ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Part I

Executive Summary

30 September 2005

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This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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Introduction

The European Council in Gothenbourg 2001 agreed on an EU strategy for sustainable development in which the social and economic aims agreed at the Lisbon EC strategy in 2000 (and its review and actualization, by the Renovated Lisbon Strategy in 2004) were to be complemented by a territorial dimension.

This was the starting point of the Espon 3.3 project called "Territorial Dimension of Lisbon-Gothenburg Strategy", of which the Third Interim Report presents the results of the work's last six months.

This Report consists of several different parts, according to the Project Terms of References (ToR) and the MC suggestions:

ToR k) **a draft proposal on adding a territorial dimension to the Lisbon/Gothenburg strategy, the added value to be obtained at European level and a presentation of the additional indicators, which could complement the current list of indicators.**

In order to add the **territorial dimension** to the Lisbon/Gothenburg strategy, the 3.3 project confirms (as already proposed into the earlier Interim Reports) the approach based on the assessment of the **competitiveness** (Lisbon strategy) **in sustainability** (Gothenburg strategy) modifying and integrating the list of most suitable indicators into a reviewed version of the Porter Diamond; and, by an innovative methodological approach (STeM Approach Prezioso, 2003), of calculate the **territorial capability** of the economic/territorial/environmental systems at national (spatial systems) and regional scale (large areas) to be "**competitive in sustainability**".

STeM Approach anticipates the European Commision goal declared on June 2005 about **Impact Assessment** (European Commission, 2005): *Within the framework of the Better Regulation package and the European Sustainable Development Strategy, the Commission has taken several concrete actions to improve the way it designs policy. One of these is impact assessment, for which the Commission introduced a new method in 2002, integrating and replacing previous single-sector type of assessments.*

Impact assessment (IA) is a process aimed at structuring and supporting the development of policies. It identifies and assesses the problem at stake and the objectives pursued. It identifies the main options for achieving the objective and analyses their likely impacts in the economic, environmental and social fields. It outlines advantages and disadvantages of each option and examines possible synergies and trade-offs.

Impact assessment is an aid to political decision, not a substitute for it. It informs decision-makers of the likely impacts of proposals, but it leaves it up to them to take the decisions.

The European Councils held in Lisbon (2000) and in Gothenbourg (2001) gave the Union a new direction by establishing a long term strategy with sustainable development as the overarching objective. As well the I EPSD Report 2005 about *From Here to Sustainability – Is the Lisbon/Göteborg agenda delivering?* says "*Sustainable development means, in this context, goals for economic, social and environmental policy, which are both mutually consistent and capable of delivering enhanced economic growth. To assure progress towards an agreed range of targets, the open method of coordination (OMC) has been adopted as the process for the implementation of the strategy*" (pg. 1).

At the moment it is not demonstrated its real effectiveness to mix the strategy for being both competitive and sustainable within the choices of development. Nevertheless, if sustainable development is a long-term strategy and the deadline originally set for the Lisbon agenda is confirmed at 2010, the 3.3 project confirms the possibility to achieve both dimensions at EU level.

ToR l) **presentation of progress made mapping the regional diversity of potentials and imbalances within the enlarged European territory for contributing to the Lisbon/Gothenburg strategy**.

As of this request, the Report covered all EU regions of the 27 countries, because the working group thinking is that the territorial potentials or imbalances come from a different, complex mix of regional values. These latter ones design the regional identities on which the next Structural Funds policy must act offering different solutions.

Nevertheless, in order to provide help in this decision, the TIR offers a simplified instrument of Impact Assessment (by a dedicated GIS) that simulates the potential scenarios and attributing specific policy recommendations looking at the relative positive effects.

Of course, some areas immediately appear to have more vocation to receive some guide-lines than other ones.

ToR m) **first policy recommendations in view of implementation of Structural Funds in relation to European priorities, measures, eligible areas and delivery mechanisms at European level, at transnational level (areas similar to INTERREG III B) and for each country (EU 27).**

The TIR has dedicated a specific study to select policy recommendations by other Espon projects, EU Reports, Agendas, proposals, thematic studies about the Lisbon/Gothenburg topics. The cross-link of the results are shown in specific tables. They also represent the data-entry to make the Impact Assessment between the actual territorial dimension of Lisbon/Gothenburg strategy and the future capability to put it into practice.

At the same time, the Report presents some territorial hypotheses about the transnational cooperation, useful to put into action old and new co-operative programs.

ToR n) **considerations on specific recommendations on policy orientations and options in order to apply European territorial development policy documents (as ESDP and the CEMAT paper), which would enhance the contribution from a territorial dimension in carrying through the Lisbon/Gothenburg strategy**.

The 3.3 project conceptualisation and the choice of an integrated methodological approach is already a critical message about some too much spatial and synthetic studies that reflect an European Union need to have few indicators, few typologies, few diversities, etc.

We consider that looking at the European Union situation in a too simplistic way is wrong. Nevertheless, the topic European proposals and documents were studied to support polycentric and cohesive choices.

ToR o) **Considerations on a proposal for the next revision of the 42 indicators behind the Lisbon/Gothenburg strategy**.

This is, perhaps, the point on which the TIR will except some discussions. After both several scientific comparisons, and the mapping of all available indicators, the 3.3 Working Group decided to present to the Espon MC two solution:

a) the mapping of a short list of indicators coming from the EU Spring Report, which cover the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background;

b) a double mapping (by Equal Interval classification for the country comparison and Quantile classification - into a specific quartile subdivision - for the regional detailed one) of an intermediate list of indicators (including the previous ones) according to punctual and original research, in order to stress the territorial dimension of Lisbon/Gothenburg strategy.

The LP opinion is that the second list of indicators is preferred to obtain the real difference of the European territorial dimensions and the specific references needed for the Structural Funds access.

Some of these new indicators were taken from other Espon projects.

1. Key messages and findings

The first key message of this project is that new Structural Funds must sustain the EU National/regional *territorial capability to be competitive in sustainability*.

The concept of territorial capability to be competitive in sustainability is to be distinguished from that of "sustainable competitiveness", commonly intended only in economic terms; identifying the territorial differences will mean providing the European regions and states with both cooperative possibilities on the basis of common carrying capacities and different chances to access the competitiveness arena (in this case performed by the new Structural Funds season 2007-2013).

For knowing the **competitiveness** in **sustainability** the project focalized its attention:

i) on the results of several scientific and political researches and documents, to justify and enforce the choice of indicators. At the same time, it looked at the concepts of territorial cohesion (Community Strategic Guidelines 2007-2013 - COM 2005 0299) and polycentricity that orient the European Spatial Development Perspective (ESDP).

Some European reports were also at the base of these reflections:

- The **Kok Final Report**: "Facing the Challenge. The Lisbon Strategy for growth and employment" (November 2004);
- The study "**Adaptation of Cohesion Policy to the Enlarged Europe and the Lisbon and Gothenburg Objectives"** by the European Parliament's Committee on regional development (provisional version, January, 2005);
- The **Communication from Mr. Almunia** (2005) to the Commission "Sustainable Development Indicators to monitor the implementation of the EU Sustainable Development Strategy";
- the recently re-launched of Lisbon Agenda (2005); an evaluation of its implications and changes deriving from this re-launch are into this report;

ii) on the **conceptual organisation** of the project for providing some **distinctive structural characteristics** that make a territorial area (regional level) a subject in a global market in order to the re-vision of Lisbon/Gothenburg indicators.

The approach adopted also appears to concentrate on a cohesive and polycentric development, by:

- an experimental use of the Strategic Environmental Assessment (SEA, Dir. CE/2001/42) as a logical common standard procedure to evaluate the territorial capacity in a modern and co-operative transnational vision (i.e. the common access at the European Funds and projects);
- an experimental GIS project as instrument to manage the complex knowledge in a territorial system.

iii) on the national and regional capacity to obtain at the same time several objectives, linked with the EU Member States need to have a territorial competitiveness' new point of view. The latter has found solution by the revision of the Porter's Diamond.

The Diamond's model needed to be updated according to the recent indications from new economics and social models respecting Lisbon 2000-05 and Gothenburg 2001 strategy. On this way it was possible to insert a further star in Porter's diamond, crossing the first, which increase interaction elements to be considered. In adding to the classics elements of Porter's diamond:

- Strategic localization
- Local demand
- Integration with regional *cluster*
- Human Resource

we listed four additional categories of elements (in our language called "Determinants") that include the classic elements, too:

- Innovation and Rsearch
- Global/local interaction
- Quality
- Resources and funds

The "playground" of each determinant have got into both the 2005 Lisbon/Gothenburg Agenda indicators and Almunia's ones (2005):

The second key message is the need to sustain the market competition through those endogenous factors that differentiate the EU regional territorial systems (mix of social, environmental, economics elements influencing the regional ranking within the enlarged Europe and in the international context).

This requires:

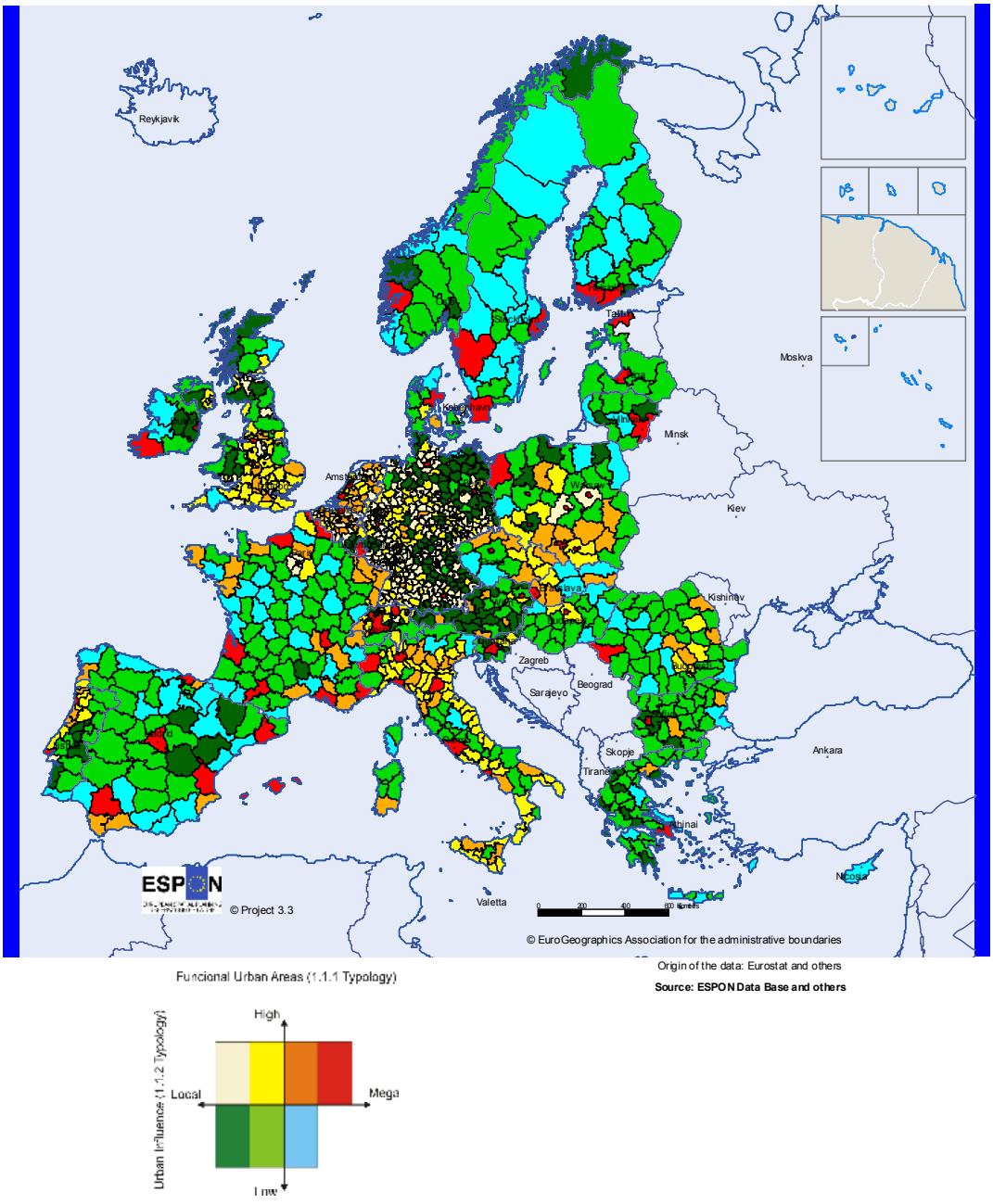
- to face market competition with scenarios capable of guaranteeing environmental, social, cultural and economic sustainability;

- to have got some management faculties (components) capable guaranteeing territorial competitiveness (innovative capacity, organisation in networks, capacity to integrate the different sectors and levels of activities, to cooperate in and with other territories, to involve different public and private subjects and institutions, to have both a global, coherent vision respecting the use of local resources, to organise international, European, national, regional policies in a subsidiary vision, etc.).

In order to obtain these results, The 3.3 TIR was organised in the following steps:

1. the final selection of the best representative indicators of Lisbon Gothenburg dimension (see Annex I, Annex II A, II B, II C, II D) on the basis of the conceptualisation and the methodological approach (see Scientific Summary, Cap. 4) anticipated in the TIR and SIR. The work is also based on a statistical approach. To better explain the project proposal, the Working Group decided to add the study of the well known "14 spring report indicators" (see Annex III) to lay the basis for a following comparison between innovative and traditional approaches. Several new additional indicators result interesting to complement the current list of indicators;
2. a double mapping of each indicator is presented - and its logical connection (on the base of a scientific references) with other indicators to arrive at the final synthetic judgment for each determinant – (see Annex II A, II B, II C, II D). Indicators' combinations (indicator/category/…/determinant) according to the matrices are described (see Scientific Summary);
3. in order to provide a territorial typology, the typologies developed within the ESPON Programme (see Scientific Summary, cap. 4) were selected and studied. The classification of territories was developed in 3 steps and 3 hypothesis. It was chosen the hypothesis C (Fig. 1) as the more adequate to evaluate behaviour in the four determinants. It emerges the differences between "Regional/Local functional areas" or "No special function areas". In this case, more depopulated areas are separated from the rural areas where we can find medium-sized cities with regional/local economic bases.

Figure 1: Typology of territories - Hypothesis C



Reminding that the main arguments of the analysis are:

- identify the more competitive and dynamic territories based on knowledge and innovation and relate it with urban and regional characteristics;
- to know if urban centres and metropolitan agglomerations play a crucial role in providing the framework conditions for a knowledge-based economic development;
- understand polycentric model in different scales, which includes the dynamics of urban growth centres and linking peripheral and disadvantaged areas with urban centres (ESPON, Terms of Reference, 2004)

This type of approach allows one to construct an indicator which includes not only the information on the current situation according to its own specificities, but also on the real dynamics of the actions that enable a given goal to be reached: in this case we turn from the simple territorial competitiveness to the **capability to generate territorial competitiveness in sustainability**.

4. The 3.3 project faces now the last question of this methodological approach: the policy recommendations and their link with the better choice to have a competitive development in sustainability. Policy recommendations in order to apply the Lisbon-Gothenburg strategy were described by the official European documents and a review of Espon projects. To have fully get the right policy recommendations for the different regions (from the territorialisation), the general Lisbon-Gothemburg policies overview was organised in *possible actions* for the European development (looking at competitiveness in sustainability). After it was simulated their effects (positive or negative) on the different regional territorialisations (see Scientific Summary, cap. 4 and cap. 8). This work is useful to assume and have get the specific result of a policy recommendations action and to suggest the implementation of Structural Funds in relation to European priorities, measures, eligible areas and delivery mechanisms at European level, at transnational level (areas similar to INTERREG III B are draw) and for each country (EU 27). The diversity of regions are reflected in diversity of the policy recommendations. Where it was possible, the consistency with national policies is also been examined, but this work will be completed in the Final Report.
5. Some specific recommendations on policy orientations and options regard the European territorial future development and organisation (as ESDP) (see Scientific Summary, Cap. 6 and Cap. 8).

6. Finally, in order to sustain the better knowledge of the European territorial dimension of the competitiveness in sustainability, the working group build a specific GIS project *into project* (see Scientific Summary, Cap. 4). It helped the 3.3 group to better organise the available data and to know the data missing (see Annex I). But it also is an important instrument of assessment. In fact, the 3.3 project proposes, as an added project value, an experimental process of Enviromental Strategic Assessment (Dir CE/2001/42) to assist the Espon project and the policy makers decisions on the base of an efficient and transparent procedure. It can also need to make an initial evaluation of the European regional and national priorities and an intermedia or final one about the use of resources and funds for the development.

2. **Key maps**

2.1 The Short List of Structural Indicators in light of European Territorial Cohesion

In connection to the Lisbon/Gothenburg Process a strategic set of indicators to measure the progress of the agenda has been agreed upon between the European Commission and the European Council. Based upon this larger collection of indicators a "short list" has been derived in order to allow for a more "concise presentation and a better assessment of achievements over time vis-à-vis the Lisbon agenda". The short list indicators cover the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background. Most of the chosen indicators do not have territorial aspects as their main measurement objective but a majority of them do have territorial implications. Six of them are available on the regional (R) level and seven only on the national (N) level. We have furthermore estimated one – dispersion of regional employment rates – using as a proxy the dispersion of regional unemployment rates. The 14 short list indicators are thus as follows:

1. Gross Domestic Product per inhabitant (R)
2. Gross Domestic Product per employed person (R)
3. Employment rate (R)
4. Employment rate of older workers (R)
5. Gross domestic expenditure on research and development (R)
6. Youth education attainment levels (N)
7. Comparative price levels (N)
8. Gross Fixed Capital Formation/GDP (N)

9. At-risk-of-poverty rate after social transfers (N)
10. Dispersion of regional (un)employment rates (R)
11. Long-term unemployment rate (R)
12. Greenhouse gas emissions (N)
13. Energy-intensity of the economy (N)
14. Volume of freight transport relative to GDP (N)

A critical comment to the choice of these indicators would be that they are synthetic, but not analytical, rendering it difficult to draw any definite conclusions as to European territorial cohesion and related issues.

The fourteen indicators are merged into three groups mirroring the "ESDP triangle" of economic (1-8), social (9-11) and environmental (12-14) sustainability, providing three synthesis indicators where, within each theme, each of the separate indicators weight equally.

The eight *economic* indicators are to a large extent interlinked, i.e. they tend on the regional level to vary correspondingly across the European space. A clear core periphery pattern therefore emerges largely resembling e.g. GDP per capita. The European Pentagon including Switzerland and Rhone-Alpes in France as well as most regions in the Nordic countries constitute the economic stronghold of Europe, primarily scoring high on most of the indicators. Furthermore selected capital and other large city regions outside these countries (such as Lisbon, Madrid, Prague, Bratislava) stand out. The lowest scores on the economic axis are nearly exclusively in the New Member States or the Cohesion Countries, Cornwall in the UK and the French Reunion constituting the most prominent exceptions. However, like in the Check Republic and Slovakia, also in other Eastern Europe most capital regions display higher scores.

In the synthesis of three *social* indicators the variables do not relate to each other to any larger degree, although there is a slight correlation between those concerning the labour market, where high long-term unemployment rates are more common in regions with high internal disparities with regard to total unemployment. Thus the social synthesis map differs from the corresponding economic one. Apart from clearly discernible east-west differences, the dominance of the European core is downplayed in this respect. Furthermore, many capital regions such as London, Paris, Lisbon or Helsinki in the west or Warsaw, Bratislava or Bucharest in the east display lower performance with regard to these social indicators as was the case with the corresponding economic ones. Much of Norway, the Netherlands or the Czech Republic on the other hand perform better in this respect.

One tentative conclusion based on these two groups of indicators is that performances on the economic and social scale do not entirely walk hand in hand, although they do not on the other hand also exclude one another.

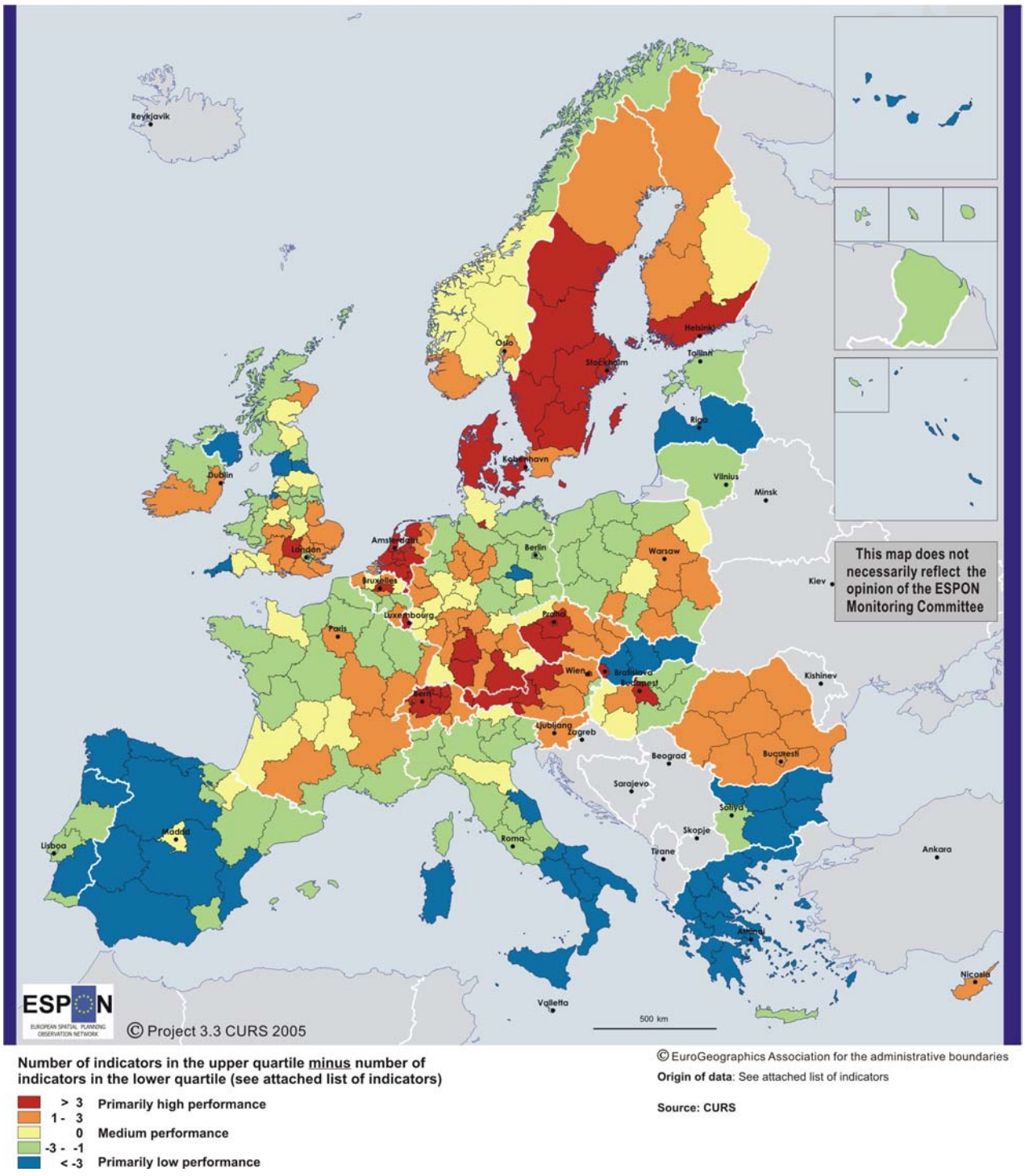
Finally the synthesis (on the national level) of the *environmental* indicators on the short list shows that in general the three indicators

correlate with each other. These indicators are by definition dynamic thus not taking into account the starting level, which explains the high performance of most transition countries. Also, as GDP is a denominator in two of the three indicators, the rapid relative economic growth in these countries is mirrored in the "reductions". The Cohesion Countries as well as Italy and Norway are the worst performers, scoring low on all three indicators.

Finally the performance on *all fourteen structural indicators* from the short list has been merged into one map. The overrepresentation (eight out of fourteen) of economic indicators is mirrored in the spatial patterns. Thus the hard economic core of Europe is clearly discernible, also encompassing much of the Nordic countries. Norway falls short primarily due to low "performance" on the environmental indicators whereas the opposite holds true for e.g. Romania and eastern Poland due to better performance both on social and environmental indices. The capital regions of Prague, Bratislava and Budapest are also among the top European performers in this respect. Territorial disparities are greatest in Slovakia basically dividing the country into the capital region on the one hand and the rest of the country on the other. The Cohesion Countries (apart from Ireland) as well as southern Italy do also stand out as low performers in this respect, scoring fairly low on all three sectors.

The composite synthesis indicators constructed above are also studied in light of three core ESPON typologies, examining whether the underlying assumptions of these typologies are reflected in the indicators on the short list. The chosen typologies are: A typology of functional urban areas FUAs (ESPON 1.1.1); Urban rural typology (ESPON 1.1.2); and Multimodal potential accessibility (ESPON 1.2.2). The main questions here thus refer to whether economic, social, environmental and overall competitiveness and sustainability measured through the fourteen short list structural indicators is higher in regions where there are large FUAs, in regions that have high urban influence and in regions where the accessibility potential is high.

Figure 2: Regional performance of fourteen Lisbon Short List Structural Indicators



For list of included indicators, see Scientific Summary, Cap. 2 and Annex III.

All in all the 14 structural indicators are reflected well in the typology of functional urban areas. Regions with European/Global FUAs have the highest average score whereas regions lacking FUAs or with only a regional/local ditto score the worst. The same hierarchy is evident when examining only the eight economic indicators taken as a group. However, there is no clear pattern as to the existence and magnitude of FUAs and social cohesion, whereas the pattern for the environmental ones is also nearly nonexistent.

Regarding urban influence and human intervention the results are not so clear cut. Nonetheless the overall average score is highest for regions where both the degree of urban influence and the degree of human intervention are high, i.e. typically urban areas. The same applies for the economic indicators alone whereas e.g. the composite social indicators are not in any way reflected in the hierarchy.

Finally with regard to multimodal potential accessibility the overall average of the 14 indicators correlates strongly with that of accessibility. Thus regions with a high accessibility do on average score high both in terms of the total result as well as on the economic composite indicator. This correlation gradually decreases with worsening accessibility. Once more, social and environmental competitiveness and sustainability are not reflected at all in accessibility.

Providing that the 14 indicators are truly indicative of economic, social and environmental competitiveness and sustainability, then a definite conclusion could be drawn that economic (or partially social) competitiveness and environmental sustainability do not necessarily correlate. Owing to the fragility of the indicators, their lack of analytical power especially regarding territorial issues, and the limited number of them, however, such a conclusion may be premature to draw. It however seems obvious that social processes reflected in social indicators are an effect of national traditions as well as welfare policies, which have emerged regardless considerations related to economic performance or, alternatively, as one possible strategy for gaining enhancing economic performance.

Providing that the welfare choice has been a deliberate one among those European countries characterised by developed welfare regimes, this strategy seems to have been successful in terms of economic performance. Moreover, with regard to the future, national welfare strategies seem to retard rather than advance, which simply seems to indicate that the old strategy is being reconsidered. Various parts of national welfare regimes in Europe are being increasingly dismantled. The reason is probably to be sought in the global expansion of markets, the quest for foreign investments and the way national competitiveness is conceived of in emerging global conditions.

On the global level, there is no system (or only very marginal ones) for the reallocation of resources according to social needs. Within Europe, there is also no EU policy aiming at the harmonisation of welfare regimes or of taxation policies for that matter. In these conditions, national economic success is connected to competition in providing advantageous business conditions in terms of low taxation and the reduction of other additional costs for productive investments, which of course diminishes the possibilities to keep up existing basis for taxation and consequent welfare regimes. An open question is to what extent a European welfare regime, including harmonised taxation, reallocation of resources on the European level according to ideas of social and territorial fairness as well as common policies for the protection of environment and culture would enhance the position of Europe as a whole in the global competition. Such questions of strategic importance cannot at the moment be addressed by available statistics, least of all by these fourteen short list structural indicators.

2.2 The result of 3.3 project

2.2.1 *Innovation and Research*

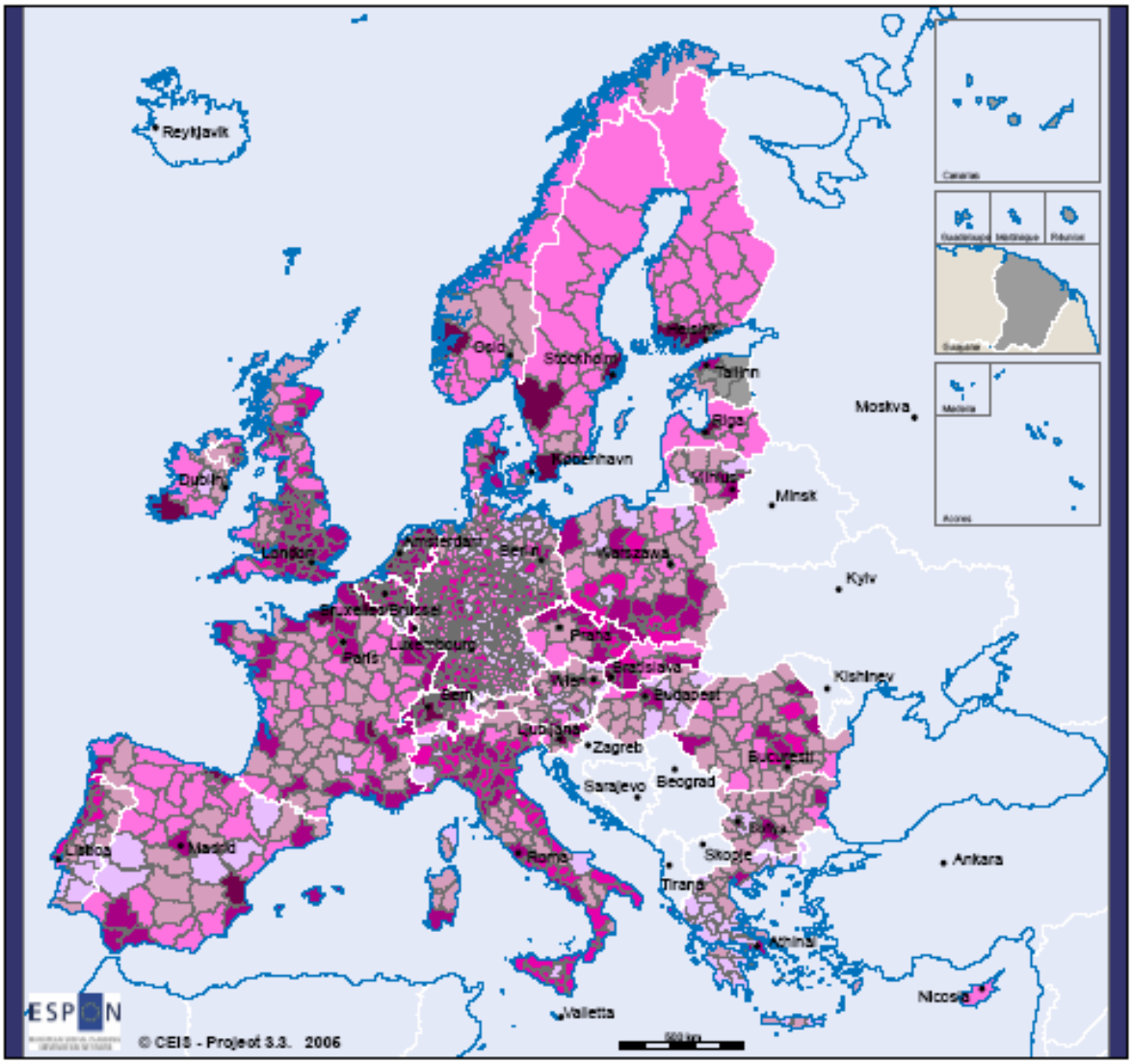
The comparison between the *two final maps of I&R* pictures a general uniformity at national level, but some different scenarius at regional level (see Annex II A).

At national level, a lot of countries have got a *low* I&R profile; only United Kingdom, Sweden, Finland, a part of Ireland, Slovenia, some regional enclaves in Netherlands, Austria, Spain, Portugal, Italy, Poland and Lithuania, Latvia show a *medium-low* profile.

At regional level, the differences are more evident, with a *medium-high* level in the "Pentagon area", Slovenia, *few high* levels into some regional enclaves of United Kingdom and Netherlands,

This difference becomes more and more evident if we look at the territorialised map (Fig. 3), crossing the regional I&R Q data with the territorial typologies at NUTs3. Here, only few regions in Finland, Sweden and Norway have got a level of territorial I&R called *absolute* (i.e. an very positive performance).

Figure 3: Determinant Innovation and Research - Territorialisation



LEVEL OF TERRITORIAL I&R

- ABSOLUTE
- VERY HIGH
- HIGH
- MEDIUM
- LOW
- VERY LOW
- no data

2.2.2 *Global/local interaction*

The Global/Local interaction never arrives to have got high values and presents a good performance only in the traditional more advanced European regions.

The Global/Local interaction at regional level privileges as good benchmarking cases the following few regions: Centro region in Portugal, Inner London- Berkshire, Buc-Surrey, East in UK, Alsaze in France, Freiburg- Gießen- Schleswig-Hols in Germany, Gelderland- Noord-Brabant-Noord-Holland in Netherlands, Agder Og Rogal in Norway, Stockholm in Sweden. This situation requires a serious reflections about the capability to have a real contact with the globalization and its market vision.

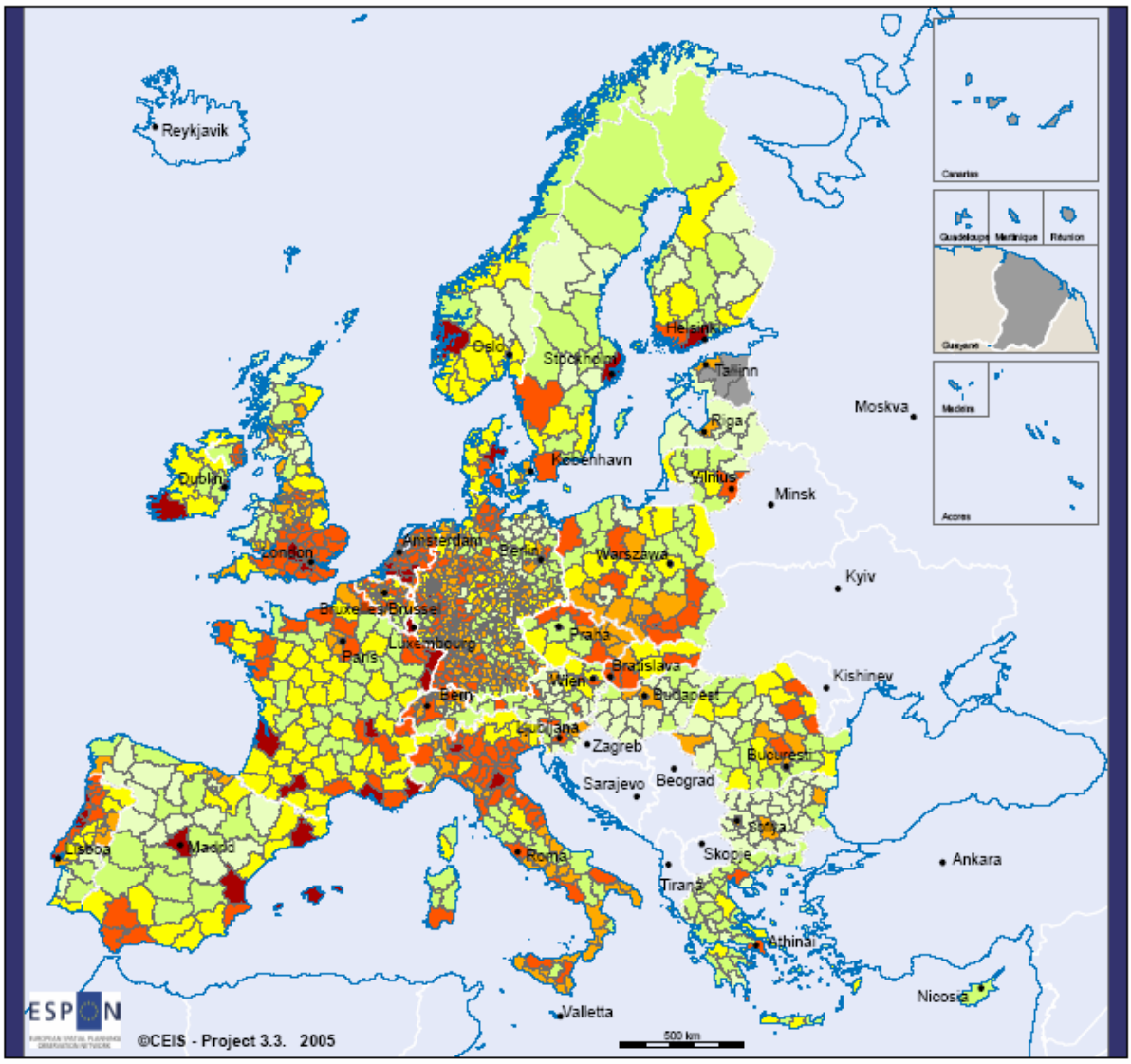
The Global/Local territorialisation (Fig. 4) picture some particular phenomena:

- the highest concentration (absolute value) in Centro of Portugal; Madrid, Valencia, Catalunia and Islas Baleares regions by several reasons (from tourism to business and population behavoiour); Aquitaine, Midi-Pyrénées, Provence-Alpes, Rhône-Alpes, Alsace, Ile de France in France; Emila-Romagna and Piemonte in Italy; Luxembourg; Noord-Brabant and Zuid-Holland in Netherlands by the recently business development; the more Eastern Denmark region; Inner London in UK; The Southern Ireland region; Vestlandet in Norway; Stockholm in Sweden; Väli-Suomi (Helsinki region) in Finland;
- the highest attitude to have got G/L territorial interaction is concentrated into central Pentagon area; from the South-East of England Netherlands to North-South-West regions of Germany; from Switzerland to Centre-North and the South of Italy; the boundary area between Poland and Czech;
- low and very low perspectives seem to involve the central regions of all EU countries.

So it could mean both the local perspective is more interesting than global one for the European government and citizenship, and definition of pheripheral area should involve a major number of regions, independent from the general economic or material resources.

This could be mean that the Globa/local interaction depend more from social cohesive aptitude of local population-enterprise-policy makers relationship than an effective offer of investments.

Figure 4: Determinant Global-local interaction – Territorialisation



LEVEL OF TERRITORIAL Global - Local

- A ABSOLUTE
- B Very HIGH
- C HIGH
- D MEDIUM
- E LOW
- F Very LOW
- no data

2.2.3 *Quality*

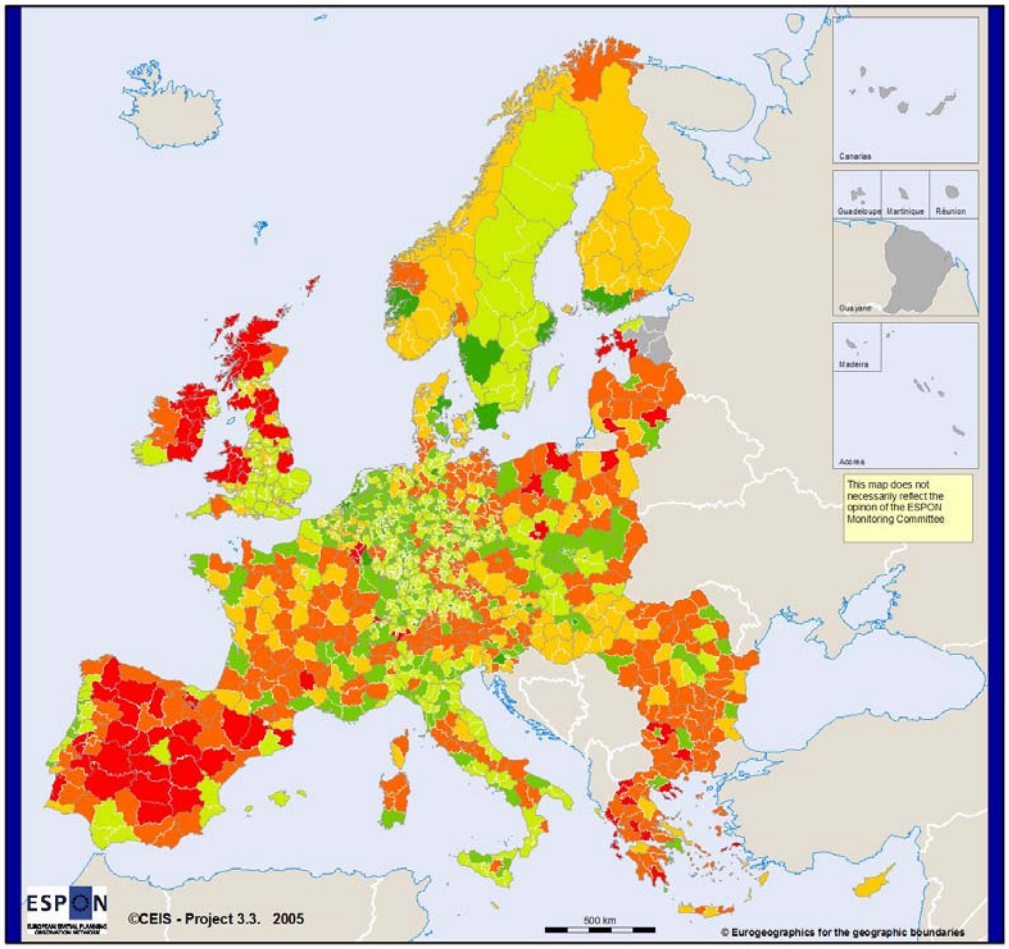
Looking at the European system, the Quality determinant shows some significant situations.

The final value of *Quality determinant* suggests to dedicate priority projects related at Ireland, United Kingdom, Estonia, Slovakia; immediately after, at the France-Italy axe, the Cyprus-Greek-Bulgaria-Romania one with an involvement of the Latvia-Lithuania-Poland- Czech axe.

The final value of *Quality determinant by quantile distribution* confirms the final previous evaluation.

The territorialisation (at Nut3) (Fig. 5), beyond it is fragmentized, shows and confirms the critical situation in many regions of the previous re-called countries. Particularly, this is true in a great part of Spain, Ireland and Austria, the North-East of UK, in the Centre-South-East of Italy, a great part of Greek-Bulgaria-Romania, the boundary regions in Poland toward Lithuania and Latvia (which must be included), the central zone of France.

Figure 5: Determinant Global-local interaction – Territorialisation



Legend

CLASSES

- Absolute
- Very High
- High
- Medium
- Low
- Very Low
- No Data

2.2.4 *Resources and Funds*

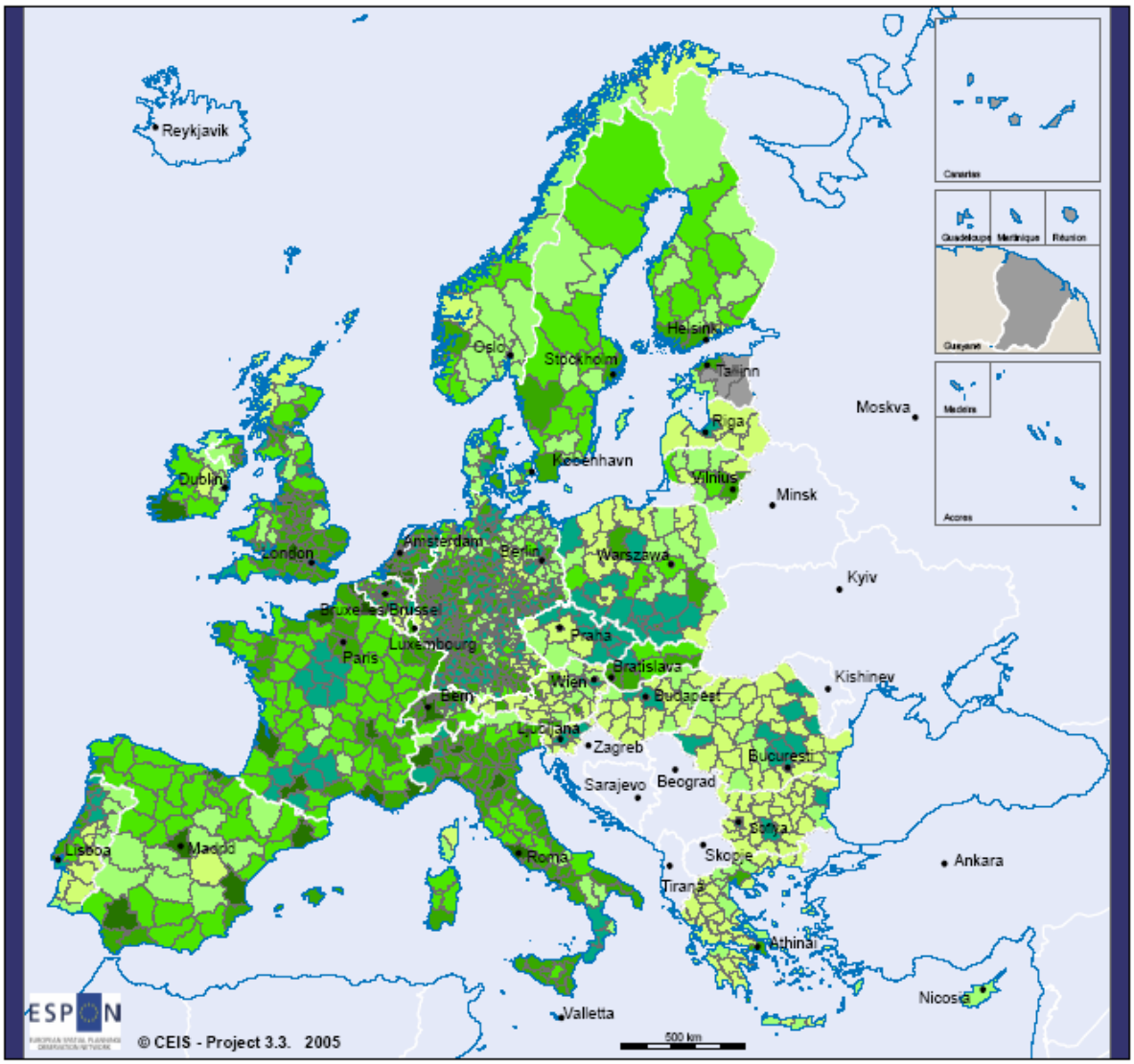
The confront between the *two final maps of R&F* pictures a general uniformity at national level, but some different levels at regional level.

At national level, the EU 15 countries has got a *medium-high* profile about the level of resources and funds, except the Scandinavian countries and Greece (*medium-low* profile); the new countries, except Lithuania, Estonia and the capital regions, picture a *medium-low* profile, justified from the use of the pre-access funds. The general national stutus quo in the use of the funds is *high* for Spain and some German lenders

At regional level, the differences are more strong, with a *low* profile in few Mediterranean regions as the Southern Italy, Portugal, Greece and the Eastern regions; a general *medium-high* level in several regions, *few high* levels into some regional enclaves of United Kingdom, Germany, France, Italy.

This difference begins interesting if we look at the territorialisated (Fig. 6) crossing the regional R&F Q data with the territorial typologies at NUTs3. Here, the values from *medium-high* to *absolute* are distributed into old and new regions, and all countries have got almost one region with low values

Figure 6: Determinant Resources and Funds – Territorialisation



3. Key policies recommendations

As expressed several times throughout the present and the past interim report, the main aim of the work of the project team is to set up a sound scientific and political basis to suggest a guideline for an effective distribution of structural funds, with the final goal of balancing the regional differences. In our approach, and by the respective research, such guideline should rely on the concept of regional capability to be competitive in sustainability.

The methodology explained in the previous chapters has provided a means to make this concept operationally assessable, in the very end, by map and/or database reading.

Therefore, the policy recommendations that are presented hereafter, are based on the above defined procedure, which, at this stage of the work, is still to be perfectioned. Nevertheless, the main outcomes of both basic indicators and final determinant processing and mapping, although far from being totally reliable and validated, allowed a readout of some well-known or new but realistic regional behaviour/performances which, in turn, led to what is here presented.

In order to detail more appropriate policy recommendations about the territorial application of Lisbon/Gothenburg strategy, in the following we present a significant synthesis of the more important suggestions about both the national and regional capability to be competitiveness in sustainability, and the project topics with respect to the renovated aims (see Scientific Summary, cap. 6).
Regarding **I&R at national level**, it is proposed:
- to draw some common measures (sub-forms of operative and infrastructural project) directly dedicated at that countries with very low I&R profiles. These measures could be organised in sectoral interventions and include as priority input into the new SF cooperative network. It is suggested to prefer and to involve in these project as Lead the East countries, measuring their reliability with respect to their financial national plans. It could be a measure of their really intentions to invest in an appropriate thecnological base (need to have I&R exchanges and a growth about ICS);

- the national policies must be addressed to sustain the population access at Information Society (population "surfing the web") in great part of European countries and the firms access, too in Eastern countries and Mediterranean area to start up of to more intensive internationalisation policies;

- the base of the ICS must be the education, which must be organised to be more near at the EU goals and to offer a common platform for obtaining – in a medium time perspective – a more efficient human capital structure. Particularly attention must interest the medium age population and their possible re-involve into productive system with new responsibility positions. To make this, it is necessary to start from the tertiary education level by life-long learning projects;

- sectoral policies must innovate and restructure the knowledge innovative structures and R&D infrastructures with the help of new telecommunication systems (new dedicated technologies by European patents) to sustain a very intense exchange between research products and their applications and operative level.

Regarding **I&R regional level**, it is proposed:

- to link I&R at the local job market, opening the access at new Structural Funds at a more strictly joint between SM firms-regional institutions-educational/research system;

- to have a major local dissemination of SF projects into local/regional system, to open the EU participation at the public-private cooperation, favoring more integration with the EU vision of IC society; and to dedicate more attention to involve into new SF education access both the Mediterranean and North Sea regions, and the Baltic ones, including Estonia, Latvia, Lithuania and the Eastern European regions. It needs to balance the EU offer and mobility of Human Capital, more positive in the Eastern regions than the old ones where the medium age of population is higher;

- to actualise the education policies to the international needs, particularly with respect to tertiary education level in the Mediterranean regions for contributing to have almost same Pentagon, Sweden and Finland regional level in order to realise new knowledge innovative structures both at EU/national level and regional one and to obtain more telecommunication horizontal structural connection for guaranting a major integration of the Europe system, over taking the design of the positive '**Y**', using especially new technologies contributions.

Regarding **Global Local Interaction at national level**, it is proposed:

- to ask the quickly full reception of major European and international agreements and experimental use of the European strategic

assessment processes, particularly Enviromental Strategic Assessment applied to policies, programs, plans at different subsidiary level of constitutional country organisations;

- to create a common language in the global 'arena' of sustainability and sustainable development to share some principles and the relative applying rules about G/L governance to stress the EU countries positive attitude (transforming it in a virtuous behaviour) in front of making sustainable plans;
- to sustain some Specific Environmental Concerns, as Kyoto Protocol, with an appropriate techniques and technological support (e.g. IPPC, BAT, etc.) particularly into delocalisated investments towards the new Eastern countries;
- to guarantee an appropriate level of security of population migration into EU countries, re-scripting the relative agreements. In this picture, it is fundamental the metropolitan capitals roles of the old European countries and national borderline regions. In this last case, it need to discuss the role of boundary regions into new ESDP and their planning choices;
- to valorise the benckmarking studies about tourism, stressing the local and endogenous resources and their sustainable use, putting attention to difference the single projects in order to be cooperative at European scale and competitive at global one. In this contest, it is possible to valorise projects which link tourism at education mobility, or where it appears this relationship and the link with global cultural system;
- to valorise the researchers exchange on the base of applied project which involve the use of new technologies with a low impact and their international patent;
- to launce specific environmental projects which involve the excluded active population. They have the aim to create new and different employment occasions linked to the local endogenous job market, particularly in the coastal or boundary ones, looking at having and maintaining social interaction;
- to launce specific manufacturing enterprise policies for restructuring this sector, e.g. fixing common new labour cost values and fiscal pressure to re-launce the internal product market in the respect of local productive identity. Some particular policies about the energy self sufficiency and the carbon re-launching with a parallel attention at the experimental use of sustainable technologies in different sectors are needed. For this aspect, it could be good to look at the government position in front of nuclear energy choice, too and at the substantial absence of energetic raw materials in some EU countries;

- to improve the general territorial appeal by territorial marketing studies to offer at the international investments some positive place in alternative at the capital regions and to active structural interventions about multimodal accessibility involving them in the future ESDP and the EU Infrastructural Plans. For this it could be to need a revision of actual state of projects into corridors and network connecting, e.g., Adriatic and the Eastern regions, or the Portuguese-Spanish-French one. In this review it needs to put attention at the intra-regional organization, too, particularly in the Northern countries;
- to contribute for having a common country fiscal pressure (on the example of flat tax) offering an "homogenous blocs" picture at the global system of investment (DFI in and out);
- to make a revision of the current economic variables, e.g. trending to obtain a common level of Labor Cost Index, Long term interest rate, etc., but also a real economy interaction;
- to implement R&D infrastructures for each countries studying strategic localisation in different regions involving credit institutions level and insurance companies to have got common and dedicated policies, to balance their localization too, and to sustain a better general management attitude;
- to fix clear common procedures to found the territorial sustainable limits about growth and investments.

Regarding **Global Local Interaction at regional level**, it is proposed:

- to stress the adoption and application of common general Environment Concern at regional level, integrating them with more specific enterprise technical and technological measures. This needs to resume the environmental protection measures into a Unique Text or Manual to sustaining international and transnational cooperative programs, plans and projects with regard to ESA, EIA, BAT, IPPC, TQ;
- to measure the sustainable level of population change into large areas and metropolitan regions to re-design centrality places into ESDP and the polycentri/polinuclear regions guarantying qualitative choices about settlement capability and its good life quality. For obtaining this goal, it needs to re-launce the role of rurban and periurban areas;
- to sustain specific cooperative projects between well known tourist places and Eastern regions, favouring the peripheral or internal regions that show a low participation at this phenomena but result to have got a great cultural and historical tradition. For them the EU new projects can think, by Structural Funds, new and innovative solutions linked at the local hiddenites, probably less competitive in

the short period but more sustainable and cohesive: it is possible to relise a better offer about the tourist marketing. It could contribute to link the tourist phenomena to the young mobility into the exchanges of European student mobility that involve the same regions of the tourism outbound. Of course, this strong relation should be oriented to sustain the family income and the European regional GDPpps per capita, too, in the respect of the different cultural positions, offering a new educational and knowledge system by globalization inputs and IC society;
- to confirm a more open and global position towards the student and researcher outbound regional mobility sustaining the regional systems to be very much attractive for the researchers which work in technological fields and require a strong link with enterprise system too, or the availability to make network in scientific/technical projects, favouring the cultural and operational exchanges;
The previous suggestions could be introduce a new topic in Espon projects in order to* 'research/education delocalization'*.
- to stress the delocalization of these suggestions with regard to population mobility, particularly in borderline regions;
- to confirm and sub-script the regional stability pact about the active population, using the cohesion regional funds to reinforce the local social interaction, involving in this pact the manufacturing enterprises to sustain the bottom-up structural change in economic European activities, in the past years focused on manufacturing production and local trade activities;
- to maintain the productive system identity changing the regional economic model by specific fiscal and financial instruments;
- to consolidate the internal good trade and services trade to built a common economic base using the same rules of the free EU market circuits, favoring the internationalization position of regional systems and city-regions;
- to homogenize the regional fiscal pressures involving some public service offer and the labor cost, for re-organising the economic situation on the base of a project which looking - in the medium period - at interest rate, the banking status and attractive element for transantional investments. This perspective could re-launce the I&R organizational rules and its infrastructural base; but also the regional *Economy capability to make Interaction* by a dedicate policy about credit institutions and insurance companies to guarantee a positive performance and offer, a more strategic localization organised on endogenous models, reinforcing the existing external links;
- to re-organise a balanced distribution of management attitude with respect the global financial interaction and the regional capability to

have a real contact with the global vision, contrasting the highest regional concentration and favoring new externalities and economic territorial vantages. This position coul contribute to re-launce the role of peripheral area involving a major number of regions, independent from the general economic or material resources, but on the base of social cohesive aptitude and local population-enterprise-policy makers relationship.

Regarding **Quality at national level**, it is proposed:

- to use more indicators than one (e.g. GDPpps per capita) to assess the country positions and to harmonise consumer prices index and the consumption aggregates (at current prices) towards a common medium level in all UE;

- to connect the level of employment (employment index) and its organisation in the traditional industrial regions to the de-industrialisation process;

- to change the parameters to assess general economic performance (now calculated by traditional economic variables) for mitigating some specific situations linked at the growth of consumptions and prices about the goods and services due at the enlargement;

- to change the parameters of calculus of buying power looking at EU goods of large consumption;

- to stress the *infrastructural variables of cohesion* as significant measure of welfare efficiency as well as the internal integration tendency of the EU states, and to propose new welfare common policies about health, recreation services, education, etc. It is possible to look at an first possibility to organise some cooperative intraregional transnational areas, on the base of a similar infra-structural 'corema' (e.g., France, Italy, Austria, Switzerland, Germany; or Finland and the three Baltic republics);

- to complete the network of physical accessibility and multimodal organisation, and horizontal TCL development by new and advanced technologies and to consider the cohesion variables as significant base of starting up these development projects into peripheral areas involving different people to exchange cultural contributions, too;

- to consider *life quality* as a complex synthetic index, representative of the regional identity into EU context, using it to measure the results of SF interventions;

- to ask the full national and regional taking in of the "Governace White Book 2001" considering *government quality* a fundamental

point of European integration and a measure of the common European political filing. For this it needs to consider the government quality as a text to regard the trend and the attitude towards a common institutional and constitutional European goal;

- to use the subisdiarity principle and its rules to create a link between government and governance, looking at the territorial government as both a general political bottom-up vision (national policies in agreement with regional and local policies, programs and plans), favouring intra and interregional cohesive instrument, as well as a new intergenerational pact between state and citizen; and an opportunity to re-define some equal rules based on laically ethic applying basic principles (e.g. the sustainability) by a different choice of power exercise.

- to fix different governance rules with respect to the geographical/territorial scale of applying (urban, metropolitan, regional) to clarify the different territorial and productive aims, deciding the strategies to catch them up, monitoring the performance and cohesion;

- to consider the ESA linked at the governance rules a possible operational substitution of EU open coordination method and a support of the SF project choices, which is capable to accompany the European technical and political working method from the beginning to the end;

- to consider the national government and local levels as governance institutional promoters, suggesting praxis, procedures, guide-lines useful to orient the investors, enterprise systems, and entrepreneur's action to the project "best practice";

- to use ESA and governance for measuring the efficiency of economic and territorial actors and introducing innovative methods into planning (i.e. to define new and appropriate economics and financial strategies), involving the administrative system (management), the political system (board), the law system, the citizens, the productive system, etc. identifying and re-modelling both the technical-financial incentives to catch up common aims, and the procedural choices to have an efficient and sustainable development project;

- to ask the taking in of Total Quality norms and Environmental Total Quality (e.g. Emas) into the territorial plans and enterprise and institutional action as management base of competitiveness model;

- to improve the citizenship confidence in some countries working on the participation at the institutional life by communication systems to

explain the European choice, e.g. in matter of financial and monetary policies;

- to propose a common reflection about *Social Quality and Cohesion*, evaluating the quality of some indicators at the base of social and welfare system, as particularly capability of sustain the balanced and satisfied relationships into the whole civil society (from stakeholders to shareholders, etc.). These indicators could be different for EU countries, but their political organisation and national/regional cost must be the same one with regard to the medium income distribution;

- to consider the need of implementing Social Cohesion resources to contrast the risk of social exclusion, particularly the children exclusion one aged 0-17 who are living in households where no-one works and the general level (Index) of poverty in Mediterranean area and along the Eastern boundaries. In this case could be useful to reorganise the social wellness aptitude with dedicated SF which takes in charge the equal opportunity, with attention at the female employment ratio;

- to sustain the social-medical research on the fertility, particularly in these areas where the social organization is living a critical phase or in restructuring.

Regarding **Quality at regional level**, it is proposed:

- to use some result (e.g. the social wellness aptitude) to reinforce the cooperative regional projects, evaluating economic variables in relationship with regional structural situations, looking at productive de-localisation to contrast the open global market and re-balance with new network forms of transregional productions, involving the new Eastern regions;

- to revisit the regional welfare system towards a right equilibrium into both the old regions than new ones, with particularly respect to: the hospital beds' availability in front of the health regional demand; the hotel beds availability linked it at the Europe fitness tourism and health, too;

- to develop technological regional equipment, into transnational cooperative areas to development the society of information, communication and knowledge and the new types of technologies recalled to obtain the Lisbon objectives;

- to define new inter-municipal waste projects, particularly in matter of hazardous waste and waste recycling, esteeming the optimum territorial dimension of disposal relationship with new technology and energy sufficiency (e.g. FUA);

- to use ESA for building a regional Environmental Picture of knowledge to assess the project offer about the climate change and other environmental subjects to opposite the cross of waste and natural hazards;

- to reduce the dependency of regional social cohesion resources from the income distribution contrasting the risk of children exclusion and its dependency from the level of poverty and to reinforce the EU regional system which have already received some political cohesive inputs and pushes;

- to dedicate priority projects related at Ireland-United Kingdom system, Estonia, Slovakia; immediately after, at the France-Italy axe, the Cyprus-Greek-Bulgaria-Romania one with an involvement of the Latvia-Lithuania-Poland- Czech one. Some attentions must be towards the regional positions into Switzerland and Poland with the addending of Slovakia Rep., Czech Rep., Slovenia, Estonia, United Kingdom. This confirms the previous suggestions about the transnational cooperative priorities in these areas. *Life and environmental quality* adds at critical Spanish situation the one of Italy, Ireland, Greek introducing a more detailed priority into cooperative transbourdary field. Particular attention is due at great part of Spain, Ireland and Austria, the North-East of UK, in the Centre-South-East of Italy, a great part of Greek-Bulgaria-Romania, the boundary regions in Poland toward Lithuania and Latvia (which must be included), the central zone of France.

Regarding **Resources and Funds at national level**, it is proposed:

- to balance the regional differences into new SF distribution on the base of regional capability to be competitiveness in sustainable;

- referring to the *Policies for the Lisbon Strategy (Structure)*, the Lisbon recommendation for regionally led innovation poles would seem to be most appropriate, particularly if backed by EIB funding, also as suggested by that strategy. To compensate for the inadequacies in Central and Eastern Europe, new strengths may emerge by building up interventions in leading areas as suggested by the team leaders in ESPON project 1.1.3. The map indicates that the central areas of the capital cities of Poland and the Czech Republic are already leading the way in this regard. Given the situation of peripheral areas, the recommendation of ESPON project 1.1.1 – to prioritise the provision of higher order services to second and lower tier cities would be pertinent – in order to broaden the competitive position of the EU as a whole. In addition, targeting isolated rural

areas to tackle depopulation as suggested by ESPON 1.1.2 and 1.3.2 teams would perhaps produce a more balanced picture in the future;

- referring to *Firms Aids*, polarisation as economic support is fairly clear cut – virtually the whole of Central and Eastern Europe, Ireland and Portugal have the *lowest* level of state support to firms. In the latter two cases the reason may be reliance on EU monies;

- referring to *Human Capital Expenditure*, here there is less polarisation, a more even spread of expenditure, except for Greece, the Czech Republic, most of Hungary and Slovakia and parts of Spain and Portugal.

- referring to *Public Expenditure for Employment*, to contrast the diagonal concentration of high public expenditure from Ireland through to Italy, with the South West, North East and Central East exhibiting much lower levels of expenditure. It would seem logical to follow the Lisbon Strategy in terms of human resources – i.e. building up the service sector in IT, telecommunications etc. in these areas to sustain more specific Human Capital Policies

- referring to *Climate and Natural Resources Expenditure*, to sustain the expenditure in the East, only matched by Southern Portugal, Corsica and small areas of Southern Belgium and Northern Italy. Recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems.

- referring to *Structural Funds and Accessibility by Population* it is interesting in terms of the dark red clusters and in the light of the recommendation from 2.1.1 that transport should be developed to enhance EU competitiveness as a whole – and not directed to national objectives. One would hope for a different map in 15-20 years if ESPON recommendations (1.1.1 and 1.2.1) of developing corridors between urban areas are followed (n.b. The choice of indicator for accessibility is interesting here - hours by car - in view of ESPON 1.2.1 policy conclusions and the Gothenburg Agenda.).

- referring to *policies for the Gothenburg Strategy (Structure)*, it needs to contrast the lowest expenditures of Netherlands, Belgium, Germany and then Central and Eastern Europe, arriving at the same systemic coverage. In the Gothenburg Strategy public health is one of four priority areas for inter-EU agreement, thus more standardisation in the future would be expected.

- About *Public Expenditure for Poverty and Ageing*, it need to have higher expenditure. Lower levels of expenditure elsewhere may to a

certain extent reflect demographic differences. High spending may also demonstrate the need, according to the principles of Lisbon, for labor markets to become more inclusive of older workers.

Regarding **Resources and Funds regional level**, it is proposed:

- to contrast the constitutional differences which play an important role in the application of Lisbon and Gothenburg strategies;

- referring to the *Policies for the Lisbon Strategy (Structure)* it should be to look at some regions (of UK, Belgium, Austria, Germany, Netherlands, France, Denmark, Sweden, Finland as well as the central areas of capital regions) that represent a good bench by the effect of an autonomous regional government (federalism or similar system) organising an homogeneous and endogenous system of firms aids, too;

- referring to *Human Capital Expenditure*, it must be linked to *Public Expenditure for Employment* contrasting a diagonal concentration of high public expenditure from Ireland through UK to whole Italian regions, as well as the low expenditure in Spain, Norway, Greek to follow the Lisbon Strategy in terms of human resources. In these regional areas it should be necessary to sustain more specific *Human Capital Policies*, as well as in Austria and Belgium.

- referring to *Climate and Natural Resources Expenditure*, SF must be dedicated to contrast a substantially lower expenditure in the Eastern regions. For them, some recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems. Generally, the old EU regions have got an *high* and *medium-high* conscious about the environmental problems and a lot of them are drawing long-term plan to arrive at the full sustainable development (see the recently re-lunched of the Kyoto Protocol). In a lot of cases, this choice is sustained from the regional enterprises system (see Quality).

- in relation to *Structural Funds and Accessibility by Population*, it is necessary to balance *high* values of the capital regions with the few level of Campania and Sicily (Italy), Herefordshire and Shropshire in the North of London (UK), Norte e Centro (Portugal), Castilla y Leó (Spain), Belgium and Rastand Holland (Netherlands), where there is a major sprawl of productive settlements (periurbanisation/rurbanisation phenomena) which needs of a quickly access;

- referring to *policies for the Gothenburg Strategy (Structure)* and the relative public expenditure for public health, it needs to reflect about different priorities in the development regional plans. E.g., the public health to answer at Gothenburg Strategy is one of priorities of Mediterranean regional governments, but it is not the same in Baltic area or in other countries, where the welfare organization is more balanced from a long time and the Public Expenditure for Public Health has a constant and continuous level.

- to stress a radical changing in the regional government priorities into some countries and their more attention to apply the European policies about *Public Expenditure for Poverty and Ageing*, the highest expenditure is apparent in the over same regions. It should be presented as a measure the cohesion trend, too and to influence the future *level of cooperation* for the Interreg project use of resources involving all the regions respect to a medium-high level of old regions.

- to over come by new ESDP the North/South divide because it is the strongest division, followed by an East/West divide and to a certain extent a Centre/Periphery one.

- referring enterprise aids, polarisation is a possible virtually economic support for the whole of Central and Eastern Europe to involve the old and female workers, too.

In the last time, the approaches and the points of view about the Lisbon questions are not often similar.
Some right indications and new topics come from several meeting and conferences, which have debated the renovated Lisbon Agenda and some Gothenburg aspects (as climate changing) in the last year.
3.3 project took on some of these thesis, as **Metrex contribution** focused its attentions on some points of the renovated Lisbon Agenda in agreement according with the slogans "*A new start for the Lisbon Agenda: Working together for growth and jobs*" and "*Urban Change created Climate Change"*, for contributing at the definition of spatial planning and development.
Metrex attention is concentrated on some themes and plans (see Scientifi Summary, Cap. 6) and promotes the metropolitan level and dimension to experiment this connection, because in these areas it is possible to have appropriate competencies, capabilities and processes and at the same time to text quickly comparatively the results of different policy initiatives.
In order to choice some appropriate instruments to apply the renovated Lisbon Agenda, several contributions focalized their

attention on *benchmarking*, as propedeutic approach at marketing actions.
An other useful indication comes from the studies about vertical and horizontal integration. It is linked both with the subsidiarity (for its real application in all EU countries) and the planning integration at the different Nuts levels: *the vertical and horizontal integration of strategies and plans appears an important aspect of effective governance and hence of economic competitiveness* into all better experiences. Of course this recommendation values for the financial system, too.
About the contribution at definition of European Spatial Planning, 3.3 project agrees with some Metrex and others purpose:
- to have a major business confidence between goods and services exchanges;
- to reduce investment risk
- to maintain high and stable levels of economic growth
- to sustain social progress, which recognizes the needs of everyone
- to realize an effective protection of the environment by a prudent use of resources

and about the new start for the Lisbon Strategy
- to sustain more attractive places to invest and work
- to specify the investment in knowledge and innovation for growth reating more and better jobs

Particularly, 3.3 project sub-scripts and integrates the Metrex spatial planning and development contribution to the Lisbon/Gothenburg Strategy:
- to reduce the need for road travel and to facilitate the efficient import and export of goods
- to minimize congestion and facilitate the efficient movement of goods
- to widen the accessibility to the labour market
- to accommodate business needs
- to make the urban area more equitable
- to provide an acceptable and affordable home for every household
- to focus integrated remedial action
- to protect and improve the health of residents and workers
- to provide access to recreational opportunities for all
- to protect the setting of metropolitan areas
- to make metropolitan areas more attractive places in which to live and work
- to contribute to better ecological balance
- to maintain and improve the quality of water supplies
- to reduce the risk of flooding
- to reduce the need for urban expansion

- to sustain this resource for future generations
- to reduce the consumption of minerals from primary sources(optimize recycling)
- to facilitate a more sustainable approach
- Urban Change must solve Climate Change to achieve Kyoto seeks, renewable and energy saving, behavioral change both individually and corporately, assessments and budgets of all kinds on a carbon cost as well as a financial cost basis

Other positions and sharable suggestions by EU documents and thematic literature review:

- EESC thinks the Lisbon Strategy must be recognized for what it is, a very ambitious agenda for building a European society of prosperity, welfare, competitiveness, social inclusion and a high awareness of the environment;
- the COR position is different and strongly in favor of an integrated approach, in agreement with 3.3 project position;
- facilitate access to finance, in particular Venture Capital and SME guarantees, notably micro-loans are the suggestions coming from other opinion groups or lobbies, which acting at European level.

Particularly, about competitiveness and Lisbon Strategy, SME ask to have more projects (and, obviously, finance) geared towards:

- supporting innovation and tech transfer
- technical assistance and advisory financial services provided to agencies working for creation and development of SMEs

for development and sharing of good practices with public and private business partners, across Europe, in the respect of Access Intellectual Property

They ask also to include new instruments to better meet the Lisbon objectives:

- a **new risk capital instrument** to the existing instrument fostering SME start-ups. This is aimed specifically at innovative and high growth SMEs.
- a significant proportion of these resources will be dedicated to supporting SMEs developing or using **environmental technologies.** Investment in side funds with **Business Angels.**
- an instrument for **securitisation of bank loan portfolios** will free up further SME loan capacity amongst smaller and regional banks, which are the typical interface for family businesses.

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Part II

Scientific Summary

30 September 2005

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This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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The partnership behind the ESPON programme consists of the EU Commission and the Member States of the EU25, plus Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

Information on the ESPON programme and projects can be found on www.espon.lu
The web side provides the possibility of downloading and examining the most recent documents produced by both finalised and ongoing ESPON projects.

This basic report exists only as an electronic version.

As you will be asked for the name and address of the editor the Lead partner should as the responsible person of the project assume the role of the editor and give information accordingly.
The registration in the world wide catalogue is free of charge.

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Introduction

In order to address the complex economic concept of **competitiveness** (Lisbon), and the even more complex one of **sustainable development** (Gothenburg), the ESPON 3.3 project focuses on evaluating the coherence of the **territorial dimension of the Lisbon and Gothenburg objectives** with respect to current and future challenges **in the Structural Funds**.
The project studies economics competitiveness as a system, as well as that of territory and the environment, to calculate the **carrying capacity** of the economic/territorial/environmental systems at national (spatial systems) and regional scale (large areas) to be "**competitive in sustainability**". In the 3.3 project, this concept is to be distinguished from that of "sustainable competitiveness", which is commonly intended only in economic terms. Instead, by identifying territorial differences, European regions and states will be provided with cooperative possibilities, both on the basis of common carrying capacities and of different chances to access the competitiveness arena (Structural Funds).

The **conceptual organisation** of the present project is focused on providing tools and indications towards policy solutions which will address some major issues that the EU is asked to answer in a short time. Particularly, it is focused on how to reach a cooperative solution for the territorial use of the Structural Funds on the basis of the **distinctive structural characteristics** that make a territorial area a subject in a global market.

Competitiveness in sustainability is able:

to sustain market competition through those endogenous factors that differentiate the EU territorial whole/systems (mix of social, environmental, economics indicators influencing the regional ranking within the enlarged Europe and in the international context);

- to face market competition with scenarios capable of guaranteeing environmental, social, cultural and economic sustainability;

to have some management faculties (components) capable of guaranteeing territorial competitiveness: awareness of its innovative capacity, organisation in networks, capacity for integrating different sectors and levels of activities, cooperating in and with other territories, involving different public and private subjects and institutions, having both a global, coherent vision which respects the

use of local resources and organising international, European, national, regional policies in a subsidiary vision.

The **methodological approach** is based on a qualitative-quantitative conceptual theory, also using the results of other ESPON projects, to calculate the **territorial capability**, i.e. the capacity of the territory to produce value and to own competitiveness/rank in sustainability at different levels.

The new point of view on territorial competitiveness in sustainability is based on a revision of the Porter's Diamond and its integration with new structural indicators (determinants) able to objectively compare European Member States and their regions. The 3.3 project chose the following synthetic indicators:

- Innovation & Research
- Global/local interaction
- Quality
- Use of resources and funds

This project reconsiders the indicators' relationship in the vision of the Sustainable Territorial Management Approach – STeMA.

It implies continuous confrontation and updating to increase the levels of awareness and participation to the development choices.
It defines the "playground" for every determinant and contributes to determine the *status quo* and *vulnerability judgements*, to calculate the state and the risk of compromising the system/determinant with respect to the Structural Funds plan.
Status Quo is the state of the determinants (the critical elements to be competitive) and is defined by state indicators. ***Vulnerability*** is the description of the *effects* of the determinants and is defined by process indicators.

Territorial Typologies, derived by crossing Urban-Rural (ESPON project 1.1.2), MEGA/FUA (ESPON project 1.1.1) typologies which represent the link with the territorial dimension to construct a **composite final indicator** of territorial competitiveness in sustainability.
In our case, it becomes the **territorial capability**.

After having presented, in the first chapters, a review of the definitions of key concepts also found in previously released ESPON projects' reports, the TIR gives an example of statistical analysis of territorial competitiveness, by performing an exercise on the basis of 12 of the 14 "Spring report" structural indicators at the national level. The aim of this part of the work is to understand to what extent this reduced list of indicators may provide a territorial dimension to the

Lisbon-Gothemburg strategy, as well as to establish a "reference point" against which the results of the new proposed methodology are compared. The details on the approach and the methodology, as well as the resulting maps are explained in the chapters 4 and 5. The analysis is applied at the regional level (NUTS 2). The territorial dimension is, in addition, introduced as described above, corresponding with territorial typologies at NUTS 3 level.

Finally, from each ESPON project, **recommendations, scenarios and the implications for competitiveness and sustainability have been considered**, where evident and appropriate.

The main work of the ESPON projects focuses on the comparative advantages of European regions, for instance in locating 'hot spots' and 'cold spots'. The projects also focus on the economic performance of regions and the level of employment in a region, as well as where important development factors such as R&D, accessibility, ICT, nature and cultural assets are located. With regard to the fulfilment of the Lisbon objectives, this territorial perspective indicates that not all regions are potential 'Lisbon areas'. Consequently, some regions need to develop their economic base around other assets as well. Innovation capacity is shown to vary across the EU. Overall, the successful development of regions requires integrated packages of initiatives, and cooperation and coordination between sectors and policy areas at national and regional levels. In general though, enhancing European attractiveness would be supported if the European regions better exploited their diverse potentials.

The review above reflects the fact that previous ESPON projects have not considered sustainability and competitiveness concurrently, or their implications for each other. Indeed, some project conclusions infer that they are incompatible; however, the work in this project will attempt to unite the concepts through the development of the notion of competitiveness in sustainability and re-evaluate policy sectors in this context.

Policy recommendations are developed in an integrated or cross-sectoral way and in their development we will continue to work closely with the other projects in the third ESPON strand, in particular project 3.2 (Scenarios).

In this scenario, the EU embarks on a mission to implement the Lisbon/Gothenburg strategy. While large enterprises and advanced regions will adapt to the new requirements based on private resources (their own and external), the knowledge-based and innovative development of small and medium-sized firms and of more peripheral regions, will need to be supported by EU and national policies. EU and cohesion policy will play a more active role in these developments than previously. The most lagging regions are largely

"written off" as having little promise for improving the EU's competitiveness.
It is assumed in this scenario that EU policy will build upon this process as a very important factor of European cohesion policy and, simultaneously, factor of European sustainable development and competitiveness. Additionally, this development process will largely contribute to a more polycentric structure of European space and urban network.
The policy approach toward individual member states or groups of member states will be differentiated to reflect the different potentials of member states.
A methodological comparison among the issues concerning the several ESPON projects/programmes in order to point out any disparity connected with **Policy Recommendations** is also presented, implying a preliminary look at what had already been proposed – in the form of "suggestions" – within the ESDP policy and, through this, also achieved.

1. Theoretical background

1.1. Lisbon-Gothenburg Strategy: nature, aims, driving themes

The increase of processes that allow the production and distribution of commodities and services - worldwide globalization - requires a reflection on the interdisciplinary nature of the planning contents that policies, programs and projects must acquire to respond to the demand of cohesive, competitive development of regions and territories[1].

According to this view, economy and territory - the critical issues of an organization based on the circulation and exchange of human resources, information and knowledge - direct the decisions for planning and organizing a large area (national and regional decisions). This led to various interpretations, to which the European territorial aggregates responded with specific models (i.e., fordist and post-fordist, cohesive, *civitas* and citizenship, etc.). Today these models need to be reviewed in light of the new and more precise geopolitical trends dictated by the European Union enlargement, based on cohesion, sustainability and subsidiarity for competitiveness (Lisbon-Gothenburg strategies).

Given its direct, formal and substantial relationship with the possible model of future European economy (i.e. in relation with the new Structural Funds reform), the territorial dimension of these strategies is the place for experimentation and can still be planned. To do this, a series of diverse and priority actions for knowledge need to be put in place. The nature of these actions varies according to content (environmental, territorial, economic and social), sector (settlements, transportation, services), purpose (conservation, management, development), geographical-political scale (urban, periurban, regional large area, political-administrative area).

1.2. Indications by the European Union

The fundamental elements in the European Union structural framework 2000/2006 are planning as process and territory as reserve/product. The results obtained by the European Commission in 1998[2] with Sustainable Urban Development in the European Union, completed in 1999 with the European Spatial Development Perspective (ESDP) for country planning in

[1] Territory is an artificial concept, a synthetic entity of reference to physical reality, to indicate the projection of a given space into a terrestrial surface, geographically and historically identifiable. Natural and artificial forces act upon it designing, managing and organizing this space (Prezioso, 2003).
[2] Through the collaboration of Ministries and Agencies.

metropolitan areas, led to the first tools for the management model of persistency and transformations of economy, so as to achieve a shared model of sustainable development[3], with the following objectives:

- balanced competitiveness
- social cohesion
- urban redevelopment and restructuring
- good governance

This vision, still innovative in many contexts (particularly, in the new 10 EU countries), considers the environment as an internality of the economic-territorial system. It aims at achieving a continuous qualitative improvement, and it implies the acceptance of social and natural values. It also aims at guaranteeing the equilibrium of reference ecosystems, conserving the general equilibrium (natural and anthropic) and socio-cultural and economic values (the milieu and the heritage, broadly speaking), redefining instruments and intervention procedures; inserting monitoring techniques and providing a preventive assessment of policies, programmes and projects[4].

Because the planning process can be referred to policies and programmes (indirect), as well as projects (direct), competitive planning requires a redefinition of objectives, contents and techniques, starting from the ordering principle of sustainability.

While the historic polycentrism of the EU is already undergoing a crisis, the enlargement and peculiarity of the diffusive processes of environmental sustainability become evident in territories between areas of cooperation (cross-border areas, thanks to the bottom-up development of economic activities that consume free spaces and join settlements).

Therefore, the research for environmental integration is intensified not through institutional solutions, but aiming at governing the complexity of the environment on a national and trans-national scale through "top-down" and "bottom-up" relationships[5].

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[3] Referring in this case to the concept of *Sustainable Development* (from limits to growth in 1970, to the Commission in 1987, to the Rio Summit in 1992) as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

[4] From the Dublin Declaration in 1990, through international conventions like the one in Rio in 1992, in Kyoto in 1996, and the macro-regional one of Maastricht in 1992-93, to the adoption of political programmes, like the one of the European Union, in favour of sustainable development (*VI° Framework Programme and Agenda 2000-2006*).

[5] It's even more the case after the Russian signing of Kyoto Protocol, with certain effects on the Eastern Countries economic planning choices.

The model is both interactive and diagonal, in order to integrate the central policies with those of regional (and local) systems, to safeguard the specificities carrying out the great options, already achieved in France, the Netherlands and Great Britain.

To this aim, the Final Communication (2002/C 48/26), by the Economic and Social Committee about 'Sustainable Europe' released in view of the Laeken European Council, is enlightening. Sustainable development becomes one of the most important tasks of the EU, to be pursued by adopting a more "radical" approach, as to induce profound changes in the life of citizens.

Through solidarity, governance and responsibility, sustainable development is no longer linked solely to an environmental solution, but also social and economic goals. It becomes a global ethical value.

New concrete elements are now added to the main themes of sustainability (climate, energy production, long-term solutions to transportation) (2002/C 54/03) discussed in the preceding Lisbon and Göteborg Councils (2000-2001). New indicators are introduced to sanction the indissoluble relationship between knowledge and the practice of sustainability. The permanent consultation with stakeholders (the environment's and territory's clients) is used to measure inter-generationally the policies for sustainability. National, regional (and local) governments are recognised as being promoters of endogenous solutions.

1.3. Subsidiarity and Sustainability: the binomial of new European policy

The term subsidiarity[6] begins to be debated in Europe, implicitly or explicitly, in the seventies, realizing that it could provide a contrasting force to "europessimist" attitudes or "eurosclerosis" judgements.

The former European Economic Community foresees in subsidiarity[7] an instrument through the Commission can exercise its control over the Member States. The latter have responded to the problem institutionally,

[6] Meant as the principle that privileges, in entrusting tasks, functions and powers, the level of government and administration closer to the citizen. This allows the government to provide an appropriate offer to the demand expressed by the citizen. In practice, subsidiarity represents the most suitable way to achieve flexibility in the supply and management of services. The EU uses this principle to strengthen the unitary systems called *regions,* as to create a form of local government capable of achieving integration.

[7] European Community's Commission (1975), *Report on European Union*, CEC, Suppl. 5/75 - Bull. EC; European Community's Commission (1975), *Tindermans Report*, CEC, Suppl. 1/76 – Bull. EC

by including subsidiarity in the dictates of their constitutions and imposing its application to the powers of the Commission.

Only at the beginning of the eighties subsidiarity becomes an indicator of the complexity of the European decisional process (1982 Draft Treaty), and when the Single European Act (1986)[8] comes into force, the power of the Community is still centralised. Member States carry out a review process of government practices and of individual norms that regulate the life of regions (in terms of decentralisation and/or regionalism), reallocating clear limitations to the subsidiary powers of the Community in the art. 130 of the Single Act that deals with environmental issues.

In this moment subsidiarity and sustainability meet and are established as the ethical principles unifying the policies of the States at a global level[9], with Europe as the guarantor of this choice[10.]

It is not a coincidence that the two principles of subsidiarity and sustainability begin together their path of acceptance and application in Europe. In fact, to be operative, both require a voluntary act by the collectivity, that claims their paternity "from the bottom", as an expression of a concrete demand of environment and government.

Therefore, the political terms of the European environmental issue are highlighted, and can be oriented towards sustainable solutions only by eliminating the democratic deficit, as defined by the Union in the European Parliament Resolution of 1990.

Subsidiarity and sustainability are, in fact, democratic principles, and the Report by David Martin at the Intergovernmental Conference in 1990, as well as the Edinburgh Summit (1992), have revealed that both principles are present in very few regional contexts[11].

From a theoretical point of view, sustainability has not met many difficulties in being adopted as guiding principle of the Community's actions, while for subsidiarity it has been more difficult, the problem being the increase in number of authorities and levels of power to attribute to the Union. Germany, where the principle is already in the constitution, and France, that uses it as a method, have expressed their support for this

[8] The act was signed on 17 February 1986. With this act the Treaty of Rome was revised and the current European Union scheme was born.

[9] The 1987 *Brundtland Report,* followed by the 1993 *Rio Conference* that produced *Agenda 21,* by the Conferences of *Kyoto* in 1997, *São Paolo* in 1998, and *Johannesburg* in 2002.

[10] At the time Gro Harlem Brundtland was the Norwegian Minister of the Environment.

[11] The Report uses as assessment indicators: monetary and economic integration; social and environmental homogeneity areas; the Union's Foreign Affairs; european population. D. Martin (1990), *Interim Report on the Intergovernmental Conference in the context of Parliament's Strategy for European Union*, Luxembourg, European Parliament.

increase, facing the opposition of Great Britain. The latter ascertains that subsidiarity has always been applied in Great Britain through the action of the local government, and from that experience a reduction of the number of levels of power has been decided.

During the Great Britain Presidency of 1992, subsidiarity becomes the pressing theme of the European debate, in view of the Treaty of Maastricht that seems to represent the basis for the construction of a Europe beyond the States. In that same period subsidiarity is used by the Union as an instrument to give pressure to Denmark to convince it to ratify the Treaty, to which it was opposed by referendum vote. In Federal Germany, the länder strongly opposed this way of applying the subsidiarity principle to the Union. It was too different to the one that allowed them to dictate the rules of the regional market and, therefore, to set up the historic negotiation between Bonn and Bruxelles, perceiving the threat of a transformation in their consolidated regional competences[12].

Subsidiarity has obtained full consensus, even though in some cases its sense and confines have been erased, forgetting that in the Treaty of Maastricht subsidiarity has been clearly defined in relation to the aims of the Union:

in art. A[13], where it is defined as a substantial principle through which citizens can orient all their political decisions;

in art. 3B, where it is defined as a procedural criteria to determine how and when the Unions acts.

On the constitutional level subsidiarity represents the level of government most suitable to respond to the problems raised by the population; therefore, the definition contained in the Treaty must be considered an applicative consequence of this definition. It is measured in terms of efficiency of the organization that promotes and manages the policies (the response), because the organization acts at various levels, one for each structure of government capable of achieving the objectives posed by the most efficient policy.

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[12] Jeffery Ch. and Yates J. (1993), "Unification and Maastricht: The response of the Lander Governments", in Jeffery Ch. and Sturm R. (Eds), *Federalism. Unification and European Integration*, London, Frank Cass, pp. 59-71.

[13] Treaty of Maastricht, Title I art. A: "By this Treaty, the High Contracting Parties establish among themselves a European Union, hereinafter called 'the Union'. This Treaty marks a new stage in the process of creating an ever closer union among the peoples of Europe, in which decisions are taken as closely as possible to the citizen. The Union shall be founded on the European Communities, supplemented by the policies and forms of cooperation established by this Treaty. Its task shall be to organize, in a manner demonstrating consistency and solidarity, relations between the Member States and between their peoples.".

The European Commission has decided to consider subsidiarity fundamental in the preparing actions for integration. This decision depends on the various competences that regions have in Europe and on the different solutions that each region requires in facing environmental problems.

Subsidiarity has become a procedure that maintains its value as useful principle within the limits of proportionality, i.e. as long as the Union's interventions are acceptable to both the Member States and the regions. In short, subsidiarity is useful to the Union in the case of far-reaching policies (environment, unemployment, culture, education); but it does not work when these common policies have to be transferred to a lower level, and be applied locally, in other words, when the directives become norms (environmental taxes, unemployment subsidies, provision of services, etc.).

The Intergovernmental Conference of 1996 has admonished the Commission to apply more correctly the principle of subsidiarity. Harmonization rules have to be imposed to obtain positive results from the use of subsidiarity, redefining the roles that the various levels of government have traditionally carried out in the territories of their competence.

However, by formally including the principle of subsidiarity in the Treaty, the competences between the sovra-national institutions (the Commission) and the Member States governments have been outlined. Everyone agrees that Europe must take a more flexible position in the policy-making and decision-taking processes, and also that flexibility is to be found again within the Member States.

Subsidiarity becomes the main instrument to carry out a flexible integration, even if it is clear from the premises that subsidiarity does not represent the only possible interpretation of cohesion to achieve integration.

The Commission's attitude towards this purpose is pragmatic, so that the knot of powers, and the levels that exercise those powers, is loosened. To this aim, in 1997 the Commission has led a new phase of institutional interest for sustainable development policies, related to constitutional discourse. Formerly, in the first phase, only cultural-scientific and pre-political documents were produced (Tab. 1.1).

Table 1: European documents and initiatives for the application phase I and II of sustainability to territorial policies

PHASE I	
1990	Green Paper on the Urban Environment

1992	Document by the *Europe 2000* Committee on the European urban structure
1993-97	Indications by the European Council, the Committee of the Regions, the Spatial Development Committee
1994	URBAN initiative promoted by the European Parliament (not by the Commission)
1994	Document by the *Europe 2000* Committee on the new European urban structure
1994	Leipzig: informal meeting of the territorial Ministers under the German presidency
1995 (pubbl. 1997)	*European Sustainable Cities* document
1996	Venice: informal meeting of the territorial Ministers under the Italian presidency
1997	Towards an Urban Agenda in the European Union
1998	Noordwijk: informal meeting of the territorial Ministers and formal presentation of the *European Spatial Development Perspective (ESDP)* draft.
1999	First Structural Funds Reform
PHASE II	
2000	Lisbon Council (ten-years strategy)
2000	Nizza Treaty
2001	Göteborg Council
2001	*White Paper on European Governance*
2002	Laeken Declaration
2003	Intergovernmental Conference
2004	III European Cohesion Report
2004	New European Constitution

At the end of the first phase, the institutional binomial sustainability/subsidiarity can be found in three specific points:

- the declaration of common European interest for the maintenance of a balanced and sustainable territorial development, based on a human settlement organization that is careful with regards to land consumption, and to balanced urban-rural relationships;
- the city and the overall urban structure are considered the new instruments of competition/cooperation between territorial systems;
- the urban networks are the territorial organization model. This allows for a system of medium-sized cities to achieve high levels of competitiveness, through synergy and complementarity relationships, and through network and specialization economies.

This is the condition for a balanced development and for the overall objectives of territorial equity and cohesion (integration), by intervening in

areas of exclusion and poverty, as well as in competitive areas, to improve efficiency and sustainability.

This approach is almost a declaration of environmental cohesion, and, as a consequence, the prospective horizon changes: no longer do we have a geographical and economic-political space with the city or region as administrative centre (defined by the "cage" of physical contiguities and environmental limits), but a broad, dilated territory designed by the system of external relationships. We have instead a territory that coincides more and more with the environment and the "variable geometry" economic space.

1.4. Citizens and citizenships participation: a way to realize a social and economic cohesion

The release of the White Paper on European Governance in August 2001, by the Commission of the European Union, marked a decisive turn for sustainable territorial management, because it formally codified a new relation between the territorial management (in terms of planning) and its stakeholders: the citizens and citizenships.

It has been a long time since this relation had intensified and has thus been discussed, becoming increasingly essential to realize a total participation of citizens in the decisional processes.

Without delving into the origins of this relation, it must be noted that, recently, private enterprises, and not public institutions, can claim its paternity. This paternity was brought about by the necessity of giving credible solutions to shareholders, clients, suppliers, stakeholders, in order to reduce uncertainty for investments in production and distribution of market goods.

Enterprises have called this process "strategic management" since the Seventies, and have acquired appropriate tools to govern it, among which are corporate governance.

Public institutions also manage their interventions, but, as the OECD had implicitly observed in 1998, in time they have been deprived of (or they have given up) a unified management process, abdicating the role of promoters of shared principles to merely exercise their functions.

The Union has followed, like for subsidiarity and sustainability, the path of voluntary adherence to this renewal, outlining an integration process between policies, tools for action and non-legislative tools.

Increased knowledge and interaction at local level are the starting points to redesign the territorial management process, so as to continuously

improve policies, norms and results, and at the same time consideri the regional and local specificities.

In this way, the Union outlines some regulations that have a strong impact in changing the behaviour of public institutions, and the general conception of sustainable development:

demand must be considered before the offer; the demand must be "bottom-up" and, consequently, the congruent offer must be measured from the "bottom-up";

policies, programmes, projects represent the offer and must respond to the demand;

the intersection demand/offer establishes the price, i.e. the equilibrium point where the State/citizen pact is completely fulfilled;

demands can be many and they can be expressed in different ways, because they refer to different markets according to the geographic scale. The same goes for the offers;

the geographic scale of the demand must correspond to the subsidiary level of the offer;

there are as many institutional levels as there are geographic scales in subsidiarity.

It would be desirable for the Union to definitively assume these conditions, by redefining the institutional levels in view of the growing federalism and in relation to subsidiary competences: policies for EU-State-regions, programmes for provinces, projects for towns and cities.

Anyway, the influence of the White Paper on the conception of sustainable development is evident. By contributing to the world's debate on governance, the Union had undertaken the global task of sustainability and promoted it as a shared principle, to be managed by applying the regulations of good governance, thus meeting its global responsibilities and strengthening the efficacy of the executive powers of international institutions (the Kyoto Protocol, for instance).

According to this perspective, the institutions of the Union and of Member States need to redefine the subsidiary role and to elaborate a common, global, political strategy, and to promote initiatives that guarantee the coherence of policies, programmes and projects to sustainable management.

The demand for sustainability does not necessarily refer to any organization, because it deals with ethical problems that regard subjective and institutional responsibility.

Consequently, if governance is used towards sustainable development, it cannot be internal anymore, but also external, transforming itself in urban, metropolitan/provincial, regional governance. In other words: territorial governance strengthens the cohesive culture of continuous consultation and dialogue, as well as the precaution principle, that supports public institutions in their role of risk manager, and of disinterested mediator of sustainable policies, programmes and projects.

From the territorial point of view, governance has been treated like the evolution of the current form of local government, or as strategic economic tool; that is, as an expression of the active (rather than reactive) behaviour of actors and institutions in this transition phase towards the decentralization of powers, thanks to the position they have adopted within the administrative decentralization. Therefore the use of governance makes sense if it is capable of increasing the participation and diversity of the actors (public or private), encouraging the agreements system and enlarged participation in urban policies. It must be noted that territory is the place where horizontal relations originate and grow, as well as being the forum for a substantial intervention by the population in State decisions for sustainability.

Governance, by its entrepreneurial application does not pertain only to public/private local relations and decisions, but it is also an indispensable tool for managing a complex territorial structure.

The notion of Governance has, thus, been recently redefined to reflect current territorial transformations (in urban and metropolitan cases). This confronts two typical behavioural problems: scarce participation in public local policies (in France this only happens in Nancy, while in Germany at all levels), and weak involvement of private actors.

Governance so intended, is an important element of territorial competitiveness in many countries, integrating the participation of "key actors" (mayors, presidents of administrations, experts, etc) with citizenships and stakeholders.

1.5. Reinterpreting the EU indications for the sustainable government of the territory

The EU has only recently defined a common vision for territorial management. It has been made possible by the fact that similarities have increased in the last two decades, as a result of: the increased level of knowledge and its diffusion, thanks also to new information technologies, the environmental matrix of plans, and especially projects, supported by the VI Framework and III Cohesion Report.

Within the European Union, cities are at the right level of discussion to tackle the problem of sustainable development. They are able to maintain their own values and identities (III Cohesion Report, 2004) and, simultaneously, to be competitive in terms of a compatible lifestyle, because of their development capability - not just in terms of growth - for future generations.

The driving themes of economic-territorial development have changed. These are informed by the research on strategies to achieve sustainable places, where the national and regional level of intervention and observation has to put into practice the principle of subsidiarity and achieve a position in the trans-national context (network or system) through effective social-economic cooperation to be competitive with the global system.

Diverting the attention towards *governance*, in other words towards methods and procedures of local government (regulations), the EU had in fact precluded the possibility of a direct intervention on single planning procedures, delegating to regional authorities the choice between different approaches:

- cooperative/institutionalist with direct forms of government, influenced by the interests of individual communes or groups of municipalities;
- argumentative/participative more open to trans-border cooperation in the periphery.

An initial review of the application of the *European Spatial Development Perspective*, reveals that, for large-scale planning, the European programmatic framework seems to resume three principles:

1. the common European interest in maintaining a balanced and sustainable territorial development, based on the institutionalised respect of sensitive areas and of areas of great cultural value, and on a human settlement organization that is watchful of soil consumption and that maintains urban-rural relations
2. the adherence to a *policy-making* European culture to respond to two important questions and concepts of scientific interest:
    - the large area (not urban) planning framework is the instrument of competition between territorial systems in this time of globalisation;
    - the networks of urban and periurban systems are the models of territorial organization, that allow a medium-sized city to achieve high levels of competitiveness through synergy and complementarity relations and network of bottom-up economies;

3. both in the case of regional networks of cities and large metropolis, the connection to the main trans-European transport and communication networks and the construction of an *equipotential polycentric system* (the ESDP model) are viewed as the necessary conditions for a balanced development, and for the achievement of the global objectives of territorial equity and cohesion (through interventions in excluded and poor areas), of competitiveness (improving the efficiency and accessibility of investors external to the city), and of sustainability (improving the energy network and the use of scarce resources like soil and natural areas).

Nonetheless, this hypothesis has to be improved because of the reductive use of the concept of environmental sustainability, the application of which is limited to saving scarce energy and resources and because of the incentives to deregulate methodologies of intervention, notwithstanding the statements of principle they derive from.

With respect to the two "main trends" proposed by the EU to solve the problem of sustainability and competitiveness:

- *spatial polarization*
- *functional specialization*

the possibilities for them to mature within the 25 EU countries - measured in terms of admissible policies and carrying capacity of urban systems - are few, given the emerging scenarios which are dominated by phenomena like:

- the dominance of large polycentric metropolitan systems rather than conurbations;
- the polarization along the transport network, with the exception of medium-sized coast settlements;
- a new hierarchy without internal borders;
- the urban-rural integration through the diffusion of the periurban phenomenology;
- further pressures on the "entrance gates" (that partly coincide with port cities).

Only now the EU is facing the effects of this experimentation and its integration in prescriptive terms (through the *European Spatial Planning Observation Network - ESPON 2006* Programme), from which – we hope - the II European Spatial Development Perspective will originate.

If sustainability is the new element of scientific debate[14], it must be broadly accepted that the places that have been traditionally seen as carriers of the European compactness, must be assumed as ideal forms;

[14] Especially after the release of the *Green Book* by the European Commission.

their permanence depends on the permanence of a sustainable quality of life, supported by investments of material goods, where non-renewable resources are used within the limits of development.

According to this view, a criticism of the binomial *sustainability=high density*[15] is implicit, considering that the political and technological innovations have accelerated the internalisation of regional economies, thus weakening or strengthening the position of some territories, without creating a stable trend towards general economic equilibrium.

Putting aside, for the moment, definitions made according to rigid hierarchical visions, it can be stated that the socio-economic and physical structures of European areas have adapted their configurations to specific local situations, ignoring for a long time any request to accept the indications for an environmental organization that is prescriptive rather than coercive. In fact, this prescriptive type of organization is considered to be too distant to the compact lifestyle, the limitation of which is mainly its inadequacy to undergo the attention of 'different' cultures only because of the functionality principle.

Comparing problems within the European countries, it emerges that territorial systems, do not present common conditions in terms of environmental and socio-economic culture as to point out relevant differences in regional organization, other than some morphological affinities and the effects produced by high levels of pollution.

According to EU directives, the activities of territorial government must progressively refer to sustainable development, at whichever scale they are exercised, in the following way:

- to safeguard the integrity and interaction of ecosystems, viewed as the capacity of maintaining the physiological reproduction conditions of the relations between natural and human elements;
- to pursue a model of economic efficiency, viewed as the constitution of production and consumption regulations that account for negative externalities and, in particular, aim at avoiding the destruction of non-renewable resources;
- to achieve territorial equity, intended as a guarantee of accessibility to opportunities for all the population, including future generations.

Therefore, it appears necessary to proceed to the definition of a new conception of policies and decisions that involve plans and programmes (as well as individual projects) by Structural Funds, coherently to the objectives of a development that, though already in action (territorial offer/demand), must be transformed in conformity with the principles of

[15] Binomial that is the paradigm of the Green Book

sustainability, accepting that the environmental theme should not be a priority aspect in plans (like in the preceding strategic generation experience), but that it must assume *the role of primary collector of the set of actions with transversal characteristics in the various sectors of investment involved in the development planning process.*

In those conditions it does not seem possible to regardless from the following planning tasks/objectives:

a) to prioritise the levels of sustainability ex ante as demand for territorial development;
b) to consequently provide the admissible development planning offer according to the demand;
c) to design a new management subdivision of the existing one, organized in cohesive sub-systems oriented towards the maintenance of their initial environmental value (trans-national and cross-border cooperation);
d) to redesign the division into compartments of local units starting from the problems and the appropriate scales to give aimed solutions (subsidiarity and self-centred model);
e) to measure the interaction by applying integrated and systemic preventive assessment procedures (Strategic Environmental Assessment and Environmental Impact Assessment);
f) to establish a stable link between sustainability and economic-financial compatibility.

1.6. A territorial dimension for the strategy of Lisbon and Gothenburg

By the Lisbon (2000), Nice (2000), Göteborg (2001) agreements, as well as by the draft text of the new Constitution, the European Union faced the topic of the enlargement, also through the adoption of instruments and common procedures, made more flexible after the Amsterdam Treaty of 1999.

The full subsidiarity for making a sustainable Europe for citizens and institutions, and the "proximity" (Committee of the Regions, 2000 and 2002; III Cohesion Report, 2004), are the principles able to support (not to refrain) the action of the local authorities within the limits set up from the sustainable principles (Laeken Declaration, 2003).

The numerous suggestions and exhortations towards changes and structural innovation in this direction have evidenced, above all in the Göteborg meeting, the necessity to plan political-organizational models

useful to State and regional integration. The thesis finds foundation also in Italy, above all within studies and experimentations involving geopolitical and geo-economic contributions in matter of economic-territorial planning towards federalism.

The EU highlighted some inner clear-cut differences (ESPON Programme 2006; Prezioso, 2004), stating that also that NUTs 3, in addition to the regions and the cities, are independent units of reference for planning and sustainable development in the competitive arena. In fact, if not political areas, they are administrative zones, constituting the local socio-spatial condition through which communities manifest themselves, their local development and social cohesion, beyond the cultural divisions and the dominant strategic economic models.

This knowledge is the basis of the vision that some of these zones carry in Europe today. The assertion of the existence of a geographic type between State and regions (as in the case of Italy, Germany, Austria, Belgium, Czech and Slovak Republics, Slovenia, etc.) is the possible basis of the new structural and economic European policy (Structural Funds new vision, in III Cohesion report 2004), able to manage the transition from a city vision to a territorial one, in relation to the growing strategic weight assigned to: a) the border areas/regions in the political-territorial assessment that the Union makes of the sustainable development in the short period; b) the not traditionally perceived regions, that represent a new and innovative organization of metropolitan city/areas; c) the areas of a new geography for European integration, that oppose the peripheral/core theorem, a model of integrated and cohesive, `bottom up', equipotential, polynuclear development.

Inserting the topic of integration (both vertical and horizontal concentration of proximity) in a systemic and complex vision, the project will investigate the territorial assumption (by case studies) of all the stages that allow for a sustainable qualification of spaces, coordinating them towards an univocal aim by institutional governance and the use of appropriate instruments that regulate the behaviours of the private and public actors.

This formulation is found again also in the most recent governmental and enterprise strategies (Multi-stakeholder CSR Forum, 2001; European Commission and Italian Welfare and Job Ministry, 2003), that can more usefully orient the laws regarding both the sustainable development and the welfare in the competitiveness (Prezioso, 2003a), into the geographical pictures of the national, regional and local diversities of the new Europe.

The topic is not yet studied, so it is linked more to a new and balanced behaviour in the complexity of territorial government – in order to

provide, therefore, new external economies of scale to the multitude of institutions that take part in European spatial development.

The project will look at the formula suggested in Europe by the so-called "Rhenanian Capitalism" experience, but will be based on the new and fundamental role that the European Public and Private Institutions can play in the wide and diffuse participation of the enterprises to the competitive model, following an experimental approach to define the development, called "Sustainable Territorial Management" (STeM Approach by Prezioso 2003e 2004a).

1.7. Competitive territorial structures and cooperative multilevel programmes: new conditions of the environmental partnership in Europe

The debate about the reform of cohesion policies after 2006 shows how most within the European institutions supported EU participation to favour the macro level; the entire community territory, offering a wide support to the centralized action on strategic topics: knowledge society's innovation and development, employment, social cohesion, sustainable development, competitiveness' improvement for the social and economic re-development; concentration of the investments on the less favoured regions of the new member-states.

The community structural instruments offer a lot of possibilities to overcome regional differences, tying them to a policy of deep financing tout-court and a philosophy of the structural funds, to promote subsidiarity and governance. The private public/partnership, the medium-term programming linked to a careful analysis of the regional potentialities, the decentralized management and the exchange of the best practice guarantees the effectiveness of the European strategies, supplying flexible answers in function of the regional necessities.

The full coherence with the dictates of Lisbon (2000) require that the European Union aims to become, within 2010, "the most competitive and dynamic knowledge-based economy in the world", full employment, equipping itself of a method "of open coordination"; where the economic and social increase becomes a fly for a sustainable policy of cohesion towards integration of the environmental dimension (Council of Göteborg, 2001).

However, there is still an urge to define the real territorial context of sustainable development to plan the allotment procedure of structural investments, even if the Commission has pushed, since the Eighties, to the collaboration within regional networks for the exchange of good

practice, particularly for trans-border cooperation and cohesion (Interreg III, Urban II, Equal and Leader plus).

The regional competitiveness promoted by the cooperation has favoured strong progress in the economic and social field, strengthening social cohesion, contributing in meaningful ways to improve the quality of life in peripheral and less favoured regions.

In such regions, some territorial factors slow down development, for example the distance from the main centres and advanced areas, the persistence of high unemployment rates, the disadvantages of natural character, etc.; they transform the regions in places where new and necessary proximities should be built, to strengthen borderline participations, coordinated to the pre-existing instruments of cooperation (Interreg, Phare, Tacis, Cards and Meda).

The UE enlargement has emphasized the differences in matter of economic development, redefining the geographic borders of the disparities and the employment disadvantages.

The new cohesive policy has an unquestionable impact on the structural planning instruments, that guarantee political and economic integration, developing, for example, some infrastructure networks and the institutional abilities in matter of political thinking and performance, cultural heritage assessment, transparency and exchange of best practices to favour the institutional subsidiary governance.

A definition of the concept of competitiveness, is at this point unavoidable for the definition of a new competitive territorial structure.

1.8. The analysis of the competitiveness concept

The Theory of international exchange shifts the study of the behaviour and strategy of the enterprise in an international context, trying to define the reasons for international commerce.

In this way, the basic causes of the competitiveness are to be researched according to different initial resources and different technological levels, scale performances and the change of factor prices and assets, etc. As said above, it's correspondingly important to find synthetic indicators that might capture and measure the behaviour of the enterprise in a competitiveness international context.

The literature on the determinants of performance concerning enterprises (Prezioso, 1993) considers the different form of access to foreign markets as one of the main competitive factors. The positive relationship between enterprise efficiency and exportations (Aw - Hwang, 1995; Clerides – Lach

- Tybout, 1998) is explained by two approaches not mutually exclusive: i) that exports are a process of learning that improve the productivity of enterprises; ii) that export markets select the most effective enterprises (Delgado - Farinas, 1999). Many other works focus the analysis more on actual forms of internationalisation and analyse the factors orienting FDI (Graham, 1995; Graham-Krugman, 1993; Onida, 1989), or on the choice between FDI and alternative forms of the internationalisation, like licensing (Kumar, 1985; Saggi, 1996) o *joint-ventures* (Cleeve, 1997; Kogut-Chang, 1991).

The relationship between exports and performance depends first of all on the higher exposureof the exporting enterprises to competition. The competition should have, in turn, a positive effect on the effectiveness in three different ways (Short, 1994; Nickell, 1995; Vickers, 1995).

Through international competitiveness, it becomes simpler for the owners of the enterprise to compare the management performances to their competitors' one, that should reduce the possibility of the management appropriating a share of the enterprise profits "playing" on position stocks. Moreover competition should reduce the incidence of production and distribution costs in favour of an increase in the enterprise efficiency that determines an increase of profit in those sectors where the flexibility of the demand is higher. Finally, a competitive system increases the probability of failure and urges the management of the enterprise to additional efforts (Schmidt, 1996; Aghion-Howitt, 1996).

A few works only, extend the analysis to *the role of the access procedures of access to foreign markets*, that are very important in Italian regional economies, that are based on small and middle enterprise (Prezioso, 1993, 2000 e 2001; Wagner - Schnabel, 1994; Duarte, 1994;). For example, the decision to create a foreign structure sale (CSSA), trough a direct control or through local trade agreements or creating new participated enterprises, has been dealt with in the literature to only a small degree, although it represents the more advanced form of internationalisation for small entrepreneurs and constitutes the first step toward the creation of a foreign branch.

The investments of CSSA show the interesting theoretical character of being a decision of choice made under conditions of uncertainty that include a certain degree of irreversibility, given the presence of *sunk costs*.

Dixit (1998a e 1998b) analyses this structure of choice in the frame of the "real option theory". The access to the foreign markets, even if represented exclusively by exports, has significant *sunk costs* (information costs and opportunity costs). Such costs are substantially higher for small

enterprises because, for example, the incidence of travel costs for human resources are higher.

It should be noted that, when an enterprise belongs to a group or a society, the *sunk costs* can be shared among the group, so as to significantly reduce the value of the " wait option" of the investment for the single enterprise.

However, the internationalisation of the enterprises is only one of the components influencing the firm's competitiveness and its role can be estimated only in comparison to that of other traditional competitiveness factors.

In a microeconomic analysis of competitiveness, the level of efficiency of the enterprise plays a major role; in fact, other than competition, efficiency can be considered as directly correlated to the level of ownership concentration, as Short says (1994) in several empirical papers.

The idea that ownership concentration has a different impact on the firm's performances as a function of its dimension, is supported by recent empirical evidence: Mc Connel - Servaes (1990) finds a positive relationship in a large statistical sample of listed and un- listed companies, while Leech – Leahy - Leahy (1991) find a negative one from a small statistical sample of big listed companies.

It must also be taken into account that there are huge differences at the meso level - in the various countries across Europe - in this respect. A balanced structure of companies is a buffer against rapid changes in the economy caused by cyclical changes (ordinary business cycles) and structural changes (causing altered competitive advantages) of the economy as a whole.

In the literature the relationship between performance, financial structure of the firm and market of access to source of funding (financial pressure) is underlined.

The main hypothesis is that "financial pressure" causes improvements in management accuracy (Jensen, 1986; 1988; Aghion, 1995) in those firms where the development of corporate governance is greater (separation between owner and controller, market and controller, informative asymmetry etc.).

It could therefore be interesting to estimate whether the positive relationship between financial pressure and firm's performance has any economic effects: a high financial pressure may lead to firms with less performance.

In the international context, the literature on this topic focuses the attention on medium-sized firms, listed companies, (Prezioso, 1993a), and can be subdivided into six main branches, through theoretical models that try to explain the determinants of the capital structure and its influence on the process of management decision: i) tax shield, ii) conflict of interests and informative asymmetry costs between shareholders and creditors (Jensen-Meckling, 1976; Jensen, 1986 and Grossman-Hart, 1982), iii) informative asymmetry costs between managers and shareholders, iv) financing strategies as a "signal" of the expected profitability in a context of informative asymmetry (Ross, 1977; Leland-Pyle 1977; Brennan-Kraus, 1987; Noe, 1988; Costantinides-Grundy, 1989; Stein, 1992); v) financial choices oriented by strategic decisions taken in the contexts of oligopolies (Brander-Lewis, 1986; Titman, 1984; Maksimovic, 1988); vi) financial choices taken in contest of share raids (Harris-Raviv, 1988; Stultz, 1988: Israel, 1991).

In a situation of market failure, the choice of financing a plan of investment for an enterprise is correlated with the positive gap existing between costs of the internal and external finance (Fazzari-Hubbard-Petersen, 1988). From that, it comes out that the firms with a higher profitability rate and with a high level of liquidity would have to be those with a lower debt/assets ratio. However, the existence of asymmetric information should give rise to a trade-off between the financing strategies of the short and long period. Moreover, information asymmetry finds an explicit realisation in the estimation of the risk of the investment plan, such appraisal directly influences the financing choices.

One of the direct consequences of information asymmetry on the credit market is the equilibriums with rationing. The rationing is the cause of market failure. That could be connected with an insufficiency in the structure of information that the enterprise sends to the market (Besanko & Thakor, 1993), so the asymmetric information is bigger than the firm's efforts to reduce it. The asymmetric information generates rationing also because it modifies the distribution risk-return of projects, that could lead the credit system to refuse the supply of capital and generate a divergence between supply and demand (Stiglitz e Weiss, 1981).

Competitiveness is a typical (normative?)economic concept and usually measured as the advantage of the firms as compared to their competitors on both the domestic and international markets, focusing the interest on the macroeconomic level. (World Economic Forum, 1995; Markusen, 1992 and Porter, 1990).

Within macroeconomic analysis, authors like Lipschitz and McDonald measured the competitiveness of a system in terms of real exchange rate. Helleiner (1989) and Krugman (1994) criticise the assertion of economy-

wide competitiveness, pointing out that a country cannot be competitive in absolute, but exclusively in average terms. This should involve an increase of the exchange rate, even if in some sectors the country it is not competitive. So, fluctuation in the exchange rates will be compensated for by the balance of payments (Lafay,1987).

Anyway, "*economic-wide competitiveness"* includes the concept of competitiveness as measurable by *cross-country* performance analysis. Therefore it's important to choose variables capable of measuring performance in quantitative or qualitative terms. A possibility, generally used, is to analyse the growth of GDP, under the hypothesis of a causal relation between competitiveness and economic growth.

The alternative is to use the concept of competitiveness finalised to understand the competitive relations between firms and industries. It's clear that macroeconomic conditions, such as high level of education, high attitude to competitive market conditions, high level of optimisation in the use of natural resources, can influence the competitiveness of specific industrial sectors.

Competitive relations established at micro level essentially manifest themselves through actions tending to offer on the market high quality products and services at the lowest prices as possible.

In this way, the concept of competitiveness is strictly linked to economic theory; the understanding of sale abilities is the first objective in at least two fields of the theory: production and exchange.

The theory of production analyses the process of choice of enterprises, presupposing that they tend to maximise the desired profit according to the technological constraints expressed by the production phase.

The maximisation process determines the quantity of goods and services to be sold; as production will go on until profit conditions exist in the market, then an enterprise will be competitive if it will have an increase of profit. Such definition does not lose effectiveness even if the goal of the firm is to increase the market shares instead of the profit maximisation.

In synthesis, the theory says that the profit maximisation is correlated with the increase of market shares; so that a firm that wants to sell the greatest number of products at the lowest price possible must have an optimal cost structure, or a cost structure below the market prices.

Credit rationing decreases the financial resource of the firm and it can't undertake new investments, including investments in new occupations (Nickell & Nicolitsas, 1999).

From the microeconomic point of view the study of industrial district is highly significant, and like this typology of territorial aggregation can help the competitiveness of firms (Prezioso, 1993).

The study of the industrial district has been, always, an source of eclectic argument.

A number of regions have been appointed as industrial districts, mainly because of their growth, competitiveness and agglomeration patterns and certain similarities to the model of industrial district provided by Marshall.

Most references to the origin of industrial districts go back to the economist Alfred Marshall. In Principles of Economics (1922) the development and features of industrial districts, or as the author label the phenomenon "the concentration of specialised industries in particular localities" is discussed. Marshall (1922) stressed not only the business relationships instituted in a local environment but also the importance of undertaking other socio-cultural aspects of this phenomenon.

In his original formulation of the industrial district, Marshall envisioned a region where the business structure is comprised of small locally owned firms that make investment and production decisions locally. Scale economies are relatively low, forestalling the rise of large firms. Within the district, substantial trade is transacted between buyers and sellers, often entailing long-term contracts or commitments. Reading through the lines in the seminal work by Marshall (1922) linkages and cooperation with firms outside the industrial district appears to be minimal. What makes the industrial district model so special, in Marshall's account, is the nature and quality of the local labour market, which is internal to the district and highly flexible. Individuals move from firm to firm, and owners as well as workers live in the same community, where they benefit from the fact that "the secret of industry are in the air", i.e. there is an industrial atmosphere, as he defines it. Workers appear to be committed to the district rather than to the firm, and moreover labour out-migration is assumed to minimal. The district is seen as a relatively stable community which enables the evolution of strong local cultural identity and shared industrial expertise.

All of these features depicted by Marshall in the model of industrial district are subsumable under the notion of agglomeration, which suggests that the stickiness of a place resides not in the individual locational calculus of firms or workers, but in the external economies available to each firm from its spatial conjunction with other firms and suppliers of services.

It is therefore not surprising, after this overview of the industrial model, as elaborated by Marshall (1922), that many disciplines, from economics

to sociology and geography, have investigated the topic of industrial districts both in general terms and specific ones.

Many authors don't think that it's important to study the concept of the district beyond the traditional microeconomic approach, that study the dynamic of production units separated from their positioning in the geographic space (the territory) (Prezioso and Renzetti, 1999; Prezioso, 2000). So, the main critical issues are two fundamental questions: i) the distinctive structural characteristics (economic and institutional specialisation, relations, organisation of firm,) that make up some territorial areas or some industrial district; ii) the effects on the firms that make part of the industrial district.

The characteristics that can identify the industrial district (starting to the Marshall concept) are:

- the presence of cooperation and competition elements that reduce the costs of the market transactions;
- the great horizontal and vertical mobility of the workers;
- the presence of opportunity of "exiting" generated from the productive relations and the interactions between the enterprises and the subjects pertaining to the inside of the district;
- the abundance of not material factors of local production (entrepreneurial culture, know how);
- the presence of "social network" in a position to facilitating the flow of exchanges informed to the inside of the borders of the districts.

The presence of these communities that work like a "system" (Prezioso 2000) would favour as intermediate output the creation of common institutions and cooperatives that can generate a climate of mutual confidence (social capital) whose importance relates to the ends of the development (Knack-Kiefer, 1997).

The ability to incorporate these characteristics key of the district in model form has been until recent years rather limited.

In order to completely comprise (explore/investigate?) the topic of the competitiveness, a review of the contribution of the "empirical literature" is fundamental so that verification of the many reflections arising from the case study aim to estimate if valid conclusions for some particular areas can be generalised..

From the main ones it turns out that there are:

- positive effects on the district of export performance and foreign market access;
- a negative effect on expenses in research and development of the single enterprises regarding parity of innovative performance;
- a positive effect on ROE and measured productive efficiency through the methodology of the *stochastic frontiers*;
- an easier access to credit.

An further aspect of a microeconomic analysis of competitiveness is that relative to the dimensional impacts, it is an attempt to discover which relations exist between competitiveness and dimension. Some recent contributions in the topic of industrial economy assert as peculiar, characteristics of specific territorial systems can influence in an important way the occupational and productive dynamics of enterprises, in fact, they favour both a greater flexibility and productive and occupational increase of the enterprises.

From the first half of the 70's we helped to produce a progressive increase in small enterprises in all more industrialised Countries with a deep impact on the structure and organisation of the productive system. The under-dimensioning allows to the enterprise not to have support of the "transparency costs" and the "upsising costs"

By analysing the competition of the productive systems the contribution in literature of Porter is fundamental. The competitive advantage of an enterprise is described by Michael Porter (1982 and 1991), marking one abrupt breach with the theoretical instruments of traditional planning and with the methodology of the transition costs. The work of Porter gives attention to the importance of the territorial dimension in development.

The true origin of the competitive advantage of an enterprise is the local dimension (or milieu) in which the enterprise is placed. The territory next to the enterprise will define many of the markets of input from which the enterprise must be re-supplied, the information that guide the strategic choices, and the incentives and the pressures on the enterprises in order to innovate and accumulate "know how" or resources in the time. The competitive advantage can reside both in the territory both in the single enterprise (Porter, 1982).

Porter denies the hypothesis of the mutual extraneousness between enterprise and territory, in order to make to develop a dialectic much more complex: the territory/environment stops being an objective data, in order to become the "product" of the strategic action of the enterprise.

In his approach Porter places the enterprise and the productive, defining two concepts: the chain of the value and the competitive environment.

An enterprise is something more of the simple sum of its activities. The chain of the value of a company is a system of interdependences, a net of activities, connected from connections.

The generation of the economic value is not a phenomenon that can be determined in an isolated ring of the chain, but demands the coordination and competition of all the activities, which produce a competitive advantage producing complementariness. The economic competition does not happen therefore opposing isolated enterprises, but chains of the value alternatives. The best enterprises create and support through their ability to improve continuously. The advance developed by Porter is the process of a more sophisticated movement along the chain of the value towards types of advantage..

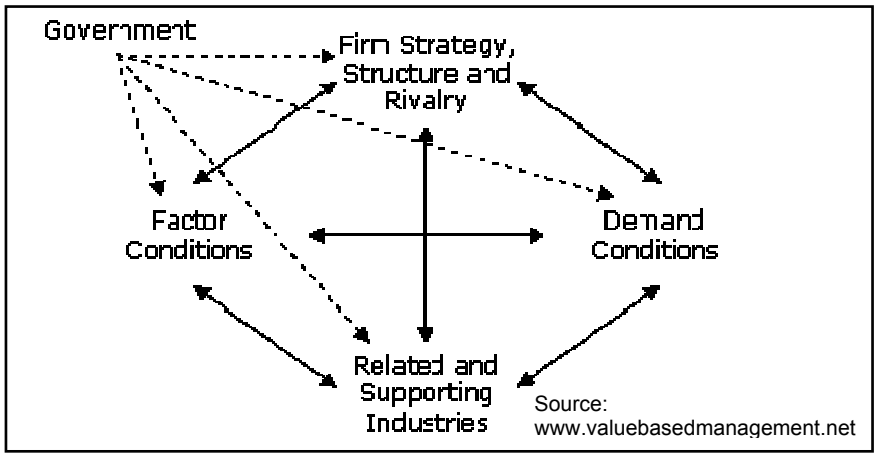
So competitiveness it is not limited to single contenders, but it extends to many actors (concurrent effectives, suppliers, contenders upgrades them, etc.) that are situated along the chain of value and exactly define the extension of activities that the enterprise carries out to compete in a specific field.

With the competitive environmental notion, Porter recovers in his economic analysis two fundamental elements: history and geography. History is fundamental in order to comprise dynamics of the forces in game and their development. The competitive atmosphere of an enterprise has changes in the time: changing and intensifying the competitive games and increasing the technological complexity, the enterprise if it wants to remain competitive, must continuously renew the own abilities to control and coordinate. Geographically, the competitive environment has the tendency to extend, integrating and differing itself, so that the localisation strategy is an integral part of the competitive action of enterprises.

Porter asserts that the competitive advantage depends on the internal factors of the enterprises, and by the territory where the enterprises are inserted, so the search for competitive advantage does not have to be separated interacting with local systems and their actors.

This assertion leads to an analysis of a fundamental point for Porter: if the advantage is achieved and maintained through a localised process (Porter, 1982), the reasons for the success of some competitors must be found in the localised contexts (states, regions) in which they operate.

Figure 1: Porter's Diamond Model for the competitive Advantage of Nations



In Porter's studies, this greater role for the territory is a key element in the evolution of ten countries as great champion of industries and leaders in the commercialisation. The ability of an enterprise to innovate and to grow depends on four characteristics of the territory (from which the famous "diamond"), geographically not common:

- Strategic localisation
- Local demand
- Integration with regional *cluster.*
- Human Resource

Passing from the competitiveness of the enterprises to the national competitiveness Porter transforms the diamond (fig. 2.1) where the fundamental elements are:

a. factor conditions (i.e. the nation's position in factors of production, such as skilled labour and infrastructure);
b. demand conditions (i.e. sophisticated customers in home market);
c. related and supporting industries;
d. firm strategy, structure and rivalry (i.e. conditions for organisation of companies, and the nature of domestic rivalry).

a. *Factor Conditions*

Factor conditions refer to inputs used as factors of production - such as labour, land, natural resources, capital and infrastructure. This sounds similar to standard economic theory, but Porter argues that the "key" factors of production (or specialised factors) are *created*, not inherited. Specialised factors of production are skilled labour, capital and infrastructure. "Non-key" factors or general use factors, such as unskilled

labour and raw materials, can be obtained by any company and, hence, do not generate sustained competitive advantage. However, specialised factors involve heavy, sustained investment. They are more difficult to duplicate. This leads to a competitive advantage, because if other firms cannot easily duplicate these factors, they are valuable. Porter argues that a lack of resources often actually helps countries to become competitive (call it selected factor disadvantage). Abundance generates waste and scarcity generates an innovative mindset. Such countries are forced to innovate in order to overcome their problem of scarce resources.

b. Demand Conditions

Porter argues that a sophisticated domestic market is an important element in producing national competitiveness. Firms that face a sophisticated domestic market are likely to sell superior products because the market demands high quality and a close proximity to such consumers, enabling the firm to better understand the needs and desires of the customers. If the nation's discriminating values spread to other countries, then the local firms will be competitive in the global market.

c. Related and Supporting Industries

Porter also argues that a set of strong related and supporting industries is important to the competitiveness of firms and their nationals. This includes suppliers and related industries. This usually occurs at a regional level as opposed to a national level.

The phenomenon of competitors (and upstream and/or downstream industries) locating in the same area is known as clustering or agglomeration. The advantages locating close to rivals are: potential technology knowledge spillovers, an association of a region on the part of consumers with a product and high quality and therefore some market power, or an association of a region on the part of applicable labour force. Some disadvantages to locating close to your rivals are: potential poaching of your employees by rival companies and obvious increase in competition possibly decreasing mark-ups.

d. Firm Strategy, Structure and Rivalry

Domestic capital markets affect the strategy of firms. Some countries' capital markets have a long-run outlook, while others have a short-run one. Industries vary in how long the long-run is. Countries with a short-run outlook (like the U.S.) will tend to be more competitive in industries where investment is short-term (like the computer industry).

Porter argues that the best management styles vary among industries. Some countries may be oriented toward a particular style of management. Those countries will tend to be more competitive in industries for which

that style of management is suited. Moreover Porter argues that intense competition spurs innovation. Competition is particularly fierce in Japan, where many companies compete vigorously in most industries. International competition is not as intense and motivating. With international competition, there are enough differences between companies and their environments to provide handy excuses to managers who were outperformed by their competitors.

1.9. Policy/programming literature review

There is already a wealth of policy-related documentation at the EU level related to the Lisbon and Gothenburg Strategies. This part of the interim report sets out a preliminary overview of some of the most important relevant policy-related documents including the Presidency Conclusions of the Lisbon (2000) and Gothenburg (2001) European Council Meetings, the annual European Competitiveness Report, the most recent report on Economic and Social Cohesion (2004) and the European Sustainable Development Strategy (see Appendix A for a full list of documents reviewed to date). The main focus of the review is competitiveness. This part of the interim report summarises the various definitions, key concepts and indicators to be found in these documents. First, however, is a short outline concerning the significance of competitiveness for spatial development in Europe.

Competitiveness is a fundamental goal of European policy and central to the aims of spatial development policies in Europe. According to the European Spatial Development Perspective, or ESDP (1999), the aim of spatial development policies is to work towards a balanced and sustainable development of the territory of the European Union according to three fundamental goals of European policy, namely:

- economic and social cohesion
- conservation and management of natural resources and the cultural heritage
- more balanced competitiveness of the European territory

The ESDP identifies a variety of ways in which different aspects of territorial development can influence competitiveness. Examples include transport policy, research, training and development (RTD), monetary union and telecommunications. On transport policy, for example, the ESDP states that rising traffic levels, particularly on road and air networks,

are threatening the competitiveness of some central areas in the EU.[16] Concerning RTD, the ESDP states that multi-annual Framework Programmes promote co-operation with and between companies, research centres and universities with a view to reinforcing the scientific and technological foundations of industry and its competitiveness on the world stage. On monetary union, the ESDP argues that this will trigger further intensification of EU domestic trade and further specialisation within the EU and will enhance the competitiveness of the EU in the world market. In terms of telecommunication policy, the ESDP states that the development of information and telecommunications networks is an important potential force for closer integration and the promotion of enhanced competitiveness for cities and regions in the EU.

Competitiveness is similarly important for the guiding principles for sustainable spatial development of the European continent agreed by the European Conference of Ministers responsible for Regional Planning, or CEMAT (CEMAT, 2002). According to the document, the development of a sustainable spatial development policy for the territory of the Council of Europe should be based on ten principles relating to more regionally balanced development. The first of these principles relates specifically to competitiveness: development should promote of territorial cohesion through a more balanced social and economic development of regions and improved competitiveness (CEMAT, 2002: p12).

1.9.1. Definitions

According to the Seventh Competitiveness Report published in 2003, competitiveness can be defined in many ways (CEC, 2003a: p130). Thus, there is no single definition of competitiveness: a variety of different definitions exist in the policy/programming literature. Of these various definitions, the most up to date one comes from the 2003 European Competitiveness Report. According to this document, competitiveness is understood to mean "***high and rising standards of living of a nation with the lowest possible level of involuntary unemployment, on a sustainable basis***" (CEC, 2003a: p6). The 2002 Communication from the European Commission to the European Council and European Parliament concerning productivity ('Productivity: the key to competitiveness of European economies and enterprises') contains a similar (but not identical) definition, stating that competitiveness is understood to mean

[16] The 2001 European Transport White Paper states that the Trans-European transport Network (TEN) is an important factor in promoting European competitiveness and improving links between the European Union's outlying regions and its central markets (CEC, 2001: p50)

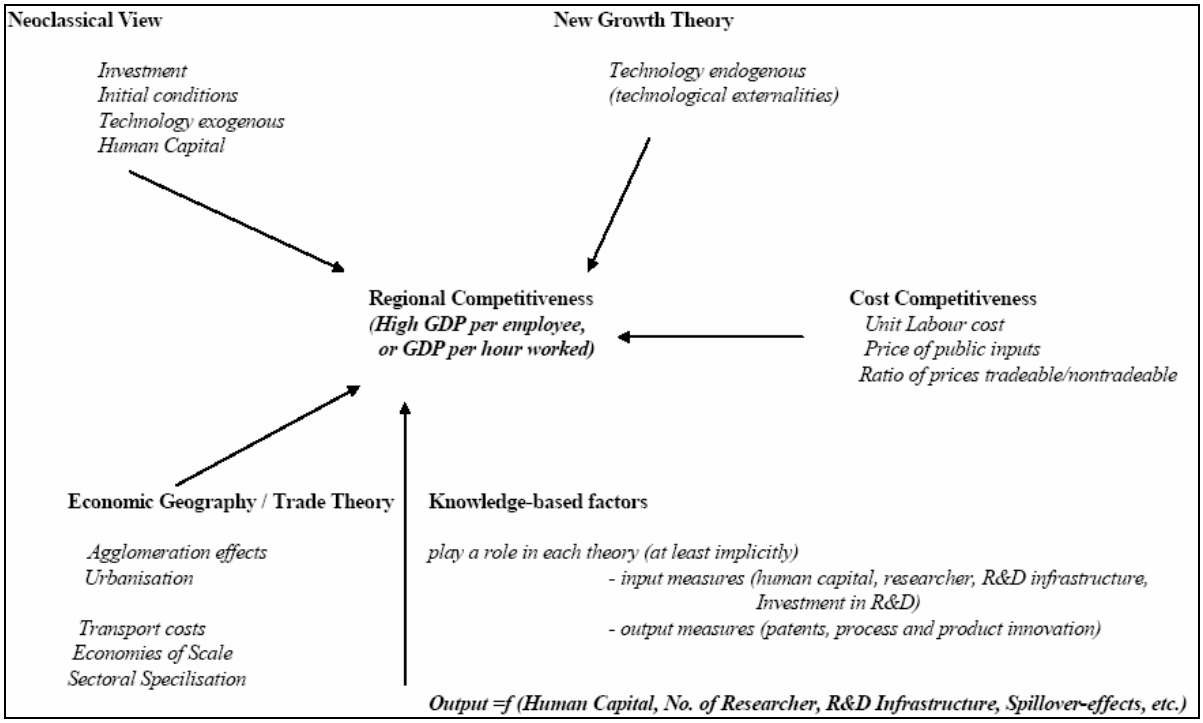
"***a sustained increase in real incomes and in the standards of living of regions or nations, with jobs available for all those who wish to find employment***" (CEC, 2002: p.4). This definition, we read, was in fact based on the definition from the earlier 2001 European Competitiveness Report (European Commission, 2001). More importantly, however, it is noted in the 2002 Communication concerning productivity that this concept of competitiveness is different from the narrower concept applying to the *competitiveness of enterprises*: domestic factors are less dominant determinants of the competitiveness of enterprises (see for example Krugman, 1994 for a discussion of these concepts).

The third chapter of the 2003 Competitiveness Report focuses on the *regional aspects* of competitiveness, which is of key interest to ESPON project 3.3 in view of the territorial nature of the project. It defines regional competitiveness for the purposes of the Competitiveness Report in terms of productivity (regional GDP per hours worked), work-leisure balance (total hours worked per employee), the rate of employment and demographic factors (the ratio of the population of working age). The Competitiveness Report identifies many parallels with the study of national competitiveness and certain indicators are likely to be common to both country-level and regional analyses. However, it asserts that regions are different from countries in some key respects. Sub-national regions are part of the national monetary union and subject to common rules governing their international trade, and the degree of price and wage flexibility is generally less than across nations, whereas generally there is full and unrestricted capital and labour mobility. Regions do not have the same set of adjustment mechanisms as countries, and therefore the concept of macro-economic competitiveness cannot be fully applied to the regional level; on the other hand, as part of a national fiscal system, regions enjoy substantial benefits related to fiscal transfers that constitute an important adjustment mechanism (CEC, 2003a: p130). As regional competitiveness shares many features with its national counterpart (competitiveness between nations), according to the report, most theoretical approaches are usually present in both areas of work. Figure 2.2 gives an overview of the theoretical foundations and of the array of factors that can be considered to play a role in determining regional competitiveness. The concepts from neo-classical, new growth theory and cost competitiveness apply equally well to regions as to nations. On the other hand, knowledge and innovation, and localisation/specialisation effects are critical factors in regional competitiveness. These concepts and issues are reviewed in some detail in the 2003 Competitiveness Report and summarised in Box 2.1 below.

According to the 2003 Competitiveness Report, the EU is characterised by substantial regional diversity in wealth, and competitiveness conditions

differ substantially across regions. Whilst a process of convergence has taken place, assisted by the contribution of the Structural Funds, this process has been slow and fostering regional cohesion remains a critical policy challenge. The report attempts to analyse regional competitiveness empirically both across regions and across time, although data constraints limit the number of available indicators and the depth of analysis. However, sufficient indicators were available to measure productivity in 15 sectors across the NUTS-2 regions between 1980 and 2000. Similarly, proxies were identified to measure the importance of knowledge in the regional economy. This analysis suggested a positive correlation of productivity with research and development intensity, specialisation in high-tech activities and the number of students in tertiary education (CEC, 2003a: p11).

Figure 2: Aspects of Regional Competitiveness



Source: CEC (2003a), p131.

Box 1: Summary of theoretical foundations and factors that can play a role in determining regional competitiveness

A variety of general factors affecting competitiveness are suggested by the literature. Neoclassical theory points to physical and human capital as key influences, while technology remained largely exogenous, whereas new growth theory brought technology within the system, suggesting that the accumulation of knowledge could generate increasing returns. Knowledge could be measured as the skills of the workforce, such as education levels or spending on education, or through measures such as R&D expenditure. Theories more in tune with regional economics, such as new economic geography, look at the effects of localisation on productivity. A number of studies link spill-over effects, in particular knowledge spill-overs, with productivity gains. This links ideas from new growth theory with the concept of knowledge spill-overs as important sources of externalities. Work on knowledge and innovation has suggested a variety of relevant indicators. While it is recognised that many of the indicators will be related/correlated with each other, it is necessary to respect a basic idea of causality, i.e. not to explain one output indicator with another. A variety of indicators can be linked to productivity to assess bivariate relationships over time and across regions. Econometric approaches such as the Barro regression rely on explaining productivity growth by a list of factors, including the concept of catch-up suggested originally by neo-classical theory. The list of other factors has gradually been added to by more recent theoretical advances. In addition, new growth theory suggests it is important to test for, and take account of, spill-over effects across regions. Clearly, there are factors suggested by theory as having an effect on competitiveness for which there is no quantifiable approximation. Much of government policy falls into this category, as do indicators measuring the extent of venture capital activity, business registration rates, and the presence of high-tech clusters. Such features can be examined to see whether they are present in the characteristics of those regions which display productivity growth in excess of what would be expected when taking account of the more measurable influences.

Source: CEC (2003a), p137-138

1.9.2. Key themes and issues

Regional development is strongly linked to national and regional competitiveness. According to the Third report on economic and social cohesion, regional development requires favourable national conditions such as a macro-economic environment conducive to growth, employment and stability and a tax and regulatory system which encourages business and job creation. Two complimentary sets of conditions at the regional level also need to be satisfied (European Commission, 2004). The first concerns physical and human capital or infrastructure: material infrastructure in the form of transport, telecommunications and energy networks, and water supplies, for example, and human capital in the form of a labour force with appropriate levels of skills and training. The second set of conditions concerns *regional competitiveness* factors, which includes issues such as innovation, information and communication technologies (ICT), and environmental protection. This set of conditions largely relates

to 'intangible' factors that are also related to business competitiveness. They include, inter alia, the capacity of a regional economy to generate, diffuse and utilise knowledge and maintain an effective regional innovation system; a business culture that encourages entrepreneurship; and the existence of cooperation networks and clusters of particular activities. These two sets of conditions are interrelated. The precise focus and the mix of factors which are targeted will depend on the starting position, the characteristics of the region concerned, the prevailing circumstances, the development path being followed and so on. There is, therefore, neither a unique nor fixed recipe for successful regional development. Regions must to find the right policy mix for their own development path according to their particular economic, social, cultural and institutional features. The importance of good governance for regional competitiveness is also recognised elsewhere in the document (European Commission, 2004: p. xiii).

Reviewing policy literature and assessment reports concerning the Lisbon Strategy helps to identify key themes associated with competitiveness. The two European Council documents produced in 2003 entitled 'Lisbon Strategy Conclusions (Lisbon to Thessaloniki) by theme' and 'Lisbon Strategy Conclusions (Lisbon to Brussels) by theme' provide one source of material to identify key themes associated with competitiveness. These two reports review progress towards the goals of the Lisbon Strategy according to the various themes developed from the structure of the original Lisbon conclusions of 2000 (European Commission, 2003a and b). These main themes include:

- establishing a European area of research and innovation
- economic reforms for a complete and fully operational internal market
- more and better jobs for Europe
- the social policy agenda
- a strategy for sustainable development
- putting decisions into practice: a more coherent and systematic approach

The key issues under each of the above themes are summarized in Box 2.2. Another recent assessment of the Lisbon Strategy, the Centre for Economic Reform's 2004 annual review of progress towards the goals of the Lisbon Strategy, 'The Lisbon Scorecard IV' (Murray, 2004), is a second useful source of material to help identify key themes associated with competitiveness. This report is also based around similar main headings as the two European Council documents produced in 2003 (see above), with the exception of the theme of policy implementation or governance,

to which the Centre for Economic Reform's report pays less attention.[17] The five main headings of the Centre for Economic Reform's report are:

1. innovation
2. liberalization
3. enterprise
4. employment and social exclusion
5. sustainable development

Box 2: Key issues according to some of the main themes in the European Council's review of progress towards the goals of the Lisbon Strategy

Establishing a European area of research and innovation

- the European research area
- the 6th framework programme for research and development
- frontier technologies and biotechnology
- clean and environmental technologies
- defence R&D
- increasing investment in research and innovation
- the Community patent/intellectual property protection
- space policy

Economic reforms for a complete and fully operational internal market

- completing the internal market
- implementation deficit
- energy networks
- postal services
- single European sky
- Galileo
- railways, ports and trans-European networks
- internal market for services
- competition rules and state aid
- procurement
- better regulation / impact assessment
- consumer policy

More and better jobs for Europe: developing an active employment policy

- overall objectives
- employment targets – towards full employment
- high level employment task force

The social policy agenda

- the European social policy agenda
- improving quality in work
- reinforcing social cohesion: the social agenda

[17] 'putting decisions into practice' is the heading used in the two European Council documents to refer to the theme of policy implementation or governance

- role of the social partners
- corporate social responsibility
- modernising social protection (ageing population / pensions / healthcare)
- promoting social inclusion
- immigration
- equal opportunities

A strategy for sustainable development

- a new approach to policy-making
- the global dimension - Johannesburg
- environmental priorities for sustainability
- combating climate change / Kyoto
- ensuring sustainable transport
- addressing threats to public health
- managing natural resources more responsibly
- maritime safety

Putting decisions into practice: a more coherent and systematic approach

- improving the existing processes and role of the spring European council
- structural indicators
- implementing a new open method of coordination
- broad economic policy guidelines
- employment guidelines
- structural changes – the Cardiff economic process

Source: Adapted from European Commission (2003b)

The main indicators for monitoring the Lisbon and Gothenburg Strategies presented in the 2004 report from the Commission to the Spring European Council (CEC, 2004), are also grouped according to five similar themes, namely:[18]

1. employment
2. innovation and research
3. economic reform
4. social cohesion
5. environment

1.4 Examples of indicators

The subject of indicators concerning the Lisbon and Gothenburg Strategies, and competitiveness in particular, has been discussed intensely since the agreement of the Lisbon and Gothenburg Strategies in 2000 and 2001. At the European Council meeting in Lisbon in March 2000, the European Council invited the Commission to draw up "*an annual*

[18] see section 3.4 for an overview of the indicators for each theme

synthesis report on progress on the basis of structural indicators to be agreed relating to employment, innovation, economic reform and social cohesion" (Council of the European Union, 2000: para36). At the end of 2000 at the meeting of the European Council in Nice (December 2000), the Council welcomed the list of structural indicators to be used to draw up the synthesis report. A small number of indicators were to be selected by the Council before the European Council meeting in Stockholm (March 2001). In June 2001, at the meeting of the European Council in Gothenburg, the council welcomed the adoption of various key environmental indicators as a supplement the social and economic structural indicators. At the meeting of the European Council in Laeken in December 2001 it was agreed that the structural indicators were used to assess progress and focus activity relating to the Lisbon and Gothenburg Strategies. According to the report of the Laeken meeting, the adoption of these structural indicators "*will make it possible to see more clearly how each Member State is performing*" (Council of the European Union, 2001: para22).

In the statistical annex to the 2004 report from the Commission to the Spring European Council (CEC, 2004), indicators for monitoring the Lisbon Strategy are presented according to five main themes (see section 3.3 above) and summarised in Box 3.3 below.[19] The 'Enterprise Policy Scoreboard', a monitoring instrument within the framework of the open method of co-ordination adopted at the Lisbon European Council in 2000 (CEC, 2003b). The Scoreboard provides information about the performance of countries in specific areas and the data allow comparisons across countries and relative to the EU average. Through its annual publications, the Scoreboard facilitates assessment of progress towards the Lisbon Strategy's goal of improving Europe's competitiveness by 2010. Values of indicators are normalised by calculating indexes, whereby the EU-15 index is 100. Indicators are grouped according to 8 main themes (see Box 4 for the list of indicators):

1. Access to finance
2. The regulatory and administrative environment
3. Open and well–functioning market
4. Entrepreneurship
5. Human resources
6. Innovation and knowledge diffusion

[19] an additional general economic theme, encompassing two other indicators (GDP per capita in PPS and labour productivity per person employed), is also contained in the statistical annex

7. Information and communication technologies (ICT)

8. Sustainable development

Box 3: Indicators for the Lisbon and Gothenburg Strategies from the 2004 report from the Commission to the Spring European Council

Employment
- Employment and productivity development in the EU
- Total employment rate
- Employment rate – females
- Employment rate – males
- Total employment rate of older workers
- Employment rate of older workers – females
- Employment rate of older workers – males

Innovation and Research
- GERD (Gross domestic expenditure on R&D)
- Evolution of R&D spending
- Youth educational attainment level - total
- Youth educational attainment level - females
- Youth educational attainment level – males
- Evolution of youth educational attainment level

Economic Reform
- Comparative price levels
- Business investment
- Evolution of business investment

Social Cohesion
- At-risk-of-poverty rate after social transfers – total
- At-risk-of-poverty rate after social transfers – females
- At-risk-of-poverty rate after social transfers – males
- Evolution of the at risk of poverty rate
- Dispersion of regional employment rates – total
- Dispersion of regional employment rates – females
- Dispersion of regional employment rates – males
- Total long-term unemployment rate
- Long-term unemployment rate – females
- Long-term unemployment rate – males

Environment
- Total greenhouse gas emissions
- Energy intensity of the economy
- Transport – Volume of freight transport relative to GDP
- Relative performance of the 15 Member States according to the Structural Indicators on the shortlist
- Relative improvement of the performance of the 15 Member States according to the Structural Indicators on the shortlist

Source: CEC (2004)

Box 4: Indicators of the 'Enterprise Policy Scoreboard'

Access to Finance

- market capitalisation in percent of GDP
- newly listed companies in percent of already listed companies
- venture capital (early and later stage) as percent of GDP
- number of business angel networks

The regulatory and administrative environment

- percentage of SMEs identifying administrative burden as a major business constraint
- impact assessment
- on-line presence of government services

Open and Well-functioning Markets

- trade integration
- state aid, in percent of GDP

Entrepreneurship

- gross-birth rates of enterprises
- net-change of enterprise population, (birth-rate minus death-rate)
- volatility of enterprise population, (birth-rate plus death rate),
- female self-employment in industry and services, in percent of total self-employment

Human resources

- tertiary graduates (ISCED 5 and 6) per 1000 population aged 20 to 29
- graduates in science and technology per 1000 population aged 20 to 29
- population (aged 25-64 years) participating in education and training

Innovation and knowledge diffusion

- R&D expenditure as a percentage of GDP
- number of patents / high tech patents per million inhabitants
- co-operation for innovation

ICT

- ICT expenditure as percent of GDP
- business use of internet
- internet users per 10 000 inhabitants
- commercial use of the internet
- broadband penetration rate
- telephone charges

Sustainable development

- development of eco-efficiency for energy consumption (million € per ktoe), absolute and change in percent
- development of eco-efficiency for greenhouse gases (million € per ktonne CO2 equivalent), absolute and change in percent
- development of eco-efficiency for acidifying gases (million € per ktonne acid equivalent), absolute and change in percent

- development of eco-efficiency for ozone precursors (million € per ktonne ozone forming potential), absolute and change in percent
- number of ISO 14001 and EMAS certifications per 1000 enterprises

Source: CEC (2003b)

The 2003 Competitiveness Report uses a variety of regional indicators of competitiveness to produce a number of tables and a series of cross-plots with productivity to examine the evidence for some of the relationships suggested by economic theory (CEC, 2003a). These indicators comprise:

- productivity growth (%pa)
- R&D intensity
- high-tech location quotient
- students per capita in tertiary education
- productivity spillover effect

According to the analysis of the pattern of regional competitiveness by means of indicators, the 2003 Competitiveness Report concludes that productivity differences across the regions of the EU are diminishing over time (CEC, 2003a: p164). The report states that the disparities remain substantial, however, and the pace of convergence remains very slow. This justifies an active policy stance, according to the report.

The report concludes that the fastest-growing regions have firms that have most successfully integrated into the international competitive system. This is thought to allow them to harness the human knowledge resources of their regions and raise their competitive edge.

The role of public policy is thought to have been subtle but critical in the success of these regions, providing a policy infrastructure that supports business innovation. Policies that remove barriers to trade and open up regions to competition across the single EU market are considered crucial.

According to the report's conclusions, problems of peripheral regions need to be specifically addressed through improved transport and communications, especially telecommunications. It asserts that case studies confirm these as important influences in those regions that have generated a better productivity performance. It reports that evidence for the importance of human knowledge in boosting regional competitiveness is varied, often difficult to tie down but ultimately compelling in its message.

The fastest growing regions appear to be those with firms that are better at harnessing human knowledge, both in the cross-regional statistical analysis and in the case study analysis. The report states that the success

of clustering in the high technology areas, especially in the case of biotechnology, is strongly linked to human knowledge factors. Clusters may not only confer advantages through common access to knowledge resources, such as the science and research base of higher education, or indeed capital resources, but also may facilitate inter-firm communication and entrepreneurial activity in those sectors that generate the highest value-added outcomes.

The message for policy, according to the report, is that the agglomeration forces generating such human resourcefulness should be actively supported and the processes that build such human capital should be encouraged.

The implications to be drawn are that active public support for improved competitiveness will come from concerted programmes operating at different levels, such as those co-financed by structural and cohesion funds, pan-European through to regional, and covering associated physical and non-physical infrastructure requirements. This will support better transport and communications infrastructure and better support the regional entrepreneurial culture that allows businesses to build close links with well-funded and well-organised networks of, especially science-based, higher education institutions.

Policy support at regional level appears critical in the better-performing regions and this corresponds to regional stakeholders subscribing to a common vision, facilitated by public-private partnerships to take this vision forward.

It is difficult to attribute changes in productivity or competitiveness to any one particular factor. There is nevertheless wide consensus that ICT and innovation can play a crucial role in the acceleration of productivity growth in certain EU Member States and in the US, according to the 2002 communication from the European Commission to the European Council and European Parliament concerning productivity (CEC, 2002: p18). Selective and ad hoc policies will not substantially enhance EU competitiveness according to the report: a complete set of policies needs to be implemented in order to have a substantial effect. Thus, strong commitment to implement the Lisbon strategy is necessary. Without such commitment, the objectives of the strategy will not be realised.

2. The Short List of Structural Indicators in light of European Territorial Cohesion

In the Lisbon European Council in March 2000 the European Union set a strategic goal for the next decade "of becoming the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion". In order to measure the progress of this strategy a set of indicators was needed – and agreed upon. These were to be reported in a separate "Synthesis Report" or annex of the annual European Commission "Spring Report" to the European Council. The indicators cover the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background.

A critical comment to the choice of these indicators would be that they are synthetic, but not analytical. The structural changes of the globalising economy seem to indicate an increased outsourcing of movable production (compared to the prevailing domestic immovable production) and an increased share of the production of intangible goods (compared to tangible goods). Such structural changes could be useful to conceptualise when analysing the European situation in relation to the global one. Available statistics do not, however, lend themselves to this kind of analytic scrutiny.

Starting from originally 35 indicators for the EU15 in 2001 the list has successively expanded. In 2002 it covered 42 indicators and was expanded geographically in 2003 to cover also the (at that time) Candidate Countries. For the report of 2004 the Commission suggested a "short list" of 14 structural indicators, allowing for a more "concise presentation and a better assessment of achievements over time vis-à-vis the Lisbon agenda". This short list has been agreed upon with the European Council. Three of the fourteen indicators were successively replaced but it was agreed upon that the short list will be kept stable for three years and is as such viable until at least the 2006 spring report.

The rationale of the short list is essentially pragmatic. In a communication (COM (2003) 585 final, 8.10.2003) the Commission stated five primary benefits with such a short list, namely that:

- it is easier to present a clear picture of the Member States' positions relative to the most important Lisbon targets;
- the proposed indicators are well known and easy to understand;

- the shortlist of indicators has a clearer logic and therefore the policy messages drawn from the progress assessment based on the structural indicators will be soundly based;
- agreeing the list of indicators every three years fits with the streamlined procedure for the Broad Economic Policy Guidelines, the Employment Guidelines and the Internal Market Strategy; and
- the stability of the list will be ensured by agreeing it once every 3 years

Finally, the composition of the list reflects data availability.

Most of the chosen indicators do not have territorial aspects as their main objective for measurement but a majority of them do have territorial implications. There thus exists a clear rationale to analyse these 14 indicators also from the point of view of European territorial cohesion.

2.1 Short list of structural indicators – regional perspectives

Six of the fourteen Structural Indicators from the short list are available wholly or partially on the regional level (NUTS 2). Furthermore, in order to improve the analysis, we have estimated the regional implications of one additional indicator (the [un]employment rate). The regionalised indicators are primarily economic and social ones. However, also for these, variations are first and foremost reflections of differences between countries rather than regional ones. This is however understandable since the framework for economic and social activity still today is largely a matter of nation states rather than regions. Within a given country, by and large, broad economic policies, legislation, taxation, the currency, and so on are primarily national matters. Although this analysis has a clear regional-spatial focus, Figure A15 in the Annex nonetheless presents an outline on the country level, providing a basis from which to address the issue on the regional level.

Gross Domestic Product per capita in Purchasing Power Standards

The rationale for this indicator is to estimate the overall *standard of living, and social and environmental welfare.* It is a temporal comparison where it is expected to increase over time and the gap with main competitors (USA, Japan) should be decreased. At the same time the indicator has substantial spatial implications, mainly in connection with overall territorial cohesion. Figure A1 in the Annex III depicts this on NUTS 2 level for the entire ESPON space.

There is a substantial concentration in Europe in terms of production value. For example, the area within the Pentagon (i.e. that inside the circle London-Paris-Munich-Milan-Hamburg) produces close to half of the entire EU25 Gross Domestic Product and contains one third of its population – on a mere 15% of its land area.

In general, metropolitan and other large city areas in the west dominate the upper reaches of production per inhabitant. Also in Eastern Europe capital regions have in general a considerably higher production per capita than do the rest of their respective countries. The regions surrounding Prague and Bratislava are the only Eastern European regions to have a productivity rate higher than the EU average. In addition to Cyprus and Malta the only additional region amongst the new member states to reach above 75% of the EU average is the one surrounding Hungary's capital Budapest.

Most regions in the new member states fall below 50% of the EU average. Similarly, most regions in the cohesion countries (with the exception of Ireland) as well as the New Länder display considerably low rates, albeit far above Eastern European levels in general. In macro-spatial terms Europe thus in this respect displays a clear core-periphery pattern with eastern Germany, the Czech Republic, western Hungary and Slovenia constituting a buffer zone running through the continent.

When taking into account the varying national levels of GDP per capita, the largest variations within one country (on NUTS 2 level) can be found primarily in East-European countries such as Slovakia, the Czech Republic, Romania and Hungary. Among the old Member States Belgium and the UK have the highest internal disparities. At the other end of the scale variations in e.g. Switzerland and the Netherlands are very small.

Gross Domestic Product per employed person in Purchasing Power Standards

The primary aim of this indicator is to measure the overall efficiency of the economy in terms of labour productivity, i.e. how much on average is being produced per every employed person. Like with GDP per capita, it is a temporal comparison where it is expected to increase over time and the gap with main competitors (USA, Japan) should be decreased. Raising labour productivity is crucial if aiming for sustained growth during a period of ageing populations. Figure A2 in the Annex III depicts the data on NUTS 2 level for the entire ESPON space.

On the whole the pattern is somewhat reminiscent that of GDP per inhabitant, i.e. a clear core-periphery and a clear east-west division. All capital regions in the 15 old Member States as well as Prague are also

above the EU average. A closer inspection reveals considerable differences. There are two primary explanations for variance between these two. Firstly, differences in labour productivity may stem from more labour input (extensive input), i.e. more persons in employment. Secondly, they may also stem from more output per unit of labour input (intensive input: mainly driven by more capital and/or advanced technologies or/or improved organisation of production processes).

Labour productivity on the regional level does not correlate to any higher degree with the employment rate, i.e. there are "productive" regions with high and low shares of employment alike. Labour productivity as such is thus primarily a reflection of the economic structure of the region (high vs low share of capital intensive production). However, differences between GDP per capita and GDP per person employed are by and large explained with the rate of employment.

Thus e.g. Corsica in France, Sterea Ellada in Greece and the Italian regions of Sicily, Campania and Calabria show considerably higher productivity (>40 index points when compared to the European average) when looking at productivity per employed person instead of per inhabitant. The same applies for all French Outremer territories as well as for most of remaining Greece and southern Italy, as is the case for most regions in western Spain and virtually all of Bulgaria. In general these regions have in common a substantially low rate of employment.

The opposite holds true for much of Fennoscandia, the Netherlands and the UK, southern Germany and all regions in Switzerland. In these areas the rate of employment is substantially higher than the European average.

Apart from Brussels, Rome and Sofia, most capital regions display a lower productivity per person employed than per inhabitant. The primary reason for this is extensive commuting from outside these regions. There are only seven regions where labour productivity lays above 50% of the EU average (Brussels, Inner London, Luxembourg, Hamburg, Corsica, Île de France, i.e. Paris, and Bremen), in contrast to GDP per capita, where this figure is nearly threefold. More generally, considering the NUTS 2 level, labour productivity shows substantially larger territorial cohesion than does GDP/capita.

Employment rate

The raising of the rate of persons employed is perhaps the most widely cited and publicly well known goals of the Lisbon strategy. When looking at the EU population as a whole, a mere 27% of it is engaged in employment. Those not employed represent a wide variety of people. This includes first and foremost unemployed persons, whereas the non-actives

group is comprised of e.g. pre school infants and schoolchildren, students, pensioners, persons in military service or on maternity or sick leave, housewives etc. While large portions of those not currently employed are, by definition, non-employable (e.g. children), a noteworthy part of those unemployed or non-active persons represent a pool of unutilised labour potential that could partly ease the demographically based labour market pressure many European countries are currently facing.

In March 2000, at the Lisbon European Council, a target was set for an EU employment rate of 70% by the year 2010 (60% for females). This ratio refers to the share of employed persons in the age group 15-64 years. The employment rate is a summary measure of the use of labour in the economy. There is considerable scope for the EU to rise its employment rate and hence also to rise output and living standards.

At the time that this goal was set the corresponding average rate was 63.1% for the EU15, while some four years later this had increased to 64.8%, which – if the trend continues – would not be sufficient to meet the target. In the second quarter of 2004 the employment rate for the EU25 was even lower (63.3%) owing mainly to the lower levels in some of the larger new Member States, such as Poland and Hungary. On average, the employment rate is ten percentage points lower in the new Member States than in the old ones.

Regional differences are also substantial (Figure A3 in the AnnexIII). Out of all 280 NUTS 2 (or corresponding) regions within the ESPON study area, less than a quarter or 66 regions lay above 70%. Of these only Prague and Bratislava are in Eastern Europe, the rest laying primarily in northern Europe, the Netherlands, the UK, Switzerland and southern Germany. In general, capital regions and other large city regions do have higher rates than their respective countries on average.

In some 4/5 of the European territory the employment target has not yet been met. In 24 regions less than half of the working age population are employed. These regions cover 11% of the ESPON space. Four of them are in (northern and eastern) Bulgaria, two in (western) Hungary and three in Poland. Furthermore all French overseas territories as well as Corsica, four Spanish regions as well as the six most southerly Italian regions belong to this group. In Corsica, which has the lowest rate, less than 38% of the working age population are employed.

In general (in Western Europe) high employment rates and small shares of working age population (aged 15-64 years) correspond. Due to the substantial structural changes underway this is not currently the situation in most Eastern European countries however, which means that in those countries a rise of the employment rate is a realistic goal.

Employment rate of older workers

When comparing internationally the employment rate of older workers is low in Europe. Raising the employment rate of older workers is essential in order to achieve a higher overall employment rate. It should also increase social cohesion by means of a better integration of older workers in the labour force and help ensure sustained economic growth in a phase of ageing populations.

The Lisbon target employment rate for persons aged 55-64 years is set at fifty percent of that age group by 2010. Out of a total of 280 NUTS 2 regions his target has been met in 58 of them, these laying primarily in Denmark, Norway, Sweden, Switzerland and covering most of the UK (Figure A4 in the Annex III). In Eastern Europe only Prague and three regions in Romania belong to this group. However, in Romania, in the capital region of Bucharest this rate is as low as 27% (suggesting data inaccuracies).

The lowest rates can be found in Eastern Europe. Out of the 20 regions with the lowest rates only three are in the old Member States (Nord-Pas-de-Calais and Corsica in France and the Belgian Limburg). In three regions in Bulgaria, Poland and Slovakia respectively and in four in Hungary less than a fifth of the population aged 55-64 years are employed.

When comparing the total employment rate to the corresponding one of older persons and thus viewing the issue from the point of view of social inclusion, the patterns are somewhat different. Labour market integration of older workers is particularly low in North-western France and in a belt stretching from the Alps (Northern Italy, via Slovenia, Eastern Austria, Hungary and Slovakia) to the Black Sea and including all of Bulgaria. In these regions the overall employment frequency is between two and three times higher than that of older persons. In contrast, employment frequency of older persons is nearly on a par with the corresponding total one in all regions of Norway and Sweden.

Gross domestic expenditure on research and development

The gross domestic expenditure on research and development (GERD) is considered a core indicator when aiming for a knowledge-based competitive economy. The Barcelona European Council target rate of gross domestic expenditure on R&D was set at 3% of the GDP by 2010, of which two thirds should stem from the private sector.

Figure A5 in the Annex III presents these data on the regional level. Apart from those where the entire country consists of merely one NUTS 2 region

also Belgium, Ireland, Norway, Sweden and Switzerland are presented on the national level. Currently 18 out of 280 regions meet up to the criterion. Ten of these are in Germany, basically covering all of the country's leading academic and private sector research cities, three in Finland, two in France and one each in the Netherlands and Austria. Furthermore also the region surrounding Prague (Střední Cechy) has a GERD rate exceeding the 3.0% target, showing a rate more than double that in the city of Prague itself. An additional three UK regions (aggregated from NUTS1) and eight Swedish ones (aggregated from the country level) could also be included on the list. The single highest rate in Europe – higher than for Silicon Valley in the US – is in Braunschweig (railway technology, aeronautics, etc), where the R&D expenditure exceeds 7.1% of GDP.

Those regions performing worst in this respect are primarily in Eastern Europe and the cohesion countries. Additionally, many regions where tourism generates much revenue also belong to this category.

Rather unexpectedly, the correlation between a high rate of GERD and correspondingly high GDP is remarkably weak on the regional level. Top research regions display both average or lower production values (such as Braunschweig or Dresden in Germany or Pohjois-Suomi in Finland) than Europe in general or adversely, regions (such as Åland in Finland or Bolzano-Bozen in Italy) may perform highly with regard to the production output per inhabitant despite very low GERD rates.

Youth education attainment

This indicator reflects the urgent need to ensure a proper educational level for the coming generations. It refers to the proportion (%) of population aged 20-24 years having completed at least an upper secondary education. Data are only available at the national level (Figure A6 in the Annex III). It has no fixed target rate; it is merely expected to increase over time. This indicator replaces the old "Public expenditure on education", which has been dropped from the short list.

Although in general one among several reasonably good indications of the prevailing knowledge level of this age group it should nonetheless be interpreted with a considerable amount of caution. Varying education systems, where intermediate degrees are not issued, affect the data considerably. In addition, perhaps even more crucial in an age of knowledge society, it does not in any way disclose how large a share of youngsters (presumably also post-24 years of age) that has completed a tertiary education, which can be either low (such as in the Czech Republic) or high (such as in Denmark). Self-evidently, it does furthermore not

reveal the overall educational level of the entire population, merely that of this particular age group.

In Norway, the Czech Republic and Slovakia this rate exceeds 90% of the total age group. It is also high in Poland, Finland and Sweden. In Malta and Portugal on the other hand less than half of the young population have completed at least an upper secondary degree. Also in Spain, Italy and Luxembourg the rate is below 70%.

Comparative price levels

The rationale behind this indicator is to measure the efficiency of the single market and the overall integration of consumer markets in Europe. It refers to the national deviation from average European price levels for all private household final consumption. It has no fixed target rate but is expected to display convergence over time. This indicator substitutes the old "Financial market integration", which has been dropped from the short list. Figure A7 in the Annex III displays the data on the national level.

In order for a well functioning internal market price levels in Europe should thus converge toward the EU average and both too high and too low prices presumably reflect non-convergence with regard to private household consumption. In this respect the core European countries France, Benelux, Germany and Italy as well as Austria are well integrated, as price levels in these countries do not vary more than 7% in either direction from the EU average. Price levels in Ireland and the UK (more expensive) as well as Spain, Cyprus and Greece (cheaper) are also within a range of 20% of the EU average. At one extreme end of the scale are countries, such as Switzerland, Norway, Denmark and Sweden, where consumer prices are substantially higher than in EU on the whole. At the other extreme are most transition countries as well as Portugal, in which consumer prices are substantially lower than in the EU on average. The extremes are Bulgaria, Romania, Slovakia, the Czech Republic and Hungary where average consumer price levels lay on less than half of the prevailing EU one.

From a spatial point of view substantial cross border variations in price levels are also interesting. This has several implications of which cross border private household trade is the most obvious. Also, as consumer prices in general tend to follow general wage levels in any given country, the implications for cross border investment could be expected to be substantial. FDI data between e.g. Germany and the Czech Republic and Poland support this assumption. The largest cross border price discrepancies are between Austria on the one hand and Slovakia, the Czech Republic and Hungary on the other. Across these borders consumer

prices vary with a ratio of 1:2 to the advantage of the latter. Variations are also of similar magnitude across the German-Czech and the German-Polish border, as is the case e.g. between Finland and Estonia, a border across which private household trade is quite substantial.

Business investment

One method of estimating the magnitude of private sector investment (as opposed to public sector investments) is to relate the value of gross fixed capital formation stemming from the private sector to the overall GDP of a country. Gross fixed capital formation measures the expenditure on durable real assets, such as buildings, cars, plants and machinery, roads as well as "improvements" to land. In measuring the expenditure, sales of similar goods are deducted. Trade in real estate is excluded from gross fixed capital formation. The term "gross" indicates that consumption of fixed capital has not been deducted from the value and therefore comparable with GDP (Gross Domestic Product).

No fixed target rate has been set but the rate is expected to increase over time. This indicator is introduced instead of (but not replacing) the former "Expenditure on information technologies", which has been dropped from the short list, primarily due to problems with availability. Data are only available on the national level.

The rate of private sector investment can vary due to a multitude of reasons, such as the relative size of the public sector, the current business cycle a country is in, the amount of FDI and development assistance received, the current level of general economic development or, first and foremost, the overall structure of the economy. In the last case a production based economy tends to generate a larger gross fixed capital formation than is the case in a service based economy, where investments to a larger extent are being made in intangibles. Due to these factors the results presented in Figure A8 (Annex III) are difficult to interpret concisely. High rates of investment can be found in transition countries (such as the Czech Republic, Latvia and Slovakia), in advanced economies (such as Switzerland) and in Cohesion countries (such as Portugal) alike. Similarly, the lowest rates are in Bulgaria, Cyprus and Sweden.

At-risk-of-poverty rate after social transfers

The at-risk-of-poverty rate refers to the share of persons with an equivalised disposable income after social transfers below 60% of the median equivalised disposable income in each country. It is a measure of the risks of poverty and social exclusion. This indicator is in accordance

with the Lisbon European Council's high priority on social cohesion. It has no fixed target value but is expected to decrease over time. The larger the share of these persons, the more skewed is the income distribution of that country. Data are available on the national level only and are presented in Figure A9 of the Annex III.

On the national level the most balanced income distributions are in the Czech Republic and Sweden, where the rate of persons with an income below 60% of the national average is less than 10%. Income distribution is also very even in Germany, the Netherlands, Denmark and Norway. At the other end of the scale are countries with large income differences such as Portugal, Greece, Ireland and Slovakia. In these, the share of persons at-risk-of-poverty amounts to a fifth of the total population.

These figures however reveal nothing of the spatial distribution of income within these countries. Experience from previous studies in the Nordic countries however suggests that these partially walk hand-in-hand. Thus regional income variations in for example Finland are also substantially larger than in Sweden.

Dispersion of regional unemployment rates

The dispersion of regional employment rates is the only indicator on the short list that has a clear spatially cohesive objective. The reduction of regional disparities as measured by the dispersion of regional employment rates has long been a primary aim of EU territorial policy. It has no fixed target rate; disparities are merely expected to decrease over time. On the national level disparities are measured as the coefficient of variation of employment rates across regions (on NUTS 2 level) within countries. When wanting to measure this on NUTS 2 level instead, data on employment rates should correspondingly be available on at least NUTS 3 level. Unfortunately this is not the case. We have therefore here substituted this by measuring the regional variance of unemployment rates across all NUTS 2 regions in the ESPON space, well aware that this does not measure the same thing as employment rates. Furthermore, in 35 cases (such as Vienna, Brussels, Zurich, Prague, Hamburg, Madrid) NUTS 2 and 3 regions are one and the same meaning that the measured dispersion is nil. This however is simply a fact that cannot be overcome within the scope of this study. All data are based on labour force surveys.

Figure A10 in the Annex III presents this estimation. Regional disparities are in general smaller in the European core than on its edges. Slightly larger regional disparities can be observed in the New Member States than in the old ones, albeit many Cohesion countries do also display high regional variations. Outside these countries the only regions with

substantial variations (coefficient of variation above 10) are Languedoc-Roussillon in southern France, East Riding and North Lincolnshire on the English east coast and Övre Norrland in northern Sweden. Poland and Bulgaria however constitute the European extremes in this respect as the corresponding rate in regions such as Pomorskie, Dolnoslaskie, Mazowieckie, Zachodniopomorskie and Wielkopolskie in Poland and Severoiztochen and Yuzhen Tsentralen in Bulgaria exceeds 40.

The lowest regional variations can generally be found in Norway, the Netherlands and France and regional disparities are in this respect also marginal in several regions in Austria, Belgium and the UK.

Long-term unemployment rate

Long-term unemployment is herein measured as persons unemployed for more than 12 months as a share of the total labour force. All data are based on labour force surveys. In accordance with the Lisbon objectives the share of long-term unemployed persons is expected to decrease over time but no definite target value has been fixed. Figure A11 in the Annex III presents these data on NUTS 2 level (Norway and Switzerland on the national level).

To a large extent, long-term unemployment is a mere mirror of the prevailing employment rate (Figure A3 in Annex III). Regions with a high employment rate tend to have low unemployment, also in the case of long-term ditto, and vice versa. And as the demographic composition of the population (mainly the share of working age population to that of the total) by and large reflects the employment rate, long-term unemployment is far from being merely a measurement of the functionality or dys-funcionality of the labour market in general. Reducing long-term unemployment is nonetheless important for achieving the overall Lisbon goal of "greater social cohesion", because the long-term unemployed face a high risk of social exclusion. The long-term unemployment rate does certainly also reflect structural problems in the labour market, which lead to an under-utilisation of human resources. In addition, reducing long-term unemployment is important from a human capital perspective, because the long-term unemployed become detached from the labour market and lose their skills, which are increasingly needed in the face of rapidly ageing populations.

In several regions of Spain, southern Italy, Greece and the French Outremer a large share of the labour force have been unemployed for more than 12 months. However, the worst situation is generally in the New Länder of Germany, and in most transition countries. In altogether 23 regions this rate exceeds 10% of the labour force, a considerable

figure when comparing with the average total unemployment rates for these countries and regions. In these regions long-term unemployed persons thus constitute a lion's share of all unemployed persons.

The opposite holds true especially for the UK, the Netherlands and Austria. Of the fifty NUTS 2 regions with the lowest rates, 18 are in the UK, 12 in the Netherlands and 8 in Austria. On the national level rates are also extremely low for Norway and Switzerland.

For those countries there are data on, regional variations are smallest in the Netherlands, Romania and Austria. Regional disparities with regard to long-term unemployment are on the other hand substantial in Italy and France as well as Slovakia and Bulgaria.

Greenhouse gas emissions

The total emission of the six main greenhouse gases (the "Kyoto Basket") is measured as the relative change over time. Emissions are measured as CO2 equivalents where each gas is weighted by its warming potential. The overall objective is to reduce these emissions over time and under the Kyoto Protocol the EU has committed itself to reduce emissions by 8% by 2008-2012, compared to the 1990 baseline. This reduction goal has since (February 2005) been raised to a 15-30% reduction of emissions by 2020 and 60-80% by 2050.

Also this is a dynamic indicator not taking into account the starting point of gas emissions. New investments in cleaner and cleaning technology as well as a downscaling or closing of the old production structure has implied that emission reductions in the transition countries have been the largest, most so in Latvia (65% decrease) and Lithuania (58%). This reduction is however in most cases counterbalanced by mainly increased road transport.

The most rapid increases have occurred in Ireland, Spain and Portugal (Figure A12 in the Annex III).

Energy-intensity of the economy

Energy intensity is measured as gross inland consumption of energy divided by GDP at constant prices and indiced on 1996. The original unit is kgoe (kilogram of oil equivalent) per 1000 Euro. The data is aggregated from five types of energy (coal, electricity, oil, natural gas and renewable energy source) and four sectors of inland consumption (production, storage, trade and consumption/use of energy). No clear target rates have been fixed but the aim is to reduce this ratio over time. Data are available on the national level only and presented in Figure A13 in the Annex III.

Reductions in the rate can stem from two sources: either a decrease in energy consumption or an increase of GDP. This indicator is also by nature a dynamic one not taking into account the starting level. Thus countries where the share of energy consumption has been high at onset do expectedly display the highest decreases. This is the case for most of the New Member States. Norway, Spain and Portugal on the other hand display slight increases in the ratio.

Volume of freight transport relative to GDP

The last indicator on the short list measures the volume of freight transport relative to GDP. It is an indication of the decoupling of freight transport growth from real GDP growth. Freight transport is measured in tonne-km per GDP in constant prices and includes transport by road, rail and inland waterways but excludes air (and pipeline) transport. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country.

Data (Figure A14 in Annex III) are provided on the national level and as indiced to the base year 1995 and do thus not take into account the level at the beginning. As it is a ratio this indicator can decrease either through a real decrease in transport or through an increase of GDP, the latter of which has few direct positive environmental consequences. Such is the case in e.g. Finland and Sweden as well as in many transition countries where transport has actually increased, but at a lower rate then production, therefore displaying a relative decrease in the ratio. Increases in the ratio again have mainly occurred in Estonia, Greece and Ireland.

2.2. Short list of structural indicators – a synthesis

We have here merged the fourteen indicators from the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background into three groups mirroring the "ESDP triangle" of economic, social and environmental sustainability. Groupings could be made in several ways, all affecting the outcome of the synthesis indicator. We have here done as follows. First, upper and lower quartiles were calculated for each 14 indicator. Second, for each region the number of values in the lowest quartile was subtracted from the number of values in the highest quartile, thus ending up with a net value where each indicator has equal weight. Where no data were available on the regional level, we have provided each NUTS2 region in the ESPON space with the corresponding

disaggregated country value. This implies that regional variations within a given country are based upon a few indicators alone, whereas the overall variations within the entire ESPON space are more diverse.

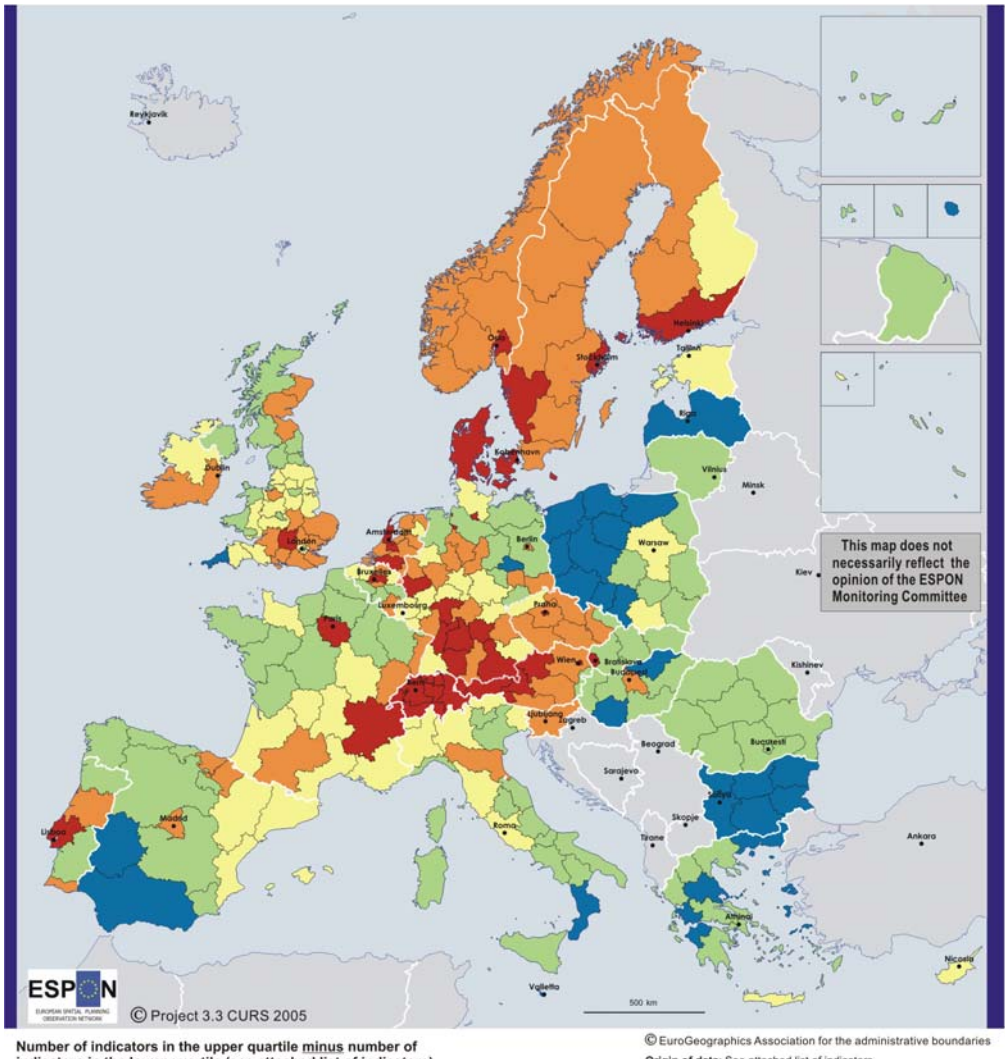
Figure 3 displays a synthesis of the eight economic indicators from the short list. These are:

1. Gross Domestic Product per inhabitant
2. Gross Domestic Product per employed person
3. Employment rate
4. Employment rate of older workers
5. Gross domestic expenditure on R&D
6. Youth education attainment levels
7. Comparative price levels
8. Gross Fixed Capital Formation/GDP

The first five are available on the regional level whereas the last three are dis-aggregations from national figures.

These indicators are to a large extent interlinked, i.e. they tend on the regional level to vary correspondingly across the European space. A clear core periphery pattern therefore emerges largely resembling e.g. GDP per capita. The European Pentagon including Switzerland and Rhone-Alpes in France as well as most regions in the Nordic countries constitute the economic stronghold of Europe, primarily scoring high on most of the indicators. Furthermore selected capital regions outside these countries (such as Lisbon, Madrid, Prague, Bratislava) stand out.

Figure 3: Regional performance based on eight economic indicators



Number of indicators in the upper quartile minus number of indicators in the lower quartile (see attached list of indicators)

- > 2 **Primarily high performance**
- 1 - 2
- 0 **Medium performance**
- -2 - -1
- < -2 **Primarily low performance**

Origin of data: See attached list of indicators

Source: CURS

Indicators:

1. **Gross Domestic Product** as purchasing power parities **per inhabitant** in 2000. Origin of data: EUROSTAT, ESPON Database 2.4 (CH and NO)
2. **Labour productivity**: gross domestic product as purchasing power parities per person employed in 2000. Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office, 2001. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
3. **Employment rate**: employed persons aged 15-64 as a share of total population of the same age group in 2000 (%). Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
4. **Employment rate of older workers**: employed persons aged 55-64 as a share of total population of the same age group in 2000 (%). CH: data at the national level. Data for FR9 is from 2001 and for DEB from 2002. Origin of data: EUROSTAT, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
5. **GERD**: gross domestic expenditure on research and development as a share of GDP in 2000 (%). BG: data is from 2002 . MT: data is from 2002. ES63: average value of NUTS 1 -region ES6. Origin of data: EUROSTAT, ESPON Dtb 2.4 (DE27, DE22, FR9, ITD1, ITD2 (disaggregated from old N2 regions), UK (disaggregated from N1 level, 1999)), UNESCO (at national level: BE (year 2000), CH (2000), IE (2000), NO (2001), SE (2001)).
6. **Youth education attainment level**: share of population aged 20-24 having completed at least upper secondary education (%). Annual average 2001-2003. Origin of data: EUROSTAT.
7. **Comparative price levels** of final consumption by private households (including indirect taxes) in 2000. Origin of data: EUROSTAT.
8. **Business investment**: gross fixed capital formation by private sector as a share of GDP (%) in 2000. Origin of data: EUROSTAT, OECD (CH).

The lowest scores are nearly exclusively in the New Member States or the Cohesion Countries, Cornwall in the UK and the French Reunion constituting the most prominent exceptions. However, like in the Check Republic and Slovakia, also in other Eastern Europe most capital regions display higher scores.

The synthesis of three social indicators concerns:

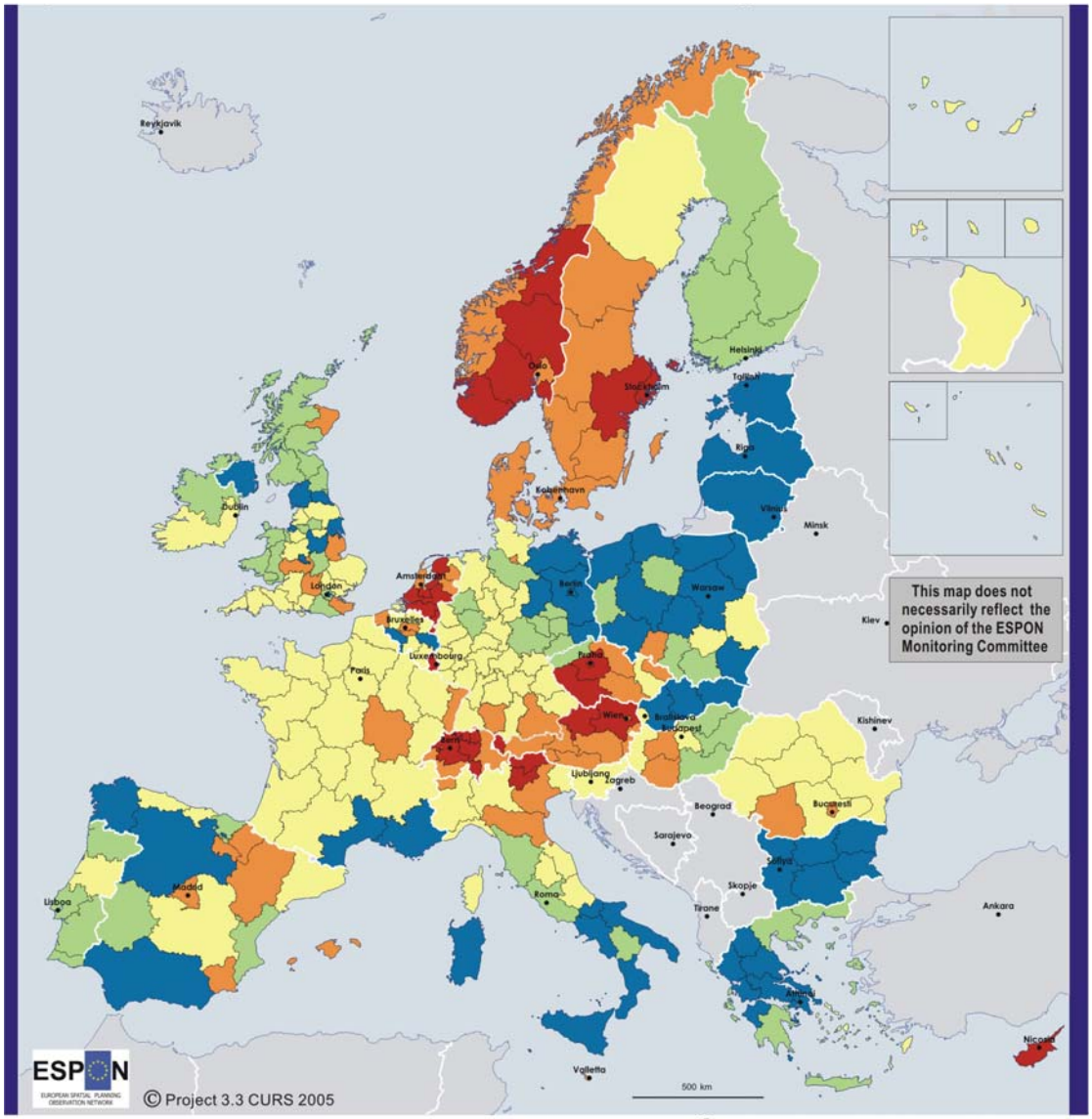
9. At-risk-of-poverty rate after social transfers
10. Dispersion of regional unemployment rates
11. Long-term unemployment rate

The latter two are regional figures whereas the first one is a dis-aggregation from data on the national level. The three variables do not relate to each other to any larger degree, although there is a slight correlation between the latter two, where high long-term unemployment rates are more common in regions with high internal disparities with regard to total unemployment.

Thus Figure 4 differs from the corresponding economic one. Apart from clearly discernible east-west differences, the dominance of the European core is downplayed in this respect. Furthermore, many capital regions such as London, Paris, Lisbon or Helsinki in the west or Warsaw, Bratislava or Bucharest in the east display lower performance with regard to these social indicators as was the case with the corresponding economic ones. Much of Norway, the Netherlands or the Czech Republic on the other hand perform better in this respect.

One tentative conclusion based on these indicators is that performances on the economic and social scale do not entirely walk hand in hand, although they do not on the other hand also exclude one another.

Figure 4: Regional performance based on three social indicators



Number of indicators in the upper quartile minus number of indicators in the lower quartile (see attached list of indicators)

- > 1 **Primarily high performance**
- 1
- 0 **Medium performance**
- -1
- < -1 **Primarily low performance**

© EuroGeographics Association for the administrative boundaries

Origin of data: See attached list of indicators

Source: CURS

Indicators

9. **At-risk-of-poverty -rate**: share of persons with an equivalised disposable income after social transfers below 60% of the national median, in 2000. CY: data is from 1997. CH: data is from 1999. CZ, DK and SE: data is from 2001. NO and SK: data is from 2003 and provisional. FI and FR: the available data only permits adjustment for social transfers on a gross basis. Origin of data: EUROSTAT, Swiss Federal Statistical Office, Observatoire social Européen (CY).
10. **Dispersion of regional unemployment rates**: coefficient of variation (VAR) of NUTS 3 level unemployment rates within each NUTS 2 region. CV= $\frac{\sum(x-\bar{x})^2}{(n-1)}$

    Annual average 2003 (except for GR & MT: 2002; Ceuta & Melilla: 2002).
    GR & PT: Regional variatons between all NUTS2 regions in respective country.
    Origin of data: EUROSTAT
11. **Long-term unemployment rate**: persons unemployed for more than 12 months as a share of the total labour force in 2000 (%). PT12-14 and NUTS 1 -region FR9: data is from 2001. NL, MT and NUTS 1 -region DEB: data is from 2002. CH and NO: data at the national level and from 2003. Origin of data: EUROSTAT.:

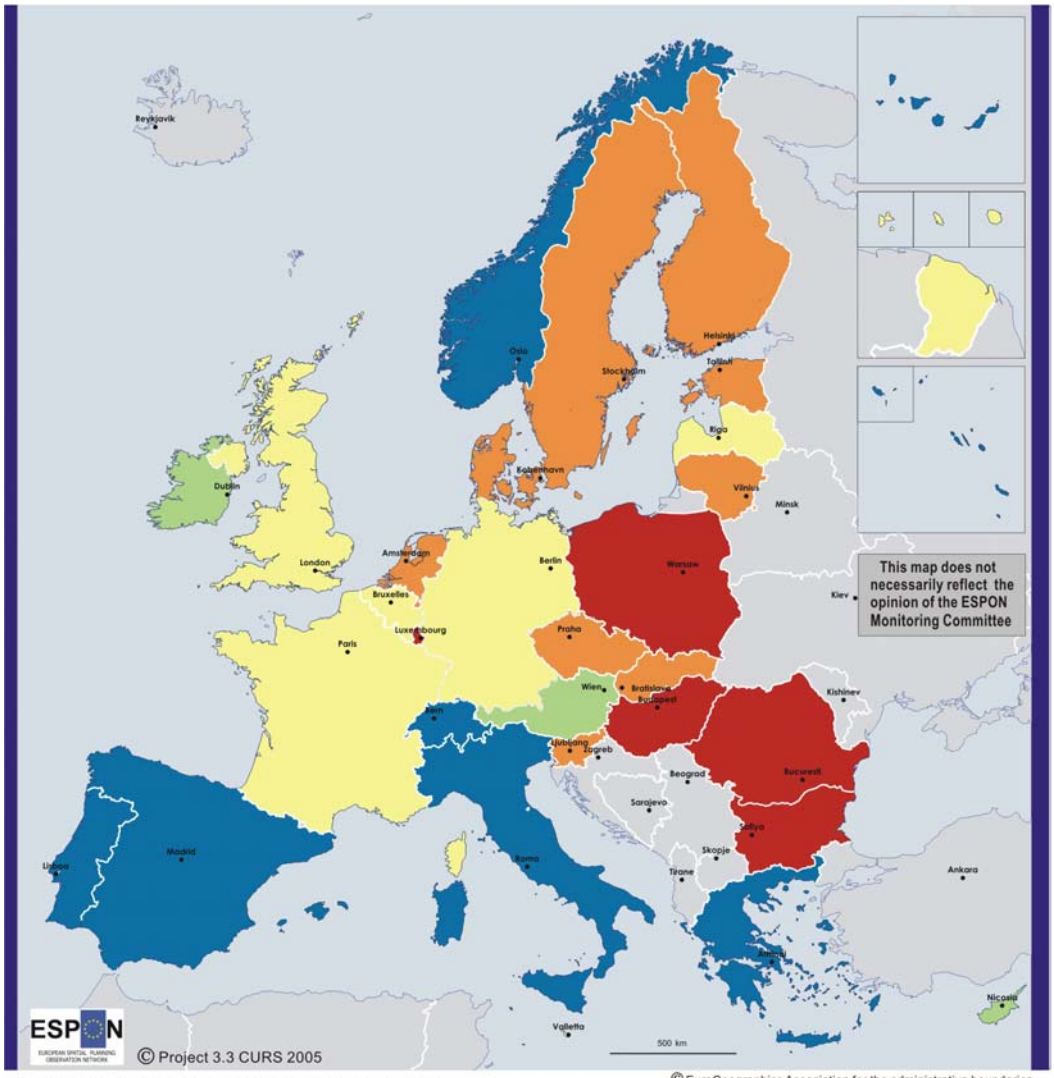
Figure 5 depicts a synthesis on the national level of the three environmental indicators on the short list, namely:

12. Energy-intensity of the economy
13. Greenhouse gas emissions
14. Volume of freight transport relative to GDP

In general the three indicators correlate with each other. As was stated above, these indicators are by nature dynamic thus not taking into account the starting level. The high performance of most transition countries is largely explained by this fact, as they are starting from substantially high levels. Also, as GDP is a denominator in two of the three indicators, the rapid relative economic growth in these countries is mirrored in the "reductions".

The Cohesion Countries as well as Norway are the worst performers, scoring low on all three indicators.

Figure 5: Performance based on three environmental indicators



Number of indicators in the upper quartile minus number of indicators in the lower quartile (see attached list of indicators)

- > 1 Primarily high performance
- 1
- 0 Medium performance
- -1
- < -1 Primarily low performance

Origin of data: See attached list of indicators

Source: CURS

Indicators

12. **Total greenhouse gas emissions**: percentage change in emissions of 6 main greenhouse gases (in CO2 equivalents) between base year and year 2000. The base year for the non-fluorinated gases (CO_2, CH_4 and N_2O) is 1990, and 1995 for the fluorinated gases (HFC, PFC and SF_6). Exceptions are: FI, FR, IS and NO have 1990 as the base year also for the fluorinated gases; PL and BG have 1988, and SI has 1986 as the base year for the non-fluorinated gases (and 1995 for fluorinated gases); HU has the average of 1985-87, and RO has 1989 as the base year for all GHG gases; For EE, LT and LV no information on fluorinated gases is available. Origin of data: EUROSTAT; Bundesamt für Umwelt, Wald und Landschaft, die Scweiz.
13. **Energy intensity of the economy**: gross inland consumption of energy divided by GDP (kilogram of oil equivalent per 1000 Euro at constant prices) in 2000, indexed on 1996 = 100. CH: measured as Kwh/GDP in Swiss Frangs. Origin of data: EUROSTAT, Swiss Federal Statistical Office.
14. **Volume of freight transport** relative to gross domestic product in 2000, measured in tonn-km/GDP and indexed on 1995. Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country. SI and CY: Figures are estimations. Greece: Some data is estimated by Eurostat as no data on road freight transport are available for Greece since 1999. MT: average value of EU25. Origin of data: EUROSTAT.

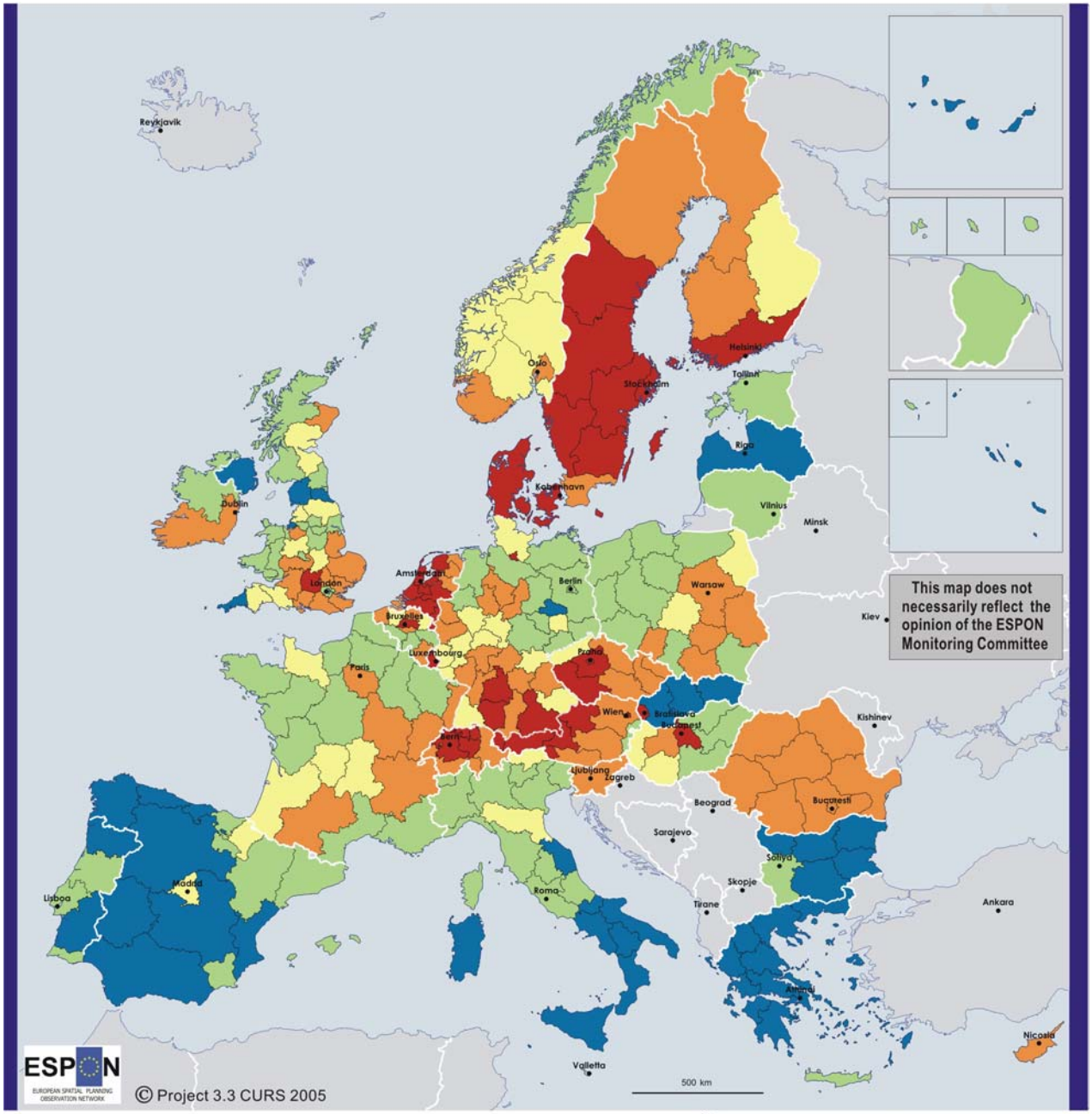
In Figure 6 performance on all fourteen structural indicators from the short list has been merged into one. Seven of these are wholly or partially based on regional data whereas seven are merely dis-aggregations from data on the national level.

The overrepresentation (eight out of fourteen) of economic indicators is mirrored in the pattern. Thus the hard economic core of Europe is clearly discernible, also encompassing much of the Nordic countries. Norway falls short primarily due to low "performance" on the environmental indicators whereas the opposite holds true for e.g. Romania and eastern Poland due to better performance both on social and environmental indices.

The capital regions of Prague, Bratislava and Budapest are also among the top European performers in this respect. Territorial disparities are greatest in Slovakia basically dividing the country into the capital region on the one hand and the rest of the country on the other.

The cohesion countries (apart from Ireland) do also stand out as low performers in this respect, scoring fairly low on all three sectors.

Figure 6: Overall performance with regard to fourteen structural indicators



Indicators:

1. **Gross Domestic Product** as purchasing power parities **per inhabitant** in 2000. Origin of data: EUROSTAT, ESPON Database 2.4 (CH and NO)
2. **Labour productivity**: gross domestic product as purchasing power parities per person employed in 2000. Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office, 2001. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
3. **Employment rate**: employed persons aged 15-64 as a share of total population of the same age group in 2000 (%). Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
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5. **GERD**: gross domestic expenditure on research and development as a share of GDP in 2000 (%). BG: data is from 2002 . MT: data is from 2002. ES63: average value of NUTS 1 -region ES6. Origin of data: EUROSTAT, ESPON Dtb 2.4 (DE27, DE22, FR9, ITD1, ITD2 (disaggregated from old N2 regions), UK (disaggregated from N1 level, 1999)), UNESCO (at national level: BE (year 2000), CH (2000), IE (2000), NO (2001), SE (2001)).
6. **Youth education attainment level**: share of population aged 20-24 having completed at least upper secondary education (%). Annual average 2001-2003. Origin of data: EUROSTAT.
7. **Comparative price levels** of final consumption by private households (including indirect taxes) in 2000. Origin of data: EUROSTAT.
8. **Business investment**: gross fixed capital formation by private sector as a share of GDP (%) in 2000. Origin of data: EUROSTAT, OECD (CH).
9. **At-risk-of-poverty -rate**: share of persons with an equivalised disposable income after social transfers below 60% of the national median, in 2000. CY: data is from 1997. CH: data is from 1999. CZ, DK and SE: data is from 2001. NO and SK: data is from 2003 and provisional. FI and FR: the available data only permits adjustment for social transfers on a gross basis. Origin of data: EUROSTAT, Swiss Federal Statistical Office, Observatoire social Européen (CY).
10. **Dispersion of regional unemployment rates**: coefficient of variation (VAR) of NUTS 3 level unemployment rates within each NUTS 2 region. CV= $\frac{\sum(x-\bar{x})^2}{(n-1)}$
    Annual average 2003 (except for GR & MT: 2002; Ceuta & Melilla: 2002).
    GR & PT: Regional variatons between all NUTS2 regions in respective country.
    Origin of data: EUROSTAT
11. **Long-term unemployment rate**: persons unemployed for more than 12 months as a share of the total labour force in 2000 (%). PT12-14 and NUTS 1 -region FR9: data is from 2001. NL, MT and NUTS 1 -region DEB: data is from 2002. CH and NO: data at the national level and from 2003. Origin of data: EUROSTAT.
12. **Total greenhouse gas emissions**: percentage change in emissions of 6 main greenhouse gases (in CO2 equivalents) between base year and year 2000. The base year for the non-fluorinated gases (CO_2, CH_4 and N_2O) is 1990, and 1995 for the fluorinated gases (HFC, PFC and SF_6). Exceptions are: FI, FR, IS and NO have 1990 as the base year also for the fluorinated gases; PL and BG have 1988, and SI has 1986 as the base year for the non-fluorinated gases (and 1995 for fluorinated gases); HU has the average of 1985-87, and RO has 1989 as the base year for all GHG gases; For EE, LT and LV no information on fluorinated gases is available. Origin of data: EUROSTAT; Bundesamt für Umwelt, Wald und Landschaft, die Scweiz.
13. **Energy intensity of the economy**: gross inland consumption of energy divided by GDP (kilogram of oil equivalent per 1000 Euro at constant prices) in 2000, indexed on 1996 = 100. CH: measured as Kwh/GDP in Swiss Frangs. Origin of data: EUROSTAT, Swiss Federal Statistical Office.
14. **Volume of freight transport** relative to gross domestic product in 2000, measured in tonn-km/GDP and indexed on 1995. Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country. SI and CY: Figures are estimations. Greece: Some data is estimated by Eurostat as no data on road freight transport are available for Greece since 1999. MT: average value of EU25. Origin of data: EUROSTAT.

Providing the 14 indicators are truly indicative of economic, social and environmental competitiveness and sustainability, then a definite conclusion could be drawn that economic (or partially social) competitiveness and environmental sustainability do not necessarily correlate. Owing to the fragility of the indicators, however, such a conclusion may be premature to draw.

It seems obvious, however, that social processes reflected in social indicators are an effect of national traditions as well as welfare policies, which have emerged regardless considerations related to economic

performance or, alternatively, as one possible strategy for gaining enhancing economic performance.

Providing that the welfare choice has been a deliberate one among those European countries characterised by developed welfare regimes, this strategy seems to have been successful in terms of economic performance. Moreover, with regard to the future, national welfare strategies seem to retard rather than advance, which simply seems to indicate that the old strategy is being reconsidered. Various parts of national welfare regimes in Europe are being increasingly dismantled. The reason is probably to be sought in the global expansion of markets, the quest for foreign investments and the way national competitiveness is conceived of in emerging global conditions.

On the global level, there is no system (or only very marginal ones) for the reallocation of resources according to social needs. Within Europe, there is also no EU policy aiming at the harmonisation of welfare regimes or of taxation policies for that matter. In these conditions, national economic success is connected to competition in providing advantageous business conditions in terms of low taxation and the reduction of other additional costs for productive investments, which of course diminishes the possibilities to keep up existing basis for taxation and consequent welfare regimes.

Environmental performance as reflected in the indicators probably mirrors the initial structure of the national economy and its alterations during the period under scrutiny more that national economic performance in quantitative terms (or changes in that performance) as such. While policies aiming at protection and conservation of natural assets may enhance the economic prospects of increased consumption, they may also be conceived as hampering competition with regard to productive investments on the global scale.

Consequently, the lack of income transfers on the global level could constitute a threat to the protection of people, the reproduction of labour, and protection of nature and culture on the European level. These tendencies are obviously connected to the lack of harmonised intra-European policies concerning these very same matters. An open question is to what extent a *European* welfare regime, including harmonised taxation, reallocation of resources on the European level according to ideas of social and territorial fairness as well as common policies for the protection of environment and culture would enhance the position of Europe as a whole in the global competition. Such questions of strategic importance cannot at the moment be addressed by available statistics.

2.3. Short list of structural indicators and core ESPON typologies

The territorial dimensions of the ESPON space have been thoroughly mapped in previous ESPON projects and several typologies describing the territory have been constructed. In this chapter three such core typologies are examined in light of the composite synthesis indicators constructed above. This allows an examination as to the extent which the underlying assumptions of these typologies are reflected in the indicators on short list. The chosen typologies are:

1. A typology of functional urban areas (FUAs), ESPON 1.1.1;
2. Urban rural typology, ESPON 1.1.2; and
3. Multimodal potential accessibility, ESPON 1.2.2.

The main questions thus refer to whether economic, social, environmental and overall competitiveness and sustainability is higher in regions where there are large FUAs, in regions that have high urban influence and in regions where the accessibility potential is high.

Table 1 presents these data. As was the method in Figures 3-6 above, for each region the number of each indicator's value in the lower quartile has been subtracted from that in the upper quartile resulting in a net sum. For each type of region (in the typologies) the mean value of these indicators has then been calculated. This implies that all averages are unweighted (i.e. not taking into account the population of the region).

Table 2: Synthesis indicators in light of three core ESPON typologies

Core ESPON typology:	*Structural Indicator Short List Syntheses*			
	All fourteen Structural Indicators	*Eight economic Structural Indicators*	*Three social Structural Indicators*	*Three environmental Structural Indicators*
	Average net sum	*Average net sum*	*Average net sum*	*Average net sum*
Typology of Functional Urban Areas (ESPON 1.1.1)				
Highest level FUA in NUTS 2 -region				
No FUAs	-1	-1	0	-1
Regional/Local	-1	-1	0	-1
National/Transnational	0	0	0	0
European/Global	1	1	0	0
Total	0	0	0	0
Urban-Rural Typology (ESPON 1.1.2)				
High urban influence, high human intervention	1	1	0	0
High urban influence, medium human intervention	-2	-1	-1	0
High urban influence, low human intervention	0	1	0	-1
Low urban influence, high human intervention	-1	-2	-1	2
Low urban influence, medium human intervention	-2	-1	0	-1
Low urban influence, low human intervention	-1	0	0	-1
Total	0	0	0	0
Potential Multimodal Accessibility (ESPON 1.2.2)				
Index, ESPON Space=100				
over 140	3	2	0	0
110-140	1	1	0	0
90-110	0	0	0	0
60-90	-1	-1	0	0
below 60	-2	-1	-1	0
Total	0	0	0	0

All in all the 14 structural indicators are reflected in the typology of functional urban areas. Regions with European/Global FUAs have the highest average score whereas regions lacking FUAs or with only a regional/local ditto score the worst. The same hierarchy is evident when examining only the eight economic indicators taken as a group. However, there is no clear pattern as to the existence and magnitude of FUAs and social cohesion, whereas the pattern for the environmental ones is also nearly nonexistent, albeit in slight favour of large FUA regions.

Regarding urban influence and human intervention the results are not so clear cut. Nonetheless the overall average score is highest for regions where both the degree of urban influence and the degree of human intervention are high, i.e. typically urban areas. The same applies for the

economic indicators alone whereas e.g. the composite social indicators is not in any way reflected in the hierarchy.

Finally with regard to multimodal potential accessibility the overall average of the 14 indicators correlates strongly with that of accessibility. Thus regions with a high accessibility do on average score high both in terms of the total result as well as on the economic composite indicator. This correlation gradually decreases with worsening accessibility. Once more, social and environmental competitiveness and sustainability are not reflected at all in accessibility.

3. From the concept of economic competitiveness to that of territorial competitiveness

3.1. Evolution of the Lisbon and Gothenburg Strategies: 2000-2004

In March 2000, EU heads of state agreed the ambitious goal of making the EU "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". More specifically, it was agreed that the overall strategy to achieve this goal (the 'Lisbon Strategy') would centre on the following three strands:

- preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D, as well as by stepping up the process of structural reform for competitiveness and innovation and by completing the internal market
- modernising the European social model, investing in people and combating social exclusion
- sustaining the healthy economic outlook and favourable growth prospects by applying an appropriate macro-economic policy mix

The Lisbon Strategy was designed to mark a turning point for EU enterprise and innovation policy: it saw the high-level integration of social and economic policy with practical initiatives to strengthen the EU's research capacity, promote entrepreneurship and facilitate take-up of information society technologies. The main headings of the conclusions of the summit comprised:

- an information society for all
- establishing a European Area of Research and Innovation
- creating a friendly environment for starting up and developing innovative businesses, especially SMEs
- economic reforms for a complete and fully operational internal market
- efficient and integrated financial markets
- coordinating macro-economic policies: fiscal consolidation, quality and sustainability of public finances
- education and training for living and working in the knowledge society

- more and better jobs for Europe: developing an active employment policy
- modernising social protection
- promoting social inclusion[20]

In June 2001, at the meeting of the European Council in Gothenburg, the EU strategy for sustainable development was agreed and an environmental dimension was added to the Lisbon Strategy for employment, economic reform and social cohesion (The 'Gothenburg Strategy'). According to the conclusions of the meeting, the strategy for sustainable development "completes the Union's political commitment to economic and social renewal [and] adds a third, environmental dimension to the Lisbon strategy". The sustainable development strategy focuses on four key-priorities:

- limiting climate change and increasing the use of clean energy
- addressing threats to public health
- managing natural resources more responsibly
- improving the transport system and land use

Almost half-way through the implementation period, however, little progress had been made in moving towards these ambitious goals. After a global economic downturn, governments had generally become more reluctant to push through difficult and unpopular economic reforms or to focus on increasing their national budgets for research and innovation. As a result, there were claims that the EU has lost ground to its main competitors: USA and Japan.

In its traditional Spring Report, which served as a basis for the Spring Summit in March 2004, the Commission set out to assess the progress made towards the Lisbon goals. This report was accompanied by the Implementation Report of the Broad Economic Policy Guidelines 2003-2005, the Joint Employment Report, and the Implementation Report on the Internal Market Strategy. All these reports painted a disappointing picture of the EU's competitiveness. The Commission therefore urged governments to give the Lisbon strategy fresh impetus, outlining three priority areas in particular:

investment in networks and knowledge: starting the priority projects approved in the 'European Growth Initiative'

[20] The first six of these headings related to strand 1 (preparing the transition to a knowledge-based economy and society by better policies for the information society and research and development), whilst the last four headings related to strand 2 (modernising the European social model, investing in people and combating social exclusion).

strengthening competitiveness in industry and services: stepping up efforts in the areas of industrial policy, the services market and environmental technologies

increasing the labour market participation of older people: encouraging older workers to continue working

At their 2004 Spring Summit meeting in Brussels, EU leaders adopted conclusions on strategies to meet the Lisbon targets. The Council reaffirmed that the process and goals remain valid but that the pace of reform needs to be significantly stepped up. Wim Kok, the former Dutch Prime Minister, was appointed to head a high-level expert group to give new impetus to the Lisbon strategy. The group's mission was to assess the instruments and methods used to date and to involve Member States and stakeholders more closely to ensure the Lisbon objectives can be delivered. The group's report (the 'Kok Report') was presented to the European Commission and the European Council in November 2004 and concluded that little progress had been made over the first five years and recommended to refocus the agenda on growth and employment, stating that the 'disappointing delivery' was due to 'an overloaded agenda, poor co-ordination and conflicting priorities' and identifying the main cause as the lack of political will in member states.

3.2. The Lisbon and Gothenburg Strategies revisited

After the disappointing mid-term review of the Lisbon Strategy, the Commission has responded by trying to refocus the Lisbon Strategy on economic growth and job creation. The 2005 Lisbon Action Plan issued in February 2005 identifies 10 central policy areas:

- extend and deepen the Internal Market
- ensure open and competitive markets
- improve regulation
- expand and improve infrastructure
- invest in Research and Development
- facilitate innovation, ICT uptake and sustainable resource use
- contribute to a strong industrial base
- increase employment and modernise social protection
- improve the adaptability and flexibility of the labour market
- invest in education and skills

The Commission's proposals to relaunch the Lisbon agenda have raised controversy about the equality of the three pillars in the process: economic growth and competitiveness, social inclusion and environmental concerns. Critics argue that social and environmental issues have been sidelined whilst the European Commission argues that the proposal to refocus the Lisbon agenda on actions that promote jobs and growth is fully consistent with sustainable development. All actions of the strategy, the Commission argues, will reinforce the EU's potential to meet and further develop its environmental and social objectives. According to the EU:

"The renewed Lisbon strategy does not roll back the existing policies and commitments with regard to environment. The renewed focus will be pursued while respecting the existing policies and regulations concerning environmental protection. The Commission will step up its promotion of environmental technologies. It will also take necessary steps to promote the development of approaches and technologies that allow the EU to make the structural changes needed for long term sustainability, for example in the areas of sustainable resource use, climate change and energy efficiency. These are needed both for use within the EU and to meet demand in expanding markets worldwide."

In April 2005, the Commission presented its 'integrated guidelines' for growth and jobs for the period 2005-2008, which serve as the basis for the national action plans that the member states will have to present in the autumn of 2005 (see below). At the same time, the Commission also presented a working paper with guidance for the member states in terms of structure and content of their action plans. In July 2005, the Commission issued a programme containing actions needed at EU level, based on the EU Lisbon Action Plan issued in February 2005 (European Commission, 2005a). Before mid-October 2005, all EU member states are expected to publish their national programmes. The Commission will then assess the national action plans and adopt an Annual Progress Report early in 2006.

A review of the EU sustainable development strategy is also promised before the end of 2005. The rationale for the review, according to the EU, in addition to the change in the Commission, includes a number of significant changes that have occurred since the introduction of the current sustainable development strategy presented in 2001, such as:

- the enlargement of the European Union to 25 Member States
- terrorism and violence increases the instability of regions and life danger for citizens across the world
- the EU commitment to a number of global initiatives and targets

- further globalisation and changes in EU and world economy
- persistent and increasingly apparent signs of environmental problems in the EU and globally

The new sustainable development strategy will be based on the key objectives and guiding principles identified in the recent Draft Declaration on Guiding Principles for Sustainable Development published in May 2005. The key objectives comprise: environmental protection; social equity and cohesion; economic prosperity and meeting our international responsibilities. The guiding principles for policy comprise: promotion and protection of fundamental rights; intra-generational and inter-generational equity; open and democratic society; involvement of citizens; involvement of businesses and social partners; policy coherence and governance; policy integration; use best available knowledge; precautionary principle; and the polluter pays principle.

3.3. The Territorial Cohesion Agenda

Territorial cohesion is mentioned in the current EU Treaty,[21] the draft EU Constitution as well as in several EU policy documents such as the White Paper on European Governance, the Communication on Integrated Coastal Zone Management, the White Paper on Transport and the report of the Van Miert Group on the revision of the TEN Guidelines. Although not explicitly mentioned in the Lisbon Strategy, it has been argued that it implicitly incorporates a strong territorial dimension (e.g. Luxembourg Presidency of the European Council, 2005). The first formal attempt to define the concept comes from the European Commission's Third Cohesion Report (2004), which refers to territorial cohesion as a synonym for 'more balanced development', 'territorial balance' or 'avoiding territorial imbalances', stating:

"The concept of territorial cohesion extends beyond the notion of economic and social cohesion by both adding to this and reinforcing it. In policy terms, the objective is to help achieve a more balanced development by reducing existing disparities, avoiding territorial imbalances and by making both sectoral policies which have a spatial impact and regional policy more coherent. The concern is also to improve territorial integration and encourage cooperation between regions."

The Interim Territorial Cohesion Report, prepared by DG Regio based on preliminary results of the ESPON program and of other Commission studies, provides a more thorough presentation of the concept of territorial cohesion (EC, 2004). According to the report, territorial

[21] Article 16 of the EC Treaty concerns the role of services of general economic interest in promoting 'social and territorial cohesion'.

cohesion is complementary to economic and social cohesion: it concerns 'the balanced distribution of human activities across the Union' and 'translates the goal of sustainable and balanced development assigned to the Union into territorial terms' (EC, 2004:3).

During the Dutch presidency of the EU in 2004, the issue of territorial cohesion was one of the main subjects of discussion at the EU informal ministerial meeting held in Rotterdam (November 2004). The meeting sought to elaborate the objective of territorial cohesion (although no general agreement was reached on an operational definition of the concept of territorial cohesion) and to adopt a political agenda for the following 2 to 3 years with the aim of creating a coherent, effective and efficient approach to territorial development in EU policies. An accompanying discussion paper was prepared by the Dutch government for this meeting and set out three 'distinct but related dimensions of territorial cohesion' (Dutch Presidency of the European Council, 2004):

- a regional/national dimension – adding a territorial dimension to EU cohesion policy
- a transnational and interregional dimension – concerning external economic, social and cultural links
- a governance dimension – integrating and coordinating public policy between regions and across borders

The 'scoping document' prepared to inform discussion at the informal ministerial meeting on Regional Policy and Territorial Cohesion in Luxembourg (20-21 May 2005) continues along similar lines to the discussion paper prepared for the 2004 ministerial meeting in Rotterdam (Luxembourg Presidency of the European Council, 2005). The scoping document asserts that the concept of territorial cohesion builds on the ESDP and states that territorial cohesion 'adds to economic and social cohesion by translating the fundamental EU goal of balanced competitiveness and sustainable development into a territorial setting'. The accompanying document, the summary of political messages, states:

"Although not explicitly mentioned in the strategy, both the Lisbon and Gothenburg ambitions have a strong territorial dimension. The territorial dimension is essential for the implementation of the strategy as most important and dynamic forces in terms of economic development are increasingly both localised and territorially specific."

The translation of the concept of territorial cohesion into policy and practice is also considered in the scoping document prepared for the Luxembourg meeting. The integration of the territorial dimension into European and national policies (including sectoral policies as well as

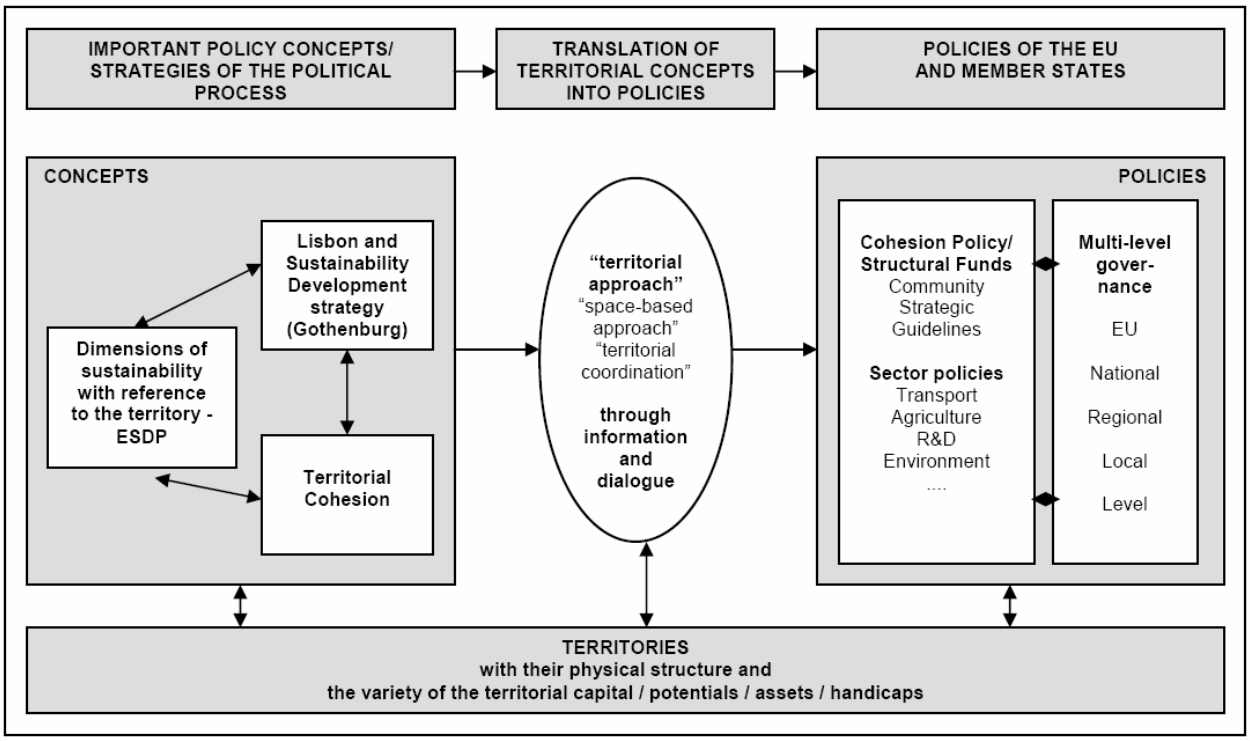
cohesion policies and structural funds) is highlighted (Figure 7). The document states:

"Strengthening territorial cohesion in the light of the Lisbon aims is not about creating a top-down and separate EU territorial policy but about integrating the territorial dimension into EU and national policies. Although spatial development is more than territorial cohesion, the EU Ministers with a responsibility for spatial development and the Commission could have a key role in raising awareness concerning the territorial dimension of EU policies and in promoting policy coherence and cooperation in this concern. The EU institutions and other stakeholders should become more aware of this territorial dimension and should be triggered to act adequately. Moreover, the EU Ministers for spatial development have a role in strengthening the (trans-) European dimension of national and regional territorial development strategies and policies and promoting horizontal and vertical policy coherence."

Reviewing these documents, Camagni (2005) proposes a definition for territorial cohesion as the territorial dimension of sustainability. Like the concept of sustainability, it attempts to integrate economic, social and environmental dimensions. More specifically Camagni sets out the three main aspects of territorial cohesion (territorial quality,[22] territorial efficiency[23] and territorial identity[24]), arguing that territorial cohesion concerns the integration of these three aspects (Figure 8). According to such a definition, the Lisbon and Gothenburg Strategies would appear to be perfectly compatible with the concept of territorial cohesion.

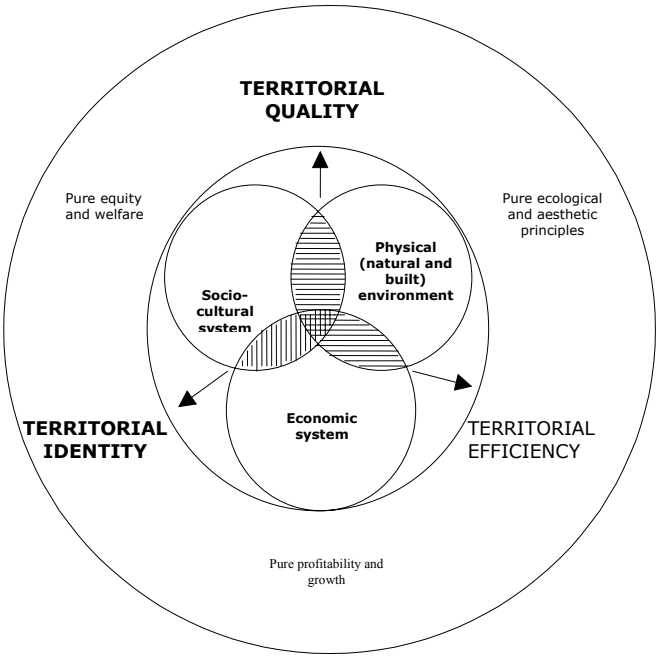
[22] territorial quality: the quality of the living and working environment; comparable living standards across territories; similar access to services of general interest and to knowledge
[23] territorial efficiency: resource-efficiency with respect to energy, land and natural resources; competitiveness of the economic fabric and attractiveness of the local territory; internal and external accessibility
[24] territorial identity: presence of 'social capital'; capability of developing shared visions of the future; local know-how and specificities, productive 'vocations' and competitive advantage of each territory

Figure 7: Translation of policy concepts into policies for territories



Source: Luxembourg Presidency of the European Council, 2005

Figure 8: The components of territorial cohesion



Source: Camagni, 2005

3.4. Reconciling the Lisbon and Gothenburg Strategies with Territorial Cohesion

As a consequence of the relaunch of the Lisbon Strategy, the review of the EU sustainable development strategy, ongoing discussions about the future of the Structural Funds (and the European Constitution), planning and programming concerning the Lisbon and Gothenburg Strategy are currently in a state of flux. It is therefore extremely difficult to assess the congruence of the Lisbon and Gothenburg Strategies or their relation with territorial cohesion. It is possible, for example, that Structural Funds could be bent to support a relatively narrow (predominantly economic) agenda in support of the Lisbon Strategy of growth and competitiveness or, on the other hand, they could be broadened to encompass the broader aspirations of territorial cohesion. An important factor in this debate is how the policy priorities are translated into practice. One of the main chapters (Chapter 5) of the recent Communication from the European Commission on Cohesion Policy is addressed to territorial cohesion, so it might be reasonable to assume that territorial cohesion will be an important dimension of future Structural Funds and Cohesion Funds (European Commission, 2005b).

EU Cohesion policy is the second largest area of EU expenditure, with an allocation of €212 billion between 2000 and 2006 and a further €22 billion in the new Member States between 2004 and 2006. It is a territorially focused policy: most of the funding is allocated for specific areas. Over two-thirds of the expenditure is spent on economic and social development in the least prosperous parts of the EU (with a GDP per head of less than 75 percent of the EU average), covering around 22 percent of the EU population. Since the reform of the Structural Funds in 1988, spending has been based on multi-annual programs drawn up by Member States (at national or regional levels) and approved or adopted by the Commission. For larger programs, Member States prepare Community Support Frameworks (CSFs), which outline the strategic objectives of the funding, and a series of sector-specific or region-specific Operational Programs (OPs) describing the detailed measures and delivery arrangements for interventions. In the case of smaller programs, these two levels of programming are combined in a Single Programming Document (SPD). Although the parameters for these programming documents are outlined in Council Regulations, there is considerable scope for interpretation of issues such as the balance of spending, the prioritization of EU policy objectives and themes and eligible expenditure. Through the process of approval/adoption of programming documents, and latterly the requirements for monitoring, reporting and financial

management, the Commission has been able to influence the content and delivery of regional development programs.

In the 2007-2013 programming period, the Commission has proposed a new and important form of leverage over the way in which Member States spend EU Cohesion policy allocations, which is of considerable significance for the territorial cohesion agenda. The proposal involves a new planning system with, at the apex, a set of Community Strategic Guidelines and National Strategic Reference Frameworks governing the delivery of individual operational programs. This is intended to ensure that overall EU policy objectives are reflected more clearly in the allocation of resources. The 2005 Community Strategic Guidelines takes account of some of the policy views expressed at the Rotterdam ministerial meeting, with a chapter dedicated to 'taking account of the territorial dimension of cohesion policy' (European Commission, 2005b). The document states:

"*The concept of territorial cohesion extends beyond the notion of economic and social cohesion, its objective being to help achieve a more balanced development, to build sustainable communities in urban and rural areas and to seek greater consistency with other sectoral policies which have a spatial impact. This also involves improving territorial integration and encouraging cooperation between and within regions*." (European Commission, 2005b:29)

The extent to which future Structural Funds programs will deliver territorial cohesion will also depend on the content of domestic development policies in the Member States. These are likely to be reflected in the implementation of European Cohesion policy. In a number of EU Member States policies are increasingly concerned with growth and overall national development, rather than with overcoming internal disparities. In such countries, a shift has taken place in spatial targeting from selectively focusing resources on designated regions 'in need' to an approach which places emphasis on the contribution of all regions to national development and growth, what Yuill has termed the 'all-region approach' (Yuill, 2004:21-22).

Perhaps the most striking example of this shift to an 'all-region approach' in the domestic regional policies of the Member States is found in the Dutch 2004 regional policy White Paper. This sets out an economic agenda for six Dutch regions, focusing particularly on large, 'ambitious' projects aimed at the 'recovery of the growth capacity of the Dutch economy and strengthening the business locations climate' (Ministerie van Economische Zaken, 2004:11). The strategy of the White Paper incorporates two innovations:

- the refocusing of regional economic policy away from the traditional problem regions in the north and towards economic priorities in all Dutch regions
- a move towards a more selective policy approach, with clear choices being made as to where, in the regions, national policy efforts should be directed

Similar approaches can be found in the Irish National Spatial Strategy which aims to provide a framework for the development of an all-island economy (McMaster, 2004), as well as in policy documents in the UK. The "National Planning Framework for Scotland" for example highlights "the importance of place and identifying priorities for investment in strategic infrastructure to enable each part of the country to play to its strengths in building a Scotland which is competitive, fair and sustainable" (Scottish Executive, 2004, 10).

This move to an all-region/national growth approach, is not just taking place in countries where regional disparities have traditionally been perceived as low (such as Austria, Denmark or the Netherlands), but also in other countries, not least due to the negative economic cycle of recent years and the difficulties met in maintaining sustainable economic growth also in the wealthiest and economically healthiest regions. The above-mentioned trend is particularly evident in the new Member States where, despite the general rise of regional disparities - caused mainly by the unprecedented, accelerated growth, especially in and around the main cities – the policy focus tends to be on reducing the national development gap with the EU average, rather than on addressing interregional inequality (Yuill and Quiogue, 2005). Some of the 10 new Member States that joined the European Union in May 2004, whose Structural Funds strategies in the 2004-06 period were focused on national development, are currently considering shifting their policy emphasis for the next programming period towards more balanced regional development (Davies and Gross, 2005:18).

The policy shift to national development and all-region approaches can be seen as having, potentially, both positive and negative effects on the contribution of future Structural Funds programs to the goal of territorial cohesion. On the one hand, the emphasis placed on national growth (and catching-up) over inter-regional balance, may contribute to the achievement of territorial cohesion at a pan-European level. On the other hand, territorial cohesion may be constrained at the domestic level, due to the residual weight attributed to spatial balance across and within regions, which is seen as secondary to overall national growth.

Despite new rules and re-focused overarching policy objectives (i.e. harmonization of strategies with the so-called Lisbon goals), it is likely

that current programs will significantly influence their successors. This will be particularly the case in the new Member States where the 2004-2006 period has been viewed as a preparatory, learning phase for the 'real' challenge of the 2007-2013 period. The political and policy rhetoric of territorial cohesion is likely to be subject to major constraints. The flexibility sought by some Member States with respect to the proposed Community Strategic Guidelines suggests that they do not necessarily share the conceptual approach underlying territorial cohesion. Second, the policy priorities of individual countries vary greatly. Third, there is considerable variation in the scope and capacity of institutional arrangements within Member States to address the territorial cohesion agenda.

3.5. A step onward: the Porter's Diamond review

According to the guidelines of the Lisbon/Gothenburg strategy, in this work will be compared and assessed the critical contribution of the literature including both theoretical/academic and policy/programming documents) on the theme of the territorial competitiveness, particularly those studies concerning environment as internality of the economic-territorial system useful to the achievement of a competitive advantage.

The regional and national territory is not treated as undifferentiated space of the social and economic action but as a physical place where receive and check the territorial capability of the competitiveness. The ESPON 3.1. project results had already shown the territory as real expression of the R&D's, innovation and education demand and supply regard to production and employment market. Therefore, the territory becomes a parameter to measure virtuous solutions supporting the regional entrepreneurial structure in terms both of environmental sustainability and of improvement of cohesion and integration levels between different territorial actors (institutional and not institutional).

In this framework this work will analyse:

- the role of the territorial context in the international competition at national and regional level;
- the determining factors (as quality, governance, ICT, human capital, efficient use of resources) in improving the territorial performance and competitiveness at different geographical scales (states, regions, cities, metropolitan areas).

A wide variety of forces can contribute to improve the attractiveness and competitiveness degree of a territory in relation to Lisbon/Gothenburg strategy. The main concepts are:

- continuous qualitative improvement
- cultural and social heritage valorisation
- sustainable use of resources (natural, economic, human)
- preventive assessment of policies, programs and projects

The EU Member States need a new territorial competitiveness point of view, that requires a revision of the Porter's diamond.

In such reference context, the research of new structural indicators able to put objectively in comparison European Member States from a territorial competitiveness viewpoint, requires a revision of the Porter's diamond. The diamond's model needs to be updated according to the recent indications from new economics and social models for a new EU respecting Lisbon 2000 and Gothenburg 2001 strategy. On this way it's possible to insert a further star in Porter's diamond, crossing the first, which increase interaction elements to be considered. In adding to the classics elements of Porter's diamond:

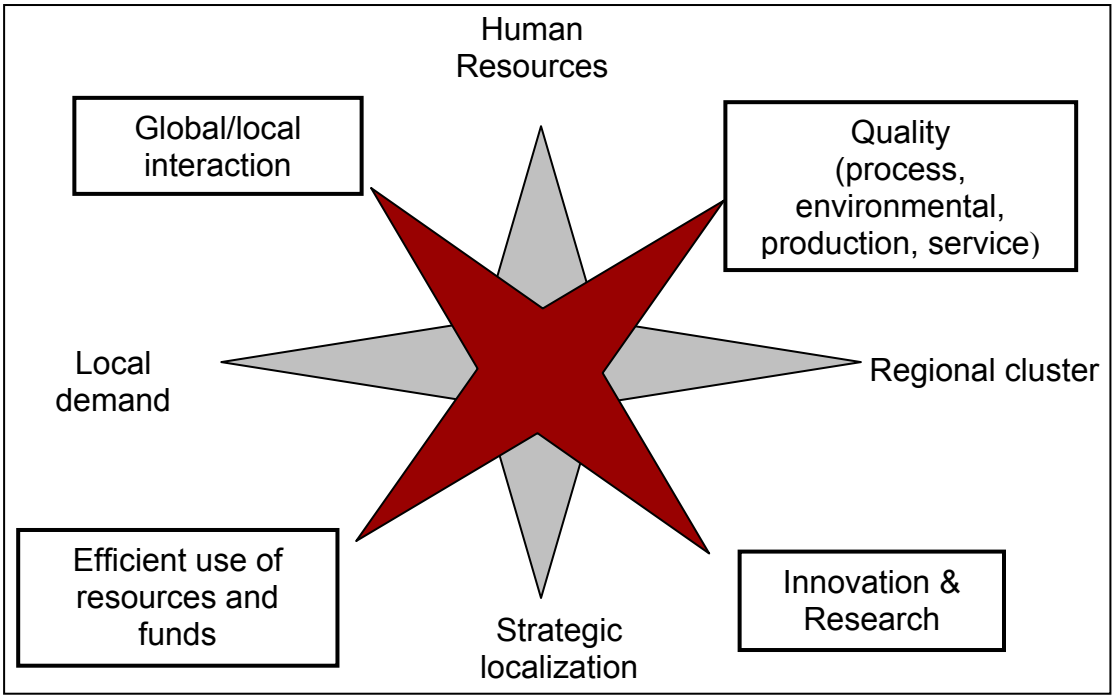
- Strategic localization
- Local demand
- Integration with regional *cluster*
- Human Resource

we can list four additional categories of elements that will include the classic elements, too:

- Global/local interaction
- Quality (process, environmental, production, service ones)
- Innovation Technology
- Efficient use of resources and funds

The new scheme deriving from the concepts above is the following:

Figure 9: Modified Porter's Diamond Model



Now we will analyse the four categories that will include old e new important elements for the definition of territorial competitiveness. These categories can be considered like four big containers which arrange in the right way the different elements that concur to the overall definition of a territorial area.

4. Methodology

As seen in the previous chapters, that of defining territorial competitiveness in an objective and univocal way is a complex task, both because it pertains to several different dimensions and it is continuously transforming in time.

Therefore, it is a **multidimensional concept, changing in time and space**. Moreover, the choice of the previous definition and, therefore, of its measure invests the political-social dimension (non-competitiveness may become a cause of exclusion from the mechanisms of setting-up collective decisions). The more appropriate approach is therefore **territorial-multidimensional** that revolves around three key objectives/principles:

- sustainability
- cohesion
- integration

that on one hand, constitute the foundations for the activities of the various actors who interact on a given territory and on the other hand, define their inter-relations with the other territorial dimensions.

4.1. The interactions among indicators

As discussed in detail in the SIR, the main goal is the building of a **composite indicator** of territorial competitiveness, that we have linked to what Amartya Sen calls **"capabilities".** In our case, they become **territorial capabilities** and are described in terms of four **determinants.**

Each determinant outlines, at the scale of pertinence to the Structural Funds Plan, *the logical network* of the information and the judgements produced to respond to the logic of the system. This meant identifying the process and the target through which the **basic indicators** of every determinant interact individually or on the whole.

On one hand, some of the indicators[25] defining the determinants

[25] Into the Almunia's Document (2005: 2-6), the indicators (a preliminary set of Sustainable Development Indicators – SDI consisting of 12 headline, 45 core policy and 98 analytical indicators) reflect the various priorities adopted in Gothenburg (climate change, public health, management of natural resources, transport, ageing society, social exclusion and poverty) and subsequently in Barcelona in 2002 (global partnership for sustainable development), as well as the commitments which the EU made at the

contribute to express the *status quo judgement*[26], i.e. their 'dimensional state', that concur in the definition of the determinant.

On the other hand, other indicators contribute to define the *vulnerability judgment*, or risk of compromising the system/determinant.

The interactions between indicators, in synergy or in reciprocal prevalence, define a 'domain of interaction' that allows to define every competitiveness component or determinant and to asses the potential impact that could come from the realization of the new SF plan or part of it.

This method of reading the territorial competitiveness is, in our opinion, the most adequate one, for several reasons: the system of definitions used, the area concerned, the objective pursued (the competitiveness in sustainability in relation to the Structural Funds).

In this approach, that faces the challenge of adding the "territorial dimension" to peculiarly economical-political aims (competitiveness and sustainability), the main operational problem has been that the majority of indicators describe social-economical phenomena that are not completely "territorialised" because of the statistical relevance of the data themselves, both in terms of modality of the survey and of geographical level of detail.

In this particular case, the great majority of the data that, according to the theoretical approach, are needed to build from the indicators up to the determinants, are at present available mainly at national (NUTS0) and, less frequently, at regional (NUTS2) level. As will be described later, this issue was addressed by performing a thorough data availability and quality research and a subsequent choice of "proxies" or "second best" indicators and gap filling actions.

From our point of view, the most appropriate territorial level on which the analysis of the competitive process should be addressed would, instead, be the "provincial" one, i.e. NUTS3. In fact, the readout of the programmatic demand –to which the SF policy should provide a consistent offer- is best performed at this intermediate level of subsidiarity.

This problem was solved by taking advantage of the work made by those ESPON projects which have provided territorial typologies of various kind,

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Johannesburg summit on sustainable development, again in 2002 (patterns of production and consumption, good governance).
Some examples of the indicators which can be found on the Eurostat website are shown below: http://europa.eu.int/comm/eurostat/sustainabledevelopment

[26] This concept corresponds to "state indicators" in the well-known DPSIR Environmental Assessment Framework (EEA and OECD).

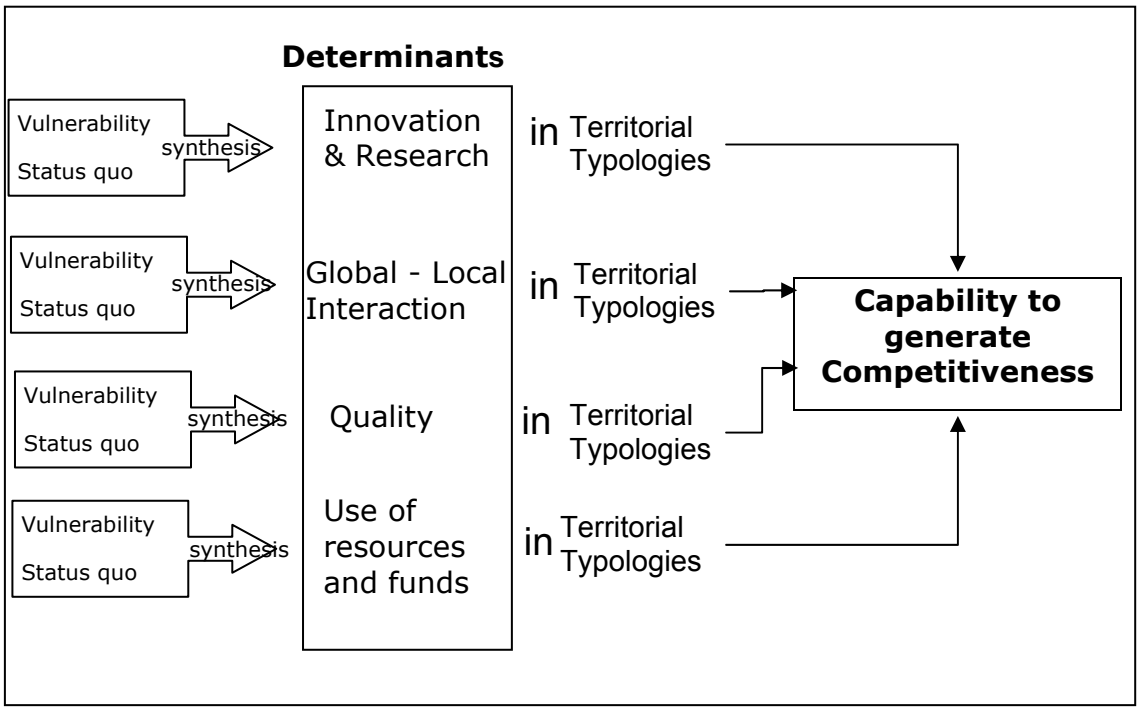
namely, the most part of the thematic projects. Most of them, or at least the ones that are more closely related to our framework, have in fact been geographically referred to the NUTs3 administrative level (see tab. 9 of 3.2 project's SIR).

The territorial typology helps providing a way to "project" onto a more detailed reference, data that are generally assigned to a wider boundary. This also allowed to retain a source of information that is geographically more detailed, even when this has to be combined with less detailed ones.

Moreover, this point of view is also consistent with the application of the vertical subsidiarity principle within the European States/regions.

Through the connection of the determinants to the territorial typologies – that come, in turn, from a specific weighting process - it is possible to define the Territorial Capability to be Competitive in Sustainability (Fig. 10).

Figure 10: The connection of the determinants to the territorial typologies



At this stage of the work, the "territorialisation" of the four determinants has been carried out, along with the mapping of each basic indicator and intermediate index. *The TPG is still discussing on the definition of the matrix combination with which the synthesis of the territorial determinants into the Territorial Capability Index should be performed.*

In this synthesis procedure, two different mapping ways have been used: equal interval (where the distribution of values is divided into intervals of equal width and the classes are accordingly determined) and quantiles (where the distribution of values is divided into intervals of different width in order to equalize the numerosity of each class).

From the SIR deadline on, a huge part of the work was destined to the definition of the qualitative combination by matrix of the indicators and the relative maps production. In parallel, a DataBase/GIS tool for the automatic combination starting from the basic indicators according to the methodology, has been developed as a specific part of the 3.3 project. It will serve both to test, in this phase, the connection and relative weight of the indicators/indices and to provide, once the method is definitely agreed upon, a tool for easy readout and choice for the policy makers. The design and capabilities of the tool will be described in a dedicated section.

The final step of the 3.3 methodological process is the recognition of the effects potentially generated by the policy actions. This question has been solved linking the *capability to generate competitiveness in sustainability* with the policy recommendations coming from other Espon projects and new EU programmatic documents.

This process can be considered as an economic/territorial/environmental impact assessment (DIR CE/42/2001). The value of impact is in fact produced by the effects of the policies on the indicators, using *correlation matrices* to assess the degree of risk to overtake the carrying capacity threshold and the improvement in performance and competitiveness.

After the end of this phase, it is possible to start the one of building the scenarios of Structural Funds granting, according to the indications provided by the Capability Framework.

Some scenarios are already implicit into the determinant's reading, drawing a first transnational and cooperative areas. Nevetheless, the 3.3 working group decided to present this result in the final report to have more time to discuss and picture the different scenarios.

4.2 Methodological issues for the construction of a Composite Index of Territorial Capability of Competitiveness In Sustainability.

The aim is to construct a measure in terms of an ordinal scale that reflects the endogenous equilibrium/disequilibria status that arises from a mix of conditions. These conditions identify what we have previously defined "competitiveness in sustainability".

The initial status has to be regarded as the starting point where structural funds could have their impact.

To achieve this aim there's the need of synthetic measure (technically a composite index) that moreover be:

- tailor-made for the specific political question in order to design the distribution of new SF;
- inserted in the general framework of more interconnection and integration between territories;
- devoted to preserve the territorial heterogeneity richness, but at the same time with a strong purpose of a common convergence towards higher levels in overall situations;
- and, last but not least, easy to handle for political requests and, therefore, generated from a very pragmatic operative approach.

The theoretical approaches and methodological choices discussed below are strongly depending on the previous items and the results tries to combine a rather simple procedure with the complexity of the topic. We have been asked to make an acceptable compromise between very advanced and sophisticated procedures (also in the statistical and mathematical instruments involved) and a methodological approach backed by sufficient scientific agreement, but, once more, working in an easy way so as to become understandable for everyone.

A lot of elements concur (as "driving forces") to build the territorial capability of competitiveness in sustainability; in our approach they are grouped into four fundamental aggregate sets (in our language **determinants**) that are in turn generated by the combination of other less aggregate sets in accordance with a hierarchical structure: determinants from **typologies**, typologies from **sectors**, sectors from **categories**, to end up with the elementary information, or **indicators,** that generate categories.

This framework is largely adopted in the literature concerning the development of aggregate indices that summarize the information contained in different elementary indicators (inter alia, Mazziotta 1998). What differs now from the usual methodology producing aggregate indices are the aggregation process and the introduction of an innovative territorialisation procedure (outlined in more detail below) to stress the similarity/diversity of the European regions respect to their capability of competitiveness in sustainability (include the factors creating it).

The strength of our methodology can be viewed in its capacity as to combine very different elementary information (quantitative, qualitative- the latter also transformed in quantitative, too) and referred to

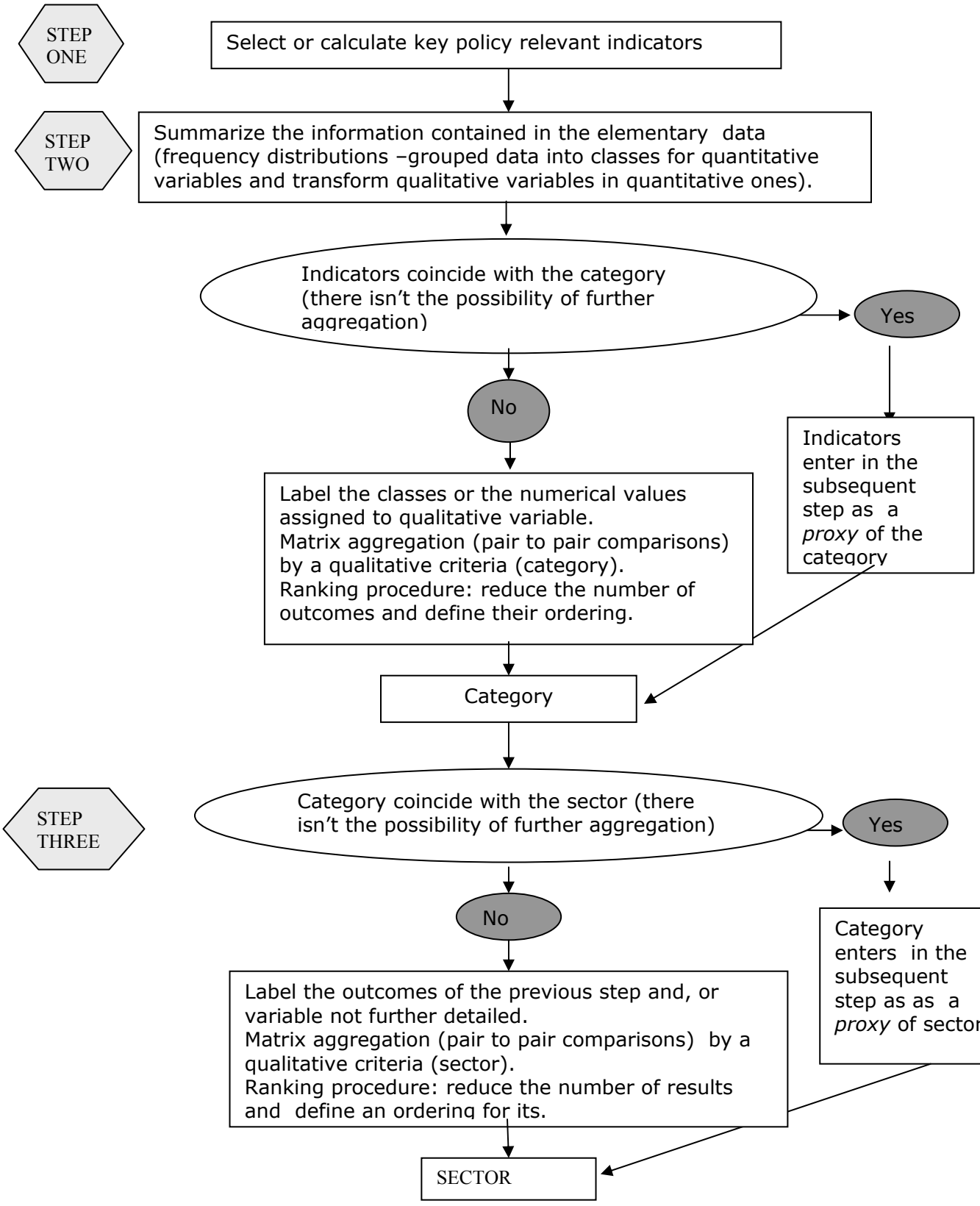
phenomena (economic, social, environmental. etc.) that could hardly be treated with the same model. As will be explained later, the methodology (especially the aggregation procedure) is in fact not depending on the scale of measure adopted for the variables. Moreover, another gain reached is the possibility to use the same rule (again in the aggregation process) without regarding the different direction of the link between components of the same determinant (when low values as well as high values contribute to make higher the value of the determinant). Finally, the methodology implemented can be updated whenever initial conditions change.

If we want to find a weakness point of the method, it could be the choice of pair to pair comparison and the ordered reduction of the outcome of this procedure, as it would anyway be the case for any, even conventional, methodology which require the selection of an aggregation function and a weighting scheme. Nevertheless, we rely on the praxis usually followed in the SEA/EIA procedures and similar.

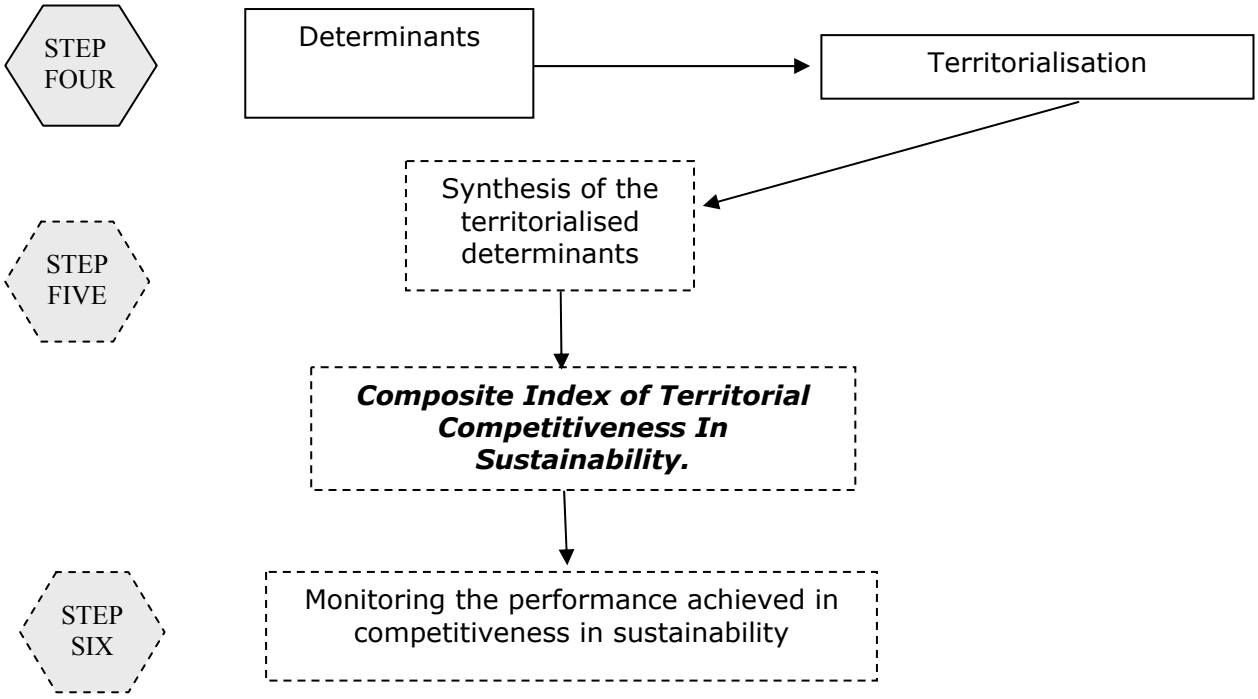
Several steps are required in order to accomplish this goal, from the proposal of our "core" indicators, to the grouping of the data and, finally, to the definition of the aggregation criteria concerning the link between the different subdivisions in order to define the next (higher) level.

The steps, six in the overall, are linked to each other, so that the previous enters as input in the following one. They are illustrated in Figure 3. It shows the relationship between the components (that is to say indicators $\rightarrow$categories $\rightarrow$sectors $\rightarrow$typologies $\rightarrow$determinant -from the lower to the higher level-) and outlines when the aggregation process and territorialisation procedure occurs (see also the software application, named the toolbox, described later).

Figure 11: Diagrammatic scheme of the methodology



And, so on, again step three for categories, sectors, typologies to end with Determinants. Then, finally:



At present, the TPG is still working on the latter two steps:

- Step five: Synthesis of the territorialised determinants
- Step six: Selection of a rule for the monitoring process.

The corresponding results will be presented in the end of the 3.3 Project.

Step one: select or calculate key policy relevant indicators.

The established approach has led to a set of 116 elementary indicators that contribute to the definition of the Composite Index.

This figure accounts also for the redundancy due to the use of the same indicator in different determinants and the aggregation rising from the use of synthetic indices from other ESPON projects. Table 4.1 shows the number of indicators, categories, and so on, related to the four determinants.

Table 3: number of indicators, categories, sectors and typologies related to the four determinants

Indicators	Categories	Sectors	Typologies	Determinant
11	8	5	3	Innovation & Research
68	23	9	4	Global/local interaction
27	23	10	4	Quality
10	10	6	3	Use of resources and funds

The high variability of the indicators required for each of the four proposed determinants (from the point of view of kind and related scale of measure) also depends on what they are intended to measure: for instance, global local or quality determinants rely a lot of on qualitative judgements whereas the other two are more connected with quantitative evaluations.

Regarding the well known criteria of selecting a set of indicators (in terms of required features, for instance, measurable, understandable, scientifically sound, and so on) some of the indicators used are also "structural indicators" or come from Espon Projects (both as remarked in table 11); another part of them, as already shown, is largely adopted in international comparisons of competitive positions and progress towards sustainable development.

Data availability as well as their description are presented in the Annex I.

Step two: summarize the information contained in the elementary data (frequency distributions –grouped data into classes for quantitative variables and transform qualitative variables in quantitative too).

Data collection provides the $n \times m$ data matrix, where n (the rows) represents the number of the regions (280), and m (the columns) the number of indicators (116) - generally i=1,2,…,n and j=1,2,..,m - so that each column inform us of the overall availability of a specific indicator for the regions and, vice versa, each row of the availability of the overall indicators for the same region. There are some gaps in this matrix because of the problem of data missing (see Annex I that goes into details about the data and their main features including the difficulties of

constructing a collection of same variables for the overall countries and also for the same year of reference).

Each dataset has then been arranged and linked to the geographical subdivisions: in this step the qualitative variables are transformed in quantitative ones through weight assignment. These set of quantitative values are then summarized forming two frequency distributions, with closed and non-overlapping classes.

The factors classifying the numerical indicators are selected with the purpose of catching immediately both the mode and the position of the frequency distributions. The dimension prevailing as well as the dimension that can be associated at least to a quarter (or an half) of the regions (both in relation to a specific indicator) are useful tools for political requests inherent cooperation objectives. So:

- the first frequency distribution is formed grouping the regions according to four classes equal in width. This subdivision, usual in the applied statistics, is known as *equal-width classes*, but we renamed this choice, also from the GIS jargon, as "the equal interval approach"; *in this case* the width of the classes is predetermined by the range of the variables and the number of the classes chosen (generally $d = \frac{Range}{k}$, where d is the width, k is the number of the classes and the Range is the difference between the first (minimum) and the last (maximum) value of the ordered sequence;
- the second kind of frequency distribution is obtained dividing the regions into equal parts (and for this reason is named *equal-frequency classes*). Because of the choice of four classes, the classes are simply defined by the values of the three quartiles and closed by those values (in the following named "the quartile approach").

Moreover, it is well known that the more skewed the distribution, the worse is the mode as the only measure. Depending on the kind of a lot of indicators selected, we have distributions typically skewed to the right, but that can contemplate a few of regions differing from the size of the greater part. For this reason, the association of "the equal interval approach" with "the quartile approach" leads to a complementary information about the skewness and it is also useful to analyze the distribution without regarding situations particullary good or bad (the quartiles, are not influenced by atypical extreme values).

In order to translate the above consideration into "maps readability", as a matter of definition of such classification schemes, Equal Interval classification usually brings about a view that "isolates" the extreme values and mainly allows for an overall (possibly, country level)

comparison. Quartiles tend to highlight the contrast between regions, because the classification is managed so as to equalize class numerosity; this usually allows a readout that is more detailed at the regional level.

Concerning the qualitative variables, attribute or adjectives that characterize it have been transformed into numbers and in the large debate about how to translate from qualitative variables into quantitative ones, the choice has simply fallen over the numbers 0, 0.5 and 1 in conjunction respectively with three different (but that can have an ordering) situations (for instance this is the case of the working about the adoption of international convention: not at all =0; in progress=0,5 and completed=1). Subsequently the regions are reconducted again in four groups on the basis of the results (for each region) of a weighted average where the weights are the frequencies (for example the stage of adoption of conventions that can assume values 0; 0.5; and 1 regarding the progress towards a complete adoption has been weighted with the number of conventions in every group –see table showing the list of indicators, categories, and so on- and in this manner the result provides an average quota of conventions adopted. Then the regions are grouped in four parts with the same criteria described in the case of quantitative variables).

Step three: label the classes or the numerical values assigned to qualitative variable. Matrix aggregation (pair to pair comparisons) by a qualitative criteria (category). Ranking procedure: reduce the number of outcomes and define their ordering.

The aggregation procedure needs to label the classes formed in the previous step. We are infact searching a procedure capable to work without regard to the kind and the dimension of the variables selected (however, these knowledge can always be recovered from the distribution of the variable).

From what previously stated, there can be only four possible allocations (positions) for the values of the different indicators: the first, the second, the third and the fourth class (labelled respectively with A or a, B or b, C or c, D or d). As will be seen later, the upper or lower case are referred only to the order in which the two indicators enter in the pair to pair comparisons (and so provide an higher or lower importance as brought about by the class-reduction definition) but they is no relevance with respect to the labelling rule adopted.

Then, when we combine the information related to each indicator by a pair to pair comparison the results are simply the number of permutation of n objects taken k at time with replacement and so in our case sixteen pairs of outcomes. They are rearranged again in four groups.

The rules involved to reduce the number of outcomes from 16 to 4, are as follows.

First of all, two general principles have to be kept in mind:

the aggregation procedure is the same for every level;

the choice about the indicator which heads the row (the column) is the result of suggestion of experts or come from deep recognition of literature concerning each specific topic.

In the methodological and operational proposal that has led the TPG in the work for the present Report, the matrix defining the combinations and the subsequent class reduction is the following:

I_2 / I_1	a	b	c	d
A	Aa (1)	Ab (1)	Ac (2)	Ad (2)
B	Ba (2)	Bb (2)	Bc (2)	Bd (3)
C	Ca (3)	Cb (3)	Cc (3)	Cd (3)
D	Da (3)	Db (4)	Dc (4)	Dd (4)

with the general rules, both based on expert's assessment, of the following order:

Aa>Ab>…….>Ba>Bb>…..>Dd

and of the rearrangement of the pair derived from the two components I_1 and I_2 value in the following way:

Aa, Ab = high value = 1 or "A" (dark green in the above example)

Ac, Ad, Ba, Bb, Bc = medium high value = 2 or "B" (light green)

Bd, Ca, Cb, Cc, Cd, Da = medium low value = 3 or "C" (orange)

Db, Dc, Dd = low value = 4 or "D" (red)

(the number in brackets in the matrix are referred to the position assigned to the pair).

The specific result of such choice for pairs grouping are as follows:

2 in the first position (all with rank one, or "A");

5 in the second position (all with rank two or "B");

6 in the third position (all with rank three or "C");

3 in the fourth position (all with rank four or "D");

More detail about criteria concerning the matrix aggregation:

i) the replacements (pair lying in the main diagonal) must necessarily have the same label of the two components from wich are defined (first for both the first and the second component leads to the first position for the outcome, and so on) and in the main diagonal are A, B, C, D or, as in brackets, 1, 2, 3 and 4.

ii) the six pairs - Ab; Bc, Cd, Ba; Cb and Dc – three above and three below the main diagonal are evaluated like the first component (respectively A, B and C or 1, 2 and 3; B, C, D or 2, 3 and 4).

The indicator (more generally the components) which first enters the matrix ($\mathbf{I_1}$) prevails in the final outcome but with opposite effect regarding the position of the second indicator (component). In the first case, this effect is "virtuose" and the association between the two positions (e.g. A for the first component and b for the second) overrides the situation of the second component and the final result is dragged along (A in the example). The same happens in the case of Bc and Cd, that are classified in the second and in the third position, respectively. In this second case the rule is the same but the effects of the combination is towards the worse position (with respect to the second component).

The different and asymmetric classification of Ab and Ba but also of Ac and Ca and so on means that a high weight has been assigned to the component which first enters the comparison, with two exceptions, now mentioned.

iii) The association between A and c leads to B (or 2) and between B and d leads to C (or 3), so that there are two cases in which we obtain an "average" position; once again if we permute the entering order there isn't a symmetric position: Ca becomes C (or 3) and Db becomes D (or 4) confirming the greater weight assigned to the first indicator (these two pair follow the rule of assuming the position of the first indicator as in ii);

iv) the greater weight for the first component is more evident for the pairs in the upper right corner and lower left corner where A and d provides B (or 2) as result and D and a provides C (or 3).

Once more, in terms of "maps readability", such definition may result in flattened distribution of values toward the two intermediate classes. It has

been left to further investigations, the possibility to review and "tuning" of the matrix ranking.

Step four: the innovative territorialisation procedure implemented into the determinant results and the final evaluation drawn in the maps deriving from it.

A comprehensive description of this process is provided in chapter 4.2

4.3. The territorialisation matrices to assess the capability to generate competitiveness in sustainability

In terms of reference and also in the approved proposal case studies were appointed to test the methodology of analysis of the territorial dimension of Lisbon and Gothenburg Strategies. For this purpose, after having applied a specific methodology, case studies that represent the territorial diversity and potential within the enlarged European territory for Lisbon and Gothenburg Strategy, had been chosen in the previous report.

Nevertheless, after having discussed the importance of integrating the "territorial performance" with "results of the indicators of Lisbon and Gothenburg Strategies", the TPG decided to change the methodological procedures and replaced case studies selection by a territorial typology which represented the European reality as a whole.

Two main reasons for this methodological change could be highlited:

- first of all, the main objective of the case studies is to test the efficiency of new synthesis indicators to assess the territorial dimension of the Lisbon/Gothenburg strategies. In that case, because it will be possible to make a classification of all territories, and not only a selection of case studies, TPG decided to make a typology of all EU in order to correlate it with the four synthesis indicators;
- the second main reason for the present decision is related to the second objective of case studies: to make a more detailed performance analysis. The sequence of the work to analyse the spring indicators and the "four synthetic indicators - determinant" occurs simultaneously to the elaboration of the territorial typology, situation that doesn't make possible in feasible time a detailed analysis. This means, that a deeper analysis could be done in the last report, after discussing the determinants results and how to integrate the political dimension.

The step was then to elaborate a territorial typology for all EU.

4.3.1. Typology of territories

In order to provide a territorial typology, it was considered:

- the population structure and its incidence in areas with urban and rural characteristics (via typologies referring to the Functional Urban Areas and to urban-rural relationships);
- the relationships between urban and rural areas (via the typology referring to urban-rural relationships);
- cities' growth dynamics (via the typology referring to the Functional Urban Areas/MEGAs) and accessibility/connectivity. This typology also show the spatial integration capacity (via the typology of FUA) that represents different competitiveness profiles and distinct patterns of social cohesion and environmental sustainability.

In this case, the typology of territories should be selected in function of the typologies of regions developed within the ESPON Programme, specifically those from Project 1.1.1. – "The role, specific situation and potentials of urban areas as nodes in a polycentric development" (2002-2004) and Project 1.1.2. – "Urban-rural relations in Europe" (2002-2004).

The classification of territories was developed in 3 steps:

i) First steep: crossing the urban-rural typology and FUA

The urban-rural typologies, take into account 6 different regional types:

1. High urban influence, high human intervention;
2. High urban influence, medium human intervention;
3. High urban influence, low human intervention;
4. Low urban influence, high human intervention;
5. Low urban influence, medium human intervention;
6. Low urban influence, low human intervention

Concerning the functional urban areas, they take into account 4 classes:

0. No special function

2. Regional/Local

3. Transnational/National

4. Mega,

These two typologies give a quite complete picture of European territorial diversity in four dimensions that include the settlement structure and the urban development level. Because they are "composite" indicators, they "integrate" also the concept of accessibility (especially 1.1.2. typology) and the economic performance/agglomeration effects (especially 1.1.1. typology).

After crossing these two typologies, we got a third classification that gives a new territorial typology that accomplishes the territorial diversity of Europe in the four pointed dimensions.

Table 4: Number of NUTS III according to the crossing of the two typologies

URBAN-RURAL TYPOLOGY	FUA Typology				Total NUTs III
	0. No special function	2. Regional/Local	3. Transnational/ National	4. Mega	
1. High urban influence, high human intervention;	241	256	129	66	692
2. High urban influence, medium human intervention;	15	31	7	6	59
3. High urban influence, low human intervention;	4	15	14	4	37
4. Low urban influence, high human intervention;	36	67	28		131
5. Low urban influence, medium human intervention;	57	111	29		197
6. Low urban influence, low human intervention	63	99	43		205
Total of NUTs III	416	579	250	76	1321

Nevertheless, the implementation of this methodology (crossing 1.1.1. and 1.1.2. typologies) has a problem that must be pointed out. The unavailability of information for the new accession countries (namely more specific indicators, time series and different NUTS levels, and from some other countries has been solved by choosing alternative indicators as a proxy, that could represent the same phenomena of 1.1.1. and 1.1.2. typologies: population density, accessibility index and urban network, indicators available in ESPON database.

The table shows 24 different classes, 21 with statistical units and 3 empty ones, which have necessarily to be aggregated in a smaller number

4.3.2. Three different hypotheses of analysis

Concerning the relevance of the phenomena, three different hypotheses have been prepared:

- Hypothesis A: Cross the 2 variables in order to obtain 5 classes
- Hypothesis B: Cross the 2 variables in order to obtain 8 classes
- Hypothesis C: Cross the 2 variables in order to obtain 7 classes

Hypothesis A

The criteria of aggregation were supported in a hierarchical order of importance of the phenomena (settlement pattern and functional importance of the urban agglomerations), that resulted in 5 classes:

Table 5: Hypothesis A - 5 classes

URBAN-RURAL TYPOLOGY aggregation	0. No special function and 2. Regional/Local		3. Transnational/ National	4. Mega
	241	256	129	66
	15	31	7	6
1,2,3	4	15	14	4
	36	67	28	
	57	111	29	
4,5,6	63	99	43	

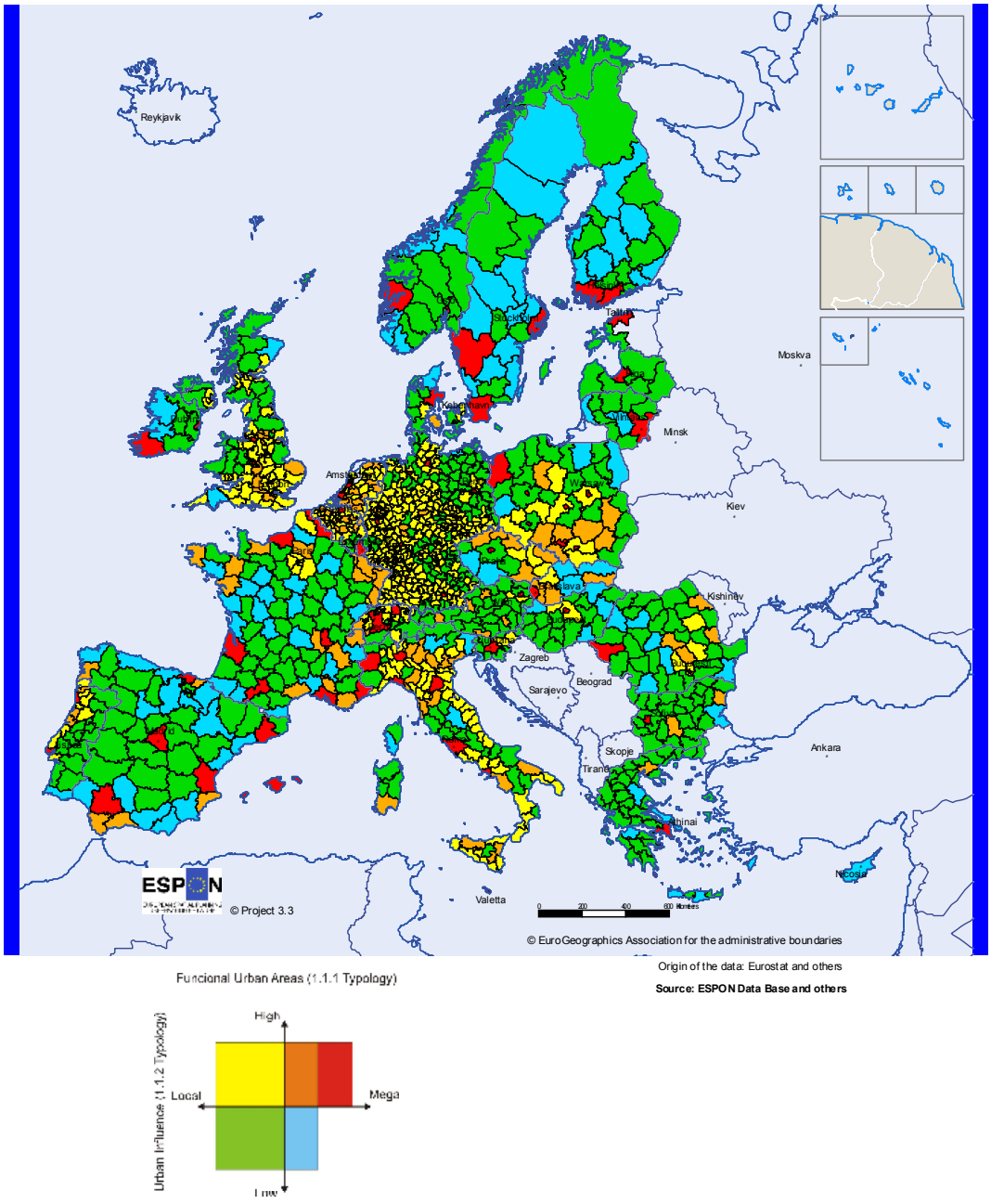
These 5 classes correspond to:

- Class 1 - High urban influence with Mega cities (top functions);
- Class 2 - High urban influence with Transnational or National city functions;
- Class 3 - High urban influence with no special or regional/local functions;
- Class 4 – Low urban influence with Transnational or National city functions;
- Class 5 - Low urban influence with no special or regional/local functions

Table 6: 5 class's classification – PROPOSAL

URBAN-RURAL TYPOLOGY aggregation	0. No special function and 2. Regional/Local	3. Transnational/ National	4. Mega
1,2,3	High urban influence with No special function or Regional/Local functions	High urban influence with Transnational or National functions	High urban influence with Mega functions
4,5,6	Low urban influence with No special function or Regional/Local functions	Low urban influence with Transnational or National functions	

Figure 12: Typology of territories - Hypothesis A



Class 1 represents high urbanisation levels in regions in the leadership of the *Metropolitan European Growth Areas* (MEGAs) as London, Madrid, Groot Amsterdam or Rome, but also Barcelona, Sevilla, Milan, that is different from class 2, where high urbanisation levels are in the leadership of urban agglomerations of Transnational and National level, as Malaga, Parma, Firenze, Utrecht, Twente, Surrey, Sheffield, or Baixo Vouga and Baixo Mondego.

The class 3 represents an interesting group of regions that are characterised by high density of occupation supported in urban centres of lower functional level. They correspond to medium sized-cities of local and regional functional level located in sprawl settlement pattern in many cases related with a presence of a class 1 NUTS, as various examples in Germany, Modena near Bologna, the NUTS3 around Paris or London, or at other level Peninsula de Setubal and Oeste around Lisbon.

Within class 4, emerge regions with lower level of urbanization concentrated in urban agglomerations of transnational or national level. In this case we have some examples of touristical areas as Algarve and Malaga, but also regions as Aberdeen, Perugia or the "semi urbain French terrioires" of Tours, Angers or Le Mans.

Finally, class 5, represent the low density territories where emerges small and medium-sized cities of regional/local role, or small villages with no special role.

Concerning the present study, hypothesis A allows distinguishing:

- the relation of MEGA with economic, social and territorial performances (class 1);
- the effects of transnational and national urban agglomerations in the regions their leadership (class 2);
- to characterise the urban sprawl pattern in territories organised around small and medium-sized cities (class 3);
- to identify the role of capitals and medium-sized cities with transnational and regional functions in the regional performance (class 4);
- to understand the role of small and medium-sized cities (and its agglomeration effects) in low density territories (class 5).

For the present analysis, classes 1 and 2 retract the European leadership nodes while classes 3, 4 and 5 emphasise the regional capabilities of territories, a more bottom-up approach of development.

Hypothesis B

The hypothesis B results in a different aggregation made in order to highlight the "high urban influence" with "high human intervention" areas (represented in Classes 1,2,3) from the "high urban influence" with "medium and low human intervention" areas (represented Classes 4,5, and 6).

Classes 7 and 8 represent the low urban influence territories in the leadership of transnational and national cities (Class 7) or with regional/local cities (with low functional level, Class 8). It resulted in 8 classes that correspond to:

Table 7: Hypothesis B: 8 classes

URBAN-RURAL TYPOLOGY aggregation	0. No special function and 2. Regional/Local		3. Transnational/ National	4. Mega
1	241	256	129	66
2,3	15	31	7	6
	4	15	14	4
4,5,6	36	67	28	
	57	111	29	
	63	99	43	

- Class 1 - High urban influence, high human intervention with Mega functions
- Class 2 - High urban influence, high human intervention with Transnational or National functions
- Class 3 - High urban influence, high human intervention with no special function or Regional/Local functions
- Class 4 - High urban influence, and medium/low human intervention with Mega functions
- Class 5 - High urban influence and medium/low human intervention with Transnational or National functions
- Class 6 - High urban influence and medium/low human intervention with no special function or Regional/Local functions
- Class 7 - Low urban influence with Transnational or National functions
- Class 8 - Low urban influence with no special function or Regional/Local functions

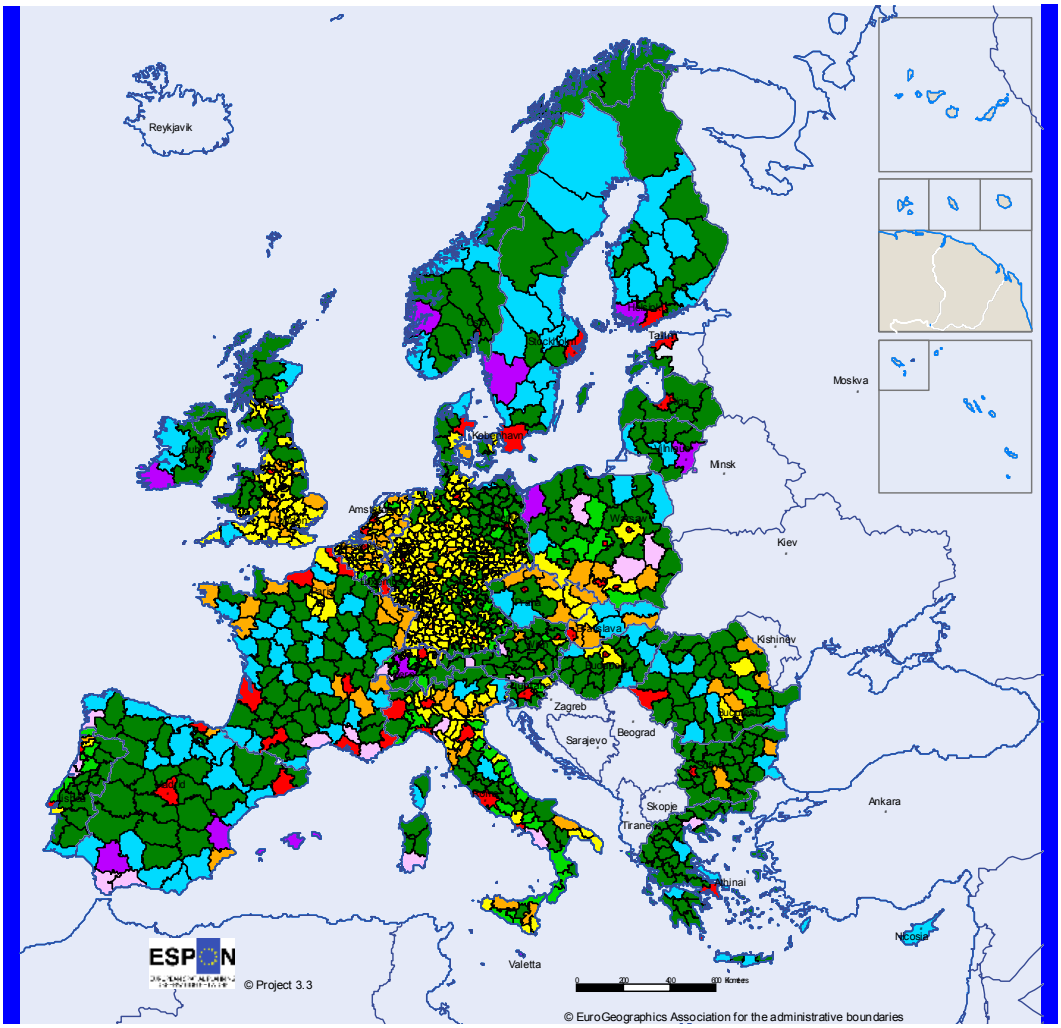
The main differences from Hypothesis A are the classification of classes 4, 5 and 6. These ones emphasise the territories with high level of urbanisation (high population density) but with low level of settlement occupation. These regions, besides the high urbanisation level, have an important agriculture or forestry occupation, which points to a more "concentrated" pattern. Classes 1, 2 and 3, are quite different as they show densely urban territories with highest functional agglomeration effects.

Table 8: 8 classes' classification - PROPOSAL

URBAN-RURAL TYPOLOGY aggregation	0. No special function and 2. Regional/Local	3. Transnational/ National	4. Mega
1	High urban influence, high human intervention with No special function or Regional/Local functions	High urban influence, high human intervention with Transnational or National functions	High urban influence, high human intervention with Mega functions
2,3	High urban influence and medium/low human intervention with No special function or Regional/Local functions	High urban influence and medium/low human intervention with Transnational or National functions	High urban influence with medium/low human intervention with Mega functions
4,5,6	Low urban influence with No special function or Regional/Local functions	Low urban influence with Transnational or National functions	

Class 4 isolates cities as Sevilla, Vilniaus or Bern, and class 5 isolates cities as Cadiz, Malaga, Parma or Innsbruck. Class 6 permits the distinction between the more rural areas located around cities of high urban influence, and with a more or less sprawl settlement pattern. In this group we can point Oeste region near Lisbon in Portugal or Ferrara near Bologna and Savona near Genoa in Italy or Potsdam near Berlin in Germany.
Class 7 and 8 are the same as 4 and 5 of the previous hypothesis

Figure 13: Typology of territories - Hypothesis B



Hypothesis C:

A third different aggregation was made in order to highlight the real difference between the "regional/local areas" and the "no special function areas".

Table 9: Hypothesis C: 7 classes

URBAN-RURAL TYPOLOGY aggregation	FUA_TYPO			
	0. No special function	2. Regional/Local	3. Transnational/ National	4. Mega
1,2,3	241	256	129	66
	15	31	7	6
	4	15	14	4
4,5,6	36	67	28	
	57	111	29	
	63	99	43	

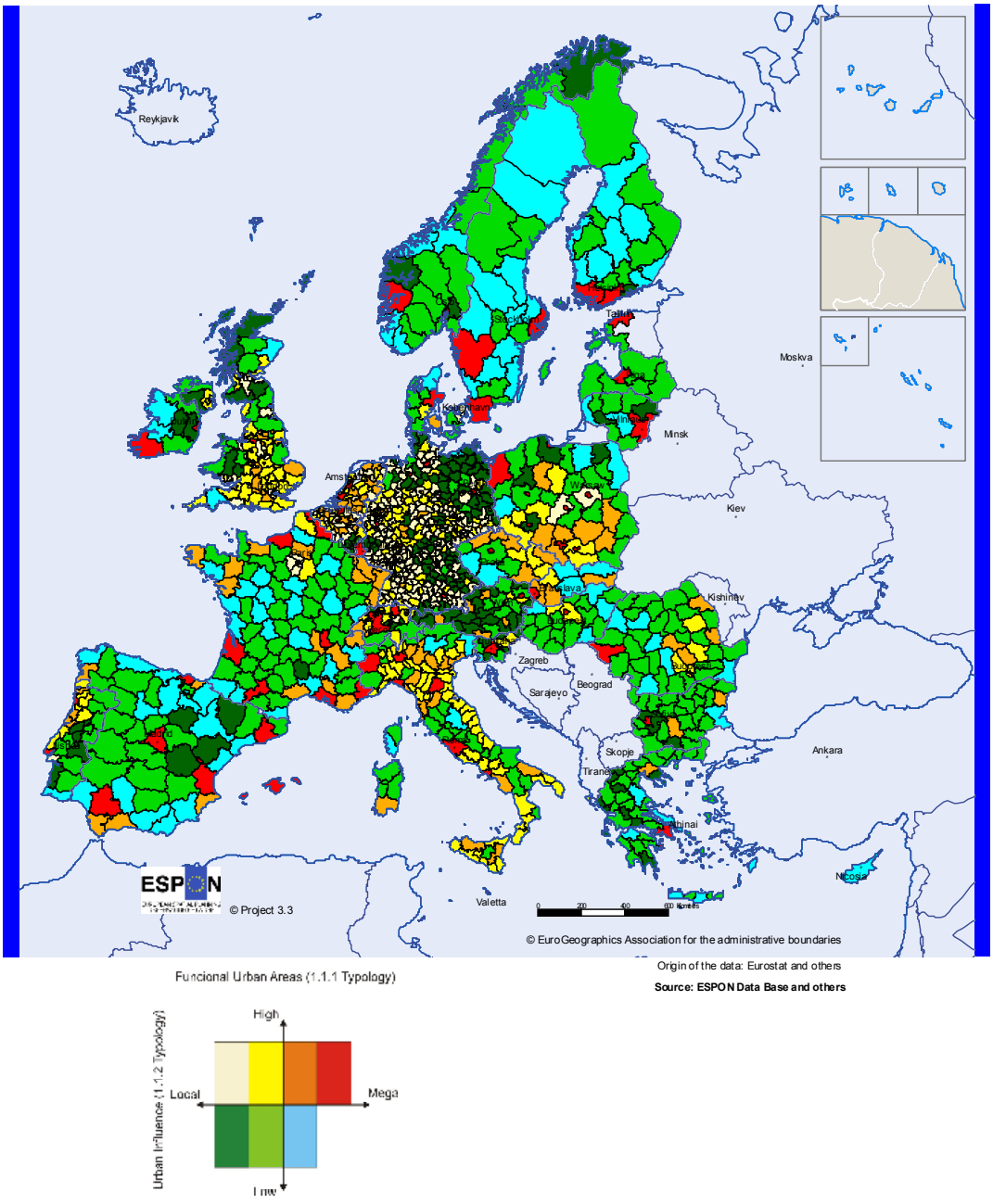
This classification resulted in 7 classes:

- Class 1 - High urban influence, with Mega functions
- Class 2 - High urban influence, with Transnational or National functions
- Class 3 - High urban influence, with Regional/Local functions
- Class 4- High urban influence, with no special function
- Class 5- Low urban influence with Transnational or National functions
- Class 6 - Low urban influence with Regional/Local functions
- Class 7 - Low urban influence with no special functions

Table 10: 7 classes' classification - PROPOSAL

URBAN-RURAL TYPOLOGY aggregation	FUA_TYPO			
	0. No special function	2. Regional/Local	3. Transnational/ National	4. Mega
1,2,3	High urban influence with No special function	High urban influence with Regional/Local functions	High urban influence with Transnational or National functions	High urban influence with Mega functions
4,5,6	Low urban influence with No special function	Low urban influence with Regional/Local functions	Low urban influence with Transnational or National functions	

Figure 14: Typology of territories - Hypothesis C



The main differences from Hypothesis A and B are:

- Class 3 and 4, that distinguish the situation of urbanised territories with or without functional roles, which gave different types of territories:
    a. Class 3 – urbanised areas with small and medium-sized cities;
    b. Class 4 – urbanised territories where urban agglomerations have no special functional role – sprawl settlement under other territorial influence, namely related with the "metropolisation" process under influence of MEGA and with a smaller area, like Val d'Oire, Essonne near Paris, Solihull near Birmingham, East Merseyside and Sefton near Liverpool, Potsdam near Berlin or Zasavska near Ljubljana or Peninsula de Setubal near Lisbon.
- Class 6 and 7, that distinguish the situation of low urbanised territories with or without functional roles, which gave different types of territories:
    a. Class 6 – underline the role of small and medium-sized cities in low density areas with several examples in Spain (Caceres, Badajoz, Toledo), Portugal (Baixo Alentejo - Beja, Alentejo Central - Évora), France (Ardennes – Reims) or Italy (Siena or Bari)
    b. Class 7 – corresponds to low density areas.

4.3.3. The selected hypothesis

Starting from hypothesis A and comparing with hypothesis B, emerge differences between the "High urban influence, high human intervention areas" and the "High urban influence and medium/low human intervention areas", that depict the differentiation in their settlement pattern.

In the hypothesis C emerges the differences between "Regional/Local functional areas" or "No special function areas". In this case, more depopulated areas are separated from the rural areas where we can find medium-sized cities with regional/local economic bases.

Reminding that the main arguments of the analysis are:

- identify the more competitive and dynamic territories based on knowledge and innovation and relate it with urban and regional characteristics;

- to know if urban centres and metropolitan agglomerations play a crucial role in providing the framework conditions for a knowledge-based economic development;
- understand polycentric model in different scales, which includes the dynamics of urban growth centres and linking peripheral and disadvantaged areas with urban centres (ESPON, Terms of Reference, 2004)

Considering these three main arguments, the TPG has chosen the Hypothesis C as the more adequate to evaluate behaviour in the four determinants.

This type of approach allows one to construct an indicator which includes not only the information on the current situation according to its own specificities, but also on the real dynamics of the actions that enable a given goal to be reached: in this case we turn from the simple territorial competitiveness to the **capability to generate territorial competitiveness in sustainability**.

The correlation matrices is shown and described in the following table 11.

Table 11: Interaction matrix between indicator and Territorial typologies: Hypothesis C

Determinant	Value	1 High urban influence with Mega functions (A1)	2 High urban influence with Transnational or National functions (B1)	3 High urban influence with Regional/Local fucntions (C1)	4 High urban influence with No special function (D1)	5 Low urban influence with Transnational or National functions (E1)	6 Low urban influence with Regional/Local fucntions (F1)	7 Low urban influence with No special function (G1)
Innovation & Research	A	A	A	B	B	C	C	D
	B	A	B	B	C	D	D	E
	C	B	B	C	D	D	E	F
	D	C	C	C	D	E	F	F
Global/Local	A	A	A	B	B	C	C	D
	B	A	B	B	C	D	D	E
	C	B	B	C	D	D	E	F
	D	C	C	C	D	E	F	F
Quality	A	A	A	B	B	C	C	D
	B	A	B	B	C	D	D	E
	C	B	B	C	D	D	E	F
	D	C	C	C	D	E	F	F
Resources & Funds	A	A	A	B	B	C	C	D
	B	A	B	B	C	D	D	E
	C	B	B	C	D	D	E	F
	D	C	C	C	D	E	F	F

cross values	
A	absolute
B	very high
C	high
D	medium low
E	low
F	very low

4.4. The Policies Impact Assessment

The 3.3 project faces now the last question of this methodological approach: the policy recommendations and their link with the better choice to have a competitive development in sustainability.

The following, we'll divide the speech in twice:

- the building of input matrices by the re-reading of all ESPON projects to extrapolate the input (action matrices) useful at the Lisbon/Gothenburg strategy application;
- the building of their link with the results of the territorial capability to generate competitiveness in sustainability (effects matrices).

The first point consist of two different part:

a) the matrices of Espon projects organised about the topics (Table 17). As it is possible to see, thematic and cross-thematic policy recommendations are synthesised stressing the relationships with the Lisbon/Gothenburg aims. So, every project pictures its particular and thematic contribution to give a solution at the competitive or sustainable problems;

b) the matrices of Lisbon/Gothenburg offers organised on the base of EU studies and suggestions (effects matrices).

This work has permitted to built:

i) the list of common project actions needs on which the civil European society thinks to make competitiveness and sustainability;

ii) ii) the list of the Lisbon/Gothenburg results (effects) generated by actions, that we aspect to measure the real goal obtained in terms of competitiveness in sustainability. These list have been called the 'actions list' and the 'effect list'.

The second point has required to cross the two previous matrices with the results of territorialisation values. This work was separately made for each determinant using its final values.

The use of dedicated GIS permits, in every time, to go back and to look at single typology, sector, category, indicator, but also to update the data-base of indicators. It permits to change and to update the policy recommendations and their effects, too.

The reading of ESPON projects and European documents has oriented the links and the weight attributions. This last operational part used

also the results of "Delphi method" in a continuous comparative dialogue with sectoral experts (sometimes by literature review).

This complex organisation of policy recommendations package needed to give a solution to an other theoretical question put by 3.3 project:

How is it possible to choice an appropriate development solutions in front of territorial-economic-social-environmental diversity of EU regions?

In fact, by this methodological procedure and this operative framework, it is possible select the appropriate and different answers asked from the different regional capabilities.

It answers also to a second question of the 3.3 project:

How to choice the transnational cooperative areas which must access and use the SF in 2007-2023?

The last result of this work is the offer to a procedure of Environmental Impact Assessment (Dir CE/42/2001) useful to evaluate ex post the European policies impacts and re-oriented their goal.

4.5 The G.I.S. as "toolbox" to manage the process

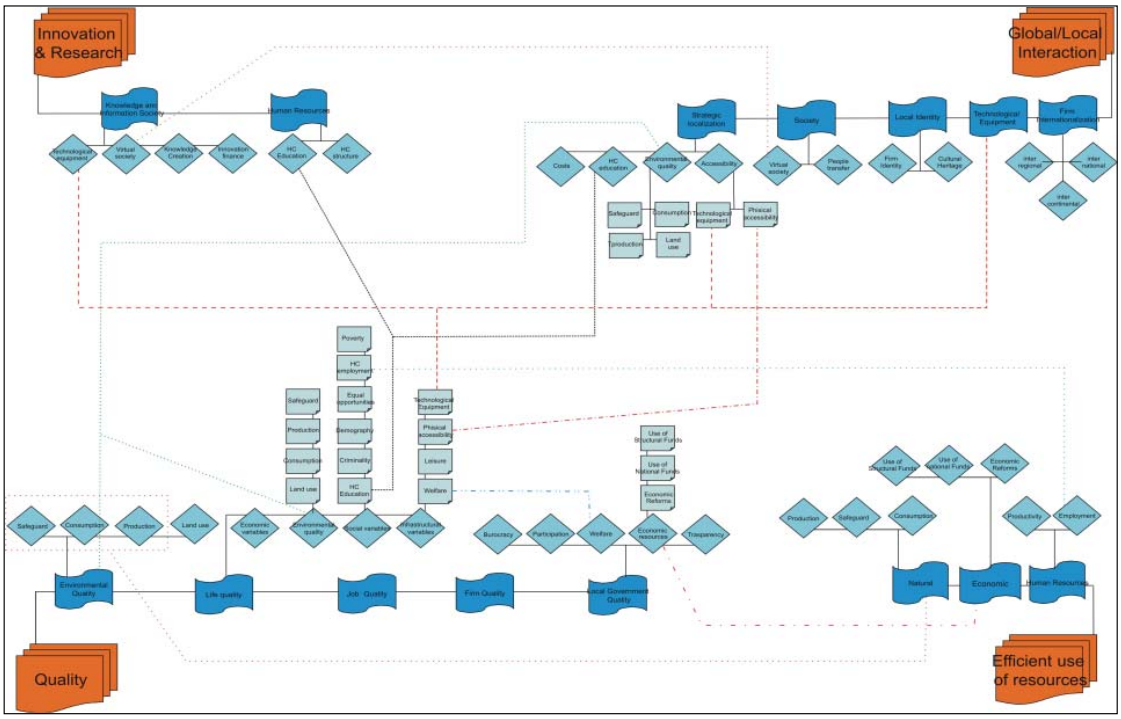
The logical network toolbox (provisory name), is an easy and intuitive instruments to define and compute regional determinants and policies for a more competitive and sustainable development of europe.

4.5.1. Understanding policy-concepts

The concept of "territorial competitiveness", as a policy-concept, is a highly abstract concept, and has an elusive meaning. Its better understanding requires to decompose it in determining factors or Determinants (e.g. "Efficient use of resources"...) that should be further decomposed in typologies, sectors and categories; the latter ones can, finally, be somehow "explained" by quantitive indicators, build up from indexes or more simple statistical descriptors. While determinants, typologies and sectors are composite elements, categories are, instead, synthetic (i.e. they are explained by quantitive indicators). Too often, for operational reasons quantitative indicators (such as GDP/capita gaps) are used to illustrate policy-concepts (such as economic development) without a sysythematic in depth analysis of the concept. This is one of the main reasons of

misunderstanding between scientists and policy-makers. The next graphic illustrates the network-like structure of concepts of different level of abstraction lying behind a policy-concept such as "territorial competitiveness" (or "territorial cohesion", "sustainable development"...).

Figure 15: The logical network



4.5.2. Objective of the toolbox: a policy-support tool

The toolbox is a software application that provides for a systhematic procedure to define highly abstract concepts (e.g. "sustainable development", "territorial cohesion"...*) as a combination of more concret concepts and specific statistic indicators* (e.g. GDP/capita, number of firms with Internet access, CO2 emissions...) *and calculate them for preselected territorial units* (e.g. European regions).

The predefined conceptual levels are the following ones:

- Indicators (e.g. Population with tertiary education)
- Cathegories (e.g. "Human capital")
- Sectors (e.g. "Innovative human capital")
- Statistical Typologies (e.g. "Knowledge innovation structures")

- Territorial Determinants (e.g. "Innovation and research capability")

The Territorial Determinant aims to integrate the most policy-relevant information in relation to each region to support a policy decision-making process; therefore, "Policies" are included as the most abstract concepts (e.g. "Progressive reduction of Structural Funds"). Depending on the relative values of the Territorial Determinants, specific policies may be suggested. because of that, *the toolbox can be considered as a policy-support tool that helps policy-analysts to make explicit and communicate more effectively their reasoning*.

4.5.3. Development of the toolbox

The design of the toolbox and the theory behind has been developed by the University of Rome at Vergara, also responsible for testing and using it within the ESPON 3.3 project, and the software implementation by MCRIT (Barcelona).

The toolbox uses as a reference data ESPON regional statistical indicators, aggregates them according to the network-like conceptual structures to be defined by the user, and provides as a result relatives values of each region from the simple indicators up to the highest more abstract concept. .

4.5.4. Software platform

The software platform selected to implement the toolbox has been Visual Basic on Microsoft ACCESS. The toolbox uses Geomedia Viewer, a royalties-free desktop mapping application by Intergraph, to display results graphically, and it can be easily linked to any other standard Desktop mapping or GIS application such as Mapinfo or Arview.

4.5.5. Rule of aggregation

- The regional values for logical objects (from Indicators to Determinants) are categorized in four *classes* (A, B, C, D).
- The aggregation rules between classes across levels are defined qualitatively.

- The qualitative aggregation is made succesively *pair to pair*, starting by the one with less relative importance.
- There is a *table of qualitative addition* that translates pair of values into single ones (e.g. A+A=A, A+B=A, A+C=B, etc.)
- The table is unique, and is applied to all levels.
- The user of the toolbox, concerning the aggregation process, can only modify the table of qualitative aggregation.

4.5.6. Main interface

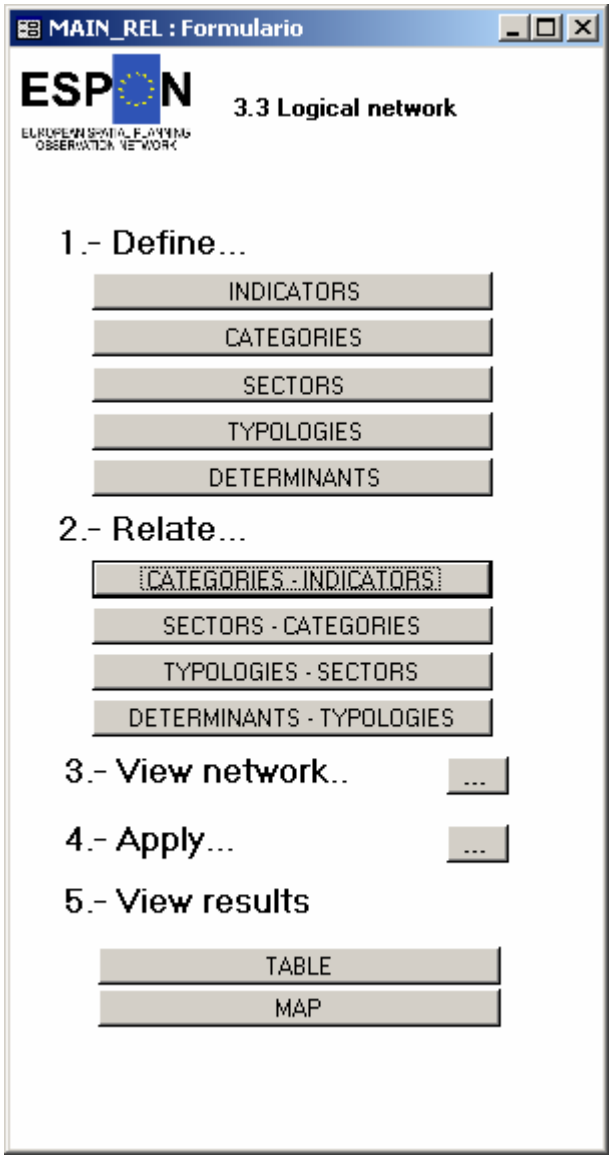
The main interface is organised according to the five succesive steps needed:

- Logic objects included in each level (Indicators, Categories, Sectors, Statistical Typologies, Determinants and Policies).
- Logic relations between objects (e.g. which Indicators form each Category, which Categories form each Sector, which Sectors each Typology and which Typologies each Determinant)
- Define Computation rules (to categorize quantitative indicators in qualitative groups, to aggregate values across levels,to aggregate determinants, to derive policy recomendations from determinants)
- Application of rules to obtain all values for all regions.
- View results , as a table (integratating all value for all regions) and as a regional map (using Geomedia Viewer).

4.5.7. Use of the application

The use of the application is extremely easy. The user has to click one by one succesively the list of buttons in the main interface and fill in the tables. Then click the RUN botton and see the results as a table and the map (using the Geomedia viewer included in the CDROM, or importing the ACCESS table in any other standard Desktop mapping).

Figure 16: the "G.I:S. Toolbox" main interface



5. The four determinants analysis

The analysis of the four indicators (Innovation and Research, Global local interaction, Quality, Resources and Funds) has been developed taken into account:

- the 42 spring indicators (that include the short list of 14 indicators analysed in chapter 2);
- the indicators coming from the other ESPON projects;

as shown in the following table (Table 12).

Table 12: List of basic indicators

Determinant	3.3 Indicator	42 Spring indicators (2003)	Espon references
Innovation & Research	Internet users	II.3.1	**project 1.2.2**
	Firms with internet access	II.3.2	**project 1.2.2**
	Municipalities with internet access		
	Universities students		**project 1.1.2 (w. gaps)**
	Innovative dependency index		ESPON DB
	Population with tertiary education		ESPON DB **(w. gaps)**
	Population in life-long learning	I.5	
	Science Parks members of (ISAP)		project 2.2.1
	Business Innovation Centres		project 2.2.1
	Universities and High level research centres		project 2.2.1 (partly)
	Old technologies	III.3.3	**project 1.2.2**
	New technologies	III.3.3	**project 1.2.2**
Global local interaction	Environmental International Agreements	V.7.2	
	Population change		ESPON DB
	Tourists inbound		
	Tourists outbound		
	Student inbound		
	Student outbound		
	Researcher inbound		
	Researcher outbound		

	Active people	I.1.1	ESPON DB
	Manufacturing enterprise		
	Product trademarks		
	Energy Self-sufficiency Index	V.2	project 2.1.4
	FDI intensity	III.6.6	
	Trade integration of goods	III.6.4	
	Trade integration of services	III.6.5	
	Vulnerability		project 1.3.1
	Typology Multimodal Accessibility Potential	V.3	**project 2.1.1**
	Total general government revenue	g/f	
	Labour - cost index (2000:100) - NSA	e	
	Long-term interest rate	d	
	Credit institutions		
	Insurance companies		
	Companies		
	Stock market capitalisation - end of period - Milliards of euro - NSA	III.6.1	
Quality	GDP per capita (PPS)	a.1	ESPON DB
	Consumption per capita		
	Level of employment	I.1	ESPON DB
	Consumer price Index	III.1.1	
	Hospital beds		
	cultural opportunities		
	Hotels beds		
	Typology Multimodal Accessibility Potential		**project 2.1.1**
	Muncipal waste generation	V.5	
	Hazardous waste generation		
	Recycling Municipal waste		
	Degree of Hazard		project 1.3.1
	Greenhouse emissions	V.1	
	Gross abstraction		
	Confidence in EU commission		

	Confidence in EU council ministers		
	Confidence in EU parliament		
	National parliament % of voting		
	European parliament % of voting		
	Early school leavers	IV.5.1	
	Inequality of income distribution	IV.1	
	Persons living in households where no one works	IV.7	
	Level of poverty	IV.2.2	
	Female employment	I.2.1	
	Fertility rate		
	Life expectancy		
Resources and funds	R&D expenditure	II.2.1	project 2.1.2
	Firm National aids	III.5	
	Human capital expenditure pps per capita	II.1	
	Employment expenditure pps per capita		
	EU funds spending		project 2.2.2
	Economics resources	III.1.1	
	Climate and natural resources expenditure pps per capita		
	Efficiency of accessibility		project 2.2.1
	Public Health expenditure pps per capita	III.5	
	Poverty and age expenditure pps per capita	III.5	

5.1. Innovation and Research

Key element in the field of firm competitiveness, the *innovation & research* area is today a capital point in the territorial competitiveness dynamics and, in the common vision, is associated with the technological change process. From this point of view it could be seen as a Schumpeterian process with three moments, not strictly delimited in several cases: invention, R&D and innovation. The model of innovation suggested through some time that only one direction of knowledge exists from research centres to productive sector. Nevertheless, there are other forms of knowledge diffusion and innovation that require more importance to relationship grade between agents besides their ability to capture information and knowledge.

This articulation between agents, and between agents and institutions, becomes an important element to create dynamic competitive advantages, in the formation, transmission and evolution knowledge. This implies that the essential support of productive system is not only this system, but the institutions leagued to available knowledge for firms, the entrepreneurial environment and the productive framework where they insert and act. Thus, the specific location becomes a knowledge generator factor, beginning the local institutions to play a more active role connected to regional impact activities. A new strategy become relevant: that of decentralized politics, with a principal role played to local authority and agents, without forget the interaction with central administration. This space that constitutes an analysis object as a policy target, depends on historical aspects such as preceding linkages, or type of agents and institutions acting with.

Is in this sense initial conditions such as evolution of this space impose conditions to the possibility of actions to perfect the productive environment and the previous relationship system. These actions must consider aspects such as the impulse enterprise and institutions networks and the improvement of entrepreneurial links with universities and technological centres, in the search of forming a local system of entrepreneurs. In short, it must search a system driven by capacity to accede and absorb knowledge to get and improve private or connected activities. Innovation is understood as evolution in learning, where the consolidation of previous knowledge or incorporation of new concepts allows the driving to new competences.

In general terms different types of innovation can be identified, *technical innovation*, related to products and services, technical productive process and service operations. Of another side, the *administrative innovation* related to the structure and administrative direction of the organization,

processes and human resources. From another angle it is possible to spoken of *innovations in process*, restricted to the specific type of company in which it takes place and the new *product innovations* that allow to satisfy demand and to expand therefore the market share of the company.

In addition we can define an innovation as *radical* if fundamental changes can be realized in the activities of the firm, but innovation would be denominated *gradual* when those changes are marginal with respect to habitual practices.

Overcoming these various and sectoral definitions the Information and Communications Technology (ICT) can be seen as the contemporary and cross-border expression of the *innovation & research* field.

The Information and Communication Technologies are generating a new cultural revolutions important and driving as those of the past centuries. It's a revolution based on the information, that is expression of the human knowledge. Technological progress today allow to elaborate, store, find and communicate information regardless their format (oral, written or audio-visual) without distance, time and volume limits. It's a revolutions that allows to the collectivity to gain new capacities.

The fast development of the Information and Communication Technology (ICT) has brought about deep changes in our way of working and living, as the widespread diffusion of ICT is accompanied by organisational, commercial, social and legal innovations (Mundula, 2004). Our society is now defined as the "Information Society", a society in which low-cost information and ICT are in general use, or as the "Knowledge(-based) Society", to stress the fact that the most valuable asset is investment in intangible, human and social capital and that the key factors are knowledge and creativity. This new society presents great opportunities: it can mean new employment possibilities, more fulfilling jobs, new tools for education and training, easier access to public services, increased inclusion of disadvantaged people or regions.

So today, the Information and Communication Economy and the connected technologies are considered more and more a positive development engine. Analyzing the ICT impacts in relation to its potentialities in supporting and favouring the territorial development, a wide typological variety of use, access, production, technologies between different territories emerges. These differences are found between customers when income, instruction, sex and nationalities are different, but it is particularly important between developed and less developed regions (Zook, 2000) generating the so-called *digital divide*.

According to this vision, the European situation is not homogenous, neither of unambiguous interpretation analyzing both the upgrades benefits by the new computer technologies and the risks connected with their use in a sustainable territorial development vision.

Looking at indirect effects and productive gain deriving from the use of these technologies, less developed regions appear in a unfavourable position, starting from the issue of the network access. While the technological change is making the network access and the computer use cheaper and cheaper for the populations of the more developed regions, the service is decidedly more expensive for the populations of less developed ones.

Physical access is another constraint to successful and spread of the new technologies. This clue comes from the low rate of Internet use in the less developed regions, also where the physical access is available (Pigato, 2001). The access is bound rather with the high costs (it's necessary to hold a computer), from the contents inadequacy (as example the lack of contents in the local language), from the lack of familiarity with the means (Nanthikesan, 2000) and from a not really dynamic institutional atmosphere. Moving the attention to relationships between the various regions a further element is to be considered: technologies (alias knowledge) transfer and its possible protection. If we are looking to the relationship between regions with different development degrees it must be pointed out the issue of the so-called Intellectual Property Rights (IPRs), whose adoption has been strongly seeked during the last decade from many developed regions through bilateral, regional and multilateral (TRIPs Agreements) actions.

Such a regulation has opened a burning debate between who thinks that this could lead to a distributive conflict between the "knowledge innovators and producers" and "knowledge and technology consumers" and who, instead, considering the possibility that all the regions may also become -sooner or later- producers of innovation, consider useful for today's less developed regions to protect the own future innovations. If one looks instead to the relationship between regions with similar degree of development, an ICT supplying opportunities of closer cooperation stimulates the mutual learning, so that they concur to realize economies of scale thanks to common investments.

However, if in the past the cooperation asked, in a substantially necessary way, that there were also a geographic proximity, so that the collaboration naturally led to constitute regional and countries groups, today the information and knowledge economy alters the concept of proximity and distance: in place of the geographic distance it's now relevant how much cohesion exists between regions in terms of

development level, professional capabilities, social integration and participation.

The information and communication technologies development allows a growing split-up between spatial proximity and carrying out daily tasks such as work, shopping, leisure, wealth, education, public services, corporate governance, etc.. Consequently some authors foresee a future without cities – at least the cities we know – as they lose their functional meaning.

A common view was that the advanced telecommunications would allow an offices' ubiquitous localization generating a firm headquarters pullout from the expensive, congested and polluted financial quarters towards more attracting places around the world. However the empirical analysis of Mitchell Moss (1987) about the telecommunication impact on the Manhattan firms already highlighted that these new and advanced telecommunication infrastructures were one of the slowdown causes of the firm transferring far from New York. Adding to this another example related to a different social sphere, it has been thought that electronic communication from home would generate the decline of the high social density urban forms and the decrease of spatially defined social interaction. Despite that, the first communication system by computer with mass diffusion, the French Minitel, was born in the 80's in a lively and highly populated urban environment and the vitality and face to face interaction of the latter have almost not been modified at all by the new media but contrary improved the social interaction as such as French students used Minitel to successfully organize protests against the Government. In the first 90's tele-work – that is online work from home – appeared as work way for the future able to support the management of the work activity in flexible time and spaces according to the emergence of the network enterprise overcoming the regional and national borders.

From this point of view one of the most important changes in the telecommunications network market in Europe in the last decade was the movement of the service delivery from the national network towards new carriers that have build a great number of alternative infrastructure at "pan-European" scale. The result is the capability to offer the most part of the services *up to date* directly connecting the greater cities, the financial hubs, the customers and the offices in real time. These pan-European telecommunication networks was become the main road of the information society in Europe and are the infrastructural foundations to deliver competitive services across the Europe.

As the *majors* tend to prefer quick accessibility, high quality and low costs, the localization and extension of these kind of infrastructure have a significant implication for the economic development and for the

competitive advantage of the regions and of the European urban centres. Unlikely, for example, a region without accessibility to the infrastructural pan-European network is able to attract economic investments, because unlikely the majors are interested to localize in a such region.

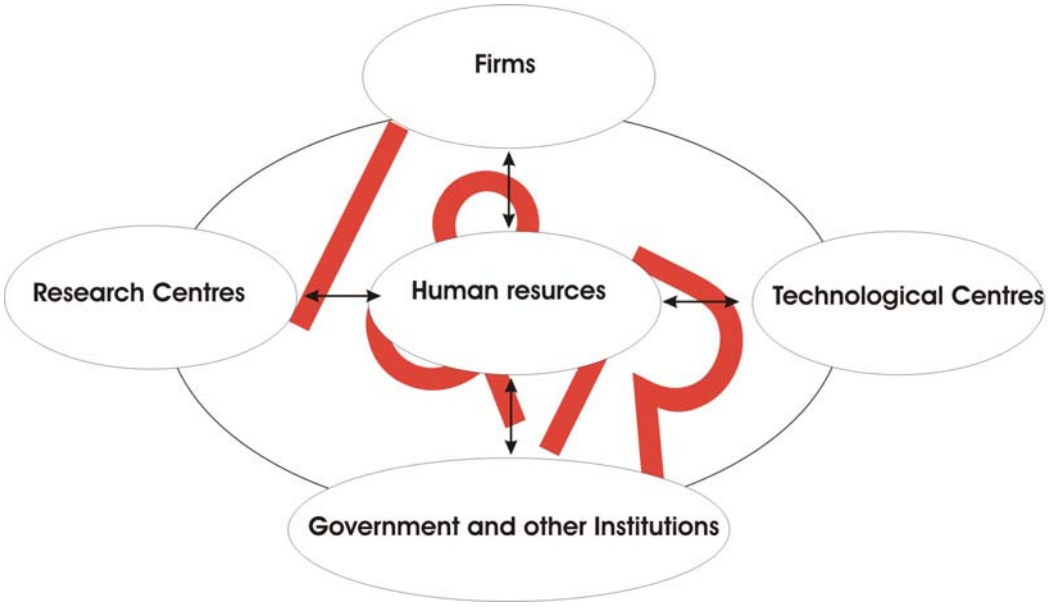
The presence of multiple networks and then a higher competition level in the delivering of the service offers to the enterprises direct access to globally integrated services, higher quality, more protected infrastructure, quicker data communications and (in absence of market bias as cartels, transversal agreements) price decreasing for the service fruition.

Investment in telecommunication network infrastructures can be seen both regional and urban economic development engine and extremely affordable indicator about the economic development models, so that an analysis of its geographies can be very useful in order to examine the dynamics of the urban and regional development in Europe.

Examining the territorial models linked to the telecommunications it's important to analyze a range of telecommunication technologies and services both to understand the different territorial implications and because these technologies are strictly correlated. Revolutionary systems as the wireless one or the satellite systems, for example, depend on previous investments in fixed network backbone.

These trends highlight new strategies of competitive development of regions that have their centre of interest in the creation of networks of innovators, where institutions, companies and societies related by knowledge influence. In that context, dynamic flows are characterized by their cooperative character as far as the contribution of knowledge. This would constitute a new frame of analysis in the style of the competitive forces of Porter, that in an extended rivalry scheme allow the regions to obtain a favourable or disfavourable result. In the new frame of analysis the forces are cooperative internally to obtain greater competitiveness externally, which can be denominated cooperative-competitive or cooptitives forces (Fig.17).

Figure 17: Cooptitives forces



In this scheme of analysis four characteristics can be emphasized at least. In the first place, a normative question of how would have to be those relations. This means that the technological centres and of investigation would have to develop entailments of technical attendance and formation, whereas is necessary that in the companies a disposition exists to generate a new form to act in interdependence with its pairs and the institutions. But in addition, it is necessary that the state generates a frame suitable so that these relations are fulfilled, it is not only say contributing the legal frame adapted but offering stimulus to incorporate and to develop the innovations, reinforcing or generating bonds. Really, we need a state that stimulates the cooptitive relations among other parts of the system besides to generate the own ones.

A second characteristic of the scheme enunciated in Figure 17 is that those relations already are marked by a culture shared between the participants, in addition to the history and the previous entailments generated by the actors. Therefore, the cooptitive forces have a scheme of repeated game in which the participants know history, are had somehow tie in the past and these joints have a particular scheme in each locality or region. So that, if it is had to develop a cooptitive strategy this one cannot be general: it must respect the previous scheme but with conditions that allow the system to evolve, to innovate and to learn.

The third key element in this scheme that arises from the previous ones, is the institutional frame in which these cooptitives forces are developed, that must allow to manage a suitable management of the knowledge that is to be integrated. So that, when we think about the force of the government, one can be asked if the government is the national,

provincial or municipal. In fact, the lines of policy arise from the greatest structures. Therefore, if we speech of financing in great scale, the necessary resources will not be able to arise in general of local governments. But when we speech of management and control of resources, the capacity of action and the local experience become invaluable assets. This means that two levels of institutions exist, one of macro type and one of micro level, where the formal or informal institutions are integrated allowing the integration of all the relations of the scheme.

The fourth fundamental characteristics is the skill level of the available human resources.

The changes in the structure of professions may be a better (more immediate!) indicator of structural changes of the economy than the changes between economic sectors. E.g. the ICT-sector was in its initial phase more easily recognisable through changes in the professional set-up than through sector indicators.

Since early twentieth-century, Max Weber highlighted the central role of social networks as driving forces to information circulation and trust improvement with relevant economic consequences in terms of development because of their capacity to promote exchanges.

Even if Weber did not use the term *social capital*, actually he used the idea of "social networks" as tool able to influence the economic development of a region. Social capital can be regarded as the social relations set at single or collective subject' disposal in a certain time (Trigilia, 1999) .

Through social capital a region improves its knowledge resources such as informations, skill, trust that allow to the different players to realize targets otherwise not accessible. Moving from individual to aggregate level it's possible to say that a certain territorial context appears rich of social capital depending on individual or collective resident subjects involvement in relationship nets. "Social networks" is so composed from a range of relationships between structural variables and immaterial-relational variables that together concur to define human resources quality.

This link with human resources quality implies sharing of a common language and basic knowledge that allow to best exploit technologies and codified organizational structures (Becattini e Rullani, 1993).

From this point of view *social capital* can be regarded as local resource able to favour local development and, compared with the past, improves the possibility of territorial players to pro-actively influence the development process.

The latter does not depend on incentive forms or other costs advantages attracting foreign enterprises but on the capacity to use social capital to develop a knowledge and skill set as guarantee for the future of the region. Social capital is so able to improves specialization external economies and to root knowledge in a certain local context.

In terms of competitiveness social capital quality of each territorial system is a strong driving force. Enterprises will be actually more attracted from region where cooperation forces had produced a strong concentration of skills, sub-furniture networks and other specialized resources.

Interventions supporting social capital within UE, such as FSE, becomes over and over strategically important so that most competitive regions at international level are those supported by a strong cooperation between social actors, by a high education level and by a balanced employment structure.

The picture of UE we are facing (by 2025) is a scenery of population mostly composed by people aged between 50 and 65, with higher level in Italy, Germany, Austria, Greece and Spain.

This trend necessary involve a widespread decline in working-age population accompanied by a marked shift in age composition, so that population aged 50 to 64, many of whom are no longer working, will account for a growing share and young people coming into the labour market for a declining one[27]. From a certain point of view, in order to face this situation, it becomes necessary, both economically and socially, to increase long time employment (for instance reducing early retiring and enforcing older people training); from the other, it becomes essential to invest more widely in physical and human capital, in innovation and ICT to boost education, productivity and employment.

As a matter of facts, it is not possible to increase younger population in short term; the stability among people age bands, that may assure individual primary needs to be satisfied, will be obtained by achieving a high level of employment in future years, supported by economic growth. This is the solution even to avoid the arising of social tensions in a scenery where young people are working to support older population in a ratio of 1 to 4 and, by 2025, of 1 to 3.

[27] By 2025, those aged 50 to 64 will account for 35% of population of working age in the EU15 as against 26% in 2000. In Italy, the share will rise to 40% and in Germany, Austria, Greece and Spain, to 36–37%.
In the accession countries, the increase is projected to be smaller but still significant, the average share rising from around 26% to some 31%, but to 34% in the Czech Republic and 36% in Slovenia (Third Social Cohesion report).

We even have not to ignore that a wide disparity in output, productivity and employment persists between countries and regions, so the previously described situation would probably exacerbate more firmly in such already disadvantaged peripheral regions.

The quality of human resource so meant, must be obtained both in vertical than horizontal direction, including different age classes and different regional origin of population: people need to be able to access education and training, and in consequence employment, in order to develop their capabilities wherever they live equitably**.**

Strengthening regional competitiveness throughout the Union and helping people to fulfil their capabilities will boost the growth potential of the EU economy towards the common benefit of all population. Guaranteeing a more balanced spread of economic activity will reduce the risk of bottlenecks when growth occurs and lessen possibility of inflationary pressure to cause a premature stop of growth. It will equally make it easier to sustain the European model of society and to cope with the growing number of people above retirement age consequently maintaining social cohesion.

In order to prevent unemployment (and support the integration of the unemployed into work, too), there is a need to offer personalised services to job seekers in the form of guidance, training and new job opportunities. The '**Education and Training 2010**' programme tries to answer this requirement. It must even be stressed that in the accession countries skills obtained from further education and initial vocational training are not necessarily in line with labour market needs and curricula and teaching structures are not well adapted to the modern economy: it have especially to be taken into consideration in a revision more focused of European education system.

A high level of education and the provision of a high standard of training, which is accessible to people throughout their working lives, are keys to strengthening innovative capacity throughout the EU and to the attainment of the Lisbon objective of making the Union the most dynamic knowledge-based economy in the world.

Education and employment can be reinforced even through the wider recourse and diffusion of new technologies, like e-learning and working from home for instance. This is tightly connected to infrastructural endowment and connection costs (that seems to be becoming more accessible in short terms by the **e-Europe** programme that provides competition in internet access services and diffused use of e-government, e-learning, e-business and e-health by 2005), as well as basic educational of PC use. The example of last years United States economic and production growth due to a larger use of ICT seems to encourage this kind

of politics in EU too and seems to be the key factor of economic recovery and competitiveness.

5.1.1. Innovation and Research in other ESPON projects

The aspects of competitiveness covered in the Innovation and Research determinant are subject of several ESPON projects, most evidently *1.2.2* and *2.1.2*. While the first one offers and overview of the telecommunication trends the second is dealing with many issues regarding R&D as well as innovation.

The final report of *ESPON project 1.2.2* emphasizes two aspects important for territorial aspect of competitiveness. The first one is the central role telecommunications have adopted in modern societies. *"We need only think of how, in a few short years, firms have come to depend on telecommunications networks within their competitiveness strategies."* As it has been often emphasized this development changes the perception of distance in the territory. *"Such developments offer enormous opportunities for reducing the 'friction of distance' and/or the problems of remoteness from which many peripheral regions and rural areas have suffered. At the same time, however, concerns are arising over the territorial dimension to the so-called 'digital divide', whereby any deficiencies in access to the advanced networks, or geographically-defined limitations in the capabilities of enterprises and households to make use of these networks, could serve to exacerbate, rather then ameliorate, territorial development disparities."* (p. 33-34).

The second important aspect addressed in *ESPON project 1.2.2* are the spatial impacts of the measures trying to stimulate competition on the telecommunications market. *"The key question from a regional perspective is how competition can be developed where there is little appetite amongst the telecommunications providers to address those markets. Measures adopted by national regulators to date seem to be 'spatially blind' in that they treat the country in question as a single entity and take no account of territorial differences when considering whether a measure designed to increase competitiveness is likely to be successful in inducing competition in peripheral regions…The proportion of customers to be covered in any given territory is usually drawn so that the least populous parts of the territory are not served, the provider's target figure being met through serving the more urbanised areas of the territory."* (p. 237-238)

The role of innovation is generally considered as the key element generating competitiveness. Spatial aspects of innovation and research are central issues of *ESPON project 2.1.2*, although they are less directly

addressed also in some other projects (e.g. *1.3.2*). The final report of the project provides, among others, also some useful definitions. Regarding innovation, for instance, it says that there is no universal definition but that *"in the field of management, innovation is generally defined as 'an internally generated or externally purchased device, system, policy, process, product or service that is new to the adopting organisation' (Damanpour, 1991)."* (p. 35) Referring to this definition the project defines also the crucial question in innovation as *"how new devices, systems, policies, processes, products and services are identified and adopted by organisations."* This is why the subject of much research have recently been *"the processes through which knowledge, from a variety of sources, including R&D, is converted into innovations, which may in turn have impact on the productivity, growth rates and wealth in a given territory... models of innovation have become more sophisticated, moving away from the simplistic 'technology push' and 'market pull' models, towards a less linear and more interactive understanding of the innovation process."* (p. 36)

Contrary to the indicators for R&D, that are well established and include expenditure on and personnel employed in R&D activities, *"measuring innovation and the processes involved in the innovation system has proved more difficult."* (p. 36) Moreover, in innovation and knowledge transfer *"most critical aspects 'are not dependent upon frontier research, doctoral graduates, gross expenditures and so on, but on spillovers, linkages, networks, inter-dependencies, synergies etc' (de la Mothe and Pacquet, 1998). Developing this robust line of reasoning, other experts have argued that the 'technological and market knowledge which underpins innovation is often tacit and idiosyncratic, and therefore learned by doing, using and interacting with customers, suppliers and related industries' (Utterback and Afuah, 2000)."* (p. 38)

The definition of knowledge transfer that the report offers is *"the process by which knowledge, expertise and skilled people transfer between the science base and its user communities to contribute to the economic competitiveness, the effectiveness of public services and policy and the quality of life."* (p. 39) Again, there's a problem of measuring knowledge transfer. *"Although the most tangible forms of knowledge transfer are licensing and the establishment of start-up companies around intellectual property generated from R&D activity, these form a very small part of real benefits of knowledge transfer…This demonstrates the significant intangible element to knowledge transfer and the difficulty of assigning benefits to particular activities, either in space or in time."* (p.40)

Importance of networks is acknowledged in recent studies of innovation. *"One area where there does appear to be consensus is on the value of*

interorganisational networks. A range of studies in different contexts (Premkumar and Roberts 1999; Cooke and Willis 1999; OECD 2000) have confirmed the positive relationship between networking and innovation in so far as this increases the capacity available for innovation through additional resources, joint learning and knowledge flows." (p. 42)

We arrive at the territorial aspect of innovation when the role of institutions in innovation is considered. *"It involves both institutions in terms of organizations, and institutions as norms, rules and behaviour. Crucially, institutions may thus be both the medium and the outcome of collective action (Morgan, forthcoming). The latter further reflects acceptance of the mutual compatibility of collaboration and competitiveness (Cooke, 1998) ... The acknowledgement of the role of actors (both collectively and individually conceived) beyond the firm and conventional R&D institutions coincides with conceptions of contemporary, associational, networked governance, as compared to the polar opposition of the market and the state (Grabher, 1993; Morgan, 1997, Morgan & Cooke, 1998).* (p. 43) The importance of institutional connectivity arises from this viewpoint. *"Institutions are thus actors, more intangible convergences, and regulatory mechanisms. Such co-ordination permits both knowledge flows and synergies – in particular, the re-combination of knowledge to produce new orders of innovation, and in order to adapt it to enable assimilation."* (p. 46) From the territorial perspective *"the spatial agglomeration of different institutions, including different industrial functions thus becomes important beyond the traditional conceptions of external economies in terms of 'collective economies' which require extra-market, co-ordinated and active involvement of actors, a certain amount of solidarity."* (p. 47) Referring to the issue of *"which parts of the system need to be localised, some authors have in fact suggested that non-local links are an important dimension to learning and a means of overcoming local limitations."* (p. 49) As a rule of thumb the report concludes that regarding territorial aspect of innovation *"the greater the complexity, uncertainty and tacitness of an activity, the more it will require physical as opposed to virtual proximity to be transacted. (Morgan 2004)"* (p. 49)

5.1.2. Innovation and Research in 3.3 project

Table 13: Innovation and Research (I&R) framework

Indicators	Categories	Sectors	Typologies	Determinants
Internet users	Virtual Population	Virtual shareholders	Virtual Society	Innovation & Research
Firms with internet access	Virtual Firms	Virtual stakeholders		
Available e-government services	Virtual Institutions			
Universities students	Education structures	Knowledge creation education	Knowledge Innovative Structures	
Innovative dependency index	Human capital structure	Human Capital		
Population with tertiary education	Human capital education			
Population in life-long learning				
Science Parks that are members of the International Association of Science Parks (ISAP)	R&D infrastructures	Knowledge creation facilities	Innovation Status quo	
Business Innovation Centres				
Universities and High Level Research Centres				
Old technologies	Level of Telecommunication development			
New technologies				

The comparison between the *two final maps of I&R* pictures a general uniformity at national level (Map. 17 Equal), but some different levels at regional level (Map. 17 Q).

At national level, a lot of countries have got a *low* I&R profile; only United Kingdom, Sweden, Finland, a part of Ireland, Slovenia, some regional enclaves in Netherlands, Austria, Spain, Portugal, Italy, and, between the new countries, Poland and Lithuania, Latvia picture a *medium-low* profile.

At regional level, the differences are more evident, with a *medium-high* level in the "Pentagon area", Slovenia, *few high* levels into some regional enclaves of United Kingdom and Netherlands,

This difference becomes more and more evident if we look at the territorialised (Figure 20), crossing the regional I&R Q data with the territorial typologies at NUTs3. Here, only few regions in Finland, Sweden and Norway have got a level of territorial I&R called *absolute* (e.g. very very high).

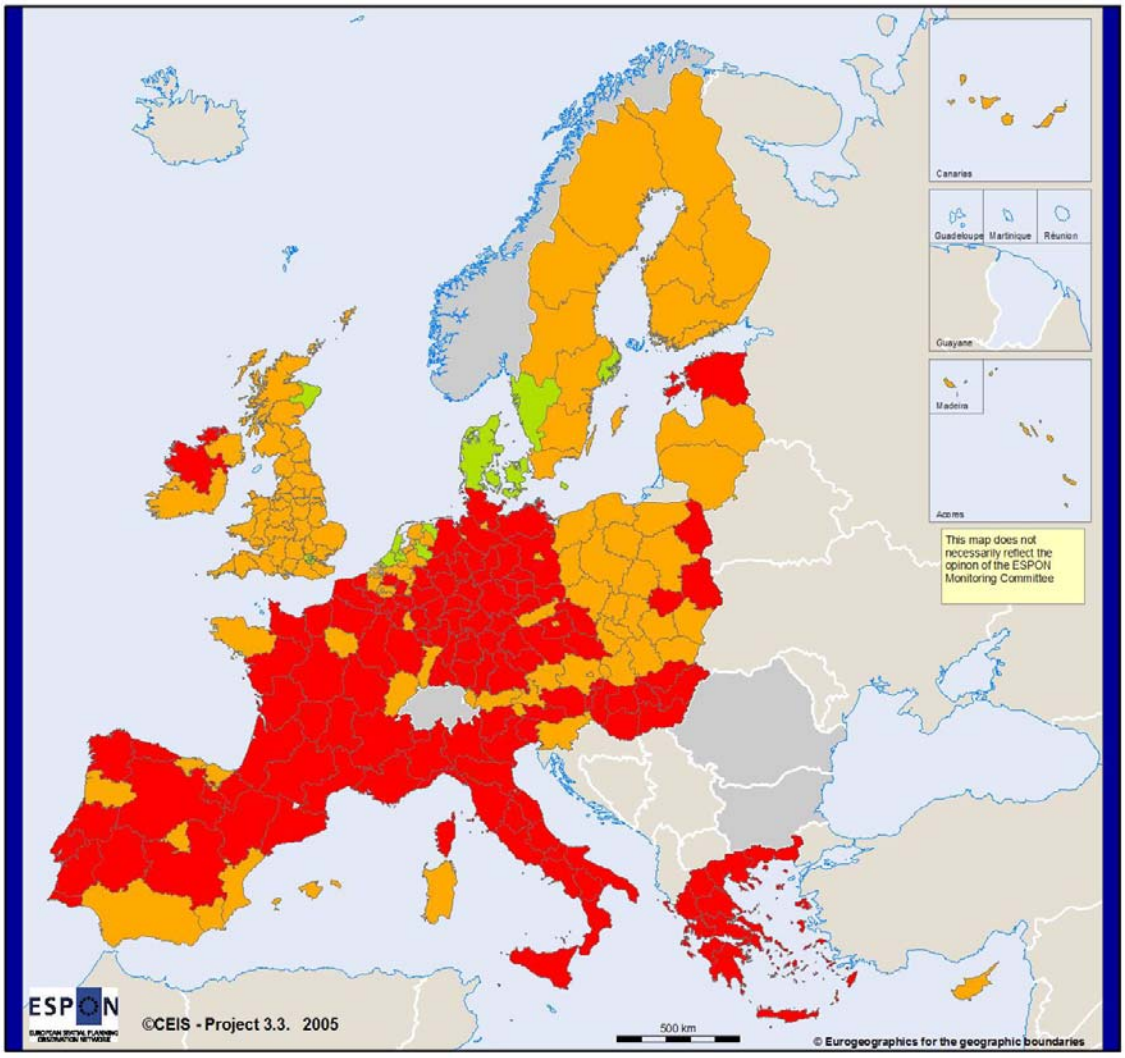
This happens because, if one looks at the single indicators (first level or input data), it is possible to note (see equal interval maps in Annex IIA):

- the values of virtual population (population "surfing the web") are generally medium-low and low in all European countries. Only Norway, Denmark, Switzerland present medium-high values;
- contrarly, the values of virtual firms are generally high (except Romania with a low value and Greece, Lithuania, Latvia, few regions of Portugal and Spain with medium-low values); medium-high for virtual institutions (except Netherlands, Czech Republic, Greece with medium-low values and Latvia, Poland, Hungary, Slovak Republic with low values) as well as for virtual stakeholders;
- the education demand is medium-low and low in all European countries (except for the medium-high value in Emilia Romagna region - Italy and Övre Norrland region – Sweden);
- the Human Capital structure (Innovative Dependency Index) is more positive in the European new countries than old ones, because in the last ones the medium age of population is high (as in Sweden);
- the share of population with a tertiary education level is generally medium-low o low (except in United Kingdom, Denmark, Finland, Lithuania, which pictures a great attention for the life-long learning too). i.e. Italy and Greece have got the same low level of the great part of new countries;
- a bit number of countries picture attention for the knowledge innovative structures, and it's generally low the level of R&D infrastructures (except Ireland, Netherlands and some regional enclaves); while the level of telecommunication divide vertically in two parts the Europe system, designing a positive '**Y**' from the East Mediterranean area (Adriatic corridor, Austria, Czech, Germany) to United Kingdom at West and Scandinavian Peninsular at North-East.

At regional level, the situation is generally better (see Quartiles maps in Annex IIA):

- the values of virtual population (surfing the web population) are generally medium-high and high in the old European regions, from central Mediterranean area to Northern; medium-low and low into the Southern Mediterranean and Eastern regions, and in France too;
- the values of virtual firms come generally in the same direction (except to be medium-low in the UK regions); they are medium-high and high for virtual institutions (except for the Eastern regions), while the virtual stakeholders are more hard in avertival direction from the central area of Italy to Scandinavian Peninsula;
- both the Mediterranean regions, UK and Sweden and Finland put more attention at offering a good tertiary level of education at the young demand (high and medium-high); this is low in all the Eastern European regions;
- the Human Capital structure (Innovative Dependency Index) is more positive in the Eastern regions than old ones, because in the last ones the medium age of population is high, confirming the national evaluation;
- the share of population with a tertiary education level is generally medium-low o low (except in United Kingdom, Netherlands, Denmark, Finland, Lithuania regions). i.e. Italy and Greece have got the same low level of the great part of new regions, as at national level;
- the Pentagon, Sweden and Finland regions picture attention for the knowledge innovative structures, while it's generally more low the regional attention for the R&D infrastructures (except Ireland, Finland, Sweden, Norway and some regional enclaves); while the level of telecommunication maintains the vertically division in two parts the Europe system, confirming the design of a positive '**Y**' from the East Mediterranean area (from Adriatic regions to Austria, Czech, Germany) to United Kingdom at West and Scandinavian Peninsula at North-East.

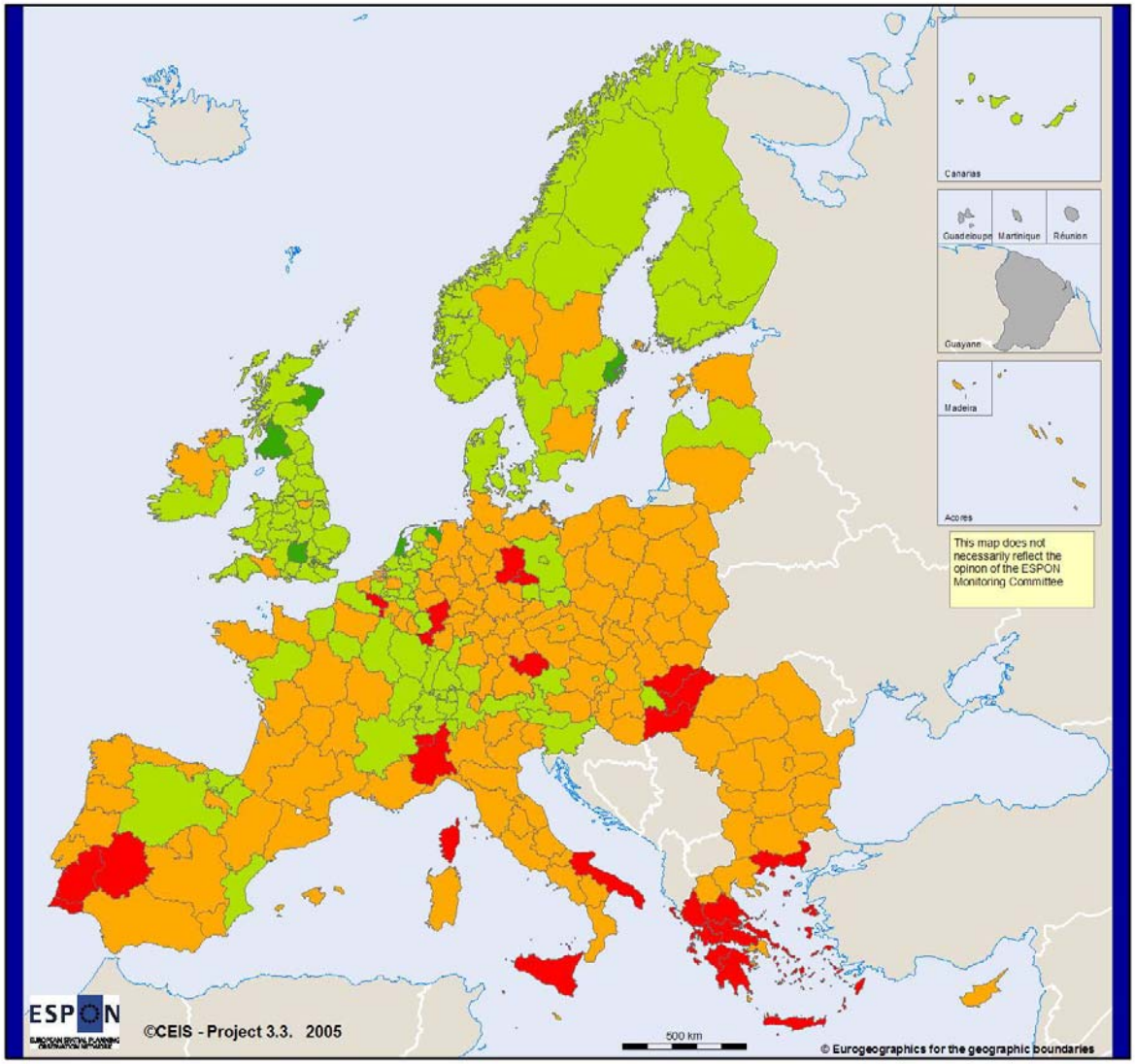
Figure 18: Map. 17 Determinant Innovation and Research - Equal interval version



Legend

- medium high
- medium low
- low
- Incomplete data

Figure 19: Map. 17 Determinant Innovation and Research - Quantiles version

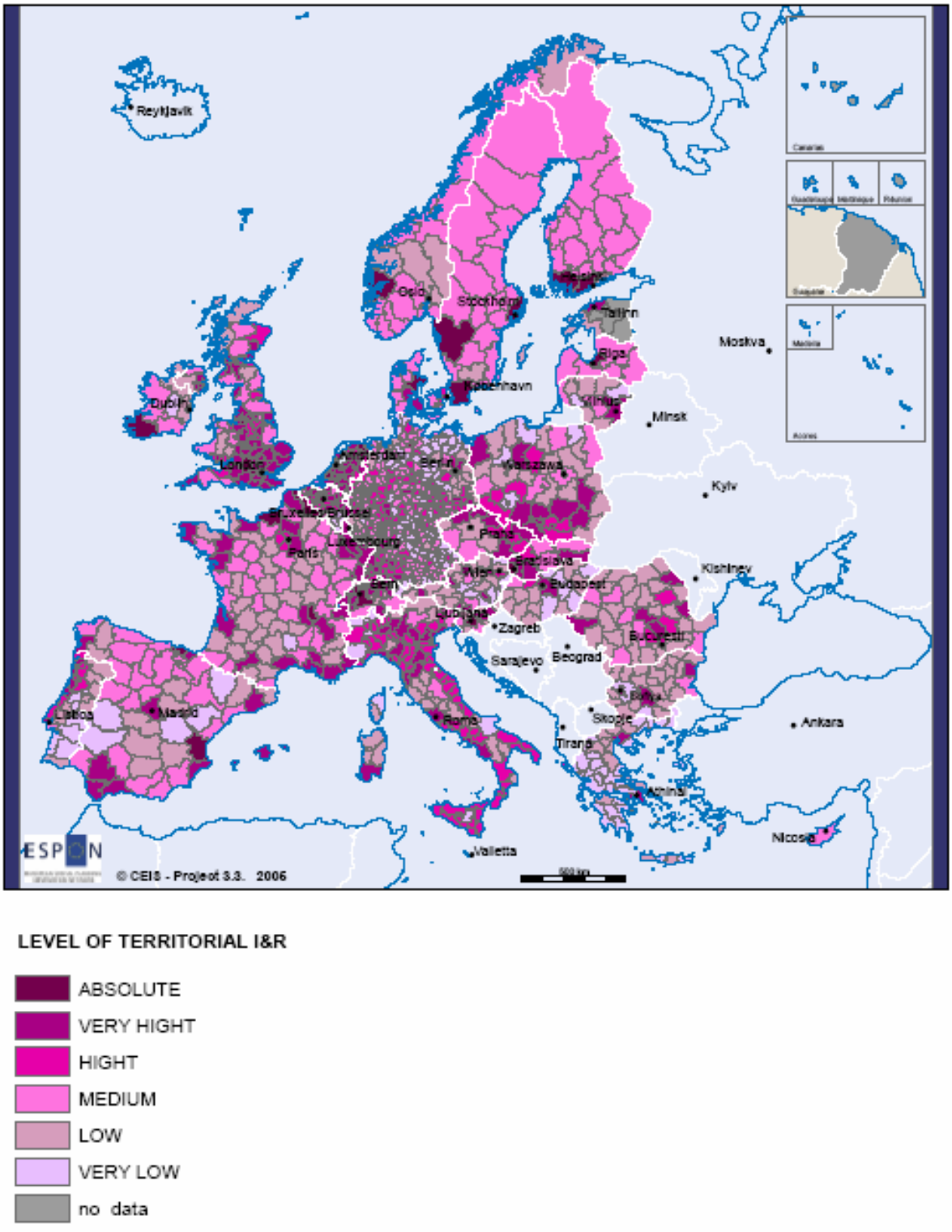


Legend

INNOVATION AND RESEARCH

- high - 7
- medium high - 103
- medium low - 138
- low - 27
- Incomplete data - 5

Figure 20: Map. 17 Determinant Innovation and Research - Territorialisation



LEVEL OF TERRITORIAL I&R

- ABSOLUTE
- VERY HIGHT
- HIGHT
- MEDIUM
- LOW
- VERY LOW
- no data

5.2. Global/local interaction

The appearance, on the international scenario, of broad competitive templates among urban areas, or of smaller territories, represents an important phenomenon of the actual socio-economic development of the modern competition. States, at all different territorial levels and at all dimensions, are trying with a growing attention, to achieve some strategies aimed at exalting the present and potential inclinations of the above-mentioned territories, as well as strategies, that can lead to the diversification of the competitor areas.

If the will is that the local does not turn into localism but becomes a success factor to the territorial competitiveness, many efforts must be paid in order to create the best conditions of attractiveness of economic activities that bring new wealth or that support the development of the existing ones.

The ability of the local dimension to get linked –without disappearing because of that– to the system of the global relationships implies the necessity to recognise and safeguard the local differences and peculiarities as an answer to the globalisation processes. The territory, along with the precise analysis of the indissoluble bonds between the geo-morphologic characteristics of the locality, the settlement models, the systems of relationships, the production specialisations, is now the starting point to relaunch development processes where "how" be not necessarily placed before "where", which should, instead, be based on an original mix of both concepts.

What is now happening in the typical productions sector, above all where the concept of "intrinsic quality" –related to the production place, the productive cycle and its results in terms of marketable goods– certainly prefigures an alternative to the undifferentiated universality of mass production, even though at this moment this seems to get winning only in particular market niches. Niches that are probably destined to grow, rewarding, though, only those production places that were able to early show up to the attention of the public, thanks to the availability of particular material or cultural resources.

The dynamism of the territorial competition is fostered by actions that tend to build a revised environment, starting from the peculiarities and resources of each territory. New actions are set up and combine economic and social dimensions, attention to growth and sustainable development, public with private domain, technologies with knowledge. Their strength precisely lies on that mix that fits for different formulas in different countries.

This implies, on one hand, the engagement to fertilize the territory, increasing the value of the relations system of the area, on the other hand, to turn that system into a platform that involves greater openings towards the global dimension.

Therefore the territorial competition lies on the connection between local territory and global market that is supposed to foster the implementation process of the Lisbon strategy, but without "blocking" it on the common belongings of the local stakeholders, and also without overlapping their paths with the adoption of models pre-constituted far from the internal characteristics of their territorial systems.

The continuous reference to local dimension and global dimension constitute the background for one of the matter that draws the competitive development of a territorial system, that is to say the link between the endogenous knowledge, that rises from the direct experience of the relevant stakeholders, and the "codified" knowledge, that allows the access to the global networks and the exploitation of its languages. It is clear that the two forms of knowledge do not correspond exactly and may clash in terms of contents and professional/training experiences. The point, instead, is that they must get used to coexisting, because, on one hand, the implied knowledge of experience is not only a surviving of the past and, on the other hand, the codified knowledge is not only something that standardises language and communication. Each one is, on the contrary, necessary to the other because:

The knowledge coming from experience exploits resources available "for free" in loco, like traditions, local culture, relationship based on personal familiarity and mutual trust, and that is what makes the local dimension being distinct and recognizable;

The codified knowledge allows leaving the local system and interacting with external persons since it turns communication into well-known codes, independently from the background

The connection global/local is given a clear-cut role within the model of a European Area, and for this reason the abovementioned systems within the European debate are considered as (Prezioso, 2003):

place of cohesion and development;

motor for the definition of a shared model of sustainable growth;

points of benchmarking for the setting of integration tools

As for the territorial systems, the threat is to interact with the networks of the global economy without prejudice to the experience acquired at local level. So the degree of local/global integration depends on several factors that vary from the possibility of physic and virtual accessibility, to the

level of exchanges of goods and services (import/export) and cultural exchanges. Measuring the degree of local/global integration will involve a multi-factor analysis relevant to the following links: Society, Firm Internationalization, Strategic Localization.

The globalisation of the economy can also be grasped by two pairs of concepts: *intangible/tangible* and *immobile/mobile goods*. The production of mobile goods are escaping from high cost countries to low cost countries, which means that the share of the immobile sector grows in relative importance in accordance with the advancement of the economy. E.g. the land –related sector has reached a 40 percent share of the GDP in the economically most advanced countries. Thus the share of the immobile sector could be taken as a sign of economic advancement.

Intangible goods constitute an increasing share of the GDP in advanced economies, and the value added by intangible goods to the imported tangible goods from low-cost countries forms a major part of advanced economies. This reflects of course a deepening division of labour (and wealth) between advanced and less advanced countries and regions. Low cost countries produce tangible goods, which are valorised by intangible measures in the advanced high cost countries. Thus the share of the intangible part of the economy may indicate economic advancement.

The global/local connection at social level aims at measuring the social aptitude for the development of interchanging materials and/or virtual relations towards the outside. A closer connection of the local society with the global dimension will be brought out from counting an increasing number of Erasmus students, an increasing number of immigrants, having a major opening to the cultural exchanges in general. From a virtual point of view, the more internet users will be and the more internet contacts people will have, the more the social interaction will grow (number of contacts internet sites/overall contacts).

Since the internationalisation of the enterprises represents a bridge between local economy and external markets, it fosters the productive coordination of both enterprises and territorial system of which they are a part. Increasing the number of goods produced and sold (beyond local and national boundaries), comparing it with external competitors, brings, on one hand, a revitalization of the economic and financial cycle and of the territorial system and, on the hand, a growth in the efficiency of management and in the quality in the production.

The internationalisation becomes, by consequence, one of the essential key for competition.

Even though we should remind that the economic-manufacturing system, often oriented towards the internal and local demand, is often much

characterized by a small entrepreneurial size, measuring internationalisation means investigating and evaluating the signs/efforts made by the Small and Medium Enterprises (SME) system aimed at optimising and exploiting the existing production in the global market.

Therefore the global/local connection at enterprises level will be measured by their recorded degree of internationalization, the market quotas they acquire, the structural financial system (types of financing) they refer to.

5.2.1. Global-local interaction in other ESPON projects

Concepts important for this determinant are dealt with in several of the ESPON projects. This is the most overarching determinant and in general it describes the interaction of the territory with its wider context.

The role of telecommunications is again of great importance when the interaction of certain territory with its context is considered. The spatial aspects considered in *ESPON project 1.2.2* and described in previous determinant hold true also regarding global/local interaction. These are the potential of telecommunications to reduce the 'friction of distance' as well as the danger of the 'digital divide' which both imply that better access to the services of the 'virtual society' enhances the ability of a territory to interact with its wider context. On the other hand the 'spatial blindness' of measures adopted by national regulators intended to increase competitiveness are emphasized, which take no account of territorial differences.

Another crucial issue determining the ability of a territory to interact with a global context is its physical accessibility and its position in transportation networks. Although often accessibility is considered to be of major importance for a competitive position of certain territory and its economic performance the results of *ESPON project 2.1.1* presented in its final report do not totally support this popular view. *"The main general result from the scenario simulations is that the overall effects of transport infrastructure investments and other transport policies are small compared with those of socio-economic and technical macro trends, such as globalization, increasing competition between cities and regions, ageing of the population, shifting labor force participation and increases in labor productivity."* (p. 13) Despite this conclusion regarding transport policies, the project later does assume a more general importance of interactions through transport and telecommunication infrastructure for the European economy. *"Efficient and effective communications are essential for the competitiveness of European industry and commerce, the cohesion of the European economy and the welfare of Europe's citizens. Despite this pivotal role, policy towards transport and communications has often been*

developed without sufficient regard for its impact on these wider aspects." (p. 40)

One of the aspects the report mentions is also the importance of transport operators for the competitiveness of a region or a nation. *"For national policy competitiveness has been seen more as preserving the competitiveness of national transport operators than using transport as a means of enhancing either national or EU competitiveness of industry as a whole. Thus we find individual member states seeking to ensure that ports, airports, rail operators and, above all, airlines and road haulage companies can compete effectively in the European markets."* (p. 251)

In connection of transport policy with other policies the role of research and development is emphasized again. *"On the one hand, research and development is seen as a means of overcoming some of the negative problems of environmental impacts, on the other hand research is an essential means of ensuring the competitiveness of domestic transport vehicle producers (road and rail) in the integrating European market, and more especially in third country markets."* (p. 252)

The project also emphasizes the inherent conflict present in European spatial policy goals on several occasions. *"One cannot expect one single design of transportation policy to be optimized for contributing to competitiveness, efficiency and growth of the entire EU area, for environmental sustainability, social equity and a balanced spatial development at the same time"* (p. 257) It also points to the origin of these conflicting goals. *"These conflicts arise because the way in which transport itself interacts with other sectors and the way in which transport policies, both infrastructure policies and pricing/regulation policies are poorly understood – or at least open to different interpretations. Thus transport as an agent of economic growth conflicts with transport as a destination of public funds. Transport as an agent of enhancing competitiveness conflicts with transport as an agent of improving accessibility and cohesion. Transport as a source of welfare through mobility conflicts with the need to control harmful effects on the environment."* (p. 253)

When interaction of certain territory with its wider context is considered we have to at least briefly take note of the concept of polycentricism. Although it is primarily related to policy approach it is of course based on some assumptions that are important for understanding global/local interaction as well. In *ESPON project 1.1.1* dealing with the issue of polycentricism the relational aspect is emphasized as one of two main defining elements (beside the morphological one). The relations among urban areas are defined as connections through flows (structural relations) and cooperation (institutional relations) on different scales. Regarding the

issue of scale the project makes a distinction between connections over large distances and connections based on proximity. *"Distant urban areas may be connected through various types of relations such as market-based flows or exchanges, or cooperation directed towards the sharing of experiences, methods, or information, or by participating in a development project, etc. These relations are characterized by connectivity rather than proximity."* (p. 47) Therefore for large distances institutional relations are the prevailing type. On the contrary in proximity, structural relations are more common. *"Spatial proximity between urban areas potentially allows for other forms of cooperation and integration to take place: economies of scale through shared infrastructure, such as universities and hospitals, or common strategies to manage flows and exchanges generated by commuters, telephone calls, etc. The most frequently used indicator for economic integration is travel-to-work intensity between cities. A situation with intense commuter flows in both directions would be a sign of integration and of polycentricism."* (p. 48)

5.2.2. Global-local interaction in 3.3 project

Globalization increases both opportunities and competition for investment. It offers opportunities for local businesses to develop new markets and also presents challenges from international competitors entering local markets. Multi-site, multi-national manufacturing, banking and service corporations vie globally to find cost efficient sites in which to locate. Technologically advanced growth industries require more highly specialized skills and technology infrastructure.

The set of changes in the context of development (at different geographic scales) refers to what Dicken (1998) called the new 'geo-economy'. This consist of three factors, namely: i) space reducing technologies in transport and communication; ii) the technological and managerial changes in production of goods and services and, last but not least, iii) the growing volume of people, capital, and firms that are mobile across (parts of) the globe.

In this new global vision, the Local Territories make the difference in the international competition, therefore they present the local community's comparative advantage and hence its ability to attract and retain investment. Even small towns and their surrounding rural regions can find niche opportunities at a national or international level by building on their inherent advantages.

The global – local interaction is the process by which public, business and nongovernmental sector partners work collectively to create better conditions for economic development and the growth of international

exchange. The aim is to improve the quality of relation between local and global market. So global – local interaction can be considerate like the ability of the regional territories to having relations of international exchange.

Practicing improve this interaction means working directly to build up the economic capacity of a local area to improve its economic future. Prioritizing the local economy and increasing the productive capacity of local firms, entrepreneurs and workers is crucial if communities are to succeed in the fast changing world. The ability of communities and their government to improve the interaction lives of their members today depends upon them being able to adapt to the fast changing and increasingly competitive international market environment.

So this component seeks to investigate the relationship and the ongoing re-alignment between public, private and civil society actors in territorial interaction processes, with special emphasis on the role of regional territories as the domain where local and global forces interact most strategically. So we must analyze some thematic fields:

- Environmental and cooperation agreements
- Social
- Economy and Finance

How these forces of global integration affect local conditions and livelihoods is a important question. This component taking this perspective are interested in finding out to what extent, and under what conditions, economic globalisation offers opportunities for improvement to actors and groups at the local level.

Table 14: Global local interaction (GLI) framework

indicators	category	sector	tipology	Determinant
Arhus Convention	General impact measures	general environment concerns	Environmental interaction	Global-local interaction
Espoo Convention				
Aircraft Engine Emissions	Atmosphere	Specific environmental concerns		
LRTAP				
UNFCCC				
Protection of the Ozone Layer				
CRTD	Hazardous substances			
Basel Convention				
Convention on the Transboundary Effects of Industrial Accidents				
ADN				
ADR				
Rotterdam Convention				
Stockholm Convention on POPs				
London Convention 1972	Marine Environment			
MARPOL 73/78				
1969 CLC				
AFS Convention				
1992 Fund Convention				
HNS Convention				
OPRC				
Intervention Convention				
LOS Convention				
CCAMLR	Marine Living Resources			
ICCAT				
ICRW				
The Antarctic Treaty	Nature Conservation and Terrestrial Living Resources			
World Heritage Convention				
Convention on Biological Diversity (CBD)				
Bern Convention				
CMS				
CITES				
Ramsar Convention				
CCD				
FAO International Undertaking on Plant Genetic Resources				
ITPGRFA				
ITTA1994				
Assistance Convention	Nuclear			

Notification Convention	Safety			
Convention on Nuclear Safety				
Vienna Convention on Civil Liability for Nuclear Damage				
ECE Water Convention	Freshwater Resources			
Manufacturing enterprise, product trademarks	Productive local identity	productive system identity	Economy interaction	
Energy self-sufficiency index	Energy dependency	Energy		
FDI intensity	Territorial appeal	International isation		
Trade integration of goods; trade integration of services	Export			
Vulnerability	Natural hazard	Strategic localization		
Typology Multimodal Accessibility Potential	Accessibility			
Total general Government Revenue, Labour cost index, Long Term Interest rate	Costs			
Science Parks that are members of the International Association of Science Parks (ISAP)	R&D infrastructures			
Business Innovation Centres				
Universities and High Level Research Centres				
Credit institutions	Bank	Credit & Insurance attitude	Financial interaction	
Insurance companies	Insurance			
Companies (local units)	Company	Management attitude		
Stock markets capitalization	Exchanges			
Population change	Migration	Population Mobility	Social interaction	
tourists inbound	Tourism			
tourists outbound				
Students erasmus/socrates (inbound and outbound)	Cultural exchange			
Researchers movements inbound and outbound (erasmus/socrates)				
Active peoples	Labour force	Active population		

In order to calculate the demand/offer relationship at the base of European Global/Local interaction, the project starts up looking at the international agreements, to measure the taking in level into UE countries. In this contest, the environment matter, with all its problematic aspects, has got particularly importance to realise a balanced Global/Local relationship because it is the 'arena' where it possible to be competitive in sustainability.

Of course, to arrive to obtaining this result, it needs to share some principles and the relative applying rules (G/L governance). This is well represented by the most important international agreements on environment and development[28].

Looking at the Equal methodological approach, the EU countries have positive attitude and a virtuous behaviour in front of general environmental treaties (from Map MB1 to Map B3). They took in a lot of global and thematic agreements, albeit these last are not always entered into force.

About the Specific Environmental Concern (Map MB2), Kyoto included, the new Eastern countries, Ireland, Belgium, Denmark, Portugal, Cyprus show a medium or medium-high interest.

The equal approach tends to homogenize the value distribution. It's particularly evident about the economic variables.

So, the Global/Local interaction (Map B39) never arrives to have got high values and presents a good performance only in the traditional more advanced European regions.

The quantile study appears more detailed at regional level.

So, the Global/Local interaction (Map Q_B39) privileges as good benchmarking cases the following few regions: Centro region in Portugal, Inner London- Berkshire, Buc-Surrey, East in UK, Alsaze in France, Freiburg- Gießen- Schleswig-Hols in Germany, Gelderland- Noord-Brabant-Noord-Holland in Netherlands, Agder Og Rogal in Norway,

[28] See *Yearbook of International Co-operation on Environment and Development*, 2004. According to the Fridtjof Nansen Institute , we have divided the agreements into eight subsections:

- General Environmental Concerns;
- Atmosphere;
- Hazardous Substances;
- Marine Environment;
- Marine Living Resources;
- Nature Conservation and Terrestrial Living Resources;
- Nuclear Safety;
- Freshwater Resources.

Stockholm in Sweden. This situation requires a serious reflections about the capability to have a real contact with the global vision.

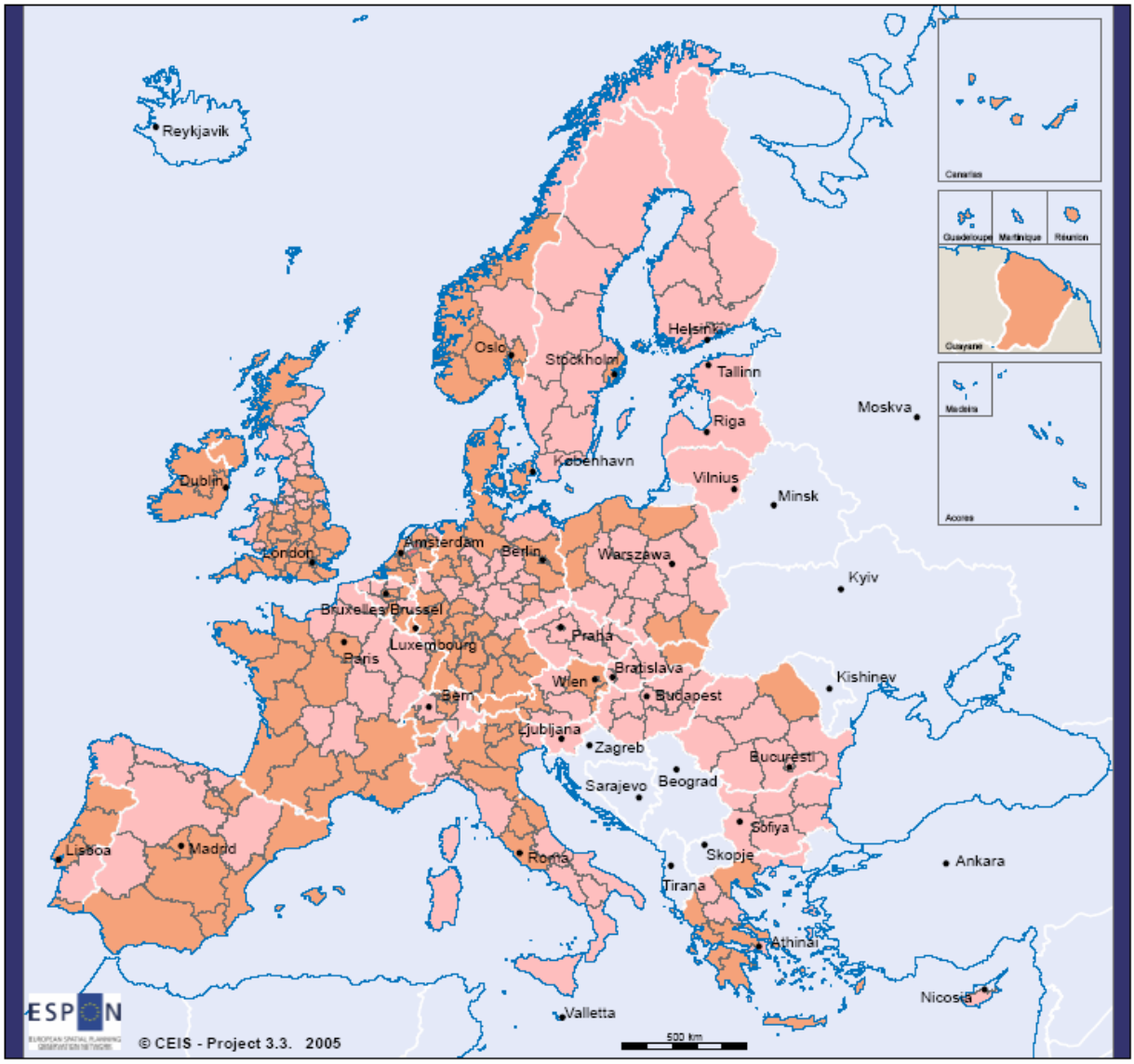
The Global/Local territorialisation (Map territorial G/L) picture some particular phenomena:

- the highest concentration (absolute value) in Centro of Portugal; Madrid, Valencia, Catalunia and Islas Baleares regions by several reasons (from tourism to business and population behavoiour); Aquitaine, Midi-Pyrénées, Provence-Alpes, Rhône-Alpes, Alsace, Ile de France in France; Emila-Romagna and Piemonte in Italy; Luxembourg; Noord-Brabant and Zuid-Holland in Netherlands by the recently business development; the more Eastern Denmark region; Inner London in UK; The Southern Ireland region; Vestlandet in Norway; Stockholm in Sweden; Väli-Suomi (Helsinki region) in Finland;
- the highest attitude to have got G/L territorial interaction is concentred into central Pentagon area; from the South-East of England Netherlands to North-South-West regions of Germany; from Switzerland to Centre-North and the South of Italy; the boundary area between Poland and Chzec;
- - low and very low perspectives seem to involve the central regions of all EU countries.

So it could mean both the local perspective is more interesting than global one for the European government and citizenship, and definition of peripheral area should involve a major number of regions, independent from the general economic or material resources.

This could be mean that the Global/local interaction depend more from social cohesive aptitude of local population-enterprise-policy makers relationship than an effective offer of investments.

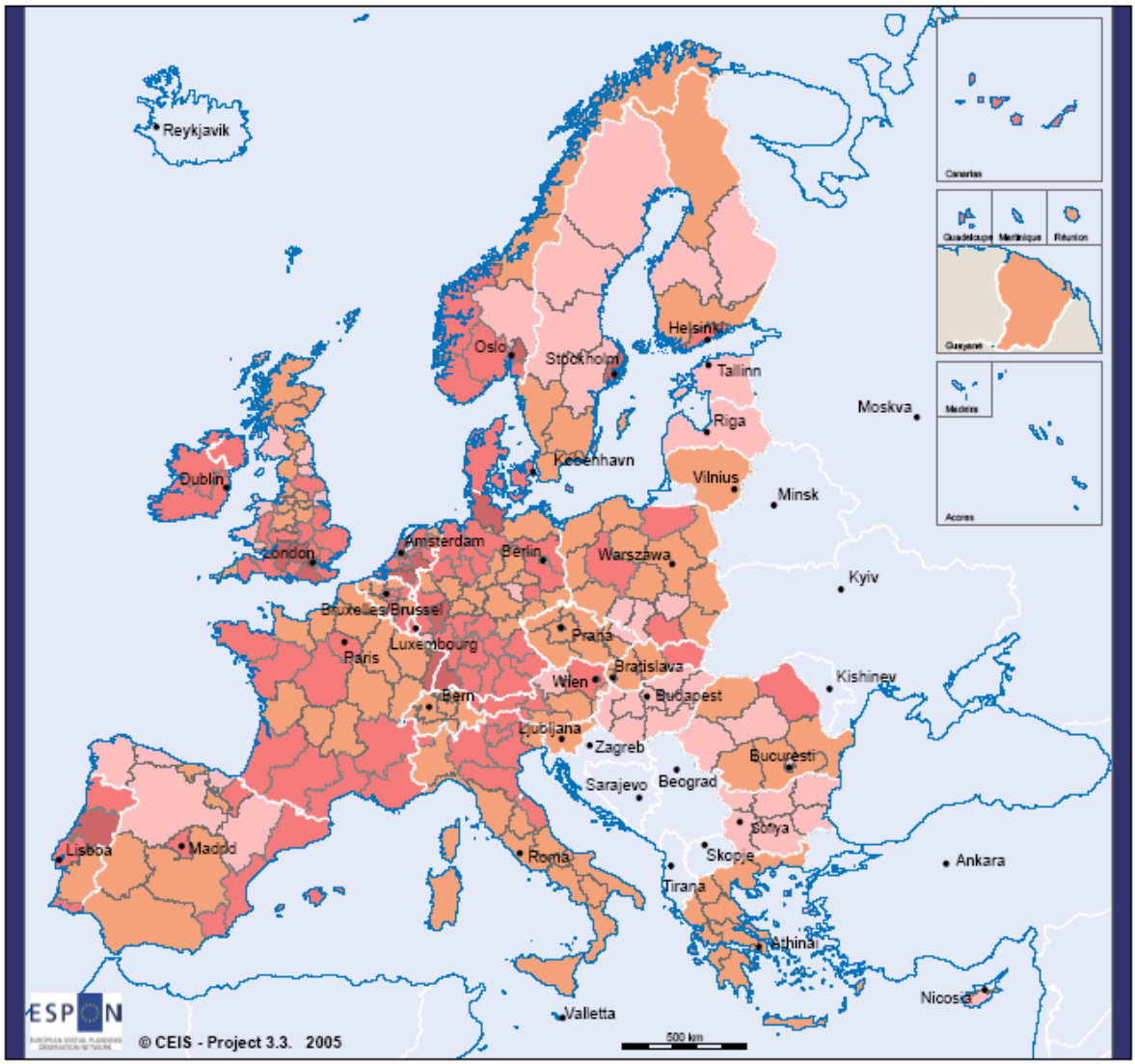
Figure 21: Map. 39 Determinant Global-local interaction – Equal interval version



Global local interaction
(equal interval version)

- B Medium high
- C Medium low
- D Low

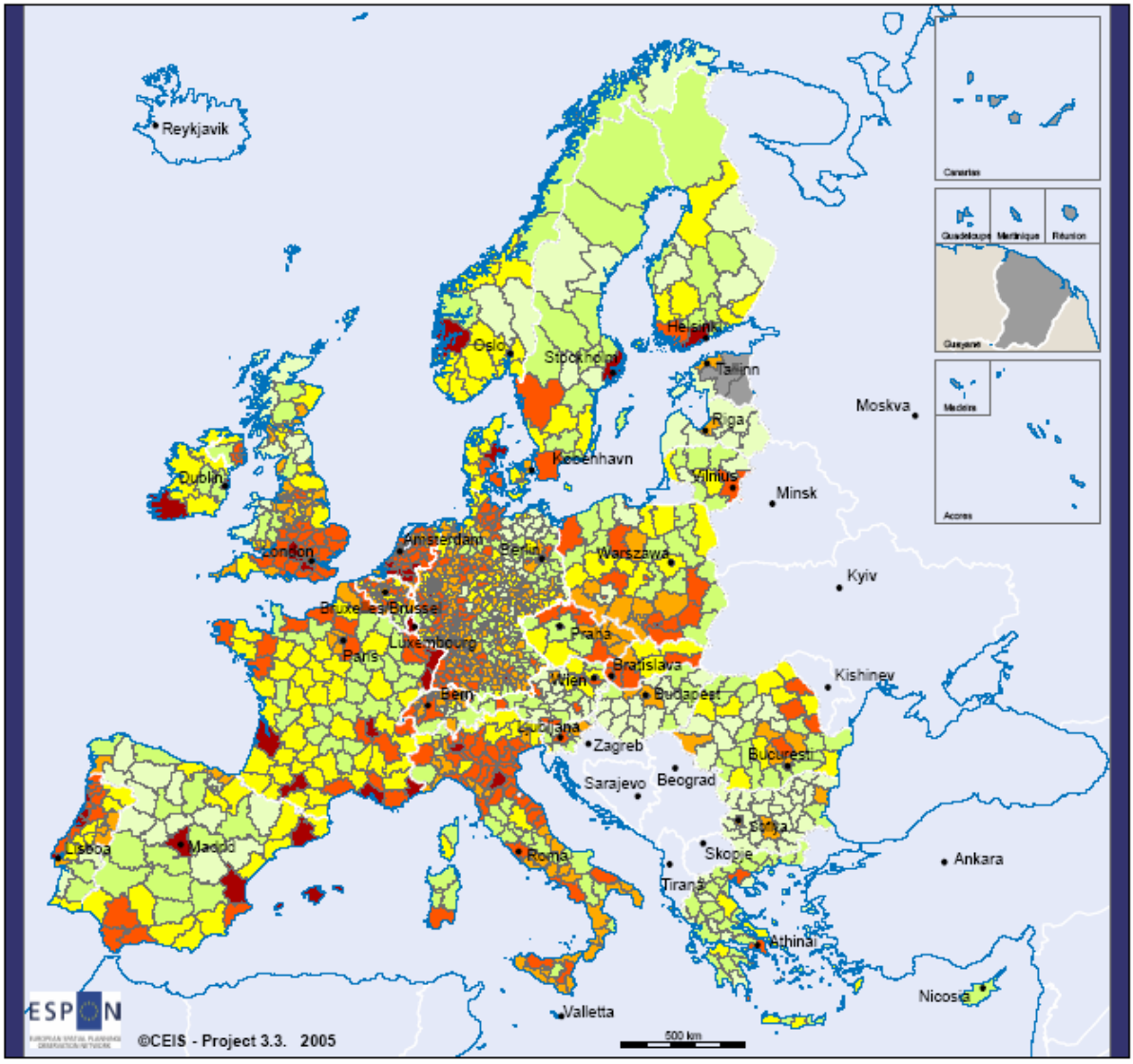
Figure 22: Map. 39 Determinant Global-local interaction – Quantiles version



Global local interaction
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Figure 23: Determinant Global-local interaction – Territorialisation



5.3. Quality

"Quality" is a very common expression of our present language, but it has got a particular significance into the geographical one, because it referees both to the life and the environment, enterprises, society, government, etc.

Up to 10 years ago, it was a common belief that the growth of economic wealth was the only indicator for the quality of life (progress=wealth) without taking into account social and environmental problems. Since then, the idea of quality of life has extended. Joachim Vogel (2001) has well explained this change: "Quality of Life gives the possibility to enjoy health and personal security, to express one's own personality by experiencing a cultural growth, a professional satisfaction or improvement, a feeling of self-accomplishment in enjoying one's own spare time, as well as to have at one's disposal enough material goods and services, human relationships, personal freedom and possibilities to participate in the public sector".

Some economic and regional researchers agree that the three cornerstones for the quality of life are: the environment, the economic wealth and the access to services. The territorial accessibility and availability of services are further parameters of quality: the more the services are easily reachable and close to one another, the more is the quality of life in terms of time saving.

"The first Human Development Report" combined indicators of life expectancy, educational attainment and income into a composite human development index, the Human Development Index (HDI). The breakthrough for the HDI was to find a common measuring rod for the socio-economic distance travelled. This approach defined a method to take into account several economic and social aspects which directly and indirectly had an impact on the citizens' life.

The study of this determinant consists of the analysis of indicators into 4 different groups:

- Quality of Life
- Environmental Quality
- Government Quality
- Social Quality and Cohesion

The first group involves the *economic variables* and the point of view that the quality of life is directly proportional to the GDP level and to the consumption level, and directly proportional to the level of employment and consumptions.

At the same time, the 3.3 project considered some "infrastructural variables" as cohesive indicators. They picture the level of integration had got from a region by material and immaterial structures and the integrated network of services to use and to advantage of the citizens/consumers (e.g. welfare structure, leisure structure, physical accessibility - see ESPON 1.2.1 and 2.1.1 projects -, technological equipment).

When wondering about the meaning of "quality" we are about to put questions which concern in the first place the domain of ethics and the ways it has an influence on the traditional economic analysis.

Everyday experience shows how some human factors, such as solidarity, voluntary work etc., are essential to the implementation of social and hence economic relations, so that some phenomena can be considered as complementary to competition.

Hence, the definition of the principles identifying respectable standards of life and the inclusion in these life standards of as much population as possible in order to give an idea of sustainable development under the economic, environmental, social and cultural point of view, is the primary goal of every modernisation process.

However, the quality can be measured and quantified by means of specific indicators set by the scientific research in the last decades.

These indicators reveal, in the first place, the causes of divergence between economic wealth and welfare and, in the second place, how crucial ethical and emotional evaluations can be in the determination of a set of values which are well far beyond the concept of usefulness.

By using these indexes is possible to observe how the GDP growth does not necessarily lead to a growth of the welfare. The most paradoxical result in the evaluation of the set of values determining quality of life highlights that economic growth, assessed in terms of GDP, salaries, prices etc., and welfare, assessed in terms of employment/unemployment, justice/injustice, corruption, crime, discrimination etc., hardly ever are the same thing even though, if properly integrated, they can give a reasonable exhaustive outline of the quality of life for this kind of determinant.

The tradition in the application of the environmental studies has produced an effective field of application in the assessment of the *environmental quality* by using indicators which not only represent, but also determine and describe, the causes which have altered the state of resources, as well as the corrective actions taken by society to heal degradation.

An integrated approach in the reporting process on the state of the environment carried out at any geographical scale, is mainly a conceptual approach to represent and summarize the complexity of the environmental changes, without loosing the flexibility required to represent the characteristics of any environmental phenomenon related to the policies applied to it.

The instruments used to implement this process of integration are many and of different nature: from the adoption of the code of conduct, to the implementation of targeted communication methods (e.g. environmental and social balance, sustainability reports, etc.) and from environmental and social certifications to donations and sponsorships.

A transposition of the Corporate Social Responsibility's method is an important management tool to entrepreneurship intended both for the public and private sectors in order to improve financial performances, processes of internal cohesion and operations, as well as to become a tool for the diversification of the market and a synonym of "value" for the citizens and the consumers as far as it contributes to the improvement of their quality of life.

Since both private and public companies play, above all others, a role of social interest, the expectation is to meet these infrastructural variables into those companies applying models of social cohesion, where the attention to the achievement of the economic and financial balance is subject to the assessment of the value attributed to the achievement of the objectives of this kind of companies (e.g. prevention, treatment and rehabilitation services within hospitals, accommodation, welcome services, entertainment for the spare time, accessibility to services and availability of technologies able to facilitate the use of the above-mentioned infrastructures).

In the process of analysis and evaluation of the *environmental quality*, it is of utmost importance to collect all the environmental data for the evaluation of the territory both on the basis of its characteristics, and of a qualitative and quantitative evaluation, by integrating all natural and anthropical factors which contribute to the determination of the environment conditions and of any possible critical factors.

In fact, any governance activity bringing changes to the pre-existing physical conditions, should be well aware of the practical implications of the decisions taken, as they have a direct impact on the effectiveness of all human actions by conditioning populations' health and their quality of life in general.

The quality is therefore determined by the environmental relations deriving from the adopted environmental policies (enterprise and public

administration's responsibilities: ISO, EMAS, VAS, VIA and GPP "Green Public Procurement"), from data concerning human activities (Soil deployment: green area per capita, protected green area per capita, artificial surface per capita, less favorite areas per capita, agriculture area per capita) and from risk data of natural hazards (earthquakes, flood events, forest fires, volcano risk) as well as from information about the measures needed to prevent, mitigate and retrieve possible conditions of environmental degradation.

The environmental quality therefore is influenced positively by human activities that assume the responsibility for the actors of the action and they move to an objective commune to improve the quality of the life, to decrease the uneasiness determined by actions purely speculative as the environmental pollution or as the calamitous events of difficult control (quality of natural element as air, water, soil, and level of noise; public and private institution responsibility: ISO, EMAS, ESA, EIA, GPP; land use: green area per capita, protected green area per capita, artificial surface per capita, less favourite areas per capita, agriculture area per capita, natural hazard: earthquake, flood events, forest fires volcano risk, etc.)

It is widely acknowledged that emissions of greenhouse gases by human society are causing climate change on a global scale. Most greenhouse gas emissions are caused by the burning of fossil fuels for energy and by industrial processes such as petroleum refining and cement manufacturing. The dominant greenhouse gas is carbon dioxide.

Although the precise impacts are not known, it is expected that climate change will cause rising sea levels (threatening millions of people), changing precipitation patterns, thinning of polar ice caps, heat waves, floods, droughts, water shortages and disruptions of forests and agriculture. Northern regions are expected to be particularly hard hit. The Arctic Region is already experiencing warmer weather, shorter winters, melting permafrost, wildlife impacts and disruptions of traditional Inuit lifestyles.

Consuming energy causes a wide range of health and environmental impacts, from the habitat loss associated with exploration for fossil fuels and the construction of hydroelectric facilities to the pollution resulting from the burning of fossil fuels.

Environmental impacts are caused by the actions required to produce energy, including oil and gas exploration and development, coal mining, and the construction of nuclear reactors, hydroelectric dams and reservoirs. Environmental impacts also include the pollution generated by burning oil, gas and coal or disposing of nuclear waste and the impacts of dams on aquatic ecosystems.

Fossil fuel combustion is the main source of three major air pollution problems – climate change, acid deposition and urban smog. The energy consumption (from not renewable resources) produces 90% of carbon dioxide emissions, 55% of sulphur dioxide emissions, 90% of nitrogen oxide emissions and 55% of volatile organic compound emissions.

Hydroelectric projects flood large tracts of land, have major impacts on river systems and cause the release of both methane (a greenhouse gas) and mercury (a toxic heavy metal). Nuclear power facilities require uranium mining and produce nuclear waste for which no safe disposal system currently exists.

So the energy efficiency measures the amount of energy required to produce a certain amount of Gross Domestic Product (GDP). The more energy efficient a country becomes, the lower the environmental impacts of both producing and using energy, unless economic growth and population growth out-pace increases in energy efficiency.

Energy efficiency not only has environmental implications but also economic consequences. Weak energy efficiency undermines a country's international competitiveness because using more energy generally means goods and services are produced at a higher cost.

Municipal waste contributes to several environmental problems including habitat destruction, surface and groundwater pollution and other forms of air, soil and water contamination. Depending on the disposal method, there may be other negative consequences, such as the creation of toxic substances through incineration. Landfills also emit methane (which contributes to global warming) and other gases.

Hazardous wastes are those substances that require special technologically advanced methods of disposal to render them harmless or less dangerous because of the threat they pose to human health and the environment. If disposed of without proper treatment, hazardous wastes can cause serious, long-lasting damage to both terrestrial and aquatic ecosystems. Human health impacts can also be severe. For example, long-term exposure to mercury, lead or cadmium can damage the brain, the kidneys, the nervous system and fatal development. Hazardous wastes are produced by manufacturing processes, the chemical industry, the petroleum industry and other industrial sectors. Examples include acids, alkalis, solvents, medical waste, resins, sludge and heavy metals.

In many countries of the EU25+2 there are many working or shut down reactors to produce energy. An inevitable by-product of the process is spent fuel, the most common form of nuclear waste. Radioactive waste is also generated by uranium mining and milling, fuel enrichment, decontamination and decommissioning of nuclear facilities and other

activities using isotopes, such as scientific research. Nuclear waste is a major threat to human health and the environment, and poses a difficult disposal problem. The dilemma about how to properly dispose of nuclear waste continues to plague the "nuclear industry" of every nation.

The OECD defines recycling as the "reuse of material in a production process that diverts it from the waste stream". Recycling is an important activity because it reduces the amount of material being treated as waste, reduces energy requirements and relieves pressure on virgin sources of natural resources. Levels of recycling vary widely among different materials such as glass, metal, plastic, wood, paper and cardboard. Composting is an important means of diverting food and yard waste from the municipal waste stream. The environmental problems caused by municipal waste can be significantly alleviated through increased recycling, although reducing the amount of waste generated is a more effective and efficient strategy in the long run.

The land use choices we make are the blueprint for our community's design. So a new vision of the future provides effective infrastructure that enables us to work, raise our families, and educate our children. Our land use supports our quality of life while protecting the environment. Community infrastructure attract several territorial actors (for business and for leisure) as well as high quality jobs. The region will foster sustainable development that meets the needs of present generations without impairing future generations' ability to meet their own needs.

A sustainable economy is essential to good land use planning and infrastructure provision. A respect for the environment helps maximize the use of land and infrastructure. Involved neighborhoods are essential for a thriving community. Smart land use and high quality infrastructure are essential if we are to achieve our vision of a robust economy, world-class education, and a safe community.

A protected area is a geographic region in which certain activities that cause ecological damage are restricted or prohibited. Originally created to promote recreation and tourism, protected areas are now viewed as critical wildlife conservation areas. The primary goals of protected areas are to maintain biodiversity, allow ecological processes to continue and provide recreational opportunities.

The relationship between government and citizens is becoming increasingly complex. Policy decisions are taken at multiple levels of government. Many problems (e.g. environmental degradation, tax evasion, crime) must be addressed in a global and increasingly inter-related environment, requiring co-operation and agreement across regions, nations, or on a global basis.

In considering these challenges, governments increasingly realise that they will not be able to conduct and effectively implement policies, as good as they may be, if their citizens do not understand and support them. Thus, governments are looking to new or improved models and approaches for better informing and involving citizens in the policy-making process.

Variations in political participation between areas are conventionally explained by the different socio-economic make-up of localities: wealthier areas are expected to have higher levels of participation than more disadvantaged ones. However, it is widely recognized that this so called 'resource model' cannot explain all variations in participation. Nowadays this gap it's not the only reason of a potential low participation of citizen in local government. So it's necessary to indagate the other factors, other than socio-economic variables, that influence the level and style of participation in different areas and the level of citizen satisfaction of the local government services.

The level of public knowledge of local government, people's satisfaction with local service provision, public views and complaints about local services it's a good method to measure the level of quality of local government. In the past years the studies show that the level of public knowledge of local government was low and people did not complain about local government services although the level of satisfaction was low[29], but now the situation it's changing.

The study of *government quality* must analyze some aspects of strengthening relations between governments and citizens (considered as individuals and as groups: Government information for citizens; Government consultation with citizens; Government efforts to ensure active participation by citizens).

Public participation (or governance) can be seen as ranging from information-sharing to consultation to more active forms of participation, such as partnerships, that involve strong citizen influence over public policies and services. It is considered here in this most active sense of local government and welfare structure level.

The daily life shows us as some factors "human" as the base of *the social quality and cohesion*. E.g., the level of human capital (schooling), the social uneasiness (crime), the level of social integration (equal opportunities) and the demographic variable, have a direct influence on

[29] The belief that complaints would have no effect is the main reason for not complaining. The impact of sex, age, education, income, length of residence in the locality, housing tenure, and political opinion on public attitudes to local government is also assessed. Of these variables, age, education and income levels are found to be significant.

the quality of the life (e.g. human resources, criminality, equal opportunity, etc.)

Both individuals and countries benefit from education. For individuals, the potential benefits lie in general quality of life and in the economic returns of sustained, satisfying employment. For countries, the potential benefits lie in economic growth and the development of shared values that underpin social cohesion. Countries make substantial investments from both public and private sources in education, both formal provisions and informal provisions in the community and the workplace. It is important to ensure that the education programs they support are effective and efficient and that the benefits are distributed equitably.

5.3.1. Quality in other ESPON projects

The determinant of quality is the one that is generally most difficult to describe. It is a multi-dimensional concept including different distinguishable qualities of a territory. Among them are quality of life, quality of the environment and quality of the institutions and governance in a certain territory. Each of these is a complex concept on its own and addressed in several of the ESPON projects, although none of them has been investigated thoroughly.

Despite the distinct concepts and different ways of measuring them, it is also important to emphasize their interconnectedness and the ways in which they complement each other contributing to competitiveness of a certain territory. A nice summary of this is offered again in the *ESPON project 1.1.1* in relation to polycentricity. *"As a general rule, large city regions have a wider set of economic activities than do smaller regions, especially as regards services. They also have larger labour markets. Therefore, they offer better services for businesses and families as well as more job opportunities. On the other hand, large city regions also face a number of challenges in respect of welfare issues, such as traffic congestion and crime. A city region's physical structure may be important for pollution levels and for the availability of recreation areas. The challenge is therefore to combine the advantages of size without having too many of the disadvantages.*" (p. 228) A very similar explanation from a different point of view is offered also in the final report of *ESPON project 2.2.3* dealing with the effects of structural funds on urban areas. *"The size of a city is also seen by some authors as a factor of competitiveness, with larger cities viewed as being more competitive. The shrinking of distance with the advent of High Speed Trains, for example, is argued to be contributing to the decline of small and medium-sized cities which are excluded from the new network. However, the better quality of life which*

smaller towns and cities may offer may act as a counter-weight to this process." (p. 11)

Although the project is focused on urban areas it offers also some overall picture of competitiveness that contributes to the quality issue. It emphasizes, for example, the social aspect of quality and its connection with economic one when it states that a good mix of both aspects is crucial for the success of the cities. *"For example a successful city offers a sufficient density and mix of employment options, good quality education, leisure and childcare facilities to be able to cater for lifestyles, culture, jobs and the needs of dual-career families (such as diversity of opportunity)."* (p. 11)

The importance of economic performance on quality has never been in question. In fact, until recently GDP as an indicator of economic performance has often been used also to describe both competitiveness as well as quality of life. In relation to economic performance functional or economic specialization is often mentioned as a key component contributing to competitiveness of a certain territory. *ESPON project 2.2.3* offers an example of this issue. *"Trollhättan and Lahti provide two examples of a strategy to support further specialisation in response to increasing international competition. In Lahti the focus is especially on the plastic and metal industry, and on environmental technology. This is in line with the establishment of "Centres of Expertise" in Finland, with a high degree of regional specialisation."* (p. 68) Despite a wide consensus that such "economies of scope" contribute to competitiveness of a territory the difficult part is again how to measure this. The project warns against connecting it directly to economic structure. *"Whilst economic structure is clearly an important determinant of the economic performance of a city the nature of the industrial base does vary ...Care is also needed not to associate economic structure too closely with competitiveness. Competitive cities can successfully sustain thriving industries in declining sectors whilst expanding sectors may grow sub-optimally in non-competitive cities."* (p. 11)

Another important aspect of quality is also the quality of institutions and governance. Partly this aspect was addressed already in the innovation and research part when discussing the role of institutions in innovation. Again also the *ESPON project 2.2.3* raises some issues. *"Important questions are being raised about the role and nature of governance in the promotion of territorial development. Its tasks are seen as ranging from maintaining 'competitiveness' to developing innovative milieux and managing development within environmental capacity limits. Major change is towards wider partnership, across sectoral and administrative borders, including private and voluntary sectors. The significance of*

networking, which is recognised as being crucial for entrepreneurs, is also increasing amongst localities." (p. 12) The *ESPON project 2.3.2* dealing specifically with the issue of governance is of course also adding some important aspects to this in its first interim report. In the overview of documents on governance it cites *Third Report on Economic and Social Cohesion* on several occasions. *"'There is a growing consensus about the importance for regional competitiveness of good governance – in the sense of efficient institutions, productive relationships between the various actors involved in the development process and positive attitudes towards business and enterprise. Nevertheless, regions still differ markedly in these respects and in their ability to develop their own competitive advantage given the expertise they possess'...' it is widely accepted that good governance and an effective institutional structure are an important source of regional competitiveness through facilitating cooperation between the various parties involved in both the public and private sectors ...they can improve collective processes of learning and the creation, transfer and diffusion of knowledge and transfer ... they can cement networks and public-private partnerships and so stimulate successful regional clusters as well as regional innovation strategies and policies.'"* (p. 46)

5.3.2. Quality in 3.3 project

Table 15: Quality (Q) framework

indicators	category	sector	tipology	Determinant
GDPpps per capita	GDP	Economic variables	Life quality	Quality
Consumption per capita	Consumption			
Level of employment	Employment			
Consumer-price index	Prices			
Hospital beds	Healt	Infrastructural variables of cohesion		
Cultural opportunities	Leisure			
Hotels beds				
Physical accessibility	Accessibility			
Old technologies	Level of Telecommunication development			
New technologies				
Municipal Waste	Municipal Waste	Waste	Environmental	

Generation			Quality	
Hazardous Waste Generation	Hazardous Waste			
Municipal Waste Recycled	Recycling Waste			
Degree of vulnerability in Europe	Vulnerability	Natural hazard		
Total greenhouse emission	Air	Natural Resources Status		
Total gross abstraction of freshwater	Water use balaced			
CO^2 emissions	Ozone layer	Climate change		
Confidence in EU commission	Level of citizen confidence	Good Governance	Government quality	
Confidence in EU council of ministers				
Confidence in EU parliament				
National public participation	Public participation			
European public participation				
Early school leavers	Base education	Social Cohesion Resources	Social Quality and Cohesion	
Iniquity of regional income distribution	Economic Elements for Social Cohesion			
Persons aged 0-17 who are living in households where no-one works	Risk of children exclusion	Risk of social exclusion		
At-risk-of-poverty rate before social transfers	Poverty			
Female employment	Equal opportunities	Social wellness attitude		
Fertility rate	Welness			
Hope of life				

Looking at the European system, the Quality determinant shows some significative situations.

At national level (see Equal mapping in Annex IIB) we note:

- a low level of the GDPpps per capita for all the new countries, the Southern Italian regions, Portugal and a great part of Spain and Greek.

The central places of EU, UK and Scandinavian countries show generally a medium value;

The general economic performance (calculated by traditional economic variables) is not good, as demonstrated from the medium-low values in all old European countries. Between the new countries, Poland, Hungary, Slovak Rep., Bulgaria show a medium-high values, while Romania has high values. This specific situation is linked at the growth of consumptions and prices about the goods and services due at the enlargement.

Of course, at national level, the purchasing power is low into European Union (Romania and Bulgaria excluded), as well as the consumption tendency. This last aspect is more fragmentise, because the traditional peripheral areas (Spain, the Southern of Italy, Greek, Norway, Finland, the Eastern of Germany and, generally, the Eastern countries) picture a more high or medium-high tendency to have got goods of large consumption.

Staying into 'Life quality', the *infrastructural variables of cohesion* are a significant measure of welfare as well as the internal integration tendency of the EU states. The synthesis of cohesion variables picture a more significance tendency to be cohesive in the peripheral areas (high values in Spain, Portugal, Italy, Greek, UK, Ireland, Denmark, Sweden) than in core's ones medium-high values). It is possible that this dues at a more high connection and communication between people (by accessibility and networks) to exchange cultural contributions too.

But this is not sufficiency to have got a good *Life Quality* (Map 12). This results: high only in Romania and the overseas French regions (Guayane, Guadeloupe, Martinica, Réunion); medium-high in Spain, Italy, Greek, United Kingdom (Scotland excluded), Ireland, Luxembourg, Netherlands, Denmark, Sweden, Poland (in part), Bulgaria; medium-low in the other EU countries.

Government quality is another important point for the calculus of national and regional European Quality:

1. as *governance* with regard to the more general vision of *government* (national policies in agreement with local policies, programs and projects for the full carrying out of subsidiarity), to transform the plan in a bottom-up and intra and interregional cohesive instrument, as well as a new intergenerational pact between state and citizen;
2. as opportunity to re-define some equal distributive rules on ethical and basic principles (the sustainability) to apply by a substantial choice of power exercise.

Territorial (urban and metropolitan) governance ranks in this vision, because it keeps to the structure by it's possible to fix the territorial and productive aims, deciding the strategies to catch them up, monitoring the performance.

This topic completes the picture of the new sustainable planning models applied at different contexts (UE ESPON Program), where the operative governance field doesn't come before or follow the project choices, but it comes with like European technical and political working method from the beginning to the end.

The national government and local levels can begin governance promoters, suggesting praxis, procedures, guide-lines useful to orient the investors, enterprise systems, and entrepreneur's action to the project "best practice".

Territorial governance is a key-element to increase the efficiency of economic and territorial actors and to introduce innovative methods into planning (i.e. economics and financial strategies), involving the administrative system (management), the political system (board), the law system, the citizens, the productive system, etc. Governance is defined "good" when it identifies and re-models both the technical-financial incentives to catch up common aims, and the procedural choices to have an efficient and sustainable development project.

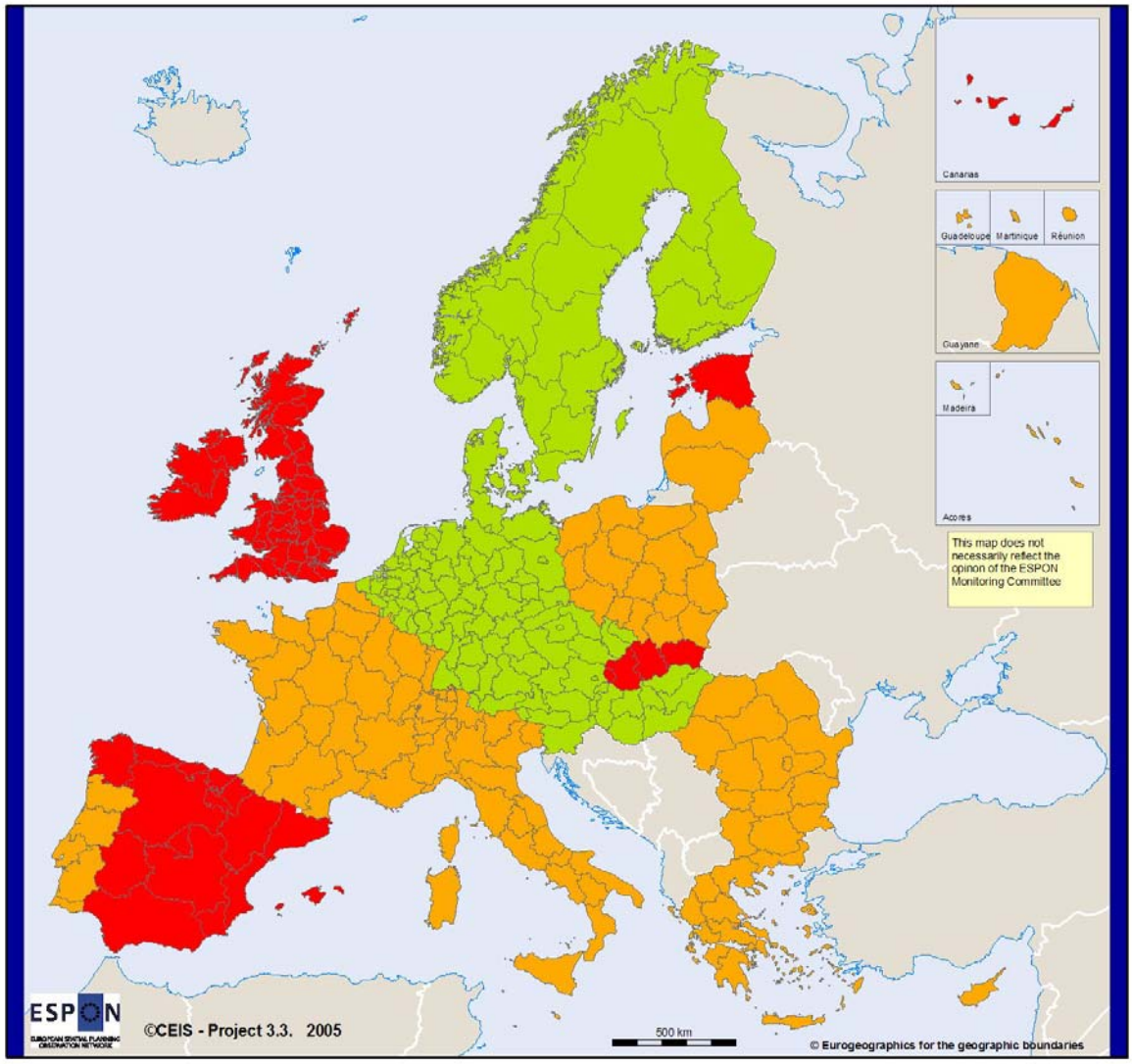
The complex approach aims to obtain a polynuclear or polycentric and cooperative territorial entrepreneurial model in local context, different and competitive in European context, using new and more dynamic political-economics instruments, to give a specific answer at the decentralized demand of sustainable development.

The final value of *Quality determinant* (Map C37) suggests to dedicate priority projects related at Ireland-United Kingdom system, Estonia, Slovakia; immediately after, at the France-Italy axe, the Kypros-Greek-Bulgaria-Romania one with an involvement of the Latvia-Lithuania-Poland-Czech one.

The final value of *Quality determinant by quantile distribution* (Map Q_C37) confirms the final previous evaluation.

The territorialisation (at Nut3) of the quantile version (Map Q_C37T), beyond it is fragmentized, shows and confirm the critical situation in many regions of the previous called countries. Particularly, this is real in a great part of Spain, Ireland and Austria, the North-East of UK, in the Centre-South-East of Italy, a great part of Greek-Bulgaria-Romania, the boundary regions in Poland toward Lithuania and Latvia (which must be included), the central zone of France.

Figure 24: Map. 39 Determinant Global-local interaction – Equal interval version

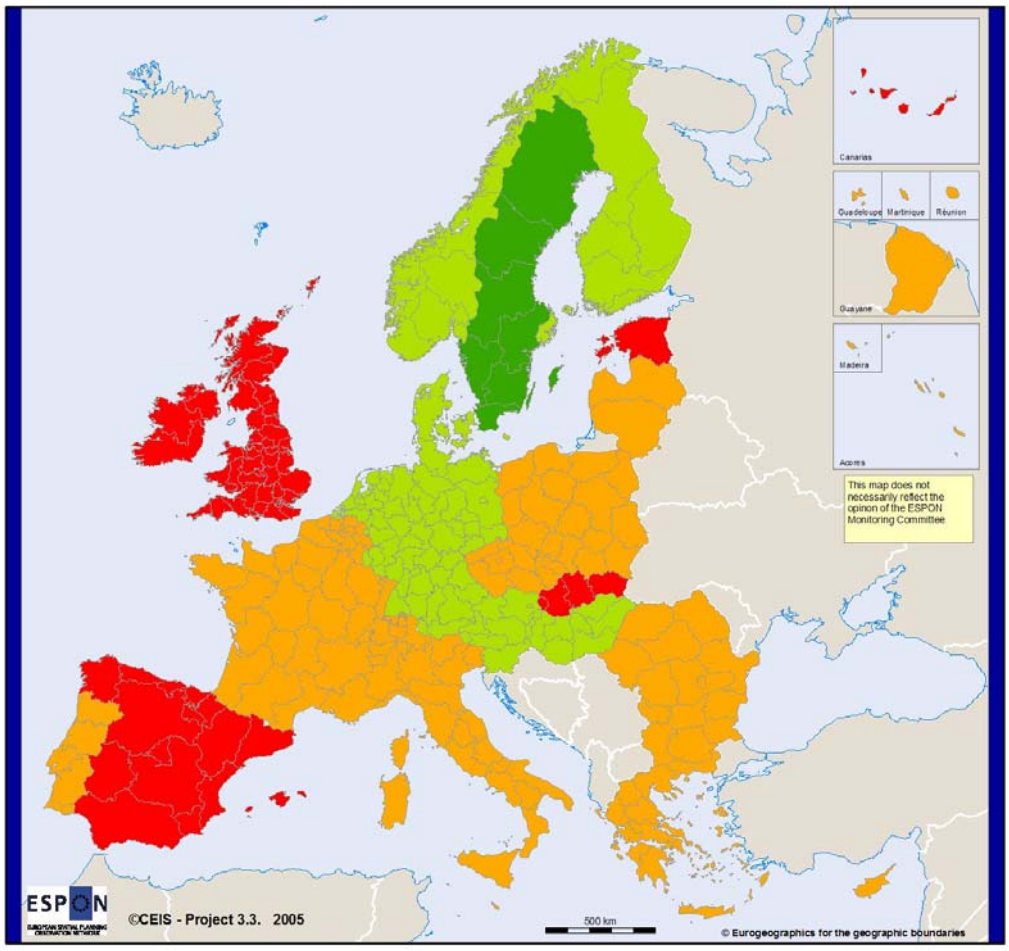


Legend

CLASSES

- Medium - high
- Medium - low
- Low

Figure 25: Map. 39 Determinant Global-local interaction – Quantiles version

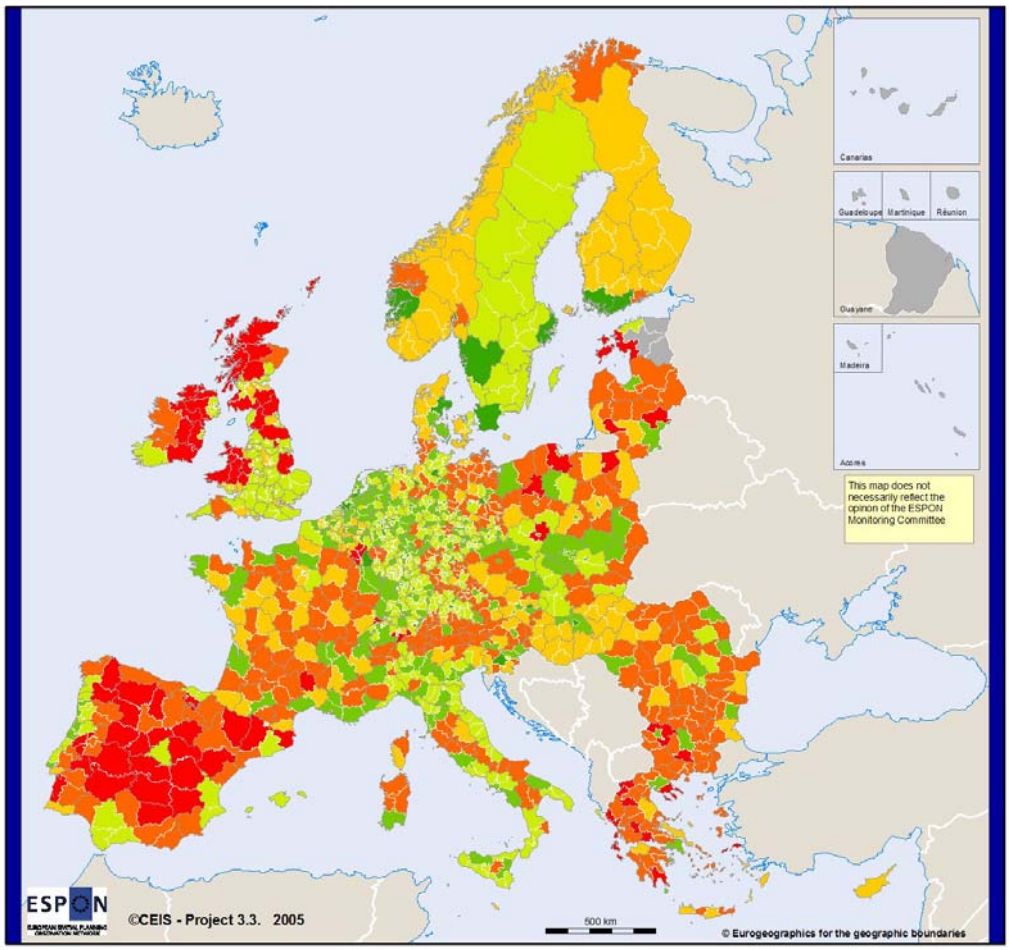


Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

Figure 26: Determinant Global-local interaction – Territorialisation



Legend

CLASSES

- Absolute
- Very High
- High
- Medium
- Low
- Very Low
- No Data

5.4. Resources and Funds

The concern that an inadequate management of resources is going to become one of the main hindrances to the sustainable development in the next decades, is spreading more and more. Resource shortage is a problem which is shared by several territorial systems. The diverging necessities towards available resources are the object of conflicts between human, economic and environmental needs.

In the last 50 years, world population has almost doubled, with a considerable increase in the world consumption of resources which, for some of them as in the case of water, has quadrupled.

In OECD countries, the amount of consumption of many natural resources does not meet the standard quality criteria, so that the resources undergo a continuous deterioration[30]. In the past years, the economic growth paradigm brought about an increase in overexploitation of resources and pollution, while the lack of suitable financings represented an hindrance to the maintenance, improvement and increase of use of renewable resources, against non- renewable ones.

By changing the paradigm –from growth to sustainable development– many OECD countries have now to face issues of expenditures sustainability and of effective use of resources.

The European Union is already on the way towards sustainable development since a long time, realizing that this goal is not an unattainable one at all; indeed, there should already be present the potentialities to turn into this road, in some countries more easily than in others. As the concept of sustainable development is connected to that of the efficient use of available resources, it is obvious that the former cannot be pursued regardless of the way the latter are managed and used. Within territorial competitiveness, an important role will be played by those territorial systems that earlier and better than others, actually steer towards sustainable development through an effective policy in the use of resources (natural, economic and human).

In the last decade there have been improvements, even significant, but not yet sufficient in order to abandon the old-fashioned and un-sustainable way of the mere economic growth; improvements not yet sufficient, either for the economic-social quality, or for the environmental one and of the consumption of resources.

[30] As an example, water bodies are more and more exposed to pollution from fertilizers and pesticides, as well as to contamination from heavy metals and persisting organic pollutants

Notwithstanding the progresses made, elements of resistance against the perspective of sustainability do emerge in some territories, which threatens the positive changes undertaken by the UE policies. Therefore territorial competitiveness also moves along the " environmental policies-efficient use of resources" axis, which has become a key factor for the development in UE quality as a product of the integration of economic-social and environmental policies.

This integration shows rather relevant difficulties in instrumentation and implementation. However, it represents, the only proposable horizon for a fairer development and a higher economic-social welfare level of the collectivity.

Sustainable development promotes an equitable access to the resources, a high quality of welfare, decreasing the pollution within the carrying capacity of the ecosystem, reducing the consumption of resources within the limits of renewability and long term availability.

It is clear that our planet does not have the physical capacity to support the levels of consumption of the past. Amount and quality of consumptions in the more industrialized countries, are, on the average, much too high, both in terms of energy consumptions, and of materials consumption, producing excessive wastes and too much pollution.

For this basic reason, the efficient use of the economic, social and environmental resources, end up, by now, with being strongly interlaced. The quality in the use of resources is fundamental. A development that damages the environment and consumes too many natural resources cannot be durable. A development that does not have a perspective of durability, or that is not founded on an efficient use of limited resources is a low quality development both economic and social, therefore not sustainable.

Such three "efficiencies" in the use of resources: social, economic and natural, that operate separately and sometimes in contrast between them, must, instead, operate in synergy, catching up the best performance in an integrated way.

Measuring the competitiveness of a territorial system / country system along the axis of the efficient use of resources, is not an easy task; we must, in fact, take into account that the management of resources is a complex one, where many factors come into play. The resources to be managed, as already stated, are manifold and belong to the three macro categories defined above.

What should be meant by "efficient use of the resources"? If on one hand the measurement turns out to be simpler for the natural resources because an "efficient use" of them is linked to consumption or –better– to

its reduction (consumption of oil, water, forests, etc), the story gets complicated when passing from the natural resources to the economic and human ones.

What does "efficient use of the human resources for the territorial competitiveness" mean? For sure, in a company, the efficient use of human resources means their best possible arrangement in the productive staff, that is to say the allocation which maximizes the productivity of the single resources. Passing from the enterprise to the territory, the efficiency in the use of the own resources and its measurement is not trivial, first of all because we risk to link the quality of the use to quantitative variables. The use of quantitative indicators turns out to be useful but not sufficient in order to measure the degree of use of human resources in the productive territorial fabric, so that we must take into account other indicators (productivity for worker) or combinations between two or more quantitative indicators, in order to obtain a more reliable estimation of the quality of use of "human capital" in the production processes of a territory.

Moreover, territorial competitiveness cannot leave out from consideration the degree of efficiency in the use of economic resources; this measurement requires an analysis of the economic/financial situation of the territorial system under study. Indicators like public deficit, the ratio debt/GDP, the inflation, are generally used as a measure of the level of "good practice" of the government of a Country, but if one stops the attention only on these indicators (of economic/financial stability) the result will not be exhaustive at all, aiming at a measure of the "good use" of the economic resources in the frame of competitiveness growth. In addition to that on these indicators, the argument must be oriented towards a quali/quantitative measurement of the phenomenon. At the UE level, since several years, surveying and statistics on the use of the Structural Funds in terms of effectiveness, build up a path of study/analysis that can be run through again and with a wider approach, in order to reach an evaluation of the contribution of the economic/financial resources (National Funds, Structural Funds, Cohesion Fund, etc) aimed at the sustainable territorial development and the growth of competitiveness.

The 2000-2006 European financing of programming documents (e.g. in Italian objective 2 regions) and operative plans (e.g. in Italian objective 1 regions) have already been engaged with different modalities and times in the various European regions since two years from the aims of the VI UE Framework.

Concerning the structural funds, in the field of productive activities - that represent the triggering factors for local territorial development (industry,

handicraft, business, tourism, technological innovation, industrial search and advanced services to the enterprises) - investments and projects for the territorial restructuring have been activated: infrastructures to support cultural goods development, tourism and business; projects for the traditional and transitional productive areas; infrastructures for the social transports, services and employment services, information society.

Those investments are different in the European regions, but the objective is common – in addition to the infrastructure demand for the less favoured zones - to win the challenge of the European competitiveness, creating the favourable conditions and environment to the birth and the development of the local identities, cultural heritage, local enterprises, heading for the control of the environmental risk factors, the quality of the products and the processes, not forgetting the territorial sustainable development. Considering that European regional development policy doesn't allow any localisms, it needs to look at the endogenous competitiveness factors, stressing the use of the technological innovation and the environmental certifications (UNI EN ISO 14000).

In the communication Com. 2003 n.26, the European Commission characterized and pointed out the main measures that the European Union will have to adopt in order to improve the competitiveness of the local productive systems and the SME's. Particularly, the small firms will have to act on international markets considering the recently occurred enlargement (10 new countries):

to intensify the exchange of the best practices;

to instil in the young people the entrepreneurial spirit (spin-off);

to create one entrepreneurial culture in the new income countries;

to place small and medium firms development in "pole position" in every UE policy.

5.4.1. Resources and Funds in other ESPON projects

The fourth and last determinant is trying to describe to what extent the available resources, directly or indirectly included in previous determinants, are used efficiently in a certain territory. Use of economic resources, human resources or natural resources can be considered separately in this determinant. In fact, there is little reference to any of these aspects found in ESPON projects.

In terms of economic resources *ESPON project 2.2.1* about the spatial effects of structural funds could offer some insight. One of the conclusions is that, of course, the spending is closely connected with the designation

of eligible areas. When describing the map on structural funds spending it states that it *"clearly reflects the dominance of Objective 1 areas and presents the general core-periphery image of Europe."* (p. 8). Besides this expected conclusion a more important one is that *"the potential contribution of the Structural Funds to achieving ... spatial policy aims will depend on the geographical level in question."* (p. 9) So at different scale levels the effects of structural funds differ. Following are the detailed explanations for different scale levels but there is little or no direct reference to the issue of competitiveness in this respect. On the other hand there is also no overview of the national spending and its spatial effects offered so far in ESPON projects.

Similar observations can be made also in terms of the efficient use of human resources. Employment and productivity as some of the main categories in this regard are not addressed in ESPON projects directly so far. There are only partial overviews included in *ESPON project 2.1.2* regarding the employment in R&D sector in relation to the innovation and research.

There is some reference to the use of natural resources available though in the third interim report of *ESPON project 2.1.4*, that deals with the spatial effects of energy policies. Although in the first place it warns that *"in fact there is surprisingly little evidence and research of the effects of energy development (increased quality and quantity of supply) on economic development."* (p. 8) One of the most important points stressed is that *"energy has a strong potential to become an important factor of life cost and of quality of life and a determinant of residential and urban location choices. Namely, energy can be a decisive factor of mobility choices and impact strongly in urban form and in the use of urban space. Fuel prices may have an important impact on modal split between car and public transport. In what concerns transport, there is an evident relationship between physical planning and energy consumption."* (p. 9) Efficient use of energy in terms of mobility therefore becomes an important aspect of territorial development. In terms of the relation between efficient use of energy and economic performance *"it seems there is an inverse relation between development and the intensity of economic uses of energy (industry and transport energy consumption divided by GDP ppp). Higher levels of development mean a higher proportion of services and higher energy efficiency."* (p. 15) We have therefore again come upon a familiar chicken-and-egg problem that is so common when competitiveness is considered.

5.4.2. Resources and Fund in 3.3 project

The analysis of resources and funds aims to measure the interactions of the variable ones linked at the Lisbon and Gothenburg strategies application.

It's the more political-economic determinant between the four ones, because it looks at the national and regional structure and performance, using the great part of already known indicators proposed into the study "**Adaptation of Cohesion Policy to the Enlarged Europe and the Lisbon and Gothenburg Objectives"** by the European Parliament's Committee on regional development (2005), and in according to what is said in *the 3rd Cohesion Report*.

Cohesion is a central subject of the EU policy, as set out in the Treaty (Article 2), because it needs '*to promote economic and social progress and a high level of employment and to achieve balanced and sustainable development, in particular through the creation of an area without internal frontiers, through the strengthening of economic and social cohesion and through the establishment of economic and monetary union...*'.

So this determinant identifies same potential priorities, or directions of intervention, to improve in the economic and social cohesion linked at Lisbon/Gothenburg strategy (innovation and knowledge as base of economy, regional innovation systems as stimulation of business networks, SME cooperation especially with Universities and technology centres, advance business centres, technology audits, technology forecasting, clusters policy etc.; entrepreneurship as diversification, business planning, incubators, spin outs of technology based companies; etc.).

A particular attention is put on the welfare and services of general economic interest to help some areas with geographical handicaps (e.g. mountains, islands and sparsely populated areas) for offering by new Structural Funds services and social infrastructure, and , at same time, education, employment and social support to give a possibility of full employability and social inclusion, equal opportunities and life-long learning.

Another part of this analyse is dedicated at the environment and risk prevention for the sustainable development (e.g, climate), that for the 3.3. project represents a particular aspect of the future model of EU cohesion, looking at ESI - Environmental Sustainability Index 2005 too.

The use of economic resources has direct and indirect effects on the economy and the society of a territory. The economic resources are

fundamental in order to guarantee a harmonious development of the territories, under the aspect of infrastructures and under the social aspect.

For this, the determinant measures the level of the impact of structural funds on the old UE Countries and before the enlargement (pre-access aids) using also the results of the ESPON 2.2.1 project.

This determinant is calculated using 3 typologies:

- Level of interventions of the Lisbon Strategy
- Level of interventions of the Gothenburg Strategy
- Use of Funds

To arrive at an homogeneous judgement, the indicators are calculated in terms of expenditure (pps pro capite).

In the following table (Table 16), it's possible to see the determinant framework:

Table 16: Resources and Funds (R&F) framework

indicator	category	sector	tipology	Determinant
R&D expenditure	R&D (FR&D)	Policies for the Lisbon strategy (structure)	Level of interventions to the Lisbon strategy	Resources and Funds
National aids	Firms aids	Policies for the Lisbon Strategy (performance)		
Human Capital expenditure pps per capita	Human Capital			
Employment expenditure pps per capita	Employment			
Climate and Natural Resources expenditure pps per capita	Climate and Natural Resources	Policies for the Gothemburg Strategy (structure)	Level of interventions to the Gothenburg strategy	
Efficency of accessibility	Transport			
Public Healt expenditure pps per capita	Public Healt	Policies for the Gothemburg Strategy (performance)		

Poverty and Age expenditure pps per capita	Poverty and Age			
Funds spending	European funds expending	Use of structural funds and pre access	Use of funds	
Economic resources	3rd Cohesion Report	Level of Co-operation		

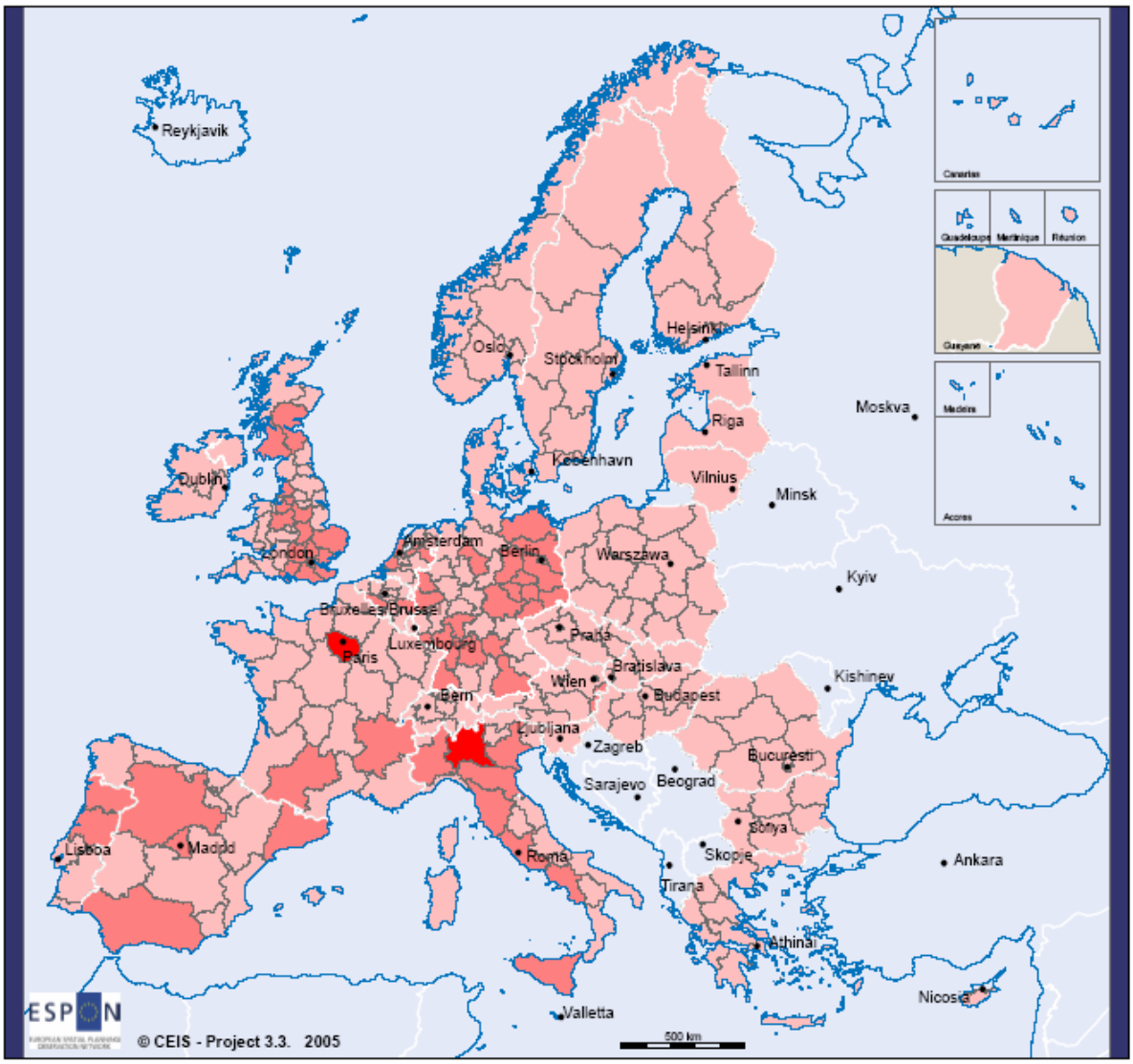
The confront between the *two final maps of R&F* pictures a general uniformity at national level (Map. D14 Equal), but some different levels at regional level (Map. D14 Quantile).

At national level (Map. D14 Equal), the EU 15 countries have got a *medium-high* profile about the level of resources and funds, except the Scandinavian countries and Greece (*medium-low* profile); the new countries, except Lithuania, Estonia and the capital regions, picture a *medium-low* profile, justified from the use of the pre-access funds. The general national stutus quo in the use of the funds is *high* for Spain and some German lenders

At regional level (Map. D14 Quantile), the differences are more strong, with a *low* profile in few Mediterranean regions of the Southern of Italy, Portugal, Greece and the Eastern regions; a general *medium-high* level in all regions, *few high* levels into some regional enclaves of United Kingdom, Germany, France, Italy.

This difference begins interesting if we look at the territorialisated (Figure 29), crossing the regional R&F Q data with the territorial typologies at NUTs3. Here, the values from *medium-high* to *absolute* are distributed into old and new regions, and all countries have got almost one region with low values

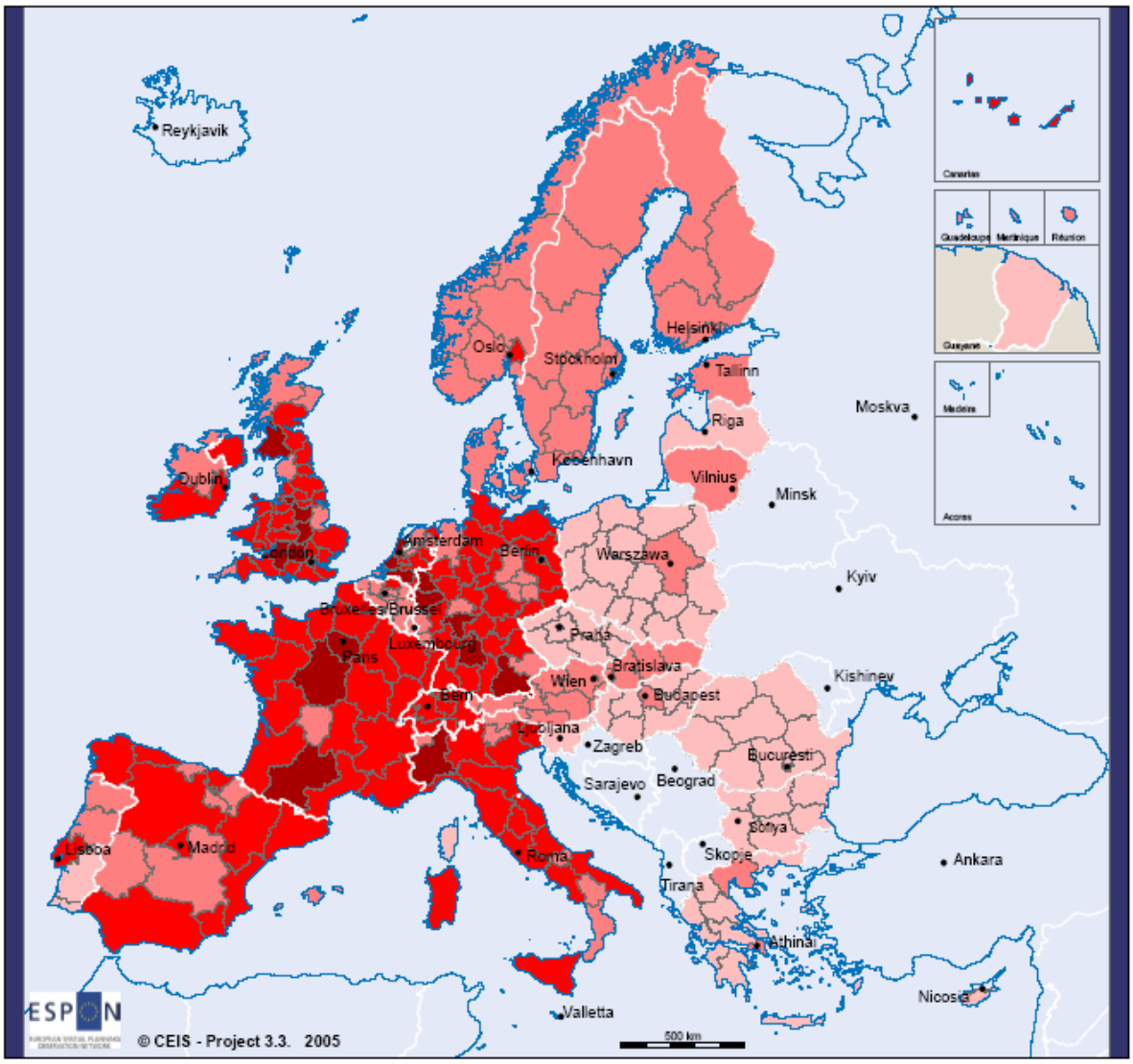
Figure 27: Map. D14 Determinant Resources and Funds – Equal interval version



Level of resources and funds

- a = High
- b = Medium high
- c = Medium low
- d = Low

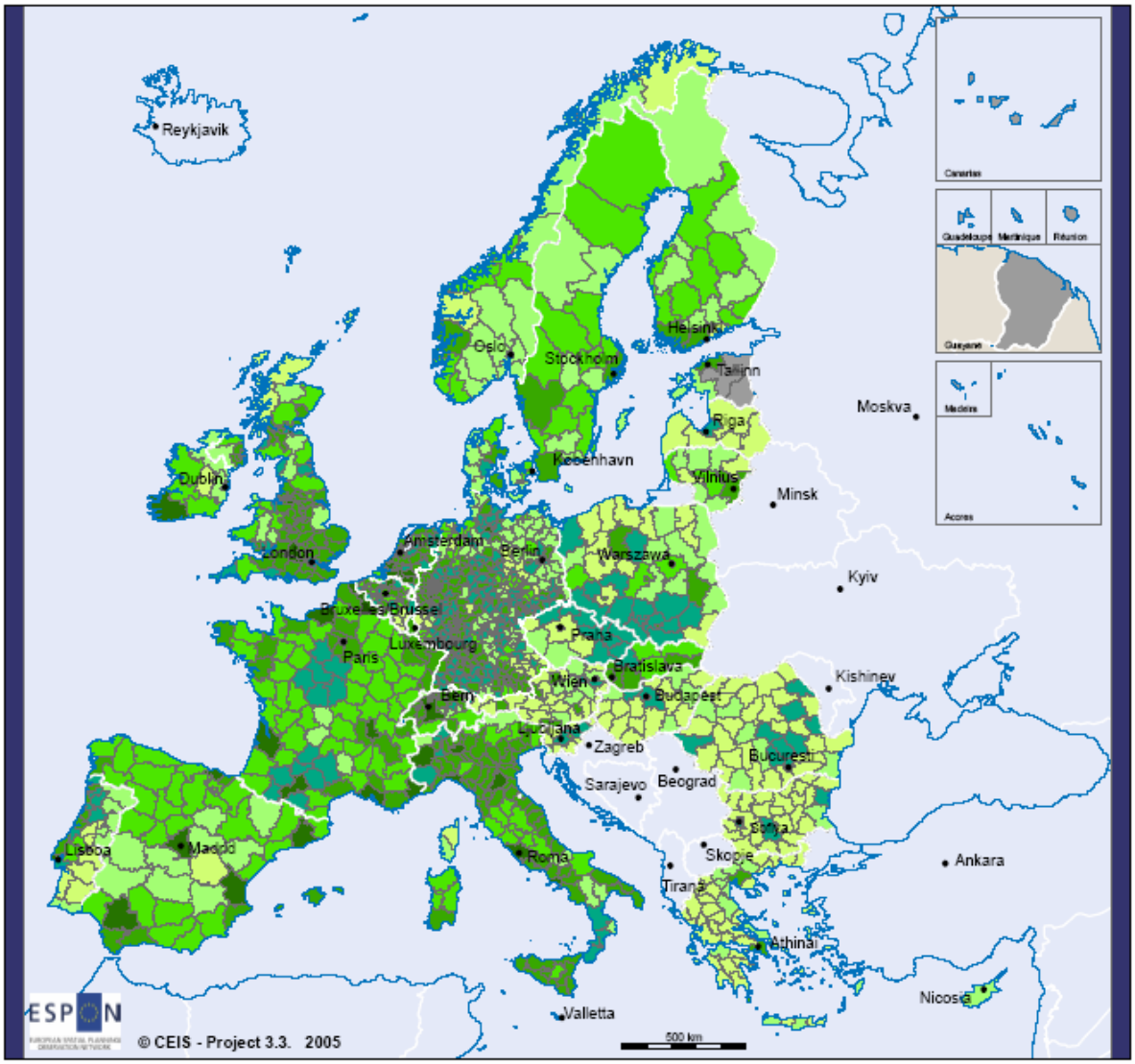
Figure 28: Map. Q_D14 Determinant Resources and Funds – Quantiles version



Level of resources and funds

- a = High
- b = Medium high
- c = Medium low
- d = Low

Figure 29: Map. D14T Determinant Resources and Funds – Territorialisation



6. Policy recommendations

6.1. The ESDP policy

The ESDP policy on the territory is marked by a very careful approach to the problems resulting from any possible disparities between one issue or one other, according to a global vision that considers the Community territory a one-off reality, despite the fundamental differences between one country and the other or one field and the other. Nevertheless, these very differences paint a comprehensive picture, however varied it can be, of any possible problems. They also set a series of questions that cannot be easily solved. The ESDP policy has resorted to the use of "suggestions", in order to be deliberately prudent through recommendations that were not binding, that were not meant as impositions, but that played the role of *several possibilities* one could appeal to, thus choosing the ones that best suited the territorial reality taken into consideration.

They are therefore matrices with multiple components, each of which is marked by its own interpretative story. This means that each component has been examined in an integrated way and then compared with the others so that it does not prove detrimental to or inconsistent with the general framework. Each component, however, is independent and, at the same time, possesses a more or less wide range of application possibilities. It is up to the policy-makers, academics and researchers to gradually find out the best solutions to the cases of real application on the territory. This kind of policy, although only partially deliberately expressed within the ESDP programme, is very reliable in terms of experiments and applications and it also greatly reduces any possible risk of inconsistency, intolerance, inadequacy and disparities between one sector and the other.

Then much is justly delegated to the skills of the administrator and of his/her scientific aides, to their ability to assess and rightly pinpoint the indications for a real application.

On the other hand a different way of harmonising the suggestions could not be conceived, and this is even more true today with an enlarged Europe and with the membership of countries with remarkable differences, above all in their policies and institutions, besides geomorphologies, climates and organizational methods.

Nor does a similar approach cause a lack of organization: the utopia of an integrated Europe despite its own varied aspects will always be a utopia. And it should remain a utopia. Every territory should possess and maintain

its own peculiarities, yet respectful of the other's differences. On the contrary, it is just these peculiarities that mark out and define Europe as a whole. The attempt to outline a single territorial policy is also utopian. Every experimentation in this respect would be destructive and dangerous. The awareness of the disparities is the key to a real and constructive policy.

This, obviously, does not mean not tending to a common management of the several aspects; but the limits that a hypothetical management may give rise to is to be carefully examined. Take a paradoxical example; what may the policy for the coastal areas, which is so well outlined within the ESDP programme, mean to those countries that do not have any? Take also a less paradoxical but more general example: which common policy may be applied to the field of transports among highly technologically developed countries and the still developing ones today, given the present disparities in the several territorial and administrative realities?

The current objective, as already mentioned, is to "lean towards a common policy", to "tend to a common policy" thus moving away from the presumption in wanting to "carry out" a common policy today.

For this reason, before examining any possible inconsistency, some basic elements and foundations that underpin the targeted analysis must be provided:

1. Respect for diversities: administrative/institutional, geomorphologic/environmental/climatic, social/religious and also those connected with the juridical and economic level of the several countries;

2. The awareness that these very diversities embody, at times, the basic elements for Europe as a whole: geographical, climatic, environmental, religious and even political diversities cannot but represent important values in the age of globalization. These differences must be preserved, still from the point of view of the development of the different parts and must adopt targeted sectional policies;

3. The awareness, on the other hand, of some worrying diversities that may constitute a hindrance: social, economic, infrastructural and, sometimes, institutional differences can undermine the Community growth. It is therefore necessary to aim at the equalization of the common territory over time.

The task is also hard in the field of non-effective diversities and of the resolution of such diversities; these disparities may not always be valid for each country.

The three great spheres of the "economic efficiency", "territorial equity" and "environmental sustainability" require a different specific approach to

any relevant issue (transport, urban management, rural areas, et cetera) according each single country, each single reality and each more or less wide territorial field. Such disparities are often apparent also at lower levels, such as the regional and, at times, the local ones. And it is quite difficult to put forward considerations that can be useful to a national scale.

One cannot therefore but consider what is stated above. And, similarly, for honesty's sake, the utopia of an ideal common policy cannot be supported. Actually, two macro issues are clear and emerge and must always be taken into consideration: "diversity" and the "limited possibility of tending to a common territorial policy".

Each single action, on the long-term, must aim at bridging the gap that today exists among the European countries. And again, each action must aim at granting the maximum respect for the structural diversities that cannot be overcome.

This is the only way (and within this dimension) by which debates like "efficiency against equity" and "territorial equity against environmental sustainability" play a non-rhetorical but, on the contrary, a productive role. And, probably, following the change in the principle of equity itself, also the very terms of reference change.

Productivity should be searched in relationships such as "common efficiency within diversities" and "common environmental sustainability within the territorial diversities".

This is a scenario that transforms the terms of many analyses applied to the territorial realities: the analysis that compares the costs and the advantages, for instance, in the field of services for the urban transport or in the field of the administration of rural areas, or again in the wide and transversal field of the ICT, in the one of the natural risks and, even more so, in that of the cultural heritage.

The key to a successful ESPON programme lies in the assimilation of these components of diversities and in the humility of proposing hypothetical solutions, mainly on the long-term.

For this reason a further explanation for the stages of the ESPON actions – hereinafter referred to as "suggestions" – is necessary:

- **in the short-term**: such suggestions should include all those actions that, although they aim at a common Europe, are faced with the present great differences; these are the actions that only partially include (or do not include at all) the idea of common policy;
- **in the medium-term**: all those actions for which a possible reduction in time differences is foreseen. They include, for instance

structural diversities, for which a subjective policy, strictly connected with the territory it refers to and whose key is the very diversity, cannot be applied;

- **in the long-term**: all those actions for which a common policy is possible and for which univocal solutions may exist and Policy Recommendations summarizing the present diversities in order to reach the only possible equity.

The great disparity that can be seen, if it really is a disparity (or rather the great difference between objectives and players) is in tune with the approaches to the ESPON issue with its different forms. The **Policy Recommendations** are not always clear or clearly stated in the several contributions. This is probably due to the basic problem of conceiving methodological parameters common to the whole European territory and valid for any direction of study. The introduction of a method able to get and list the problems connected with diversity, as mentioned above, could help provide more recognizable elements and expose the objectives of the programme.

The challenge of a common intervention policy, then, on one hand reduces its range of action and on the other makes it wider and harder.

In the field of territorial competitiveness, for example, the challenge does not lie in finding common policies, on the short-term at least, but in identifying the possible and more practical common parameters for the competitiveness of a territory, and – also through these, which result in indicators – in creating a framework of objectives, partially common and partially referred to the disparities.

To this purpose one should consider the different territorial dimensions, traditions, procedural institutional classes within the framework of policies aiming at reinforcing the general reference policy, since the increasingly closer cooperation among the countries, on the long-term, certainly bridges the present gap in several fields. The complicated issues of partnerships among EU countries and among them and the rest of the world as the subject of the improvement of the policies integrated into the planning of structural funds are parts of good-governance elements that does not consider the identification of the barriers but the existing opportunities among the different territorial realities.

The subject of the urban areas includes many aspects and is therefore dangerous.

The territorial development through polycentrism has already been dealt with in the ESDP: the areas of global integration, frontier cities, more or less big urban areas, attraction poles, etcetera.

6.1.1. Metrex contribution[31]

Metrex focused attentions on some points of the renovated Lisbon Agenda.

Here follows the specific Metrex recalling concerning the renovated Lisbon Agenda.

With the slogan "*A new start for the Lisbon Agenda: Working together for growth and jobs*", Metrex can contribute at the definition of spatial planning and development.

Its attention is concentrated on some themes:

- *A more attractive place to invest and work*, for which it asks particularly to improve European and national regulation (in Action Plan 3) and to expand and improve European infrastructure (Action Plan 4);

- *Knowledge and innovation for growth*, proposing both to facilitate innovation, the uptake of ICT and the sustainable use of resources (Action Plan 6) and to contribute to a strong European industrial base (Action Plan 7);

- *Creating more and better jobs*, by attracting more people into employment and modernise social protection systems (Action Plan 8) and improveing the adaptability of workers and enterprises and the flexibility of labour markets (Action Plan 9)

Metrex promotes the metropolitan level and dimension to experiment this connection, because in these areas it is possible to have appropriate competencies, capabilities and processes and at the same time to text quickly comparatively the results of different policy initiatives.

In order to choice some appropriate instruments to apply the renovated Lisbon Agenda, several contributions focalized their attention on *benchmarking*, as propedeutic approach at marketing actions.

An other useful indication comes from the studies about vertical and horizontal integration. It is linked both with the subsidiarity (for its real application in all EU countries) and the planning integration at the different Nuts levels: *the vertical and horizontal integration of strategies and plans appears an important aspect of effective governance and hence of economic competitiveness* into all better experiences. Of course this reccomentation values for the financial system, too.

About the contribution at definition of European Spatial Planning, 3.3 project agrees with some Metrex and other purposes:

[31] see *METREX Response Discussion Note*, Nürnberg Conference, May 2005

- to have a major business confidence between goods and services exchanges;
- to reduce investment risk
- to maintain high and stable levels of economic growth
- to sustain social progress, which recognizes the needs of everyone
- to realize an effective protection of the environment by a prudent use of resources

and about the new start for the Lisbon Strategy

- to sustain more attractive places to invest and work
- to specify the investment in knowledge and innovation for growth reating more and better jobs

Particularly, 3.3 project sub-scripts and integrates the Metrex spatial planning and development contribution to the Lisbon Strategy:

a) about Maintenance of high and stable levels of economic growth:

1 Accessibility to metropolitan interchanges for the modal transfer of people and goods *to reduce the need for road travel and to facilitate the efficient import and export of goods*

2 Effective primary transport network *to minimize congestion and facilitate the efficient movement of goods*

3 Good public transport to the main centres of employment *to widen their accessibility to the labour market*

4 Adequate economic development opportunities *to accommodate business needs*

b) about Social progress, which recognizes the needs of everyone:

5 Balanced distribution of population, housing, employment and services *to facilitate accessibility between activities*

6 Where there is an unequal distribution of employment and services, take action to reduce disparities *to make the urban area more equitable*

7 Where there is poor accessibility to employment and services, take action to improve this *to make the urban area more equitable*

8 Adequate housing in terms of size, tenure and affordability *to provide an acceptable and affordable home for every household*

9 Identify areas that suffer from multiple deprivation *to focus integrated remedial action*

10 Acceptable environmental standards within urban areas in terms of noise and air pollution *to protect and improve the health of residents and workers*

11 Provision of a linked network of open space *to provide access to recreational opportunities for all*

c) about Effective protection of the environment and linked with Gothenburg Strategy

12 Safeguard and enhance the quality and character of the landscape *to protect the setting of metropolitan areas*

13 Safeguard and enhance the quality and character of the urban heritage of buildings and public spaces *to make metropolitan areas more attractive places in which to live and work*

14 Safeguard and enhance biodiversity *to contribute to better ecological balance*

15 Safeguard and enhance water catchment areas *to maintain and improve the quality of water supplies*

16 Safeguard the capacity of flood plains from development *to reduce the risk of flooding*

d) about Prudent use of resources (Gothenburg Strategy):

17 Maximise urban development capacity through the reuse of urban land and buildings *to reduce the need for urban expansion*

18 Protect high quality agricultural land from development *to sustain this resource for future generations*

19 The planned development of mineral extraction *to reduce the consumption of minerals from primary sources(optimize recycling)*

20 Within a waste treatment strategy of waste reduction, recycling, treatment and disposal, enable the development of waste management facilities *to facilitate a more sustainable approach*

An other condivisible Metrex slogan is *Urban Change created Climate Change* so:

- Urban Change must solve Climate Change to achieve stability at 450-550 ppm;
- Kyoto seeks 12.5% cut by 1012
- UK government has a target of 20% reduction by 2012

- IPCC target is 60% reduction by 2050; it implies 35-45% by 2030. Precautionary principle indicates 80% cut by 2050
- Renewable and energy saving can achieve only about 20% this level of reduction
- Urban change implies behavioral change both individually and corporately
- Assessments and budgets of all kinds on a carbon cost as well as a financial cost basis
- Carbon viability becoming a key consideration
- Non essential travel will become too carbon costly
- A far greater emphasis on local/regional networks, facilities and economies, which are carbon light
- A move away from centralized operations of all kinds, which involve long lines of communication and are carbon heavy
- Long distance production and distribution, commuting and tourism becoming carbon uneconomic
- Increasing emphasis on maximizing renewable sources of energy and efficiency savings but a recognition that these will not provide more than 20% of the reduction target of 80%
- Recognition of the need for absolute reductions in fossil fuel usage
- Recognition that this means much of the remaining fossil fuel resources remaining unused
- Recognition that the only effective and certain way to achieve the necessary reductions will be through global/national quotas, economic sectoral caps, per capita rationing and carbon trading
- The Contract and Convergence (C and C) approach being promoted by the Global Commons Institute (www.gci.org.uk) demonstrates one way of achieving this
- There will be a debate about the wisdom of further nuclear energy plants to mitigate the need for carbon reductions
- The need of a more effective involvement of the Regions, because the EU documents about a new start for the Lisbon Strategy calls for a European partnership and for mobilisation at the national level.
- This mobilisation is only possible if the various players feel that the policies proposed concern them and that they are truly involved in the decision making and implementation process. One of the reasons for the failure of the implementation of the Lisbon Strategy is the

insufficient commitment of the States. But above all it is the involvement of the regions and the other local authorities that has failed and has to be strengthened.

- In EU document the role of the Regions is envisaged to be very weak. The document often speaks about "social partners" but only once about Regions and local authorities. But it is at this level, at the level of local areas and institutions, that it is possible to act on the complex relationships between competitiveness, jobs and the environment.
  About these themes there is the important "position paper" presented by the network named "Lisbon Regions

6.1.2. EESC and COR positions

EESC by Joost van Iersel thinks the Lisbon Strategy must be recognized for what it is, a very ambitious agenda for building a European society of prosperity, welfare, competitiveness, social inclusion and a high awareness of the environment.

In agreement with Metrex suggestions, 3.3 project proposes to communicate more actively with social partners and organized civil society, because the Lisbon Strategy has been too much identified as only an economic agenda.

To have a common language useful at the Lisbon objectives communication it is essential to stress the *concept of quality* (quality of goods, services, regulation, governance, employment, social relations and environment), as it was picture by the fourth determinant. The implementation of the Lisbon strategy is therefore needed, and this should be an integral element of the annual evaluations of progress made at regional and national level into EU countries.

The COR position is different and well expressed by Gerhard Stahl, which is strongly in favour of an integrated approach, in agreement with 3.3 project position.

The origin of this opinion comes from the analyses of population demand, that looks more at specific offers (as the sustainability of public finances and the development of services) than the general ones. So it needs to propose effective measures for developing and encouraging people to stay into the offer of regional employment.

For having this result, it's necessary to see economic, employment, social, environmental, education and research policy as integrated and complementary elements in the Lisbon Strategy to offer specific support

at the regional capabilities to be competitiveness in sustainability, and at the same time to obtain economic growth aging on social cohesion.

In implementing the Lisbon Strategy the primary focus is considered the improving employment and competitiveness. A major decentralized approach should be adopted to save that good part of the open coordination method, thereby providing local and regional players with real opportunities to develop local and regional strategies. Nevertheless these strategies should be part of a coactive national strategy to receive and to apply the EU inputs.

In this option regional governace plays an essential rule, particularly in order to realize the employment strategy

Governace is also important to achieve the goals of the renewed Lisbon Strategy balancing them with the Gothenburg one about a most sustainable development.

6.1.3. Other sharable suggestions

Facilitate access to finance, in particular Venture Capital and SME guarantees, notably micro-loans are the suggestions coming from other opinion groups or lobbies, which acting at European level.

Particularly, about competitiveness and Lisbon Strategy, they ask to have more projects (and, obviously, finance) geared towards:

- supporting innovation and tech transfer

- technical assistance and advisory financial services provided to agencies working for creation and development of SMEs

for development and sharing of good practices with public and private business partners, across Europe

Some of them raise the question of Access Intellectual Property from research organisations, and, seeking critical mass, propose:

• to support "virtual clusters" in particular as "Airbus of tech transfer"

• to run on principles of financial discipline and independence

• a sufficiently long duration - 15+ years, possibly evergreen

• finances not only spin-offs but also licensing and Intellectual Property exploitation

• to have sufficient resources to reap value - at least EUR 5 million per individual project

• technology-specific approaches

• Flexibility to partner with both financial investors and industrial partners

They ask also to include new instruments to better meet the Lisbon objectives:

- a **new risk capital instrument** to the existing instrument fostering SME start-ups. This is aimed specifically at innovative and high growth SMEs.

- a significant proportion of these resources will be dedicated to supporting SMEs developing or using **environmental technologies.** Investment in side funds with **Business Angels.**

- an instrument for **securitisation of bank loan portfolios** will free up further SME loan capacity amongst smaller and regional banks, which are the typical interface for family businesses.

6.2. Policies from other ESPON projects in relation to the Lisbon/Gothenburg strategy

In the review below, a range of issues relevant to the Lisbon and Gothenburg are extrapolated from the findings of past and current ESPON projects. For each project, recommendations, scenarios and the implications for competitiveness and sustainability are considered, where evident and appropriate. Finally, draft work from the parallel project 3.2 (Spatial Scenarios) is outlined, most notably some preliminary research relating to scenarios for achieving the Lisbon agenda.

The main work of the ESPON projects focuses on the comparative advantages of European regions, for instance in locating 'hotspots' and 'cold spots'. Projects also focus on the economic performance of regions and the level of employment in a region as well as where important development factors such as R&D, accessibility, ICT, nature and cultural assets are located. With regard to the fulfilment of the Lisbon objectives, this territorial perspective indicates that not all regions are potential 'Lisbon areas'. In other words, they cannot all rely on a knowledge based economy given the limitations of personnel and infrastructure. Consequently, some regions need to develop their economic base around other assets as well. Innovation capacity is shown to be variable across the EU. For example, it is greater in the North than in the South of the EU, and more prevalent in larger cities. Improvements in R&D performance will need targeted measures, for example building human capital and institutional learning through education. The 'territorial roll-out' of the information society is not unproblematic and will depend on the

establishment and acceptance of ICT infrastructure. Indeed, there are specific issues relating to the practicality of this in remote areas with low population density. Overall, the successful development of regions requires integrated packages of initiatives, and cooperation and coordination between sectors, policy areas at national and regional levels. In general though, enhancing European attractiveness would be supported if the European regions better exploited their diverse potentials.

The detail of these policy recommendations as well as reference to the research upon which they are based is discussed below.

6.2.1. Thematic project reviews

Polycentric development (1.1.1)

Polycentrism is presented by this project as a bridging concept between economic growth, traditionally associated with efficiency and concentration and balanced development, associated with de-concentration. It is proposed as a means of achieving both economic competitiveness and environmental sustainability. Where GDP per capita is an indicator of competitiveness, polycentric regions are shown to be more competitive, though the strength of the relationship is disputed.

Policy recommendations

Strategies to achieve moves towards the promotion of polycentricity at the regional and national level included the use of Structural Fund regulations and Interreg to boost 'second tier urban areas' and encourage countries and regions to analyse their urban structures, promote networking and the development of common strategies to cover several cities and cross-border regions. Areas outside the Pentagon should thus form strategic co-operation as a means to improve their global competitiveness.

At the macro level the main emphasis is on regions outside the Pentagon, the dominant policy objective being to move away from the EU having only one 'zone of global economic integration' based around the core area, to the establishment of new zones able to compete internationally. Therefore, stimulating a polycentric structure should contribute to the competitiveness of Europe. Key objectives for these policycentric areas should be functional specialisation, supported by the completion of long-term EU based initiatives (such as the TENs network), to strengthen the performance of competing EU territories in a competitive global context. Structural Funds must be targeted explicitly towards counterbalancing tendencies towards further concentration.

Scenarios

Two preliminary scenarios are presented; the first is a continuation of current trends, resulting in a persistence of a single global economic zone, with peripheral areas unable to compete on the international stage. The second, the 'ideal situation scenario' shows increased polycentricity at the intra-urban level (*micro*) makes city regions stronger and therefore produces a more polycentric national or trans-national urban system (*meso*). In the next step, stronger functional areas at the *meso* level can work together to produce strongholds for a more balanced Europe, heralding the eventual emergence of several Global Integration Zones in addition to Pentagon (*macro*). This scenario would be the consequence of interventions as elaborated in detail in the Final Report of 1.1.1.

Implications

The conclusions of this project demand a change in thinking about competitiveness. Rather than associating it with the economic attractiveness of large, particularly capital cities, attention is to be given to making available higher order services and developing functional specialisations to second and lower tier cities. This contributes to sustainable development, reducing the urban sprawl of monocentric capital cities, as well as broadening of the economic base of areas such that they are capable of competing internationally.

Urban-Rural Relations (1.1.2)

The implications for the Lisbon and Gothenburg agendas for the project on urban-rural relations are less explicit than project 1.1.1, but some data drawn mainly from their review of changes in this sphere are relevant.

Policy *recommendations*

Current trends extrapolated by 1.1.2 (in particular the enlargement of functional urban areas) have contributed to an increasing flexibility of employment opportunities. While this has been positive for competitiveness, its association with an increase in work-related travel and the use of private cars has been negative for sustainability. The protection of rural assets is proposed as a recommendation for sustainable development and more tenuously a contribution to territorial competitiveness in terms of 'added value'. Specific policy recommendations are based on area types, however some of those focusing on strengthening the economic base are difficult to visualise. For example, struggling rural areas would benefit from economic

diversification that in turn would improve functional urban-rural relations. However, this is harder to achieve the less accessible the rural area is – a consequence of the need for urban markets.

The project concludes with the warning that interdependence between urban and rural areas 'should not be promoted for its own sake' as the implications for increased interaction may not be environmentally sustainable.

Enlargement and polycentrism (1.1.3)

Enlargement of the EU has been presented by some policy makers as a possible brake on the potential of achieving the Lisbon objectives. The perspective of the team working on this project is to assess the process from the point of view of an opportunity. This can be seen in spatial terms through the development of a new Central Eastern zone of global competitiveness, and in terms of the scope for 'catch up'. As environmental objectives have been a priority in much pre-accession aid, sustainability goals have also been respected in the convergence process.

Policy recommendations

Project conclusions suggest that enlargement represents one of the most important opportunities for the EU to increase international competitiveness, and is precisely in line with the Lisbon/Gothenburg strategy. The reality though, is less promising. Economic restructuring is occurring in the enlargement area from primary sectors to the service sectors, but employment levels have fallen.

The project thus takes up the particular effects of enlargement by focusing attention on the discontinuities and barriers implicit in successful economic integration. Policy recommendations concentrate on identifying these and providing the results of their study on the Transnational Regions and Transnational Urban Networks (TUN) which show areas of the Enlargement area with the potential to compete with the Pentagon. A focus is placed on the risks and opportunities of enlargement by measuring the regional specialisation and geographic concentration of sector employment in the EU-12, and drafting typologies for particularly vulnerable regions. The special needs of border regions are highlighted with typologies based on the particular barriers to flows of people, goods, services and knowledge. In addition to particular 'remedial actions', the primary recommendation is that improving transport links within accession countries will not be sufficient, and that transport links between old and new countries also need to be prioritised.

Scenarios

Preliminary scenario work studying the effects of selected EU policies on the Enlargement area is presented in the form of 'policy combinations' (multi-level and inter-sectoral). 'Capacity-based' policy combinations are 'governance orientated' and 'bottom-up', while 'principle-based' policy combinations are more 'top-down' in perspective, geared at what interventions the EU might do to enhance the long term competitive potential of the accession states. Th latter include groups of policies targeted at co-operation, transport and cultural interventions. In addition to the focus on transport infrastructure investments in the new member states (and more particularly between new and old member states), suggest a new emphasis on the functional growth of second tier cities. EU funding should be provided to partnerships formed at the regional level - both to draft the plan and to secure its implementation. Small member states should profit from drafting plans in cooperation with neighbouring states. Such plans should include policies aimed directly at generating employment in second and lower order cities to increase competitiveness and cohesion in the EU as a whole.

The scenarios also contains region specific advice, most notably for the development of an additional zone of global importance, the promotion of the network of major cities in the "Triangle of Central Europe", with its potentially high level of integration and encompassing the area from Warsaw in the east, Poznan in the west and Budapest in the south. This Trananational Region has to strengthen its relationships with the Pentagon, the wider Baltic area, Poland and the Balkan region.

Demography and migration (1.1.4)

The ageing and general stagnation of the EU population is of direct relevance to future sustainability and competitiveness. One indicator of sustainability is the proportion of the population under 15, while indicators relating to competitiveness concern the vibrancy of the labour market.

Policy recommendations

In the context of future labour market problems, 1.1.4 focuses much of its attention to the role of immigration as the answer to projected workforce shortages. However, unlike several other demographic studies of Europe, its conclusions are that immigration is not a panacea to Europe's ageing and declining population. This recommendation is however subject to regional variation. Falling population in the Eastern European accession states means that immigration needs there are significant. But the EU15 it

suggests has strong potential for improving its labour productivity and labour force participation rate - which will lower the need for immigration. Proposals to national governments stress that they should respond to demographic change and to potential labour shortage with a variety of policies and instruments, depending on the specificity's of each particular country or region. They present five broad categories of available interventions:

- Encouraging higher workforce participation through retraining of the unemployed, discouraging early retirement, increase female activity rate, by making it easier for women to combine work with childcare
- Postponing retirement ages, a process facilitated by longer active lives
- Improve labour productivity levels, by increasing capital investment and

  promoting the development innovation both in technology and organisation capacity
- Immigration policies
- Encouraging increase in fertility

They assert that it is also important to distinguish between short-term from long-term policy responses to a labour shortage. Immigration can only offer a short-term solution to the consequences of ageing. Long-term solutions, such as higher labour force participation rates, a higher retirement age or the stimulation of an increased fertility rate improve labour productivity, which is necessary to deal with the consequences of ageing.

Recommendations at the EU level are limited, as demographic and migration policies are still the preserve of national governments despite attempts to co-ordinate them. However the conclusions stress that different levels of income and education are key push and pull factors in all migratory movements. Therefore, the broad recommendation at the EU level must be to reduce such regional and national differences and increase the symmetrical economic development of the whole EU27/29 area, particularly to stem the flow of young persons from East to west and from the periphery to the core (which contributes to the existence of a single economic zone of global significance).

Implications

The projected acceleration of the ageing population and regional population losses are a particular challenge for the realisation of the

Lisbon agenda. This is not only an issue in relation to the relative size and strength of the labour force, but also in the light of the associated fall in consumer demand, through the propensity of older people to save rather than spend

Transport services and networks (1.2.1)

The quality of transport infrastructures, in terms of capacity, connectivity, and travel speeds are shown to determine the competitive advantage of locations - this is often measured as potential accessibility.

Studies of potential accessibility show there are two overlaying core-periphery patterns - a national and a European one. The national pattern reflects the fact that spatial interactions are more intense within than between countries. Thus, regions in the periphery of their respective national market centres suffer from increasing transport costs, as their interaction with markets is more dependent on transport than more central regions. If transport policies reinforce polycentricity at the European level, by connecting large urban centres, they may reinforce the dominance of capital cities.

The implications of existing patterns and proposals for using new transportation options to strengthen polycentricity at different levels are ambiguous. The association between transport options and sustainability is more straightforward. Nonetheless transport connectivity is essential for the movement of goods and cannot be substituted by the electronic exchange of information. Recommendations from this project focus on a modification of existing transport forms and their use to effect a reduction in fuel consumption and moves to multi-modal forms of transport, such as a the development of rail for dedicated freight passage.

Telecommunication and networks (1.2.2)

Development in this field is key to the means by which the Lisbon/Gothenburg strategy is to be realised, it is also profoundly different to the nature of transport (c/f project 1.2.1) in that it is changing rapidly and has the potential to develop within areas not benefiting from physical connectivity to the European core.

Recommendations

Despite the potential for development across the EU, current strengths in telecommunication reflect an existing urban bias and territorial divisions. Project findings indicate that leaving further developments to the market

will exacerbate existing divisions. Thus intervention is necessary to increase territorial competitiveness producing a broader polycentric base. As such, standardisation and subsidisation are required and the EU should participate in establishing better symmetry between public authorities and telecommunication providers.

However, a more positive trend is identified around the idea of a polycentric form of territorial development of telecommunications where fibre optic operators are investing in cities outside the traditional European core.

Scenarios

Much of the Final Report concentrates on intra-EU competition and the identification of regions and countries that are 'lagging and those that are leading'. These are charted into three scenarios using the STIMA tool (investigating the spatial economic impacts of ICTs investments). Scenario A is based on indiscriminate policy, while scenario B discriminates in favour of more efficient regions and scenario C in favour of lagging regions. Apart from demonstrating the vital role of ICT for the creation of GDP, the scenarios impacts are fairly predictable except that they show that there are clusters of areas that are (and are not) able to respond dynamically to ICT policies.

Other ESPON thematic projects

Project 1.3.1 (Natural and technological hazards), which relates mainly to risk management, is relevant in that territorial competitiveness is compromised by potential and real hazards (such as floods or forest fires), and sustainability by actual hazard events. Indeed recent disasters have entailed heavier costs than any EU compensatory action could deal with. Policy recommendations emphasise that prevention should be the primary objective. Secondly, containment or reduction of the impact where the first is not possible should be sought, and that such measures should be incorporated into Structural Fund assistance (as they already are for many Objective 1 assessments). In this policy area the goals of sustainability and competitiveness are compatible - the problem is getting member states to apply recommended guidelines.

Project 1.3.2 (Natural heritage) has obvious significance for the sustainability agenda of the Gothenburg agreements, and in terms of 'added value' (geographical diversity, high levels of ecological protection) to Lisbon. In addition, it is highlighted that where natural resources are

over-exploited, ultimately money has to be spent to rehabilitate those areas. The project considers the potential for the Natura 2000 proposed network of high quality semi-natural environments to support sustainability and add to the attractiveness for locating activities outside the Core, thus the scheme may indirectly support 'balanced development' away from the Pentagon. It recommends that Natura 2000 sites should be enhanced and other Europe-wide networks identified.

6.2.2. Territorial impact project reviews

Tens and Transportation Policy (2.1.1)

Recommendations and scenarios

In this project, the indirect impacts of transport infrastructure were investigated. New infrastructure produces changes in accessibility and thus increases economic attractiveness of certain places. Consequently, there is a positive relationship between the deployment of transport infrastructure and a rise in economic competitiveness. It is for this reason that a 'speeding up' of the TENs programme is necessary to overcome deficiencies in connectivity. However, increase in all forms of transport infrastructure is not necessarily consistent with the goals of sustainable development.

Here SASI scenario work undertaken by the project is informative. Ten policy scenarios covering various pricing measures and infrastructure investments (road/rail) were developed over a period up to 2021. While transport investments do have a positive impact, and particularly on the development potential of areas outside the Pentagon[32], relatively large differences in accessibility only translated into relatively small differences in GDP per capita.

Modal shifts, however, could offer major differences though in terms of meeting sustainability goals. Promoting new waterway connections could offer an alternative to road transport and more high-speed train networks are environmentally friendly alternative to air travel. Generally, relocating transport streams and modal shifts from road to rail and waterways

[32] The best scenario offering positive economic impacts for East of the Pentagon/accession countries, with a view to stimulating an alternative zone of global economic integration, was the 'combined investment and marginal cost pricing. This depended on the realisation of TEN-T and TINA networks over the next two decades.

should also be used as a means of reducing pressure on overloaded transport corridors that will produce benefits in terms of competitiveness.

However, the positive economic impacts that were predicted in the SASI model, were on the development of roads rather than rail lines and indicated raising transport costs[33] for environmental reasons had a significantly negative impact on economic development. In this policy area there seems to be underlying conflict between the political goals of economic efficiency, environmental sustainability and spatial equity.

Implications for competitiveness and sustainability

The project team are not optimistic in terms of accommodating both the principles embodied in the Lisbon and Gothenburg agreements. They reach the 'unavoidable conclusion that different objectives tend to conflict with each other'. Specifically '(you) can't expect a single design of transportation policy to be optimised to the pursuit of economic competitiveness, efficiency and the growth of the entire EU area (and simultaneously) provide environmental sustainability and a balanced spatial development'.

The conclusion from 2.1.1 suggests that in view of current thinking in transport policy, the goals of the Lisbon and Gothenburg agendas are going to be hard, in practice, to unite. Their assessment though (in the short, medium and long-term) favours the modal rebalancing and a reduction in fuel consumption.

<u>EU Research and Development Policy and Innovation (2.1.2)</u>

Recommendations and scenarios

The Nemesis European macro-econometric model was used to assess the effects of all countries increasing their expenditure on R&D. If this level were to rise to the target level of at least 3% (and 4% by 2050), there would be GDP increases of 0.25% per year by 2010, rising to 0.5% of GDP thereafter (with the least R& D intensive countries catching up in productivity gains). This would result in a total increase in jobs of between 2 and 6 million by 2015 (and up to 18 million by 2030) reflecting a period of deployment of the effects of innovation, leading to sustained demand and an increase in the competitiveness of all European sectors.

[33] Raising transport costs has been shown to support polycentricity. All transport scenarios, except for pricing, support monocentricity.

The question however, is how can an increase in R&D expenditure be achieved? Although the model assumes that two-thirds would be contributed by industry (though the model does provide alternative calculations of the amount financed by the public sector, with projected improved gains in GDP and employment where this contribution is greater[34]) this is an ambitious target, particularly for some countries.

There are two problems with this optimistic analysis. Firstly, the current review of R&D intensity and personnel shows considerable disparity, based on the core-periphery pattern across the EU27, yet the gaps are narrowing apparently without being translated into economic wealth. The project team consider that this is a result of the innovation processes being insufficient to become a significant driving force. Secondly, where alternate scenarios of investment (STIMA model) were charted according to whether they targeted strong areas, lagging areas or were indiscriminate, there were clusters of regions (lagging and non-lagging), which did and did not respond. The resultant recommendations include addressing innovation co-ordination, absorption capacity (particularly for weaker R&D areas) and providing different policies for different area types.

Maximising innovation potential requires successful inter-regional and trans-national collaboration. In this context, the team agree with the objectives of the proposed European Research Area (2000), that the current national fragmentation of research capacities leads to duplication, instead there must be a 'mutual opening up of programmes' and co-ordination of member states research strategies. The sectoral intervention of the RTD Framework Programme is important here. In addition, territorial interventions through the Structural Funds can be used by ensuring that minimum of 5% of Fund monies are dedicated to R&D within each regional project, especially in areas with GDPs below the 75% EU average (where co-funding should be implemented).

There should be a better coordination between the Framework Programmes (FP) and the Structural Funds (SF), which enhances the innovation capability of disadvantaged regions. The objective should be to strengthen those disadvantaged areas which possess the relatively best chances for catching up and establishing as competitive regions with a high innovation capability. Regarding the accessibility of broadband infrastructure (which shapes an essential element of the Lisbon objectives regarding Europe's way towards the leading knowledge society), some progress could be made on the roll-out of broadband infrastructure in less densely populated regions. This supply-side improvement of broadband

[34] The model does not however account for any possible negative effects of government deficits on interest rates or the performance of economic groups.

access in these disadvantaged regions could be accompanied by boosting the demand for internet services delivered by broadband.

Area specific suggestions include the following: 'Type 5 regions' (exceptionally strong system of R&D and innovation) should be promoted as 'focal points of a 'European innovation system', other measures include fostering co-operation, networking and other links (pp175-6), which are also proposed for 'Type 4 regions' (strong R&D). 'Type 3 regions' ('mixed fortune') should, where possible, reinforce links with stronger regions. Where this is not an option, strengthening their regional capacity for R&D and innovation should be a priority so that they can then themselves act as 'trans-regional knowledge hubs'. Much of this is compatible with the conclusions of the first ESPON project on polycentricity (1.1.1). With weak R&D areas (Type 1&2) it is recommended that the private sector is harnessed to the improvement of the economic base and service infrastructure to promote the development of R&D.

Implications for competitiveness and sustainability

The 2.1.2 team conclude that the role of R&D and ICT are vital for future competitiveness, but more co-ordination and capacity building are needed together with an increase in spending to make a positive impact on the competitiveness of the EU.

R&D and associated innovations are unique in the sense that they may be seen as the answer to the desire for economic expansion without environment cost. They also do not depend on geographical connectivity, demographic concentration or other factors associated with economic growth, and unlike sectors such as transport, R&D is subject to rapid change. As such RDT is identified in Lisbon/Gothenburg as central to the success of the strategy. It is also distinctive in being well placed to impact the spatial structure of the EU territory- that is to stimulate competition away from the Core. However, precisely how to direct innovation policies to address current territorial imbalances and improve the overall competitiveness of the EU is not clear and the potential of the sector is limited to the partners involved in its implementation.

<u>Common Agricultural and Rural Development Policy (2.1.3)</u>

As the world's largest food trader, the EU has a strong interest in global competitiveness in the production of agricultural produce. At the same time agricultural methods, which maximise production can negatively impact on landscapes and habitats. The agri-environmental schemes proposed in Agenda 2000 and the establishment of the RDR (Rural

Development Regulation) show a move to a focus on sustainability goals from the previous bias of the CAP[35].

Recommendations and scenarios

The project ran a series of policy scenarios assessing the likely outcome in competitiveness, cohesion and natural heritage of different options relating to the reform of the CAP. The radical liberalisation of agricultural policy (elimination of price support, quotas etc.) was predicted to support competitiveness, by leading to more territorial specialisation, some intensive, commercial agri-businesses, other areas turning to leisure and rural residential land use. This scenario though would be likely to undermine the objectives of sustainability, resulting in the loss of much natural heritage. The team recommend rather that the EU retain global competitiveness through a combination of quality and distinctiveness through maintaining its unique and varied pattern of rural resources.

In seeking to fulfil this objective the team broadly supports the Commissions' views on reforming EU agricultural policy, with a broader stress on RDP, more LEADER type projects and more emphasis on Pillar 2, in keeping with the goals of sustainable development. Their conclusions are reached primarily through case study work. These do reveal some agri-environmental schemes, which have had positive impacts on economic competitiveness at the macro level, if indirectly, by retaining rural populations and, in line with Gothenburg, producing good effects in terms of environmental sustainability. LEADER also is shown to have successfully built the basis for more competitiveness in areas previously struggling.

Energy services, networks and EU energy policy (2.1.4)

Recommendations and scenarios

The energy sector has parallels with the transport sector. Not only is 40% of energy used in transport (subsequently producing 28% of C02 emissions), but energy price increase also result in gains for sustainability with reduced consumption. Conversely low energy prices may boost competitiveness but have perverse effects on sustainability, reducing the drive for technological development and efficiency. In the scenarios

[35] CAP received most criticism from the 2.1.3 team for running counter to the cohesion objectives of the ESDP, favouring prosperous, accessible regions and large mechanised farms.

(econometric models and simulations) presented, all except increased prices are shown as likely to have a negative impact on sustainability.

The proposed focus should be on decentralisation - local energy initiatives, these should stimulate local employment and income, reduce dependency[36]) and ultimately international competitiveness as well as being more sustainable.

Specific policy recommendations, which are given initially on country basis, do address demand side issues in the context of global competition, transferring environmental costs to the user. Focus is also given to finding cost-effective ways of promoting renewable sources of energy designed to increase competition with current cheap imports. The problem is noted that the relation between regional development and energy policy vectors are not always obvious and it is suggested that the TIA should address this. The other obvious difficulty is the uncertainty of the future. This is stressed and the need for further scenario studies to address it is emphasised, an issue that project 3.2 is prioritising. As the partners of 2.1.4 propose, key questions include; 'will nuclear power emerge as a winner?' and 'what role for bio-fuels in the transport sector of the future?'

Implications for competitiveness and sustainability

As energy consumption is an indicator for sustainability the relevance to sustainable development is obvious. While there have been improvements in diversification and moves from fossil fuel use across the EU, alternatives have not been primarily renewable, and dependency on external imports and consumption remain high. The implications of this project suggest that if current levels of competitiveness are maintained in this way a major change is required. For sustainable development the projects findings suggest that a much more significant commitment to renewable energy supplies and local energy sources is required than the limited move that has been initiated in this direction.

Structural Fund Impacts (2.2.1)

Recommendations and scenarios

The project completes an assessment on the success of Structural Fund spending in narrowing the gap in GDP between lagging and non-lagging

[36] Most EU countries are currently net importers of energy and this is dependency has been increasing.

regions. The gap had been reduced per capita from 64% in 1993 to 69% in 2000. This shows an improvement in the territorial competitiveness of these regions, but not a substantial one. This limited impact is part of the rationale presented by the team, for a proposed move from redistribution to competitiveness potential in future proposed Structural Funding. They recommend a concentration of funding on existing and promising FUAs which are potentially internationally competitive or show the potential for becoming European hubs. This would involve the adoption of a spatially more explicit policy towards polycentricity and specifically focusing on the creation of strong urban poles outside the Pentagon and the establishment of trans-national functional regions, especially between EU15 and the new member states.

Instead of the current system which tends to support rather small eligible areas, which are unable to support a wider spatial perspective, Funds should be allocated in a competitive way with no constraints other than that of maximizing the added value of the investment. An assessment of the urban system may facilitate a spatially sensitive delimitation as well as identifying most profitable activity. It would also involve strengthening the endogenous potential of FUAs which have potential of European or global importance (through a particular economic specialism or cultural peak-competence or targeting potential areas of functional specialisation), to strengthen their position globally. This could be helped by more sector co-ordination. It is advocated that promoting strategic alliances between FUAs can further bolster these objectives.

Clearly, this omits regions which are less competitive. For such areas it is suggested that Structural Fund monies be used to build up R&D, tourism, re-structuring or other potential strengths. Alternatively where weakness is due to 'permanent handicaps of remote or sparsely populated regions' it is recommended that 'non-region based clusters' are engaged.

Implications for competitiveness

Relating to the Lisbon strategy then, it is argued that to become more competitive and dynamic potentials and comparative advantages of urban poles with the most realisable development potential should be identified as 'engines for improving competitiveness and dynamism'. The objectives of international economic competitiveness are thus being explicitly linked to the idea of polycentricity, with a recommended emphasis 'more a focus on the effective use of limited resources through a focus on governance effects' than, it is implied, the use of substantial resources in a 'remedial and ineffectual way'.

Pre-accession aid (2.2.2)

The project on the territorial effects of 'acquis communitaire' for pre-accession aid and the Phare/Tacis/Meda programs begins by reviewing the aid and its focus to date. While half of this has concentrated on environmental projects, the remainder focuses on improving competitive regional structures mainly through investments in transport infrastructure.

Recommendations and scenarios

Recommendations from the project stress that future assistance must support regions capable of acting as growth poles for national and EU economies (including second and third rank cities within them) and eliminating barriers to future competitiveness. This 'potential oriented approach' projects that growth is most likely to achieved in regions already well endowed with potential and that this growth should then have a snowball effect on neighbouring regions. It stresses the creation of growth from economic centres through competition oriented policy. It is argued that without strengthening these regions for European competition in terms of their human resources and innovation capacity, all regions in new member states and candidate countries will fall back in relation to the Lisbon Strategy.

This concentration on potential, as with project 2.2.1, shows something of a departure from previous remedial type prioritisation aiming for spatial cohesion. However old industrial areas in need of restructuring and peripheral rural areas are recommended alternate packages based on environmental improvements and the building up of local SMEs and other forms of institutional capacity building. But they conclude that funding should, 'avoid jeopardising national efficiency by channelling resources to regions that have little prospect of competing, while retaining some policy orientation towards indigenous development in less-favoured areas'.

The project's analysis is supported by their categorisation of area types according to average growth and intervention levels, as high intervention levels are shown to have no correlation with growth levels. The implication is that in differentiating between varying priorities of the new Structural Fund policy interventions, spatial delineation between countries and regions with and potential is preferable to a priority mindset.

Effects of Structural Funds in Urban Areas (2.2.3)

Recommendations

The potential role of FUAs in the Lisbon strategy is also central to this project, which has given attention to what makes cities compete successfully on the international stage and produces some relevant recommendations for the future allocation of Structural Funds. The success of cities, it is demonstrated, should not just be about meeting the needs of business as, 'economic structures are not tied to competitiveness. Competitive cities can successfully sustain thriving industries in declining sectors whilst expanding sectors may grow sub-optimally in non-competitive cities'.

Former Structural Fund concentration on 'declining urban areas' have failed to deal the root causes of the decline. As with some of the other TPGs, 2.2.3 project partners argue that the better strategy (at least economically) would be to focus on the potential competitiveness of urban areas. Thus, they recommend that for the 2007-2013 Structural Fund period:

- A increased urban focus is adopted (with the above provisos)

- A new EU-level approach is used which will significantly widen eligibility for support, with potentially 100% of urban areas being able to apply for an element of the new Funds.

6.2.3. Current projects

Spatial Scenarios (3.2)

One of the tasks of this project is to reassess the indices and measures used in the construction of a European Territorial Cohesion Index (ETCI). Early work on this has led to indications that respecting the principles of the Lisbon Agenda may imply a shift from the agreed objectives of the ESDP. Thus two different formulas were proposed in experimentation for the ETCI. The first, classed as 'ESDP oriented', was based on the three goals of the European Spatial Development Perspective; economic competitiveness, social cohesion and sustainable development. The second, 'Lisbon oriented' stresses the future competitiveness of Europe as being associated less with cohesion and sustainability, than post industrial

activities and human capital as measured in indicators such as education levels[37].

The implications are uncertain. One of the most problematic issues is the relationship between cohesion policy and the Lisbon objectives – does the support of regions lagging behind hinder competitiveness and dynamic growth in Europe? Furthermore, is regionalisation (regional breakdown of Structural Funds) one of the principal causes of the underutilisation of funds and their low efficiency? In summary, must Lisbon necessitate a move away from cohesion as main goal – and are the agendas of Lisbon and the sustainability interests of Gothenburg compatible?

Preliminary scenario work (still in draft form) addresses some of these issues by investigating the key problems accounting for a poor EU competitive position relative to the USA, and then providing four *prospective policy*[38] scenarios;

- High efficiency/competitiveness — low equity/cohesion (best foot)
- High efficiency/competitiveness — high equity/cohesion (Euro Tigers)
- Low efficiency/competitiveness — low equity/cohesion (Balnibarbi)
- Low efficiency/competitiveness — high equity/cohesion (Beaten track)

The initial conclusions from the 'Euro Tigers' scenario is outlined in the appendix below. This scenario most closely reflects the findings and perspective of the ESPON work as summarised above.

6.2.4. General considerations

The implications of the review of the work and conclusions of the ESPON projects to date are, if accepted, substantial. They suggest a need to move away from previous trajectories about competitiveness in particular. The most notable change, though linked to a policy approach, is a spatial repositioning, away from an association of competitiveness with the capabilities with capital cities towards a broadening of the economic base

[37] Work for the Second Interim Report includes the development of scenarios covering aspects of economic competitiveness and issues relating to sustainability up to 2030. At present these are in draft form, but will be available for analysis later in the project.
[38] Prospective policy scenarios consider the impacts of policy changes, in this context in key national and community priorities.

and an explicit promotion of polycentricity. The inference is that this will not only ultimately have economic benefits, but will have advantages in terms of sustainability.

If polycentricity is acceptable as an objective in the fulfilment of the Lisbon and Gothenburg agendas, RDT is most a most appropriate tool as innovations in this sphere do not depend on geographical connectivity. As such, with targeted intervention and investment, future RDT growth could positively impact the spatial structure of the EU territory; stimulating competition away from the Core.

Realistically achieving this 're-growth' in an effective way may mean moving away from a 'remedial' approach to structural problems, to concentrating on future 'hubs with potential'.

Other policy aspects covered by the ESPON work prove more problematic for working simultaneously towards the goals of competitiveness and sustainability. Transportation is particularly challenging, the focus of conflict being related to fuel consumption. Compromises here were found primarily in the desirability of modal shifts. Similarly with energy policy, diversification was promoted as the way forward.

The issue of the changing demographic composition of the EU proved especially resistant to practical recommendations, particularly in terms of the realisation of the Lisbon agenda. This is an area of that needs more exploration as regards the implications of current population projections on economic competitiveness, environmental sustainability and future spatial development.

Implications which arise more broadly from all projects relate to the identification of regional variation, denoted by area type and geographical area, which impacts capacity to develop competitive potential. This aspect of work can feed most directly into future regional level policy recommendations.

The review above reflects the fact that previous ESPON projects have not considered sustainability and competitiveness concurrently, or their implications for each other. Indeed some project conclusions infer that they are incompatible; however work in this project will attempt to unite the concepts through the development of the notion of competitiveness in sustainability and re-evaluate policy sectors in this context.

Table 17: Synthesis of policy recommendations in ESPON projects – by determinants

Determinant / ESPON Project	Innovation & Research	Global local interaction	Quality	Resources and Funds
1.1.1	Priority to be given to making available higher order services to second and lower tier cities, to broaden the competitive position of the EU as a whole.	EU interventions should promote strategic co-operation to improve their competitiveness, producing new global zones of economic integration. Connections between closer urban areas could be built up by economies of scale through shared infrastructure.	Reducing the urban sprawl of capital cities improves environmental quality and is more sustainable.	EU funds should bolster functional specialisation of polycentric regions and 'second tier urban areas' strengthened to broaden the EU's competitive base,
1.1.2	Reduce rural isolation through use of IT, thus reducing drivers of emigration, depopulation and the poor competitive position of remote areas.	Aspects of urban rural relationships should be promoted, such as integrated pollution control and the development of 'soft tourism' in depopulated rural areas, generally diversification will strengthen the economies of struggling rural areas.	The protection of rural assets is proposed for sustainable development and as a contribution to territorial competitiveness in terms of 'added value'.	Accessibility of remote areas could be improved by the injection of appropriate IT resources
1.1.3	Stress 'capacity-base' interventions to help build up technological and knowledge base and update IT interventions, particularly of leading Central and East European areas.	Small member states could profit from drafting plans in cooperation with neighbouring states. Possible conflict found between strengthening highest-level global cities to enhance global competitiveness and strengthening cities outside the Pentagon, which may improve polycentricity but diminish the EU's global position.	Continue stress on environmental objectives in use of pre-accession aid.	Prioritise the building up of transport links between new and old member states, particularly to strengthen the eastern potential 'global integration zone'.
1.1.4	Increase development potential in technological capacity to compensate for falling population.	Co-operation between member states is necessary regarding migration; it is important to limit	Reducing regional and national differences and closing the gap in living conditions will increase the	The growth poles in de-populated areas should be stimulated. A higher workforce participation may

		east-west migrations as the out-migration of qualified workforce can impose negative consequences on regional economic development in the East. Selective migration policies and improving the appeal of emigration zones are recommended.	symmetrical economic development of the whole EU27/29.	be needed to deal with the ageing population.
1.2.1	Focus on regions which have been identified as having the capacity to respond to development of K & I society.	Trans-border corridors need more attention, with the development of rail and inland waterways. Also the development of a new maritime transport mode along all coasts of ESPON space is recommended. Co-ordination in reducing road usage and road speeds etc. (to reduce emissions) is urged.	Modification of existing transport forms and their use to effect a reduction in fuel consumption are required and moves to multi-modal forms of transport.	Investment in modal transfer to dedicated rail and maritime transport forms are recommended, though the specifics vary according to the needs of each region.
1.2.2	The uptake and usage of ICTs by enterprises, including SMEs is of prime importance in contributing to competitiveness. Accessibility to networks needs to be broadened.	The relative competitive advantage of EU regions is currently too much in the hands of major private companies, direct interventions may be necessary to redress this.	Strategies to increase the role of the public sector in constructing or owning telecommunications networks may help to improve the competitiveness of some regions.	The EU should participate in establishing better symmetry between public authorities and telecommunication providers to build up networks. Standardisation and subsidisation are required.
1.3.1	International exchange of information and joint research efforts should be promoted for sustainable development.	Cross-border network systems will help make regions more competitive by reducing pollution and environmental risks. EU Policy instruments should contribute to hazard prevention.	Risk prevention is clearly a prerequisite for maintaining quality of life and the environment.	Hazard prevention is key to sustaining natural resources, EU actions should give more attention to this in their fund allocations.
1.3.2	Innovation in agriculture and especially tourism are important in stimulating employment, specific types of service economy may locate in more remote areas such as the Alpine region: institutions for R&D and conferencing etc.	To maximise synergy between natural heritage and economic competitiveness polycentric urban development should be concentrated with the main corridors of infrastructure that will act as development axes. This will also distribute development pressure away from the Pentagon.	Natura 2000 sites should be enhanced and other Europe-wide networks identified. Focus on environmental quality gives added value, thus enhancing competitiveness.	Developing nodes near highway accesses and high speed rail stations should avoid unnecessary fragmented (sub) urbanisation through the landscape and unnecessary mobility, so supporting the natural heritage.

2.1.1	Transport requires continuing inputs of innovation to ensure continuing development, to address the negative problems of environmental impacts and maintaining competitive advantage.	The role of transport in enhancing EU competitiveness as a whole should be concentrated on rather than being used to secure national objectives.	Modal rebalancing and a reduction in fuel consumption is recommended.	More high-speed train networks are an environmentally friendly alternative to air travel. Relocating transport streams and modal shifts from road to rail and waterways should also be used as a means of reducing pressure on overloaded transport corridors that will produce benefits in terms of competitiveness.
2.1.2	The role of R&D and ICT are vital for future competitiveness but can only reach that with more co-ordination and capacity building and an increase in spending.	Territorial interventions through the Structural Funds can be used by ensuring that minimum of 5% of Fund monies are dedicated to R&D within each regional project, especially in areas with GDPs below the 75% EU average.	Knowledge transfer, defined as the process by which knowledge, expertise and skilled people transfer between the science base and its user communities to contribute to the economic competitiveness and the quality of life, means that investment in R&D is needed.	Innovation co-ordination, absorption capacity (particularly for weaker R&D areas) should be prioritised in general, but there should also be different policies for different area types, such as harnessing the private sector in weak R&D areas.
2.1.3	To make the operation of the Rural Development Policy more effective, more attention must be given to innovation.	The EU should aim to retain global competitiveness through a combination of quality and distinctiveness through maintaining its unique and varied pattern of rural resources. Agri-environmental programmes should be promoted.	The cultivation of rural amenities should be seen as a promising resource, offering new economic opportunities to rural areas.	The provision of support for organic production and other agri-environmental measures has the potential to contribute to balanced competitiveness through high quality food production targeted at niche markets.
2.1.4	Technical grid constraints currently limit the amount of energy that can be produced by wind farms, this needs addressing.			
2.1.5	Recommendations for innovation in the fisheries industries need to be developed.	The overexploitation aspect of the fisheries sector needs attention.		
2.2.1	The Structural Funds could be used to promote the goals and concepts of European spatial development policies in indirect ways, such as by funding studies, evaluations and promoting new thinking. The *micro*	The development of clusters of cities of global importance outside the pentagon and strengthening the international competitiveness and 'endogenous' potential of functional urban areas can be achieved by		

	and *meso* levels are particularly suited to promoting such new thinking and policy innovation.	strategic alliances (networking etc.) between functional urban areas.		
2.2.2	Innovation should be a priority for the policy of MEGAs, the most important regions in light of the Lisbon Strategy. Measures for 'high road' economic restructuring for them should be prioritised.			
2.2.3	A shift towards the knowledge economy and globalisation of trade are perceived as relevant drivers, but over inflated expectations of what the SFs can be able to deliver in these areas may be a problem.			

6.3. Policy recommendations derived from Lisbon – by determinant

Innovation & Research

1. The European Investment Bank should take a leading role in promoting the networks required for innovation and research across the European Union. The issue of up-take is also a priority.
2. At a regional level innovation poles should be established. At the EU level a 'European Institute of Technology' should be set up and European Technology Initiatives partnered with industry promoted.
3. A European innovation scoreboard should be introduced.

Global local interaction

1. The co-ordination of the EU is required to ensure labour market requirements are met, with agreement on increasing the mobility of the workforce and migration. This would be assisted by the establishment of a European Higher Education Area.
2. The European social model should be reformed, basing support on work and alleviating tax pressures on labour.

Quality

1. Innovation in eco-technologies should be harnessed to enhancing quality of life and renewing neighbourhoods.
2. Policies need to be introduced which address the conflicts arising from maintaining a healthy work/home life balance.

Use of resources

1. Work force participation rates must be increased – by at least 9% - with particular emphasis on women and older workers. More flexibility in labour market conditions should help create the conditions for this.
2. The environment for private research investment, R&D partnerships and high technology start-ups should be made more attractive by adjusting tax policies and providing the appropriate support in the form of venture capital with EIB backing.
3. There should be a reform of Structural Funds to focus on local employment delivery and economic growth.

6.4. Policy recommendations derived from Gothenburg – by determinant

Innovation & Research

1. A substantial investment in I&R is required in order to fulfil the Sustainable Development Strategy.

Global local interaction

1. EU co-ordination in four key policy areas must be worked towards; climate change, natural resources, transport and public health. Pre-existent policy agreement on climate change must be implemented.
2. Some way of separating economic growth from resource use must be found.
3. The contribution of renewable energy sources must be increased proportionately.
4. Prices should be linked to their environmental impact, especially in the field of transport.
5. A reformed Common Agriculture Policy should demand more environmentally sustainable forms of production.

Quality

1. Specific EU wide measures on public health should be introduced, including a European surveillance and early warning system on health issues.
2. EU action on the problems relating to rising levels of traffic should take the form of EU policy on a sustainable transport system which includes greater investment in public transport and other actions to encourage a major modal shift.

Use of resources

1. New measures should be introduced to maintain bio-diversity and preserve eco-systems.
2. Urgent attention must be given to reducing the levels of waste produced in the EU and the EU Integrated Product Policy should be implemented in co-operation with business.
3. The Common Fisheries Policy must address the issue of over-fishing more pro-actively.

Table 18: Policy recommendations for the determinant 'innovation and research'

Typology / Agenda	Knowledge and Information Society	Technical equipment	Human resources
Lisbon	Preparing the transition to a knowledge-based economy and society by better policies for the information society and R&D must be a key priority. As the shift to a digital, knowledge-based economy, prompted by new goods and services, will be a powerful engine for growth, competitiveness and jobs.	Businesses and citizens must have access to an inexpensive, world-class communications infrastructure and a wide range of services. Every citizen must be equipped with the skills needed to live and work in this new information society. Realising Europe's full e-potential depends on creating the conditions for electronic commerce and the Internet to flourish, so that the Union can catch up with its competitors by hooking up many more businesses and homes to the Internet via fast connections. The rules for electronic commerce must be predictable and inspire business and consumer confidence. Steps must be taken to ensure that Europe maintains its lead in key technology areas such as mobile communications. The speed of technological change The frequency requirements for future mobile communications systems must be met in a timely and efficient manner. Fully integrated and liberalised telecommunications markets should be completed. The Member States, together with the Commission, must work towards introducing greater competition in local access networks and unbundling the local loop in order to help bring about a substantial reduction in the costs of using the Internet. The Member States must ensure that all schools in the Union have access to the Internet and multimedia resources, and that all the teachers needed are skilled in the use	The services sector in the areas of telecommunications and the Internet needs further development. The skills gap must be narrowed, especially in information technology where increasing numbers of jobs remain unfilled. Innovation and ideas must be adequately rewarded within the new knowledge-based economy, particularly through patent protection. The Commission, Council and Member States should take steps to remove obstacles to the mobility of researchers in Europe by 2002 and to attract and retain high-quality research talent in Europe.

		of the Internet and multimedia resources. They must also ensure generalised electronic access to main basic public services. The Community and Member States, with the support of the EIB, should make available in all European countries low cost, high-speed interconnected networks for Internet access and foster the development of state-of-the-art information technology and other telecom networks as well as the content for those networks. Specific targets should be defined in the *e*Europe Action Plan. The creation of a very high-speed trans-european network for electronic scientific communications must be facilitated, with EIB support, linking research institutions and universities, as well as scientific libraries, scientific centres and, progressively, schools.	
Gothenburg		Achieving the objectives of the Sustainable Development Strategy requires major investment in innovation and research.	

Table 19: Policy recommendations for the determinant 'global local interaction'

Typology / Agenda	International co-operation on environment	Social interaction	Economic
Lisbon		Research activities at national and EU level must be better integrated and coordinated to make them more efficient and innovative and to ensure that Europe offers attractive prospects to its best brains. The number of 18 to 24 year olds with only lower-secondary level education who are not in further education and training should be halved by 2010. Learning partnerships should be established between schools, training centres, firms and research facilities for their mutual benefit. A European framework should define the new basic skills to be provided through lifelong learning: IT skills, foreign languages, technological culture, entrepreneurship and social skills; a European diploma for basic IT skills, with decentralised certification procedures, should be established in order to promote digital literacy throughout the Union. The means for fostering the mobility of students, teachers and training and research staff should be defined, by making the best use of existing Community programmes (Socrates, Leonardo, Youth), by removing obstacles and through greater transparency in the recognition of qualifications and periods of study and training; steps must be taken to remove obstacles to teachers' mobility by giving higher priority to lifelong learning as a basic part of the European social model, including by encouraging agreements between the social partners on innovation and lifelong learning.	The process of structural reform for competitiveness and innovation should be stepped up by completing the internal market. The European social model must be modernised, full employment remaining the objective, helping to produce an average economic growth rate of around 3%. The Council, Commission and member states should develop appropriate mechanisms for networking national and joint research programmes on a voluntary basis around freely chosen objectives, in order to take greater advantage of the concerted resources devoted to R&D in the Member States. There should be regular reporting to the Council on the progress achieved and a mapping of research and development excellence in all Member States in order to foster the dissemination of excellence. Indicators for assessing performance in different fields should be identified, in particular with regard to the development of human resources and a European innovation scoreboard introduced. Further efforts are required to lower the costs of doing business and remove unnecessary red tape, both of which are particularly burdensome for SMEs. Specific action is also needed to encourage the key interfaces in innovation networks, i.e. interfaces between companies and financial markets, R&D and training institutions, advisory services and technological markets. A strategy for the removal of barriers to services; is also needed, this would; speed up liberalisation in areas such as gas, electricity, postal services and transport. The potential of the euro must be exploited to push

		The European social model, with its developed systems of social protection, must underpin the transformation to the knowledge economy. But these systems need to be adapted as part of an active welfare state to ensure that work pays, to secure their long-term sustainability in the face of an ageing population, to promote social inclusion and gender equality, and to provide quality health services. Co-operation between Member States must be strengthened by exchanging experiences and best practice on the basis of improved information networks. A better understanding of social exclusion should be promoted through continued dialogue and exchanges of information and best practice, on the basis of commonly agreed indicators.	forward the integration of EU financial markets Continued measures must be taken to: alleviate tax pressures on labour and especially on the relatively unskilled and low-paid; improve the employment and training incentive effects of tax and benefit systems; redirect public expenditure towards increasing the relative importance of capital accumulation – both physical and human – and support research and development, innovation and information technologies; ensure the long-term sustainability of public finances, examining the different dimensions involved, including the impact of ageing populations (in particular on pensions systems). Further steps are also required to: improve employability and reduce skills gaps, in particular by providing employment services with a Europe-wide data base on jobs and learning opportunities; promote special programmes to enable unemployed people to fill skill gaps; ☐☐give higher priority to lifelong learning as a basic component of the European social model (including by encouraging agreements between the social partners on innovation and lifelong learning).
Gothenburg	The four priority areas for inter-EU agreement are: *climate change, transport, public health and natural resources*. Economic growth must be 'decoupled' from resource use. The contribution of electricity produced from renewable energy sources to be increased. Co-ordination with the European Investment Bank in promoting the Sustainable Development Strategy is planned, particularly in implementing the EU policy on climate change. Industry to be encouraged to take part in the development and wider use of new environmentally friendly technologies in		Efforts to simplify the regulatory framework of the internal market must continue, to ensure that the virtuous circle of job creation and growing prosperity in the EU economy in recent years can continue.

	sectors such as energy and transport. The environmental effects of all policies should be examined in a co-ordinated way and taken into account in decision-making. "Getting prices right" so they better reflect the true costs to society of different activities would provide a better incentive for consumers and producers in daily decisions about which goods and services to make or buy. A framework to ensure that the price of using different modes of transport also better reflects costs to society is planned. A "global deal" on sustainable development. will be sought. Kyoto targets must be met, although there is a recognition that Kyoto is only a first step. The objectives set out in the 6th Environmental Action Program are endorsed. The Common Agricultural Policy should continue reforms with a focus on environmentally sustainable production methods, e.g. organic, renewable raw materials and the protection of biodiversity. The Council to be encouraged to further develop sector strategies for integrating environment into all other relevant Community policy areas with a view to implementing them as soon as possible.		

Table 20: Policy recommendations for the determinant 'quality'

Typology / Agenda	Life quality	Environmental quality	Local government quality
Lisbon	A goal should be set for full employment in Europe in an emerging new society which is more adapted to the personal choices of women and men. All aspects of equal opportunities must be furthered, including reducing occupational segregation, and making it easier to reconcile working life and family life, in particular by setting a new benchmark for improved childcare provision. The shift to a digital, knowledge-based economy will be capable of improving citizens' quality of life. To make the most of this opportunity a comprehensive *e*Europe Action Plan is to be drawn up. Steps must be taken towards the eradication of poverty, setting specific targets. The new knowledge-based society offers much potential to reduce social exclusion, by creating the economic conditions for greater prosperity by more growth and employment, and by opening up new ways of participating in society. But it brings a risk of an ever-widening gap between those who have access to the new knowledge, and those who do not. To avoid this risk, efforts must be made to improve skills, promote wider access to knowledge and opportunity and fight unemployment: the best safeguard against social exclusion is a job. The promotion of inclusion in Member States' employment, education and training, health and housing policies must be a priority, complemented at Community level by action under the Structural Funds.	Information technologies could be used to renew urban and regional development and promote environmentally sound technologies Investment in a digital, knowledge-based economy could enhance the environment.	Real efforts must be made by public administrations at all levels to exploit new technologies to make information as accessible as possible.

	Priority actions addressed to specific target groups (for example minority groups, children, the elderly and the disabled) should be developed.		
Gothenburg	Public health is one of four priorities. Specific measures include: ensuring that within a generation chemicals are only made and used in ways which do not lead to a major impact on health and the environment; Action Plans are made for tackling issues related to outbreaks of infectious diseases and resistance to antibiotics; Food Law Regulations are put in place and a European surveillance and early warning network on health issues is considered. A sustainable transport policy should tackle rising volumes of traffic and levels of congestion, noise and pollution and encourage the use of environment-friendly modes of transport as well as the full internalisation of social and environmental costs. Action is needed to bring about a significant decoupling of transport growth and GDP growth, in particular by a shift from road to rail, water and public passenger transport.	The four priority areas: *climate change,* *transport, public health and natural resources*, A move to electricity produced from renewable energy sources, alternative modes of transport to road and general measures to implement the EU policy on climate change are to be followed. See issues on life quality which clearly also relate to environmental quality.	

Table 21: Policy recommendations for the determinant use of 'resources and funds'

Typology / Agenda	Economic resources	Human resources	Natural resources	Resources for innovation
Lisbon	Member States must focus on small companies as the main engines for job-creation in Europe, and to respond specifically to their needs.	The participation in the labour market by women and older workers must be increased. The employment rate should be raised from an average of 61% today to as close as possible to 70% by 2010 and the number of women in employment should rise from an average of 51% today to more than 60% by 2010. Different means of access must prevent info-exclusion. The combat against illiteracy must be reinforced. Special attention must be given to disabled people. A substantial annual increase in per capita investment in human resources must be made. The flexible management of working time and job rotation with life-long learning should be realised and a European award for particularly progressive firms introduced. Progress towards these goals should be benchmarked. More employment in services needs to be promoted, including personal services, where there are major shortages; private, public or third sector initiatives may be involved, with appropriate solutions for the least-favoured categories.		The Council, along with the European Parliament where appropriate should adopt as rapidly as possible changes to the legal framework for electronic commerce, on copyright and related rights, on e-money, on the distance selling of financial services, on jurisdiction, the enforcement of judgements, and the dual-use export control regime and consider how consumer confidence in electronic commerce may be promoted. The environment for private research investment, R&D partnerships and high technology start-ups should be improved by using tax policies, venture capital and EIB support.
Gothenburg	Clear and stable objectives for sustainable development will present significant	Member States must capitalise on the Union's entire labour force reserve by improving women's opportunities to	Member States should draw up their own national sustainable development strategies and consult widely with all	

	economic opportunities. New related technological innovation and investment should generate growth and employment. New priority should be given to infrastructure investment for public transport and for railways, inland waterways, short sea shipping, inter-modal operations and effective interconnection.	enter the labour market and increasing employment rates among older workers.	relevant stakeholders establishing appropriate national consultative processes. Resource use cannot continue to grow at the same rate as economic growth. Natural resources must be managed more responsibly; the relationship between economic growth, consumption of natural resources and the generation of waste must change. Strong economic performance must go hand in hand with sustainable use of natural resources and levels of waste, maintaining biodiversity, preserving ecosystems and avoiding desertification. To meet this challenge the Common Agricultural Policy and its future development should, among its objectives, contribute to achieving sustainable development by increasing its emphasis on encouraging healthy, high-quality products, environmentally sustainable production methods, including organic production, renewable raw materials and the protection of biodiversity. GMOs should be labelled. The Common Fisheries Policy review should address the overall fishing pressure by adapting the EU fishing effort to the level of available resources, taking into account the social impact and the need to avoid over-fishing. The EU Integrated Product Policy aimed at reducing resource use and the environmental impact of waste should be implemented in cooperation with business. Biodiversity decline should be halted with the aim of reaching this objective as set out in the 6th Environmental Action Programme.	

Table 22: Synthesis of policy recommendations EFFECTS in Lisbon/Gothenburg – by determinant[39]

Determinant / Agenda	Innovation & Research	Global local interaction	Quality	Use of resources
Lisbon	Facilitating access to an inexpensive, world-class communications infrastructure and a wide range of services to increase up-date of ICT* is a priority, to be supported by the EIB. Creating the conditions for electronic commerce and improving investment in R&D are important.* The development of a very high-speed trans-european network for electronic scientific communications must be facilitated, with EIB support. The frequency requirements for future mobile communications systems must be met. Reducing barriers to competition in local access networks Innovation poles are to be promoted regionally.+ The EU should continue to focus on biotechnology and eco-innovation.	Co-ordination at the EU level is needed for qualifications, education (including lifelong learning*) and research (geared at enhancing competitiveness. There should be the creation of a European Higher Education Area * to increase the mobility of the workforce.* Co-ordination is also needed with a plan for legal migration to maintain the workforce.+ Completing the internal market is necessary to promote competitiveness.* A European innovation scoreboard should be introduced. The European social model should be reformed, basing support on work and alleviating tax pressures on labour. Public expenditure should be redirected towards increasing the importance of capital accumulation. Help must be targeted at SMEs*, reducing administrative burdens on them.	Occupational segregation must be addressed and measures must be taken to reconcile home and work life. Eco-technologies to improve quality of life need development and investment.* IT should be used to renew neighbourhoods and promote environmentally sound technologies.	Labour market participation of older workers and women must increase. The general participation rate should rise by at least 9% with more flexible working hours and flexible labour market conditions.* A rise in per capita investment in human resources is required. Tax policies, venture capital and EIB support should be used to support the environment for private research investment*, R&D partnerships and high technology start-ups. The creation of a 'European Institute of Technology' is recommended+ and European Technology Initiatives partnered with industry. Structural Funds should be reshaped to focus on local employment delivery and economic growth.+ National plans to deliver the Lisbon Agenda to be established nationally, led by a 'Mr/Ms Lisbon'.+
Gothenburg	Achieving the objectives of the	The four priority areas for inter-EU	Action on improving public health	New infrastructure should be

[39] * Points that have been prioritised by the 'new' Lisbon agenda.
+ Points that have been added by the 'new' Lisbon agenda.

	Sustainable Development Strategy requires major investment in innovation and research.	agreement are: *climate change, transport, public health and natural resources*. Economic growth must be 'decoupled' from resource use and the contribution of electricity produced from renewable energy sources should be increased. Prices ought to be linked to their environmental effects, particularly in the fields of transport and other high impact goods and services. The Common Agriculture Policy should encourage moves to environmentally sustainable production.	should include measures relating to infectious diseases, antibiotic resistance, food laws and a European surveillance and early warning system on health issues introduced. The EU policy on climate change should be implemented. A sustainable transport system must address rising volumes of traffic and congestion, noise and pollution. This would involve greater investment in public transport.	devoted for a modal shift in transport. Natural resources must be managed more responsibly as they cannot continue to grow at the same rate as economic growth. Priority should be given to reducing levels of waste, maintaining bio-diversity and preserving ecosystems. CAP should encourage change in production methods sand the Common Fisheries Policy should address the problem of over-fishing. The EU Integrated Product Policy, aimed at reducing resource use and the environmental impact of waste should be implemented in co-operation with business.

6.5. Policy recommendation from 3.3 project results

As expressed several times throughout the present and the past interim report, the main aim of the work of the project team is to set up a sound scientific and political basis to suggest a guideline for an effective distribution of structural funds, with the final goal of balancing the regional differences. In our approach, and by the respective research, such guideline should rely on the concept of regional capability to be competitive in sustainability.

The methodology explained in the previous chapters has provided a means to make this concept operationally assessable, in the very end, by map and/or database reading.

Therefore, the policy recommendations that are presented hereafter, are based on the above defined procedure, which, at this stage of the work, is still to be perfectioned. Nevertheless, the main outcomes of both basic indicators and final determinant processing and mapping, although far from being totally reliable and validated, allowed a readout of some well-known or new but realistic regional behaviour/performances which, in turn, led to what is here presented.

In order to compare the national and regional background that allows the redaction of the new Structural Funds' Plan (SFP), it's necessary to build the conceptual scenario of competitiveness in sustainability. *This represents the first general policy recommendations*.

It is to be conceived according to the European directives and through the definition of the determinants, based on the criteria and parameters to be assigned in order to calculate their functionality towards the objectives of this project.

To plan a territorial capability of competitiveness in sustainability, it is first of all necessary to complete the following steps:

- fix and share a common lexicon (common language)
- define the 'quality plan' applied to the plan's procedures and process
- define the modalities of acquisition of certified data
- arrange the general architecture to apply the systemic method
- arrange the systemic architecture of the Capability Framework, the Programmatic Framework (the present framework of EU institutional laws, norms, directives and instruments), the Project

Framework (modality of granting of the new Structural Funds) and the modalities of relation

- arrange the contents and cognitive procedure to express the *ex ante* judgement, by applying the systemic-qualitative and quantitative method to every determinant of the Capability Framework and to their interrelation
- arrange the contents and the procedure to apply the systemic-qualitative and quantitative method to every component of the Programmatic Framework
- arrange the contents and the procedure to apply the systemic-qualitative and quantitative method to every component of the Project Framework and to their interrelation
- design the architecture of the information and management system
- design the SEA and insert it in the architecture of the information and management system
- define the contents of the territorial governance

It has been made a comparison among the issues concerning the several ESPON projects in order to point out any disparity connected with the competitiveness within the framework of sustainable development (Creation of a new objective 'regional competitiveness and employment; - Territorial cooperation programmes based on the Lisbon and Gothenburg priorities).

The first results suggest:

Policy recommendations have generally been organised according to level of governance (European, national, regional, alternatively referred to as macro, meso and micro). In some others it has been considered more appropriate to provide recommendations according to geographical region:

- To substitute the open method of coordination (OMC) introduced by the Lisbon Strategy because it had not proved satisfactory (i.e. OMC can be useful in reforming regulations or defining shared policy objectives, but it is not suited to the management of the Structural Funds or to the conduct of common policies)
- More interistitutional integration by planning and project co-operation to stop the more accentuated competitive tensions at regional level (i.e. more coordinated policies on fiscal matters)

- To streight real policies of internal cohesion within the Member States
- there is a need for greater synergy with national policy, in particular as regards sectoral policies with a major impact on regions
- the obligation of making combined use of the three Structural Funds in order to finance the regional development programmes, integration enabled the yoke of sectoral policies to be broken. It became a classic approach for resolving social problems, problems of unemployment, the struggle against social exclusion, and for leading to operations involving urban renewal, rural development or treatment of industrial wasteland.
- Network cooperation is particularly embodied in the Community Initiative Programmes (CIPs), such as INTERREG, EQUAL, URBAN and LEADER. In order to stimulate innovation, the Union encourages regions or towns faced with similar problems to exchange experiences and to use their diversity and their complementarity in order to make progress
- . It provides them with methodological support in the shape of technical assistance. Recourse to "calls for projects" rather than to administered management of measures also gives more dynamism to local projects that are opened up to competition
- To make increased use of private funding

In order to introduce specific policy recommendations stemming from the analysis of the project 3.3, the approach has been based on both the national and regional capability to be competitive in sustainability (thus following the four determinants division), and the project topics with respect to the renovated Lisbon/Gothenburg Strategy.

About I&R

a) *For national level it is proposed*:

- to draw some common measures (sub-forms of operative and infrastructural project) directly dedicated to the very low I&R profiles. These measures could be organised in sectorial interventions, including into the cooperative network at least a country with high or medium-high profile and one with a medium-low one;

- to prefer and involve as Lead Partner the Eastern countries, measuring their reliability with respect to their financial national plans. It could be a measure of their real intentions to invest in an

appropriate infastructural basis (need to have I&R exchanges and IC society);

- the national policies must be addressed to sustain the population access to Information Society (incrreas the population "surfing the web") in great part of European countries;

- the national policies must be addressed to sustain firms access to the Information Society in Eastern countries and Mediaterranean area as a base to utilise into Global policies;

- the education offer must be revisited and re-organised on a common base to obtain – in a medium time perspective – a more efficient human capital structure (looking at a new Innovative Dependency Index). Particular attention must be put on the medium age population and their possible re-involvement into the productive system with new responsibility positions. To make this feasible, it is necessary to operate from the tertiary education level with life-long learning policies;

- sectorial policies must innovate and restructure the knowledge innovative structures and R&D infrastructures with the help of new telecommunication systems to sustain a very intense exchange between research products and their applications and operative level.

b) *About regional level, it is proposed*:

- to use the good regional level obtained in a lot of cases to experiment the effective link with the local job market;

- to open the access to new Structural Funds at a more strict joint between SM firms-regional institutions-educational/research system;

- to ask a major local dissemination of SF projects into local/regional to open the EU participation at the public-private cooperation, favouring a better integration with the EU vision of IC society;

- to pay more attention to involve into new SF education access both the Mediterranean and North Sea regions, and the Baltic ones, including Estonia, Latvia, Lithuania and the Eastern European regions. It needs to balance the EU offer and mobility of Human Capital, more positive in the Eastern regions than old ones where the average age of population is higher;

- to ask at regional level (perhaps by COR?) to actualise the education policies at the international needs, particularly with respect to tertiary education level is, generally medium-low o low i.e. Mediterranean regions;

- to contribute at having got almost same Pentagon, Sweden and Finland regional level in order to realise new knowledge innovative structures both at EU/national level than regional one;

- to realise more horizontal connection of telecommunication to guarantee a major integration of the Europe system, overtaking the design of the positive '**Y**', especially using new technologies contributions.

About Global Local Interaction

c) *About national level, it is proposed:*

- to ask the quickly full reception of major European and international agreements;

- to ask the quickly full reception and experimental use of the European strategic assessment processes, particularly Enviromental Strategic Assessment applied to policies, programs, plans at different subsidiarity level of constitutional country organisations;

- to create a common language in the global 'arena' of sustainability and sustainable development.
- to share some principles and the relative applying rules about G/L governance;
- to stress the EU countries positive attitude (transforming it in a virtuous behaviour) in front of making sustainable plans;
- to sustain some Specific Environmental Concerns as Kyoto with an appropriate technological support (e.g. IPPH, BAT, etc.) particularly into delocalisation investments towards the new Eastern countries;
- to guarantee an appropriate level of security to population migration into EU countries re-scripting the relative agreements. In this picture, it is fundamental the metropolitan capitals role of the old European countries and national borderline regions. In this latter case, it needs to be discussed the role of boundary regions and their planning choices.
- to valorise the benckmarking studies about tourism, stressing the local and endogenous resources and their sustainable use, putting more attention to differenciate the single project, in order to be cooperative at at European scale and competitive at global one;
- to valorise projects which link tourism to education mobility, or where this relationship appears and is linked to the global cultural system;
- to valorise the researchers exchange on the basis of applied projects which involve the use of new technologies and their international patent;

- to launch specific projects about the active population and its redistribution with relation to job market, particularly in coastal or boundary regions, looking at having and maintaining a good social interaction.
- to launch specific manufacturing enterprise policies to innovate this sector, e.g. fixing common new labour cost values and fiscal pressure to re-launch the internal product market in the respect of local productive identity;
- a particular policy about the energy self-sufficiency and the carbon re-launching with a parallel attention at the experimental use of sustainable technologies in different sectors. For this aspect, it could be good to look at the government position in front of nuclear energy choice, too and at the substantial absence of energetic raw materials;
- to improve the general territorial appeal by territorial marketing studies to offer to the international investors some positive places in alternative to the capital regions;
- to activate structural interventions about multimodal accessibility involving them in the future ESDP and the EU Infrastructural Plans. For this, it could be needed a revision of actual state of projects into corridors and network connecting, e.g., Adriatic and the Eastern regions, or the Portuguese-Spanish-French one. In this review we need to put major attention to the intra-regional organization, too, particularly in the Northern countries;
- to contribute for having a common country fiscal pressure (on the example of flat tax) offering a "on homogenous blocks" picture at the global system.
- to make a revision of the current economic variables, trending to obtain a common level of e.g. Labour Cost Index, Long term interest rate, etc., also a real that need economy interaction;
- to implement R&D infrastructures for each countries studying strategic localisation in different regions;
- credit institutions level and insurance companies must be object of common and dedicated policies, to balance their localization too, and to sustain a better general management attitude;

d) *About regional level, it is proposed:*

- to stress the adoption and application of common general Environment Concern at regional level, integrating them with more specific enterprise technical and technological measures;.
- to resume the environmental protection measures into a Unique Text or Manual to sustain international and transnational cooperative programs, plans and projects with regard to ESA, EIA, BAT, IPPH, TQ;

- to measure the sustainable level of population change into large areas and metropolitan regions to re-design centrality places into the ESDP and the polycentric/polinuclear regions guaranteeing qualitative choices about settlement capability and its good life quality;
- to sustain specific cooperative projects between well known tourist places and Eastern regions; favouring the peripheral or internal regions that show a low participation at this phenomena capable to picture their great cultural and historical tradition. For them the EU new project by Structural Funds can think new and innovative solutions linked at the local identities, probably less competitive on the short period but more sustainable and cohesive to have a better offer about the tourist marketing;
- to link the tourist phenomena to the young mobility into the exchanges of European student mobility that involve the same regions of the tourism outbound. Of course, this strong relation should be oriented to sustain the family income and the European regional GDPpps per capita, too, maintaining the the different cultural positions and offer in front of educational and knowledge system prospected by globalization and IC society;
- to confirm a more open and global position towards the student outbound regional mobility, researcher mobility, bringing the regional systems to be very much attractive for the researchers which work in the technological fields that require a strong link with enterprise system too or the availability to make network in scientific/technical projects, favouring the cultural and operational exchanges;

The previous considerations could suggest to introduce a new topic in Espon projects in order to study the* 'research/education delocalization'*.

- to stress the delocalization of these phenomena with regard to population mobility, particularly in borderline regions;
- to confirm and subscribe a regional stability pact about the active population using the cohesion regional funds to reinforce the local social interaction, involving in this pact the manufacturing enterprises, to sustain the bottom-up structural change in economic European activities, in the past years focused on manufacturing production and local trade activities;
- to maintain the productive system identity changing the regional economic model by specific fiscal and financial instruments;
- to consolidate the internal goods trade and services trade, to build a common economic base using the same rules of the free EU market circuits and to favour the internationalization position of regional systems and city-regions;

- to homogenize the regional fiscal pressures involving the public service offer and the labour cost, for re-organising the economic situation on the base of a project which be looking - on the medium period - at interest rate, the banking status and attractiveness elements for transnational investments. This perspective could re-launch common organisational rules of I&R and its infrastructural base; but also the regional *Economy capability to make Interaction* by a dedicate policy about credit institutions and insurance companies to guarantee a positive performance and offer, a more strategic localization organised on endogenous models, reinforcing the existing external links;
- to re-organise a balanced distribution of management attitude with respect to the global financial interaction and the regional capability to have a real contact with the global vision;
- to contrast the highest regional concentration favouring new externalities and economic territorial advantages;
- to review the role of peripheral area involving a major number of regions, independent from the general economic or material resources, but on the base of social cohesive attitude and local population-enterprise-policy makers relationship.

About Quality

e) *About national level, it is proposed:*

- to use more indicators than one (e.g. GDPpps per capita) to assess the country positions;

- to harmonise consumer prices index towards a common medium level in all UE;

- to link the level of employment (employment index) and its organisation in the traditional industrial regions to the de-industrialisation process;

- to harmonise the consumption aggregates (at current prices) towards a common medium level in all UE;

- to change the parameters to assess general economic performance (now calculated by traditional economic variables) to mitigate some specific situation linked to the growth of consumptions and prices about the goods and services due to the enlargement;

- to change the parameters of calculation of the purchasing power looking at EU goods of large consumption;

- to consider the *infrastructural variables of cohesion* as a significant measure of welfare as well as the internal integration tendency of the

EU states, and to propose new welfare common policies about health, recreation services, education, etc. *It is then possible to look at a first possibility to organize some cooperative intraregional transnational areas, on the base of a similar infra-structural 'corema' (i.e., France, Italy, Austria, Switzerland, Germany; or Finland and the three Baltic republics*);

- to complete the network of physical accessibility and multimodal organisation, and horizontal TCL development by new and advanced technologies;

- to consider the cohesion variables (see the previous list) as significant base of starting up development projects into peripheral areas and communicating between different people to exchange cultural contributions too;

- to consider *life quality* as a complex synthetic index, representative of the regional identity into EU context, using it to measure the results of SF interventions;

- to ask the full national and regional reception of the "Governace White Book 2001" considering *government quality* a fundamental point of European integration and a measure of the common European political feeling;

- to consider the government quality as a test of the trend and the attitude towards a common institutional and constitutional European goal;

- to use the subsidiarity principle and rules to create a link between government and governance, looking at the territorial government both as in a more general political bottom-up vision (national policies in agreement with local policies, programs and plans), favouring intra and interregional cohesive instrument, as well as a new intergenerational pact between state and citizen; and as opportunity to re-define some equal distributive rules on ethical bases and to apply basic principles (the sustainability) by a substantial choice of power exercise.

- to fix different governance rules with respect to the geographical/territorial scale of application (urban, metropolitan, regional) to clarify the different territorial and productive aims, deciding the strategies to catch them up, monitoring the performance and cohesion;

- to consider the governance rules a possible operational substitution of EU open coordination method and a support of the SF project

choices, which is capable to accompany the European technical and political working method from the beginning to the end;

- to consider the national government and local levels as governance institutional promoters, suggesting praxis, procedures, guide-lines useful to orient the investors, enterprise systems, and entrepreneur's action to the project "best practice";

- to use the governance for measuring the efficiency of economic and territorial actors and introducing innovative methods into planning (i.e. to define new and appropriate economics and financial strategies), involving the administrative system (management), the political system (board), the law system, the citizens, the productive system, etc. identifying and re-modeling both the technical-financial incentives to catch up common aims, and the procedural choices to have an efficient and sustainable development project;

- to ask the adoption of Total Quality norms, Environmental Total Quality (e.g. Emas) and Corporate Social Responsability into the territorial plans and enterprise and institutional actions as management and control platform of a comparative model of competitiveness;

- to improve the citizenship confidence in some countries working on the participation at the institutional life by communication systems to explain the European choices, e.g. in matter of financial and monetary policies;

- to propose a common reflection about *Social Quality and Cohesion*, evaluating the quality of some indicators at the base of social and welfare system, as particularly capability of sustain the balanced and satisfied relationships into the whole civil society (from stakeholders to shareholders, etc.). These indicators could be different for EU countries, but their political organisation and national/regional cost must be the same with regard to the medium income distribution;

- to consider the need of implementing Social Cohesion resources to contrast the risk of social exclusion, particularly for children and young people, and the general level (risk) of poverty in Mediterranean area and along the Eastern boundaries. In this case, it could be useful to reorganise the social wellness attitude with dedicated SF which take into account also the equal opportunities, with attention to the gender-related issues in employment and social-political life;

- to sustain the social-medical research on the fertility, particularly in these areas where the social organization is living a critical phase or under a restructuring phase.

f) *about regional level, it is proposed:*

- to refer to the results on the issue of social wellness attitude to reinforce the cooperative regional project;

- to evaluate economic variables in relationship with regional structural situations, looking at productive de-localisation to contrast the open global market and re-balance with new network forms of transregional productions, involving the new Eastern regions;

- to revisit the regional welfare system towards a right balance into both the old regions and the new ones, with particular consideration to: the health-care system infrastructures in front of the regional specific demands; the tourism facilities availability and receptivity, linking it also to the fitness and health offer;

- to develop technological regional equipment, by transnational cooperative areas to further develop the society of information, communication and knowledge and the new types of technologies recalled to obtain the Lisbon objectives;

- to define new inter-municipal waste projects, particularly in matter of hazardous waste and waste recycling, estimating the optimal territorial dimension of disposal relationship with new technology and energy sufficiency (e.g. FUA);

- to use SEA for building a regional Enviromental Picture of knowledge to assess the project offer about the climate change and other environmental issues to contrast the growth of waste and natural hazards;

- to reduce the dependency of regional social cohesion resources from the income distribution;

- to contrast the risk of children exclusion and its dependency from the level of poverty and to reinforce the EU regional systems which have already received some political cohesive inputs and pushes;

- to dedicate priority projects related to the Ireland-United Kingdom system, Estonia, Slovakia; immediately after, to the France-Italy axis, the Cyprus-Greece-Bulgaria-Romania one with an involvement of the Latvia-Lithuania-Poland- Czech one. Some attentions should also be drawn towards the regional positions in Switzerland and Poland with the addition of Slovakia Rep., Czech Rep., Slovenia, Estonia, United Kingdom. This confirms the previous suggestions about the transnational cooperative priorities in these areas. The assessment of *"Life and environmental quality"* adds to the critical Spanish situation the one of Italy, Ireland and Greece, thus

introducing a more detailed priority into cooperative transbourdary field.

The territorialisation, in addition to its fragmentation, shows and confirms the critical situation in many regions of the previously recalled countries. This is particularly evident in a great part of Spain, Ireland and Austria, the North-East of UK, in the Centre-South-East of Italy, a great part of Greece-Bulgaria-Romania, the boundary regions in Poland towards Lithuania and Latvia (included, as well), the central zone of France.

About Resources and Funds Interaction

g) *About national level, it is proposed:*

- referring to the *Policies for the Lisbon Strategy (Structure)*, the Lisbon recommendation for regionally led innovation poles would seem to be most appropriate, particularly if backed by EIB funding, also as suggested by that strategy. To compensate for the inadequacies in Central and Eastern Europe, new strengths may emerge by building up interventions in leading areas as suggested by the team leaders in ESPON project 1.1.3. The map indicates that the central areas of the capital cities of Poland and the Czech Republic are already leading the way in this regard. Given the situation of peripheral areas, the recommendation of ESPON project 1.1.1 – to prioritise the provision of higher order services to second and lower tier cities would be pertinent – in order to broaden the competitive position of the EU as a whole. In addition, targeting isolated rural areas to tackle depopulation as suggested by ESPON 1.1.2 and 1.3.2 teams would perhaps produce a more balanced picture in the future;

- referring to *Firms Aids*, polarisation as economic support is fairly clear cut – virtually the whole of Central and Eastern Europe, Ireland and Portugal have the *lowest* level of state support to firms. In the latter two cases the reason may be reliance on EU monies;

- referring to *Human Capital Expenditure*, here there is less polarisation, a more even spread of expenditure, except for Greece, the Czech Republic, most of Hungary and Slovakia and parts of Spain and Portugal.

- referring to *Public Expenditure for Employment*, to contrast the diagonal concentration of high public expenditure from Ireland through to Italy, with the South West, North East and Central East exhibiting much lower levels of expenditure. It would seem logical to follow the Lisbon Strategy in terms of human resources – i.e.

building up the service sector in IT, telecommunications etc. in these areas to sustain more specific Human Capital Policies

- referring to *Climate and Natural Resources Expenditure*, to sustain the expenditure in the East, only matched by Southern Portugal, Corsica and small areas of Southern Belgium and Northern Italy. Recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems.

- referring to *Structural Funds and Accessibility by Population* it is interesting in terms of the dark red clusters and in the light of the recommendation from 2.1.1 that transport should be developed to enhance EU competitiveness as a whole – and not directed to national objectives. One would hope for a different map in 15-20 years if ESPON recommendations (1.1.1 and 1.2.1) of developing corridors between urban areas are followed (n.b. The choice of indicator for accessibility is interesting here - hours by car - in view of ESPON 1.2.1 policy conclusions and the Gothenburg Agenda.).

- referring to *policies for the Gothenburg Strategy (Structure)*, it needs to contrast the lowest expenditures of Netherlands, Belgium, Germany and then Central and Eastern Europe, arriving at the same systemic coverage. In the Gothenburg Strategy public health is one of four priority areas for inter-EU agreement, thus more standardisation in the future would be expected.

- About *Public Expenditure for Poverty and Ageing* (Map D7b E), it need to have higher expenditure. Lower levels of expenditure elsewhere may to a certain extent reflect demographic differences. High spending may also demonstrate the need, according to the principles of Lisbon, for labour markets to become more inclusive of older workers.

h) *About regional level, it is proposed:*

- to contrast the constitutional differences which play an important rule in the application of Lisbon and Gothenburg strategies;

- referring to the *Policies for the Lisbon Strategy (Structure)* some regions of UK, Belgium, Austria, Germany, Netherlands, France, Denmark, Sweden, Finland are shown to be strongest for the effect of an autonomous regional government (federalism or similar system).

They could be represented a good bench as well as the central areas of capital regions;

- to organise an homogeneous system of *Firms Aids*;

- referring to *Human Capital Expenditure*, it must be linked to *Public Expenditure for Employment* contrasting a diagonal concentration of high public expenditure from Ireland through UK to whole Italian regions, as well as the low expenditure in Spain, Norway, Greek to follow the Lisbon Strategy in terms of human resources. In these regional areas it should be necessary to sustain more specific *Human Capital Policies*, as well as in Austria and Belgium.

- referring to *Climate and Natural Resources Expenditure*, it needs to contrast a substantially lower expenditure in the Eastern regions. For them, some recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems. Generally, the old EU regions have got an *high* and *medium-high* conscious about the environmental problems and a lot of them are drawing long-term plan to arrive at the full sustainable development (see the recently re-lunched of the Kyoto Protocol). In a lot of cases, this choice is sustained from the regional enterprises system (see Quality).

- in relation to *Structural Funds and Accessibility by Population*, it is necessary to balance *high* values of the capital regions with the few level of Campania and Sicily (Italy), Herefordshire and Shropshire in the North of London (UK), Norte e Centro (Portugal), Castilla y Leó (Spain), Belgium and Rastand Holland (Netherlands), where there is a major sprawl of productive settlements (periurbanisation/rurbanisation phenomena) which needs of a quikly access;

- referring to *policies for the Gothenburg Strategy (Structure)* and *Public Expenditure for Public Health* it needs to reflect about different priorities in the development regional plans. I.e., the public health to answer at Gothenburg Strategy is one of priorities of Mediterranean regional governments, but it is not the same in Baltic area or in other countries, where the welfare organization is more balanced from a long time and the Public Expenditure for Public Health has a constant and continuous level.

- to stress a radical changing in the regional government priorities into some countries and their more attention to apply the European policies about *Public Expenditure for Poverty and Ageing*, the highest

expenditure is apparent in the over same regions. It should be presented as a measure theof cohesion trend, too and to influence the future *level of cooperation* for the Interreg project use of resources involving all the regions respect to a medium-high level of old regions.

- to over come by new ESDP the North/South divide because it is the strongest division, followed by an East/West divide and to a certain extent a Centre/Periphery one.

- referring enterprise aids, polarisation is a possible virtually economic support for the whole of Central and Eastern Europe to involve the old and female workers, too.

6.6. A first Scenario to be faced with

This scenario describes a situation where the EU pursues a strong two-pronged strategy of economic competitiveness and territorial cohesion. This is currently articulated in the Lisbon/Gothenburg strategy that aims at competitiveness, cohesion and sustainable development and thus echoes the principles stated in the ESDP. The concept of polycentricity is used as a vehicle to achieve implementation.

6.6.1. Scenario hypothesis

In this scenario, the EU embarks on a mission to implement the Lisbon/Gothenburg strategy. While large enterprises and advanced regions will adapt to the new requirements based on (own and external) private resources, knowledge-based and innovative development of small and medium-sized firms and of more peripheral regions will need to be supported by EU and national policies. It assumes also that a more differentiated approach will need to be applied to countries and regions that are in quite different situations. According to the EuroTigers strategy, support is given to areas with the potential to become competitive on a global scale. Consequently, new competitive knowledge and innovation centres will emerge both inside and outside of the "Pentagon" and not within, but around large urban centres. The EU and cohesion policy will play a more active role in these developments than previously. The most lagging regions are largely "written off" as having little promise for improving the EU's competitiveness. Like the other scenarios, it is assumed that current globalisation trends will continue as well as the rise of the knowledge economy. It furthermore assumes that external conditions will be

favourable, or at least non unfavourable, and enabling to implement the reform of the EU.

6.6.2. Driving forces

The main driving forces of this scenario are the ambitions of the Lisbon/Gothenburg strategy and the midterm review, European enlargement, globalisation and increasing pressure from international competitors in the knowledge economy. These will be considered in turn.

- *Critical reports:* Lisbon/Gothenburg remain the best statement of European ambitions behind which most member states and citizens can rally. The midterm reviews only emphasise the fact that more efforts — not less — are needed at the European scale. This is consistent with the ESDP and many ESPON findings. In addition, insights into the knowledge economy show that 'softer' criteria are also vital in securing a region's competitiveness, an argument for retain the aspects of cohesion and sustainability in the Lisbon agenda.
- *Enlargement:* there is a formidable task of reforming sectoral policy in a fair way to accommodate the new member states and bring them up to speed with the rest of Europe. It is acknowledged that the low starting point in terms of GDP per capita can translate itself into high annual growth, and thus interesting to investors.
- *Globalisation:* the mediocre economic performance of Europe in terms of annual growth could be augmented with the incorporation of developing regions (Euro- Tigers) gained by the enlargement into the EU.
- *Governance*: economic organisations (enterprises) will apply business strategies suitable to enhance competitiveness and innovation. Governments and politicians of member states, inspired by their responsibility for the future of Europe, will implement those changes in the institutions, lows and regulations at national and supranational level which are necessary to set the European economy on a new development path, without losing the specific European achievements and social traditions.

6.6.3. EuroTiger strategy

With the subsequent enlargements the European Union became more heterogeneous. Heterogeneity poses, without doubt, a threat to community governance, but simultaneously it is an opportunity as well. The European Union has to apply a more differentiated approach to countries and regions being in very different situations and at rather different development level. A differentiated approach is not necessarily contradictory to integration and can, in specific situations, even facilitate and promote integration. In addition, although the new member states are lagging economically, for precisely this reason they have great growth potential, which far exceeds that of the elite areas in Europe in proportional terms. This is the essence of the EuroTigers philosophy. The new member states of the Union offer a suitable ground for experiments with new policies and new methods of government. This has already been realised by the European Commission. For example, the European Union applied a 50:50 share between Guarantee and Guidance sections immediately after accession. This proportion will bring about a much more rapid structural change in rural areas than what we could observe in the old member states. There are many ways to restructure European agricultural, social, R&D, cohesion and structural funds in order to promote stronger structural change and growth. These changes can be applied first in the new member states, and if they work well there, they can be extended to the whole territory of the EU.

The economies of the new member states — and those of the "old" cohesion countries as well — are now growing faster than the EU average. Obviously, their economic weight is not sufficient to give a momentum to the overall growth of the EU, nevertheless, theirs can be a valuable contribution to the dynamics and to the more balanced spatial structure of the EU beyond their proper weight, if managed properly. That is one of the main elements of this scenario.

The midterm review of the Lisbon/Gothenburg strategy provides a new impetus for change within Europe. The sobering conclusions serve as a call for action to implement the strategy in its full form: competitiveness, cohesion and sustainability. This becomes a rallying call for all member states; rather than accept a Europe of two speeds all member states must band together to ensure that Lisbon becomes a reality. In order to raise the political support necessary in an enlarged Europe, the strategy devised to unite old and new member states stresses the complementarity of competitiveness and cohesion. Ireland is held up as a 'EuroTiger', a shining example of successful use of structural funds, and a model for the N10. Its progressive

stance on intra-EU migration is also praised.

The essence of the Tiger strategy is to identify specific areas and sectors that hold the most promise for rapid and sustainable economic development. But these are not necessarily the elite. Proponents of the EuroTiger strategy see devoting resources solely to the performing areas as flawed for three reasons. First, they already have such formidable resources that any extra support provided by the EU would be very small in proportional terms. Second, since these top-performers are already successful (by definition), they most likely have the resources to remain competitive without EU assistance. Third, since most of these institutions and regions are located in relatively wealthy member states anyway, if support were needed, this could be granted at the national level. The EuroTiger strategy, in contrast, seeks out instances where it can make a decisive contribution. The philosophy is similar to that of regional policy where funds are only given as a critical extra push for a project, rather than comprising a significant share of the total costs.

Like in spatial development, the motto is that polycentricity constitutes the golden mean between equity/welfare and efficiency/redistribution. This has the clear advantage of broadening the base of political support for the strategy, seen as a prerequisite for the implementation of the Lisbon strategy (COM(2005)24, p. 12). The experience of the last years seems to confirm the viability of this strategy. Not just the new member states, but practically all capital regions have increased their relative level of development (compared to EU average) in the Northern, Southern and Eastern periphery: Stockholm, Helsinki, Budapest, Bucharest and Warsaw with more than 10 percentage points. Beside capital regions, there are a few other regions outside the Pentagon which can fulfil the growth pole function. This means that without these regions the "catching-up" process in these countries could not take place, these regions and cities are actually the "carriers of growth" in the relevant areas. It is a fact that cannot be disregarded. It is assumed in this scenario that EU policy will build upon this process as a very important factor of European cohesion policy and, simultaneously, factor of European growth and competitiveness. Additionally, this development process will largely contribute to a more polycentric structure of European space and urban network.

6.6.4. Implementation of the strategy

This section complements the ESPON conclusions (see 6.2. above). A

short summary of the various interventions into strategic decisions and sectoral policies that are required to realise the strategy outlined above is provided.

- *Agriculture:* CAP in its present form is not viewed as supporting the EuroTiger strategy because it tends to work against cohesion and supports an old industry. There is little economic reason for maintaining the current level of European exports of agricultural products, made inexpensive by lavish Pillar 1 subsidies. However, Pillar 2 does seem to hold some promise for maintaining the environmental quality of rural areas.
- *Competition:* internal market rules (including public procurement) must be rigorously applied as the development of new markets necessitates unobstructed flow of capital and labour. Markets must not be distorted with national state aid (usually to failing industry), but instead aid must be given at a EU level with the goal of acting as a catalyst to allow exciting new businesses to gain their footing.
- *Enlargement:* this is a dynamic process in this scenario. Nevertheless, this process is not exclusively guided by market expansion and political control considerations, as in the first scenario. The deepening of integration is as important aspect of the process as widening of the EU. Therefore, the enlargement process is subject to reasonable limits, set by political, social and economic absorption capacity. The present candidate countries (Bulgaria, Romania, Croatia and perhaps Turkey) will join the community but further enlargement is not to be expected within the time horizon of the scenario. The policy approach toward individual member states or groups of member states will be differentiated to reflect the different potentials of member states.
- *Environment and nature:* value for a clean environment and natural heritage is seen as an asset of Europe, rather than a liability, which sets it apart from its major competitors. Natura2000 should be implemented throughout Europe and environmental standards applied firmly because all of Europe's citizens have the right to clean air and water. Economic development does not have to come at the cost of the natural environment.
- *R&D:* To meet the Lisbon objective of 3% of GDP, the budget for research will need to be increased dramatically. With regard to the Framework Programme, an evaluation of FP6 showed that it was 'almost impossible' for SMEs to participate in the

'Networks of Excellence' programme and that it was particularly difficult for newcomers to become partners (High Level Group chaired by Ramon Marimon, *Evaluation of FP6*, 21 June 2004). In EuroTigers, this problem is remedied with specific measures to ensure that new and smaller organisation also reap the benefits of EU R&D policy. Avoiding uneasy compromises, the principle of scientific excellence is consequently used as the core criterion for decision-making within the framework of European R&D funding. However, instead of taking for granted a ruthless competition for scarce financial means, European policies (in coordination with national policies) follow a strategy to encourage researchers and small businesses in less favoured regions to participate in innovation processes either funded by public means or by private resources. Such policy actions to strengthen development cores in disadvantaged areas are accompanied by initiatives to improve the mobility and the skills of the workforce, e. g. by improving the accessibility of the emerging development cores and by offering training measures. Spatially concentrated efforts to improve the quality of living in these cores will lead to a growing attractiveness of these locations for young, well educated people (whereby, however, the attractiveness of the agglomerated spaces in the core of Europe remains greater. Large companies possess and use the capability to manage these training requirements themselves whereas small firms benefit from public support, e. g. from initiatives to create "learning regions", based on private-public partnerships.

- *Regional policy:* the tenets of the policy proposed in the *Third Cohesion Report*(2004) are largely consistent with the EuroTiger strategy, insofar that both competitiveness and cohesion are objectives. However, EuroTiger goes further in linking the two, taking full heed of the recommendation of ESPON 2.1.2 to facilitate coordinated implementation of regional and R&D policy. The same report has shown that R&D investments in less developed regions may deliver more value-for- money as the impact on accelerating the 'catching up process' is greater.
- *Transport:* as the EuroTiger strategy rests on the idea of polycentricity, this will become the Leitmotiv of the EU's transport policy as well. For the most part, this corresponds with initiatives already underway: the linkage of major 'peripheral' centres with the core of Europe with high-speed connections. However, a budgetary increase is necessary to

translate EU-scale priorities into concrete results.

6.6.5. Impacts

Since the ambition is to enter the economy scenarios in the MASST model, only certain qualitative and rather guarded statements can be made here regarding *expected* results. These will have to be borne out later by the quantitative results. Below the aggregate and territorial economic impacts, rather than the predicted spatial consequences, are given.

- *Aggregate economic impact:* In a report to the European Commission *Delivering Lisbon*, the authors state that "studies and simulations, conducted by the Commission, have concluded that the simultaneous and integrated pursuit of reforms [akin to the EuroTigers strategy] will produce an increase in the GDP growth potential of the Union in the order of 0.5-0.75 percentage points over the next 5 to 10 years" (COM (2004) 29 final/2, p.2).
- *Territorial economic impacts:* Territorial cohesion in Europe would decrease at the national level as more competitive regions seize new opportunities, and are actually stimulated in doing this by the EuroTiger adapted structural funds. Territorial cohesion would however increase at the macro (European) level as secondary regions acting as carriers of growth — like Prague, Budapest and Warsaw — catch up to and in some respects even overtake regions in the Pentagon.

  At the meso level, disparities within these countries will increase (as it has been experienced in the last one and half decade), since the large part of national GDP increment will be born by these leading regions. These increasing disparities can be regarded as of transitional, provisional character. Filtering down and "spread" and "pull" effects sooner or later will have their impact upon the growth of the other regions of the respective countries, though this internal catching up process might prove to be of rather long run character. Nevertheless, within countries there is always a budgetary redistribution process, so that poorer regions are beneficiaries of higher income generation in the growth poles even in the short run.

6.6.6. General considerations

This scenario visualises the implementation of the Lisbon strategy as it was formulated in 2004, with reference to cohesion and sustainability. There is an obvious link to be made between these economic ambitions and the three-pronged strategy of the ESDP. For this reason, the concept of polycentricity is also well adapted to the Euro Tigers strategy. The outcome of the scenario is slightly higher total GDP growth than the 'best foot forward' scenario and considerably higher growth than the next two scenarios. This is because of improved effectiveness of stimuli. The effect on territorial cohesion will also differ from the previous scenario. Here, it is expected to increase at the macro level (rather than decrease) but decrease at the meso level.

7. Networking

During the last period the 3.3 project Lead Partner had deep and continuous contacts with some other Espon projects as the 3.2 one (University of Bruxelles) and its partner in Italy (University of Milan); the 2.3.2 project (University of Valencia) and its Italian partner (University of Turin).

The 3.3 project supplied the methodological approach (STEM), data and informations to some projects and programs:

- Espon 3.4.2 project (of which M. Prezioso and her Working Group is partner);
- Interreg III B to support the *Study on traffic in Vienna* by Mr. Wolfgang Polasek, IHS Wien;
- Project "*Polydev*" (*Sustainable Development of Cadses Area*) Interreg III B CADSES Mis. 1.1 - III call **Lead Partner:** Regione Veneto (IT) **Partners:** Regione Marche (IT), Regional Center for Central and Eastern Europe (SLO), Statistical Region of Goriska (SLO), Primoraska Region (SLO), ANEM – Prefettura di Magnesia (GR), Prefettura di Fhtotida (GR), Regional Center for Central and Eastern Europe (SK), Università di Bratislava (SK), Municipalità di Sofia (BG) by Arch. Tiziana Quaglia -Regione del Veneto U.C. Pianificazione territoriale - PTRC, Via Baldassarre Longhena, 28 - 30175 Marghera (Venezia) – Italy. In this project M.Prezioso was requested as scientific coordinator;
- *Geoland project* by Dr Neil Evans, Research Fellow - CUDEM (Centre for Urban Development and Environmental Management), Leeds Metropolitan University, Brunswick Building - Leeds LS2 8BU;
- Italian Ministry of Environment (Sustainable Development Direction by Mr. G. Brunelli) about regional Environmental Strategic Assessment, opening a specific observatory on the 3.3 project progress.

The Lead Partner was invited to present the 3.3 project results in:

- the Open Day of the *2nd Geoland Forum* held in Toulouse on 10th December 2004;
- the *Geoland User workshop* – Observatory Spatial Planning, held in Innsbruck on 9-10th May 2005, by Mr. Luigi Mundula;

- METREX Nürnberg Meeting on 15-18 June 2005, by Mrs. Maria Prezioso;
- International Conference *European Territorial Cohesion and the Sustainable Development: Convergence and Competitiveness* organised by Lead Partner with University of Sannio (IT) and Italian Geographical Society, held in Benevento (Italy) on the next 6-7 October 2005;
- Italian Conference Giornate del Turismo 2005 *Competitività E Sostenibilità. Tipi di Turismo, Strategie d'impresa e Politiche del Territorio* held in Stresa (Lago Maggiore – Milan, Italy), on 16-18 Ottobre 2005 organised by University of Piemonte Orientale (Italy).

An other international formal presentation dedicated at the 3.3 project is envisaged on January 2006. It will be held in the University of Rome "Tor Vergata", Faculty of Economics, involving the Italian Ministery of Territorial Development and Infrastructure (Italian Focal Point).

A summary dissemination of the project results will be presented into a especial number (1/2006) of the review *Italian Geographical Society Bulletin* ed. by LP.

Some papers from 3.3 project are making ready on international reviews.

The 3.3 Working Group participated at all ESPON Meetings and at the LP ones.

The project was discussed into several TPG meeting, the last of which was in Lisbon on 8 July 2005.

The LP was and is in continuously contact with the MC project referee.

During this last period the cooperative research network reinforced in and out the 3.3 project and the results of the meetings, included the TPG ones, were very comfortable, sustaining the 3.3 complex methodological approach.

The innovative aspects of the project created a very good climate to have intensive and propositive discussions. The high quality of single contribution and the personal availability of the partners permitted to over come the differences of background and experience between partners, offering at the ESPON MC and EU policy makers a new point of view for looking at the Lisbon/Gothenburg strategy. We hope to have offered some little added values at the scientific/academic European discussion.

8. Further research issues

Regarding the further 3.3 project issues (Final Interim Report, June 2006), the further purposes will be the following:

- to collect the missing data with the Country FP help;
- with regard to methodological approach (see Cap. 4), to complete *Step 5* (Synthesis of the territorialised determinants and the building of the Composite Index of Territorial Competitiveness in Sustainability.with the relative mapping) and *Step 6* (Monitoring the performance achieved in competitiveness in sustainability);
- the definitive choice of the transnational cooperation areas, now only in draft in the present Report (see Annex II A, B, C and D)
- to complete the matrices policy actions-effect-territorialisated determinats to perform the specific national and regional SF choices (see Figure 30)
- to verify the final GIS operational procedure in order to connect scenarios and policy recommendations and to conclude the ESA operational procedure;
- to up date the territorial Lisbon/Gothenburg strategy in the light of new EU possible inputs.
- to develop Policy recommendations in an integrated or cross-sectoral way. In their development we will continue to work closely with the other projects in the third ESPON strand.
- to continue the study of other ESPON projects in identifying uneven and unequal development, areas in particular need for support in the context of the reform of the structural funds post enlargement and the identification of barriers to future potential polycentric development in order to include specific measures appropriate for lower levels of governance in line with our approach to competitiveness in sustainability.

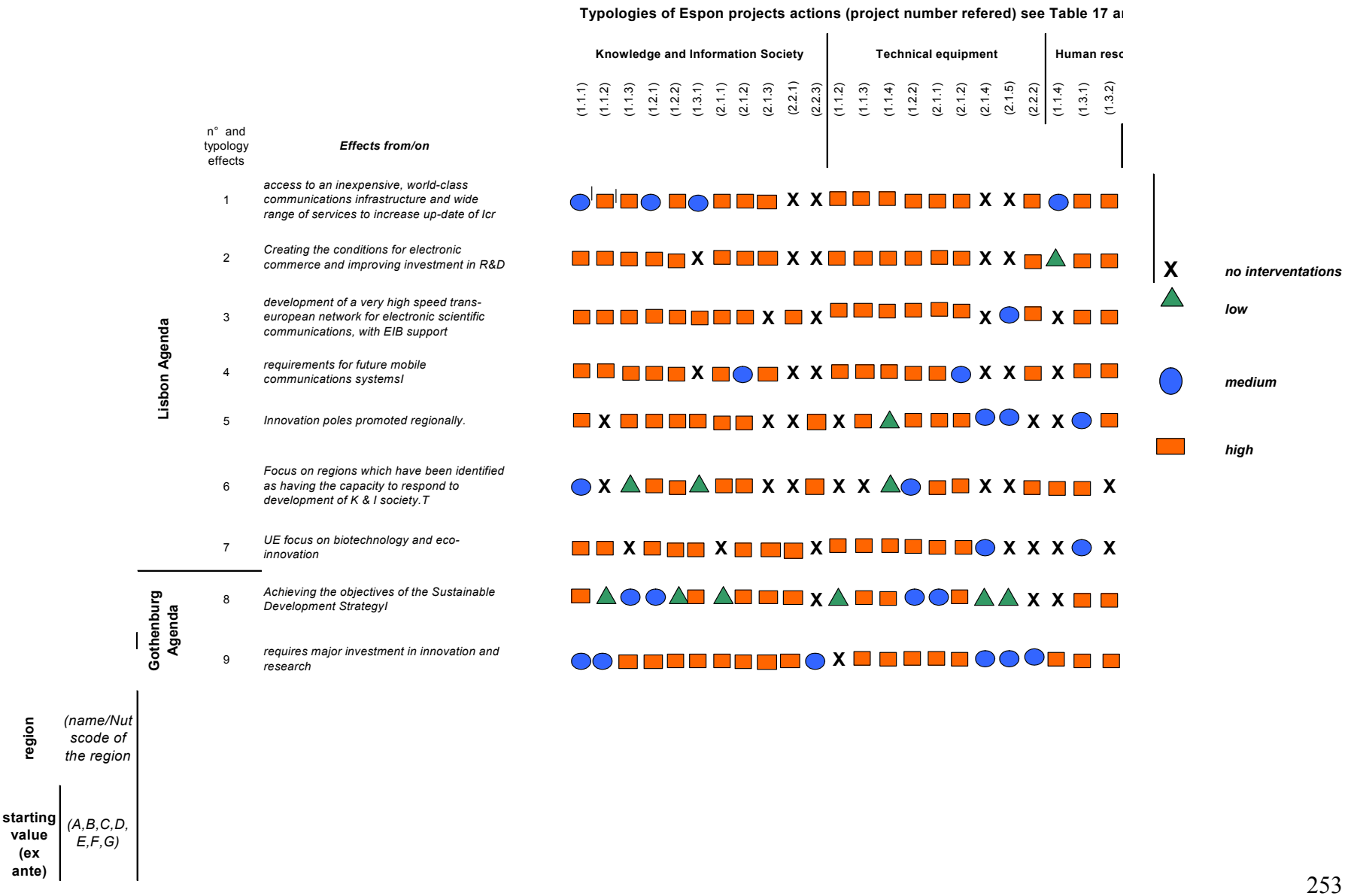
Regarding the further contributions that can come from territorial dimension of Lisbon/Gothenburg, it is possible to suggest the following hypothesis:

- to review the open method of coordination (OMC) introduced by the Lisbon Strategy
- to adopt the experimental use of the European Strategic evaluation processes, particularly Enviromental Strategic Assessment applied to policies, programs, plans at different subsidiarity level of constitutional country organisations;
- to apply Specific Environmental Concerns as Kyoto with an appropriate technological support (e.g. IPPH, BAT, etc.)

particularly into delocalisation investments towards the new Eastern countries
- to apply Total Quality, Total Environmental Quality and Corporate Social Responsibility norms at the enterprise and institution action;
- to study specific strategies about the offer of 'research/education delocalization'
- to apply the subisdiarity principle and the relative rules to create a link between government and governance, looking at the territorial government in a bottom-up vision (national policies in agreement with local policies, programs and plans), favouring the intra and interregional cohesive instruments into a new intergenerational pact between state and citizen. This represents also an opportunity to re-define the common rules about ethical and to apply basic principles (e.g. the sustainability) by a substantial choice of power exercise;
- to study the potential application of Social Quality and Cohesion principles, evaluating the quality of some indicators at the base of social and welfare system, as particularly capability of sustain the balanced and satisfied relationships into the EU civil society (from stakeholders to shareholders, etc.);
- to built a common model for contrasting the risk of social exclusion looking at the child and ageing ones;
- to use ESA for building an EU knowledge Enviromental Picture at regional level to assess the project offer about the climate change and other environmental topics;
- to study in the same contest life and environmental quality with regard to public expenditure for employment;
- to study into a territorial marketing vision the strengths that make more attractive the places to invest and work for development and sharing of good practices with public and private business partners, across Europe;
- to research specific supporters about innovation and tech transfer in a joint with technical assistance and advisory financial services provided to agencies working for creation and development of SMEs, looking at the question of Access Intellectual Property from research organisations

to include in the Espon researches the study of new instruments to better meet the Lisbon/Gothenburg objectives (e.g new risk capital instruments for SME start-ups using environmental technologies).

Figure 30: Draft of Policy effects assessment matrix for Innovation and Research



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<http://www.europa.eu.int/comm/research/era/index_en.html>

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5. Transport and Energy

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<http://www.europa.eu.int/comm/energy_transport/en/lb_en.html>

Energy Green Paper: Towards a European strategy for the security of energy supply
<http://www.europa.eu.int/comm/energy_transport/en/lpi_lv_en1.html>

6. Education, Learning and Training

Education and Training
<http://www.europa.eu.int/comm/education/policies/2010/et_2010_en.html>

eEurope (including the eLearning initiative)
<http://www.europa.eu.int/information_society/eeurope/index_en.htm>

Lifelong Learning
<http://www.europa.eu.int/comm/education/policies/lll/lll_en.html>

7. Environment and Sustainable Development

EU Sustainable Development Strategy
<http://www.europa.eu.int/comm/sustainable/pages/strategy_en.htm>

8. Spatial/Regional Issues

European Spatial Development Perspective (ESDP)
<http://www.europa.eu.int/comm/regional_policy/themes/spatial_en.htm>

Guiding Principles for Sustainable Spatial Development of the European Continent (GPSSDEC-CEMAT)
<http://www.coe.int/T/E/Cultural_Co-operation/Environment/CEMAT/GPSSDEC/default.asp>

Structural Funds
<http://www.europa.eu.int/comm/regional_policy/funds/prord/sf_en.htm>

Cohesion Funds
<http://www.europa.eu.int/comm/regional_policy/funds/procf/cf_en.htm>

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Annex I

Operational Procedures

30 September 2005

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

This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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

The partnership behind the ESPON programme consists of the EU Commission and the Member States of the EU25, plus Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

Information on the ESPON programme and projects can be found on www.espon.lu
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This basic report exists only as an electronic version.

As you will be asked for the name and address of the editor the Lead partner should as the responsible person of the project assume the role of the editor and give information accordingly.
The registration in the world wide catalogue is free of charge.

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Table of contents

Introduction

In general, the data were prepared in tables with the 1999 or the 2003 version of the NUTS2 according to the convenience related to which was the version of the majority of data provided. When the data to be combined were provided with a different version, a transcoding table was used.

When linked to the geometry of the regions, the differences between the two versions bring about some problems of aggregation or separation that have been addressed accordingly. Unfortunately, the new NUTS2 subdivision of Finland is not simple to address, as the changes involve NUTS3 subdivisions.

The mapping covers the countries of EU 25 plus Norway, Switzerland, Bulgaria and Romania; but it needs to be remembered the fact that it is often challenging to find comparable information and data for all these countries. Nevertheless, the main maps always cover all 29 countries, as a result of a "compensation" procedure of the data gaps, which has been performed in response of a specific request made by the CU regarding missing data: in a very rough approximation, the regions having no data were assigned a value according to the following rule:

- If the data gap regards a region within a nation otherwise covered, the value is the average value of that nation (this does not apply for France overseas regions);
- If the gap regards a whole nation from the former EU-15, CH or NO, the value is the EU-15 (plus CH or NO, if present) average
- If the gap regards a whole nation from the new accession countries, the value is the average of the remaining accession countries.

When such calculations were not possible, the gap was kept and drawn as no-data.

Anyway, for synthesis maps, the gaps have been filled up by the attribution of a specific rank (usually "C") to the missing region, according to a "prudence" approach to the estimation.

A refinement of the above described actions is envisaged for the final report, possibly performing a specific data collection during the last year of the project.

1 Innovation & Research

Indicators	Categories	Sectors	Typologies	Determinants
internet users	Virtual Population	Virtual shareholders	Virtual Society	Innovation & Research
firms with internet access	Virtual Firms	Virtual stakeholders		
available e-government services	Virtual Institutions			
universities students	Education structures	Knowledge creation education	Knowledge Innovative Structures	
Innovative dependency index	Human capital structure	Human Capital		
population with tertiary education	Human capital education			
population in life-long learning				
Science Parks that are members of the International Association of Science Parks (ISAP)	R&D infrastructures	Knowledge creation facilities	Innovation Status quo	
Business Innovation Centres				
Universities and High Level Research Centres				
Old technologies	Level of Telecommunication development			
New technologies				

STATUS QUO
VULNERABILITY

As already explained, for this determinant has been performed the linear normalization of the data: $(I - I_{min})/(I_{max} - I_{min})$. Therefore, class breaks for the Equal Interval classification scheme are the same for each indicator:
0.25; 0.5; 0.75.
Of course, the rank A to D is associated to the class breks according to its own meaning, "A" standing for "best performance" which, in turn, can be obtained either when the indicator gets its lower value or its greater one.

1) Virtual shareholders (VSh) = Virtual Population (VP)
Definition: estimated Internet users/pop (%)
Source: ESPON DB, Indicator IUI03N2, table 091_Telecoms_Data_N2i, from project 1.2.2, Eurostat
TIME: 2003
NUTS version 1999
Missing data: FR9
Notes: Data in the DB look different from those mapped.
Moreover, data gaps in the DB are instead covered in the report's maps (e.g. DK, EE, LT, LU, LV, MT, CY, NO). All of the above nations are single-regions, except NO, which has, anyway, the same class in the maps for the whole country. For them, the value from the EUROSTAT data which we have already used in the NUTS0 maps of the SIR were kept. When missing, the class rank from the maps was kept, putting into the records the mid value of that class breaks as declared in the maps. FI2, Aland, is also missing. As data for Finland are extremely different from the map classification. the same value of FI16, Uusimae, vhich has a GDPpc very similar to that of Aland, was taken
Here, data were not normalized because the data distribution is approximately identical in both cases (minimum 0.005 maximum 0.99)
Class breaks (Quantile): 0.15; 0.28; 0.36

2) Virtual Firms (VF)
Definition: proportion of firms with internet access
Source: table p.102 annex 10 from project 1.2.2
TIME: 2003
NUTS version 1999
Missing data: CH
Class breaks: 0.66; 0.75; 0.85

3) Virtual Institutions (VI)
Definition: number of the available e-government services out of those defined in the survey.
Source: EUROSTAT e-government service availability (supply side) – CapGemini survey.
TIME: 2004
NUTS version 1999
Missing data: BG, CH, RO

Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data. Quantiles have been calculated on the number of nations, therefore classes at NUTS2 level are not evenly populated
Class breaks: 0.3;0.55; 0.73;

4) The Virtual Stakeholders (VSt) value is obtained combining 2) and 3) with I1= VF and I2 = VI:

5) The Virtual Society (VS) value is obtained combining 1) and 4) with I1= VSh and I2 = VSt

6) Knowledge creation education (KCE) = Education structures (ES)
Definition: No. of students in tertiary education/Pop. Aged 15-24
Source: ESPON DB, table 102_Pupils_by_educational_level_2000_N3r, from project 1.1.2; EUROSTAT data; EC report on education 2003.
TIME: 2000
NUTS version 1999
Missing data: CH
Notes: Eurostat data differ pretty much from those in the ESPON DB. The latter have been gathered from national sources. Probably, they suffer from different local definition in education levels. Data for Belgium only are the same ones. As an order-of-magnitude comparation, data are "similar" for IT, PT, ES, UK. ESPON data are much lower for NL and much bigger for DK, LU, AT and FI.
I'm relying on EUROSTAT data. I'll try to fill the gaps using the NUTS1 data from the Education03 report. Such data have been used for DE and UK. Data for PT have instead been taken from the ESPON DB.
Class breaks: 0.125; 0.24; 0.31

7) Human Capital Structure (HCs) = Innovative Dependency Index (Idi)
Definition: (pop. 0-14 + pop. over 54)/pop. 15-55
Source: ESPON DB, table 021_Population_by_age-groups_2000_N2r
TIME: 2000
NUTS version 1999
Class breaks: 0.33; 0.47; 0.6

8) Population with tertiary education/Total Population (PTE)
Source: Third cohesion report. Statistical Annex to part 1
TIME: 2000
NUTS version 1999
Missing data: CH, FR9, NO
Notes: This has been chosen as the data in both Eurostat website and ESPON DB showed gaps, whilst the maps and tables in the 3CR didn't
Class breaks: 0.19; 0.36; 0.47

9) Population in life long learning (PLL)
Definition: Participation of adults aged 25-64 in education and training.

Source: Eurostat, from Labour Force Survey. Tab. LF2P_LLL.
TIME: 2003
NUTS version 2003
Missing data: BG, CH, NO, RO
Notes: This table was eventually gotten by a full text search. It was not possible to us to browse the EUROSTAT "Queen tree" so as to find it.
The link is:
http://epp.eurostat.cec.eu.int/pls/portal/url/page/PGP_MISCELLANEOUS/PGE_DAT_DETAIL?p_product_code=LF2P_LLL
The data are expressed in percent of population in the same age group (provided in the table). Data are from yr. 2003. Single region's data gaps were filled by subtraction of the numerator from upper level NUTS of the existing regions within that NUTS1. Only for one case in Greece, an indetermination was still remaining, as two regions were missing. I have estimated the data dividing evenly the percent value (thus assigning to the numerators a value proportional to the respective denominator).
The above definition leads to slightly different values from those at NUTS0 level found in the section "POPULATION AND SOCIAL CONDITIONS" of the Eurostat web database, because of the quota of people not answering the LFS.
Data link to the NUTS1999 version was performed. When a merger occurred (IT31 and ES63) the average value was assigned. For Finland the problem is a bit more complicated because the change involves NUTS3 subdivisions that have been "exchanged" between new regions. An assignment of values based on an arbitrary "likelyhood" perception of the new vs. old region was performed. This is of course to be cross checked.
Class breaks: 0.14; 0.2; 0.3

10) The Human Capital Education (HCe) value is obtained combining 8) and 9) with I1= PTE and I2 = PLL

11) The Human Capital (HC) value is obtained combining 7) and 10) with I1= HCe and I2 = HCs

12) In order to obtain the Knowledge Innovative Structures (KIS), we combine the 6) and 11) with I1= HC and I2 = KCE

13) R&D Infrastructures (RDI)
Definition: (Number of universities or high level research centres + 2*No. of BIC's + 3*No. of Science Parks)/ total population.
Source: Survey performed from the links listed in the official web site of the University of Bologna or from official ministerial websites; ESPON project 2.2.1
TIME: not specified, should be 2003
NUTS version 1999
Notes: This indicator was originally defined in a different way. Unfortunately, data collection for that definition was impossible, especially to extend the survey of universities made by the project 2.2.1 to the nations other than EU15.

It is envisaged to collect more harmonised data, probably from the list of the official CEE codes for the high education institutes.
Class breaks: 0.03; 0.07; 0.125

14) Level of Telecommunication Development (LTD)
Source: ESPON project 1.2.2 (map: final report pag. 200, table: annex to the final report pag. 134), INRA survey
TIME:2002
NUTS version 1999
Missing data: CH, FR9
Class breaks: 4; 6; 7

15) The Knowledge Creation Facilities (KCF) = Innovation Status Quo (ISQ) value is obtained combining 13) and 14) with I1= RDI and I2 = LTD

16) Next, the value of the Innovation Vulnerability (IV) is obtained combining the 5) and the 12), with I1= KIS and I2 = VS

17) Finally, combining the 15) with 16), with I1= IV and I2 = ISQ we obtain the determinant I&R

2 Global-Local Interaction

indicators	category	sector	tipology	Determinant
Arhus Convention	General impact measures	general environment concerns	Environmental interaction	Global-local interaction
Espoo Convention				
Aircraft Engine Emissions	Atmosphere	Specific environmental concerns		
LRTAP				
UNFCCC				
Protection of the Ozone Layer				
CRTD	Hazardous substances			
Basel Convention				
Convention on the Transboundary Effects of Industrial Accidents				
ADN				
ADR				
Rotterdam Convention				
Stockholm Convention on POPs				
London Convention 1972	Marine Environment			
MARPOL 73/78				
1969 CLC				
AFS Convention				
1992 Fund Convention				
HNS Convention				
OPRC				
Intervention Convention				
LOS Convention				
CCAMLR	Marine Living Resources			
ICCAT				
ICRW				
The Antarctic Treaty	Nature Conservation and Terrestrial Living Resources			
World Heritage Convention				
Convention on Biological Diversity (CBD)				
Bern Convention				
CMS				
CITES				
Ramsar Convention				
CCD				
FAO International Undertaking on Plant Genetic Resources				
ITPGRFA				
ITTA1994				
Assistance Convention	Nuclear			

Notification Convention	Safety			
Convention on Nuclear Safety				
Vienna Convention on Civil Liability for Nuclear Damage				
ECE Water Convention	Freshwater Resources			
Manufacturing enterprise, product trademarks	Productive local identity	productive system identity	Economy interaction	
Energy self-sufficiency index	Energy dependency	Energy		
FDI intensity	Territorial appeal	International isation		
Trade integration of goods; trade integration of services	Export			
Vulnerability	Natural hazard	Strategic localization		
Typology Multimodal Accessibility Potential	Accessibility			
Total general Government Revenue, Labour cost index, Long Term Interest rate	Costs			
Science Parks that are members of the International Association of Science Parks (ISAP)	R&D infrastructures			
Business Innovation Centres				
Universities and High Level Research Centres				
Credit institutions	Bank	Credit & Insurance attitude	Financial interaction	
Insurance companies	Insurance			
Companies (local units)	Company	Management attitude		
Stock markets capitalization	Exchanges			
Population change	Migration	Population Mobility	Social interaction	
tourists inbound	Tourism			
tourists outbound				
Students erasmus/socrates (inbound and outbound)	Cultural exchange			
Researchers movements inbound and outbound (erasmus/socrates)				
Active peoples	Labour force	Active population		

STATUS QUO
VULNERABILITY

For Indicators 1 and 2 (2a to 2g), the same calculation approach was used: the value is obtained using the weighted average of the relative treaties' status, where the weight attributed to each status is:

0 if the lex/treaty is not signed;
0.5 if the lex/treaty is signed;
1 if the lex/treaty is ratified, approved and accepted

For each of them the following data attributes apply:
Source: Green Yearbook
TIME: 2004
NUTS0
Missing data: MT

1) **General Environment Concerns (GEC) = General Impact Measures (GIM)**
1 = ArCo (Arhus Convention)
2 = EsCo (Espoo Convention)

2a) **Atmosphere (Atm)**
1 = Aircraft Engine Emissions
2 = LRTAP
3 = UNFCCC
4 = Protection of the Ozone Layer

2b) **Hazardous Substances (HS)**
1 = CRTD
2 = Convention on the Transboundary Effects of Industrial Accidents,
3 = Basel Convention
4 = AND
5= ADR
6 = Rotterdam Convention
7= Stockholm Convention on POPs

2c) **Marine Environmental (ME)**
1 = London Convention 1972
2 = MARPOL 73/78
3 = 1969 CLC
4 = AFS Convention
5 = 1992 Fund Convention
6= HNS Convention,
7= OPRC
8= Intervention Convention
9=LOS Convention

2d) **Marine living resources (MLR)**
1 = CCAMLR,
2 = ICCAT
3 = ICRW

2e) **Natural conservation and territorial living resources (N&T)**
1 = The Antarctic Treaty
2 = FAO International Undertaking on Plant Genetic Resources
3 = World Heritage Convention,
4 = Convention on Biological Diversity (CBD)
5 = Bern Convention
6 = CMS
7= CITES,
8= Ramsar Convention
9= CCD,
10= ITPGRFA,
11= ITTA1994

2f) Nuclear Safety (NS)
1 = Assistance Convention
2 = Notification Convention
3 = Convention on Nuclear Safety
4 = Vienna Convention on Civil Liability for Nuclear Damage

2g) Freshwater Resources (FR)
1 = ECE Water Convention

2) The **Specific environmental concern (SEC)** value is obtained combining 2a), 2b), 2c), 2d), 2e), 2f) and 2g) by arithmetic average
Class breaks
equal interval version
0.25; 0.5; 0.75
quartiles version
0.714; 0.77764; 0.804025

3) The **International Cooperation on Environment (ICE)** value is obtained combining 1) and 2) with I1= **GEC** and I2 = **SEC**

4) Migration (M) = Population Change (PCh) = % of population change 1995-1999
Source: ESPON DB, table 022_Population_change_95-99_Typo_N2i, from project 1.1.4 Indicator PopC9599N2
TIME: 1995 -1999
NUTS2 version 1999
Class breaks
equal interval version
0.725; 5.95; 11.175
quartiles version
0.5; 0.7; 1.9

5) Tourism inbound (InT)
Definition: non resident tourist arrivals/tot arrivals
Source: EUROSTAT data.
TIME: 2003; CH, 2002
NUTS2 version 2003
Missing data: IE, MT, UKI1, UKI2, RO, FR9

Class breaks
equal interval version
0,012; 0,024; 0,036
quartiles version
0.0006; 0.0017; 0.0036

6) Tourism outbound (OutT) =
Definition: resident tourist arrivals/tot arrivals
Source: EUROSTAT data.
TIME: 2003; IE, UKG3, CH - 2002
NUTS2 version 2003
Missing data: RO
Class breaks
equal interval version
0.0068; 0.0136: 0.0204
quartiles version
0.0014; 0.0028; 0.0044

7) The **Tourism (TI)** value is obtained combining **5)** and **6)** with I1= **InT** and I2 = **OutT**

8a) Inbound Student (InStud)
Definition: n° of inbound student / n° of total inbound student
Source: Erasmus/Socrates Programme database
TIME: 2003-2004
NUTS0, NUTS2 version 1999 for population
Missing data: CH, MT (for population)
Notes: The data are available at Nuts 0; Population aged between 18 and 25 was used to extrapolate the data into Nuts 2 level.
Class breaks
equal interval version
0.0317; 0.0632; 0.0948
quartiles version
0.0032; 0.0096; 0.018

8b) Outbound Student (OutStud)
Definition: n° of outbound student / n° of total outbound student
same as 8a
Class breaks

equal interval version
0.0351; 0.0695; 0.1042
quartiles version
0.0062; 0.0122; 0.0206

8) The **Student mobility (SM)=** value is obtained combining **8a)** and **8b)** with I1= **InStud** and I2 = **OutStud**

9a) Inbound Researchers (InRes)
Definition: n° of inbound researcher / n° of total inbound researcher
same as 8a
Class breaks
equal interval version
0.0214; 0.0419; 0.0625
quartiles version
0.0064; 0.0102; 0.0182

9b) Outbound Researchers (OutRes)
Definition: n° of outbound researcher / n° of total outbound researcher
same as 8a
Class breaks
equal interval version
0.0083; 0.0165; 0.0248
quartiles version
0.0023; 0.040; 0.075

9) The **Researcher mobility (RM)=** value is obtained combining **9a)** and **9b)** with I1= **InRes** and I2 = **OutRes**

10) The **Cultural Exchange (CE)** value is obtained combining **8)** and **9)** with I1= **RM** and I2 = **SM**

11) To obtain the **Population Mobility (PM)** first we combine the **7)** and **10)** with I1= **TI** and I2 = **CE** and then combine this result with **4)** with I1= **PCh** and I2 = **CETI**

12)) Active Population (AcP) = Labour Force (LF) = Active People (AcPe)
Definition: n° of economically active population EU-25 (1000)
Source: ESPON DB, table 031_Active_population_95-01_Typo_N2r, from project 3.1 Indicator ACPT00N2
TIME: 2000
NUTS2 version 2003
Class breaks
equal interval version
0.25; 0.5; 0.75
quartiles version
0.42; 0.46; 0.50

13) The **Social Interaction (SI)** value is obtained combining **11)** and **12)** with I1= **PM** and I2 = **AcP**

14) Manufacturing Enterprise (ME)
Definition: number of local units of the munufacturing enterprise Nace D/ tot. enterprises
Source: Eurostat
TIME: 2002, BE, LV - 2001
NUTS2 version 2003
Missing data: CZ, GR, SK, LU, UK, BG, CH, MT, CY.
Class breaks
equal interval version
0.054; 0.106; 0.157
quartiles version
0.06; 0.11; 0.137

15) Product Trademark (PTm)
Definition: number of registered community trade marks at OHIM (1996-2004)/number of manufacturing companies (2002)
Source: OHIM
TIME: 1996-2004
NUTS0
Notes: The data are available at Nuts 0; Population data were used to extrapolate the data into Nuts 2 level.
Class breaks
equal interval version
0.425; .85; 1.275
quartiles version
0.02; 0.064; 0.12

16) The **Productive system identity (PSI) = Productive local identity (PLI)** and their value is obtained combining **14)** and **15)** with I1= **ME** and I2 = **PTm**

17) Energy (E) = Energy Dependency (Ed) = Energy Self-sufficiency Index (ESSI)
Definition: we use the result of ESPON project 2.1.4 (final report p.17), ranked as follows:
Class breaks
equal intervals version = quartiles version
15; 50; 89

18) Territorial Appeal (TA) = Foreign direct investment intensity (FDIin)
Definition: Average value of inward and outward Foreign Direct Investment flows divided by regional GDP(%)
Source: Eurostat

TIME: 2004
NUTS0
Missing data: BG, RO, NO, CH
Notes: regional GDP was used to extrapolate data to NUTS2 level. The value of Luxembourg looks quite strange (is too high compared to the others)
Class breaks
equal interval version
0.3; 5.1; 9.9
quartile version
0.5; 1.8; 2.6

19) Trade Integration of goods (TIg)
Definition: Average value of imports and exports of goods divided by
Source: Eurostat
TIME: 2004
NUTS0
Missing data: IE
Notes: regional GDP was used to extrapolate data to NUTS2 level.
Class breaks
equal interval version
20.8; 41.6; 62.4
quartile version
20.8; 29.7; 37.3

20) Trade Integration of services (TIs)
Definition: Average value of imports and exports of services divided by regional GDP(%)
Source: Eurostat
TIME: 2004
NUTS0
Missing data: IE
Notes: regional GDP was used to extrapolate data to NUTS2 level.
Class breaks
equal interval version
21.8; 43.55; 65.4
quartile version
6; 8.8; 15

21) The **Trade Integration (TInt)** value is obtained combining **19)** and **20)** with I1= **TIs** and I2 = **Tig**

22) The **Internazionalization (Int)** value is obtained combining **18)** and **21)** with I1= **TA** and I2 = **TI**

23) Natural Hazard (NH) = Vulnerability (Vuln)

Definition: Degree of vulnerability in Europe (GDP and population density in 50:50 relationship) as from the results of ESPON project 1.3.1
Source: ESPON DB, table 124_Vulnerability_95-99_Typo_N3i, from project 1.3.1 Indicator DeVu99N3
TIME: 1999-2000
NUTS 3 version 1999
Missing data: CH, DE3, ES63, ES7, FR9, MT, NO, PL08, PT2, PT3
Class breaks
equal interval version
2; 3; 4
quartile version
2; 2.6; 3.33

24) Accessibility (Acc) = Typology Multimodal Accessibility Potential (TMAP)
Definition: we use the result of ESPON project 2.1.1 ranked as follows:
Source: ESPON DB, table 066_ Typology_Multimodal_Accessibility_Potential_N2i, from project 2.1.1 Indicator MACPT01N2
equal interval version = quartile version
TMAP= peripheral = d
TMAP = intermediate= c
TMAP = central = b
TMAP = very central = a

25) Fiscal Pressure (FP)
Definition: Total general government revenue (% of regional GDP)
Source: Eurostat
TIME: 2004, PL - 2003
NUTS0
Missing data:
Notes: regional GDP was used to extrapolate data to NUTS2 level.
Class breaks
equal interval version
15; 30; 45
quartile version
41; 44.6; 48.9

26) Labour Cost index (LC)
Definition: Annual average value of the quarterly total labour cost index in Industry and services (excluding public administration). Nace: C - K
Source: Eurostat
TIME: 2004, IE, BG - 2002
NUTS0
Missing data: GR, MT, CY, NO
Notes: regional GDP was used to extrapolate data to NUTS2 level
Class breaks

equal interval version
137; 174; 211
quartile version
114; 116; 121

27) Long Term Interest rate (LTIr)
Definition: 10-year government bond yields, secondary market. Annual average (%)
Source: Eurostat, ECB/National Central Banks
TIME: 2004, CZ - 2002
NUTS0
Missing data: CH, EE, LU, NO, RO, SI
Class breaks
equal interval version
2.05; 4.1; 6.15
quartile version
4.11; 4.26; 5

28) To obtain the **Cost (Cs)** first we combine the **25)** and **26)** with I1= **LC** and I2 = **FP**
and then combine this result (which we may call, **AC**) with **27)** with I1= **LTIr** and I2 = **AC**

29) R&D infrastructure (RDI) (cfr. I&R #13 above)

30) To obtain the **Strategic Localization (SL)** first we combine the **24**) and **29**) with I1= **Acc** and I2 = **RDI**, then combine this result with **23**) with I1= **AE** and I2 = **NH** the result (which we may call, **En**- environmental) is combined with **28**) with I1= **Cs** and I2 = **En**

31) To obtain the **Economy Interaction (EcI)** first we combine the **17**) and **22**) with I1= **Int** and I2 = **ESSI**, then combine this result (which we may call, **ESSI&Int**) with **30**) with I1= **SL** and I2 = **ESSI&Int**. Finally, we combine this result with **16**) with I1= **PSI** and I2 = **SE**

32) Bank (Bnk) = Credit Institutions (CI)
Definition: n° of local units of credit institutions / tot population
Source: Eurostat
TIME: 2000, LV, RO - 2001
NUTS0
Missing data: CY, CZ, PL, MT
Notes: The data are available at Nuts 0; Population data were used to extrapolate the data into Nuts 2 level.
Class breaks
equal intervals version
0.117; 0.233; 0.348

quartile version
0.0077; 0.0145; 0.0338

33) Insurance (Ins) = Insurance companies (InsC)
Definition: n° of local units of credit institutions / tot population
Source: Eurostat
TIME: 2000, LV, RO - 2001
NUTS0
Missing data: CY, CZ, PL, MT
Notes: The data are available at Nuts 0; Population data were used to extrapolate the data into Nuts 2 level.
Class breaks
equal intervals version
0.0203; 0.0406;m 0.0609
quartile version
0.005; 0.0067; 0.0106

34) The **Credit & Insurance attitude (C&IA)** value is obtained combining **32**) and **33**) with I1= **Bnk** and I2 = **InsC**

35) Company (Cmp) = Companies (BC)
Definition: number of local units of the manufacturing enterprise (Nace C, D, E, F, G, H, I, K)/ total number of companies
Source: Eurostat
TIME: 2002, 2001 (BE all NACE, LV NACE D E F G, UK NACE G)
NUTS2 version 2003
Missing data: NACE C: CZ, GR, SK, LU, UK, BG, NO, CH, MT, CY. NACE D: CZ, GR, SK, LU UK, BG, CH, MT, CY. NACE E: CZ, DE30, DE50, DE60, DE80, GR, IE, SK, LU UK, NO, CH, MT, CY. NACE F: CZ, GR, LU, BG, NO, CH, MT, CY. NACE G: CZ, DE, GR, IE, SK, LU, FI, BG, CH, MT, CY. NACE H: CZ, DE, GR, IE, SK, LU, FI, UK, CH, MT, CY. NACE I: CZ, GR, IE, SK, LU, FI, UK, CH, MT, CY. NACE K: CZ, GR, IE, SK, LU, FI, UK, CH, MT, CY
Class breaks
equal intervals version
0.008; 0.016; 0.024
quartile version
0.001935; 0.002789; 0.003584

36) Exchanges (Ex) = **Stock market capitalisation (STM)**
Definition: Stock market capitalisation - end of period - Billions of euro – NSA (annual average on monthly data)
Source: Eurostat
TIME: 2004; PT, NL - 2001
NUTS0
Missing data: BG, CH, RO
Class breaks

equal interval version
506; 1010; 1520
quartile version
74; 589; 1100

37) The **Management attitude (MA)** value is obtained combining **35**) and **36**) with I1= **Ex** and I2 = **BC**

38) The **Financial Interaction (FI)** value is obtained combining **34**) and **37**) with I1= **C&IA** and I2 = **MA**

39) To obtain the **Global Local Interaction (GLI)** first we combine the 31) and **38**) with I1= **EI** and I2 = **FI**, then combine this result (**E&FI**) with **3**) with I1= **ICE** and I2 = **E&FI**
The result for the **Determinant "Global Local Interaction"** is finally obtained by combining this result (called **M&EI**) with **13**) with I1= **SI** and I2 = **M&EI**

3 QUALITY

indicators	category	sector	tipology	Determinant
GDPpps per capita	GDP	Economic variables	Life quality	Quality
Consumption per capita	Consumption			
Level of employment	Employment			
Consumer-price index	Prices			
Hospital beds	Healt	Infrastructural variables of cohesion		
Cultural opportunities	Leisure			
Hotels beds				
Physical accessibility	Accessibility			
Old technologies	Level of Telecommunication development			
New technologies				
Municipal Waste Generation	Municipal Waste	Waste	Environmental Quality	
Hazardous Waste Generation	Hazardous Waste			
Municipal Waste Recycled	Recycling Waste			
Degree of vulnerability in Europe	Vulnerability	Natural hazard		
Total greenhouse emission	Air	Natural Resources Status		
Total gross abstraction of freshwater	Water use balaced			
CO^2 emissions	Ozone layer	Climate change		
Confidence in EU commission	Level of citizen confidence	Good Governance	Government quality	
Confidence in EU council of ministers				
Confidence in EU parliament				
National public participation	Public participation			
European public participation				
Early school leavers	Base education	Social Cohesion	Social Quality and Cohesion	

Iniquity of regional income distribution	Economic Elements for Social Cohesion	Resources		
Persons aged 0-17 who are living in households where no-one works	Risk of children exclusion	Risk of social exclusion		
At-risk-of-poverty rate before social transfers	Poverty			
Female employment	Equal opportunities	Social wellness attitude		
Fertility rate	Welness			
Hope of life				

STATUS QUO
VULNERABILITY

1) GDP = GDP_{PPS} per capita
Definition : Gross Domestic Product per capita in Purchasing Power Standard
Source: Eurostat
TIME: 2002 - CH, NO, BG, RO - 2000
NUTS version 2003
Class breaks
equal intervals version
19821.2; 35467.8; 51114.3
quartile version
15236.9; 20233; 23819

2) Level of prices
Definition: HICP = Harmonized Index of Consumer Prices
Source: Eurostat
TIME: 2005
NUTS version 2003
Missing data: CH
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data. Quantiles have been calculated on the number of nations, therefore classes at NUTS2 level are not evenly populated.
Class breaks
equal intervals version
577.9; 1043.8; 1509.6
quartile version
117.1; 126.8; 142.7

3) Level of employment (Emp) =
Definition: number of employers/active population (%)
Source: Eurostat
TIME: 2002
NUTS version 2003
Missing data: CH, NO, BG, RO
Class breaks
equal intervals version
75.66; 83.15; 90.63
quartile version
87.85; 93.2; 95.69

4) The Consumption (Cons)
Definition: consumption aggregates (Current prices)/population
Source: Eurostat
TIME: 2002
NUTS version 1999

Notes: Original data are at NUTS0 level as percent of GDP. The regional values of GDP per capita has been used to draw the map at NUTS2 level as well as to introduce the population effect.
Class breaks
equal intervals version
17118.2; 30435.4; 44115.8
quartile version
11924.1; 15741.6; 18697.6

5) Economic Variables (EV): first we combine **1)** and **2)** with I1= **ConPr** and I2= **GDP,** to obtain the intermediate result, called **Buying Power (BP);** then, we combine **3)** and **4)** with I1= **EMP** and I2= **Cons,** to obtain the intermediate result called **Consumption Tendency (CT).** In the end we combine the above results with I1=**BP** and I2 = **CT**

6) Health (Hlt)
Definition: number of hospital beds per 100.000 inhabitants
TIME: 2002; Exceptions: IE, LU, UKD – 1999; DK, EE, GR, SE, UK – 2000; CY, LV, LT, HU – 2001; DE30, DE40, DE50, DE80, DEC0, DEF0, DEG0, FR10 – 2003; BE10 - 2004
NUTS version 2003 – LEVEL: DE, IE, FI1 (except FI13), PT1 (except PT11), UK NUTS1
Missing data: CH, NO, BG, RO, SI, UKC, UKF, UKH, FR30
Class breaks
equal intervals version;
571.6; 988.6; 1405.6
quartiles version;
406.6; 623.3; 839.5

7a) Receptivity (Hotel beds) (Htb)
Definition: HTB=number of hotel beds per 100.000 inhabitants
Source: EUROSTAT (Number of establishments, bedrooms and bedplaces - NUTS II - annual data + Annual average population)
TIME: 2003, except RO - 2001; BE, CZ, DEE, DEG, FR, PT2, UK - 2002,
Notes: MT has pop. data for 2002 only, and accomodation for 2001 and 2003, the average was taken to have the ratio with 2002 pop.; CH has pop. data for 2003 only, and accomodation for 2001 and 2002. Same as for MT was done.
NUTS version 2003
Class breaks
equal intervals version;
12561; 24976; 37390
quartiles version;
1196; 1858; 3212

7b) Cultural opportunities (CuOp)
Definition: Expenditure for recreation and culture (COICOP 09)
Source: EUROSTAT
TIME: 1999, (GDP 2000)

NUTS version 1999
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Missing data: CH, NO
Class breaks
equal intervals version;
942.4; 1882.3; 2822.1
quartiles version;
36.6; 71.8; 180.6

8) To obtain the level **of Leisure (Ls)** we combine the **7a)** and **7b)** with I1= **Htb** and I2= **CuOp**

9) To measure the **Physical Accessibility (PhAc)** we use the result of ESPON project 2.1.1 Typology Multimodal Accessibility Potential, ranked in two ways:
case 1 "equal interval-like";
Very central = A
Central = B
Intermediate = C
Peripheral and very peripheral = D
case 2 "quartiles -like";
Very central and Central = A
Intermediate = B
Peripheral = C
very peripheral = D

10) The **Level of Telecommunication development (LTD)** is taken from the first determinat Innovation and Research (point 14) above.

11) Infrastructural Variables of Cohesion (IVC): first we combine **9)** and **10)** with I1= **PhAc** and I2= **LTD,** to obtain the intermediate result, called **Physical Accessibility and Telecommunication (PATE);** then, we combine this result and **8)** with I1= **Ls** and I2= **PATE,** to obtain the intermediate result called **Physical Accessibility – Telecommunication – Leisure (PTLs).** In the end we combine the above result and **6)** I1=**Hlt** and I2 = **PTLs**

12) The **Quality of Life (LQ)** value is obtained combining **5)** and **11)** with I1= **EV** and I2= **IVC**

13a)MunicipalWaste (MWas)
Definition: Municipal waste generated NUTS0*(Population NUTS 2/Population NUTS0).
Original data are at NUTS0 level. The regional share of population has been used to draw the map at NUTS2 level
Source: Eurostat

TIME: 2002; exceptions: EE, PL 1998; BE 1999; CH, IE,LU, NO, UK 2000; AT, ES, FR, MT, PT, SE 2001;
NUTS version 1999
Class breaks
equal intervals version;
385.16; 491.4; 597.7
quartiles version;
441.7219; 501.3343; 615.1617

13b) Hazardous Waste (HWas)
Definition: Hazardous waste generated NUTS0*(Population NUTS 2/Population NUTS0).
Original data are at NUTS0 level. The regional share of population has been used to draw the map at NUTS2 level
Source: Eurostat; PUBLICATION "Waste generated and treated in Europe" 2003 EDITION for BE and FR
TIME: 2002; exceptions: FR, SI, FI, CH 1998; BE, EE, AT 1999; GR, RO 2000; IE, IT, CY, MT 2001; CZ, DK, LV, LT, PL, BG, NO 2003
NUTS version 1999
Missing data: BE and FR
Class breaks
equal intervals version;
133.8; 238.4; 511
quartiles version;
35.1; 80; 133.8

13c) Recycling of Municipal Waste **(RMWas)**
Definition: Recycling of Municipal waste at NUTS0*(Population NUTS 2/Population NUTS0).
Original data are at NUTS0 level. The regional share of population has been used to draw the map at NUTS2 level
Source: Eurostat
TIME: 2002; exceptions: CY 1998; LU 1999; MT 2001; CH 2000
NUTS version 1999
Missing data: BG, LT
Class breaks
equal intervals version;
34.13; 92.245; 148.115
quartiles version;
7.7971; 62.9279; 137.0338

14) Waste (Ws): first we combine **13a)** and **13b)** with I1= **HWas** and I2= **MWas,** to obtain the intermediate result, called **Municipal and Hazard Waste (M&Hw)** that is combined with **13c)** with I1= **RMWas** and I2= **(M&Hw),**

15) Natural Hazard (NH)

Source: ESPON project 1.3.1 table provided by GTK
TIME:2004
NUTS version 2003, level 3, rank values averaged down to NUTS2
Class breaks
equal intervals version;
2; 3; 4
quartiles version;
2.0833; 2.9333; 3.2

16a) **State of Air (SA)**
Definition: total greenhouse gas emissions: Percentage change since base year and targets according to Kyoto Protocol / EU Council Decision for 2008-2012 (in CO2 equivalents). Indexed on actual base year = 100.
Source: Eurostat
TIME: 2002
NUTS version 2003
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
Class breaks
equal intervals version;
65.1; 93.3; 121.5
quartiles version;
69; 98.1; 108.5

16b) State of Water (SW)
Definition: Total gross abstraction of freshwater (**FW)/Population**
Source: Eurostat
TIME: : 2002; exceptions: IE, 1994; IT, 1995; GR, 1997; PT, 1998; LU, AT, FI, 1999; MT, 2000; DE, NL, 2001; CY, LV, LT, PL, SK, BG, RO, 2003
NUTS version 2003
Missing data: BE, NO, UK
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
Class breaks
equal intervals version;
550.663; 1057.26; 1563.86
quartiles version;
298.9605; 418.114; 828.1899

17) to obtain the level of **Natural Resources State (NRS) (MAP C 17)** we combine **16a)** and **16b)** with I1= **SA** and I2= **SW**

18) Climate Change (CC)
Definition: national total CO_2 emissions (Thousand tonnes)
Source: Eurostat
TIME: 2002

NUTS version 1999
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
Class breaks
equal intervals version;
1.82; 3.54; 5.27
quartiles version;
0.3868; 0.736; 1.566

19) Environmental Quality (EQ): first WE combine **14)** and **15)** using I1= **WS** and I2= **NH,** to obtain the intermediate result, called **Waste and natural hazard ();** then, we combine this result to **18)** with I1= **CC** and I2= **WS&NH.** The next intermediate result, called **Map C19b- "Waste-Hazard-Climate Change" (WHC)** is used as I2 in the final combination with **17)** as I1

20a) level of citizen **confidence in EU Commission (CfCom)**
Definition: share of positive opinions (people who declare that they 'tend to trust') about this institution
Source: Eurostat – EuroBarometer bi-yearly survey
TIME: 2004
NUTS version – n.a.
Data Missing: CH, NO
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
20b) level of citizen **confidence in European council of ministers (CfCM)**
Definition: share of positive opinions (people who declare that they 'tend to trust') about this institution
Source: Eurostat – EuroBarometer bi-yearly survey
TIME: 2004
NUTS version – n.a.
Data Missing: CH, NO
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
20c) level of citizen **confidence in European parliament (CfEP)**
Definition: share of positive opinions (people who declare that they 'tend to trust') about this institution
Source: Eurostat – EuroBarometer bi-yearly survey
TIME: 2004
NUTS version – n.a.
Data Missing: CH, NO
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
21) **Level of citizen confidence (CzCf)**:
Definition: arithmetical average of the quantities 20-a,b and c. CzCf = (CfCom + CfCM + CfEP)/3
Class breaks

equal intervals version;
40.6; 49.2; 57.7
quartiles version;
46; 53.7; 58.4

22a) National Public participation (PbPn)
Definition: Voter turnout in national Parliamentary elections.
Source: Eurostat/international istitute for democracy and electoral assistance.
Data for CH (time 2003) from Swiss Statistical Institute web page (http://www.bfs.admin.ch/bfs/portal/fr/index/themen/politik/wahlen/blank/kennzahlen0/national_rat/wahlbeteiligung.html)
TIME: various: 2000-2004
NUTS version 1999

22b) European Public participation (PbPe)
Definition: Voter turnout in European Parliamentary elections
Source: Eurostat/international istitute for democracy and electoral assistance
TIME: 2004
NUTS version - n.a.
Missing data: CH, NO, BG, RO

23) Public participation (PbP):
Definition: arithmetical average of the quantities 22-a and b:PbB = (PbBn + PbBe)/2
Class breaks
equal intervals version;
48; 62.4; 76.8
quartiles version;
50.7; 56; 63.5

24) To obtain the level of The level of **Government quality (GQ),** we combine the **21)** and **23)** with I1= **PbP** and I2= **CzCf**

25) Level of base education (EdB)
Definition: Level of **early school leavers (ESL):** Percentage of the population aged 18-24 with at most lower secondary education and not in further education or training**..**
Source: Third Cohesion Report; origin Eurostat – Labour Force Survey (LFS)
Notes: the table with the original data could not be found in the Eurostat site. We have made a data request with no answer. Classes were extracted by graphics processing of the map published in the 3rdCR (5 classes recoded into 4) with no distinction between equal intervals and quantiles.

26) ECONOMIC ELEMENTS FOR THE SOCIAL COHESION (SCEc)
Definition: Inequality of regional income distribution - The ratio of total income received by the 20 % of the population with the highest income (top quintile) to that

received by the 20 % of the population with the lowest income (lowest quintile). Income must be understood as equivalised disposable income.
Source: Eurostat
TIME: 2003; exceptions: FR, LV, LT, HU, NL, PL, SI, SE, BG, RO, 2002; IT, 2001; MT, 2000
NUTS version 1999
Missing data: CH
Class breaks
equal intervals version;
4.1; 5.2; 6.3
quartiles version;
3.7; 4.3; 5.1

27) To obtain the level of **SOCIAL COHESION RESOURCES ()** we combine **25)** and **26)** with I1= **EdB** and I2= **SCEc**

28) the RISK OF CHILDREN EXCLUSION (CEr)
Definition: Share of persons aged 0-17 who are living in households where no-one works
Source: Eurostat – Labour Force Survey (LFS)
TIME: 2004
NUTS version - n.a.
Notes: Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
Missing data: CH, PL, SE
Class breaks
equal intervals version;
6.2; 9.7; 13.3
quartiles version;
5.7; 8.9; 11.1

29) the LEVEL OF **POVERTY (Pvy)**
Definition: At-risk-of-poverty rate after social transfers - The share of persons with an equivalised disposable income, after social transfers, below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers). Retirement and survivor's pensions are counted as income before transfers and not as social transfers.
Source: Eurostat
TIME: 2000
NUTS version na
Class breaks
equal intervals version;
11.2; 14.8; 17.7
quartiles version;
11.2; 14.8; 17.7

30) To obtain the **RISK OF SOCIAL EXCLUSION (SEE)** we combine **28)** and **29)** with I1= **Pvy** and I2= **CEr**

31) EQUAL OPPORTUNITIES (EqOp)
Definition: share of female employment/total employment
Source: Eurostat
TIME: 2003
NUTS version 2003
Missing data: CH, NO, BG, RO
Class breaks
equal intervals version;
30.86; 37.08; 43.31
quartiles version;
42.7; 44.3; 45.49

32a) FERTILITY RATE (Fty).
Definition: Total fertility rate - The mean number of children that would be born alive to a woman during her lifetime if she were to pass through her childbearing years conforming to the fertility rates by age of a given year. This rate is therefore the completed fertility of a hypothetical generation, computed by adding the fertility rates by age for women in a given year (the number of women at each age is assumed to be the same). The total fertility rate is also used to indicate the replacement level fertility; in more highly developed countries, a rate of 2.1 is considered to be replacement level.
Source: ESPON DB, origin Eurostat
TIME: 1999
NUTS version 1999
Class breaks
equal intervals version;
1.13; 1.43; 1.74
quartiles version;
1.27; 1.47; 1.69

32b) LIFE EXPECTANCY
Definition: The indicator Healthy Life Years (HLY) measures the number of years that a person at birth is still expected to live in a healthy condition. HLY is a health expectancy indicator which combines information on mortality and morbidity. The data required are the age-specific prevalence (proportions) of the population in healthy and unhealthy conditions and age-specific mortality information. A healthy condition is defined by the absence of limitations in functioning/disability. The indicator is calculated separately for males and females. The indicator is also called disability-free life expectancy (DFLE).
Source: Eurostat
TIME: 2003; CZ, MT, PL - 2002
NUTS version na

Geographical detail is limited to the national level. Each NUTS2 region is given the NUTS0 data.
Missing data: CH, LU, RO, BG, SK, SI, LT,LV, EE. CH and LU are given the EU15 average. The remaining nations are assigned a class judgement of "C" as they're too many to use the NMS average.
Class breaks
equal intervals version;
59.9; 64.15; 68.41
quartiles version;
61.95; 64.85; 67.55

33) To obtain the level of **WELNESS (Wns)**, we combine **32a)** and **32b)** with I1= **HLY** and I2= **Pvy**

34) To obtain the level of **SOCIAL WELLNESS ATTITUDE (SWA)** we combine **31)** and **33)** with I1= **Wns** and I2= **EqOp**

35) To obtain the level of **SOCIAL QUALITY AND COHESION (SQ&C) = VULNERABILITY (Vul),** first we combine **27)** and **34)** with I1= **SCEr** and I2= **SWA** to obtain the intermediate result called **COHESION ATTITUDE (ChA),** which is then combined to **30)** with I1= **SSE** and I2= **Cha**

36) To obtain the **STATUS QUO (SQ),** first we we combine **12)** and **19)** with I1= **EQ** and I2= **LQ,** to obtain the intermediate result called **"Life and Environmental quality" (L&EQ),** which is then combined to **24)** with I1= **GQ** and I2= **L&EQ**

37) In the end, we obtain the **Determinant QUALITY (Qty)** combining the **Vulnerability 35)** and the **Status Quo 36)** with I1= **Vul** and I2= **SQ**

3 Resources and Funds

indicator	category	sector	tipology	Determinant
R&D expenditure	R&D (FR&D)	Policies for the Lisbon strategy (structure)	Level of interventions to the Lisbon strategy	Resources and Funds
National aids	Firms aids	Policies for the Lisbon Strategy (performance)		
Human Capital expenditure pps per capita	Human Capital			
Employment expenditure pps per capita	Employment			
Climate and Natural Resources expenditure pps per capita	Climate and Natural Resources	Policies for the Gothemburg Strategy (structure)	Level of interventions to the Gothenburg strategy	
Efficency of accessibility	Transport			
Public Healt expenditure pps per capita	Public Healt	Policies for the Gothemburg Strategy (performance)		
Poverty and Age expenditure pps per capita	Poverty and Age			
Funds spending	European funds expending	Use of structural funds and pre access	Use of funds	
Economic resources	3rd Cohesion Report	Level of Co-operation		

STATUS QUO
VULNERABILITY

1) Policies for the Lisbon strategy (structure) (LsS)
Definition: R&D expenditure (GERD), defined as % of GDP
Source: ESPON DB, 3rd Cohesion Report (MAP 1.10); origin: Eurostat,
TIME:, 2000; exceptions: DE,EL, FR, PT, SE, UK: 1999; AT: 1998
NUTS version 1999 – Level 2, except: UK: NUTS1; BE, IE, SE, RO: NUTS0
Missing data: CH;FR9; NO;
Class breaks
equal intervals version;
N.A.
quartiles version;
0.52; 0.82; 1.15

2) Level of aids given to the national firms (FA)
Definition: national aids defined as % of national GDP
Source: Eurostat,
TIME: 2003, RO, MT: 2002
NUTS version 1999
Missing data: CH
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Class breaks
equal intervals version;
1.07; 2.14; 3.21
quartiles version;
0.010; 0.025; 0.89

3) Funds utilized for the human capital (HCex) = public expenditure in educational sector (PHex)
Definition: Expenditure in pps per capita (COFOG GF09)
Source: Eurostat,
TIME: 2003 (COFOG GF09), 2000 (GDP in PPS per capita)
NUTS version 1999
Missing data: BG,CH, CZ, LT
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Class breaks
equal intervals version;
3500; 7000; 10500
quartiles version;
86.28; 212.31; 471.94

4) Funds utilized for employment policies (Eex) = employment expenditure in pps per capita (PEex)
Definition: Expenditure in pps per capita (COFOG 1009)
Source: Eurostat,
TIME: 2003 (national expenditure), 2000 (GDP in PPS per capita)

NUTS version 1999
Missing data: BG,CH, CY;CZ,EE, HU; IE, LT, LV,MT, PL, RO, SE, SI, SK
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
For this indicator, no data at all were available for the enlargement countries. The above described gap-filling scheme was therefore impossible to apply. In order not to lose information in the map combinations following this indicator, a qualitative rank just below that corresponding to the EU-15 average was assigned to the missing data. This is, of course, a bad approximation to be corrected by data gathering in the course of the project.
Class breaks
equal intervals version;
87.2; 174.4; 262.8
quartiles version;
4.64, 28.17, 52.92

5) The measure of the **Policies for the Lisbon Strategy (performance) (LsP)** is obtained first combining **3)** and **4)** with I1 = **Eex** and I2 **= Hcex,** to obtain the intermediate result, called, **Human Lisbon performance (HLP)**, which is then combined to **2)** with I1 = **FA** and I2 **= HLP**

6) The **Level of interventions to the Lisbon strategy (LS)** is obtained combining **1)** and **5)** with I1 = **LsS** and I2 **= LsP**

7) Funds for climate exchange and natural resources (CNRex) = Climate and natural resources expenditure pps per capita (PCNRex)
Definition: regional expenditure in pps per capita (COFOG GF05)
Source: Eurostat,
TIME: 2003 (COFOG GF05), 2000 (GDP in PPS per capita)
NUTS version 1999
Missing data: BG, CH, CZ, DK, IE, LT, LV, RO,
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Class breaks
equal intervals version;
376.3; 754.6; 1128.9
quartiles version;
18.50, 72.50, 157.50

8) Funds for improve the accessibility (Tex)
Definition: structural funds spending in relation to accessible population in 3 hours by car
Source: ESPON project 2.2.1 (SIR map. 02)
TIME:1994-1999 (structural funds spending), 1999 (accessible population in 3 hours by car)
NUTS version 1999

Missing data: BG, CH, CY, CZ, EE, ES7, FR91,FR92, FR93, FR94, HU, LT, MT, NO. PL, PT2, PT3, RO, SI, SK,
Notes: The data taken from the project 2.2.1 are already ranked in a qualitative way, re-ranked as in the following table in order to meet the four classes approach here used. In order to fill the gaps in the map, no-data were repalced by the rank "medium-low" - C

A	A	C	+ Spending -
A	B	C	
B	C	D	
+ Accessibility -			

9) The **Policies for the Gothemburg Strategy (structure) (GtS)** is obtained combining **7)** and **8)** with I1 = **CNRex** and I2 **= Tex**

10) Funds for the public health (PHex)
Definition: regional expenditure in pps per capita (COFOG GF07)
Source: Eurostat,
TIME: 2003 (COFOG GF07), 2000 (GDP in PPS per capita)
NUTS version 1999
Missing data: BG, CH, CZ, LT, RO,
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Class breaks
equal intervals version;

quartiles version;
47.50, 120.50, 650.50

11) Funds for poverty and aging (PAex)
Definition: regional expenditure in pps per capita (COFOG GF10)
Source: Eurostat,
TIME: 2002 (COFOG GF10), 2000 (GDP in PPS per capita)
NUTS version 1999
Missing data: , BG, CH, CZ, LT, RO,
Notes: Original data are at NUTS0 level. The regional share of GDP has been used to draw the map at NUTS2 level
Class breaks
equal intervals version;
1376.9; 2753.8; 4130.7
quartiles version;

38.5, 140.50, 444.50

12) A measure of the **Policies for the Gothemburg Strategy (performance) (GtP)** is given by the combination of **10)** and **11)** with I1 = **PAex** and I2 **= PHex**

13) A measure of the **Level of interventions to the Gothenburg strategy (GS)** is given by the combination of **9)** and **12)** with I1 = **GtS** and I2 **= GtP**

14) The **Vulnerability (RFv)** is obtained combining **13)** and **6)** with I1 = **GS** and I2 **= LS**

15) Use of structural funds and pre access (SFU)
Definition: Amount of all structural and cohesion funds expenditure (or pre accession funds expenditure)
Source: Espon database, indicators SFT99N2 (EU15) and TPPA00N2 (NMS) (reference therein)
TIME: 1994-1999 (EU15); 1998-2000 (NMS)
NUTS version 1999
Missing data: CH, NO
Class breaks
equal intervals version;

quartiles version;
55.50, 156.50, 476.50

16) Level of co-operation (Co-op)
Definition: Share of INTERREG III funds in million of euro
Source: European Union (web site) – INTERREG III
TIME: 2000
NUTS version 1999
Class breaks
equal intervals version;
4.29; 8.58; 12.87;
quartiles version;
1.50; 6.70; 8

17) The **STATUS QUO (RFsq)** is obtained combining **15)** and **16)** with I1 = **SFU** and I2 **= Coop**

18) In the end, the **Determinant "Resources and Funds" (RF)** obtained combining Vulnerability **14)** and the Status Quo **17)** with I1 = **RFv** and I2 **= RFsq**

5 Framework and sources of the overall indicators

where

	COMPETITIVENESS
	DETERMINANT
	TIPOLOGY
	SECTOR
	CATEGORY
	INDICATOR

	COMPETITIVENESS DETERMINANTS	Parameters	source	time
	Innovation & Research			
	Virtual Society			
	Virtual Shareholders			
	Virtual Population			
1	internet users	number/population	Espon DB, T, project 1.2.2, Eurostat	2003
	Virtual Stakeholders			
	Virtual Firms			
1	Firms with internet access	number/population	table p.102 Annex 10 Espon project 1.2.2	2003
	Virtual Institutions			
1	Municipalities with internet access	number/population	Eurostat	2004
	Knowledge Innovative Structures			
	Knowledge creation education			
	Education structures			
1	Universities students	number/population 15-24	Espon DB, project 1.1.2; Eurostat;EC report on Education 2003	2000
	Human Capital			
	Human Capital Structure			
1	Innovative dependency index		Espon DB, table 021_population_by_age-groups_2000_N2r	2000
	Human Capital Education			
1	Population with tertiary education	number/population	Third Cohesion Report. Statistical Annex to part 1	2000
2	Population in life-long learning	number/population	Eurostat, Labour force survey, tab. LF2P_LLL	2003

	Innovation Status Quo			
	Knowledge creation facilities			
	R&D infrastructures		Survey performed from the links listated in the Official web-site of the University of Bologna or from Officla Ministerial web-sites	not specified , should be 2003
1	Science Parks members of (ISAP)	number/population		
2	Business Innovation Centres	number/population		
3	Universities and High level research centres	number/population		
	Level of Telecommunication development		Espon project 1.1.2 final report pg. 200	2002
1	Old technologies			
	fixed lines	*number/households*		
	mobile	*number/population*		
	housholds with TV	*number/households*		
2	New technologies			
	PCs	*number/population*		
	broadband subscribers	*number/population*		
	internet servers	*number/area*		
	Global-local interaction			
	International Cooperation on environment			
	General Environment Concerns (GEC)			
	General Impact Measures (GIM)			
1	Århus Convention	stage of adoption	Greenyearbook	2004
2	Espoo Convention	stage of adoption	Greenyearbook	2004
	Specific Environmental Concerns (SEC)			
	Atmosphere			
1	Aircraft Engine Emissions	stage of adoption	Greenyearbook	2004
2	LRTAP	stage of adoption	Greenyearbook	2004
3	UNFCCC	stage of adoption	Greenyearbook	2004
4	Protection of the Ozone Layer	stage of adoption	Greenyearbook	2004
	Hazardous substances			
1	CRTD	stage of adoption	Greenyearbook	2004
2	Basel Convention	stage of adoption	Greenyearbook	2004
3	Convention on the Transboundary Effects of Industrial Accidents	stage of adoption	Greenyearbook	2004
4	ADN	stage of adoption	Greenyearbook	2004
5	Rotterdam Convention	stage of adoption	Greenyearbook	2004
6	Stockholm Convention on POPs	stage of adoption	Greenyearbook	2004
	Marine Environment			
1	London Convention 1972	stage of adoption	Greenyearbook	2004
2	1969 CLC	stage of adoption	Greenyearbook	2004
3	AFS Convention	stage of adoption	Greenyearbook	2004

4	1992 Fund Convention	stage of adoption	Greenyearbook	2004
5	HNS Convention	stage of adoption	Greenyearbook	2004
6	Intervention Convention	stage of adoption	Greenyearbook	2004
7	LOS Convention	stage of adoption	Greenyearbook	2004
8	OPRC	stage of adoption	Greenyearbook	2004
9	MARPOL 73/78	stage of adoption	Greenyearbook	2004
10	Bunkers Convention	stage of adoption	Greenyearbook	2004
	Marine Living Resources			
1	CCAMLR	stage of adoption	Greenyearbook	2004
2	ICCAT	stage of adoption	Greenyearbook	2004
3	ICRW	stage of adoption	Greenyearbook	2004
4	SPAW	stage of adoption	Greenyearbook	2004
5	IAC	stage of adoption	Greenyearbook	2004
6	IOSEA	stage of adoption	Greenyearbook	2004
7	AIDCP	stage of adoption	Greenyearbook	2004
	Nature Conservation and Terrestrial Living Resources			
1	The Antarctic Treaty	stage of adoption	Greenyearbook	2004
2	World Heritage Convention	stage of adoption	Greenyearbook	2004
3	Convention on Biological Diversity (CBD)	stage of adoption	Greenyearbook	2004
4	Bern Convention	stage of adoption	Greenyearbook	2004
5	CMS	stage of adoption	Greenyearbook	2004
6	CITES	stage of adoption	Greenyearbook	2004
7	Ramsar Convention	stage of adoption	Greenyearbook	2004
8	CCD	stage of adoption	Greenyearbook	2004
9	FAO International Undertaking on Plant Genetic Resources	stage of adoption	Greenyearbook	2004
10	ITPGRFA	stage of adoption	Greenyearbook	2004
11	ITTA1994	stage of adoption	Greenyearbook	2004
	Nuclear Safety			
1	Assistance Convention	stage of adoption	Greenyearbook	2004
2	Notification Convention	stage of adoption	Greenyearbook	2004
3	Convention on Nuclear Safety	stage of adoption	Greenyearbook	2004
4	Vienna Convention on Civil Liability for Nuclear Damage	stage of adoption	Greenyearbook	2004
	Freshwater Resources			
1	ECE Water Convention	stage of adoption	Greenyearbook	2004
	Social Interaction			
	Population Mobility			
	Migration (cfr. ESPON project Demography)			
1	Population change	number/population	ESPON project 1.1.4	1995-1999
	Tourism			
1	Tourists inbound	n° of non resident arrivals /tot arrivals	Eurostat	2003
2	Tourists outbound	n° of resident arrivals/tot arrivals	Eurostat	2003
	Cultural exchange			

	Student inbound	% tot inbound	erasmus/socrates programme	2003/2004
	Student outbound	% tot outbound	erasmus/socrates programme	2003/2004
	Researcher inbound	% tot inbound	erasmus/socrates Programme	2003/2004
	Researcher outbound	% tot outbound	erasmus/socrates Programme	2003/2004
	Active population			
	Labour force			
1	Active people	n° active pop /population	Eurostat	2003 (2000 population)
	Economic Interaction			
	Productive system identity			
	Productive local identity			
1	Manufacturing enterprise	n°/tot. enterprise	Eurostat	2002
2	Product trademarks	n°/ n° manufacturing companies	OHIM	1996-2004
	Energy			
	Energy dependency			
	Energy Self-sufficiency Index	value	ESPON project 2.1.4	2002
	Internazionalization			
	Territoral Appeal			
1	FDI intensity	% of GDP	Eurostat	2004
	Export			
1	Trade integration of goods	% of GDP	Eurostat	2004
2	Trade integration of services	% of GDP	Eurostat	2004
	Strategic localization			
	Natural hazard			
1	Vulnerability		ESPON project 1.3.1	1999-2000
	Accessibility			
1	Typology Multimodal Accessibility Potential	value	ESPON project 1.2.1 and 2.1.1	2001
	Costs			
1	Total general government revenue	% of GDP	Eurostat	2004
2	Labour - cost index (2000:100) - NSA	value	Eurostat	2004
3	Long-term interest rate	Annual average (%)	Eurostat	2004
	R&D infrastructure (cfr. annex 1 I&R)			
	Financial Interaction			
	Credit & Insurance attitude			
	Bank			
1	Credit institutions	n° local units/tot local units	Eurostat	2000
	Insurance			

1	Insurance companies	n° local units/tot local units	Eurostat	2001
	Management attitude			
	Company			
1	Companies	n° local units/tot local units	Eurostat	2002
	Exchanges			
1	Stock market capitalisation - end of period - Milliards of euro - NSA	value	Eurostat	2004
	Quality			
	Life quality			
	Economic variables			
	GDP			
1	GDP per capita (PPS)	Gross Domestic Product Purchasing Power Standards per inhabitant	Eurostat	2000
	consumption			
1	Consumption per capita	Consumption per capita/ PIL per capita	Eurostat	2000
	employment			
1	Level of employment	Employers/active population	Eurostat	2001/2002
	Prices			
1	Consumer-price index	Harmonized consumer price index, 1996=100	Eurostat	2005
	Infrastructural variables of cohesion			
	healt			
1	Hospital beds	Hospital beds - Absolute numbers and rate per 100.000 inhabitants	Eurostat	2000-2004
	leisure			
1	cultural opportunities	Mean consumption expenditure in Recreation and Culture*Regional GDP	Eurostat	1999
2	Hotels beds	number of	Eurostat	2002-2004
	phisical accessibility			
1		Typology Multimodal Accessibility Potential	espon	2001
	Level of Telecommunication development		I&R determinat	

	Environmental quality			
	Waste			
	Municipal waste			
1	generation	Municipal waste generated*share of national population	Eurostat	1998-2003
	Hazardus waste			
1	generation	Hazardous waste generated (total amount)(1000 T)*share of national population	Eurostat	last available
	Recycling Municipal waste			
1	recycled	Municipal waste recycled (1000t)*share of national population	Eurostat	last available
	Natural hazard			
	vunerability			
1	degree of vulnerability	Degree of vulnerability in Europe (GDP and population density in 50:50 relationship)	espon	1999
	Natural resources status			
	Air			
1	greenhous emissions		eurostat	2002
	water use balance			
1	gross abstraction	Total gross abstraction of freshwater	eurostat	LAST avalable
	Climate channge			
	Gas emission			
1	CO2 emission	CO2 intensity of energy consumption thousand tonnes	eurostat	2002
	Government quality			
	Good governance			
	level of citizen confidence			
1	confindence in EU commission	% of population	eurostat	2004
2	confindence in EU council ministers	% of population	eurostat	2004
3	confidence in EU parliament	% of population	eurostat	2004
	public partecipation			
1	national parliament	% of voting	Eurostat/ international istitute f or democracy and electoral assistance	1997-2004

2	european pariliament	% of voting	Eurostat/European Parliament	
	Social quality and cohesion			
	Soccial cohesion resources			
	Base education			
1	early school leavers	Percentage of the population aged 18-24 with at most lower secondary education and not in further education or training	eurostat	2004
	Economic elements for social cohesion			
1	inequality of income distribution		eurostat	2001-2003
	Risk of social exclusion			
	Risk of children exclusion			
1	persons living in households where no one works	Share of persons aged 0-17 who are living in households where no-one works	eurostat	2004
	Poverty			
1	level of poverty	At-risk-of-poverty rate before social transfers: total	eurostat	2000-2003
	Social wellness attitude			
	Equal opportunities			
1	female employment	female emploiers/total emploiers	eurostat	2003
	Welness			
1	fertility rate	Total fertility rate Number of children per woman	eurostat	2003
2	hope of life	Healthy life years at birth	eurostat	2000-2003
	Resources and funds			
	Level of interventions to the Lisbon strategy			
	Policies for the Lisbon Strategy (structure)			
	R&D			
1	R&D expenditure	% of regional GDP	Third Cohesion Report	2000
	Policies for the Lisbon Strategy (performance)			
	Firms aids			
1	National aids	% of GDP	Eurostat	2003
	Human capital			

1	Human capital expenditure pps per capita	% of regional GDP	Eurostat	2003
	Employment			
1	Employment expenditure pps per capita	% of regional GDP	Eurostat	2003
	Use of funds			
	Use of structural funds and pre-access			
	European funds expending			
1	funds spedding	funds spending	Espon database	1999/2000
	Level of co-operation			2003
	3rd cohesion report			
1	Economics resources	funds spending		2000
	Level of interventions to the Gotenburg Strategy			
	Policies for the Gotenburg Strtegy (structure)			
	Climate and natural resources			
1	Climate and natural resources expenditure pps per capita	% of regional GDP	Eurostat	2003
	Transport			
1	Efficency of accessibility		Espon project 2.2.1	1999
	Policies for the Gotenburg Strtegy (performance)			
	Public Health			
1	Public Health expenditure pps per capita	% of regional GDP	Eurostat	2003
	Poverty and age			
1	Poverty and age expenditure pps per capita	% of regional GDP	Eurostat	2003

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Annex II A

"Innovations and research " Determinant

Maps and comments

30 September 2005

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

This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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

The partnership behind the ESPON programme consists of the EU Commission and the Member States of the EU25, plus Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

Information on the ESPON programme and projects can be found on www.espon.lu
The web side provides the possibility of downloading and examining the most recent documents produced by both finalised and ongoing ESPON projects.

This basic report exists only as an electronic version.

As you will be asked for the name and address of the editor the Lead partner should as the responsible person of the project assume the role of the editor and give information accordingly.
The registration in the world wide catalogue is free of charge.

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Innovations and research: comments of the maps

The comparison between the *two final maps of I&R* pictures a general uniformity at national level (Map. 17 Equal), but some different levels at regional level (Map. 17 Quantile).

At national level, a lot of countries have got a *low* I&R profile; only United Kingdom, Sweden, Finland, a part of Ireland, Slovenia, some regional enclaves in Netherlands, Austria, Spain, Portugal, Italy, and, between the new countries, Poland and Lithuania, Latvia picture a *medium-low* profile.

At regional level, the differences are more evident, with a *medium-high* level in the "Pentagon area", Slovenia, *few high* levels into some regional enclaves of United Kingdom and Netherlands,

This difference becomes more and more evident if we look at the territorialised map 18 crossing the regional I&R Q data with the territorial typologies at NUTs3. Here, only few regions in Finland, Sweden and Norway have got a level of territorial I&R called *absolute* (e.g. very very high).

This happens because, if one looks at the single indicators (first level or input data), it is possible to note (see equal interval maps):

- the values of virtual population (population "surfing the web") are generally medium-low and low in all European countries. Only Norway, Denmark, Switzerland present medium-high values;
- contrarily, the values of virtual firms are generally high (except Romania with a low value and Greece, Lithuania, Latvia, few regions of Portugal and Spain with medium-low values); medium-high for virtual institutions (except Netherlands, Czech Republic, Greece with medium-low values and Latvia, Poland, Hungary, Slovak Republic with low values) as well as for virtual stakeholders;
- the education demand is medium-low and low in all European countries (except for the medium-high value in Emilia Romagna region - Italy and Övre Norrland region – Sweden);
- the Human Capital structure (Innovative Dependency Index) is more positive in the European new countries than in the old ones, because in the last ones the medium age of population is high (as in Sweden);
- the share of population with a tertiary education level is generally medium-low o low (except in United Kingdom, Denmark, Finland, Lithuania, which pictures a great attention for the life-long learning

too). i.e. Italy and Greece have got the same low level of the greater part of new countries;

- a bit of countries picture attention for the knowledge innovative structures, and the level of R&D infrastructures is generally low (except Ireland, Netherlands and some regional enclaves); while the level of telecommunication divides vertically in two parts the Europe system, designing a positive '**Y**' from the East Mediterranean area (Adriatic corridor, Austria, Czech, Germany) to United Kingdom at West and Scandinavian Peninsular at North-East.

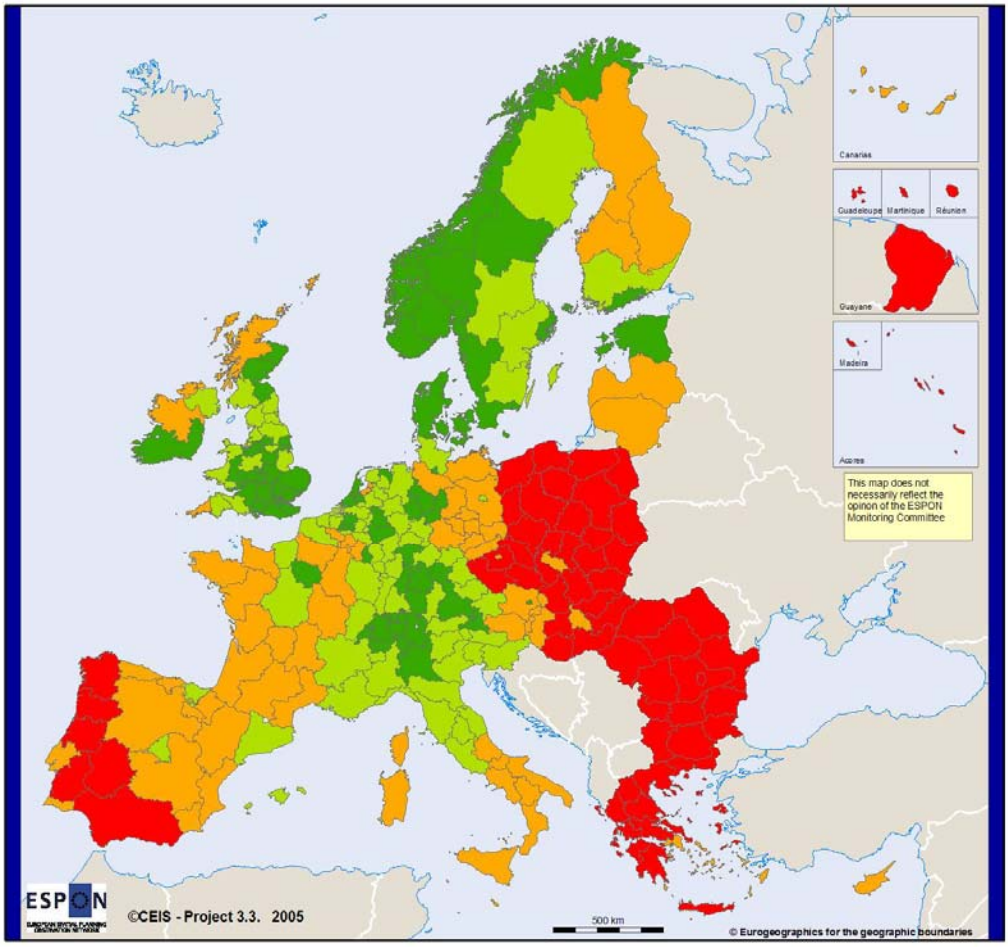
At regional level, the situation is generally better (see Quantiles maps):

- the values of virtual population (surfing the web population) are generally medium-high and high in the old European regions, from central Mediterranean area to Northern; medium-low and low into the Southern Mediterranean and Eastern regions, and in France too;
- the values of virtual firms generally go in the same direction (except to be medium-low in the UK regions); they are medium-high and high for virtual institutions (except for the Eastern regions), while the virtual stakeholders are stronger in a vertical direction from the central area of Italy to Scandinavian Peninsula;
- both the Mediterranean regions, UK, Sweden and Finland put more attention at offering a good tertiary level of education at the young demand (high and medium-high); this is low in all the Eastern European regions;
- the Human Capital structure (Innovative Dependency Index) is more positive in the Eastern regions than old ones, because in the last ones the medium age of population is high, confirming the national evaluation;
- the share of population with a tertiary education level is generally medium-low o low (except in United Kingdom, Netherlands, Denmark, Finland, Lithuania regions). i.e. Italy and Greece have got the same low level of the greater part of new regions, as at national level;

the Pentagon, Sweden and Finland regions show attention for the knowledge innovative structures, while it's generally more low the regional attention for the R&D infrastructures (except Ireland, Finland, Sweden, Norway and some regional enclaves); while the level of telecommunication maintains the vertical division in two parts of the Europe system, confirming the design od a positive '**Y**' from the East Mediterranean area (from Adriatic regions to Austria, Czech, Germany) to United Kingdom at West and Scandinavian Peninsula at North-East.

QUANTILES VERSION

Map 1- "VIRTUAL POPULATION"

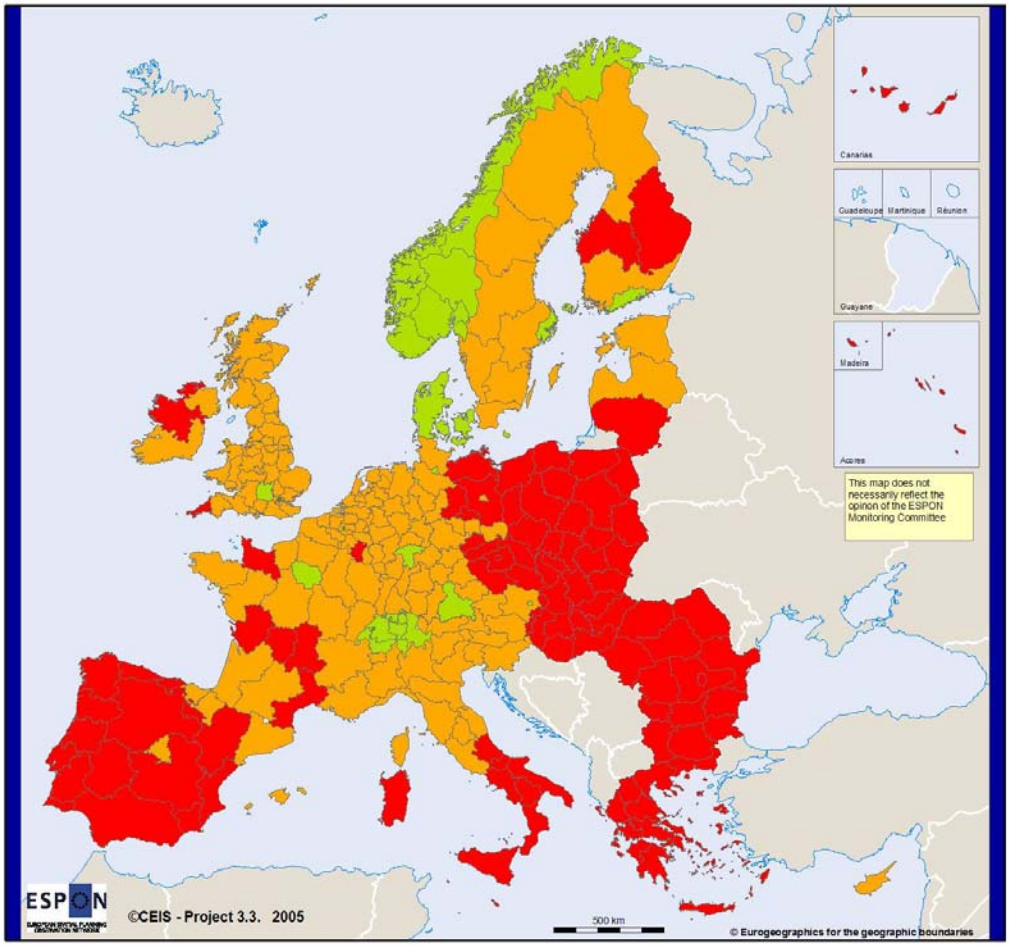


Legend

- high - 70
- medium high - 75
- medium low - 69
- low - 66

EQUAL VERSION

Map 1- "VIRTUAL POPULATION"

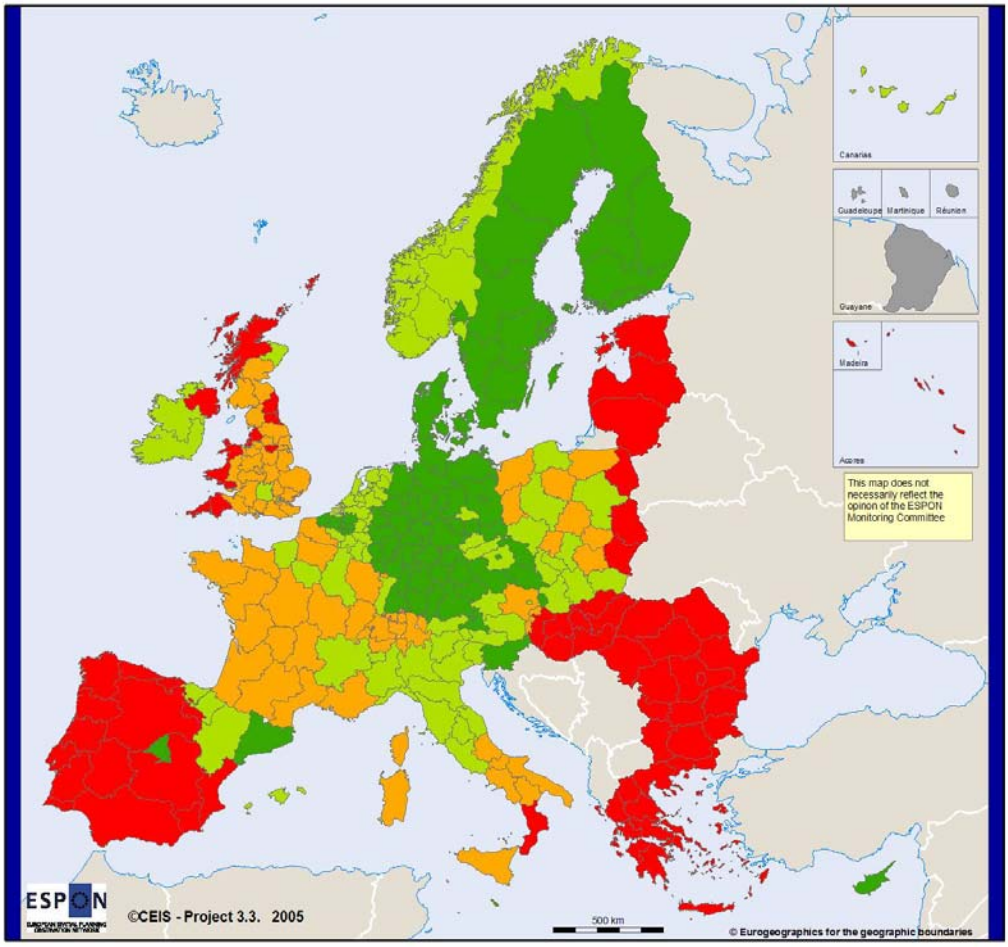


Legend

- A
- B
- C
- D

QUANTILES VERSION

Map 2- "VIRTUAL FIRMS"

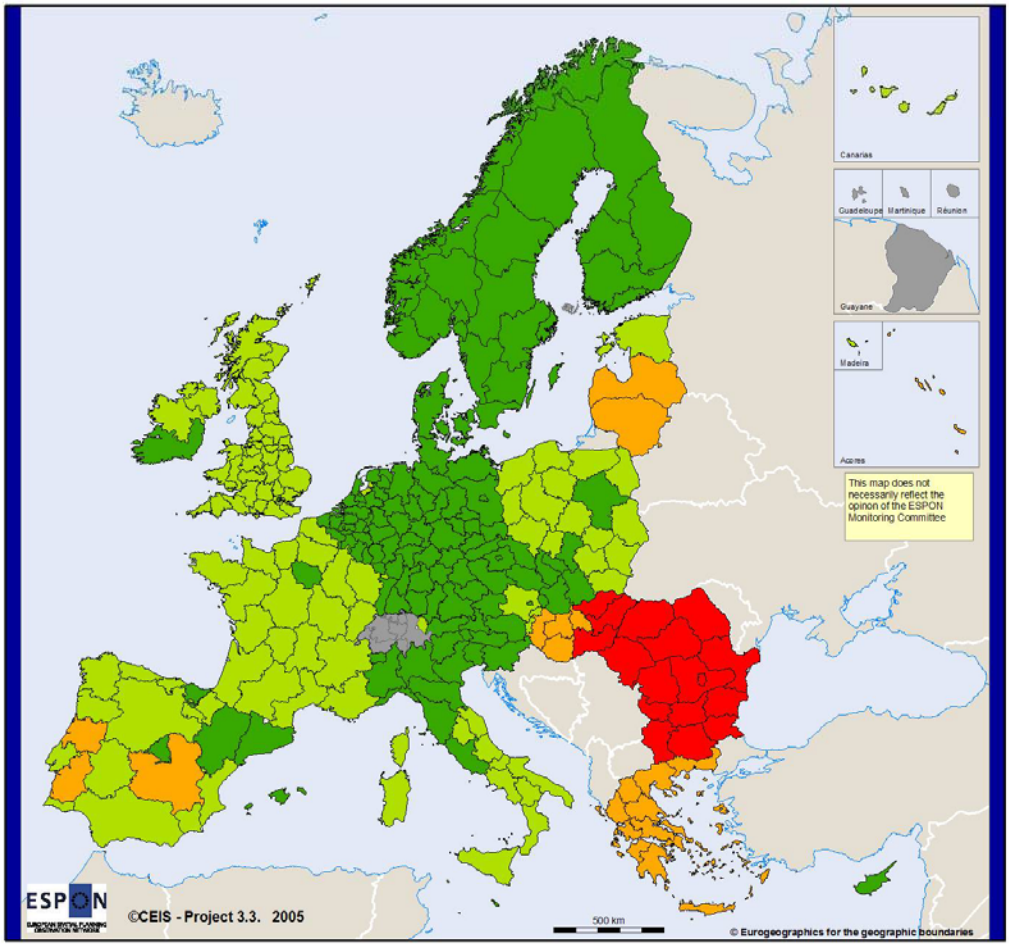


Legend

- high - 71
- medium high - 70
- medium low - 66
- low - 69
- no data - 4

EQUAL VERSION

Map 2- "VIRTUAL FIRMS"



Legend

<all other values>

2_VF.VF_NORM_CL

No data

A

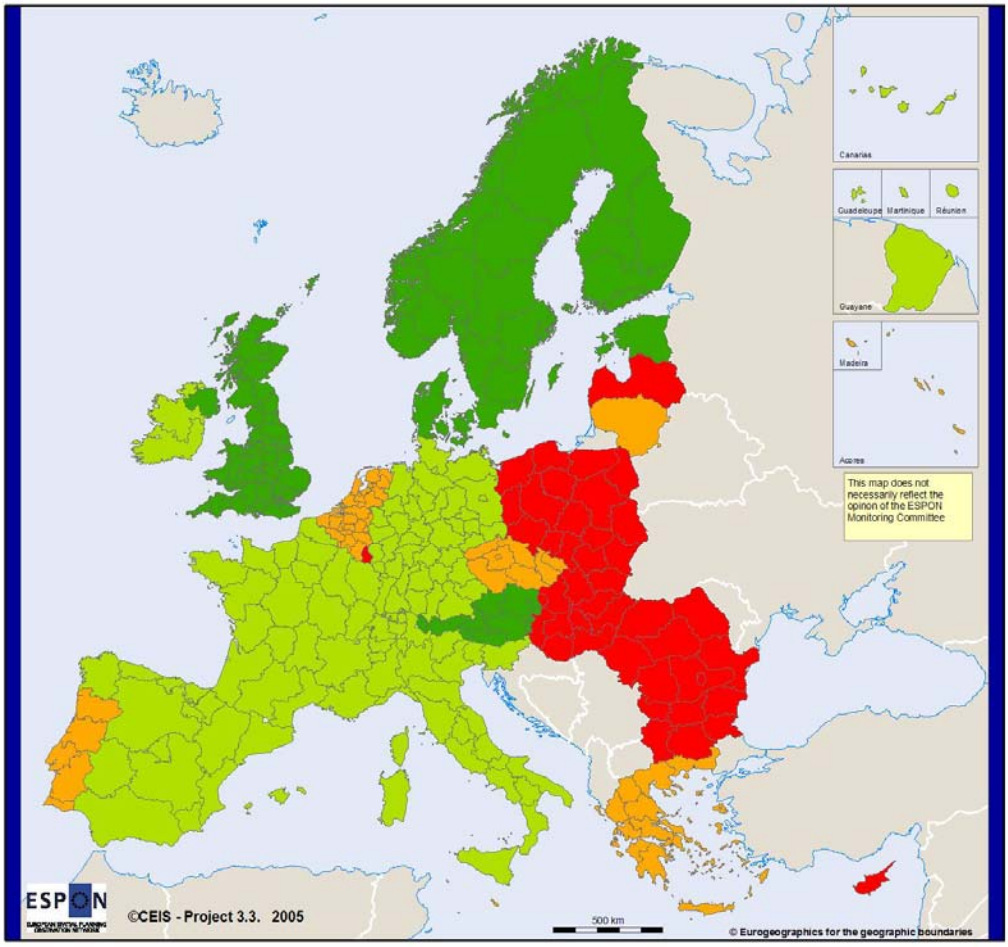
B

C

D

QUANTILES VERSION

Map 3- "VIRTUAL INSTITUTIONS"

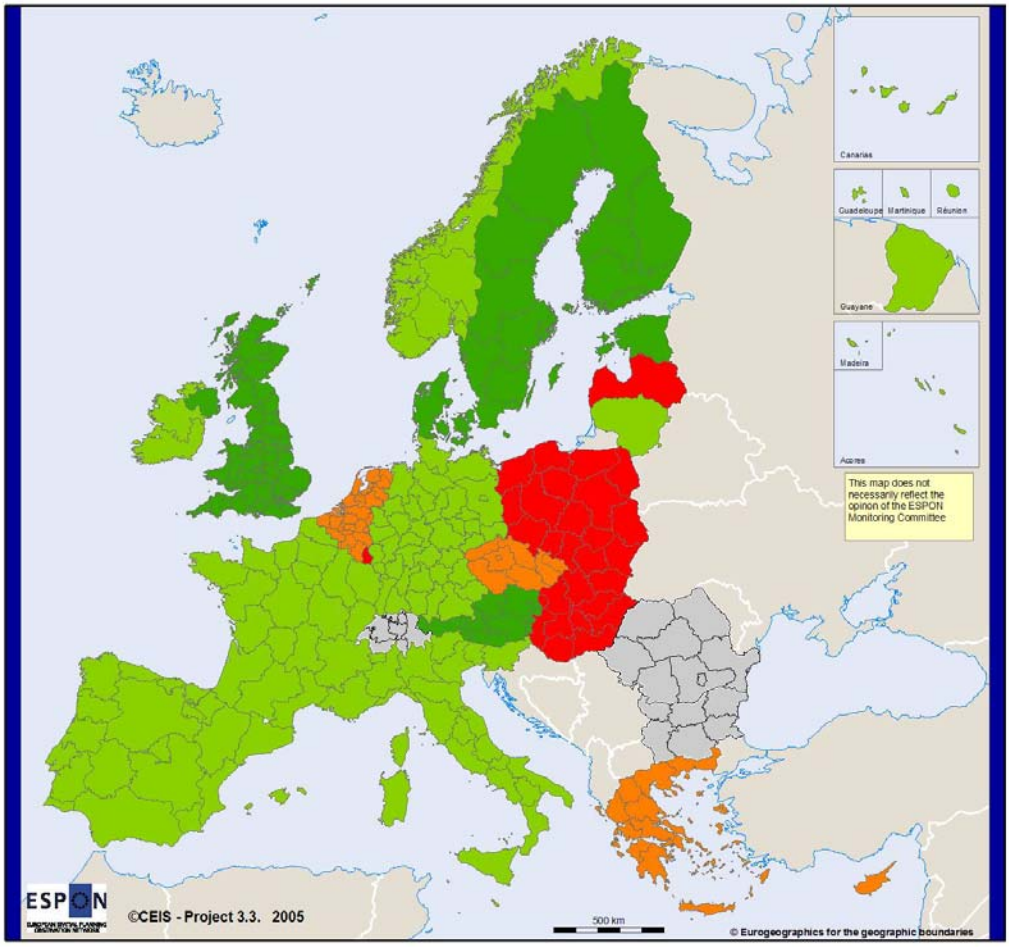


Legend

- high - 7 (countries)
- medium high - 7
- medium low - 7
- low - 8

EQUAL VERSION

Map 3- "VIRTUAL INSTITUTIONS"



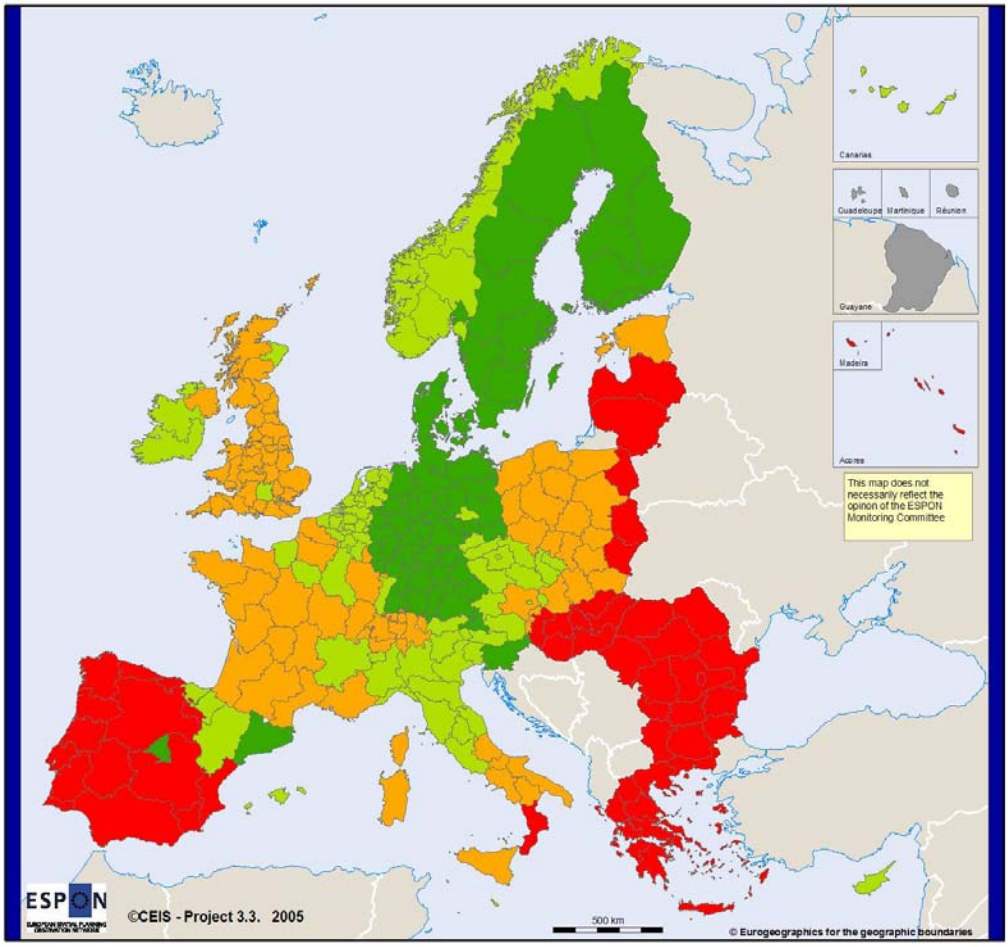
Legend

3_VINST.CLASS

- no data
- a
- b
- c
- d

QUANTILES VERSION

Map 4- "VIRTUAL STAKEHOLDERS"

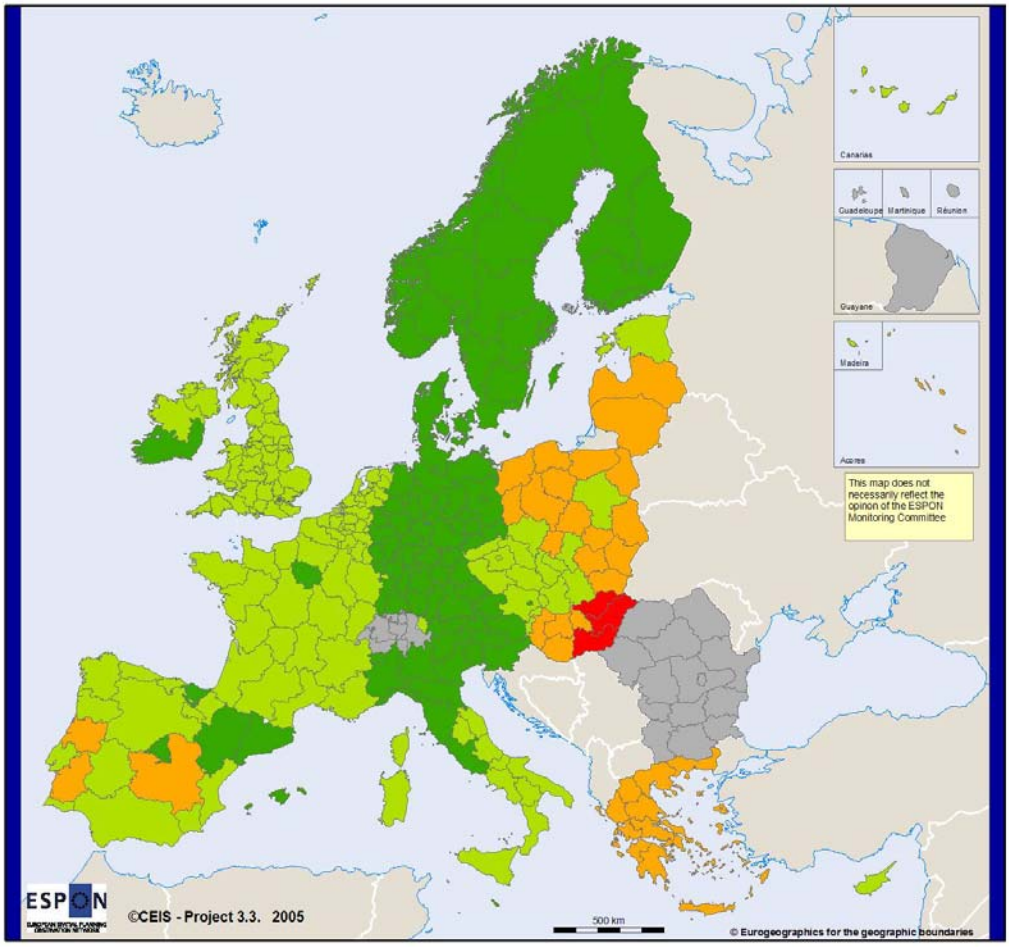


Legend

- high - 69
- medium high - 74
- medium low - 86
- low - 58
- incomplete data - 4

EQUAL VERSION

Map 4- "VIRTUAL STAKEHOLDERS"

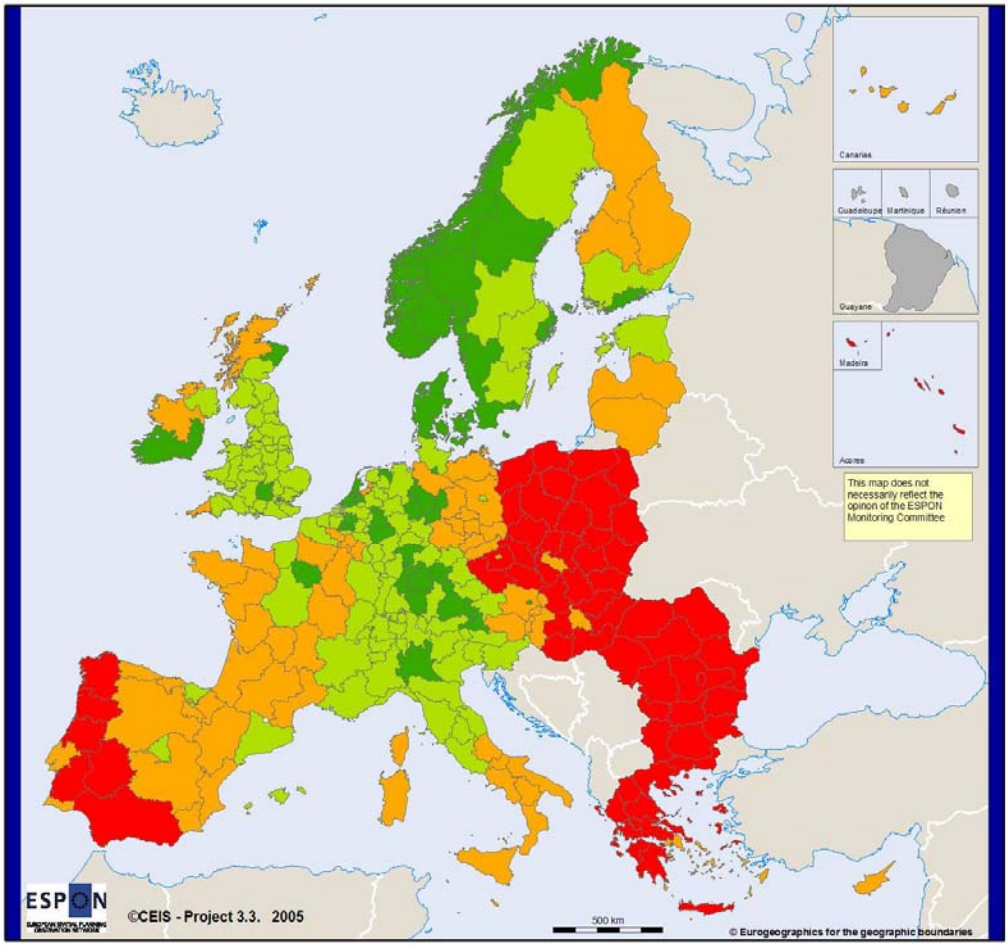


Legend

- high
- medium high
- medium low
- low
- incomplete data

QUANTILES VERSION

Map 5- "VIRTUAL SOCIETY"

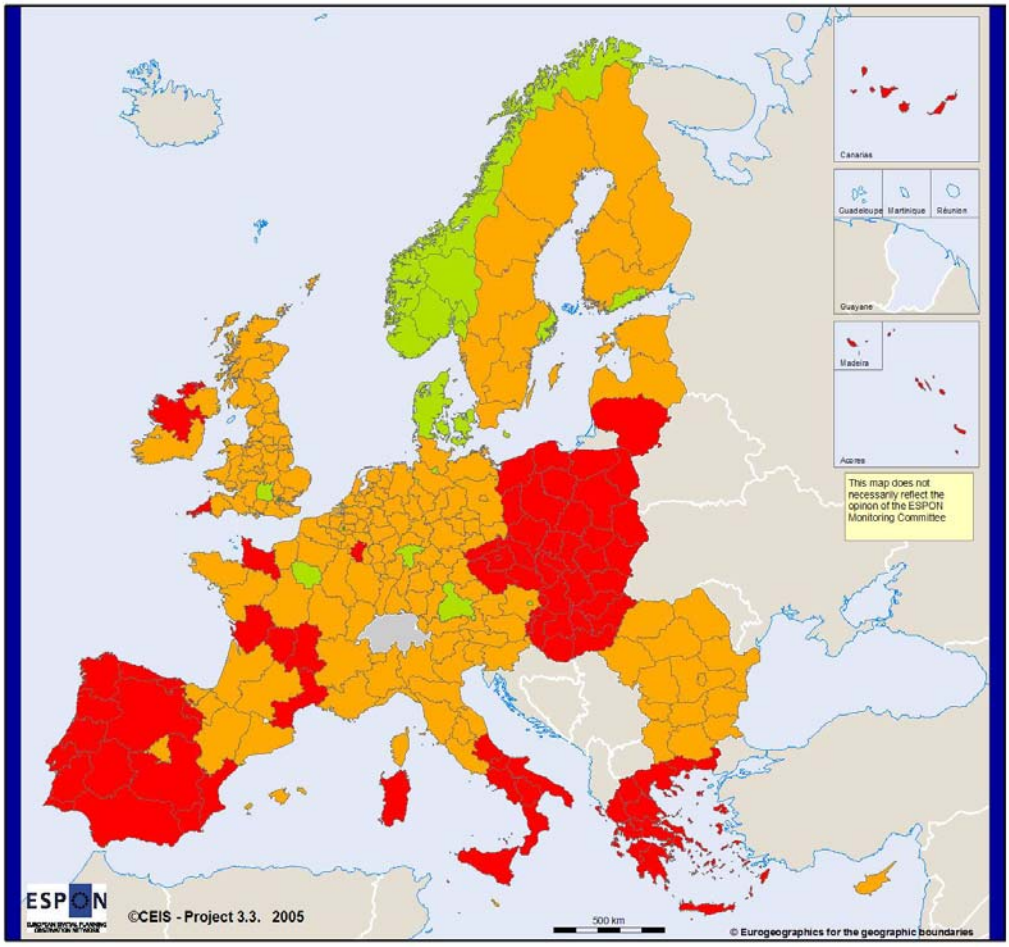


Legend

- high - 42
- medium high - 103
- medium low - 69
- low - 62
- incomplete data - 4

EQUAL VERSION

Map 5- "VIRTUAL SOCIETY"

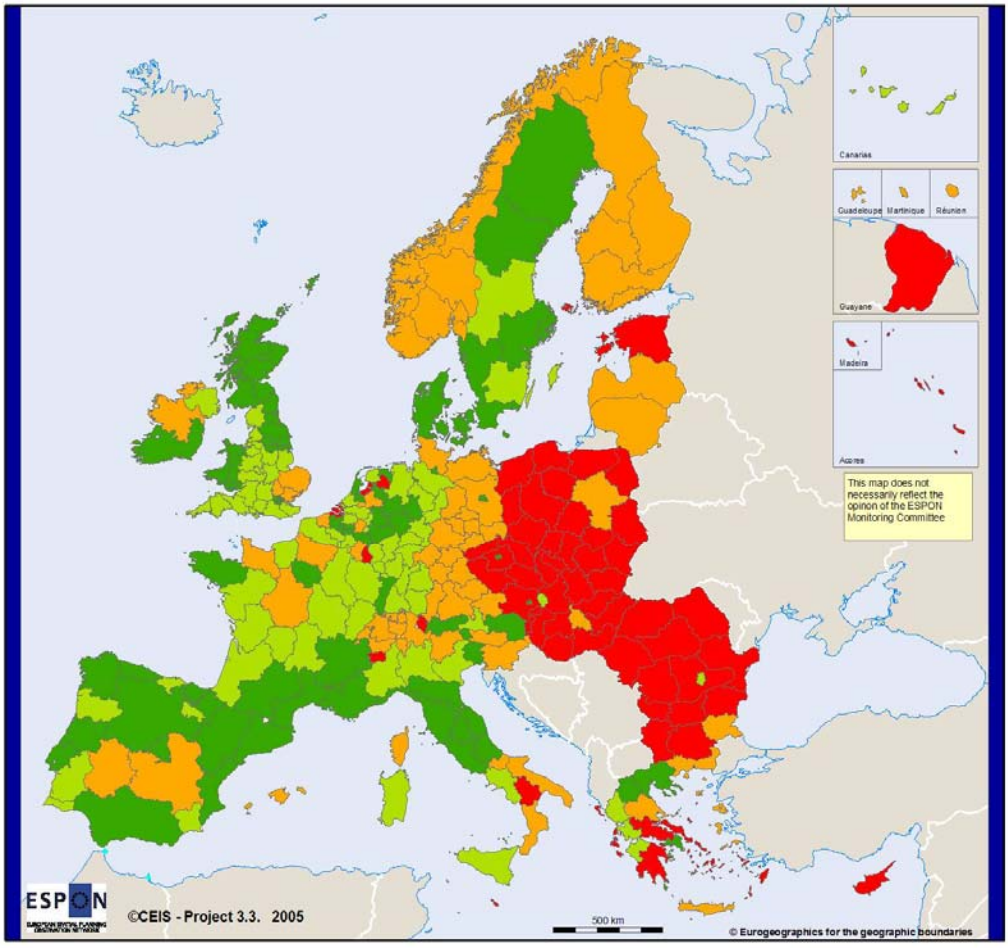


Legend

- high
- medium high
- medium low
- low
- incomplete data

QUANTILES VERSION

Map 6- "KNOWLEDGE CREATION - EDUCATION"



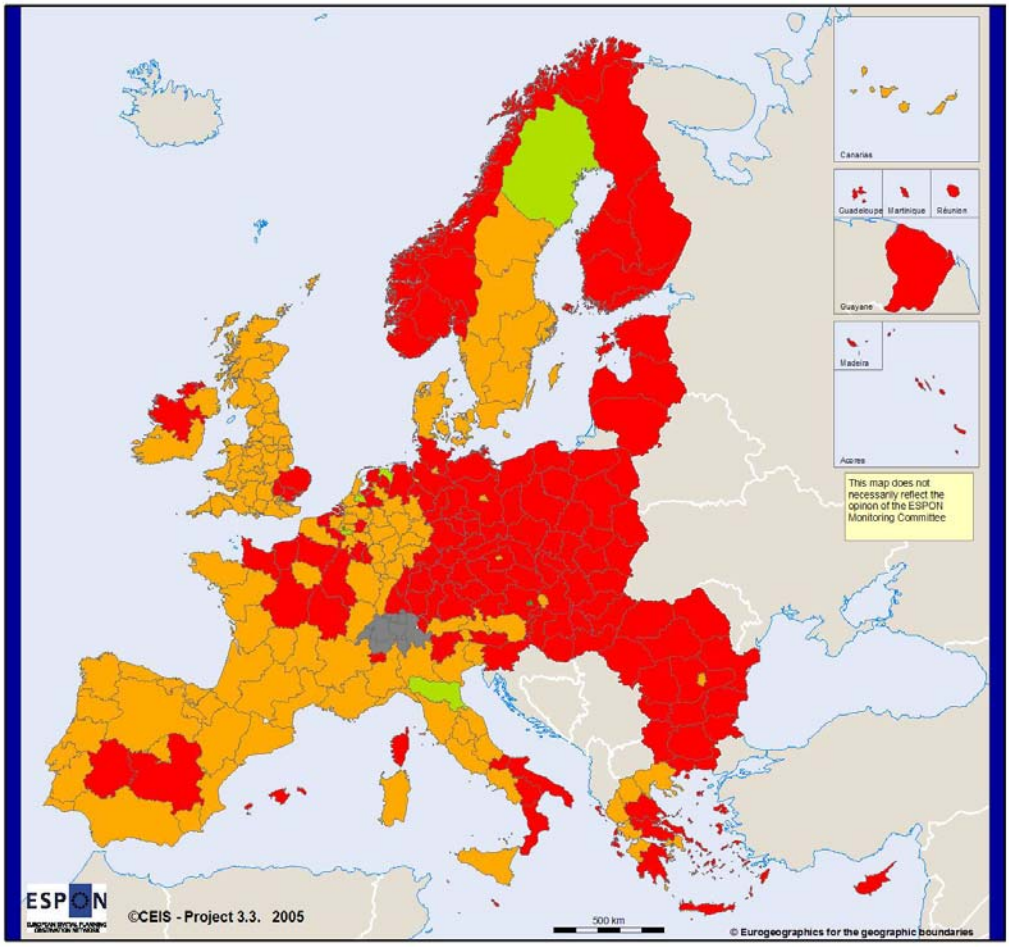
Legend

EDUCATION DEMAND: TERTIARY LEVEL STUDENTS/POP. AGED 15-24

- high - 73
- medium high - 73
- medium low - 70
- low - 63
- no data - 1

EQUAL VERSION

Map 6- "KNOWLEDGE CREATION - EDUCATION"



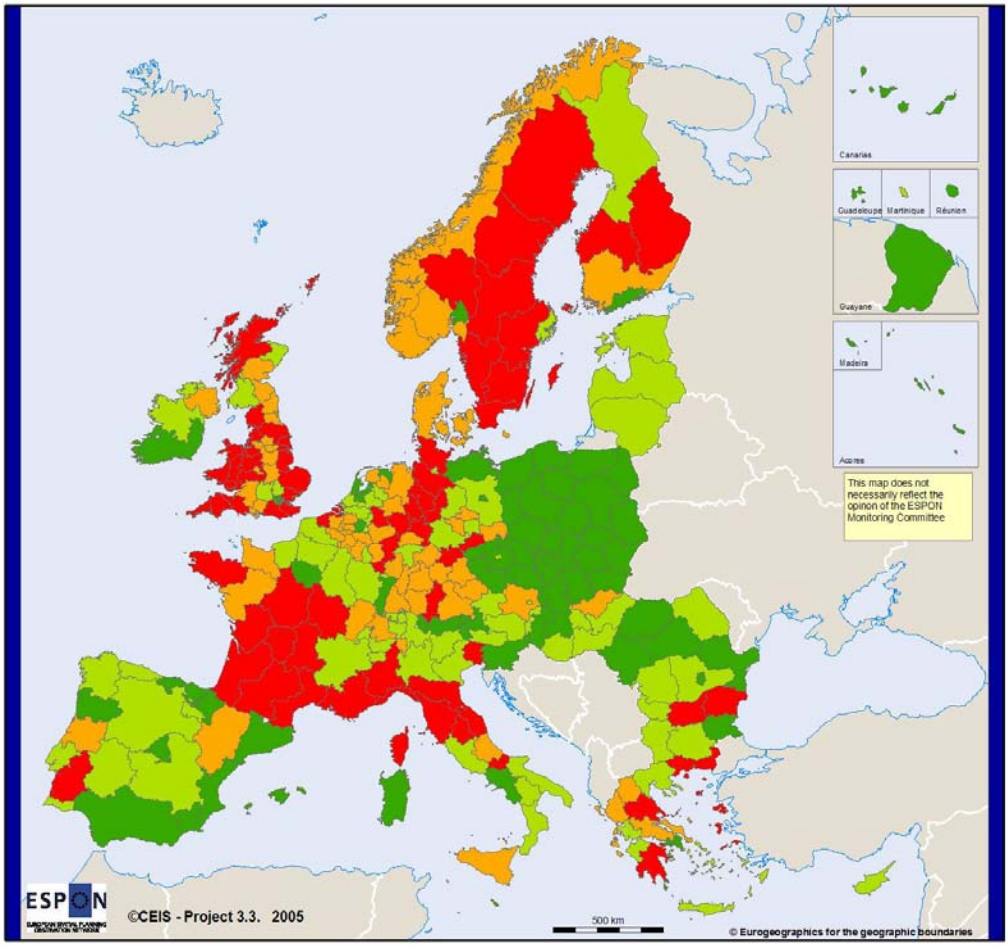
Legend

EDUCATION DEMAND: TERTIARY LEVEL STUDENTS/POP AGED 15-24

- No data
- high
- medium high
- medium low
- low

QUANTILES VERSION

Map 7- "HUMAN CAPITAL - STRUCTURE"



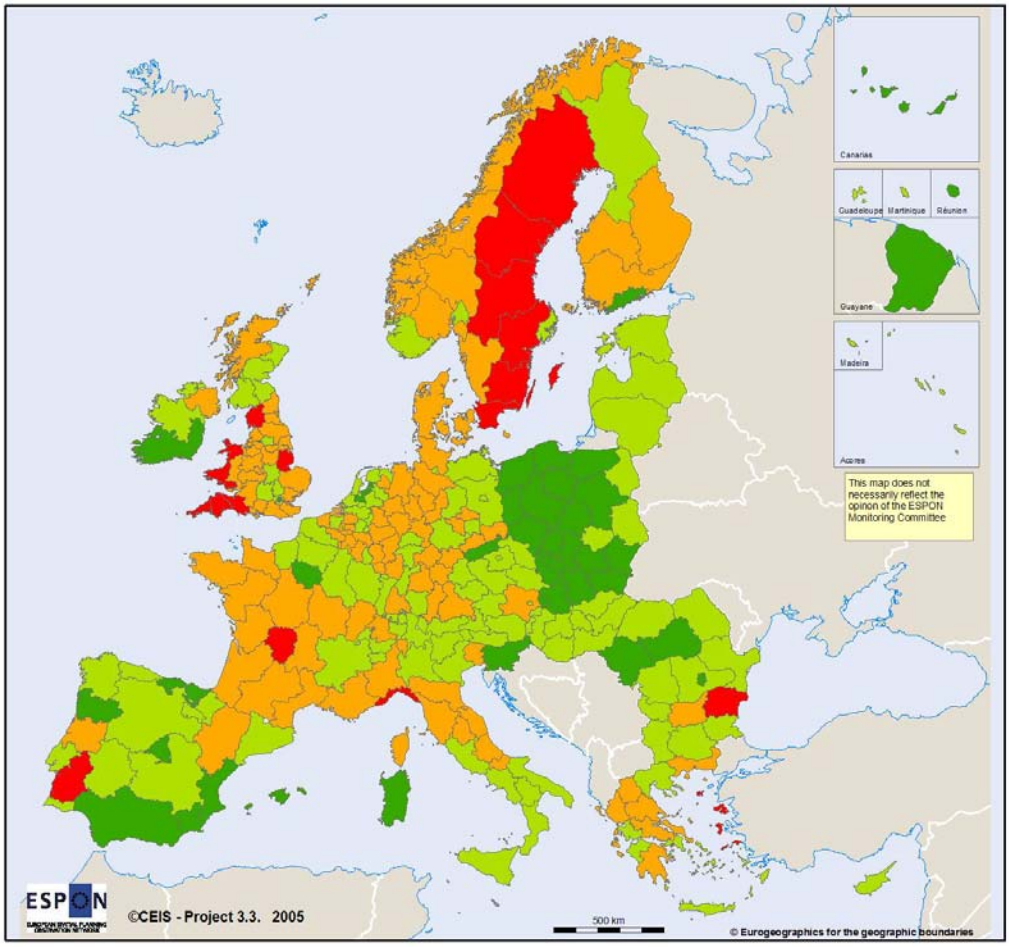
Legend

Innovative Dependency Index: (POP 0-14 + POP OVER 55)/POP 15-55

- high - 74
- medium high - 72
- medium low - 62
- low - 72

EQUAL VERSION

Map 7- "HUMAN CAPITAL - STRUCTURE"



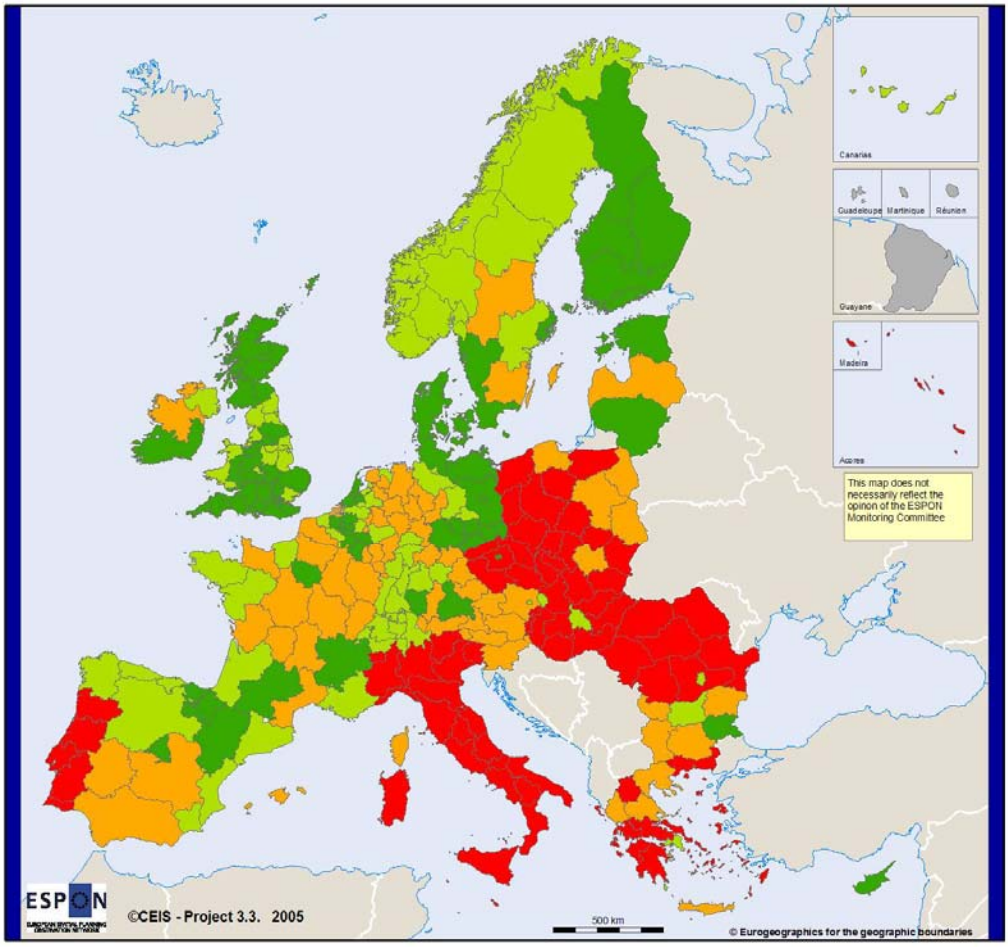
Legend

Innovative Dependency Index: (POP 0-14 + POP OVER 55)/POP 15-55

- no data
- high
- medium high
- medium low
- low

QUANTILES VERSION

Map 8- "POPULATION WITH TERTIARY EDUCATION"



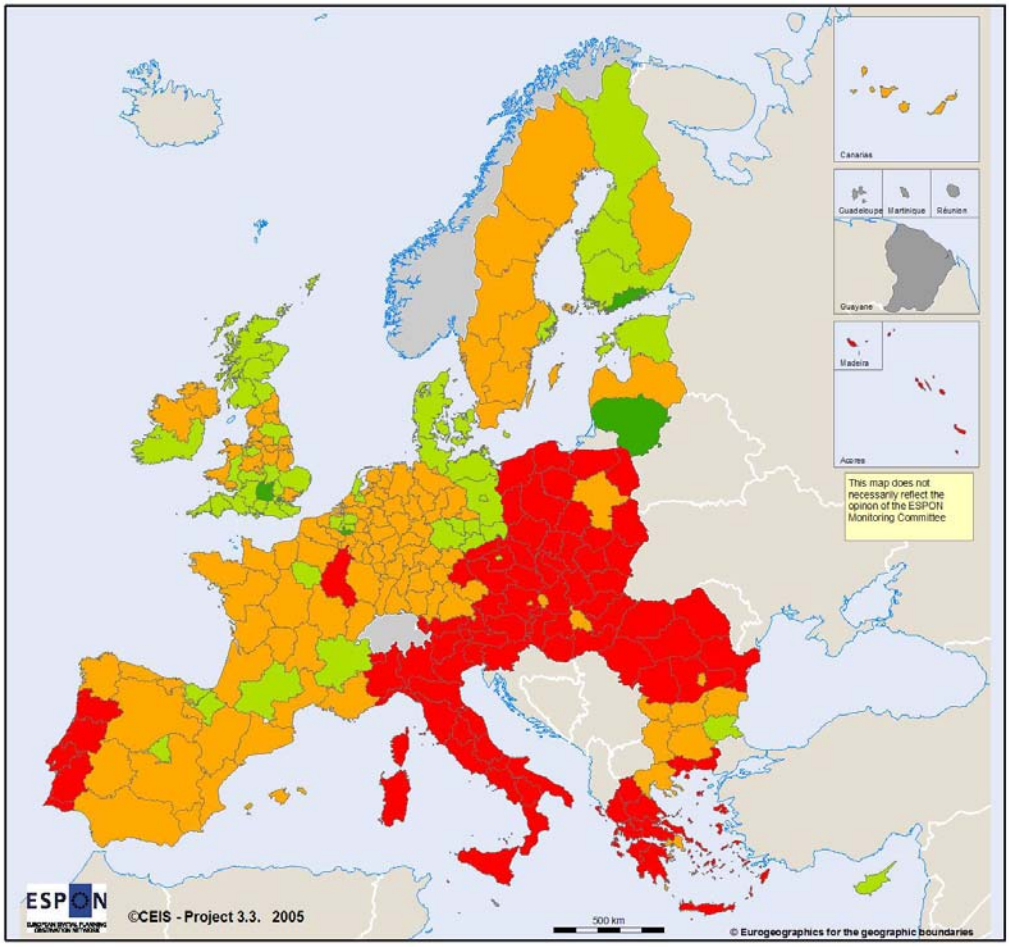
Legend

SHARE OF POPULATION WITH HIGH LEVEL OF EDUCATION ATTAINMENT

- high - 70
- medium high - 69
- medium low - 66
- low - 71
- no data - 4

EQUAL VERSION

Map 8- "POPULATION WITH TERTIARY EDUCATION"



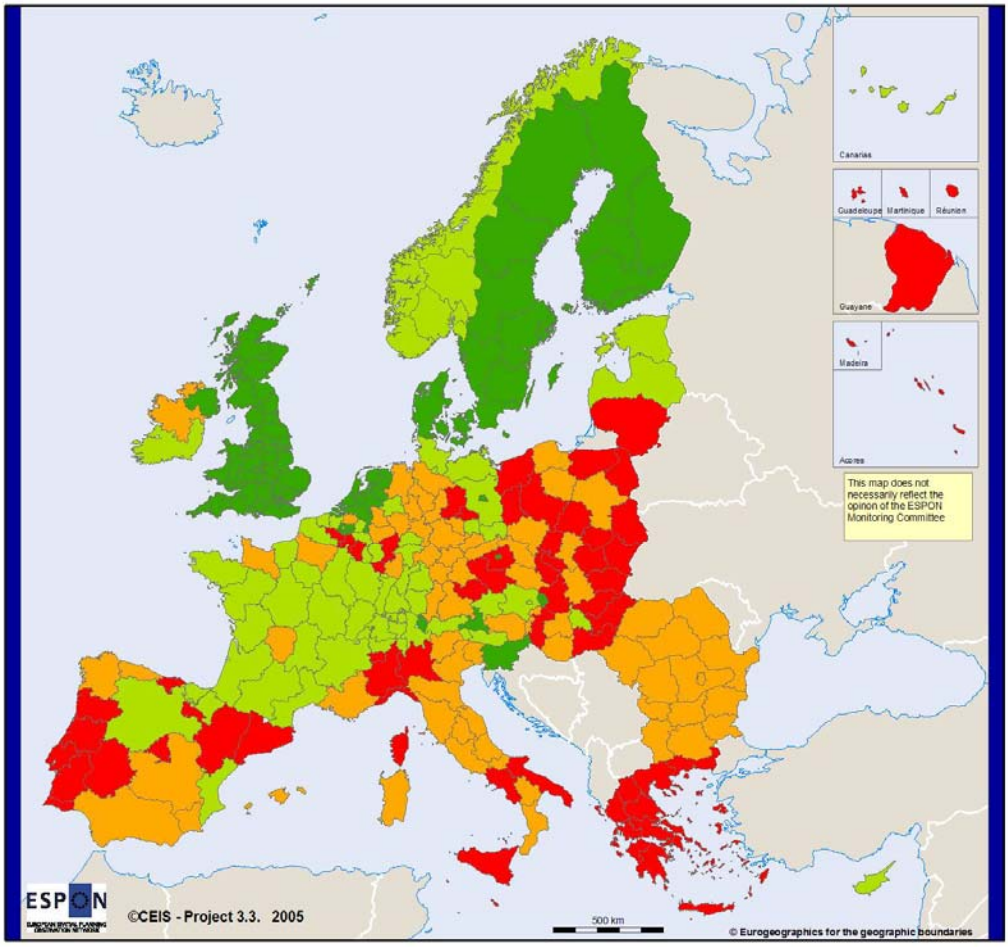
Legend

SHARE OF POPULATION WITH HIGH LEVEL OF EDUCATION ATTAINMENT

- high
- medium high
- medium low
- low
- no data

QUANTILES VERSION

Map 9- "POPULATION IN LIFE-LONG LEARNING"



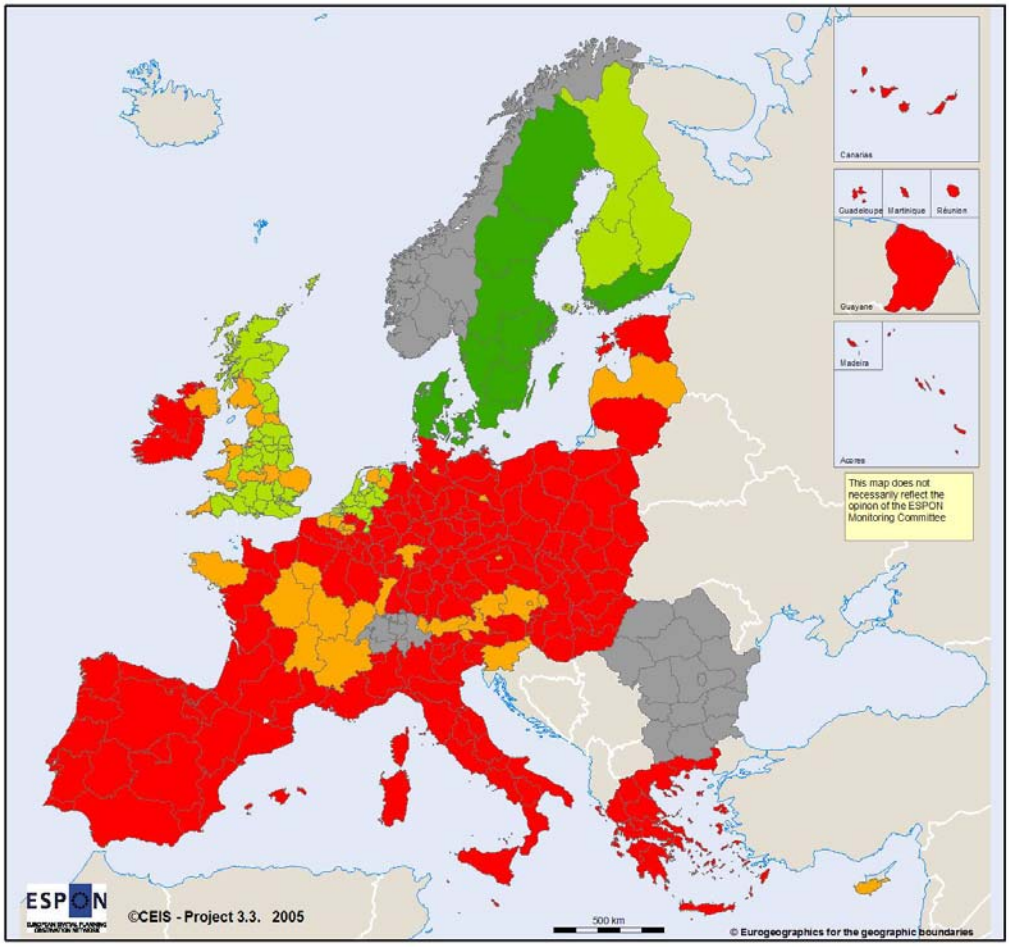
Legend

Share of adults aged 25-64 participating in education and training

- high - 72
- medium high - 67
- medium low - 72
- low - 69

EQUAL VERSION

Map 9- "POPULATION IN LIFE-LONG LEARNING"



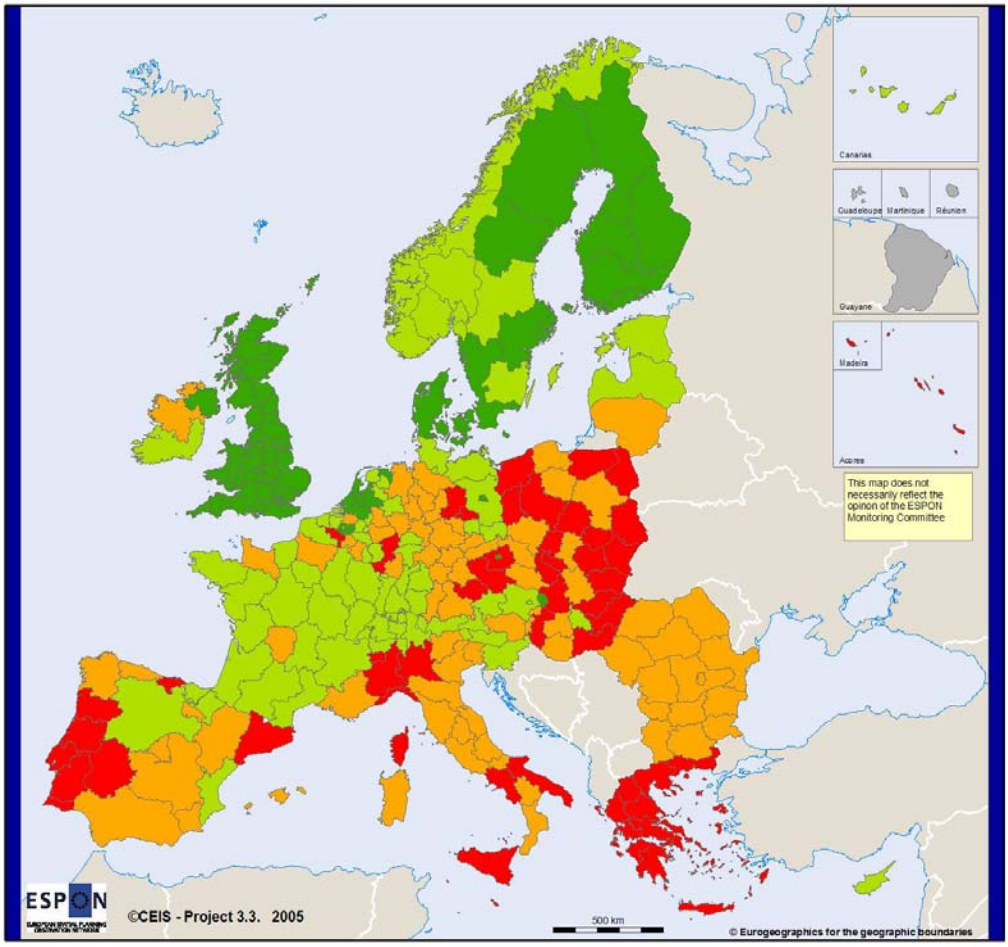
Legend

POPULATION IN LIFE-LONG LEARNING

- No data
- high
- medium high
- medium low
- low

QUANTILES VERSION

Map 10- "HUMAN CAPITAL - EDUCATION"

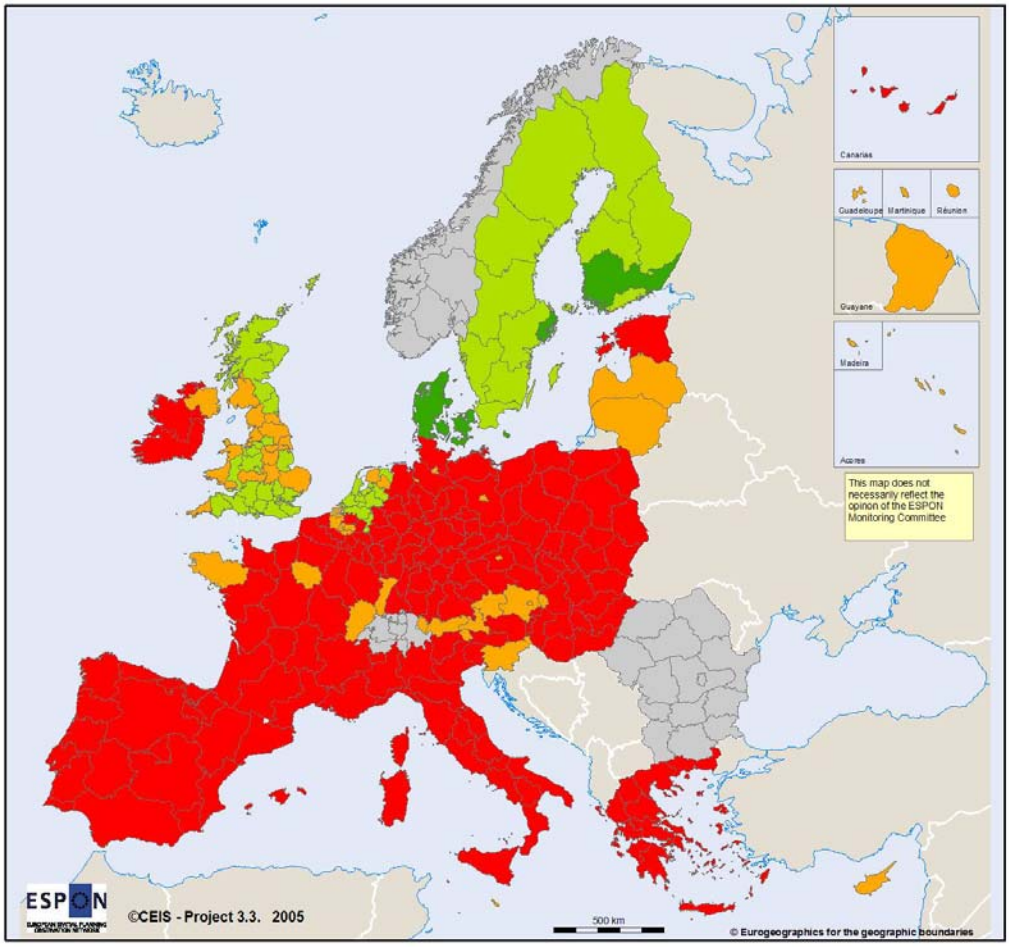


Legend

- high - 62
- medium high - 77
- medium low - 78
- low - 59
- Incomplete data - 4

EQUAL VERSION

Map 10- "HUMAN CAPITAL - EDUCATION"



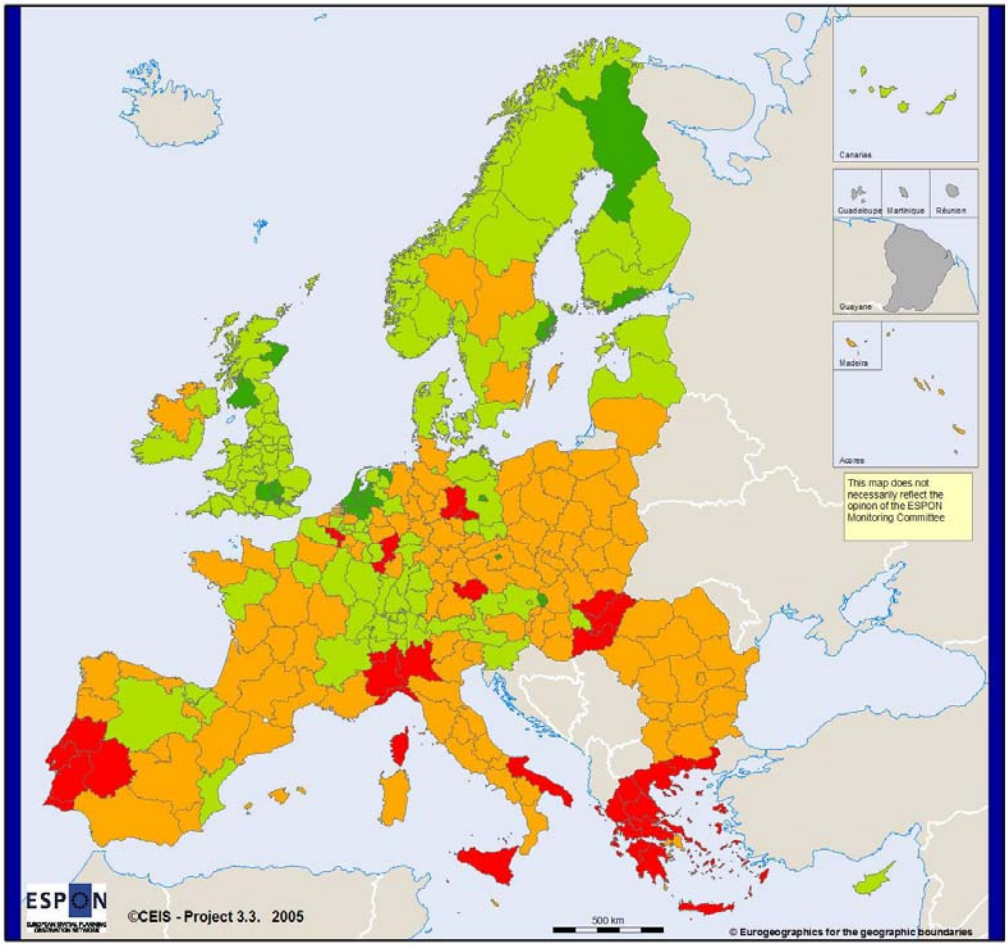
Legend

HUMAN CAPITAL - EDUCATION

- high
- medium high
- medium low
- low
- Incomplete data

QUANTILES VERSION

Map 11- "HUMAN CAPITAL"

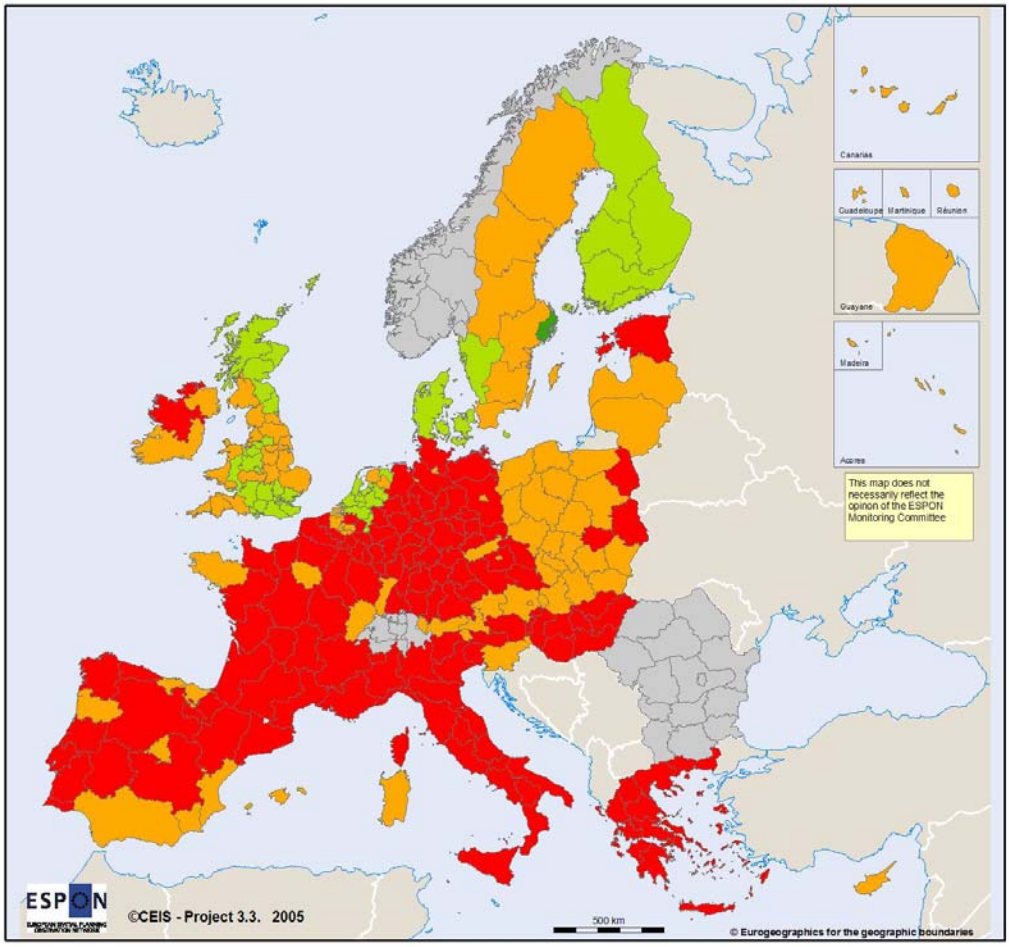


Legend

- high - 19
- medium high - 105
- medium low - 119
- low - 33
- Incomplete data - 4

EQUAL VERSION

Map 11- "HUMAN CAPITAL"

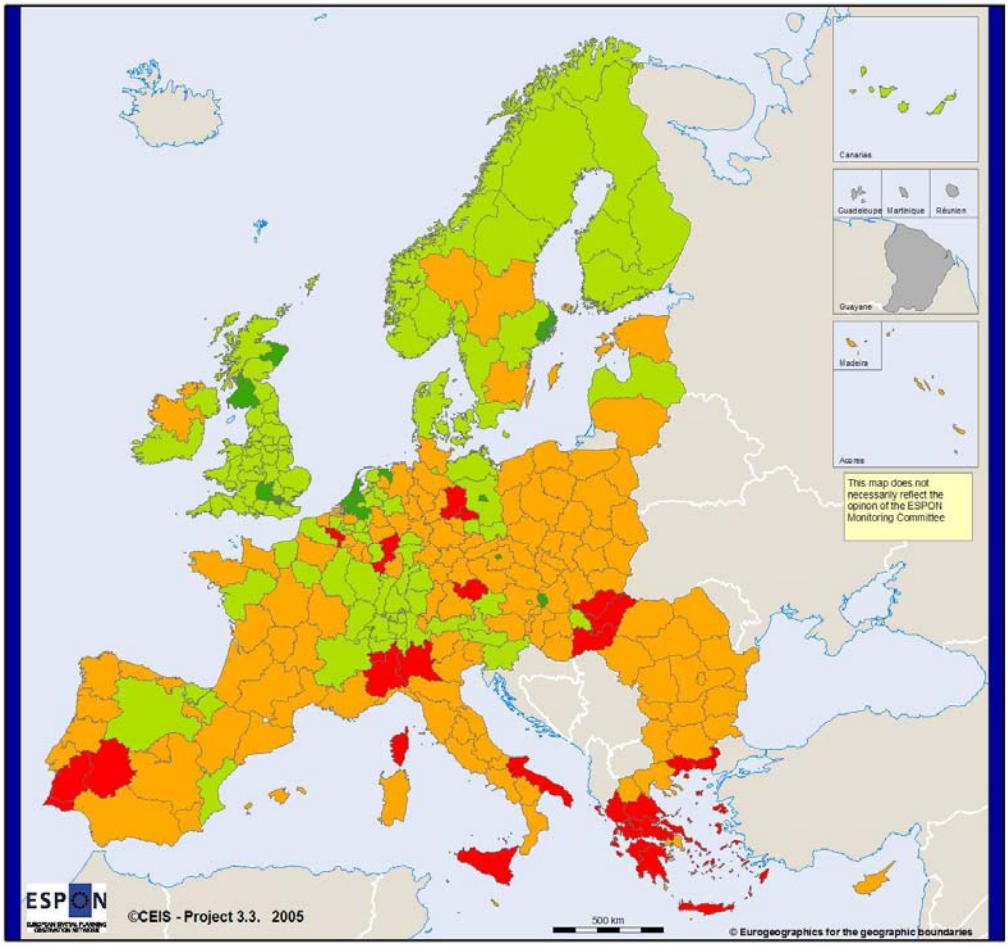


Legend

- high
- medium high
- medium low
- low
- Incomplete data

QUANTILES VERSION

Map 12- "KNOWLEDGE INNOVATIVE STRUCTURES"

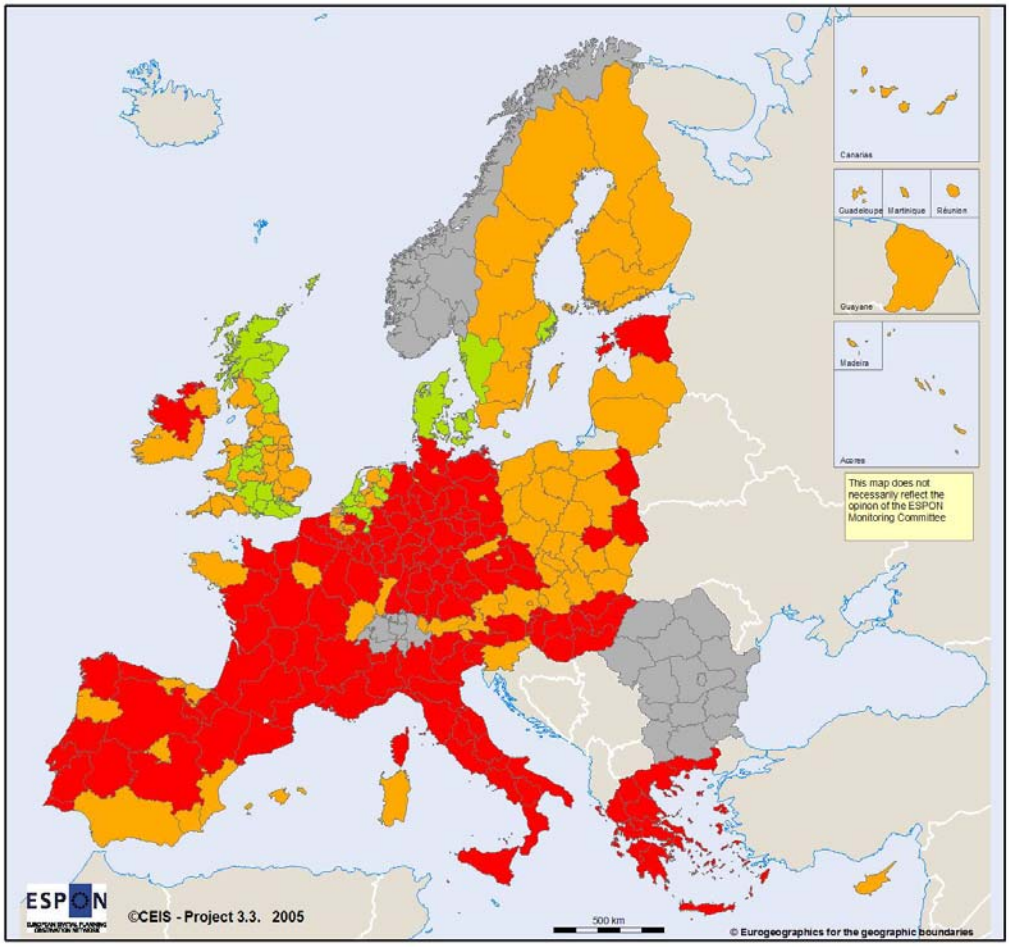


Legend

- high - 14
- medium high - 103
- medium low - 130
- low - 28
- Incomplete data - 5

EQUAL VERSION

Map 12- "KNOWLEDGE INNOVATIVE STRUCTURE"



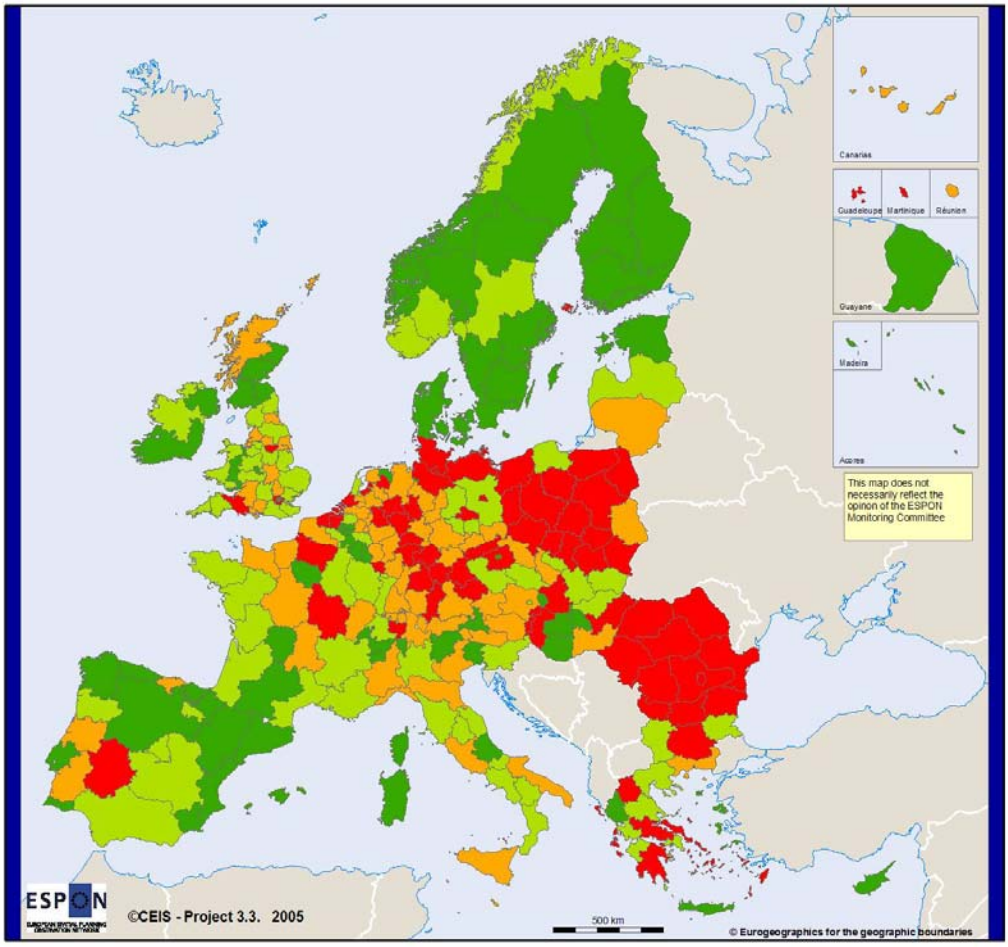
Legend

KNOWLEDGE INNOVATIVE STRUCTURE

- incomplete data
- medium high
- medium low
- low

QUANTILES VERSION

Map 13- "R&D INFRASTRUCTURE"

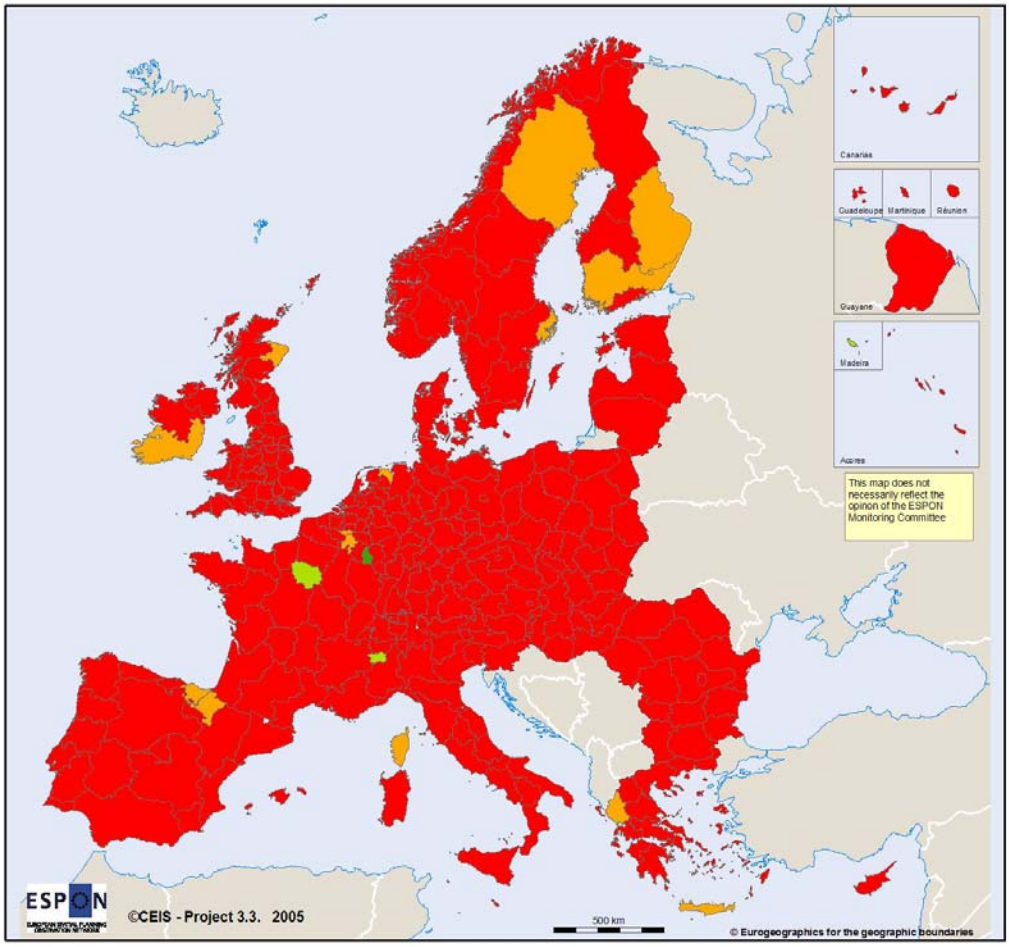


Legend

- high - 70
- medium high - 70
- medium low - 67
- low - 73

EQUAL VERSION

Map 13- "R&D INFRASTRUCTURE"



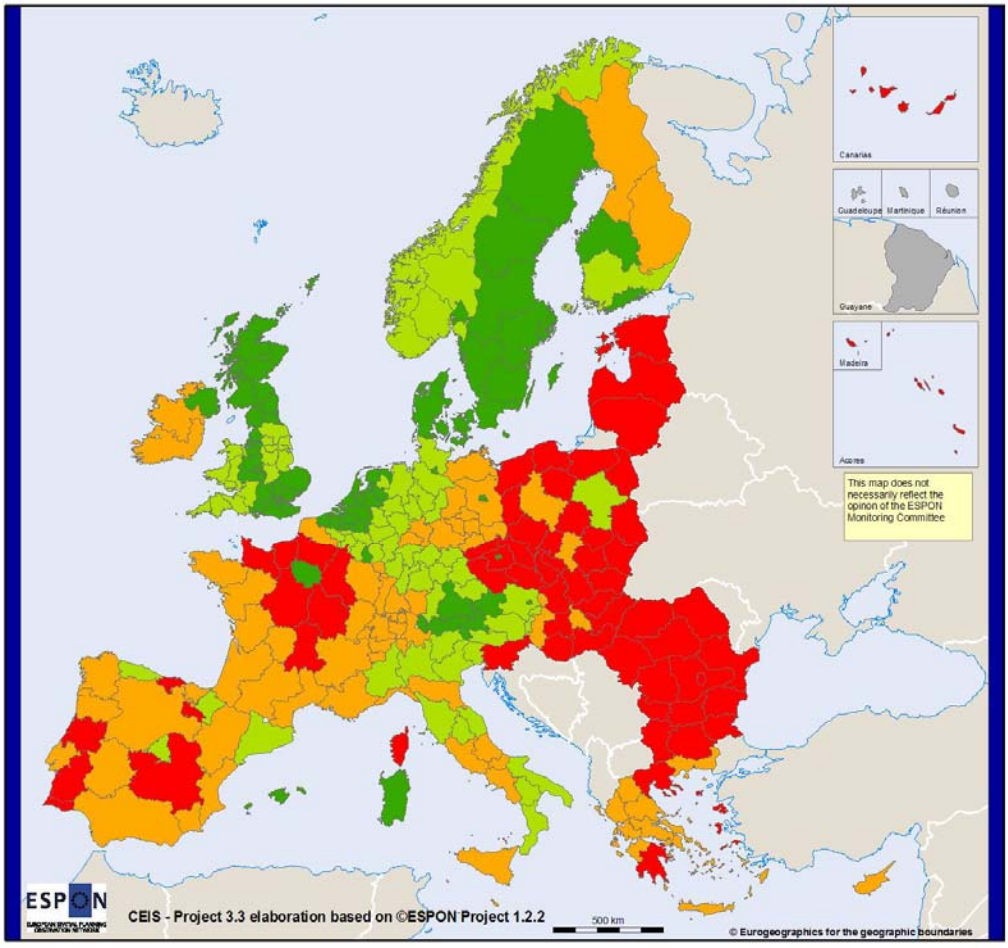
Legend

R&D INFRASTRUCTURE

- Incomplete data
- high
- medium high
- medium low
- low

QUANTILES VERSION

Map 14- "LEVEL OF TELECOMMUNICATION DEVELOPMENT"

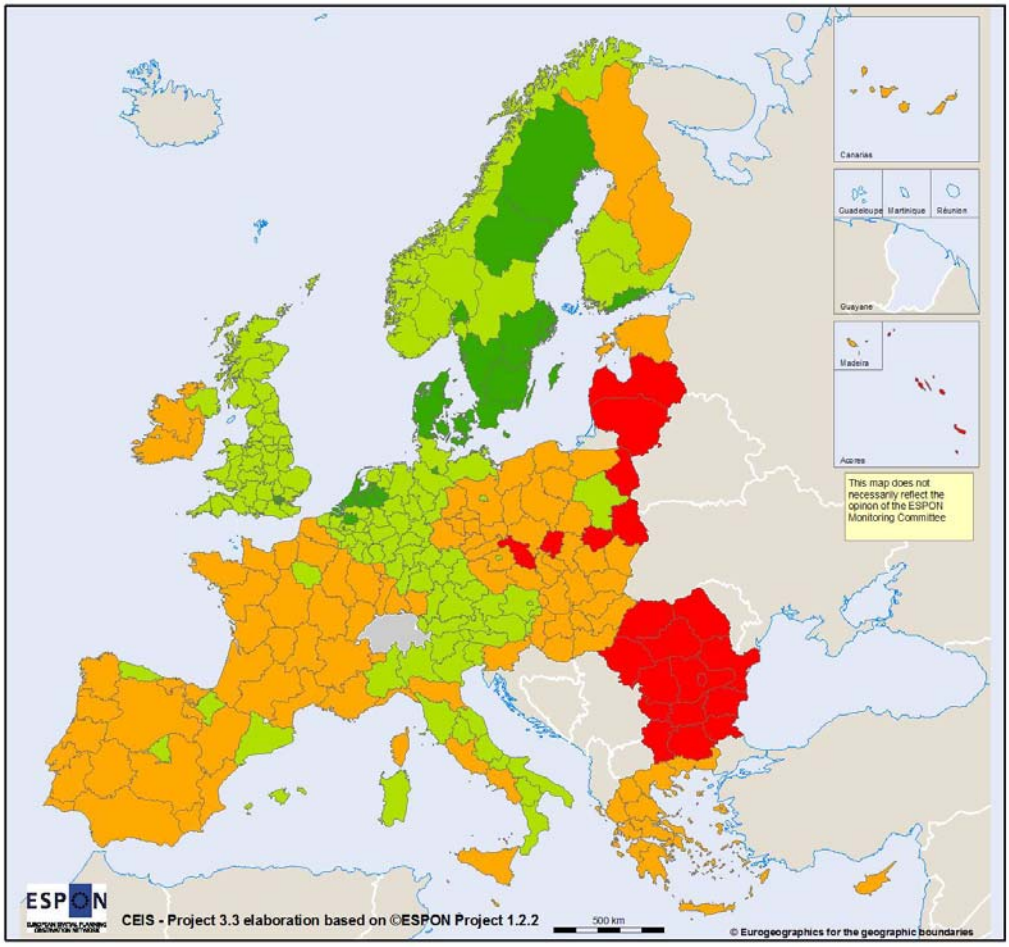


Legend

- high - 66
- medium high - 70
- medium low - 74
- low - 66
- no data - 4

EQUAL VERSION

Map 14- "LEVEL OF TELECOMMUNICATION DEVELOPMENT"

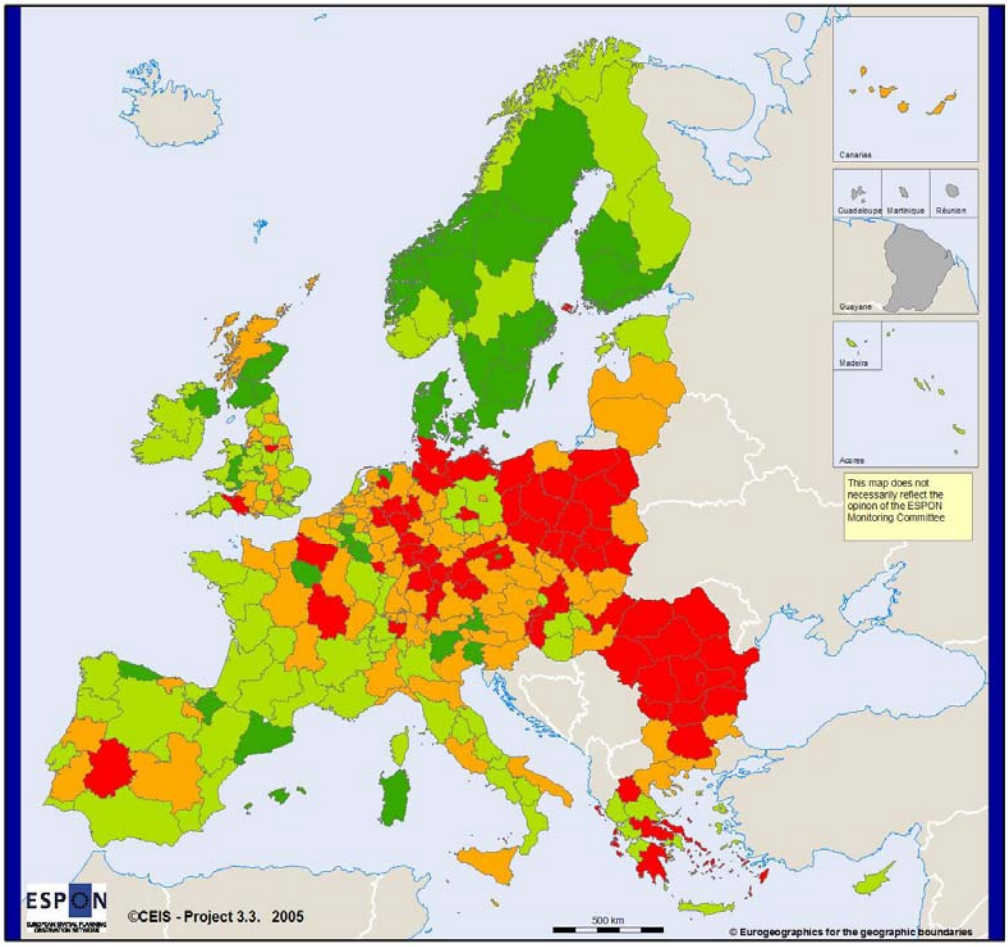


Legend

- high
- medium high
- medium low
- low
- incomplete data

QUANTILES VERSION

Map 15- "INNOVATION - STATUS QUO"

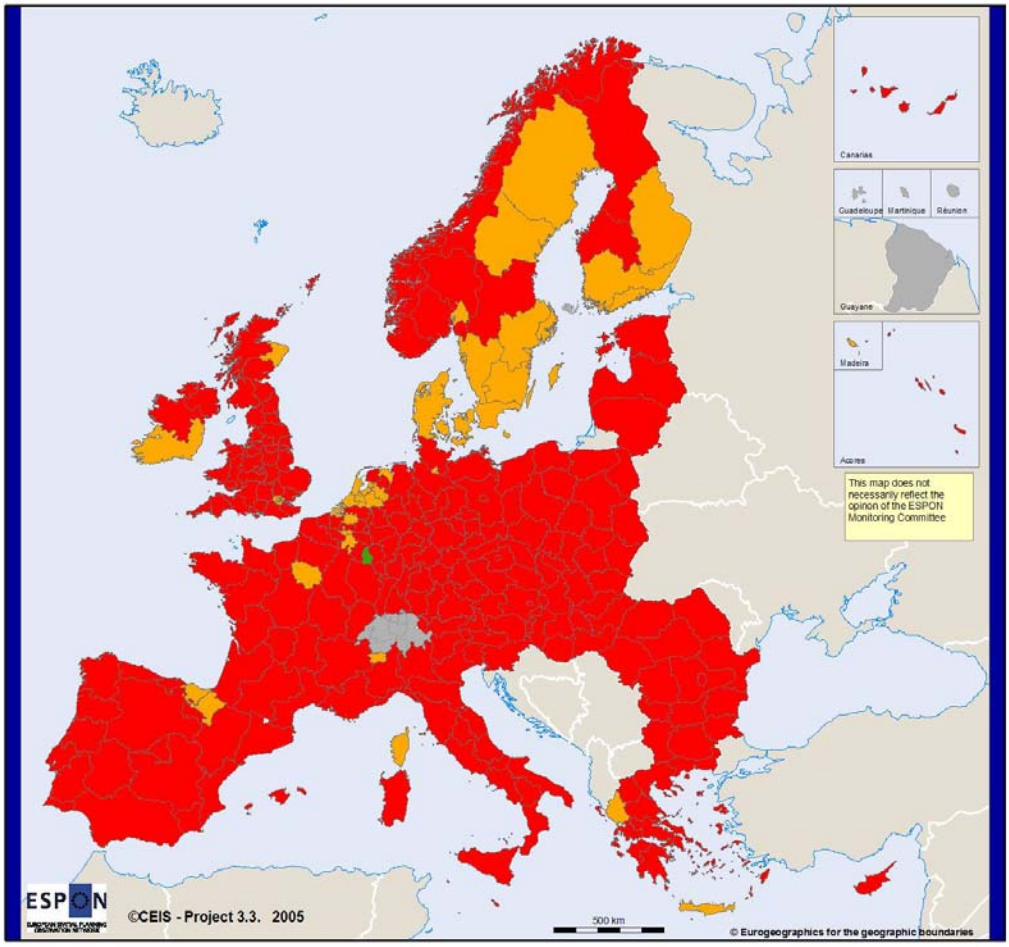


Legend

- high - 40
- medium high - 84
- medium low - 89
- low - 63
- incomplete data - 4

EQUAL VERSION

Map 15- "INNOVATION - STATUS QUO"

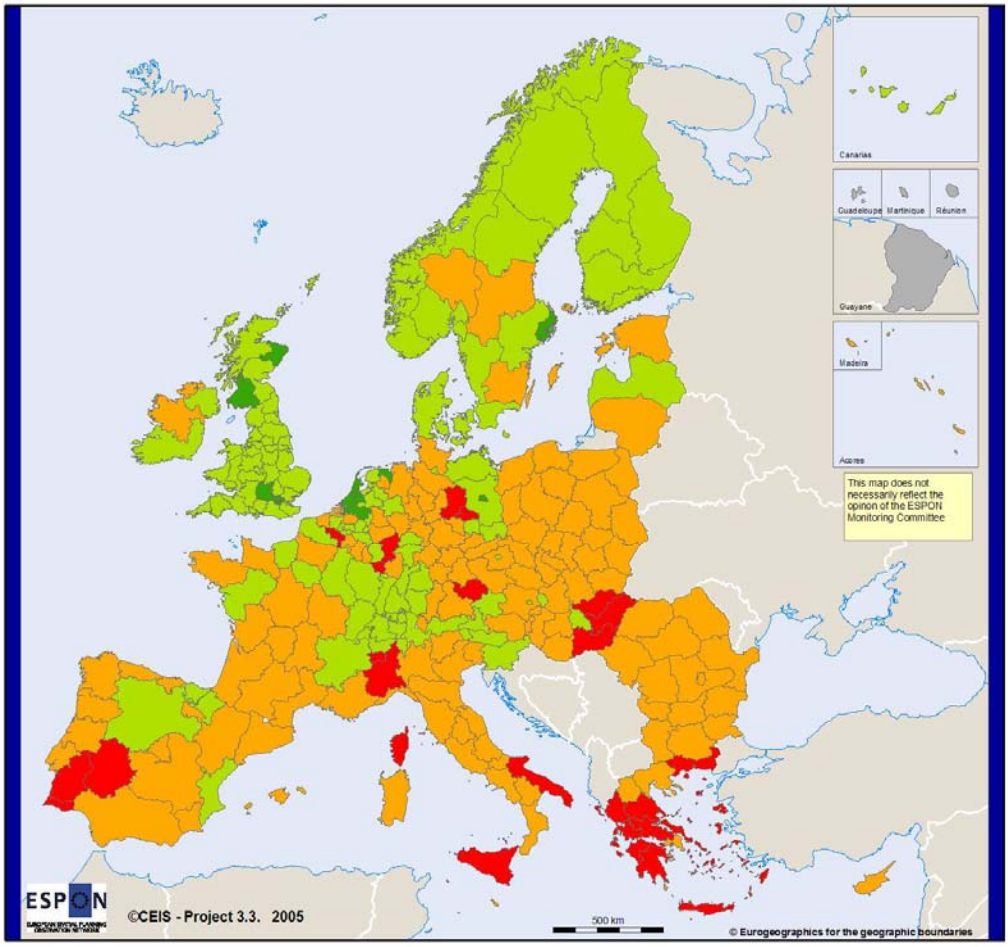


Legend

- high
- medium high
- medium low
- low
- incomplete data

QUANTILES VERSION

Map 16- "INNOVATION - VULNERABILIITY"

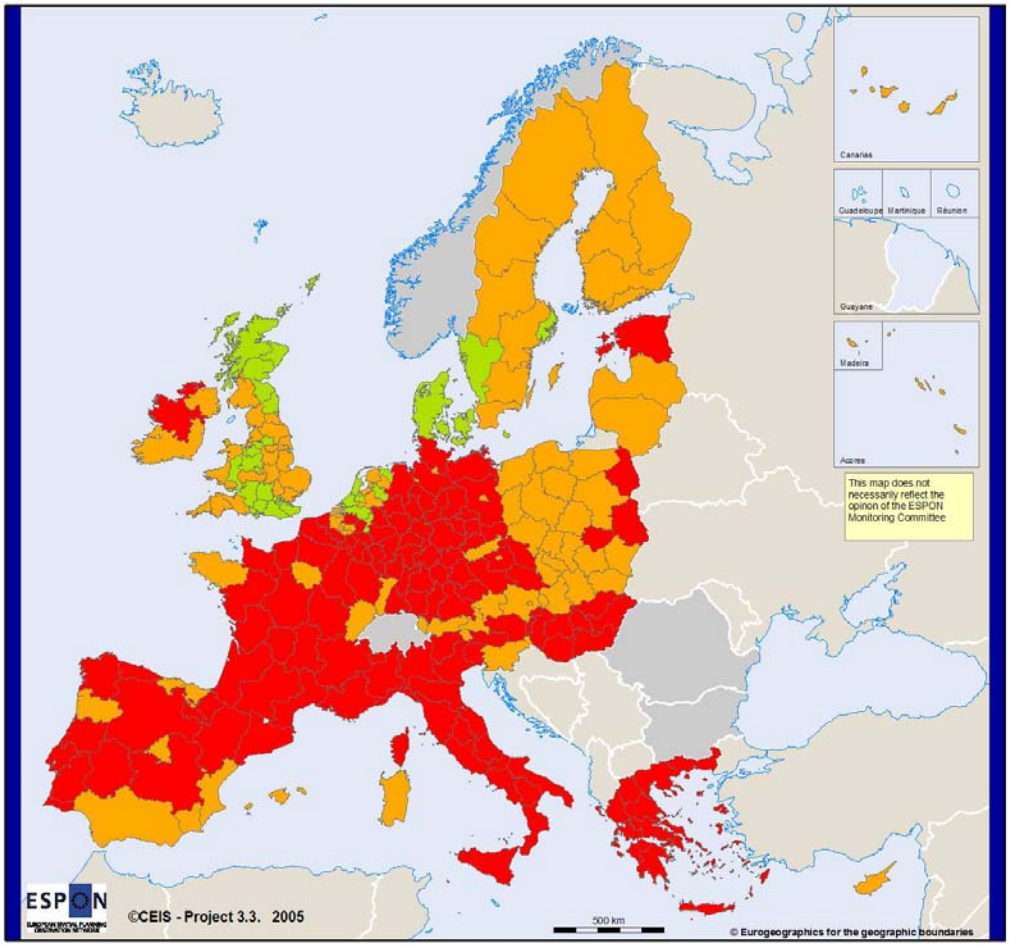


Legend

- high - 12
- medium high - 105
- medium low - 131
- low - 27
- Incomplete data - 5

EQUAL VERSION

Map 16- "INNOVATION - VULNERABILIITY"

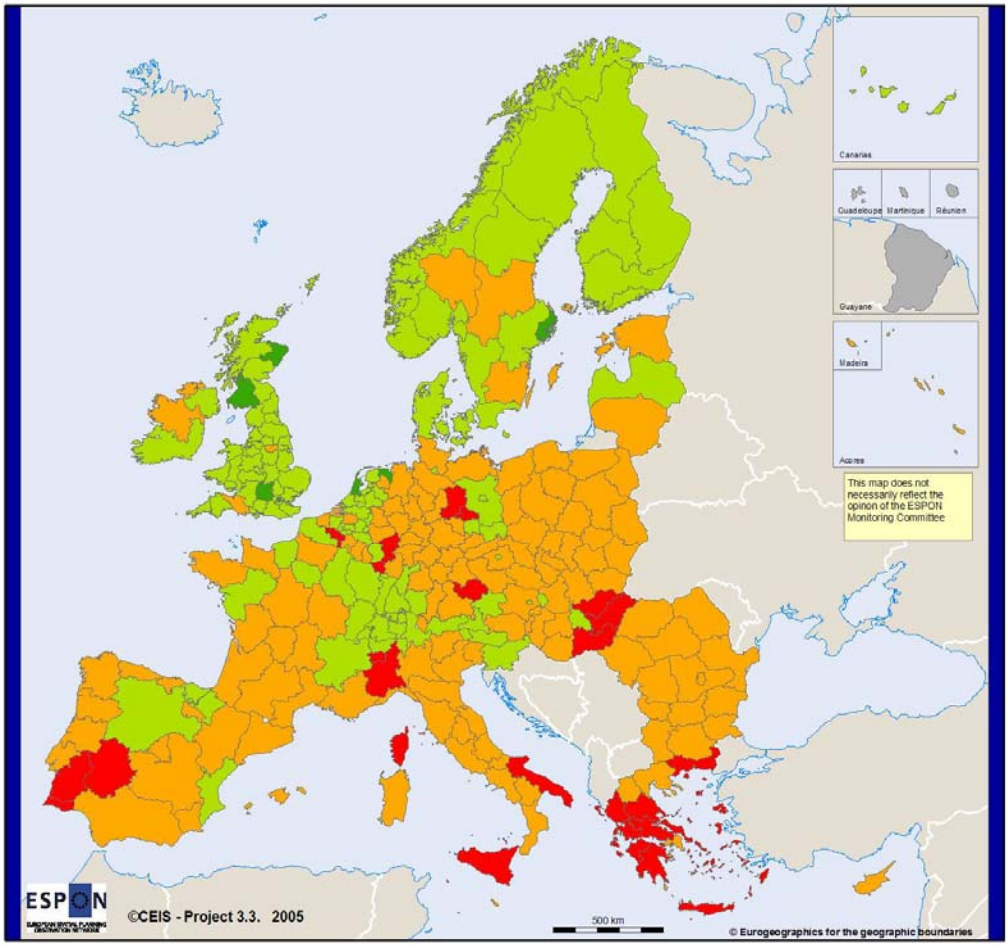


Legend

- medium high
- medium low
- low
- Incomplete data

QUANTILES VERSION

Map 17- "DETERMINANT: INNOVATION AND RESEARCH"



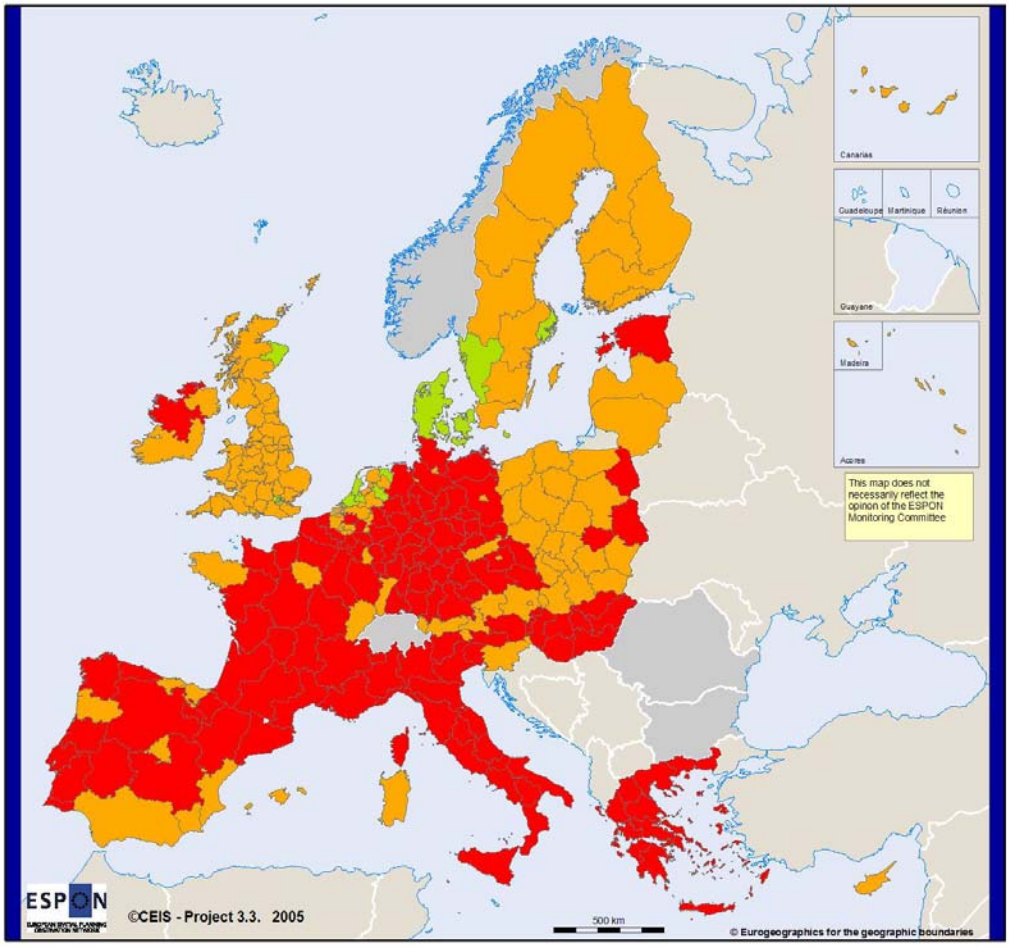
Legend

INNOVATION AND RESEARCH

- high - 7
- medium high - 103
- medium low - 138
- low - 27
- Incomplete data - 5

EQUAL VERSION

Map 17- "DETERMINANT: INNOVATION AND RESEARCH"

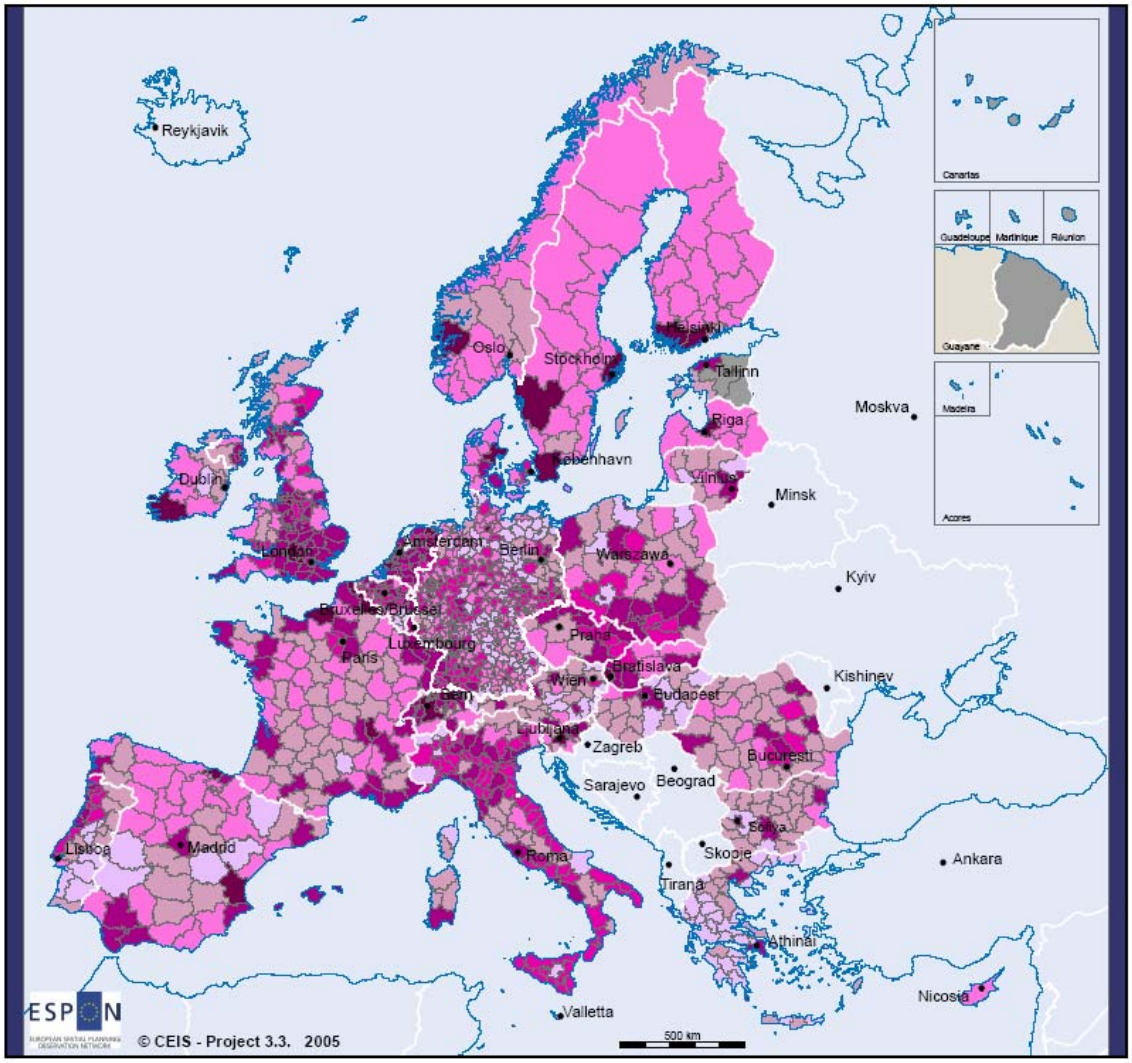


Legend

- medium high
- medium low
- low
- Incomplete data

QUANTILES VERSION

MAP. 18 **TERRITORIAL I&R**



LEVEL OF TERRITORIAL I&R

- ABSOLUTE
- VERY HIGHT
- HIGHT
- MEDIUM
- LOW
- VERY LOW
- no data

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA

Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Annex II B

"Global-Local Interaction" Determinant

Maps and comments

30 September 2005

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

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Global-Local interaction: comments to the maps

In order to calculate the demand/offer relationship at the base of European Global/Local interaction, the project starts up looking at the international agreements. In this context, the environment matter, with all its problematic aspects, has got particularly importance to realise a balanced Global/Local relationship because it is the 'arena' where it is possible to be competitive in sustainability.

Of course, in order to obtain this result, nations need to share some principles and the relative applying rules (G/L governance). This is well represented by the most important international agreements on environment and development[1].

The terms used in this section, denoting various stages in the status of participation related to international agreements, are legal-technical ones, based on the Law of Treaties as contained in the 1969 Vienna Convention on the Law of Treaties and in the 1986 Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations, as well as in customary international law.

Upon the negotiation of a treaty, there are often several stages required before it enters into force: **Adoption**[2]; **Signature**[3]; **Ratification**[4];

[1] See *Yearbook of International Co-operation on Environment and Development*, 2004. According to the Fridtjof Nansen Institute , we have divided the agreements into eight subsections:

- General Environmental Concerns;
- Atmosphere;
- Hazardous Substances;
- Marine Environment;
- Marine Living Resources;
- Nature Conservation and Terrestrial Living Resources;
- Nuclear Safety;
- Freshwater Resources.

[2] It is the formal act by which the form and content of a proposed treaty text are established. As a general rule, the adoption of the text of a treaty takes place through the expression of the consent of the states participating in the treaty-making process. As a rule, however, adoption does not yet mean a consent of a State to be committed by a treaty.

[3] It may sometimes be definitive, meaning that it establishes the consent of the state to be committed by the treaty. This is usual in most bilateral treaties. For multilateral treaties, however, the signature is, as a rule, not definitive, meaning that the treaty is subject to ratification, acceptance, or approval in order to enter into force. Although in those cases the signature does not establish the consent to be bound, it is a means of authentication and expresses the willingness of the signatory State to continue the treaty-making process (i.e. to proceed to ratification, acceptance, or approval). It also creates an obligation to refrain, in good faith, from acts that would defeat the object and the purpose of the treaty.

Acceptance or **approval**[5]; **Accession**[6]; **Entry into force**[7] of an international treaty.

Looking at the Equal Interval classification approach, the EU countries have positive attitude and a virtuous behaviour in front of general environmental treaties (from Map MB1 to Map B3). They took in a lot of global and thematic agreements, albeit they have not always entered into force.

As an example, Slovak Rep. has not got some General Environment Concerns (e.g. some environmental strategic/impact assessment instruments) or it doesn't seem to show any interest to make it a priority topic into transnational cooperation (although a recent change in policy need to be noticed after the subscription of Interreg IIIB projects), but all of the other countries have accepted but not entered into force them (Map MB1) and cooperate by dedicated experimental projects (Map MB3).

About the Specific Environmental Concern (Map MB2), Kyoto included, the new Eastern countries, Ireland, Belgium, Denmark, Portugal, Cyprus have pictured a medium or medium-high interest.

Population and its change and migration is an important indicator of social interaction in the G/L frame. It is not explicitly recalled between the

[4] It defines an international act whereby a State indicates its consent to be committed to a treaty if the parties intended to show their consent by such an act. In the case of multilateral treaties the usual procedure is for the State to notify the depositary of its ratification; the depositary keeps all parties informed of the situation regarding ratifications. The institution of ratification grants States the necessary time-frame to seek the required approval for the treaty on the domestic level and to enact the necessary legislation to give domestic effect to that treaty.

[5] Both have got the same legal effect as ratification and consequently express the consent of a State to be committed to a treaty. In the practice of certain States, acceptance and approval have been used instead of ratification when, at a national level, constitutional law does not require the treaty to be ratified by the head of State.

[6] It is the act whereby a State accepts the offer or the opportunity to become a party to a treaty already negotiated and signed by other states. It has the same legal effect as ratification. Accession usually occurs after the treaty has entered into force. The conditions under which accession may occur and the procedure involved depend on the provisions of the treaty; a treaty might provide for the accession of all other states or for a limited and defined number of states.

[7] It does not necessarily coincide with its ratification (acceptance, approval) by individual States. It is common for multilateral treaties to provide for a fixed number of States to express their consent for entry into force. Some treaties provide for additional conditions to be satisfied, e.g. by specifying that a certain category of States must be among the consenters. The treaty may also provide for an additional time period to elapse after the required number of countries have expressed their consent or the conditions have been satisfied. A treaty enters into force for those States which gave the required consent. A treaty may also provide that, upon certain conditions having been met, it shall come into force provisionally.

Spring indicators, but the 3.3 TPG wanted to underline its fundamental role into G/L interaction. In fact, we can see (Map MB4) that only four regions, Leipzig in Germany and Algarve in Portugal, Canarias e Reunion islands, picture high values; a medium-low change is visible into metropolitan capital areas of the old European countries but not into capital cities of the new ones. The latter don't attract new population, to the contrary of the national borderline regions.

Tourism is another indicator of this relationship. The tourism inbound values (Map B5) are low and medium-low in all EU countries excepted in Ile de France, Canarie, Cataluna, Veneto, Illes Balea; as well as the outbound ones (Map B6), picturing a no attractive situation, excluding Ile de France, Andalucia, Cataluna, Provence, Rohen-Alps, Mecklenburg, Oberbayer. So, the general tourism behaviour results at the same low level in all countries (Map B7).

This homogeneous distribution is due ato the type of approach (Equal interval), which doesn't allow to look much at the differences also about the student mobility (Map B8), inbound and outbound students (Maps B8a and B8b), where the values are all medium-low and low, excepted in Andalucia, Ile de France, Catalunia, Comunidad de Madrid and Valencia, Southern of Ireland, Lombardia. The relative first synthetic index, student mobility has not much significance at this stage

The same medium-low and low trend is shown by the following indicators: inbound and outbound researchers (Maps B9a and B9b) and the general researcher mobility (Map B9), as well as the cultural exchange (Map B10). Particularly, the inbound research distribution results very concentrated in Ile de France, Etela-Suomi and Danish regions, a few less in Lombardia, Uusimaa, Andalucia, Norte, Lisboa, Catalunya, Latvia, Espace Midi, Comunidad de Madrid.

Contrarily, the general population mobility (Map B11) picture different values: medium-high for regions included between Ramstad-Holland, Denmark and the Centre-North of Italy; the coastal zone of Norway; England; Ireland, Portugal; the South-East of Spain; the North-West and South of France, Greece; some Polish borderline regions (e.g., Lubuskie, Pomorskie, Zachodniopomorskie, Dolnoslaskie, etc.), the Wien and Berlin regions.

The active population (Map B12) is highest concentrated in few both countries and regions (e.g. UK, Portugal, Germany, Denmark, Romania), particularly in coastal or boundary ones.

In the same zones there is the highest level of social interaction (Map B13), which is never above the medium value.

Manufacturing enterprise (Map B14) pictures low values in the whole EU, while the product market (Map B15) seems to concentrate its high and medium value only in Germany. Magdeburg and Leipzig (Germany) with a very little sub-region in Denmark are the only regions to maintain some (medium-low) values about the productive identity (Map B16)

A particular suggestion regards the energy self sufficiency (Map B17, from Espon project, with Equal Interval version = Quantile one). It pictures a low sufficiency situation for Portugal, Ireland, Italy, Cyprus due, on one hand, to the government position on the nuclear energy choice and a substantial absence of raw materials as energetic source, on the other hand, to a would-be investment in alternative energy sources.

The general territorial appeal (Map B18) is high only in Switzerland. Medium-high values are visible for Ireland, Belgium, Estonia, Cyprus. They are particularly low in Germany, Denmark, Sweden.

In equal interval distribution, the internalization is just positive only for Switzerland (Map B22), so that the general vulnerability values (Map B23) express the need to strong interventions both in some capital regions (as Madrid, Paris, London, Athens) and in the central – north EU area from Germany to Denmark, included Italian regions as Lombardia and Friuli-Venezia Giulia.

Contrarily, the typologies drawn by multimodal accessibility potential (Map B24) require several structural interventions. In great part, they can be considered the same as those pertaining to the present EU Infrastructural Plans (see, e.g. EU corridors and network connecting Adriatic and the Eastern regions, or the Portuguese-Spanish-French one). Of course, this address concerns the intra-regional organization, too, particularly the Northern countries.

The equal interval approach tends to homogenize the value distribution. It's particularly evident about the country fiscal pressure (Map B25), nevertheless offering a "on homogenoous blocks" picture, trending to flatten out the values toward low (e.g. Italy) or medium level (e.g. UK).

The same consideration concerns the economic variables:

- the Labour Cost Index (Map B26) flattens out the high value, except for Estonia, Latvia, Slovenia, Slovakia Rep., Hungary, Cyprus (medium-high values) and Romania (low value);
- Long term interest rate (Map B27) seems to be very low only in Poland and Hungary, high in Spain, France, Netherlands, Germany, Ireland, medium-low in the rest ones and peripheral areas;
- Total costs (Map B28) are medium-high in all EU countries, except in Romania;

- R&D infrastructures (Map B29) are medium-high and high only in few places, generally one regions for each countries of Ireland, Spain, UK, Sweden, Finland, Netherlands, Belgium, France, Greece, Italy;
- Strategic localisation (Map B30) is medium-high in few countries: in several regions of Spain (excluded the coastal ones), Southern and Eastern region in Ireland; Corisca, Midi-Pyrénées and Île de France in France; Gießen, Dessau and Münster in Germany; Groningen and Noord-Holland in Netherlands. Low values are only found in Poland and Hungary.

Economy interaction (Map B31) is mostly medium-low in all EU countries; North of Ireland and of Finland, most of Norway and Germany except Berlin and Brandemburg) are in a low position. North of Scotland, Eastern England, Center-North of Italy, North Rumania, as well as Slovenia, Lithuania, Bourgogne in France Norte in Portugal and Eastern Slovakia show the relative best situation.

The presence of Credit institutions (Map B32) is low in all countries (except in Luxembourg where it is high and Malta where it is medium-low), as well as insurance companies distributions and localizations (Map B33) trends to picture a medium-low level, excepted in Norway and Luxembourg (high values), and in Denmark, Cyprus, Malta (medium-high values). For this their synthetic index (Map B34) has got a very low value in all EU.
The company distribution value (Map B35) is medium-low in EU (except for Lombardia and Veneto in Italy, Ile de France, Catalunya in Spain, as well as the European exchanges (Map B36); nevertheless these latter are high in UK and medium-high in France, medium-low in Spain, Italy, Netherlands.

Management attitude (Map B37) distinguishes only UK, with a medium-low value.

Financial interaction (Map B38) is pretty much compressed into the low value, only Luxembourg showing medium-high performance and Ile de France, Norway and Malta medium-low.

So, the Global/Local interaction (Map B39) never reaches high values and presents a good performance only in the traditional more advanced European regions.

The quantile study allows a more detailed distinction at regional level.

The General Environment Concern (Map Q_B1) is high in many countries (from Portugal, to Norway, Denmark, Belgium, France, Italy, Lithuania,

Latvia, Estonia, Poland, Hungary, Romania, Bulgaria, Cyprus), but not, i.e., in UK, Sweden, Finland, Netherlands, Spain, Greece, etc.

Many countries show low values about the specific environment concern (Map Q_B2a): Ireland and Austria have the same low profile of Lithuania, Latvia, Estonia, Slovenia, Poland, Hungary, Romania, Bulgaria; other countries, as UK, Denmark, Belgium, Switzerland live a slightly better situation. The high values are only in France and Germany.

This situation repeats in front of more specific environmental protection treaties (Map Q_B2b). Of course, this behaviour is a strong limit to sustaining international and transnational cooperative projects (Map Q_B3), where France, Norway, Italy have the first place and Finland, Austria, Portugal in part, Bulgaria, Czech Rep., Slovakia Rep a very low one.

The population change is more detailed than in the previous analysis (Map Q_B4). It draws a high change both in large areas as Ireland, the South-East of England, the North-West and South-West of France, the North and South-West of Germany, the Netherlands and Denmark; and in single regions as the Portuguese Centre region, the Spanish Comunidad Valenciana and Région de Murcia ones, the Italian Trentino-Alto Adige one, the Swiss Espace Mittelland one, the Greece Iperyos and Kentriki Makedonia ones, the Norwegian Sør-Østlandet and Agder Og Rogaland ones or Stockholm and Helsinki metropolitan regions. This trend show the no centrality of the capital regions about the choices of population settlement and a more general attention of the EU population in front of the choice of a qualitative settlement area capability to guarantee a good life quality.

Tourism Inbound (Map Q_B5) is very high both in Ireland, Denmark, Slovenia and several French and Italian regions, and other specific well known places: Northumberland in UK; Sydsverige in Sweden, Etelä-Suomi in Finland, West-Vlaandere in Belgium, Köln, Gießen, Oberbayern in Germany; Espace Mittelland in Swizerland; Salzburg, Tirol, Kärnten in Austria; Algarve in Portugal; Andalucia, Catalunya, Comunidad Valenciana and islands in Spain; Kriti in Greece. The capital regions added up to the list with high or medium-high values. Several enclaves of low value are in the Eastern countries (except Romania and Estonia); Germany, United Kingdom, Scandinavian regions.

Tourism outbound (Map Q_B6) pictures a major positive situation, probably for the mobility of the European young people. Only the peripheral or internal regions (as Molise or Basilicata in Italy) tend to show low participation at this phenomena.

The synthesis of the tourism indicators (Map Q_B7) draws only few real critical situations, that involve nevertheless regions with a great cultural and historical tradition, first of all, Greece or the Southern regions of Italy. For them the EU new project of Structural Funds can design new and innovative solutions linked to the local identities, probably less competitive on the short period but more sustainable and cohesive to have a better offer about the tourism marketing.

The previous suggestions linked the tourism phenomena to the young people mobility. This results is even more true if we look at the European student mobility (Map Q_B8), that involve the same regions of the tourism outbound. Of course, this strong relation is oriented from the family income and the European regional GDPpps per capita, too.

At the same time, it depicts different cultural positions in front of educational and knowledge system prospected by globalization and IC society: Sweden, Ireland, Scotland more than England, Portugal, Spain, Italy, Romania, Estonia are the countries where the student regional inbound movement is to a greater extent high or medium-high (Map Q_B8a). The confirmation of a more open and global position in some countries than others comes from the student outbound regional view (Map Q_B8b): Italy, France, Spain, Denmark are dominant with respect to other European countries in this field.

The same comments holds true for the Researcher Mobility (Map Q_B9). It involves Denmark, Finland, Switzerland, Slovenia, Estonia, Latvia, Lithuania; a great part of French, Italy, Portugal, Spain; the capital regions. In this case, e.g. Finland shows to be very much attractive for the researchers which work in technological fields that require a strong link with enterprise system too (Map Q_B9a). At the same time, the Finnish researchers tend to show a great mobility and availability to build networks in scientific/technical projects (Map Q_B9b). This position on mobility is obtained in several capital or old and new business regions (e.g. Lazio e Lombardia in Italy or Slovakia Rep. and Romania), too; but also in rural or tourist regions as Andalucia in Spain or in France.

The previous suggestions could suggest to introduce a new topic in Espon projects in order to study the 'research/education delocalization'*.*

Nevertheless, cultural exchanges (Map Q_B10) don't involve all of the previously recalled regions. High values are taken in some capital regions (Vienna, London, Dublin, Madrid, Lisbon, Rome, Bucharest, Tallinn, Bern, Copenhagen, Stockholm, Helsinki) but also in regions as Andalucia in Spain or Nord - Pas-de Calais and Bretagne in France.

So the total behavior of population mobility (Map Q_B11) shows a concentration of this phenomena (high values) in some regional enclaves:

Irelands, Inner and Outer London in UK, Centro in Portugal, Comunidad Valenciana in Spain, Pays de la Loi-Bretagne-Poitou-Charentes and from Aquitaine to Rhône-Alpes in France, Trentino Alto Adige in Italy, the border French-German area Alsace-Freiburg, Koblenz and Schleswig-Holstein in Germany, the Oslo region in Norway, the Stockholm one in Sweden. And it's worth noticing that they are all borderline regions.

Looking at the influence of economic system on quality, the active population (Map Q_B12) has got low and medium-low value in Mediterranean area, Switzerland, Hungary, Bulgaria, Romania. Particularly, several regions in France, the Central area of Spain and the Centre-South one of Italy are in a worrying situation with respect to the Centre North of EU.

Nevertheless, in these regions the social interaction (Map Q_13) is sufficiently good, as well as in the all EU ones. Low values are only in few regions: South Western, Tees Valley, Northumberland, Lincolnshire, West Wales in United Kingdom; from north-West to East of Spain; Calabria e Molise in Italy, Limousin in France, Oberösterreich in Austria, Estonia and Latvia; Slaskie, Swietokrzyskie, Opolskie in Poland; Leipzig in Germany, all Hungarian and Bulgarian regions; the Northern Finlandian, Sweden, Norwegian ones.

The manufacturing enterprises (Map Q_B14) gives a more detailed picture of the regional economic systems, and it is of a certain concern, the critical status of Ireland, Germany, Norway and great part of Finland. Espace Mittelland and Suisse Du Nord in Switzerland must be looked at with particular attention.

At the same time, the product trademark (Map Q_B15) is very low only in new EU countries and Portugal (except Lisbon and Algarve regions).

This permits to presuppose a structural change in economic European activities, in the past years focused on manufacturing production and local trade activities.

So, the general result of the EU productive system identity (Map Q_B16) is peculiar and interesting with respect to the several discussions and suggestions of this last period. In fact, it is generally not that bad, if we exclude the low values of Norway and Finland. Some worries come from the central Pentagon zone (Germany, Austria and Poland in part, with the adding of Switzerland) and some capital regions (as Paris, Rome or Madrid), probably due to a quick changing of national economic model by the monetary union and the problem of international security, which have a strong weight on the life quality at the moment.

So, several areas seem to have lost their territorial appeal (Map Q_B17) as Greece, Germany, Denmark, Netherlands, Sweden, while new ones

appear to have got or maintain a good position (Switzerland, UK and Belgium) with respect to the past times, also among the new countries (Estonia, Latvia or Bulgaria).

Nevertheless, the good trade is not a vehicle of integration (Map Q B_18) for all countries. Italy, Greece, Cyprus seem to remain too much peripheral with respect to the free EU market circuits, as well as in part of Spain, Portugal, France.

Low is the contribution to services trade regarding integration for France, Italy, Finland, Poland, Romania (Map Q_B19), too, giving a strong contribution to picture a critical situation for the latter countries in front of the integration aim (Map Q_B20). And it is obvious to have a general status of trade integration (Map Q_B21) reflecting the previous suggestions.

Another important value for the calculation is represented by the internationalization position of regional systems (Map Q_B22). It is well visible both in Finland, Denmark, Estonia, France, Cyprus, Scotland, Ireland and into a certain number of capital regions, but not in the complex of EU.

All this, draws a dynamic and variegated situation with respect to vulnerability of regional European systems, picturing needs of structural interventions in great part of UK, Denmark, Netherlands, Germany and in some particular city-regions: Madrid, Paris, London, Milano (Map Q_B23).

In the last months, the national and regional fiscal pressures (Map Q_B25) was a theme of strong discussion in the EU. It's very interesting to look at the high values in UK and Ireland as well as in Spain, Estonia, Latvia, Lithuania, Romania, Bulgaria; and, at the same time, very low values in France, Austria, Denmark, Norway, Sweden, Finland, which explain also the displacement upwards of some public service offer in this countries.

Index of labor cost (Map Q_B26) brings back to a more homogenous situation: low values are obtained in Spain, Cyprus, Estonia, Latvia and the other Eastern countries; medium-low ones in Ireland, UK, Netherlands, Sweden, Finland; much too high in the '**Y**' drawn by Belgium, Germany, Austria, Italia, Malta, making new investments difficult in these countries.

In order to explain the general economic situation, the project looked at the long term interest rate (Map Q_B27), an indicator of a national banking status and an attractive element for transnational investments. Not surprisingly, it is low in Poland, Hungary, Czech, Bulgaria, Cyprus; but some reflections could be done about the common medium-low values of UK, Italy, Greece, Denmark, Sweden, Latvia, Lithuania, Slovakia Rep.

Nevertheless, the general cost of EU systems (Map Q_B28) is medium, except for Germany where is very high, or Poland, Slovakia Rep., Czech Rep., Hungary where is too low.

In order to assess the rule assumed from I&R (Map Q_29), we must argue the general very low profile of this indicator into EU. Few regions (Finland regions and Lisbon one) have got high levels of I&R infrastructures. Medium positions distinguee only Paris, Amsterdam, Bruxelles, Stockholm, Centro and Alentejo in Portugal, Pais Vasco and Comunidad Foral de Navarra in Spain, Övre Norrland in Sweden, North Eastern Scotland, Valle d'Aosta in Italy, Corsica in France, Ipeiros in Greece.

So the final *Economy Interaction* (Map Q_B31) is very low for the whole Italy and Portugal, Border-Midlan in Ireland, Cyprus; medium-low from Spain to Pentagon area, Greece and several Eastern countries.

The presence of Credit Institutions (Map Q_B32) is more encouraging in quantile version than in the equal interval one. Ireland, Luxembourg, Switzerland, Austria, Germany, Norway, Finland but also Slovenia, Latvia, Cyprus picture a positive performance and offer in this sector, in contrast with the decrease position of traditional leaders as the Northern countries and at least one of some Italian regions, as Emilia Romagna, well known for the presence of micro-credit and cooperative institues.

The localization of insurance companies (Map Q_B33) confirms this trend, to which other countries give a specific contribution (see Netherlands, Sweden, Denmark, Lithuania, Greece) more involved into international trade. For this reason, the synthetic index about credit & insurance attitude (Map Q_B34) depicts a good situation in the Central-North area of UE, including Portugal but excluding UK and the South-East of Europe.

Companies distribution value (Map Q_B35) is sufficiently good in all European system. Some worrying come from German and Austrian, regions, because structural interventions for a modernization of national model are needed, as well as from Romania, where the helps could be dedicated to organize an endogenous model, reinforcing the existing external links.

Even if the general companies and credit institutions situation advantages some countries, European exchanges (Map Q_B36) particularly favour UK and France and, to a lesser extent, Spain, Belgium and Netherlands.

On the contrary, the fragmented distribution of management attitude (Map Q_B37) pictures a better general EU situation, drawing some important enclaves, particularly in Spain, France, the central directory of Germany, Denmark, Ireland, the South-East of England, Belgium-Netherlands coastal zone, Finland, part of Sweden, an important part of Poland. Also Italy and Greece participate, with a medium-high values.

Financial interaction (Map Q_B38) is high in Finland, Denmark, Switzerland and present some problems for other EU countries.

So, the Global/Local interaction (Map Q_B39) privileges as good benchmarking cases the following few regions: Centro region in Portugal, Inner London, Berkshire – Buckinghamshire, Surrey, East Anglia in UK, Alsace in France, Freiburg, Gießen, Schleswig-Holstein in Germany, Gelderland, Noord-Brabant, Noord-Holland in Netherlands, Agder Og Rogal in Norway, Stockholm in Sweden. This situation requires a serious reflections about the capability to have a real contact with the global vision.

The Global/Local territorialisation (Map territorial G/L) depicts some particular phenomena:

- the highest concentration (absolute value) in Centro of Portugal; Madrid, Valencia, Catalunia and Islas Baleares regions for several reasons (from tourism to business and population behaviour); Aquitaine, Midi-Pyrénées, Provence-Alpes-Côte d'Azur, Rhône-Alpes, Alsace, Ile de France in France; Emila-Romagna and Piemonte in Italy; Luxembourg; Noord-Brabant and Zuid-Holland in the Netherlands for the recent business development; the easternmost Danish region; Inner London in UK; The Southern Ireland region; Vestlandet in Norway; Stockholm in Sweden; Väli-Suomi (Helsinki region) in Finland;
- the highest attitude to have G/L territorial interaction is concentrated in the central Pentagon area; from the South-East of England, Netherlands to North-South-West regions of Germany; from Switzerland to Centre-North and the South of Italy; the boundary area between Poland and Czech;
- low and very low perspectives seem to involve the central regions of all EU countries.

So, this could mean both that the local perspective is more interesting than the global one for the European government and citizenship, and definition of pheripheral area should involve a major number of regions, independently of the general economic or material resources.

This could also mean that the Globa/local interaction depends more on social cohesive attitude of local population-enterprise-policy makers relationship than on an effective offer of

investments.

MAP Q_B1 - General Environment Concerns

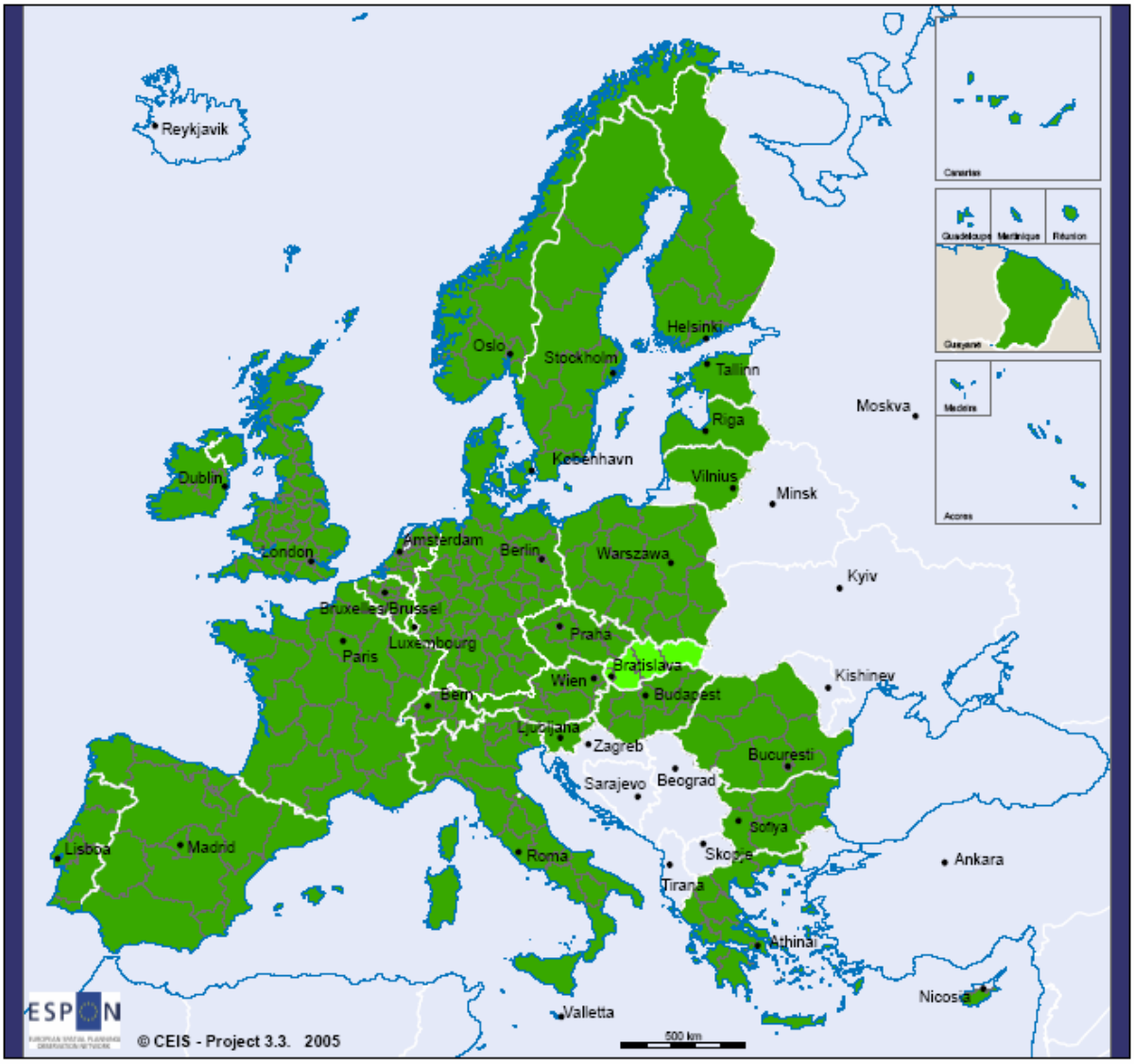
General environment concerns
(quantile version)

A High

B Medium high

EQUAL VERSION

MAP B1 - General Environment Concerns

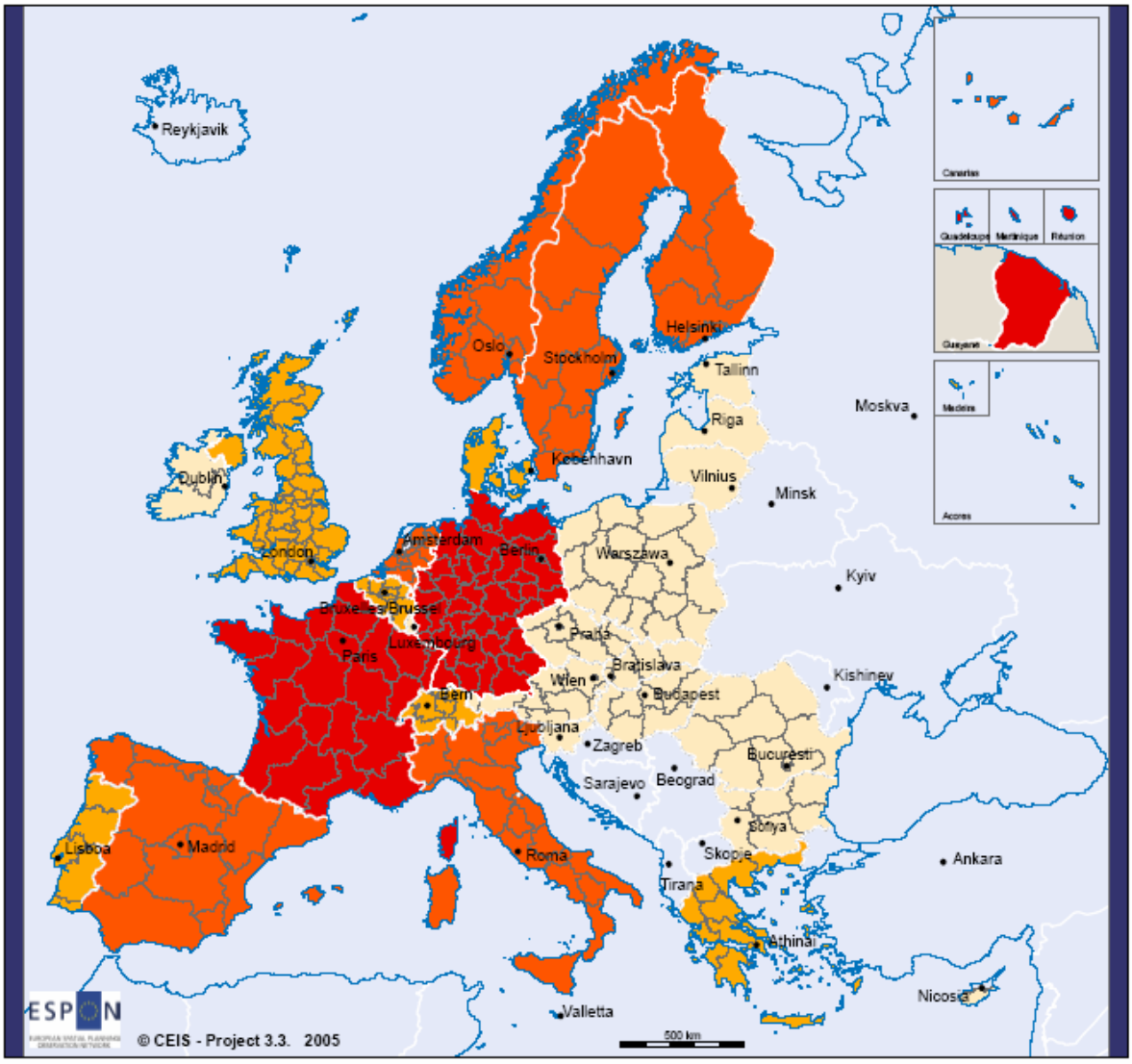


General environment concerns
(equal interval version)

- A High
- B Medium high

QUANTILE VERSION

MAP Q_B2 - Specific Environmental Concern

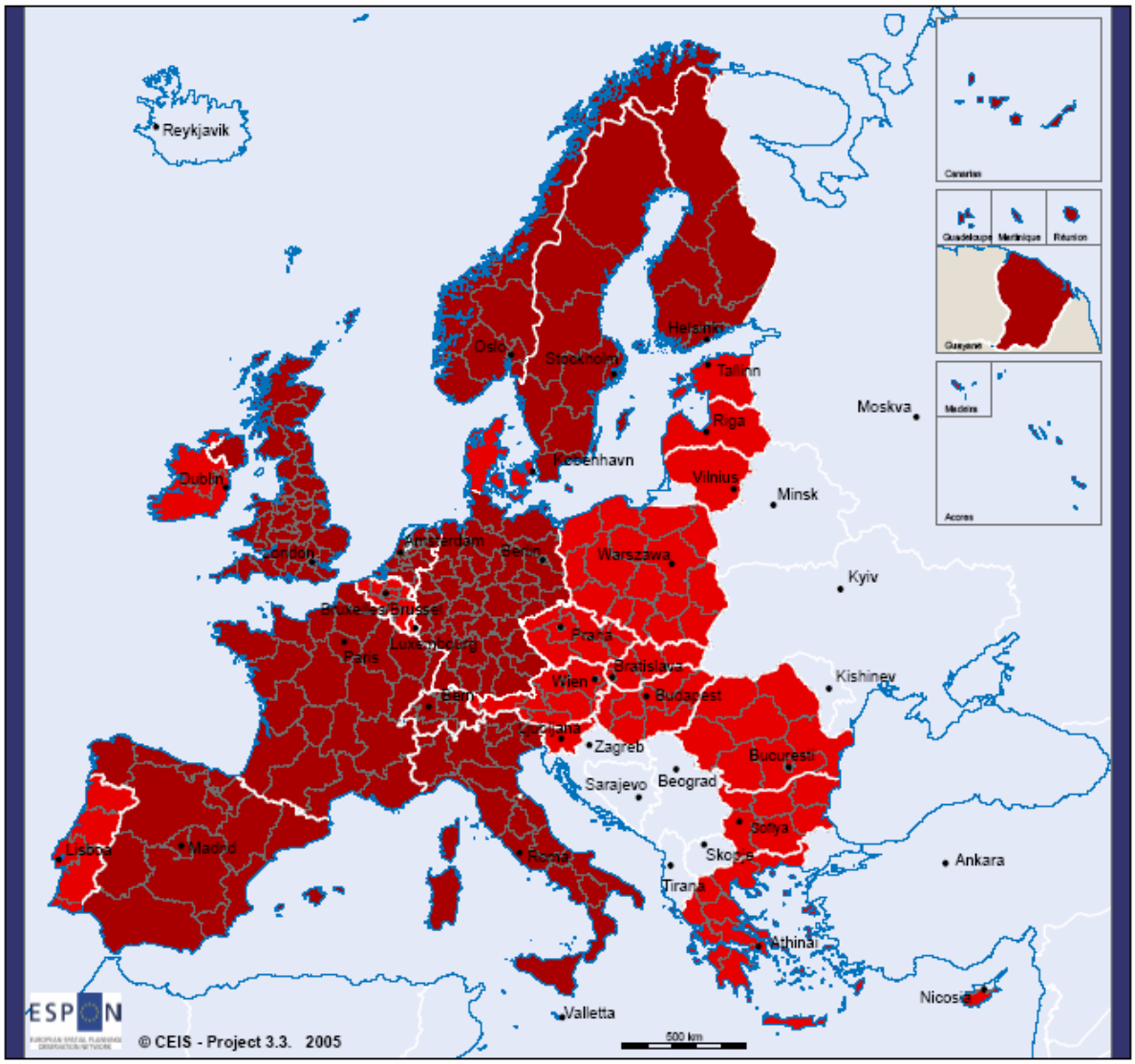


Specific environmental concerns
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

EQUAL VERSION

MAP B2 - Specific Environmental Concern



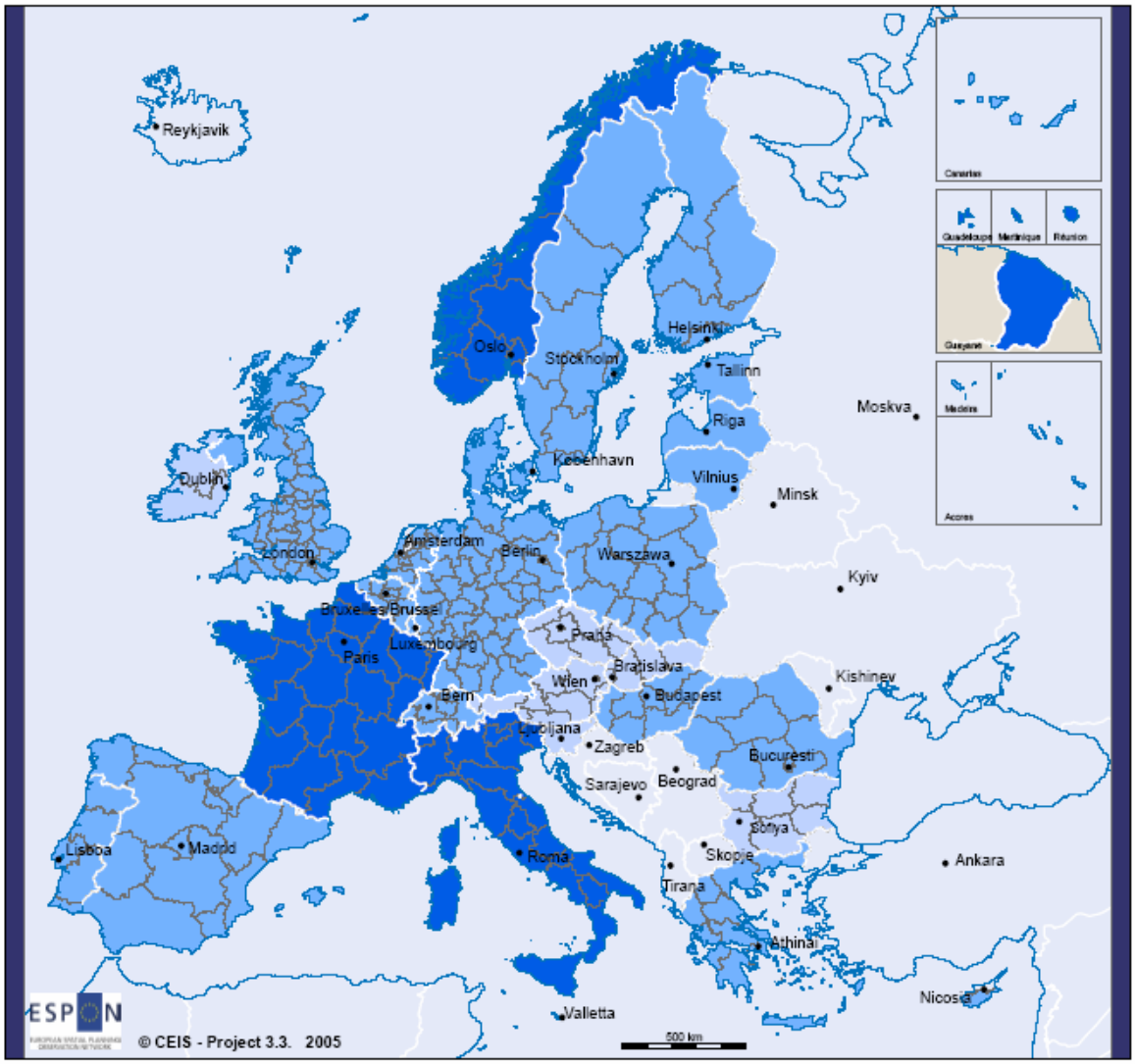
Specific environmental concern

A

B

QUANTILE VERSION

MAP Q_B3 - International Cooperation on Environment

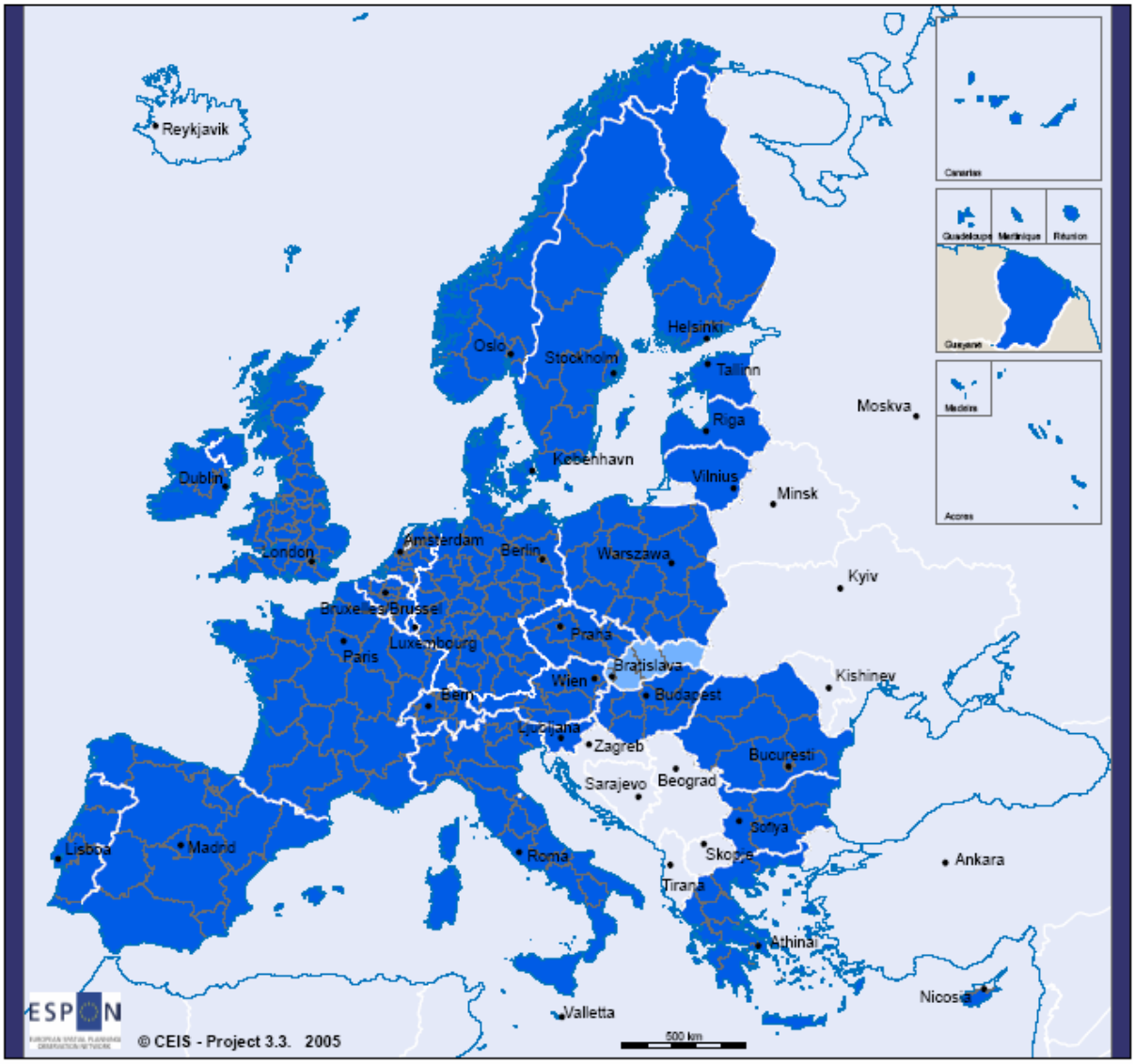


International cooperation environment
(quantile version)

- A High
- B Medium high
- C Medium low

EQUAL VERSION

MAP B3 - International Cooperation on Environment



International cooperation environment

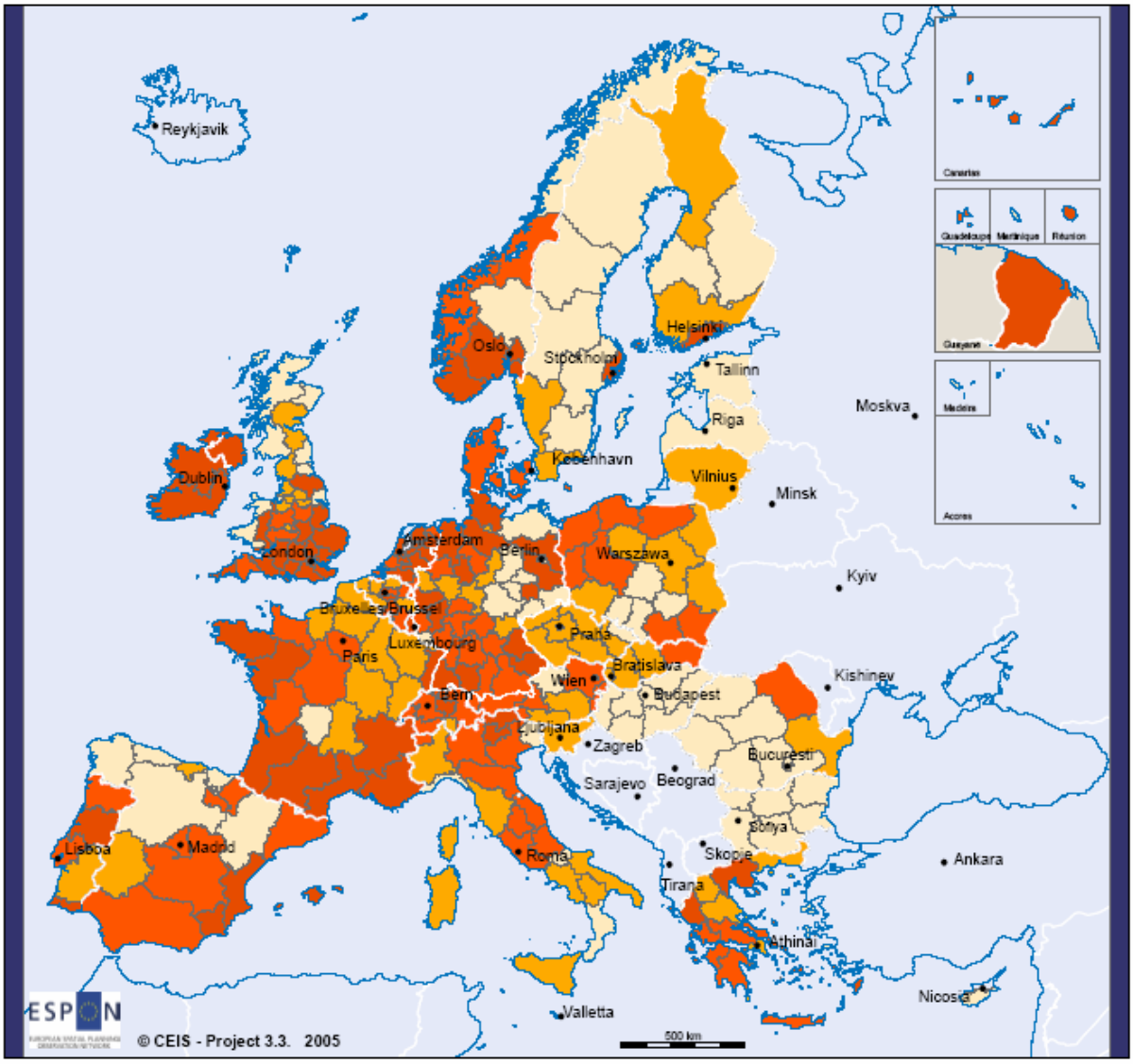
(equal interval version)

A High

B Medium high

QUANTILE VERSION

MAP Q_B4 - Population Change

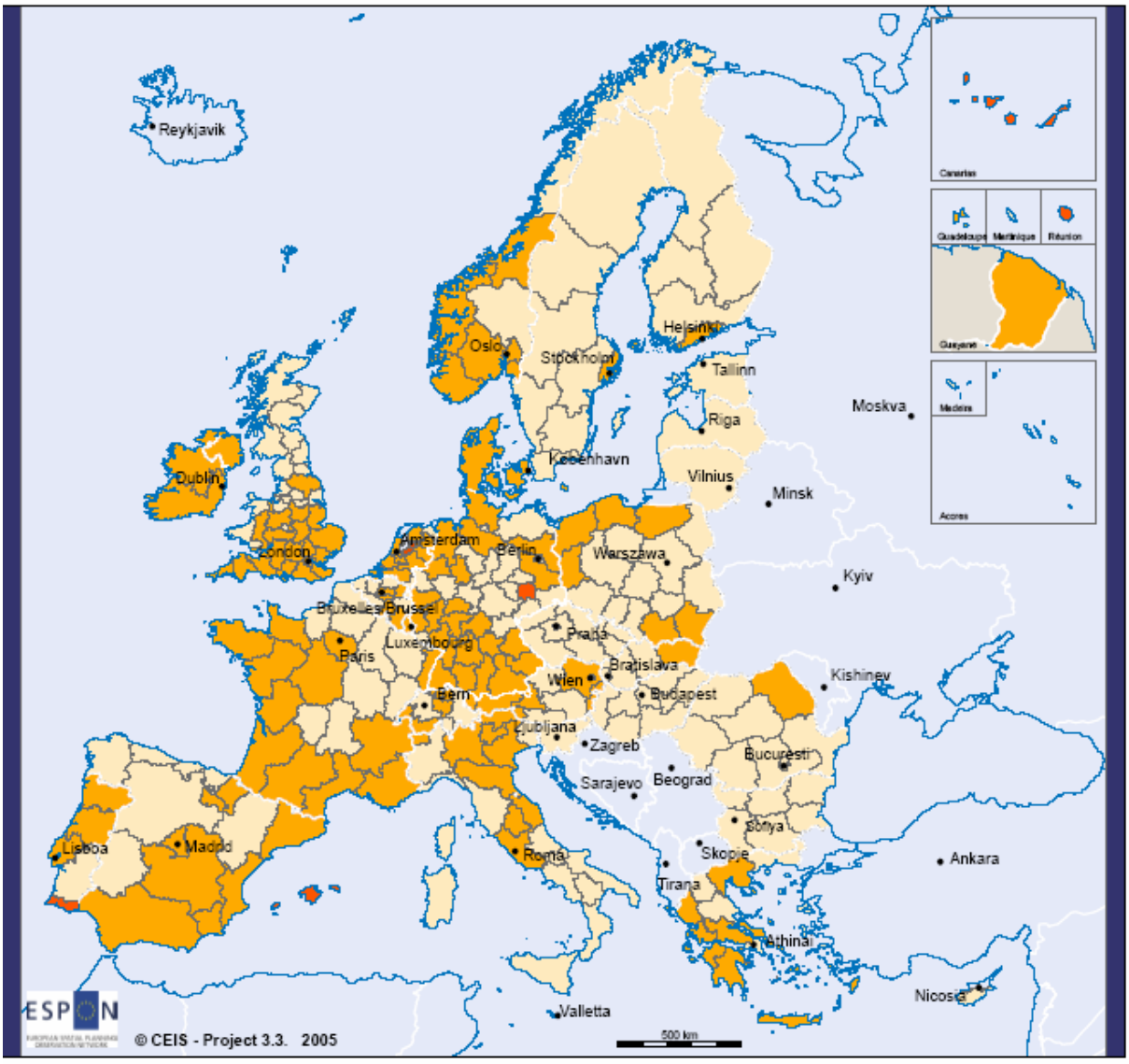


Population change
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

EQUAL VERSION

MAP B4 - Population Change

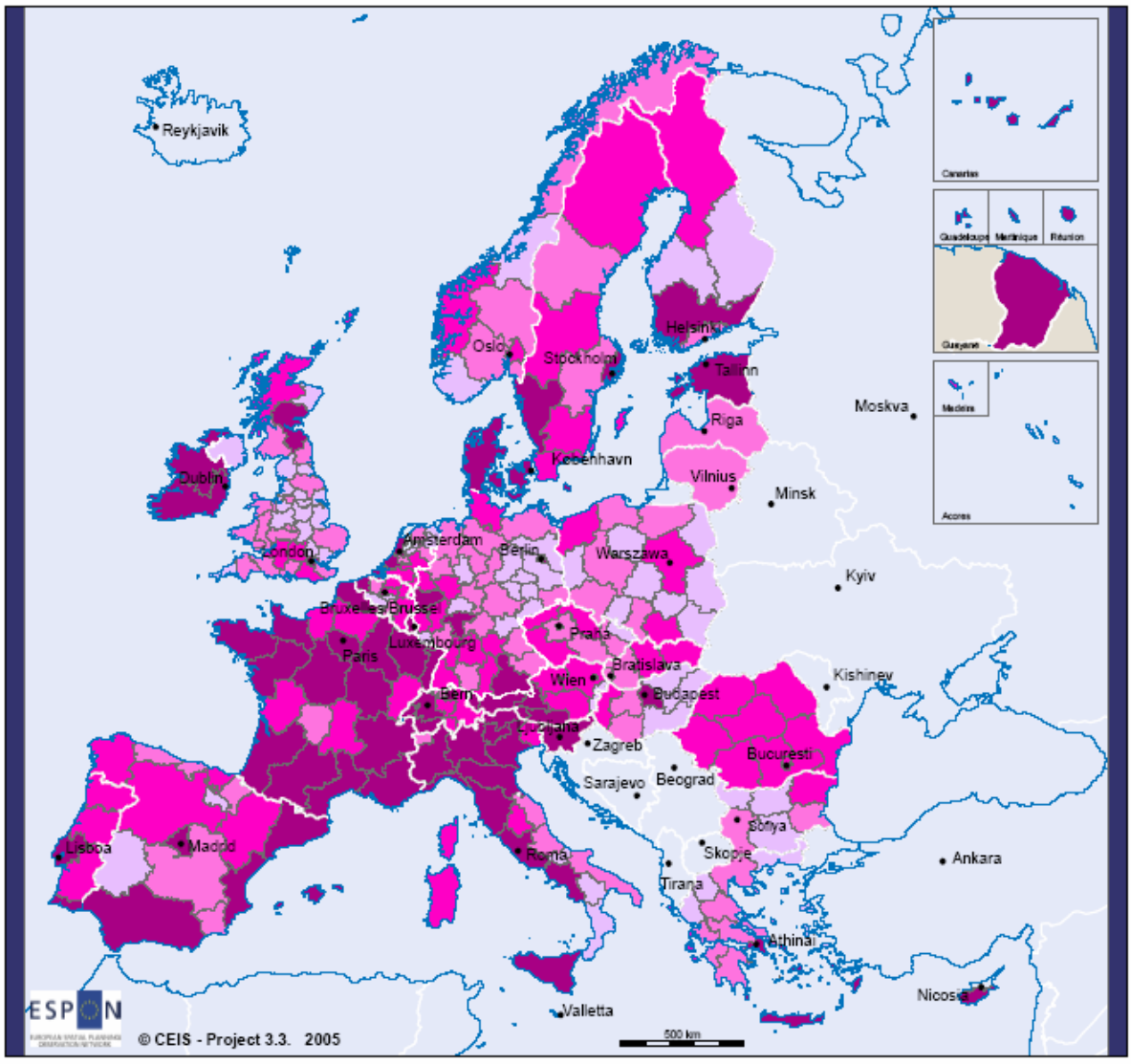


Population change
(equal interval version)

- A High
- B Medium high
- C Medium low
- D Low

QUANTILE VERSION

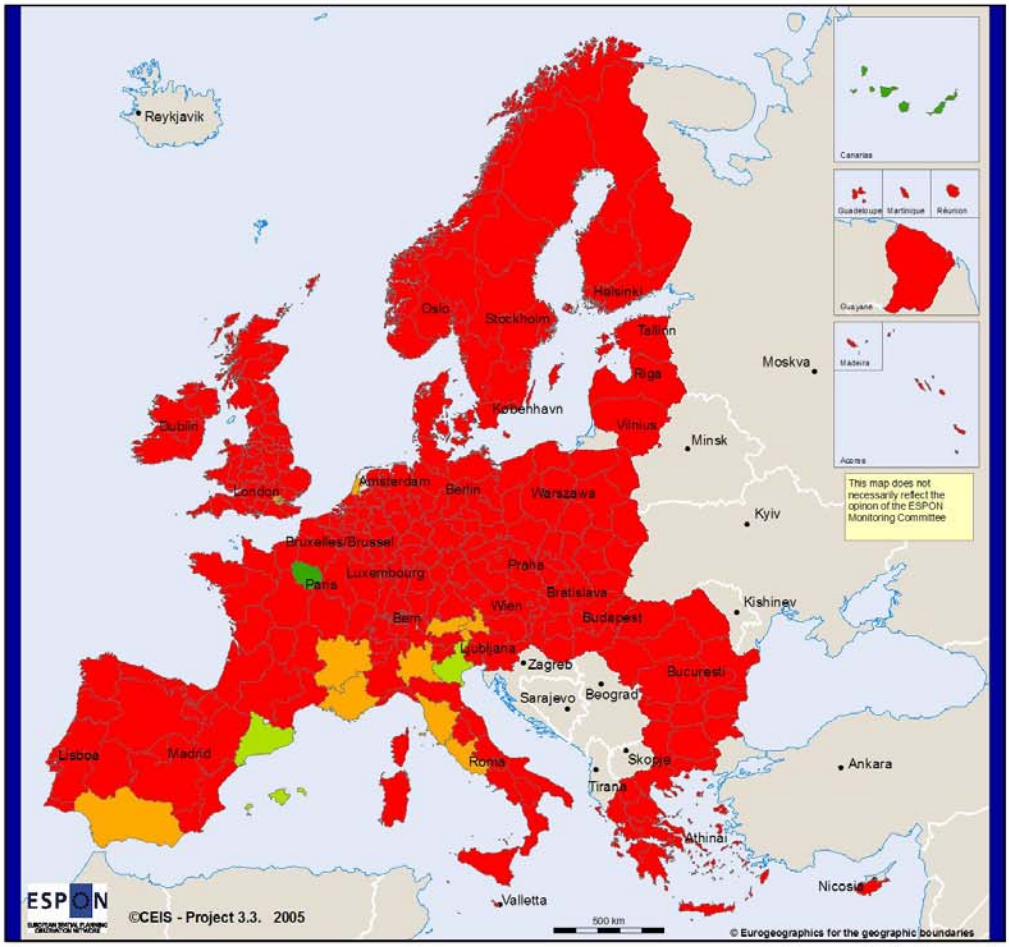
MAP Q_B5 - Tourism inbound



Tourism inbound
(quantile version)

- A High
- B Medium high
- C Medium Low
- D Low

Map B-5- "TOURISM - INBOUND"



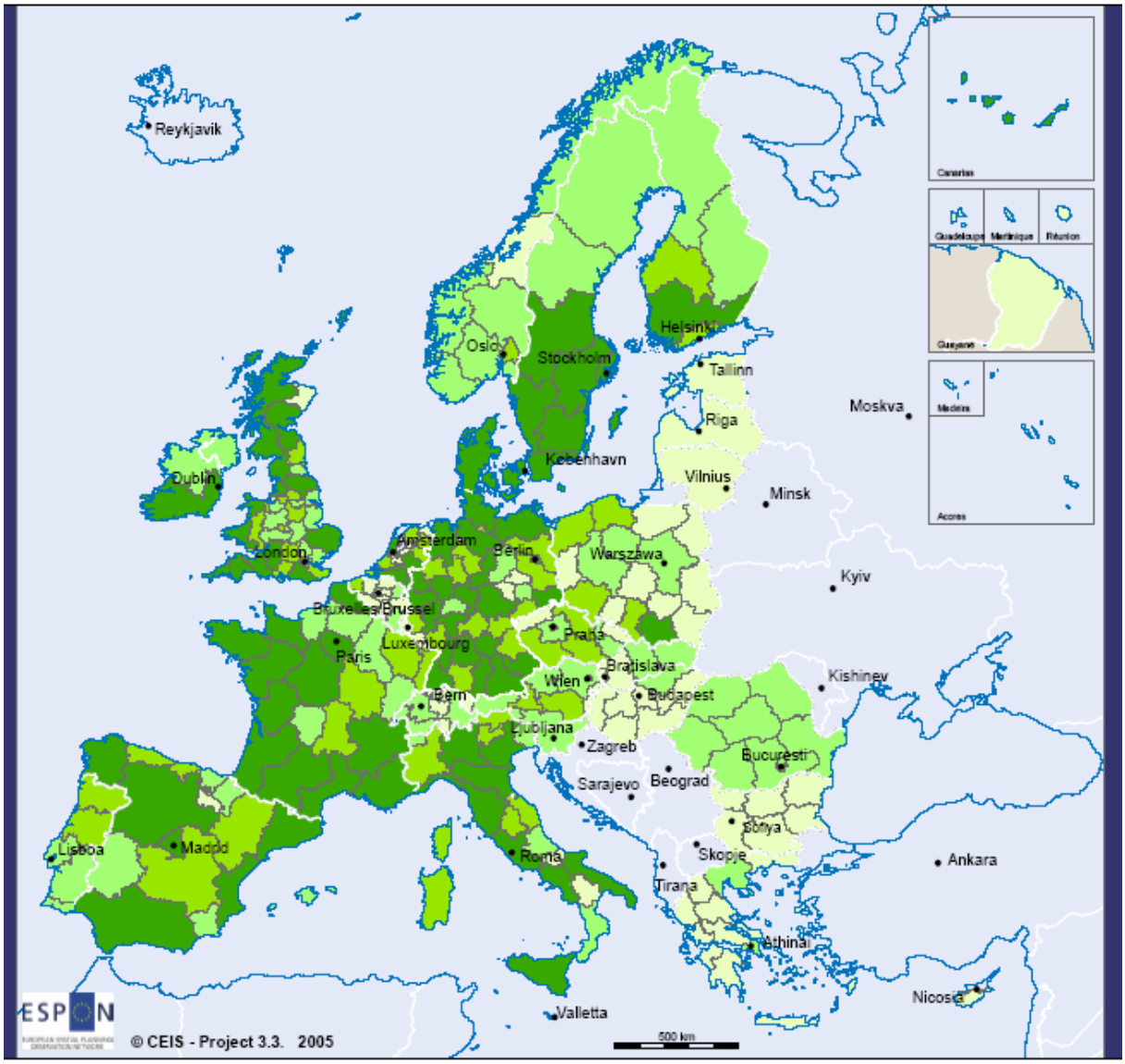
Legend

Tourist inbound - CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILE VERSION

MAP Q_B6 - Tourism outbound

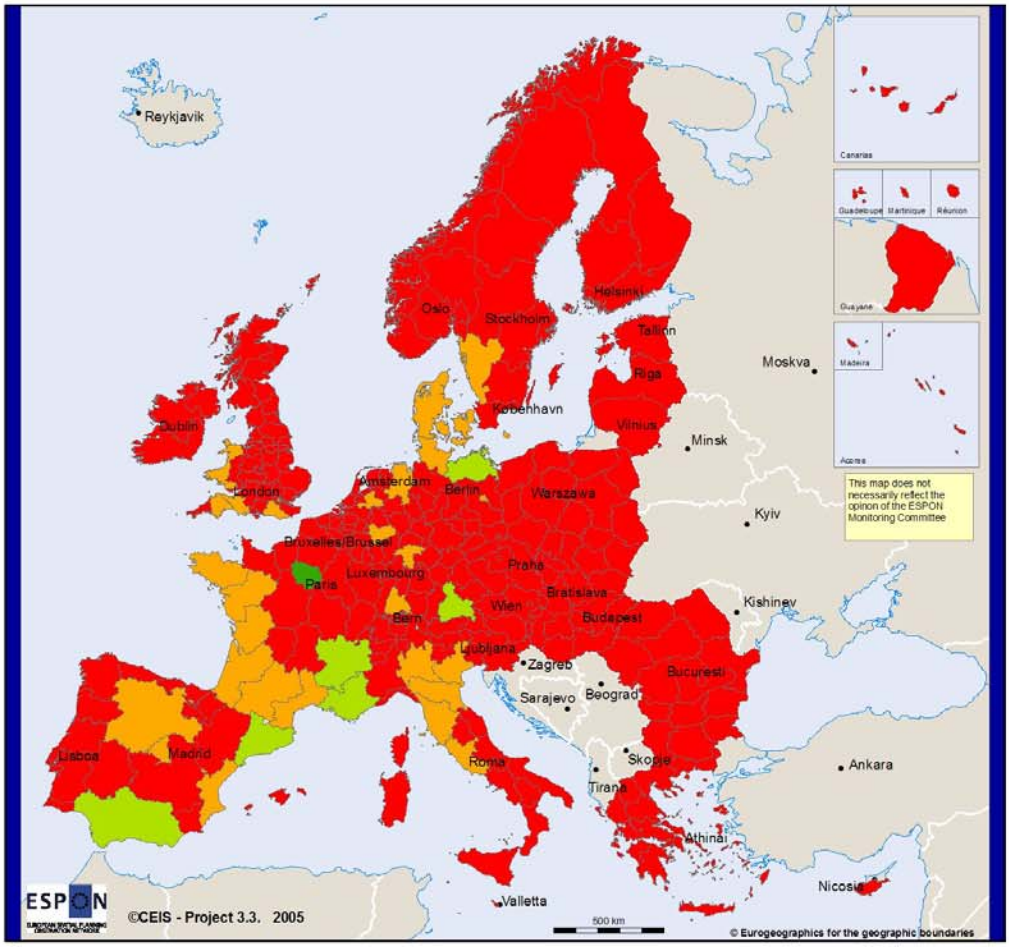


Tourism outbound

(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-6- "TOURISM - OUTBOUND"



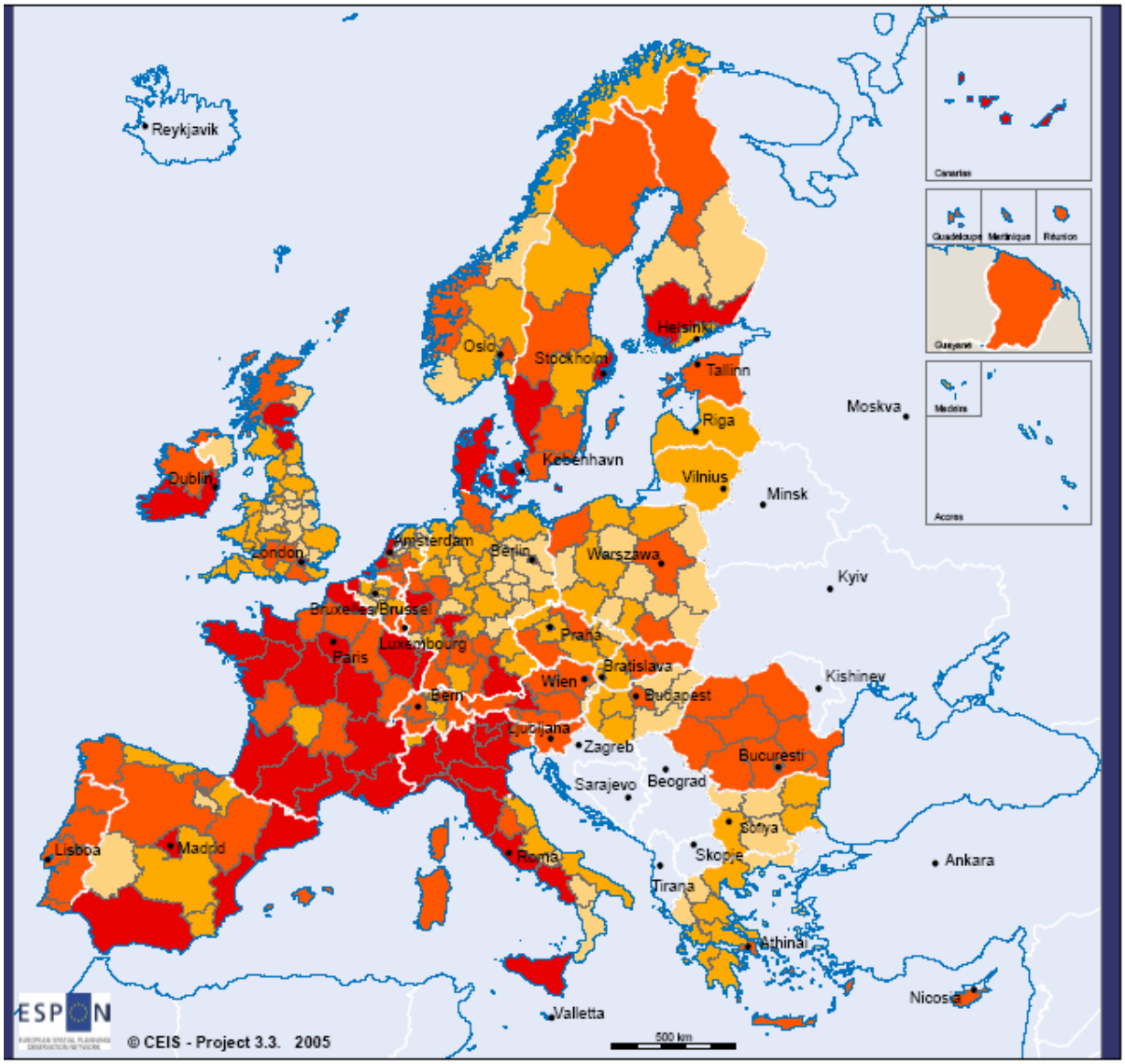
Legend

TOURISM - OUTBOUND - CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILE VERSION

MAP Q_B7 - Tourism

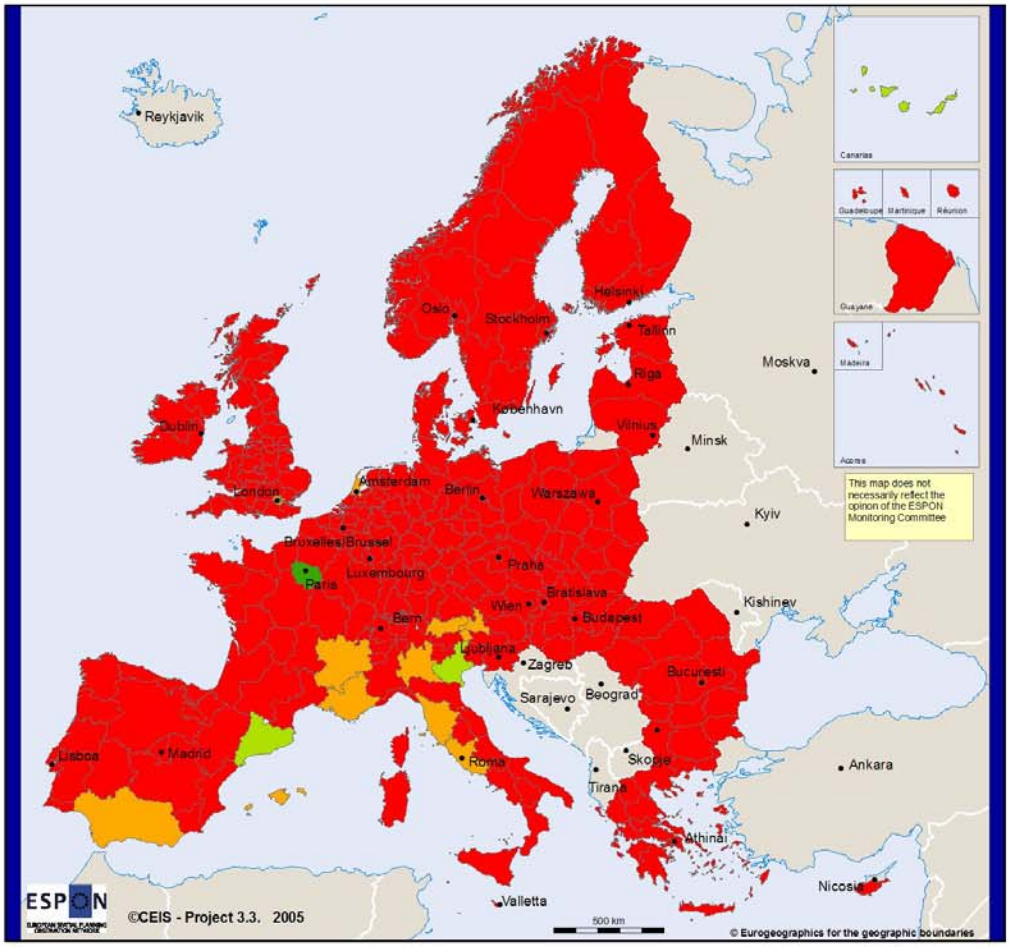


Tourism

(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-7 - "TOURISM"



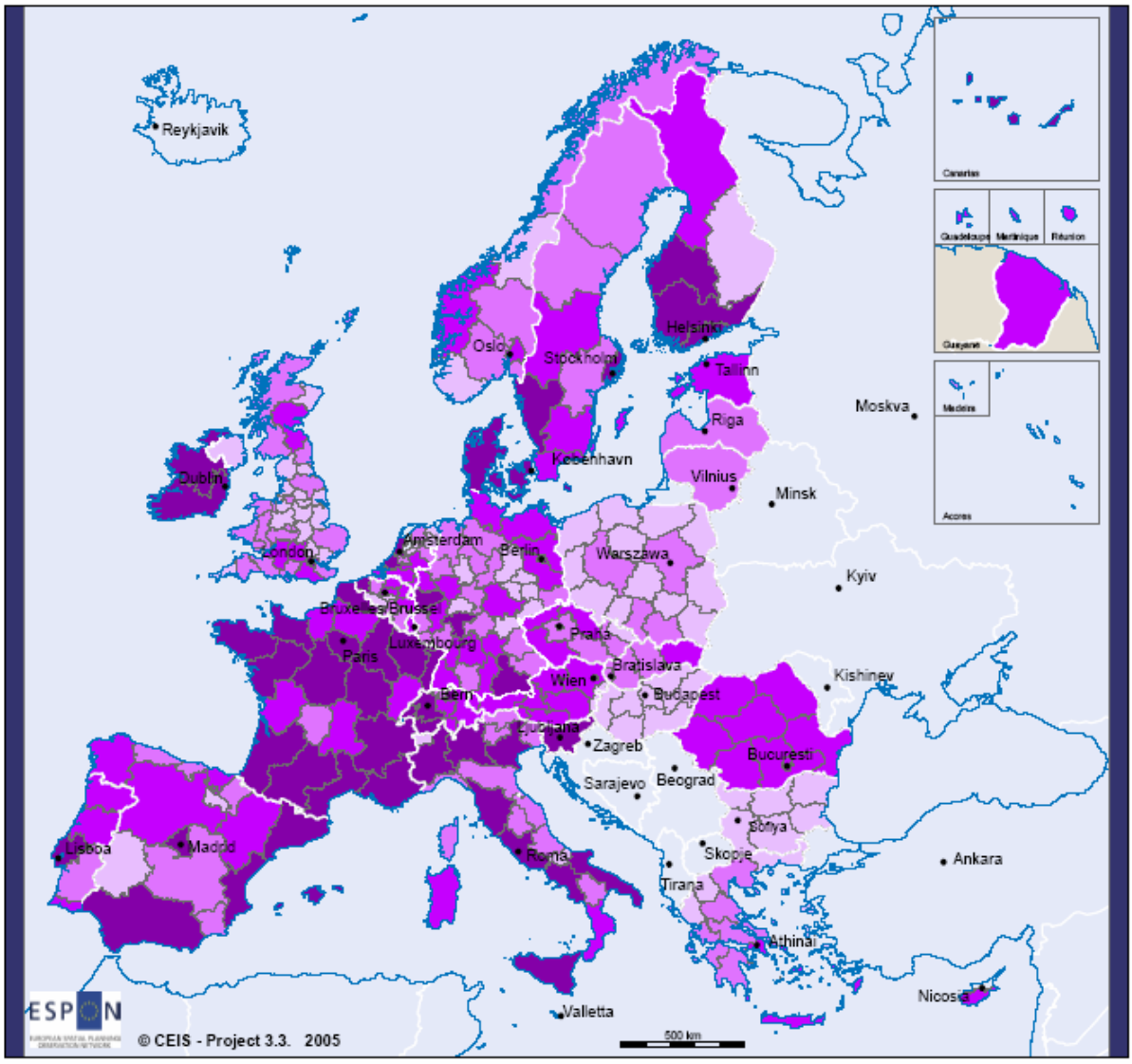
Legend

TOURISM

- High
- Medium - high
- Medium - low
- Low

QUANTILE VERSION

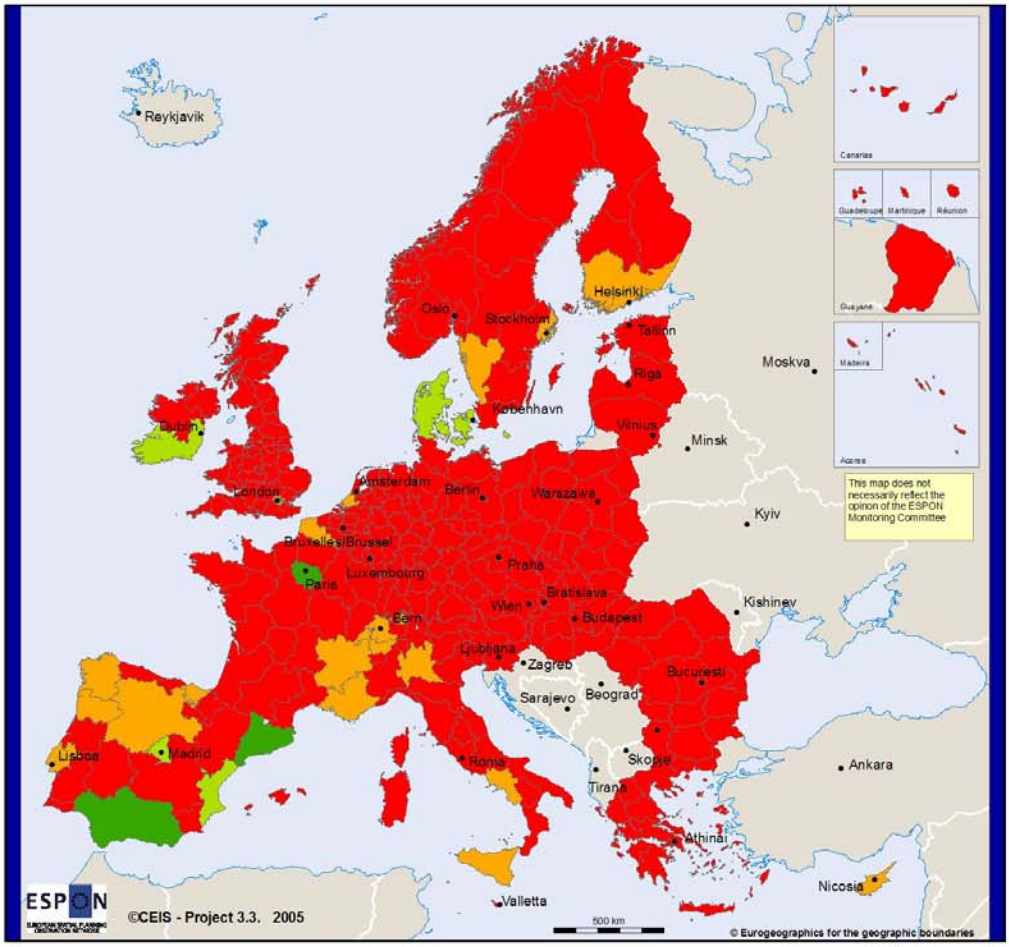
MAP Q_B8 - Student Mobility



Student mobility
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-8 - "STUDENT MOBILITY"



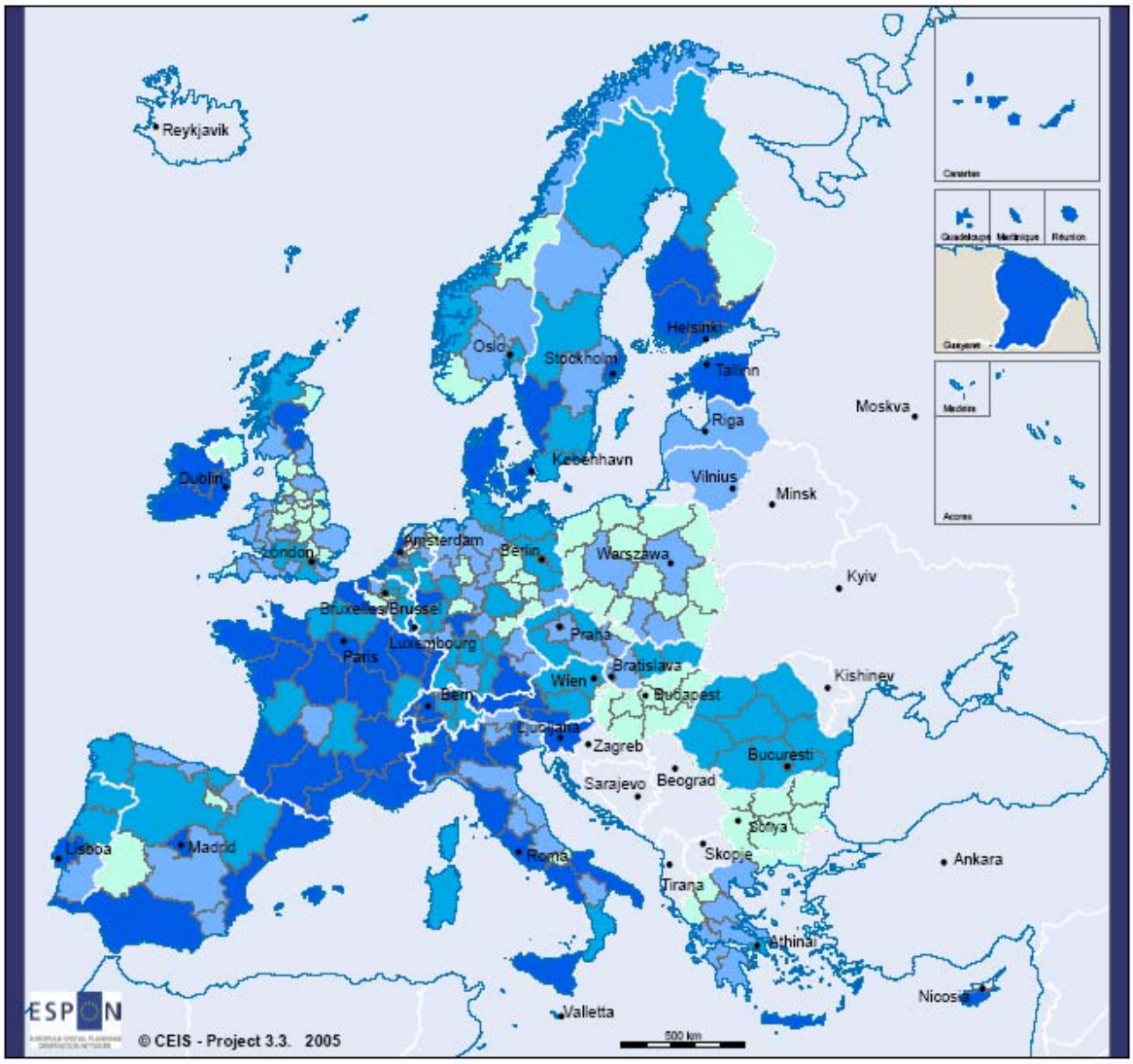
Legend

STUDENT MOBILITY

- High
- Medium - high
- Medium - low
- Low

QUANTILE VERSION

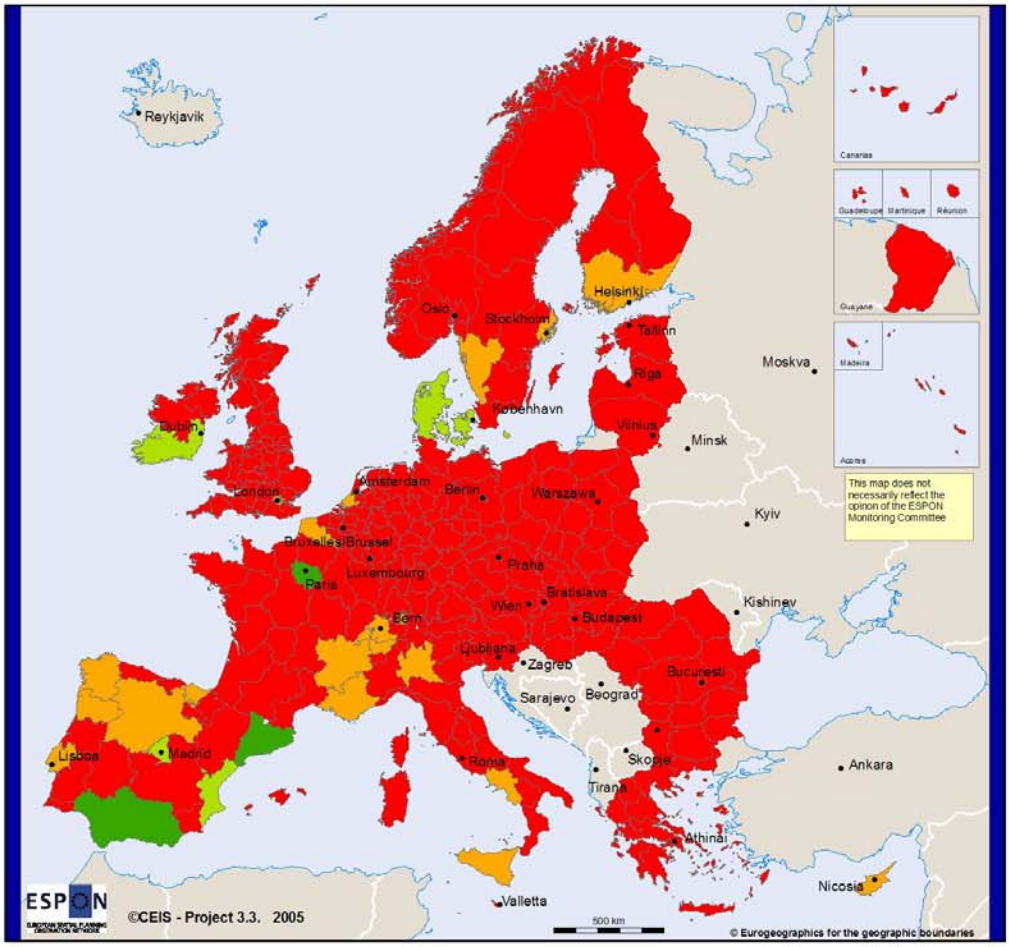
MAP Q_B8a - Inbound Student



Inbound student
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-8a- "INBOUND STUDENTS"

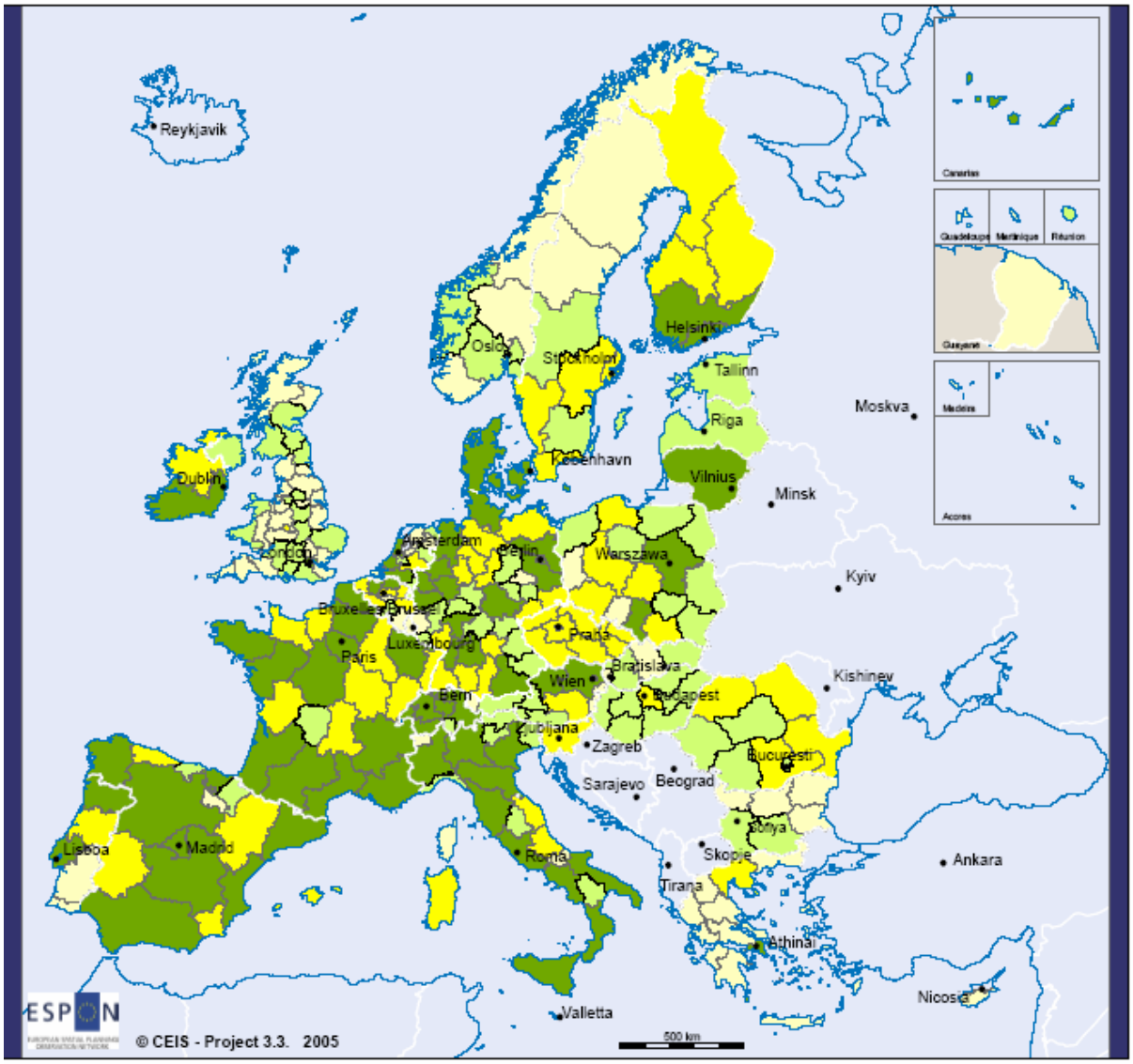


Legend

STUDENT - INBOUND - CLASSES

- High
- Medium - high
- Medium - low
- Low

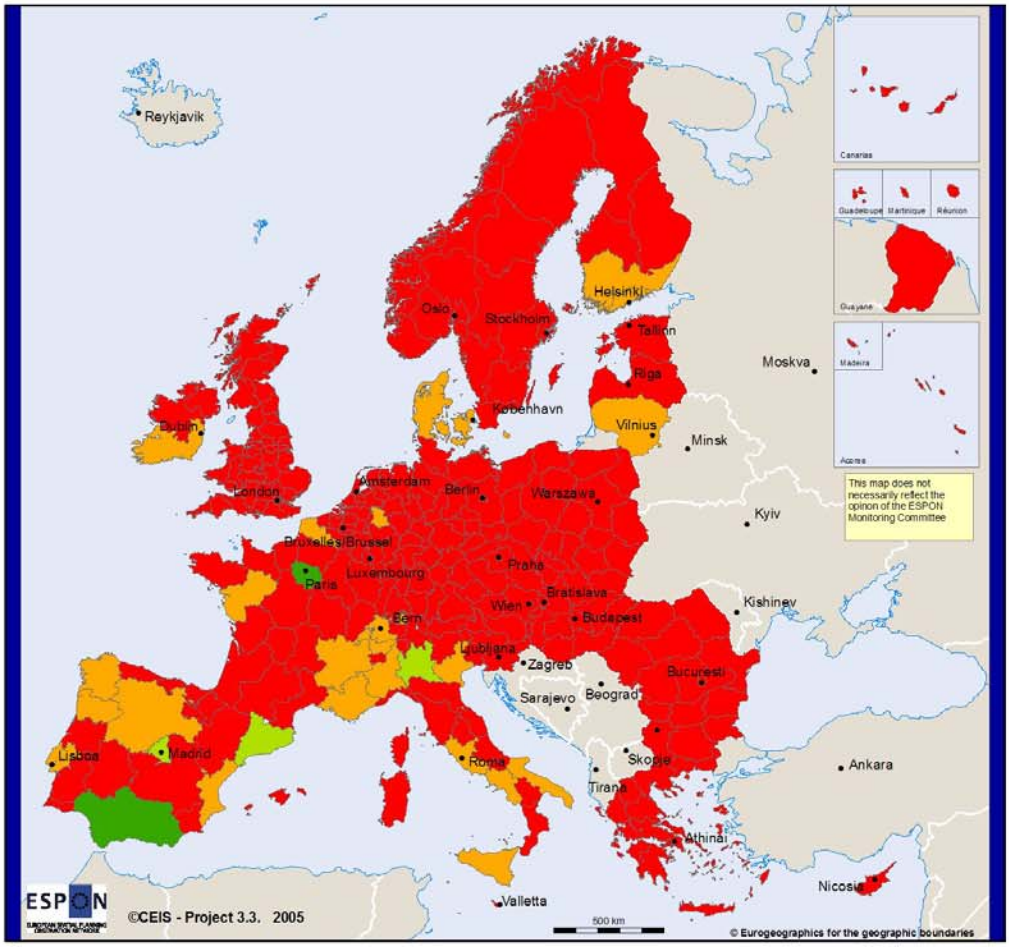
MAP Q_B8b - Outbound Student



Outbound student
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-8b- "OUTBOUND STUDENTS"

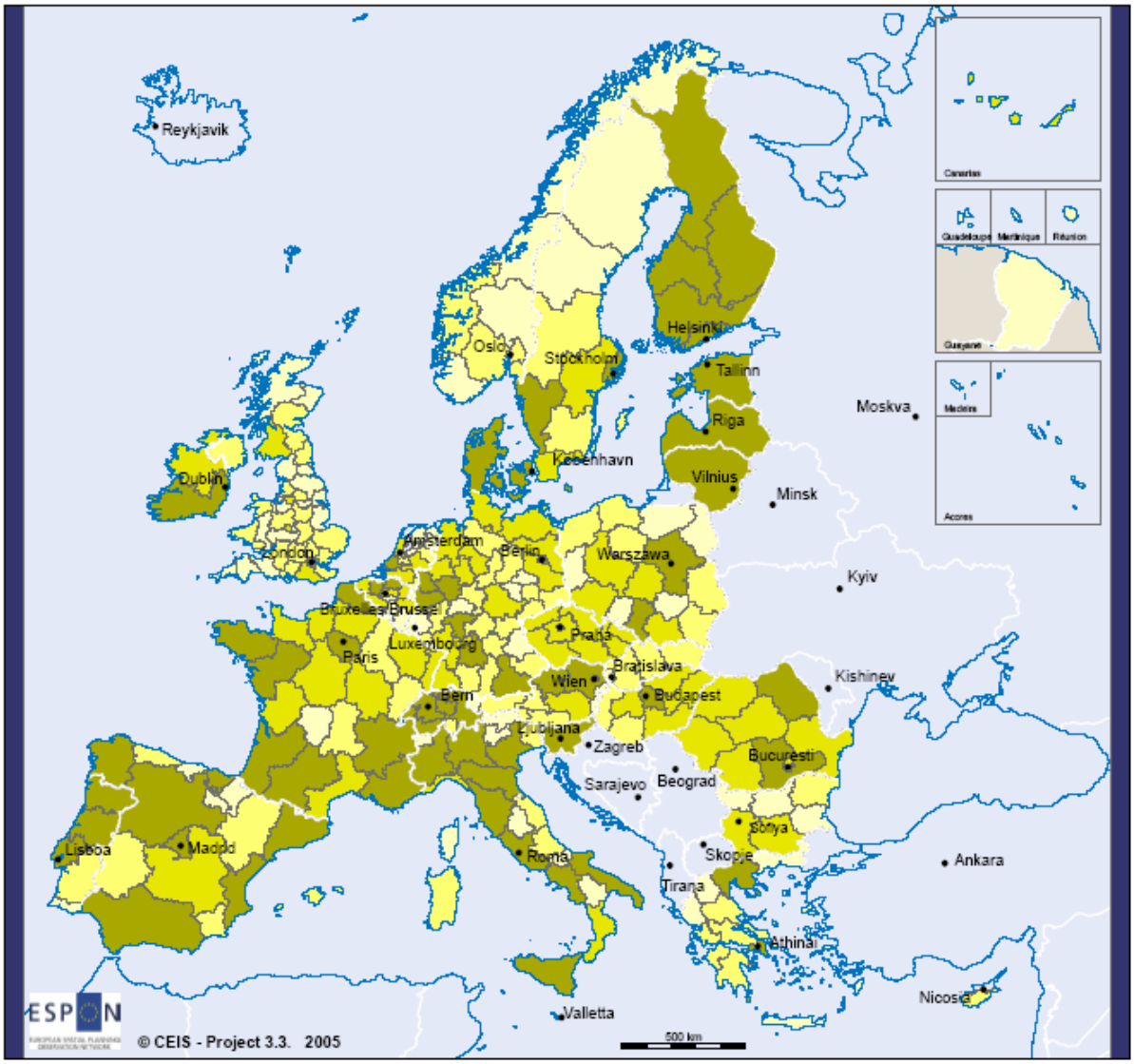


Legend

STUDENT - OUTBOUND - CLASSES

- High
- Medium - high
- Medium - low
- Low

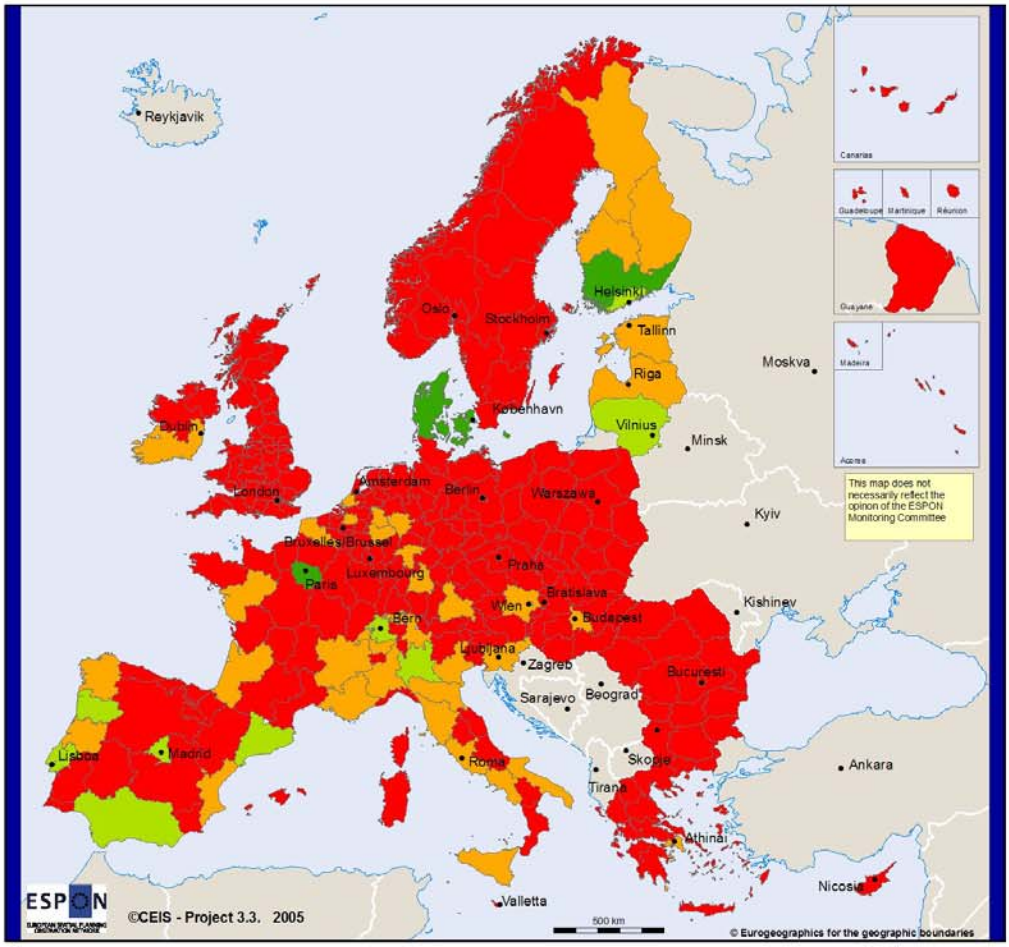
MAP Q_B9 - Researcher Mobility



Researcher mobility
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-9 - "RESEARCHER MOBILITY"

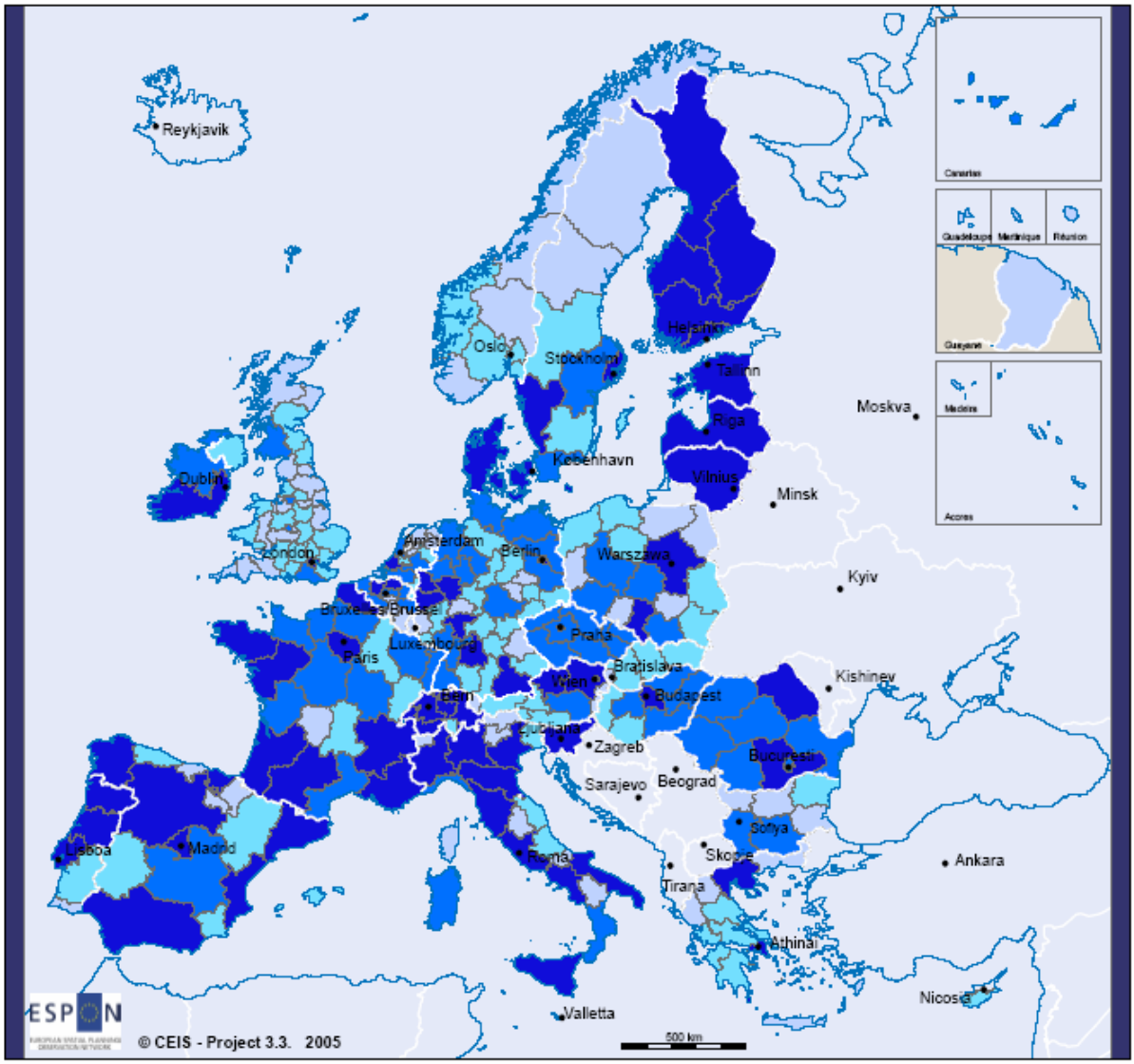


Legend

RESEARCHER MOBILITY

- High
- Medium - high
- Medium - low
- Low

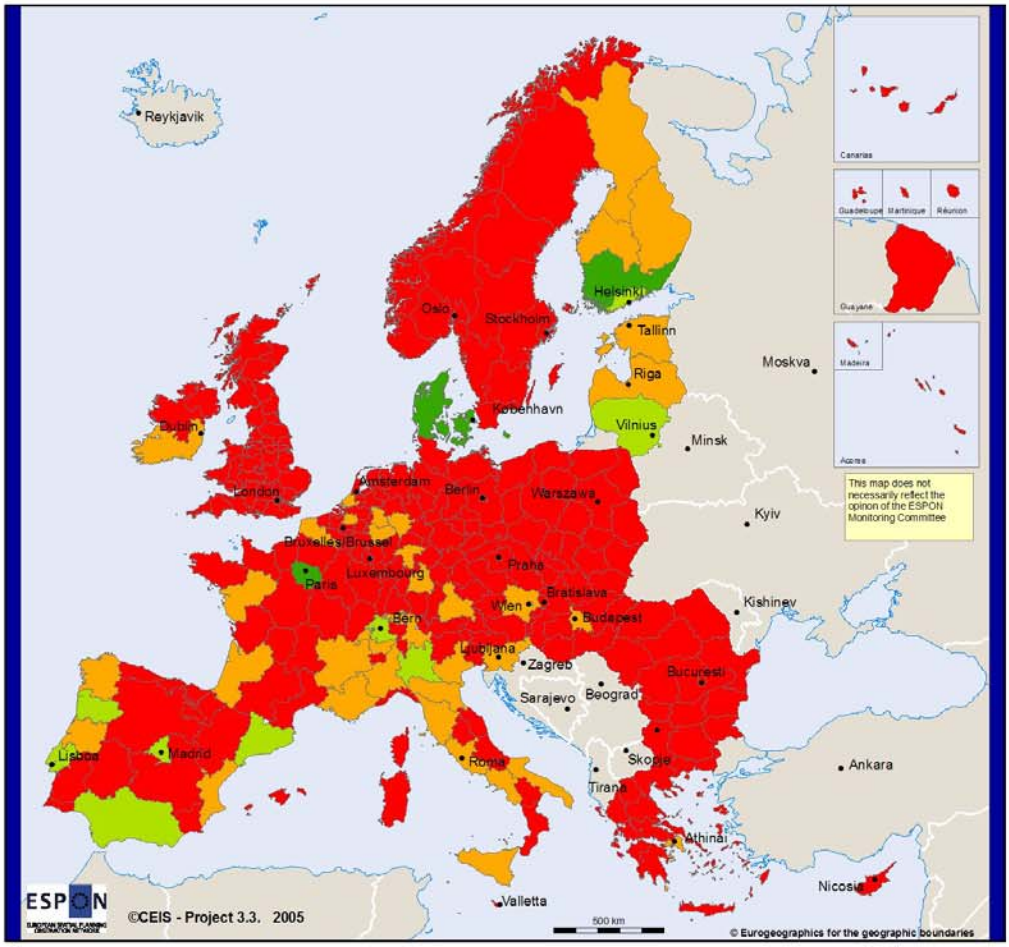
MAP Q_B9a - Inbound Researcher



Inbound researcher
(quantile version)

- A High
- B Medium
- C Medium low
- D Low

Map B-9a- "INBOUND RESEARCHERS "

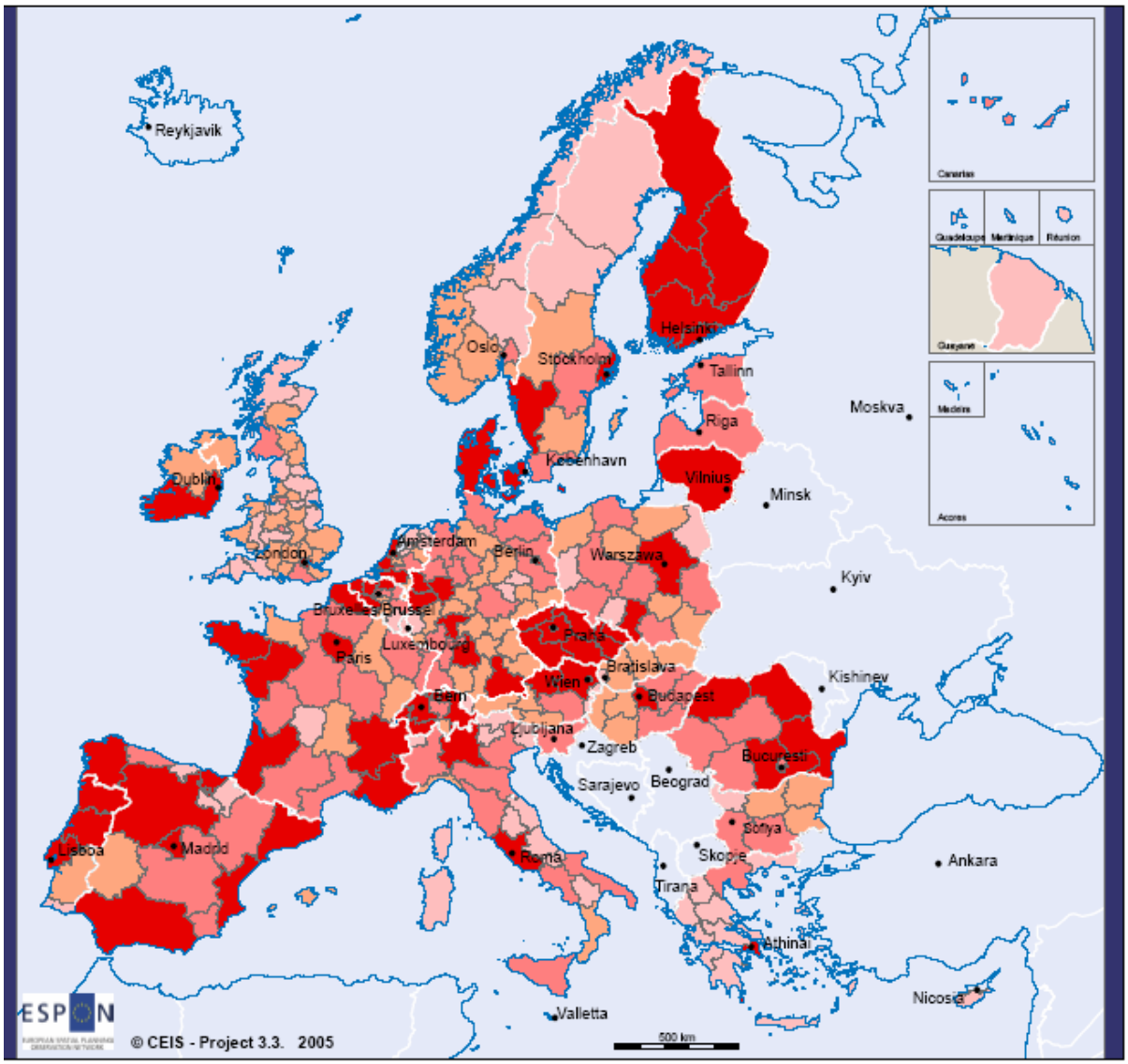


Legend

RESEARCHERS - INBOUND - CLASSES

- High
- Medium - high
- Medium - low
- Low

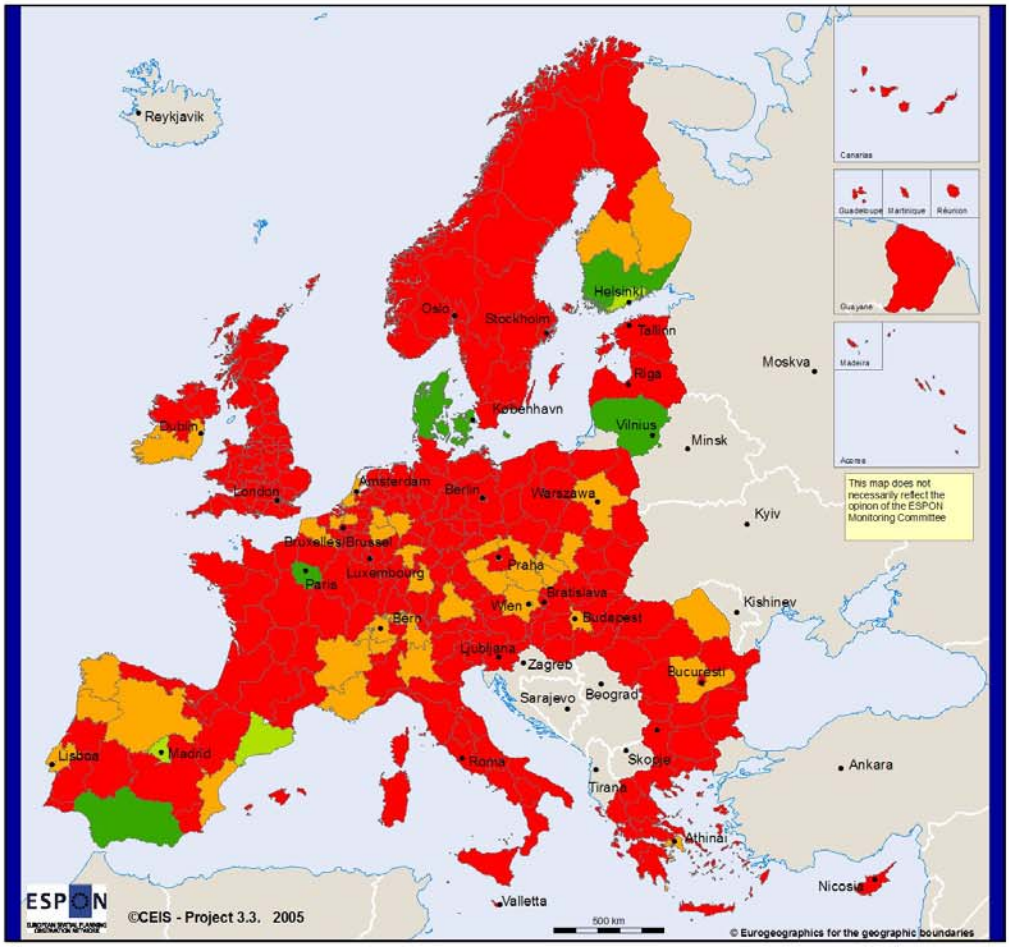
MAP Q_B9b - Outbound Researcher



Outbound researcher
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-9b- "OUTBOUND RESEARCHERS "

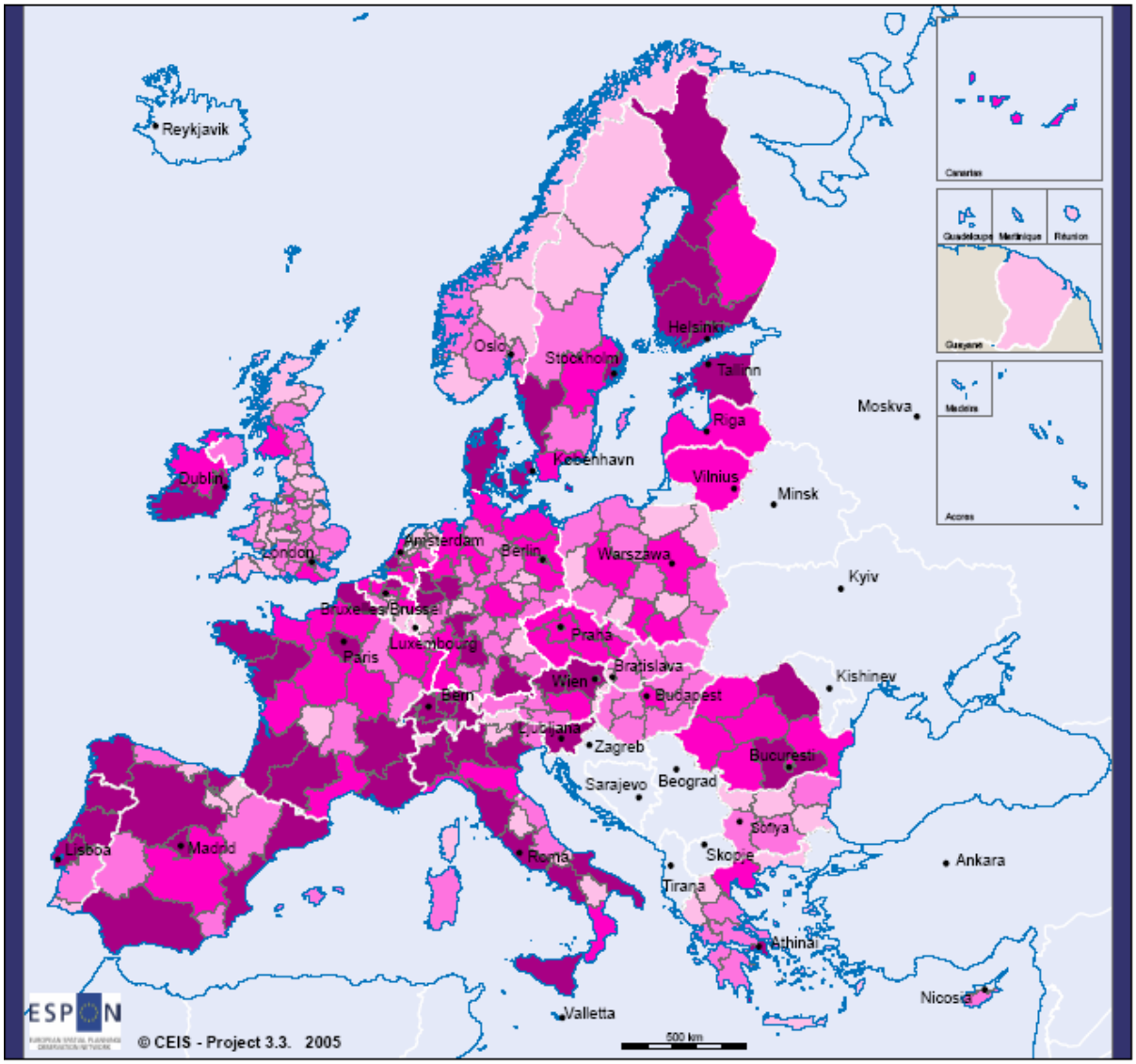


Legend

RESEARCHERS - OUTBOUND - CLASSES

- High
- Medium - high
- Medium - low
- Low

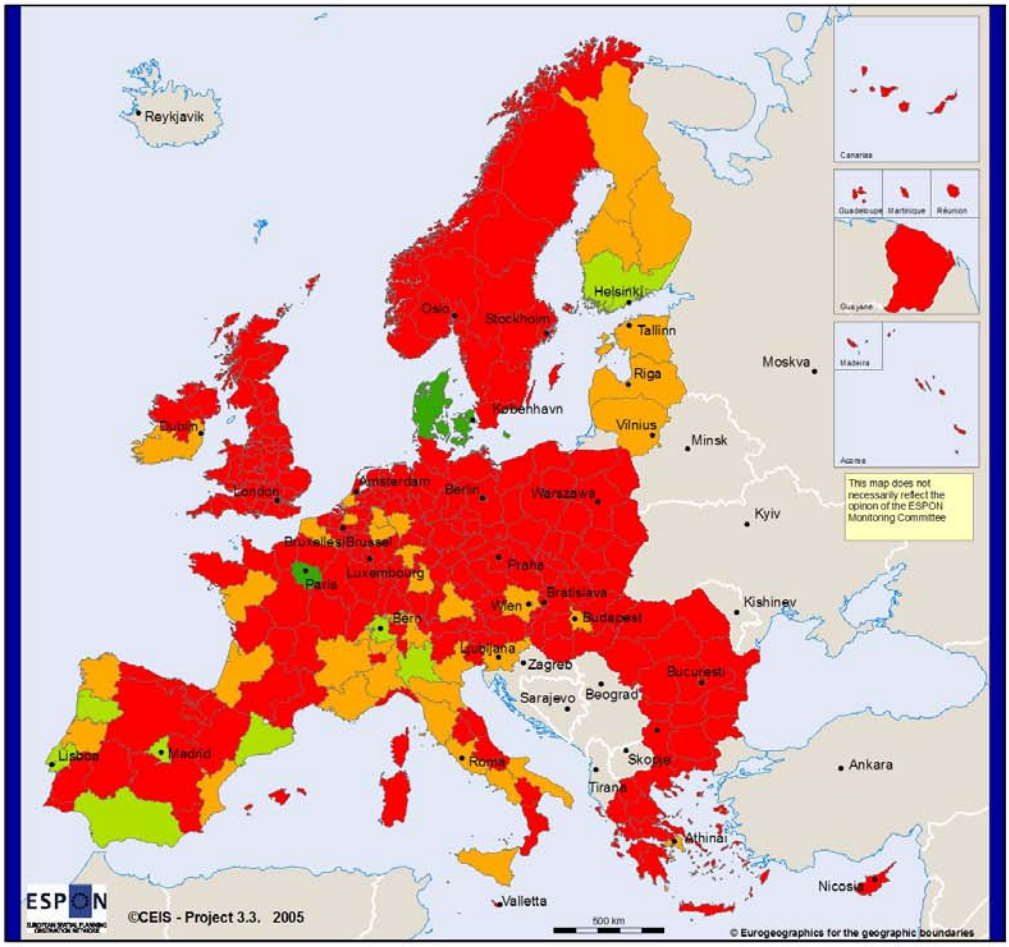
MAP Q_B10 - Cultural Exchange



Cultural exchange
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-10 - "CULTURAL EXCHANGE"

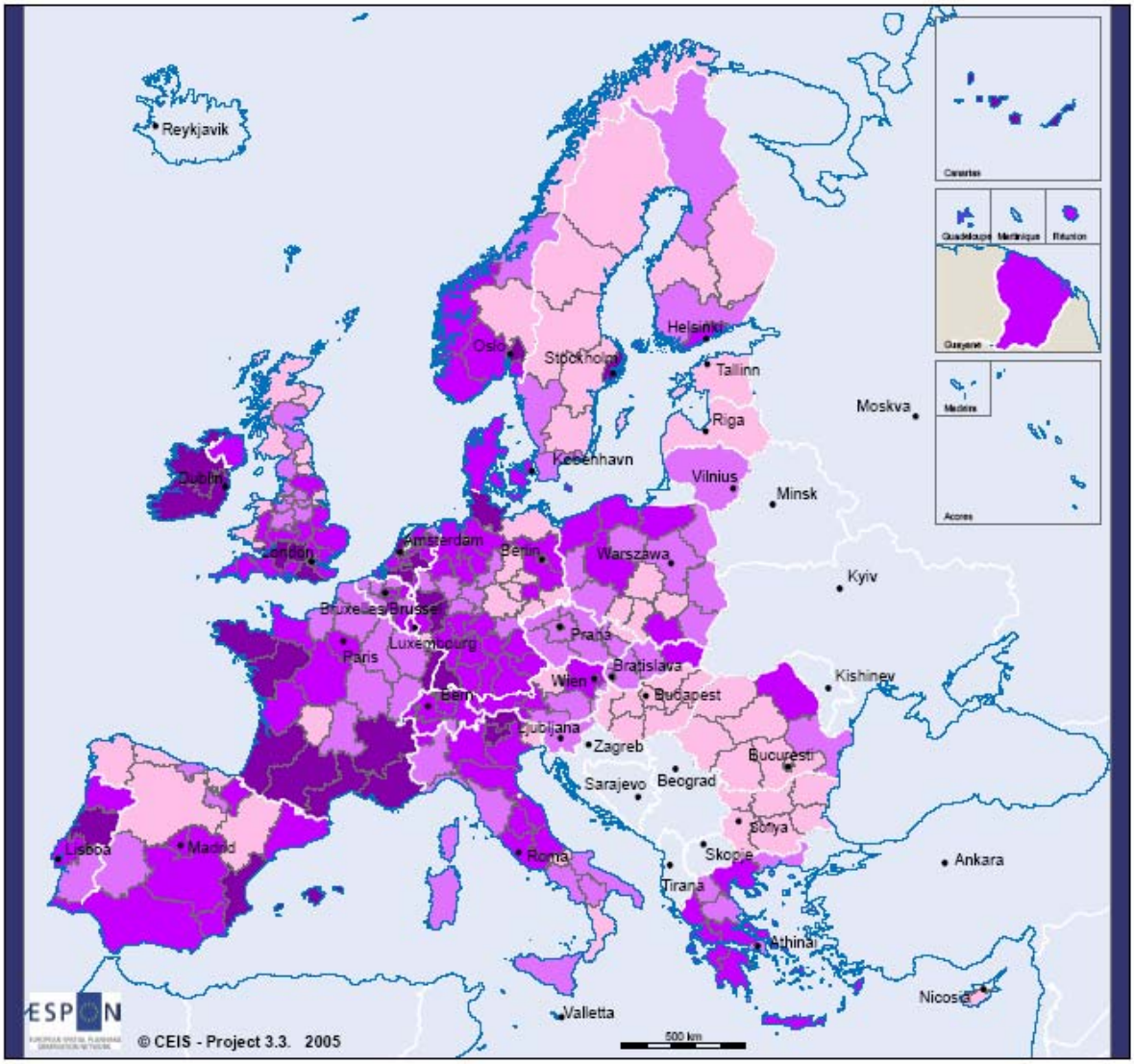


Legend

CULTURAL EXCHANGE

- High
- Medium - high
- Medium - low
- Low

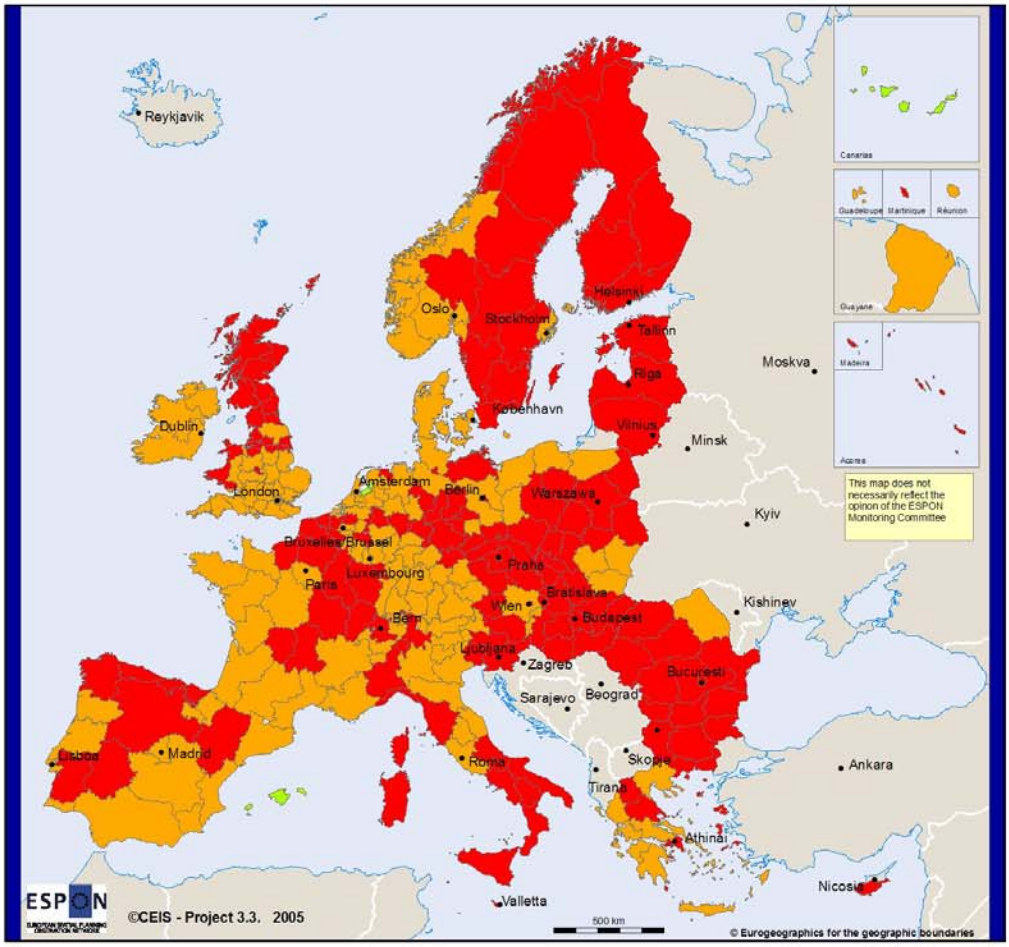
MAP Q_B11 - Population Mobility



Population mobility
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-11 - "POPULATION MOBILITY"

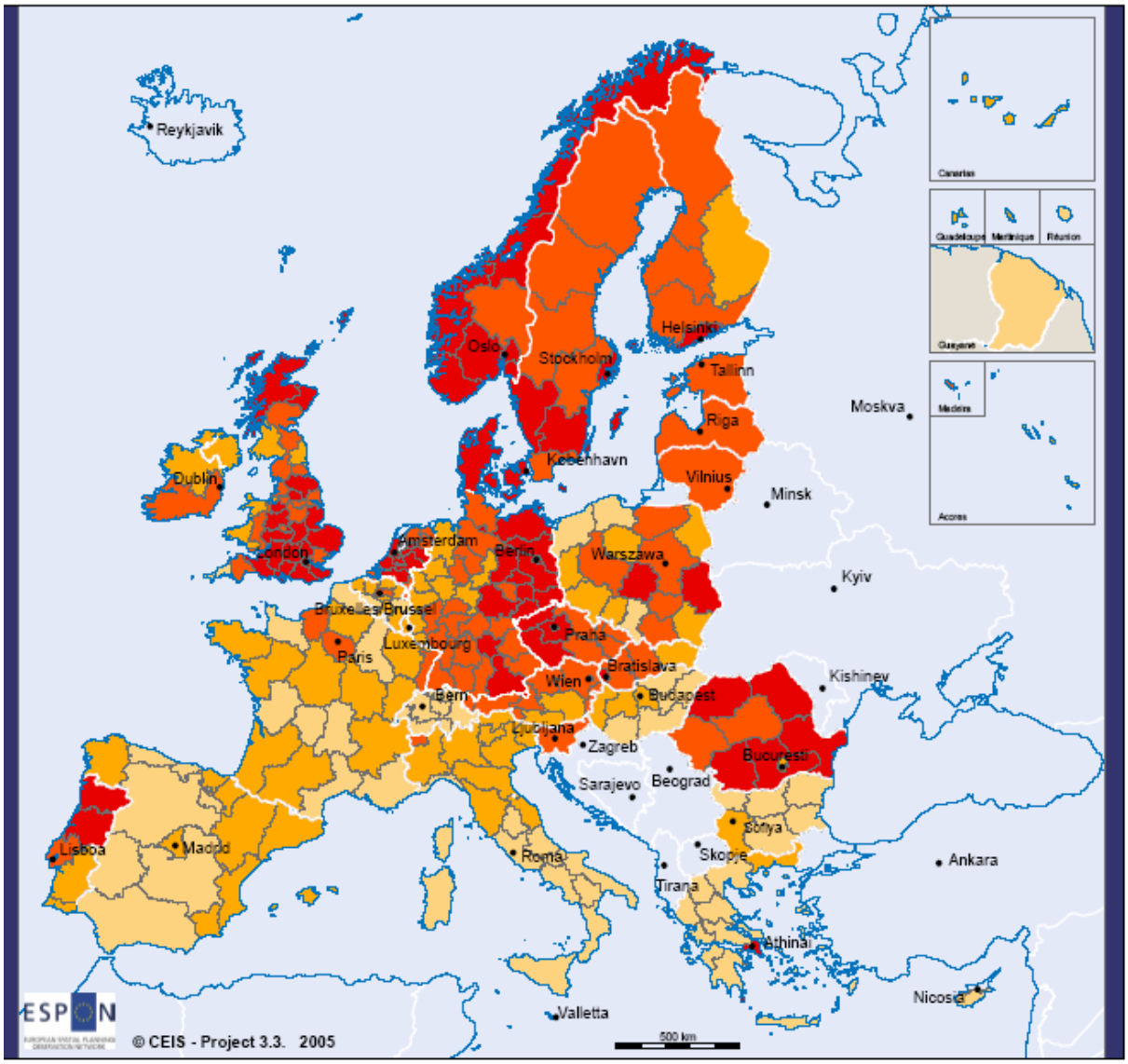


Legend

POPULATION MOBILITY

- Medium - high
- Medium - low
- Low

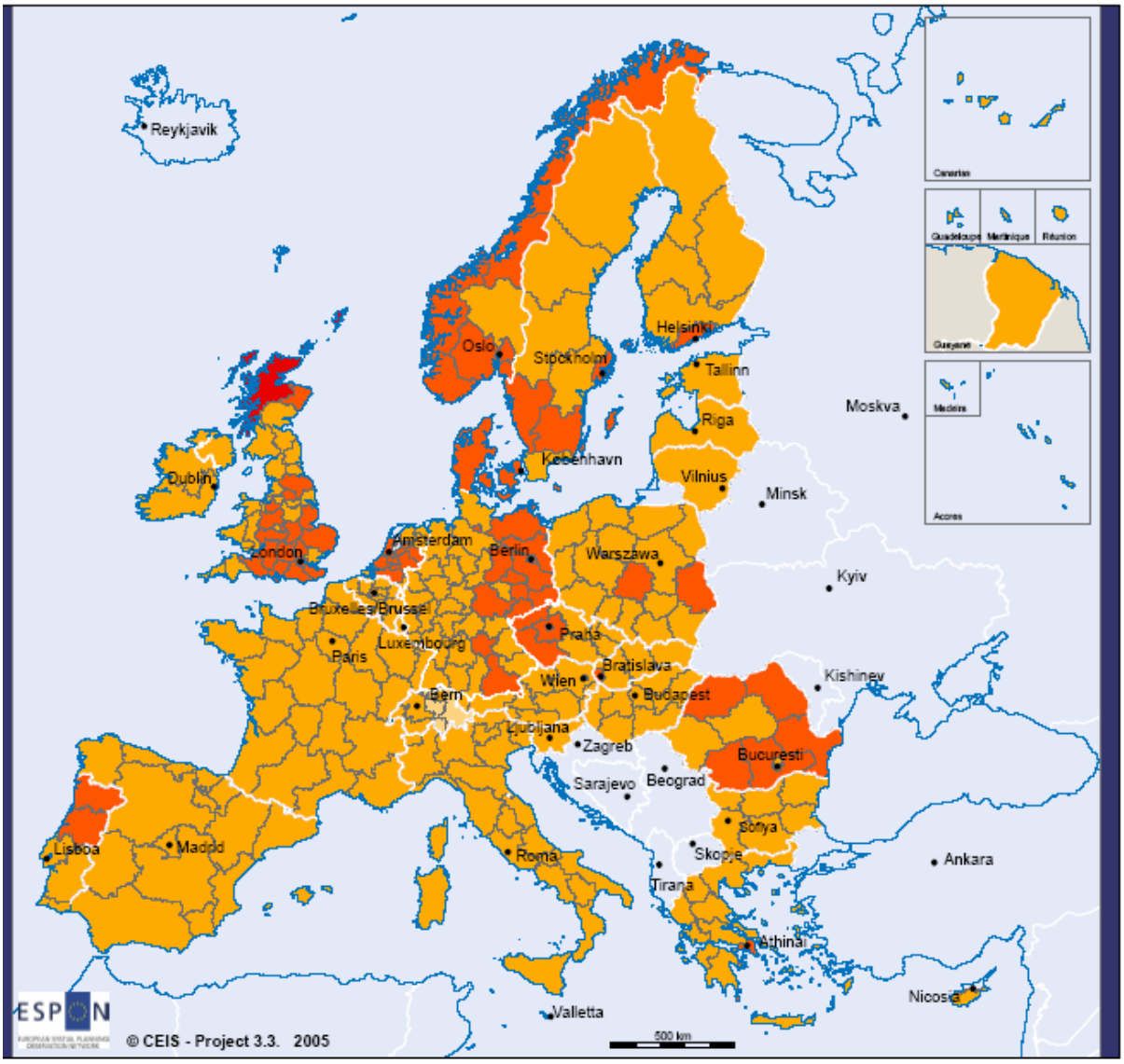
MAP Q_B12 - Active Population



Active population
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

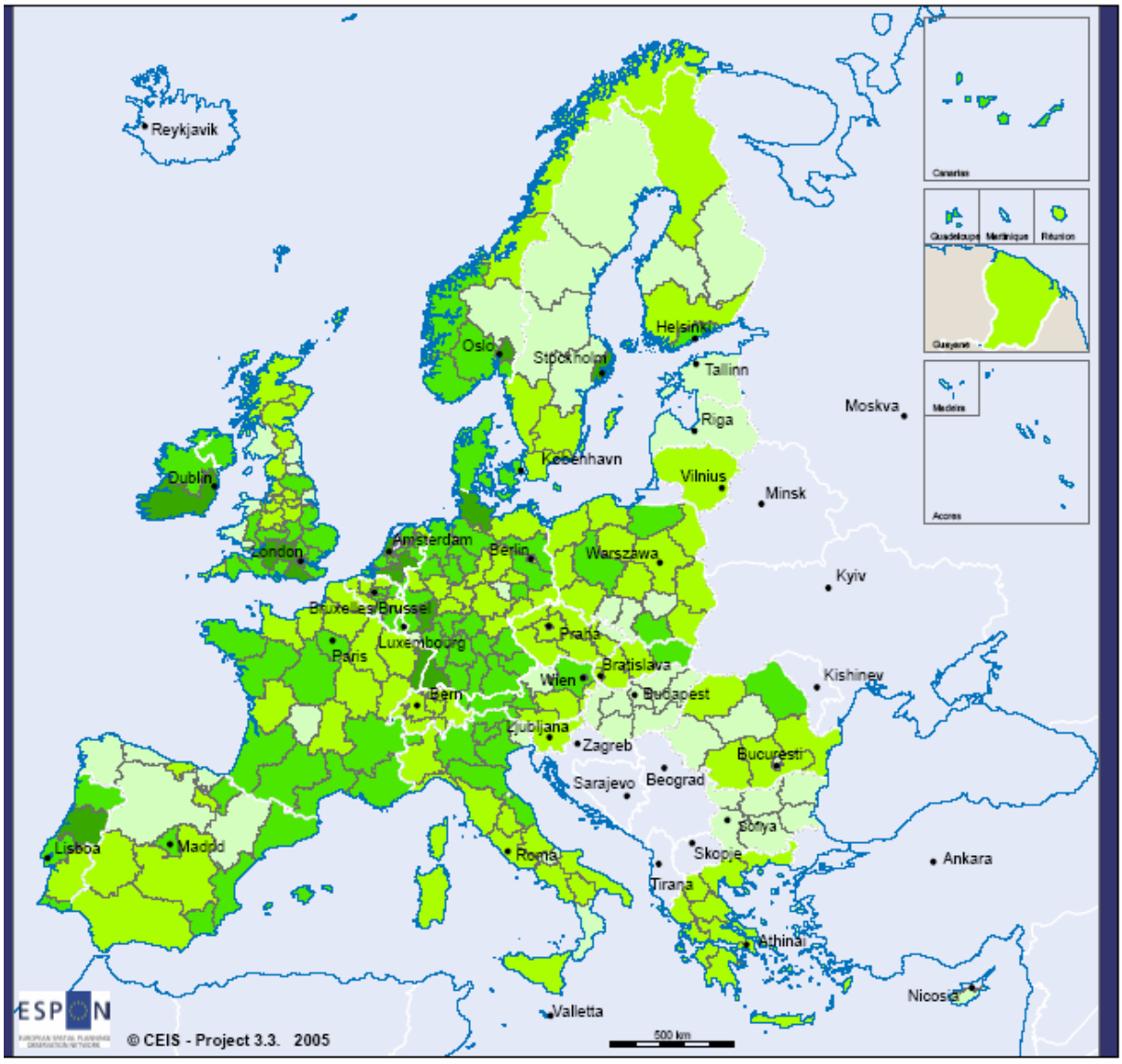
MAP B12 - Active Population



Active population
(equal interval version)

- a High
- b Medium high
- c Medium low
- d Low

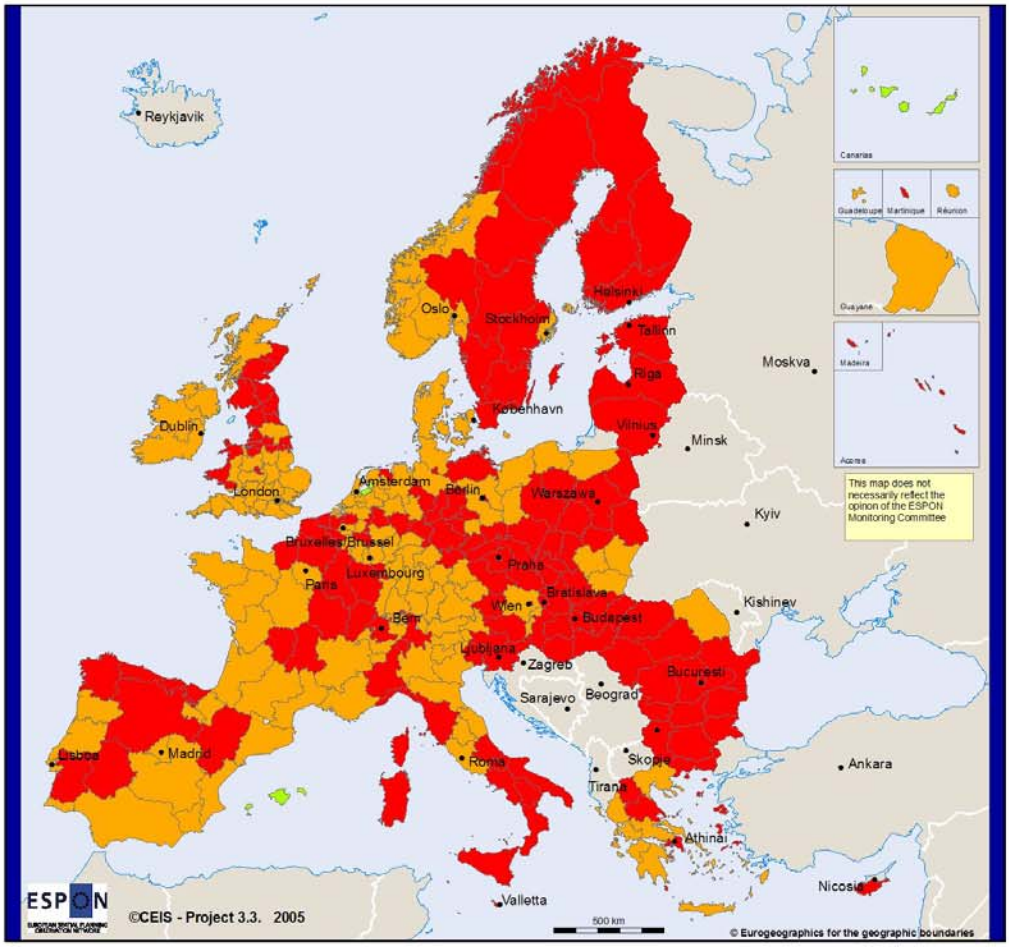
MAP Q_B13 - Social Interaction



Social interaction
(quartile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-13 - "SOCIAL INTERACTION"

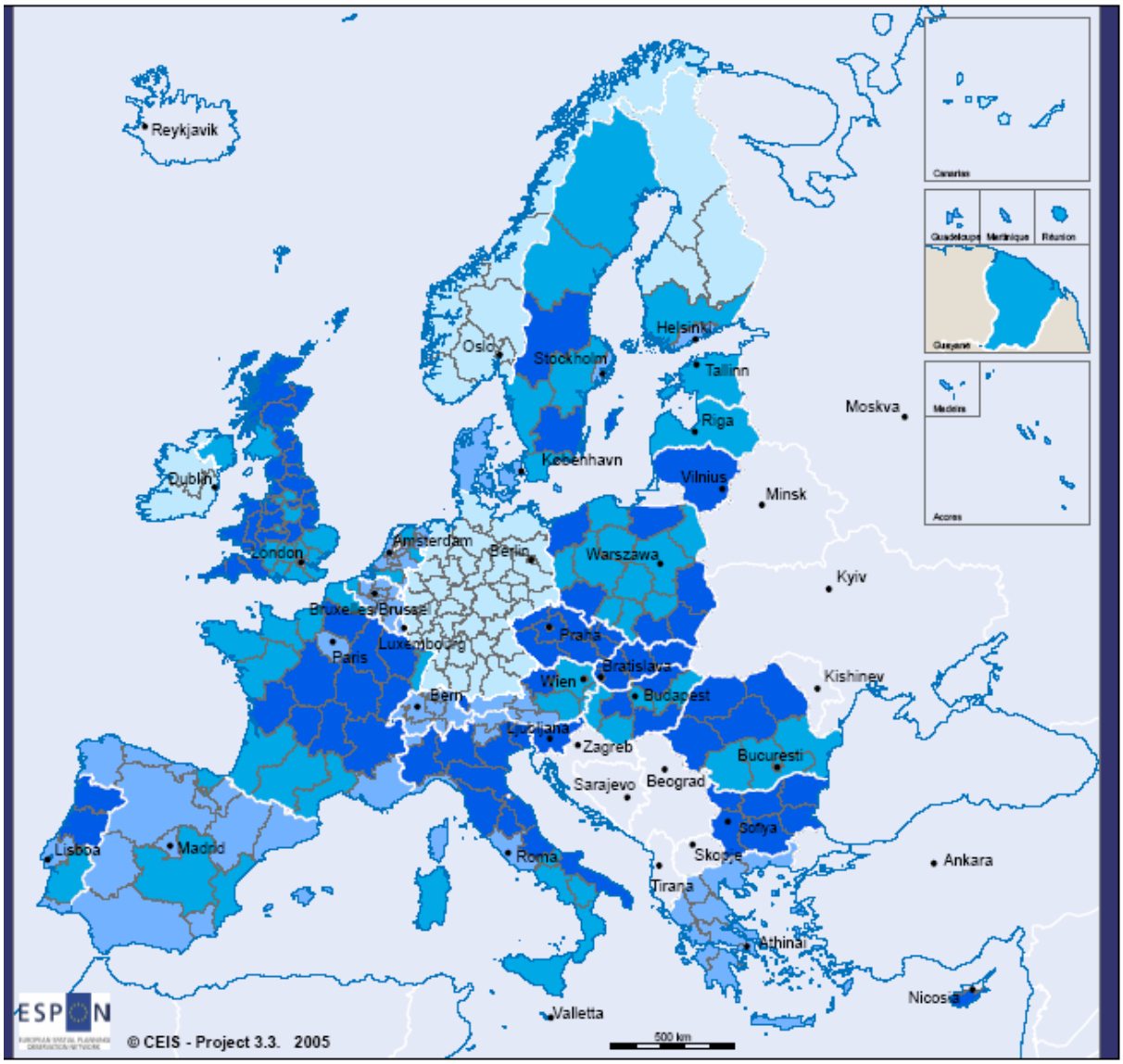


Legend

SOCIAL INTERACTION

- Medium - high
- Medium - low
- Low

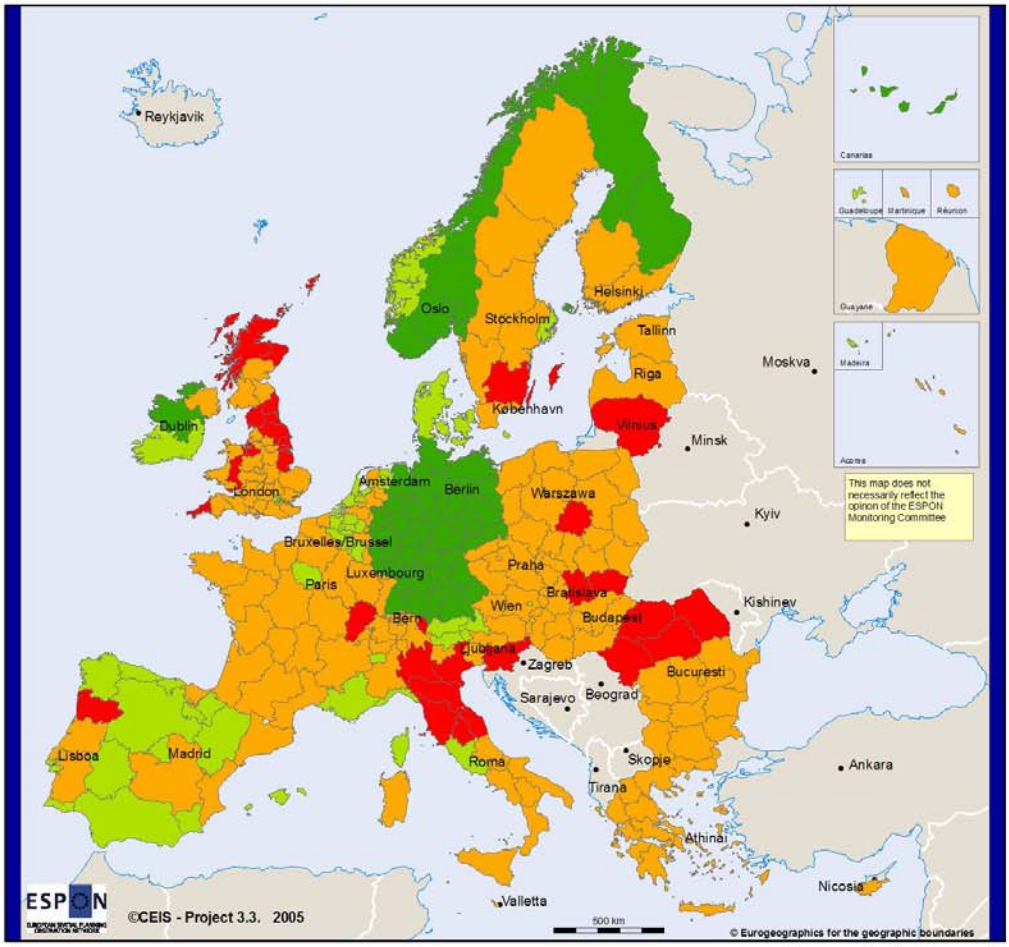
MAP Q_B14 - Manufactury Enterprise



Manufactury enterprise
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-14 MANUFACTURING ENTERPRISE

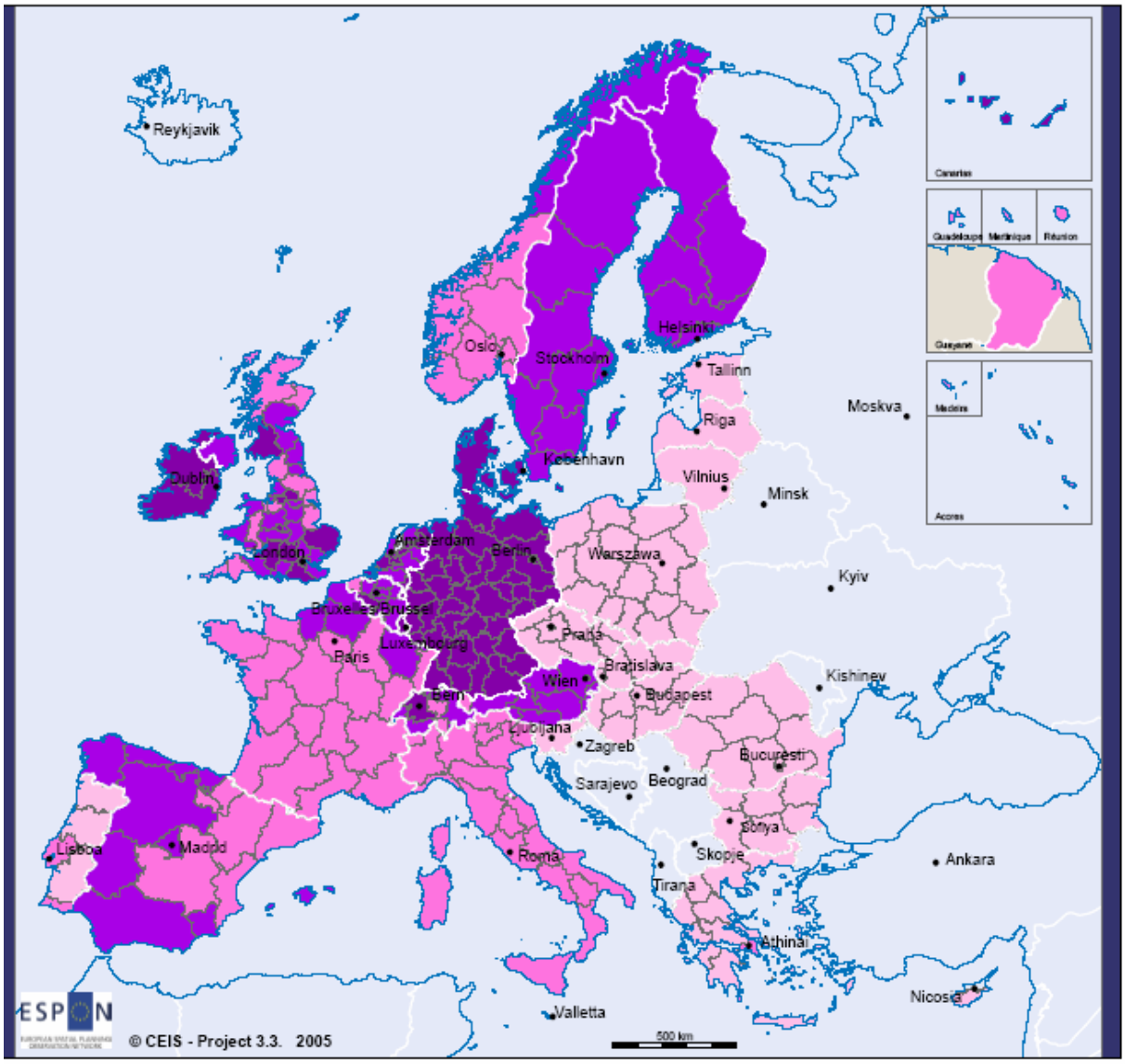


Legend

Manufacturing enterprises - CLASSES

- High
- Medium - high
- Medium - low
- Low

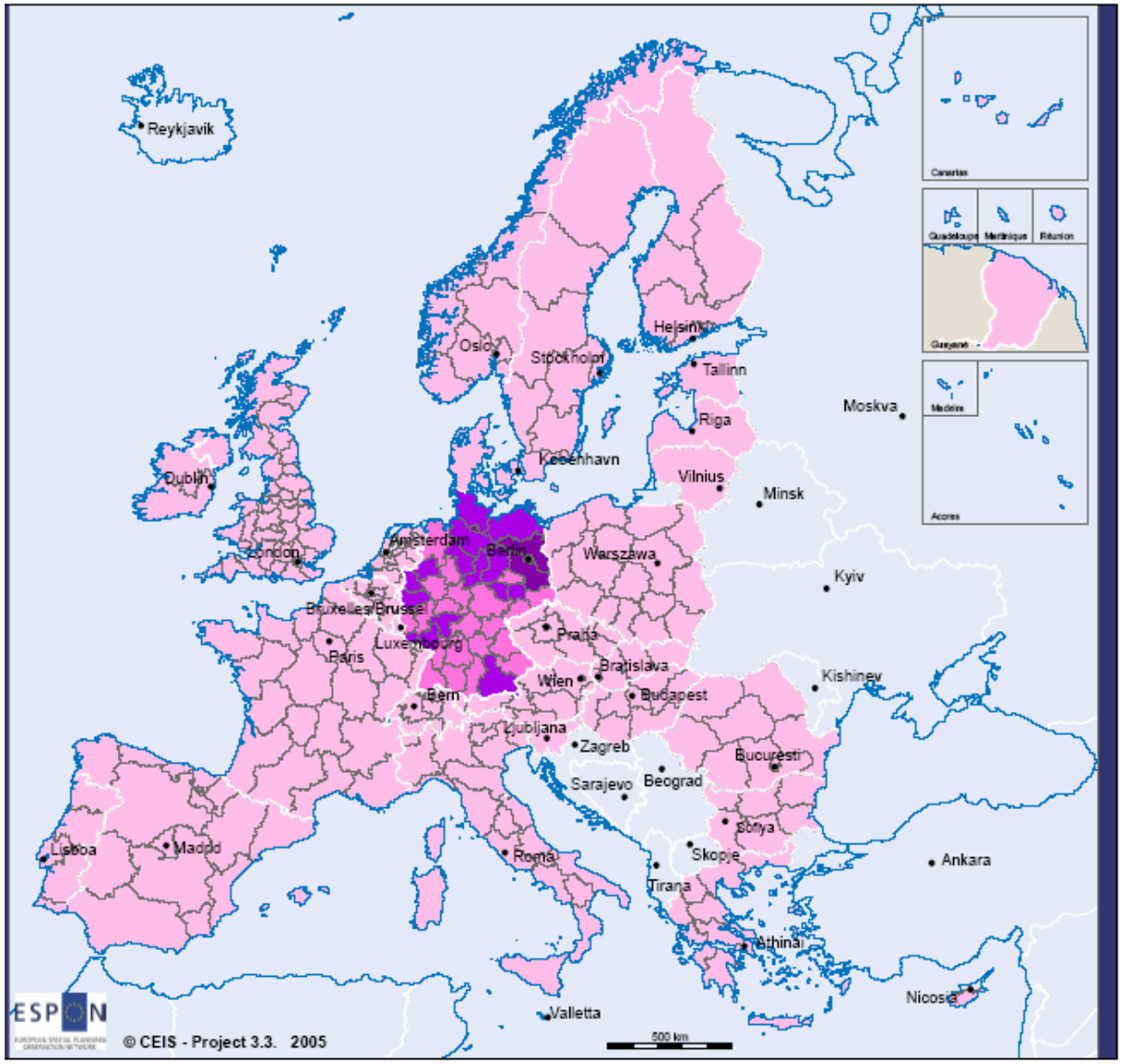
MAP Q_B15 - Product Trademark



Product trademark
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

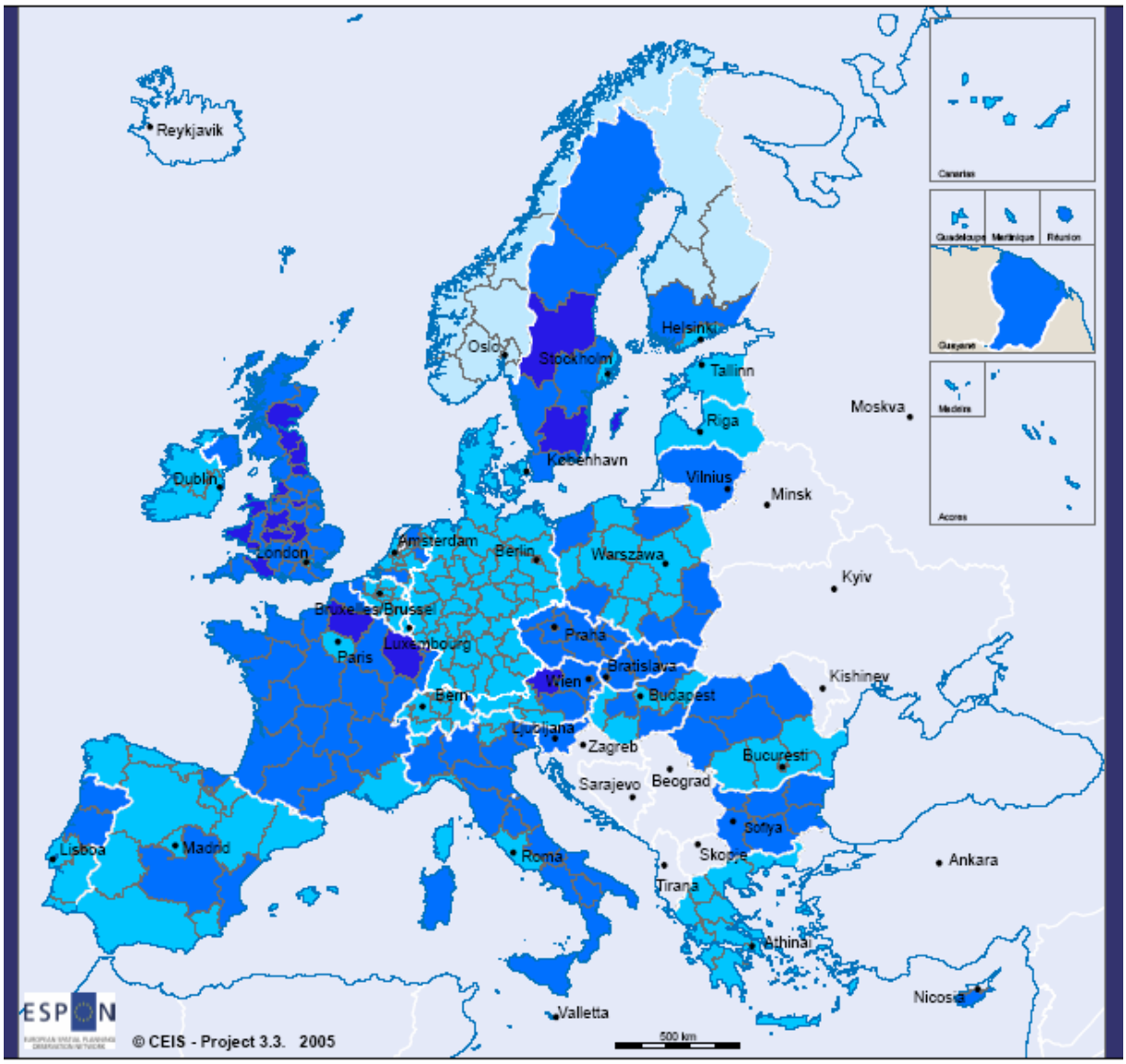
MAP B15 - Product Trademark



Product trademark
(equal interval version)

- a High
- b Medium high
- c Medium low
- d Low

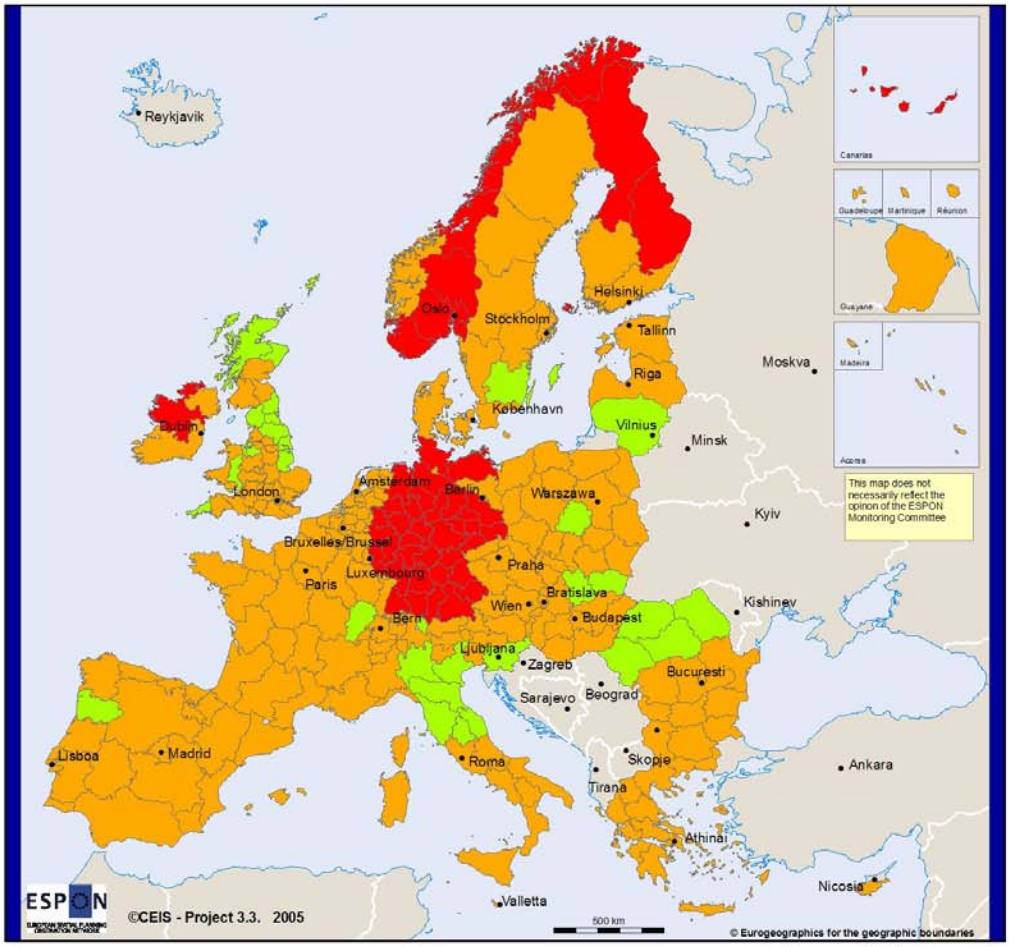
MAP Q_B16 - Productive system identity



Productive system identity
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-16 - "PRODUCTIVE SYSTEM IDENTITY"

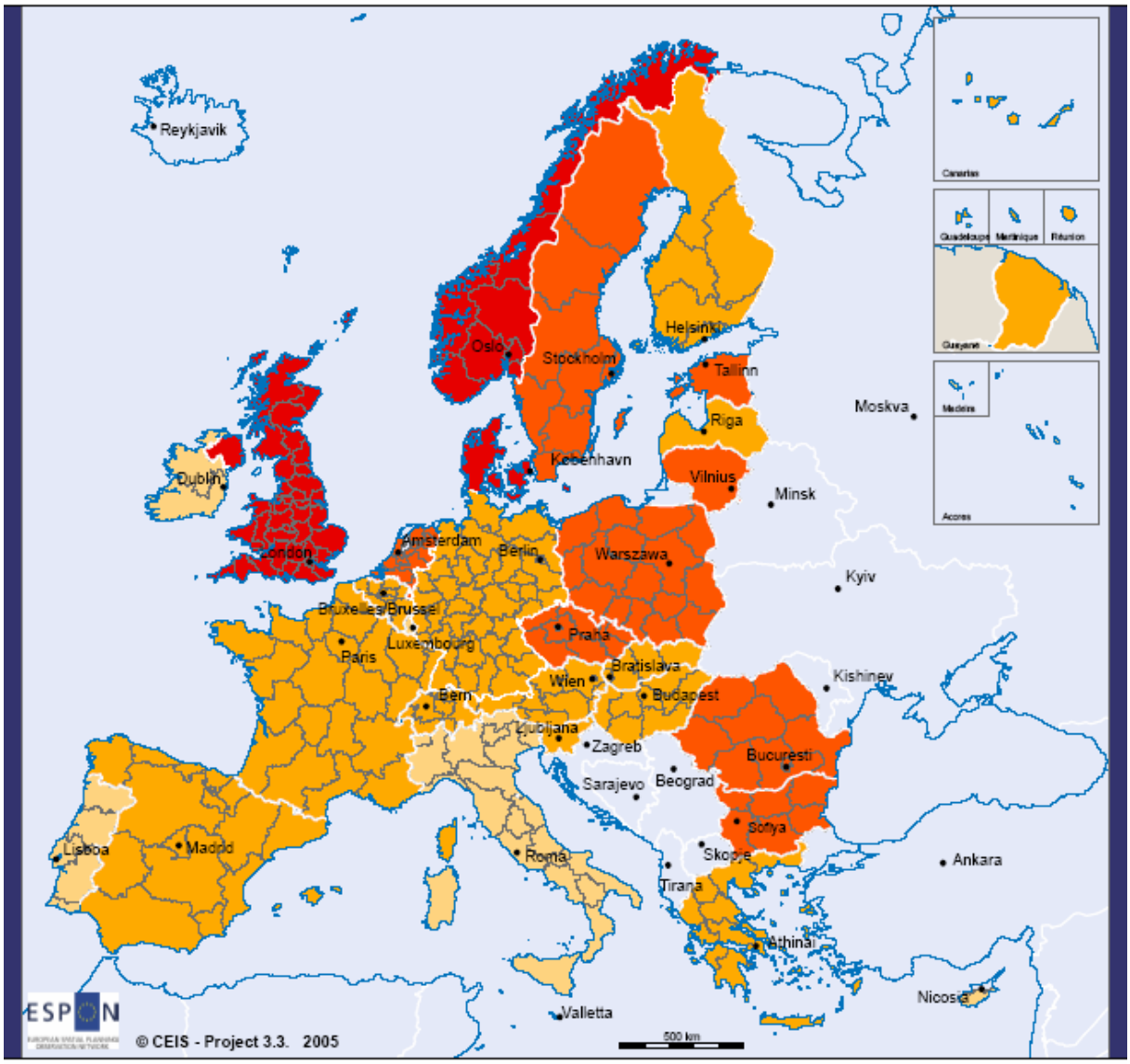


Legend

PRODUCTIVE SYSTEM IDENTITY

- Medium - high
- Medium - low
- Low

MAP B17 - Energy Self - Sufficiency Index

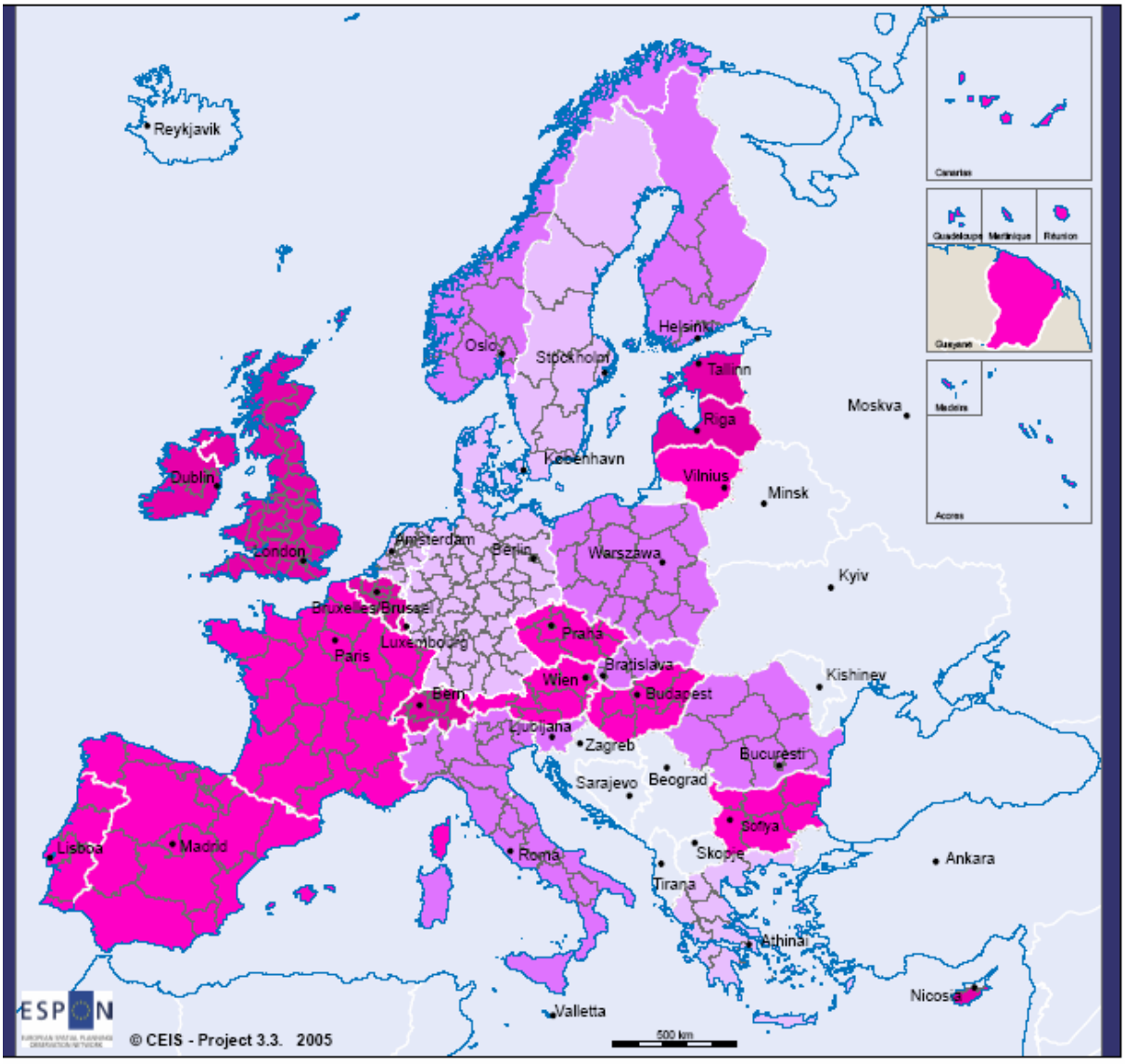


Energy self - sufficiency index

(equal interval version = quantile version)

- A High
- B Medium high
- C Medium low
- D Low

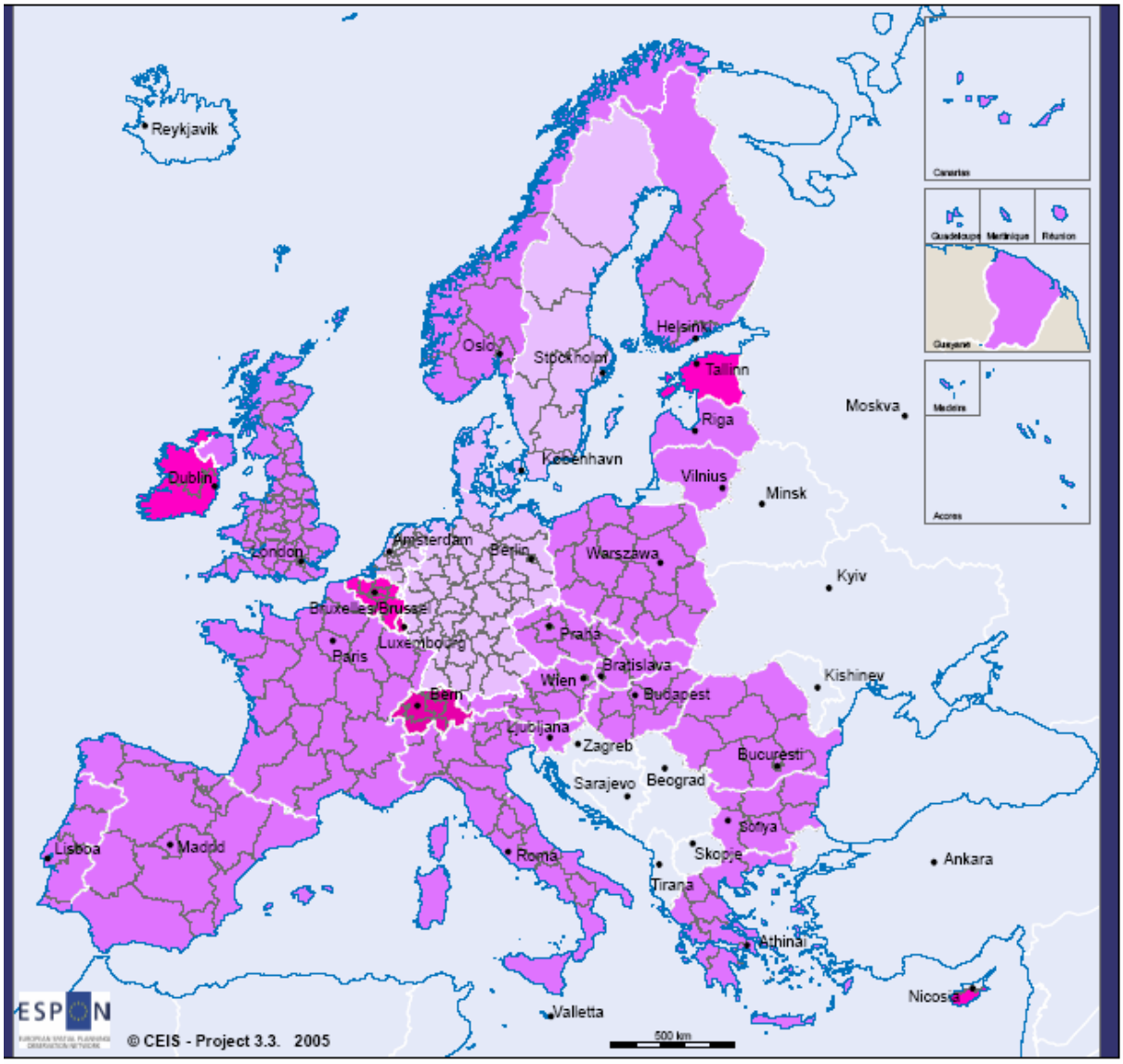
MAP Q_B18 - Territorial Appeal



Territorial appeal
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

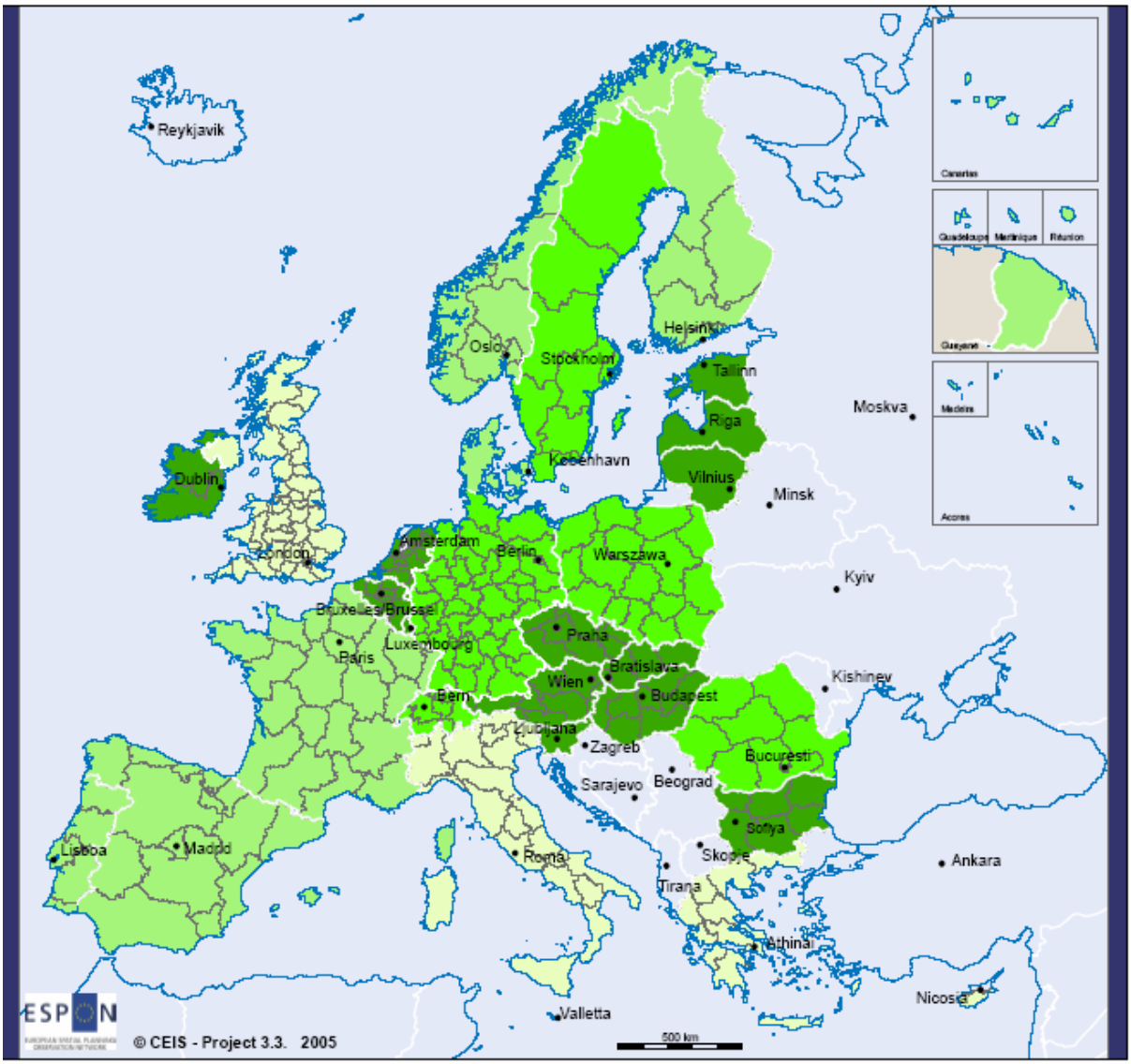
MAP B18 - Territorial Appeal



Territorial appeal
(equal interval version)

- A High
- B Medium high
- C Medium low
- D Low

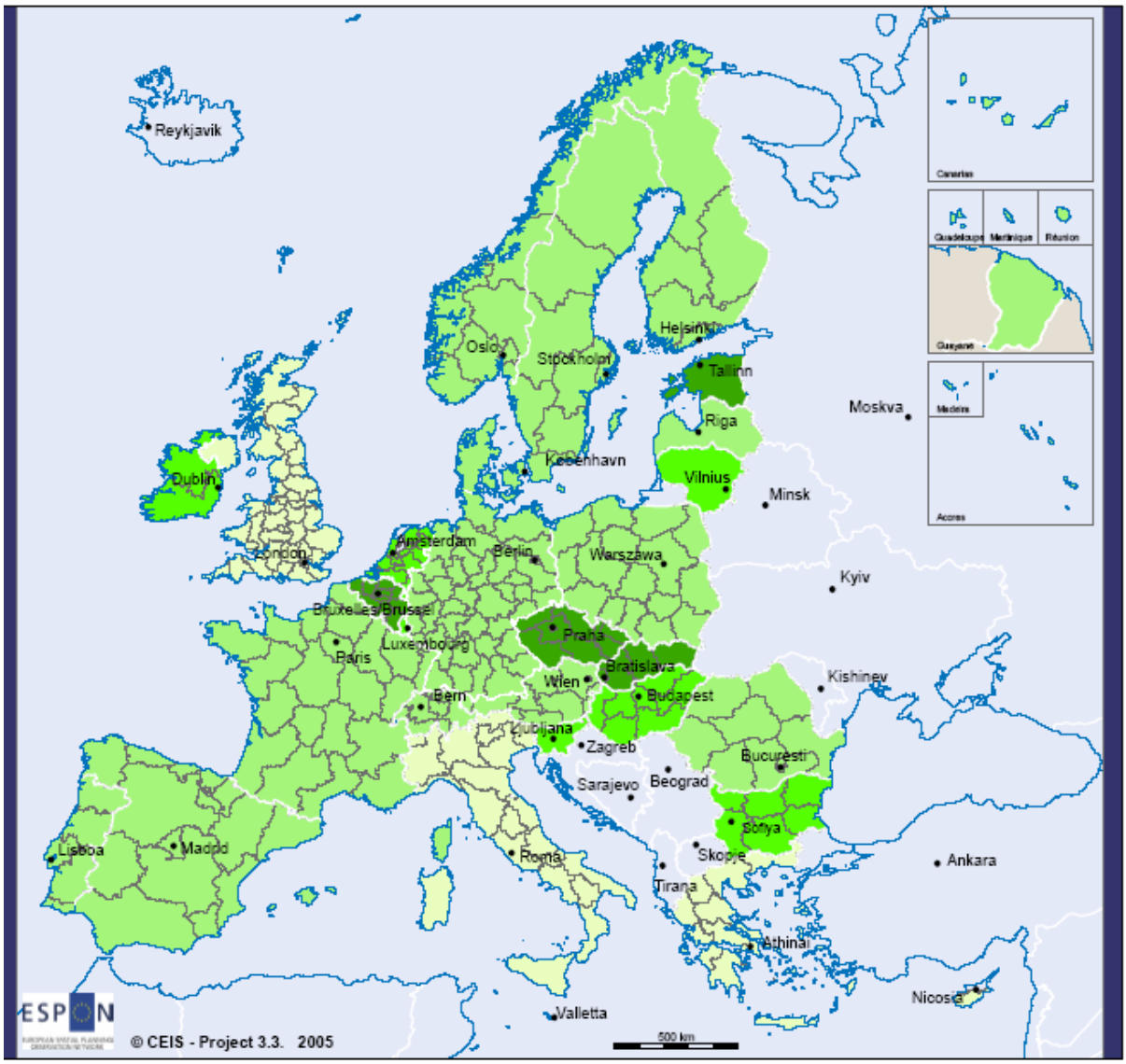
MAP Q_B19 - Trade Integration of good



Trade integration of good
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

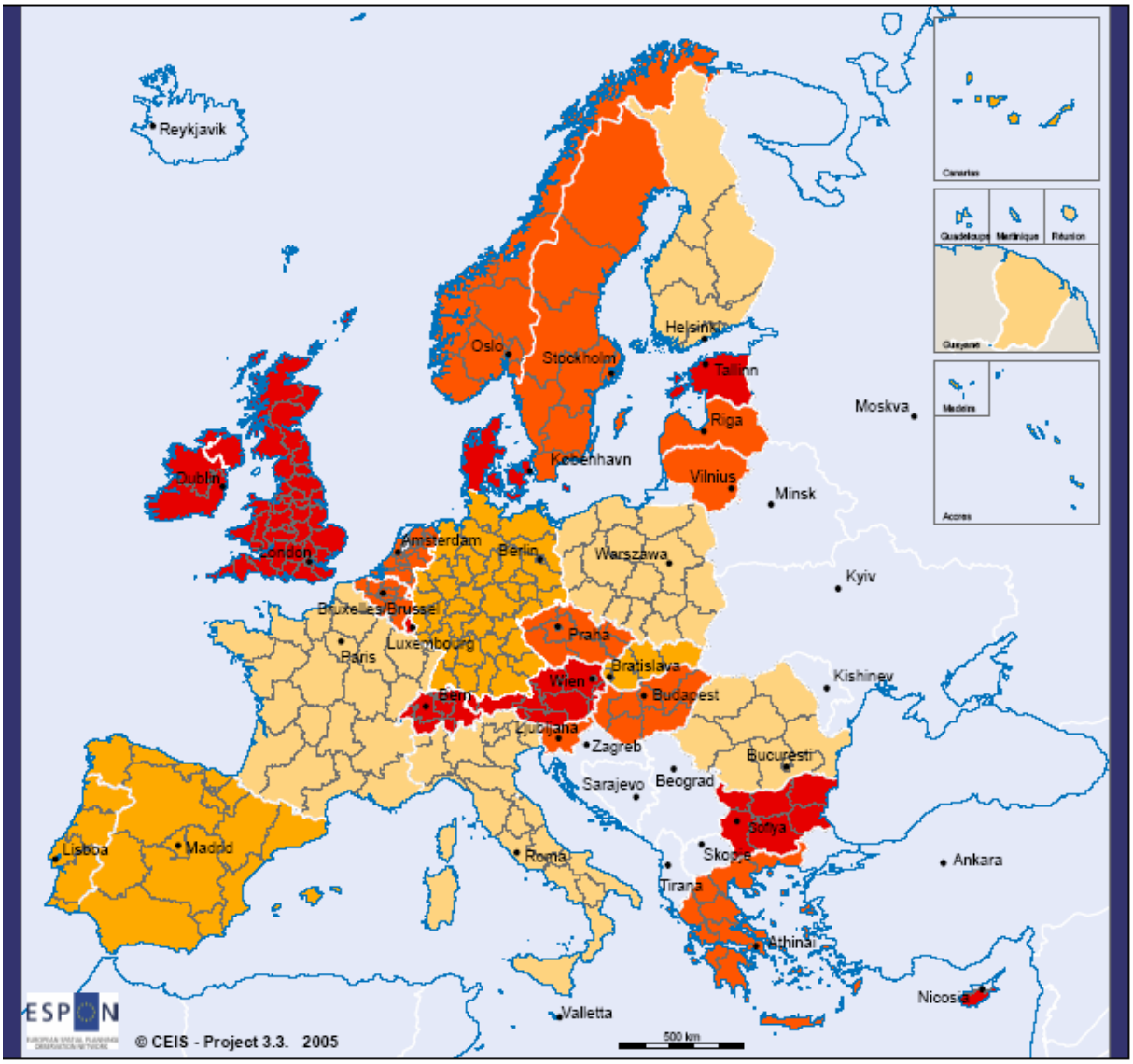
MAP B19 - Trade Integration of good



Trade integration of good
(equal interval version)

- a High
- b Medium high
- c Medium low
- d Low

MAP Q_B20 - Trade Integration of services

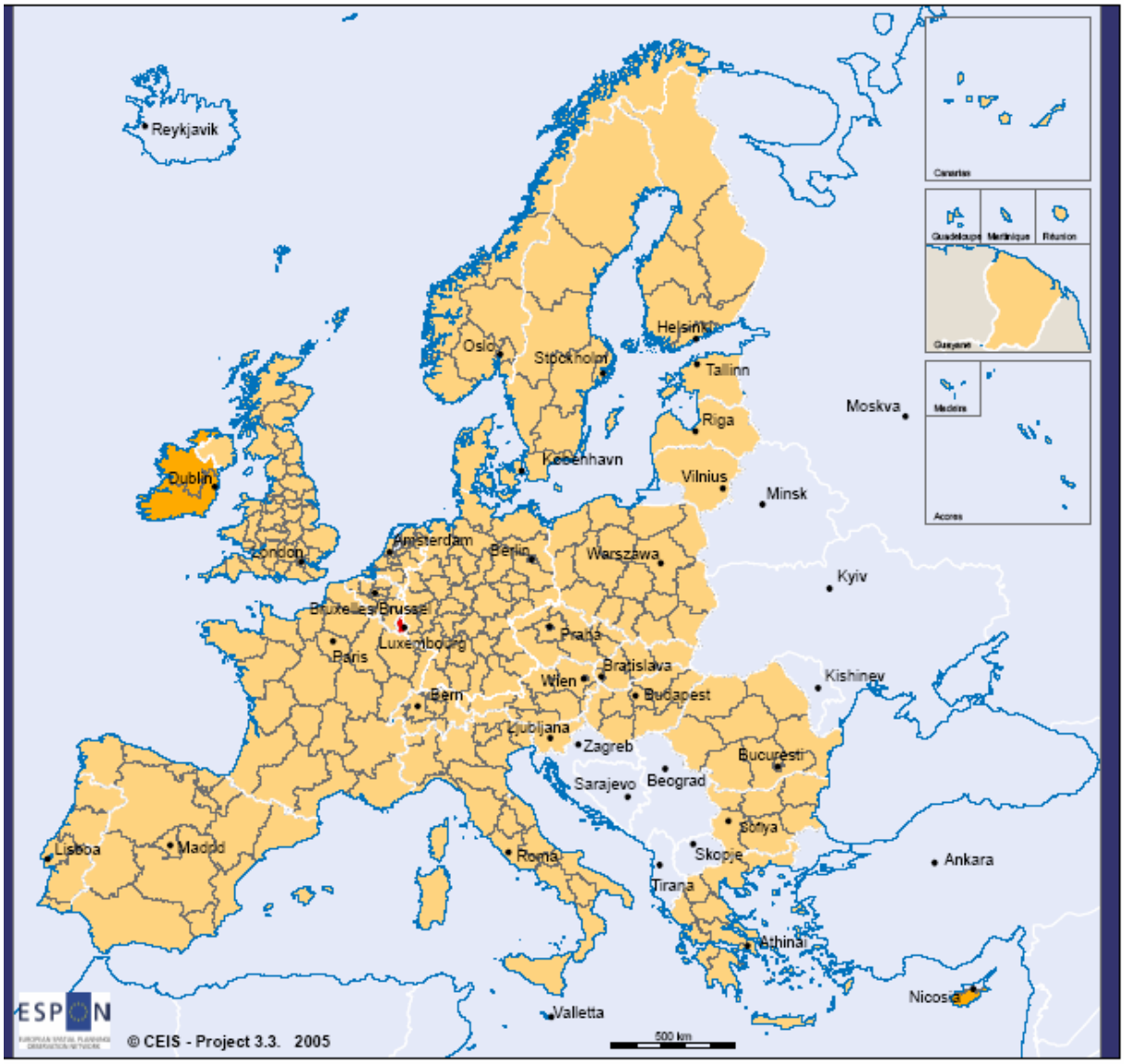


Trade integration of services

(quantile version)

- A High
- B
- C Medium low
- DLow

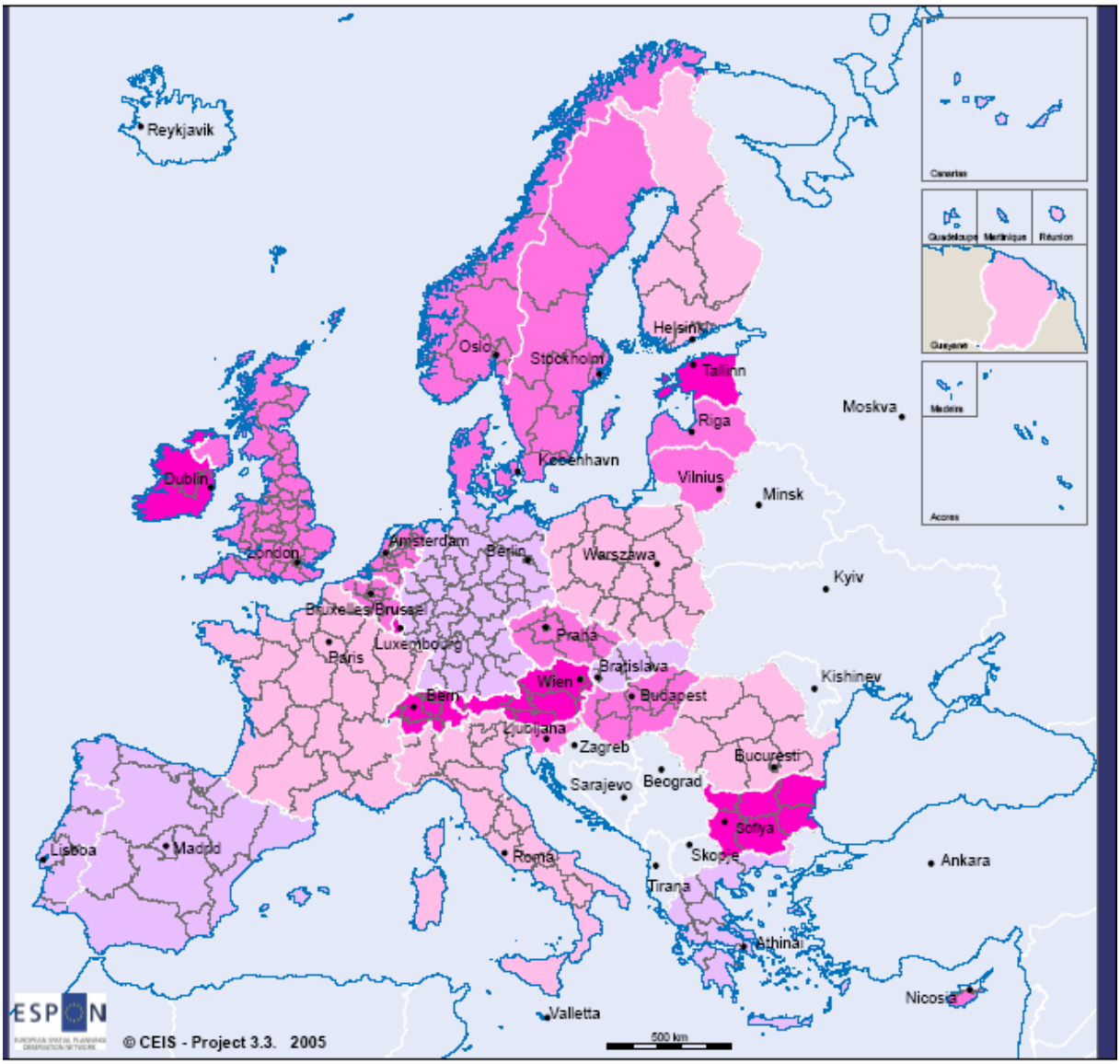
MAP B20 - Trade Integration of services



Trade integration of services
(equal interval version)

- A High
- C Medium low
- DLow

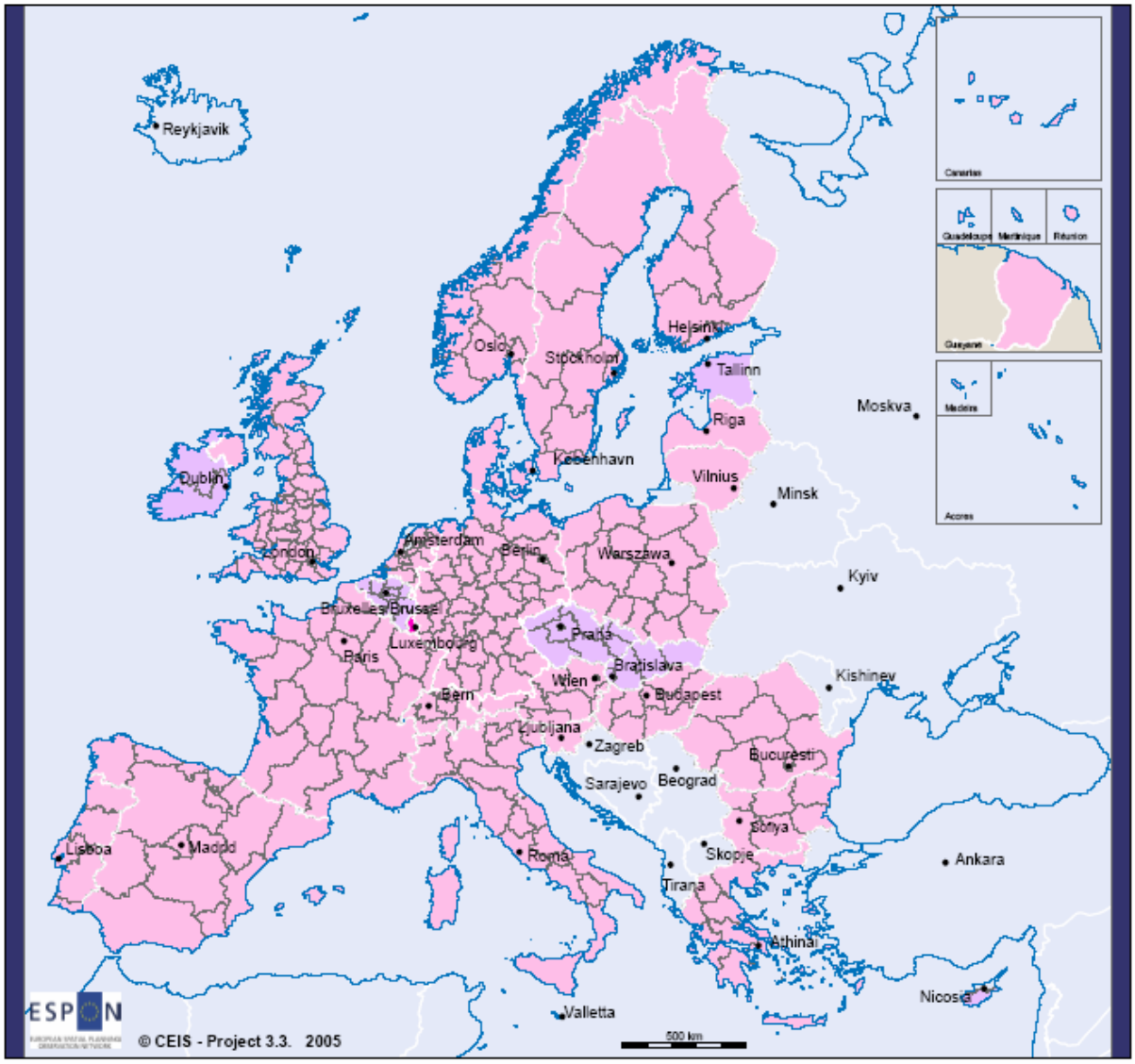
MAP Q_B21 - Trade Integration



Trade integration
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

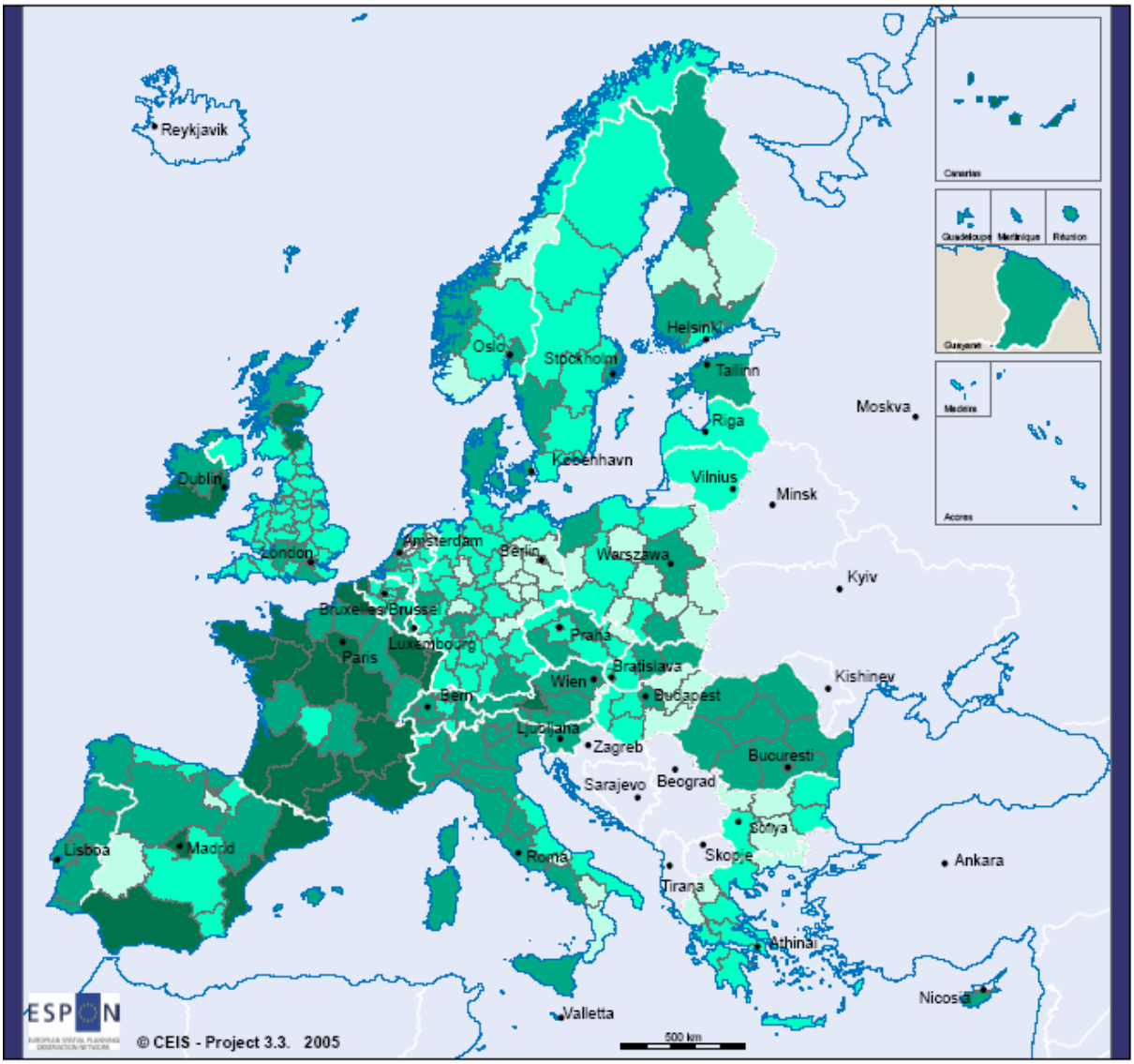
MAP B21 - Trade Integration



Trade integration
(equal interval version)

- a High
- c Medium low
- d Low

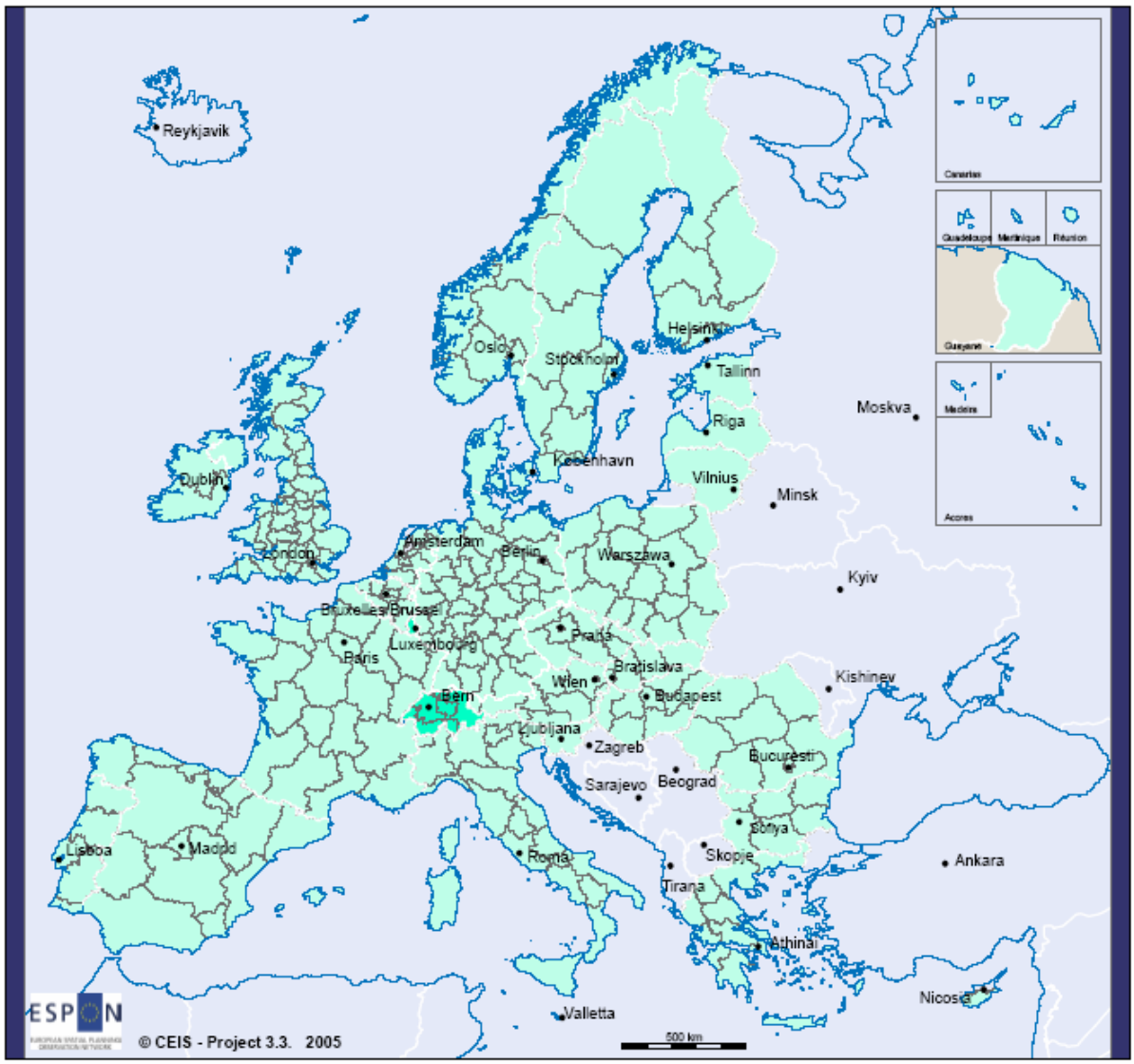
MAP Q_B22 - Internazionalization



Internazionalization
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

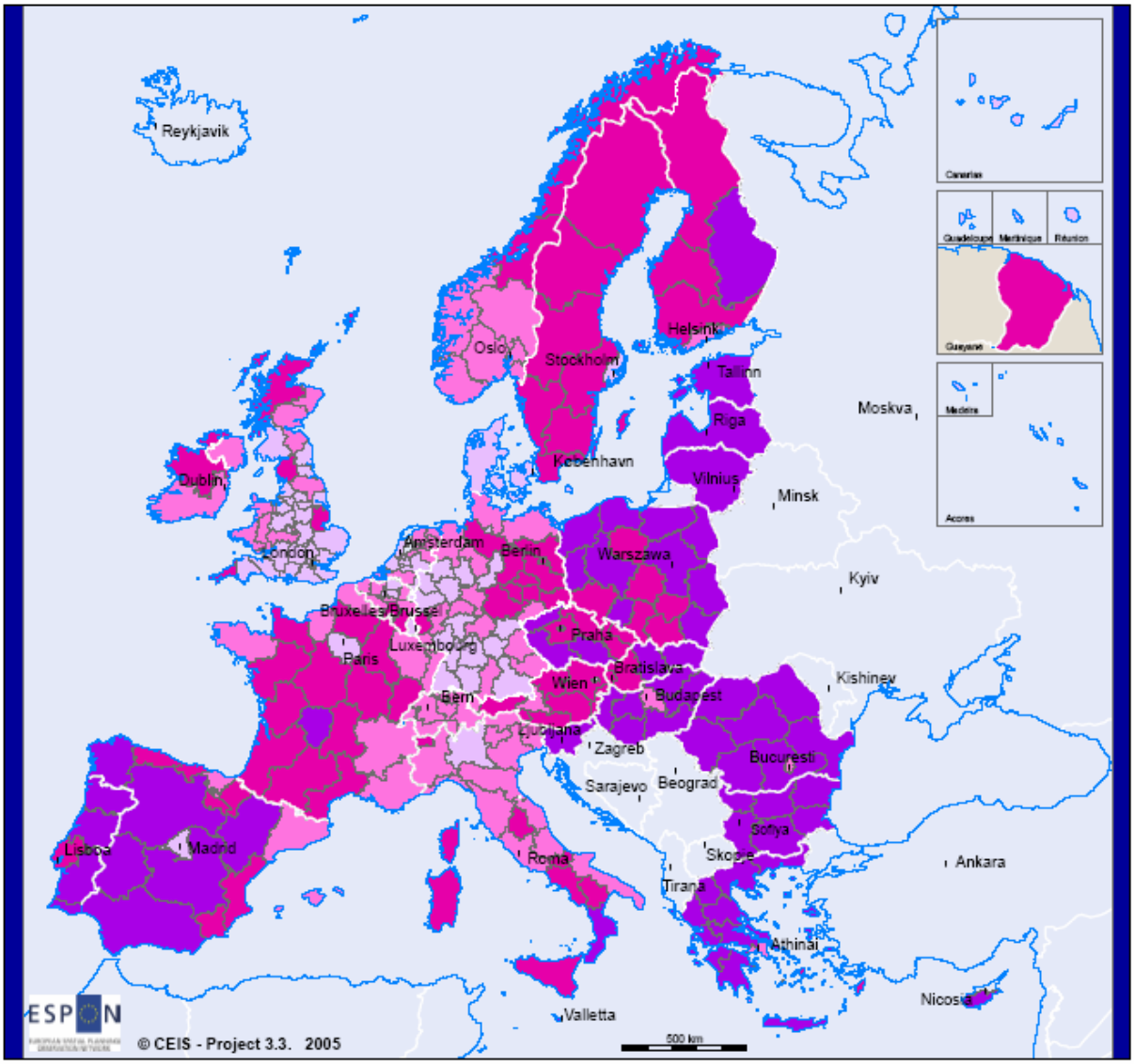
MAP B22 - Internazionalization



Internazionalization
(equal interval version)

- C Medium low
- D Low

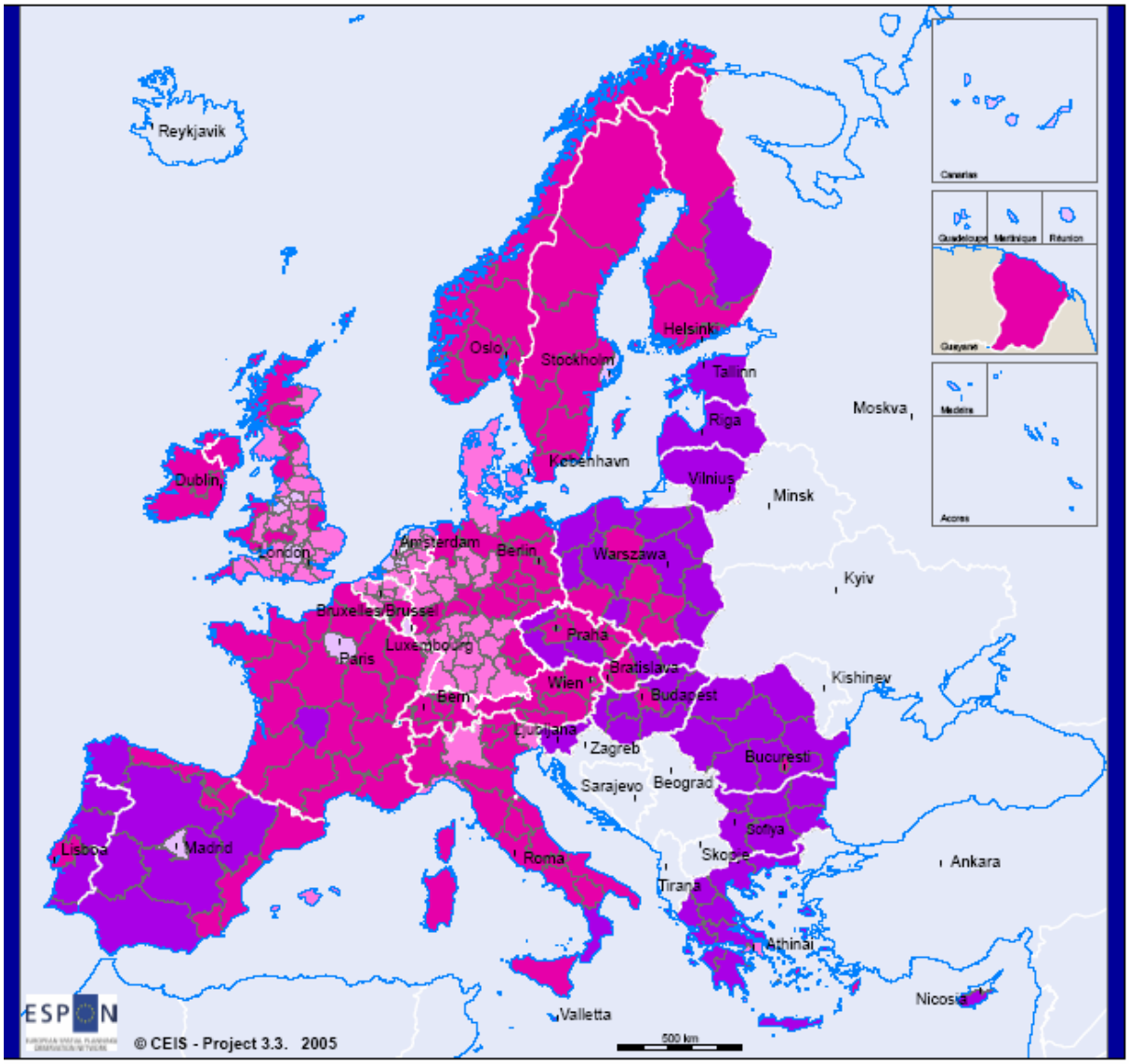
MAP Q_B23 - Vulnerability



Vulnerability
(quantile version)

- a Low
- b Medium low
- c Medium high
- d High

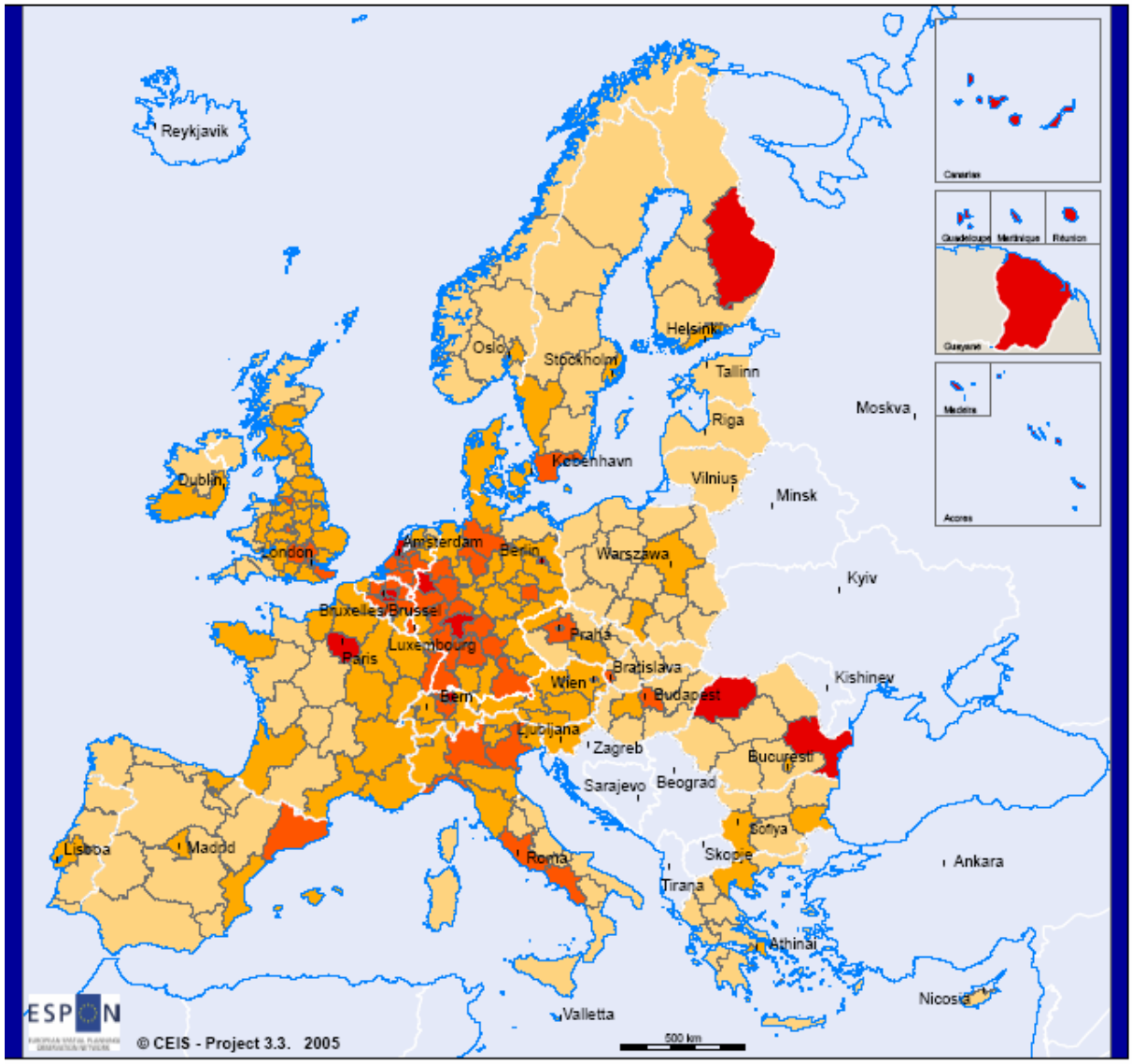
MAP B23 - Vulnerability



Vulnerability
(equal interval version)

- a Low
- b Medium low
- c Medium high
- d High

MAP B24 - Tipology Mutimodal Accessibility Potential

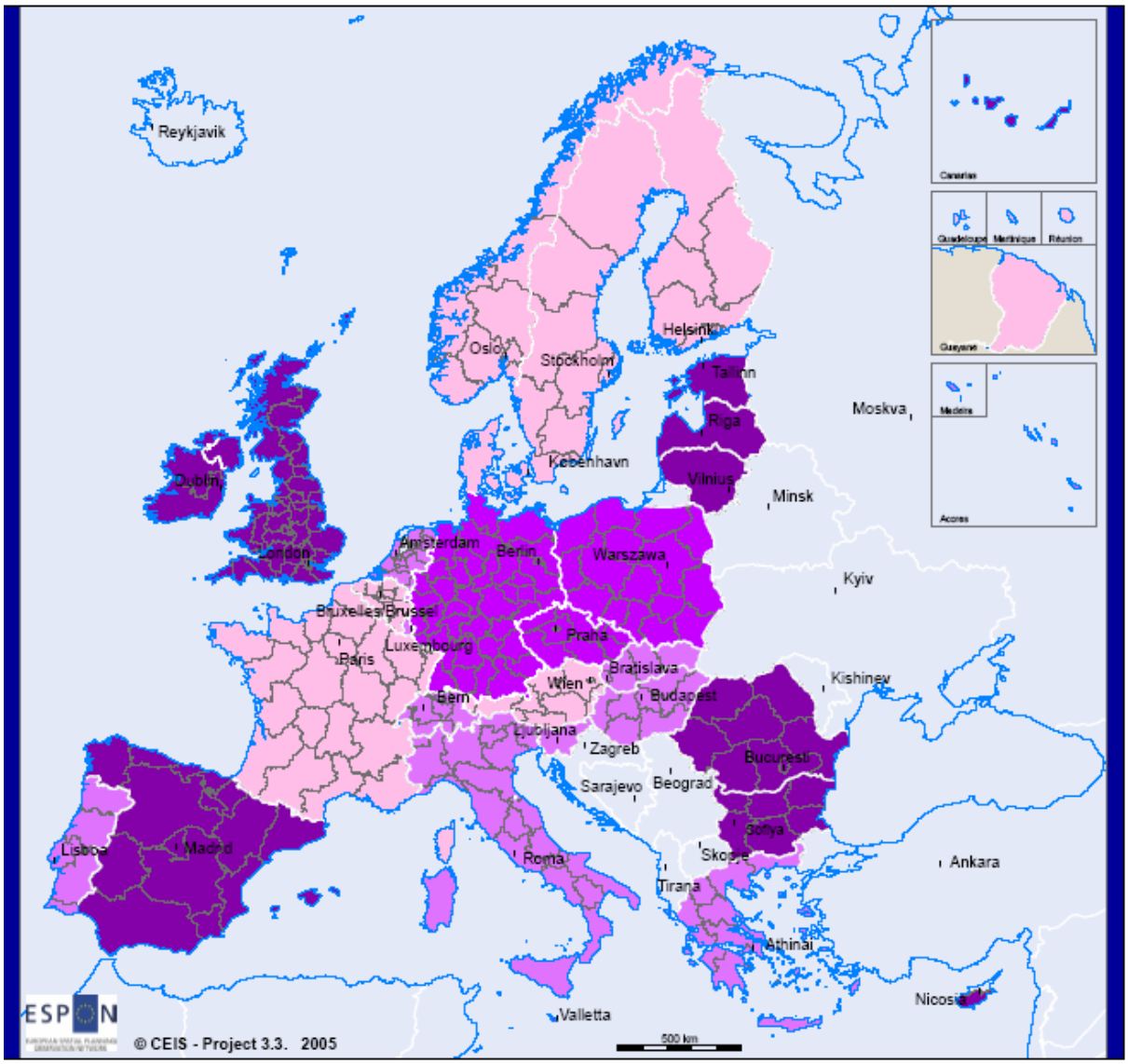


Tipology multimodal accessibility potential

(equal interval version = quantile version)

- a High
- b Medium high
- c Medium low
- d Low

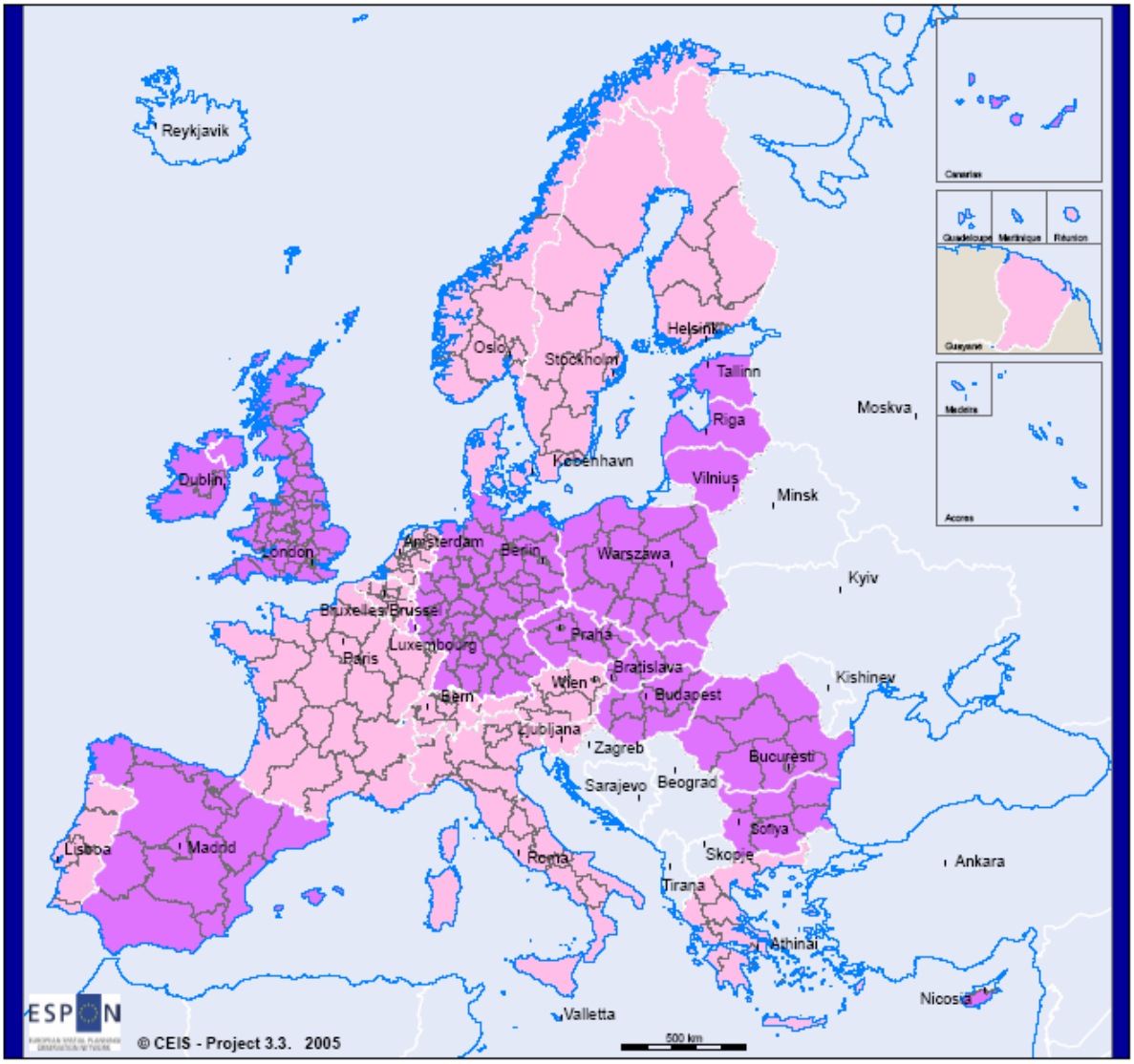
MAP Q_B25 - Fiscal Pressure



Fiscal Pressure
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

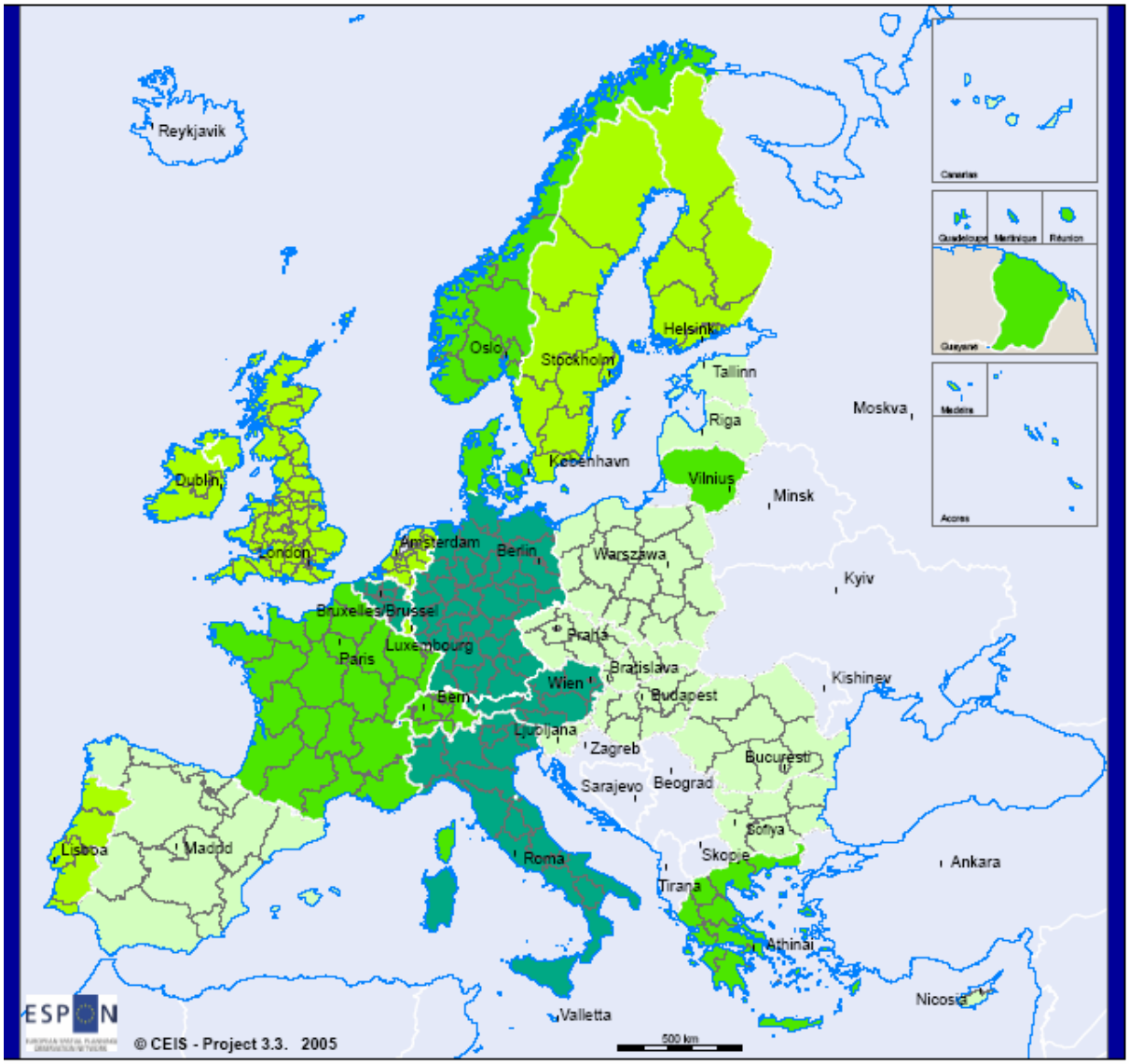
MAP B25 - Fiscal Pressure



Fiscal Pressure
(equal interval version)

- c Medium high
- d High

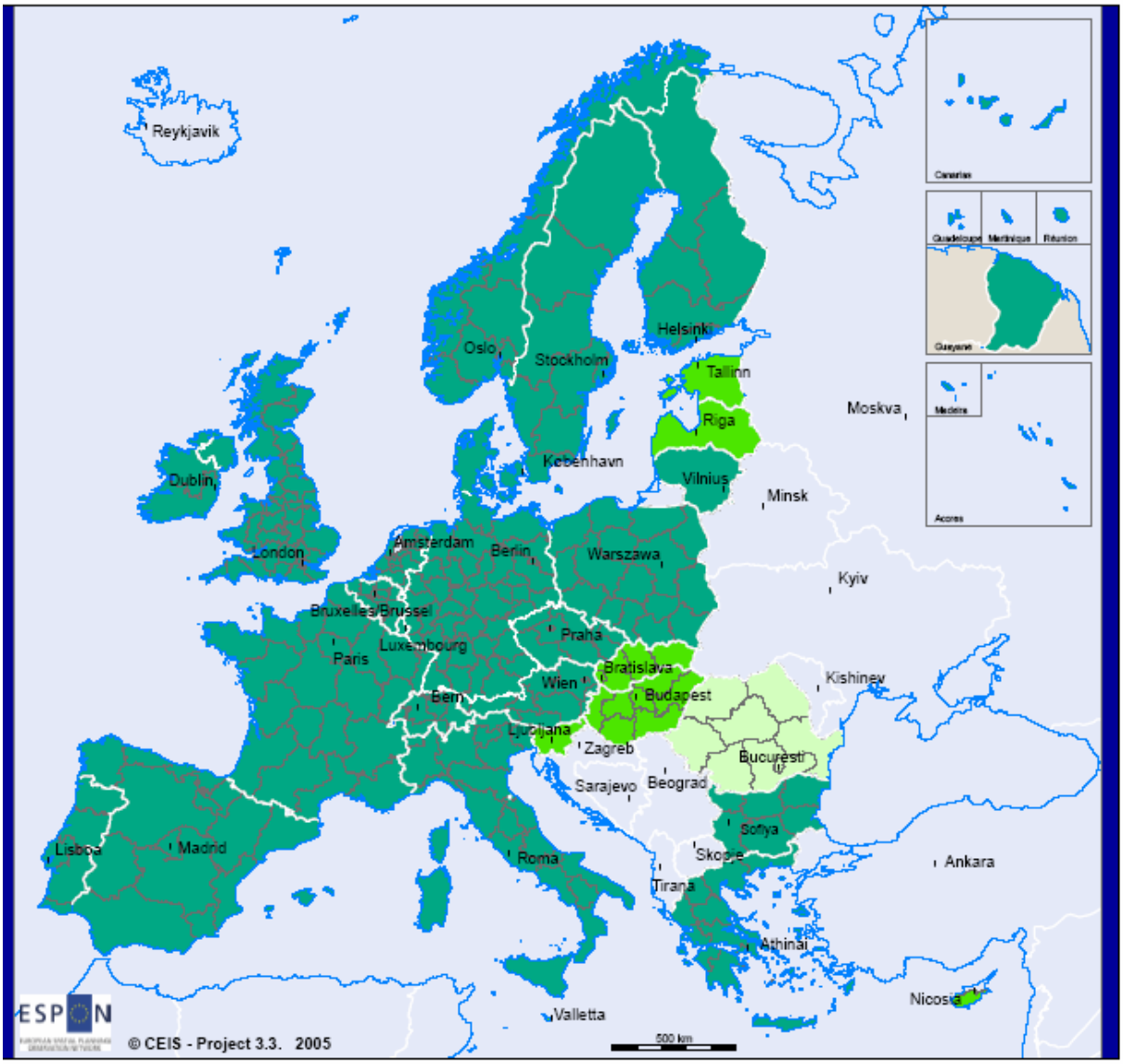
MAP Q_B26 - Labour Cost Index



Labour cost index
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

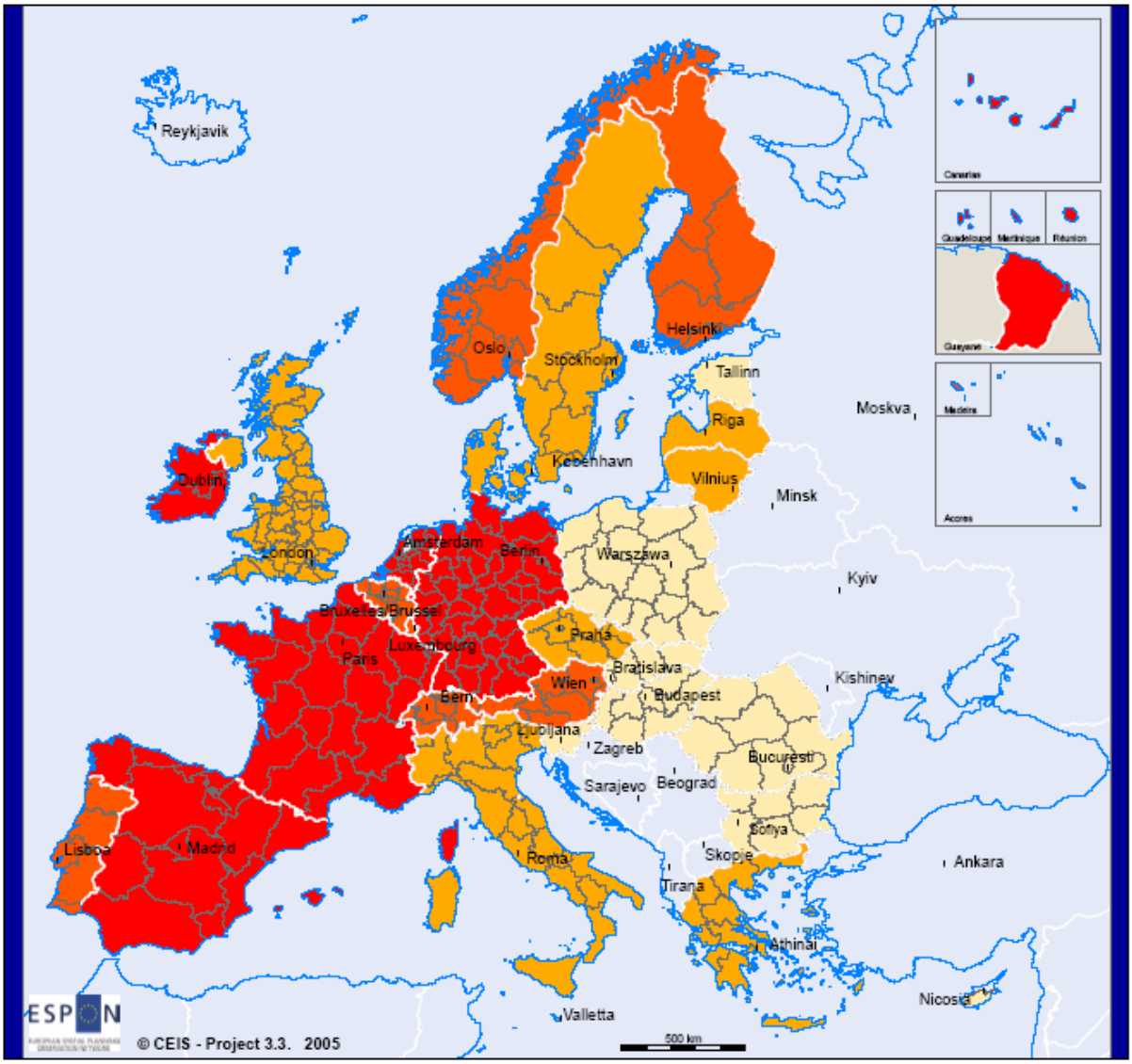
MAP B26 - Labour Cost Index



Labour cost index
(equal interval version)

- A Low
- B Medium low
- D High

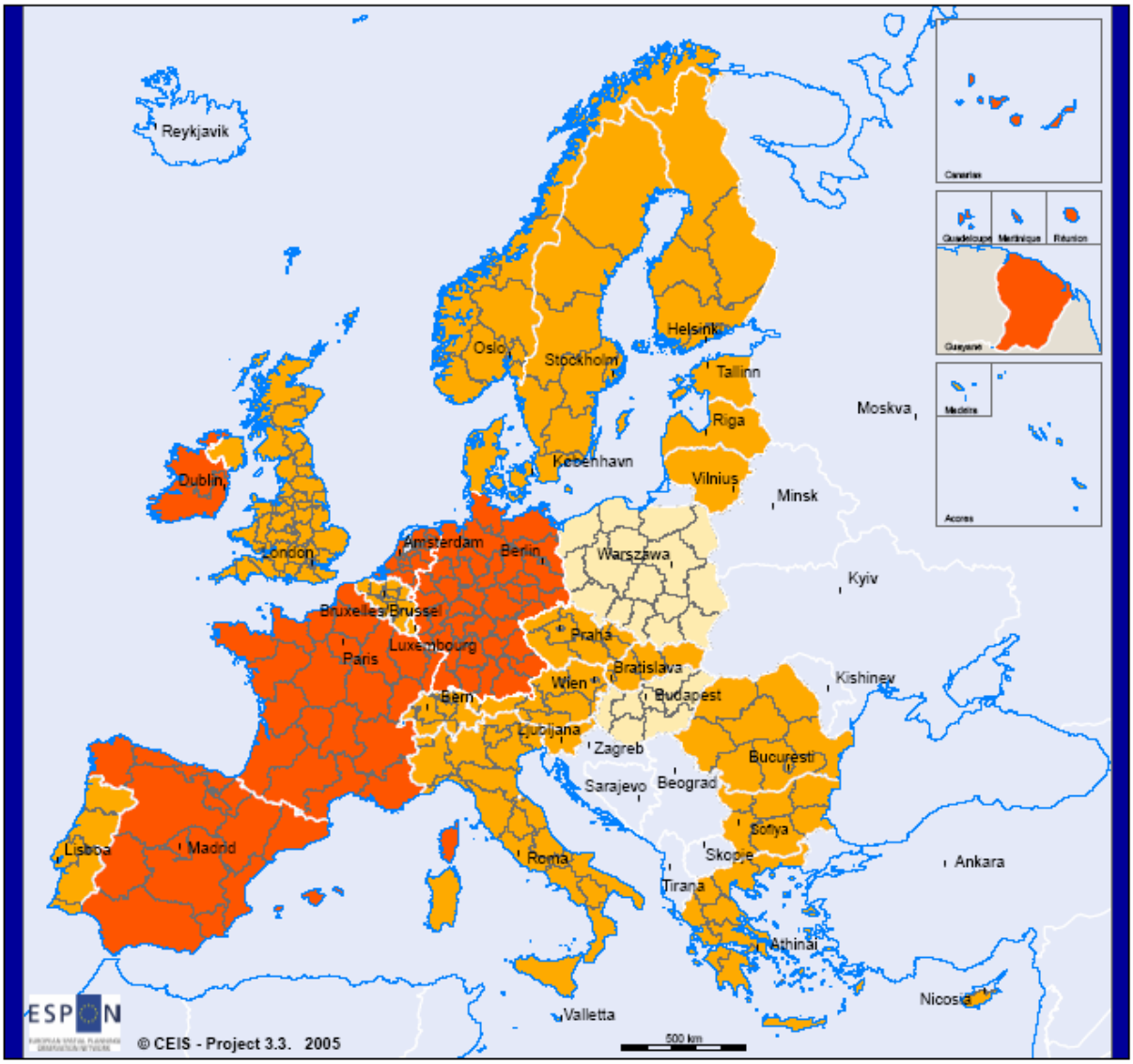
MAP Q_B27 - Long Term Interest rate



Long term interest rate
(quantilel version)

- A High
- B Medium high
- C Medium low
- D Low

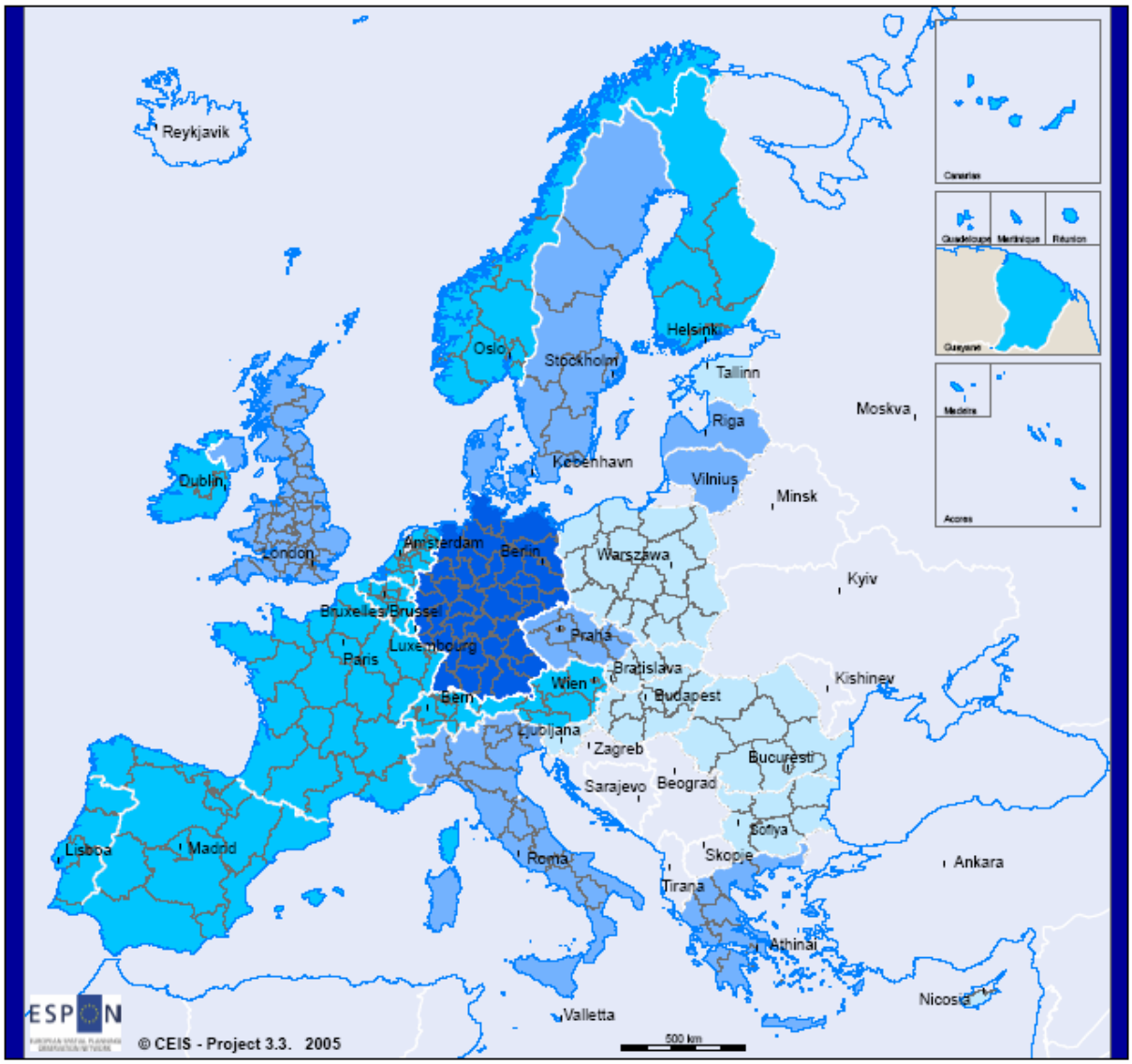
MAP B27 - Long Term Interest rate



Long term interest rate
(equal interval version)

- B Medium low
- C Medium high
- D High

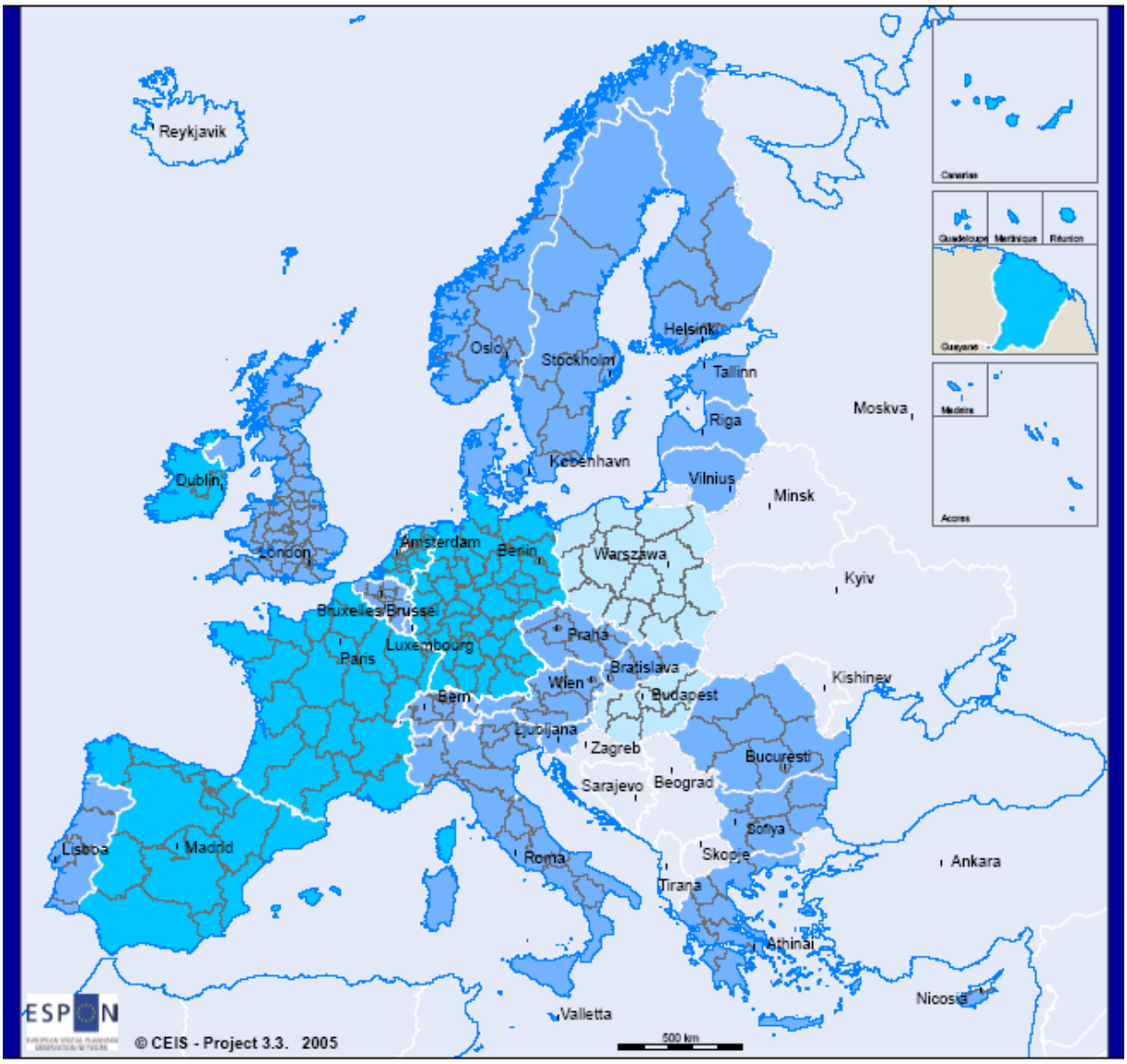
MAP Q_B28 - Cost



Cost
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

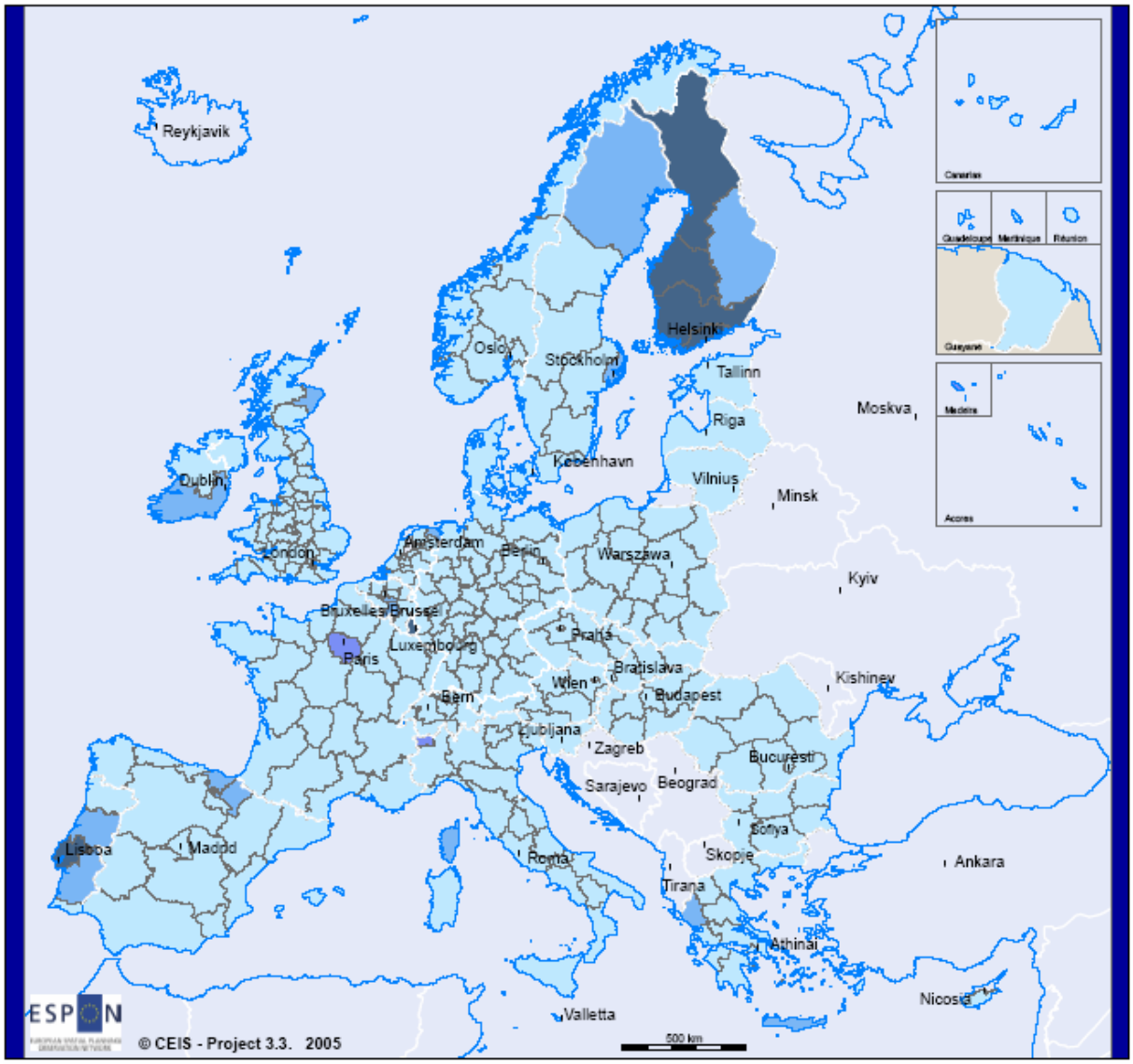
MAP B28 - Cost



Cost
(equal interval version)

- B Medium high
- C Medium low
- D Low

MAP Q_B29 - R&D Infrastructures



R&D infrastructures
(quantile version)

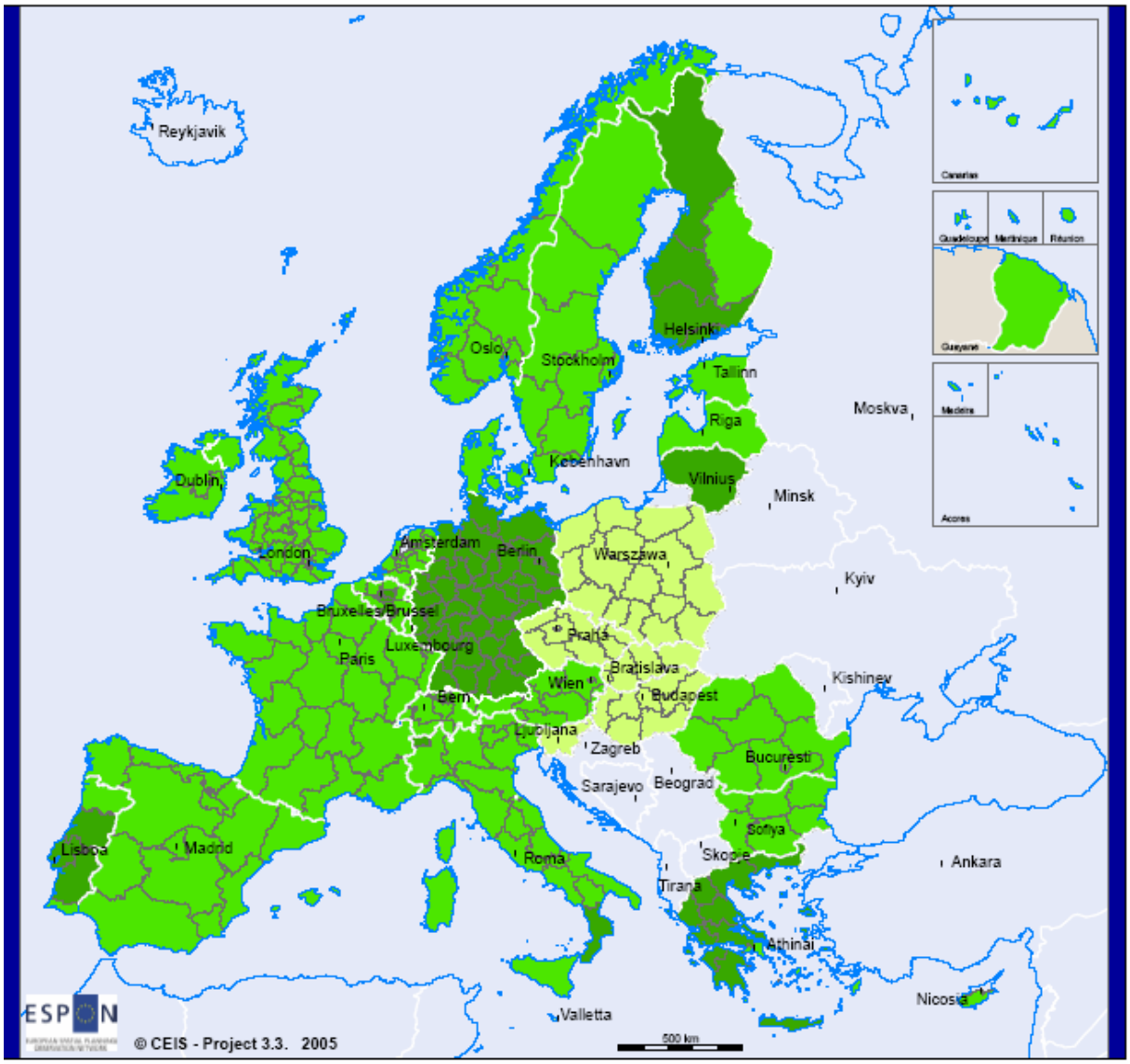
- A High
- B Medium high
- C Medium low
- D Low

MAP B29 - R&D Infrastructures

R&D infrastructures
(equal interval version)

- A High
- B Medium high
- C Medium low
- D Low

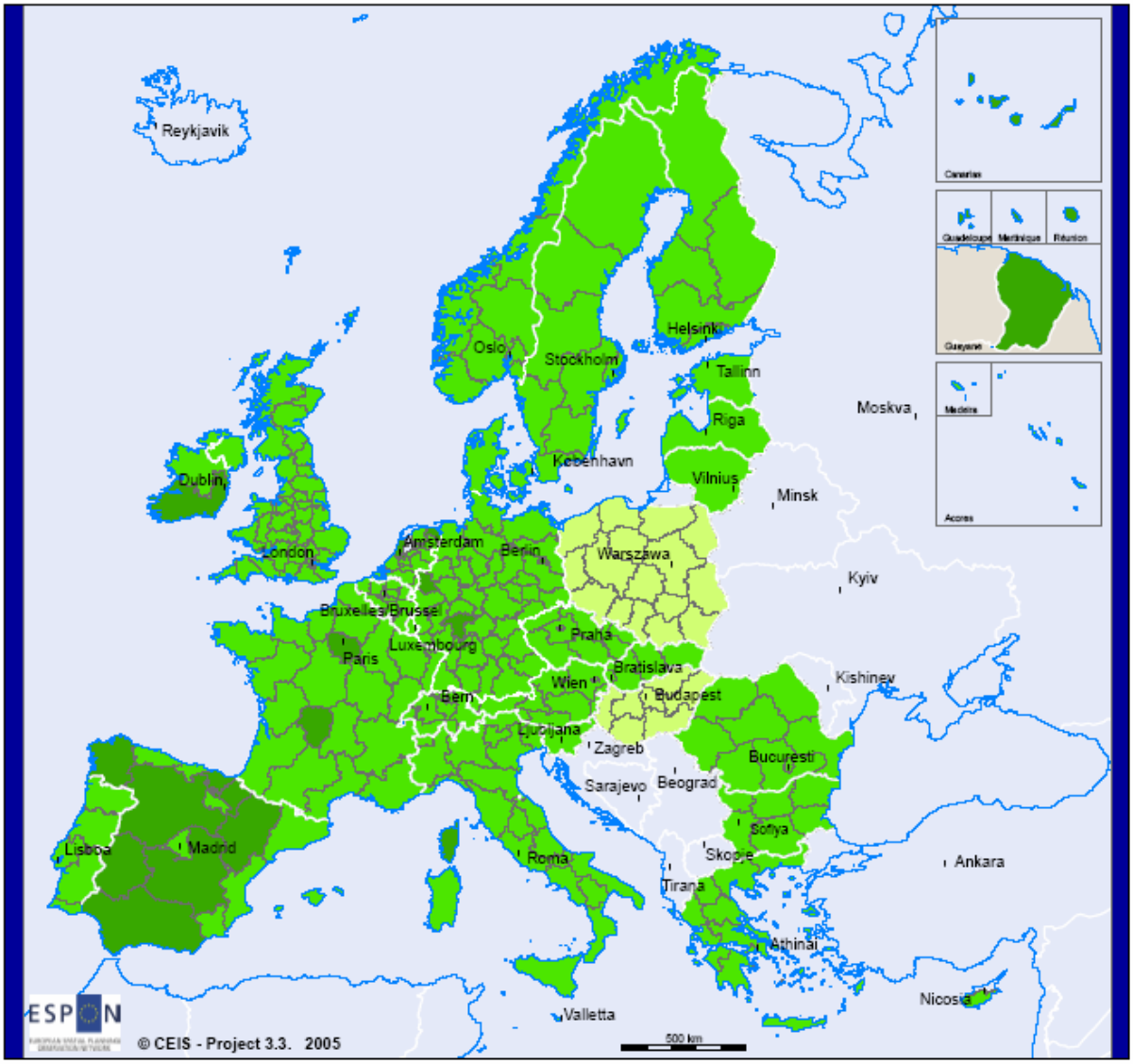
MAP Q_B30 - Strategic Localization



Strategic localization
(quantile version)

- B Medium high
- C Medium low
- D Low

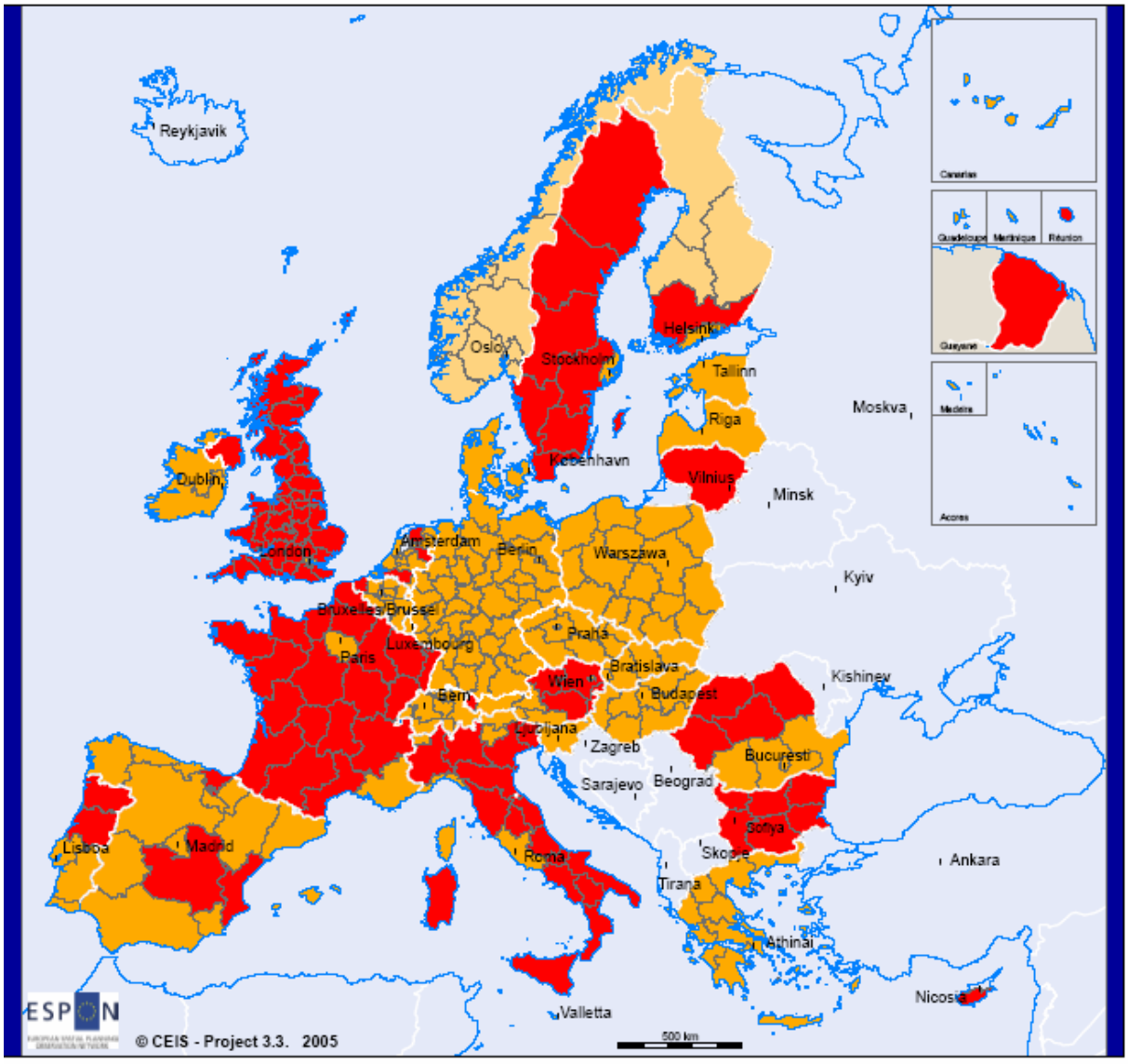
MAP B30 - Strategic Localization



Strategic localization
(equal interval version)

- B Medium high
- C Medium low
- D Low

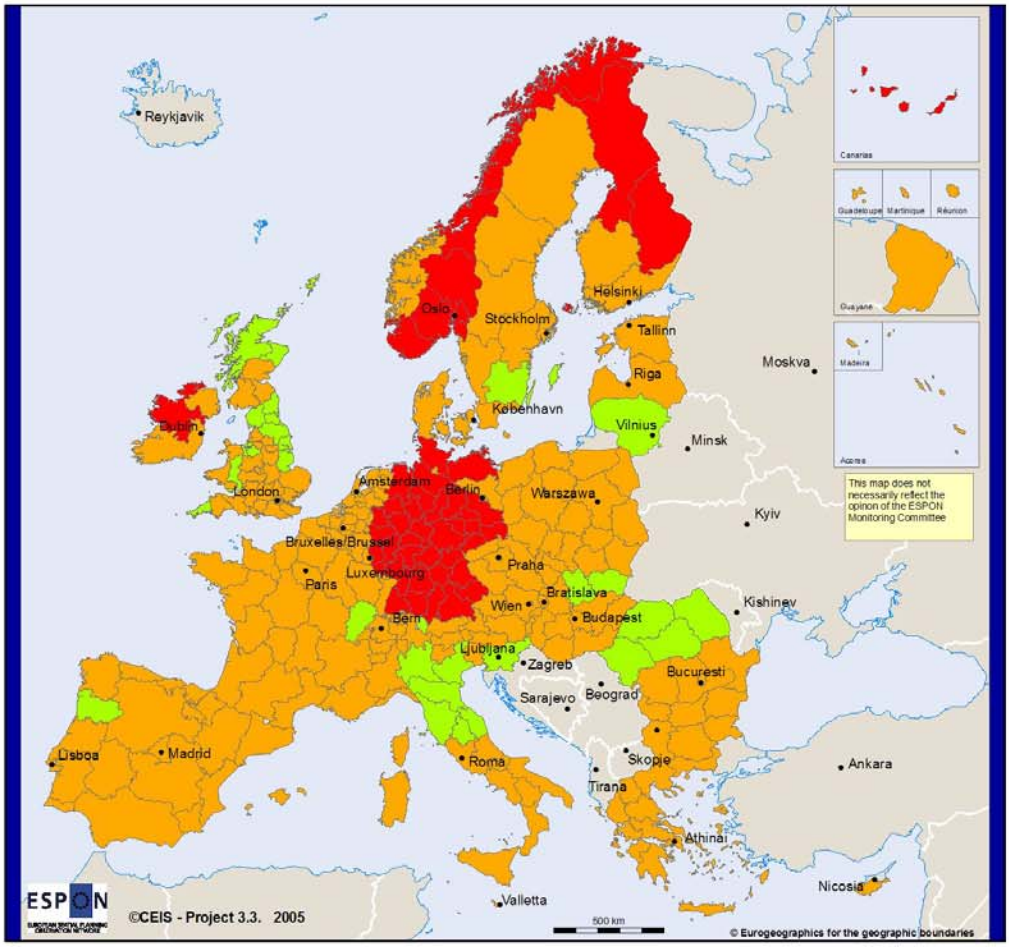
MAP Q_B31- Economy Interaction



Economy interaction
(quantile version)

- B Medium high
- C Medium low
- D Low

Map B-31 - "ECONOMY INTERACTION"

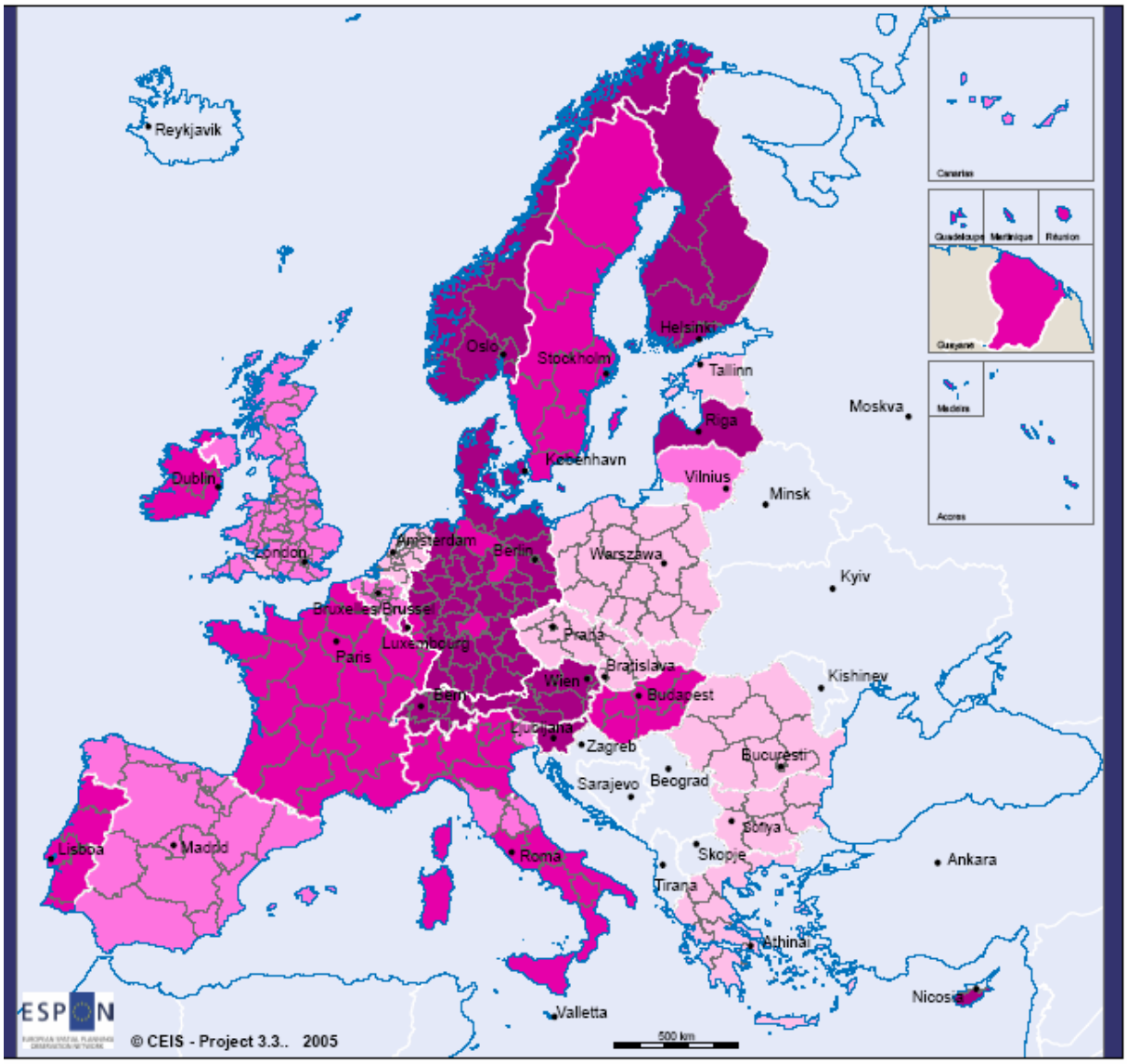


Legend

ECONOMY INTERACTION

- Medium - high
- Medium - low
- Low

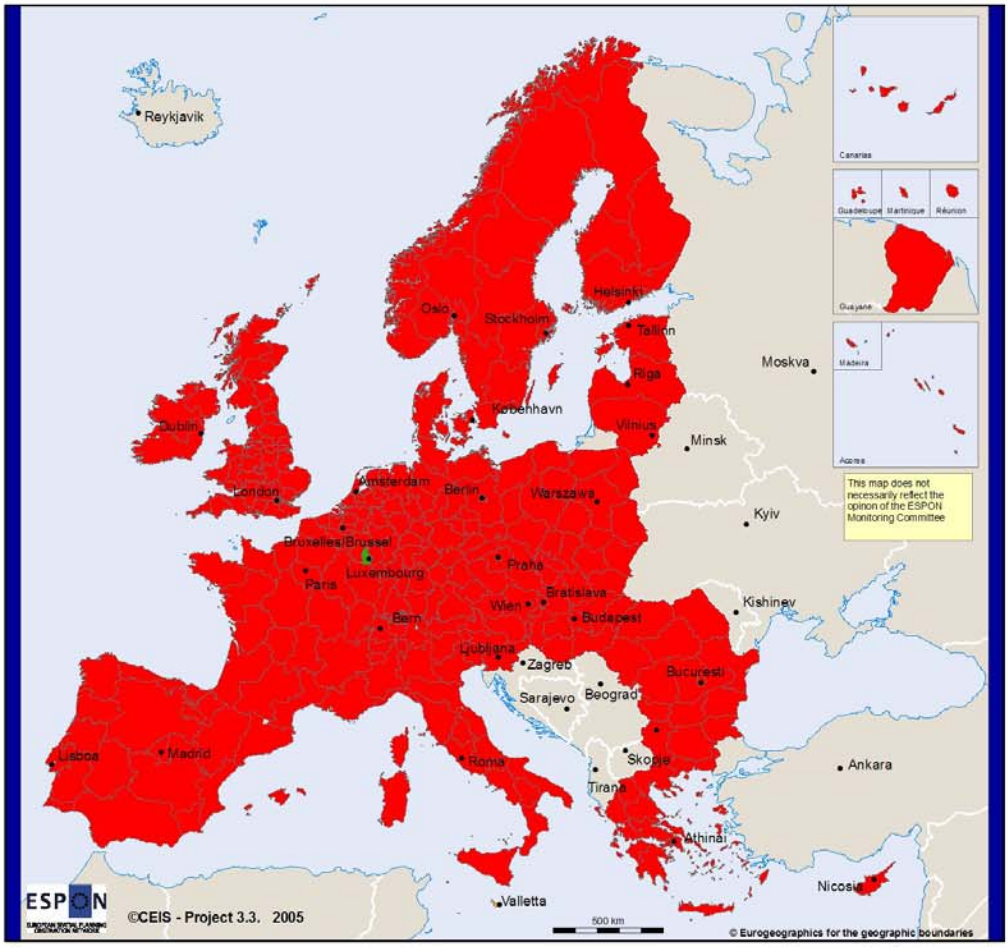
MAP Q_B32 - Credit Institutions



Credit institutions
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-32 - "CREDIT INSTITUTES"

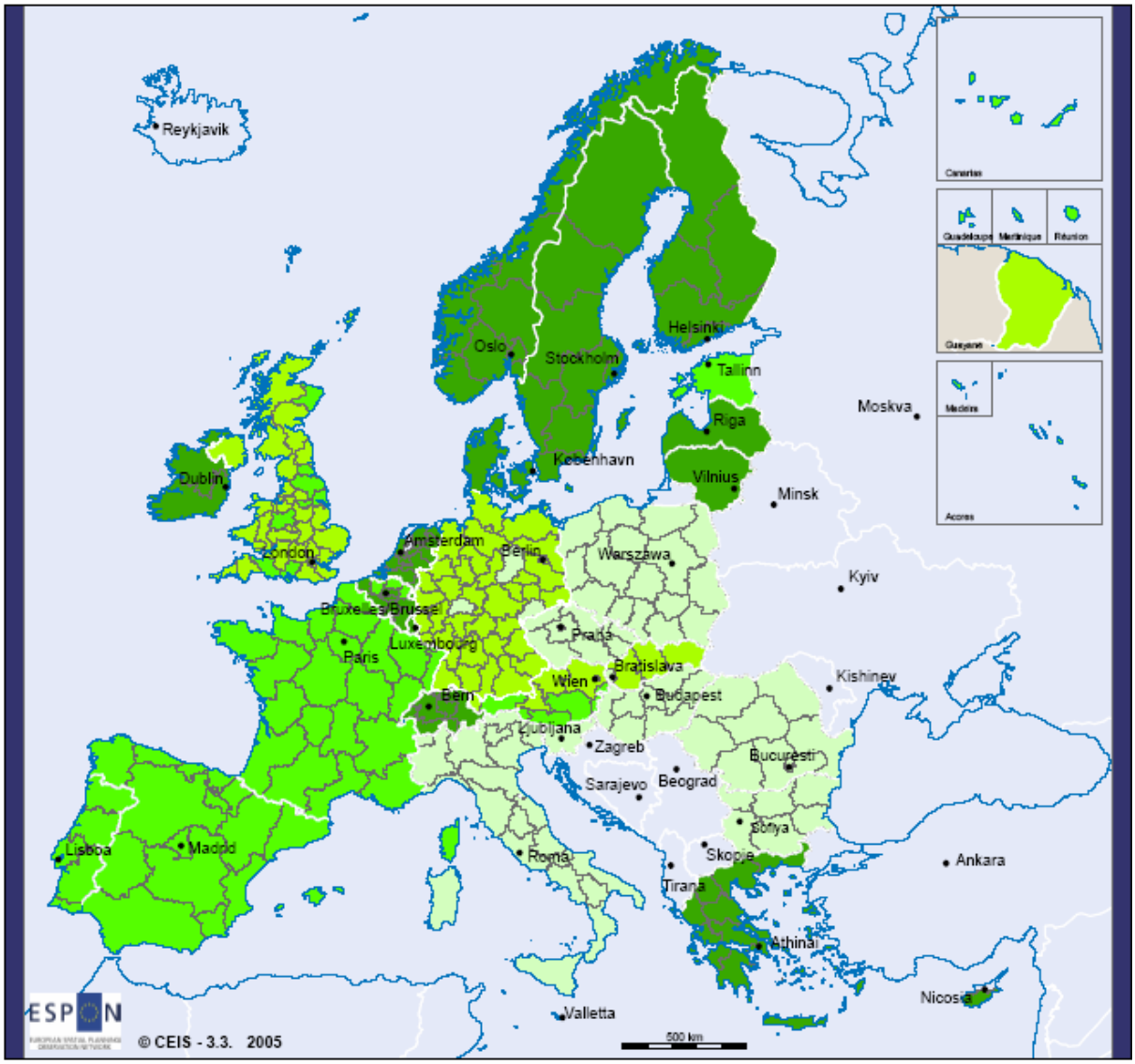


Legend

CREDIT INSTITUTES - CLASSES

- High
- Medium - high
- Medium - low
- Low

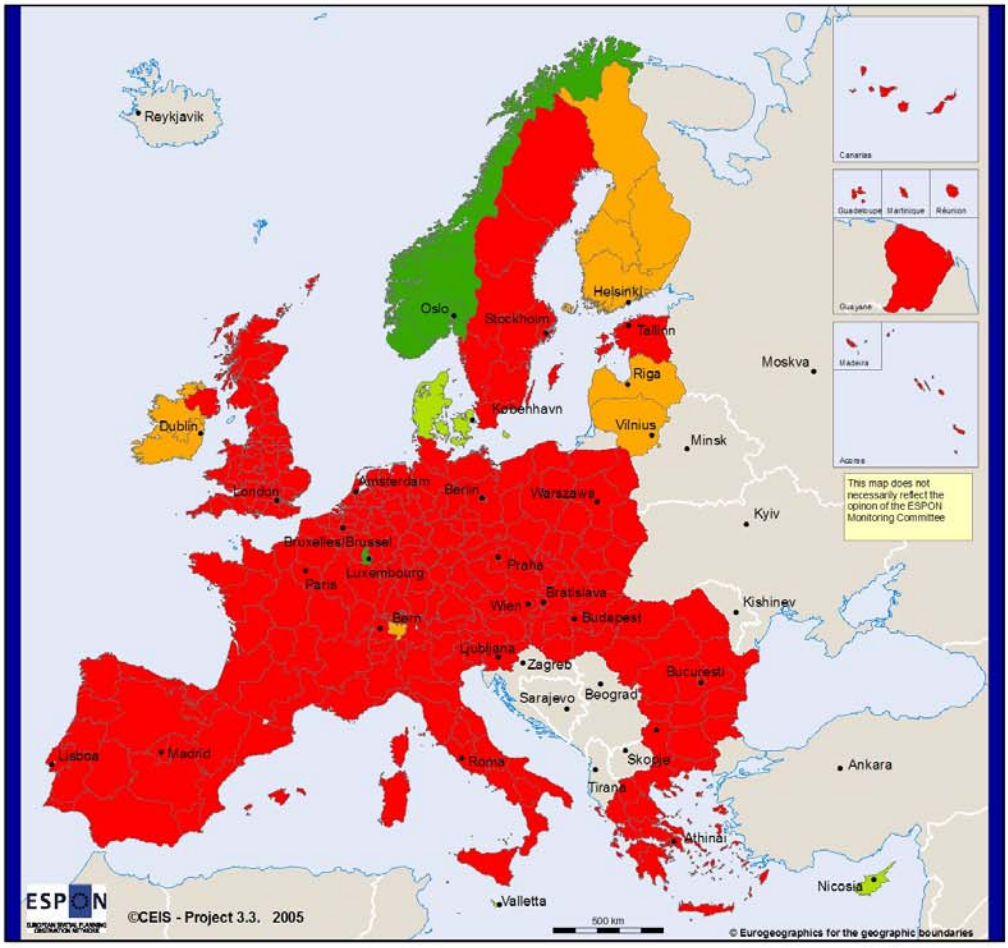
MAP Q_B33 - Insurance Companies



Insurance companies
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-33 - "INSURANCE COMPANIES"

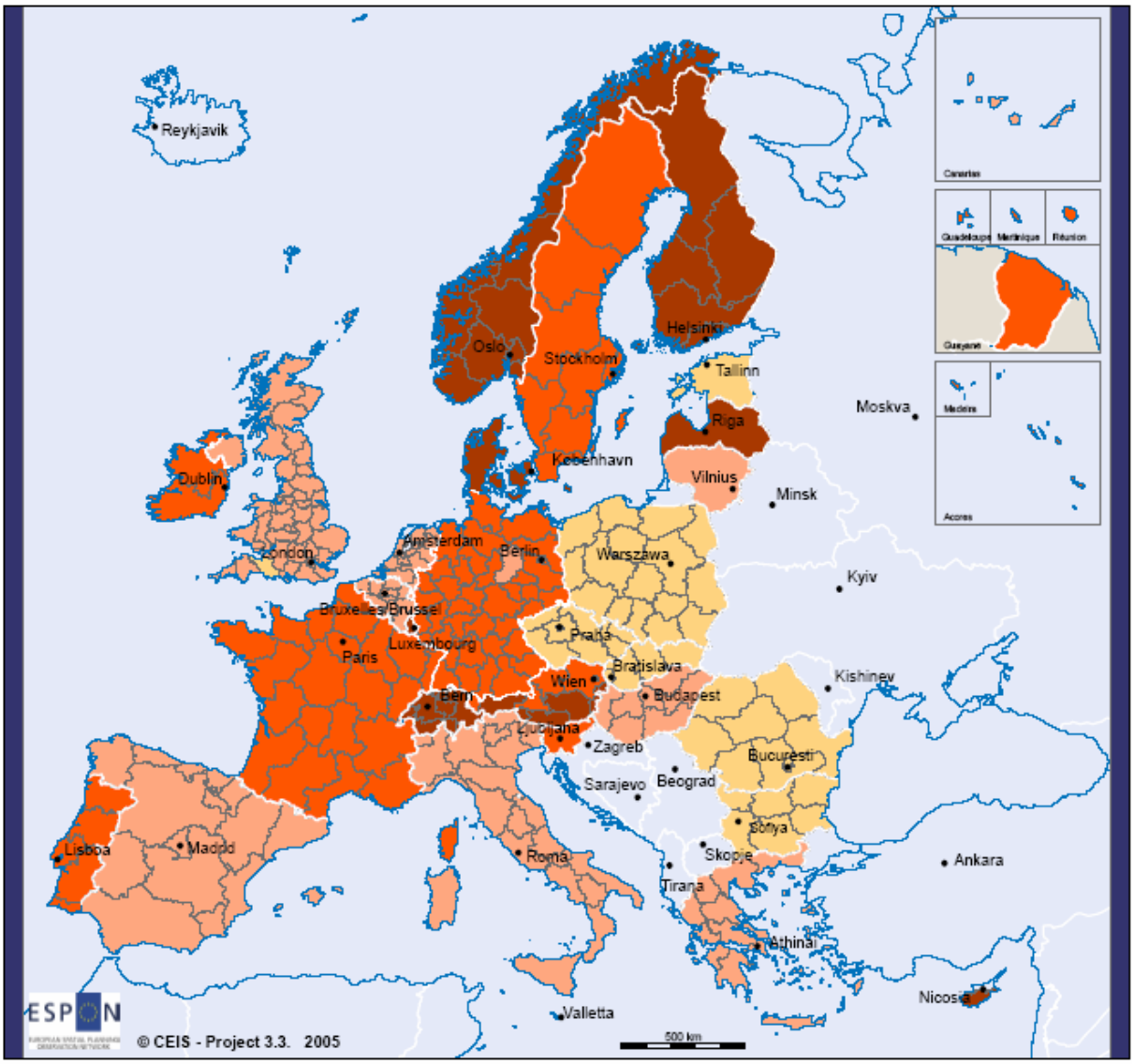


Legend

INSURANCE COMPANIES - CLASSES

- High
- Medium - high
- Medium - low
- Low

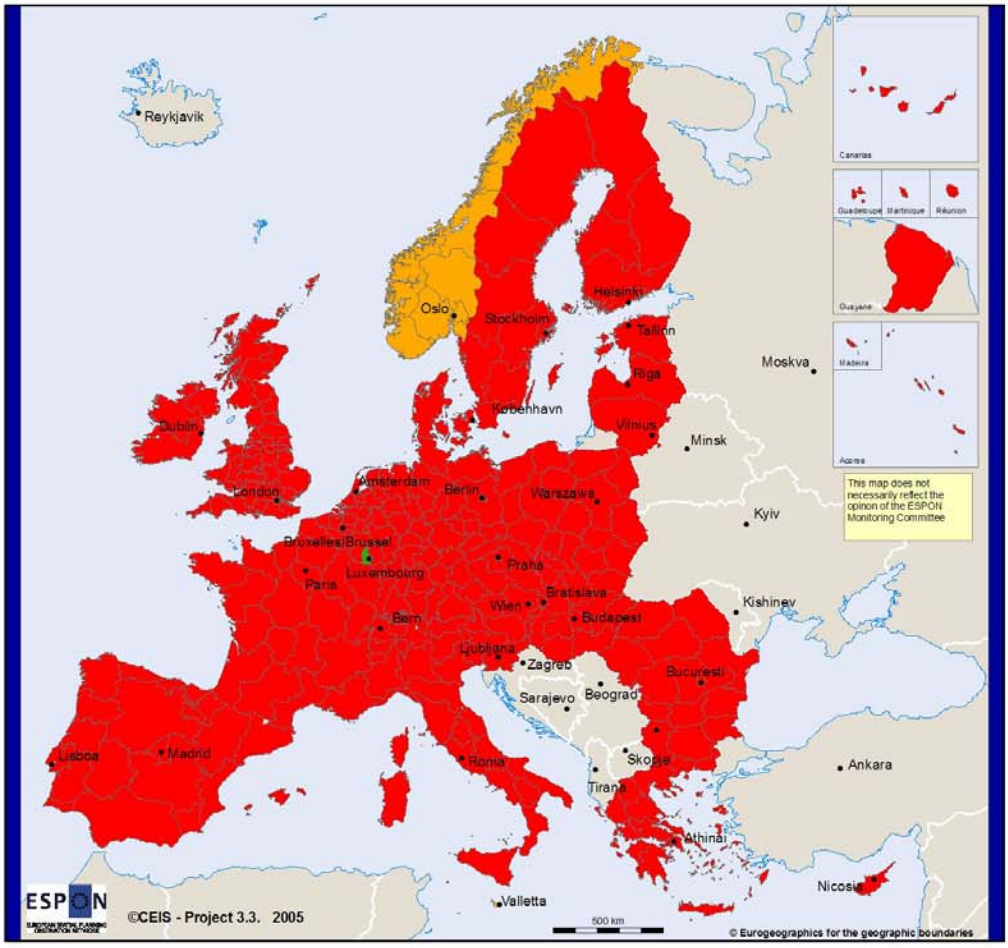
MAP Q_B34 - Credit & Insurance attitude



Credit & Insurance attitude
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-34 - "CREDIT & INSURANCE ATTITUDE"

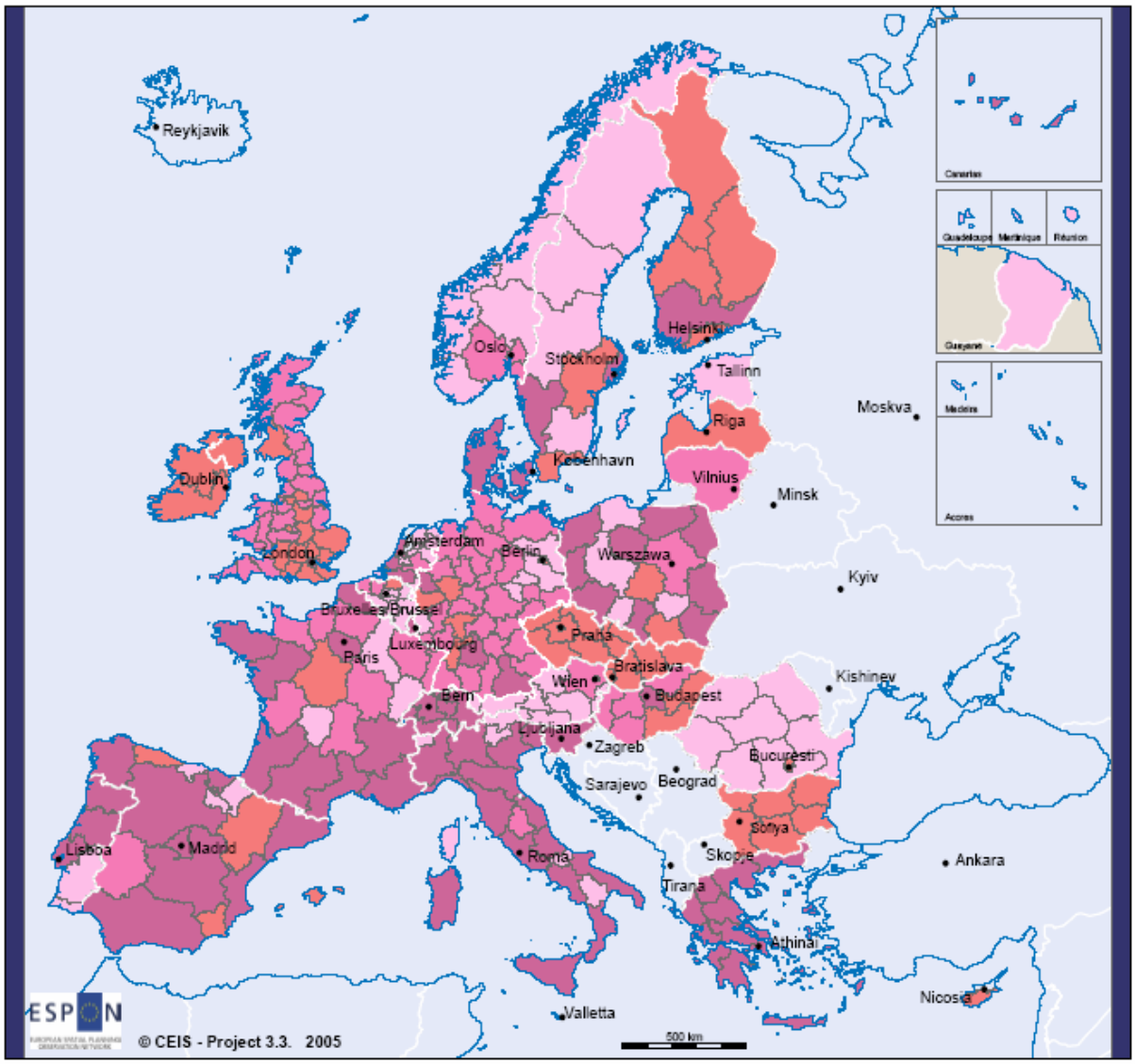


Legend

CREDIT & INSURANCE ATTITUDE

- High
- Medium - low
- Low

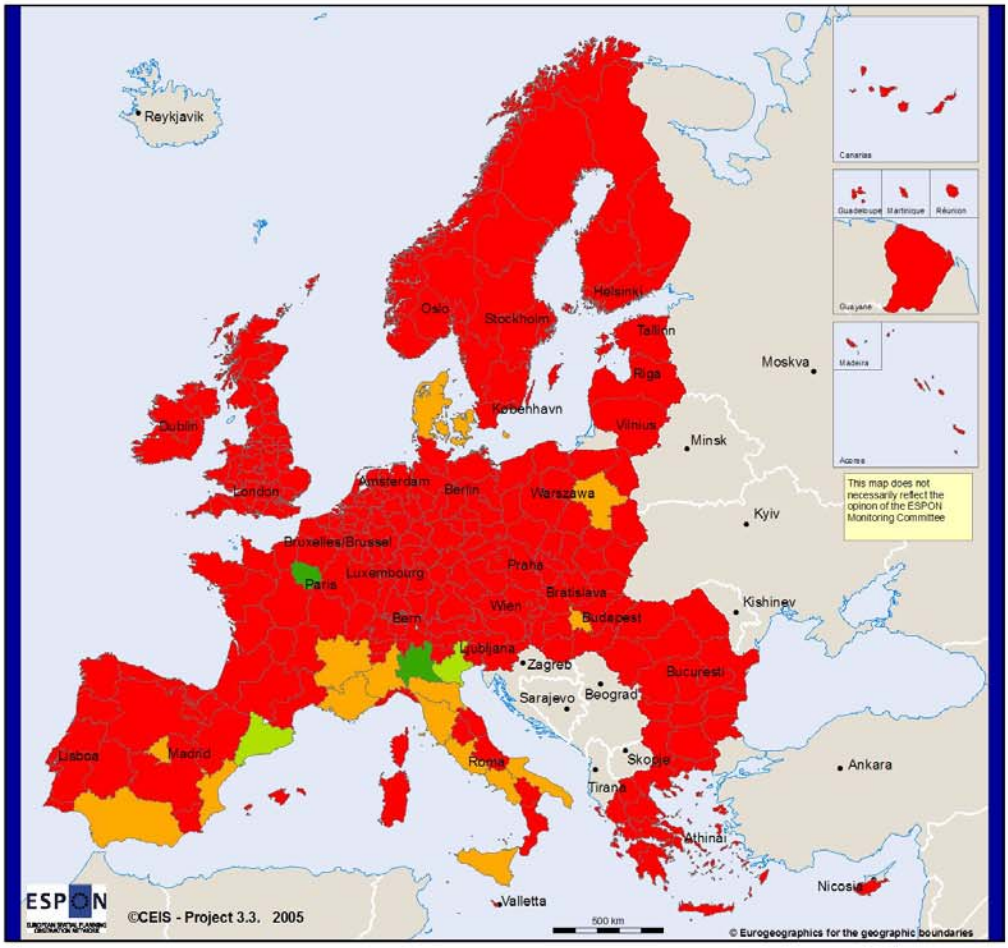
MAP Q_B35 - Companies



Companies
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

Map B-35- "COMPANIES"

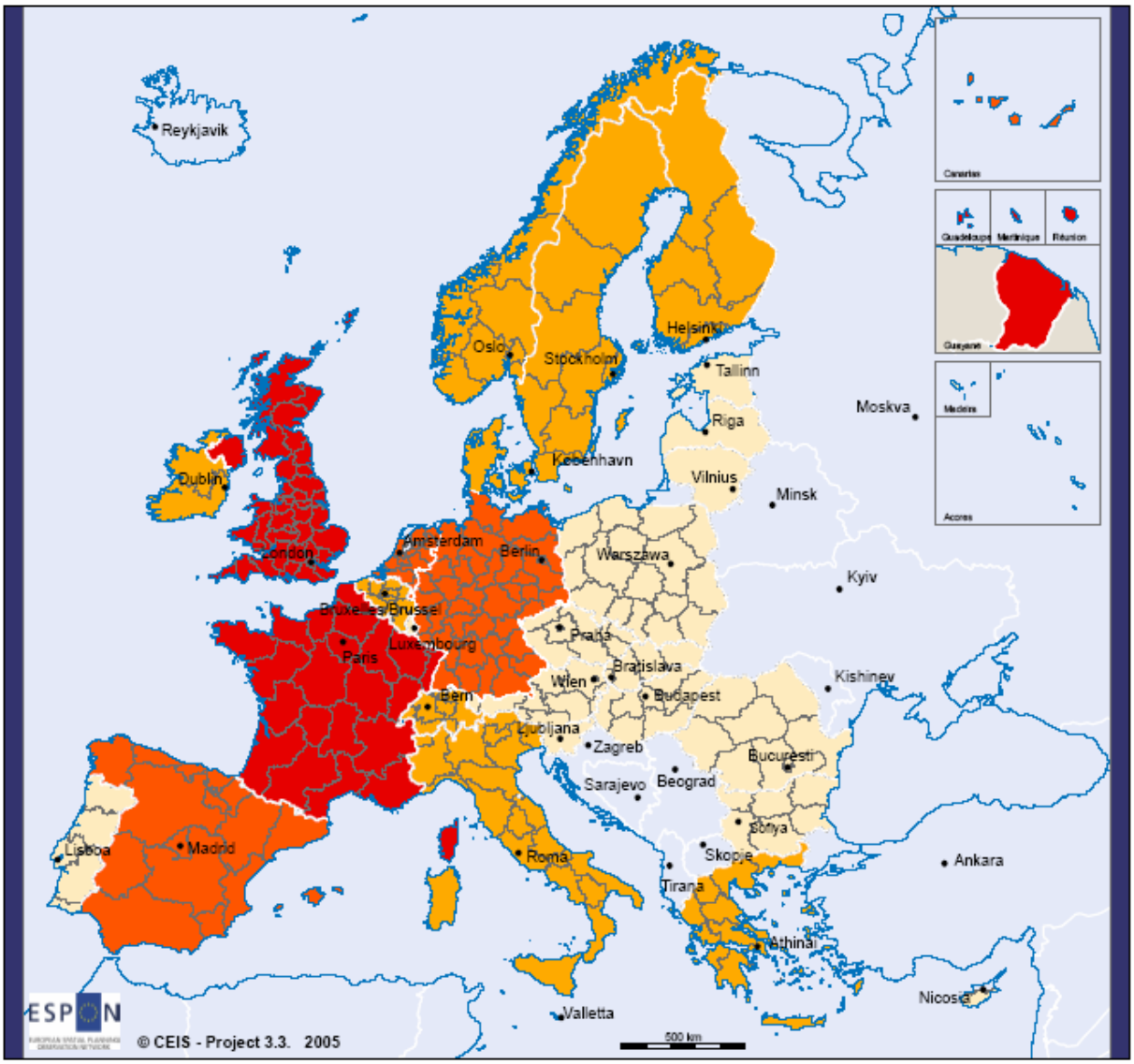


Legend

COMPANIES - CLASSES

- High
- Medium - high
- Medium - low
- Low

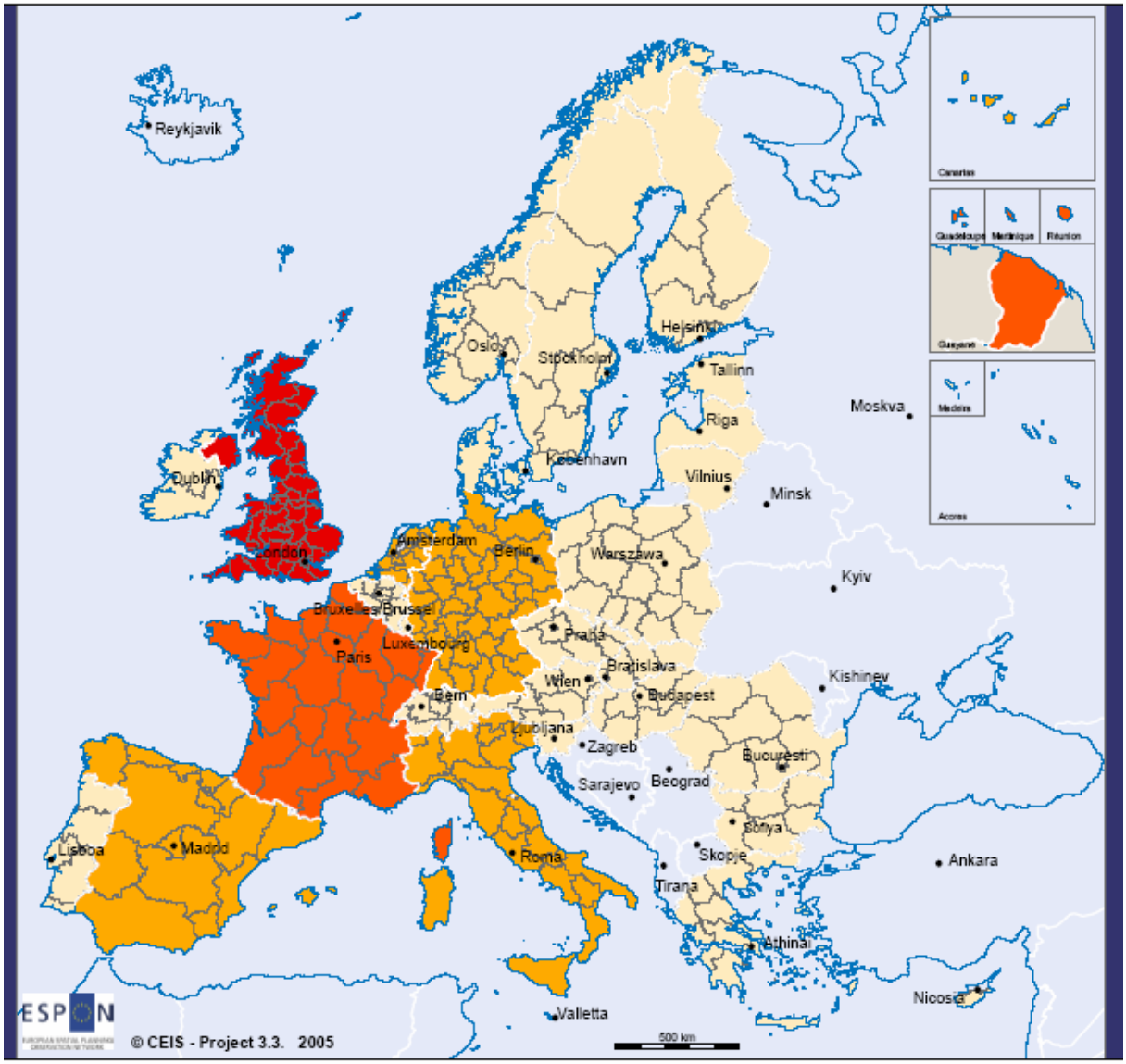
MAP Q_B36 - Exchanges



Exchanges
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

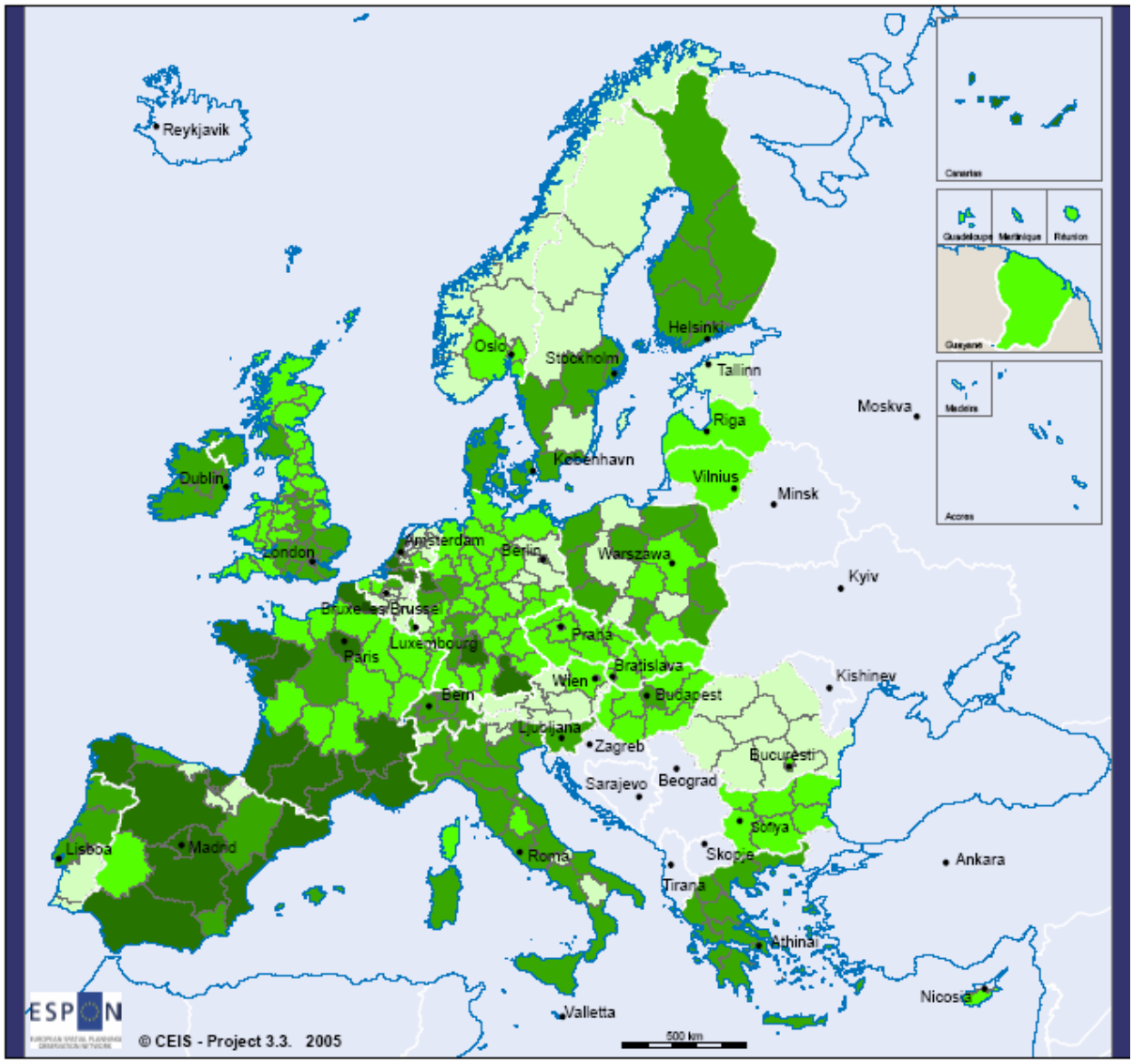
MAP B36 - Exchanges



Exchanges
(equal interval version)

- a High
- b Medium high
- c Medium low
- d Low

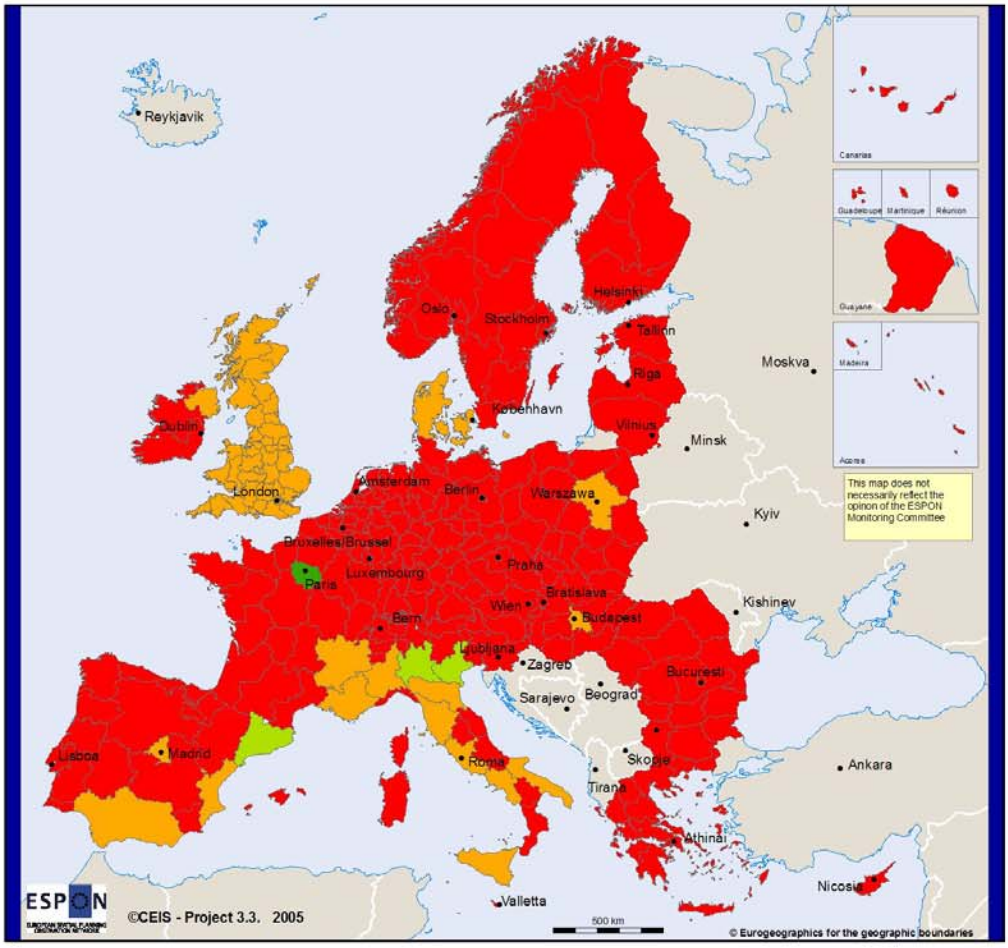
MAP Q_B37 - Management attitude



Management attitude
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-37 - "MANAGEMENT ATTITUDE"

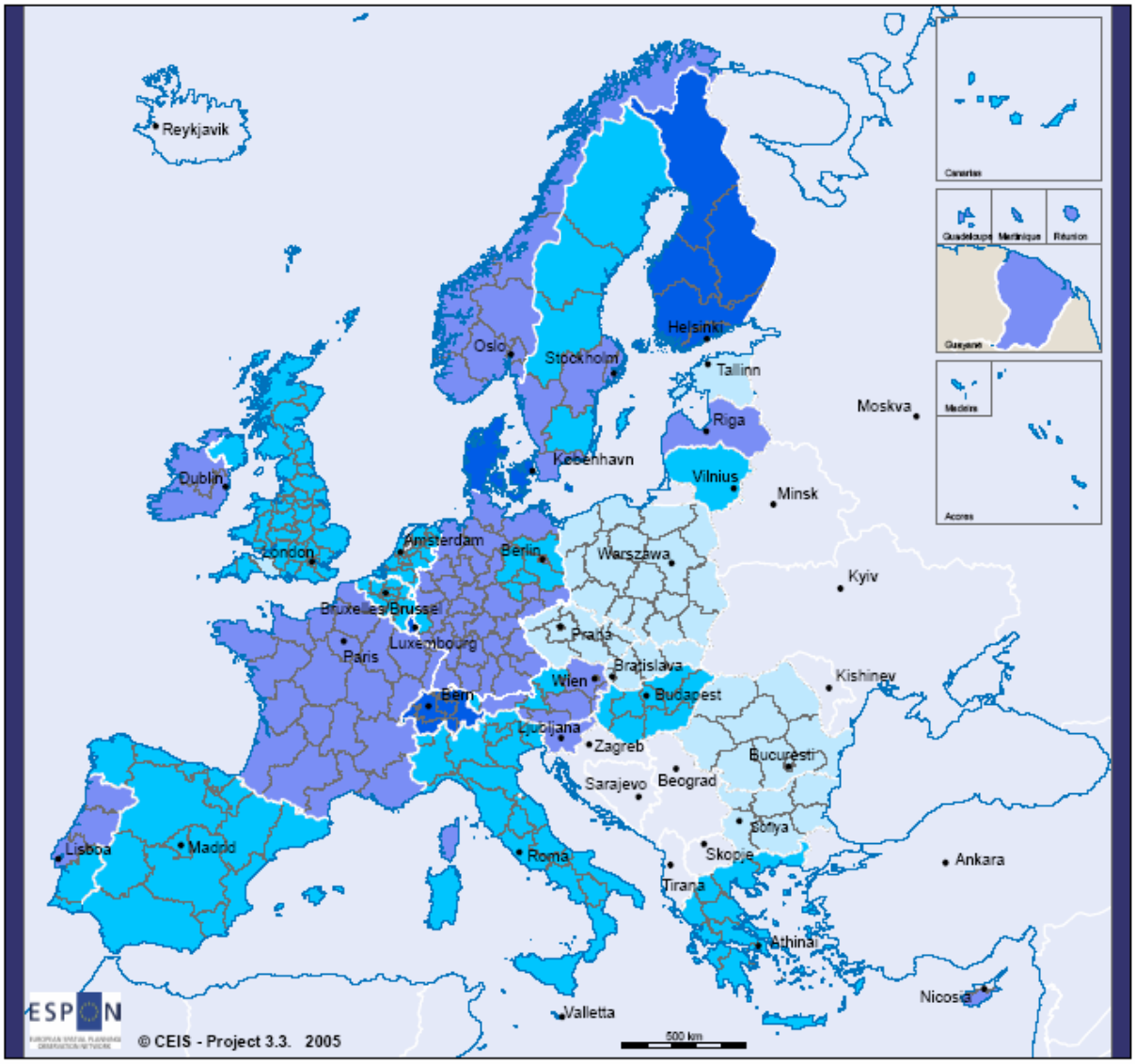


Legend

MANAGEMENT ATTITUDE

- High
- Medium - high
- Medium - low
- Low

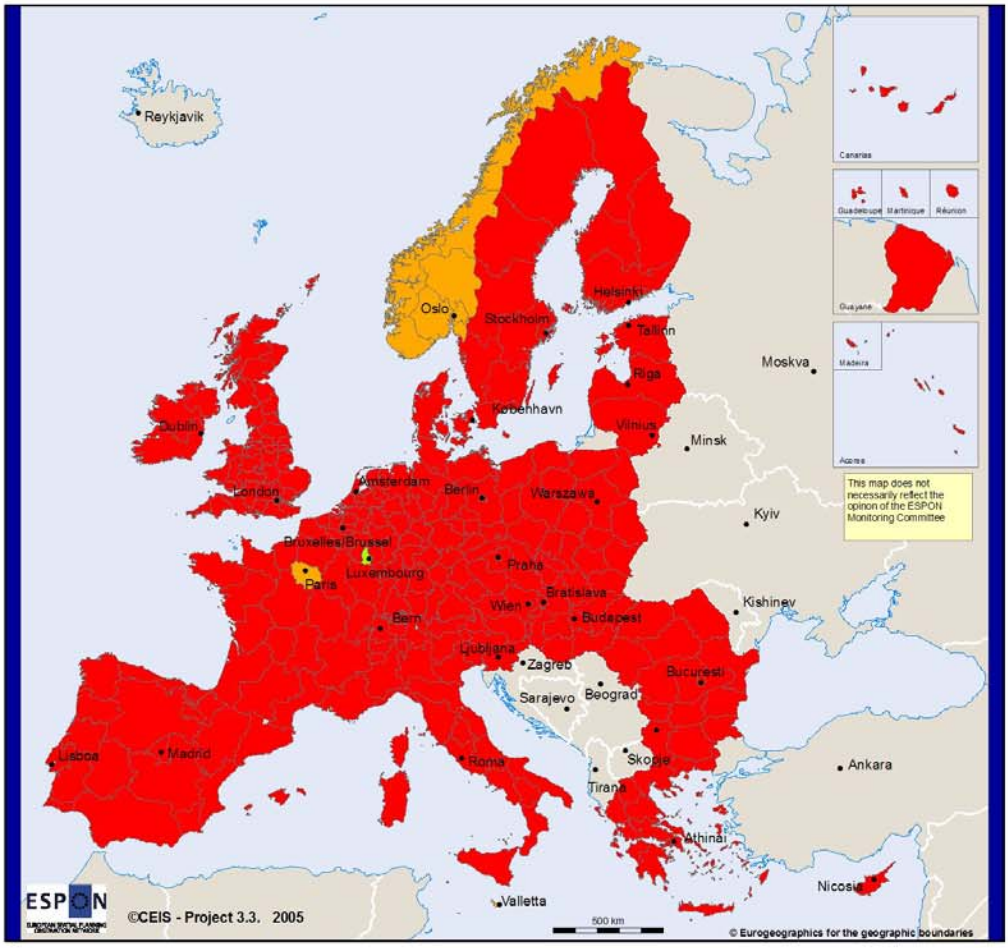
MAP Q_B38 - Financial Interaction



Financial interaction
(quantile version)

- a High
- b Medium high
- c Medium low
- d Low

Map B-38 - "FINANCIAL INTERACTION"

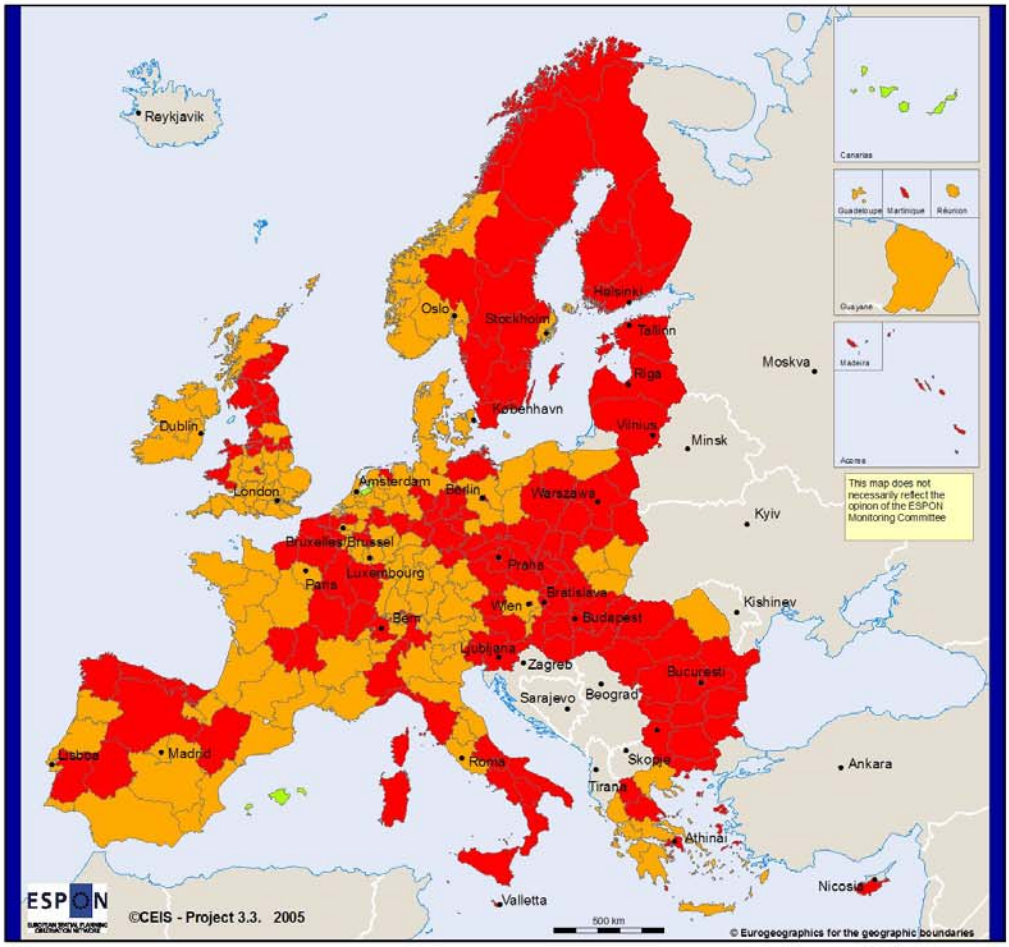


Legend

FINANCIAL INTERACTION

- Medium - high
- Medium - low
- Low

Map B-39 - "GLOBAL LOCAL INTERACTION - DETERMINANT"

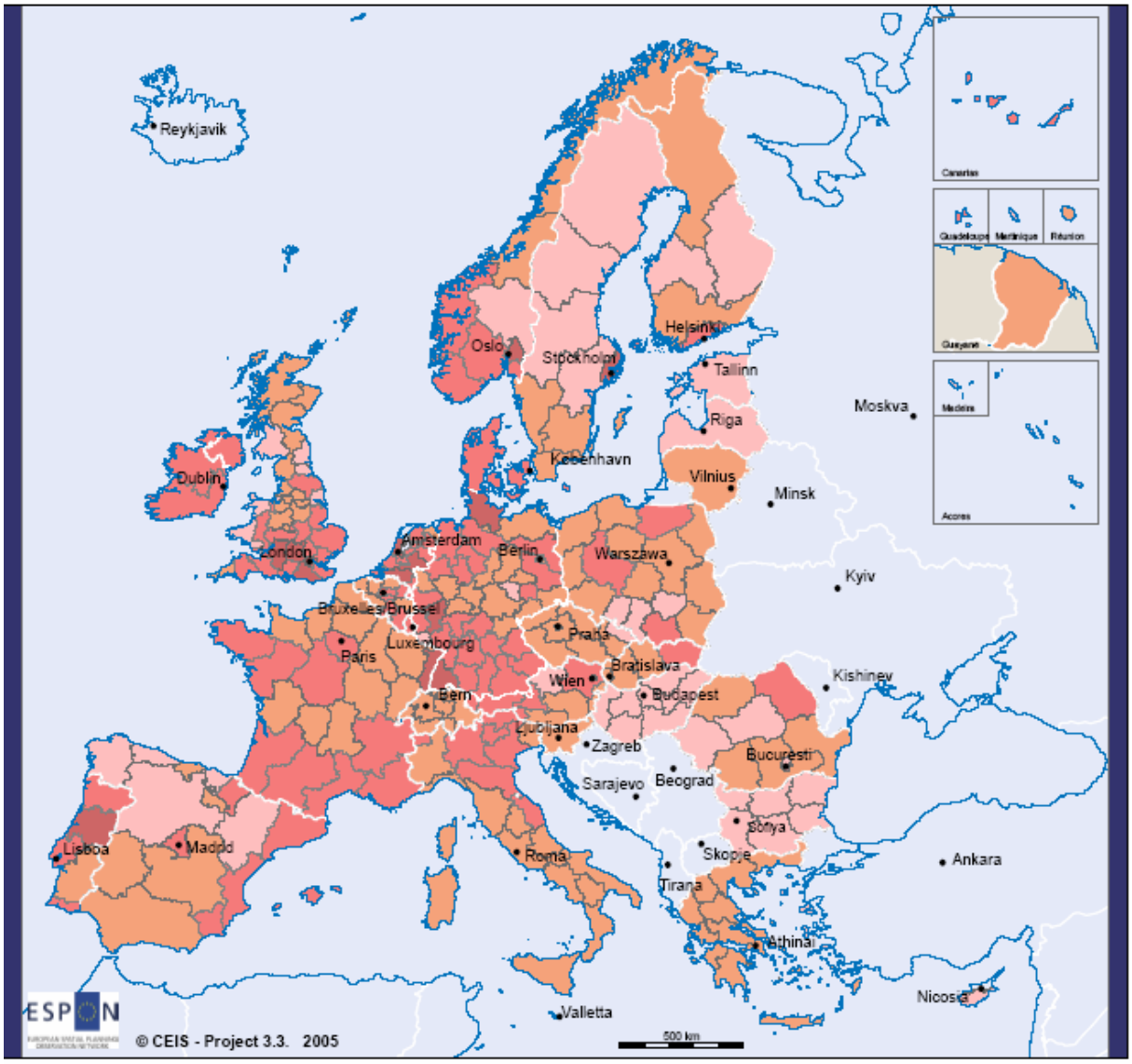


Legend

CLASSES

- Medium - high
- Medium - low
- Low

MAP Q_B39 - Global Local Interaction

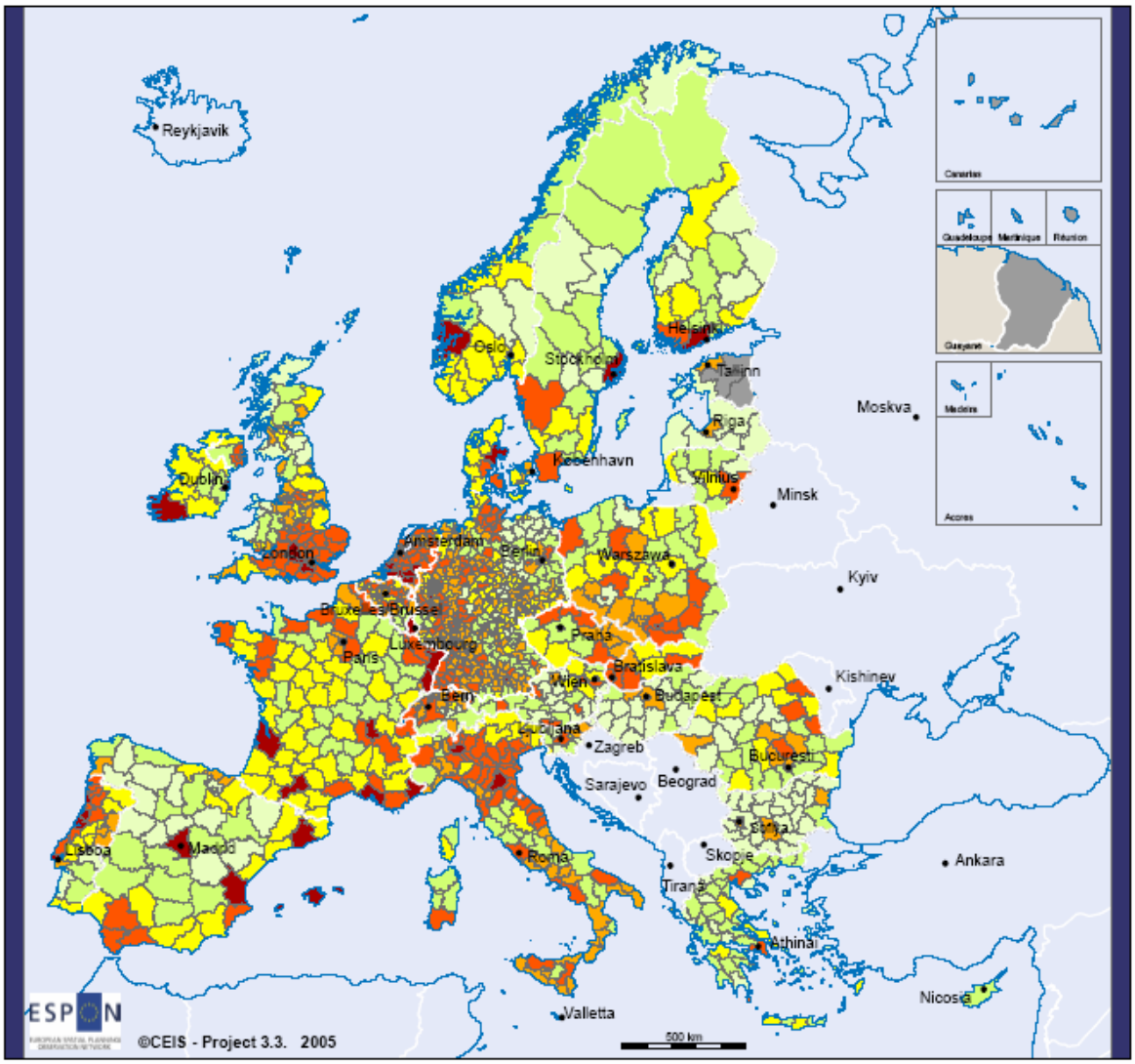


Global local interaction
(quantile version)

- A High
- B Medium high
- C Medium low
- D Low

QUARTILE VERSION

MAP 40 **TERRITORIAL Global - Local**



LEVEL OF TERRITORIAL Global - Local

- A ABSOLUTE
- B Very HIGH
- C HIGH
- D MEDIUM
- E LOW
- F Very LOW
- no data

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Annex II C

"Quality" Determinant

Maps and comments

30 September 2005

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

Quality: comments of the maps

"Quality" is a very common expression of our present language, but it has got a particular significance into the geographical one, because it refers both to the life and the environment, enterprises, society, government, etc.

The study of this determinant consists of the analysis of indicators into 4 different groups:

- Quality of Life
- Environmental Quality
- Government Quality
- Social Quality and Cohesion

Looking at the European system, the Quality determinant shows some significative situations.

Within the discrimination allowed by the Equal interval classification scheme, we note:

- a low level of the GDPpps per capita for all the new countries, the Southern Italian regions, Portugal and a great part of Spain and Greece. The central place of EU, UK and Scandinavian countries picture generally a medium level;

- the harmonised consumer prices index is generally low in all UE, except Bulgaria (medium-low); Romania (high);

- the level of employment (employment index) is generally high and medium-high, except for some regions in the Southern of Italy, Greece, the South of Spain, the East of Germany, Poland, Slovak Rep. In particular, Poland pictures low levels in the traditional industrial regions, where the de-industrialisation process is stronger;

- the consumption aggregates (at current prices) in relation with the population is generally low in all European countries. Only the central area, from North to South (Denmark and few Spanish enclaves included, some German, Netherlands and French regions excluded), designs a medium-low tendency;

Therefore, the general economic performance (calculated by traditional economic variables) is not good, as demonstrated from the medium-low values in all old European countries. Among the new countries, Poland, Hungary, Slovak Rep., Bulgaria picture a medium-high value, while Romania has high values. This specific situation is linked to the growth of consumptions and prices about the goods and services due to the enlargement.

Of course, at national level, the buying power is low into European Union (Romania and Bulgaria excluded), as well as the consumption tendency. This last aspect is more fragmentise, because the traditional peripheral areas (Spain, the South of Italy, Greece, Norway, Finland, the East of Germany and, generally, the Eastern countries) picture a more high or medium-high tendency to have got goods of large consumption.

Still within 'Life quality', the *infrastructural variables of cohesion* are a significant measure of welfare as well as the internal integration tendency of the EU states, nevertheless:

- the hospital bed number is lower in a lot of countries (Spain, Italy, Greece, a large part of UK, Ireland, Sweden, Denmark, Netherlands) than the people's needs;
- the tourism opportunities (hotel bed number) is low in all countries (except in a very little region between Switzerland and Austria), as well as the expenditure for culture and recreation (there is only a positive growth in Slovenia, the Southern of Ireland, Denmark). So the level of leisure designs only few states (the Eastern countries) with an homogenous high and medium-high values vs. a fragmented regional distribution within the more traditional areas. *In this map (C8), it is possible to look at a first possibility to organize some cooperative intraregional transnational areas, on the base of a similar infra-structural 'corema' (i.e., France, Italy, Austria, Switzerland, Germany; or Finland and the three Baltic republics*);
- the physical accessibility (Map C9) is higher in the States than between ones. Particularly, the traditional EU central area (from the South of England to the North of Italy) pictures low and medium-low values about multimodal accessibility with respect to the Southern peripheral areas and the ones along the East-West axis;
- about the level of TCL development (Map. C10, from Espon project 1.2.2), the EU is vertically divided in three parts with: medium-high values at West, high values at East, medium-low and low values in the central area from Italy to UK and Norway, Sweden, part of Finland;

The synthesis of cohesion variables depicts a more significant tendency to be cohesive in the peripheral areas (high values in Spain, Portugal, Italy,

Greece, UK, Ireland, Denmark, Sweden) than in core's ones. It is possible that this is due to a higher connection and communication between people (by accessibility and networks) also to exchange cultural contributions.

But this is not sufficient to have a good *Life Quality* (Map C12). This results high only in Romania and the overseas French regions (Guayane, Guadeloupe, Martinica, Réunion); medium-high in Spain, Italy, Greece, United Kingdom (Scotland excluded), Ireland, Luxembourg, Netherlands, Denmark, Sweden, Poland (in part), Bulgaria; medium-low in the other EU countries.

Government quality is another important point for the calculation of national and regional European Quality. To explain this concept, the project linked it to the good governance (see Espon project 2.3.2, too) and the "White Book 2001" and OCSE studies.

Some members of the Working Group made some research about this topic on the base of recent international and European experiences, that suggest studying the territorial quality of government problem in the following way:

1. both as *governance* with regard to the more general vision of *government* (national policies in agreement with local policies, programs and projects for the full carrying out of subsidiarity), to transform the plan in a bottom-up and intra- and inter-regional cohesive instrument, as well as a new intergenerational pact between State and citizen;
2. and as an opportunity to re-define some equal distributive rules on ethical and basic principles (the sustainability) to be applied by a substantial choice of power exercise.

Territorial (urban and metropolitan) governance ranks in this vision, because it bears the structure by which it's possible to fix the territorial and productive aims, deciding the strategies to catch them up, monitoring the performance.

This topic completes the picture of the new sustainable planning models applied at different contexts (UE ESPON Program), where the operative governance field doesn't come before or follow the project choices, but it comes with them, like an European technical and political working method from the beginning to the end.

The national government and local levels can become governance promoters, suggesting praxis, procedures, guide-lines useful to orient the investors, enterprise systems, and entrepreneur's action to the projects' "best practice".

Territorial governance is a key-element to increase the efficiency of economic and territorial actors and to introduce innovative methods into planning (i.e. economics and financial strategies), involving the administrative system (management), the political system (board), the law system, the citizens, the productive system, etc. Governance is defined "good" when it identifies and re-models both the technical-financial incentives to catch up common aims, and the procedural choices to have an efficient and sustainable development project.

The complex approach aims to obtain a polynuclear or polycentric and cooperative territorial entrepreneurial model in local context, different and competitive in the European context, using new and more dynamic political-economic instruments, to give a specific answer at the decentralized demand of sustainable development.

By the analysis of the maps by equal intervals classification, it is possible to read that the citizenship confidence (Map C21) pictures an high level in Ireland, Belgium, Portugal, Italy, Greece, Slovak Rep., Hungary; a medium-high level of confidence is shown by Sweden, Finland, Netherlands, Denmark, Slovenia, Lithuania, Lativa, Romania, Bulgaria, Cyprus. From Spain to Poland the feeling of reliability is medium-low and it gets low in UK and Lithuania. Perhaps, the reason for this is correlated to the participation to the institutional life (Map C23), that is very high only in Italy and Belgium or medium-high in Austria, Denmark, Greece. It's interesting the low interest and participation of UK, Switzerland, Poland, Czech Rep., Estonia, Slovak Rep., all countries that haven't signed the European monetary union or have recently entered it. Generally, the political participation is medium-low. For this reasons the synthesis designs Italy and Belgium as both pivot of the European good governance (Map. C24);

About *Social Quality and Cohesion*, the TPG has addressed this issue looking at the quality of some indicators at the base of social and welfare system, as particularly capability of sustain the balanced and satisfied relationships into the whole civil society (from stakeholders to shareholders, etc.).

About the base education system (Map C25), it is high and medium-high for a major part of EU countries, except Switzerland, UK, the eastern of Germany, Poland, Slovakia, Hungary, Scandinavian Peninsula and other few regions in the Pentagon areas.

At the same time, the income distribution (Map 26C) shows strong inequality in France, the Netherlands, Scandinavian Peninsula and Denmark, Czech and Slovak Rep., Hungary, Slovenia, Austria, Bulgaria, Cypros; it is low one in Portugal and Greece.

Social Cohesion resources (Map 27C) are more fragmented, and requires some important structural implementations in Portugal, great part of Spain (particularly in South-Eastern one), Italy also in Northern-Central regions in addition to the Southern ones as well as in some Romanian and Greek regions, and Cyprus. The more significant positive presence of resources useful at developing the social cohesion are in the Polish and the contiguous Eastern of Germany regions.

About the risk of social exclusion, the children exclusion one (Map C28) is particular significant in UK and Bulgaria (high values) because it pictures persons aged 0-17 who are living in households where no-one works. Medium-high values are in Ireland, Norway Belgium and Germany too, as well as in great Eastern region from Poland to Romania. Contrarily, Finland, Portugal, Italy, Austria, Greece, Cyprus don't show this problem.

The judgement doesn't change much if we look at the level (Index) of poverty (Map C29) – the Index comes from the list of Spring Report (see 2.1) -, which is low also in countries as Ireland, UK, Italy, Spain, Greece, Slovakia, Estonia. Generally, the EU poverty level is medium (high or, more ways, low as France, Poland, Romania), and requires some structural measures.

So, the final *Risk of Social exclusion* (Map C30) results more homogenous and draws a vertical line of medium-high risk in the Mediterranean area and along the Eastern boundaries; a medium-low one for the Baltic region and Pentagon, picturing some possible cooperative transnational areas. Only Spain, Ireland, UK, Slovakia, Estonia maintains a total low value.

About the *Social wellness attitude*, the project takes into account the equal opportunity (Map C31) and wellness.

In the first case, the female employment ratio (Map C31) appears to have a scarce significance, because it is generally positive in all European countries, except in the South of Italy, Spain, Greece.

We know well the general status of European Index of Fertility (Map C32a), which is low or medium-low except in Cyprus, great part of France, Ireland, Norway, Finland, Denmark; or the trend of life expectancy at birth (Map C32b), which is low only in Hungary and, surprisingly, in Finland, because the low-medium values are shown from areas where the social organization is living a critical phase or restructuring (i.e., UK or Sweden and Denmark).

So the general *wellness* situation (Map C33) confirms the previous vertical going, with the added of particular cases (Ireland, Belgium, Poland, Sweden for the low values and Slovenia and Cyprus for the high ones).

The Social wellness aptitude (Map C34) results oriented on only three values, which confirm some possible cooperative areas: Portugal - France - UK; Luxembourg - Netherlands – Denmark – Sweden – Finland – Estonia – Lithuania - Latvia, Central Germany – Slovakia – Slovenia – Hungary – Romania - Bulgaria in force of their medium-low values. At this kind cooperation Italy and Greece can participate with only a few regions.

The total quality of the EU system (value of vulnerability) explains the risk of no achieving the cohesion goal in a great part of EU, excluding a part of Pentagon area too (Map C35).

The cohesion attitude (Map C35a) pictures a medium-high and high trend only in UK, Germany, Switzerland, Poland, Slovakia and Czech Rep., Slovenia, Norway, Sweden, Finland.

By Equal interval distribution, *Quality status quo* (Map C36) pictures low values only in Switzerland and Poland, while an high value is represented by Luxembourg. Italy, Austria, Belgium, Denmark, Cyprus contribute with medium-high values.

Life and environmental quality (Map C36a) seems to favour the Baltic republics (high values) and UK, Germany, Poland, Slovakia. Critical situations present Spain, Portugal, Greece.

So, the final value of *Quality determinant* (Map C37) suggests to dedicate priority projects related to the Ireland-United Kingdom system, Estonia, Slovakia; immediately after, to the France-Italy axis, the Cyprus-Greece-Bulgaria-Romania one with an involvement of the Latvia-Lithuania-Poland-Czech one.

In order to assess the regional behavior as obtained by the quantile classification procedure, we can observe:

- a variegated distribution of regional GDPpps per capita (Map C1 Q), with low values in the South of Spain, Portugal and Italy, the Eastern new countries, the overseas French regions Guyane, Guadeloupe, Réunion vs. high values of all Austrian regions, Luxembourg, Demark; some Belgium regions, Ile de France and the greater part of the capital-regions as Comunidad de Madrid, London and Inner London, the North-East and the East of Scotland, the South of Ireland, Noord and Zuit Holland; but also Fora and La Roja in Spain, Vestandet in Norway, Uusimaa in Finland, Sydsverige in Sweden; and, finally, a large European Centre-South regionalized area with high values from the South of Germany to centre-south of Italy (Lazio region and Rome). This should be an important basic area of co-operative development for

studying the experimental application of the Gothenburg principles. The remaining part of European system has got medium-low values;

- the Consumer Price Index (Map C2 Q) is more homogenous. Of course, high values are in Poland, Slovenia, Czech Rep., Hungary, Romania, Bulgaria, Estonia. Medium-low values are in Lithuania, Slovak Rep., Ireland, Portugal, Spain Greece; medium-high in Italy, Cyprus, Luxembourg, Netherlands, Denmark, Norway, Latvia. Other countries have got low values;
- the level of employment (C3 Q) is high only in the Southern regions of Germany, Ireland and England, Austrian and Netherlands regions, the North-East of Italy, Açores in Portugal, Közép-Magyarorszag in Hungary, Småland med öarna in Sweden, Tees Valley in Scotland, Cyprus. For the future, it's more worrying the chronic situation (a low value of the Index) in the South of Italy and Spain, all Greece, Itä-Suomi and Pohjois-Suomi in Finland after the long season of using the Structural Funds, than a low value in the regions of new countries;
- generally, the regional consumption per capita (calculated at current prices in the map C4 and C5b Q) reflects the distribution of buying power and, of course, the one of GDP per capita;
- the value of economic variables (map C5 Q) is low in the critical regional systems. Some structural situations, due substantially to the productive de-localisation to contrast an open global market should be re-balanced with new network forms of transregional productions, involving the new Eastern regions;
- the welfare system seems more difficult to have got a right balance among the old regions than the new ones (Maps C6 Q, C7a Q, C7b Q): the hospital beds' availability is again very low in some regions of Portugal, Spain, Italy, Greece, UK and Ireland, Scandinavian peninsula with respect to a health specific demand; in contrast the hotel beds availability puts the same regions in pole position, demonstating that in Europe there is not a direct link between tourism and health. This link is more evident if we look at the expenditure for recreation and culture. In this case, the UE regional people pictures a general trend to invest in these sectors, finalising it to have got a better educational level too;
- the general leisure prefers few regions (high values) of which is known the local traditions: South-West, Derbyshire, Shropshire, Berkshire and Essex in UK; Nord Pas de Calais, Loraine and Picardie in Franch; Hainaut in Belgium; Friesland, Overijssel and North Holland in The Netherlands;
- physical accessibility (map C9 Q) is low in some Mediterranean coastal zones of Italy (Liguria, Lazio and Campania, some of the more

populated Italian regions), Spain (Catalunya); along the Alpine Arc, at the boundary between Italy (Lombardia, Veneto and Friuli-Venezia Giulia) and Switzerland, Austria, Slovenia; in the French Nord-Pas de Calais region; along the longitudinal zone from Netherlands-Belgium-German to the boundary Germany-Austria (regions from West Vlaandere-Gronigen Hamburg, Luneburg included, to Freiburg-Oberbayern); Gloucestershire, Berkshire, Devon and Derbyshire, Herefordshire in UK; Sydsverige in Sweden; Strední Czechy in Czech Repub.; Közép-Magyarorszag in Hungary. The medium-low values are usually distributed in central regions of Europe and UK, while the medium-high ones interest both the ring, islands and the Eastern regions, Cypros. Only three regions have got high values of accessibility: Itä-Suomi in Finland, Sud-Est and Nort-Vest in Romania, the ex French and Portuguese colonies;

- about the level of TLC development (Map C10 Q, from Espon project 1.2.2), the high values are in all the Eastern regions and only in few Western ones (Centro and Alentejo in Portugal; Cantabria e La Rioja in Spain; Basse-Normandia, Auvergne, Canarias, Madeira, Acores in Frence). The usually value of EU is medium-high or medium-low, while a lot of British and Sweden regions picture low values in this important field of Lisbon Strategy:

- as an effect of another indicator (technological equipment, from the first determinant and Espon Project 1.2.1), the “sectoral variable of infrastructure” (Map C11 Q) pictures some possible transnational cooperative areas for the development of the society of information, communication and knowledge and the new types of technologies recalled to obtain the Lisbon objectives: Portugal with the Southern regions; Principato, Cantabria, Pais Vasco, Comunidad Fora in Spain; England regions with Friesland, Overijssel, Gelderland in Netherlands and West-Vlaandere, Liège in Belgium; Campania, Puglia, Basilicata, Sicilia with Greek regions. In fact they all start up already with an high level of development. A second typology of cooperation, with a medium-high level at the beginning, is possible between the Italian Northern regions and Switzerland, Austrian regions or the Italian Central regions and Spanish regions into Mediterranean area. An important and prioritary area of development can be constituted from the Southern German regions and Czech ones, where the level of technological equipment is very low. Another important cooperative area could be involved the Finland regions and the segment formed by

Lithuania, Latvia, Estonia, which level of technological equipment is medium-low, perhaps involving some German regions as Mecklenburg and Berlin. In Finland, in fact, the level of physical accessibility and telecommunication (Map C11a Q) is high in the Ita-Suomi region, that could be also leader in cooperative project with similar Romanian regions (Nord-Vest and Sud-Est) used the EU Funds to development the European corridors;

- the synthesis of physical accessibility-telecommunication-leisure (Map C11b Q) pictures a major number of possibilities about exchanges and cooperation. From this point of view, some regions are focused for their high value: Alentejo in Portugal, Pais Vasco in Spain, Eastern Scotland, Derbyshire, Shropshire, Essex in UK, Picardie, Haute-Normandy and Loraine in France, Rheinhessen-Pfalz, Gießen, Leipzig in Germany, Friesland, Drenthe, Overijssel in Netherlands, all Polish regions, a lot of regions in Romania and Bulgaria. These particular regions have regions around them with a medium-high situation, but we don't look at the territorial contiguity, some neighbor regions can are involved in common project about accessibility-telecommunication-leisure: Germany and Czech Repub.; Italy, France, Switzerland, Austria; Spain and France; Finland, Sweden, Estonia, Lithuania, Lativa, Denmark, etc.;

- the final assessment about *Quality of Life* (Map C12 Q) appears more homogenous than the analysis of single indicators or categories or typologies: Estonia, Poland, Slovakia, Hungary, Slovenia, Romania, Bulgaria usually show high values; Ireland, Portugal, Spain, the South of Italy, Greece, Lithuania, Latvia, the Eastern Germany with the North-Pas de Calais in France and the very accessible regions re-called before draw medium-high ones; the North-Centre of Italy, France, the major part of UK and Germany, Norway, Sweden, Finland, Denmark, Netherlands, Cypros present an medium-low level. Only few regions have got low values: Czech, the Centre of Germany, Bretagne in France, North-Eastern and Eastern of Scotland, West-Vlaandere in Belgium and represent isolated cases.

In order to explain the regional environment quality, it's possible to reflect about the following problems:

- the level of municipal waste (the Map C13a_Q, which at the moment is only possible to have at national scale) is high in Spain, Switzerland, Belgium, Luxembourg, Netherlands, Denmark, Cyprus; medium-high in Ireland, Italy, France, Austria, Germany, Norway; medium-low or low in the other countries.
- The level of hazardous waste (Map C13b_Q) is high French, Switzerland, Germany, Norway, Estonia, Slovakia Rep., too and it is worrying in Cyprus, Austria, UK, Ireland, Belgium, Netherlands, Finland.

- The level of waste recycling (Map C13c_Q) is too low Luxembourg, Cyprus, Romania, Hungary, Slovakia, Poland; medium-low in UK, Portugal, Greece, Slovenia, Czech, Estonia, Latvia.

So the general waste weight is really low only in Sweden region (Map C14_Q), and medium-low in the vertical area from Pentagon up to include Italy and Spain. Municipal and hazardous waste is a problem for the Pentagon area, Norway and Estonia (Map C14a_Q), while a lot of natural hazards (aggregated in Map C14b_Q) put at risk the Mediterranean coastal zone, the North of Spain, the central European zone (see the "**scorpion**" symbolic picture from the Espon 1.3.1 project).

Luckily, the state of other indicators is better. The Air quality is bad only in the great part of new European regions (from Estonia to Bulgaria), albeit some problems can be found in Slovenia, Austria, Belgium, Netherlands, Norway, Finland (Map C16a_Q). About the consumption of water (Map C16b_Q), it is high only in Portugal, Spain, Italy, Bulgaria, Hungary, Lithuania; while it is medium-high in the Pentagon area and Finland (excluded Belgium and Switzerland).

Final evaluation pictures still an high natural resources availability in Latvia, Poland, Romania in front of a real low one in Portugal, Spain, Italy, Greece (Map C17_Q).

The contribution to potential climate change (Map C18_Q) is very evident in UK, Belgium, Netherlands, Germany, as well as in some contiguous areas: Italy, Austria, Slovenia, Czech, Poland, Greece.

Luckily, the crossing of waste and natural hazards indicators (Map C19a_Q) pictures still few region at high risk, concentred in Bulgaria and Hungary. Nevertheless, all the EU system is at medium-high risk, except Sweden and less Ireland, Belgium, Netherlands, Germany,Denmark, Finland, Norway, Italy, Austria, Switzerland by the soil morphology.

The cross with the climate change confirms the worrying situation in UK, Belgium, Netherlands, Germany (Map C19b_C).

Consequently, the Environment Quality (Map C19_Q) is very low in the Mediterranean area and this value involves Ireland, too, from which starts up the Northern zone where the medium-low quality is obtained, involving Norway, Finland and the old European continental Central zone.

Moving forward and looking at the *social-political aspects of quality*, we can see as the level of citizen confidence (Map C21_Q) is high in the medium-small regions (Portugal, Ireland, Belgium, Hungary, Greece), and medium-high in the peripheral ones (Italy, Slovenia, Slovakia, Finland, Cyprus), as well as the public participation at the political life (Map C23_Q), that involves the traditional old regions too.

Nevertheless, the level of good governance (Map C24_Q) is high in few regions: Italy, Greece, Belgium, Denmark; medium-high in Ireland, Netherlands, Norway, Sweden.

In order to assess the *social cohesion*, the economic indicators picture:

- a dependency from the income inequality distribution (Map C26_Q). It is very high in Portugal, UK, Greece, Slovakia, Estonia, Latvia; medium-high in Ireland, Italy, Romania, Poland, Lithuania.
- The fragmented distribution of social cohesion resources (Map C27_Q), particularly in Portugal, Spain, Italy, Greece, Bulgaria, Romania.
- A high risk of children exclusion (Map C28_Q) in UK, Belgium, Slovakia, Hungary, Bulgaria.
- A high and increasing level of poverty in Ireland, UK, Portugal, Spain, Italy, Greece, Slovakia, Estonia (Map C29_Q).

Nevertheless, the risk of social exclusion is very high only in Ireland, UK, Spain, Slovakia, Estonia (Map C30_Q). In some countries (e.g. Ireland, Spain, Italy and Greece) the situation is more complex by the low female access at the employment (Map C31_Q), tending to show a low attention at the equal opportunities European policy. This trend is shown in a small

Northern area between France, Belgium, The Netherlands and in Switzerland, too.

In these areas and in the Eastern ones the rate of fertility is low (Map C32_Q), as well as in Estonia and Latvia, by the actual economic-social and political transition phase. Some regions (in Ireland, UK, France, Norway, Finland) maintain anyway a high and medium-high fertility rate (Map C32a_Q). Nevertheless the life expectancy (Map C32b_Q) is low only into few countries: UK, Netherlands, Portugal, Denmark, Hungary, Finland. In some of them (UK, Netherlands, Portugal, Slovakia) is also low the general wellness (Map C33_Q), leading to the result that the relative social aptitude is really high in two only regions: Hainaut in Belgium and Cyprus (Map C34_Q).

The general trend of *social quality and cohesion* (or *quality vulnerability*, Map C35_Q) pictures high level in Sweden, Finland and Slovenia; medium-high values in the vertical direction from Norway to Hungary, left also the old European system in a worrying situation, in which it seems have not receipted the many political cohesive inputs and pushes. This trend agrees with a low level of the cohesive attitude, particularly deep-rooted in the Mediterranean and Pentagon areas (Map C35_Q).

By quantile distribution, *Quality status quo* (Map Q_C36) pictures a more detailed situation, confirming the low position of Switzerland and Poland with the Slovak Rep., Czech Rep., Slovenia, Estonia, United Kingdom. This confirms the previous suggestions about the transnational cooperative priorities in these areas.

Life and environmental quality (Map Q_C36a) adds to the critical Spanish situation the one of Italy, Ireland, Greece introducing a more detailed priority into cooperative transbourdary field.

The final value of *Quality determinant by quantile distribution* (Map Q_C37) confirms the final previous evaluation.

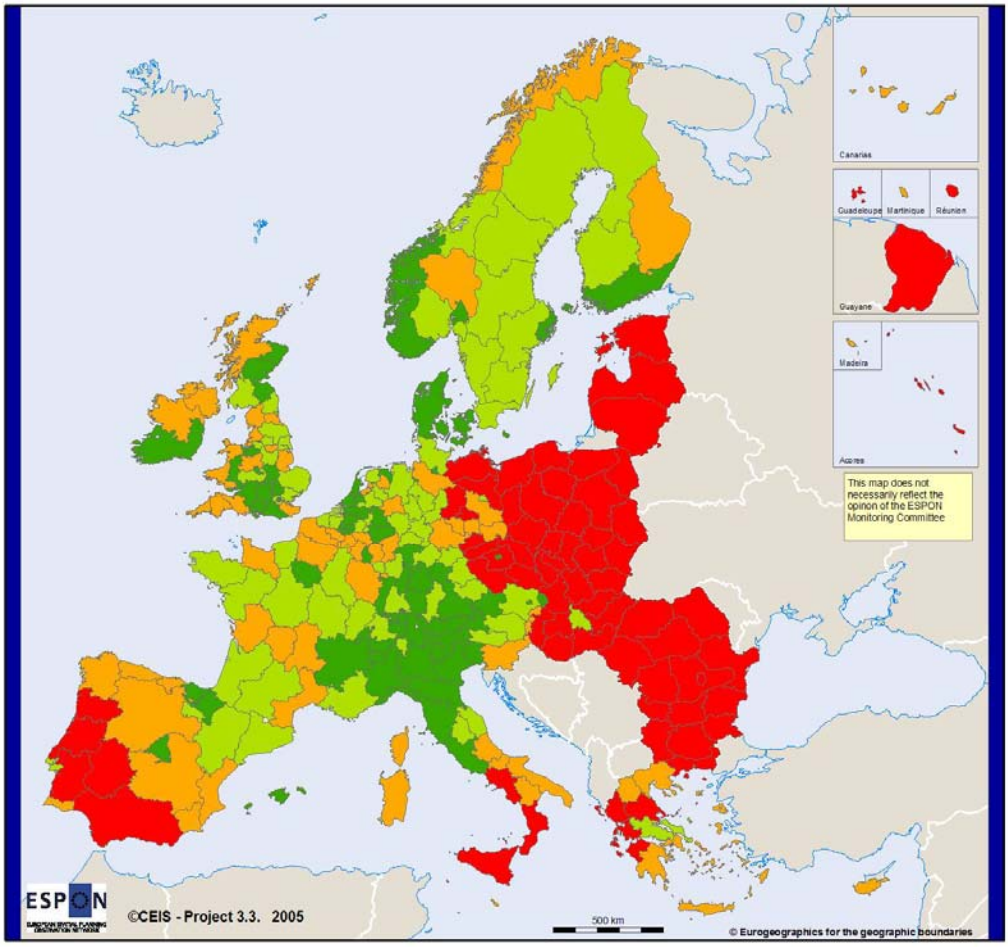
The project has territorialized (at Nut3) only the quantile version of the four determinants to have a more detailed reading (Map Q_C37T).

In addition to its fragmentation, the Map shows and confirm the critical situation in many regions of the previously recalled countries. Particularly, this is real in a great part of Spain, Ireland and Austria, the North-East of

UK, in the Centre-South-East of Italy, a great part of Greece-Bulgaria-Romania, the boundary regions in Poland toward Lithuania and Latvia (which must be included), the central zone of France.

QUANTILES VERSION

Map C1- "GROSS DOMESTIC PRODUCT PER CAPITA - PPS"



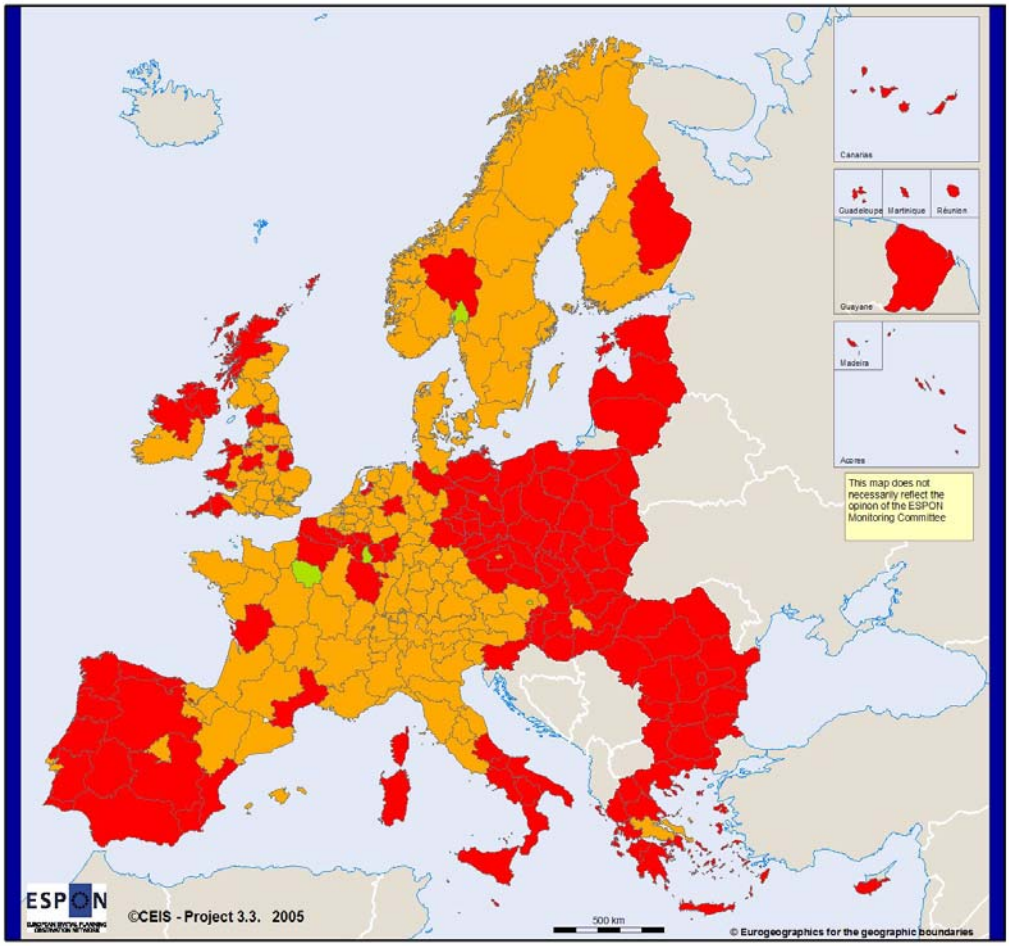
Legend

1_GDPpps PER CAPITA - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C1- "GROSS DOMESTIC PRODUCT PER CAPITA - PPS"



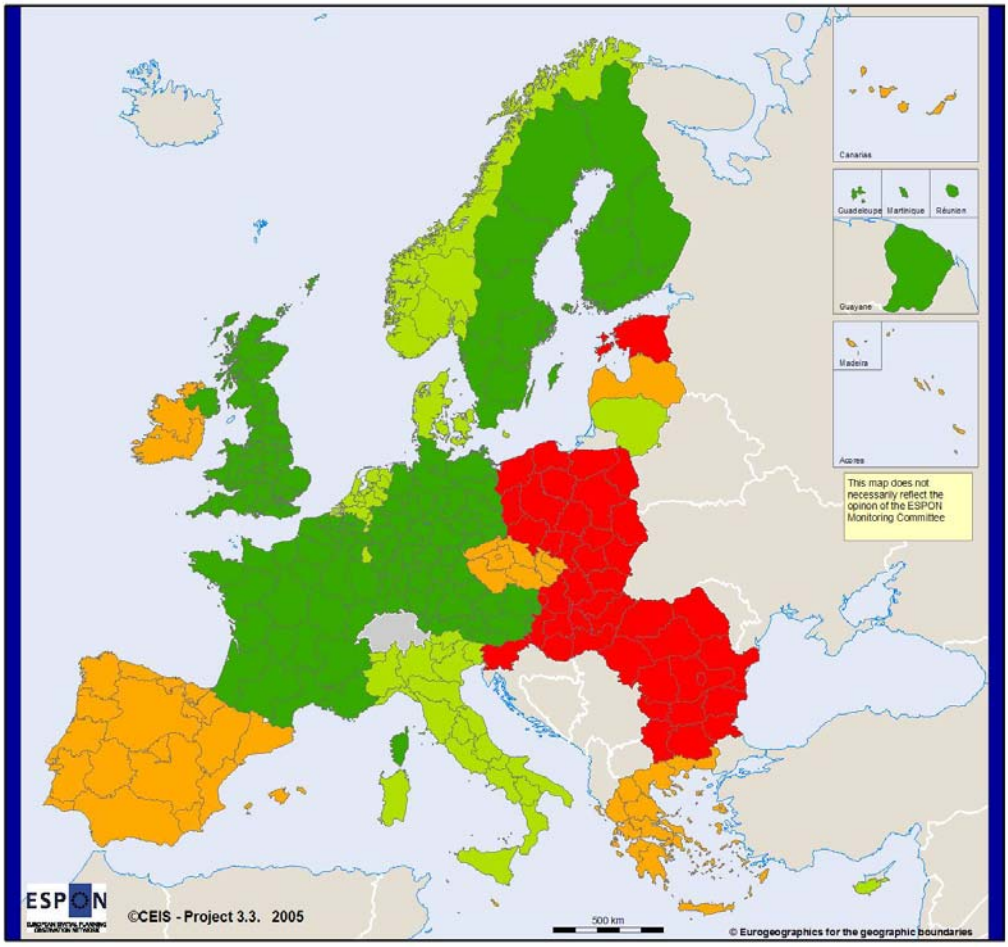
Legend

1_GDPpps PER CAPITA - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C2- "LEVEL OF PRICES "



Legend

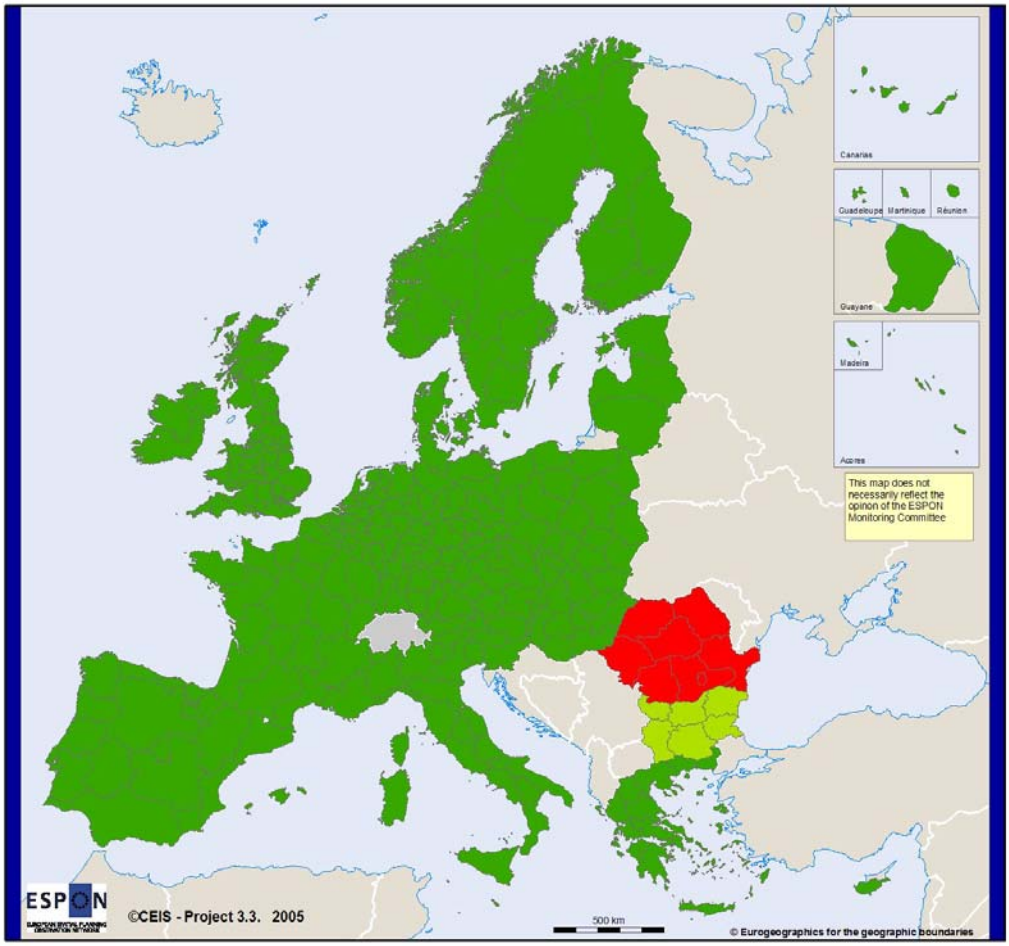
IND2

Harmonised Consumer Price Index - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C2- "LEVEL OF PRICES "



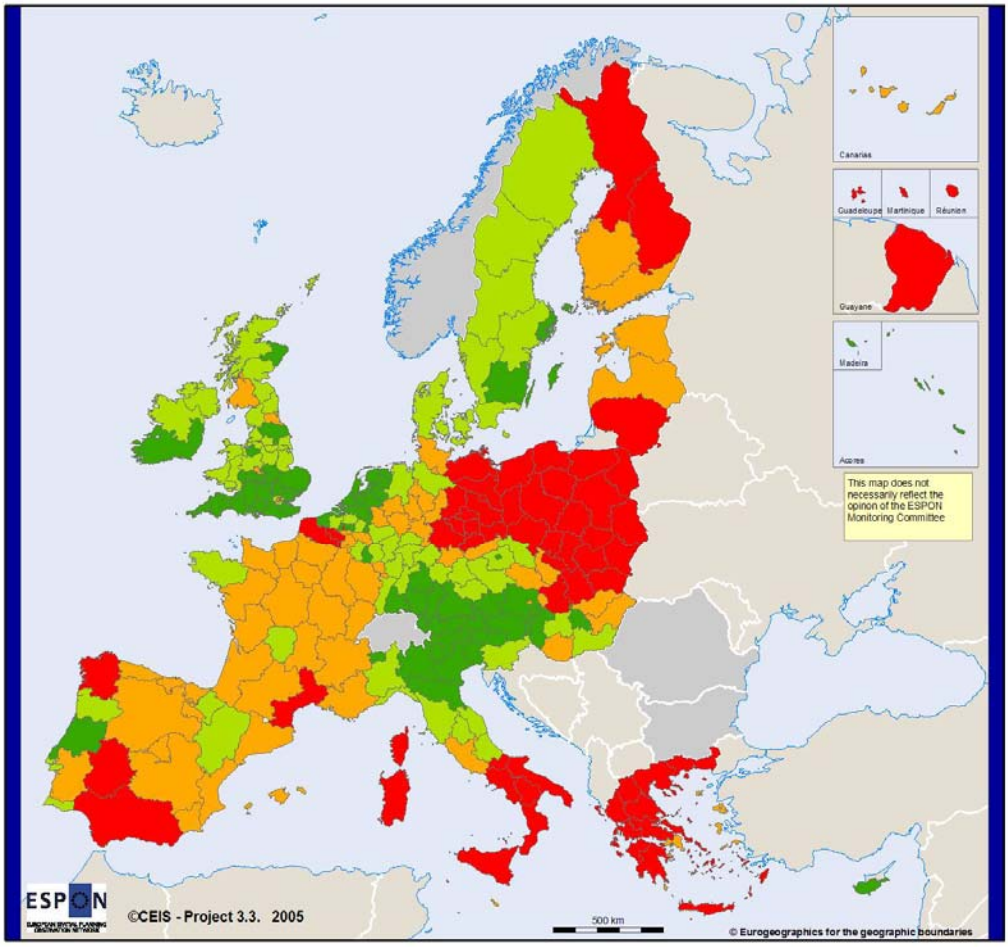
Legend

Harmonised Consumer Price Index - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C3- "LEVEL OF EMPLOYMENT "



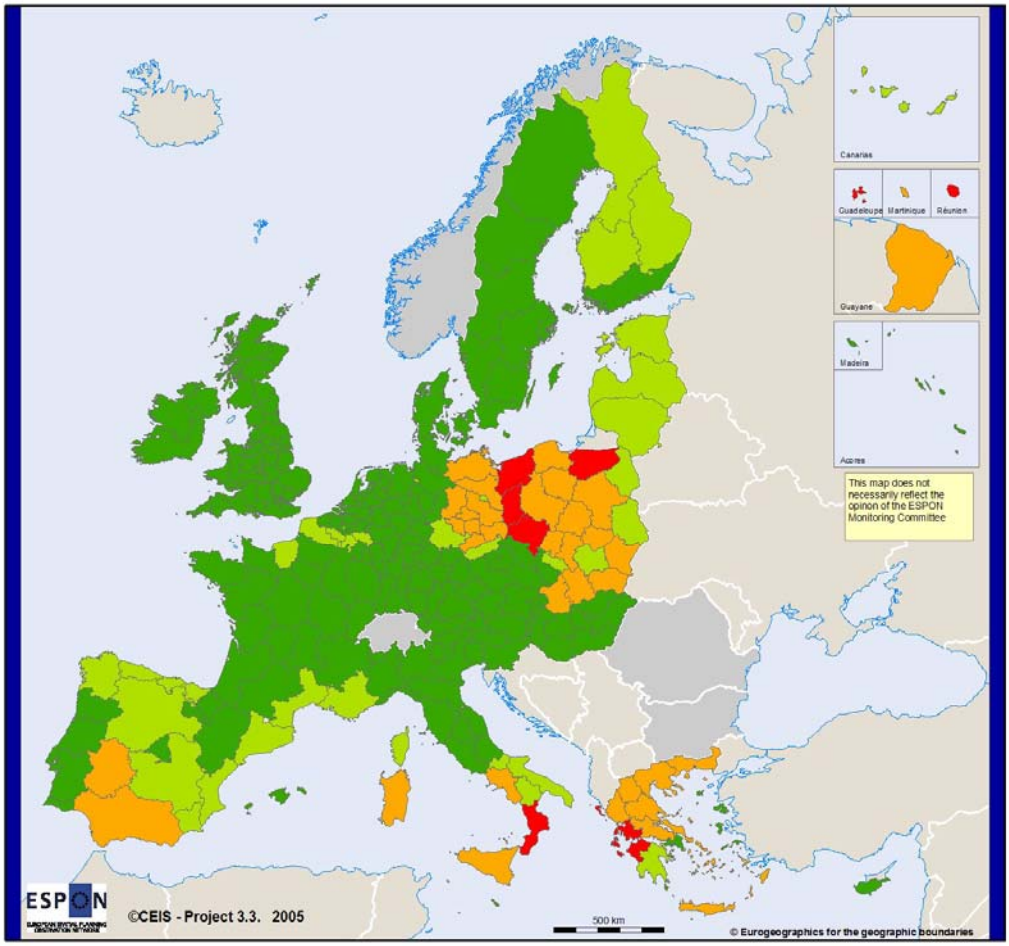
Legend

EMPLOYMENT INDEX - classes

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C3- "LEVEL OF EMPLOYMENT "



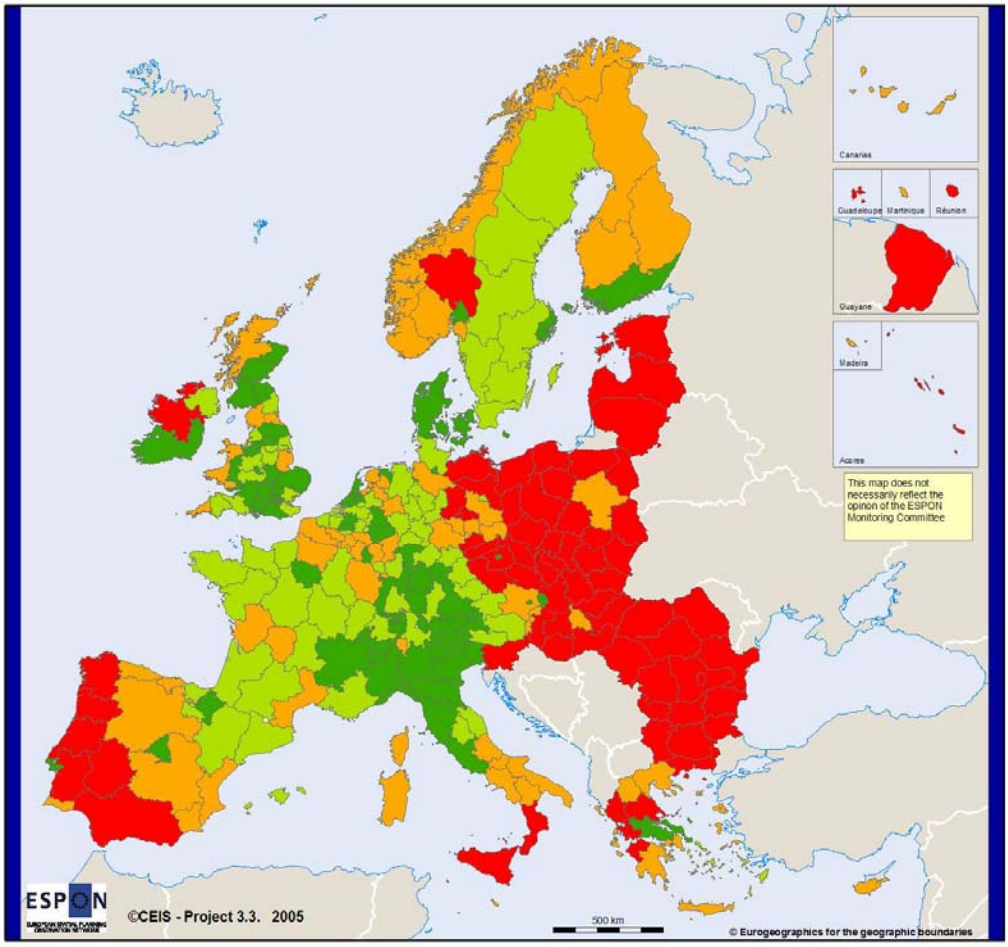
Legend

EMPLOYMENT INDEX - classes

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C4- "CONSUMPTION PER CAPITA "



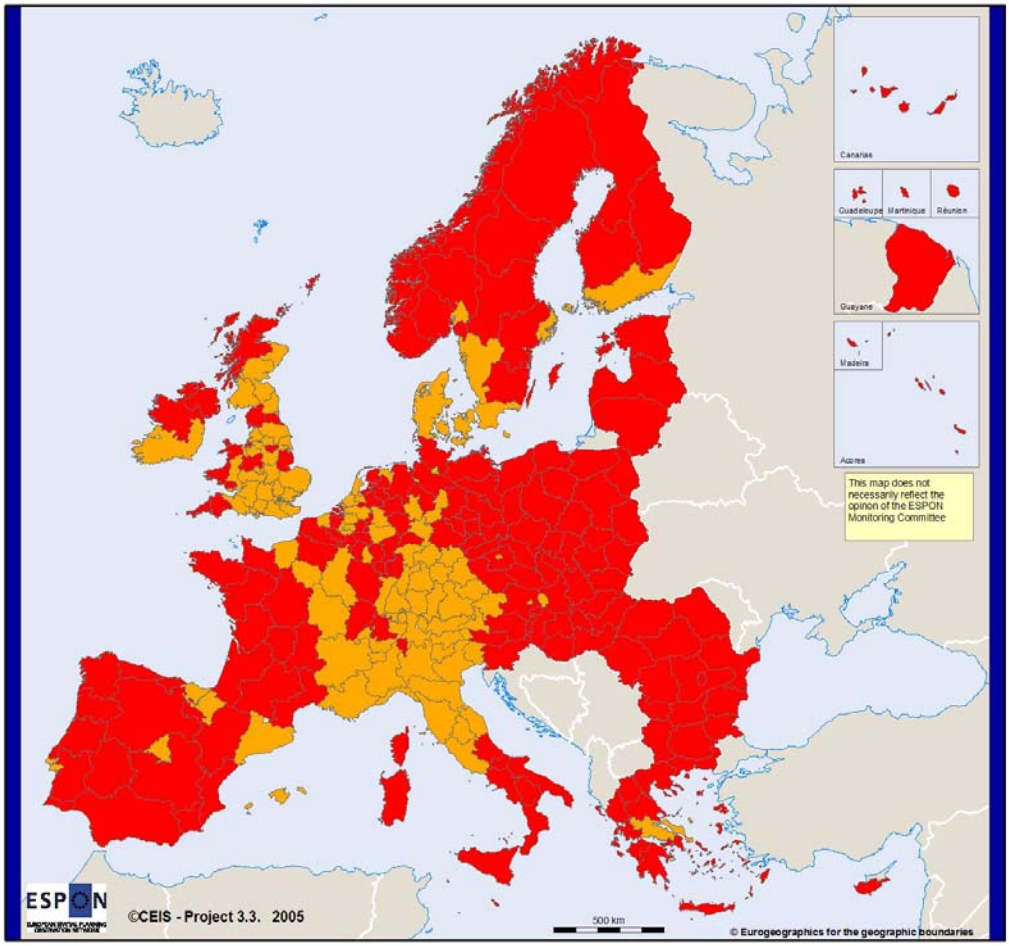
Legend

Consumption Aggregates (Current prices)/pop. - Classes

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C4- "CONSUMPTION PER CAPITA "



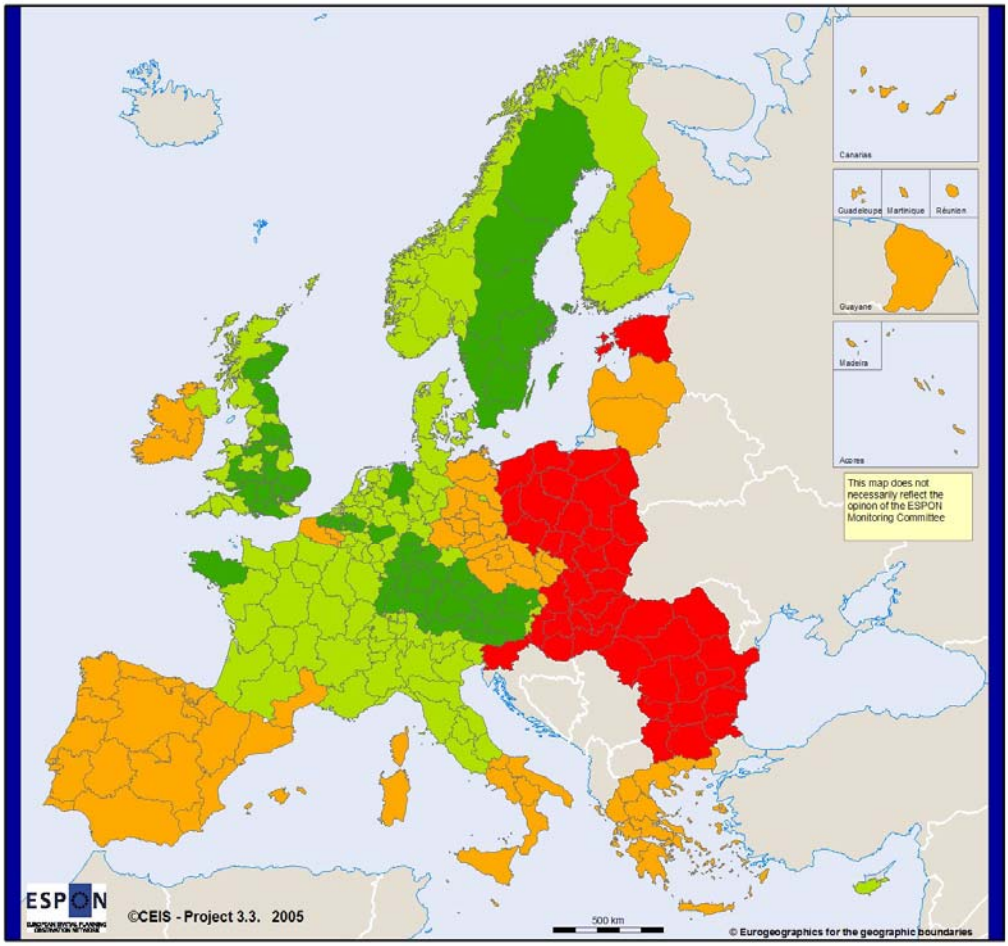
Legend

Consumption Aggregates (Current prices)/pop. - Classes

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C5- "ECONOMIC VARIABLES"



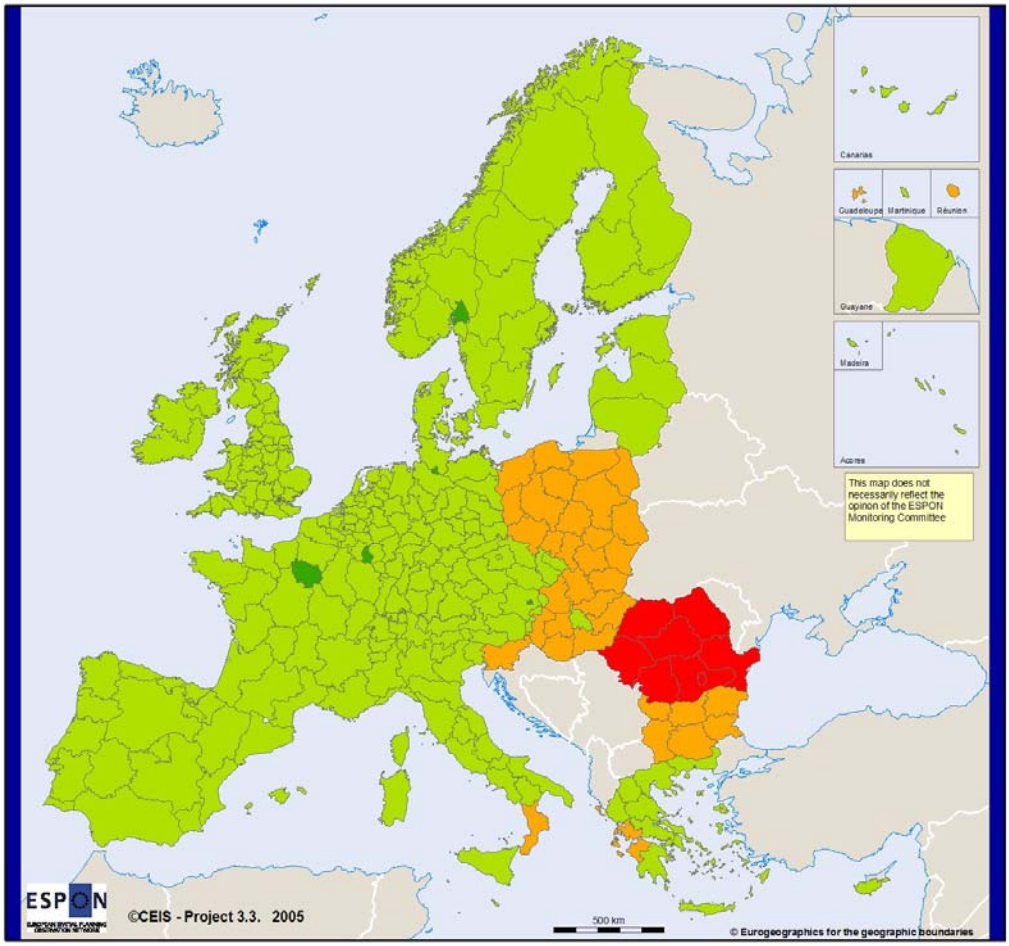
Legend

SECTOR "ECONOMIC VARIABLES"

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C5- "ECONOMIC VARIABLES"



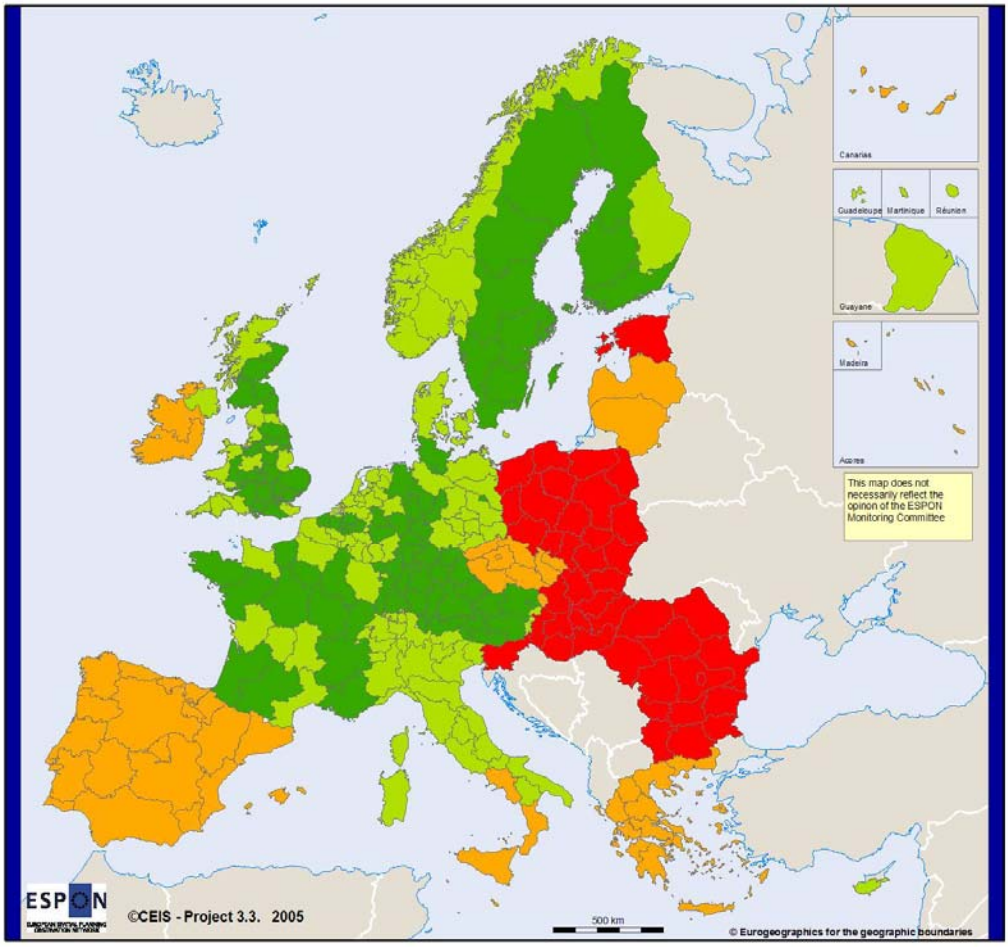
Legend

SECTOR "ECONOMIC VARIABLES"

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C5a- "BUYING POWER"



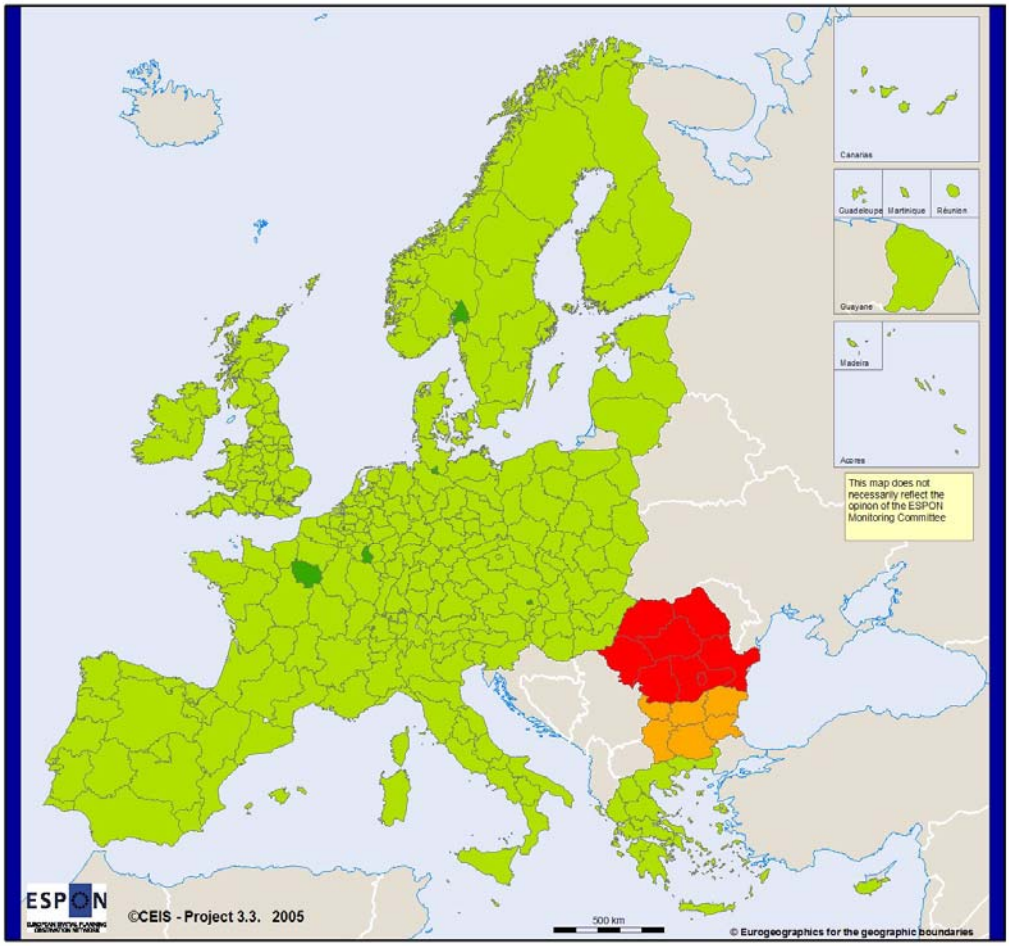
Legend

CATEGORY "BUYING POWER"

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C5a- "BUYING POWER"



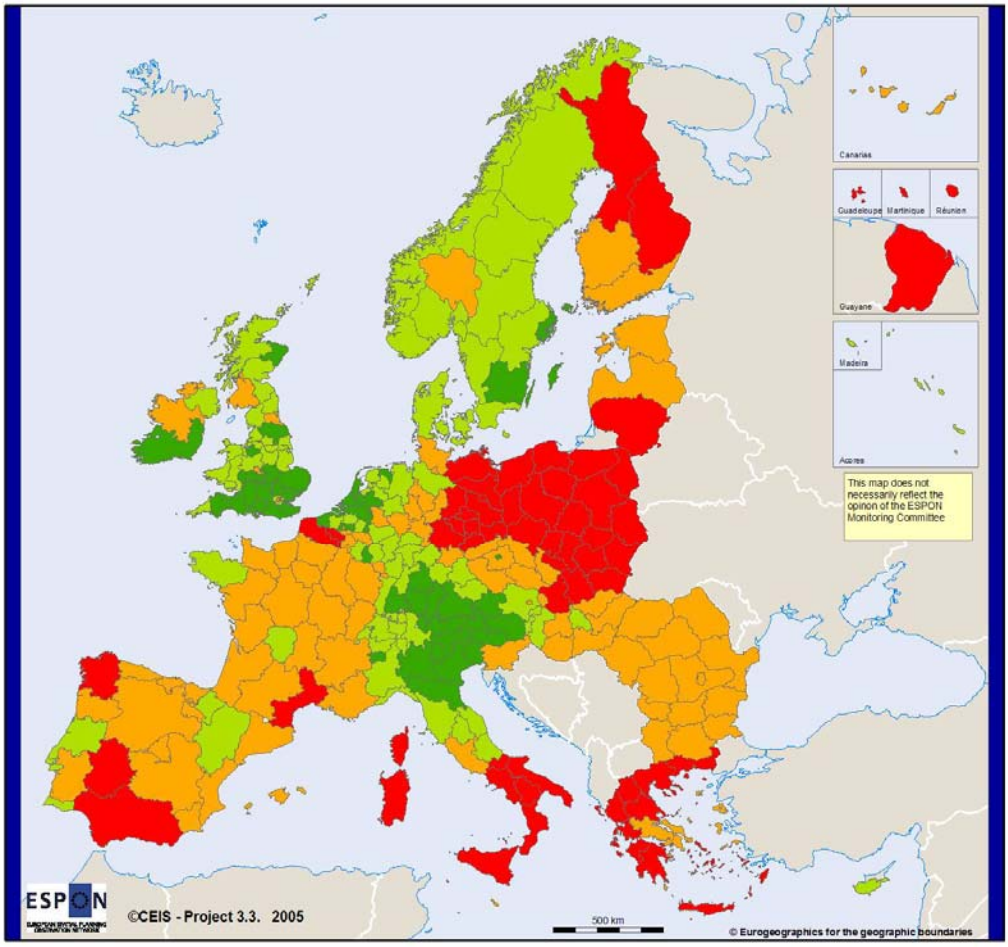
Legend

CATEGORY "BUYING POWER"

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C5b- "CONSUMPTION TENDENCY"



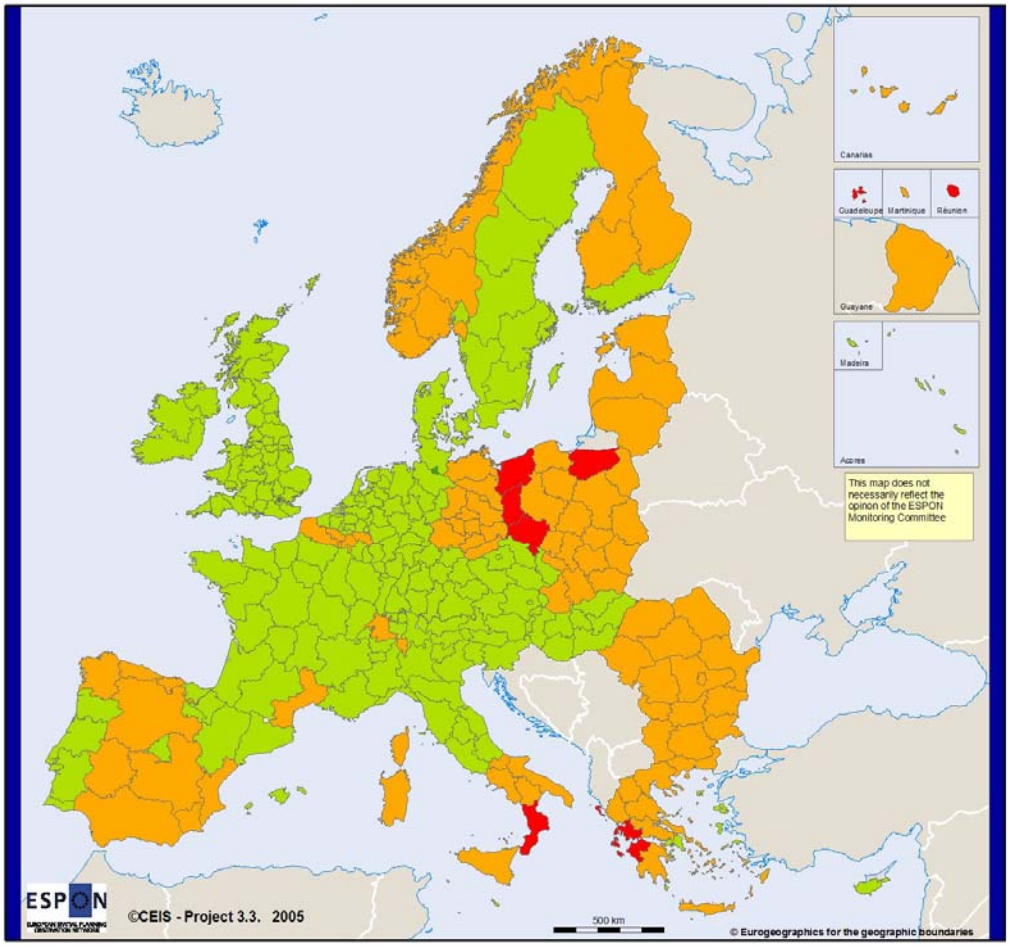
Legend

CATEGORY "CONSUMPTION TENDENCY"

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C5b- "CONSUMPTION TENDENCY"



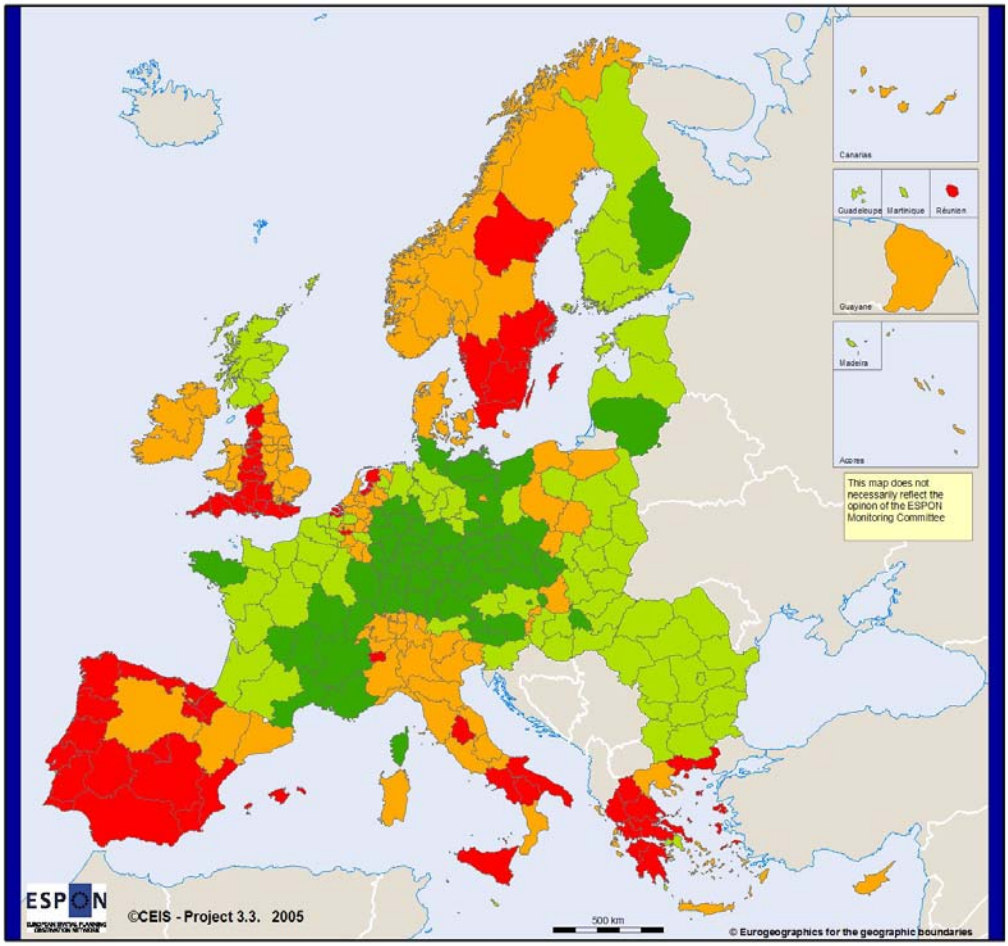
Legend

INDICATOR "CONSUMPTION TENDENCY"

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C6- "HEALTH SYSTEM"



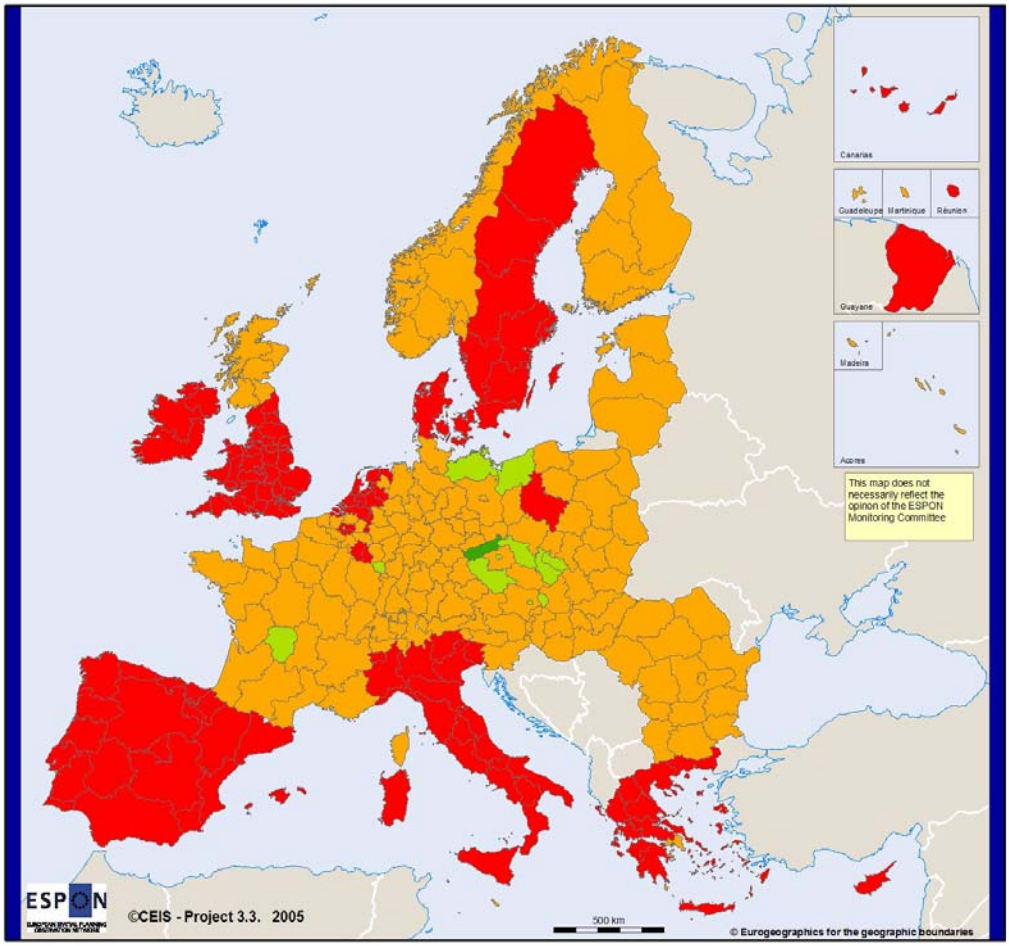
Legend

Hospital beds per 100,000 inh.

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C6- "HEALTH SYSTEM"



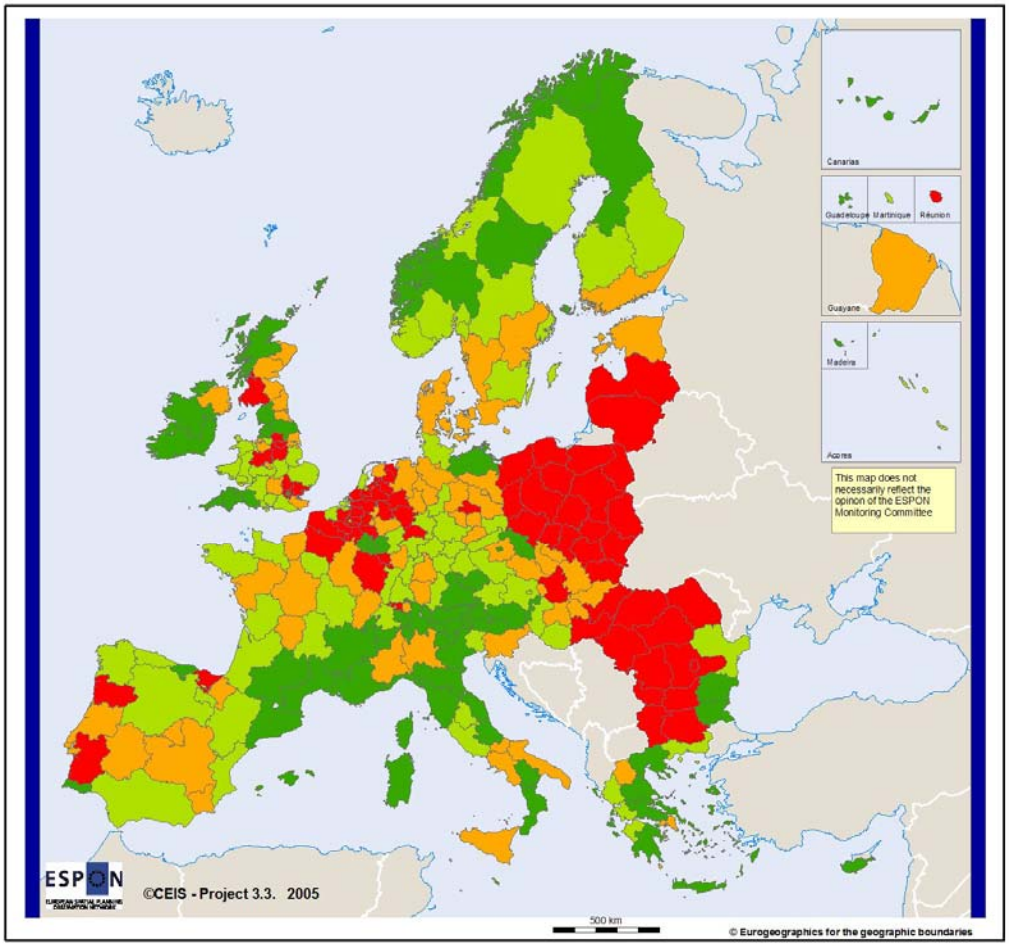
Legend

Hospital beds per 100,000 inh.

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C7a- "TOURISM OPPORTUNITIES"



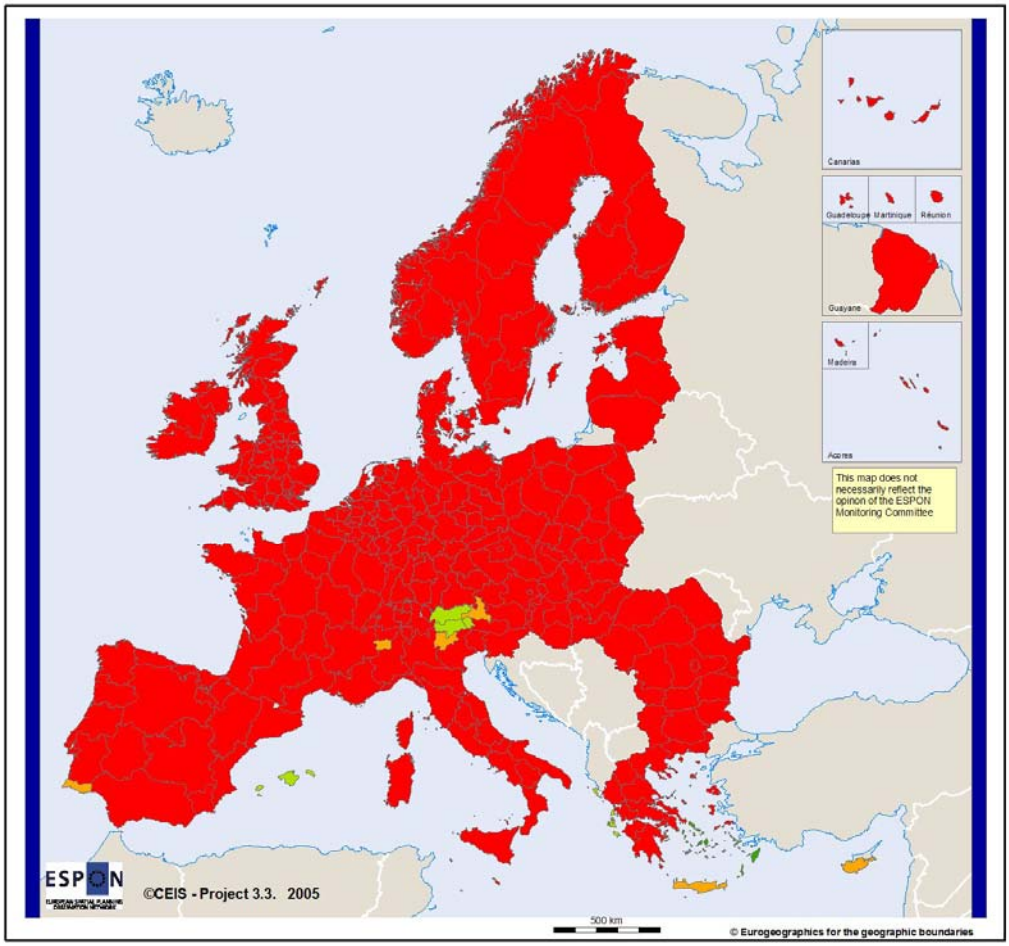
Legend

Hotel beds per 100,000 inh.

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C7a- "TOURISM OPPORTUNITIES"



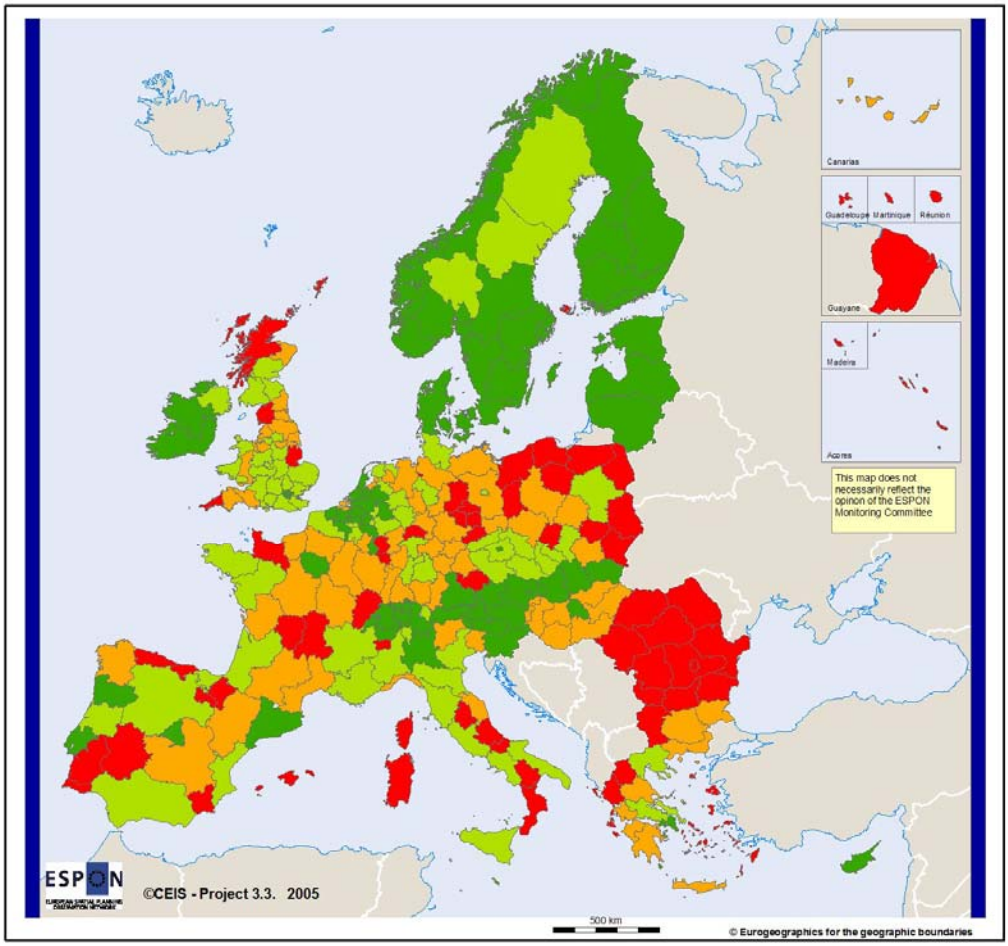
Legend

Hotel beds per 100,000 inh.

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C7b- "CULTURAL OPPORTUNITIES"



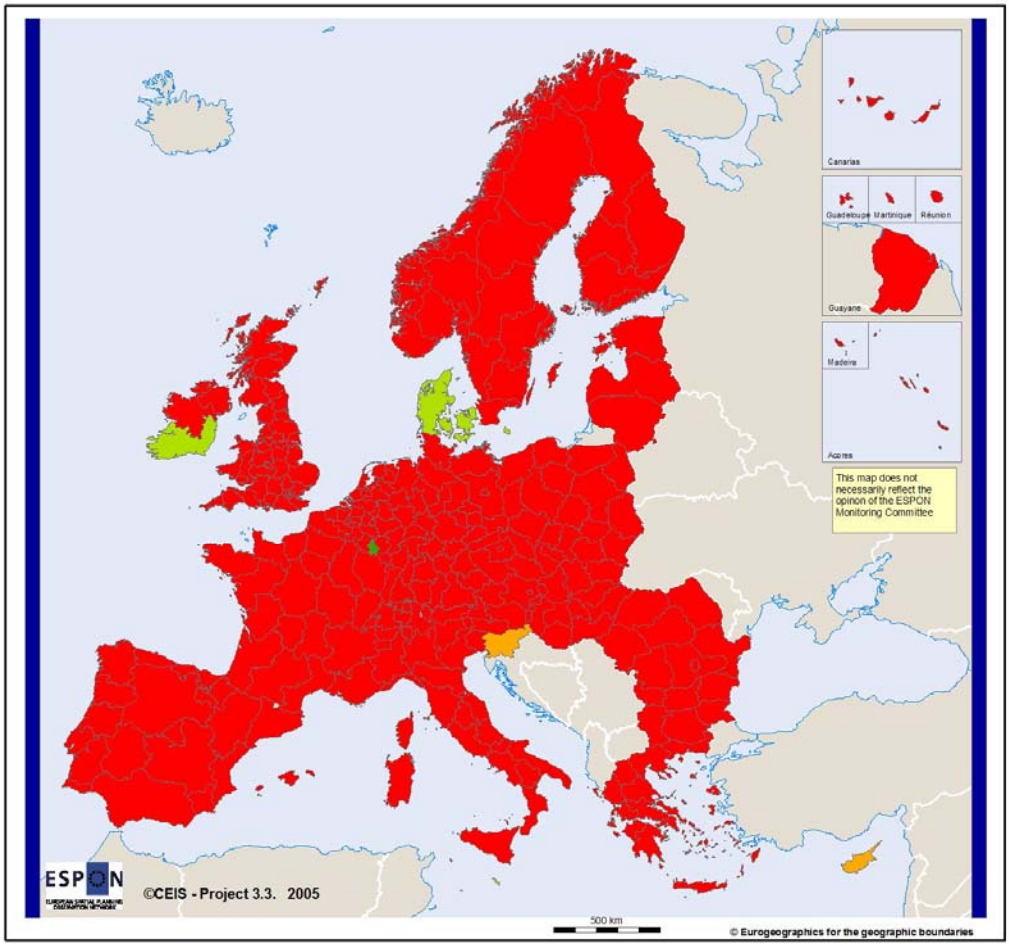
Legend

Expenditure for recreation and culture (by GDPat market prices)

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C7b- "CULTURAL OPPORTUNITIES"



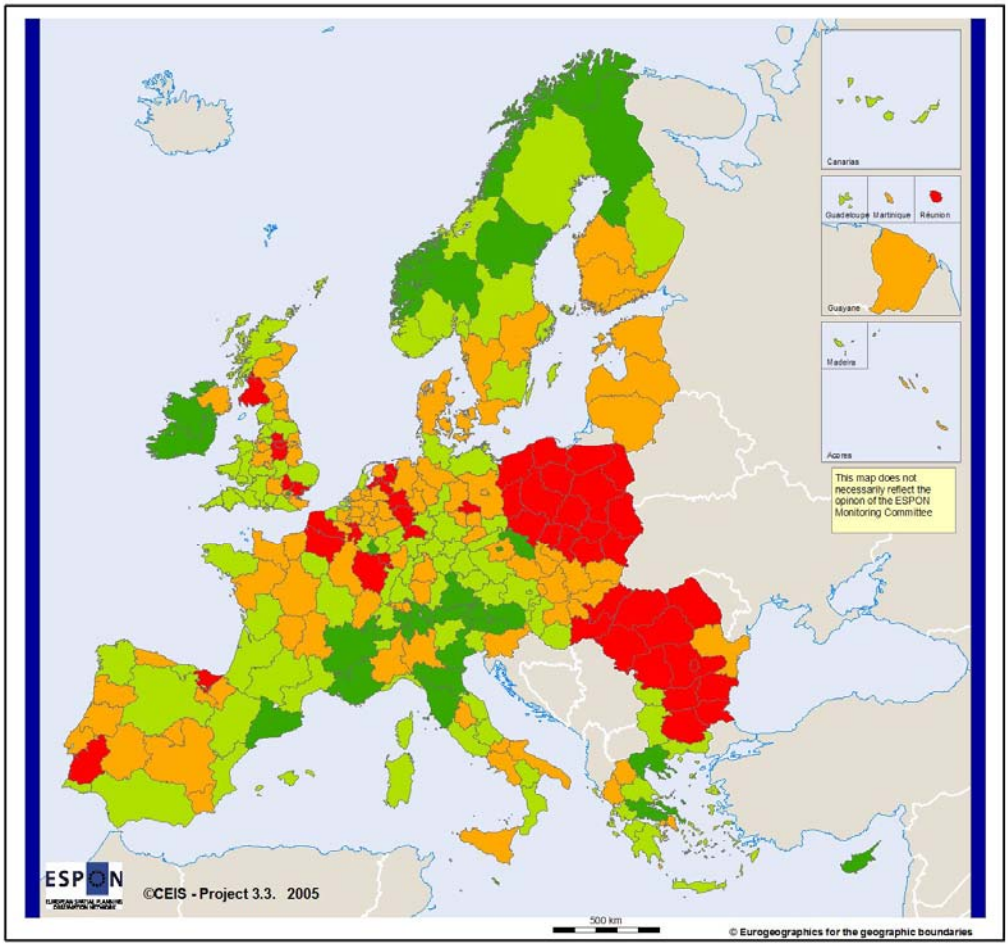
Legend

Expenditure for recreation and culture (by GDPat market prices)

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C8- "LEVEL OF LEISURE"



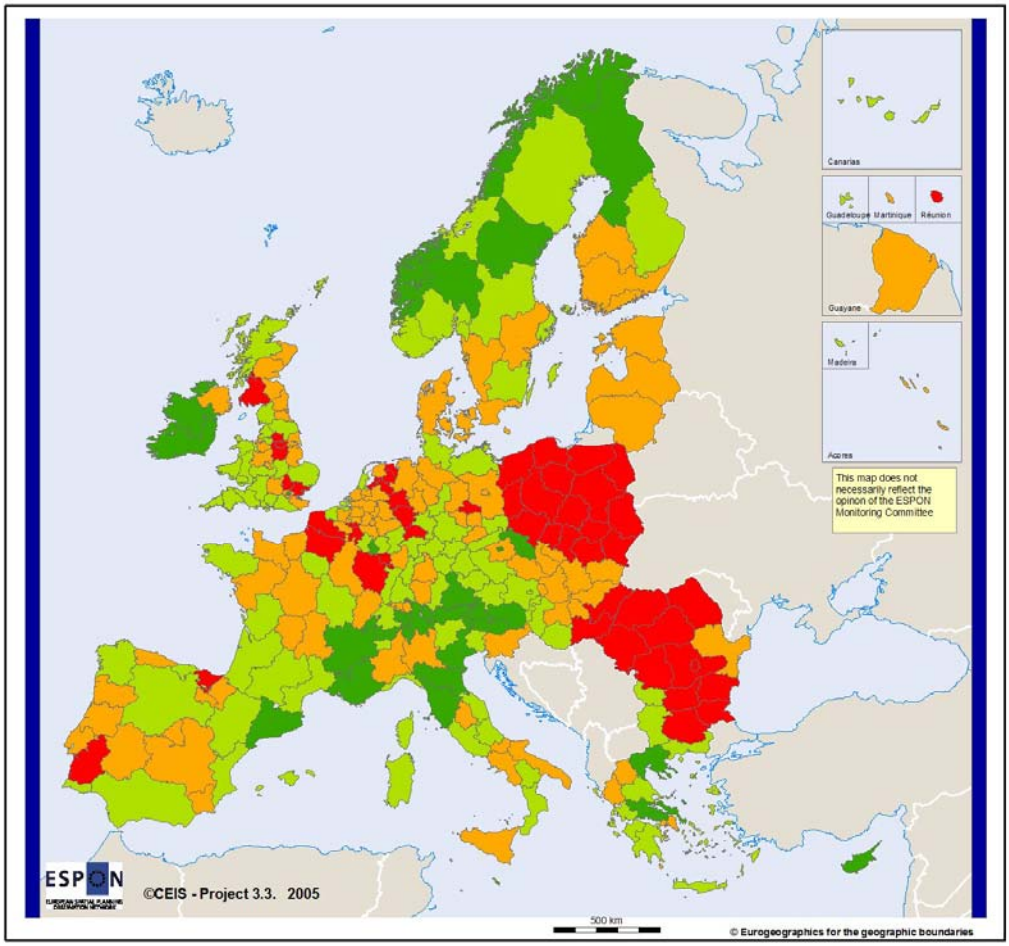
Legend

Level of Leisure

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C8- "LEVEL OF LEISURE"



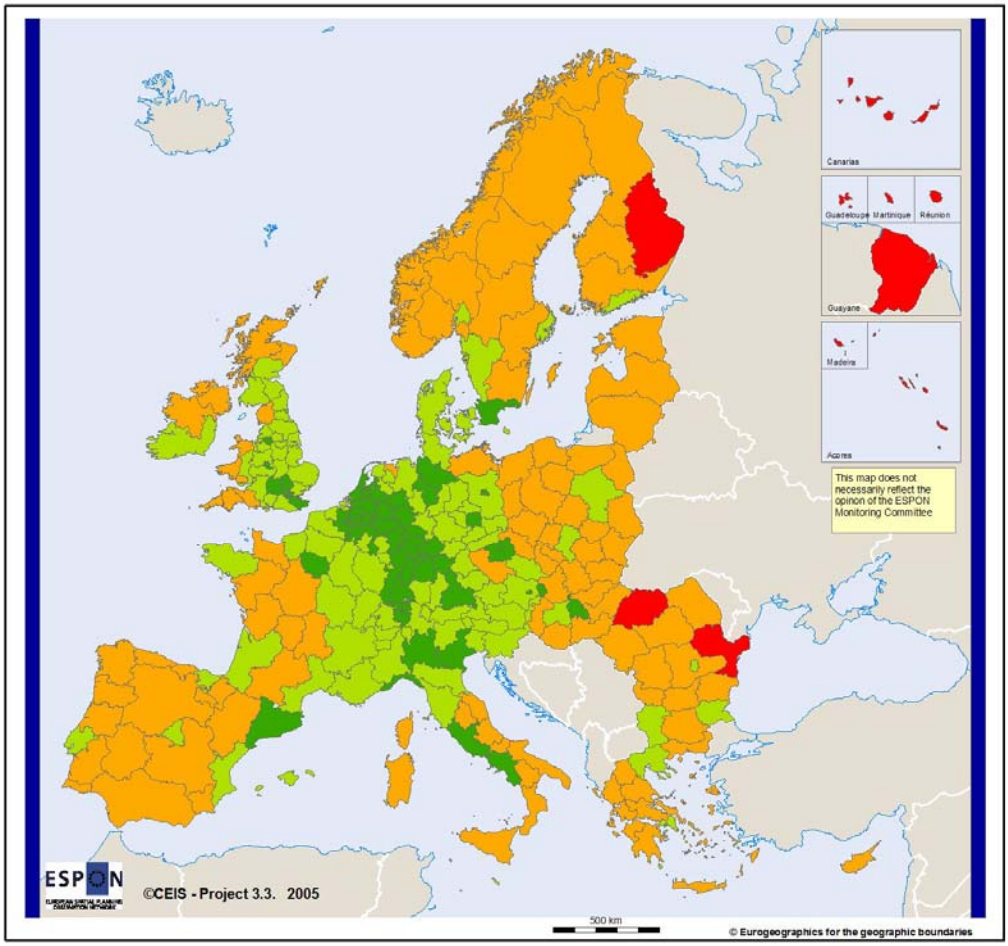
Legend

Level of Leisure

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C9- "PHYSICAL ACCESSIBILITY"



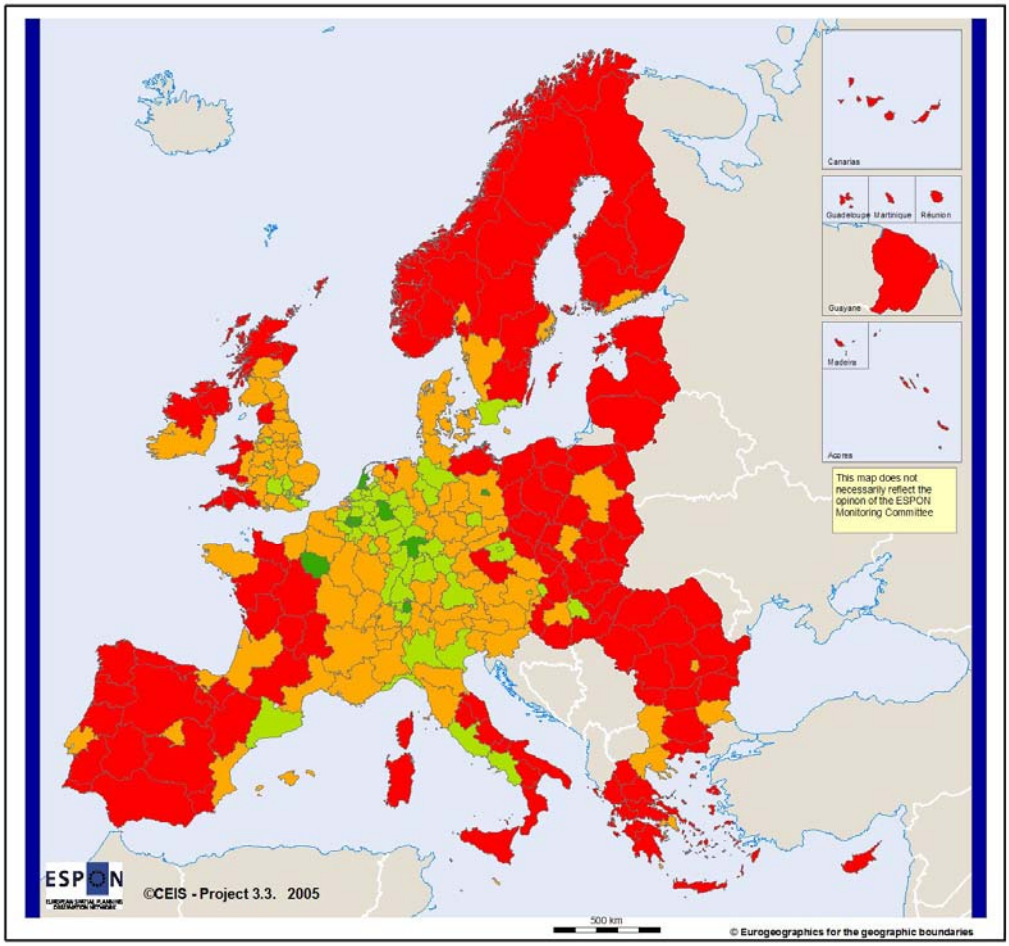
Legend

Typology Multimodal Accessibility Potential

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C9- "PHYSICAL ACCESSIBILITY"



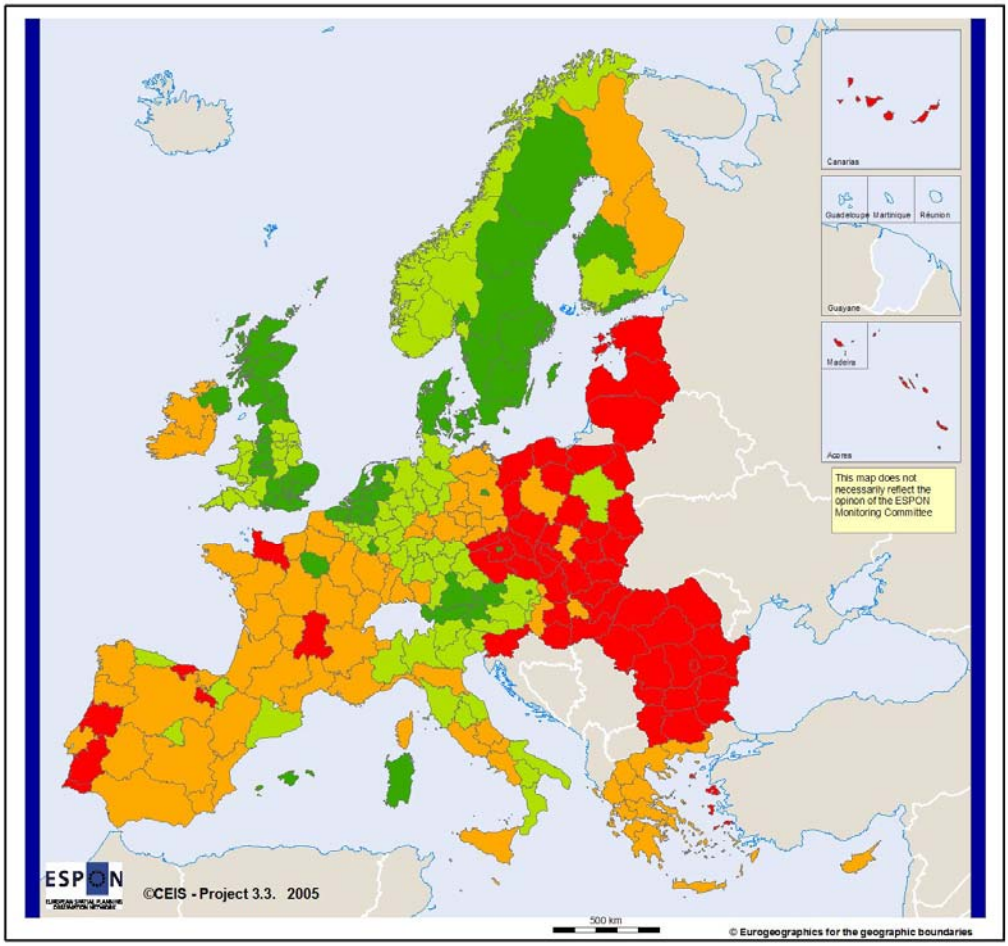
Legend

Typology Multimodal Accessibility Potential

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C10- "LEVEL OF TLC DEVELOPMENT"



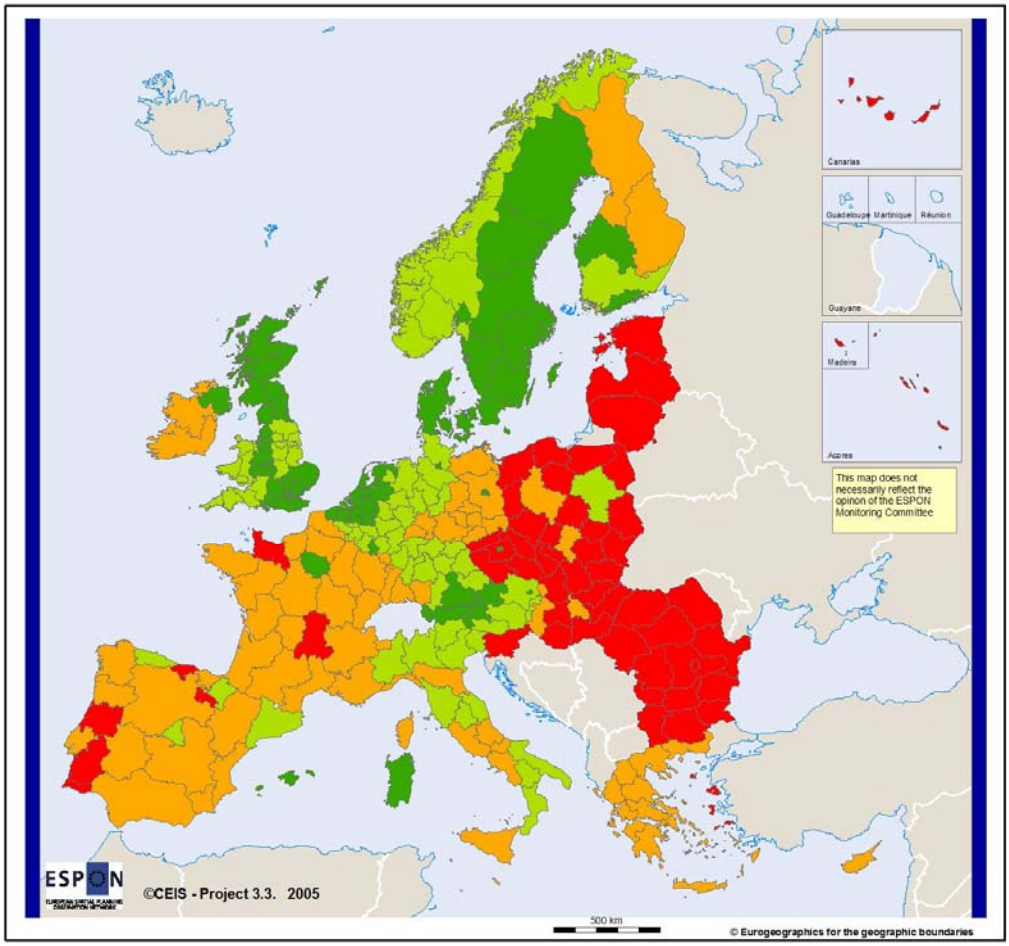
Legend

Level of TLC Development (rank from ESPON proj. 1.2.2)

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C10- "LEVEL OF TLC DEVELOPMENT"



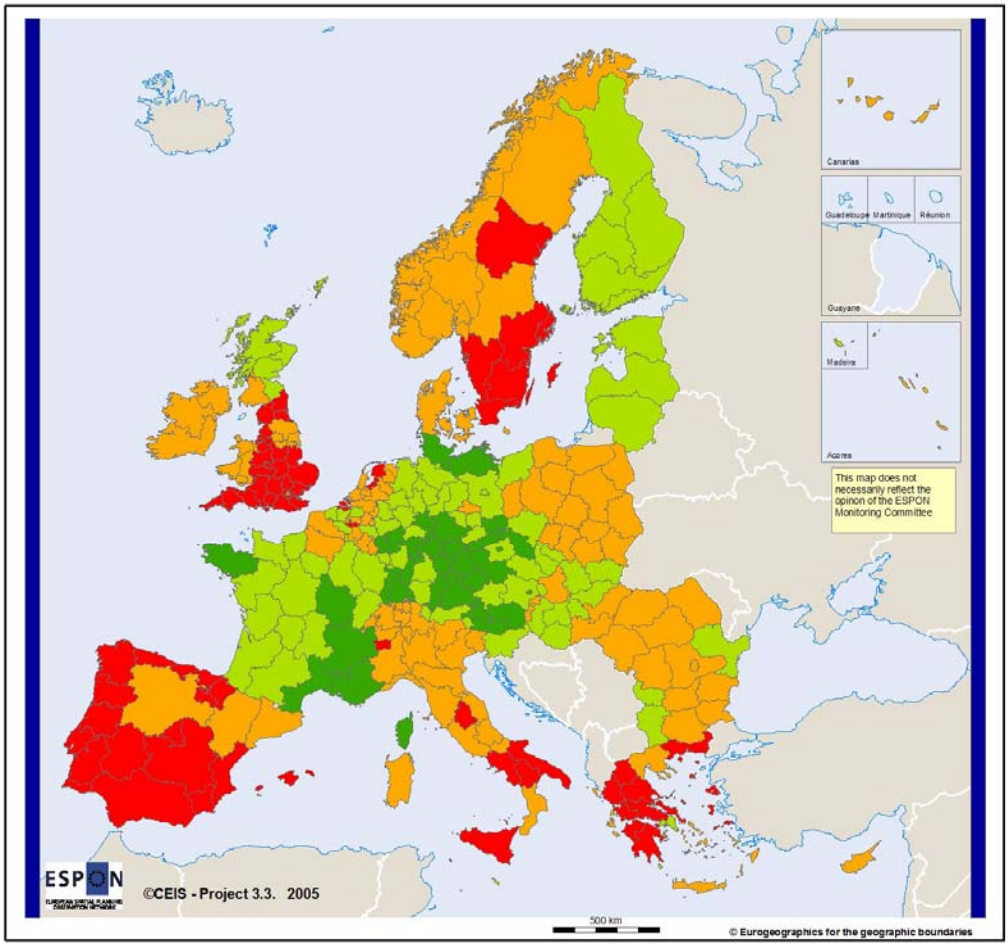
Legend

Level of TLC Development (rank from ESPON proj. 1.2.2)

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C11- SECTOR "INFRASTRUCTURAL VARIABLES OF COHESION"



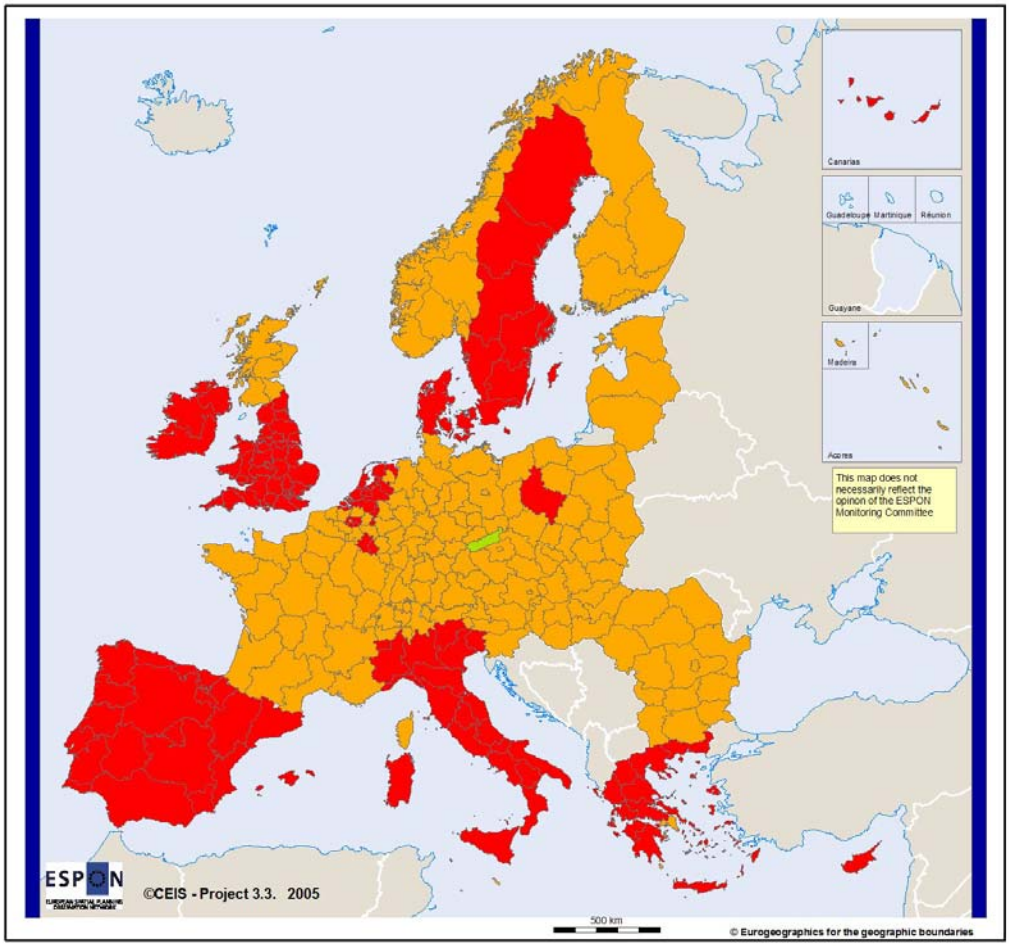
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C11- SECTOR "INFRASTRUCTURAL VARIABLES OF COHESION"



Legend

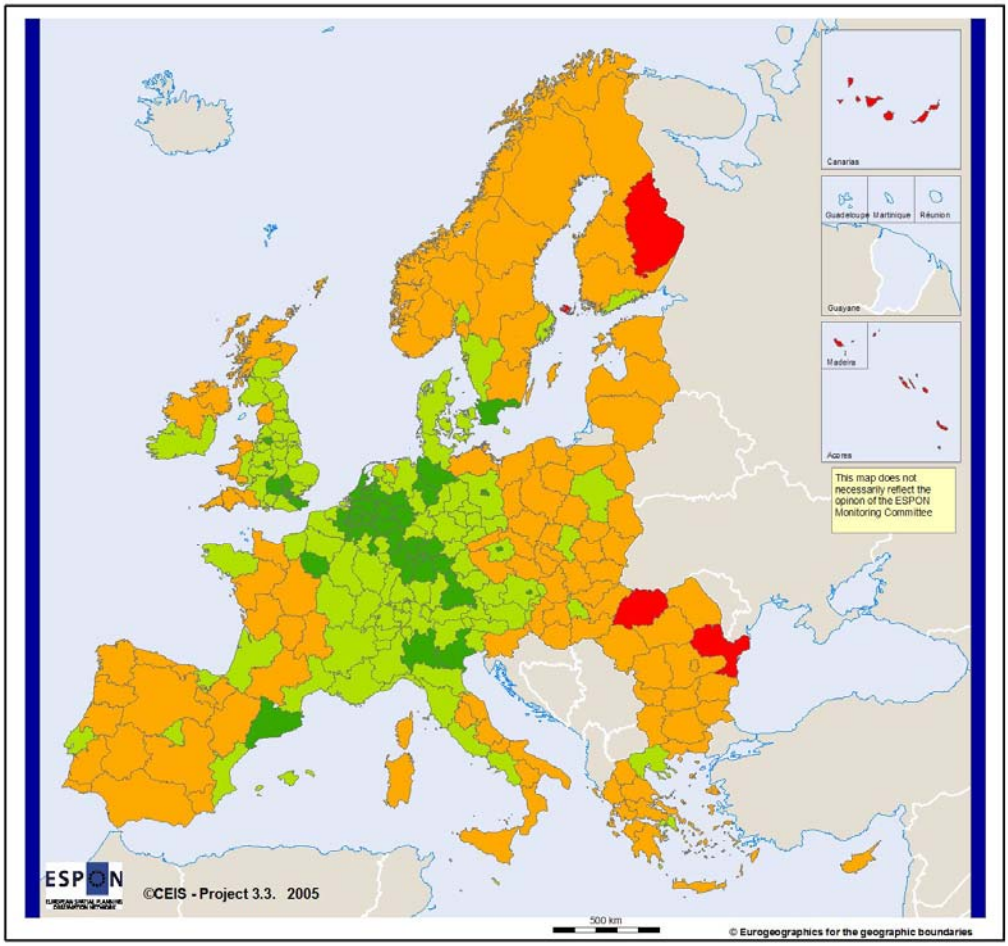
IND11

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C11a- "PHYSICAL ACCESSIBILITY AND TELECOMMUNICATION"



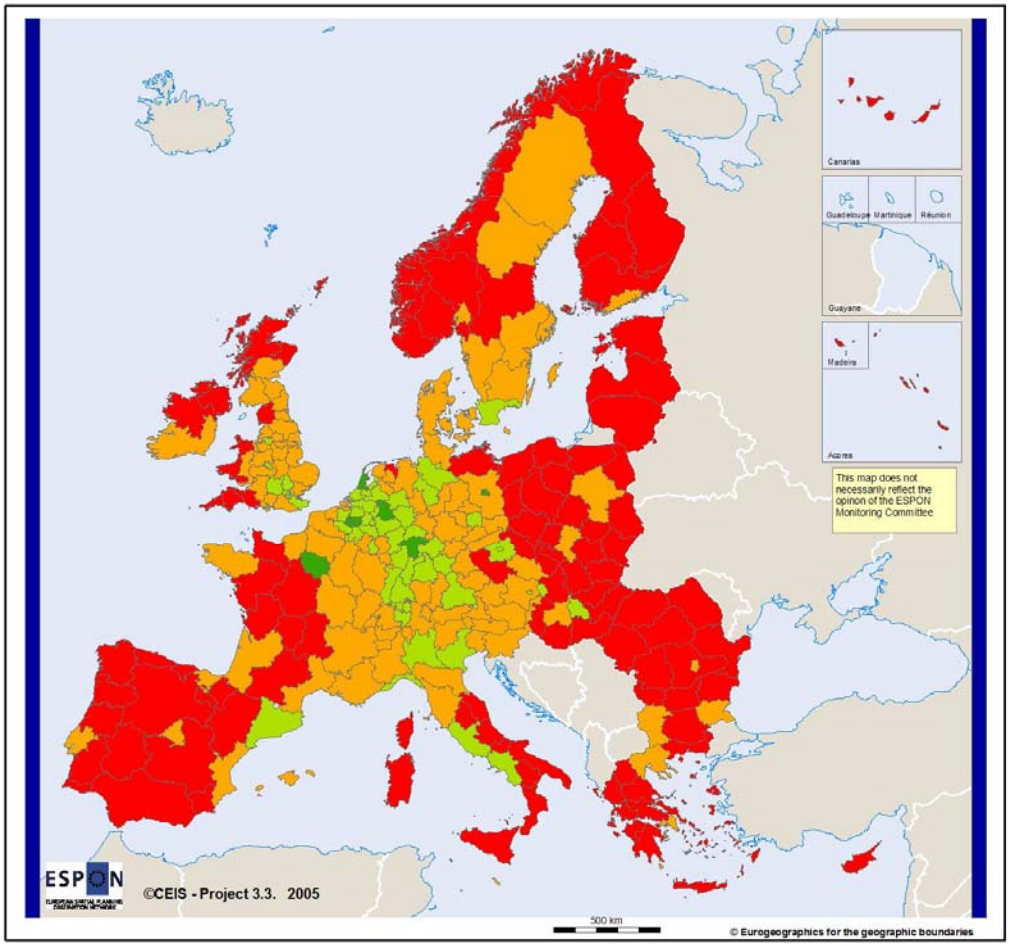
Legend

Physical Accessibility and Telecommunication

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C11a- "PHYSICAL ACCESSIBILITY AND TELECOMMUNICATION"



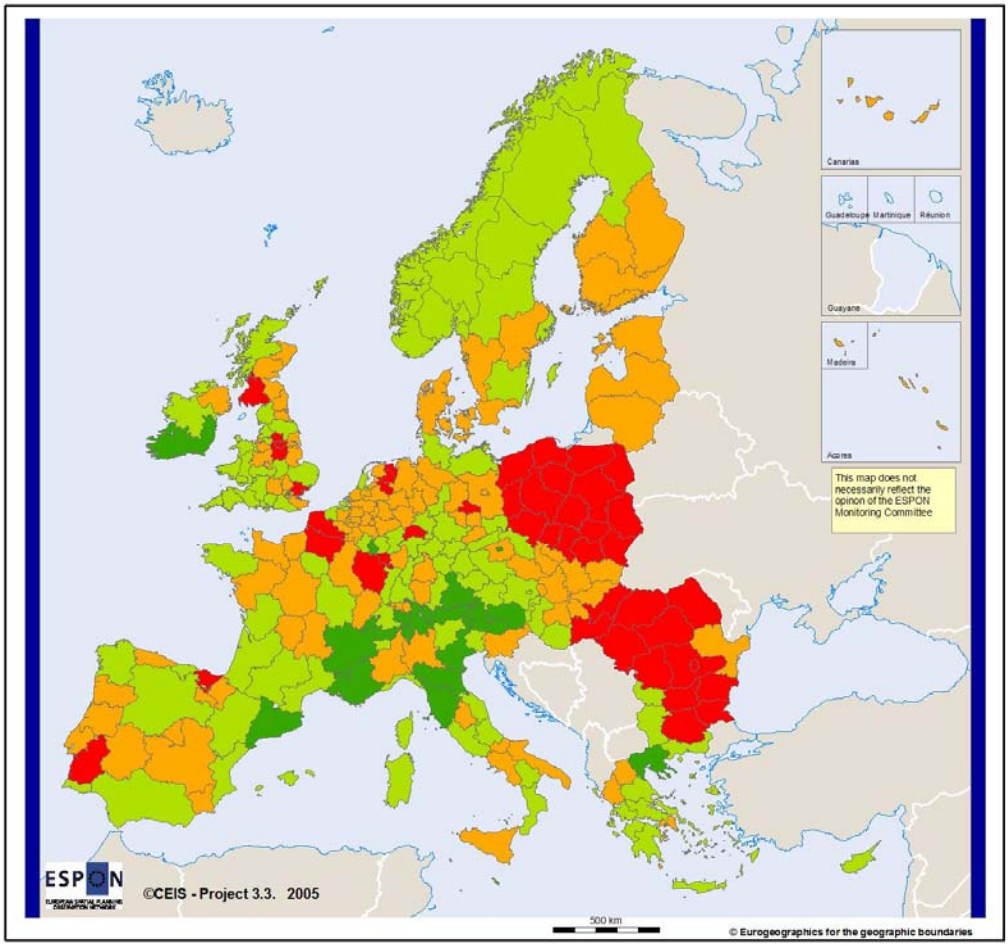
Legend

Physical Accessibility and Telecommunication

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C11b- "PHYSICAL ACCESSIBILITY-TELECOMMUNICATION-LEISURE"



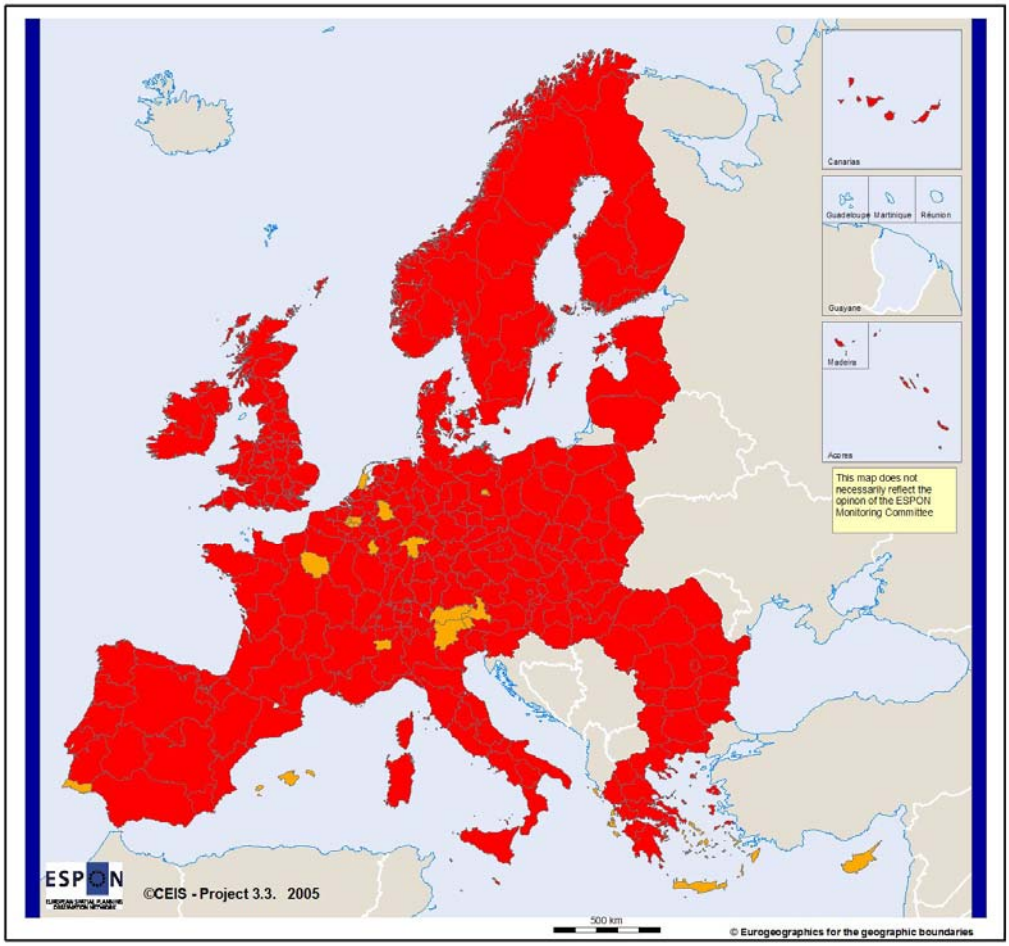
Legend

Physical Accessibility - TLC - Leisure

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C11b- "PHYSICAL ACCESSIBILITY-TELECOMMUNICATION-LEISURE"



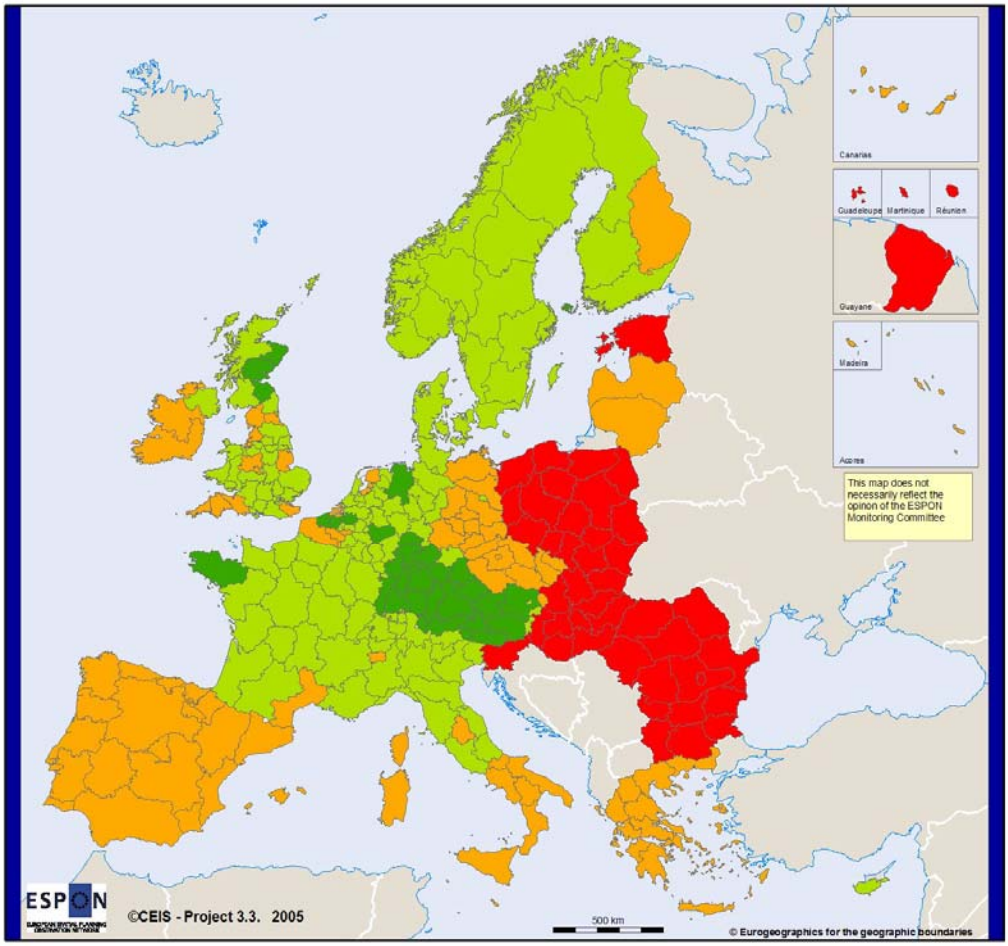
Legend

Physical Accessibility - TLC - Leisure

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C12- TYPOLOGY "QUALITY OF LIFE"



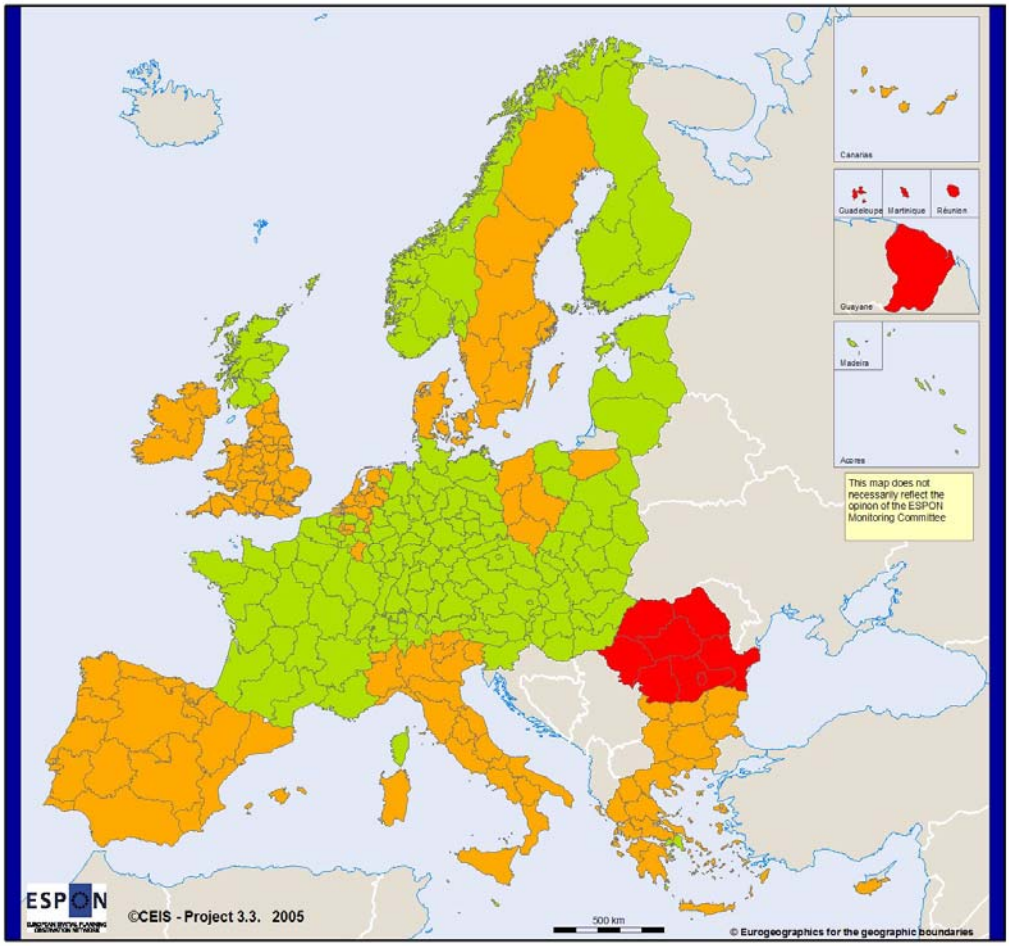
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C12- TYPOLOGY "QUALITY OF LIFE"



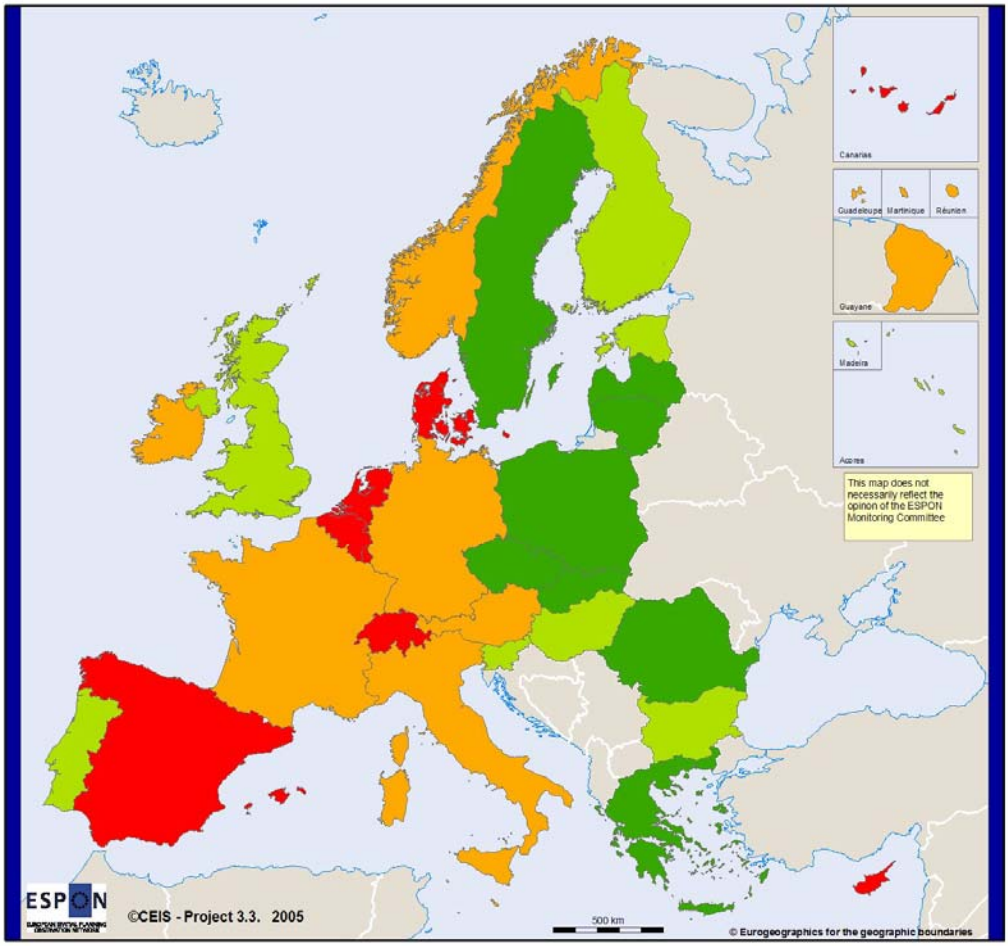
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C13a- "LEVEL OF MUNICIPAL WASTE"



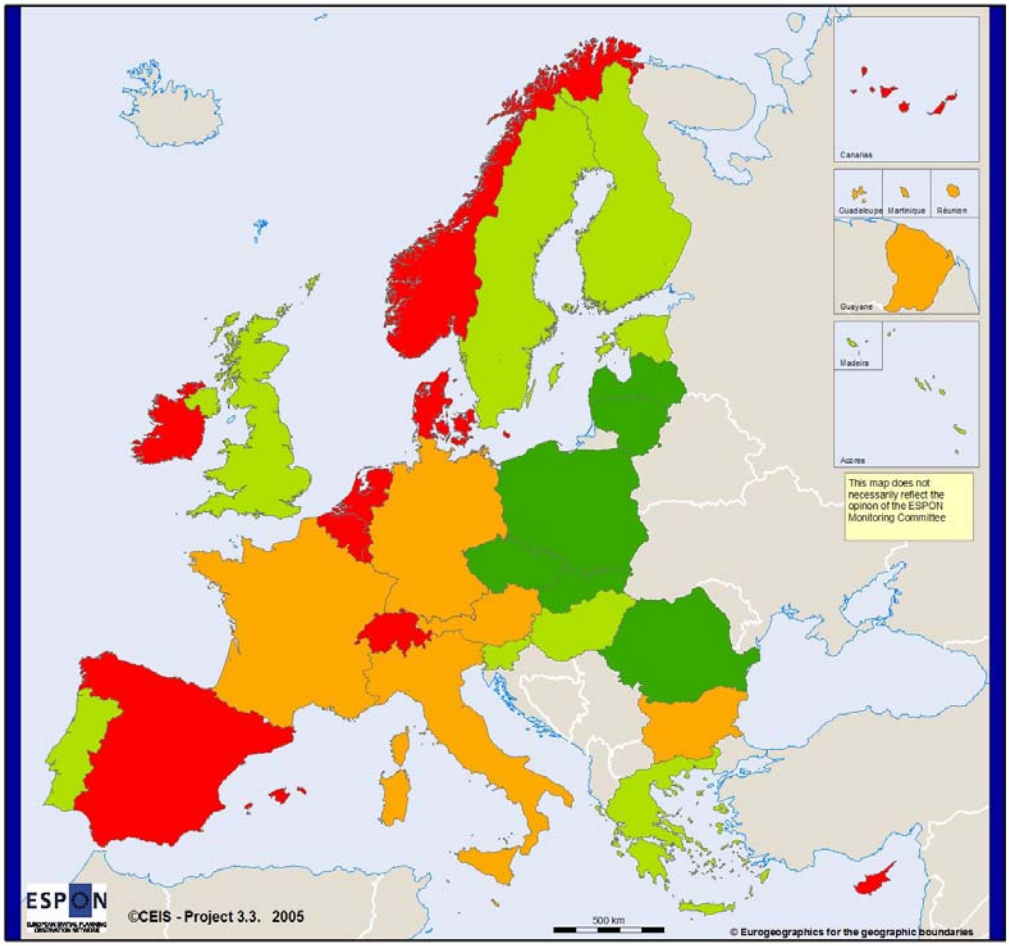
Legend

MUNICIPAL WASTE/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C13a- "LEVEL OF MUNICIPAL WASTE"



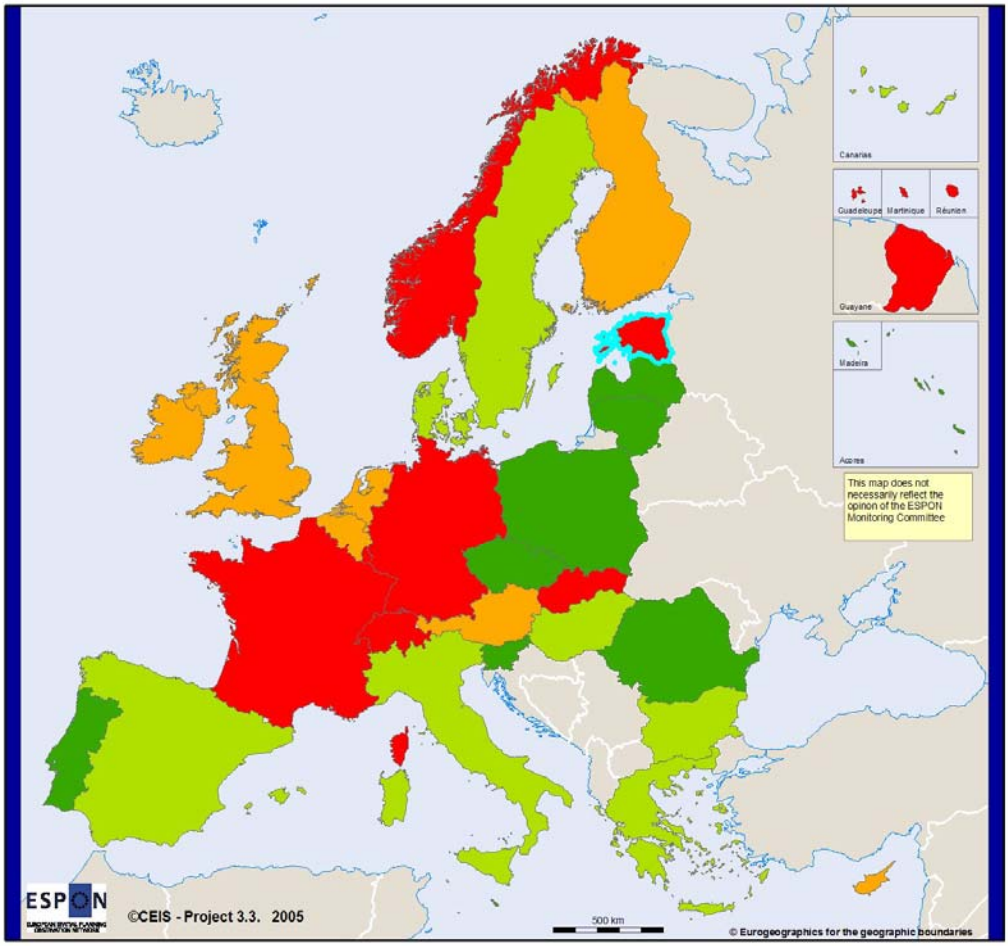
Legend

MUNICIPAL WASTE/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C13b- "LEVEL OF HAZARDOUS WASTE"



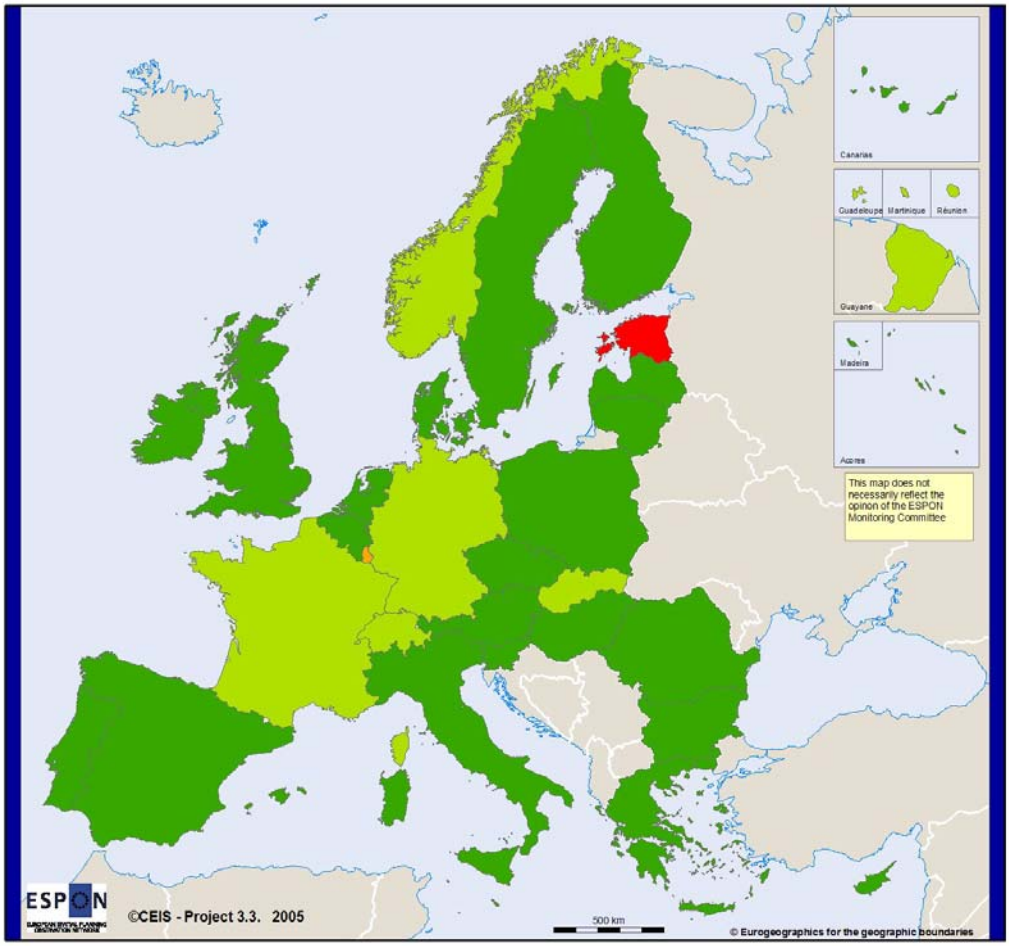
Legend

HAZARDOUS WASTE/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C13b- "LEVEL OF HAZARDOUS WASTE"



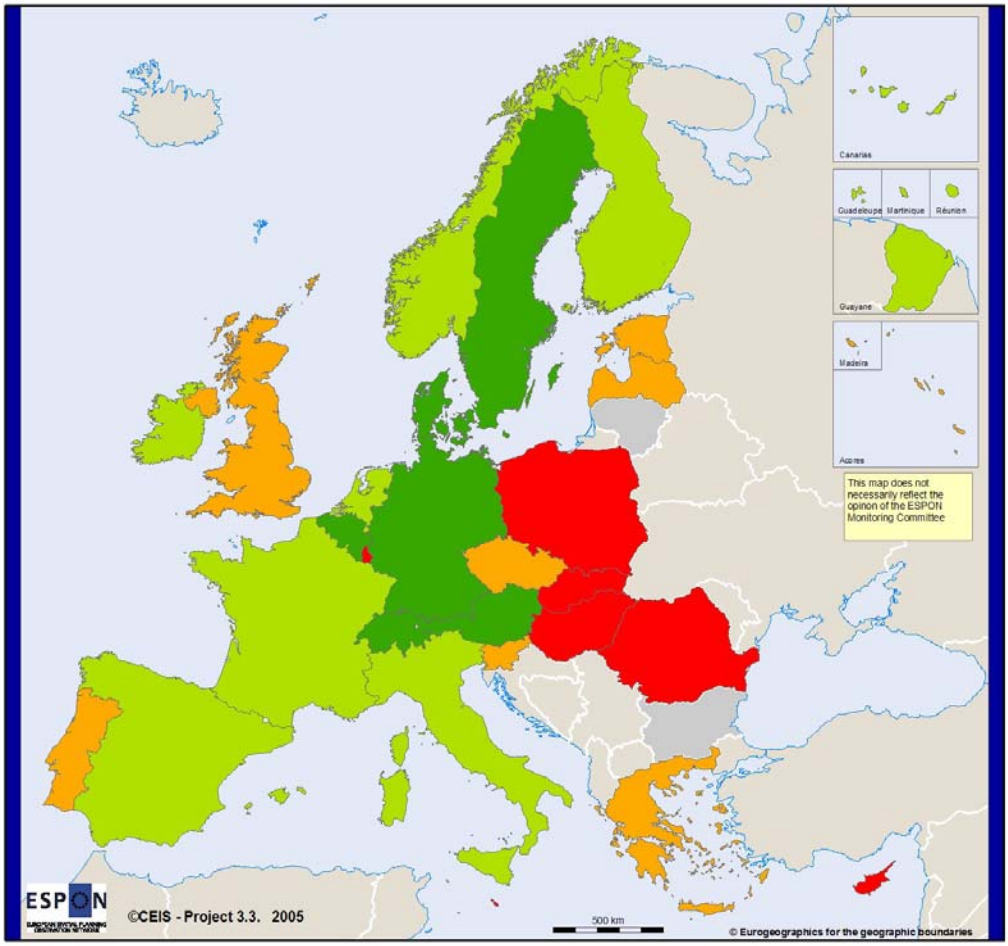
Legend

HAZARDOUS WASTE/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C13c- "LEVEL OF WASTE RECYCLING"



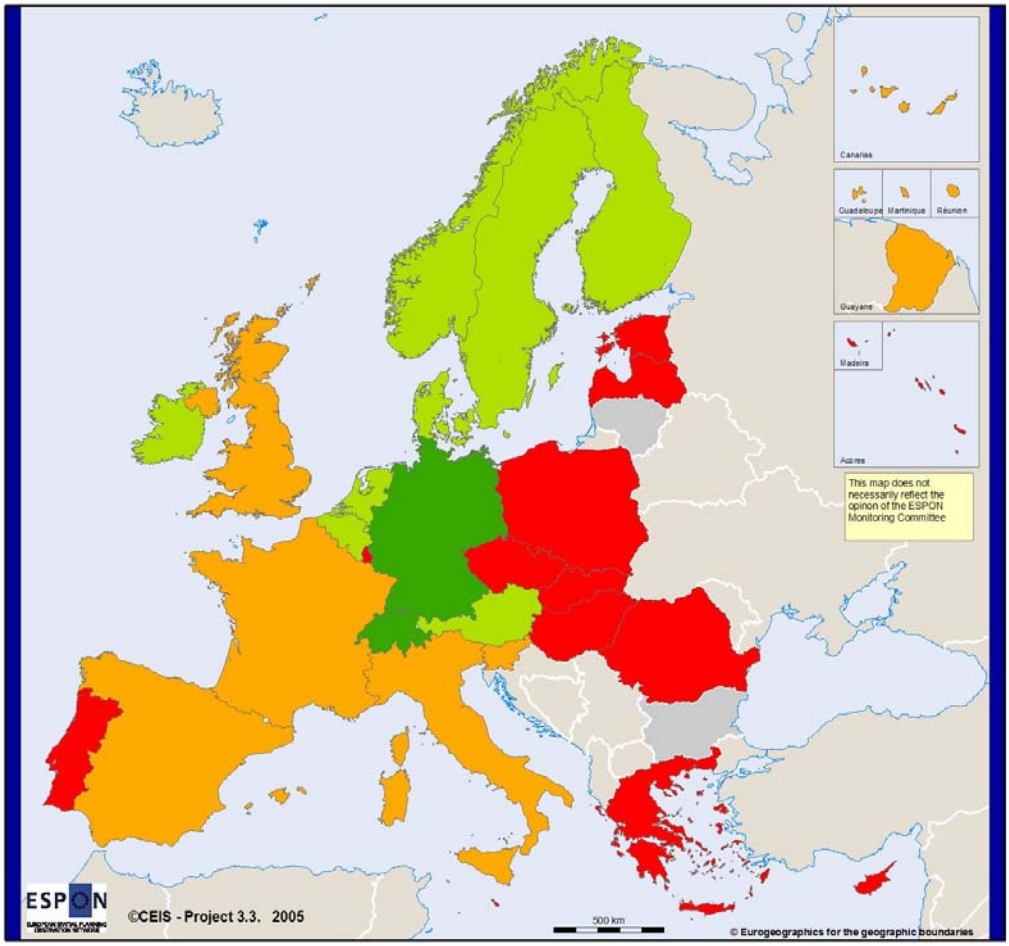
Legend

WASTE RECYCLED/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C13c- "LEVEL OF WASTE RECYCLING"



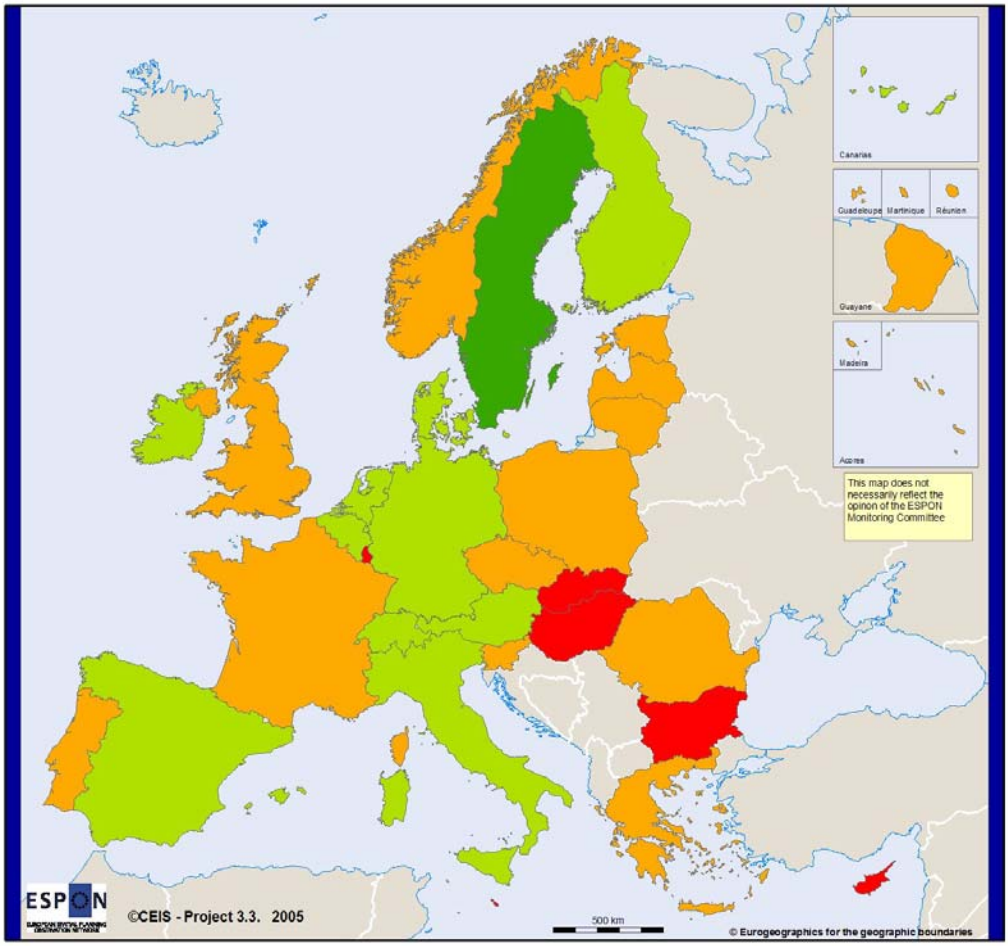
Legend

WASTE RECYCLED/POP - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C14- "WASTE"



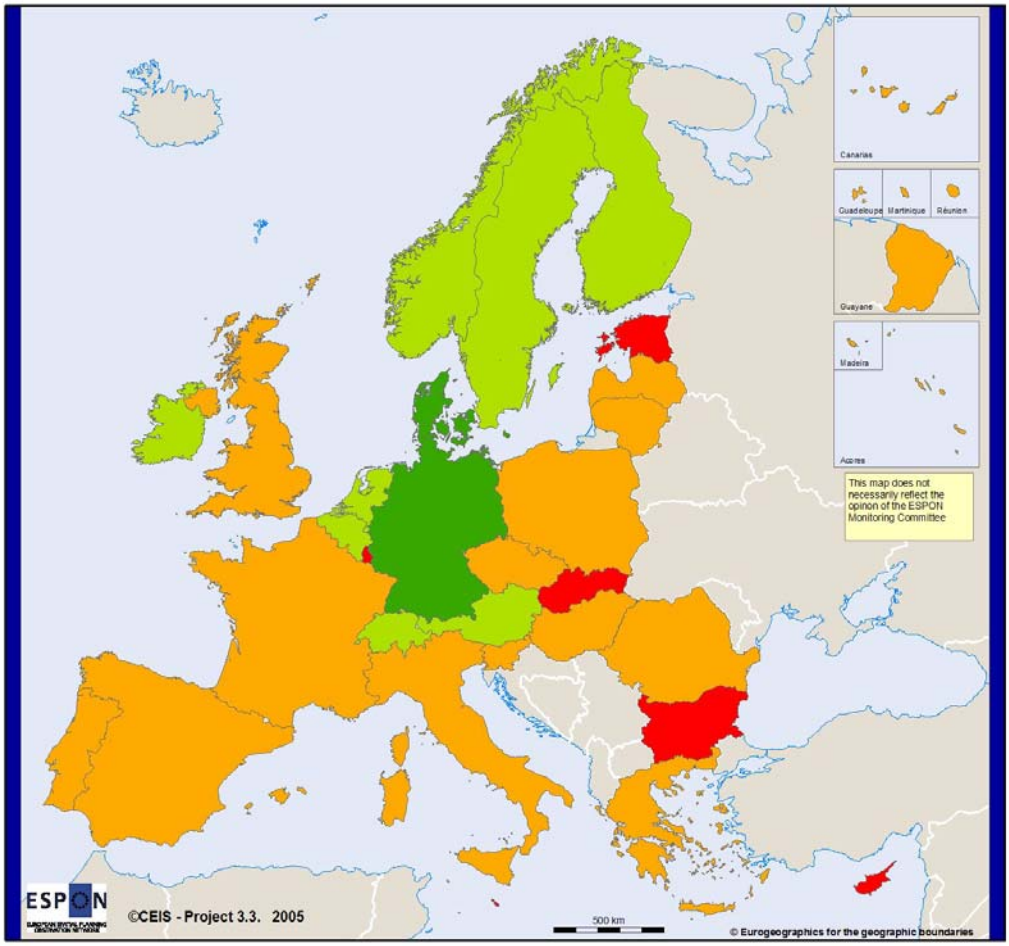
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C14- "WASTE"



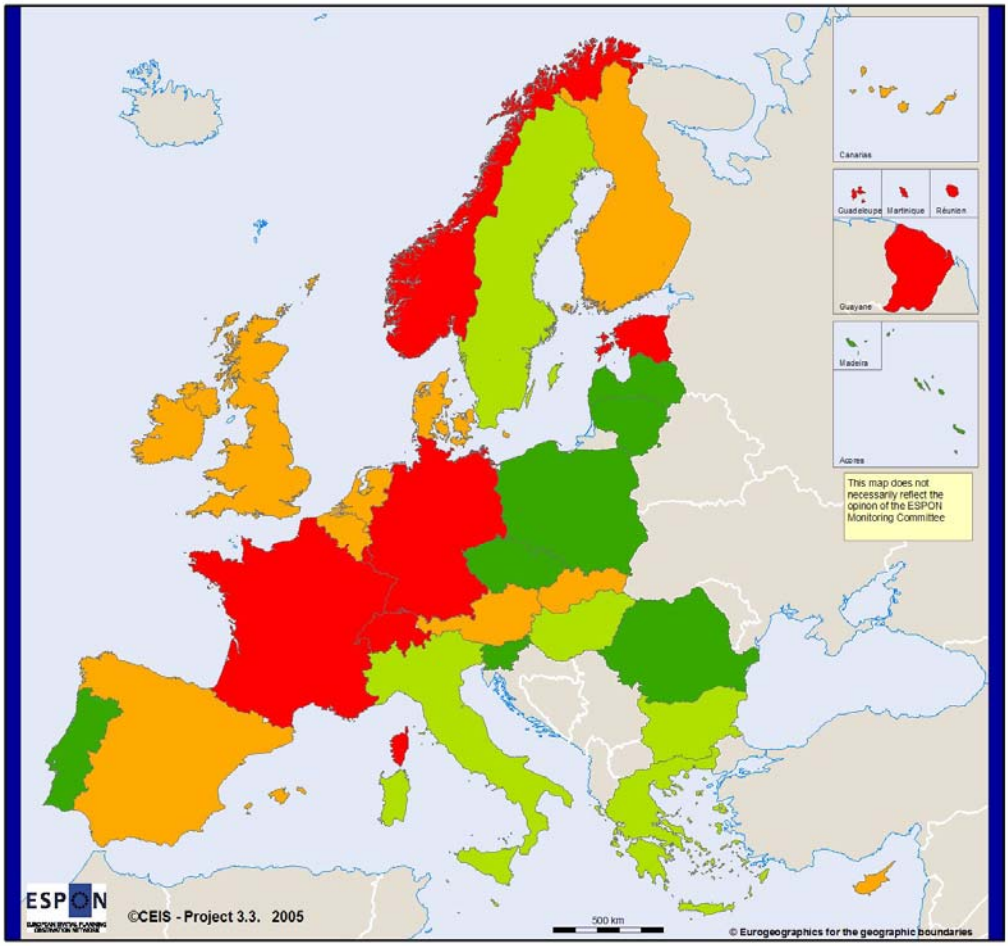
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C14a- "MUNICIPAL & HAZARDOUS WASTE"



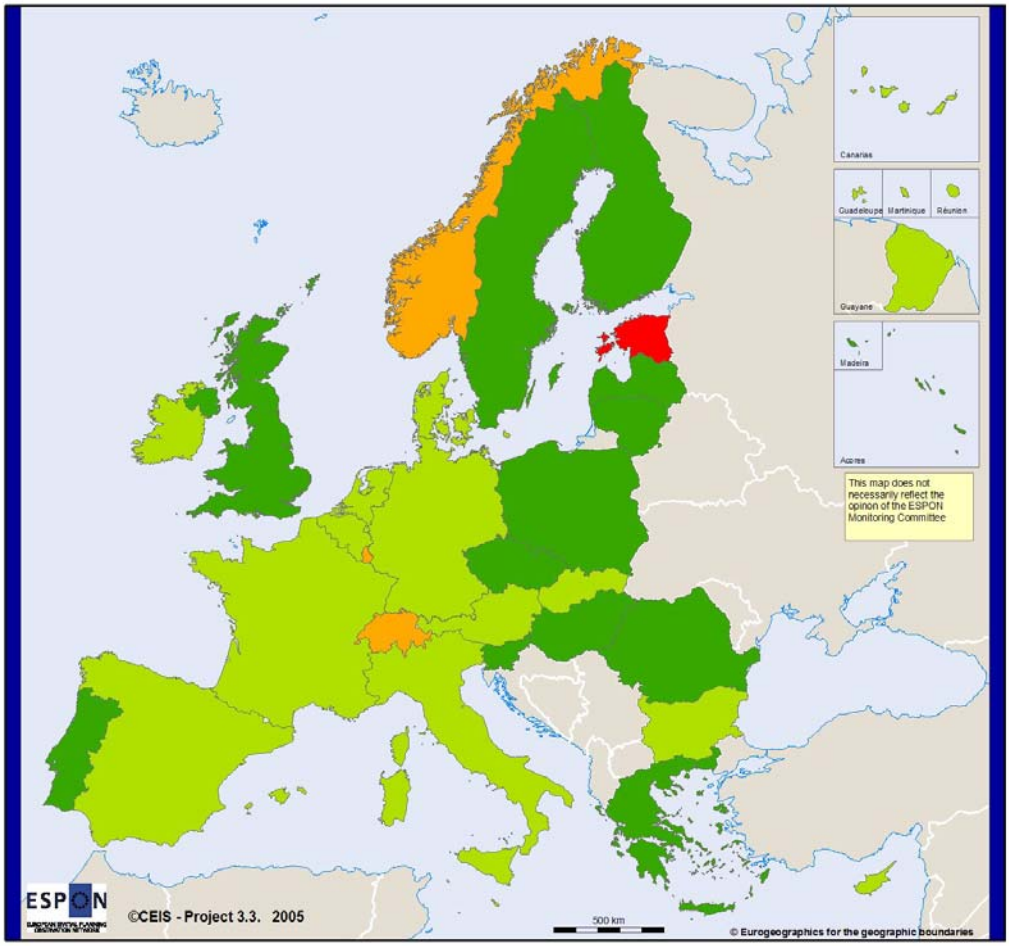
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C14a- "MUNICIPAL & HAZARDOUS WASTE"



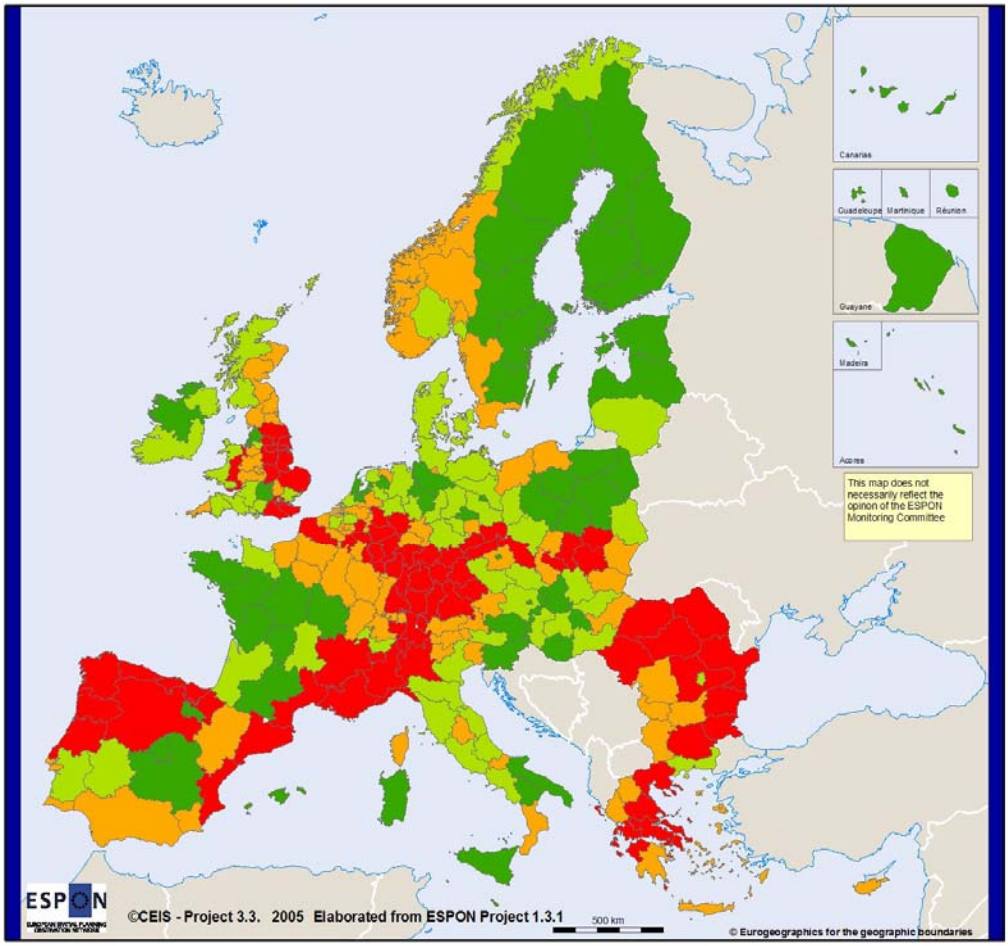
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C15- "AGGREGATED NATURAL HAZARD "



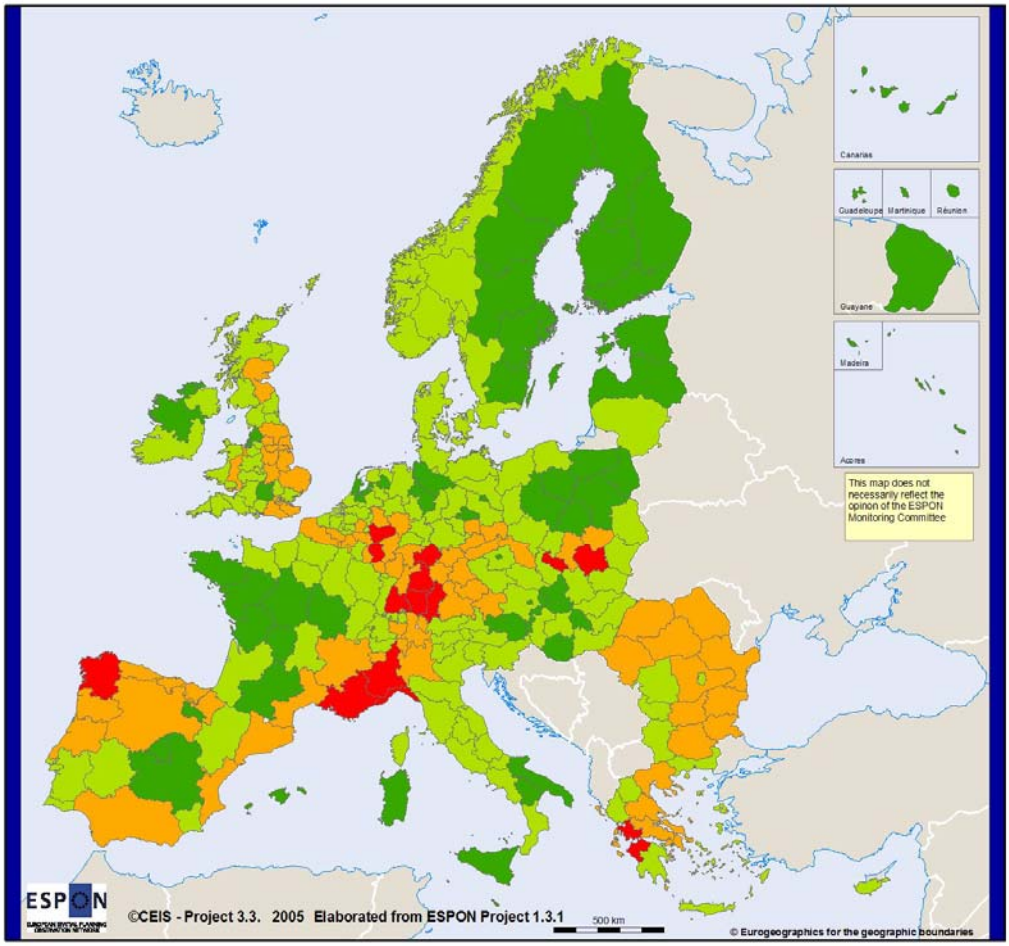
Legend

AGGREGATED RANK

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C15- "AGGREGATED NATURAL HAZARD"



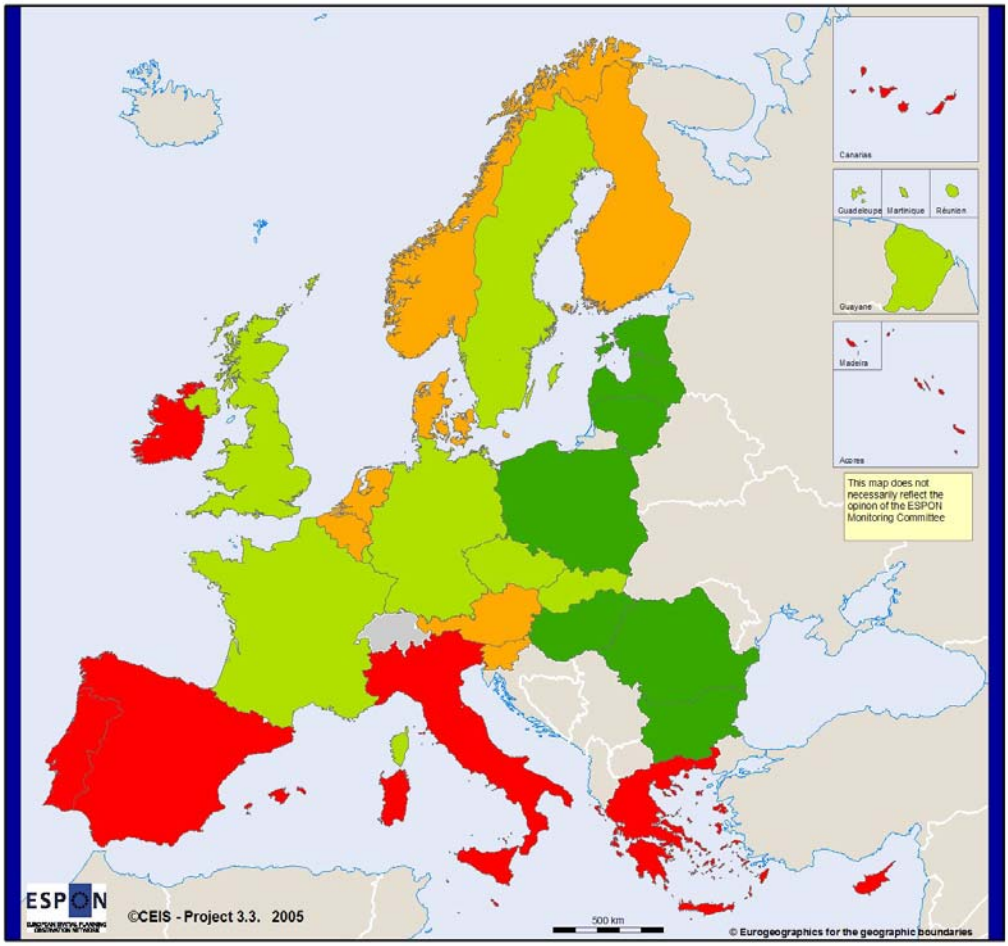
Legend

AGGREGATED RANK

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C16a- "STATE OF THE AIR"



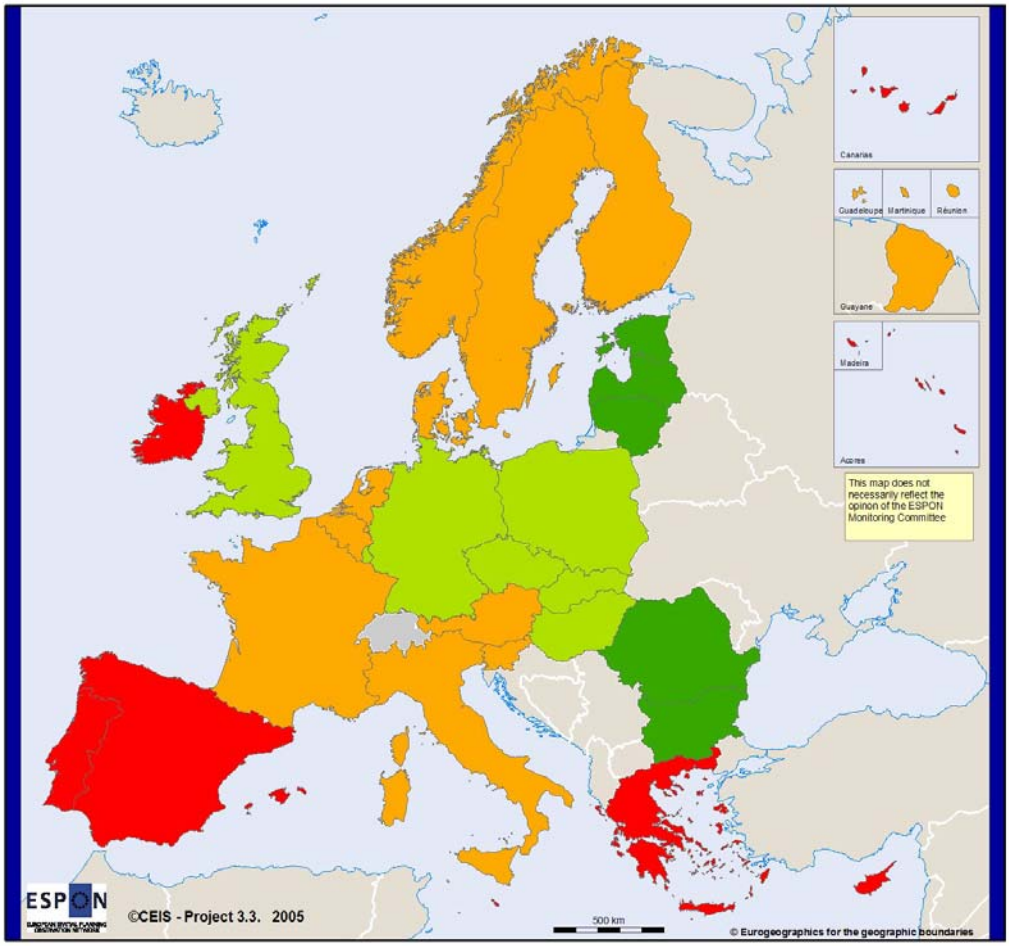
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C16a- "STATE OF THE AIR"



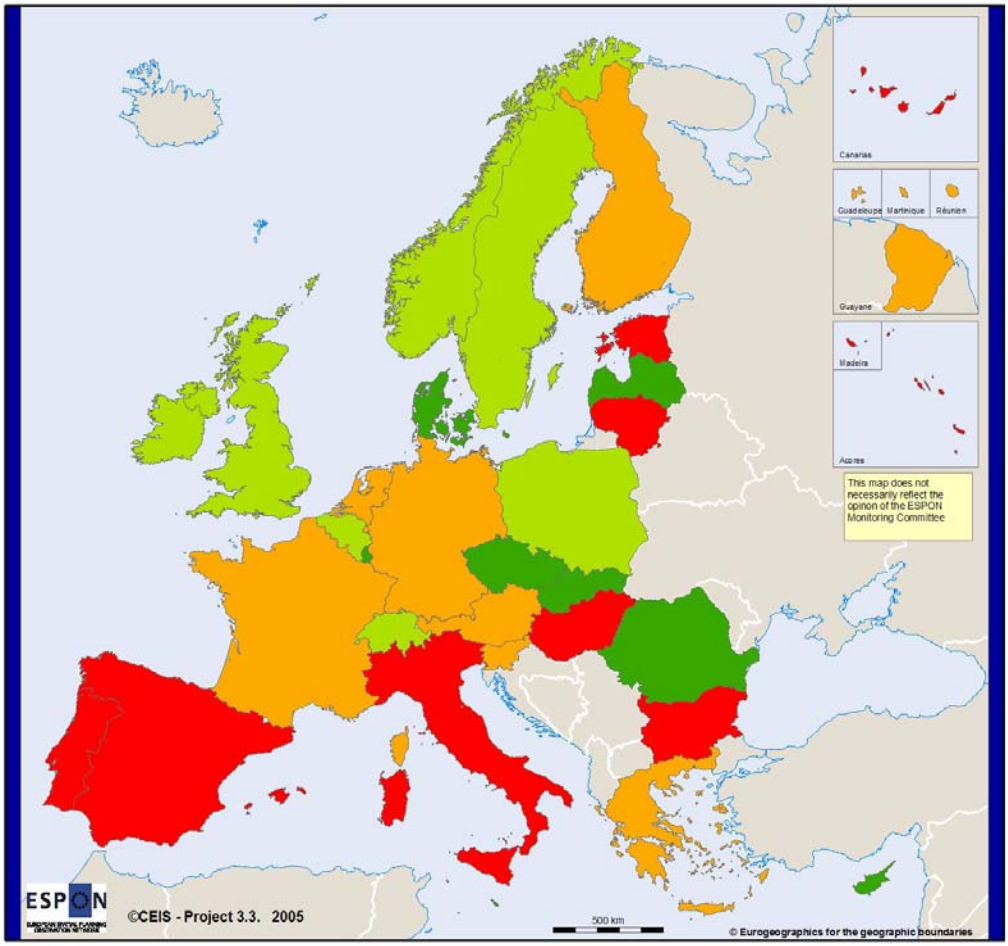
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C16b- "STATE OF WATER (CONSUMPTION)"



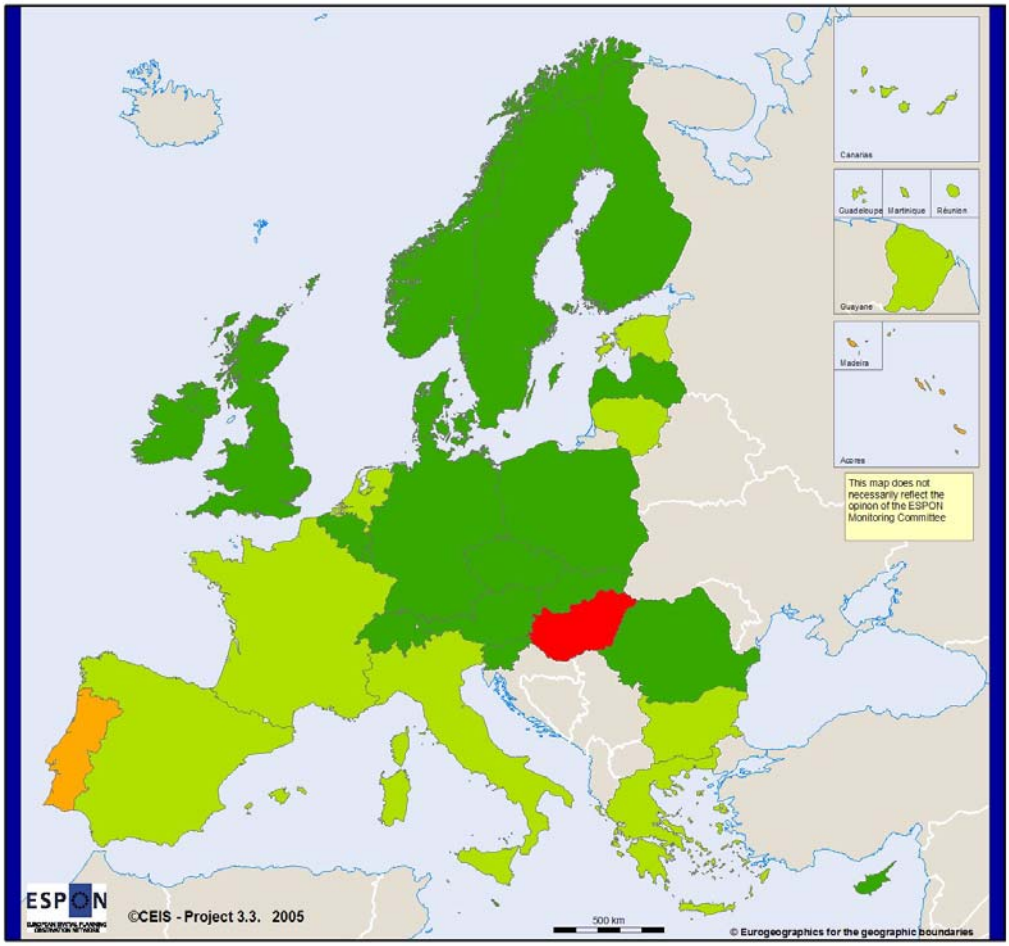
Legend

WATER ABSTRACTION/ POP. - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C16b- "STATE OF WATER (CONSUMPTION)"



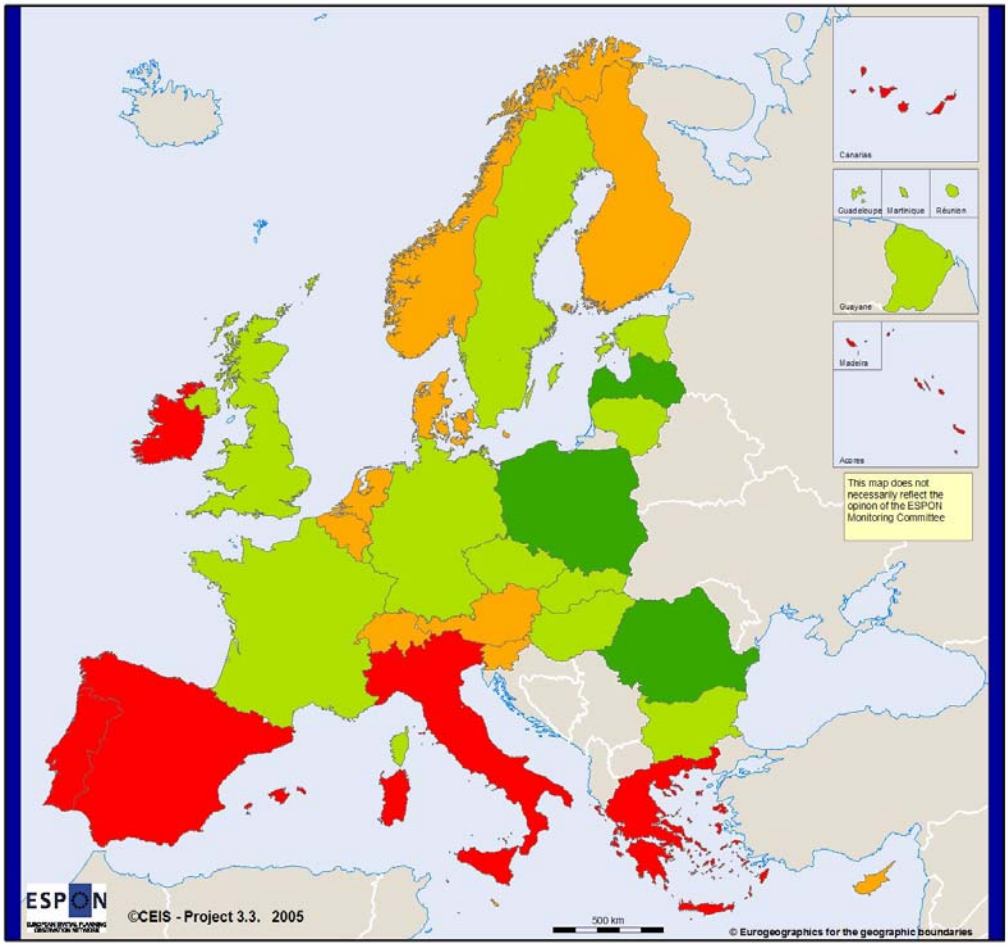
Legend

WATER ABSTRACTION/ POP. - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C17- "STATE OF NATURAL RESOURCES"



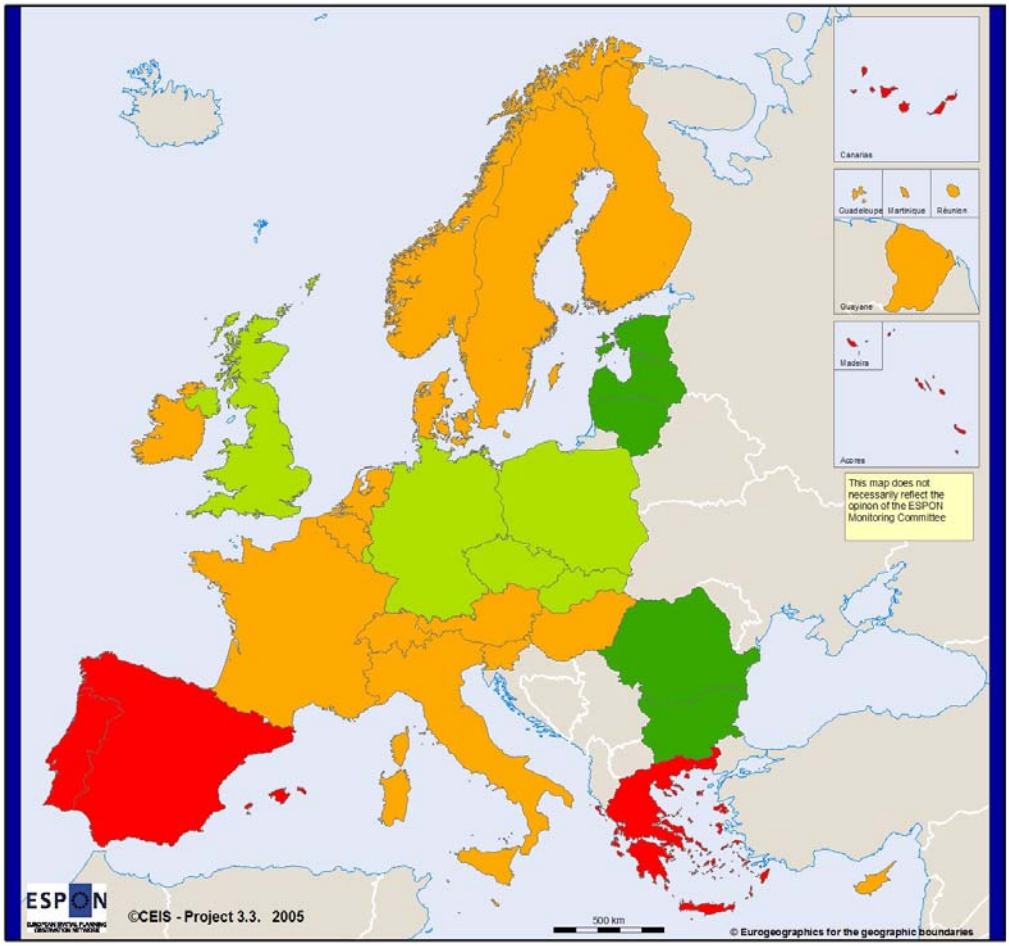
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C17- "STATE OF NATURAL RESOURCES"



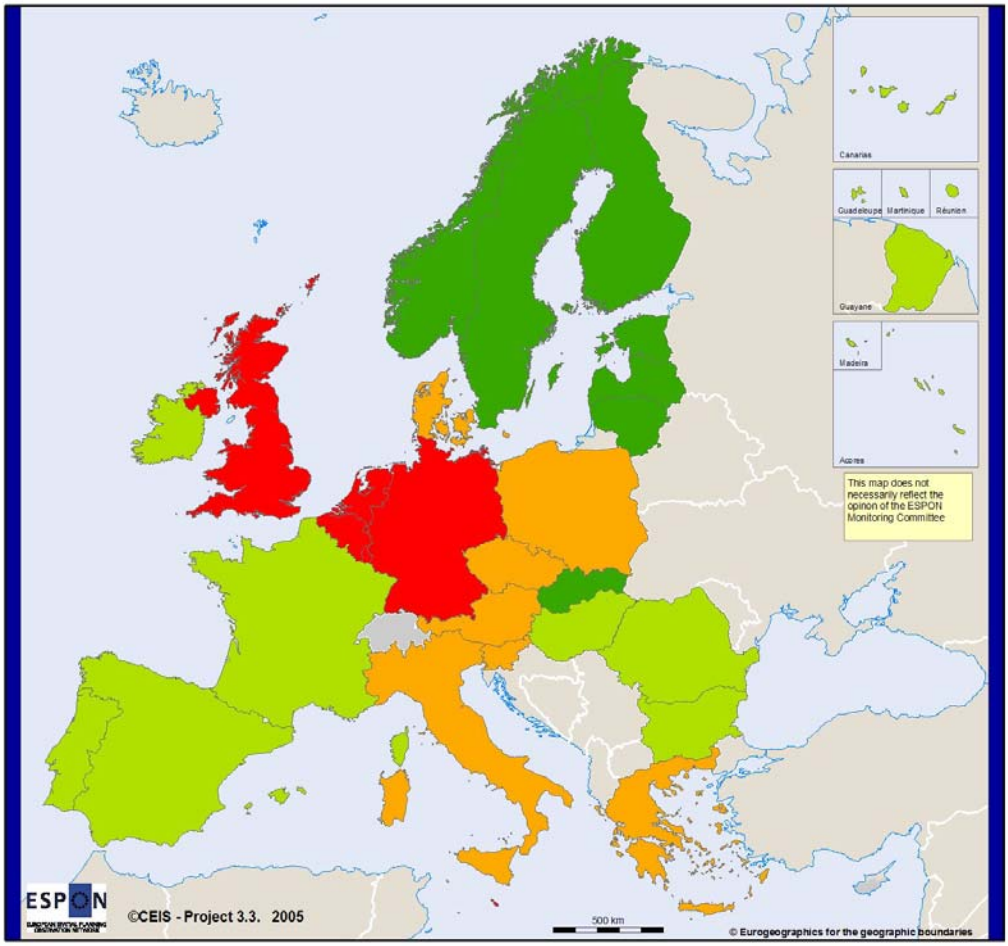
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C18- "CLIMATE CHANGE"



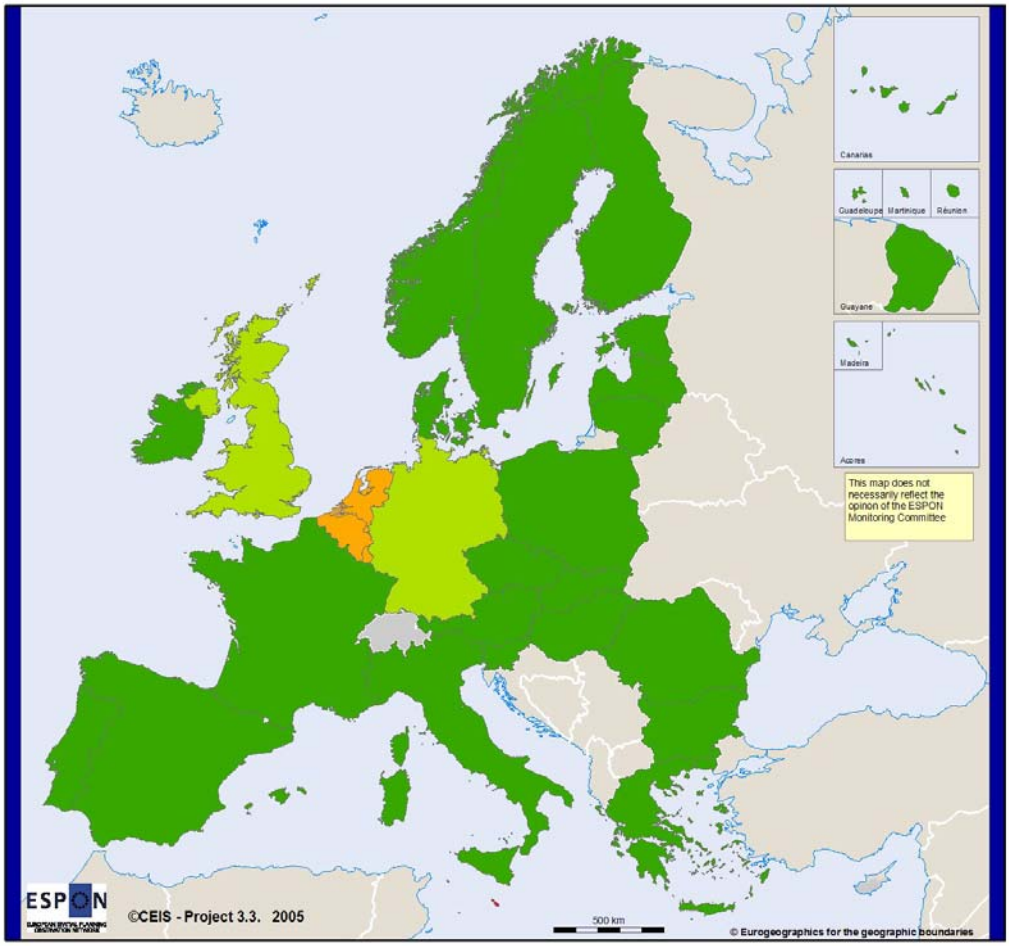
Legend

EMISSIONS OF CO2/AREA - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C18- "CLIMATE CHANGE"



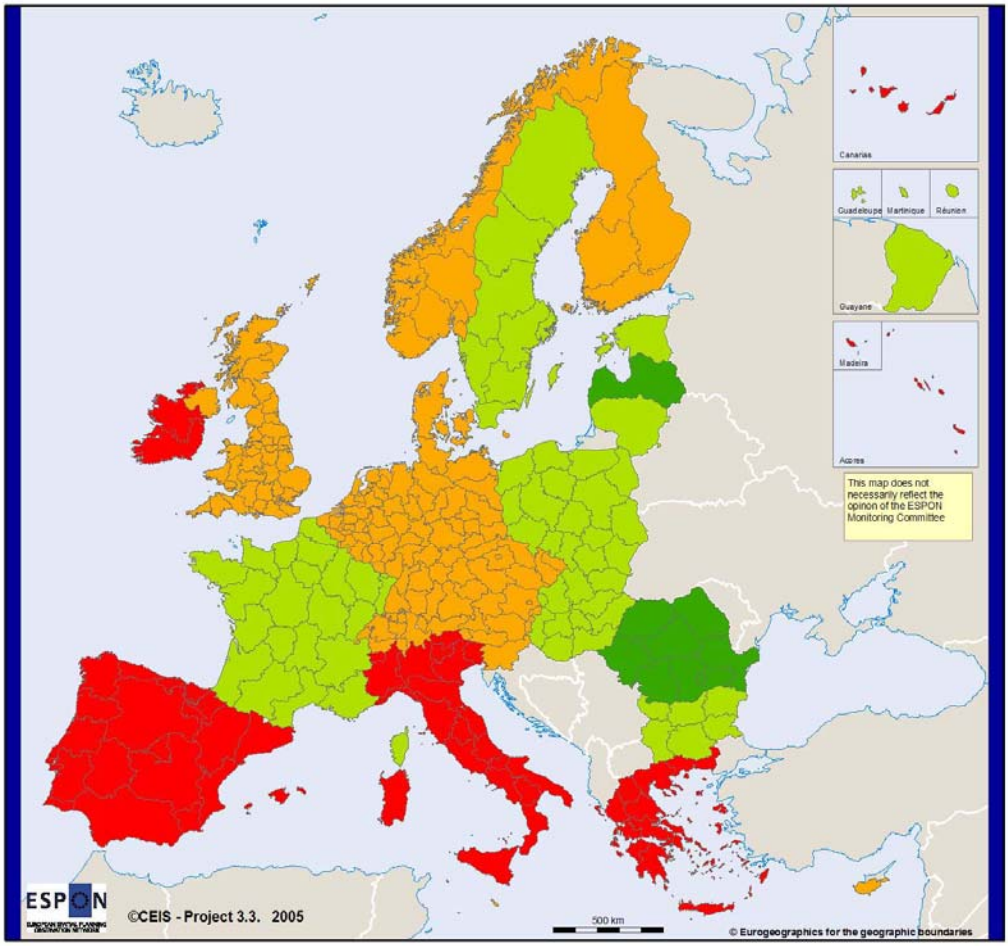
Legend

EMISSIONS OF CO2/AREA - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C19- SECTOR "ENVIRONMENTAL QUALITY"



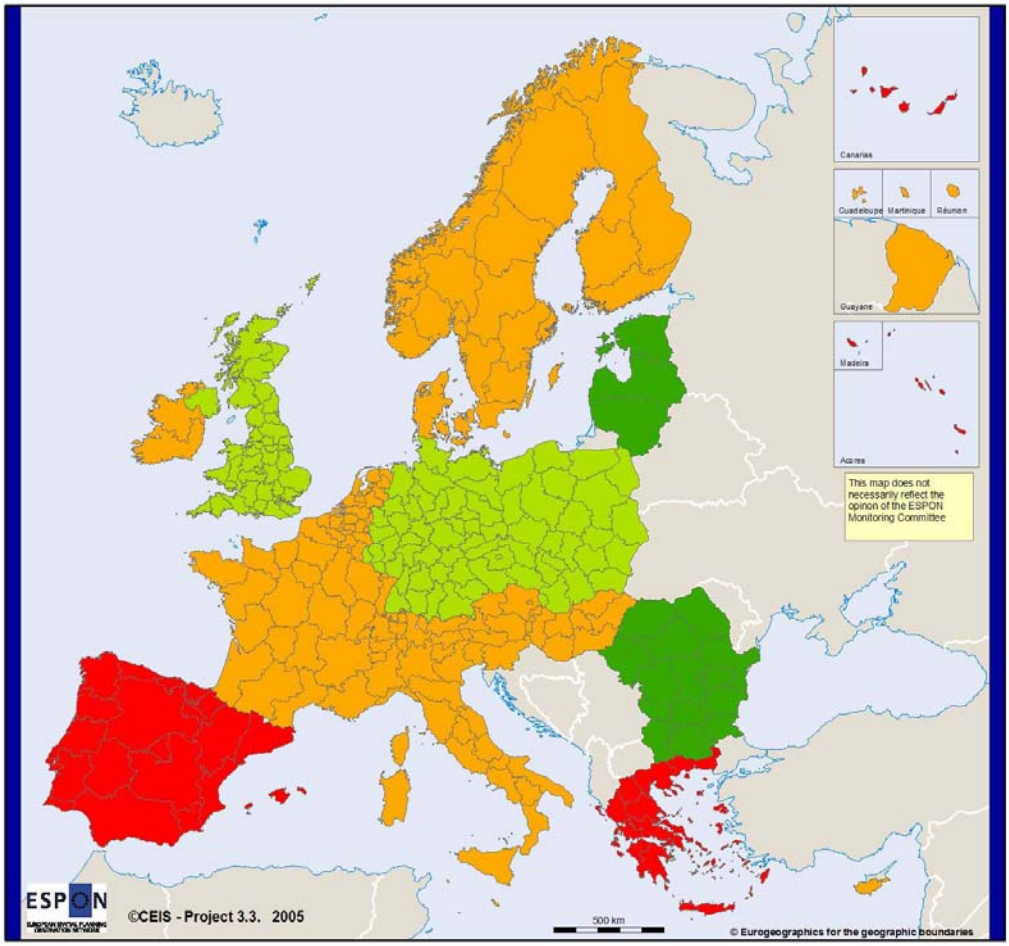
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C19- SECTOR "ENVIRONMENTAL QUALITY"



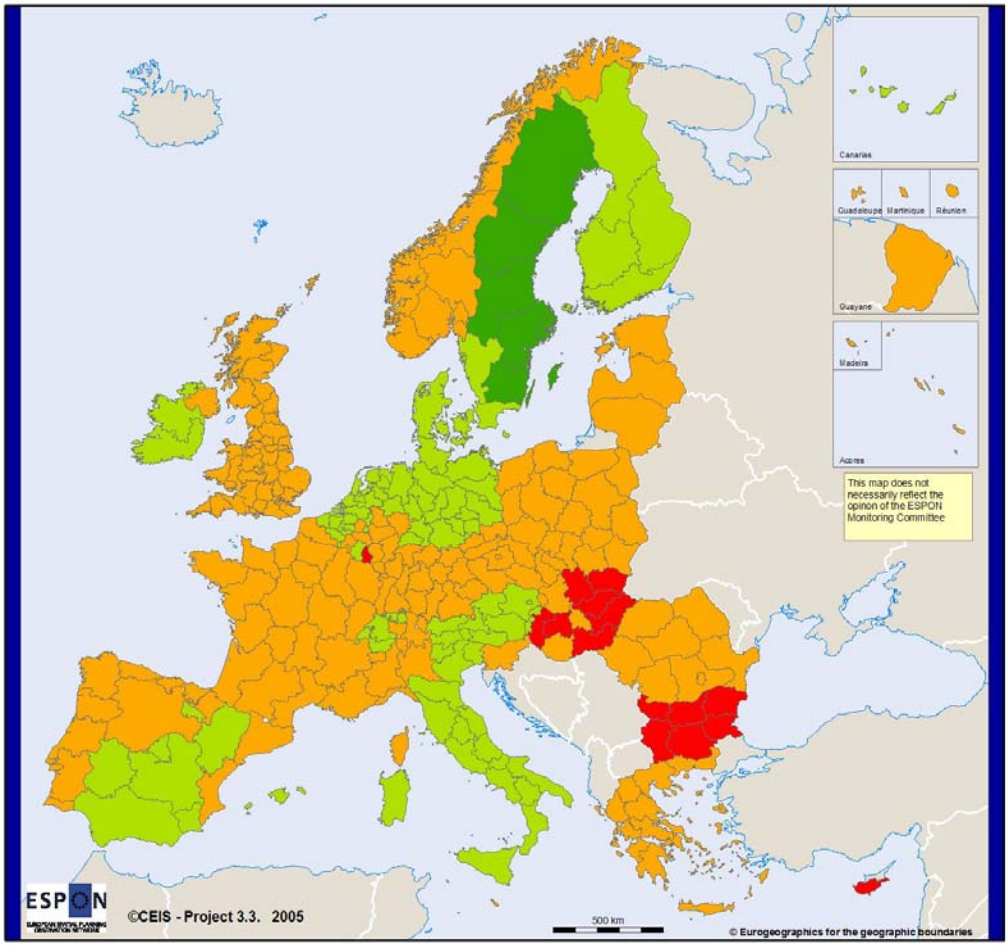
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C19a- "WASTE - NATURAL HAZARDS"



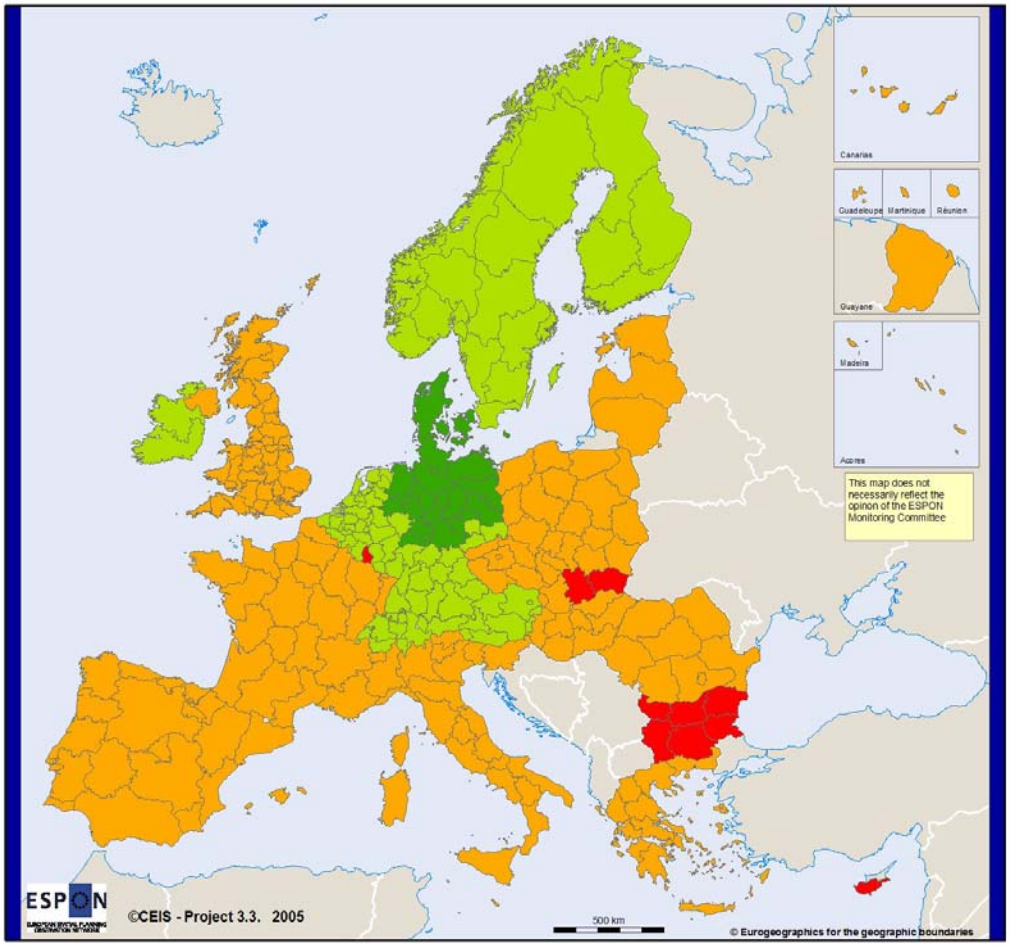
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C19a- "WASTE - NATURAL HAZARDS"



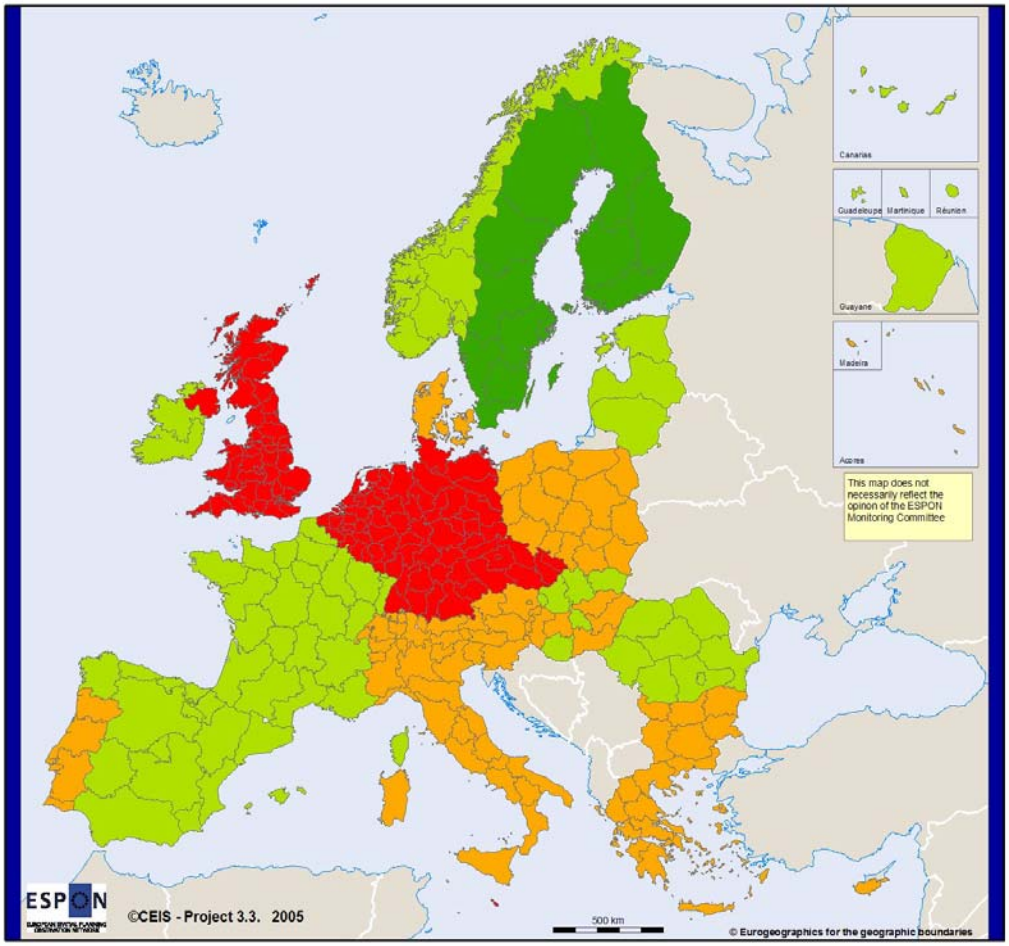
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C19b- "WASTE-HAZARD-CLIMATE CHANGE"



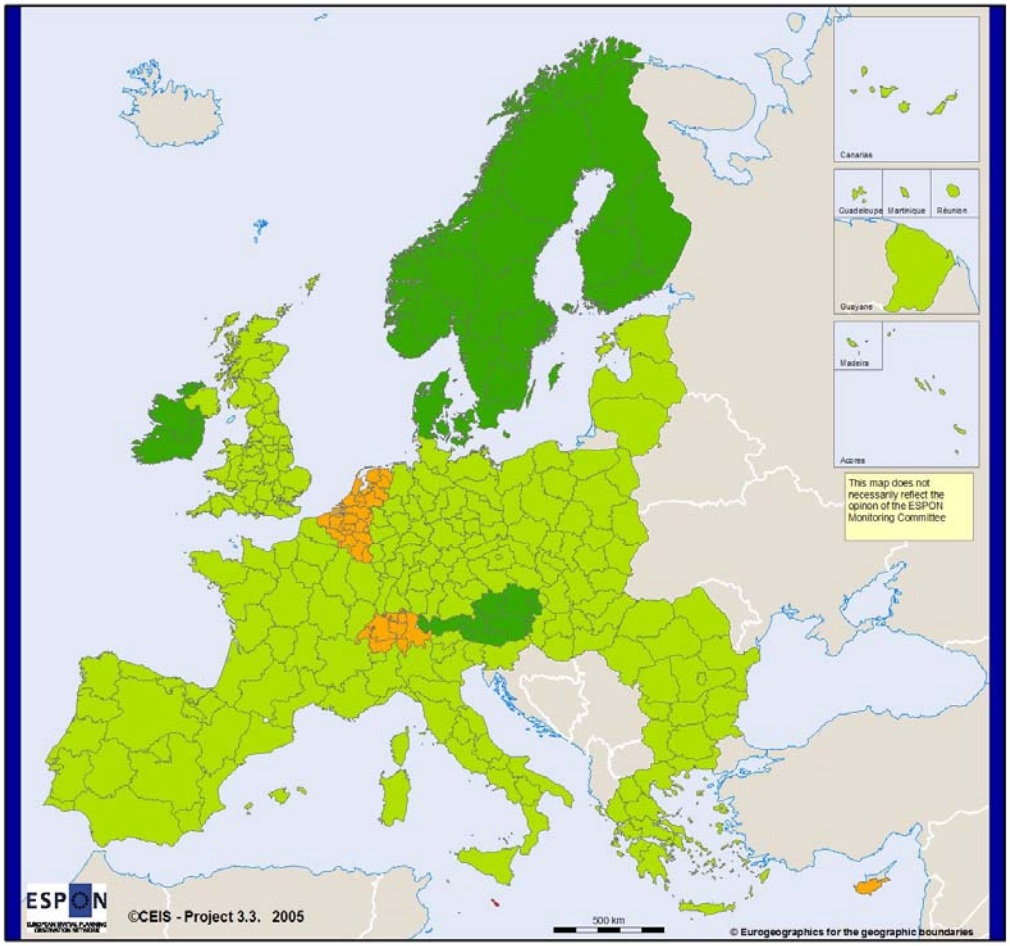
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C19b- "WASTE-HAZARD-CLIMATE CHANGE"



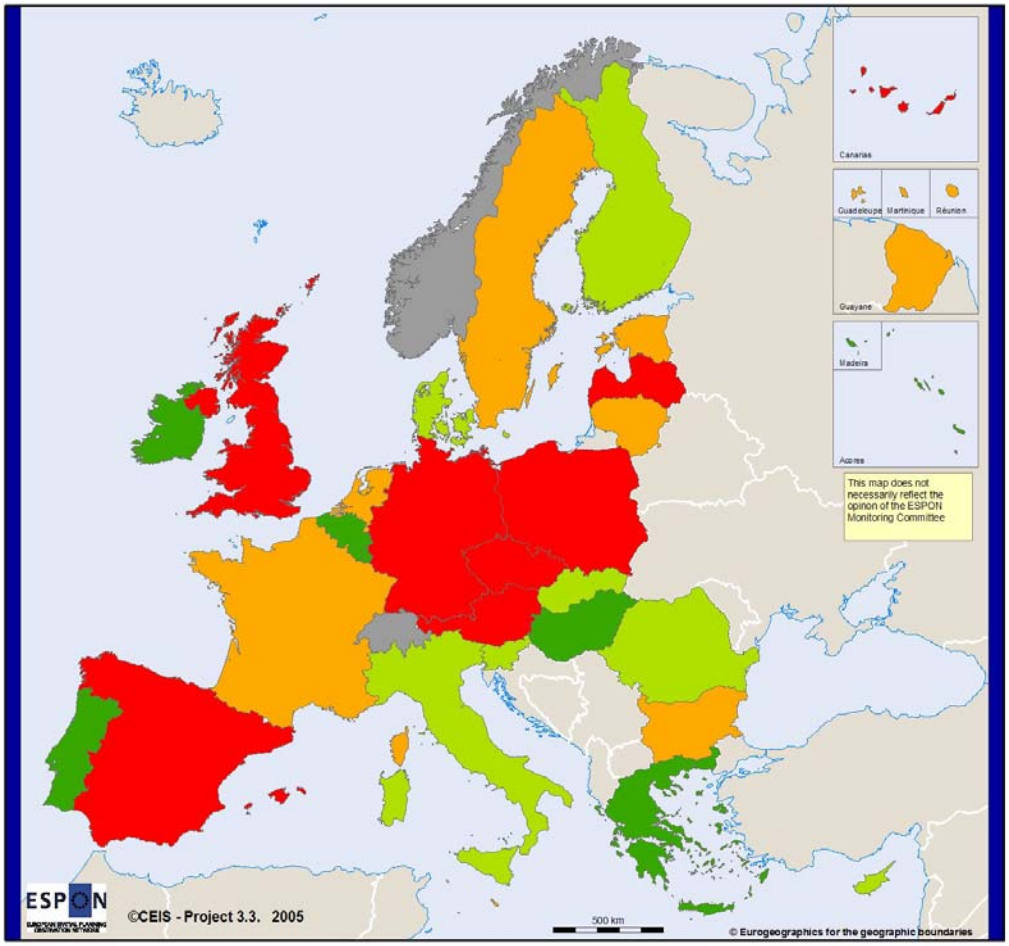
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C21- "LEVEL OF CITIZEN'S CONFIDENCE"



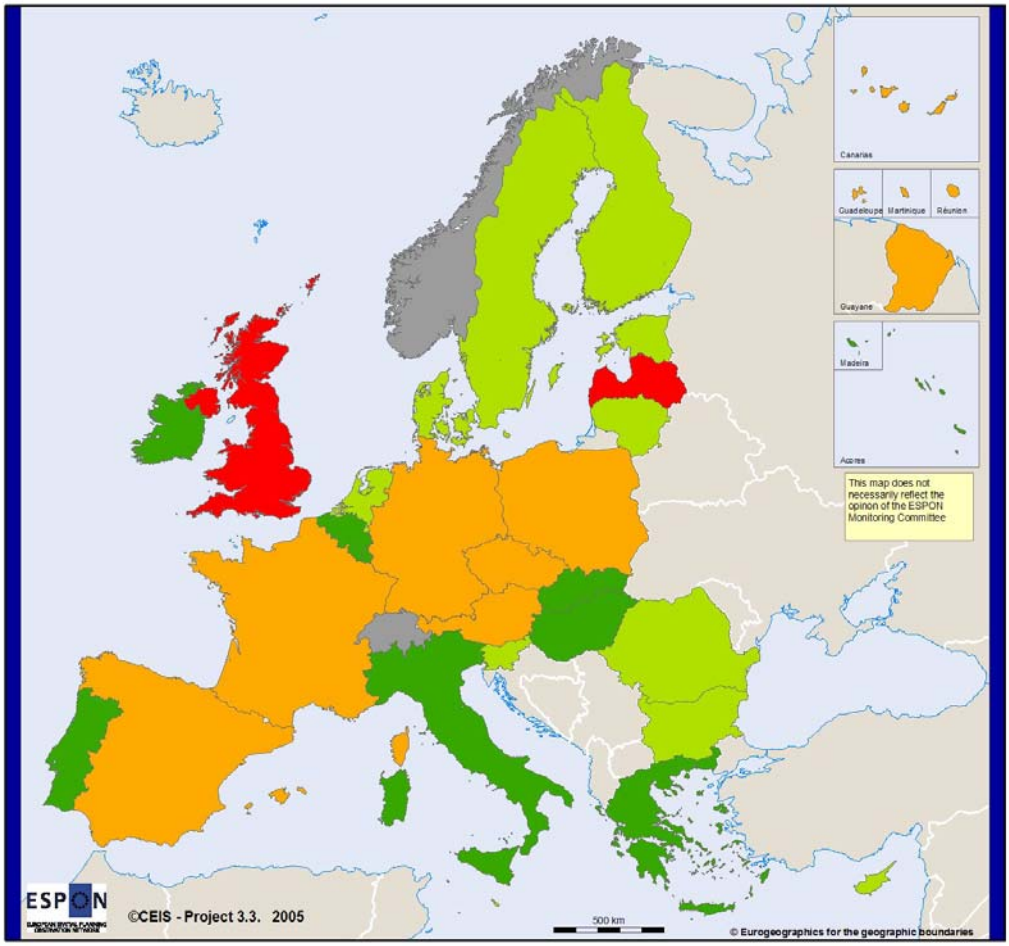
Legend

Average share of positive opinions about EU institutions

- Low
- Medium - low
- Medium - high
- High
- no data

EQUAL VERSION

Map C21- "LEVEL OF CITIZEN'S CONFIDENCE"



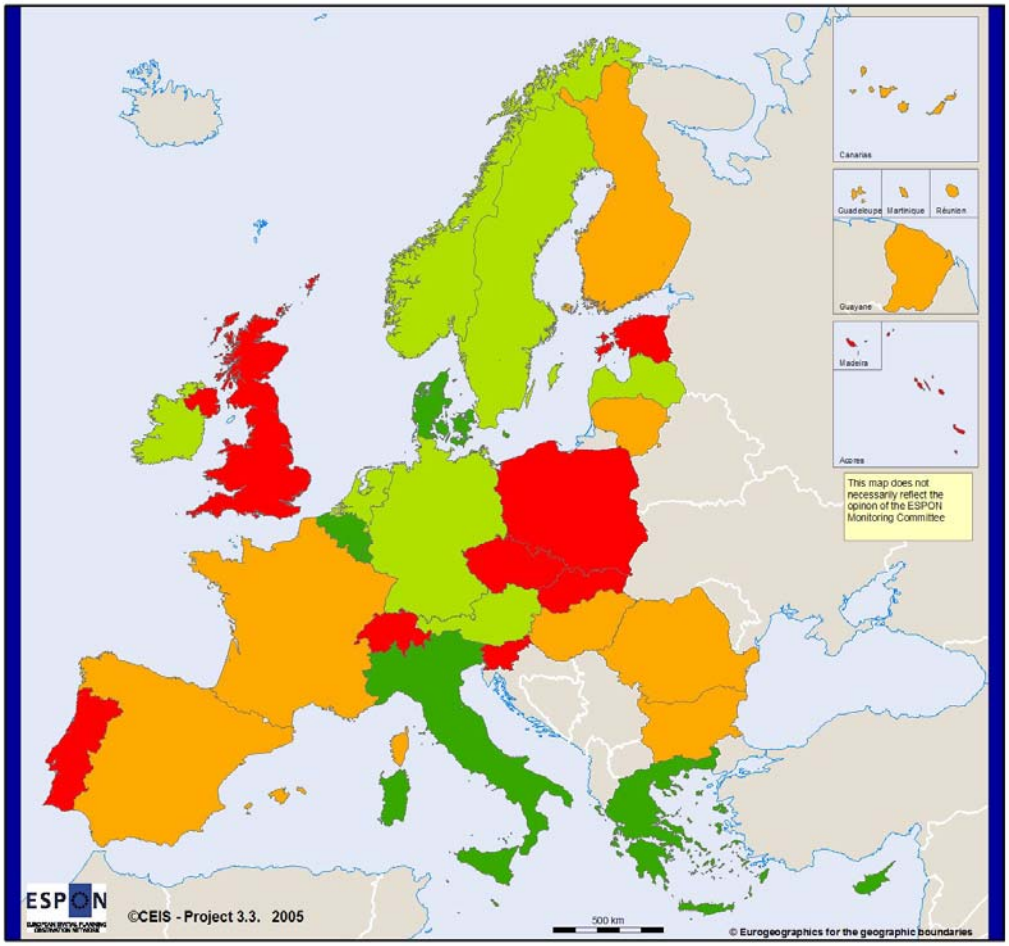
Legend

Average share of positive opinions about EU institutions

- Low
- Medium - low
- Medium - high
- High
- no data

QUANTILES VERSION

Map C23- "LEVEL OF PUBLIC PARTICIPATION"



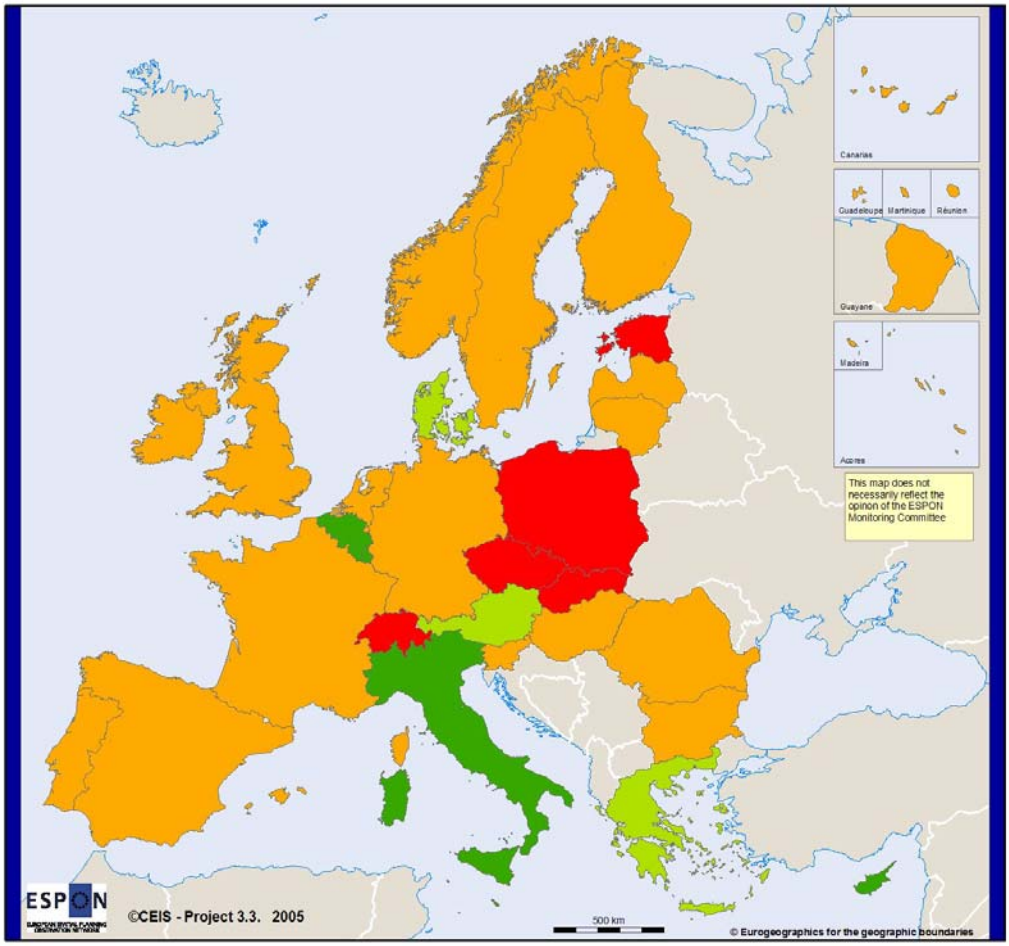
Legend

Average voter turnout in national and european Parliamentary elections

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C23- "LEVEL OF PUBLIC PARTICIPATION"



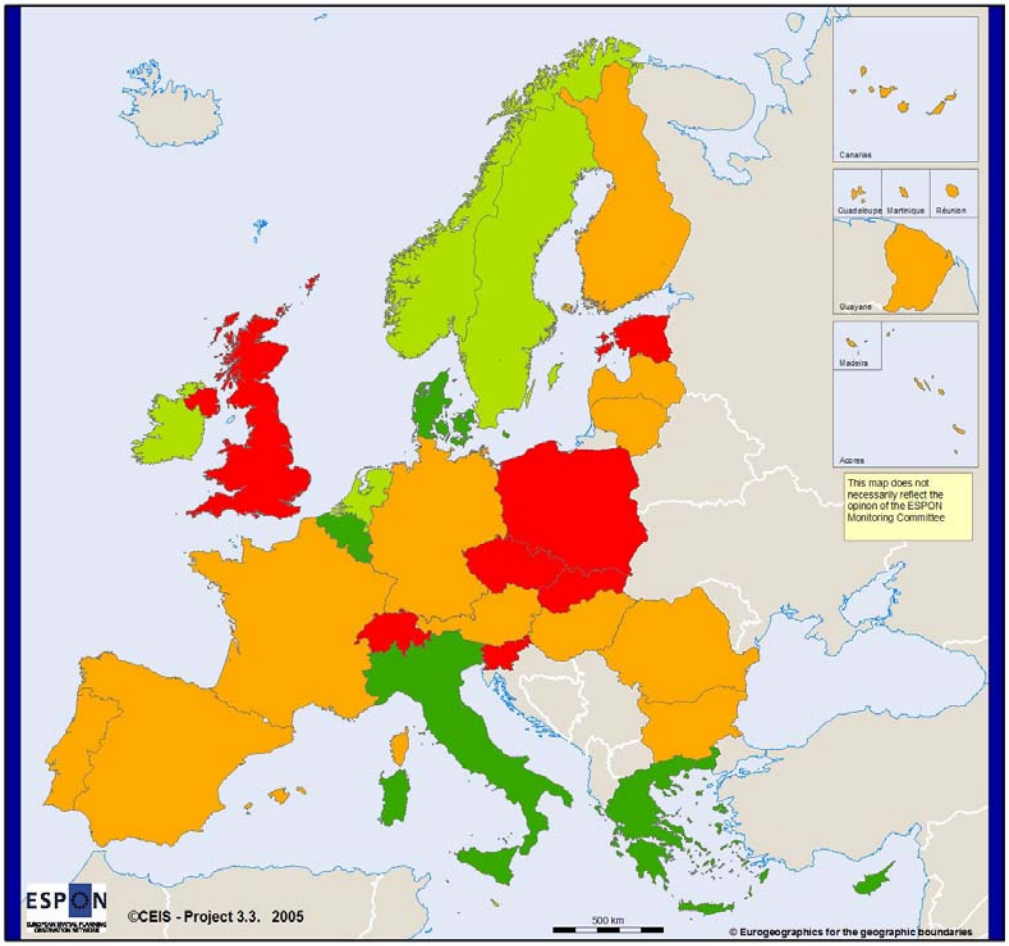
Legend

Average voter turnout in national and european Parliamentary elections

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C24- "LEVEL OF GOOD GOVERNANCE"



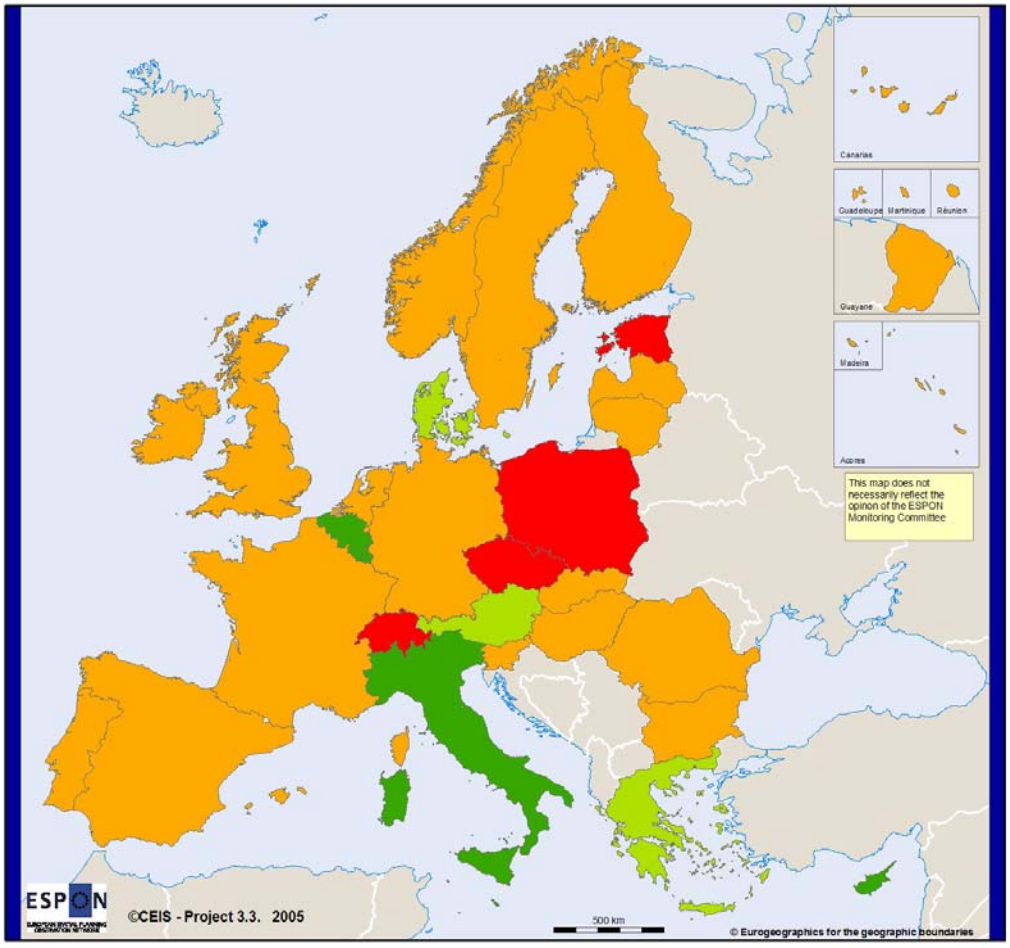
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C24- "LEVEL OF GOOD GOVERNANCE"



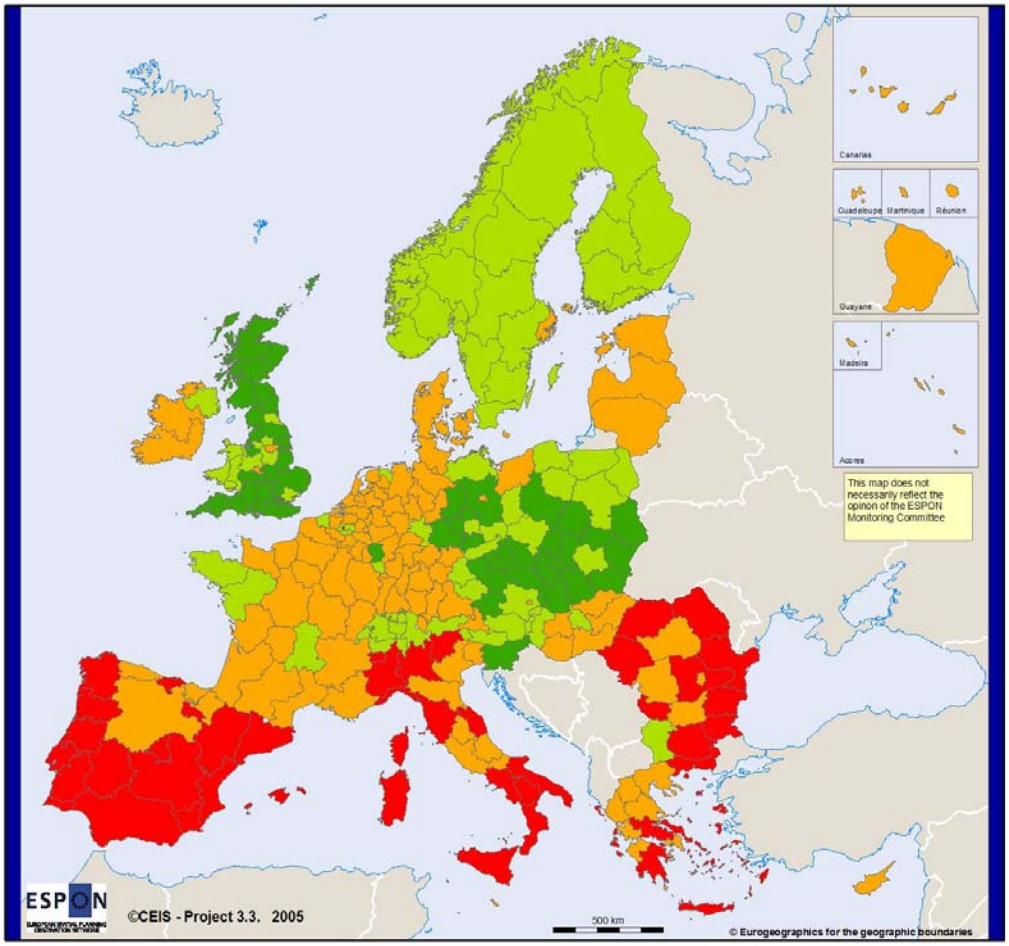
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C25- "LEVEL OF BASE EDUCATION"



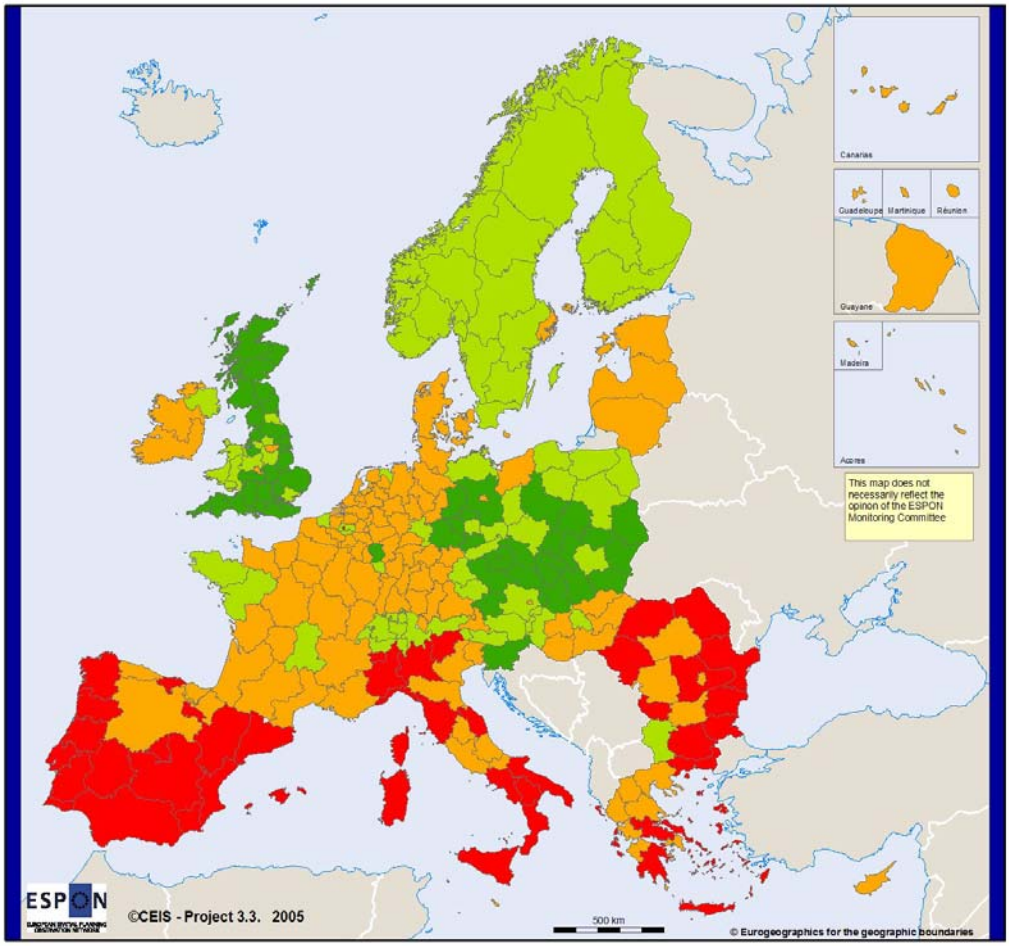
Legend

EARLY SCHOOL LEAVERS

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C25- "LEVEL OF BASE EDUCATION"



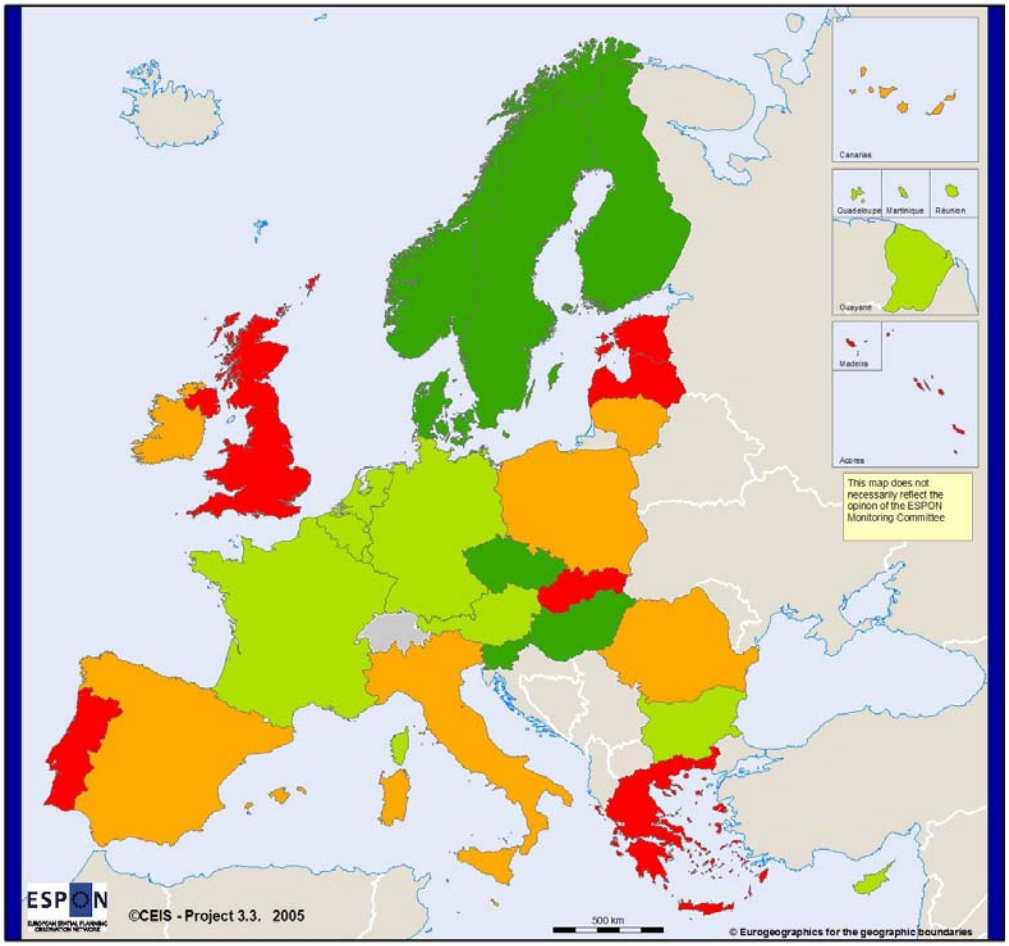
Legend

EARLY SCHOOL LEAVERS

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C26- "ECONOMIC ELEMENTS OF SOCIAL COHESION"



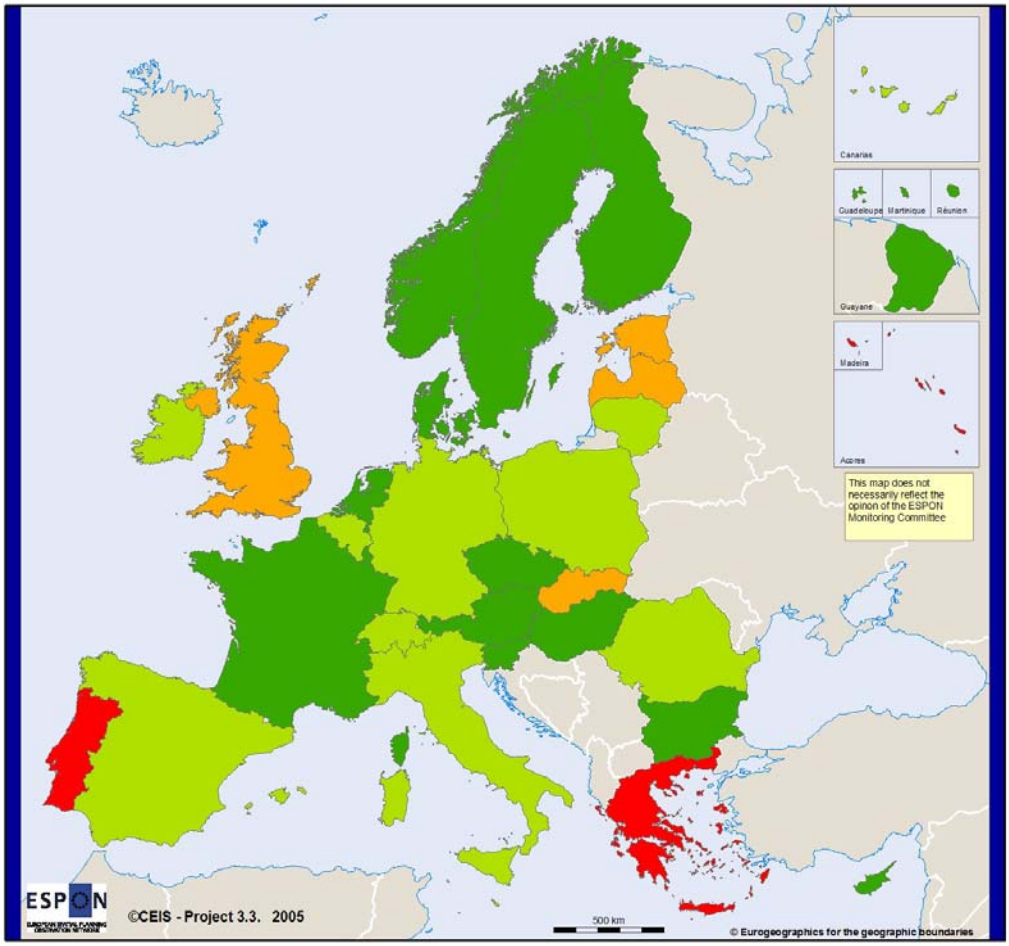
Legend

INCOME INEQUALITY - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C26- "ECONOMIC ELEMENTS FOR SOCIAL COHESION"



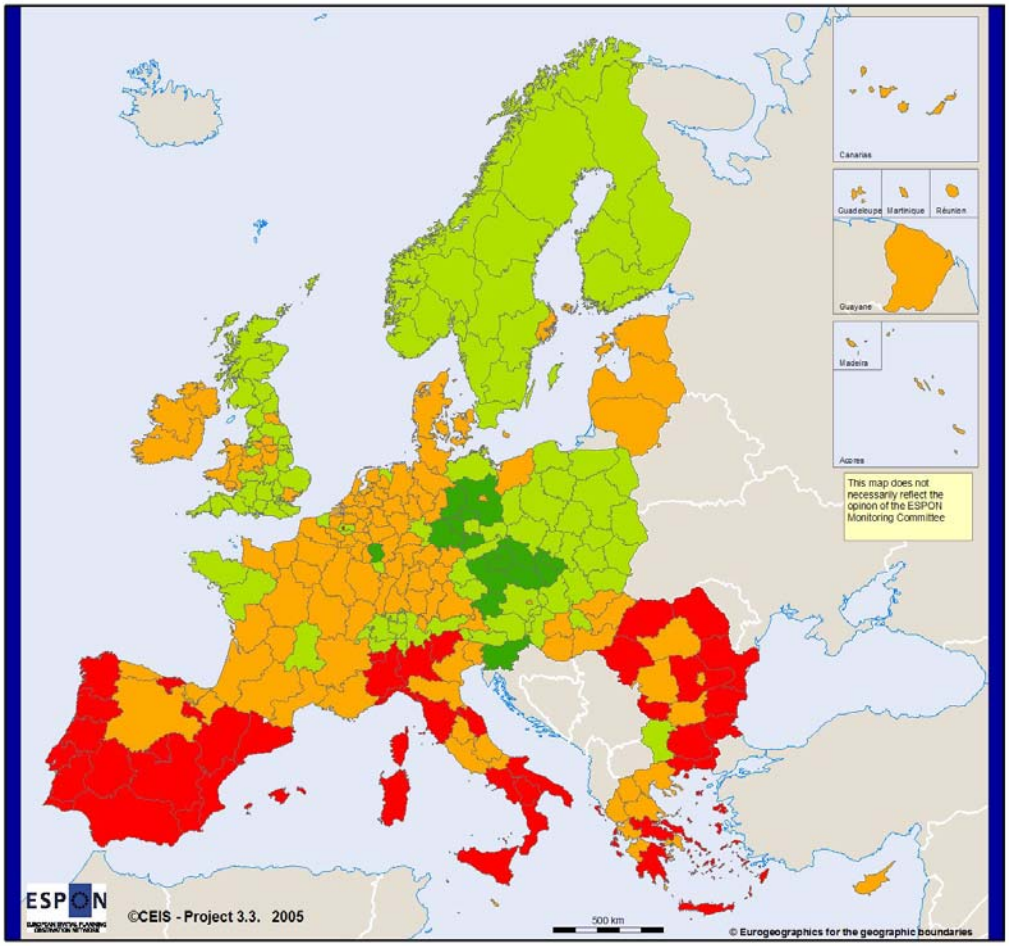
Legend

INCOME INEQUALITY

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C27- "SOCIAL COHESION RESOURCES"



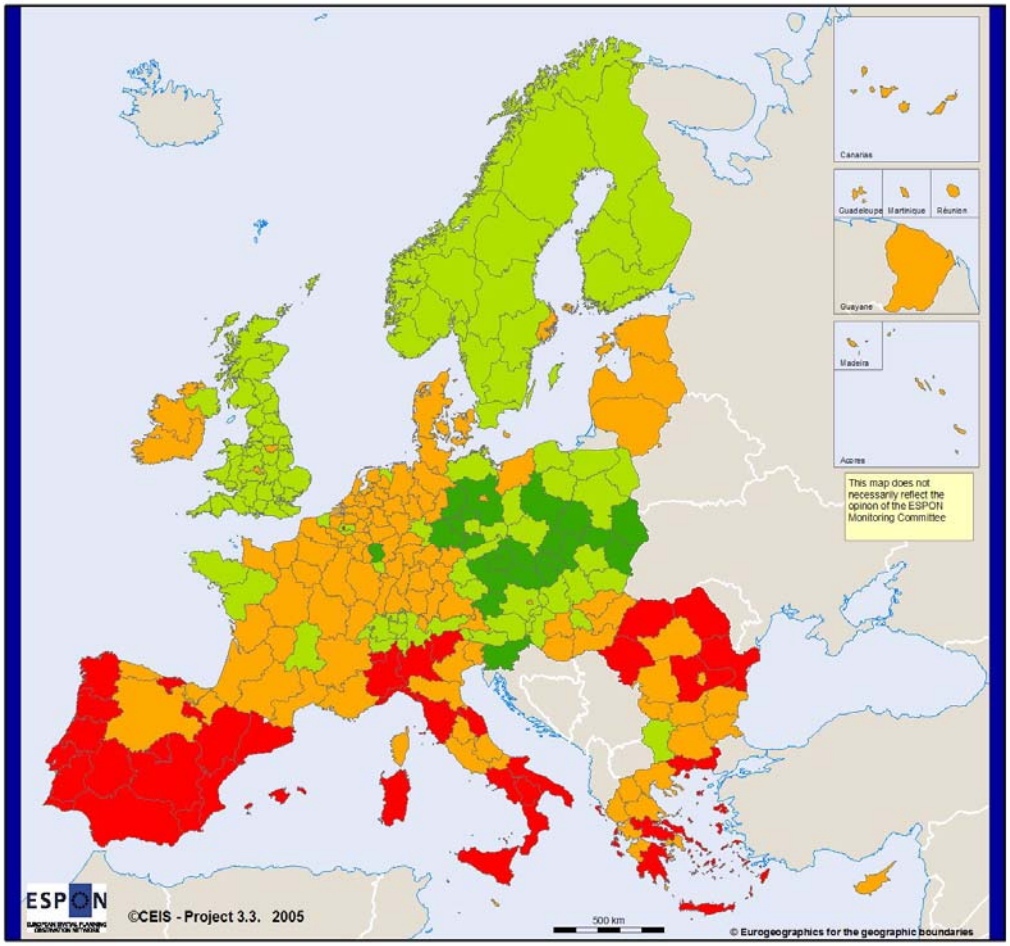
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C27- "SOCIAL COHESION RESOURCES"



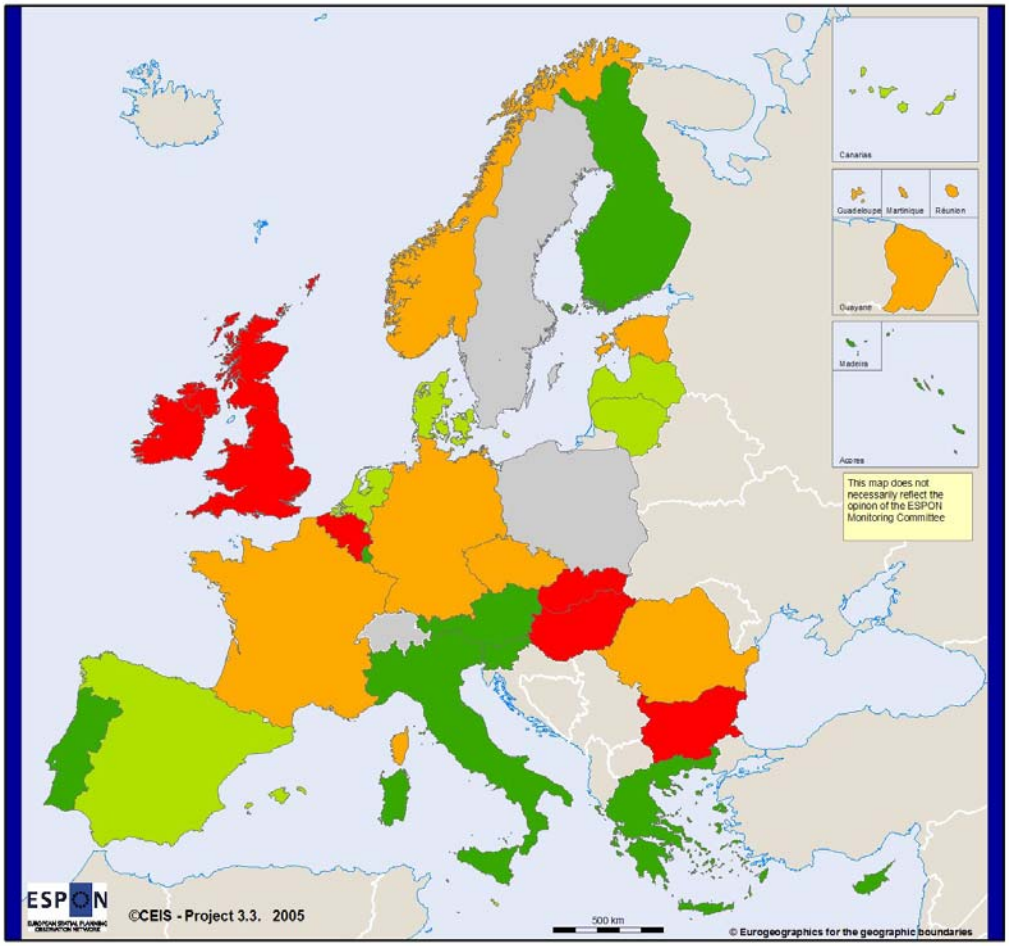
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C28- "RISK OF CHILDREN EXCLUSION"



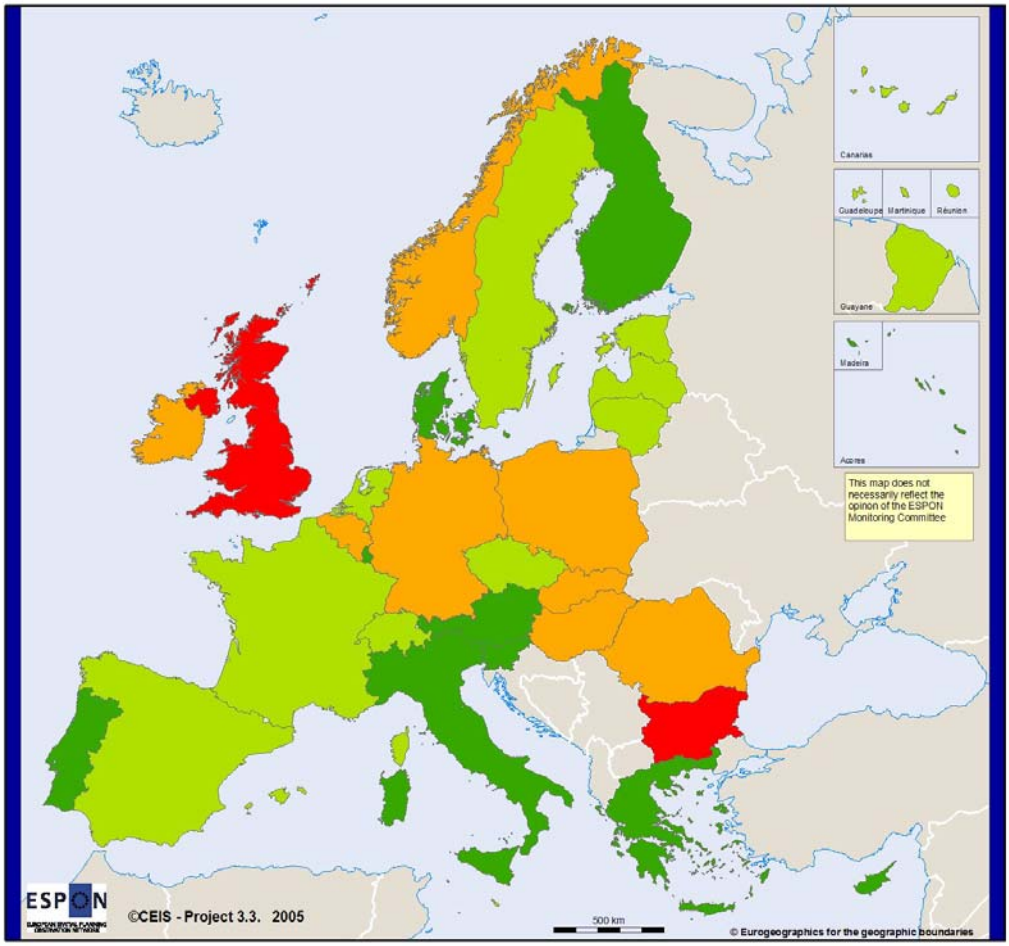
Legend

SHARE OF YOUNGSTERS IN JOBLESS HOUSEHOLDS - CLASSES

- Low
- Medium - low
- Medium - high
- High
- No Data

EQUAL VERSION

Map C28- "RISK OF CHILDREN EXCLUSION"



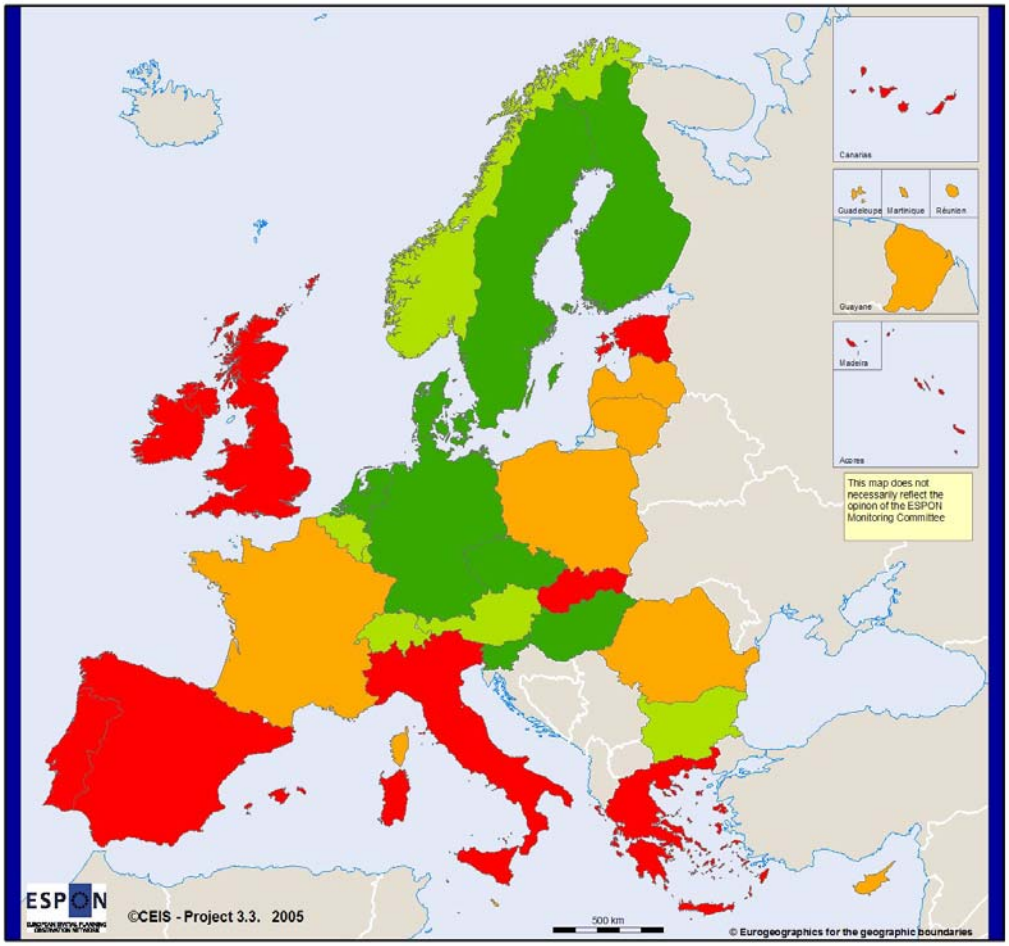
Legend

SHARE OF YOUNGSTERS IN JOBLESS HOUSEHOLDS

- Low
- Medium - low
- Medium - high
- High
- No Data

QUANTILES VERSION

Map C29- "LEVEL OF POVERTY"



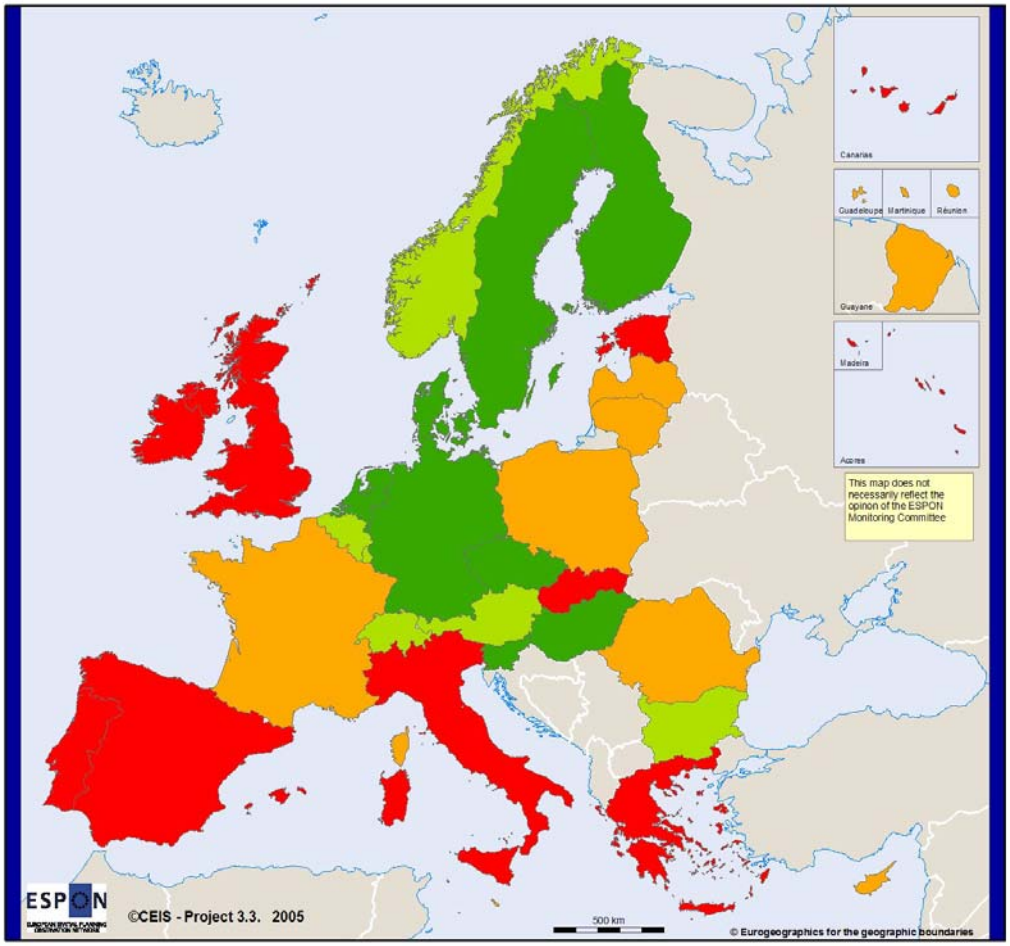
Legend

SHARE OF PEOPLE WITH AN INCOME BELOW 60% OF NATIONAL MEDIAN (AFTER SOCIAL TRANSFER)-CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C29- "LEVEL OF POVERTY"



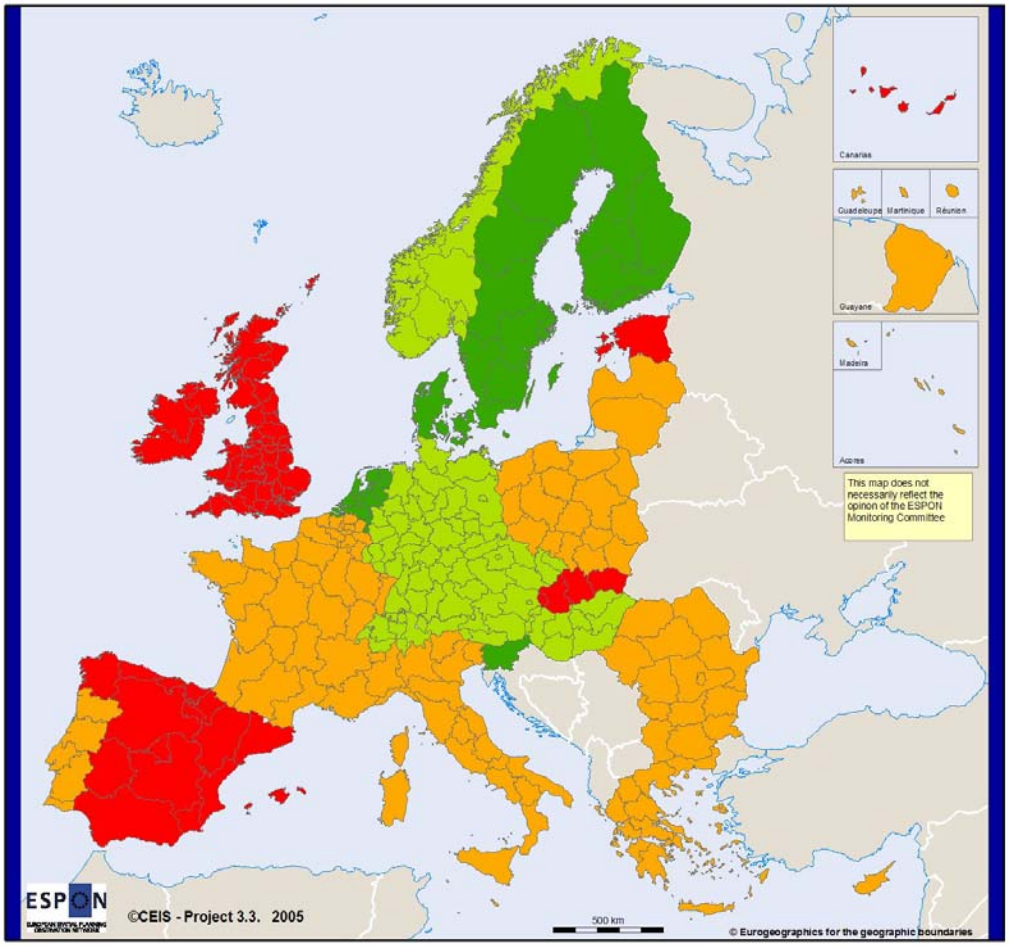
Legend

SHARE OF PEOPLE WITH AN INCOME BELOW 60% OF NATIONAL MEDIAN (AFTER SOCIAL TRANSFER)-CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C30- "RISK OF SOCIAL EXCLUSION"



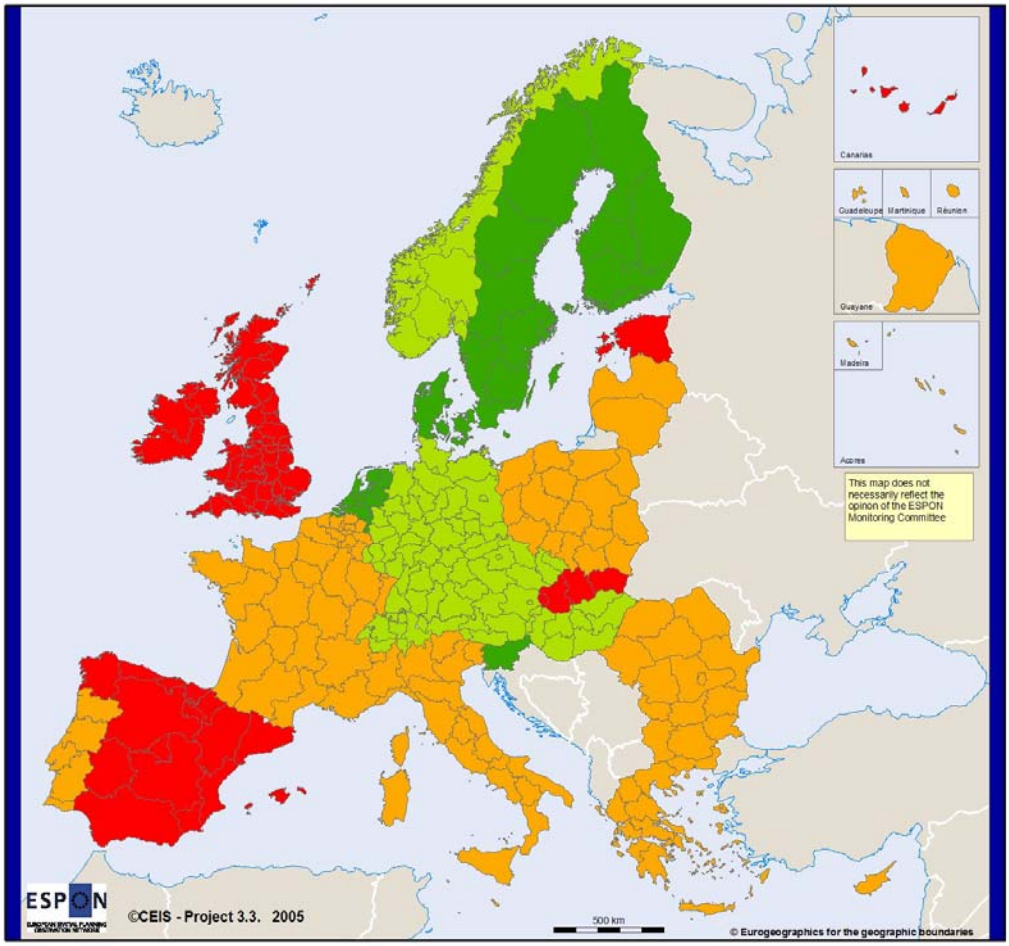
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C30- "RISK OF SOCIAL EXCLUSION"



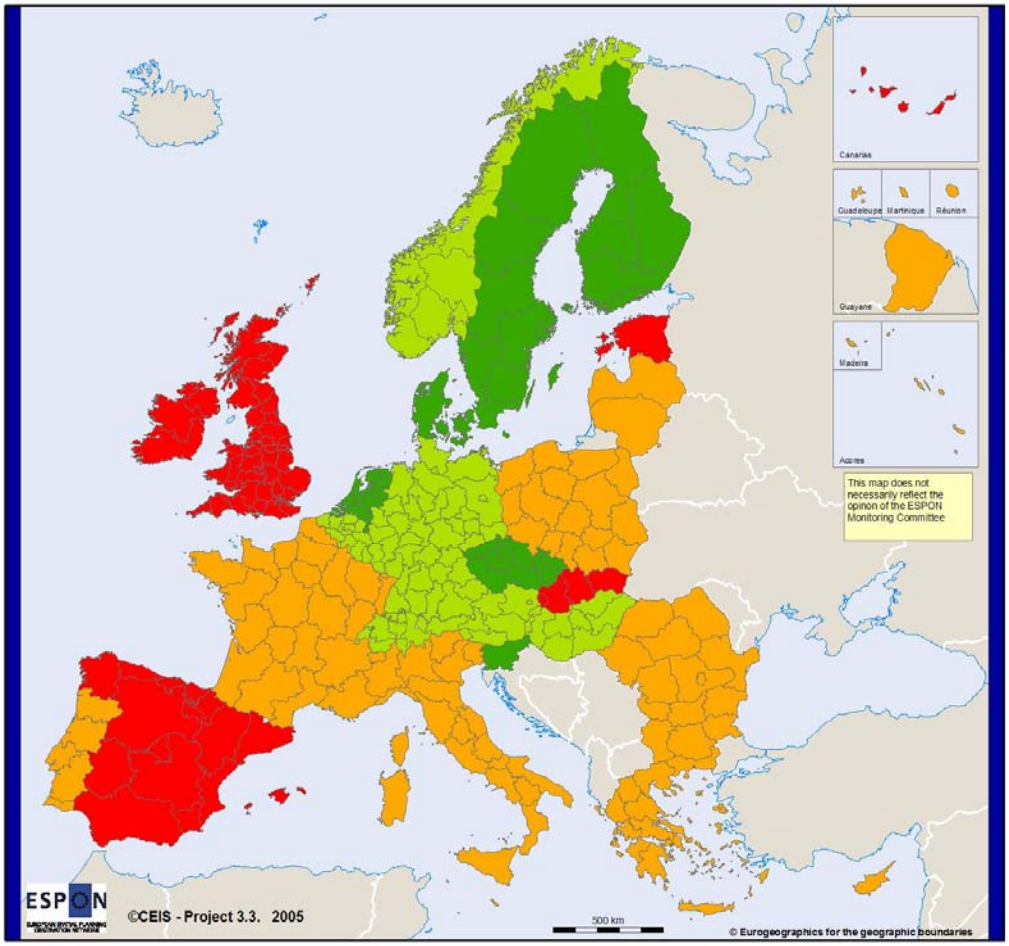
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C30- "RISK OF SOCIAL EXCLUSION"



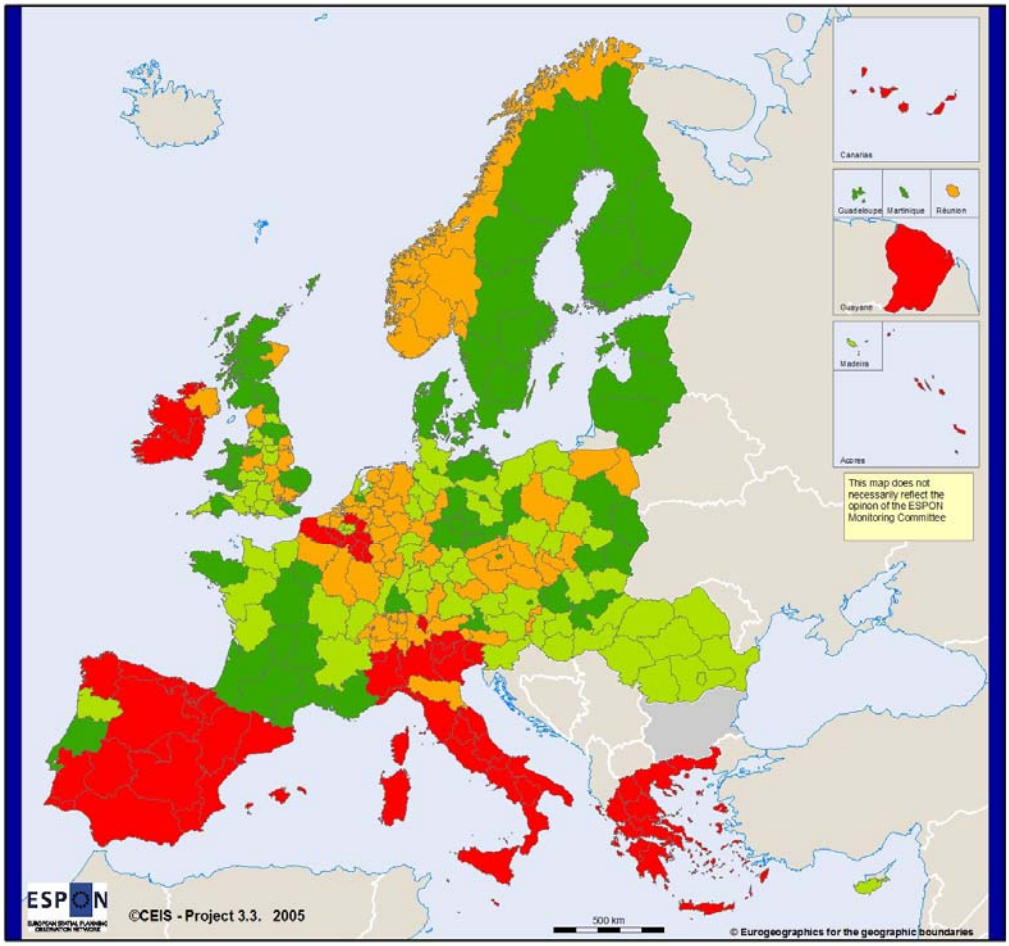
Legend

CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C31- "EQUAL OPPORTUNITIES"



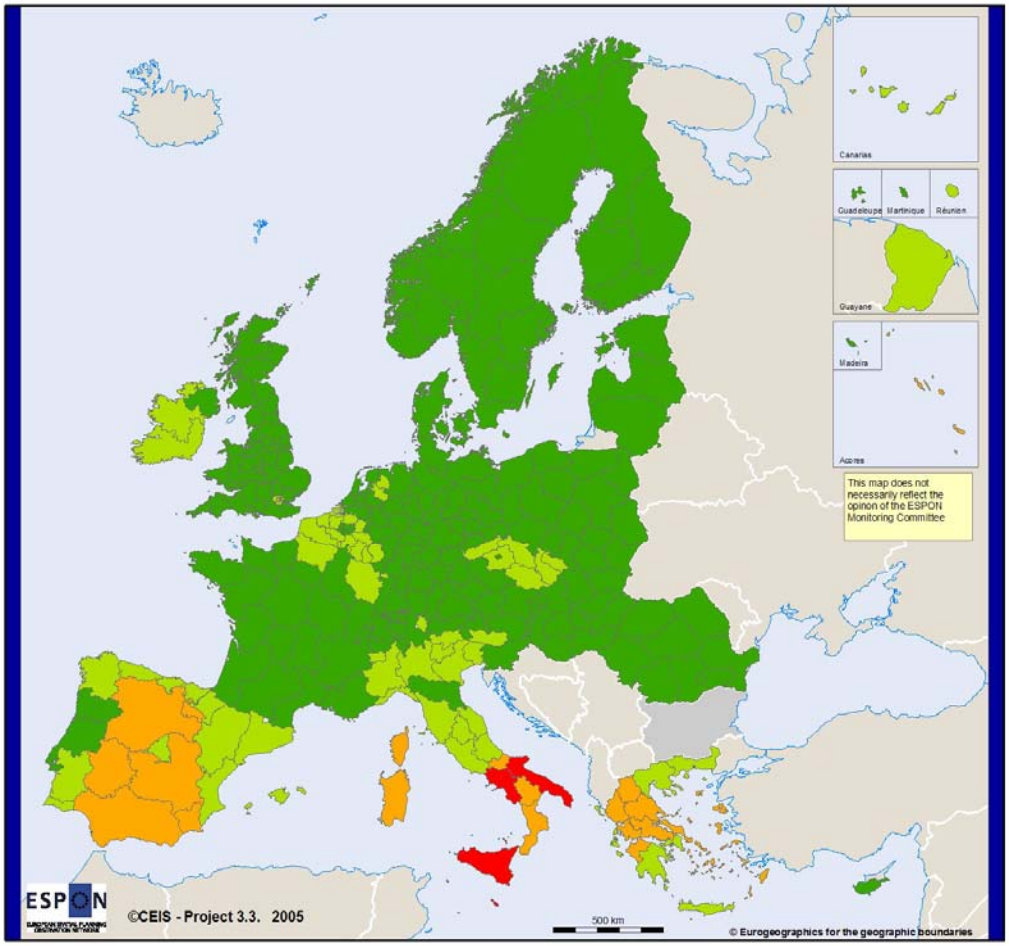
Legend

FEMALE EMPLOYMENT RATIO - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C31- "EQUAL OPPORTUNITIES"



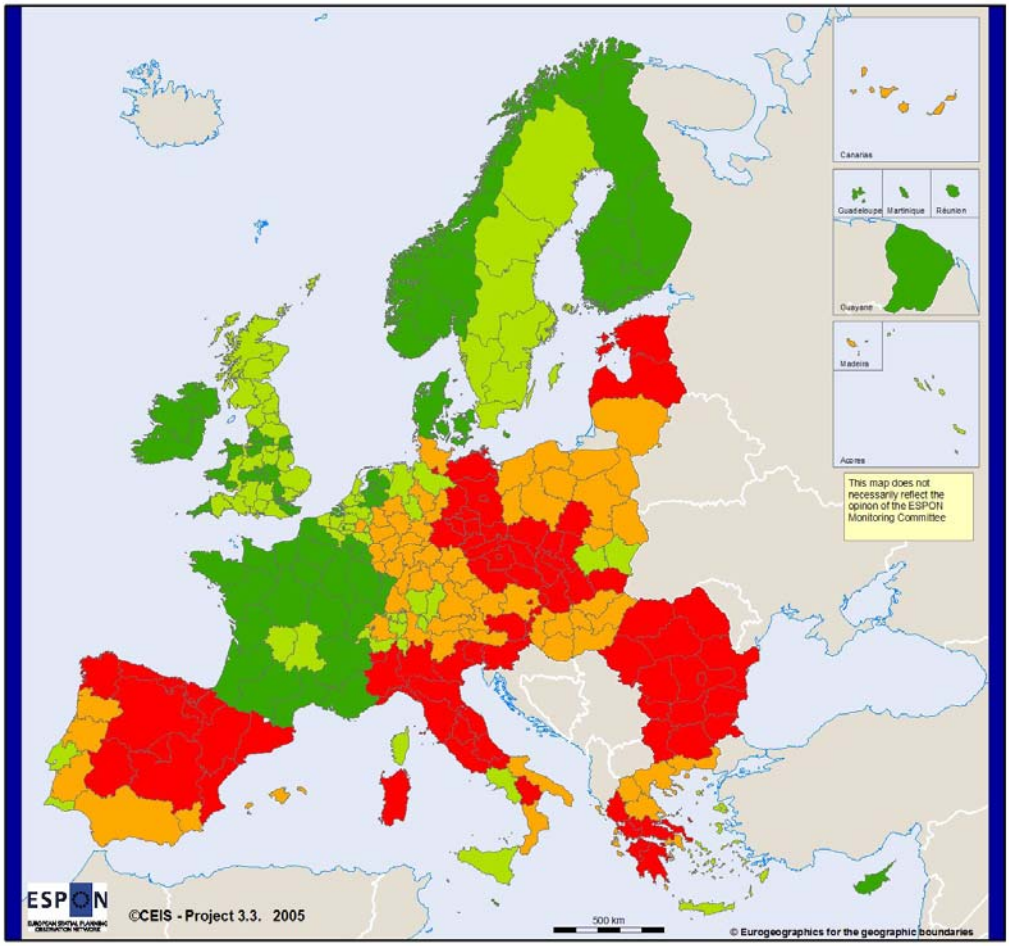
Legend

FEMALE EMPLOYMENT RATIO

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C32a- "FERTILITY RATE"



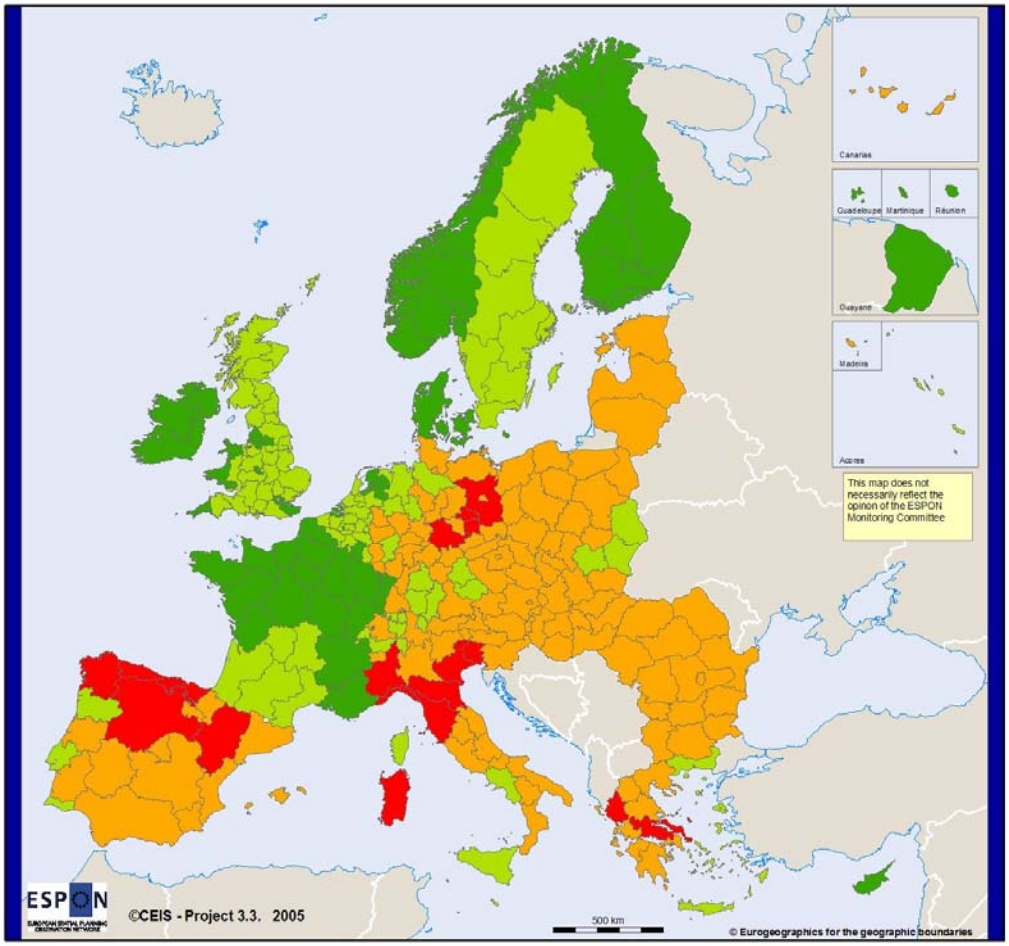
Legend

FERTILITY INDEX - CLASSES

- Low
- Medium - low
- Medium - high
- High

EQUAL VERSION

Map C32a- "FERTILITY RATE"



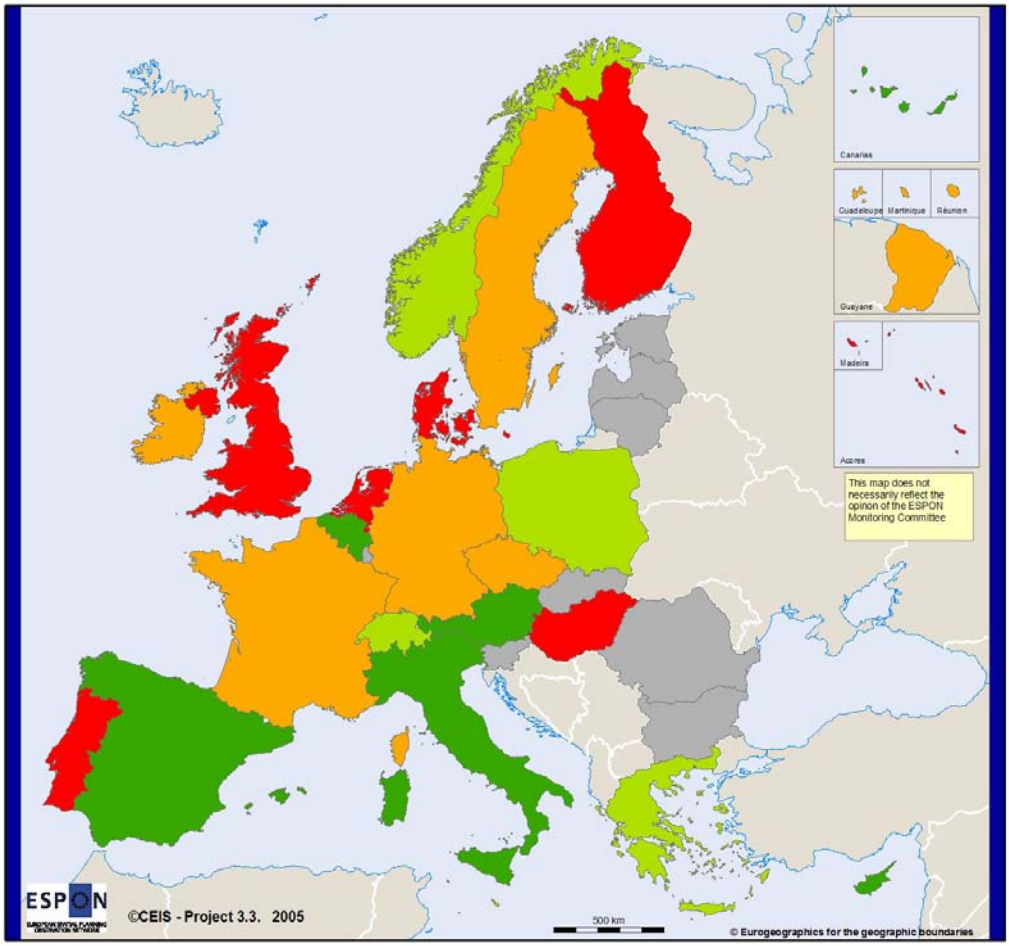
Legend

FERTILITY INDEX - CLASSES

- Low
- Medium - low
- Medium - high
- High

QUANTILES VERSION

Map C32b- "LIFE EXPECTANCY"



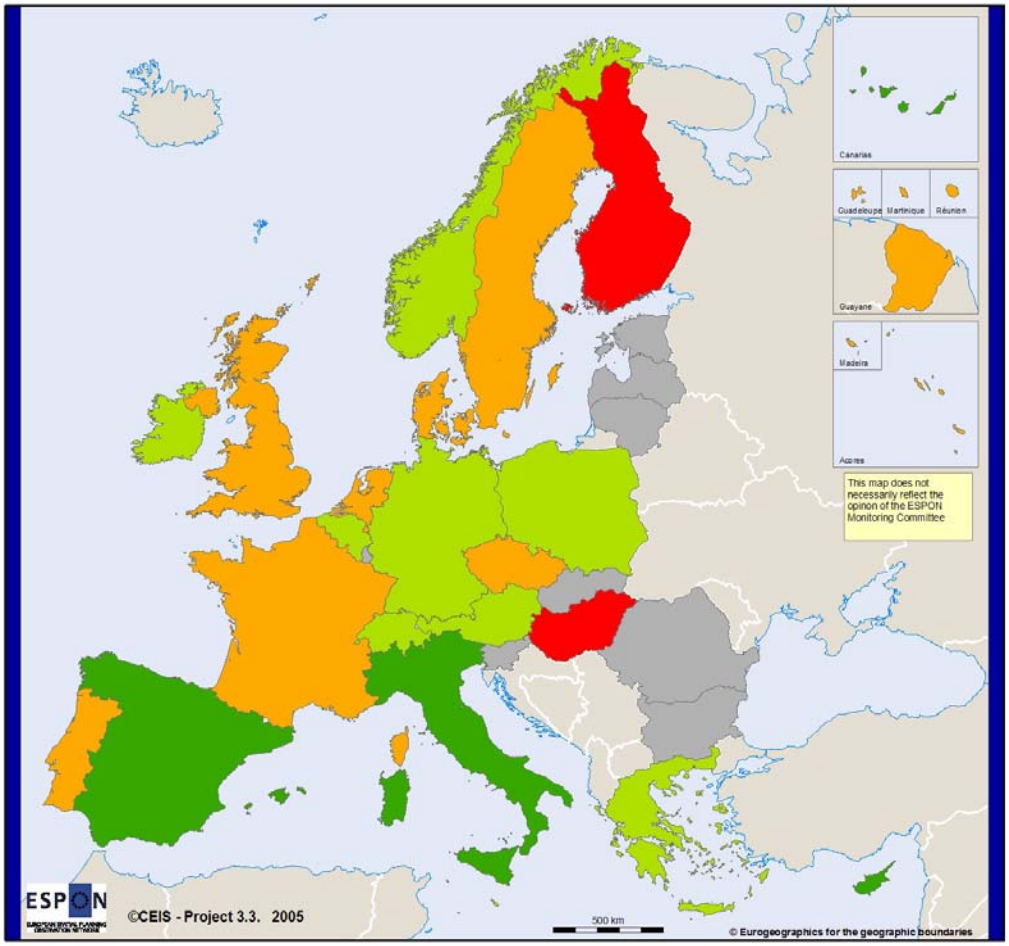
Legend

LIFE EXPECTANCY AT BIRTH - CLASSES

- Low
- Medium - low
- Medium - high
- High
- No Data

EQUAL VERSION

Map C32b- "LIFE EXPECTANCY"



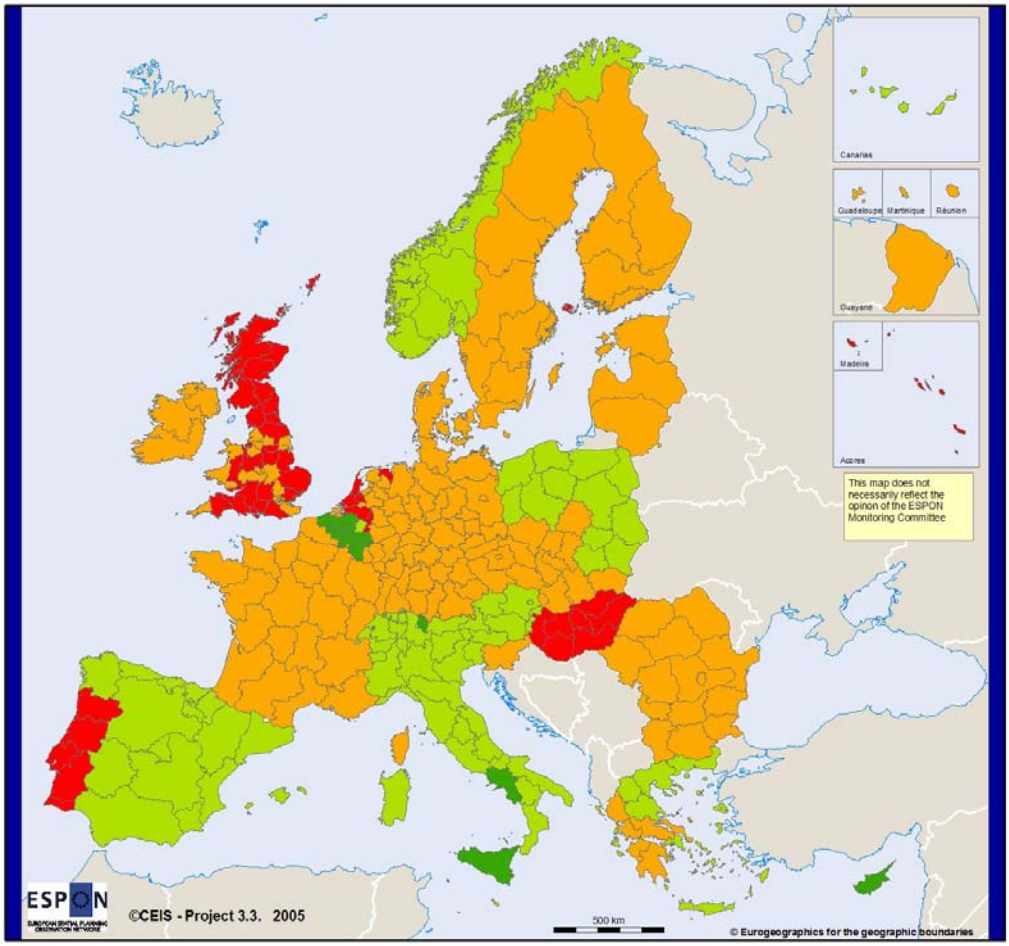
Legend

LIFE EXPECTANCY AT BIRTH - CLASSES

- Low
- Medium - low
- Medium - high
- High
- No Data

QUANTILES VERSION

Map C33- "WELLNESS"



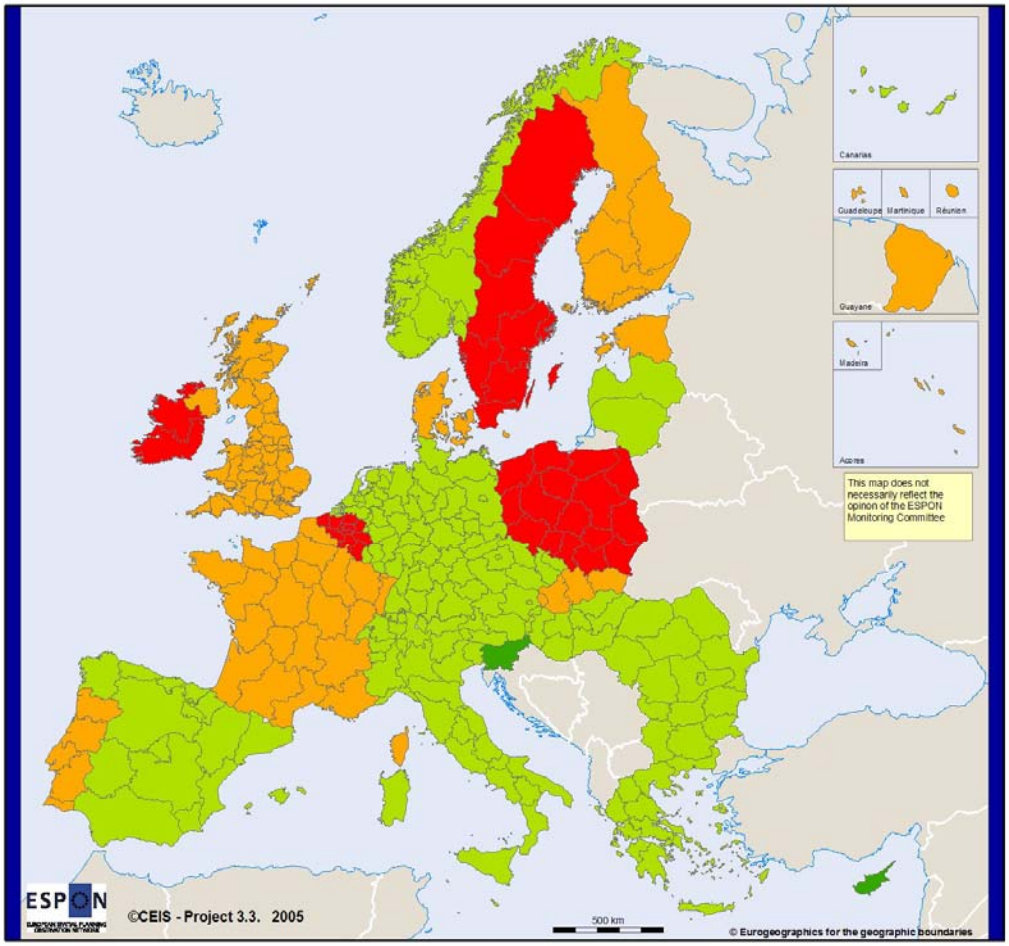
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C33- "WELLNESS"



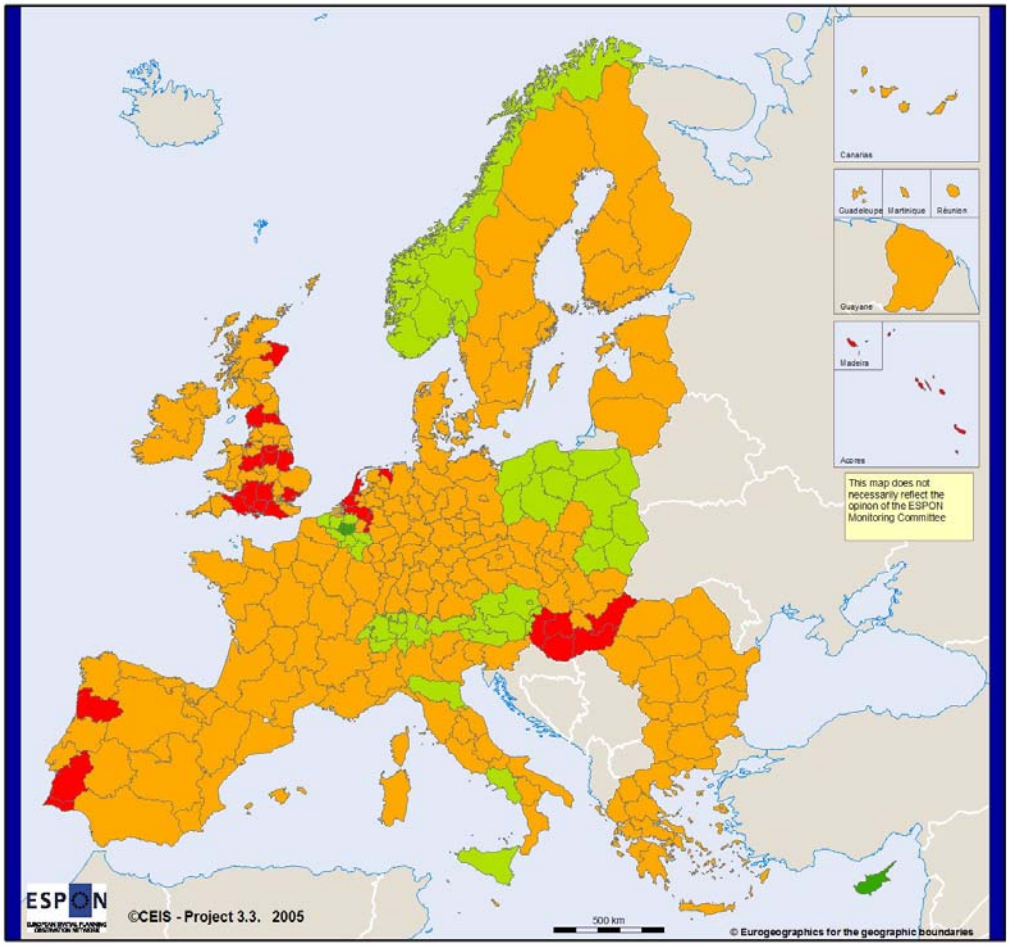
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C34- "SOCIAL WELLNESS ATTITUDE"



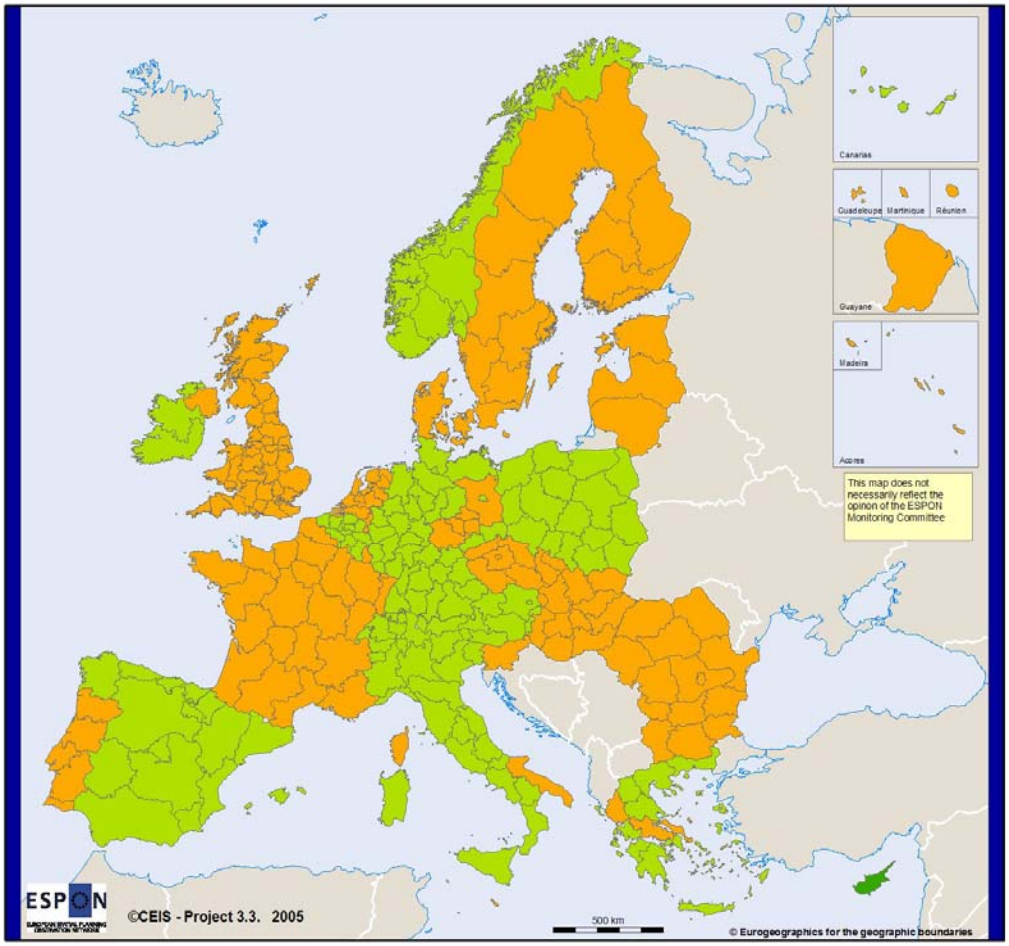
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C34- "SOCIAL WELLNESS ATTITUDE"



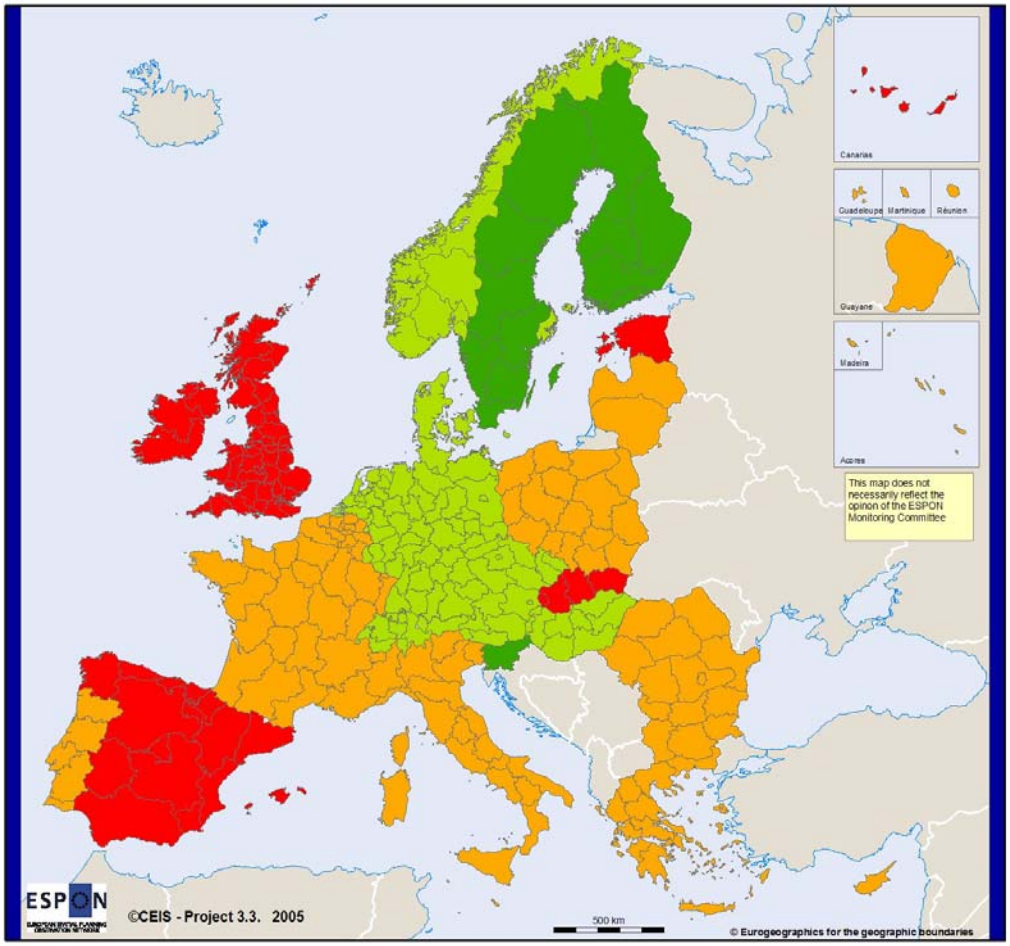
Legend

CLASSES

- High
- Medium - high
- Medium - low

QUANTILES VERSION

Map C35 - "SOCIAL QUALITY AND COHESION" (QUALITY - VULNERABILITY)



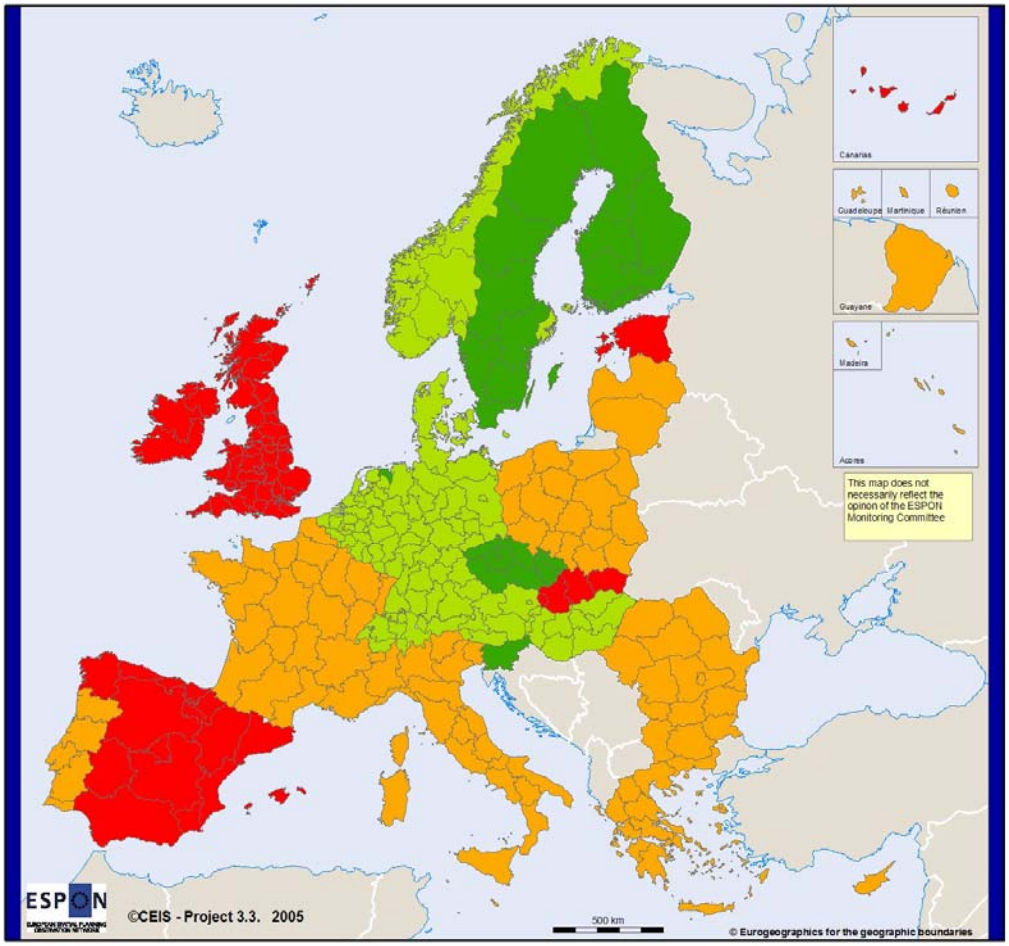
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C35 - "SOCIAL QUALITY AND COHESION" (QUALITY - VULNERABILITY)



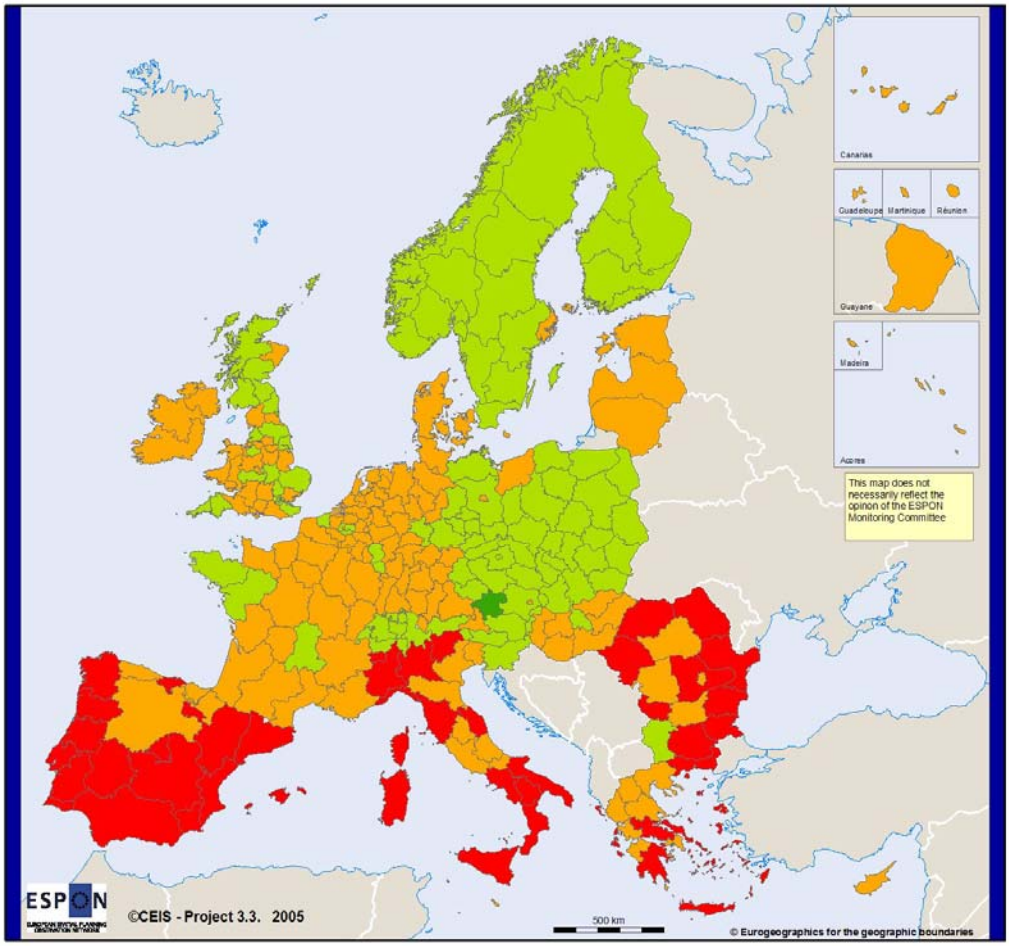
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C35a - "COHESION ATTITUDE"



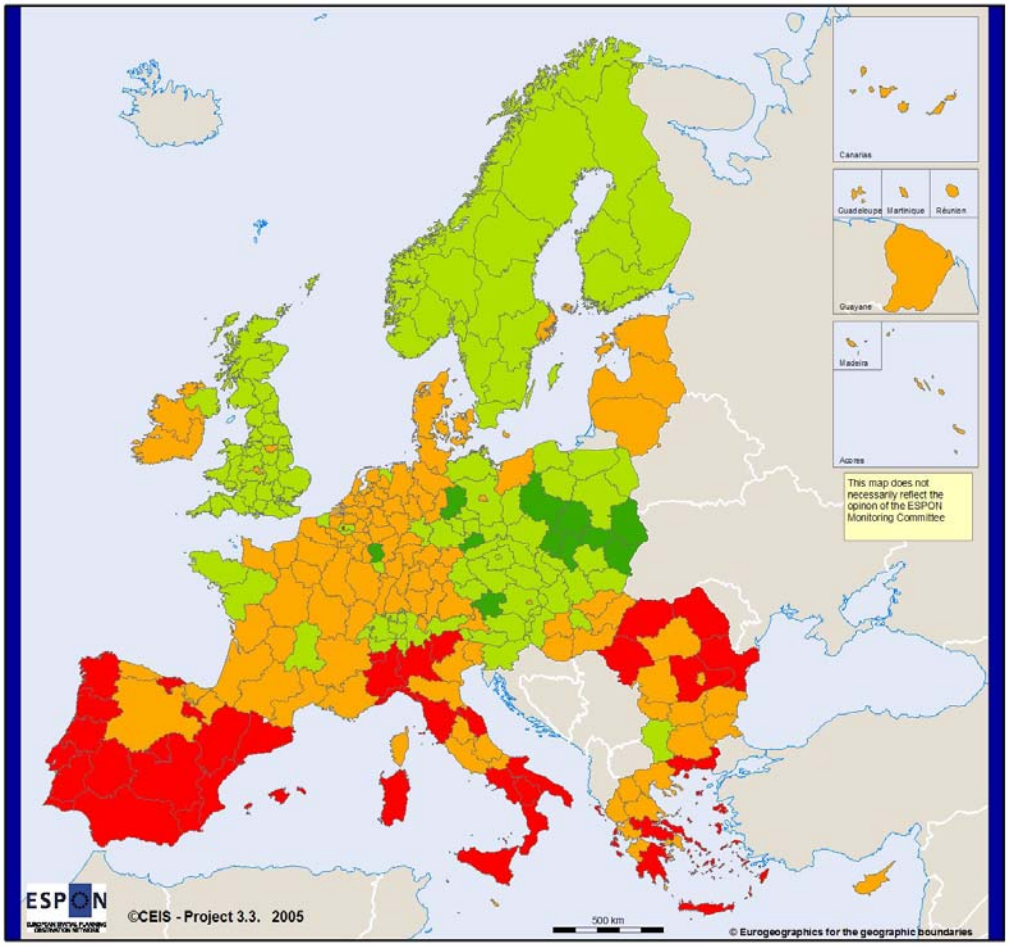
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C35a - "COHESION ATTITUDE"



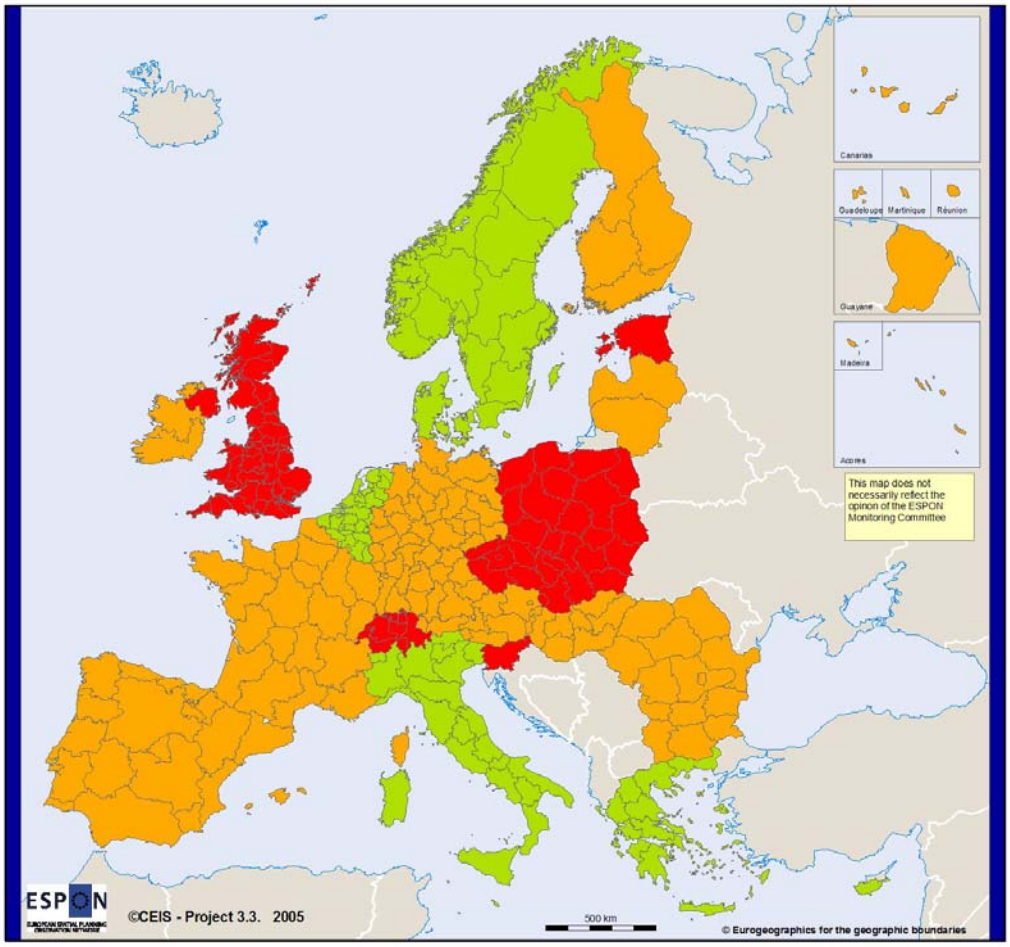
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C36- "QUALITY - STATUS QUO"



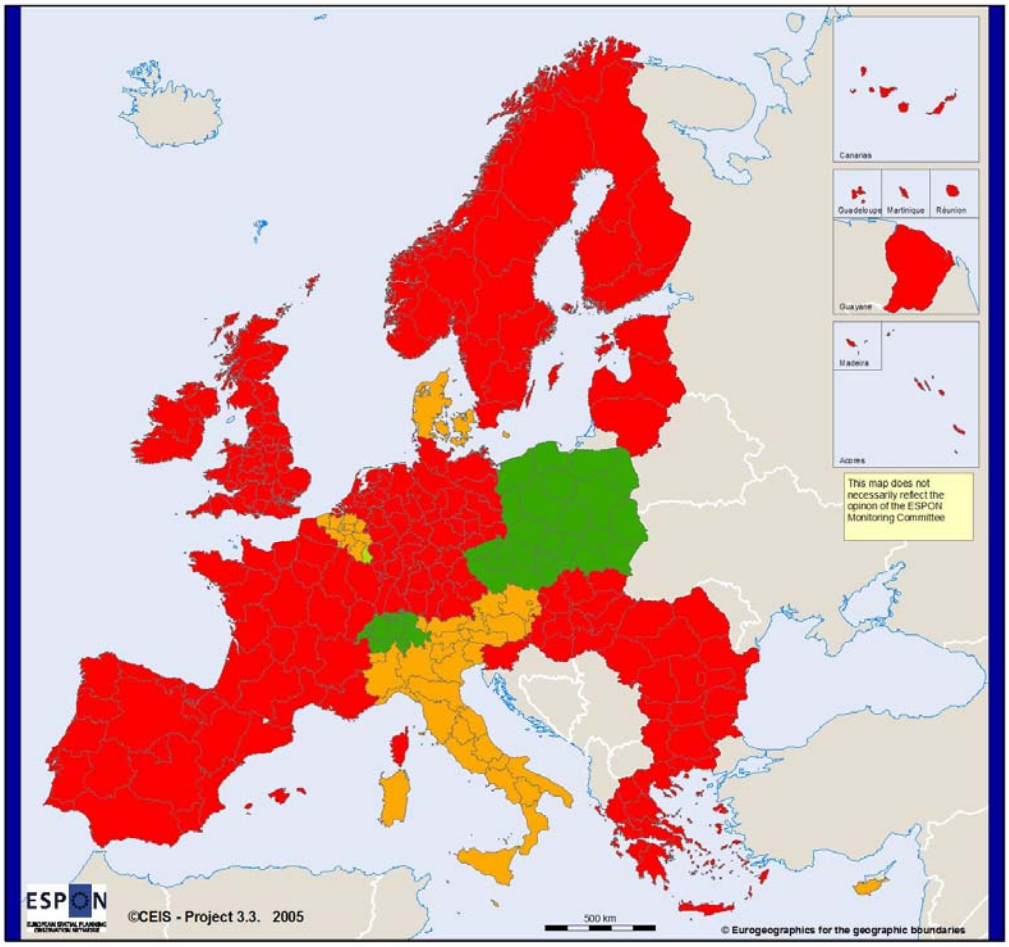
Legend

CLASSES

- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C36- "QUALITY - STATUS QUO"



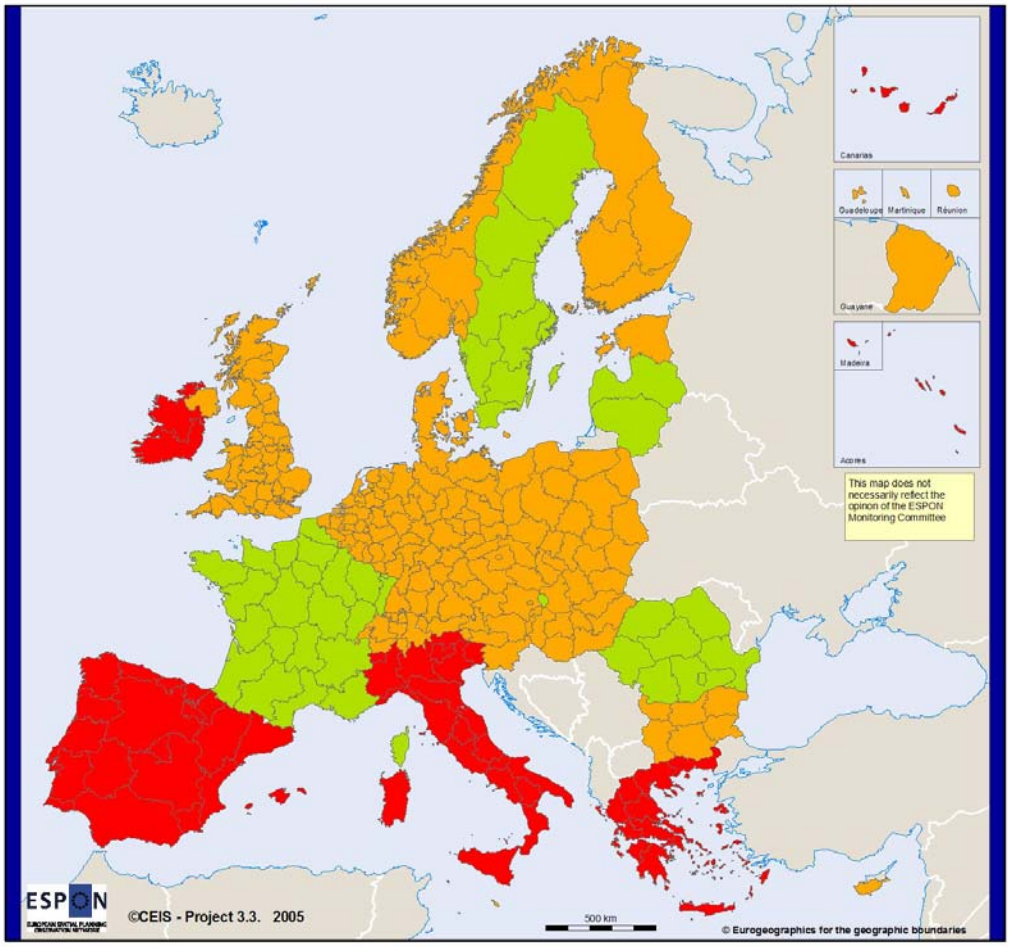
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C36a- "LIFE AND ENVIRONMENTAL QUALITY"



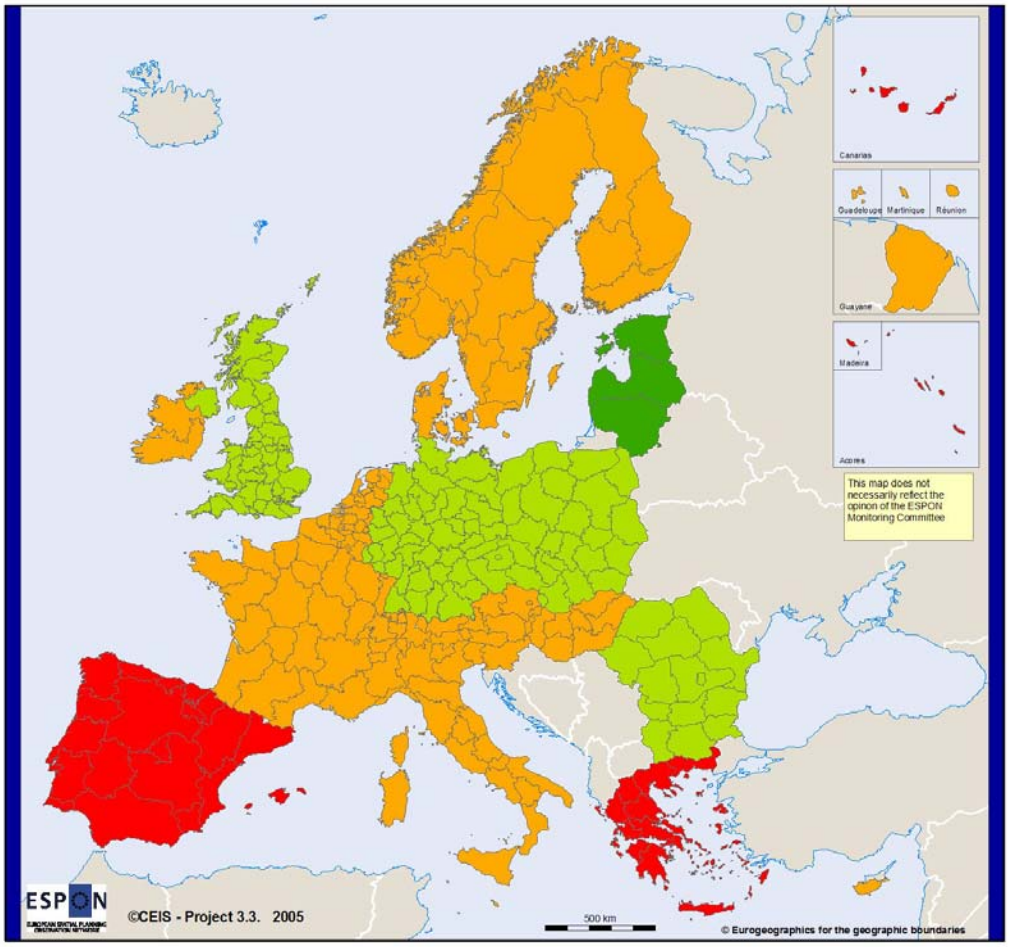
Legend

CLASSES

- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C36a- "LIFE AND ENVIRONMENTAL QUALITY"



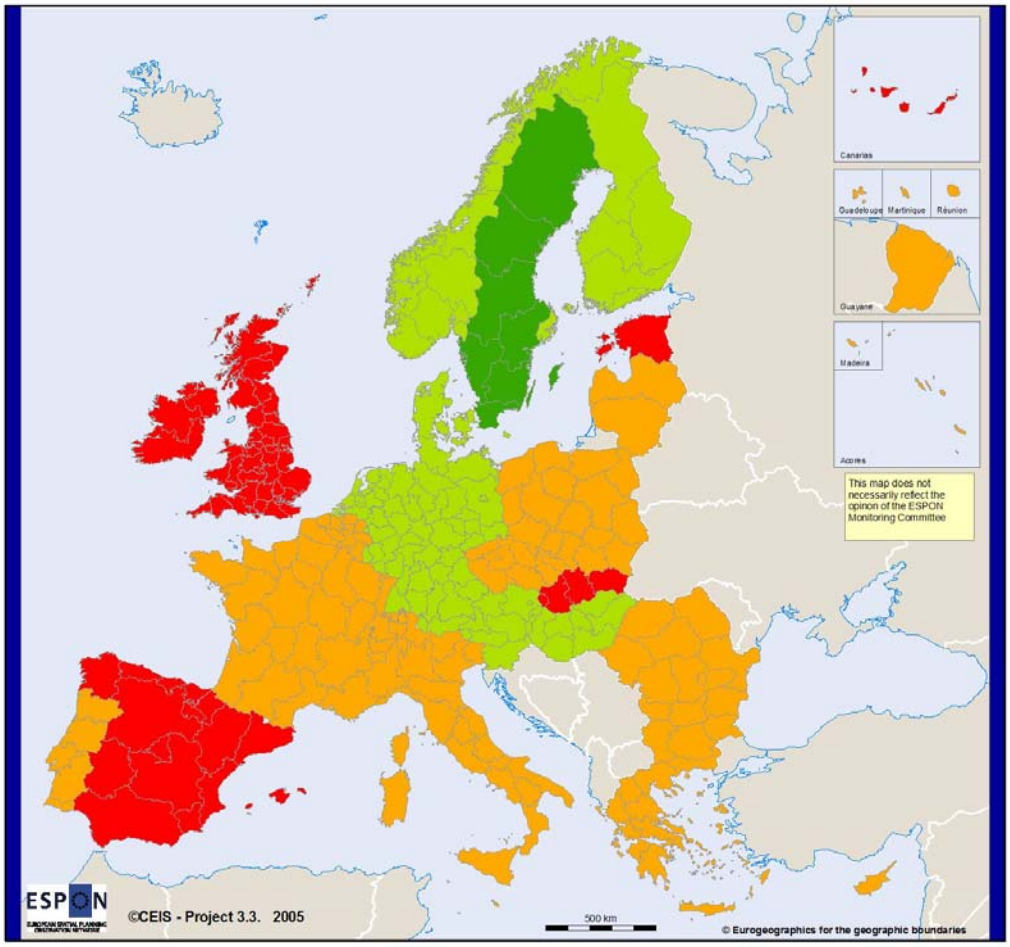
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C37- "DETERMINANT QUALITY"



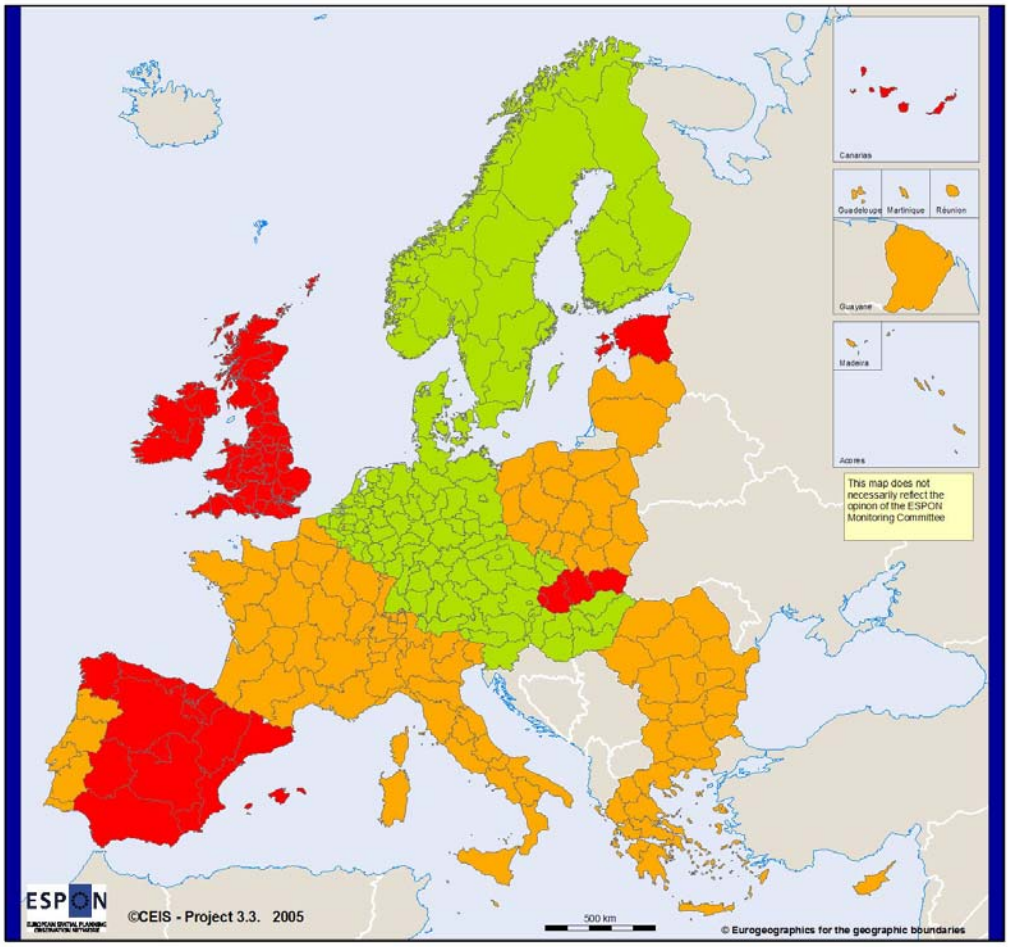
Legend

CLASSES

- High
- Medium - high
- Medium - low
- Low

EQUAL VERSION

Map C37- "DETERMINANT QUALITY"



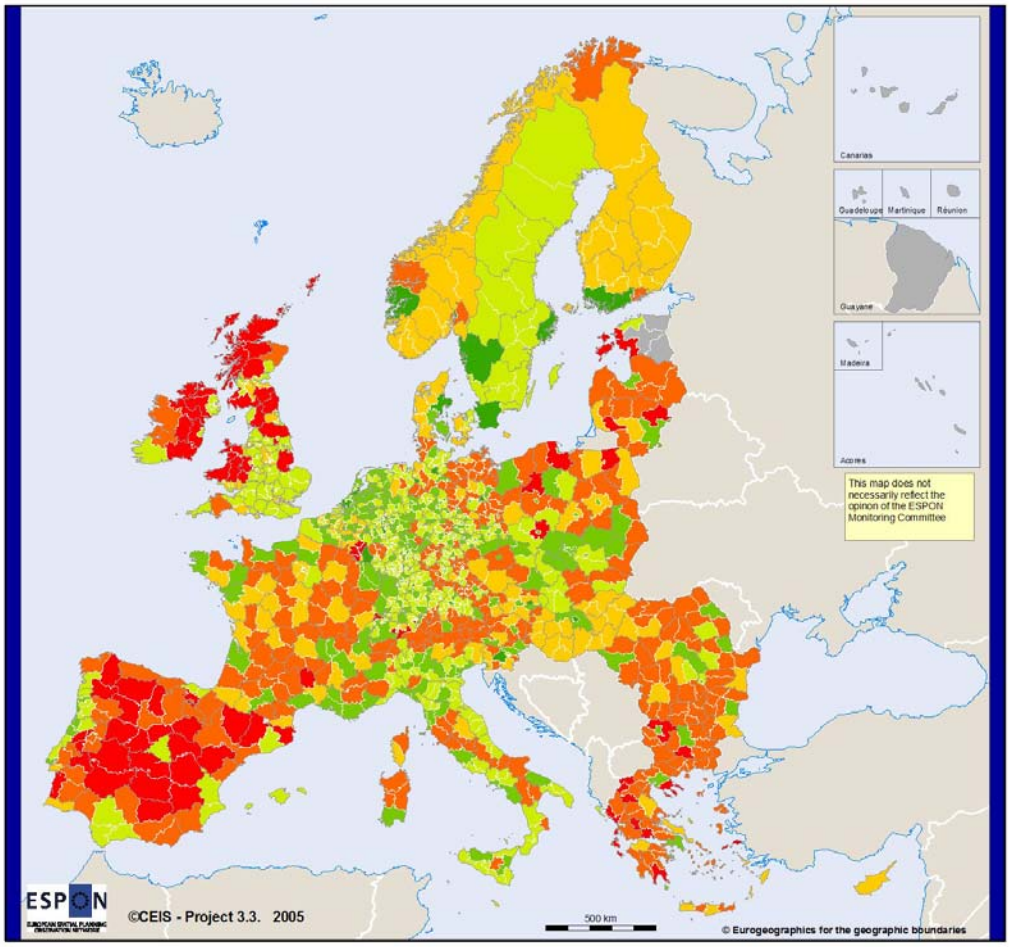
Legend

CLASSES

- Medium - high
- Medium - low
- Low

QUANTILES VERSION

Map C37T- "DETERMINANT QUALITY" - TERRITORIALIZATION -



Legend

CLASSES

- Absolute
- Very High
- High
- Medium
- Low
- Very Low
- No Data

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA

Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

Annex II D

"Resources and funds" Determinant

Maps and comments

30 September 2005

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

This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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

The partnership behind the ESPON programme consists of the EU Commission and the Member States of the EU25, plus Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

Information on the ESPON programme and projects can be found on www.espon.lu
The web side provides the possibility of downloading and examining the most recent documents produced by both finalised and ongoing ESPON projects.

This basic report exists only as an electronic version.

As you will be asked for the name and address of the editor the Lead partner should as the responsible person of the project assume the role of the editor and give information accordingly.
The registration in the world wide catalogue is free of charge.

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Resources and funds: comments of the maps

The comparison of the *two final maps of the determinant Resources and Funds (R&F)* pictures –as expected- a general uniformity at the level of investigation by Equal interval classification (Map. D14 Equal), but a better differentiation level at regional level arise from the quantile scheme (Map. D14 Quantile).

In the broader analysis (Map. D14 Equal), the EU 15 countries have got a *medium-high* profile about the level of resources and funds, except the Scandinavian countries and Greece (*medium-low* profile); the new countries, except Lithuania, Estonia and the capital regions, picture a *medium-low* profile, justified from the use of the pre-accession funds. The general national status quo in the use of the funds is *high* for Spain and some German laender.

At regional level (Map. D14 Quantile), the differences are more evident, with a *low* profile in few Mediterranean regions of the Southern of Italy, Portugal, Greece and the Eastern regions; a general *medium-high* level in all regions, *few high* levels into some regional enclaves of United Kingdom, Germany, France, Italy.

This difference becomes interesting if we look at the territorialisated map D14_T, crossing the regional R&F Q data with the territorial typologies at NUTs3. Here, the values from *medium-high* to *absolute* are distributed into old and new regions, and all countries have got almost one region with low values

Regarding the single indicators (first level or input data), it is possible to note (for equal interval maps):

- referring to the *Policies for the Lisbon Strategy (Structure)* (Map. D1 E): a North/South divide is shown to be the strongest division, followed by an East/West divide and to a certain extent a Centre/Periphery one. In view of the first, the Lisbon recommendation for regionally led innovation poles would seem to be most appropriate, particularly if backed by EIB funding, also as suggested by that strategy. To compensate for the inadequacies in Central and Eastern Europe, new strengths may emerge by building up interventions in leading areas as suggested by the team leaders in ESPON project 1.1.3. The map indicates that the central areas of the capital cities of Poland and the Czech Republic are already leading the way in this regard. Given the situation of peripheral areas, the recommendation of ESPON project 1.1.1 – to prioritise the provision of higher order services to second and lower tier cities would be pertinent – in order to broaden the competitive position of

the EU as a whole. In addition, targeting isolated rural areas to tackle depopulation as suggested by ESPON 1.1.2 and 1.3.2 teams would perhaps produce a more balanced picture in the future.

- referring to *Firms Aids* (Map D2 E), polarisation as economic support is fairly clear cut – virtually the whole of Central and Eastern Europe, Ireland and Portugal have the *lowest* level of state support to firms. In the latter two cases the reason may be reliance on EU monies.
- referring to *Human Capital Expenditure* (Map D2b E), here there is less polarisation, a more even spread of expenditure, except for Greece, the Czech Republic, most of Hungary and Slovakia and parts of Spain and Portugal.
- referring to *Public Expenditure for Employment* (Map D2c E) there is a diagonal concentration of high public expenditure from Ireland through to Italy, with the South West, North East and Central East exhibiting much lower levels of expenditure. Looking at Map D2c alongside D1, it would seem logical to follow the Lisbon Strategy in terms of human resources – i.e. building up the service sector in IT, telecommunications etc. in these areas to sustain more specific Human Capital Policies
- Generally, the national differences are apparent about the *Level of Interventions to the Lisbon Strategy* (Map D4 E) in area surrounding Madrid, South-East France, South-East UK. Differentiation is shown within Sweden, low level of interventions in Northern Italy and islands and high degree of regional variation elsewhere.
- referring to *Climate and Natural Resources Expenditure* (Map D5a E), a substantially lower expenditure is evident in the East, only matched by Southern Portugal, Corsica and small areas of Southern Belgium and Northern Italy. Recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems.
- referring to *Structural Funds and Accessibility by Population* (Map D5b E) it is interesting in terms of the dark red clusters and in the light of the recommendation from 2.1.1 that transport should be developed to enhance EU competitiveness as a whole – and not directed to national objectives. One would hope for a different map in 15-20 years if ESPON recommendations (1.1.1 and 1.2.1) of developing corridors between urban areas are followed (n.b. The choice of indicator for accessibility is interesting here - hours by car

- in view of ESPON 1.2.1 policy conclusions and the Gothenburg Agenda.).

- about the *policies for the Gothenburg Strategy (Structure)* (Map D6 E), the East/West division is very strong.
- referring to *Public Expenditure for Public Health* (Map D7a E), the lowest expenditures are the Netherlands, Belgium, Germany and then Central and Eastern Europe. This may reflect different systemic coverage. In the Gothenburg Strategy public health is one of four priority areas for inter-EU agreement, thus more standardisation in the future would be expected.
- About *Public Expenditure for Poverty and Ageing* (Map D7b E), the highest expenditure is apparent in the UK, Denmark, Italy and parts of Germany, Sweden and Finland. Lower levels of expenditure elsewhere may to a certain extent reflect demographic differences. High spending may also demonstrate the need, according to the principles of Lisbon, for labour markets to become more inclusive of older workers.

At regional level (Q maps), the constitutional differences play an important rule in the application of Lisbon and Gothenburg strategies

- referring to the *Policies for the Lisbon Strategy (Structure)* (Map. D1 Q): some regions of UK, Belgium, Austria, Germany, Netherlands, France, Denmark, Sweden, Finland are shown to be strongest for the effect of an autonomous regional government (federalism or similar system). The map indicates that the central areas of the Czech Republic capital city is already leading the way in this regard.
- referring to *Firms Aids* (Map D2 Q), UK and Norway are the highest general regional level of economic support, while the French and German regional values appear homogenous (medium-high).
- referring to *Human Capital Expenditure* (Map D2b Q), there is less polarisation, except for Italy, Denmark, part of Romania. Greek regions are at same low level of new countries.
- referring to *Public Expenditure for Employment* (Map D2c Q) there is a diagonal concentration of high public expenditure from Ireland through UK to whole Italian regions, while it would seem low the expenditure in Spain, Norway, Greek to follow the Lisbon Strategy in terms of human resources. In these regional areas it should be necessary to sustain more specific *Human Capital Policies*, as well as in Austria and Belgium.
- The regional differences are more strong about the *Level of Interventions to the Lisbon Strategy* (Map D4 Q) and the majoe

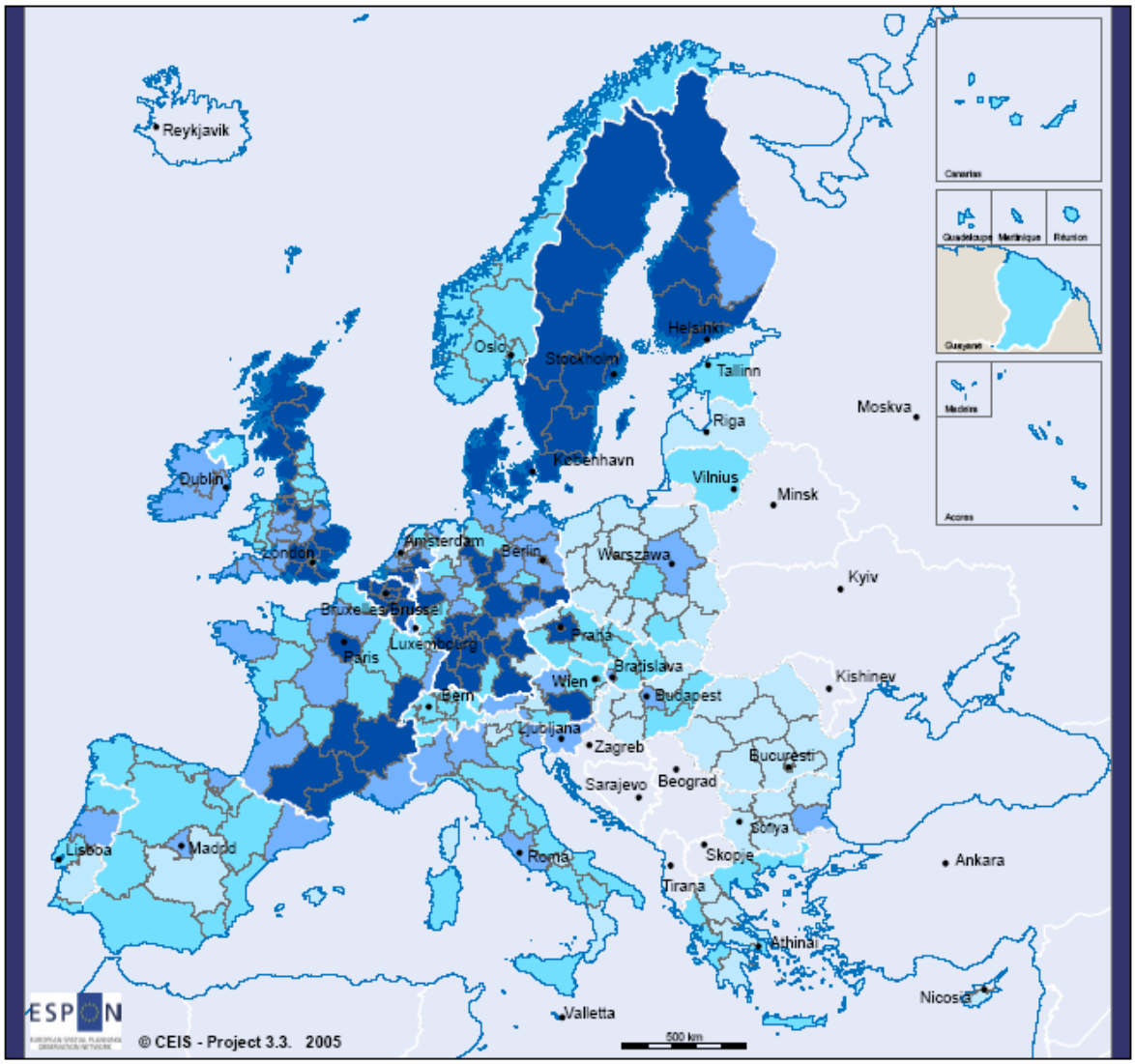
level of interventions are concentrated into Pentagon area and in the Adriatic corridor.

- referring to *Climate and Natural Resources Expenditure* (Map D5a Q), a substantially lower expenditure is evident in the Eastern regions, only matched by Southern Portugal, Corsica, Greek and small areas of Southern Belgium and Italy. For them, some recommendations drawn from ESPON project 1.3.1 may be most appropriate, stressing international exchange in relevant aspects of innovation and research and cross-border activities in pollution, risk prevention and tackling environmental problems. Generally, the old EU regions have got an *high* and *medium-high* consciousness about the environmental problems and a lot of them are drawing long-term plan to reach the full sustainable development (see the recently re-launch of the Kyoto Protocol). In a lot of cases, this choice is sustained by the regional enterprises system (see Quality).
- in relation to *Structural Funds and Accessibility by Population* (Map D5b Q), it is interesting to look at the *high* values of the laender around Berlin (Germany), few regions as Campania and Sicily (Italy), Herefordshire and Shropshire in the North of London (UK), Norte e Centro (Portugal), Castilla y León (Spain), Belgium and Rastand Holland (Netherlands), where there is a major sprawl of productive settlements (periurbanisation/rurbanisation phenomena) which feel the need of a quik access.
- among these regions, the *policies for the Gothenburg Strategy (Structure)* (Map D6 Q) pictures more high values in the Mediterranean area than in central core of EU.
- referring to *Public Expenditure for Public Health* (Map D7a Q), the higher expenditures are in United Kingdom, Denmark and Italy. This may reflect different priorities in the development regional plans. i.e., the public health reform as to match the Gothenburg Strategy is one of the priorities of Italian regional governments, but it is not the same in Sweden or in other countries, where the welfare organization is more balanced from a long time and the Public Expenditure for Public Health has a constant and continuous level.
- About *Public Expenditure for Poverty and Ageing* (Map D7b Q), the highest expenditure is apparent in the same regions. This shows a radical changing in the regional government priorities into some countries and their increased attention to apply the European policies. It should seem a test to measure the cohesion trend, too.
- About the *level of cooperation* (Map D12 Q), Germany and Spain are the countries with the highest regional level. Their percentage of

Interreg III use of resources involve all the regions respect to a medium-high level of old regions.

QUANTILE VERSION

MAP D1 - POLICIES FOR THE LISBON STRATEGY (STRUCTURE)

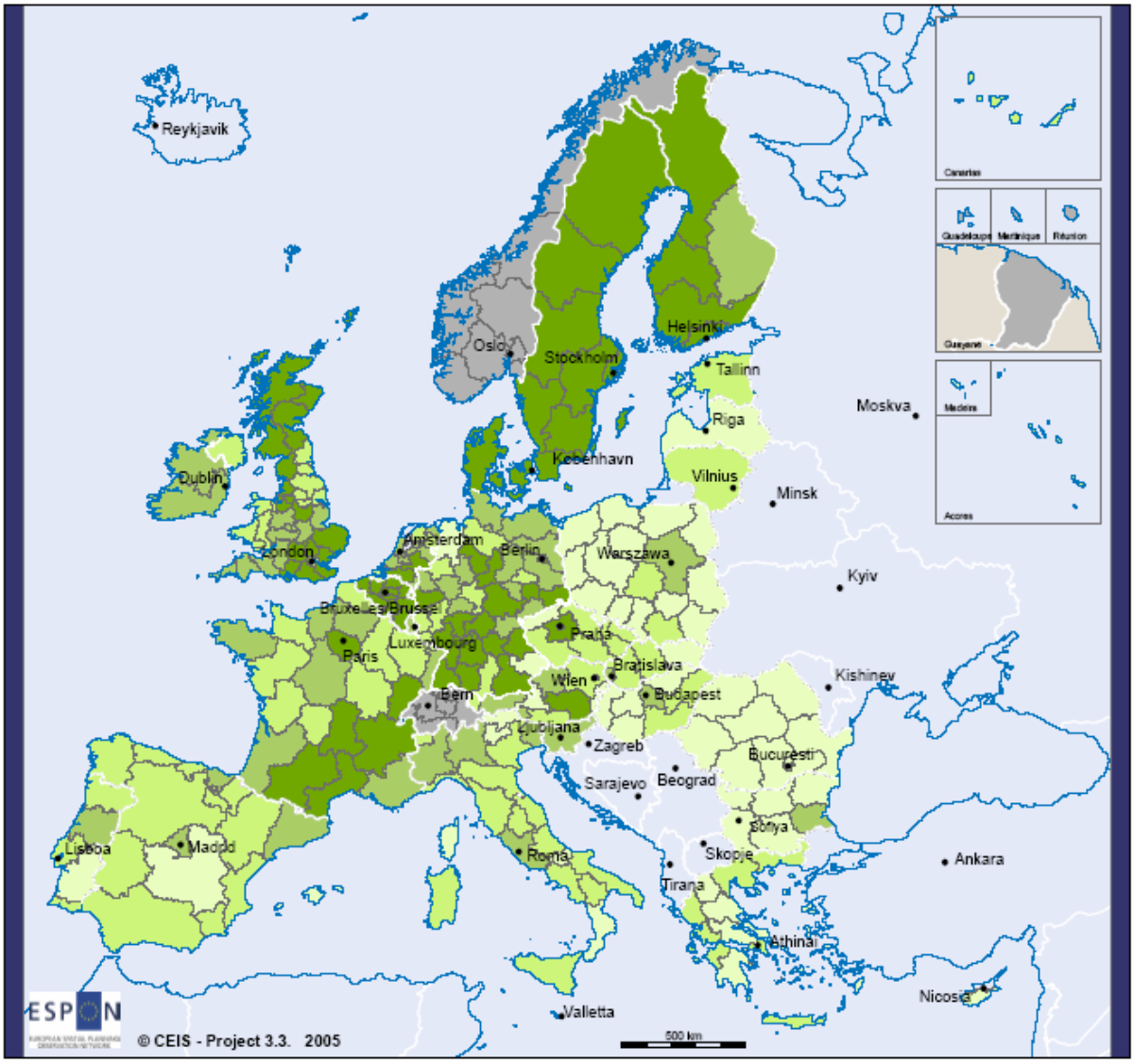


R&D expenditure

- A = Hight
- B = Medium hight
- C = Medium low
- D = Low

EQUAL VERSION

MAP D1 - Policies for the Lisbon strategy (structure)

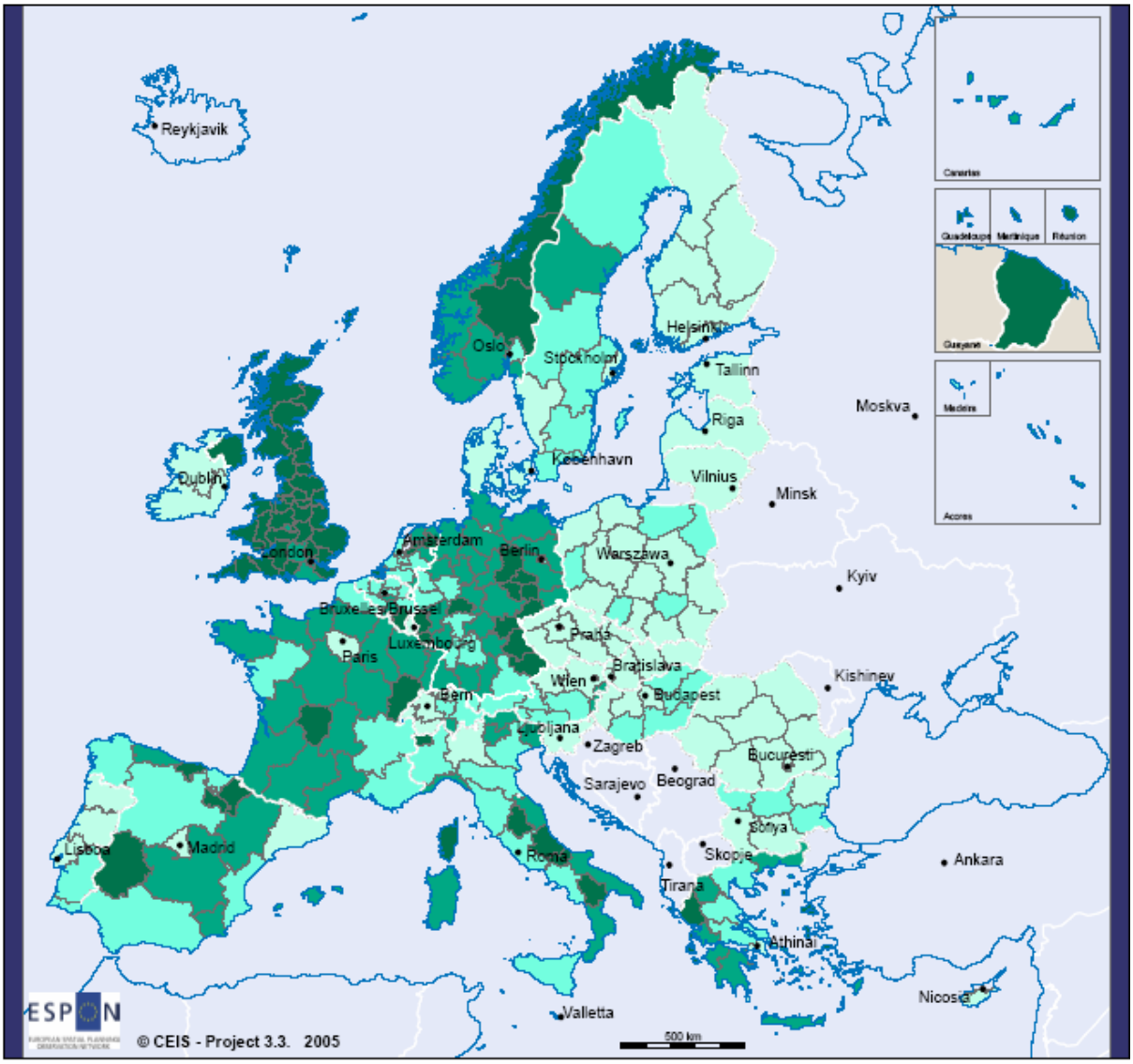


R&D expenditure

- A = High
- B = Medium high
- C = Medium low
- D = Low
- no data

QUANTILE VERSION

MAP D2a - FIRMS AIDS

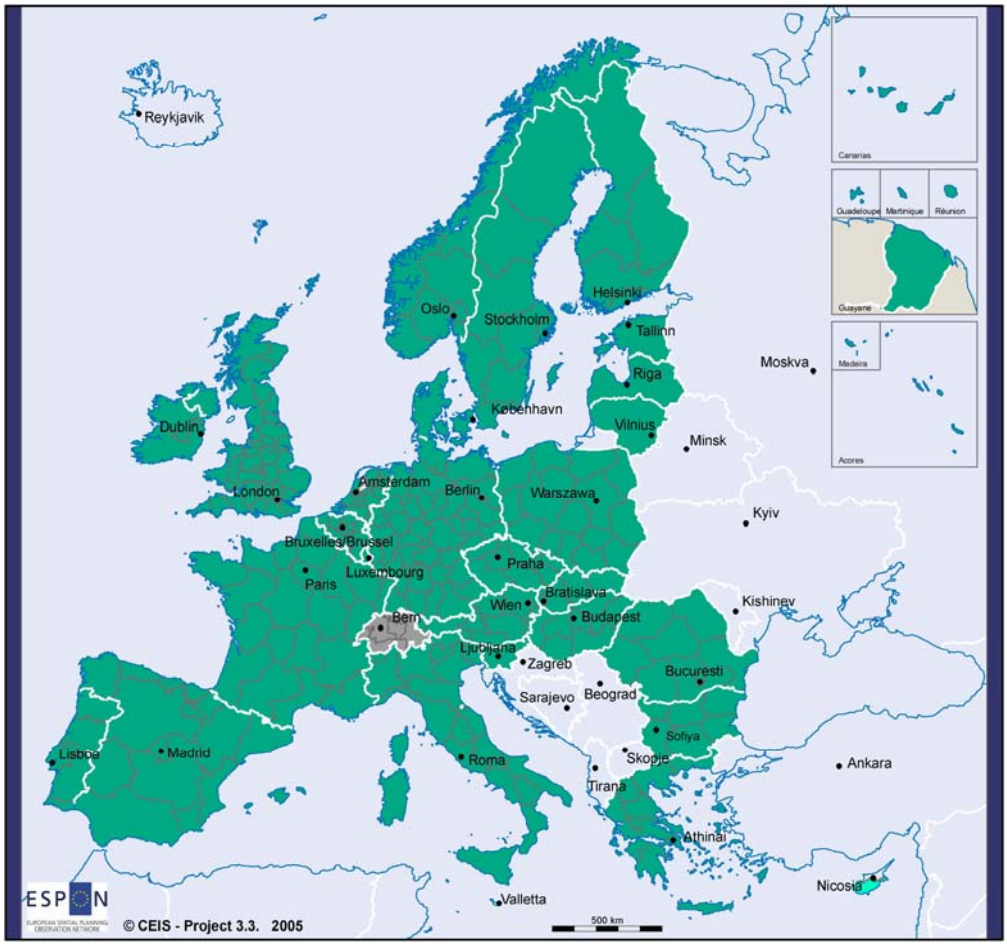


Level of National aids in % of GDP

- A 0 - 0.010
- B 0.010 - 0.025
- C 0.025 - 0.089
- D > 0.089

EQUAL VERSION

MAP D2a - Firms aids

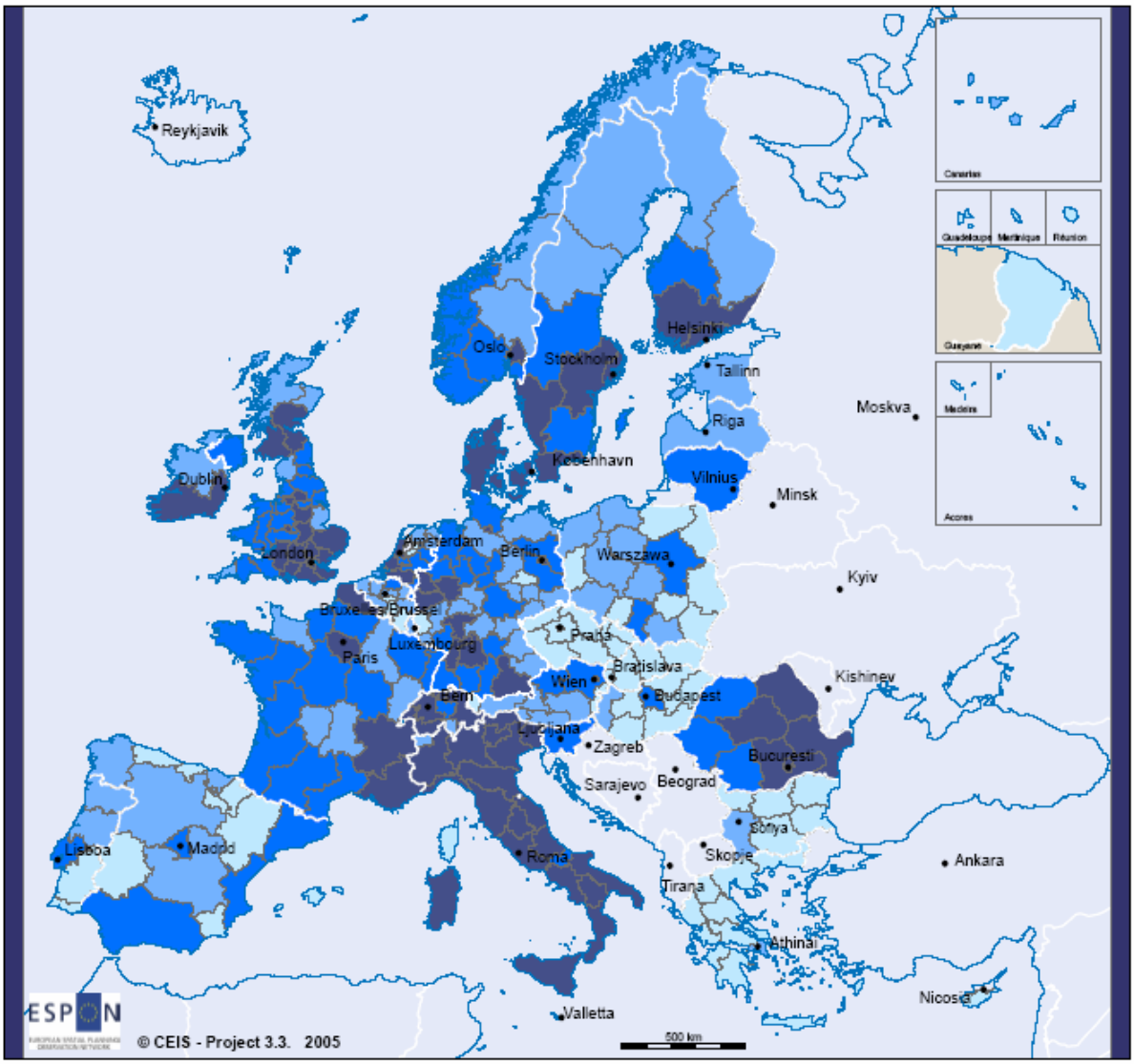


Level of National aids in % of GDP

- A 0 - 1.07
- C 2.14 - 3.21
- D 3.32 - 4.28
- no data

QUANTILE VERSION

MAP D2b - HUMAN CAPITAL EXPENDITURE

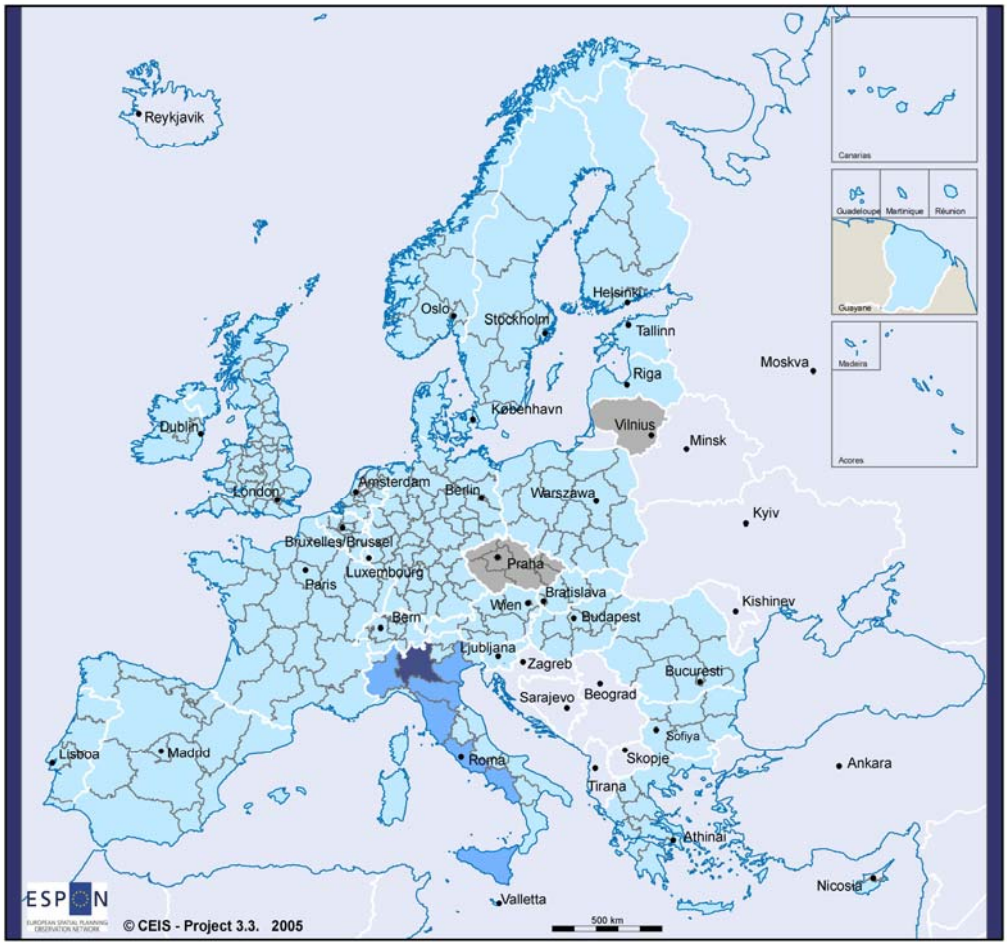


Human capital expenditure per capita in PPS

a	> 471.94
b	212.31 - 471.94
c	86.28 - 212.31
d	0 - 86.28

EQUAL VERSION

MAP D2b - Human capital expenditure

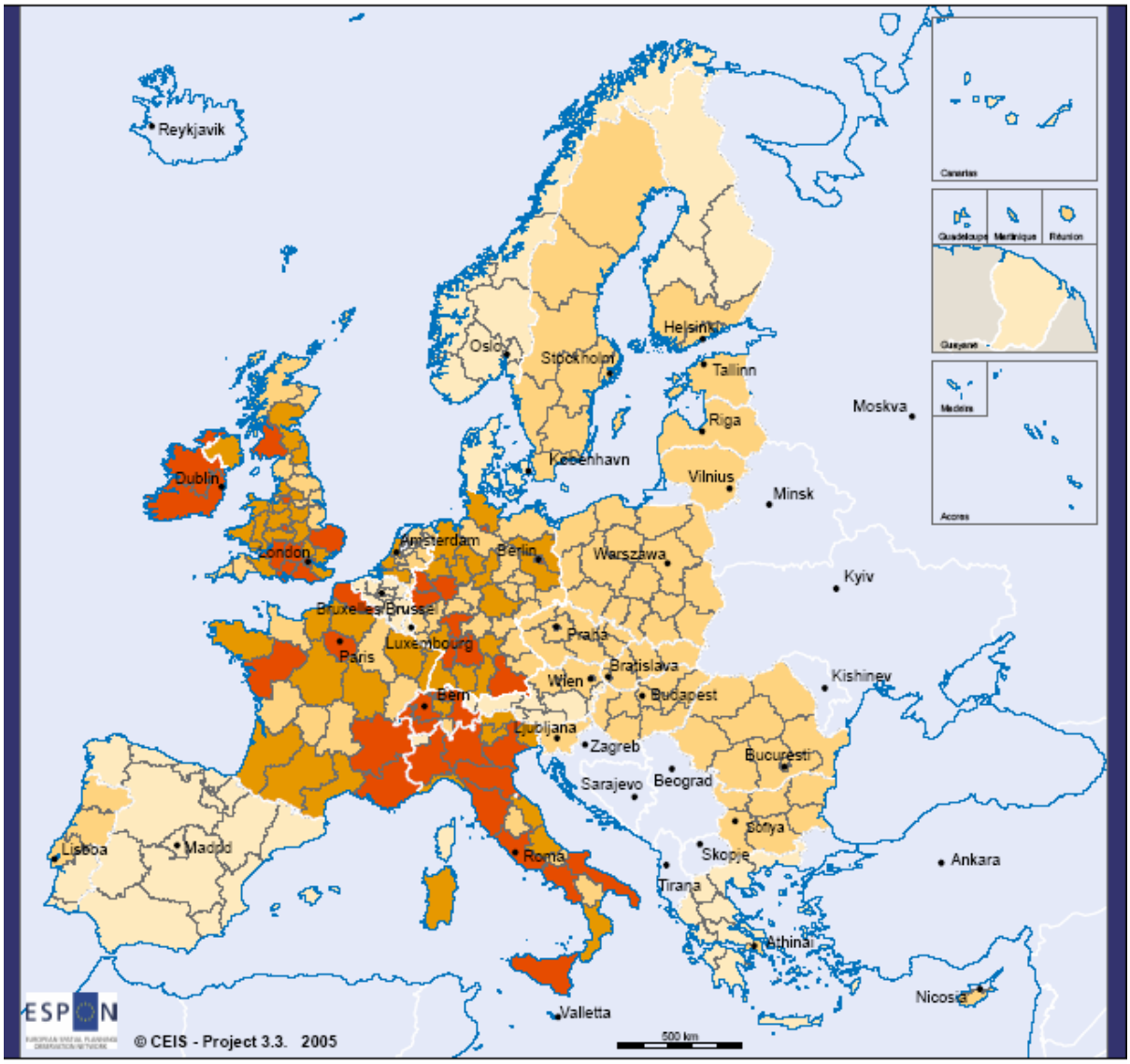


Human capital expenditure per capita in PP
(equal break class)

a	10500 - 14001.87
b	7000 - 10500
c	3500 - 7000
d	0 - 3500
no	data

QUANTILE VERSION

MAP D2c - PUBLIC EXPENDITURE FOR THE EMPLOYMENT

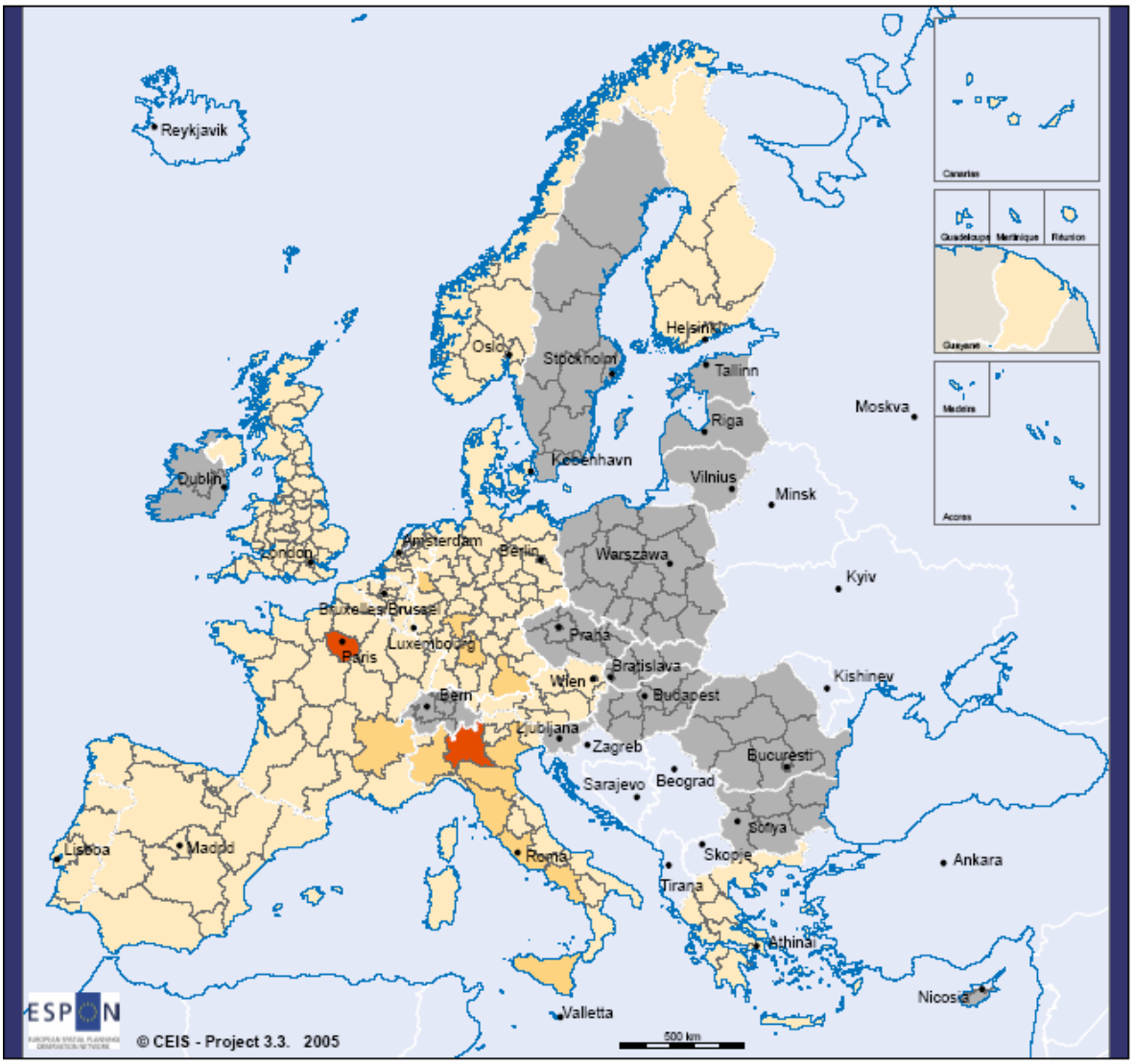


Public expenditure per capita in PPS

- A > 52.92
- B 27.17 - 52.92
- C 4.64 - 27.17
- D 0 - 4.64

EQUAL VERSION

MAP D2c - Public expenditure for employement

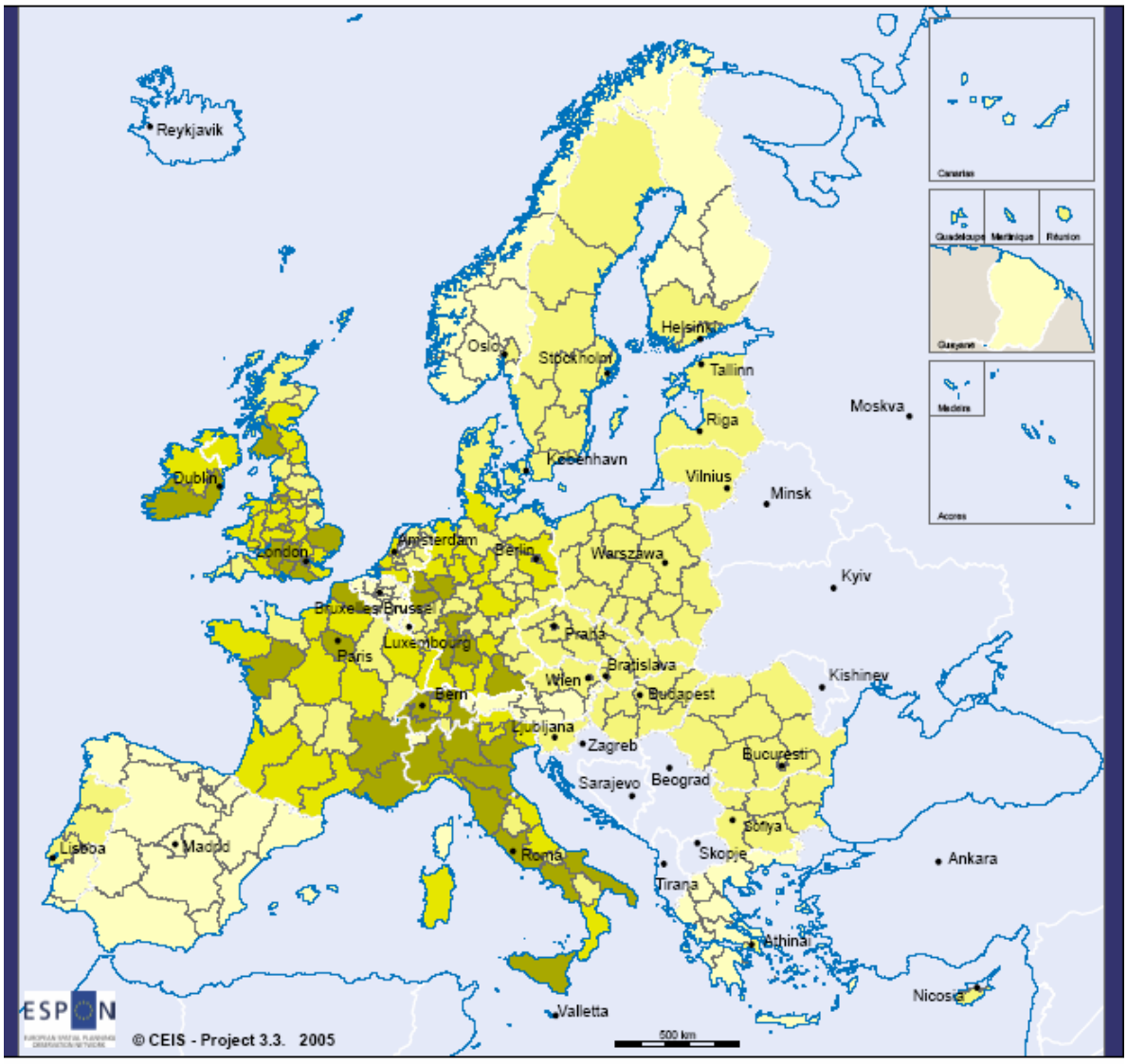


Public expenditure per capita in PPS

- A 261.8 - 348.7
- B 174.4 - 261.8
- C 87.2 - 174.4
- D 0 - 87.2
- no data

QUANTILE VERSION

MAP D3a - HUMAN CAPITAL POLICIES

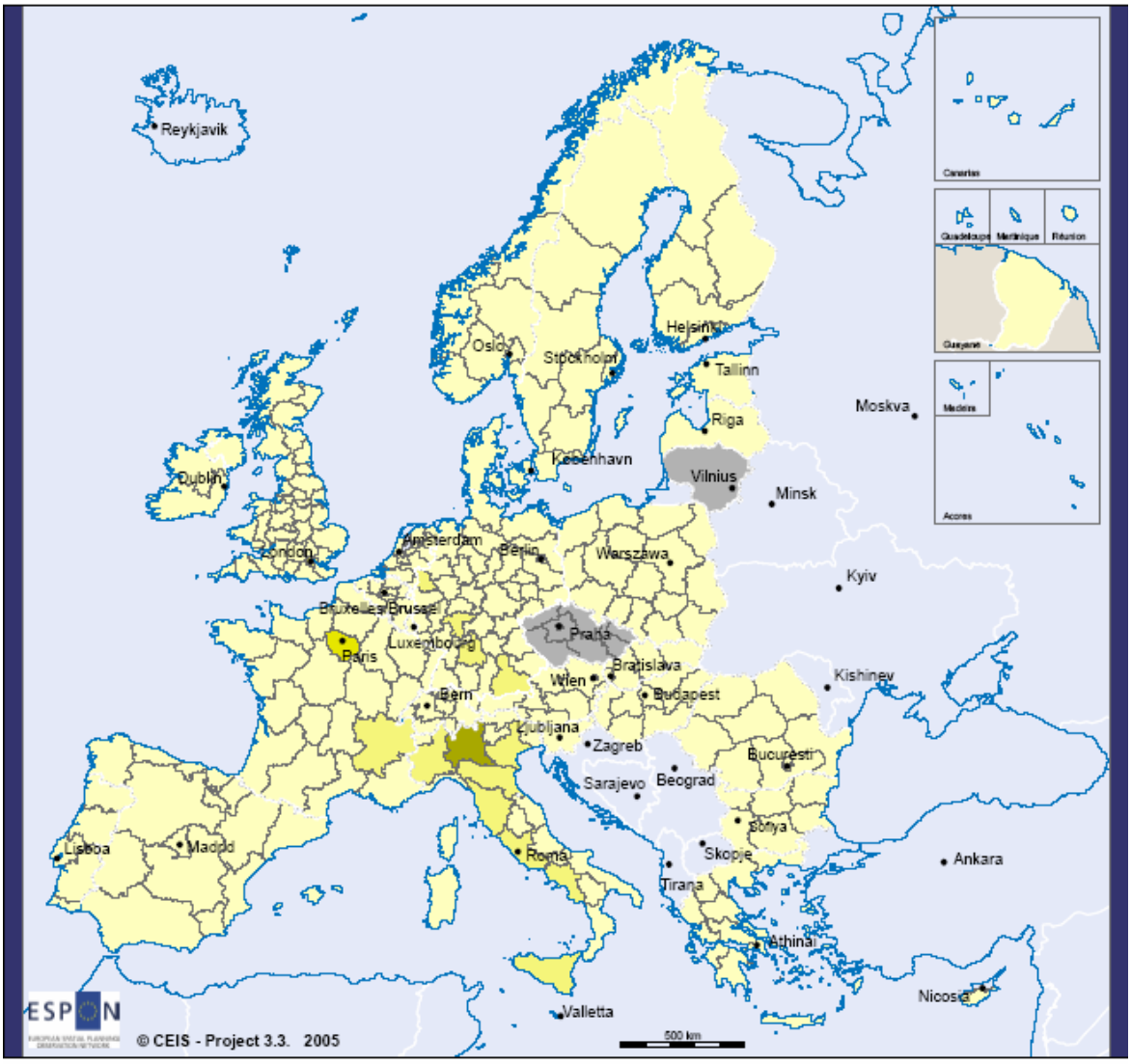


Level of the human capital policies

- a = Hight
- b = Medium hight
- c = Medium Low
- d = Low

EQUAL VERSION

MAP D3a - Human capital policies

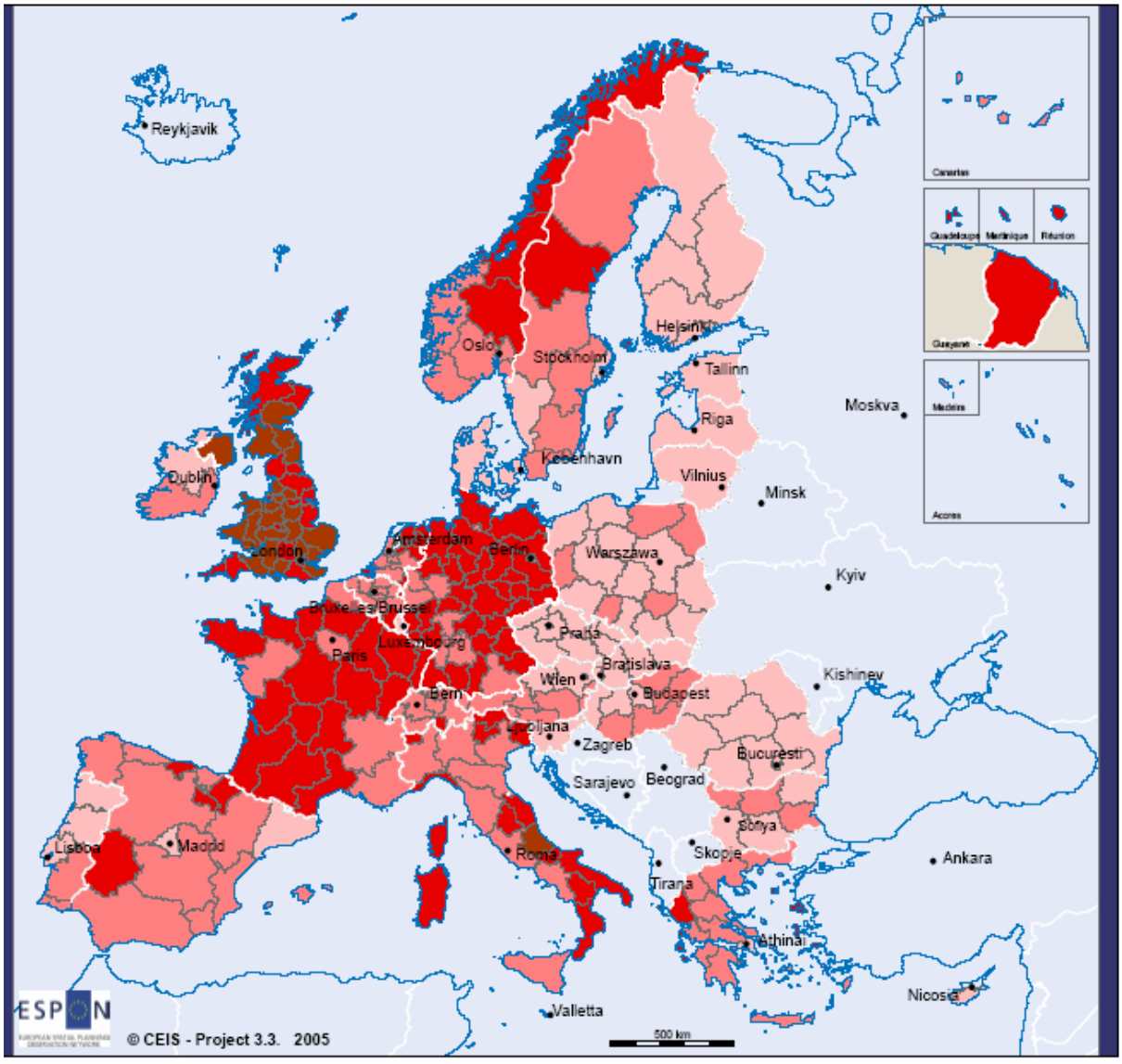


Level of the human capital policies

- a = High
- b = Medium high
- c = Medium Low
- d = Low
- no data

QUANTILE VERSION

MAP D3b- POLICIES FOR THE LISBON STRATEGY (STRUCTURE)

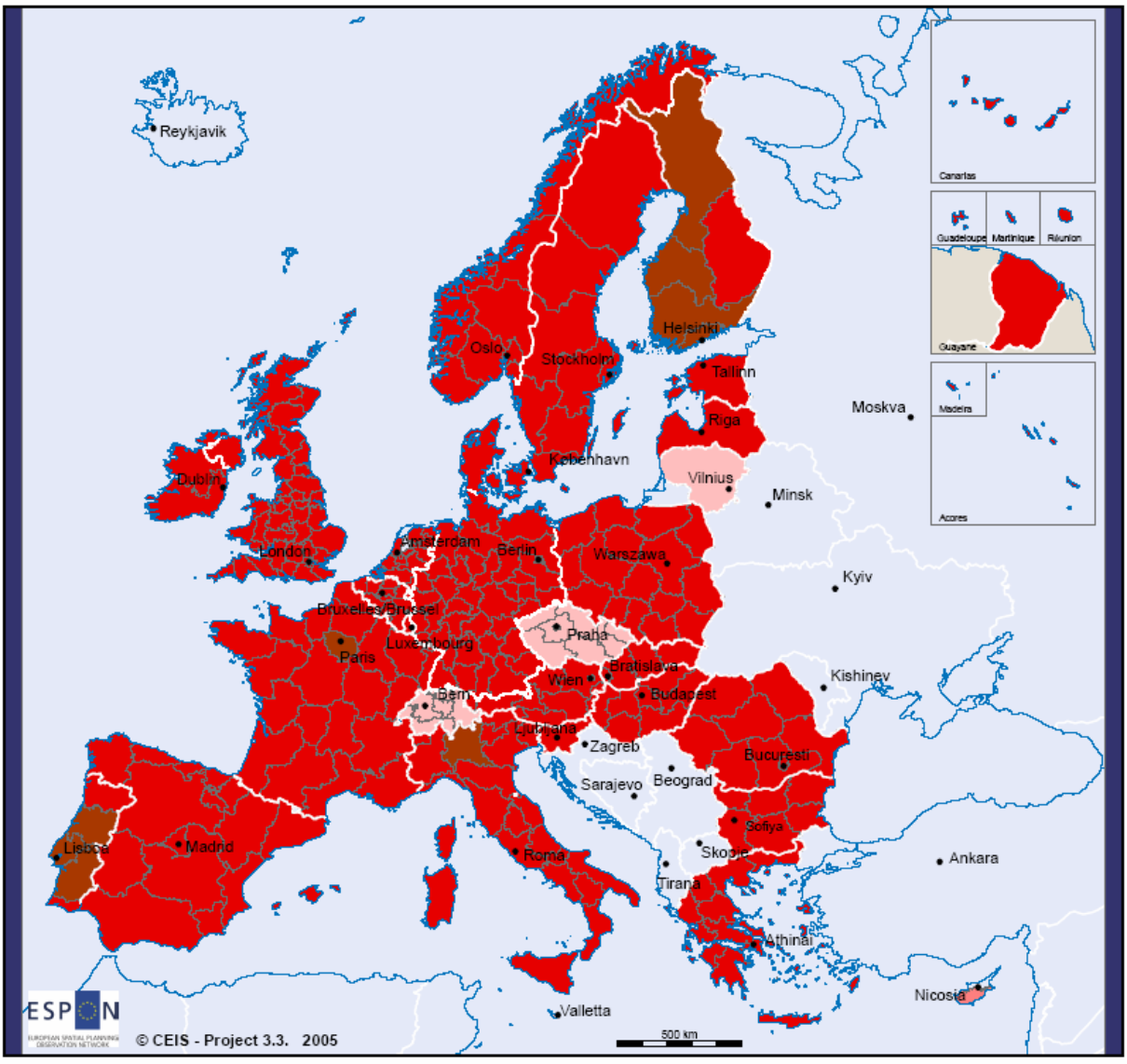


Level of the Policies for the Lisbon Strategy

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

EQUAL VERSION

MAP D3b- Policies for the Lisbon Strategy (structure)

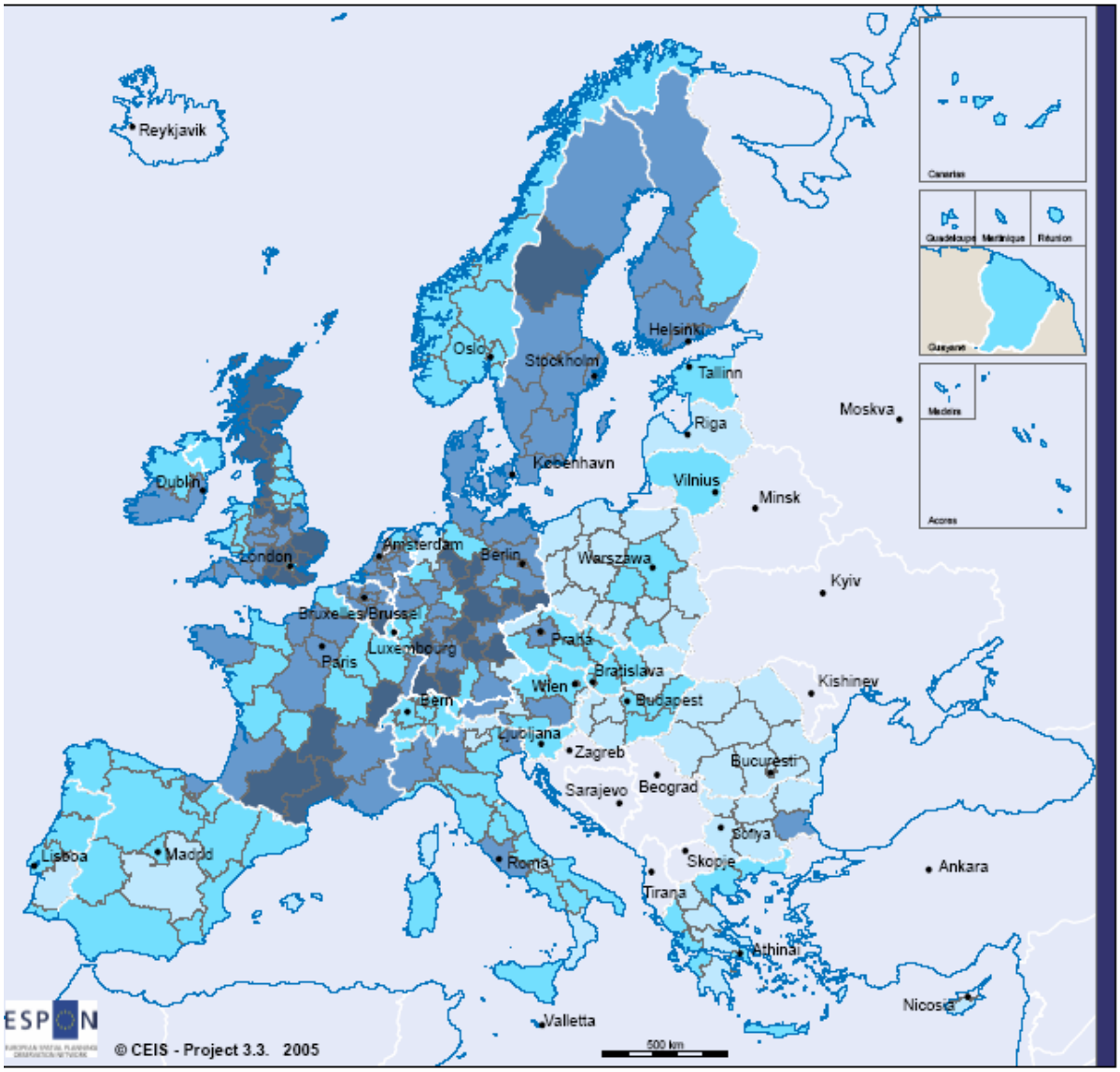


Level of the Policies for the Lisbon Strategy

- a = High
- b = Medium high
- c = Medium low
- d = Low

QUANTILE VERSION

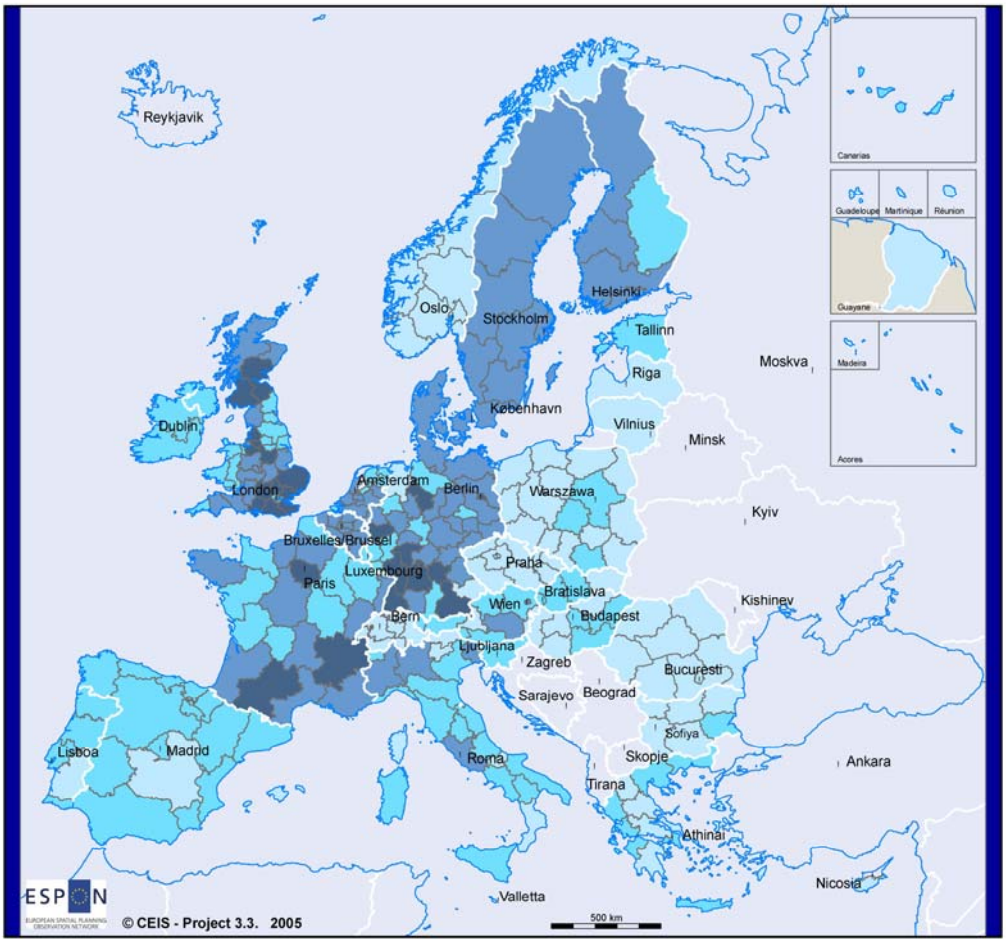
MAP D4 - LEVEL OF INTERVENTIONS TO THE LISBON STRATEGY



Level of the Policies for the Lisbon strategy

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

MAP D4 - LEVEL OF INTERVENTIONS TO THE LISBON STRATEGY

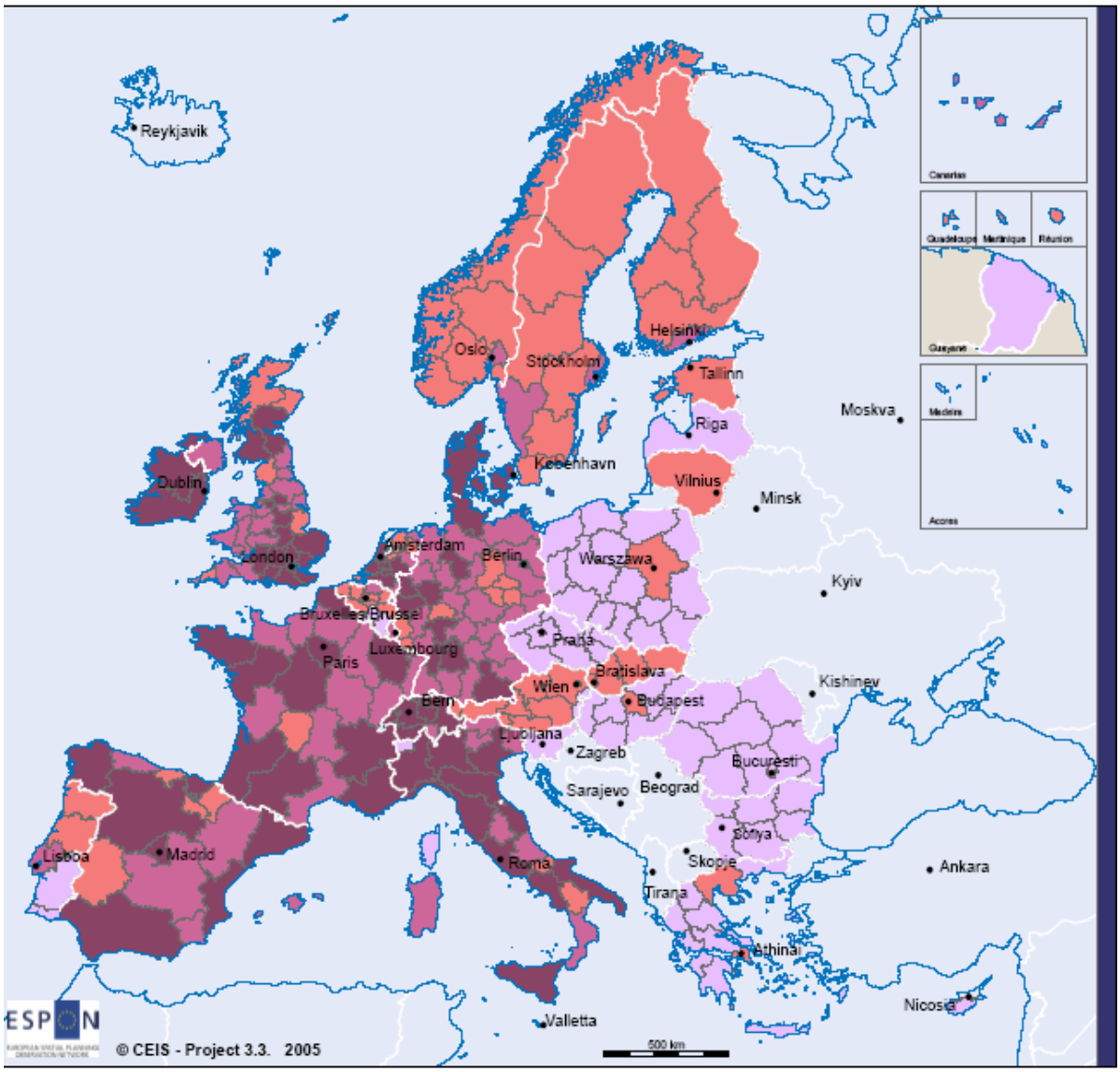


Level of the Policies for the Lisbon strategy

- a = High
- b = Medium high
- c = Medium low
- d = Low

QUANTILE VERSION

MAP D5a - CLIMATE AND NATURAL RESOURCES EXPENDITURE

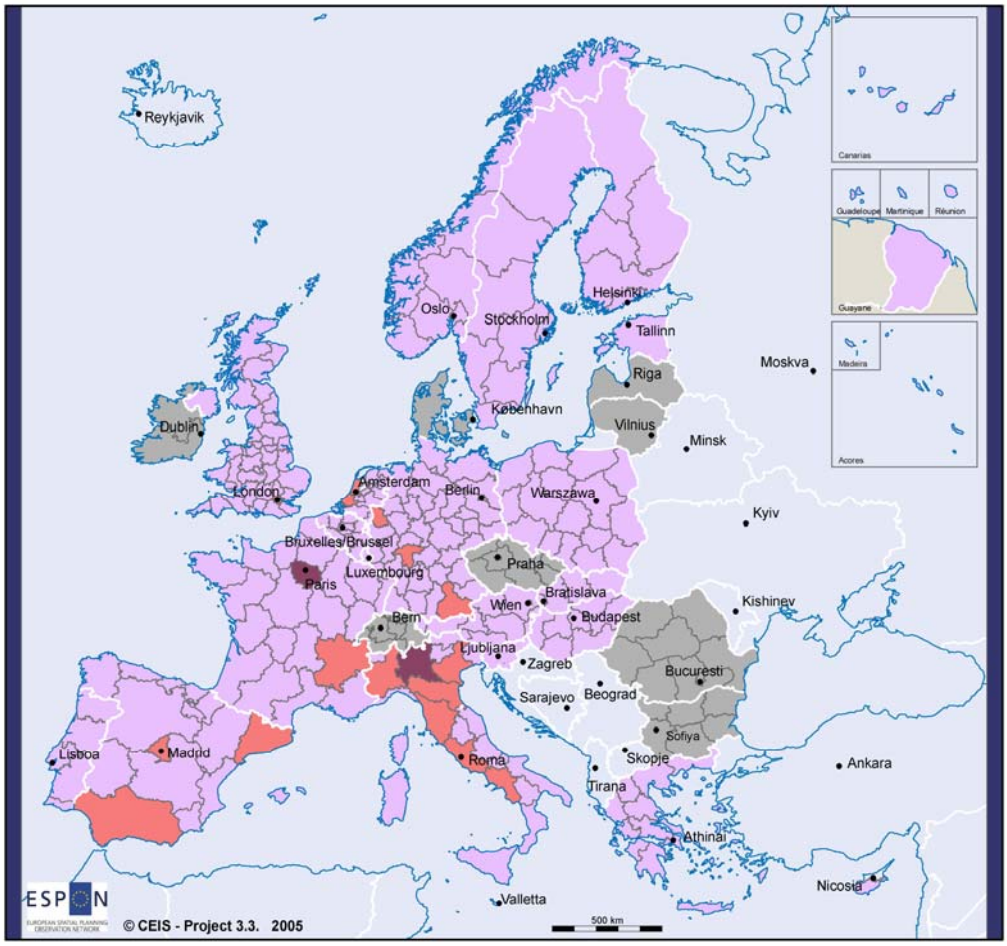


Expenditure in PPS per capita

A	> 157.50
B	72.50 - 157.50
C	18.50 - 72.50
D	0 - 18.50

EQUAL VERSION

MAP D5a - Climate and natural resources expenditure

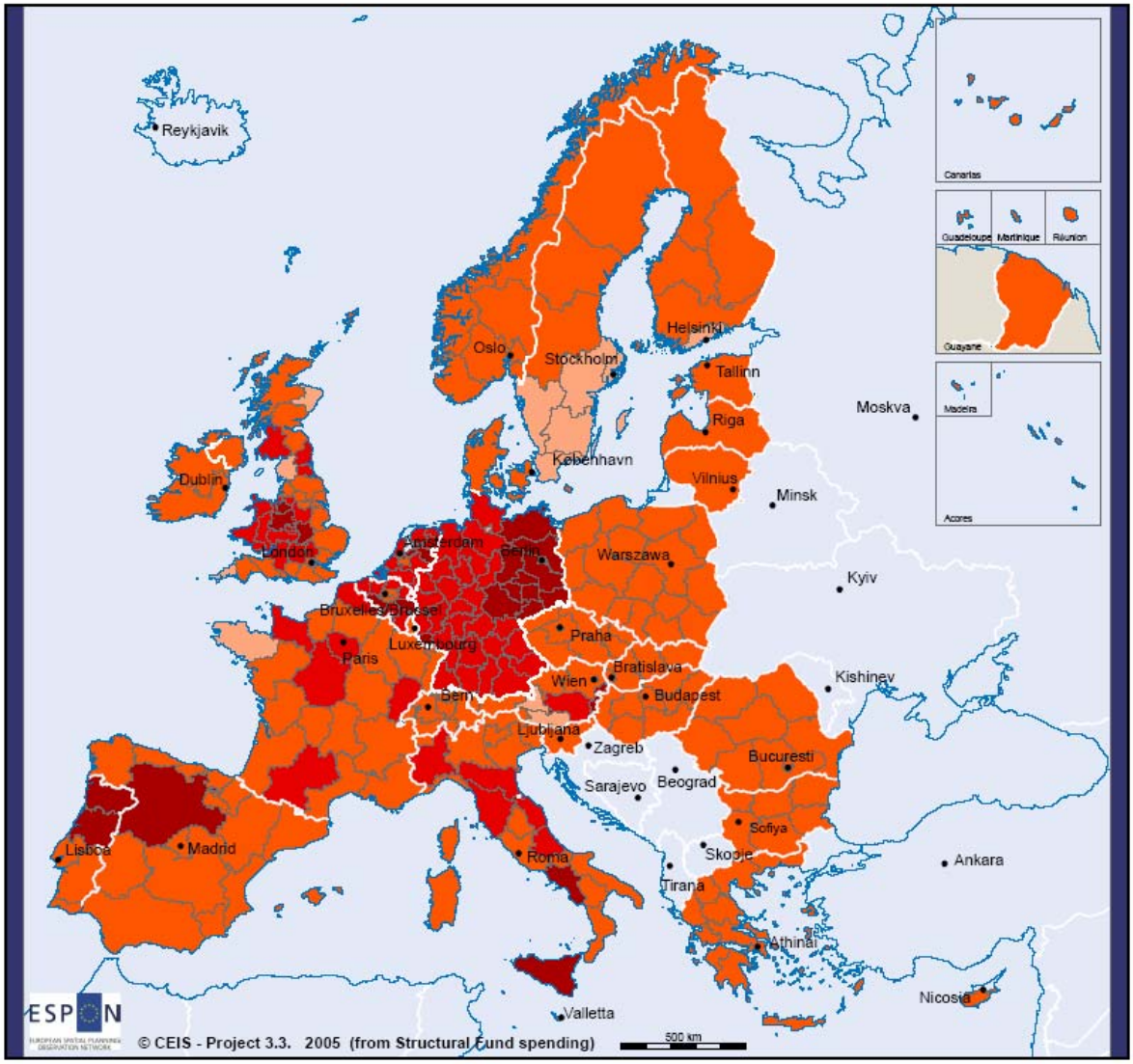


Climate and natural resources expenditure

A	1128.9 - 1505.3
B	752.6 - 1128.9
C	376.3 - 752.6
D	0 - 376.3
no data	

QUANTILE VERSION

MAP D5b - STRUCTURAL FUNDS AND ACCESSIBILITY BY POPULATION

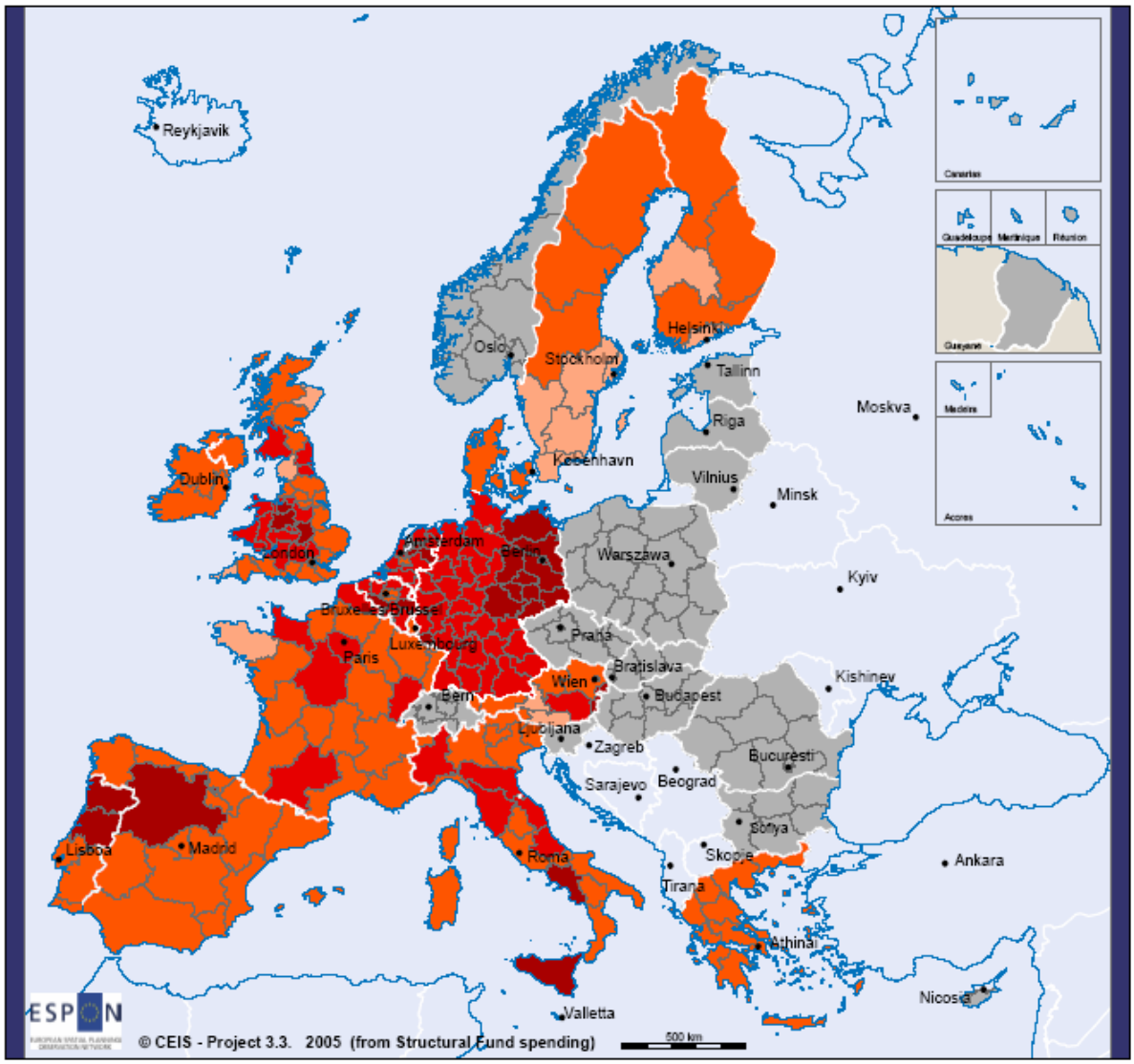


Structural Funds spending (1994 - 1999) in relation to accessible population in 3 hours by car (1999)

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

EQUAL VERSION

MAP D5b - Structural Funds and accessibility by population

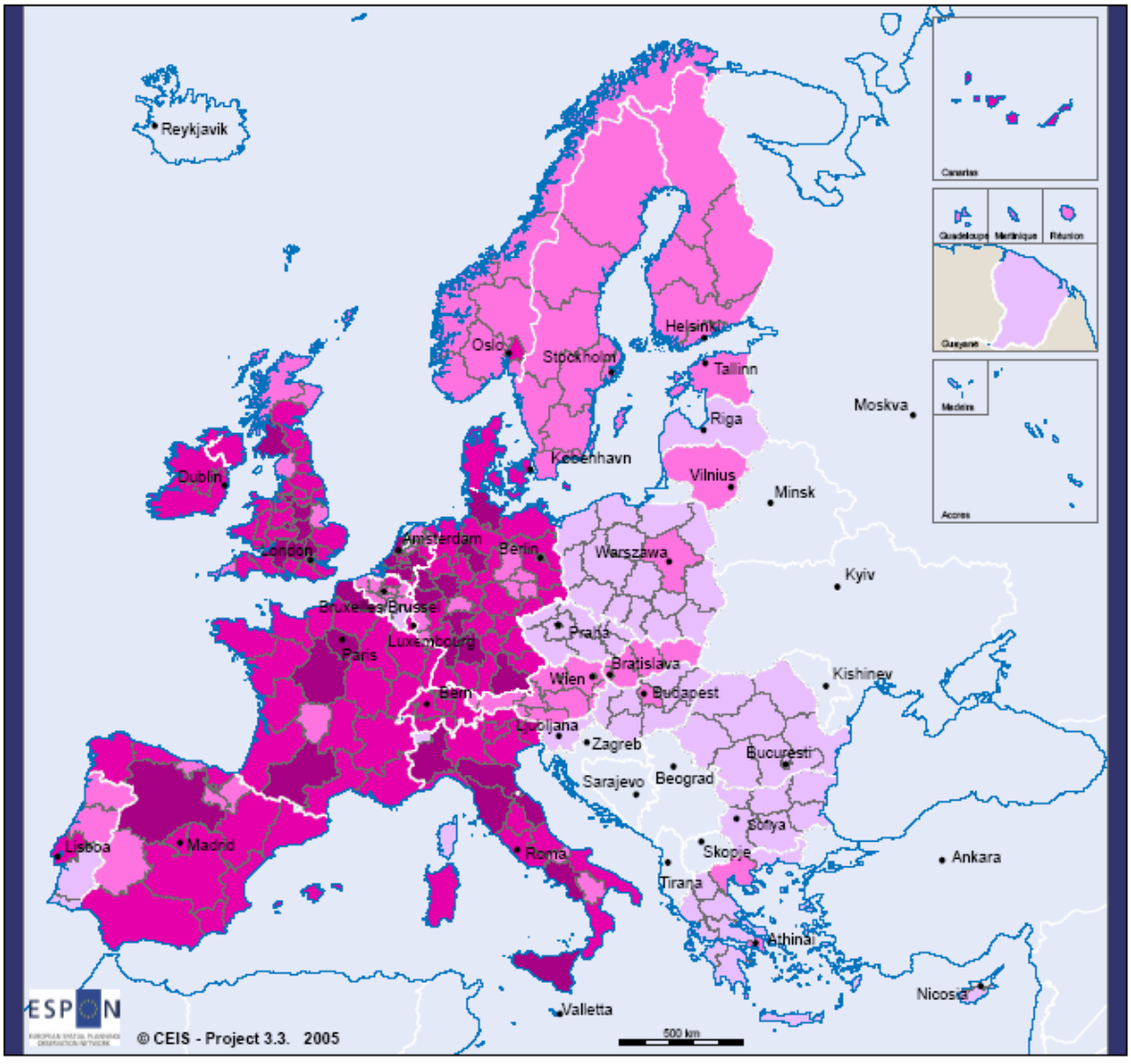


Structural Funds spending (1994 - 1999) in relation to accessible population in 3 hours by car (1999)

- a = High
- b = Medium high
- c = Medium low
- d = Low
- no data

QUANTILE VERSION

MAP D6 - POLICIES FOR THE GOTHENBURG STRATEGY (STRUCTURE)

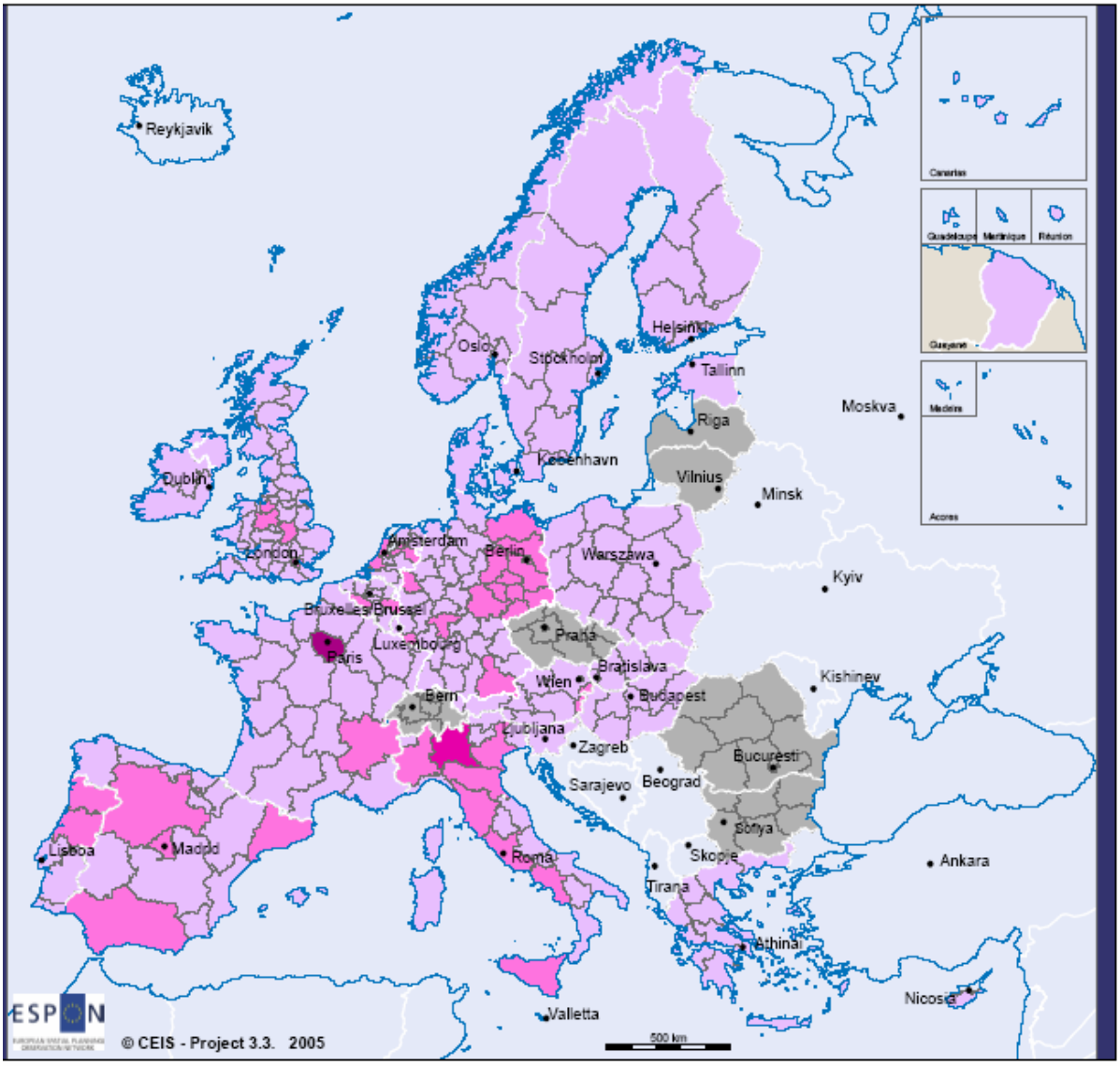


Level of the Policies for the Gothenburg Strategy

- A = Hight
- B = Medium hight
- C = Medium low
- D = Low

EQUAL VERSON

MAP D6 - Policies for the Gothenburg Strategy (structure)

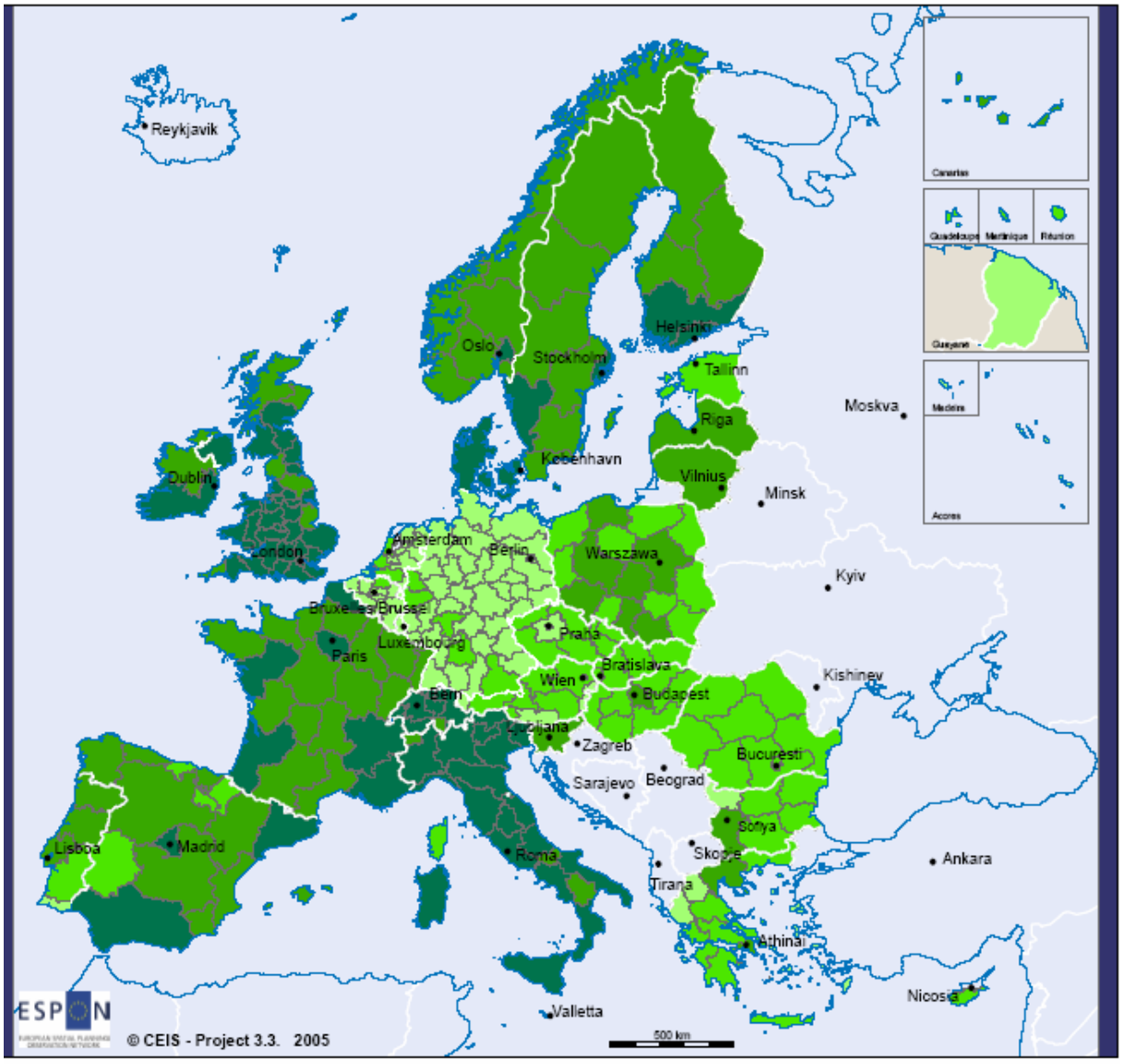


Level of the Policies for the Gothenburg Strategy

- A = High
- B = Medium high
- C = Medium low
- D = Low
- no data

QUANTILE VERSION

MAP D7a - PUBLIC EXPENDITURE FOR THE PUBLIC HEALT

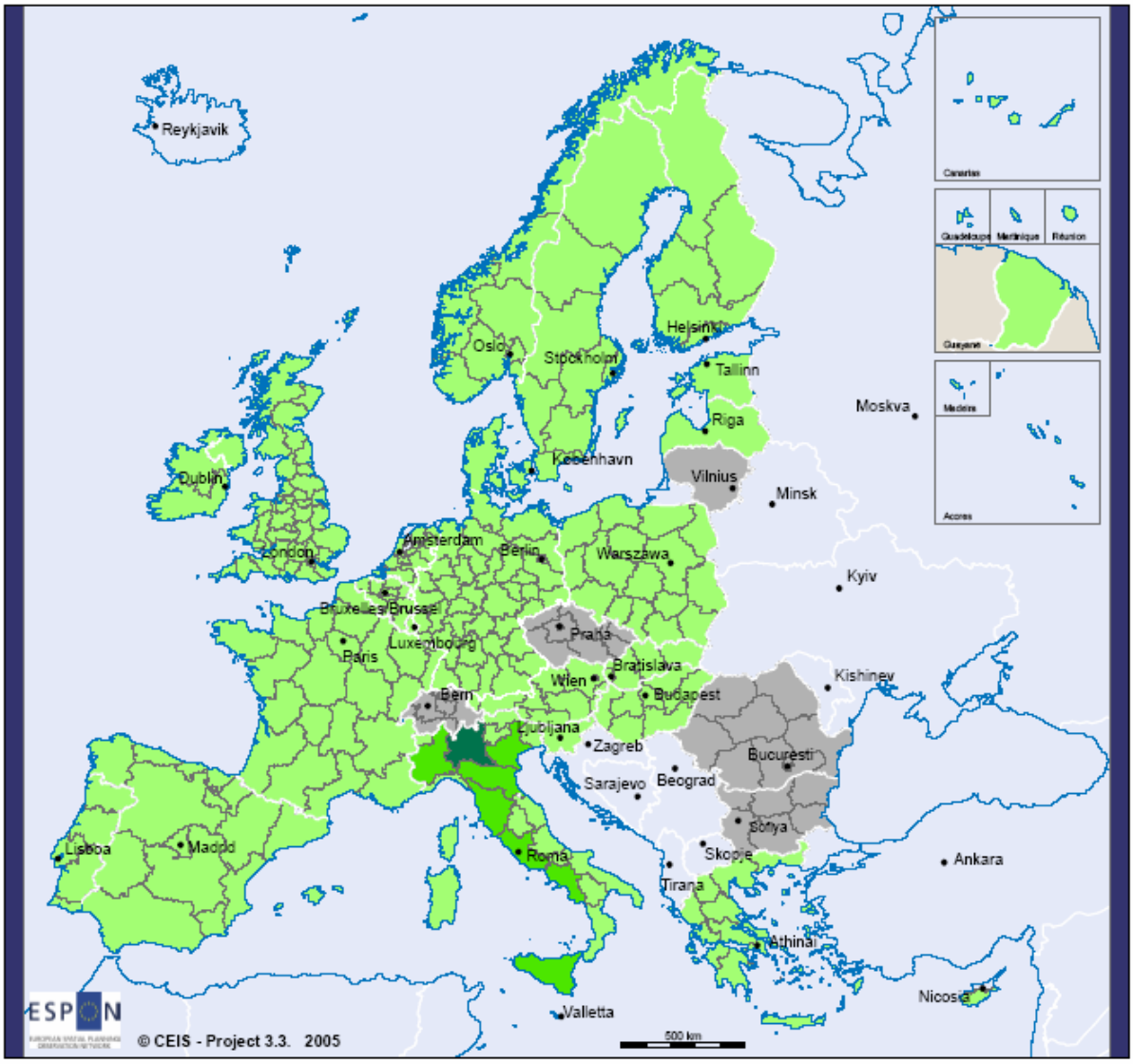


Public expenditure per capita in PPS

- a > 650.50
- b 120.50 - 650.50
- c 47.50 - 120.50
- d 0 - 47.50

EQUAL VERSON

MAP D7a - Public expenditure for public healt

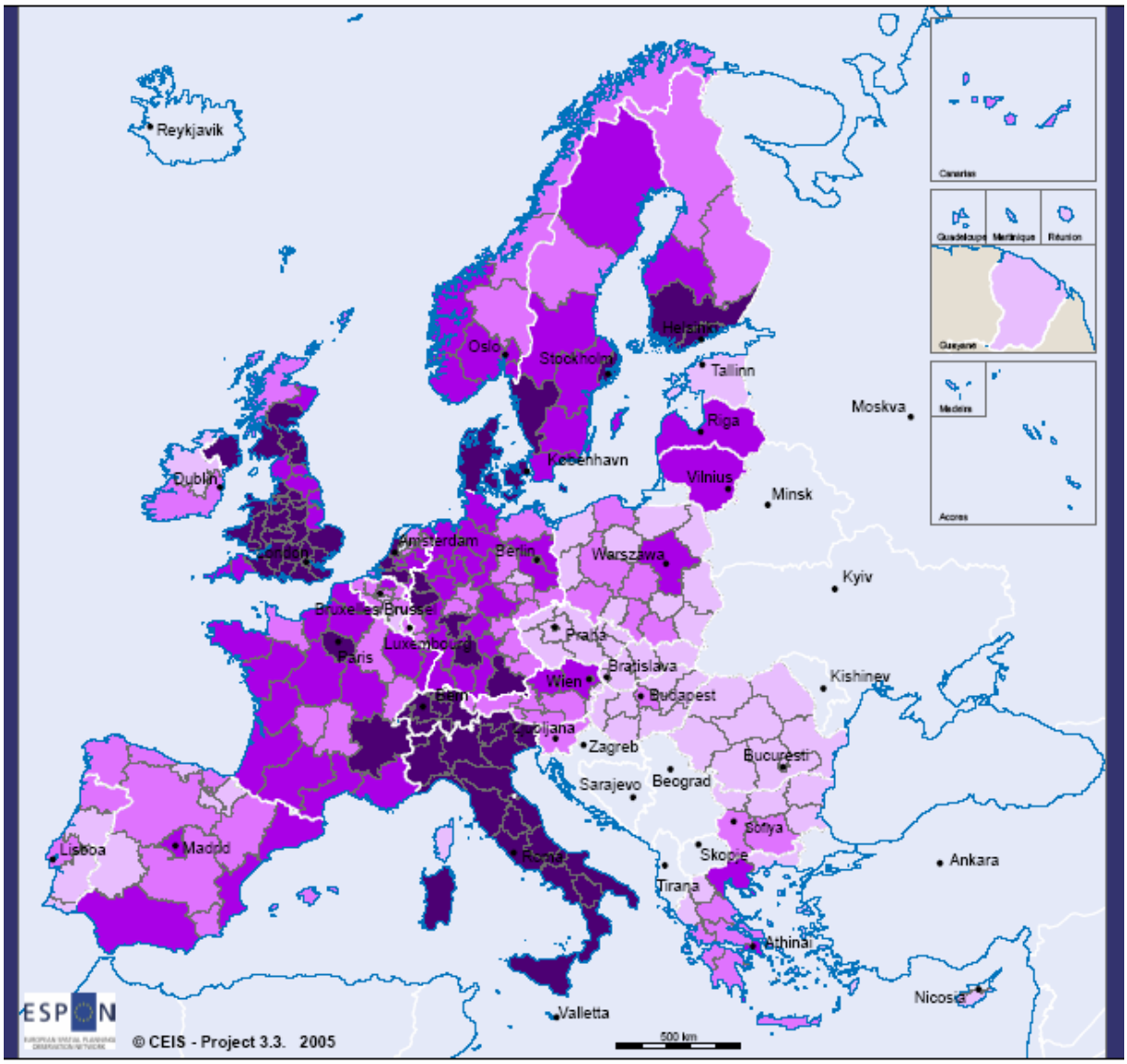


Public expenditure per capita in PPS

- a 13005 - 17343.75
- b 8670 - 13005
- c 4335 - 8670
- d 0 - 4335
- no data

QUANTILE VERSION

MAP D7b - PUBLIC EXPENDITURE FOR THE POVERTY AND AGING

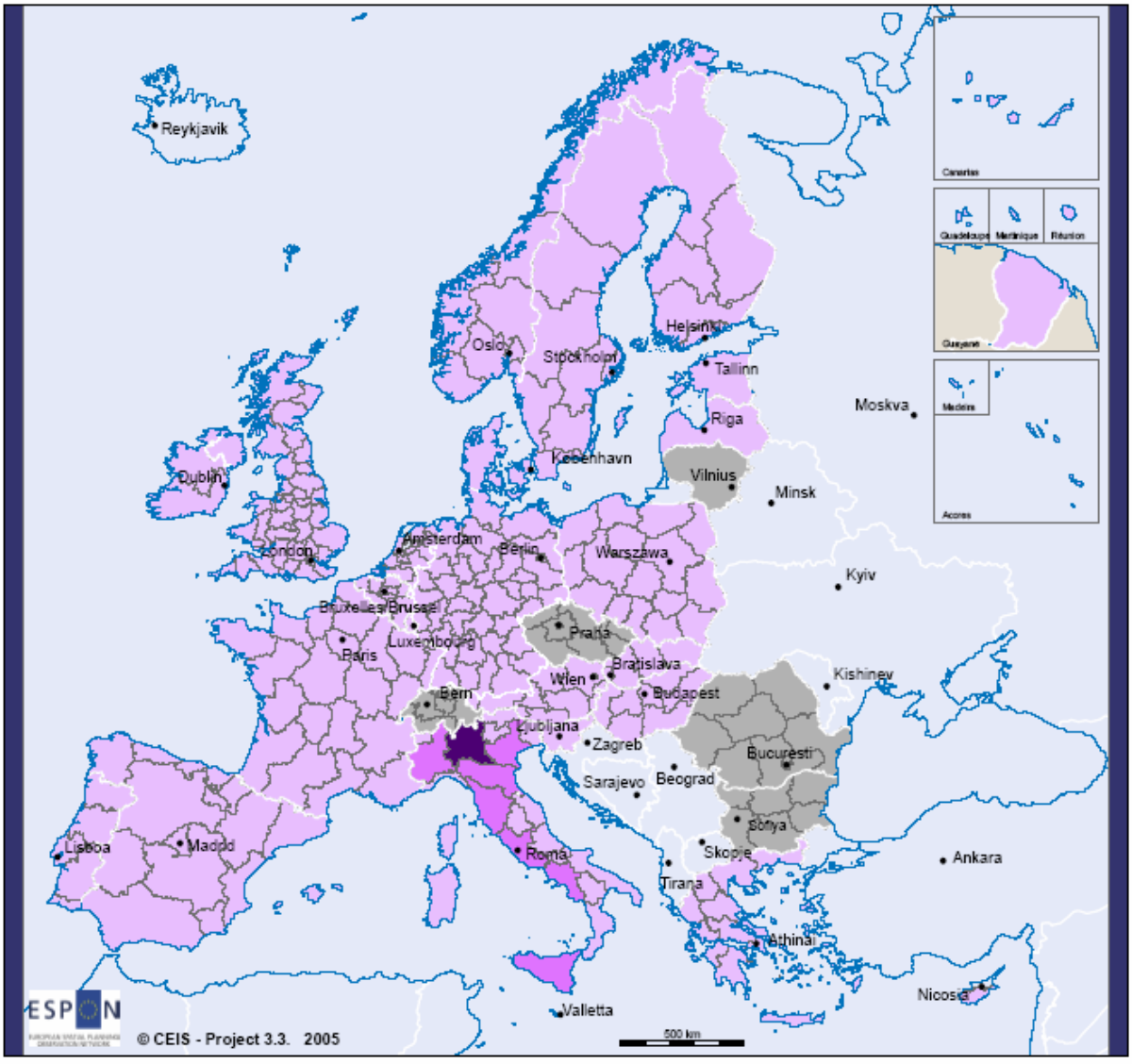


Public expenditure per capita in PPS

- A > 444.50
- B 140.50 - 444.50
- C 38.50 - 140.50
- D 0 - 38.50

EQUAL VERSON

MAP D7b - Public expenditure for poverty and aging

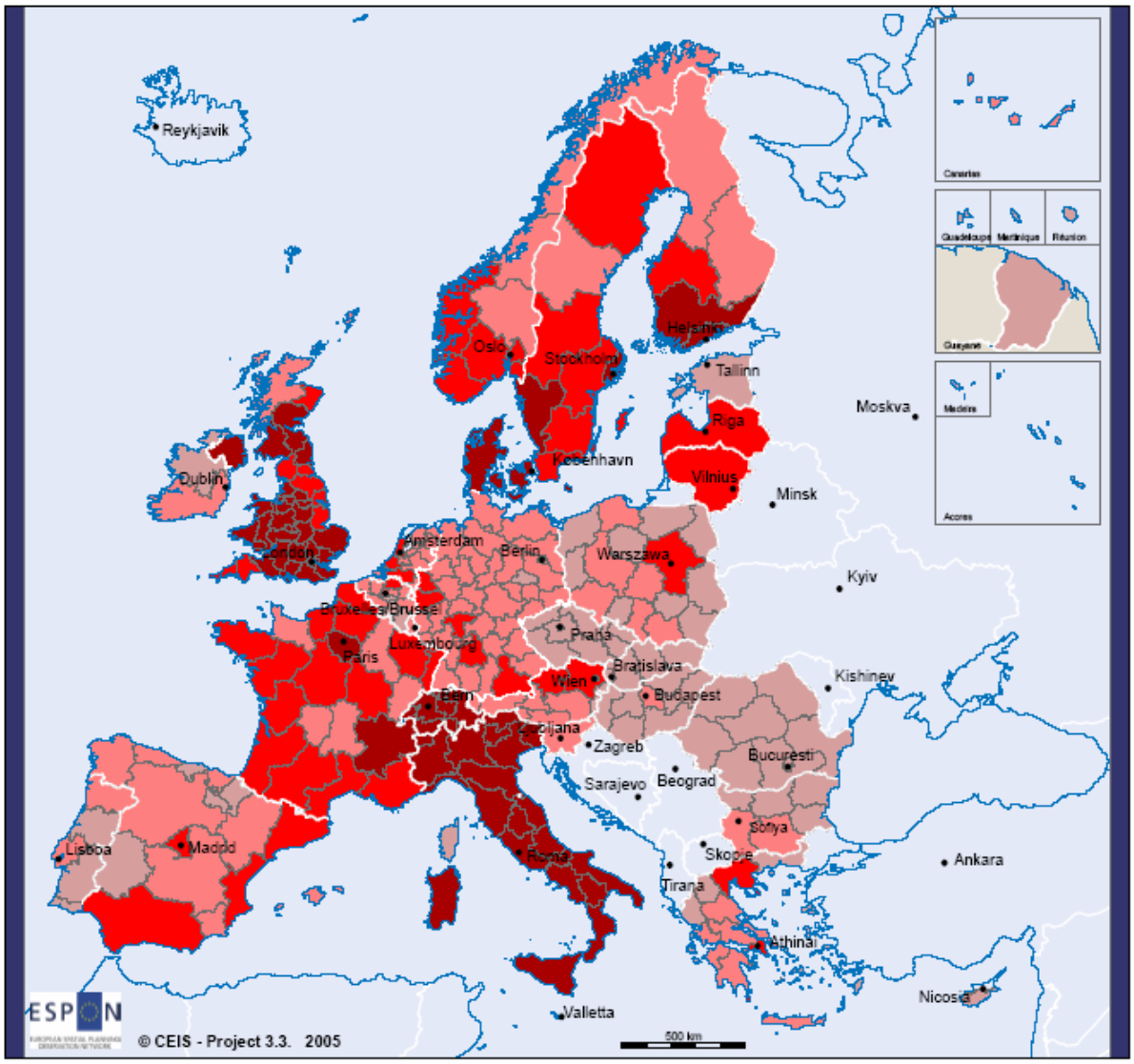


Public expenditure per capita in PPS

- A 36946.5 - 49262.04
- B 24631 - 36946.5
- C 12315.5 - 24631
- D 0 - 12315.5
- no data

QUANTILE VERSION

MAP D8 - POLICIES FOR THE GOTHENBURG STRATEGY (PERFORMANCE)

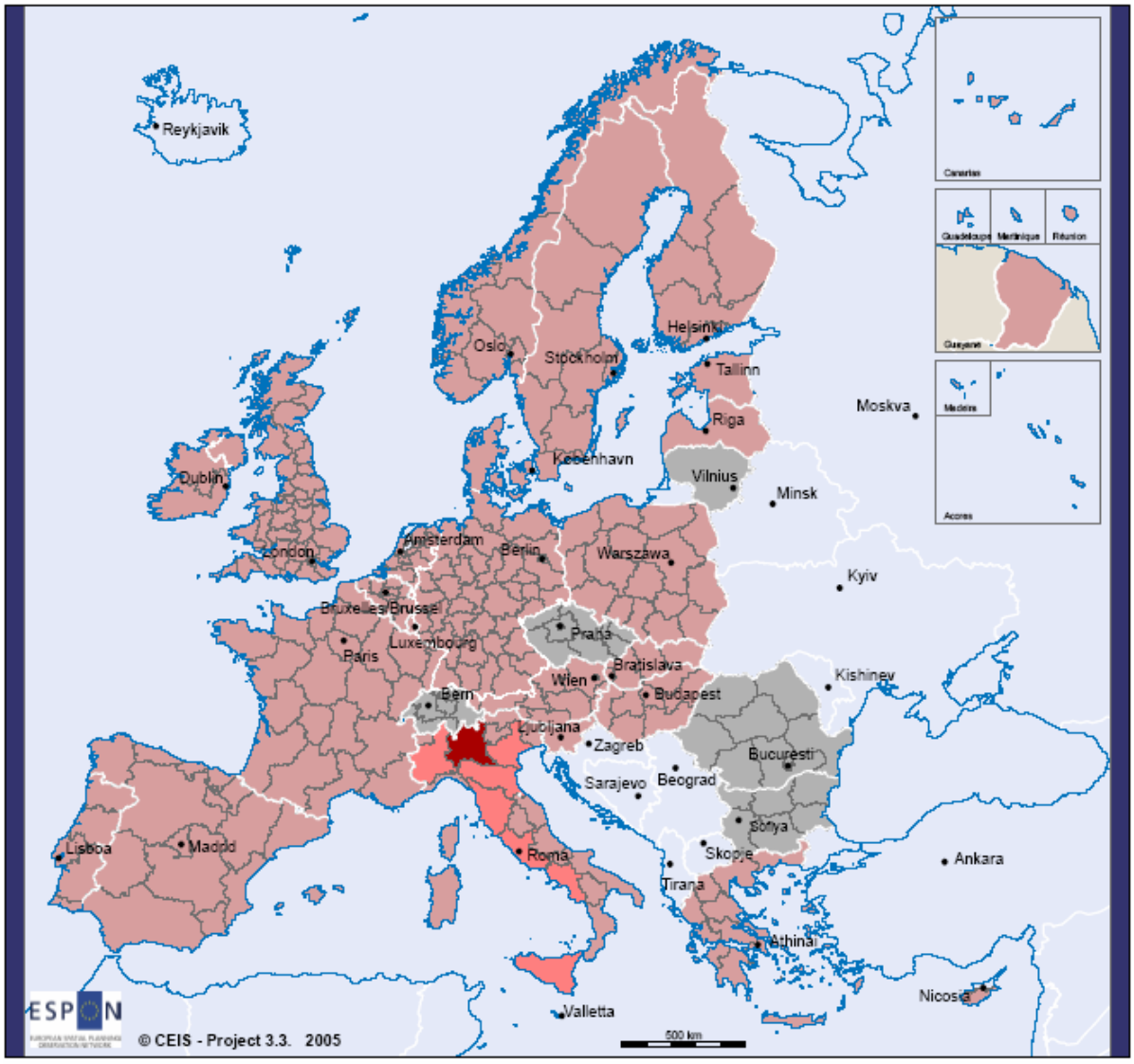


Level of the Policies for the Gothenburg Strategy (performance)

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

EQUAL VERSON

MAP D8 - Policies for the Gothenburg Strategy (performance)

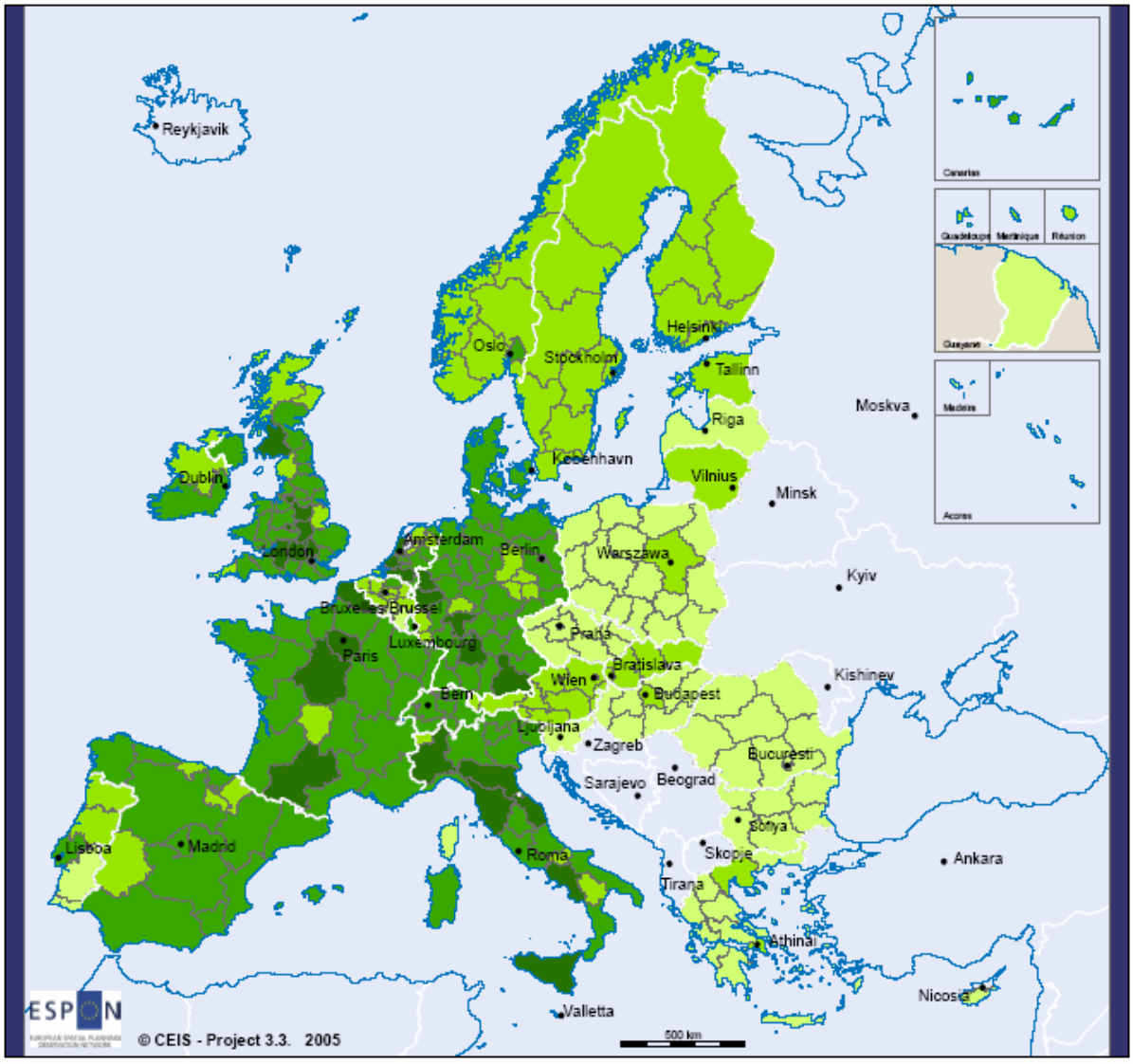


Level of the Policies for the Gothenburg Strategy (performance)

- a = High
- b = Medium high
- c = Medium low
- d = Low
- no data

QUANTILE VERSION

MAP D9 - LEVEL OF INTERVENTIONS TO THE LISBON STRATEGY

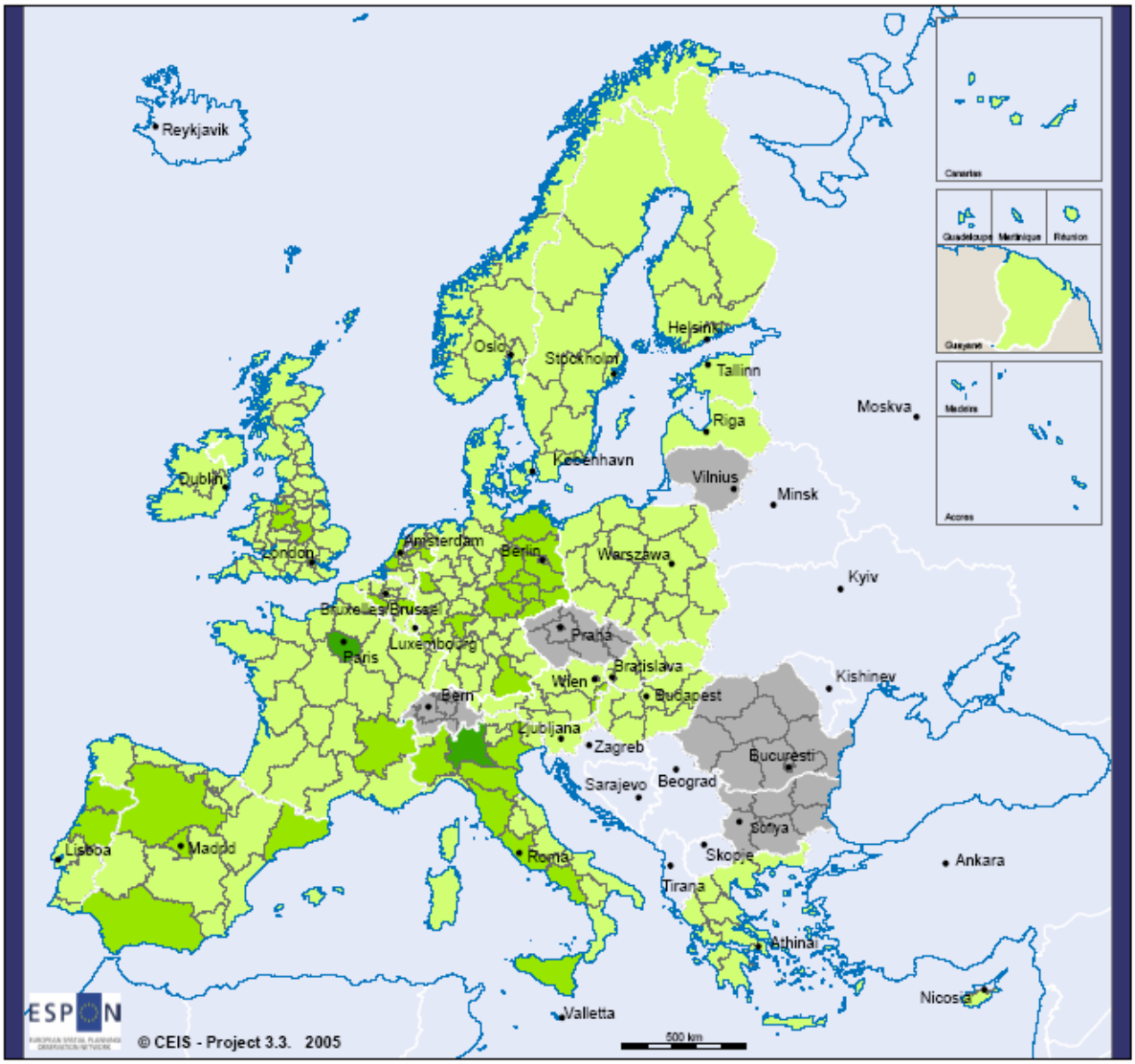


Level of interventions to the Lisbon strategy

- A = Hight
- B = Medium Hight
- C = Medium low
- D = Low

EQUAL VERSON

MAP D9 - Level of interventions for the Lisbon strategy

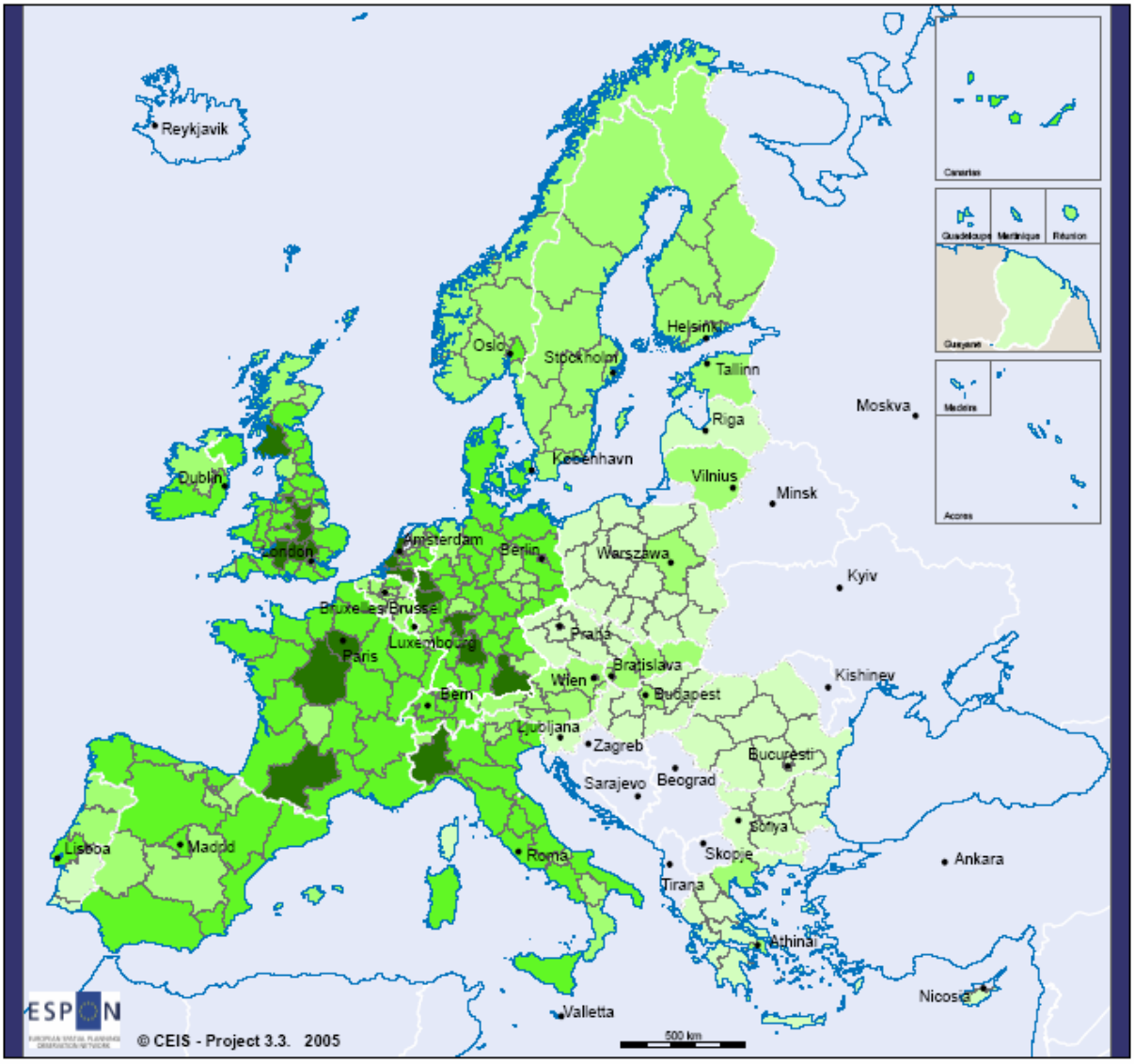


Level of interventions to the Lisbon strategy

- A = High
- B = Medium High
- C = Medium low
- D = Low
- no data

QUANTILE VERSION

MAP D10 - LEVEL OF VULNERABILITY

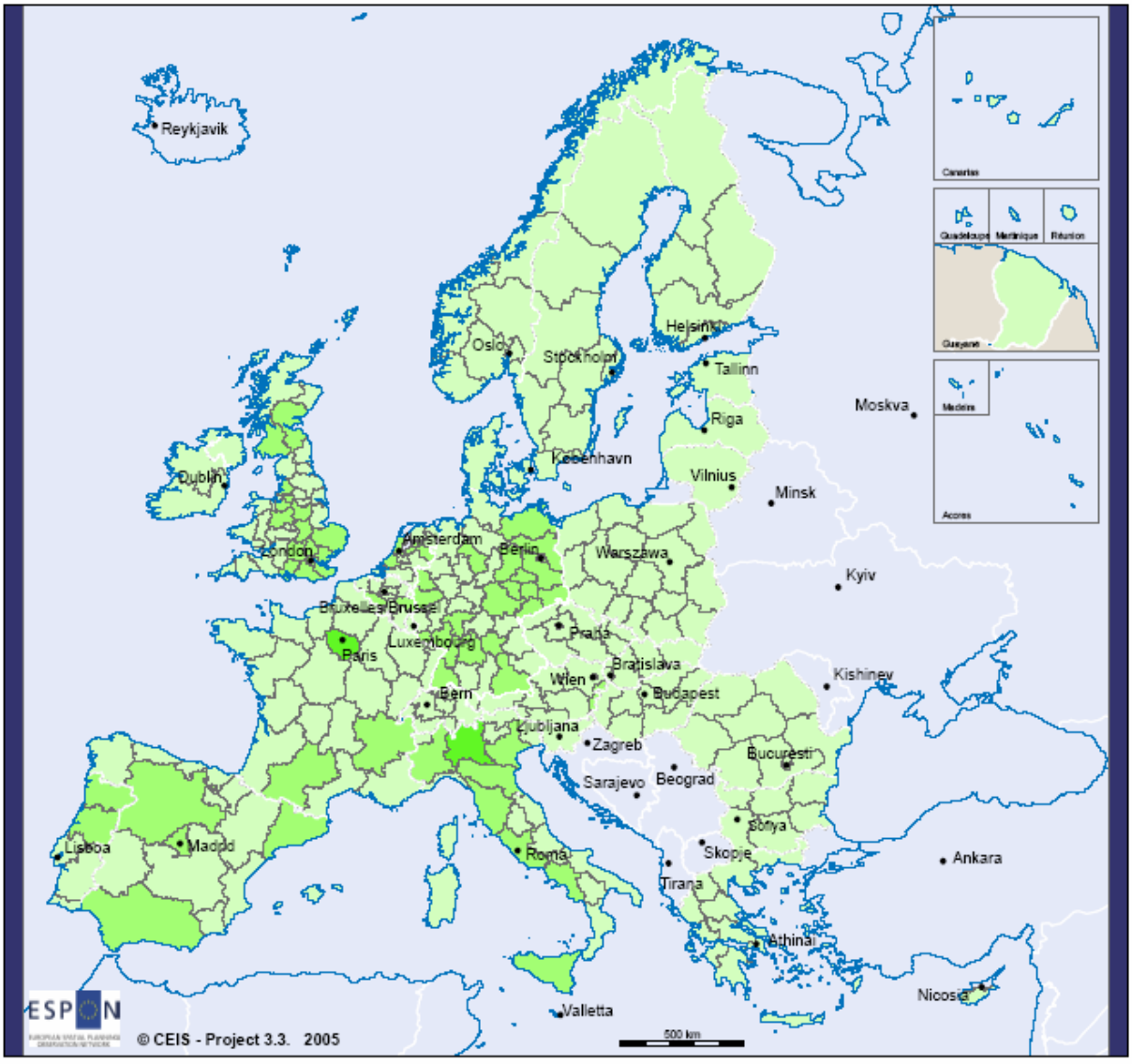


The level of vulnerability

- A = Hight
- B = Medium hight
- C = Medium low
- D = Low

EQUAL VERSON

MAP D10 - Level of Vulnerability

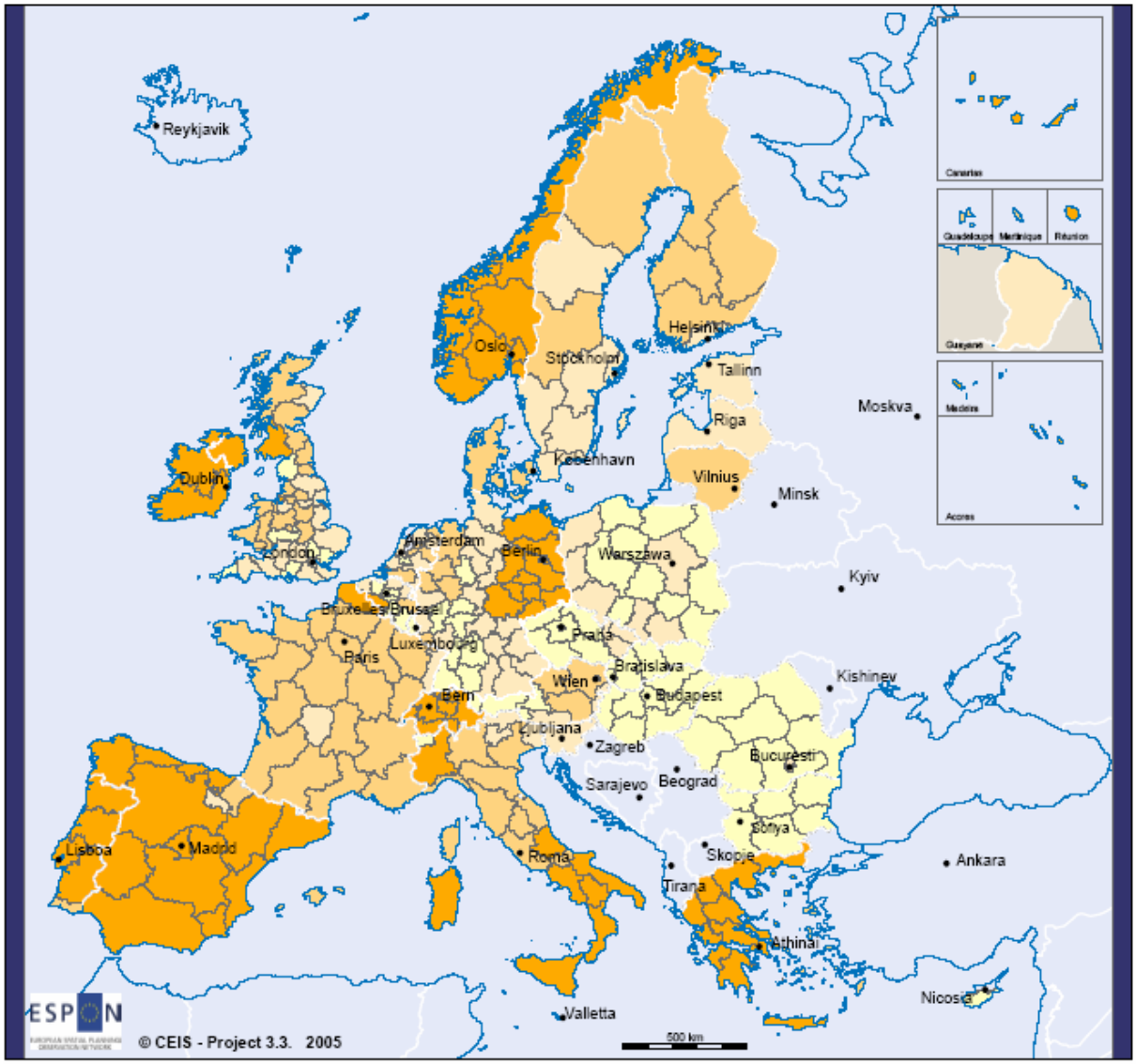


The level of vulnerability

- A = High
- B = Medium high
- C = Medium low
- D = Low

QUANTILE VERSION

MAP D11 - USE OF STRUCTURAL FUNDS AND PRE ACCESS

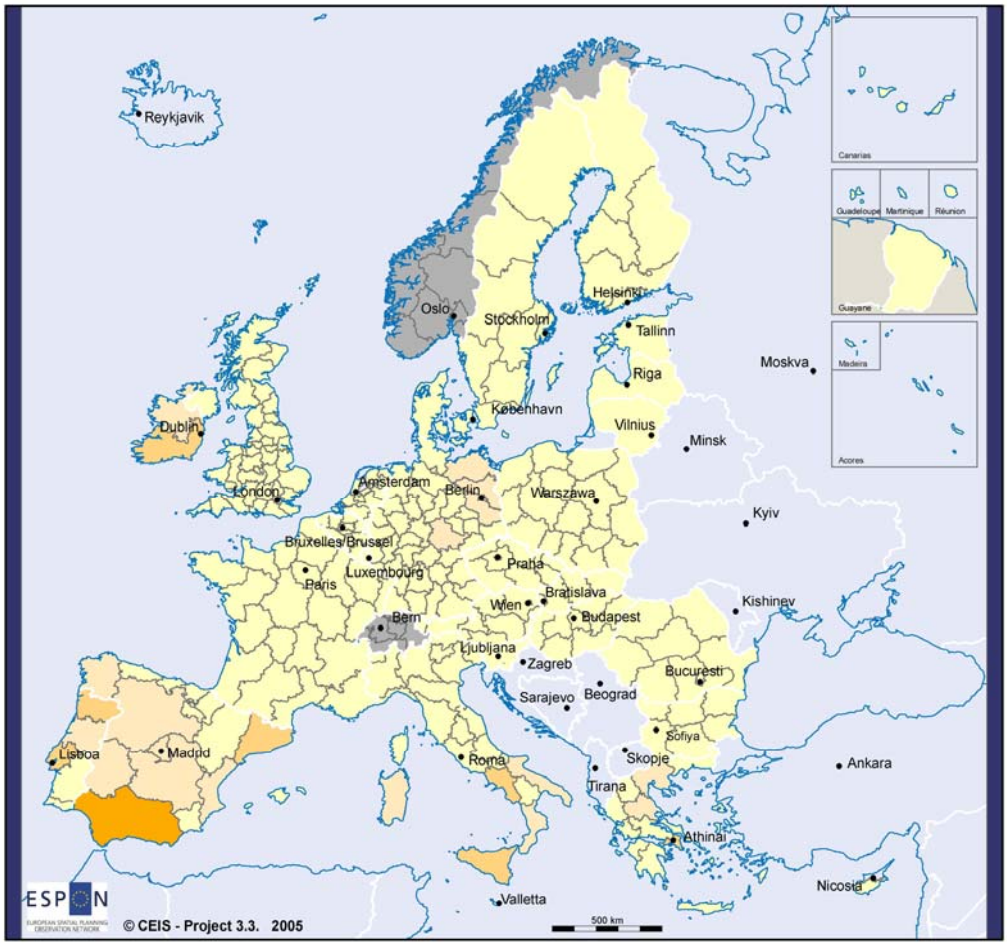


Level of European fund expending

- a > 476.50
- b 156.50 - 476.50
- c 55.50 - 156.50
- d 0 - 55.50

EQUAL VERSION

MAP D11 - Use of structural funds and pre access

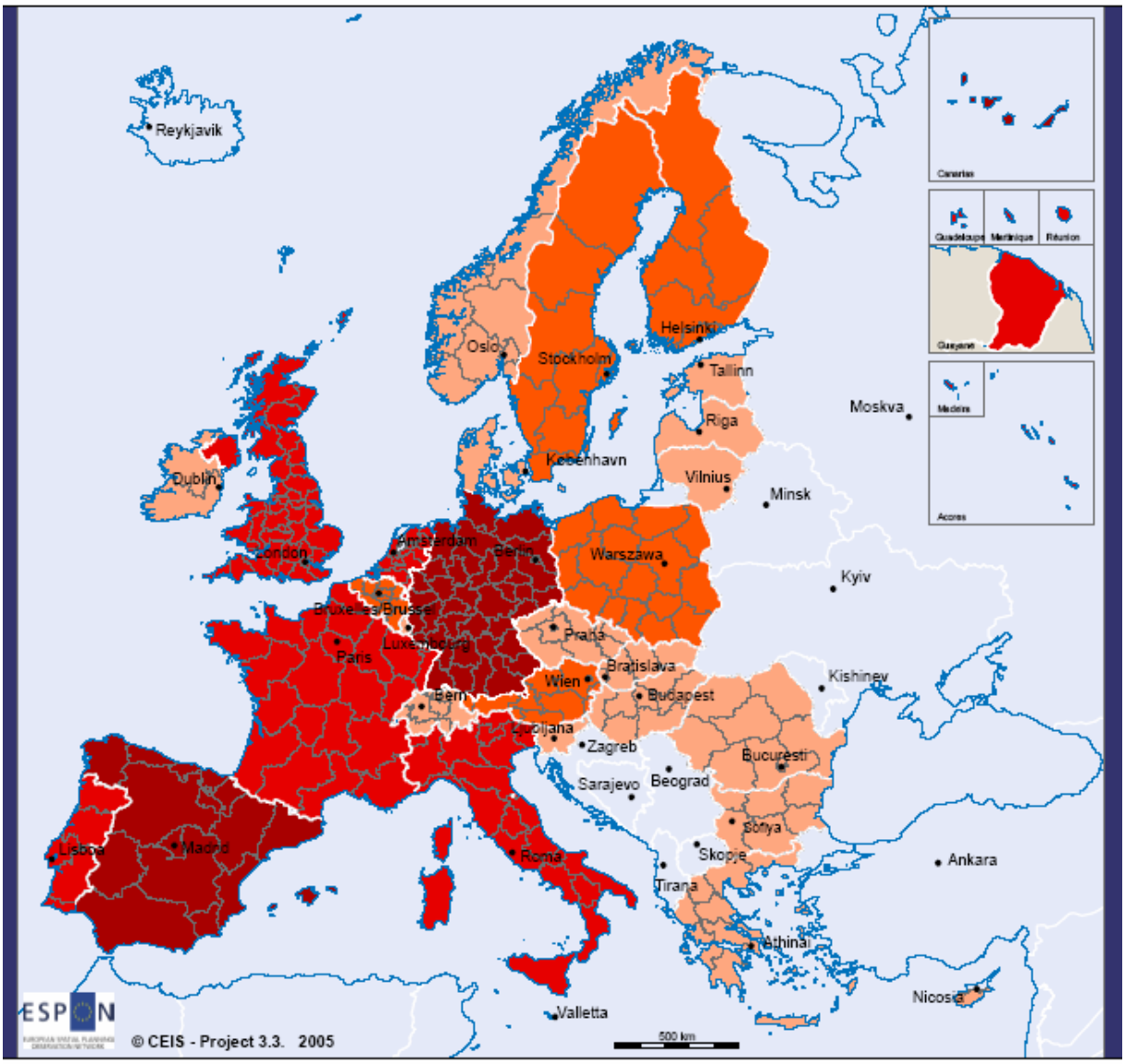


Level of European fund expending

- a 4130,7 - 5507,61
- b 2753,8 - 4130,7
- c 1376,9 - 2753,8
- d 0 - 1376,9
- no data

QUANTILE VERSION

MAP D12 - LEVEL OF COOPERATION

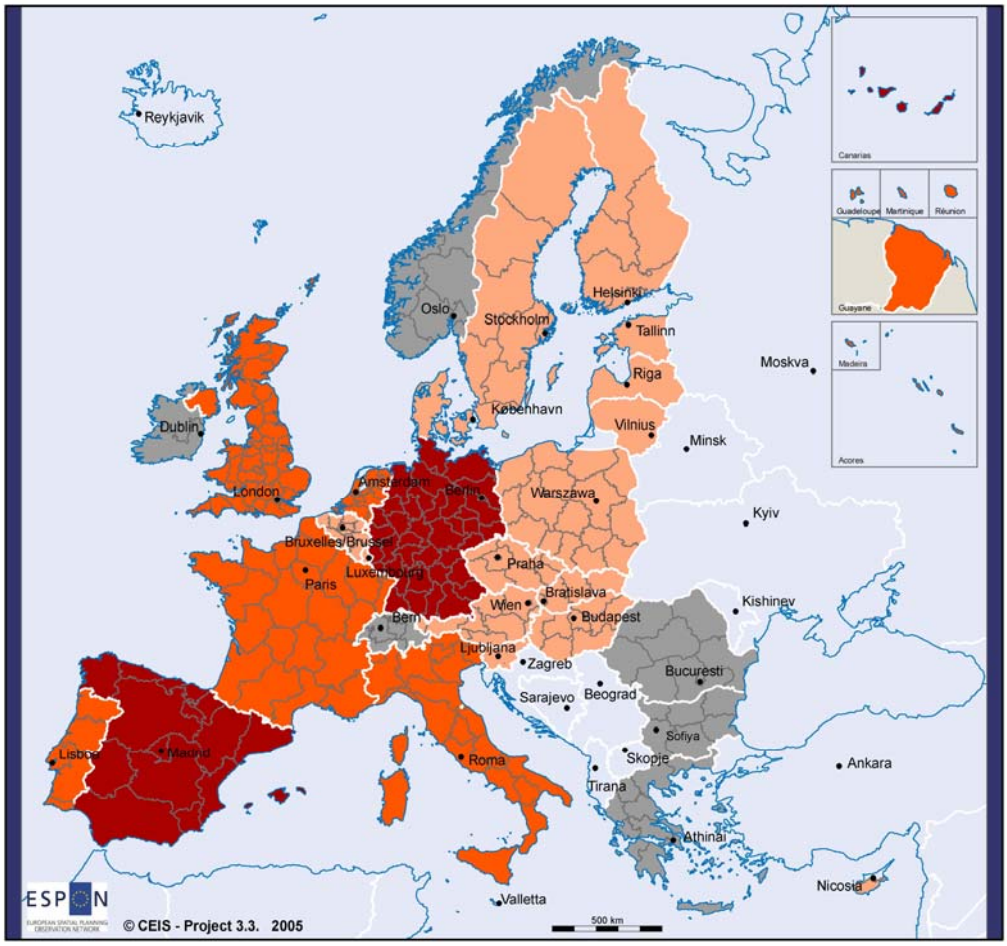


Percentage of INTERREG III resource for counties

- A > 8.00
- B 6.70 - 8.00
- C 1.50 - 6.70
- D 0 - 1.50

EQUAL VERSION

MAP D12 - Level of cooperation

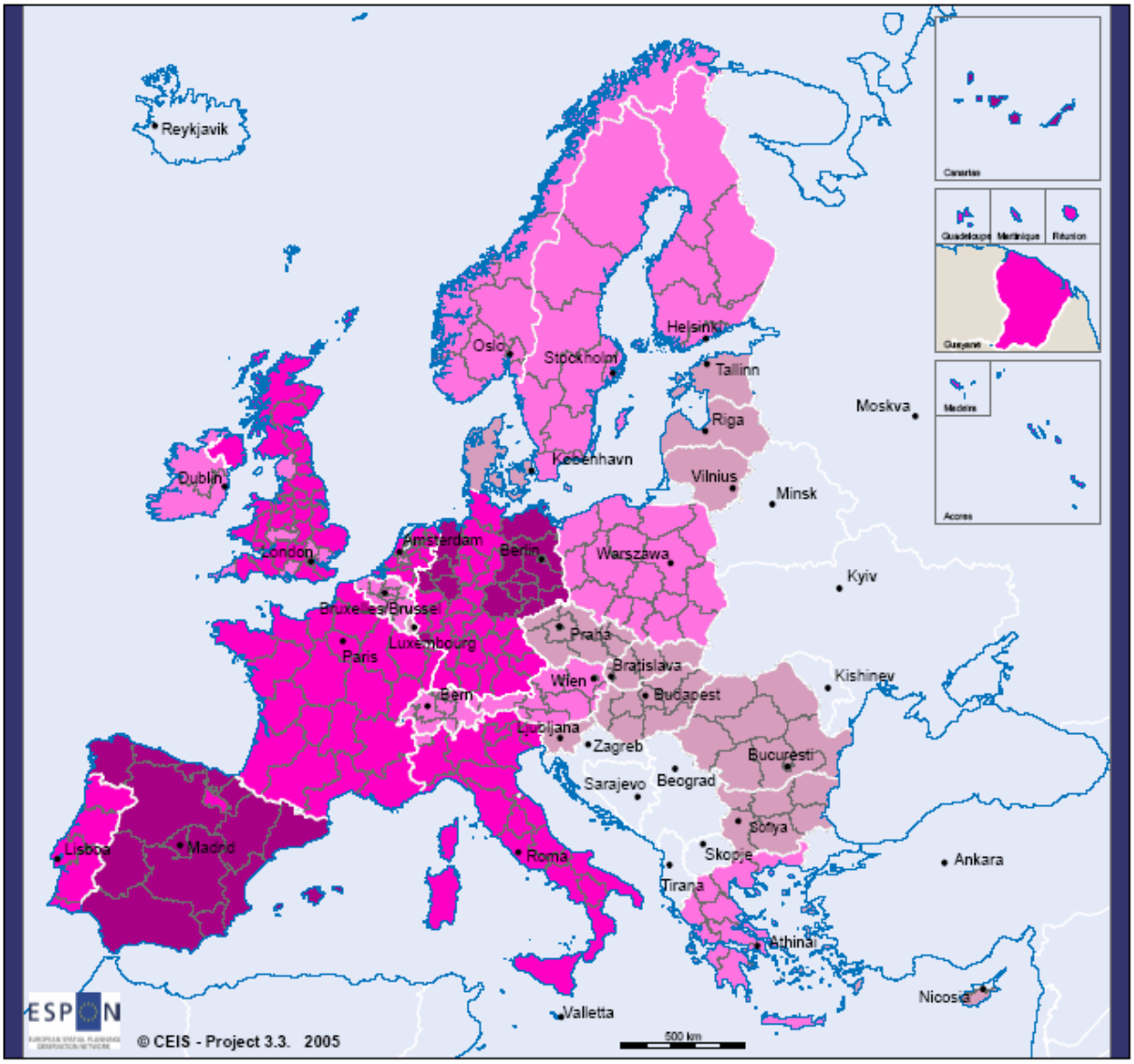


Percentage of INTERREG III resource for counties

- A 12.87 - 17.15
- B 8.58 - 12.87
- C 4.29 - 8.58
- D 0 - 4.29
- no data

QUANTILE VERSION

MAP D13 - USE OF FUNDS = LEVEL OF STATUS QUO

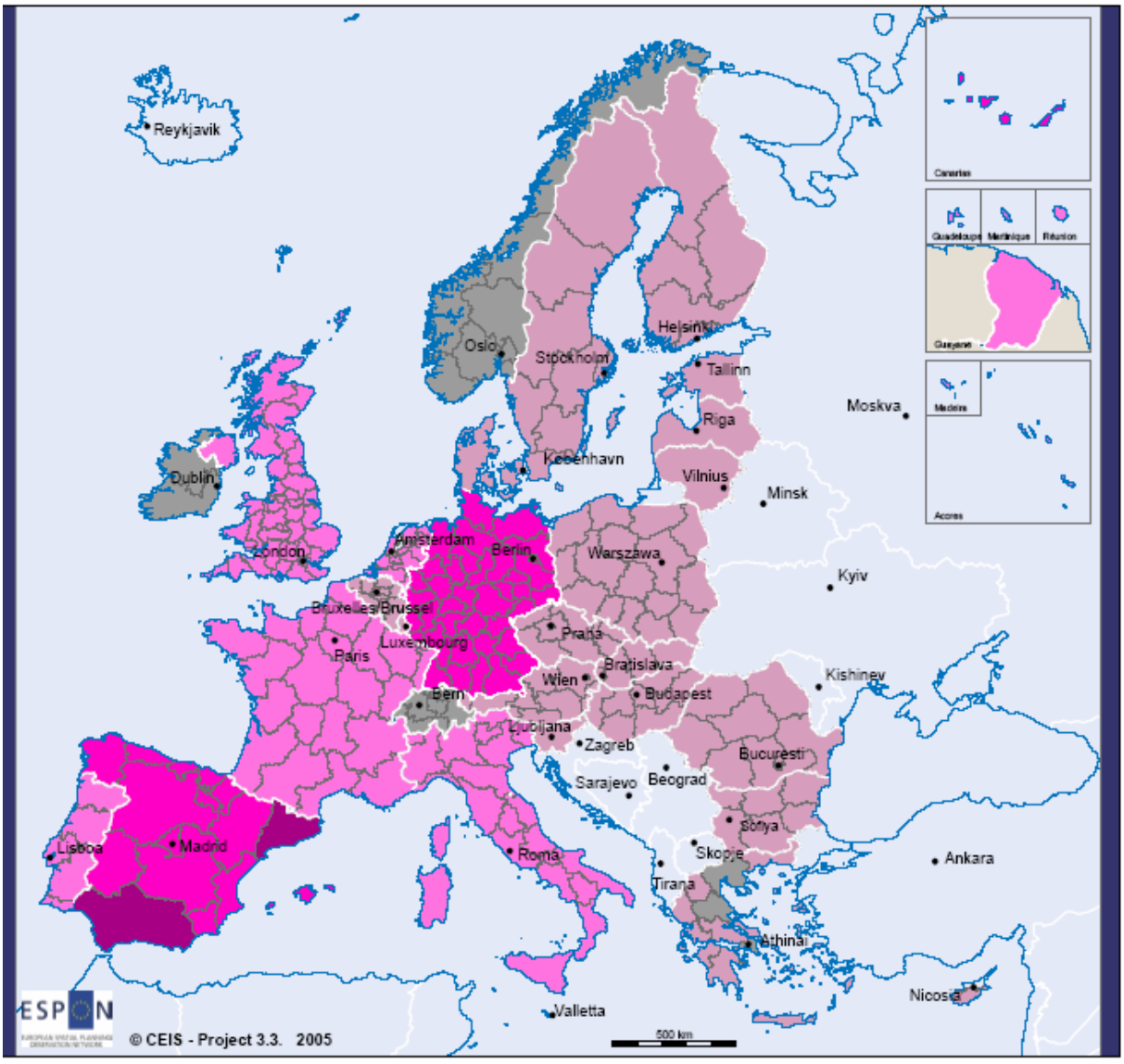


Level of use of funds

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

EQUAL VERSON

MAP D13 - Use of Funds = Level of Status Quo

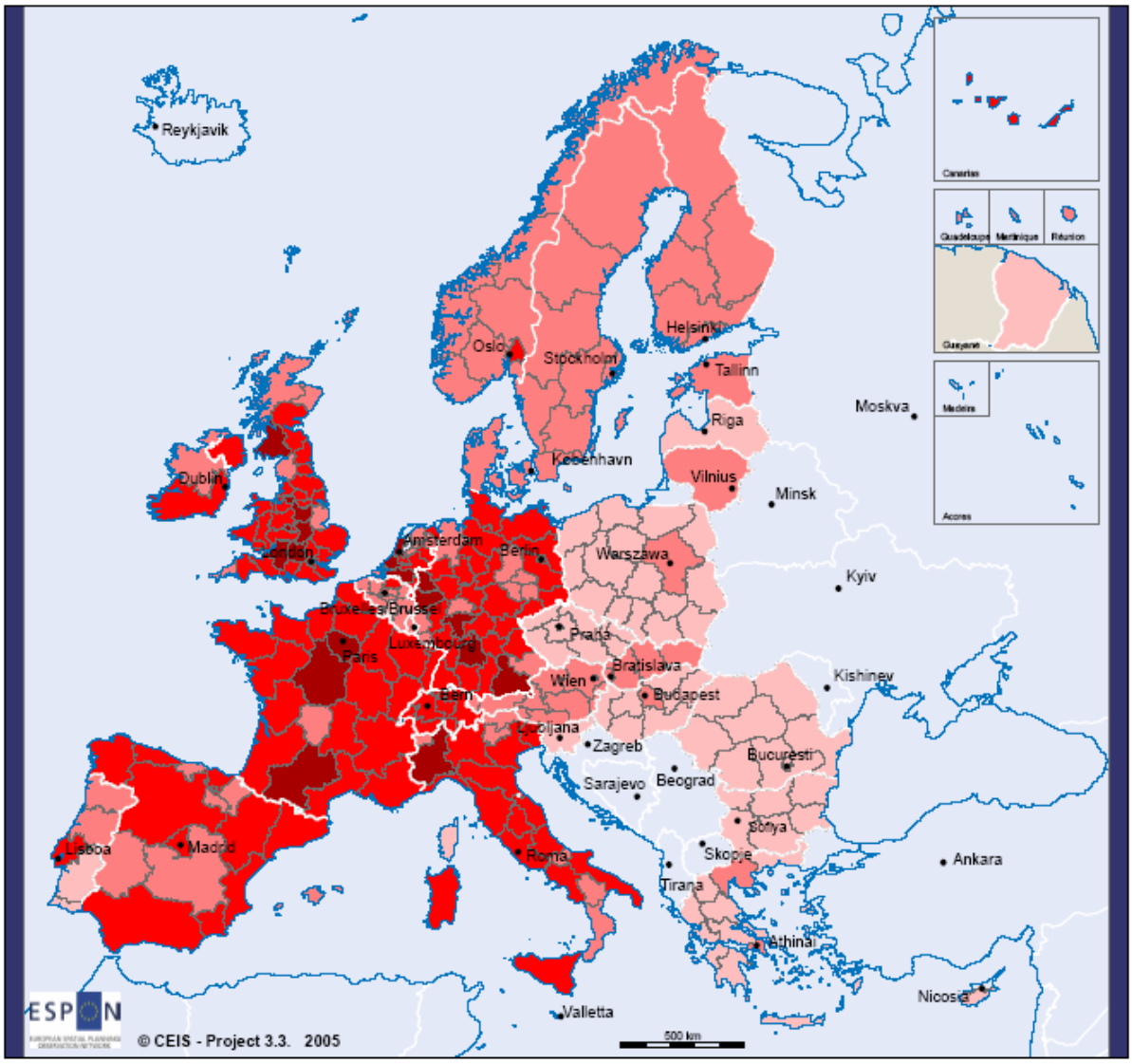


Level of use of funds

- a = High
- b = Medium high
- c = Medium low
- d = Low
- no data

QUANTILE VERSION

MAP D14 - RESOURCES AND FUNDS

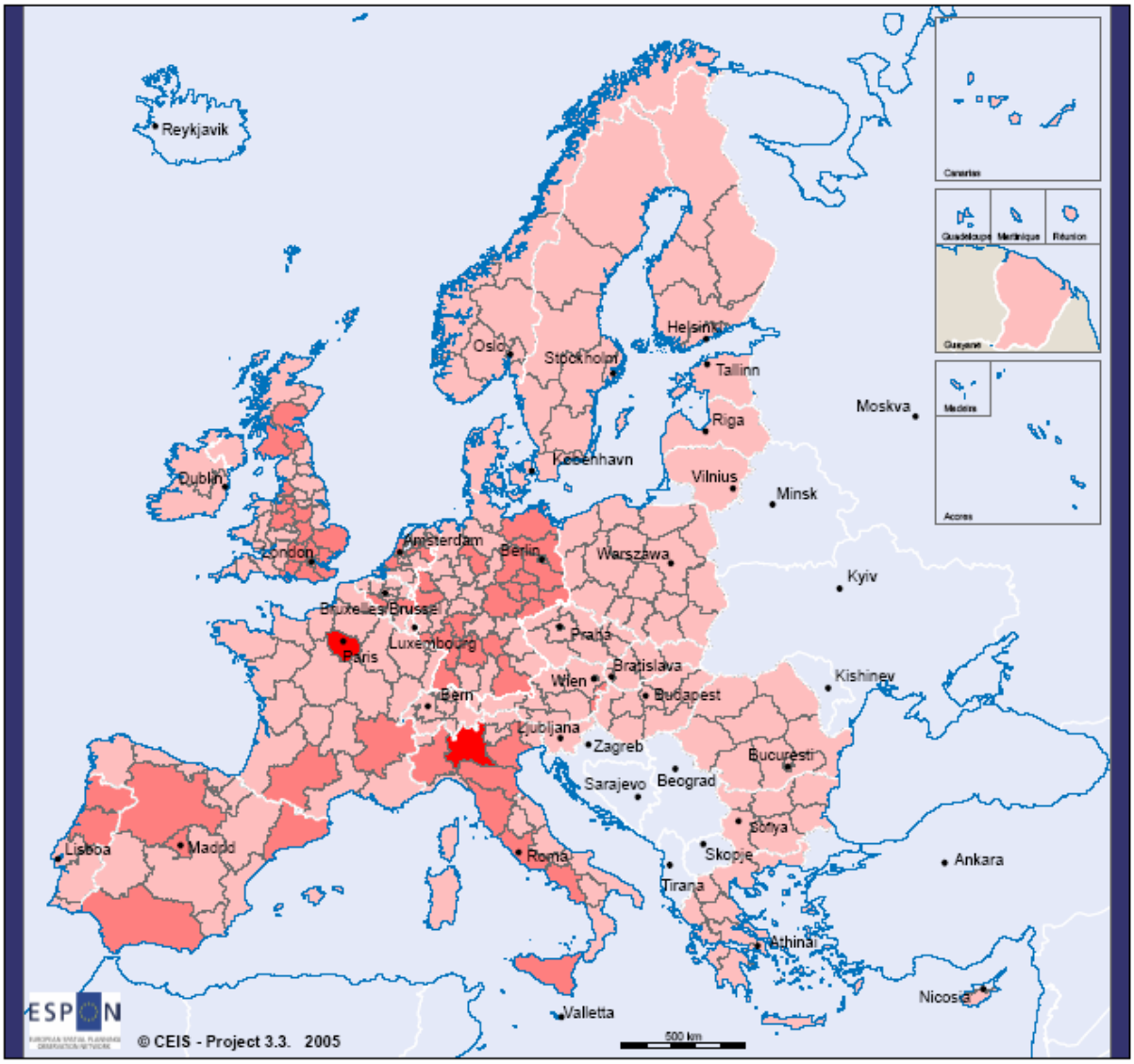


Level of resources and funds

- a = Hight
- b = Medium hight
- c = Medium low
- d = Low

EQUAL VERSON

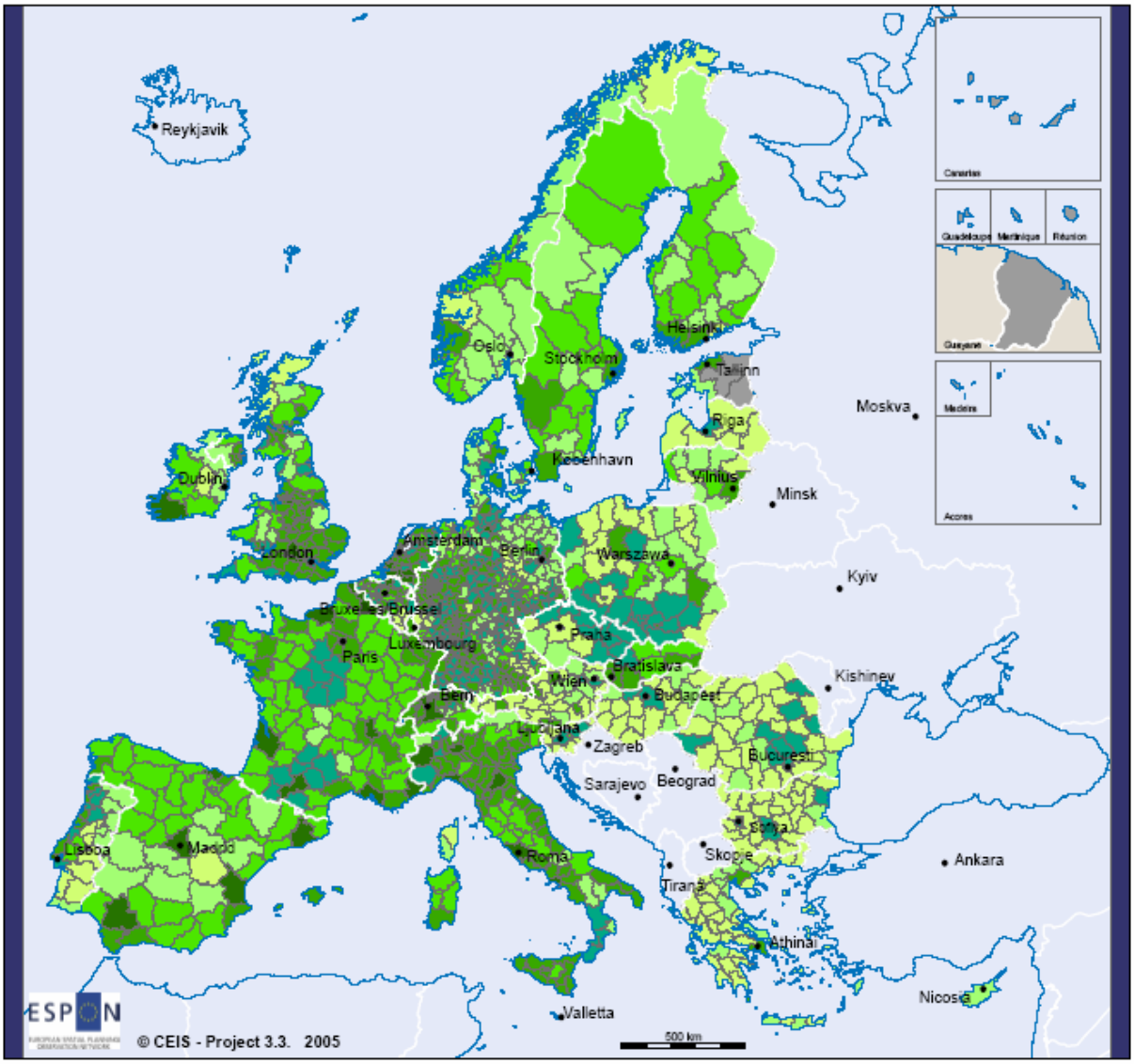
MAP D14 - Resources and Funds



Level of resources and funds

- a = High
- b = Medium high
- c = Medium low
- d = Low

QUANTILE VERSION
MAP 15 TERRITORIAL RESOURCES AND FUNDS



LEVEL OF TERRITORIAL R&F

- ABSOLUTE
- VERY HIGHT
- HIGHT
- MEDIUM
- LOW
- VERY LOW
- no data

ESPON

EUROPEAN SPATIAL PLANNING OBSERVATION NETWORK

CEIS TOR VERGATA

Centre for International Studies on Economic Growth

ESPON Project 3.3

Territorial dimension of the Lisbon-Gothenburg strategy

Third Interim Report

ANNEX III

The 14 Spring indicators analysis

30 September 2005

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

This Report presents the interim results of a research project conducted up to September 2005 within the framework of the ESPON 2000-2006 programme, partly financed through the INTERREG programme.

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

The partnership behind the ESPON programme consists of the EU Commission and the Member States of the EU25, plus Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

Information on the ESPON programme and projects can be found on www.espon.lu
The web side provides the possibility of downloading and examining the most recent documents produced by both finalised and ongoing ESPON projects.

This basic report exists only as an electronic version.

As you will be asked for the name and address of the editor the Lead partner should as the responsible person of the project assume the role of the editor and give information accordingly.
The registration in the world wide catalogue is free of charge.

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Introduction

In the Lisbon European Council in March 2000 the European Union set a strategic goal for the next decade “of becoming the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion”. In order to measure the progress of this strategy a set of indicators was needed – and agreed upon. These were to be reported in a separate “Synthesis Report” or annex of the annual European Commission "Spring Report" to the European Council. The indicators cover the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background.

Starting from an original 35 indicators for the EU15 in 2001 the list has successively expanded. In 2002 it covered 42 indicators and was expanded geographically in 2003 to cover also the (at that time) Candidate Countries. For the report of 2004 the Commission suggested a “short list” of 14 structural indicators, allowing for a more “concise presentation and a better assessment of achievements over time vis-à-vis the Lisbon agenda”. This short list has been agreed upon with the European Council. It was also agreed upon that the short list will be kept stable for three years and is viable as such until at least the 2006 spring report.

The rationale for the short list is essentially pragmatic. Data availability especially in the New Member States and the Candidate Countries is limited and it has been conceived better to measure few aspects comprehensively than many aspects erratically and/or sporadically.

The spatial dimension as a field of analysis is for the most part lacking from the short list indicators, the only exception being the “Dispersion of regional employment rates”. All other 13 are by nature mainly related to the nation state alone. This is natural as the Lisbon/Gothenburg strategy takes its starting point in macroregional global competitiveness (EU vis-à-vis North America or Southeast Asia) rather than in more regionally oriented questions.

In the informal responses from the ESPON CU regarding the SIR it was clearly indicated the need for clarity and transparency on the one hand and the need for geographic breakdown below country level as well as full ESPON coverage on the other. These comments have been taken into account.

Data availability is however a further restriction. The exercise has thus been performed in three steps, each building on the former.

1) mapping of the 14 structural indicators one by one on the finest available regional breakdown (preferably NUTS3)

Only five out of the 14 indicators are available on a regional basis for most countries. However, these are mainly connected to economic progress. For those countries where data exists on the national level alone, only this level will be presented in maps and/or tables.

Nine of the 14 indicators basically exist only on the national level. This is a fact we simply cannot overcome.

Two of the 14 structural indicators are by nature only related to the EU as an entity or to regional variations within countries and therefore difficult to present even on the national level, let alone on a regional basis. In order to achieve full coverage, we nonetheless include also them, albeit in a slightly modified form.

2) Merging the fourteen indicators from the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background into three groups mirroring the "ESDP triangle" of economic, social and environmental sustainability.

Groupings could be made in several ways, all affecting the outcome of the synthesis indicator. We have here done as follows. First, upper and lower quartiles were calculated for each 14 indicator. Second, for each region the number of values in the lowest quartile was subtracted from the number of values in the highest quartile, thus ending up with a net value where each indicator has equal weight. Where no data were available on the regional level, we have provided each NUTS2 region in the ESPON space with the corresponding disaggregated country value. This implies that regional variations within a given country are based upon a few indicators alone, whereas the overall variations within the entire ESPON space are more diverse.

3) Merging the performance on all fourteen structural indicators from the short list into one. Seven of these are wholly or partially based on regional data whereas seven are merely dis-aggregations from data on the national level.

4) Linking the results from the previous steps with the main findings from these three core ESPON projects (1.1.1, 1.1.2 and 1.2.1) in order to cover adequately the territorial dimensions of the Lisbon/Gothenburg strategy.

For each region the number of each indicator's value in the lower quartile has been subtracted from that in the upper quartile resulting in a net sum. For each type of region (in the typologies) the mean value of these

indicators has then been calculated. This implies that all averages are unweighted (i.e. not taking into account the population of the region).

Table 1: The 14 short list indicators and their availability

Indicator	Definition	Source	Spatial reference	Time	NUTS level	Situation of regional data
GDPpps per capita	GDP per capita in Purchasing Power Standars	Eurostat	EU 25+4	1991-2001	0,(2,)3	N3, N2
Labour productivity per person employed	GDP in PPS per person employed	Eurostat	EU 25+4 (or +3?)	1991-2001	0,(2,)3	N2
Employment rate	Employed persons aged 15-64 as a share of total population of the same age group	Eurostat	EU 25+4 (or +3?)	1990-2001	0,(2,)3	N3 (NL missing), N2
Employment rate of older workers	Employed persons aged 55-64 as a share of the total population of the same age group	Eurostat	EU 25+4 (or +3?)	1990-2001	0,2	N2
Spending on human resources (public expenditure on education)	Total public expenditure on education as a % of GDP	Eurostat	EU 24+4 (or +3?), no data on Slovenia	1993-2001	0	Not applicable?
R&D expenditure	Gross domestic expenditure on research and development (GERD) as % of GDP	Eurostat	EU 24+4 (or +3?), no data on Malta	1991-2000	0, 2	N2
IT expenditure	Expenditure on IT as % of GDP	OECD/WITSA/IDC/EITO	EU 23+4 (or +3?), no data on Cyprus and Malta	1991-2000	0	No regional data available
Financial market integration (convergence in bank lending rates)	Coefficient of variation across countries on annual interest rates charged on short-term corporate debt	DG MARKT / Eurostat, based on data from ECB and national central banks	EU 12	1993-2002	0 (2)	Replaced by Euribor or state obligations for N2

At-risk-of-poverty rate	Share of people with an equivalised disposable income below the risk-of-poverty threshold after social transfers. The threshold is set at 60% of the national median equivalised disposable income (after social transfers)	Eurostat	EU 25+4 (or +2?)	1995-2000	0,	No regional data available
Long-term unemployment rate	Total long-term unemployed (over 12 months) as % of the total active population aged 15-64	Eurostat	EU 25+4 (or +3?)	1990-2001	0, 2	N2
Dispersion of regional employment rates	Coefficient of variation of employment rates across sub-regions within regions	Eurostat	EU 18 (no data on DK, IR, LU, CZ, HU, PL and SK). No data on BG, RO, NO (and Switzerland?)	1996-2001	0, 2	needs to be calculated for N2
Total greenhouse gases emissions	Percentage change in emissions of 6 main greenhouse gases (CO2, CH4, N2O, HFCs, PCFs and SF6) since base year and targets according to Kyoto Protocol	EAA	EU 25+4 (or +3?)	1990-2000	0	No regional data (not applicable)
Energy intensity of the economy	Gross inland consumption of energy divided by GDP	Eurostat	EU 25+4 (or +3?)	1991-2001	0	No regional data available

Volume of freight transport relative to GDP	Index of freight transport volume relative to GDP Measured in tonn-km/GDP and indexed on 1995	Eurostat	EU 23+4 (or +3?), no data on Cyprus and Malta	1991-2001	0, (2?)	No regional data available?

1 Technical Notes and maps

The task was to gather and present data of the 14 Structural Indicators listed in the annual "Spring Report" of the European Comission. This list of core indicators has changed somewhat over the years, but the one used here is given in the Spring Report 2004. It was agreed by the Comission and the European Council that this short list will be kept stable for three years, i.e. at least until the Spring Report in 2006.

The data source is mainly Eurostat and the date of extracting is june 2005. The data covers the whole ESPON area, i.e. EU 25 + Bulgaria, Romania, Norway and Switzerland. Exceptions are mentioned separately with each indicator. All the GDP data is regularly transmitted from countries to Eurostat according to the standards of ESA 95 (European System of Accounts).

Labour market data used here is mainly gathered with the Labour Force Survey (LFS), which uses a sample (mostly a random or a stratified random sample) of private householdes. Thus it excludes e.g. people living in institutes and homeless people. Only the Nordic countries supply some data directly from population registers. The method of taking the sample differentiates a little between countries and samples themselves are subject to those errors associated with sampling. However, Eurostat has implemented basic guidelines for securing consistent reliability and comparability of data. The definitions of employment and related terms are in line with ILO. However, there are still some discrepancies between countries, which mostly stems from different ways of measuring the duration of unemployment.

The main challenge in this task was to gather the data at regional level, that is, at NUTS 3 or NUTS 2. Due to better availability of data, the level was decided to be NUTS 2. Even then, we had to accept using rather old data (mainly from 2000) and filling gaps with data from another year or from upper regional level. This was done in order to cover the whole ESPON Space and analyse the 14 indicators together, i.e. to make a synthesis of them at regional level.

In addition to this, analysis was also made at national level in order to cover the 14's list in full and make the work more comparable with other studies. For this, we used the latest reliable data available, which mainly was from 2004. This analysis is presented as bar charts indexed on EU 25.

GDP per capita in Purchasing Power Standards

Figures are indexed on EU 25 (=100). For NUTS 2 -level, the data is from 2000. The data for Norway and Switzerland is taken from ESPON Database 2.4, but the original source is Eurostat also for them. For country level, the data is from 2004, except for Ireland, Luxemburg, the Netherlands, Portugal and Romania the year is 2003. Figures are Eurostat's forecasts for Bulgaria, Italy, Spain and United Kingdom.

Labour Productivity

This indicator is measured as GDP in Purchasing Power Standards per person employed and indexed on EU 25 (=100). Persons employed include all persons who did any work for pay or profit, or were not working but had jobs from which they were temporarily absent. Family workers are also included. For NUTS 2 -level, the data is from 2000. Employment data for French oversea regions is from year 2001 and for German regions in Rheinland-Pfalz from 1999. Figures for Switzerland are own estimations for 2001, based on data from Swiss Federal Statistical Office. For country level, the data is from 2004. Figures are forecasts for Cyprus, Ireland, Portugal and Romania. Figures for Bulgaria, the Netherlands and Switzerland are from 2003.

The definiton of employment is in accordance with National Accounts concepts (ESA 95), and it may differ from national labour force statistics. There is no separation between full-time and part time work in this data, and thus differences in their shares may reflect to the productivity. For excample, if GDP is high and number of employed persons is high due to part time working, the productivity is respectively lower than if GDP is high and number of employed persons is low due to full time working, even if the amount of work itself was the same.

Total employment rate

This indicator is measured as employed persons aged 15-64 as a share of the total population of the same age group living in private households. In Norway, Spain, Sweden (1995-2000) and United Kingdom the age group is 16-64, which may cause comparatively high employment rates due to persons 15-16 rarely having jobs. For NUTS 2 -level, the data is from 2000. Data for French oversea regions is from year 2001 and for German regions in Rheinland-Pfalz from 1999. Figures for Switzerland are own estimations for 2001, based on data from Swiss Federal Statistical Office. At national level, data is from 2004 and indexed on EU 25.

Employment rate of older workers

Employed persons aged 55-64 as a share of total population of the same age group living in private households. For NUTS 2 -level, data is from 2000. Data for French oversea regions is from year 2001 and for German regions in Rheinland-Pfalz (DEB) from 2002. Data for Switzerland is at national level. At national level, data is from 2004 and indexed on EU 25. Data for Switzerland is from 2003.

Gross domestic expenditure on Research & Development (GERD)

This indicator measures the total gross domestic expenditure on research and development (GERD) as percentage of GDP. For NUTS 2 level, data is mainly from 2000, but it turned out to have many gaps and thus some other years and sources were used. Data for Bulgaria and Malta is from year 2002. Data is from ESPON Database 2.4 for following regions: Schwaben (DE27) and Niederbayern (DE22) in Germany, French oversea regions, Bolzano-Bozen (ITD1) and Trento (ITD2) in Italy. As the two latter NUTS 2 regions in Italy were same region until 2000, data has been disaggregated for these new regions – i.e. they both get the same value as the old region. For Spanish regions Ceuta and Melilla, no NUTS 2 level data was available, so they were given the value of their common NUTS 1 region (Ceuta y Melilla, ES63). Data for United Kingdom is also from ESPON Database, but it has been disaggregated from NUTS 1 level to NUTS 2 and the reference year is 1999. Data is from UNESCO and only at national level for following countries: Belgium, Ireland, Norway (year 2001), Sweden (year 2001) and Switzerland. At national level, data is mainly from 2002 and indexed on EU 25 (=100). Data for Greece is from 2003, for Belgium, the Netherlands, Portugal and Sweden from 2001, and for Luxembourg from 2000. Data for Switzerland is from UNESCO Institute for Statistics and the reference year is 2000.

The total gross domestic expenditure consists of following sub-expenditures on R&D: business enterprises, higher education, government and private non-profit sector. GERD does not take into account international purchases of R&D performed abroad. This affects especially the expenditure figures of multinational enterprises. The data is gathered with surveys according to the Frascati Manual "Proposed standard practice for surveys of research and experimental development" (OECD 2002).

Youth education attainment level

This indicator is measured as the percentage of the population aged 20-24 having completed at least upper secondary education (ISCED level 3-4). Only persons living in private households are considered. Data in figures presented at national level is from 2004, except for Austria, the Netherlands, Luxembourg and Switzerland from 2003. This indicator was not available at NUTS 2 level, but we have used national data from 2000 in the synthesis analysis.

The data is gathered with the Labour Force Survey already discussed above, and the same notions are valid also with this indicator. The age group 20-24 is used because of the educational target set by Comission for people aged 22. However, the use of this small an age group may cause differences between countries, as graduation age varies between them. Persons studying abroad are also not taken into consideration, which affects especially the smallest countries with active student exchange programs.

Comparative price levels of final consumption by private households including indirect taxes

Comparative price levels are measured as the ratio between Purchasing Power Parities (PPP) and the market exchange rate of the respective country, indexed on EU 25 (=100). Data is available only at national level. The reference year in figures presented at national level is 2002 and in regional synthesis analysis it is 2000.

The data is gathered with surveys at the same month in every country and mainly in capitals. Both spatial and temporal coefficients are needed to produce one annual figure for the whole country. Since Eurostat coordinates and regulates these procedures with OECD, comparability and reliability is fairly good, although errors due to sampling and coefficients are possible. The error margin for PPP data is +/- 5 % at aggregated level.

Business investment

Gross fixed capital formation by the private sector as a percentage of GDP, indexed on EU 25 (=100). Data is available only at national level. The reference year in figures presented at national level is 2004 and in synthesis analysis it is 2000. Data for Switzerland is from OECD.

At-risk-of-poverty rate after social transfers

The share of persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income. Data is available only at national level. The data in national level figures is indexed on EU 25 (=100) and mainly from 2002, except for Czech Republic, Cyprus, Norway and Sweden from 2003, for Austria, Belgium, Denmark, Greece, Ireland, Italy and Luxembourg from 2001, and for Malta from 2000. Data is provisional for Portugal, Norway and Sweden. Data for Switzerland is from Swiss Federal Statistical Office and the reference year is 1999. In synthesis maps the reference year is 2000, except for Czech Republic, Denmark and Sweden 2001, for Norway and Slovakia from 2003 and provisional. Data for Cyprus is from Observatoire social Européen and the reference year is 1997.

The indicator measures relative poverty in each country, which means that a person at risk of poverty in one country might not be that in another country. The EU average

is calculated as the average of national rates weighted by population in each country. The current concept of income is not taking into account some sources of income, like rents and unofficial financial support. Also the duration of poverty is not observed. Thus the state of being at risk of poverty does not necessarily mean low living conditions or poorness in general speaking. On the other hand, only persons living in private households are included in the survey, thus omitting e.g. homeless people.

The data for EU 15 is gathered with a survey under the European Community Household Panel (ECHP). Unlike in Labour Force Survey, the interviewees constitute a panel of households and individuals, and thus it is possible to have exactly the same sample every year. For new member states and candidate countries, national databases (mainly from Household Budget Surveys) are used. Even if national data is made to be as comparable with ECHP data as possible, some discrepancies most likely exist. New common survey method, EU-SILC, is being impelemented from 2002 onwards, and thus there is no more recent data avilable yet.

Dispersion of regional employment (or unemployment) rates

In the Comission's list, regional disparities in employment are measured as the coefficient of variation of employment rates (of the age group 15-64) across regions (NUTS 2 level) within countries. This means that the indicator can't be calculated for those countries consisting of only one NUTS 2 region: Cyprus, Denmark, Estonia, Latvia, Lithuania, Luxembourg, Malta and Slovenia. Thus we have used this indicator only at country profiles (bar charts) in those countries where it was possible. The data is from 2003, except for France and Romania from 2002, and it is gathered with the Labour Force Survey.

To depict regional disparities in employment, we have used the variation of unemployment, due to unemployment data being better available than employment at NUTS 3 level. The exact measure is a coefficient of variation of the rate of unemployment within NUTS 2 region as annual average. Unemployed persons are all persons aged 15-74 (16-74 in Norway, Spain, Sweden in 1995-2000 and United Kingdom) who were not employed at the time of the survey, had actively sought work during the last month and were ready to start working. The reference population is all employed or unemployed persons, i.e. active population. The final rate is an annual average from quarterly data. The data is from 2003, except for Greece, Malta and Ceuta & Melilla from 2002. For Greece and Portugal no NUTS 3 level unemployment data was available, so we have instead used regional variatons between NUTS 2 regions in these countries. To calculate NUTS 3 level unemployment rate, data is attributed from the Labour Force Survey NUTS 2 level data to NUTS 3 level by using the data for unemployment and active population received from national statistical offices. This work is done in Eurostat, and the reliability and comparability of the end

result data is fairly high, despite discrepancies stemming from the use of different data sources in different countries.

Total long-term unemployment rate
Long-term unemployed as a percentage of the total active population. Long-term unemployment means that the search for a job or the time since latest job ended is at least 12 months. For NUTS 2 level, the data is from 2000, except for French oversea regions and Portugese regions Centro (PT12), Lisboa e Vale do Tejo (PT13) and Alentejo (PT14) from 2001, for Malta, the Netherlands, and German regions in Rheinland-Pfalz (DEB) from 2002. For Norway and Switzerland data is available only at national level and from year 2003. At national level, the data is from 2004, except for Cyprus from 2003.

Total greenhouse gases missions
The total emission of six main greenhouse gases (the "Kyoto Basket") is measured as percentage change since base year and presented as an index (base year = 100). Emissions are measured as CO2 equivalents and each gas is weighted by it's warming potential. Only national data is available for this indicator. The reference year is 2002 (for Cyprus 2000) at national level analysis and 2000 at regional synthesis analysis. Data source for Switzerland is Bundesamt für Umwelt, Wald und Landschaft.

The base year referred to is mainly 1995 for fluorinated gases (HFC, PFC, SF6) and 1990 for non-fluorinated (CO2, N2O, NH4). Finland, France and Norway have 1990 as the base year for all the six gases, Romania has year 1989 and Hungary the average of 1985-1987. For non-fluorinated gases, Poland and Bulgaria use reference year 1988 and Slovenia year 1986. In addition, most new member states have difficulties in reporting all fluorinated gases. There are some differences in methdologies, background data and emission factors between countries, but these differences are well documented and apparently taken into account in calculations, as Eurostat estimates the comparability between countries to be very good.

Energy intensity of the economy
Energy intensity is measured as gross inland consumption of energy divided by GDP at constant prices (base year is 1995), and indexed on 1996 (= 100). The original unit is kgoe (kilogram of oil equivalent) per 1000 Euro. The data is aggregated from five types of energy (coal, electricity, oil, natural gas and renewable energy source) and four sectors of inland consumption (production, storage, trade and consumption/use of energy). Only national level data is available. The reference year is 2003 at national level analysis and 2001 at regional synthesis analysis. For Switzerland, the original measure is Kwh/GDP in Frangs and the source is Swiss Federal Statistical Office.

The data is gathered annually with a joint questionnaire separately for the five energy sources. The questionnaire is harmonized with all OECD and EU countries.

Volume of freight transport relative to GDP

Index of inland freight transport volume relative to GDP, measured in tonne-km per GDP in constant prices (base year is 1995) and indexed on 1995 (=100). Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country. At national level reference year is 2003, except for Portugal and the Netherlands it is 2002 and for Switzerland 2001. Figures for Greece and Italy are Eurostat's estimations. As no regional data was available, national data was disaggregated to NUTS 2 level for synthesis analysis. The reference year in this analysis is 2000. For Cyprus and Slovenia figures are estimations. Some data for Greece is estimated by Eurostat as no data on road freight transport ais available for Greece since 1999. No data on Malta was found in any year or area level.

The data is compiled from separate data sets for each transport mode. Road transport data is gathered by sample surveys of vehicles registered in the country, but some countries use a threshold for the size of the vehicle. Railway transport data is taken from registers and thus covers the whole population, but after market liberalisation in some countries small railway companies have been omitted. Also for inland waterway transport, the whole population is covered, but the method of gathering information varies between countries. Despite all these differences, the harmony of data can be raised in Eurostat, and thus the comparability between countries is fairly good.

Figure A1: Gross Domestic Product per capita in Purchasing Power Standards

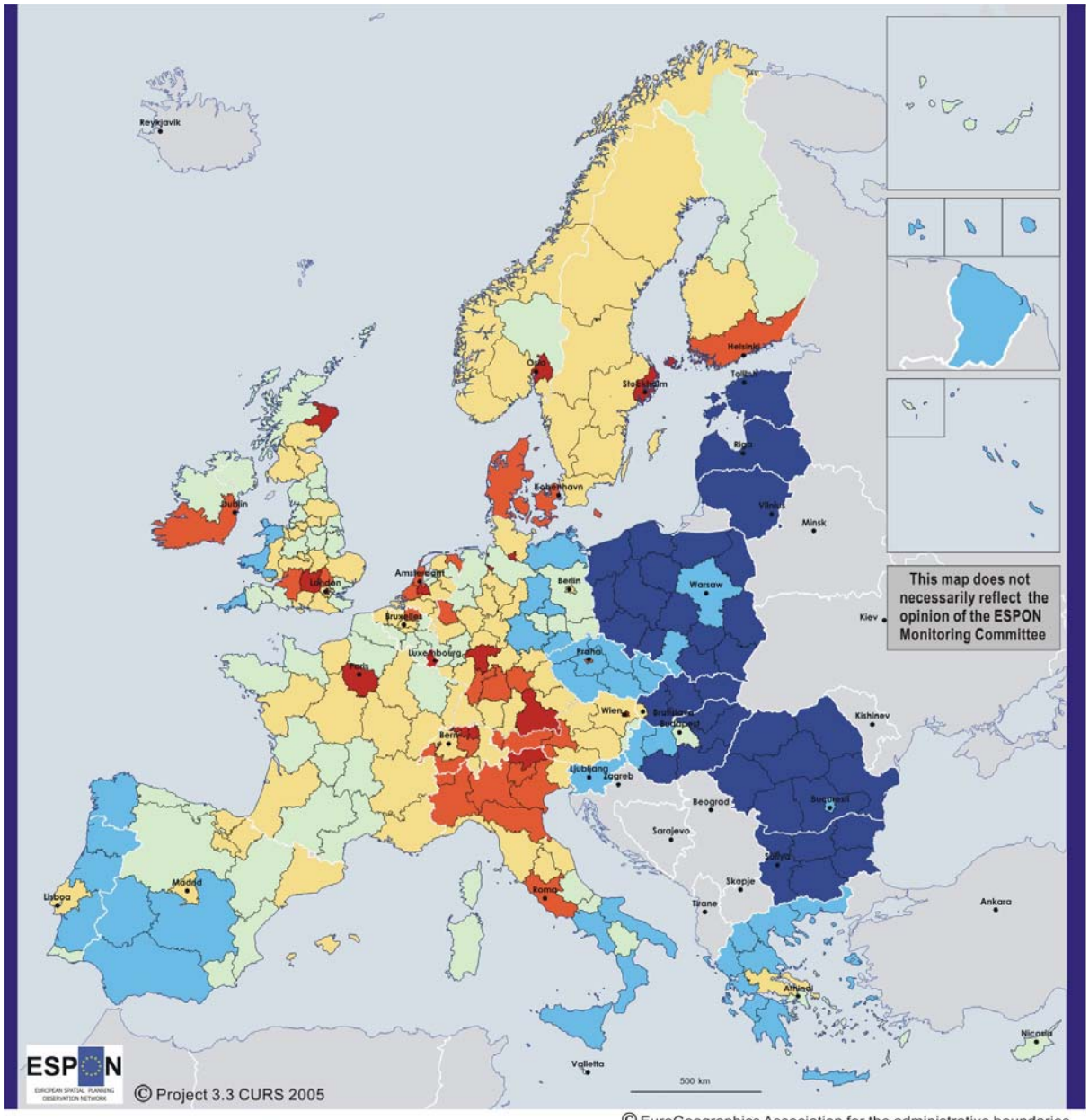
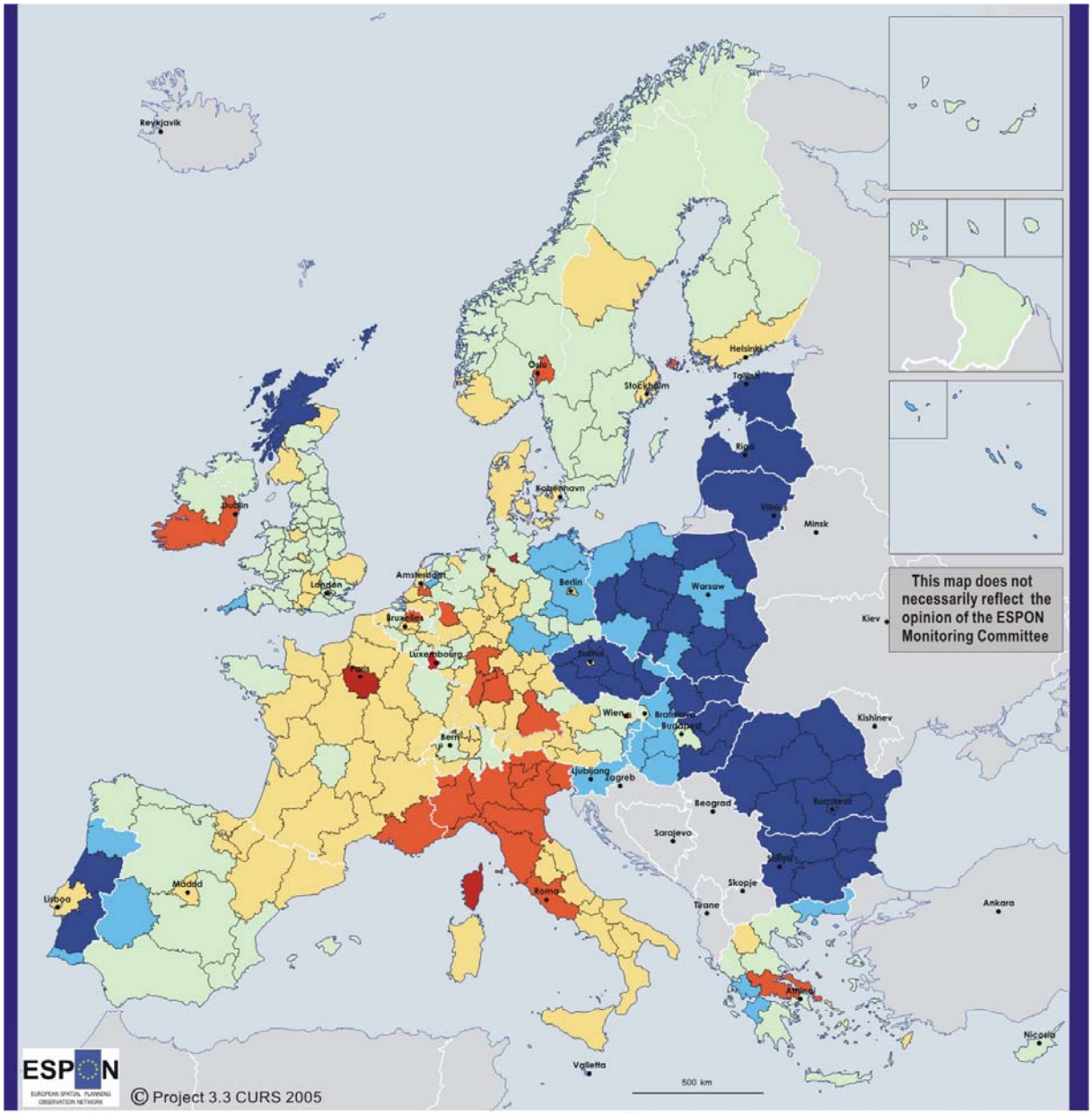


Figure A2: Gross Domestic Product per person employed in Purchasing Power Standards



Gross Domestic Product in PPS per person employed 2000, index EU 25 = 100 (49 072 €/person)

- 150 - 280
- 125 - 149
- 100 - 124
- 75 - 99
- 50 - 74
- 1 - 49

Employment data for FR9 is from year 2001, for DEB from 1999.
CH: Own estimations based on Swiss Federal Statistical Office, year 2001

Origin of data:
EUROSTAT 7/2005
Switzerland: Swiss Federal Statistical Office 7/2005
NUTS 1 regions FR9 and DEB: ESPON Database 2.4

Source: CURS, Eurostat

Figure A3: Employment rate

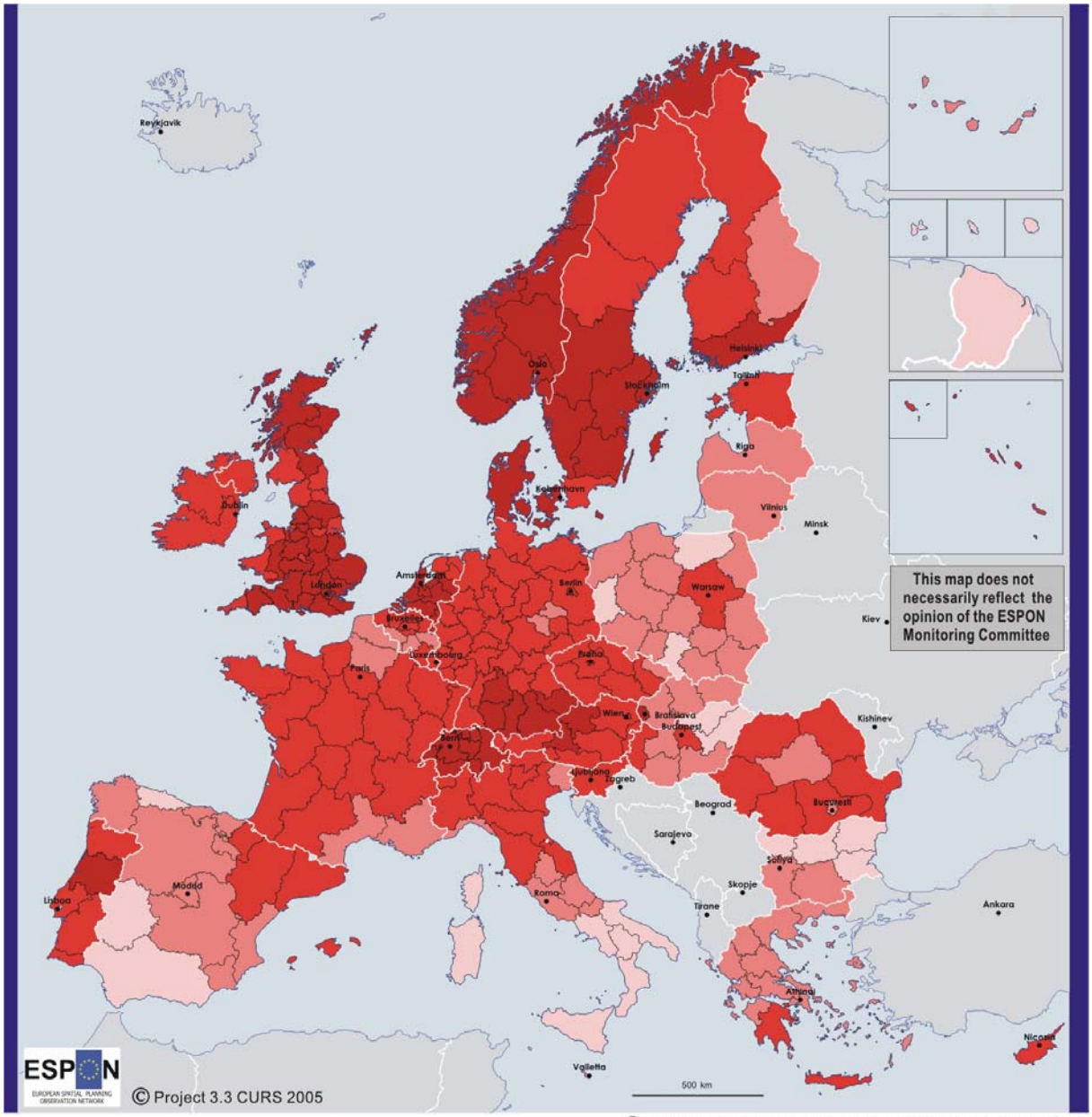


Figure A4: Employment rate of older workers

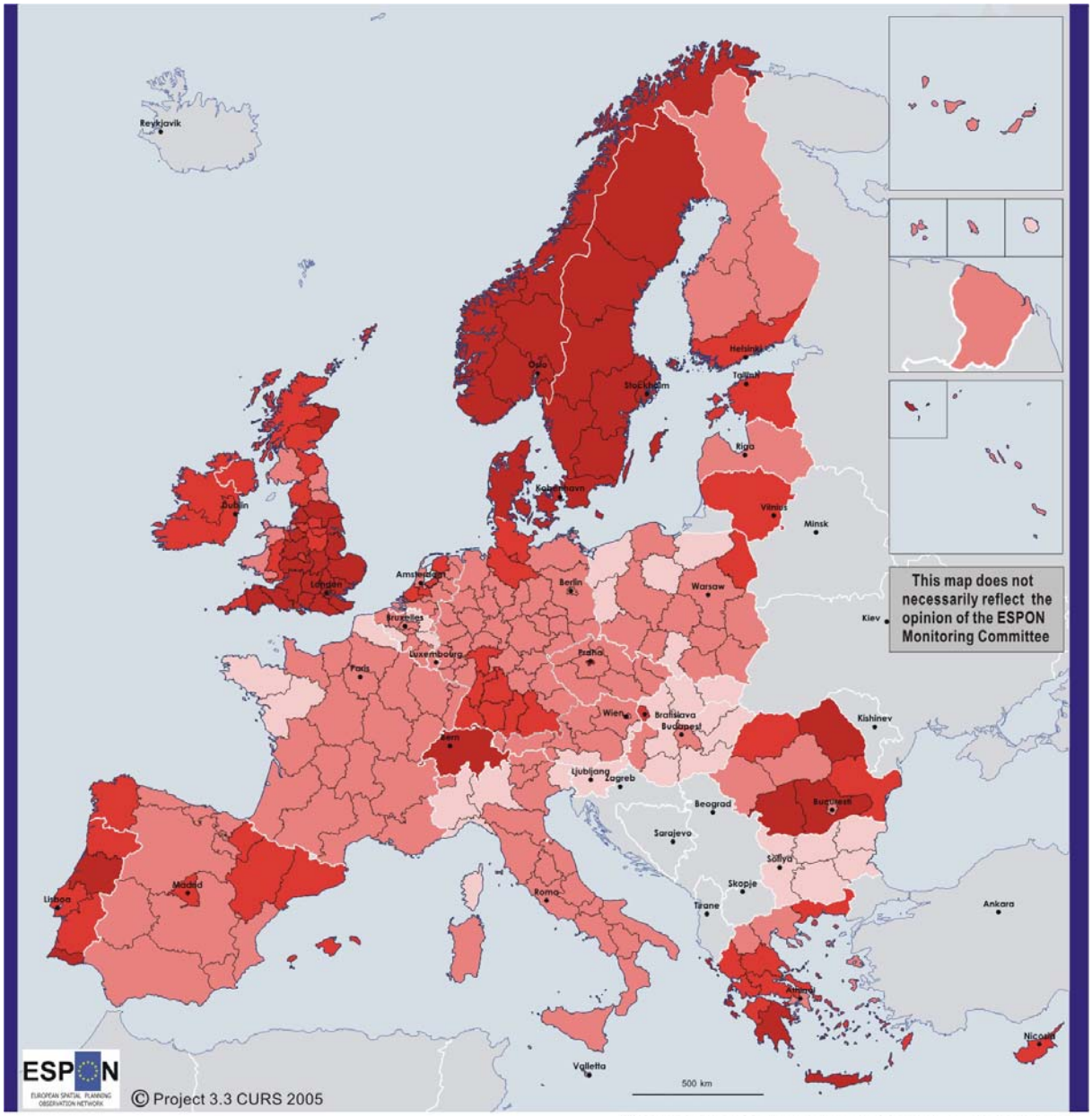
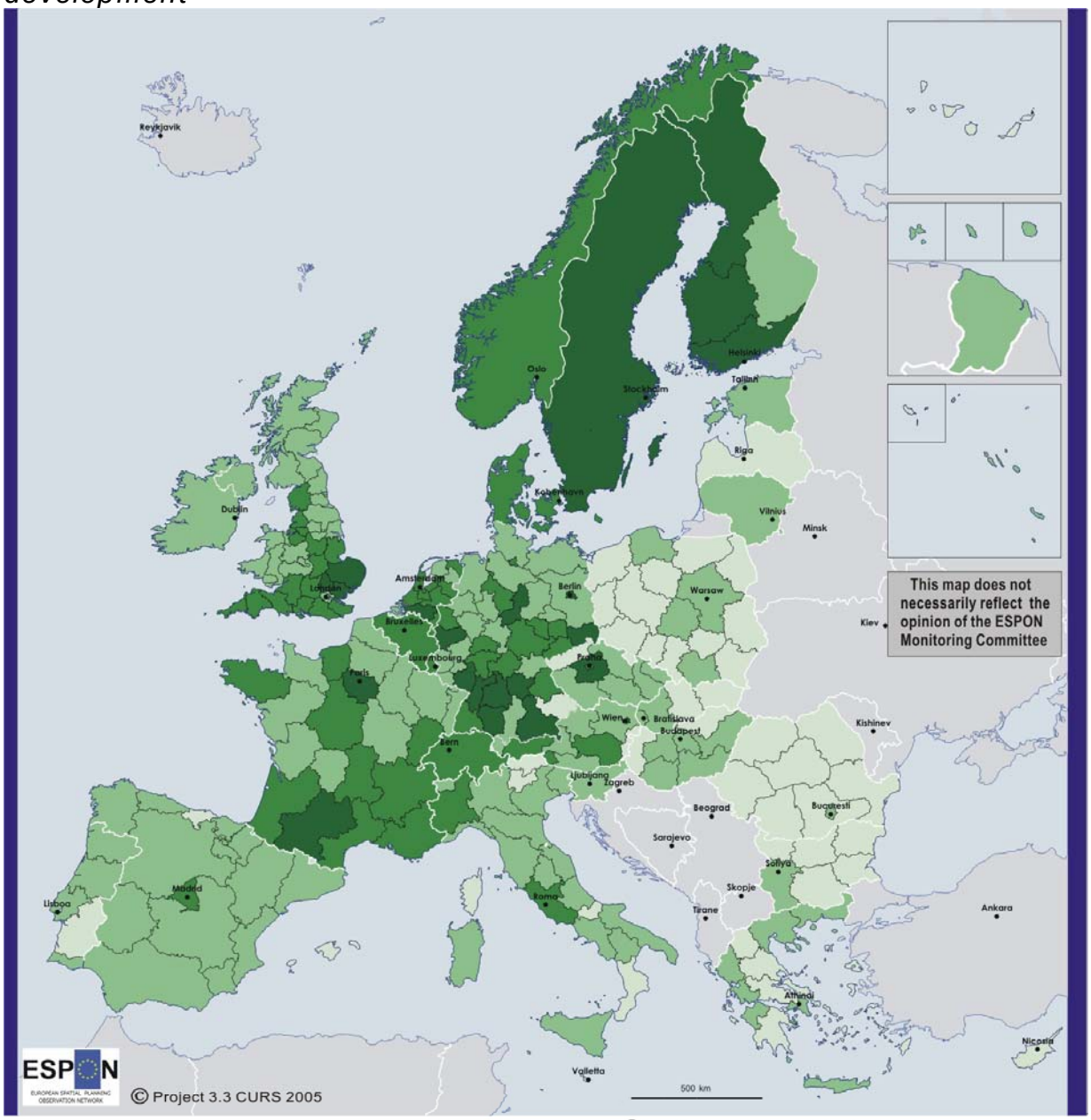


Figure A5: Gross domestic expenditure on research and development



Gross domestic expenditure on research and development (GERD) as a share of the GDP in 2000 (%)

- 3,0 - 8,0
- 1,5 - 2,9
- 0,5 - 1,4
- 0,01 - 0,4
- Data not available

Origin of data:
EUROSTAT 7/2005
UNESCO Institute for Statistics
ESPON Database 2.4

Source: CURS, Eurostat

BG: data is from year 2002
MT: data is from year 2002
Data from ESPON Dtb 2.4: DE27, DE22, FR9, ITD1, ITD2 (disaggregated from old N2 regions), UK (disaggregated from N1 level, 1999)
Data from UNESCO at national level: BE (year 2000), CH (2000), IE (2000), NO (2001), SE (2001)
Ceuta and Melilla: Data not available.

Figure A6: Youth education attainment levels

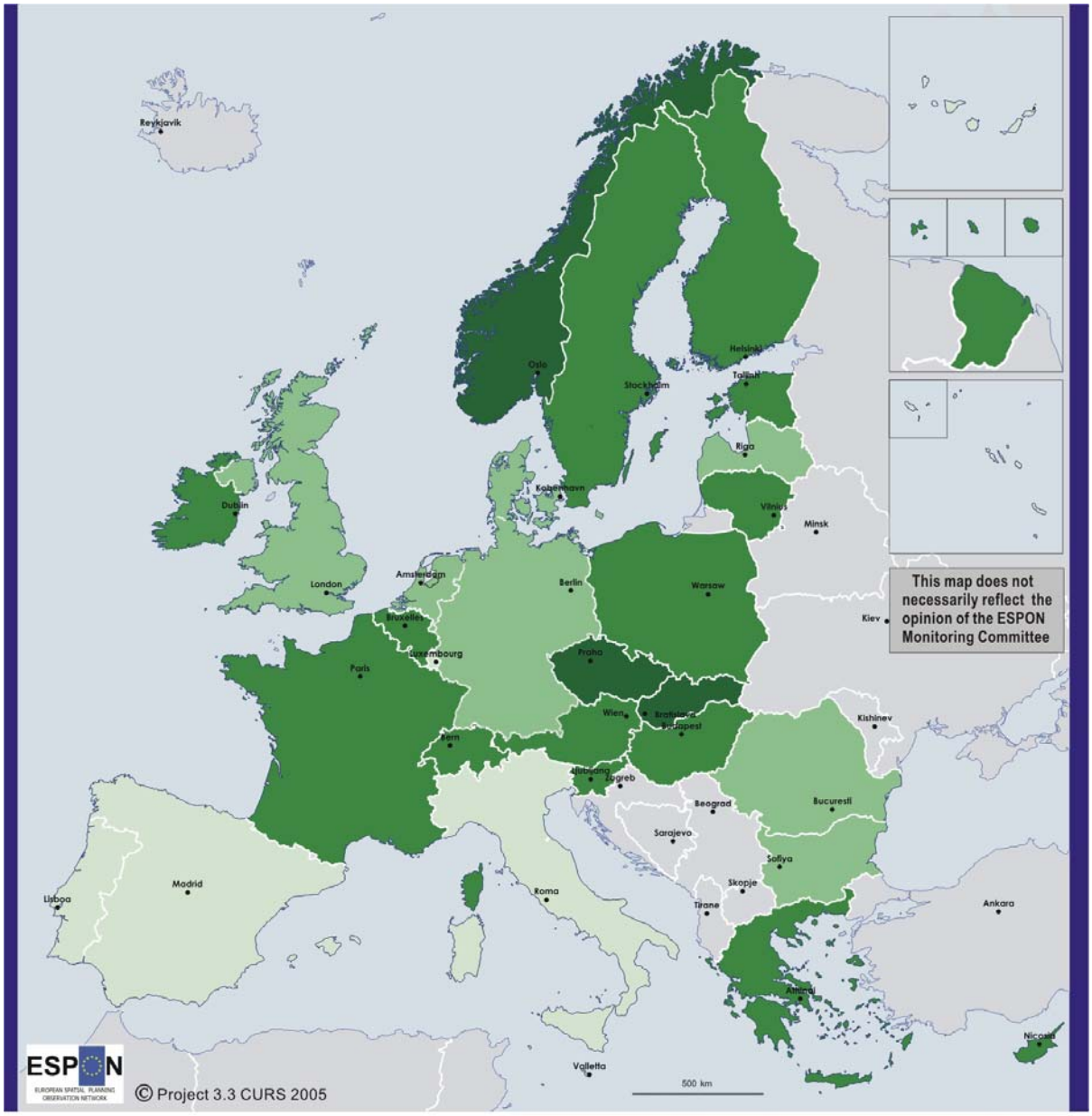
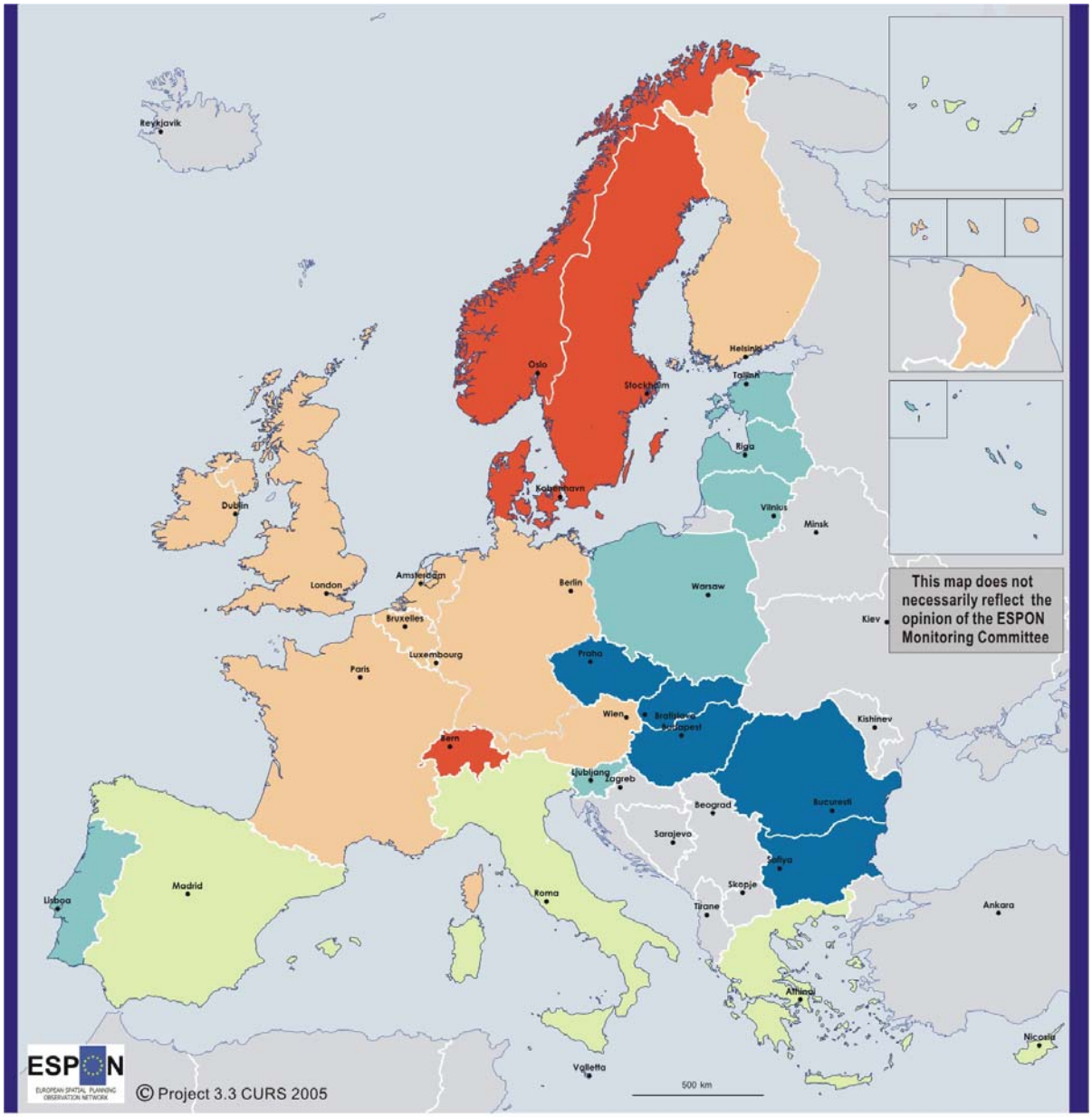


Figure A7: Comparative price levels



Comparative price levels of final consumption by private households (including indirect taxes) in year 2000. Index EU 25 = 100

>= 125
100 - 124
75 - 99
50 - 74
< 50

Origin of data: EUROSTAT 7/2005

Source: CURS, Eurostat

Figure A8: Business investment

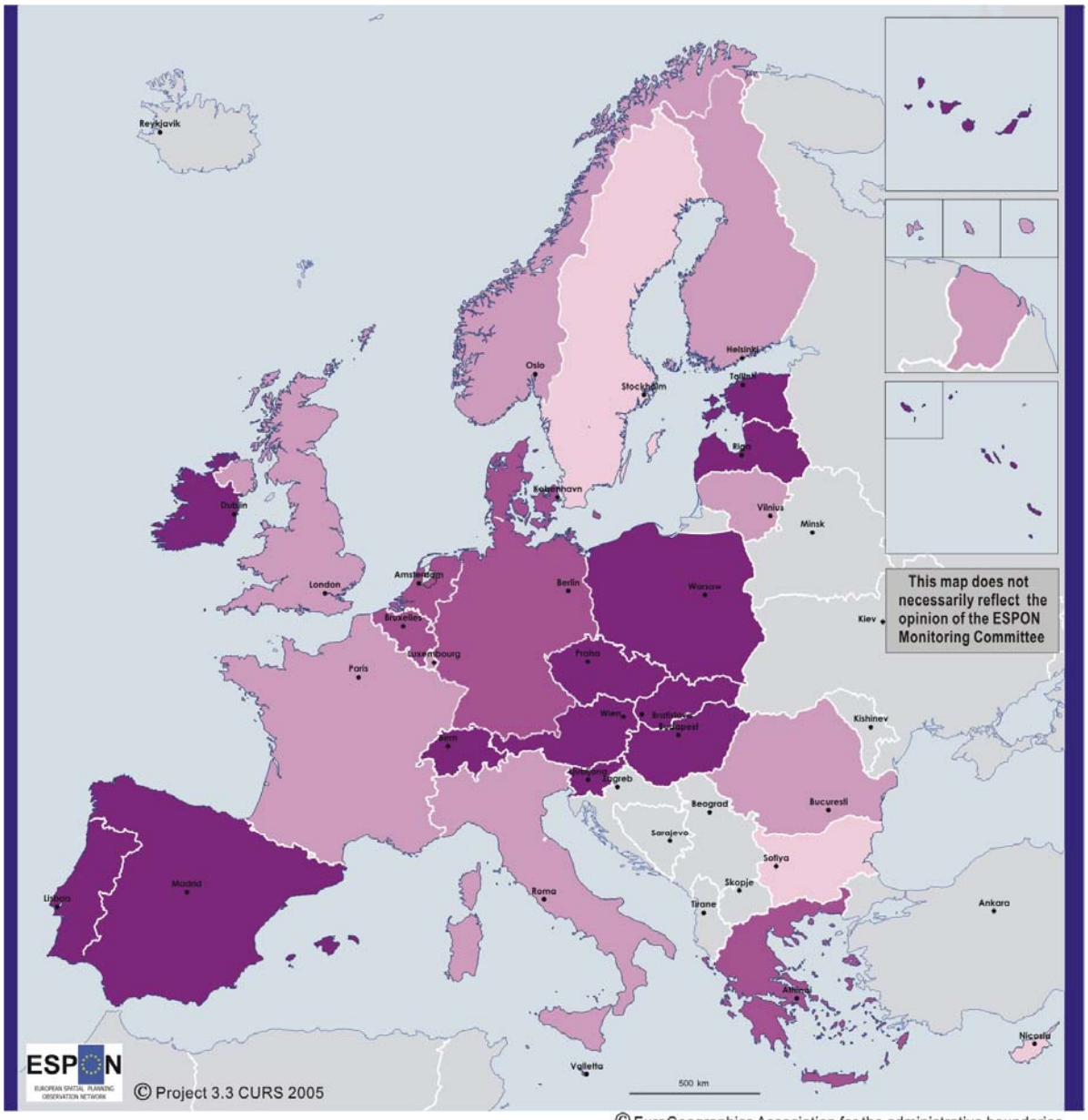
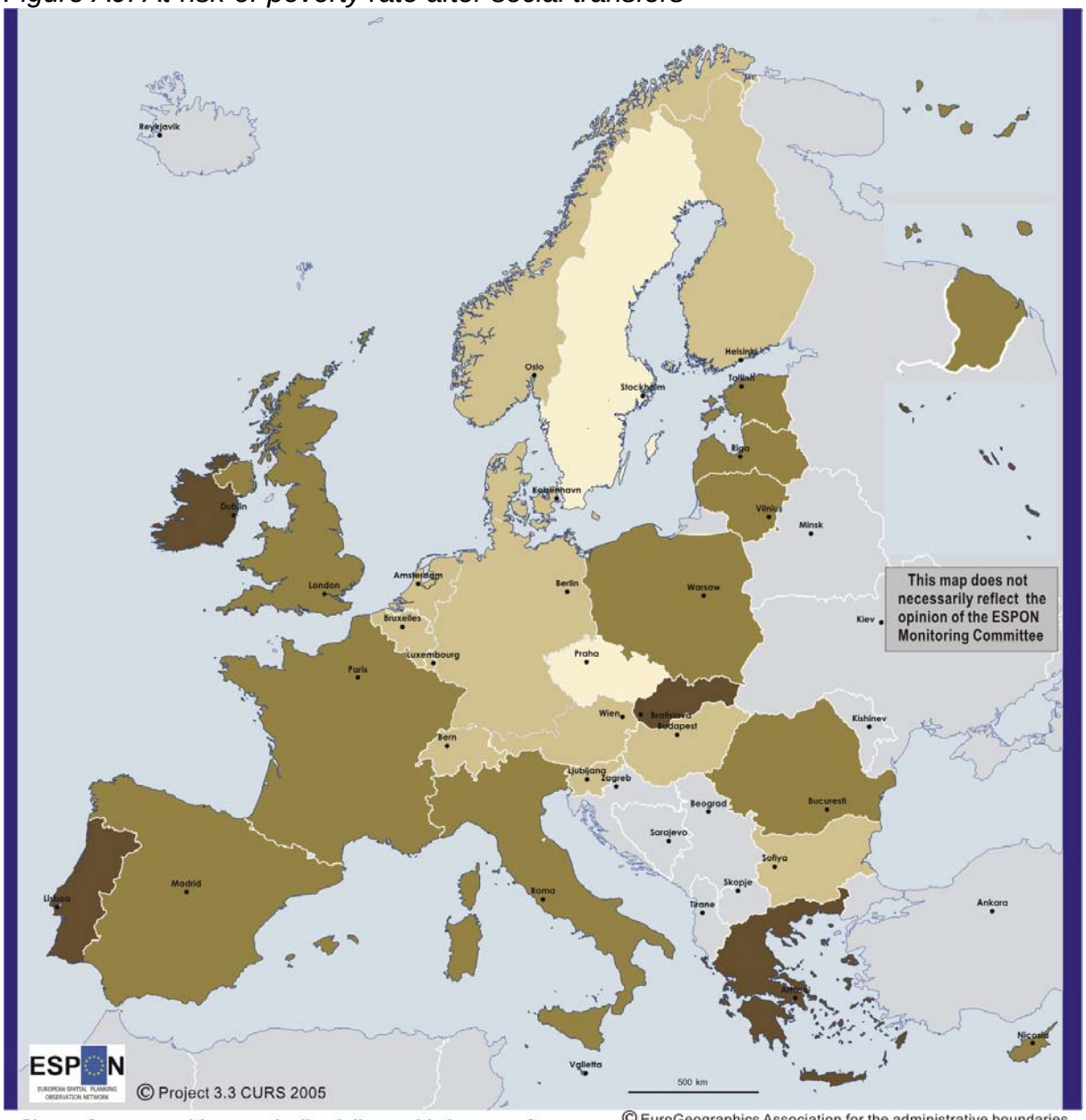


Figure A9: At-risk-of-poverty rate after social transfers



Share of persons with an equivalised disposable income after social transfers below 60% of the national median, in year 2000.

- 20,0 - 21,0
- 15,0 - 19,9
- 10,0 - 14,9
- 8,0 - 9,9

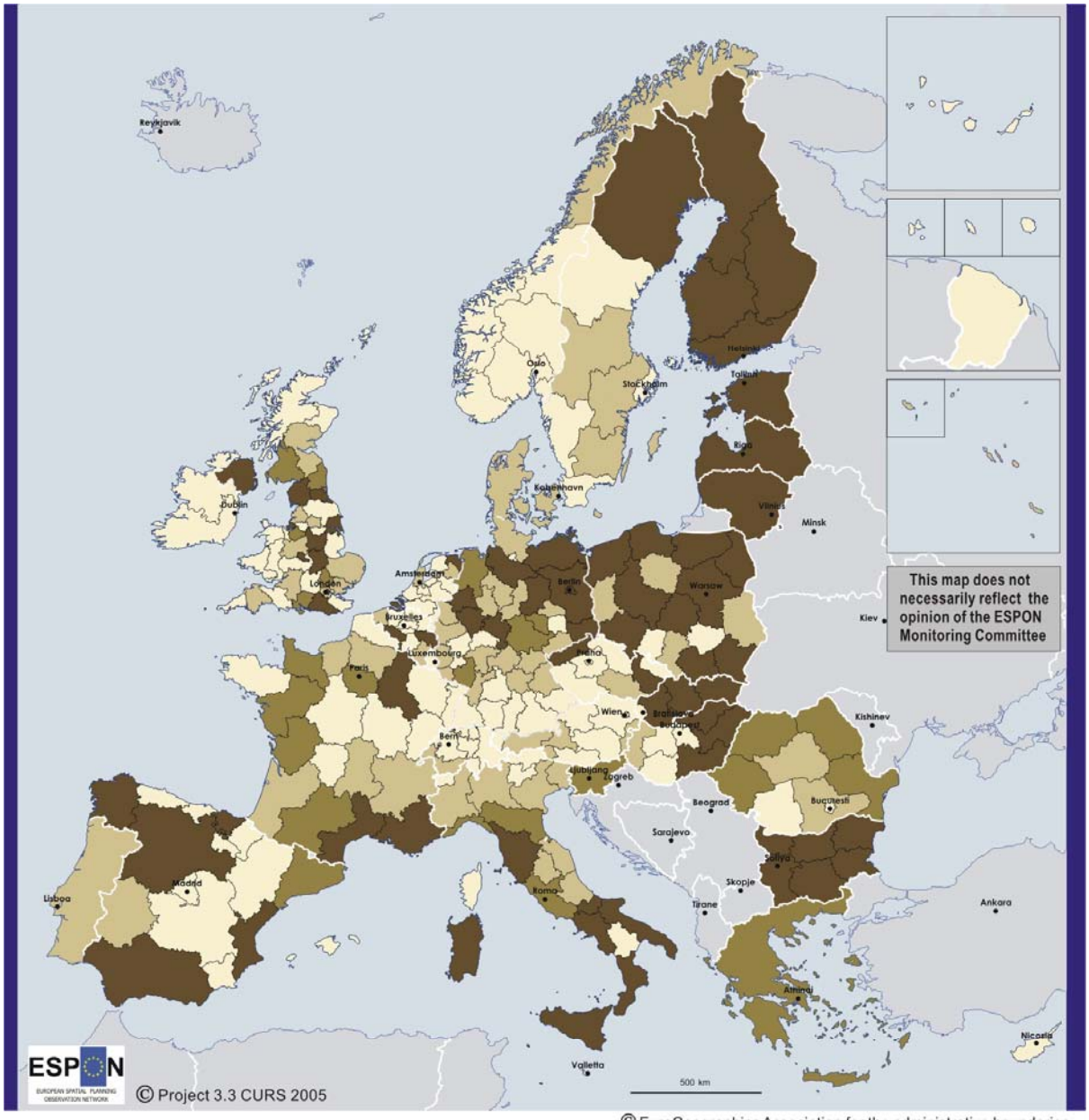
Origin of data:
EUROSTAT 7/2005
CH: Swiss Federal Statistical Office, year 1999
CY: Observatoire social Européen, year 1997

Source: CURS, Eurostat

CZ, DK and SE: Data is from year 2001
NO and SK: Data is from 2003 and provisional
FI and FR: the available data only permits adjustment for social transfers on a gross basis.

The methodology of calculation of the indicators for the Candidate Countries is the same as the one used for Member States. Even if every effort has been made to ensure that the definition of income used is as comparable as possible to the ECHP definition, the indicators for the Candidate Countries cannot be considered to be fully comparable with the EU ones, or between Candidate Countries, due to the differences of underlying data sources.

Figure A10: Dispersion of regional unemployment rates



Coefficient of variation (VAR) of NUTS 3 level unemployment rates within each NUTS 2 region

- 5,0 - 92,9
- 3,0 - 4,9
- 1,0 - 2,9
- 0 - 0,9

Origin of data: EUROSTAT 7/2005

Source: CURS, Eurostat

$$CV = \frac{\sum (x - \bar{x})^2}{(n-1)}$$

Annual average 2003 (except for GR & MT: 2002; Ceuta & Melilla: 2002)
GR & PT: Regional variatons between all NUTS2 regions in respective country

Figure A11: Long-term unemployment rate

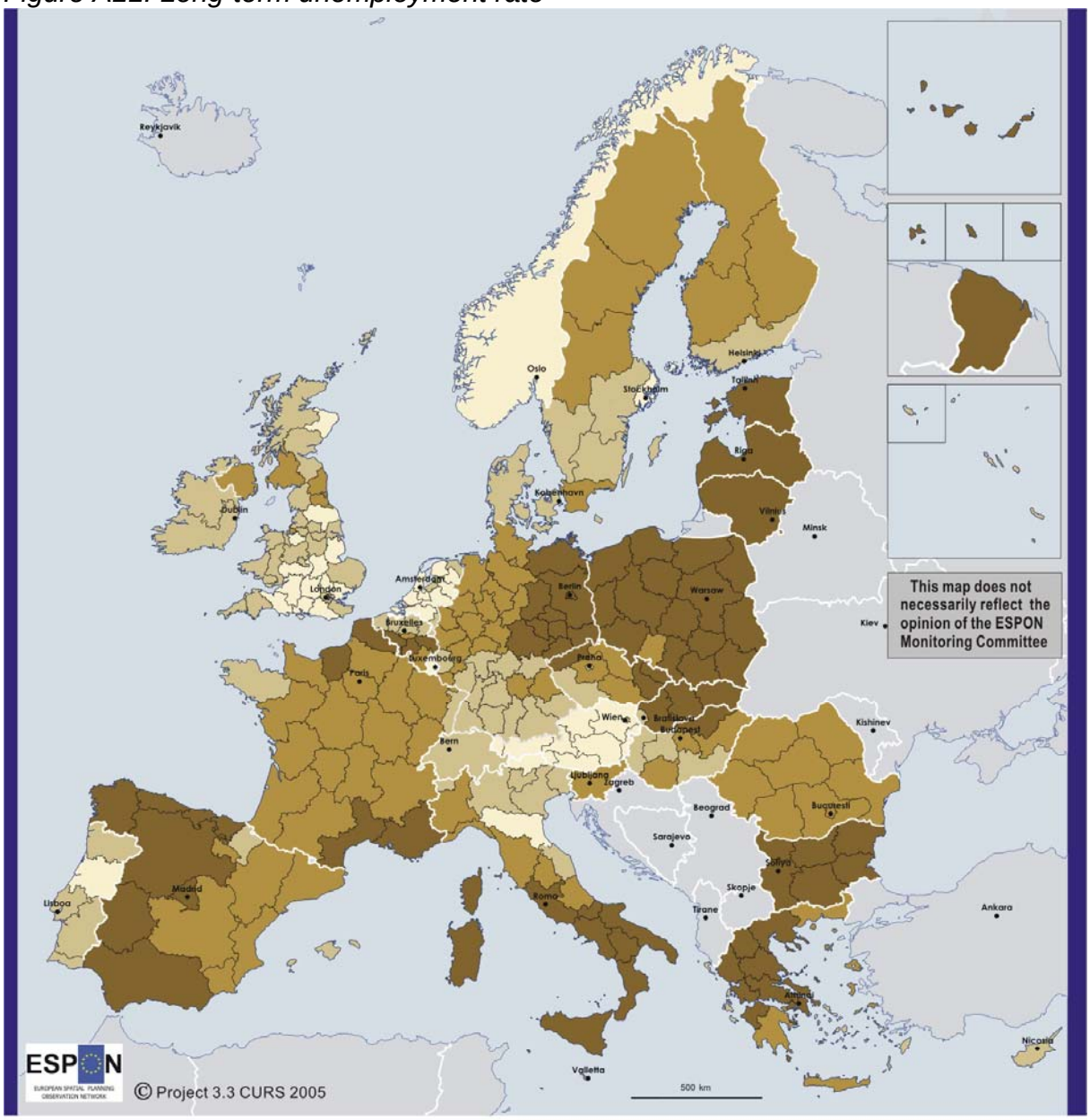


Figure A12: Greenhouse gas emissions

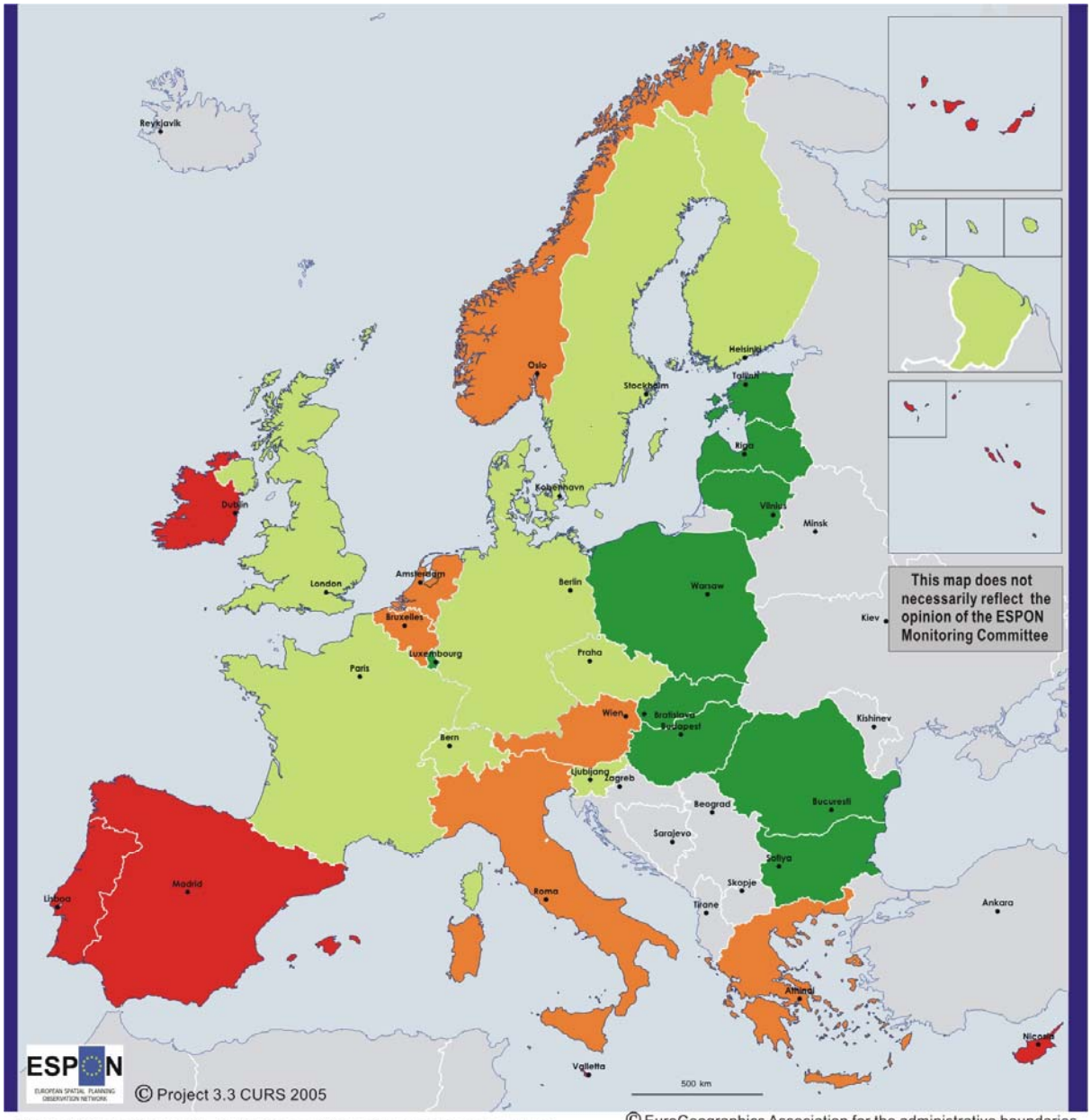
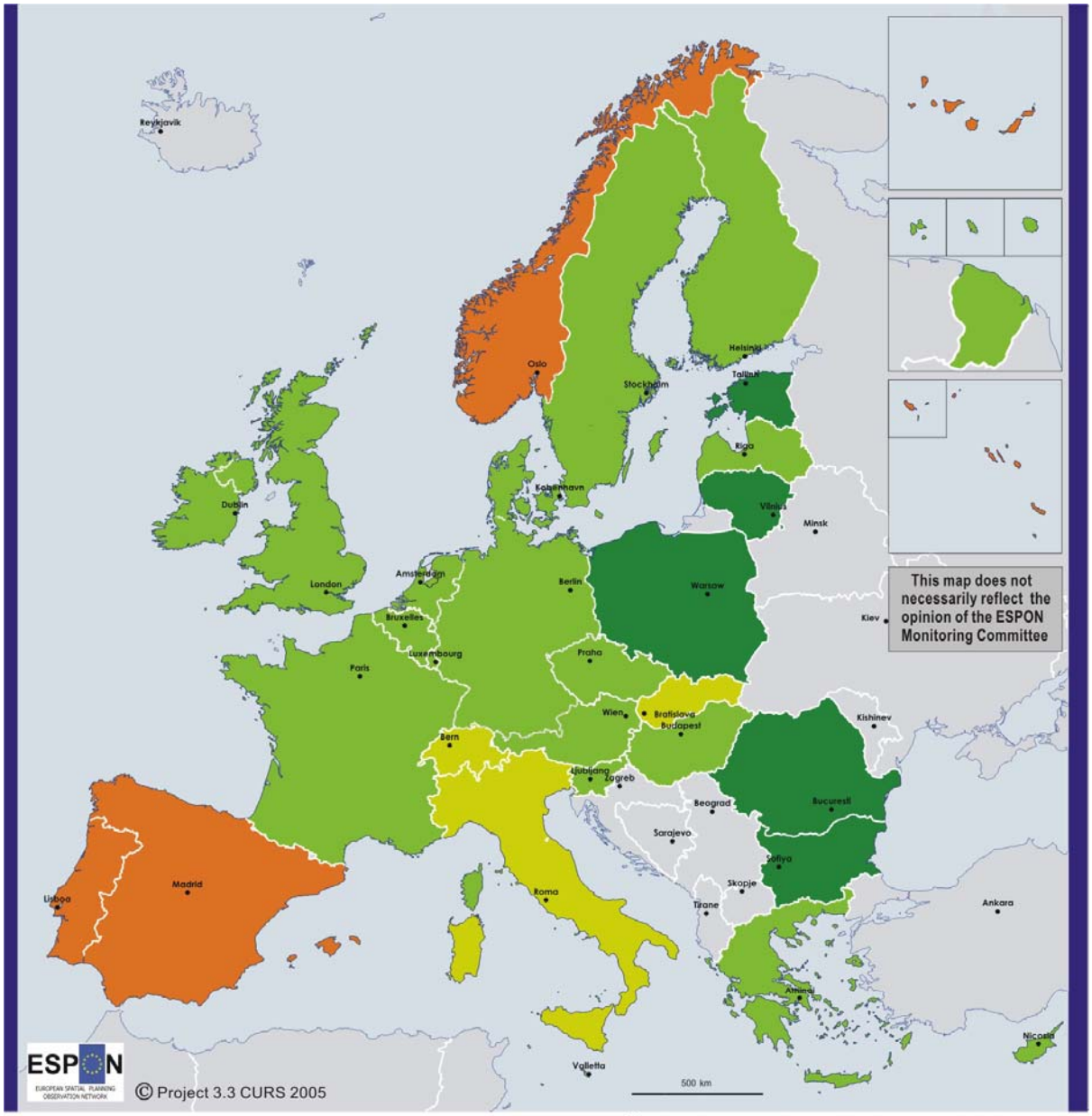


Figure A13: Energy-intensity of the economy



Gross inland consumption of energy divided by GDP (kilogram of oil equivalent per 1000 Euro at constant prices), indexed on year 1996 = 100

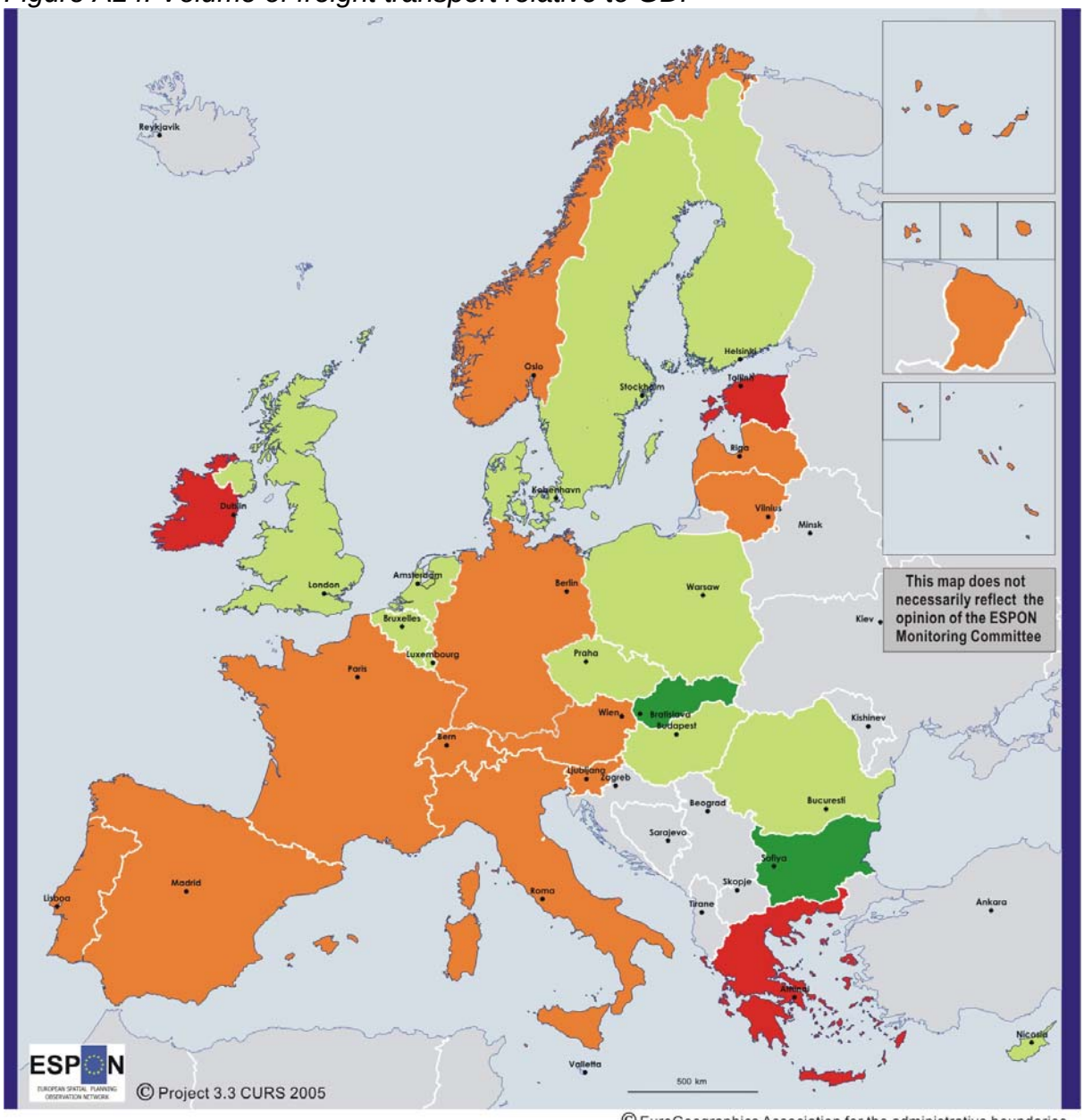
- 100 - 105
- 95 - 99
- 75 - 94
- 61 - 74

CH: measured as Kwh/GDP in Swiss Frangs.

Origin of data:
EUROSTAT 7/2005
CH: Swiss Federal Statistical Office

Source: CURS, Eurostat

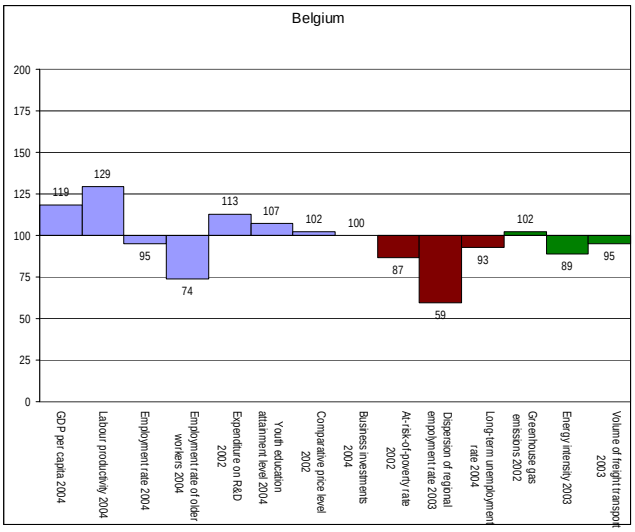
Figure A14: Volume of freight transport relative to GDP

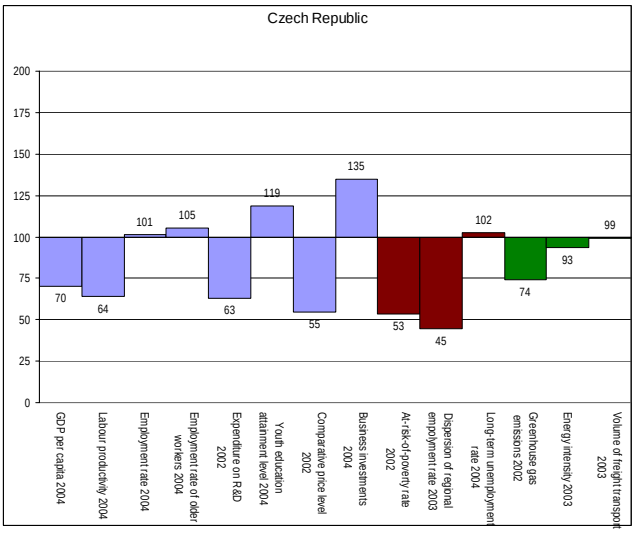


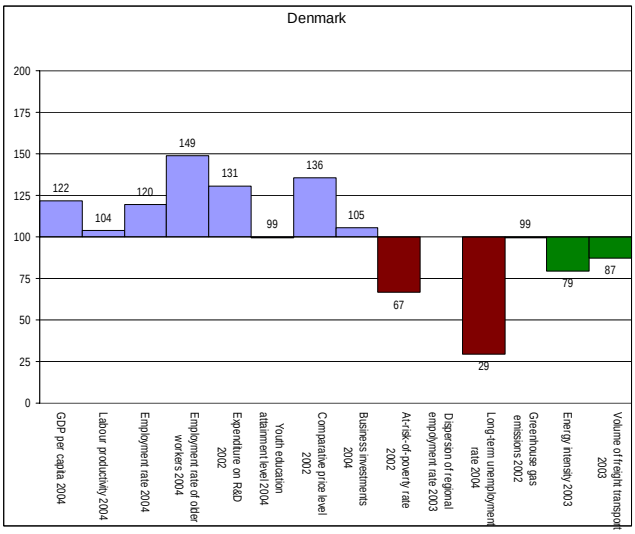
Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country.

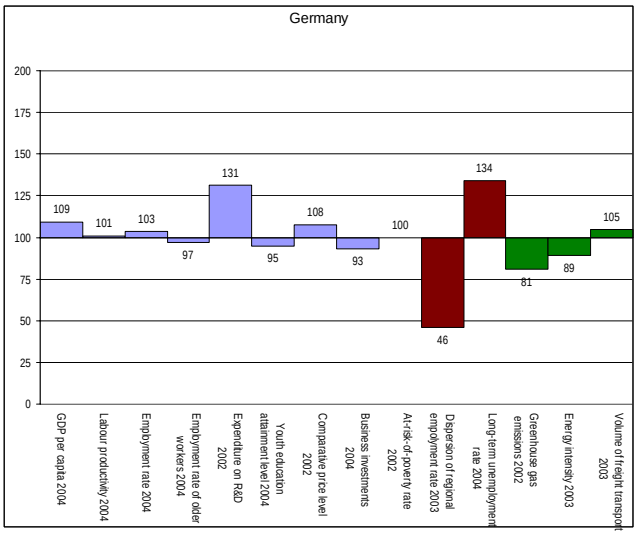
SI and CY: Figures are estimations.
Greece: Some data are estimated by Eurostat as no data on road freight transport are available for Greece since 1999.

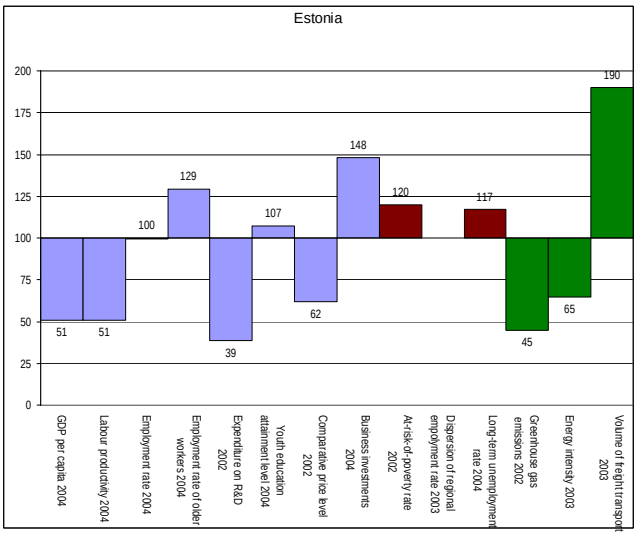
Figure A15: Structural indicator performance on the national level











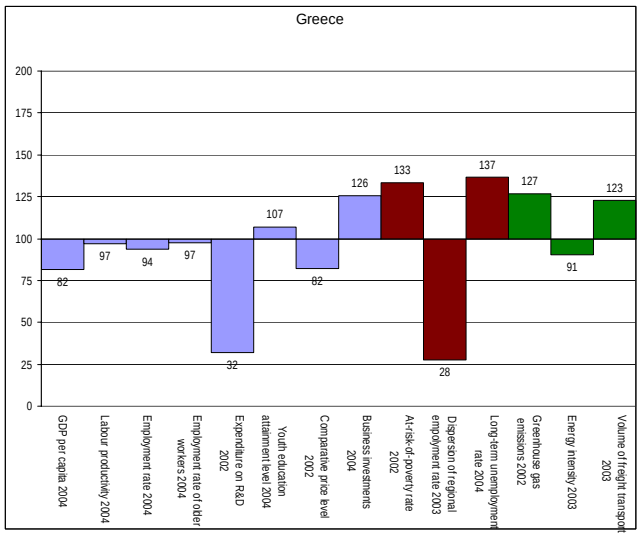
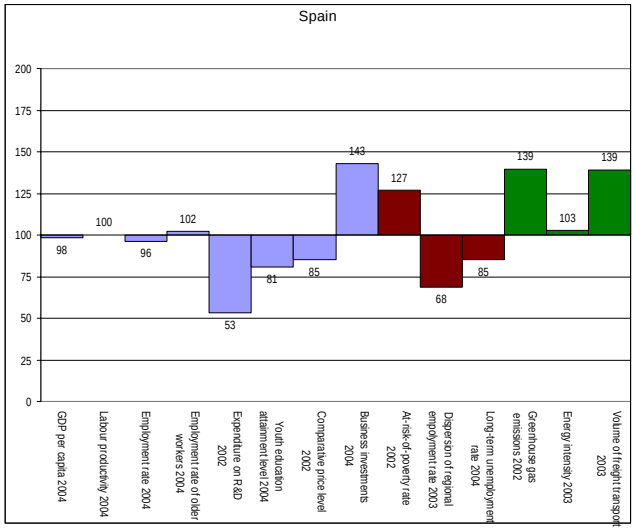
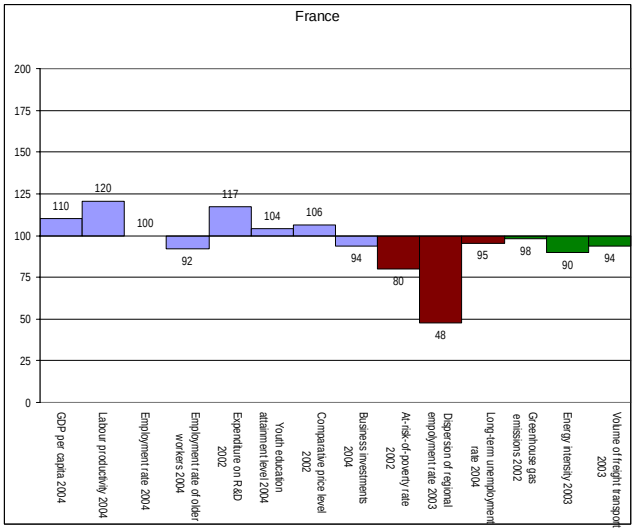
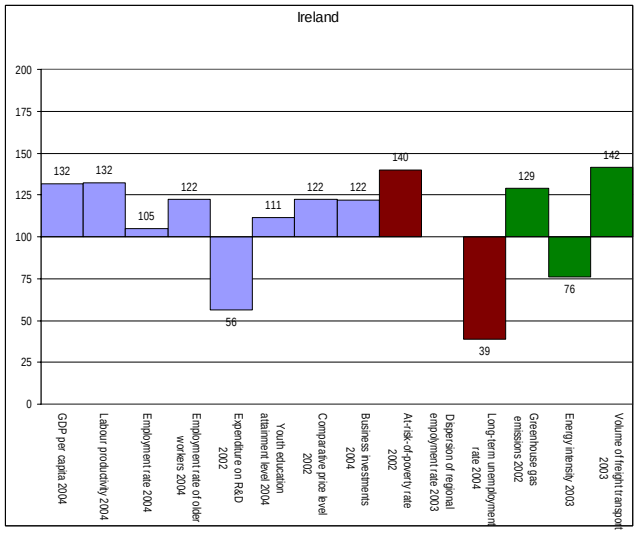
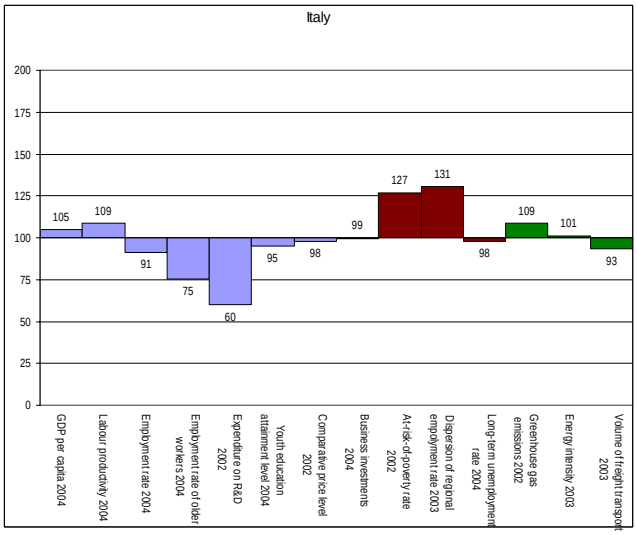


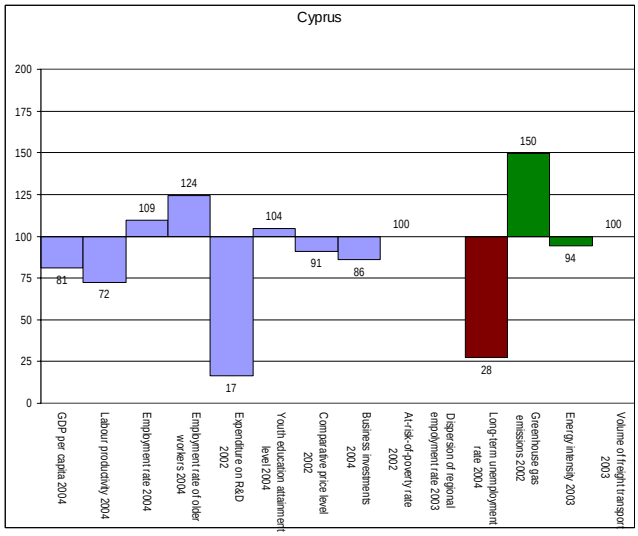
Figure A15: Structural indicator performance on the national level (continued)











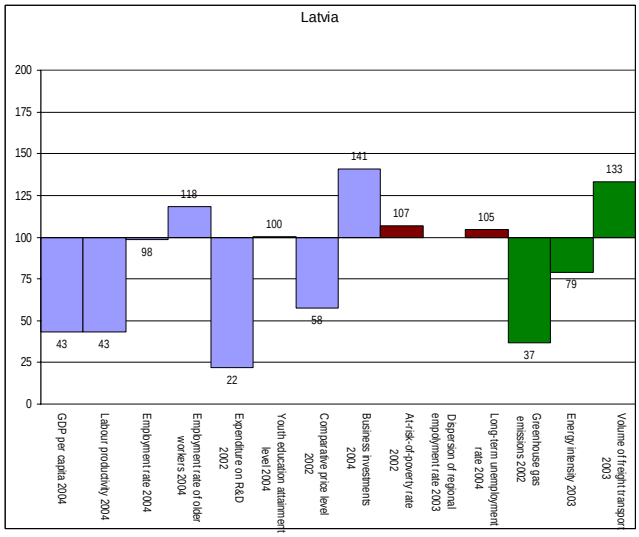
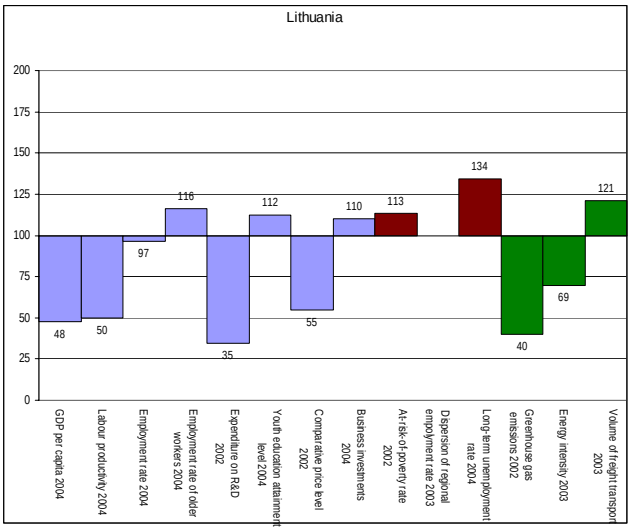
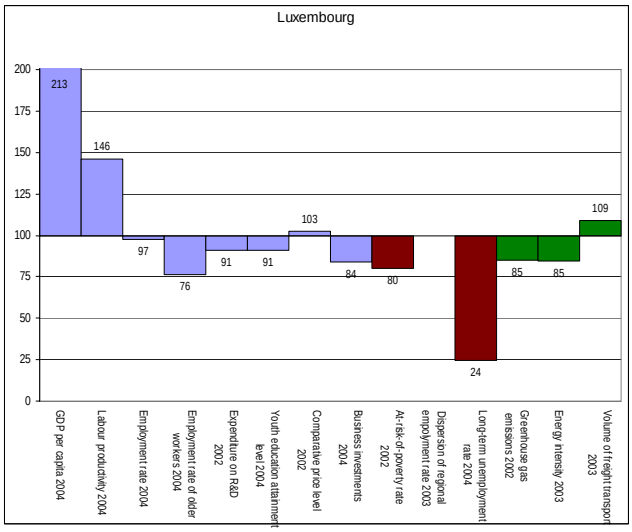
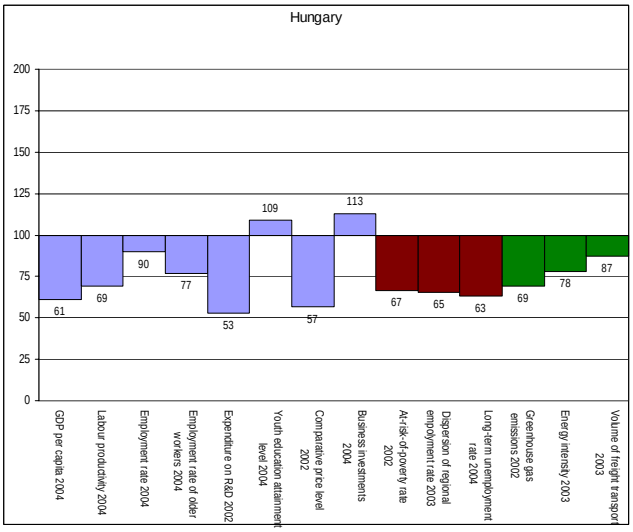
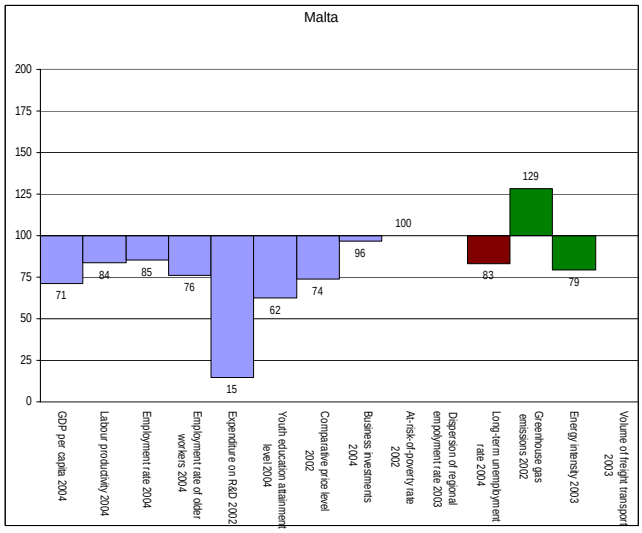


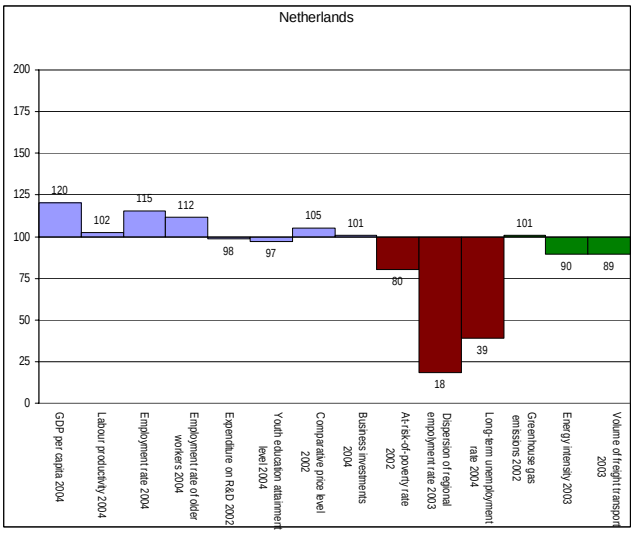
Figure A15: Structural indicator performance on the national level (continued)











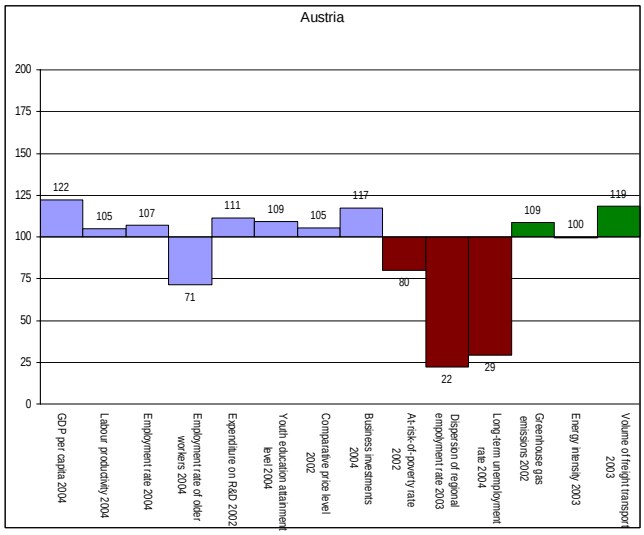
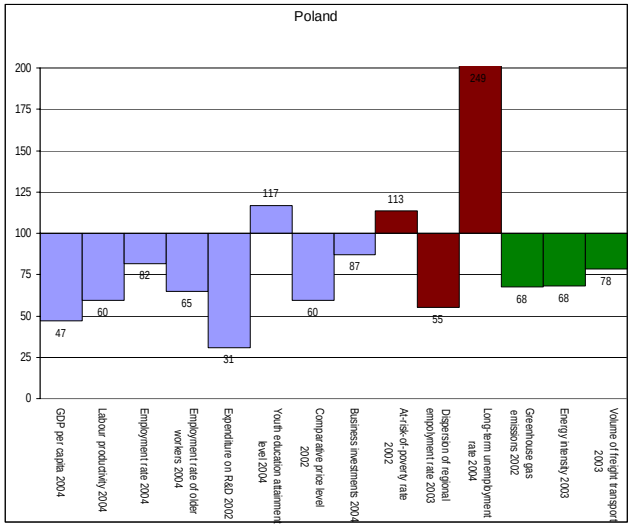
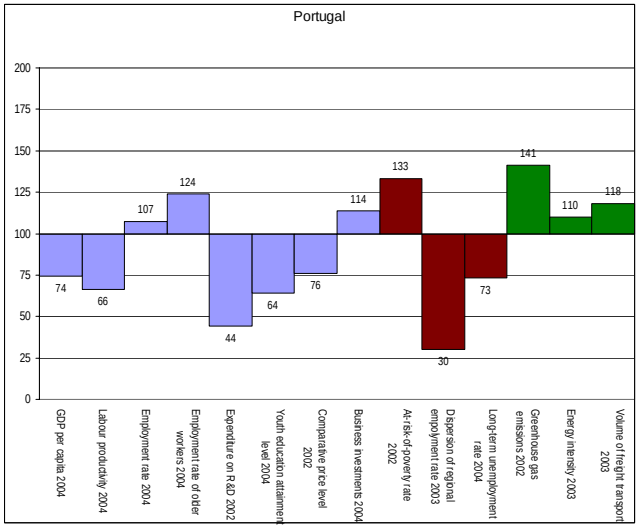
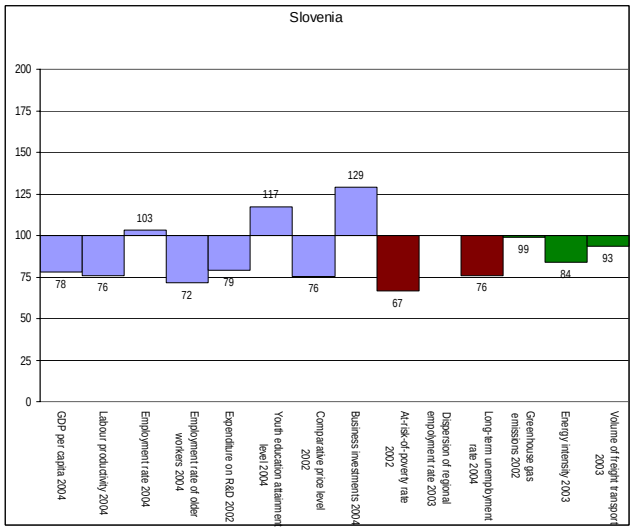
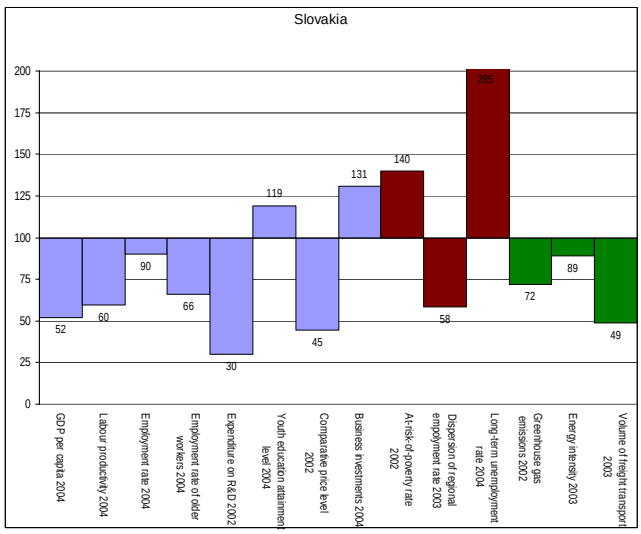


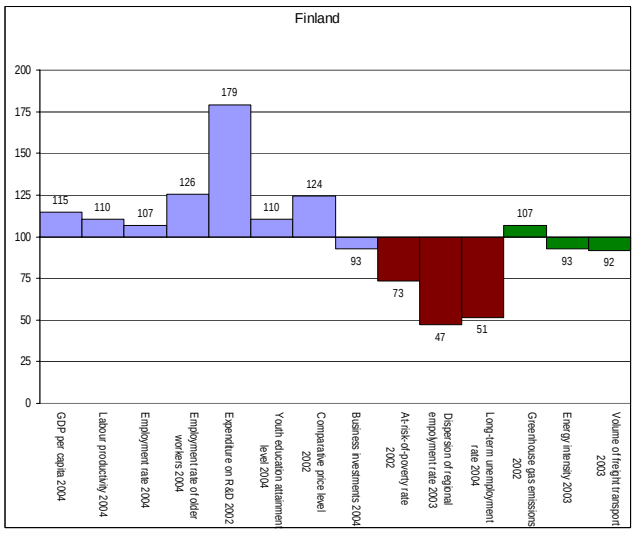
Figure A15: Structural indicator performance on the national level (continued)











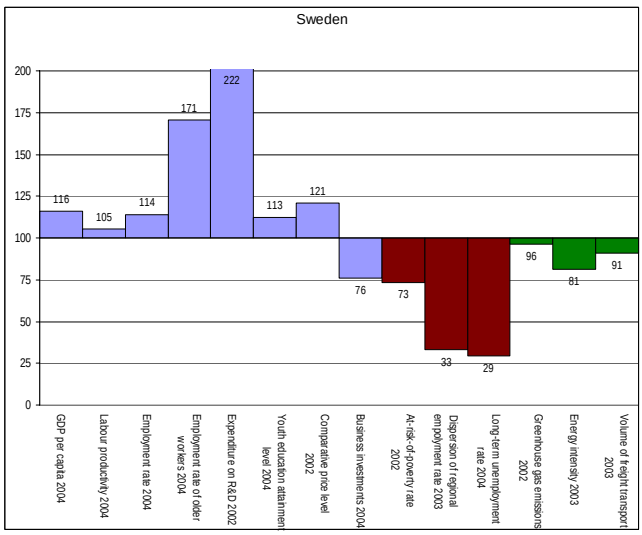
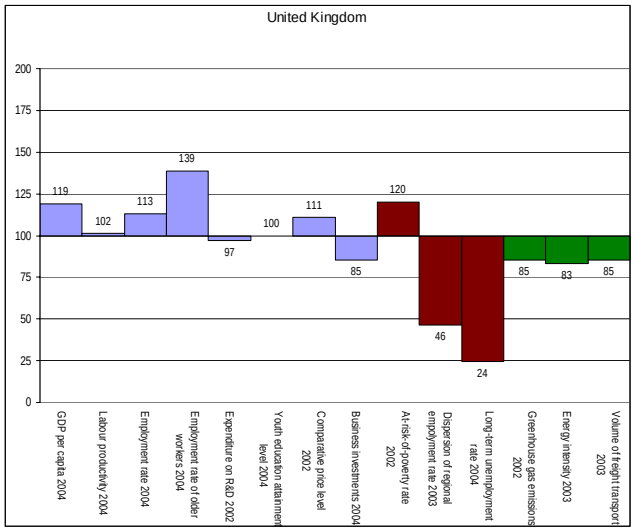
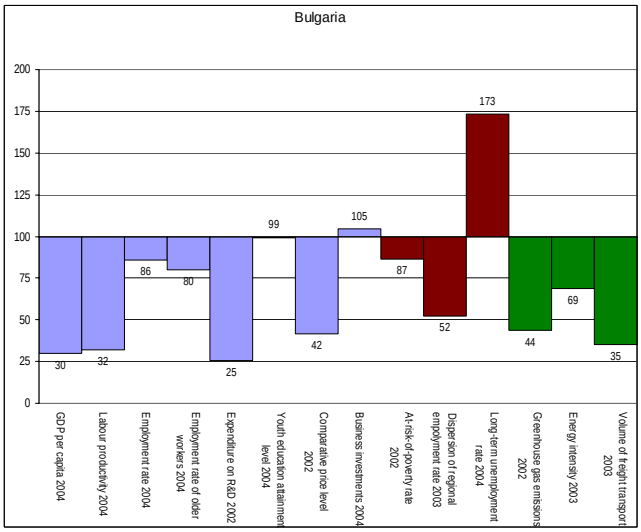
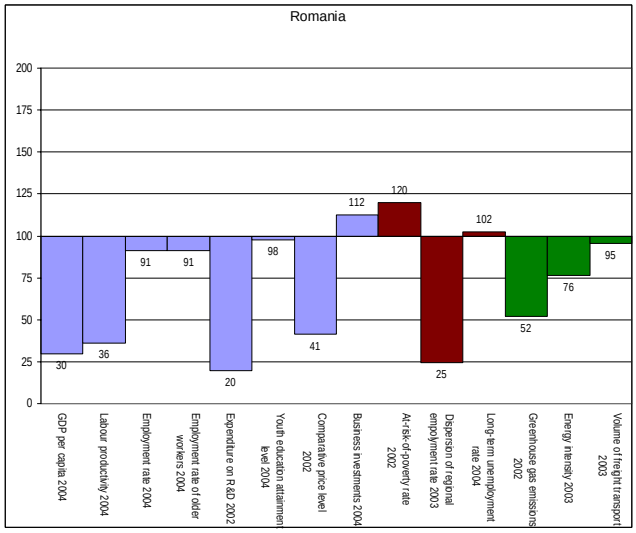
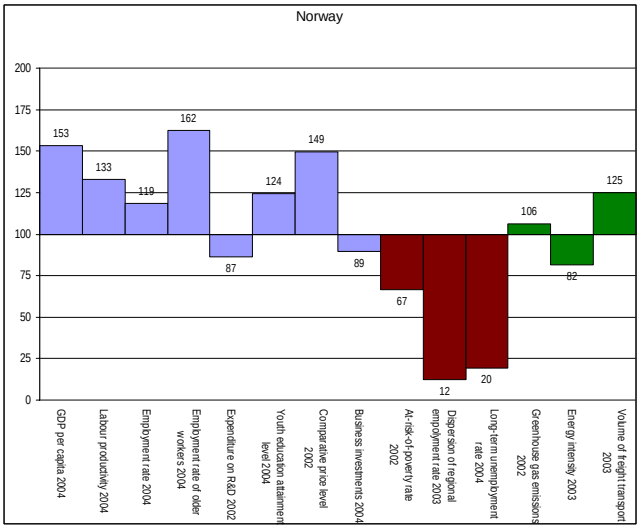


Figure A15: Structural indicator performance on the national level (continued)









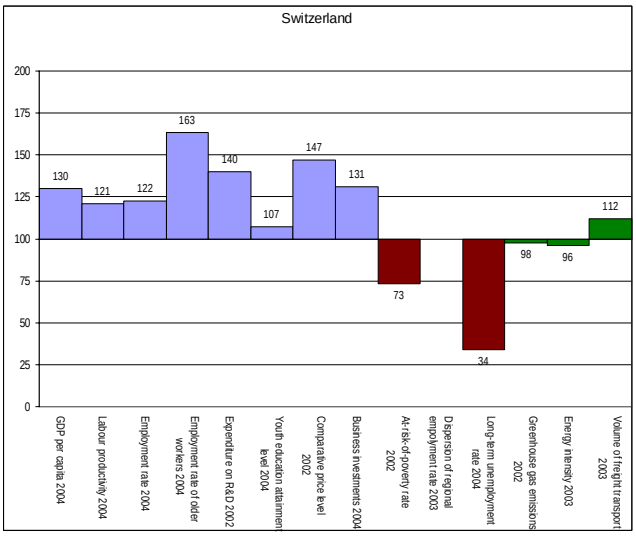
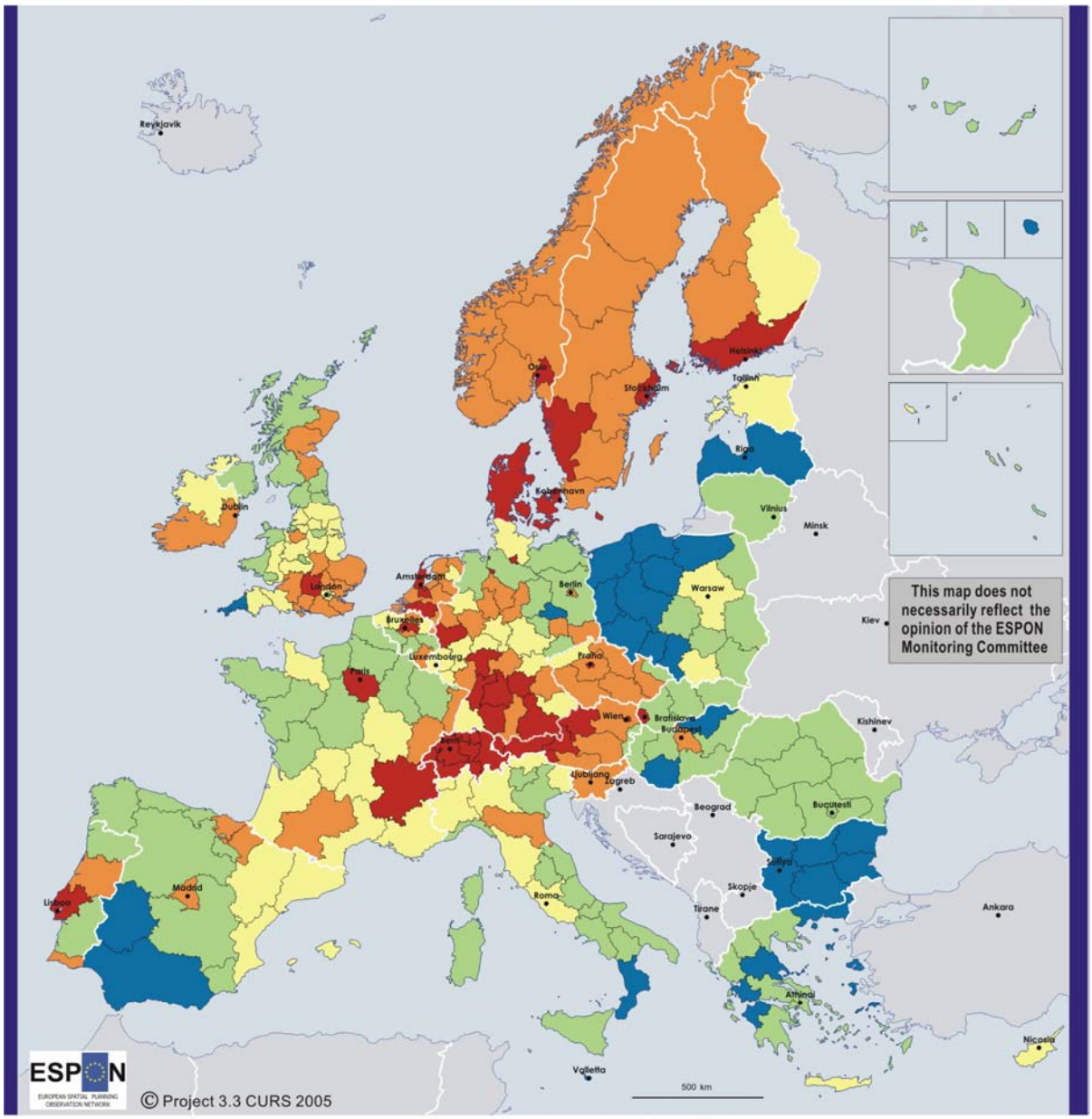


Figure 1: Regional performance based on eight economic indicators



Indicators:

1. **Gross Domestic Product** as purchasing power parities **per inhabitant** in 2000. Origin of data: EUROSTAT, ESPON Database 2.4 (CH and NO)
2. **Labour productivity**: gross domestic product as purchasing power parities per person employed in 2000. Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office, 2001. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
3. **Employment rate**: employed persons aged 15-64 as a share of total population of the same age group in 2000 (%). Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
4. **Employment rate of older workers**: employed persons aged 55-64 as a share of total population of the same age group in 2000 (%). CH: data at the national level. Data for FR9 is from 2001 and for DEB from 2002. Origin of data: EUROSTAT, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
5. **GERD**: gross domestic expenditure on research and development as a share of GDP in 2000 (%). BG: data is from 2002 . MT: data is from 2002. ES63: average value of NUTS 1 -region ES6. Origin of data: EUROSTAT, ESPON Dtb 2.4 (DE27, DE22, FR9, ITD1, ITD2 (disaggregated from old N2 regions), UK (disaggregated from N1 level, 1999)), UNESCO (at national level: BE (year 2000), CH (2000), IE (2000), NO (2001), SE (2001)).
6. **Youth education attainment level**: share of population aged 20-24 having completed at least upper secondary education (%). Annual average 2001-2003. Origin of data: EUROSTAT.
7. **Comparative price levels** of final consumption by private households (including indirect taxes) in 2000. Origin of data: EUROSTAT.
8. **Business investment**: gross fixed capital formation by private sector as a share of GDP (%) in 2000. Origin of data: EUROSTAT, OECD (CH).

The lowest scores are nearly exclusively in the New Member States or the Cohesion Countries, Cornwall in the UK and the French Reunion constituting the most prominent exceptions. However, like in the Check Republic and Slovakia, also in other Eastern Europe most capital regions display higher scores.

The synthesis of three social indicators concerns:

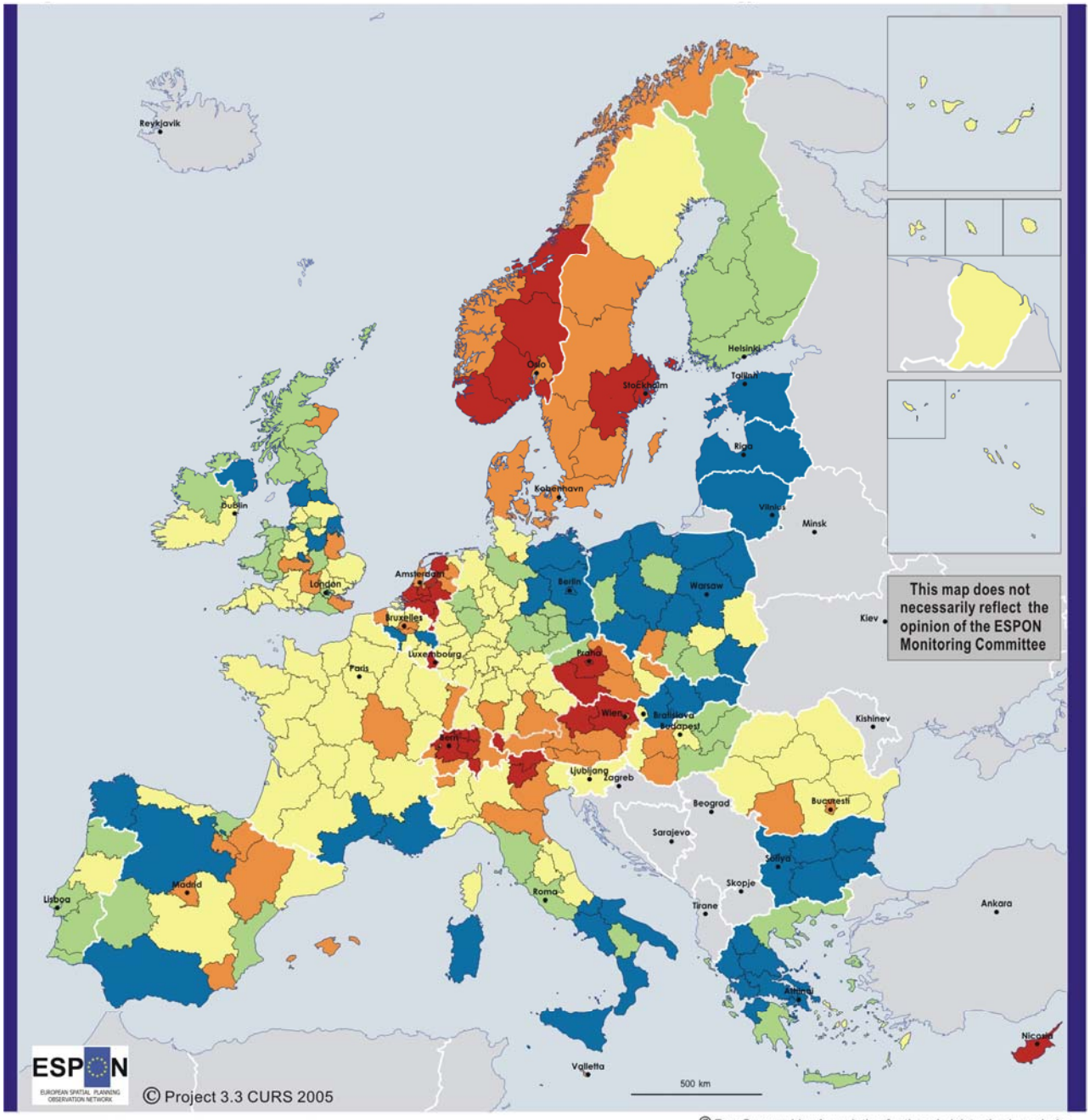
1. At-risk-of-poverty rate after social transfers
2. Dispersion of regional unemployment rates
3. Long-term unemployment rate

The latter two are regional figures whereas the first one is a dis-aggregation from data on the national level. The three variables do not relate to each other to any larger degree, although there is a slight correlation between the latter two, where high long-term unemployment rates are more common in regions with high internal disparities with regard to total unemployment.

Thus Figure 2 differs from the corresponding economic one. Apart from clearly discernible east-west differences, the dominance of the European core is downplayed in this respect. Furthermore, many capital regions such as London, Paris, Lisbon or Helsinki in the west or Warsaw, Bratislava or Bucharest in the east display lower performance with regard to these social indicators as was the case with the corresponding economic ones. Much of Norway, the Netherlands or the Czech Republic on the other hand perform better in this respect.

One tentative conclusion based on these indicators is that performances on the economic and social scale do not entirely walk hand in hand, although they do not on the other hand also exclude one another.

Figure 2: Regional performance based on three social indicators



Indicators

9. **At-risk-of-poverty -rate**: share of persons with an equivalised disposable income after social transfers below 60% of the national median, in 2000. CY: data is from 1997. CH: data is from 1999. CZ, DK and SE: data is from 2001. NO and SK: data is from 2003 and provisional. FI and FR: the available data only permits adjustment for social transfers on a gross basis. Origin of data: EUROSTAT, Swiss Federal Statistical Office, Observatoire social Européen (CY).
10. **Dispersion of regional unemployment rates**: coefficient of variation (VAR) of NUTS 3 level unemployment rates within each NUTS 2 region. CV= $\frac{\sum(x-\bar{x})^2}{(n-1)}$

    Annual average 2003 (except for GR & MT: 2002; Ceuta & Melilla: 2002).
    GR & PT: Regional variatons between all NUTS2 regions in respective country.
    Origin of data: EUROSTAT
11. **Long-term unemployment rate**: persons unemployed for more than 12 months as a share of the total labour force in 2000 (%). PT12-14 and NUTS 1 -region FR9: data is from 2001. NL, MT and NUTS 1 -region DEB: data is from 2002. CH and NO: data at the national level and from 2003. Origin of data: EUROSTAT.:

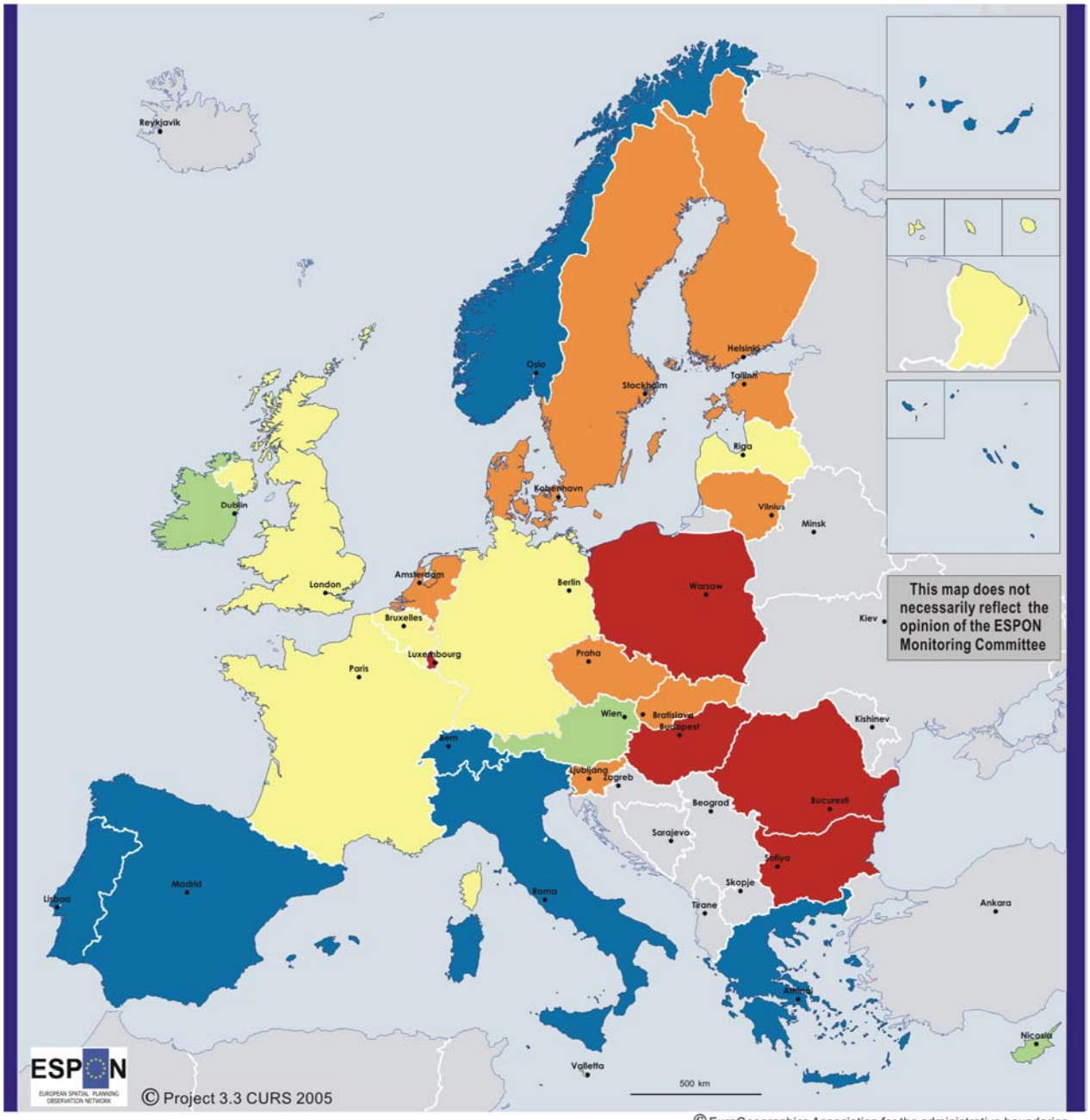
Figure 3 depicts a synthesis on the national level of the three environmental indicators on the short list, namely:

4. Energy-intensity of the economy
5. Greenhouse gas emissions
6. Volume of freight transport relative to GDP

In general the three indicators correlate with each other. As was stated above, these indicators are by nature dynamic thus not taking into account the starting level. The high performance of most transition countries is largely explained by this fact, as they are starting from substantially high levels. Also, as GDP is a denominator in two of the three indicators, the rapid relative economic growth in these countries is mirrored in the “reductions”.

The Cohesion Countries as well as Norway are the worst performers, scoring low on all three indicators.

Figure 3: Performance based on three environmental indicators



Indicators

12. **Total greenhouse gas emissions**: percentage change in emissions of 6 main greenhouse gases (in CO2 equivalents) between base year and year 2000. The base year for the non-fluorinated gases (CO_2, CH_4 and N_2O) is 1990, and 1995 for the fluorinated gases (HFC, PFC and SF_6). Exceptions are: FI, FR, IS and NO have 1990 as the base year also for the fluorinated gases; PL and BG have 1988, and SI has 1986 as the base year for the non-fluorinated gases (and 1995 for fluorinated gases); HU has the average of 1985-87, and RO has 1989 as the base year for all GHG gases; For EE, LT and LV no information on fluorinated gases is available. Origin of data: EUROSTAT; Bundesamt für Umwelt, Wald und Landschaft, die Scweiz.
13. **Energy intensity of the economy**: gross inland consumption of energy divided by GDP (kilogram of oil equivalent per 1000 Euro at constant prices) in 2000, indexed on 1996 = 100. CH: measured as Kwh/GDP in Swiss Frangs. Origin of data: EUROSTAT, Swiss Federal Statistical Office.
14. **Volume of freight transport** relative to gross domestic product in 2000, measured in tonn-km/GDP and indexed on 1995. Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country. SI and CY: Figures are estimations. Greece: Some data is estimated by Eurostat as no data on road freight transport are available for Greece since 1999. MT: average value of EU25. Origin of data: EUROSTAT.

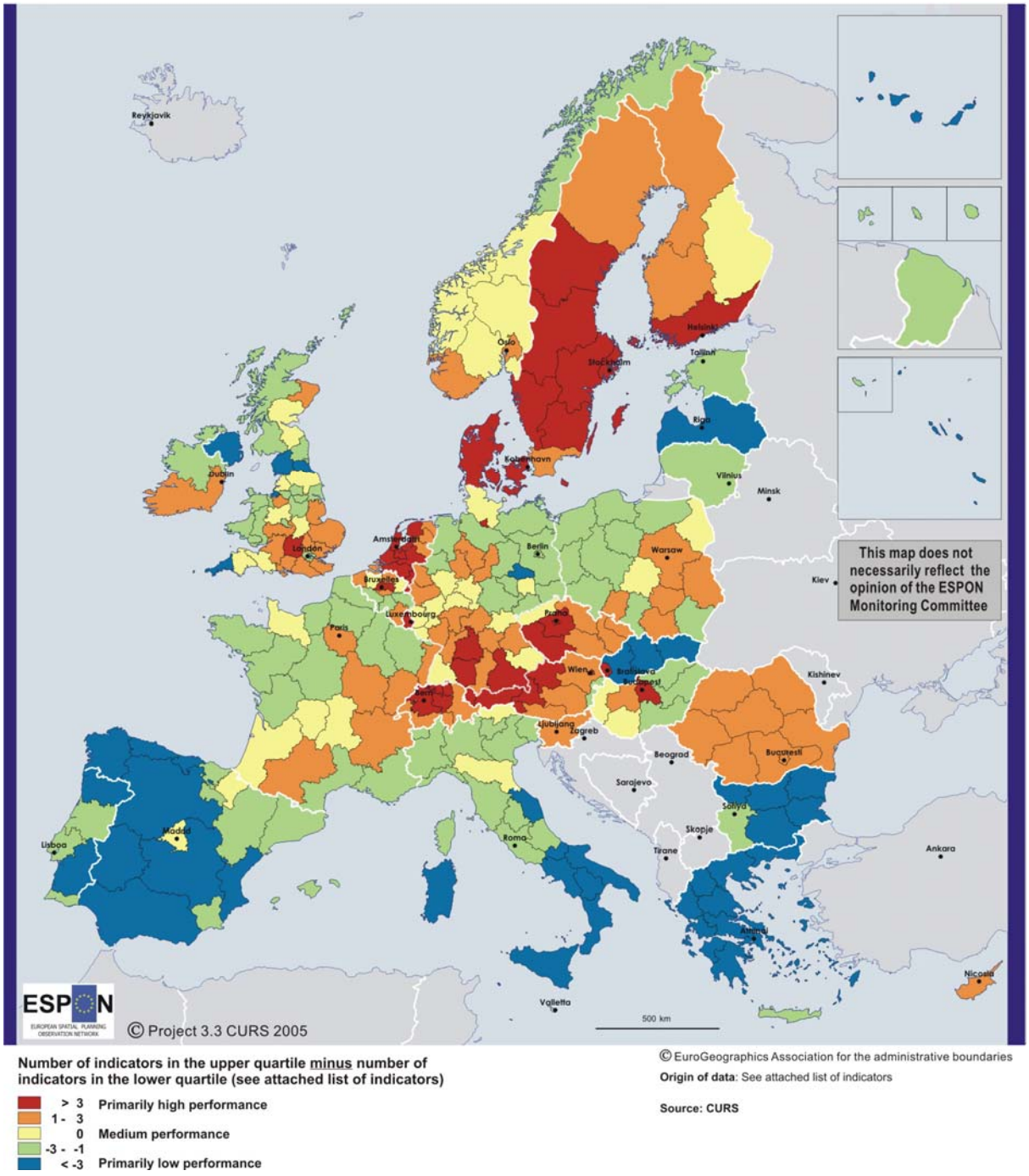
In Figure 4 performance on all fourteen structural indicators from the short list has been merged into one. Seven of these are wholly or partially based on regional data whereas seven are merely dis-aggregations from data on the national level.

The overrepresentation (eight out of fourteen) of economic indicators is mirrored in the pattern. Thus the hard economic core of Europe is clearly discernible, also encompassing much of the Nordic countries. Norway falls short primarily due to low “performance” on the environmental indicators whereas the opposite holds true for e.g. Romania and eastern Poland due to better performance both on social and environmental indices.

The capital regions of Prague, Bratislava and Budapest are also among the top European performers in this respect. Territorial disparities are greatest in Slovakia basically dividing the country into the capital region on the one hand and the rest of the country on the other.

The cohesion countries (apart from Ireland) do also stand out as low performers in this respect, scoring fairly low on all three sectors.

Figure 4: Overall performance with regard to fourteen structural indicators



Indicators:

1. **Gross Domestic Product** as purchasing power parities **per inhabitant** in 2000. Origin of data: EUROSTAT, ESPON Database 2.4 (CH and NO)
2. **Labour productivity**: gross domestic product as purchasing power parities per person employed in 2000. Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office, 2001. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
3. **Employment rate**: employed persons aged 15-64 as a share of total population of the same age group in 2000 (%). Employment data for FR9 is from 2001, for DEB from 1999. CH: Own estimations based on Swiss Federal Statistical Office. Origin of data: EUROSTAT, Swiss Federal Statistical Office, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
4. **Employment rate of older workers**: employed persons aged 55-64 as a share of total population of the same age group in 2000 (%). CH: data at the national level. Data for FR9 is from 2001 and for DEB from 2002. Origin of data: EUROSTAT, ESPON Database 2.4 (NUTS 1 regions FR9 and DEB).
5. **GERD**: gross domestic expenditure on research and development as a share of GDP in 2000 (%). BG: data is from 2002 . MT: data is from 2002. ES63: average value of NUTS 1 -region ES6. Origin of data: EUROSTAT, ESPON Dtb 2.4 (DE27, DE22, FR9, ITD1, ITD2 (disaggregated from old N2 regions), UK (disaggregated from N1 level, 1999)), UNESCO (at national level: BE (year 2000), CH (2000), IE (2000), NO (2001), SE (2001)).
6. **Youth education attainment level**: share of population aged 20-24 having completed at least upper secondary education (%). Annual average 2001-2003. Origin of data: EUROSTAT.
7. **Comparative price levels** of final consumption by private households (including indirect taxes) in 2000. Origin of data: EUROSTAT.
8. **Business investment**: gross fixed capital formation by private sector as a share of GDP (%) in 2000. Origin of data: EUROSTAT, OECD (CH).
9. **At-risk-of-poverty -rate**: share of persons with an equivalised disposable income after social transfers below 60% of the national median, in 2000. CY: data is from 1997. CH: data is from 1999. CZ, DK and SE: data is from 2001. NO and SK: data is from 2003 and provisional. FI and FR: the available data only permits adjustment for social transfers on a gross basis. Origin of data: EUROSTAT, Swiss Federal Statistical Office, Observatoire social Européen (CY).
10. **Dispersion of regional unemployment rates**: coefficient of variation (VAR) of NUTS 3 level unemployment rates within each NUTS 2 region. CV= $\frac{\sum(x-\bar{x})^2}{(n-1)}$
    Annual average 2003 (except for GR & MT: 2002; Ceuta & Melilla: 2002).
    GR & PT: Regional variatons between all NUTS2 regions in respective country.
    Origin of data: EUROSTAT
11. **Long-term unemployment rate**: persons unemployed for more than 12 months as a share of the total labour force in 2000 (%). PT12-14 and NUTS 1 -region FR9: data is from 2001. NL, MT and NUTS 1 -region DEB: data is from 2002. CH and NO: data at the national level and from 2003. Origin of data: EUROSTAT.
12. **Total greenhouse gas emissions**: percentage change in emissions of 6 main greenhouse gases (in CO2 equivalents) between base year and year 2000. The base year for the non-fluorinated gases (CO_2, CH_4 and N_2O) is 1990, and 1995 for the fluorinated gases (HFC, PFC and SF_6). Exceptions are: FI, FR, IS and NO have 1990 as the base year also for the fluorinated gases; PL and BG have 1988, and SI has 1986 as the base year for the non-fluorinated gases (and 1995 for fluorinated gases); HU has the average of 1985-87, and RO has 1989 as the base year for all GHG gases; For EE, LT and LV no information on fluorinated gases is available. Origin of data: EUROSTAT; Bundesamt für Umwelt, Wald und Landschaft, die Scweiz.
13. **Energy intensity of the economy**: gross inland consumption of energy divided by GDP (kilogram of oil equivalent per 1000 Euro at constant prices) in 2000, indexed on 1996 = 100. CH: measured as Kwh/GDP in Swiss Frangs. Origin of data: EUROSTAT, Swiss Federal Statistical Office.
14. **Volume of freight transport** relative to gross domestic product in 2000, measured in tonn-km/GDP and indexed on 1995. Includes transport by road, rail and inland waterways. Rail and inland waterways transport are based on movements on national territory, regardless of the nationality of the vehicle or vessel. Road transport is based on all movements of vehicles registered in the reporting country. SI and CY: Figures are estimations. Greece: Some data is estimated by Eurostat as no data on road freight transport are available for Greece since 1999. MT: average value of EU25. Origin of data: EUROSTAT.

Providing the 14 indicators are truly indicative of economic, social and environmental competitiveness and sustainability, then a definite conclusion could be drawn that economic (or partially social) competitiveness and environmental sustainability do not necessarily correlate. Owing to the fragility of the indicators, however, such a conclusion may be premature to draw.

It seems obvious, however, that social processes reflected in social indicators are an effect of national traditions as well as welfare policies, which have emerged regardless considerations related to economic

performance or, alternatively, as one possible strategy for gaining enhancing economic performance.

Providing that the welfare choice has been a deliberate one among those European countries characterised by developed welfare regimes, this strategy seems to have been successful in terms of economic performance. Moreover, with regard to the future, national welfare strategies seem to retard rather than advance, which simply seems to indicate that the old strategy is being reconsidered. Various parts of national welfare regimes in Europe are being increasingly dismantled. The reason is probably to be sought in the global expansion of markets, the quest for foreign investments and the way national competitiveness is conceived of in emerging global conditions.

On the global level, there is no system (or only very marginal ones) for the reallocation of resources according to social needs. Within Europe, there is also no EU policy aiming at the harmonisation of welfare regimes or of taxation policies for that matter. In these conditions, national economic success is connected to competition in providing advantageous business conditions in terms of low taxation and the reduction of other additional costs for productive investments, which of course diminishes the possibilities to keep up existing basis for taxation and consequent welfare regimes.

Environmental performance as reflected in the indicators probably mirrors the initial structure of the national economy and its alterations during the period under scrutiny more that national economic performance in quantitative terms (or changes in that performance) as such. While policies aiming at protection and conservation of natural assets may enhance the economic prospects of increased consumption, they may also be conceived as hampering competition with regard to productive investments on the global scale.

Consequently, the lack of income transfers on the global level could constitute a threat to the protection of people, the reproduction of labour, and protection of nature and culture on the European level. These tendencies are obviously connected to the lack of harmonised intra-European policies concerning these very same matters. An open question is to what extent a *European* welfare regime, including harmonised taxation, reallocation of resources on the European level according to ideas of social and territorial fairness as well as common policies for the protection of environment and culture would enhance the position of Europe as a whole in the global competition. Such questions of strategic importance cannot at the moment be addressed by available statistics.

2 Short list of structural indicators and core ESPON typologies

The territorial dimensions of the ESPON space have been thoroughly mapped in previous ESPON projects and several typologies describing the territory have been constructed. In this chapter three such core typologies are examined in light of the composite synthesis indicators constructed above. This allows an examination as to the extent which the underlying assumptions of these typologies are reflected in the indicators on short list. The chosen typologies are:

1. A typology of functional urban areas (FUAs), ESPON 1.1.1;
2. Urban rural typology, ESPON 1.1.2; and
3. Multimodal potential accessibility, ESPON 1.2.2.

The main questions thus refer to whether economic, social, environmental and overall competitiveness and sustainability is higher in regions where there are large FUAs, in regions that have high urban influence and in regions where the accessibility potential is high.

Table 2 presents these data. As was the method in Figures 1-4 above, for each region the number of each indicator's value in the lower quartile has been subtracted from that in the upper quartile resulting in a net sum. For each type of region (in the typologies) the mean value of these indicators has then been calculated. This implies that all averages are unweighted (i.e. not taking into account the population of the region).

Table 2: Synthesis indicators in light of three core ESPON typologies

Core ESPON typology:	*Structural Indicator Short List Syntheses*			
	All fourteen Structural Indicators	*Eight economic Structural Indicators*	*Three social Structural Indicators*	*Three environmental Structural Indicators*
	Average net sum	*Average net sum*	*Average net sum*	*Average net sum*
Typology of Functional Urban Areas (ESPON 1.1.1)				
Highest level FUA in NUTS 2 -region				
No FUAs	-1	-1	0	-1
Regional/Local	-1	-1	0	-1
National/Transnational	0	0	0	0
European/Global	1	1	0	0
Total	0	0	0	0
Urban-Rural Typology (ESPON 1.1.2)				
High urban influence, high human intervention	1	1	0	0
High urban influence, medium human intervention	-2	-1	-1	0
High urban influence, low human intervention	0	1	0	-1
Low urban influence, high human intervention	-1	-2	-1	2
Low urban influence, medium human intervention	-2	-1	0	-1
Low urban influence, low human intervention	-1	0	0	-1
Total	0	0	0	0
Potential Multimodal Accessibility (ESPON 1.2.2)				
Index, ESPON Space=100				
over 140	3	2	0	0
110-140	1	1	0	0
90-110	0	0	0	0
60-90	-1	-1	0	0
below 60	-2	-1	-1	0
Total	0	0	0	0

All in all the 14 structural indicators are reflected in the typology of functional urban areas. Regions with European/Global FUAs have the highest average score whereas regions lacking FUAs or with only a regional/local ditto score the worst. The same hierarchy is evident when examining only the eight economic indicators taken as a group. However, there is no clear pattern as to the existence and magnitude of FUAs and social cohesion, whereas the pattern for the environmental ones is also nearly nonexistent, albeit in slight favour of large FUA regions.

Regarding urban influence and human intervention the results are not so clear cut. Nonetheless the overall average score is highest for regions where both the degree of urban influence and the degree of human intervention are high, i.e. typically urban areas. The same applies for the

economic indicators alone whereas e.g. the composite social indicators is not in any way reflected in the hierarchy.

Finally with regard to multimodal potential accessibility the overall average of the 14 indicators correlates strongly with that of accessibility. Thus regions with a high accessibility do on average score high both in terms of the total result as well as on the economic composite indicator. This correlation gradually decreases with worsening accessibility. Once more, social and environmental competitiveness and sustainability are not reflected at all in accessibility.