and baseline forecasts 5-year periods to 2025	NUTS2 data list	000's	EU15	Eurostat/REGIOdb [SCEN2LF]
3.12	Unemployment rate (2000)	NUTS3 data list	Harmonised %, total, M/F, <25s	EU15+CEC10	Eurostat/REGIOdb [UN3RT], [XUNRT]
3.13	Unemployed persons (2000)	NUTS3 data list	000's, total, M/F, <25s	EU15+CEC10	Eurostat/REGIOdb [UN3PERS], [XUNPERS]
3.14	Research and development expenditure	NUTS2 data list	By sector (All, business, Government, higher education) %GDP	EU15+CEC10	Eurostat/REGIOdb [RD2EXP] [XRDEXP]

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
3. Socio-economic statistics					
3.15	Research and development employment	NUTS2 data list	By sector (All, business, Government, higher education), % of total employment, % of active population	EU15+CEC10	Eurostat/REGIOdb [RD2PERS] [XRD2PERS]
3.16	Research and development : Employment in high technology	NUTS2 data list	By sector (Total high tech, manufacturing, services), % of total employment	EU15	Eurostat/REGIOdb [EHT_R]
3.17	Patent applications	NUTS2 data list	8 sections of the International Patent Classification	EU15	Eurostat/REGIOdb [RD2PAT]
3.18	Patent application rates	NUTS2 data list	Rates per million inhabitants, by active population, by sector, by personnel, by expenditure	EU15	Eurostat/REGIOdb [RD2PAT]
3.19	Household numbers	NUTS2 data list	000's of households by degree of urbanisation	EU15+CEC10	Eurostat/REGIOdb [RD2PAT_R]
3.20	Tourism: Lodging capacities (2000)	NUTS3 data list	Establishments/Bedrooms/bed places, hotels/campsites etc	EU15	Eurostat/REGIOdb [RSECT_A/t_3r]
3.21	Tourism: Occupancy	NUTS2 data list	Number of nights spent by residents/non-residents, by kind of accommodation type	EU15	Eurostat/REGIOdb [RSECT_B/t_04tr] [RSECT_B/t_05tr] [RSECT_B/t_06tr] [RSECT_B/t_07tr]
4. Population, demography					
4.1	Population by commune 1981	NUTS5 data list	000's	EU12	GISCO/Eurostat
4.2	Population by commune 1991	NUTS5 data list	000's	EU12	GISCO/Eurostat
4.3	Annual average population by sex	NUTS3 data list	000's	EU15+CEC10	Eurostat/REGIOdb [D3POP] [XDPOP]

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
4. Population, demography					
4.4	Population by sex and single-year cohorts	NUTS2 data list	000's	EU15+CEC10	Eurostat/REGIOdb [P2AGE90] [XDAGE90]
4.5	Population by sex and 5-year cohorts	NUTS2 data list	000's	EU15	Eurostat/REGIOdb [D2AGE80]
4.6	Density of average total population	NUTS3 data list	000's	EU15+CEC10	Eurostat/REGIOdb [D3DENSIT] [XDDENSIT]
4.7	Births and deaths	NUTS3 data list	000's	EU15+CEC10	Eurostat/REGIOdb [D3NATMOR]
4.8	Population scenarios by sex and cohorts; High, low and baseline forecasts 5-year periods to 2025	NUTS2 data list	000's	EU15	Eurostat/REGIOdb [D2SCE]
5. Environment					
5.1	CORINE Land Cover	1:100,000	Digital map (vectors) 44-class, 3-level nomenclature on bio-physical inventory unit 25 ha	EU15 + CEC10 + other areas	EEA
5.2	CORINE Land Cover	1:100,000	Digital map (100m grid) 44-class, 3-level nomenclature on bio-physical inventory	EU15 + CEC10 + other areas	GISCO/Eurostat EEA
5.3	CORINE Land Cover	1:100,000	Digital map (250m grid) 44-class, 3-level nomenclature on bio-physical inventory	EU15 + CEC10 + other areas	GISCO/Eurostat EEA
5.4	Biotopes	Locations	Point data 7,741 sites identified and described	EU12+Finland	GISCO/Eurostat Ex-DGXI, TF-EEA
5.5	Protected sites: Designated at national, regional and local	Locations	Point data 17,830 sites identified and described	Pan-Europe	EEA/Council of Europe/W EIONET

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
5. Environment					
5.6	Protected sites: Designated Community legislation and international conventions	Locations	Point data 1,812 sites identified and described	Pan-Europe + north Africa	CEC ex-DGXI, base Ramsar, UNEP, UNESCO
5.7	NATURA2000 (Under construction)	1:100,000 or larger	Points, converting to digital map series 30,000 habitat sites from 2 ha to 300,000 ha	EU15+.	DG ENV, EEA, JRC
5.8	Soils map (FAO nomenclature)	1:1,000,000	Digital map (vectors) 15,843 soil polygons	EU12:	DG ENV, JRC
5.9	Climate: Weather records	Sampling points	19 variables, 5,308 stations	EU12, excluding ex-DDR	Ex-DGXI/national meteorological offices
5.10	Climate: Interpolated data	50x50 Km grid	Grid data, monthly for 7 parameters	Pan-Europe + Maghreb	GISCO/Eurostat/ JRC(MARS)
5.11	Landscapes	1:6,000,000	Digital map (vectors) 30 landscape types in 8 complexes	Pan-Europe	GISCO/Eurostat Ex-DGXI, TF-EEA
5.12	Bio-geographical regions	1:1,000,000	Digital map (vectors)	EU15	European Commission and Co Europe, Bundesamt Naturschutz
5.13	Natural vegetation inventory	1:3,000,000	Digital map (vectors) 4,162 polygons, 232 vegetation types	Pan-Europe (except CECs)	European Commission and Co Europe
5.14	Coasts: Morphology and erosion risks	1:100,000	Digital map (vectors) 17,051 coastal segments	EU12 except Greek islands, Azores/Madeira.	European Commission Ex-DGXI
5.15	Air pollution (urban)	Sampling points	115 major European cities (1995) SO ₂ , particulate content, NO ₂ , CO, Pb, Ozone		
6. Energy infrastructure					
6.1	Nuclear Power Stations: Capacity, type, production	Locations	Point data 151 sites	EU12	GISCO/Eurostat
6.2	Electricity: Power transformation stations	Locations	Point data 938 installations	Pan-Europe	GISCO/Eurostat

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
6. Energy infrastructure					
6.3	Terminals and refineries, oil and gas	Locations	Point data	Pan-Europe	GISCO/Eurostat
7. Transport					
7.1	Airports	Locations	Point data 1,612 airports	Pan-Europe	GISCO/Eurostat/ various
7.2	TEN airports	Locations	Point data. 331 TEN-eligible airports, 9 airport systems	Pan-Europe	GISCO/Eurostat
7.3	Ports	Locations	Point data 1,848 ports	Pan-Europe	GISCO/Eurostat
7.4	TEN ports	Locations	Point data 619 TEN-eligible EU ports	EU15	GISCO/Eurostat
7.5	Road network	1:1,000,000	Digital map (vectors) Major roads and access points	Pan-Europe	IRPUD
7.6	TEN road network	1:1,000,000	Digital map (vectors) TEN-eligible major roads	EU15	GISCO/Eurostat
7.7	Railway network	1:1,000,000	Digital map (vectors) Major railways and access points	Pan-Europe	IRPUD
7.8	TEN railway network	1:1,000,000	Digital map (vectors) TEN-eligible network	EU15	GISCO/Eurostat
7.9	TEN ferry links	1:1,000,000	Digital map (vectors) TEN-eligible ferry links	EU15+EFTA	GISCO/Eurostat
7.10	TEN inland waterways	1:3,000,000	Digital map (vectors) 654 TEN-eligible river segments	EU15	GISCO/Eurostat
7.11	Inland navigable waterways	1:1,000,000	Digital map (vectors) Navigability status of 2,283 river and canal segments	Pan-Europe	GISCO/Eurostat
8. Urbanisation					
8.1	Urban centres	Locations	Point data 7,269 towns and cities > 10-20,000 pop, pan-Europe. NB: errors and misleading aggregations	Pan-Europe	GISCO/Eurostat
8.2	National and regional capitals	Locations	Point data Status of 1,227 towns and cities	EU15+EFTA4 and 10 CEC10	GISCO/Eurostat
8.3	Degree of urbanisation	1:1,000,000	Definition of 3 density classes; dense, intermediate and sparse Algorithm uses contiguity rules to generate agglomerations	Most of EU15. Being updated and completed in-house	DG REGIO, GISCO/Eurostat
8.4	Urban regions of the Labour Force Survey	1:1,000,000	Coded attributes to link to NUTS	EU15	GISCO/Eurostat

9. Agriculture					
9.1	Land use [A2LAND, XALAND]	NUTS 2 data list	000 hectares Forest, Utilised agricultural area, market gardening, grass permanent crops, vineyards, olive groves, arable land, 1 crops, fallow land	EU15 + CEC10	GISCO/Eurostat
9.2	Crops [A2CROPS, XACROPS]	NUTS 2 data list	000 hectares, 000 tonnes, t/ha Details and aggregates of main cereal crops, potatoes, p sugar, oilseeds, flax, cotton, tobacco, orchards, vineyards,	EU15 + CEC10	GISCO/Eurostat
9.3	Livestock [A2ANIMAL, XAANIMAL]	NUTS 2 data list	000 head Detailed breakdown by livestock category and oper classes	EU15 + CEC10	GISCO/Eurostat
9.4	Agricultural accounts [A2ACCT97]	NUTS 2 data list	€, subsidies, taxes Series and aggregates for almost 40 crops and derivati livestock categories and related products. Outputs, processing activities, consumption, related good services, investment, income, wages etc.	EU15	GISCO/Eurostat

	Theme	Scale/cover/ resolution	Type, format, units	Geographical extent	Source
9. Agriculture					
9.5	Farm structures [A2EFARM]	NUTS 2 data list	155 variables covering operational details by size and t holding.	EU15	GISCO/Eurostat
10. Multi-thematic models data products					
10.1	IMAGE 2000 (Under construction)	25m multi-spectral panchromatic	satellite imagery	EU15 + CEC10+	EEA/European Commiss
10.2	Peripherality	NUTS3 data list	Index values	EU25	IRPUD(Copus)
10.3	CLC-based disaggregation of com level population on a 100m ² grid (provisional)	1:100,000	Digital map (100m grid)	Most of EU15	JRC