ESPON

European Perspective on Specific Types of Territories

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This report presents the interim results of an Applied Research Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.
The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.
This report does not necessarily reflect the opinion of the members of the Monitoring Committee.
Information on the ESPON Programme and projects can be found on www.espon.eu
The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.
This basic report exists only in an electronic version.

List of authors

Erik Gløersen, Jacques Michelet and Frédéric Giraut (Department of Geography, University of Geneva, Switzerland)

Marta Pérez Soba, Michiel van Eupen, Laure Roupioz and Rini Schuiling (Alterra, Wageningen UR (University & Research Centre), the Netherlands)

Diana Borowski and Martin Price (Centre for Mountain Studies, Perth College, University of the Highland and Islands, United Kingdom)

Gordon Cordina, Jana Farrugia and Stephanie Vella (E-Cubed Consultants, Malta)

Ioannis Spilanis and Thanassis Kizos (University of the Aegean, Greece)

Alexandre Dubois and Johanna Roto (Nordregio, Sweden)

Hugo Thenint (Louis Lengrand et associés, France)

Christophe Sohn and Olivier Walther (CEPS/INSTEAD)

Monika Meyer and Jan Roters (Leibniz Institute of Ecological and Regional Development – IÖR, Germany)

Marcus Collier and Ned Dwyer (Coastal & Marine Resources Centre, Environmental Research Institute, University College Cork, Ireland)

Wolfgang Lexer and Gebhard Banko (Federal Environment Agency, Austria)

Thomas Stumm (Eureconsult, Luxembourg)

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1 Executive summary

The report presents the methodology and preliminary findings of the ESPON GEOPSPECS project. In the first phase of the project, the Transnational Project Group (TPG) has primarily focused on constructing a framework of analysis, with coherent delineations of the objects of study and the formulation of hypotheses on how these may be socially and economically relevant. These results are not merely relevant from a technical and scientific point of view, but also feed into political debates. Discussions in connection to the presentation of the study at the European Parliament on February 3rd, 2011[3] showed that the identification of the geographical areas corresponding to each of the categories of geographic specificity identified in the Treaty and included in the terms of reference of the present project is still a significant policy issue

This delineation is a major challenge in terms of data compilation and processing. Insofar as the TPG considers NUTS 3 approximations not to be operational, this work has been undertaken at the level of LAU2 units. Additionally, the TPG has compiled digital boundaries LAU2 units in Albania, Serbia and Montenegro, making into possible to cover all of the West Balkans except for Macedonia and Bosnia and Herzegovina. The TPG has also compiled digital boundaries for LAU1 units for Turkey. All of these digital boundaries have been adjusted so as to fit seamlessly with the local boundary maps provided by Eurogeographics for the rest of the ESPON area.

The TPG has furthermore used time-distance by road for the delineation of sparsely populated areas, coastal zones, border zones and inner peripheries. The calculation of population potentials within a 45 minute travel time[4] across all of the ESPON space is a particularly significant advance. Innovative approaches of coasts and borders based on time distance to the border also provide new insights.

The draft maps presented in this report present the results of these innovative methods, adopted after in-depth exchanges on the meaning of each category within the TPG and with external stakeholders (see outputs of consultation process in section 3.1). In view of constructing a coherent analysis of the social and economic significance of geographic specificities and their potential policy relevance, the research questions to be explored have been compiled in an analytical framework (see section 3.3), that guides the collection of data and will serve as a basis for forthcoming case studies.

Organisational and technical difficulties encountered when establishing this framework of analysis imply that the project is a one to two months behind schedule as compared to the flow diagram of the inception report (See Figure 9 p. 38). However, as specified in part 4 of the report, this should not prevent the TPG from delivering the foreseen outputs in time for the draft final report deadline.

[3] Presentation at a meeting of the EU.Parliament Intergroup “Mountains, Islands and Sparsely Populated Regions”, with the presence of numerous regional and national stakeholders.

[4] This population potential corresponds to the total population that can be reached within 45 minutes.

The TPG has been confronted to the need to narrow down the "potentially infinite set of relations" that can be explored when seeking to identify how GEOSPECS categories may interact with social and economic processes. The stakeholder consultation described below has provided useful inputs on the issues on which the consortium should concentrate its efforts. The outputs from the consultation process will therefore have a decisive influence on the strategic choices in the next phase of the project.

However, the "Analytical matrix" developed by the TPG (see Table 24 p. 127) maintains a broad and exploratory focus, as this is considered necessary to accommodate the different types of issues to be focused on within each of the seven GEOSPECS categories. This matrix is based on the transversal themes (Table 23 p. 125) which have been designed to ensure that the project develops a thinking about the policy relevance of geographic specificity in general, and not simply analyses of individual GEOSPECS categories.

Transversal Themes and Analytical Matrix

For each transversal theme (see Table 23 p. 125), the responsible project partner developed a *guidance note*, which includes definitions of the most important concepts, a synopsis of the academic and policy debates around the theme, and two or three research questions which emerge for the project.

These transversal themes are the basis of the analytical matrix, which contains all the research questions of the project. The outcomes of the consultation process were then used to adapt the research questions to the requirements of each GEOSPECS category. The analytical matrix thus emerged by combining questions from the transversal themes with questions arising from the stakeholder consultation

The analytical matrix has been designed to provide a coherent basis for the analysis of different types of geographic specificities. It will shed light on the major differences between the different GEOSPECS categories, but also on their commonalities, allowing for a general discourse on territorial diversity and its political implications.

Delineations

It is not considered possible to use the NUTS3-based definitions of some GEOSPECS categories provided in the Fifth cohesion report for the present study. The main reasons for this are that the objective of the project is neither to benchmark GEOSPECS areas against European average values, nor to assess whether the creation of European regional development programmes targeting one or more of these categories could be envisaged. Rather, GEOSPECS seeks to understand how each type of specificity may influence socio-economic development processes, and potentially lead local and regional stakeholders to the formulation of development objectives that are different from those prevailing at the European and national levels. For these purposes, delineations that, for example, neither distinguish highland areas from their respective piedmont, nor make it possible to consider phenomena such as double insularity, are not operational. Furthermore, delineations that deviate substantially from local and regional understandings of the

different GEOSPECS categories may not function in a project that investigates how identities and geographic specificities interact. All delineations are based on LAU2 units, as this is considered to be the scale at which delineations meeting the criteria described above may be met.

Different approaches have been chosen for each category:

Mountains: The delineation builds on previous studies (Nordregio, 2004 and EEA, 2010). It is based on the GTOPO30 Digital Elevation Model, which records average elevation of the Earth's land surface in a 1km^2 grid. To define mountainousness, different thresholds of terrain roughness and slope were applied at different levels of altitude, up to 2500m, above which all areas are considered as mountains.

This set of grid cells with mountainous topography was approximated to municipal boundaries by considering that LAU2 units with more than 50% mountainous terrain should be considered to be mountainous. Mountain exclaves of less than 100km^2 were excluded, whereas non-mountainous enclaves of less than 200km^2 surrounded by mountains were included in the mountain delineation.

Islands: As a starting point, all territories that are physically disjoint from the European mainland and, because of their large population, the main islands of the British Isles (UK and Ireland) have been considered as insular, including parts of municipalities, but excluding inland islands. On this basis, a typology of islands was established. Firstly, islands with a fixed connection to the mainland are considered as a separate category. Secondly, a multilevel approach is used (NUTS 1 to LAU2), as the socio-economic impact and political significance of insularity is considered to be different depending on whether it occurs at the national, regional or local scale.

Sparsely Populated Areas (SPA): The delineation of SPA is based on population potential instead of population density, defining areas as sparsely populated if they have a population potential below 100,000 persons (within a distance of 50km or 45 minutes travel time). In a second step, localities (LAU2 level) are defined as sparsely populated if 90% of their area is covered by SPA. Lastly, the TPG considers a NUTS 3 region as sparsely populated if the region contains at least one sparsely populated locality.

Outermost Regions (OR): As OR are defined on an institutional basis (EC treaties), their delineation is given. However, the approach towards OR that has prevailed to date is not adequate for GEOSPECS. Firstly, on European maps, OR are depicted as European isolates, without geographic context. Consequently, it is not possible to analyse how they relate to neighbouring territories, e.g. in terms of flows, differences in development levels and wider economic production systems. Secondly, the scale currently used means that it is not possible to observe their internal territorial structures. GEOSPECS proposes new ways of presentation.

Border areas: GEOSPECS identified a series of different types of *border effects*. Because the ranges of mobility and interaction associated to the different types of border effects are different, it is not meaningful to produce a general delineation of border areas.

Instead, the notion of border area is a geographic category with variable geometry. In general, a 45 minute travel distance to a border corresponds to a reasonable proxy for the maximum generally accepted commuting and daily mobility distance, which will therefore play a key role for a large range of socio-economic processes.

Cross-Border Metropolitan Regions (CBMR): The delineation of CBMR considers regions that are "metropolitan" (i.e. which include one or more urban centres which are part of globalised economic networks and exert an influence over their regional or national area) and have a significant cross-border dimension (i.e. each "side" of the border contains no less than 10% of the population of the CBMR).

Coasts: The TPG distinguishes between two concepts: 1) the coastline is the physical environment where marine and terrestrial systems meet; 2) the coastal zone is an area where the proximity to the coastline has a direct effect on socio-economic structures, trends and development perspectives, inter alia because of the need to take into account particular forms of ecological vulnerability and exposure to natural hazards.

As for border areas, the TPG does not consider it meaningful to produce a general delineation of coastal zones, insofar as the ranges of mobility and interaction associated with the different types of coastal effects are different. However, the only database with complete and adequate coverage of all European coastline regions is of NUTS 3 designations that touch the sea. Thus, a typology that draws on NUTS 3 delineations, but that is mapped using purposefully-defined delineations (such as a combination of time-distance relationships to the coast, land use and change, environmental risk, stakeholder perceptions and valuations, energy and urban focal points, etc.) may be necessary.

Inner Peripheries (IP): Delineating IP as regions within the core area of the EU is a new concept in the ESPON space. The first delineation of IP at the European scale prepared by the GEOSPECS TPG is based on the following criteria: 1) proximity to a metropolitan area, 2) population potential and 3) travel time. Firstly, since IP are not part of the outer-European periphery, the proximity (using 200 km as a threshold) to the metropolitan core of Europe (a metropolitan area with more than 750.000 inhabitants) was calculated. Secondly, as a proxy for the size of the potential labour market, areas with a potential population size of less than 1.5 M within a travel distance of 45 minutes were considered to be more remote. Thirdly, areas which are more than 75 minutes travel time away from the main metropolitan areas were considered as an IP from European perspective. This first delineation is a first attempt to delineate a new, heterogeneously understood concept, and therefore will be improved after the Interim Report.

Stakeholder Consultation

The first stakeholder consultation was designed to clarify the views of stakeholders on processes taking place within the respective GEOSPECS areas and on policy priorities. The consultation was preceded by an analysis of relevant academic literature, policy documents and position papers of pertinent organizations. Stakeholders were then asked to provide their views on the challenges and opportunities for the different GEOSPECS

areas as well as on needs in terms of policymaking. In many cases, the views of stakeholders confirmed positions identified in the literature review, but in some cases the consultation added new nuances and new paths for research.

For most GEOSPECS areas, the stakeholder consultation was implemented by an online survey, backed up by phone interviews where necessary. Several project partners used research conferences to interview participating experts regarding their opinions. Project partner 2 – responsible for Inner Peripheries – decided to conduct face-to-face interviews with experts, as Inner Peripheries are an emerging subject in policy, so far unaddressed in most countries.

Despite a moderate number of responses, the TPG is confident to have covered the most important issues for each GEOSPECS area through input from the key representative organizations. For many categories of geographic specificity, pan-European organizations with permanent structures exist, each uniting hundreds of stakeholders across Europe. All these organizations have provided their input to the GEOSPECS stakeholder consultation. Thus, more responses were collected with regard to GEOSPECS areas with such long-established interest groups (particularly mountains, islands, sparsely populated areas, border areas) than from GEOSPECS areas that have so far not been organized in such a way (particularly coasts, Inner Peripheries, Outermost Regions).

The priorities identified for each GEOSPECS area evidently differ significantly. One challenge named for almost all categories of geographic specificity was low accessibility (compared to "mainstream" areas), leading to higher costs for transport. Many stakeholders also mentioned decline of population as a challenge (the important exception being coastal areas, where population is increasing). On the other side, tourism and/or the exploitation of natural resources was viewed as an opportunity in many areas (less so for border areas).

Next steps

The TPG will finalise the delineations and produce a European analysis of overlaps between the delineations of the different GEOSPECS categories. In parallel, indicators will be compiled from the datasets listed in the report based on the issues and questions raised in the analytical matrix and corresponding maps will be produced for each of the concerned GEOSPECS areas and transversal themes and case studies will be initiated. A second consultation focusing on first findings is foreseen in January 2012.

2.1 Understanding and conceptualising geographical specificities

The purpose of the ESPON GEOSPECS project is to explore how one could facilitate the achievement of strategic targets of the European Union and of European countries by taking better account the diversity of development preconditions linked to geographic specificities. The following types of geographic specificities are considered:

- Mountain areas,
- Islands,
- Sparsely populated areas,
- Outermost regions,
- Border regions,
- Coastal areas,
- Inner peripheries.

As the way of referring to these areas used in the inception report ("Territorial Diversity Areas" or "TeDi areas") has been criticised, they are now referred to as "geographically specific areas" or "GEOSPECS areas".

This analysis faces a two-fold challenge:

- First, all territorial development issues and processes are potentially relevant, insofar as they *may* be influenced by geographic specificity. The scope of enquiry is therefore *a priori* unlimited.

- Second, the identification of the "GEOSPECS areas" requires a conceptualisation of each category of geographic specificity. This conceptualisation needs to consider that each category has been constructed in order to organise the perception of territories and facilitate communication.

To overcome these two challenges, the TPG has specified the definition principles and natures of each category in view of identifying delineation principles, as specified in 0 and 0. On the basis of the conceptualisation of each category, it is then possible to formulate hypotheses on their possible socio-economic effects in view of circumscribing the scope of enquiry (see section 3.3).

Table 1 Principles used to delimit GEOSPECS areas

Nature of extension for GEOSPECS areas	**Outermost** ◇	**Islands** o	**Mountains** ↔	**Inner peripheries** ↔ /	**Sparsely populated** ↔	**Border areas** ◇ I →	**Coastal zones** (◇) I →
	Designated politically as a part of Europe situated in a non-European geographic context	**Defined as territories surrounded by bodies of water, irrespective of context**	**Defined on the basis of topographic contrasts with immediate neighbourhood**	**Defined on the basis of a relative proximity to metropolitan areas and a low local population potential**	**Defined on the basis of local population potentials, irrespective of wider geographic context**	**Defined on the basis of distance to a politically defined borderline**	**Defined on the basis of proximity to a maritime space, which in some respects is politically delimited**

Legend for symbols:		
◇ = Politically designated	**I** = Line	→ = Delimitation of GEOSPECS areas
○ = Unequivocally delineated		→ / → = Contextual parameters used for the delineation at local scale (LAU2 or daily mobility area) scale or considering a wider regional context

Table 2 Conceptual & methodological interpretation of GEOSPECS areas

Category of GEOSPECS area	**Outermost**	**Islands**	**Mountains**	**Inner peripheries**	**Sparsely populated**	**Border areas**	**Coastal zones**
Definition principle	Given		Based on threshold values			Based on distances to a line	
Nature of specificity	Defined politically, as a response to an inherited situation	Categories designated on the basis of specific physical characteristics		Categories designated on the basis of specific settlement patterns		Categories designated because they act as an interface and/or are situated on the rim of Member States	
Data used for definition	Not applicable		Topography	Population potential combined with access to metropolitan areas	Population potential	Time-distance, Euclidian distance, topological distance (e.g. contiguity)…	
Most relevant territorial context	Macro-regional context		Buffer zone with mutual influence	Macro-regional context		Buffer zone with mutual influence	

The Fifth Cohesion Report (CEC, 2010) provides definitions of four geographic specificities, as specified in 0. The TPG has reviewed these four delineations and found that they do not offer a satisfactory basis for analysis of how socioeconomic development processes may interact with geographic specificity. One reason is that the GEOSPECS project does not follow the same objective as the Fifth Cohesion Report, nor of the previous Green Paper on territorial cohesion (CEC, 2009) which used similar delineations. The objective of the project is not to benchmark GEOSPECS areas against European average values, nor to assess whether the creation of European regional development programmes targeting one or more of these categories could be envisaged. Rather, GEOSPECS seeks to understand how each type of specificity may influence socio-economic development processes, and potentially lead local and regional stakeholders to the formulation of development objectives that are different from those prevailing at the European and national levels. For these purposes, delineations that, for example, neither distinguish highland areas from their respective piedmont, nor make it possible to consider phenomena such as double insularity, are not operational.

Table 3 Definitions of areas with geographic specificities in the Fifth Cohesion Report

Border regions	Border regions are NUTS 3 regions which are eligible for cross-border co-operation programmes under the European Regional Development Fund regulation.
Mountain regions	These are NUTS 3 regions where 50% of the population lives in a mountainous area or 50% of the land area is considered mountainous.
Island regions	These are NUTS 3 regions where the majority of the population live on one or more islands without fixed connections to the mainland, such as a bridge or a tunnel.
Sparsely populated regions	Sparsely populated regions are NUTS 3 regions with a population density of less than 12.5 inhabitants per km².

Furthermore, the TPG considers identities associated with geographic specificities as an important factor of development, not least when trying to understand how local growth coalitions are formed and how internal and external territorial branding processes may contribute to improving economic and social performance. In order to take this dimension into account, delineations that deviate substantially from local and regional understandings of the different GEOSPECS categories – as is the case for the definitions proposed in the Fifth Cohesion Report – are not appropriate.

Table 1 introduces the principles used to delimit GEOSPECS areas, on the basis of three types of units – politically designated areas, unequivocally delineated units (i.e. islands) and lines (i.e. borders and coasts) – and measures at two different scales: LAU2 units on one hand, and daily mobility areas on the other.

The concrete implications of these distinctions are specified in 0, which first divides the GEOSPECS categories into three groups based on the definition principle used. For outermost regions and islands, the definition principle is considered to be given, insofar as the delineation derives mechanically from the definition chosen. Consequently, as specified in the third line of the table, no data are needed for the delineation[5]. For mountains, inner peripheries, and sparsely populated areas, it is necessary to select threshold values in order to delineate the selected areas. These threshold values are then applied to indicators reflecting, respectively, the shape of the topography, access to metropolitan areas, and measures of population potential. The TPG has chosen not to make a general delineation of border areas and coastal zones, considering that these categories are defined on the basis of different forms of proximity to the borderline or coastline. The second line of the table describes the nature of each specificity, i.e., political for outermost regions, physical for islands and mountains, and based on settlement patterns for sparsely populated areas and inner peripheries. The nature of the specificity is more complex for border areas and coastal zones. These categories may be designated because they act as an interface, respectively between national systems and between terrestrial and maritime systems. In some instances, however, they are singled out on the basis of their position on the rim of national territories.

Finally, the table indicates which types of territorial contexts are most relevant for each type of GEOSPECS area. The specificity of mountains, border areas, and coastal zones develops in direct contact with, respectively, a piedmont, a foreign territory, and a maritime space. The notion of "buffer zones" is therefore central to understand their development dynamics. The immediate neighbourhood may, of course, also be important in some respects for islands, outermost regions, inner peripheries, and sparsely populated areas. However, the criteria used to define these categories imply that they are surrounded by spaces which limit such neighbourhood interaction. For this reason, the macro-regional context is deemed more relevant. For outermost regions, the TPG proposes a specific map layout to incorporate this macro-regional context in the analyses when relevant (see Map 11 p. 78).

[5] A transport network model is used in view of analysing the situation of islands connected to the mainland by a fixed link as a separate category.

2.2 Spatial reference framework

The analysis of interactions between geographic specificities and territorial development structures, trends, and perspectives requires other types of GIS-files and maps than those commonly used in the context of ESPON. Both the overlay of grid data and road network models with administrative units and the calculation of proportions of territories where the different types of geographic specificity occur require a variety of inputs and high-resolution delineations of administrative boundaries.

The present section introduces the selection of GIS files used by the TPG for this purpose, and the delineation methods used. Finally, the approach adopted by the TPG in order to use LAU2 unit data is presented.

A system of codes has been set up to refer to the different data sets. More precise descriptions of data sets corresponding to each code can be found in Annex 1.

Boundary files

All calculations are based on the Eurogeographic "EuroBoundaryMap v4.0" (M-EBM08) delineation of European LAU2 units in 2008. This implies that NUTS 3, NUTS 2, and NUTS 0 delineations have been built based on these boundaries of LAU2 units. This makes it possible to produce coherent analyses at all geographic scales. As illustrated by Figure 1, this map has a considerably higher spatial resolution than the regional delineation maps used in the ESPON map kit, making overlays with other types of data possible. A second advantage is that it offers a linkage to the updated statistical LAU- and NUTS-codes for all local administrative units of EU27+4, including outermost regions.

This was the most recent version of the Euroboundary map when the TPG started its calculations. "EuroBoundaryMap v5.0" was made available in February 2011; while calculations made for the previous LAU2 delineation will not be reproduced, this new version includes local boundaries for Serbia that were previously unavailable. The TPG will extend previous delineations and analyses to Serbia using this part of the file.

The Eurogeographic boundary map has previously been complemented with LAU2 delineations for Albania and Montenegro from national sources, and a LAU1 delineation for Turkey with extensive associated socio-economic statistics (M-WbN5). For all these maps, the external boundaries have been modified so as to fit the boundaries of "EuroBoundaryMap v4.0" and the Eurogeographic world coastline (M-EgcCo06).

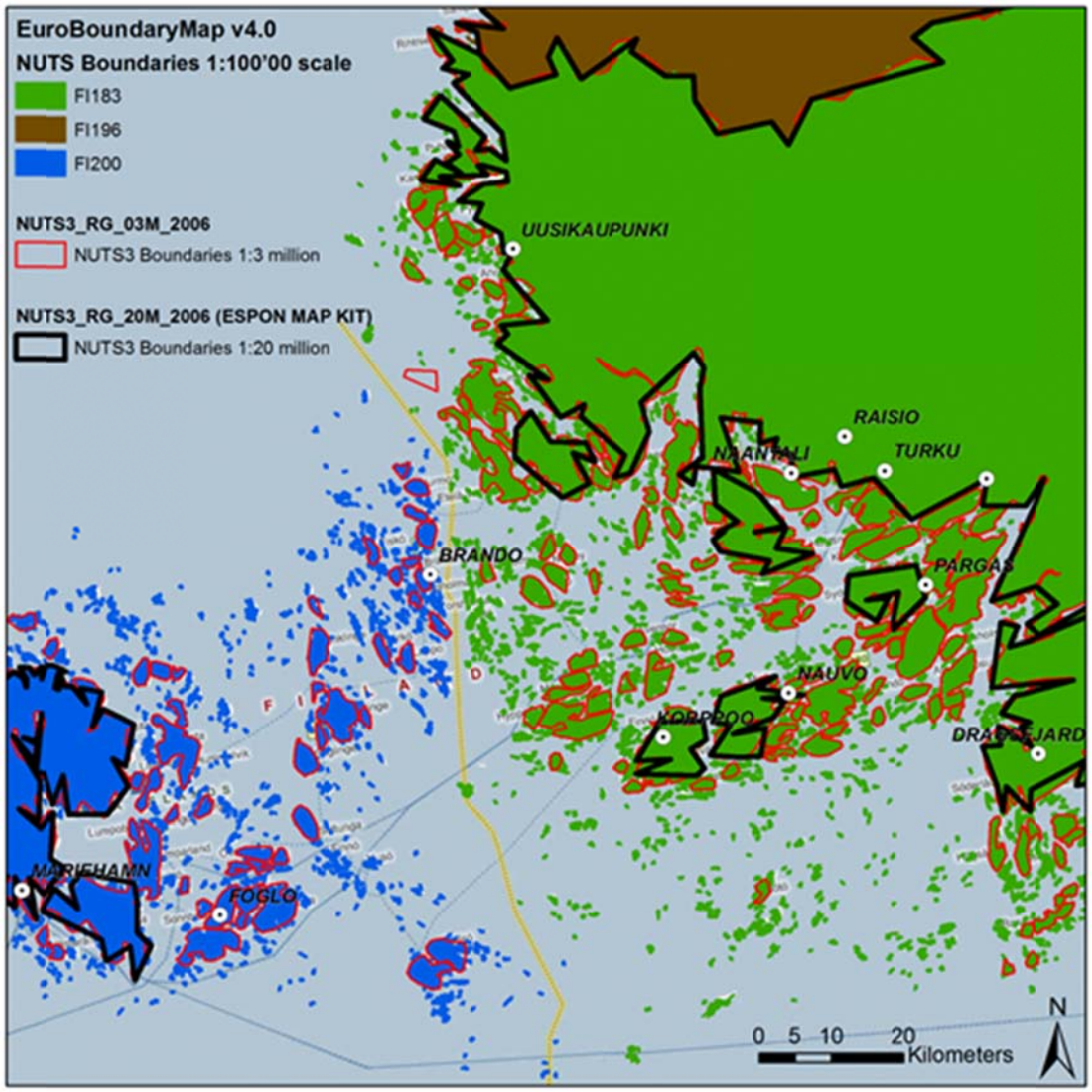


Figure 1 Comparison of the ESPON map kit and EuroBoundaryMap maps

LAU2 units are not merely considered useful in order to compile statistical data. They are also presumed to correspond to the territorial boundaries of local communities, even if the delineation principles vary considerably from country to country. This is an additional reason for which all delineations are based on LAU2 units.

Other GIS files and methods used for the delineation

The other GIS files and methods used for the delineation are described in 0. The coastline and digital elevation model are essential for the topographic characterisation of each territory, while road network models and settlement data are used to describe the demographic context, transport infrastructure endowment and relative positions of individual territories.

Delineation methods and related material

	Material	Essential methodological assets
Topography	**Coast** *(M-EgcCo06, Li-ClCoa06)*	Two complementary models of coastline must be coupled to cover GEOSPECS space. The **EEA CLC2006** coastline offers detailed descriptions of the environment and type of coastal areas. Related material includes "Eurosion DB" on coastal erosion trends and factors. It covers most of the GEOSPECS area to the exception of outermost territories, Iceland, Norway, Montenegro and Turkey. For those countries, the coastline will be completed by the worldwide **Eurogeographic COAS2006**.
	Elevation model *(Gr-EeaMdb)*	Based on GTOPO30, the EEA model is composed of 1*1 km cells with attributes such as: altitude, slope and relative scores according to neighbouring cells. The definition of mountain areas is based on a combination of those attributes, together with thresholds.
Time-distance	**Road network** (Nw-EgcRd09; Nw-Ops)	The Eurogeographic road network is fundamental for GEOSPECS. The Western Balkans, Bulgaria and Turkey are added from OpenStreetMap (Nw-Osm) (See Annex 4).
	Reference grid and friction surface	Measures of time-distance are based on the "friction surface" of cells (grids from 250*250m to 5*5km). Friction is defined by the average travel time required to cross a cell in all directions, taking into account road and off-road travel speeds. Time-distance and the resulting "isochrone areas" covering the entire GEOSPECS space are used for the characterisation of diverse territorial categories. On one hand, they help the TPG to explore the socio-economic significance of proximity to borders and coasts. On the other, they are one component in the delineation of inner peripheries. They are also used in the calculation of topologic population potentials (cf. below)
Demography	**Population potentials** (Gu-EBM06, Gr-Nsi, Gr-Ciesin)	The TPG has calculated two types of population potentials: Euclidian and Topologic. In order to calculate topologic population potentials, the TPG has crossed a population grid with the friction grid (both are 5*5km and developed by the TPG). The method consists in looping over all unique value cells and, for each cell, calculating the population potential by: • defining a reachable zone of cells by calculating the cost distance based on the friction grid and a travel time of 45 minutes • calculating the total population within the zone, by summarizing all population grid values • assigning the total population value to the base cell from unique value grid Population potential is directly used for the definition of sparsely populated areas and inner peripheries.

Using potentials to analyse local data

The TPG considers that GEOSPECS categories need to be delineated and analysed at the LAU2 level in order to produce relevant results. The review of available databases (see Annex 2) shows that there is a significant number of available datasets at this scale. A range of policy-relevant results can be obtained by combining key demographic indicators, environmental data at the level of grid cells, and point data on infrastructures such as airports and universities. The TPG will also endeavour to collect employment data by sector of activity at the level of LAU2 units whenever possible, in order to include the economic specificities of GEOSPECS areas in the analyses.

The key challenge is therefore not access to data, but the processing of local data corresponding to different delineations of LAU2 units in different years. Establishing coherent time series at this scale may not be envisaged within the framework of this project.

As part of the delineation of sparsely populated areas, the TPG has, however, demonstrated the feasibility of computing time-distance-based potentials across Europe. This method, described in 0 and 0, permits the description of a local area on the basis of the values observed within a presumed potential functional context, rather than considering each LAU2 unit in isolation. This makes it possible to overlay local data corresponding to different administrative boundaries, or with different sets of codes, if the spatial scales of the different datasets are reasonably similar.

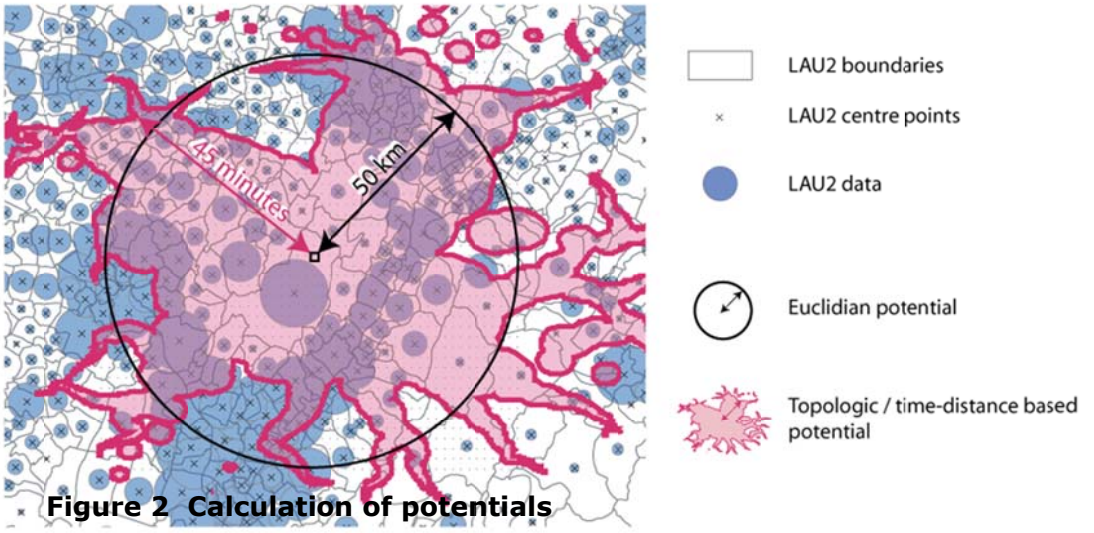


Figure 2 Calculation of potentials

Data associated to all LAU2 of which the centre point falls within the 50 km circle or area accessible within 45 minutes are summarised; this sum is the "potential". This means that the same data is taken into account as many times as they are associated to LAU2 units that are part of the potential functional neighbourhoods of the points of measurement. The GEOSPECS TPG has measured potentials for the centres 5x5 km grid cells across Europe.

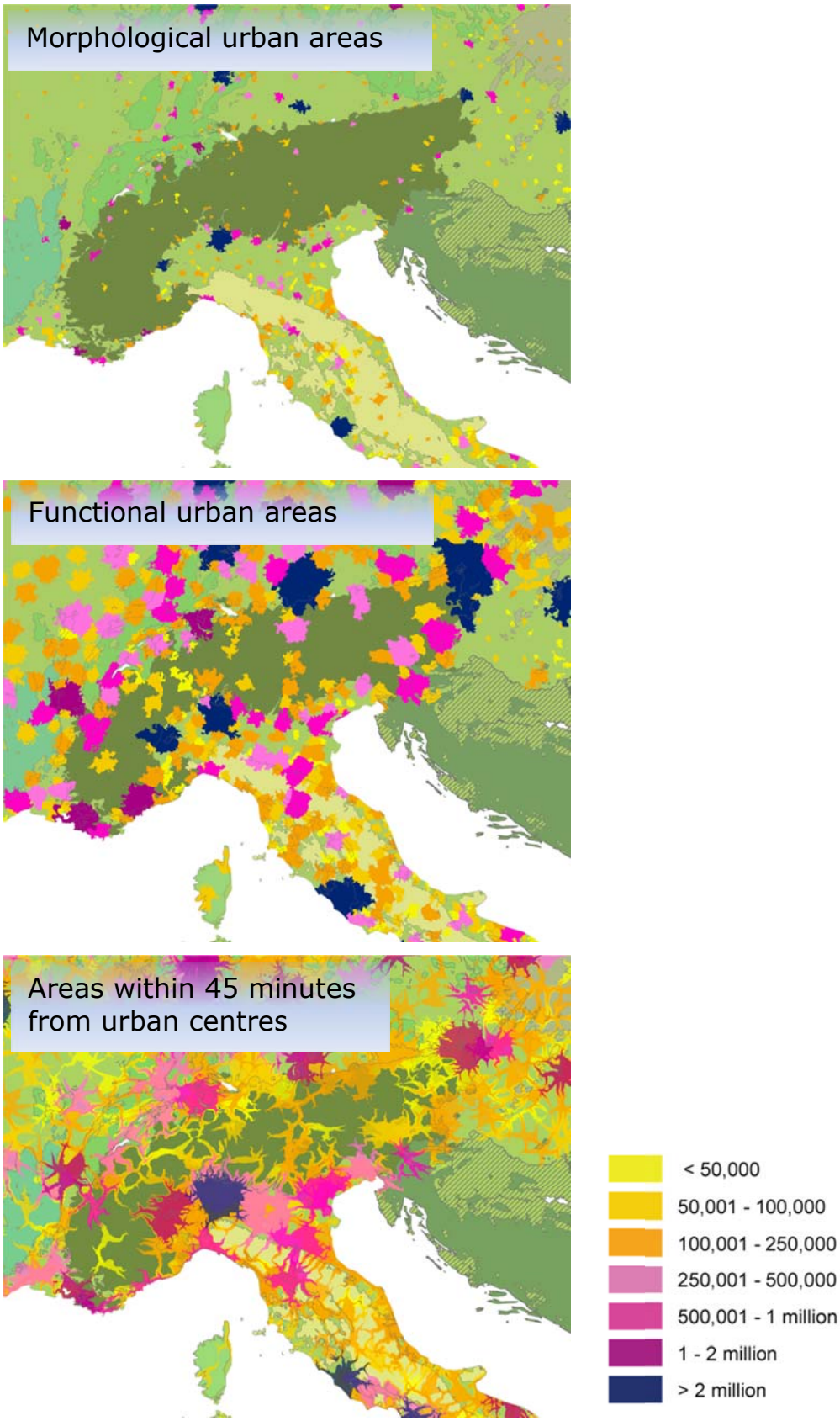
The use of potentials is not only a pragmatic solution for dealing with local data, without being constantly challenged by the problem of changing boundaries. It is also a way applying an homogenous scale of analysis across the entire ESPON space. This scale may be chosen on the basis of empirical criteria; in the case of distance by road, one may, for example, choose a 45-minute threshold based on studies showing that most people are reluctant to spend more than 1.5 hours in transport every day. The scale may also be based on normative criteria established in interaction with policy-makers. Using the same example, one could imagine a policy principle stating that local development strategies should not presuppose mobility ranges exceeding 45-minute travel time one way. The respective advantages and drawbacks of time-distance-based and Euclidian potentials is discussed in detail as part of the delineation of sparsely populated areas (see section 3.2)

Analyses based on potentials may therefore, in many respects, lead to results that are more policy-relevant than traditional local or regional indicators. This approach emphasises the importance of context and potential interaction with neighbours as the key parameter, rather than internal characteristics. This leads to results focusing on the potential benefits of cooperation and integration.

The technical implementation of time-distance-based potentials is complex and time-consuming, but has been successfully tested as part of the delineation of sparsely populated areas. The TPG will therefore apply this technique to other types of local data, and test whether comparing potentials for datasets compiled for different years gives useful results.

The role of urban-rural relations in GEOSPECS areas

Urban centres structure and organise all parts of the European territory, including GEOSPECS areas. To assess the relative importance of cities and towns, the GEOSPECS TPG will use the delineations of Functional Urban Areas and Morphological Urban Areas compiled by the ESPON Database project at the level of LAU2 units. For countries that have not been covered, or for which the background data is weaker – e.g., Lithuania, Latvia, Romania and Poland – considerate may be appropriate to use potential commuting areas based on time-distance from the centre as a proxy (see 0). The distinction between urban functional areas of different demographic and economic weight within GEOSPECS areas, and between their urban and rural parts, may prove important in view of producing policy-relevant results.



Source FUA and MUA delineations: Didier Peeters, IGEAT (ESPON DB), Isochrone delineations: ESPON 1.1.1

Figure 3 Overlay of Morphological Urban Areas, Functional Urban areas and areas accessible in 45 minutes from urban centres by road and the Alpine and northern Apennine massifs

2.3 Datasets used for the qualification of GEOSPECS areas

The TPG has reviewed available datasets and identified a range of relevant sources. The definitions of indicators are not yet finalised; these are being developed progressively in close interaction with the work on the analytical matrix (see Section 3.3).

In the present section, the organisation of the data collection is presented, and some key methodological issues are discussed. The list of reviewed datasets can be found in Annex 2.

A system of codes has been set up to refer to the different data sets. More precise descriptions of data sets corresponding to each code can be found in Annex 2. In this annex, codes referring to the lines and columns of the analytical matrix can also be found, showing how the different datasets may feed into the investigation of the research issues raised. A central objective for the TPG has been to base the analysis on relevant issues and questions and then, in a second phase, to consider what aspects may usefully be informed by quantitative data and which should rather be investigated on the basis of more qualitative enquiries. The TPG has, in other words, decided that the most relevant should be defined through analysis of literature and consultation with stakeholders (see Section 3.1), even if this means that, in some cases, qualitative rather than quantitative approaches are necessary.

Organisation of the data collection

As illustrated by 0, the collection of data is organised in conjunction between the Lead Partner and Partner 2, on the one hand, and the partners responsible for individual GEOSPECS categories, on the other. The Lead Partner and Partner 2 are responsible for so-called "transversal data", relevant for a wide range of GEOSPECS categories, while the other partners will seek to complement these with data pertaining to their specific GEOSPECS category.

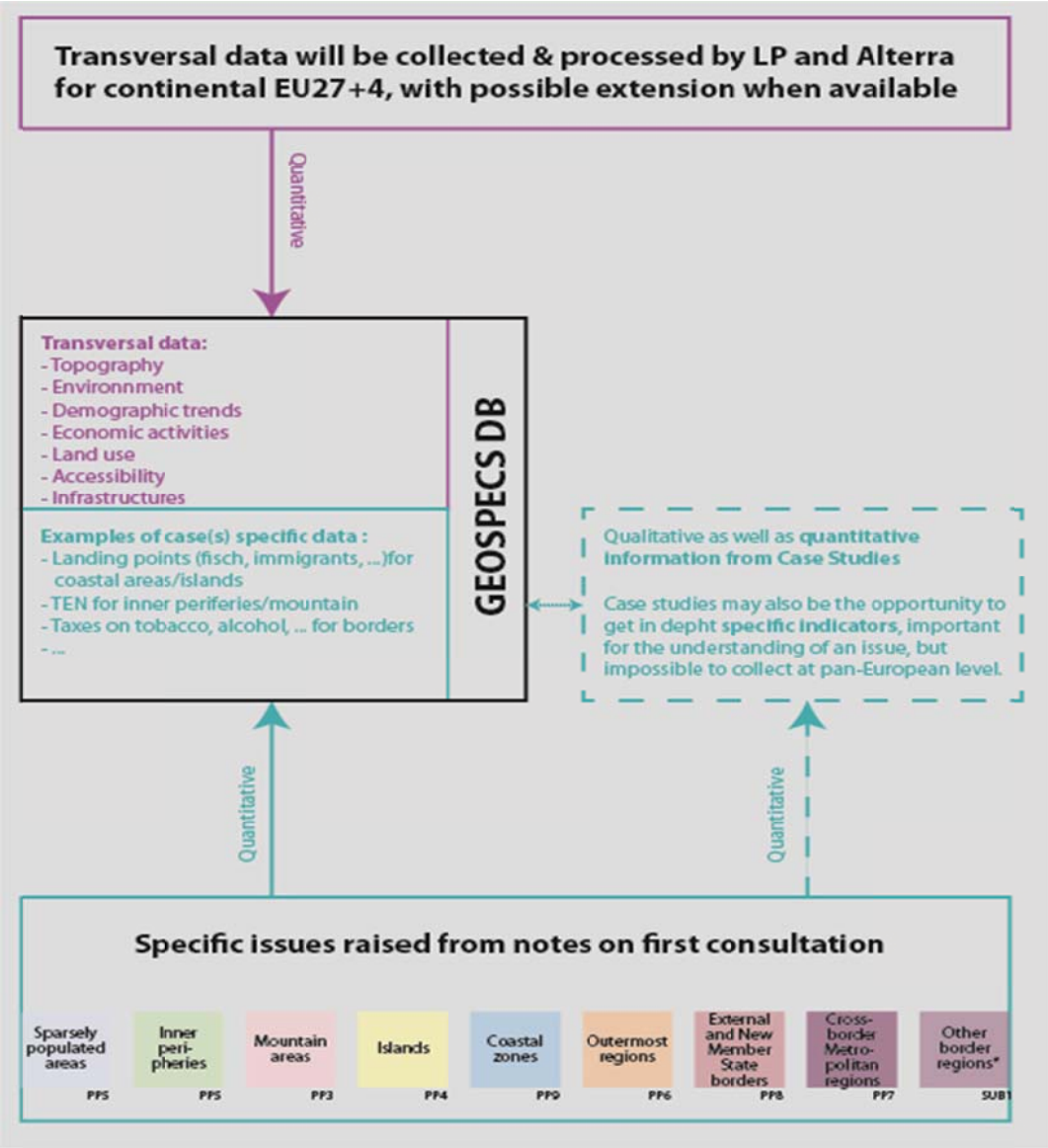


Figure 4 Division of tasks for data collection within the TPG

Selection of transversal datasets

Considering that the GEOSPECS project endeavours to cover all of the ESPON area, excluding the Former Yugoslav Republic of Macedonia and Bosnia and Herzegovina, at the LAU2 level, the range of transversal datasets that can be compiled is necessarily limited to the following:

- Total population, with 2005 as the reference year, whenever possible also gender structure, and population per age group;
- Total population (1990) is available for the ESPON NUTS 5 database; data compilation for countries not belonging to the study area for the ESPON 2006 programme is unlikely;

- Employment by sector of activity: The TPG will seek to compile the population in employment classified according to a simplified set of NACE categories[6]. The level of simplification will depend on the least common denominator among EU 27+4. This is the main field for which the TPG will allocate resources to collect data from national sources, as the characterisation of the economic profiles of different GEOSPECS areas is considered essential.
- Available infrastructure will be assessed and related to population stocks in their respective catchment areas, and to the ratio of population within these catchment areas as compared to the total population of individual GEOSPECS areas.
- Environmental data on land use, shoreline type, air quality, water quality, biogeographical regions, parks and designated areas have been identified and will be exploited in conjunction with socio-economic data whenever possible.

0 specifies the datasets that have been identified. The codes correspond to individual datasets, which are further described in Annex 2. The first part of the code corresponds to the type of data: geographical units (Gu), grid cells (Gr), networks (Nw), points (Pt) or lines (Li).

Table 4 Selection of transversal pan-European datasets

Demography	**Demographic trends** (Gu-Egc06; Gr-Nsi; Gu- TrN4; Gr-Ciesin and Gu-EspN5)	For most countries, it should be possible to calculate demographic trends between 1990 and 2005, using potentials. The TPG foresees that demographic trends may be impossible to realize at local level in Western Balkans.
	Demographic structure (Gu-EspN5; Gu-TrN4 and NSI)	The TPG limits itself to core indicators such as male/female ratio and age groups. As the 2010 census is not yet available at local level in many countries, 2000 is the target year. TPG foresees that demographic aspects may be impossible to analyse at local level in Western Balkans.
Economy	**NACE** classification (Gu-Nace NsiN5; Gu-TrN4)	The overall objective of the TPG is to provide a 17 class NACE at LAU2 level. As previous experience shows that this seems challenging for many countries, the aim is to be as detailed as possible. The TPG also considers the fact that detailed explorations beyond alphabetical codes could be confined to concerned countries, e.g., the number of fisherman (A3) for coastal countries. Economic classification aspects will be impossible to realize at LAU2 level in Western Balkans.

[6] The **Statistical Classification of Economic Activities in the European Community** (in French: Nomenclature statistique des activités économiques dans la Communauté européenne), commonly referred to as **NACE**, is the European industry standard classification system.

	Economic density (Gross Domestic Product per capita at NUTS 3 level from Eurostat and population density at 1km^2 resolution from the European Environment Agency)	Economic density is defined as the income generated per 1 km^2. It forms an integrative indicator of economic power and population density, which has been used to rank countries by their level of development (Gallup et al., 1999). Metzger et al. (2010) recently constructed a high-resolution economic density map (€/km²) at 1 km² spatial resolution by multiplying Gross Domestic Product (GDP) per capita (€/person) with population density (person/km²) (cf Sachs et al., 2001). The economic data at NUTS 3 level are from Eurostat, and population density data at 1km^2 resolution from the European Environment Agency. The latter dataset was constructed by disaggregating population density data at the level of the commune (LAU 2) by means of the CORINE Land Cover (CLC) 2000 map (EEA, 2000), as described in detail by Gallego and Peedell (2001). The guiding principle is that different land cover types within a commune can be associated with different levels of population density.
Infrastructures	**Public infrastructure** (Pt-EspN5; Erm30; Erm31a, PT-GiscoP/A) **TEN** (Nw-5CohRep)	Availability in combination with accessibility to public infrastructure plays an important role for development potential. The TPG intends to use available databases in relation with gridded time-distance model. Data from the 5th Cohesion Report on airlines and railways
Environment Those databases do not cover outermost regions	**Land use, soil** (Gr-Eea)	TPG will use Global Land Cover 2000 as the main input dataset to define the boundaries between ecosystems such as forest, grassland, and cultivated systems. In addition to the land cover, EEA also provides the degree of soil sealing.
	Air quality (Gr-Eea)	Air quality will be assessed via the EEA AirBase. This contains air quality data delivered annually, establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the Member States.
	Water quality and quantity (Pt-EeaWat)	Waterbase is the generic name given to the EEA's databases on the status and quality of Europe's rivers, lakes, groundwater bodies and coastal and marine waters, and on the quantity of Europe's water resources. In addition, popular bathing places in fresh and coastal waters are monitored for indicators of pollution throughout the bathing season. TPG expects that these data will allow identification of the influence of cities or economic activities on water quality as well as potential/threat for development of tourist water-related activities Some topics may not cover entirely Western Balkans, CH, IS and NO.

	Coast type (Li-ClCoa06)	The EEA database offers a complete description of coastline features with detailed descriptions on the environment, type of coastal areas or sensitivity to erosion. Some topics may not cover (entirely) Western Balkans, IS, NO and TR.
	Biodiversity and designated areas (Gr-Eea)	The bio-geographic regions datasets contain official delineations used under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The European inventory of nationally designated areas holds information about protected sites and the national legislative instruments which directly or indirectly create protected areas.
World data	**Regional context for outermost regions** (Gu-WBk)	The TPG will aim to obtain similar indicators (at NUTS 0 level) for neighbouring countries to those used in the project. This will allow two scales of comparison: the usual one with continental Europe and a new one, relative to regional settings.

Geographical coverage

As previously indicated, the TPG has compiled LAU2 boundaries for the Western Balkans except the Former Yugoslav Republic of Macedonia and Bosnia and Herzegovina, and LAU1 boundaries for Turkey (see Figure 5). This allows the TPG to carry out delineations of GEOSPECS areas in these parts of the ESPON study area. While the TPG has access to data on total population, levels of education, employment by sector for the Turkish LAU1 units, the data available for the Western Balkans are very limited. While many data sets are probably available, the TPG will only allocate limited resources to the compilation of data from these countries.

For the analysis of outermost regions, the TPG considers it necessary to assess their situation in relation to their respective geographic context. National data for the neighbouring countries will mainly be used, and compared to regional figures for Outermost regions.

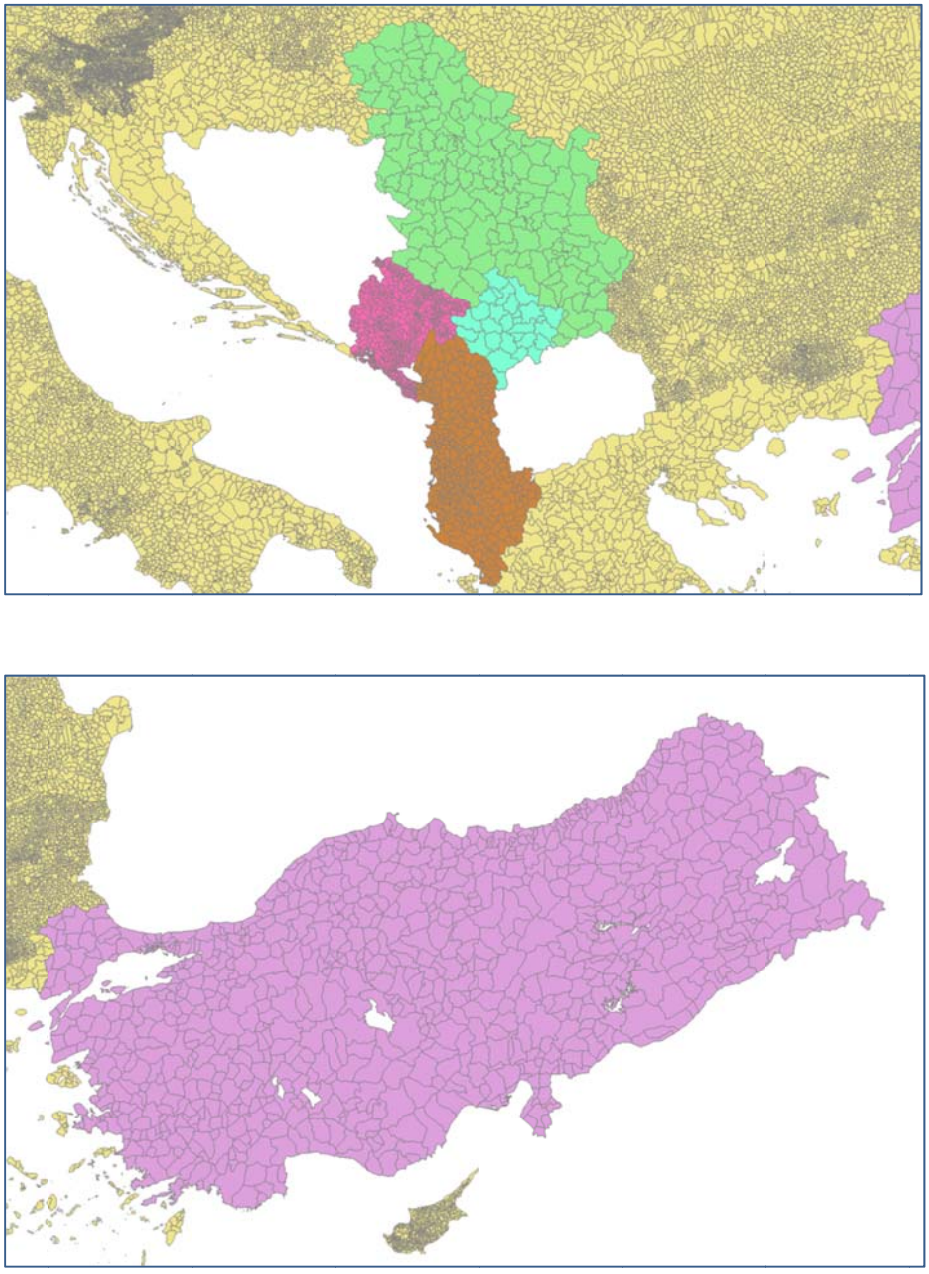


Figure 5 **LAU2 unit compiled for the West Balkans and LAU1 units for Turkey**

2.4 Nexus of development factors

The so-called "syndrome" approach was introduced in the inception report as a means to synthesise findings on interactions between geographic specificities and economic and social development processes. One purpose of this approach is to focus on sets of challenges and opportunities to be addressed in policymaking for specific types of territories rather than on limitations for development. While this approach was welcomed and considered in line with the current rationale for territorial development policies, the term "syndrome" was criticised for its negative connotations. The approach will therefore be further developed, but referred to using the terms "nexus of development factors" and "nexus approach". These "development factors" can be both positive and negative; the underlying rationale is that all GEOSPECS areas are influenced by wide range of factors, some of which stem from geographic specificity, while others are related to inherited features, macro-economic contexts, and institutional structures.

The need to narrow down the "potentially infinite set of relations" was highlighted in the reactions to the inception report. While the TPG maintains a broad and exploratory focus in the analytical matrix, which is considered necessary to accommodate the different types of issues to be focused on within each of the seven GEOSPECS categories, the consultation process (see Section 3.1) has already provided useful inputs on the issues on which the consortium should concentrate its efforts. The outputs from the consultation process will therefore have a decisive influence on the strategic choices in the next phase of the project. However, it will be necessary to preserve a balance between the need to focus on most pressing issues for each GEOSPECS category, and the objective of elaborating general and crosscutting lines of argument on the policy relevance of geographic specificities. Furthermore, "nexus" diagrams similar to those presented in the inception report may be useful tools to synthesise results from each case study (see section 3.4) and when communicating and discussing preliminary project results during the second stakeholder consultation. At a meta-level, the TPG may seek to explain differences between the "nexus" diagrams of areas with similar types of geographic specificities by using notions such as "stages of development", "macro-economic context" and "institutional framework conditions". This is part of a general strategy to identify parallel needs for regulatory adaptations or measures, rather than looking for statistically significant deviations from average social and economic performance indicators.

3.1 Outputs of consultation process

The first stakeholder consultation was designed to clarify the views of stakeholders on processes taking place within the respective GEOSPECS areas and on policy priorities. The consultation was preceded by an analysis of relevant academic literature, policy documents and position papers of pertinent organizations. Stakeholders were then asked to provide their views on the challenges and opportunities for the different GEOSPECS areas and on needs in terms of policymaking. In many cases, the views of stakeholders confirmed positions identified in the literature review, but the consultation also added new nuances and new paths for research.

For the purpose of the consultation process, stakeholders representing a certain type of territory at a European level were deemed "most relevant" – i.e., organizations such as Euromontana, the NSPA, the CPMR, AEM, the AEBR, ESIN. In addition, a number of regional stakeholders were contacted.

Methodology: Most project partners initially contacted the stakeholders of their GEOSPECS area via e-mail and asked them to fill in an online survey or a survey in Word. Subsequently, to increase responses, the most important stakeholders were contacted again via telephone. The project partner responsible for Inner Peripheries chose to conduct face-to-face interviews, and thus received more detailed evaluations of the situation of this type of area.

Mountain areas

Responses were collected from European actors (Euromontana and the *Association Européenne des Elus de montagne*, AEM), intra-regional actors (Alpine Convention, Carpathian Convention), national actors (*Fondation pour le développement durable des régions de montagne*, *Schweizerische Arbeitsgemeinschaft für die Berggebiete*, SAB) as well as regional governments from Scotland, Wales, and Cyprus.

Stakeholders agreed that the most important **challenges** for mountain areas are as follows:

- Different **geographical and climate conditions** (which affect agricultural activity and make the economy subject to seasonal patterns)
- Lower **Accessibility**
- Low population densities make **investments unviable**, which also leads to an insufficient level of **public services**
- **Demographic change** (especially outmigration of younger people due to a **lack of work for highly skilled** people)
- **Fragile ecology** / Climate change is more tangible
- **Infrastructure** is more expensive due to the topography

Meanwhile, the most important **opportunities** for mountain areas are:

- Availability of **natural resources** (e.g., water, wood, clean air) and an **intact environment**
- **Living conditions** / strong feeling of identity of the local population / cultural diversity and traditions
- **Tourism**
- **Payments for ecosystem services:** services like hydropower production, carbon storage, prevention of natural disasters, preservation of landscape and biodiversity can be considered as services for which mountain actors can claim a fair remuneration
- **Information and communication tools**: economic opportunities arising with increased availability of ICT, such as homeworking or e-commerce
- Potential of **renewable energies** (especially water)

When asked about necessary improvements of EU policy from the point of view of mountain areas, stakeholders underlined that the planning of roads and railways should reflect the characteristics of mountain areas better, but also that "green" innovation is necessary. In the field of environmental policy, more action for the preservation of biodiversity as well as more adaptation strategies to climate change were deemed necessary. Specific funding should be provided for the development of renewable energies (particularly hydropower); nevertheless, the exploitation of renewable energy sources must not negatively affect biodiversity conservation goals (several stakeholders perceived a contradiction between these two goals). Within the framework of the CAP, it was pointed out that farmers until now do not receive enough recognition for their contribution to landscape management. LFA payments were welcomed, but noted to vary too much from country to country.

6 of 9 respondents supported the idea of an integrated EU policy on mountain areas (to tackle the challenges that mountain areas face due to their characteristics and to get rid of existing incoherencies in policies); the others rejected this idea as unnecessary, given that European mountain ranges are too diverse to make such a "one-size-fits-all" policy meaningful.

Islands

Responses were collected from European actors (the CPMR Islands Commission, INSULEUR, the European Small Islands Federation, ESIN); national actors from Finland, Ireland and Cyprus; regional actors from Gozo, Gotland, Scotland (Argyll and Bute and the Outer Hebrides) and the Balearic Islands; and one inter-regional actor (the Baltic Islands Network B7).

The main **challenges** were perceived to be:

- Limited accessibility, **isolation,** remoteness
- Higher costs of **transport** / islands have no access to road or rail networks of mainland Europe, connections to the mainland (air and maritime) are infrequent
- Size limitation: **Limited market size**/ no economies of scale and no agglomeration effects
- **Access to services** limited (lack of critical mass to sustain essential services)
- **Demographic change**: ageing and declining population as young people leave (due to a lack of opportunities in the labour market and/or lack of education opportunities)
- High **dependence** on a small number of economic sectors (no diversification)
- Islands are **ecologically vulnerable** and particularly sensitive to climate change

Main **opportunities**:

- **Renewable energy** projects (excellent wind, solar and tidal resources)
- **Tourism** (based on natural and cultural assets)
- **Environment** (sanctuaries for flora and fauna, particularly birds)
- **Style of life**: cultural heritage and closely knit communities

When asked about EU policies that should pay more attention to islands, two-thirds of respondents named transport policies, and a few mentioned

the Common Fisheries Policy, the CAP, Cohesion policy and/or energy policy. The CPMR Islands Commission also called for greater flexibility in the implementation of rules and regulations, and pointed out that "all EU financial instruments should recognize that implementing a policy on an island is more expensive than in the neighbouring mainland and public spending should reflect this".

Statements on possible contradictions between policies, primarily mentioned the tradeoff between the exploitation of renewable energy sources and the conservation of the environment. Some felt that food production involved too much red tape (particularly animal welfare legislation), which is too inflexible for the special characteristics of islands.

All respondents supported the idea of an integrated EU policy on islands, either to overcome the disadvantages resulting from insularity or to adequately exploit the opportunities that islands offer.

Other remarks: The CPMR Islands Commission suggested that "the use of a broad concept such as 'specific territories' should not serve as an excuse to diminish the exact wording of the Treaty, or to **dilute the situation of islands in a much broader framework** including coastal areas or inner peripheries." The project should also avoid comparing regions that, though they are affected by the same geographic specificity, are in completely different situations (e.g., the Baltic islands and Mediterranean islands are not in the same position just because both are insular). Lastly, they voiced their reservation about the use of GDP as a sole mode of evaluation: "A more satisfactory approach seems to measure the **attractiveness** of a territory for its inhabitants and for its industry. Suggested in the EUROISLAND ESPON study, this notion of attractiveness (which can be translated roughly as a capacity to retain or increase a population or, for industries, economic activities) is a much broader concept which encapsulate factors well beyond the sole level of GDP."

Sparsely Populated Areas

Responses were received mainly from actors from the Nordic countries: Finland (North Finland EU Office, Finnish Ministry of Employment and Economy), Sweden (North Sweden EU Office, Mid Sweden EU Office, Swedish Agency for Growth Policy Analysis), Norway (North Norway EU Office, Norwegian Ministry of Local Government and Regional Development), Iceland (Icelandic local authorities EU Office), and also the North of the UK (the CADISPA Trust, the Scottish Government Directorate for the Built Environment).

The **challenges** given the most emphasis by all respondents are:

- The **remoteness** from / difficulty to access larger agglomerations

- Unfavourable **demographic** patterns, leading to lack of critical mass of inhabitants
- Small size of the internal **labour market** and Costly **access to services**
- Challenges in **transport** networks
- **Economy not diversified**, leading to→ vulnerability of the dominant economic activities (like mining, fishing and tourism) to external factors
- Lack of **education** and **training** possibilities in the area

Concerning **opportunities**, the close relationship and trust, i.e. the ***social capital*** that the local and regional actors share, was ranked highest among the development opportunities. Also unexploited **natural resources** of global importance were seen as a major development opportunity. In addition to mines and minerals, the possibilities for local **energy production** (e.g., bio energy, tides, and also thermal energy in Iceland) were widely mentioned. Another important opportunity relates to the unexploited natural potential of the **landscape**, especially for **tourism** purposes.

With regard to policies that are central for enabling the future development of SPA, respondents identified that those dealing with energy and natural resources (climate action, energy). They also highlighted as important: cross-cutting policies, dealing with the impacts of the financial crisis, growth and jobs, better regulation and sustainable development, education and science and technology policies dealing with information society, media, research and innovation, agriculture and fisheries policies.

In a meeting with stakeholders from the NSPA network in February 2011, they noted that questions of gender balance (and also age structure and migration; ; e.g., young women are frequently most likely to move to urban centers, leaving behind an imbalanced population structure in SPAs) are crucial in many SPAs and that GEOSPECS should include these issues in its analysis. Another remark insisted on the importance of high-quality internet access, which may counterbalance the lack of physical access or the loss of some services in SPAs.

Border Regions

Responses were collected from representatives of different types of borders: External EU borders (NEEBOR); "new" internal EU borders (AEBR, a representative from the Commission's DG Regio, Centrope, the Euroregion Nestos-Mesta); and border regions that are also affected by another geographic specificity (Bornholm as an insular border region and part of the "B7", Ostholstein as a coastal border region and part of the "Fehmarnbeltregion"). Challenges are summarised in Table 5.

Table 5 Challenges for border areas

"New" internal EU borders	**External EU borders**	**Original border areas** (within EU15) affected by other geographic specificity
• The new internal borders have not yet reached the same "acquis" of cooperation as the old ones: Lack of experience in EU funded project management by the new Member States • Access problems – few border crossings (in some cases even lack of basic infrastructure) • Different languages • Different levels of economic development on both sides of border • Still different legal systems in cooperation activities • Different governance structures, competences/capacities & political cultures • Lack of interest for common development strategies from regions and states • In some cases: minorities located on both sides of borders	• Schengen border regime • Specificity of the Eastern Partnership • Usually peripheral regions with social and economic depression • Remoteness, sparse population, poor accessibility • European Grouping for Territorial Cooperation (EGTC) not possible	• Border-crossing barriers limit free movement and the release of growth potentials • Different cultures meeting at borders

As for **opportunities**, the AEBR suggested: "All border areas are able to overcome their prior situation by connecting both sides in a long-lasting process of cooperation at all levels. This process, despite of its deepness or intensity, always adds value to any national or regional development strategy. Through Cross-Border Cooperation, resources can be mobilized at European, but also at national level, in a multi-annual basis, that otherwise would never be available". Other stakeholders also mentioned this point. In addition, the following opportunities were named: development of trade relations, including with emerging markets (particularly in the case of external borders), the exploitation of

economies of scale for service provision, diverse natural resources and an intact environment.

Correspondingly, the need for further intensifying cross-border policies was seen in the following fields:

- **Transport** and related **infrastructure** (border crossings and secondary networks)
- Promotion of **business**, **trade**, **tourism**, etc., across the border
- Cross-Border management of **natural resources**; environmental issues
- **Energy** supply
- Cross-border **health care** provision for citizens living in border areas, particularly rural ones
- Activation of the cross-border **labour market** (coordination of supply and demand on both sides of the border, education and training, etc.)
- Strengthening the learning of the neighbour's **language**.

Inner Peripheries

As Inner Peripheries (IP) are a new category in EU policymaking, there are no pre-defined groups of stakeholders. The consultation process in this case focused on quality instead of quantity: three extensive interviews were conducted with experts from Belgium (General Management of Territory Facilities of the Walloon Area), Germany (Federal Office for Building and Regional Planning BBR) and the Netherlands (Ministry of Infrastructure and Environment).

None of the experts offered an official definition of IP; however, some descriptions were proposed:

- The Dutch Environmental Assessment Agency (PBL) uses the concepts of high dynamic and low dynamic areas - the latter could be considered as IP. Examples: The Groene Hart, East Groningen, Zeeuws-Vlaanderen, Parkstad Limburg.
- In Germany, IP are described by several indicators based on the accessibility model, i.e. population density, accessibility of daily population, potential population or potential jobs; also, IP are never relevant urban centers. The German concept differentiates between urban and rural IP. Examples: Altmark (area between Sachsen-Anhalt, Niedersachsen and Brandenburg); the centre of the triangle between Dresden, Leipzig and Chemnitz; the area around Kassel; the Eifel region.

- For Belgium, an IP could be understood as an area where the rural economy (agriculture and animal breeding) is not important enough for the area to be defined as "rural", but where the population is not dense enough for it to be called "urban". In this context, IP appeared when the share of agriculture in GDP dropped (now 2.5% of GDP, compared to 20% half a decade ago) and the suburbanisation of the cities increased. Thanks to cars and the development of the road network, the population moved out of the cities to settle in peripheries. Each IP is necessarily always defined in relation to a nearby city, on which it relies: If the city is not doing well, the IP is not doing well either. Examples: Philippeville, Couvin, Virton.

The perception of the characteristics of, and processes in, IP seems to differ significantly between Belgium, on one hand, and Germany and the Netherlands on the other. For the Netherlands, the population decline in IP is one of the main problems (partly due to their location at a border), correlated with a decline of services of general interest. A similar perception prevails in Germany, where poor accessibility/transport connections and a lack of jobs are also seen as problems. In contrast, Belgium notes an increase of population, particularly residents, in IP. People who live in these areas are wealthy, attracted by the low price of land, low property tax, and the quiet and safe (i.e. less crime) environment. However, the Belgian experts recognize that economic life is fragile in IP, as the people only live there and do not work there; as soon as fuel prices rise significantly, the situation may deteriorate since residents are dependent on their cars. The lack of local services is also seen as the main obstacle for companies to establish themselves there.

Corresponding to their less positive view of IP, Germany and the Netherlands also see different opportunities for these areas (as compared to Belgium): IP could make use of their often pristine nature and open spaces to promote recreational and touristic activities; they could also be advertised as "low pressure" living areas, especially for retired people (but care has to be taken that not too many people are attracted, otherwise the area loses its advantage). Also, the availability of space lends itself to activities such as food production, nature conservation, and energy production (including infrastructure facilities such as power lines).

The following sectoral policies were deemed most important for IP , : agriculture, housing, regional development, energy, transport, education.

Coasts

Reponses were collected from the Conference of Peripheral Maritime Regions (CPMR); Regional Assemblies from Ostholstein, Wales, Scotland, Northern Ireland and England; as well as representatives from the

European Environment Agency, the Commission's DG Environment, the University of Seville, and the Scottish Association for Marine Science.

Challenges for coastal areas:

- Increasing population, leading to **sprawl of population and infrastructure**, and the conversion of many natural areas to artificial surfaces; impact on **fragile coastal ecology**
- **Urbanised** coastal areas / landing points manifest conflicts between scales and economies
- Risks from environmental change and climate change (**flooding** and **coastal erosion** are the main threats); nutrient loss
- Many seasonal visitors (tourists) and therefore **dependency on seasonal employment**; low skill economy with focus on tourism hampers diversification of the economy
- Peripherality and **poor connectivity**; high transport costs
- **Rubbish dumping** and **aggregate extraction Opportunities for coast**al **areas:**
- **Renewable energies (wind, t**idal and wave)
- **Aquaculture** is an increasing sector
- **Tourism** continues to be the key sector, particularly based on natural assets; the current economic climate means that more people holiday locally

Respondents stated that, in particular, the following policies should pay more attention to coastal areas: transport policies, the Common Fisheries Policy, the Common Agriculture Policy, Cohesion policy, nature conservation, and the planning of renewable energies. Concerning Spatial planning, it was mentioned that links to coastal hinterlands need to be recognized and integrated into planning in coastal areas, especially those related to inland ports.

Stakeholders were not convinced that an integrated, European policy towards coasts is necessary. Some point out that coastal areas are too diverse for a European-level policy, while others noted that Integrated Coastal Zone Management (ICZM) and the Marine Strategy Framework Directive (2008) are already very good instruments, but need to be implemented and adequately financed. However, the need for greater coherence between different measures under the responsibility of different DGs was underlined (e.g., ICZM, MSP, European Fisheries Fund).

Outermost Regions

Responses were received from French stakeholders (La Réunion économique, the Ministry for Overseas Territories) and Spanish stakeholders (the Delegation of the Government of the Canaries in Brussels, MCRIT SL).

The following **challenges** were identified by stakeholders:

- **Accessibility**: Remoteness (from the EU) and insularity affect the situation of OR in several ways. On one hand, the strong reliance on imports and the costs for transport leads to high prices for goods. On the other hand, as many people need to rely on planes as the main means of transport (for business and personal relations; tourism also relies heavily on air transport), EU policies which raise ticket prices (e.g., policies for limiting greenhouse gas emissions) are perceived as affecting ORs more seriously than other regions.
- The **small size of the market** affects the competitiveness of OR.
- **Regional insertion** poses challenges: on one hand, neighbouring countries are mostly less developed countries, making them less attractive partners for trade while, on the other hand, there are linguistic and institutional barriers.
- A conflict of interest is seen between the needs to protect the **fragile biodiversity** and for the **economic development** of growing populations ("these people don't want to live in museums").
- Additional costs derive from the tropical **climate** (requiring climate-proof construction and protection against natural disasters) and by the particular (fragmented) **topography** of OR, which makes services such as water provision and waste treatment more costly.

OR are not a homogenous group, with different factors applying to some, but not all OR. While small market size may be a common challenge, insularity is not the case for French Guyana, remoteness is less crucial for Madeira and the Canary Islands than for the French DOMs, etc.

When asked for **opportunities** for OR, some stakeholders mentioned tourism as a key economic driver. Another stated that OR have a unique geostrategic, scientific and economic position in the world (e.g., access to various oceans, climates, biodiversity, environments, human cultures). However, several stakeholders opportunities are not fully exploited. For example, in its 2008 communication "Outermost regions – an asset for Europe", the EU Commission names the following opportunities for OR:

- Outposts of the European Union in the world
- Ideal location for experimentation to combat the effects of climate change

- Remarkable biodiversity and wealth of marine ecosystems
- Scientific portals for their geographical areas
- High-quality agricultural produce

Representatives of OR indicate that, so far, no strategy has been proposed to value these assets so that the population can benefit from them. This is also true for other notions, such as "active frontier": one stakeholder pointed out that the EU Commission has recognized the opportunity of using OR as "active frontiers" of the EU, but this potential has not been fully explored.

More generally, representatives from the OR underlined that as they have a **specific legal status** in EU treaties (resulting from historic ties with certain countries), they already benefit from a distinct integrated policy approach. For this reason, many representatives from OR perceive their regions to be in a **unique situation**, different from the other GEOSPECS areas.

Many **derogations** specifically for OR exist within different EU policies (especially in Regional Policy and the CAP). This was acknowledged by all stakeholders. However, one pointed out that some international commitments made by the EU regarding **trade policy** contradicted the short-term interest of OR, given that the third countries concerned are close to OR markets and treat them as export targets. Another stakeholder stated a need for compensation for the disadvantages inflicted on ORs by trade policy.

3.2 Identification of geographically specific areas

Mountain delineation

In the Fifth Cohesion Report (CEC, 2010), mountain regions are defined as NUTS 3 regions where 50% of the population lives in a mountainous area or 50% of the land area. The share of population in mountain areas is estimated by overlaying the grid cells identified as mountainous in the study *Mountain areas in Europe: Analysis of mountain areas in EU Member States, Acceding and other European countries* (Nordregio et al., 2004) and population estimates at the same scale.

These grid cells have been identified based on the following criteria:

- between 0 m and 300 m, the objective is only to include areas with a particularly rough landscape in the mountain delineation. For this purpose, the standard deviation of elevations between each point of the Digital Elevation Model (DEM) and the eight cardinal points surrounding it is calculated. If this is greater than 50 m, the landscape is sufficiently rough to be considered as 'mountain' despite the low altitude.
- between 300 m and 1,000 m, areas which either meet the previously mentioned criterion or where altitudes encountered within a radius of 7 km vary by 300 meters or more are considered mountainous.
- between 1,000 m and 1,500 m, all areas which meet any of the previously mentioned criteria are considered mountainous. In addition, areas with a maximum slope of 5 ° or more between each point (to which value is assigned) and the 8 cardinal points surrounding it are also considered mountainous.
- between 1,500 m and 2,500 m, in addition to all previous criteria, areas with a maximum slope of 2 ° or more between each point (to which value is assigned) and the 8 cardinal points surrounding are also considered mountainous.
- above 2,500 m, all areas are considered mountain.

These criteria build on work by Kapos et al. (2000), with the final selection being made, after testing 16 different combinations, on the basis of feedback from national experts, who were asked to assess the degree to which each delineation fitted prevailing national understandings of mountain areas.

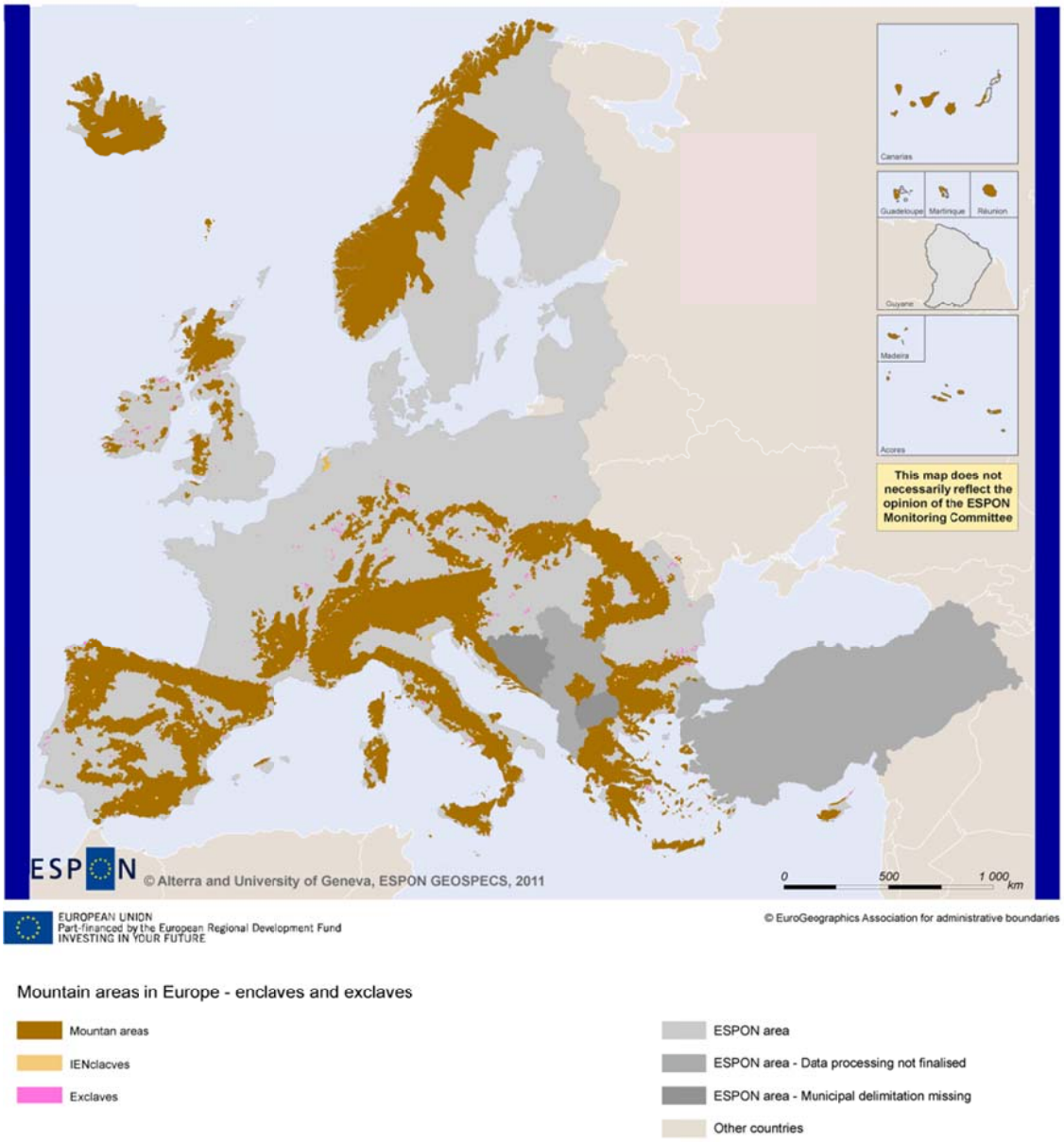
When the grid cells are used for an approximation at the level of NUTS 3 regions, this perspective is lost, as the resulting maps generally bear little resemblance to commonly accepted mountain areas. On a more fundamental level, individual grid cells with a rough topography (i.e. satisfying to the above mentioned criteria) should not *a priori* be identified as mountain areas; it is the local concentration of such cells that constitutes a mountain. Finally, and perhaps most importantly, the approximation of mountain areas at the NUTS 3 level generally makes it impossible to analyse mountain-piedmont relations, as these two types of areas are usually included in the same regions. Major components of specific social and economic processes that are specific to mountain areas would therefore be ignored if the TPG were to apply a NUTS 3-based delineation of mountain areas.

As an alternative solution, the TPG has used the delineation of the European Environmental Agency 2010 study *Europe's ecological backbone: recognising the true value of our mountains*, which applied the same criteria as in the previously mentioned Nordregio study, but applied it to a wider space including all of the ESPON study area. Furthermore, isolated mountainous areas of less than 10 km^2 were not considered, and non-mountainous areas of less than 10 km^2 within mountain massifs were included.

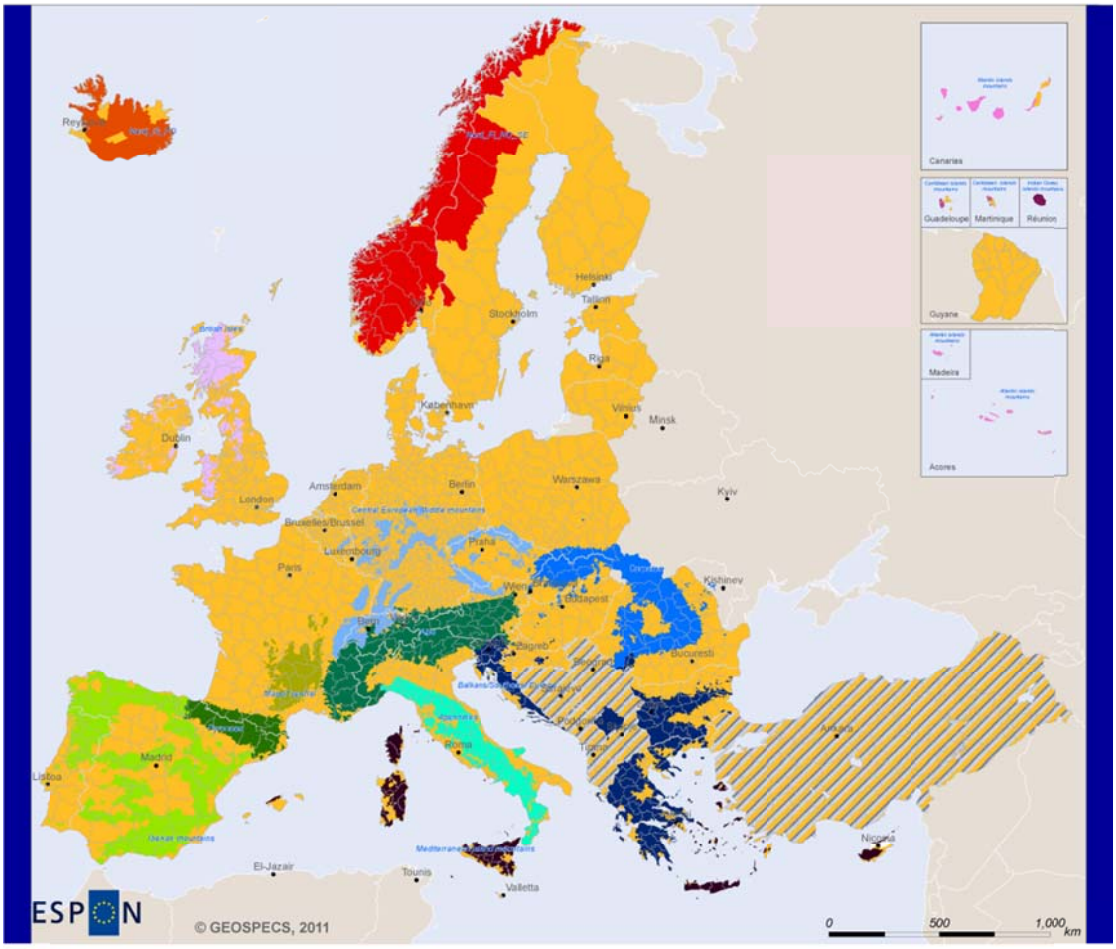
This set of grid cells with mountainous topography was approximated to municipal boundaries by considering that LAU2 units with more than 50% mountainous terrain should be considered to be mountainous. Continuous mountain areas of less than 100 km^2 were then identified, and designated as exclaves which were excluded from the mountain delineation except on islands of less than 1000 km^2. In this latter case, small mountain areas were deemed to constitute a greater potential constraint for social and economic activities, insofar as the total available land is limited. Similarly, non-mountainous groups of LAU2 units of less than 200 km^2 surrounded by mountain areas were identified as enclaves and included in the mountain delineation (see Map 1).

Mountain areas have been grouped into 15 massifs, defined on the basis of the delineations of the above-mentioned European Environmental Agency study, with some modifications:

- Mediterranean island mountains include Sicily;
- A Central European Middle Mountain category – including the Middle Mountains of Central Europe, Germany, France and Switzerland – has been created;
- The Massif Central (including Morvan) has been defined as a separate category.



Map 1 Mountainous LAU2 units in Europe, enclaves and exclaves



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European Mountain massifs

- Balkans/Southeast Europe
- Carpathians
- Central European Middle mountains
- Apennines
- Massif central
- Iberian mountains
- Pyrenees
- Alps
- British Isles
- Scandinavian mountains

Insular mountain areas

- Icelandic mountains
- Medterranean island mountains
- Indian Ocean island mountains
- Caribbean island mountains
- Atlantic island mountain
- No Mountain
- Data in progress

Map 2 Massif areas in the ESPON space

The mountain delineation is based on the European Environmental Agency 2010 study Europe's ecological backbone: recognising the true value of our mountains, *which applied very similar criteria to those used in the study* Mountain areas in Europe: Analysis of mountain areas in EU Member States, Acceding and other European countries *(Nordregio et al., 2004).*

Table 6 Overview of mountainous areas in Europe

Country	Number of massifs	Number of mountain municipalities	Area of mountain areas (km^2)	Number of enclave municipalities	Area of enclaves (km2)	Number of enclave municipalities
Albania	1	DP	DP	DP	DP	DP
Austria	3	1435	61,760.7	6	121.5	5
Belgium	1	14	1,297.5	0	-	0
Bosnia Herz.	1	DP				
Bulgaria	1	2330	53,195.8	88	1050.7	40
Switzerland	2	2380	37,472.3	36	215.7	7
Cyprus	1	316	4,264.3	6	21.7	1
Czech Republic	2	1536	25,071.1	34	526.4	42
Germany	2	2127	54,102.3	22	512.5	98
Denmark	0	0	-	0	-	0
Estonia	0	0	-	0	-	0
Spain	4	4198	272,954.9	45	1237.8	26
Finland	0	0	-	0	-	0
France	5	7352	137,252.4	71	933.3	117
FYROM	1	MD	MD	MD	MD	MD
Greece	2	710	102,675.9	3	306.6	12
Croatia	2	153	21,702.5	0	-	6
Hungary	3	143	3,524.2	0	-	25
Ireland	1	236	8,515.1	0	-	53
Iceland	1	52	86,810.7	0	-	0
Italy	4	4512	182,768.0	20	693.2	25
Kosovo	1	29	10,804.2	1	104.9	0
Liechtenstein	1	11	160.0	0	-	0
Lithuania	0	0	-	0	-	0
Luxembourg	0	0	-	0	-	5
Latvia	0	0	-	0	-	0
Montenegro	1	DP	DP	DP	DP	DP
Malta	1	2	10.6	0	-	0
Netherlands		0	-	0	-	0
Norway	1	297	267,466.5	0	-	0
Poland	2	169	16,508.0	2	82.4	1
Portugal	2	2018	31,607.9	56	551.3	32
Romania	2	951	90,749.7	9	337.6	11
Serbia		DP	DP	DP	DP	DP
Sweden	1	10	87,826.5	0	-	0
Slovenia	2	135	15,933.4	7	321.1	0
Slovakia	1	1575	29,609.2	51	605.2	17
Turkey		DP	DP	DP	DP	DP
UK	1	488	61,736.9	29	180.6	81
Sum		**33179**	**1,665,780.6**	**486**	**7,802.5**	**604**

MD: Missing data – DP: Data processing on-going

Table 7 Massifs per country

Country	Number of massifs	Massifs name
Albania	1	Balkan/Southeast Europe
Andorra	1	Pyrenees
Austria	3	Alps - Balkans/Southeast Europe Central European Middle mountains
Belgium	1	Central European Middle mountains
Bosnia Herzegovina	1	Balkan/Southeast Europe
Bulgaria	1	Balkans/Southeast Europe
Switzerland	2	Alps - Central European Middle mountains
Cyprus	1	Mediterranean island mountains
Czech Republic	2	Carpathians Central European Middle mountains
FYROM	1	Balkan/Southeast Europe
Germany	2	Alps Central European Middle mountains
Spain	4	Atlantic Islands mountains Iberian mountains Mediterranean island mountains (EU and OR) Pyrenees
France	5 + 2 OR	Alps - Central European Middle mountains Massif central - Mediterranean island mountains Pyrenees Caribbean Island mountains (OR) Indian Ocean island mountains (OR)
Greece	2	Balkans/Southeast Europe Mediterranean island mountains
Croatia	2	Alps - Balkans/Southeast Europe
Hungary	3	Alps - Balkans/Southeast Europe -Carpathians
Ireland	1	British Isles
Iceland	1	Icelandic mountains
Italy	4	Alps - Apennines Balkans/Southeast Europe Mediterranean island mountains
Kosovo	1	Balkans/Southeast Europe
Liechtenstein	1	Alps
Montenegro	1	Balkan/Southeast - Europe
Malta	1	Mediterranean island mountains
Norway	1	Nordic mountains (Finland, Norway, Sweden)
Poland	2	Carpathians Central European Middle mountains
Portugal	2	Atlantic Islands mountains (EU and OR) Iberian mountains
Romania	2	Balkans/Southeast Europe Carpathians
Serbia	1	Balkans/Southeast Europe
Sweden	1	Nordic mountains (Finland, Norway, Sweden)
Slovenia	2	Alps Balkans/Southeast Europe
Slovakia	1	Carpathians
Turkey		Turkey
United Kingdom	1	British Isles

Island delineation

The Eurostat publication *Portrait of the Islands* (Eurostat, 1994) proposed a definition of islands including five criteria: an area exceeding 1 km^2; a distance of at least one kilometre to the continent; no permanent link with the continent; no presence of an EU capital city; a permanent resident population of at least 50 people. The latter of these criteria was primarily included for reasons of data availability, as it appeared impossible to collect data for islands with less than 50 inhabitants. This pragmatic solution to a statistical challenge has, however, tended to become a definitional criterion in its own right when subsequent studies have reused these criteria, for example in the *Analysis of the island regions and outermost regions of the European Union* (Planistat Europe and Bradley Dunbar, 2003). However, the authors of this study highlight the limitations of such a definition in the introduction to the report, e.g. by suggesting that islands less than one kilometre from the coast may experience the same problems as other islands and that archipelagos comprising several islands which do not satisfy the criteria individually are excluded, even if the archipelago as a whole would satisfy the criteria.

In the Fifth Cohesion Report (CEC, 2010), islands are defined as "NUTS 3 regions where the majority of the population live on one or more islands without fixed connections to the mainland, such as a bridge or a tunnel". As the objective in the present study is not to identify regions where insularity is a predominant regional feature, but to explore how insularity may affect social and economic development processes at a variety of scales, a different approach has been adopted. Firstly, the TPG considers that a physical link does not obviate the social and economic relevance of insularity , comparably to excellent air and sea connections. Insular territories with a fixed connection to the mainland have therefore been included in the island delineation, albeit as a separate category. Secondly, a multiscalar approach has been used. The TPG considers that insularity has both socio-economic and political implications, depending on whether it occurs at the national, regional or local scale(s), but that all these levels of analysis are relevant.

Physical delineation of territories disjoint from the European mainland

The island delineation has been constructed on the basis of the highest resolution map of European municipalities available from Eurogeographics (see Section 2.2).

As a starting point, all territories that are physically disjoint from the European mainland have been considered as insular, including parts of municipalities. However, inland islands and territories separated from the mainland by man-made canals have been excluded. Insular inland areas are particularly numerous in Finland, with three entirely insular inland municipalities (Enonkoski, Puumala and Sulkava) in the South Savo region. While it could seem appropriate to include these municipalities in the island definition, the pan-European identification of inland island municipalities proves complex. In order to preserve the overall coherence of the island definition, inland islands have been excluded from the analysis.

On the basis of this first identification of territories that are physically disjoint from the European mainland, the TPG has identified 15,146 islands in the ESPON space, with a total area of 296,581km^2. However, only 615 islands have an area of more than 10 km^2. The remaining 14,531 islands have a total area of 8,016 km^2 only (see 0).

If we consider islands without a fixed connection to the continent only, 14,251 islands may be identified. These islands have a total area of 136,077 km^2. Among these, 421 islands have an area of more than 10 km^2. The remaining 13,830 islands have a total area of 7,029 km^2 only (see **Feil! Fant ikke referansekilden.**).

Table 8 Overview of island territories in Europe

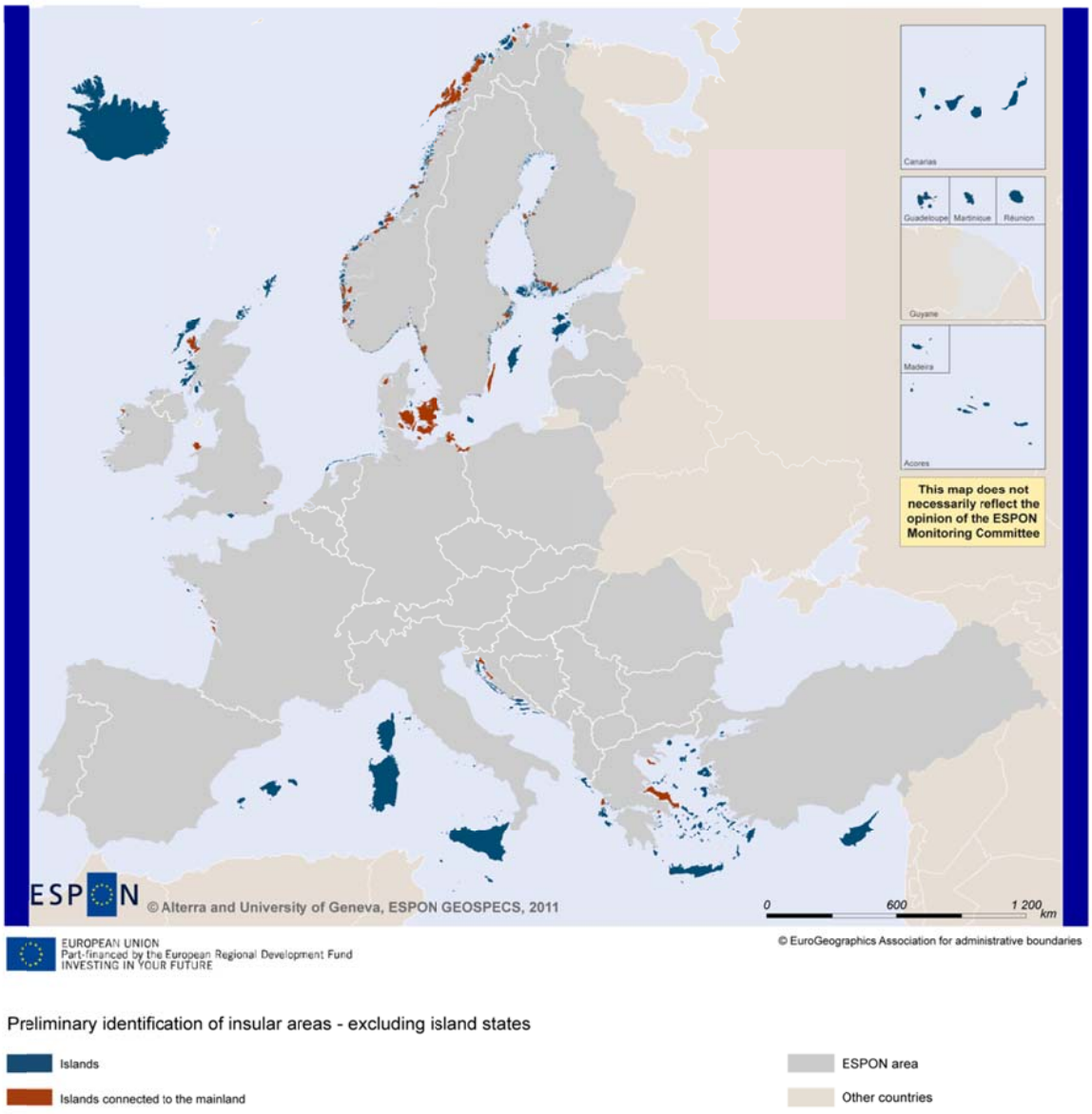
Country	Number of Islands	Area of islands (km2)	Islands of 10 km2 or more		Islands of less than 10 km2	
			Number of islands	Area of islands (km2)	Number of islands	Area of islands
Italy	111	50,203	21	50,102	90	101
Greece	653	25,625	87	25,203	566	421
Norway	6,245	22,004	180	19,536	6,065	2,468
Denmark	198	19,099	26	18,939	172	161
France	211	14,575	17	14,478	194	97
Spain	107	12,464	14	12,421	93	43
United Kingdom	836	11,726	57	11,264	779	462
Sweden	2,265	7,837	50	6,387	2,215	1,450
Finland	3,125	5,294	64	3,342	3,061	1,953
Estonia	151	4,165	9	4,082	142	84
Croatia	382	3,256	31	3,015	351	240
Portugal	29	3,125	12	3,114	17	10
Germany	93	1,928	13	1,831	80	97
Netherlands	18	1,592	10	1,575	8	17
Turkey	97	655	8	547	89	108
Ireland	311	461	7	279	304	181
Poland	12	297	2	281	10	16
Romania	1	10.1	1	10.1	0	0.0
Albania	1	5.8	0	0.0	1	5.8
Montenegro	3	0.4	0	0.0	3	0.4
Iceland (main island)	1	102,575	1	102,601	0	0
Icelandic islands	*292*	*123*	*2*	*25*	*290*	*98*
Cyprus (main island)	1	9,246	1	9,246	0	0
Malta (main island)	1	247	1	247	0	0
Maltese islands	*2*	*69*	*1*	*66*	*1*	*2.7*
Sum	15,146	296,581	615	288,591	14,531	8,016

The figures in this table are estimates based on the Eurogeographics 2008 municipal map, except for Albania, Montenegro and Turkey for which maps from national sources have been used.

Table 9 Overview of island territories in Europe

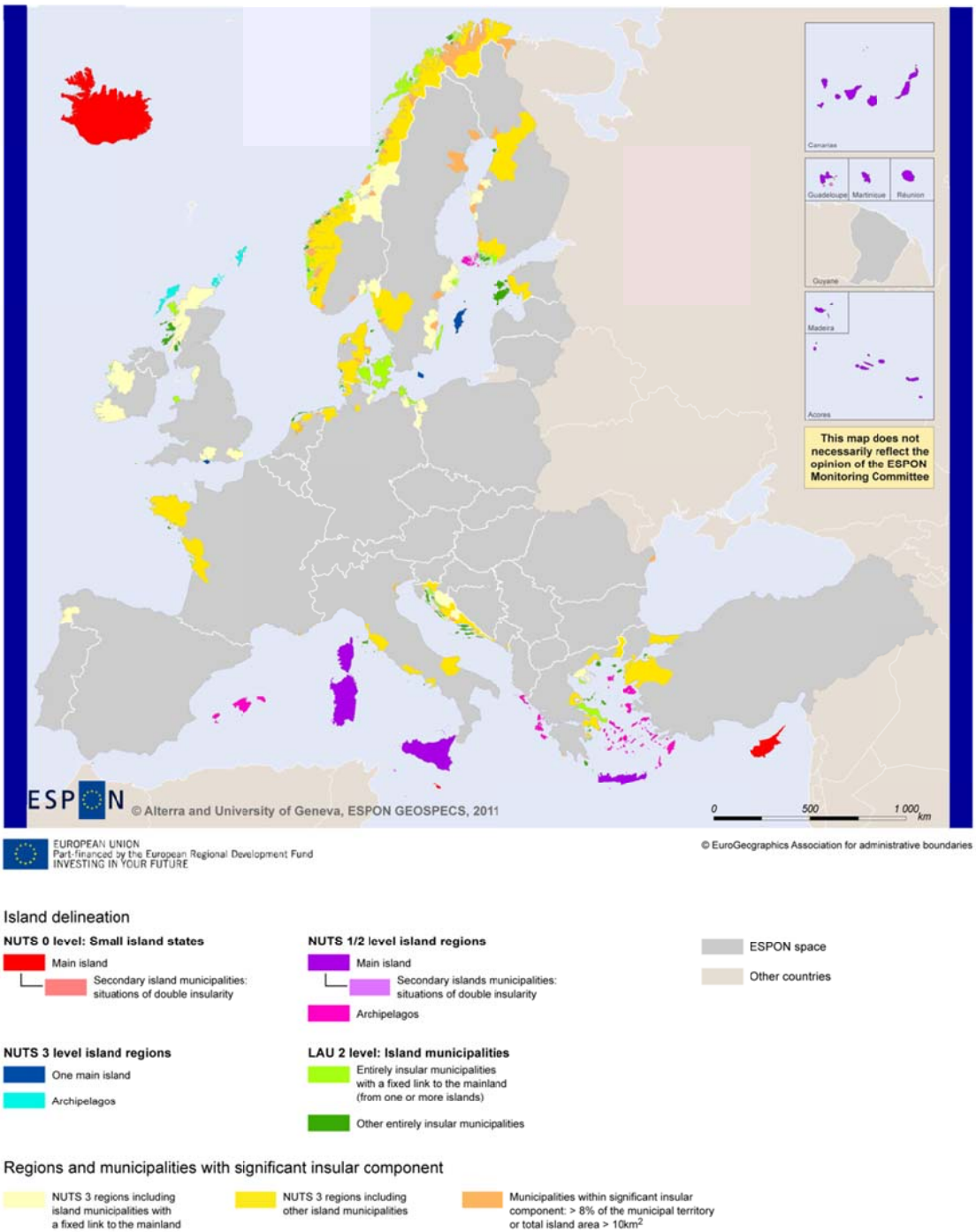
Country	Number of Islands	Area of islands (km2)	Islands of 10 km2 or more		Islands of less than 10 km2	
			Number of islands	Area of islands (km2)	Number of islands	Area of islands
Italy	111	50,203	21	50,102	90	101
Greece	638	21,212	83	20,797	555	414
Norway	5,980	7,683	97	5,626	5,883	2,056
Denmark	166	1,110	11	980	155	130
France	207	14,262	14	14,166	193	95
Spain	104	12,456	14	12,421	90	36
United Kingdom	827	9,207	50	8,750	777	457
Sweden	2,151	5,035	28	3,784	2,123	1,251
Finland	3,004	3,415	29	1,660	2,975	1,755
Estonia	151	4,165	9	4,082	142	84
Croatia	373	2,496	26	2,257	347	239
Portugal	29	3,125	12	3,114	17	10
Germany	85	380	9	285	76	96
Netherlands	11	402	5	385	6	17
Turkey	96	654	8	547	88	107
Ireland	305	251	4	83	301	168
Poland	8	6.2	0	0	8	6.2
Romania	1	10.1	1	10.1	0	0.0
Albania	1	5.8	0	0	1	5.8
Montenegro	3	0.4	0	0	3	0.4
Iceland (main island)	1	102,575	1	102,601	0	0
Iceland islands	289	102	1	12	288	90
Cyprus (main island)	1	9,246	1	9,246	0	0
Malta (main island)	1	247	1	247	0	0
Malta islands	2	69	1	66	1	2.7
Sum	***14,251***	***136,077***	***421***	***129,049***	***13,830***	***7,029***

The figures in this table are estimates based on the Eurogeographics 2008 municipal map, except for Albania, Montenegro and Turkey for which maps from national sources have been used.



Map 3 Preliminary identification of insular areas

15,146 islands with a total area of 296,581km^2 have been identified, the vast majority of which are islets of less than 10 km^2.



Map 4 Delineation and typology of islands

A multilevel approach has been used, as the socio-economic impact and political significance of insularity is considered to be different depending on whether it occurs at the national, regional or local scale(s). NUTS 3 regions with island municipalities and municipalities with a significant insular component are ***not*** *part of the island delineation, but will be analysed separately.*

Small island states

Insularity is generally experienced in relation to a mainland within the national context. In the case of "insular countries", the situation is obviously different; one not only has to ask whether being an island is a constitutive feature of national identity, but also to assess the degree to which insularity influences economic and social processes negatively or positively.

Small Island Developing States (SIDS) is a category used by the United Nations Department of Economic and Social Affairs (UN DESA). They are defined as "*small island and low-lying coastal countries that share similar sustainable development challenges, including small population, lack of resources, remoteness, susceptibility to natural disasters, excessive dependence on international trade and vulnerability to global developments. In addition, they suffer from lack of economies of scale, high transportation and communication costs, and costly public administration and infrastructure.*"

Malta and Cyprus were included in the UN DESA's *World Statistics Pocketbook on Small Island Developing States*[9] until 2003. However, since their entry into the European Union, these two countries are no longer included[10]. On the other hand, for the period 2007-2013, inclusion under the Regional competitiveness and employment objective is made conditional upon eligibility to the Cohesion Fund[11]. Malta and Cyprus are therefore now in a situation in which, as EU Member States, they are considered by the UN DESA no longer to be developing countries with specific social and economic constraints due to limited size and insularity, but to belong to the group of advanced nations. At the same time, their insularity only has concrete implications for the allocation of European funds under the Regional competitiveness and employment objective insofar as they are eligible for the Cohesion objective (i.e. have a Gross National Income per capita below 90% of the EU average). If either of these States were to exceed the threshold of eligibility to the Convergence objective, they could continue to receive particular attention based on declaration 33 of the Intergovernmental Conference, annexed to the Lisbon Treaty, which specifies that "*the Conference considers that the*

[9] http://www.sidsnet.org/docshare/other/20040219161354_sids_statistics.pdf

[10] http://www.un.org/esa/dsd/dsd_aofw_sids/sids_members.shtml

[11] Council of the European Union (2066) *Council Regulation (EC) No 1083/2006 of 11 July 2006 laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999*, Official Journal of the European Union, L 210/25.

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:210:0025:0078:EN:PDF

reference in Article 158 to island regions can include island States in their entirety, subject to the necessary criteria being met".

For the purposes of GEOSPECS, in view of feeding into discussions on the possible policy implications of this declaration, the TPG has chosen to consider NUTS 0 territories with population size and relative isolation levels that would be equivalent to, or more constraining than, those of Malta and Cyprus, as Small Island States. In spite of its large territory (100,250 km²) (see Figure 6), Iceland meets these criteria. With a population of only 319,062 inhabitants, Iceland is less populated than both Cyprus (871,000) and Malta (414,971). Located in the North Atlantic between Scandinavia, the British Isles and Greenland, it is furthermore in a considerably more peripheral situation than both other islands, even if transatlantic flights with a stopover at the national airport of Keflavik and the development of tourism have contributed to offset this isolation by making regular direct connections to a number of European and North American destinations possible. However, being a small island state with a large, mostly sparsely populated territory (see Map 7 p. 70) creates a series of specific development challenges.

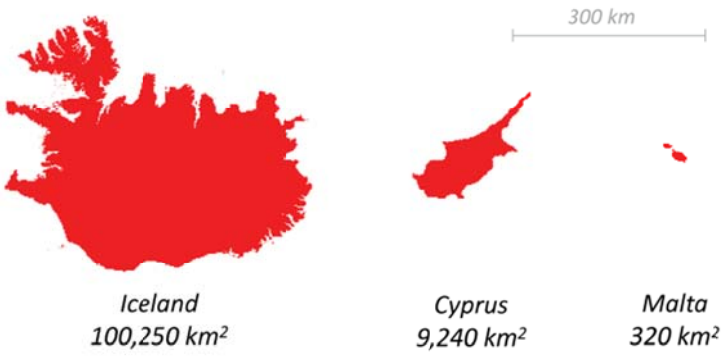


Figure 6 Compared geographic extent of the three small island states of the ESPON area

By comparison, the two other countries that could be characterised as islands, Ireland and the United Kingdom, are considerably larger (see Figure 7). Great Britain is connected to the European mainland by the Eurotunnel and could hardly be characterised as a Small Island State with its population of over 60 million. The Republic of Ireland has a population of 4,450,000. Together with Northern Ireland, the total population of the island of Ireland is 6.1 million inhabitants, i.e. more than 7 times that of Cyprus. Most importantly, neither the United Kingdom nor the Republic Ireland has requested any specific treatment linked insularity in the European context.

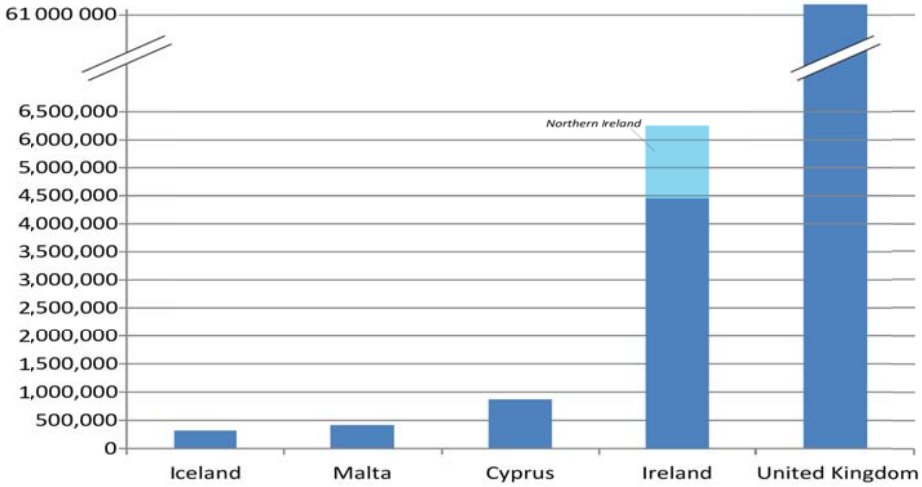


Figure 7 Compared populations of Iceland, Malta, Cyprus, Ireland and the United Kingdom

NUTS 1/2 island regions

Fifteen island regions with NUTS 1 or NUTS 2 status have been identified. Six of these are Outermost regions. All remaining regions are Mediterranean, except for the Åland archipelago which is an autonomous part of Finland.

Table 10 List of island regions with NUTS 1/status

Country	Code	Name
ES	ES53	Illes Balears
ES	ES7	Canarias
FI	FI20	Åland
FR	FR83	Corse
FR	FR91	Guadeloupe
FR	FR92	Martinique
FR	FR94	Réunion
GR	GR22	Ionia Nisia
GR	GR41	Voreio Aigaio
GR	GR42	Notio Aigaio
GR	GR43	Kriti
IT	ITG1	Sicilia
IT	ITG2	Sardegna
PT	PT2	Açores
PT	PT3	Madeira

NUTS 3 island regions

Six island regions with NUTS 3 status have been identified. Two are Baltic regions and four are British.

Table 11 List of island regions with NUTS 3 status

Country	Codes	Name
DK	DK014	Bornholm
SE	SE214	Gotlands län
UK	UKJ34	Isle of Wight
UK	UKM64	Eilean Siar (Western
UK	UKM65	Orkney Islands
UK	UKM66	Shetland Islands

Island municipalities

Island municipalities are defined as entirely insular municipalities that belong to regions and countries with a mainland component. Their perspective on insularity and the institutional context for the implementation of dedicated policies and measures will be different from that of municipalities belonging to an insular NUTS region or to an island state. A total of 193 island municipalities without a fixed connection to the continent have been identified. Their total population, excluding those in the United Kingdom and Croatia, for which data are unavailable, is 386,000 inhabitants; two are uninhabited (See Table 25 in Annex 7).

Table 12 Overview of island municipalities outside island regions per country

Country	Number of island municipalities	Population
Germany	30	32,081
Denmark	3	9,358
Estonia	23	46,026
Finland	5	4,202
France	16	15,978
Greece	12	56,477
Croatia	31	*Missing data*
Ireland	6	2,356
Italy	22	121,060
Netherlands	5	24,025
Norway	21	45,021
Sweden	1	12,231
Turkey	4	17,205
United Kingdom	14	*Missing data*
Sum	***193***	***386 020***

Island municipalities with a fixed connection to the continent have been identified by overlaying the Eurogeographic municipal map and the 2009 Eurogeographic road model (see section 2.2). 601 islands have been identified as having a fixed connection to the mainland, of which 532 are located in Scandinavia and Finland. 312 municipalities and groups of municipalities are located on these connected islands and do not include any mainland part. The Danish islands are included in this delineation, which therefore encompasses the greater Copenhagen region. With a total population of over 3.5 million inhabitants (see Table 13), these Danish islands are a special case in the European context and will be dealt with as such in the context of GEOSPECS. The distribution of the population of other insular municipalities with a fixed connection exceeds 150,000 persons only in Norway and Greece.

Table 13 Number of islands connected to the mainland by a fixed connection

Country	Number of islands	Number of insular municipalities	Population of insular municipalities (2006)
Norway	265	45	299,499
Finland	121	8	24,216
Sweden	114	6	131,507
Denmark	32	55	3,593,176
Greece	15	33	265,095
Croatia	9	14	*Missing data*
United Kingdom	9	55	*Missing data*
Germany	8	66	114,368
Netherland	7	0	0
Ireland	6	5	4,647
France	4	22	48,444
Poland	4	2	47,283
Iceland	3	0	0
Spain	3	1	4,849
Turkey	1	0	0
Sum	***601***	***312***	***4,533,084***

While a fixed connection makes it possible to interact with the other localities and regions without being dependent on sea or air connections, it does not necessarily remove all local social and economic constraints due to insularity . The financing of some bridges and tunnels is based on tolls, which may constitute a significant barrier to interaction between islands and the mainland. Some countries have created systems of frequently operated ferries fully financed by public funds as a replacement for bridges. Sweden and Finland, for example, operate respectively 38 and 43 such ferries, some of which connect islands to the mainland[12]. When comparing an island connected to the mainland with a toll bridge and another served by a regularly operated toll-free ferry, the "level of insularity" is not necessarily greater for the latter than for the former. However, as assessing such relative degrees of insularity would require individual analyses of each situation beyond the scope of the present study, all territories with a fixed road link to the continent have been classified separately.

Island municipalities and regions with a significant insular component

Insularity may be a relevant issue for territorial development policies not only for regions and municipalities that are entirely insular, but also for those with a significant insular component. For this reason, the TPG has identified municipalities and regions with a significant insular component. These are not considered to be part of the island delineation, but will be analysed separately.

Municipalities have been identified as having a significant insular component if they include islands totalling an area of more than 10 km^2 or if the insular area corresponds to more than 8% of the municipal territory (see Map 4). These thresholds have been defined arbitrarily; however, a succinct review of the websites of some municipalities immediately above these thresholds has made it possible to confirm that insularity is described as a significant issue and/or asset. The total population of these municipalities is particularly important in Sweden, mainly because the city of Göteborg satisfies the above mentioned criteria. It is also notable that Norwegian municipalities account for 40% of these LAU2 areas that have been identified (see Table 14).

[12] http://www.trafikverket.se/Farja/Farjeleder/
http://www.farja.se/sjovagen/sjovagen_0504.pdf

Table 14 Municipalities with a significant insular component

Country	Number of municipalities	Total population
Sweden	5	650,398
France	5	130,812
Norway	26	130,722
Denmark	2	117,353
Finland	5	60,393
Greece	6	27 476
Germany	6	19,814
Netherlands	1	16 695
Estonia	2	12 599
Spain	1	12,537
Italy	1	4 045
Romania	1	865
Croatia	4	Missing data
Montenegro	1	Missing data
Portugal	1	Missing data
Sum	***67***	***1,183,709***

Regions have been identified as having a significant insular component if they include one or more island municipalities. The underlying hypothesis is that separate municipalities are established on islands when the local community asserts its difference from the mainland and aspires to a certain degree of autonomy. This institutional acknowledgment of the existence of an island community implies that insularity is a relevant issue at the regional level, even if the island municipalities may be home to only a small proportion of the total regional population. The TPG has identified 90 NUTS 3 regions comprising island municipalities. 30 of these island municipalities are connected to the mainland with a fixed connection, while 15 regions comprise both island municipalities with a fixed connection and others without. The 45 remaining regions only include island municipalities without a fixed connection (see Table 15 and Table 16).

Table 15 NUTS 3 regions with a significant insular component Regions comprising municipalities not connected to the mainland with a fixed connection

Code	Name	Number of insular municipalities
EE004	Lääne-Eesti	23
DEF07	Nordfriesland	19
HR035	Splitsko-dalmatinska zupanija	15
FR524	Morbihan	9
ITE16	Livorno	9
ITF33	Napoli	9
HR037	Dubrovacko-neretvanska	7

Code	Name	Number of insular municipalities
NO053	Møre og Romsdal	7
GR300	Attiki	6
HR033	Zadarska zupanija	6
NO071	Nordland	6
DE947	Aurich	4
FI183	Varsinais-Suomi	4
FR522	FinistÞre	4
NL121	Noord-Friesland	4
GR143	Magnisia	3
HR031	Primorsko-goranska zupanija	3
NO043	Rogaland	3
DE94C	Leer	2
DE94H	Wittmund	2
ITE44	Latina	2
TR222	Canakkale Province	2
NO051	Hordaland	2
DE94A	Friesland (D)	1
DEF09	Pinneberg	1
DK032	Sydjylland	1
DK042	Östjylland	1
DK050	Nordjylland	1
FI1A2	Pohjois-Pohjanmaa	1
FR515	Vendée	1
FR521	Côtes-d'Armor	1
FR532	Charente-Maritime	1
GR111	Evros	1
GR115	Kavala	1
GR242	Evvoia	1
ITE1A	Grosseto	1
ITF41	Foggia	1
NL321	Kop van Noord-Holland	1
NO052	Sogn og Fjordane	1
NO072	Troms	1
NO073	Finnmark	1
SE232	Västra Götalands län	1
TR221	Tekirdag Province	1
TR100	Istanbul Province	1

Table 16 NUTS 3 regions with a significant insular component: Regions comprising municipalities connected to the mainland with a fixed connection

Code	Name	Number of municipalities
DE80H	Rügen	41
UKL11	Isle of Anglesey	40
DE80F	Ostvorpommern	24
GR242	Evvoia	24
FR532	Charente-Maritime	18
DK012	Københavns omegn	13
DK022	Vest- og Sydsjælland	12
DK013	Nordsjælland	11
NO051	Hordaland	11
NO071	Nordland	11
DK031	Fyn	10
NO072	Troms	8
FI183	Varsinais-Suomi	7
HR031	Primorsko-goranska zupanija	7
UKJ42	Kent CC	6
DK021	Østsjælland	5
GR224	Lefkada	5
NO053	Møre og Romsdal	5
UKM63	Lochaber, Skye & Lochalsh, Arran & Cumbrae and Argyll & Bute	5
DK011	Byen København	4
FR515	Vendée	4
HR033	Zadarska zupanija	4
IE013	West	4
GR127	Chalkidiki	2
GR300	Attiki	2
NO033	Vestfold	2
NO043	Rogaland	2
NO061	Sør-Trøndelag	2
NO062	Nord-Trøndelag	2
PL425	Szczecinski	2
SE110	Stockholms län	2
SE213	Kalmar län	2
SE232	Västra Götalands län	2
UKD11	West Cumbria	2
UKJ33	Hampshire CC	2
DEF08	Ostholstein	1
ES114	Pontevedra	1
ES612	Cádiz	1
FI195	Pohjanmaa	1

Code	Name	Number of municipalities
HR032	Licko-senjska zupanija	1
HR034	Sibensko-kninska zupanija	1
HR035	Splitsko-dalmatinska zupanija	1
IE025	South-West (IRL)	1
NO031	Østfold	1
NO073	Finnmark	1

Delineation of sparsely populated areas

In its Green Paper on Territorial Cohesion, the European Commission has identified 18 Sparsely Populated NUTS 3 Regions in the European Union, by considering that regions with an average population density of less than 12.5 inhabitants per km^2 should be included in this category[13]. The same criterion has been used in the Fifth Cohesion Report (CEC, 2010). If one applies this method to the ESPON space, one finds that 29 regions are identified as sparsely populated.

However, this approach to delineation is unsatisfactory for a series of reasons:

- It considers only the regional scale;
- The results are largely determined by the way in which regional boundaries have been drawn;
- Regions may abruptly be added or excluded from the group of "sparsely populated regions" because of demographic trends in areas that are close to the threshold levels (see Map 5);

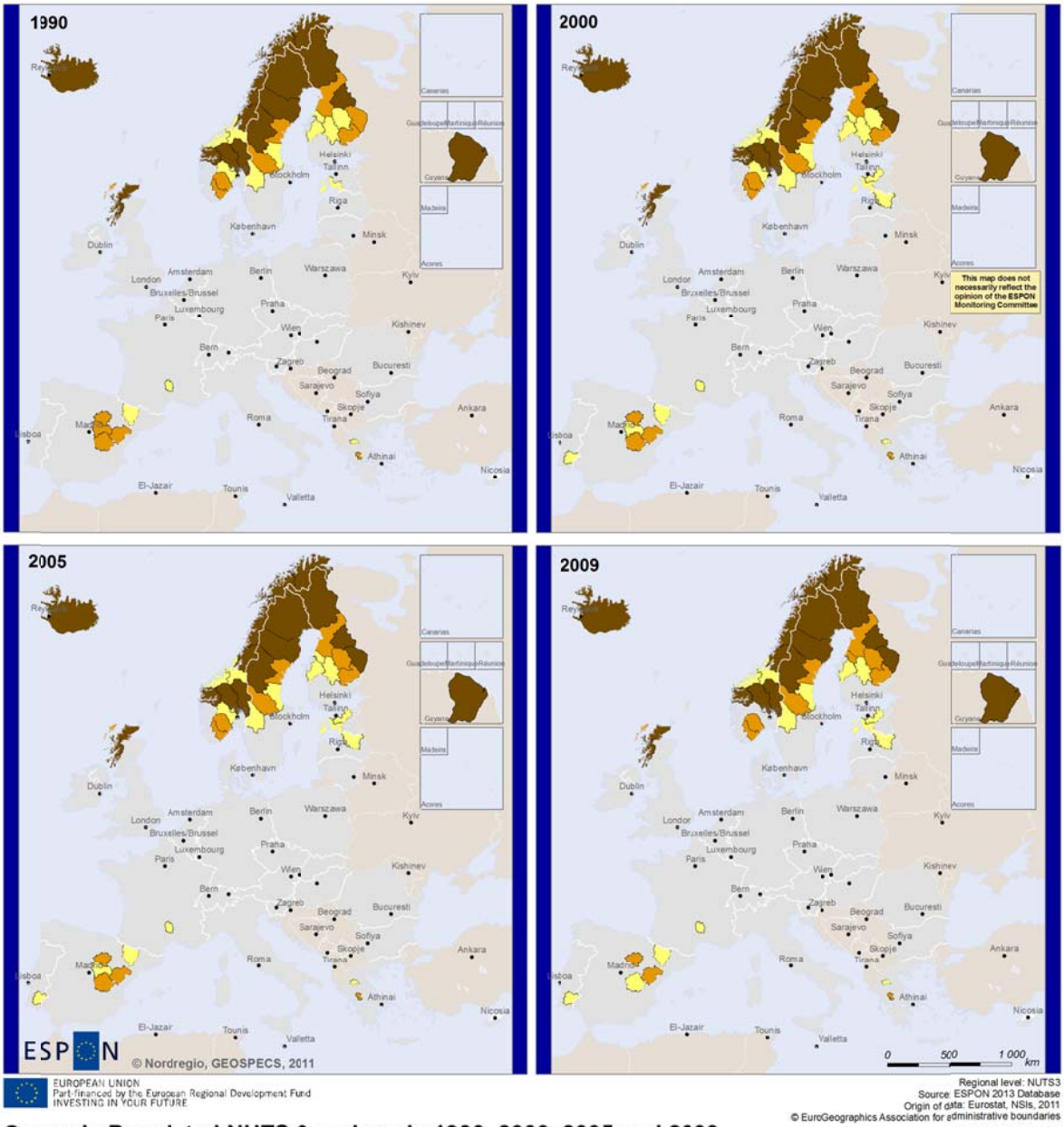
In order to analyse how sparsity creates a specific spatial context for human and territorial development, the GEOSPECS TPG has adopted a different understanding of sparsity. The challenge is not that average population densities in administrative regions are low, but that the number of individual and economic actors within daily mobility distance is limited. On this basis, a delineation method in four steps has been designed. The delineation of sparsely populated areas is carried out at the LAU 2 level (sparsely populated **localities).** In addition, the TPG has also worked at two additional geographic levels:

- Within municipalities, it has identified sparsely populated **areas** (i.e. at the level of grid-cells)
- At the regional level, it has identified regions for which sparsity is a relevant issue, i.e. those comprising at least one sparsely populated LAU2.

The sequence of steps is described in Figure 9.

[13] A list of the Sparsely Populated Regions after European Commission can be found at: http://ec.europa.eu/regional_policy/consultation/terco/terr_classifications_NUTS 3_2009.xls

Map 5 Regions with a low population density, from 1990 to 2009



Based on the European Commission's definition in the Green Paper on Territorial Cohesion there were 29 sparsely populated regions (the average population density of less than 12.5 inhabitants per square km in the NUTS 3 region) in the ESPON space in 2005): 19 in the EU countries, nine in Norway and one in Iceland. During the last 20 years, changes in the regional populations have changed this picture. Between 1990 and 2009, demographic growth has led to the exclusion of the Spanish NUTS 3 regions Guadalajara and Cuenca from the list of sparsely populated areas, while the Finnish regions of Pohjois-Pohjanmaa and Pohjois-Savo have been added.

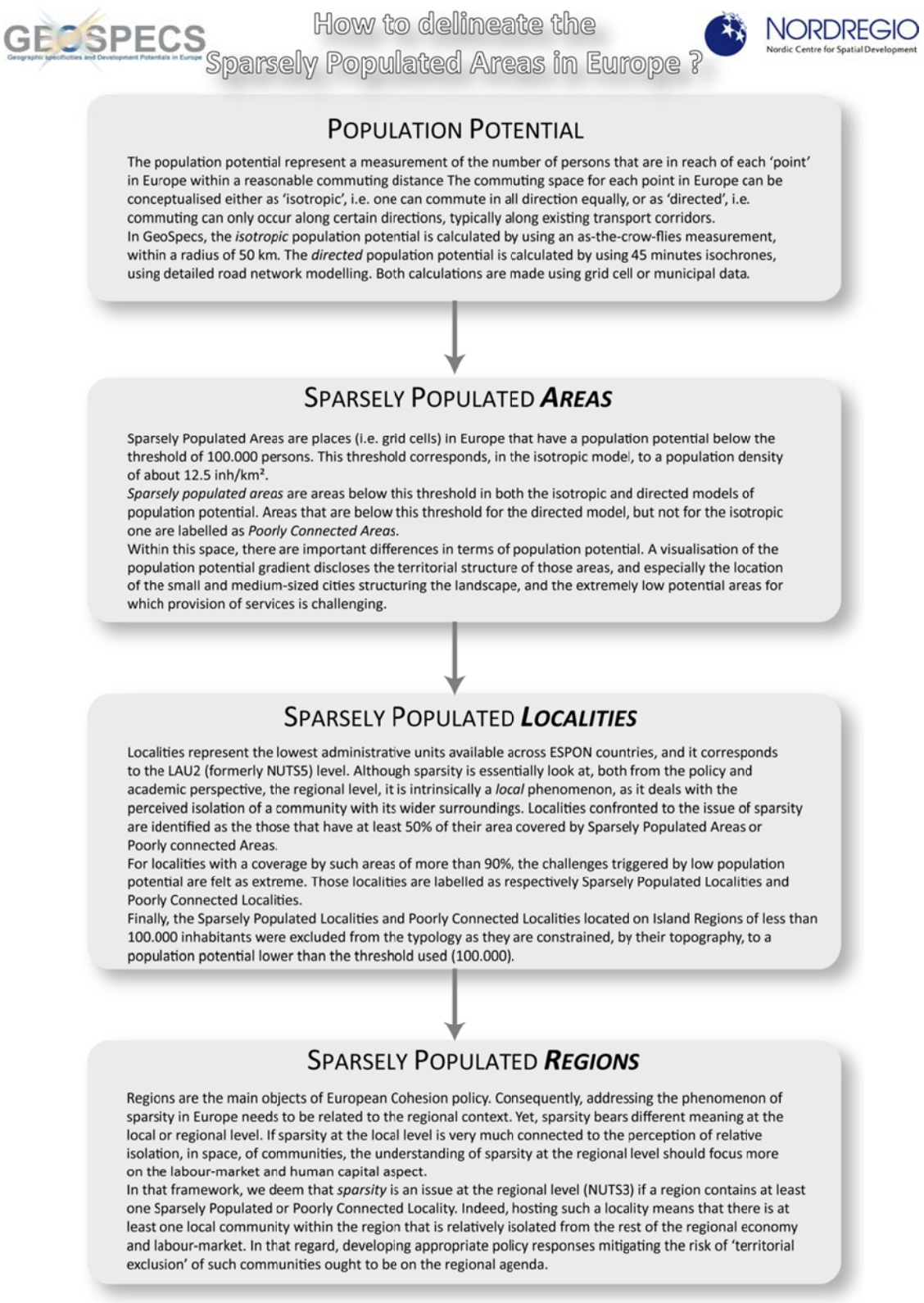


Figure 9 Steps to delineate the sparsely populated areas

Step 1: Mapping Europe's population potential

The calculation of the population potential for the extended ESPON space is described on p. 21.

The case for using population potential instead of mere population density for identifying sparsely populated areas has been made in *Northern Peripheral, Sparsely Populated areas in the European Union and in Norway* (Nordregio, 2006) (). The population potential represents a measurement of the number of persons in reach of each 'point' in Europe within a reasonable commuting distance, operationalised in the above report as an area encompassed within a 50km radius. This measurement 'as the crow flies' is rather theoretical, as commuting distance, and mobility in general, is constrained by the availability of transport infrastructure.

The operationalisation of 'reasonable commuting distance' has been refined and made more close to 'real life' conditions, using detailed mapping of the European road network with a 45-minute isochrone as a measurement of this 'reasonable commuting distance'. As noted by Nordregio (2006), the scientific and policy community has reached a kind of consensus that the distance-time of 45 minutes is that which people are willing to commute on a daily basis. Even in the case of sparsely populated areas, 45 minutes seems to be an appropriate threshold for commuting behaviour (Sandow, 2008; Sandow & Westin, 2010). So this 'new' population potential provides a more precise measurement of the total number of persons that are within a 'reasonable commuting distance' (i.e. 45 minutes) of each place in Europe.

In the GEOSPECS project, both ways of measuring 'reasonable commuting distance' have been used:

- 'Euclidian' population potential: in this case, the space is considered as isotropic, i.e. that from one point in Europe one can travel in every possible direction of the Euclidean space. It is operationalised by calculating the total population reached within 50km radius as-the-crow-flies.
- 'Topologic' population potential: in this case, the space is considered from a network perspective. In other words, the distance from one point to another is calculated on the basis of travel times on roads. It is operationalised by calculating the total population reached within 45 minutes isochrones using a detailed modelling of the primary and secondary road network in Europe.

The method used to calculate population potentials is described in section 2.2.

In the GEOSPECS project, a combination of these two population potential measurements has been used, resulting in the identification of two different types of regions:

- "Sparsely Populated" corresponds to areas that have low population potential according to both the Euclidian and topologic measurements. These areas are our main focus in the GEOSPECS project.
- "Poorly Connected" corresponds to areas that have low population potential according to the topologic measurement only, resulting from of inadequate or absent transport infrastructure enabling to access neighbouring localities.

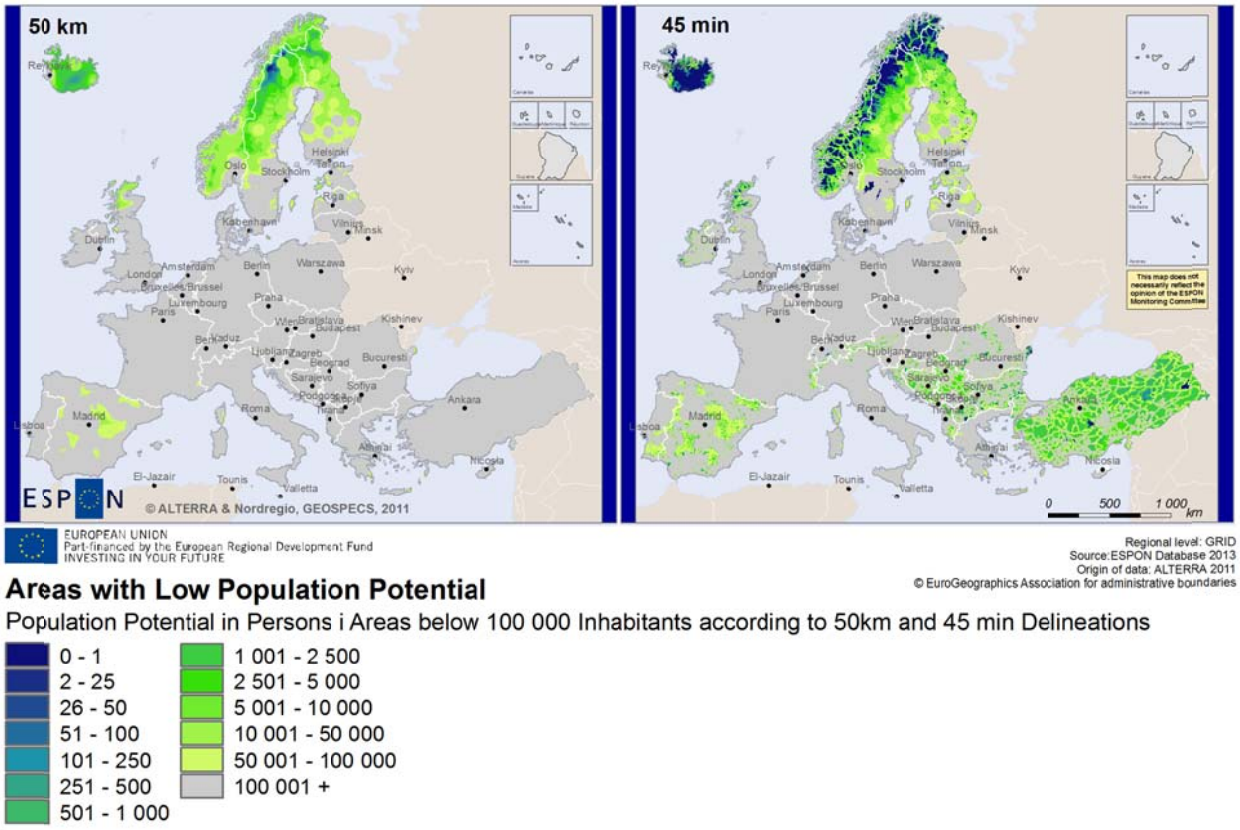
In addition, some small areas are located within the 45 minutes distance but beyond the 50 km radius. All of these small areas are located in a scattered pattern along the main transport corridors.

Later in the project we will combine the low population potential areas with "mountain" and "island" typologies in order to identify regions that are challenged primarily by sparsity rather than topography per se.

Step 2: Sparsely Populated Areas (SPA)

Sparsely populated areas (SPA) are first delineated at the level of grid cells, by identifying the cells whose population potential is below the threshold of 100,000 persons, independently of whether these grid cells are populated or not. In the Euclidian model of population potential (i.e. as the crow flies), this threshold corresponds to a population density of 12.7 persons per km^2. Yet, in the European policymaking spheres, the threshold of 12.5 persons/ km^2 is generally used to identify the European regions (at NUTS 3 level) that fall into the 'sparsely populated' category. Consequently, the TPG has found that using the threshold of 100,000 persons for the population potential is both sound from a scientific perspective and relevant from a policy point of view.

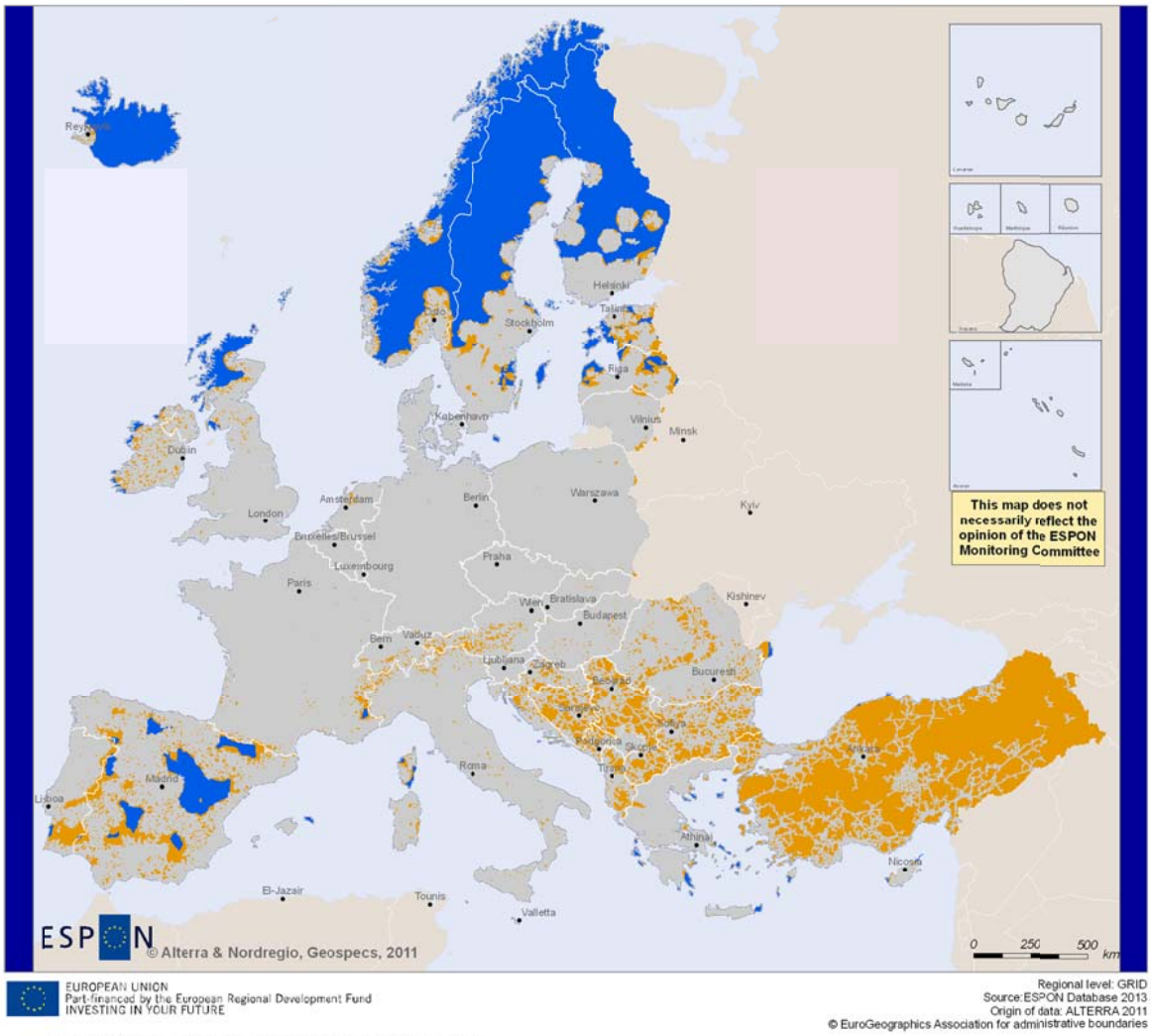
The territories in Europe with low population potential differ considerably depending on whether the Euclidian or topologic model of population potential is used. For instance, in the topologic model, large parts of the Western Balkans, Bulgaria and Turkey appear as having low potential. The topologic model also highlights the specific challenges of mountain areas, as many have a much lower population potential in the topologic model than in the Euclidian one (e.g. in Norway, Northern Scotland or the Alps).



Map 6 Areas with low population potential with 50 km radius and 45 minutes travel time.

The SPAs represent the grid cells in Europe that have a population potential below 100,000 persons (See 7). These are areas where it is more challenging for residents to get to work. Eventually, the long commuting distance may force existing residents to relocate and make it less attractive for newcomers to settle. Consequently, these are areas where a tension between access to jobs and quality of life might exist.

According to the Euclidian model, 17.2% of the ESPON area (including Turkey and the West Balkans) was sparse in terms of population potential. These areas were mostly located in Northern Europe and Mid-Spain. A few smaller regions with low population potential could also be identified in the Baltic States, Corsica, and some Greek islands. According to the topologic model, the area with low population potential covers 34.6% of the ESPON space. This figure correlates very well with the Euclidean (distance of up to 50 km) delineations because 34.7% of the ESPON area is considered as affected by some type of sparsity based on the population potential calculations. The areas with low population potential according to the 45 minutes travel time delineation are located - as in the distance based map - in the North of Europe and Mid-Spain; and also in the Balkans, Turkey and in mountain areas, like the Alps.



Map 7 Sparsely populated and poorly connected areas

Sparsely Populated Areas can mainly be found in two parts of Europe: Northern Europe from Iceland via the Scottish Highlands and Islands to Norway, Sweden and Finland; and the Spanish interior. Some minor areas can found scattered in the Baltic States, and in some isolated coastal zones and islands. The Poorly Connected Areas cover a large part of Turkey and the Balkans, where their extent has been somewhat overestimated due to the limited level of detail of the road model used. Many of these areas can also be found between the sparse and the dense areas and in the mountain areas.

On the national level, this difference between distance and time-based sparsity has the following implication. Using the distance-based definition, half of the ESPON countries had at least some (small) areas that could be classified as sparse, while in the time-based definition Belgium, Liechtenstein, Luxembourg and Malta are the only countries with *no* low potential areas. The Euclidian and topologic models of population potential provide complementary understandings of the structure of the European territory, the former purely based on the settlement structure, and the latter based on the structuring of the territory through the (mis)match between the settlement structure and the existing transport network. Yet, having low potential according to either of those models may have different bearings when it comes to policy action and relevance. Consequently, we have identified two parallel tracks for delineating low potential areas.

Step 3: Sparsely Populated Localities

The third step corresponds to the first aggregation of the population potential data at an administrative level. For this aggregation, the level used is the lowest level available on a pan-European basis: the LAU2 (formerly NUTS 5) level.

Work produced recently within the broad debate on 'geographic specificities'[14] shows that looking at the dynamics and structure at a narrow geographic scale provides a better understanding of the potential impacts of geographic specificity on the function of local labour-markets and communities. Sparsity is essentially a local phenomenon, because it relates to how a community perceives its integration with its surroundings. In concrete terms, sparsity 'in real life' corresponds to a relative perceived isolation of local communities from other places surrounding them.

Consequently, the TPG deems that aggregating the population potential grid cell data at the local (=municipal) level provides an insight into localities that may run the risk of being isolated. For such communities, sparsity is a major challenge for their future sustainable development.

For each European locality (LAU2; LAU1 for Turkey), the proportion of the total municipal area covered by low potential areas (as defined above) has been calculated. As illustrated by 8, there are few LAU2 units in the intermediate categories of sparse population, while many LAU2 include parts of their territory that are poorly connected. Insofar as this is a

[14] Nordregio 2006 report on Sparsely Populated Areas, Nordregio 2009 report on Development Opportunities in SPA, Final reporting of ESPON project on Territorial Diversity (TeDi)

measure of geographic context, it seems appropriate to consider only municipalities with a marginal proportion of areas with population potential values above the threshold of 100,000 inhabitants as being sparsely populated. For this reason, only LAU2 units with low population potentials in at least 90% of their territory have been identified as Sparsely Populated Localities or Poorly Connected Localities. In Turkey, the same criterion has been applied at the LAU1 level. Using these criteria, there are 1454 *Sparsely Populated Localities* and 1903 *Poorly Connected Localities* in the ESPON area (excluding the Outermost regions).

In addition, the Sparsely Populated Localities and Poorly Connected Localities located on Island NUTS 3 Regions of 1) less than 100,000 inhabitants or 2) archipelago NUTS 3 regions were excluded. In these areas, the population potential is necessarily below the threshold due to insularity. It is therefore not meaningful to identify them as sparsely populated.

In total, 13,868 LAU2 units can be considered as 'partly sparse' or "totally sparse" because they contain at least one area with population potential below 100,000 inhabitants. There is, however, a remarkable discrepancy between the distance- and time-based sparse localities: 2,440 LAU2 units in Europe with low potential areas based only on the Euclidian model; and 13,834 LAU2 units with low potential based only on the topologic model. 2,375 LAU2 units have areas that can be classified as low potential according to both models.

In 8, the sparsely populated LAU2 localities have been shown with different gradients of blue. In the dark blue localities, the population potential is less than 100,000 inhabitants in over 90% of the LAU2 area. Continuous groups of sparsely populated LAU2 units can mainly be found Northernmost Europe and central parts of Spain. The light blue LAU2 units where less than 50% of the area has low population potential are mainly located around continuous groups of sparsely populated localities.

The spatial pattern is quite different for the poorly connected LAU2 units, shown in brown and yellow on the map. The LAU2 localities with over 90% sparsity are more dispersed. Furthermore, the large number of LAU2 units with a limited proportion of sparsely populated areas form continuous areas that are generally not organised around a core of poorly connected localities. This difference in the spatial pattern of sparsity between the sparsely populated and poorly connected LAU2 regions is visualised in **Feil! Fant ikke referansekilden.** (p. **Feil! Bokmerke er ikke definert.**). While 60% of the sparsely populated LAU2s are 100% sparse, this only applies tp 23% of the poorly connected LAU2s are .

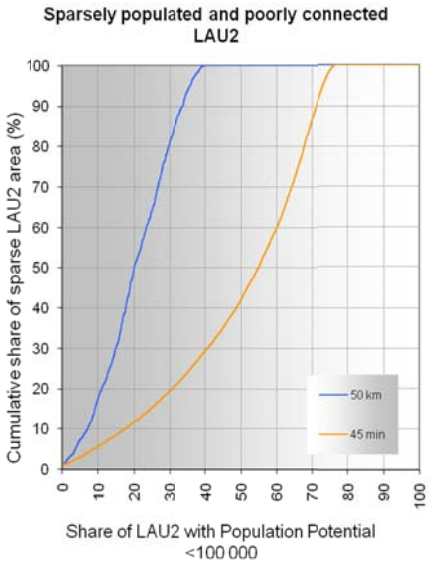


Figure 10 Cumulative share of sparsely populated and poorly connected LAU2s

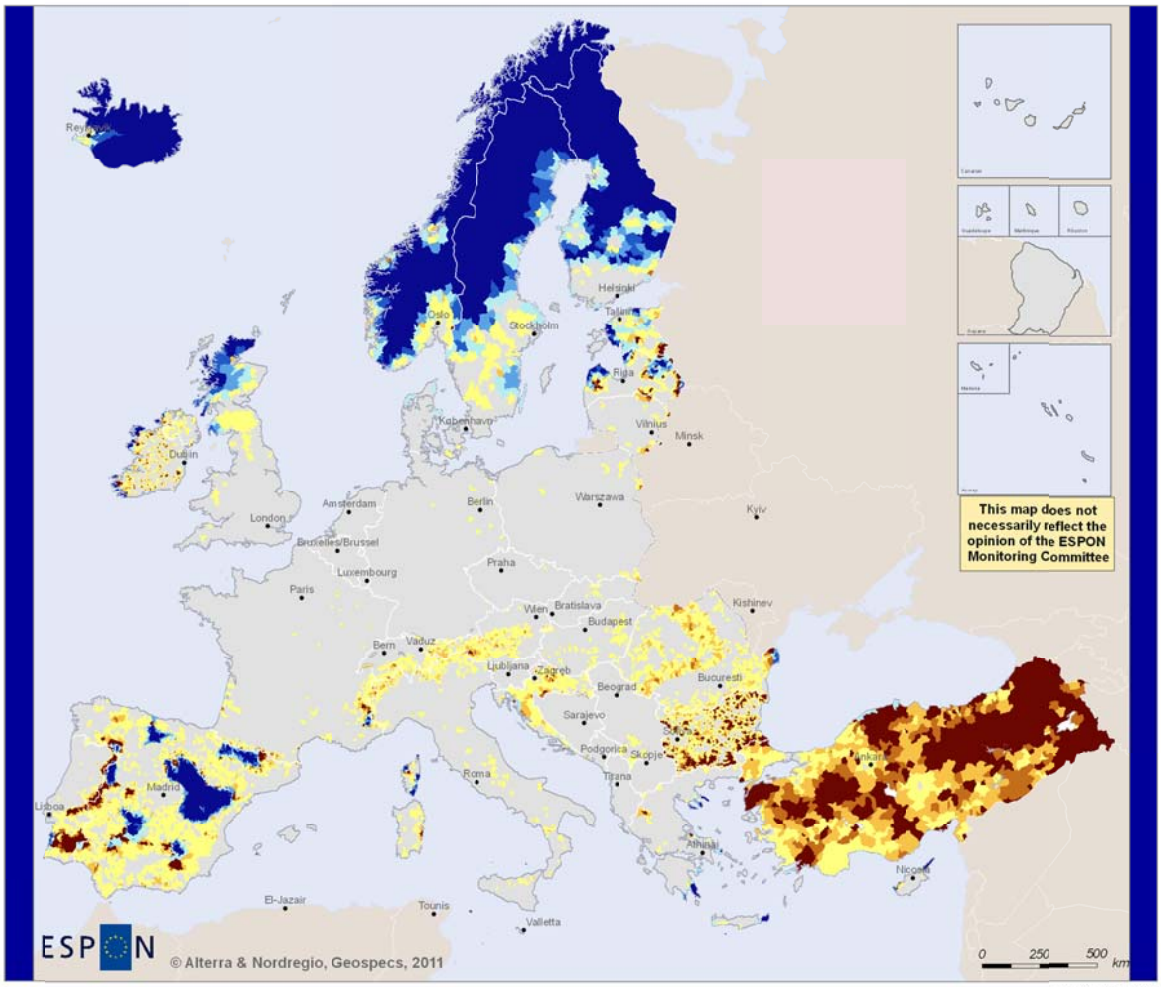
Step 4: Regions faced with demographic sparsity

The TPG does not aim to delineate sparsely populated areas at the regional level, but identifies NUTS 3 regions for which sparsity is a relevant territorial development issue.

In this context, the TPG considers that sparsity is an issue at the regional level if a region contains at least one Sparsely Populated or Poorly Connected locality. Indeed, the existence of such a locality means that at least one local community within the region is relatively isolated from the rest of the regional economy and labour-market. Thus, developing appropriate policy responses mitigating the risk of 'territorial exclusion' of such communities should be on the regional agenda.

An analysis of the extent of the constraints linked to low population densities within each NUTS 3 region, e.g. based on the proportions of the regional population located in sparsely populated localities, will be carried out in the next phase of the project.

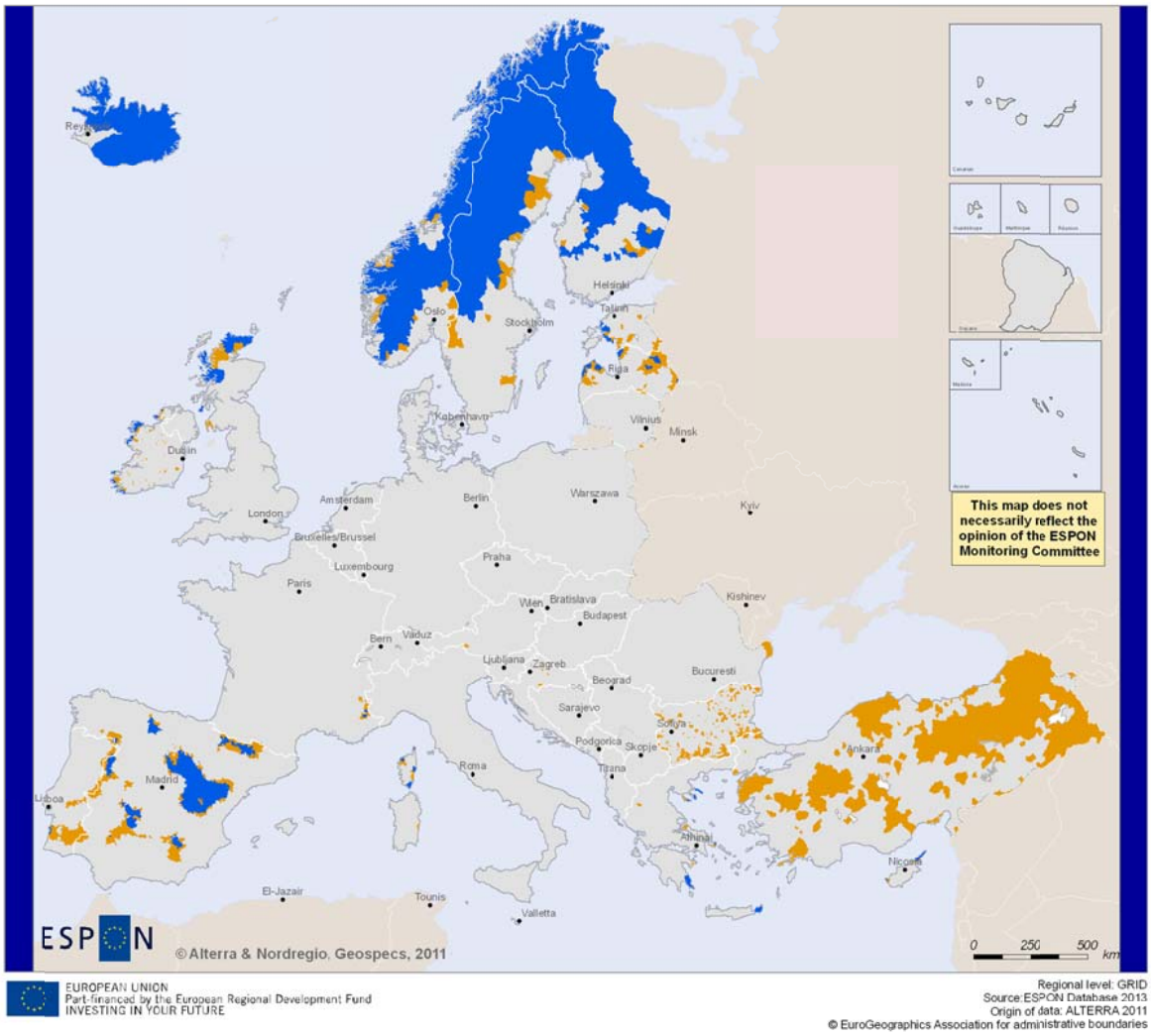
In order to make it easy to compare the sparse LAU2 and NUTS 3 regions, a map combining these two levels is included (Map 10).



Map 8 LAU2 regions with areas with population potential below 100 000

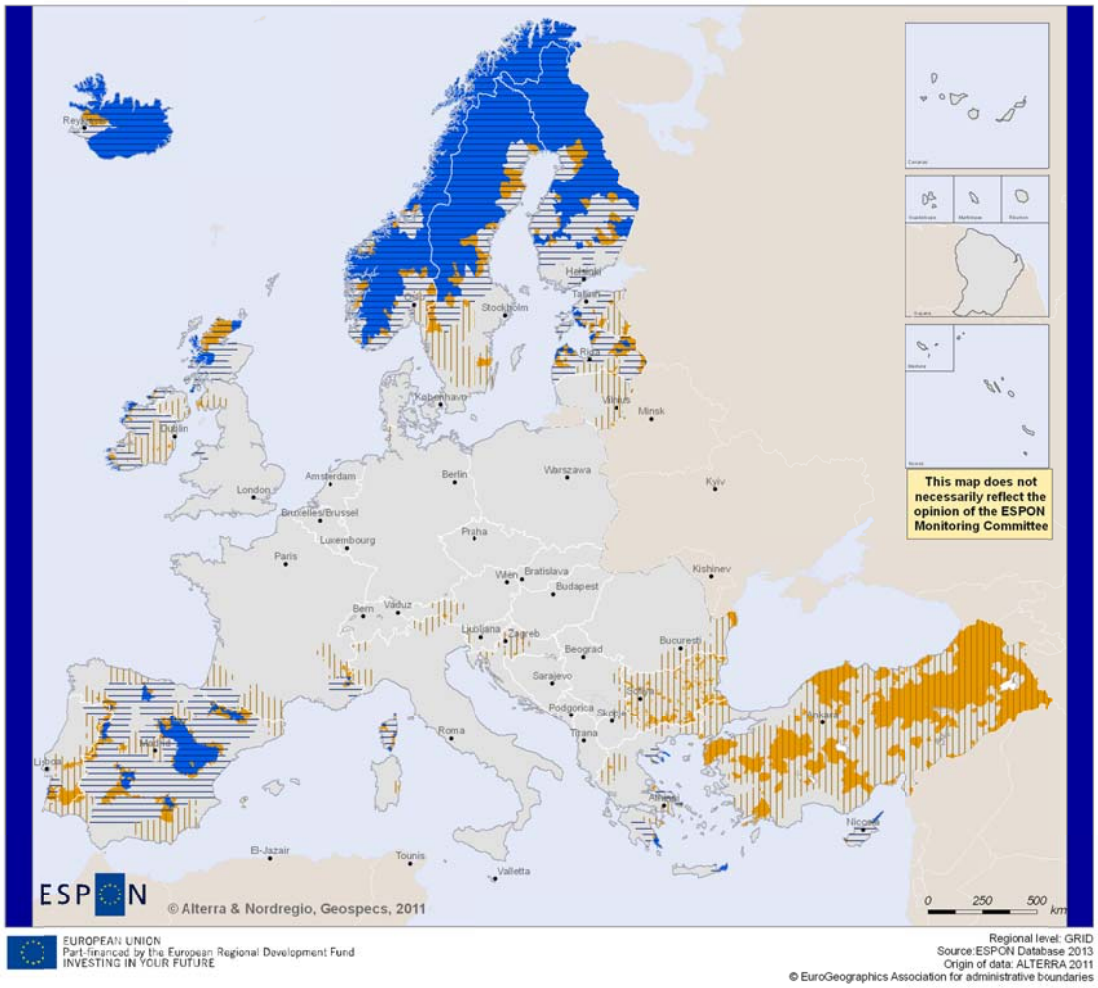
By using the proportion of European localities that are covered by low potential areas, one can better appreciate the varying extent of this phenomenon. Areas such as the interior parts of Spain, the Alps or Turkey show many localities with strong disparities in the coverage. In Northern Europe, many localities show an extreme level of 'sparsity', with more than 90% of their area covered by sparsely populated areas.

The Sparsely Populated Localities and Poorly Connected Localities located on Island NUTS 3 Regions of 1) less than 100,000 inhabitants or 2) archipelago NUTS 3 regions were excluded from the typology as they are constrained, for topographic reasons, to have a population potential lower than the threshold used (100,000).



Map 9 LAU2s with more than 90% of the total area covered by Sparsely populated areas

If many localities throughout Europe contain at least some low potential areas, their number decreases sharply when considering only the extreme cases of sparsity. The identification of Sparsely Populated Localities and Poorly Connected Localities provides a better picture of which European territories are extensively challenged by sparsity.



Map 10 LAU2 and NUTS 3 regions with low population potential

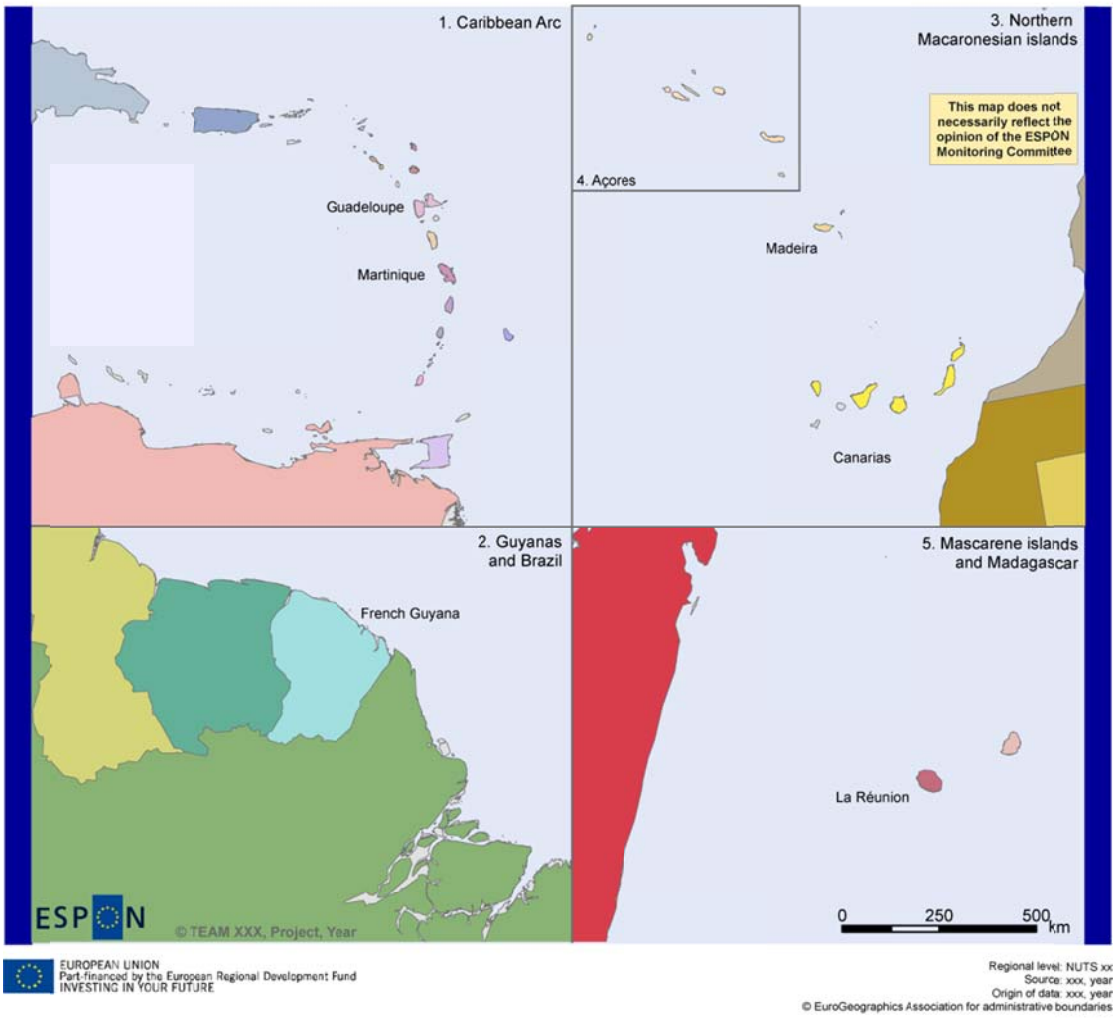
When comparing the sparse regions at the LAU2 and NUTS 3 levels, the challenge of administrative structure is visible. As many of the sparse LAU2 concentrations are located in NUTS 3 border areas, the coverage at NUTS 3 level is much larger. This is especially visible in Ireland, the UK (Scotland) and Spain. Notably, some capital and major city regions – such as the regions of Ankara, Helsinki, and Madrid - can be classified as 'sparse' if the delineation of 'at least one LAU2 unit' is used.

Analysing Outermost Regions in their geographic context

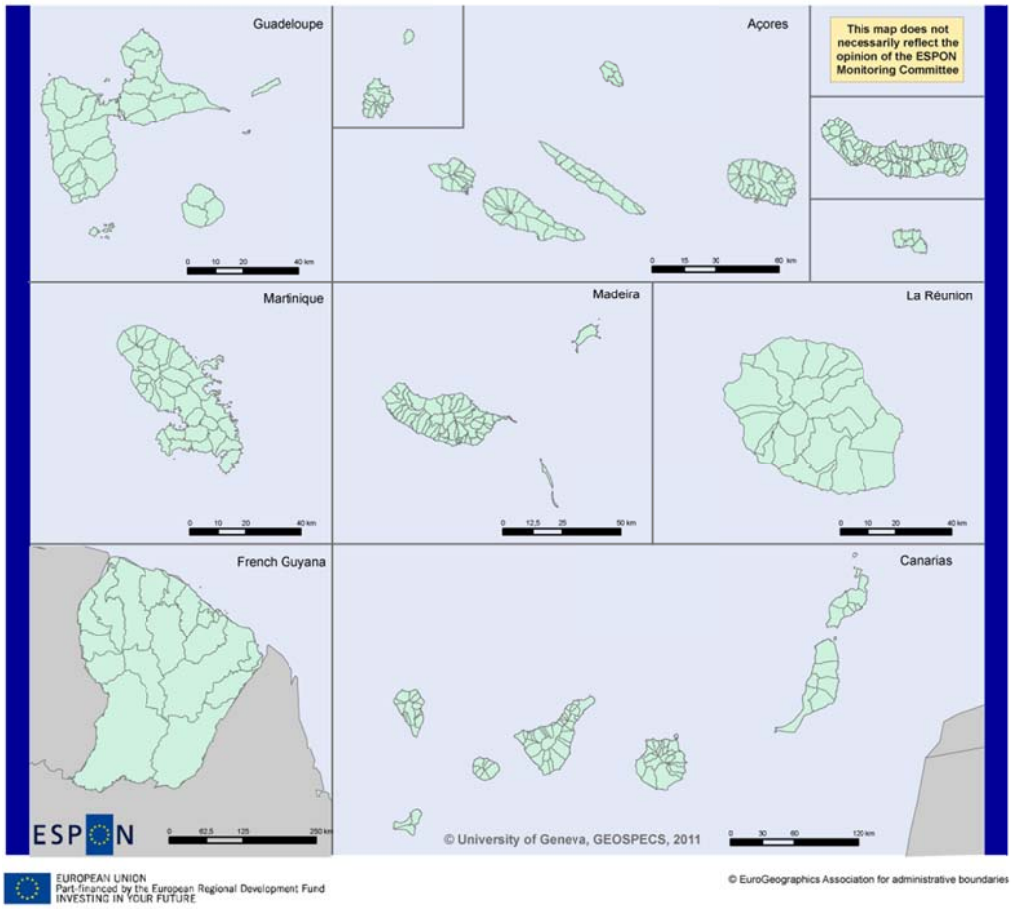
As Outermost Regions (OR) are defined on an institutional basis (EC treaties), there has been little discussion about principles for their delineation. However, it is clear that the approach of OR that has prevailed to date is not adapted for the development of an in-depth understanding of their territorial development challenges and opportunities.

First, it is necessary to consider the OR within their geographic context. Currently, they are represented as European isolates, in specific frames along the edge of the map of the European continent in which their respective geographic context does not appear. This means that it is not possible to analyse how they relate to neighbouring territories, e.g. in terms of flows, differences in development levels and wider economic production systems. As illustrated by Map 11, this is particularly important in the Caribbean Arc and in the Guyanas (French Guyana, Suriname and Guyana), which are contiguous to North-Eastern Brazil. There is also significant interaction between La Réunion and Madagascar and Mauritius. Finally, the proximity of the Canary Islands to the African coast explains the regular inflow of immigrants. In all these cases, an appropriate mapping of territorial structures can help illustrate the previously noted need for further cooperation, e.g. with the ACP countries in the Caribbean area. It may also help design more concrete strategies for coordination between the European Development Fund and the ERDF through "concertation". Border and migration issues are also of a great importance, especially for the Canary Islands and French Guyana which,because of their geographical situations, have to deal with problems of illegal immigration. Madeira and the Azores, on the other hand, function more as insular isolates.

Second, the scale used to date does not allow the internal territorial structures of the outermost regions to be analyzed. The strong gradients of wealth and development between main urban centres and more peripheral parts of these regions are therefore ignored. Furthermore, a cartographic representation at which individual LAU2 units can be discerned (see Map 12) is necessary to observe possible differences between mountain and lowland, coast and inland, sparse and densely populated areas in these regions.



Map 11 **Map template for the representation of Outermost Regions in their geographic context**



Map 12 Map template for the representation of the internal geographic structures of Outermost Regions

The variable geometry of border areas

In the Fifth Cohesion Report (CEC, 2010), border regions are defined as "regions which are eligible for cross-border co-operation programmes under the European Regional Development Fund regulation". The object of study of GEOSPECS, as designated by the terms of reference, is "border areas". As previously mentioned in the introduction, this notion has been interpreted as areas where proximity to a national border has an influence on social and economic structures and trends.

This category of geographically specific areas is different from the others analysed by GEOSPECS, insofar as national borders are constructs established as part of a political construct built on the notion of sovereign states, and later sovereign nations, traditionally considered to have begun with the Peace of Westphalia in 1648.

Admittedly, the TPG argues that all categories of geographic specificity are constructs, created in order to organise the perception of territories and facilitate communication. However, applying the same logic to border areas, one may argue they are constructs around a construct. Indeed, territories belonging to this category are identified as being based on a subjective assessment of the social and economic importance of their proximity to a border. At the same time, the creation of a national border produces a series of concrete effects, e.g. differences in political systems, regulatory frameworks, welfare state service provision, income redistribution schemes, and linguistic norms. These differences produce flows and exchanges. From another perspective, the border can also be an obstacle, both as a result of political decisions to limit flows and exchanges and because the above-mentioned differences become an obstacle to interaction. The multiple functions of borders are described in Table 17.

Table 17 Functions of national borders

Functions	Purpose/effects
Separation/control (barrier)	Delineation, protection, defence, rejection, brake
Relation (interface)	Contact, exchange, distribution, collaboration, agreement, confrontation, mediation
Differentiation	Difference, differential, inequality, asymmetry
Assertion	Construction of a cross border institutional reality : cooperation project

Source: Sohn (2010)

National borders as a modern construct

The creation of clearly-defined and demarcated border lines from the 17th century, replacing previous "frontier zones" or "marchlands" was accompanied by the streamlining and centralisation of the administrative state apparatus, the establishment of national codes of law, the creation of a unified national transport and communication system, the establishment of a national economic policy, a national fiscal and monetary system (i.e. taxation and single currency), and a protectionist trade policy (through the introduction of trade barriers). These developments considerably increased border effects throughout Europe, often reinforcing negative effects caused by existing natural borders (e.g., mountain chains, rivers, large lakes, seas and oceans). These developments penalised areas which were situated along national borders in a number of ways:

- Firstly, in economic and commercial terms, due to the development of national mercantile production systems which interrupted formerly homogenous cross-regional markets for goods and because local commercial exchanges were now forced to "cross" new fiscal and monetary borders.
- Secondly, in socio-cultural terms, as the new borders often separated areas whose population shared ethnic or socio-cultural origins (shared traditions/myths, dialect/language etc.) and because the nation-state often "unified" its population under a common national language which was propagated through the national education system.
- Thirdly, in political terms, as different national legislations were developed on either side of a border and because the principles of national defence often contributed to the development of a non-communicative infrastructure (e.g., roads or rail tracks running parallel to the border).

Due to these obstacles and because of the permanent fear of military conflicts – which normally manifested themselves first along national borders – people living in border areas increasingly migrated towards the more central areas of a state, leading to the emergence of many sparsely populated zones along national borders. This phenomenon also resulted from the forced emigration of people living in border areas. After the Second World War, this overall situation entered into a slow process of change with the European integration process, which started first in Western Europe with the creation of the Council of Europe (in 1949) and of the European Communities (in 1951 and 1958). The European

integration process has been significantly catalysed since the mid-1980s as a consequence of various and closely interconnected developments:

- The successive implementation of the Schengen Agreement (since 1985) and the Single European Market legislation (since 1987), the establishment of the EU (in 1993), and the creation of the Euro-Zone (in 1999), as well as the further deepening and widening of these developments have eliminated within the EU many of the formerly existing economic, social and political border effects. Moreover, persisting obstacles and barriers along the internal and external EU borders are now more pro-actively tackled by public policies than had been the case only a few years earlier (especialy since the INTERREG Community Initiative began in 1990).
- The extinction of the "iron curtain" at the beginning of the 1990s and the following democratic developments in Central and Eastern Europe Countries, as well as the Eastern enlargements of the EU (2004, 2007), have created new opportunities for exchanges and co-operation across the new internal and external EU borders which were previously firmly closed. Since the last enlargement, the EU has slightly more than 13,000 km of external land borders with 19 different neighbouring non-EU countries (see Map 13). The shortest external land borders exist in Spain (with Gibraltar: 1.2 km) and Italy (with the Vatican City: 3.2 km). Yet, the degree of real openness of some new internal EU borders, especially of the eastern external EU borders remains limited due to considerable socio-economic disparities (internal and external EU-borders) and because the Internal Market legislation and the Schengen regime end here (external EU borders).

The dismantling of the previously static and rigid functions of the classical nation-state borders, and of many of the associated obstacles within the EU, has led to the re-introduction of borders that are prevalently dynamic and open, resembling the marchland concept existing during the Middle Ages. This has not only paved the way for new economic development perspectives across the EU, but has also stimulated the emergence of a new territorial dynamism and of alternative patterns of spatial integration in post-modern Europe. However, the Schengen agreement and the development of the Single market implies that the burden on many – external border areas has increased, as they take over a responsibility for the control and regulation of flows that was previously shared more equally across Europe.

However, traditional views on the border as an obstacle to economic development have been challenged since the 1970s. Classical location

theory used to consider the presence of a national border as a disadvantage for economic activities. Christaller (1933), among others, argued that border regions could reduce trade since the market area of urban centres was artificially reduced by the existence of the border, producing a so-called "half circle economy". According to these views, political instability due to the proximity of the border induced a certain economic risk, reflected in the prices and disadvantaged border markets in relation to cities in more central locations within countries. By separating functional areas, border areas were also supposed to divide functional and complementary markets and introduce distance and additional costs. In those areas, entrepreneurs were supposed to be less likely to innovate and do business because they prefer large markets. Finally, the presence of a border was supposed to require a doubling of institutions or services which could function at lower cost in a homogeneous market. From the 1970s, some authors offered alternative views, showing that, in some cases, stable European border areas could develop into dynamic regions and outweigh their initial disadvantages. Hansen (1977a: 12) noted in particular that "*a stable border, together with a relatively unimpeded international labour and capital mobility will, on balance, be more advantageous than disadvantageous to a border region*". As has been shown by several subsequent works, border regions present unique opportunities (e.g., Leresche and Saez 2002).

These dynamics are superposed by **the ongoing process of globalisation** by which the national/regional economies, societies, and cultures have become, in our post-modern era, more integrated through a global network of political ideas, communication, transportation, and trade. Although it is often argued that this overall process leads to a less static nature or even a slow disappearance of the established state-borders (i.e. the political and/or economic ones) or of socio-cultural "demarcation lines" existing between people, the TPG considers that this general assumption needs to be examined thoroughly in each specific case.

The globalisation process is most often associated with the economic sphere, as the emergence of world-wide markets and of a new and specific international organisation of production generates a new reaction of enterprises which differs significantly from former patterns such as "internationalisation" or "multinationalisation". Within this context, a broad controversial debate has been underway for many years, discussing to what extent trade interdependency and integration between national economies make (or do not make) borders increasingly irrelevant for economic activity. Some observe that the *de-jure* established state-

borders are now more dynamic in nature (or in extreme cases even becoming obsolete) as the challenge of globalisation makes it increasingly difficult for individual national or regional economies to manage on their own their development in the wider framework of a world-wide economy and to adapt themselves to the new mode of technological change (Courlet, 1996). Other more economics-driven views, based on the way economics has formed its thinking about the nature of borders, as well as the effects of such national borders on the economic interactions taking place across and around those borders, observe that an analysis of *de-facto* international trade and investment flows "… *undermine our expectations about the necessary continued expansion of interdependency, integration and international economic interactions as a result of 'globalization'* (...) [and that national borders continue to have (…) *'determining' influences on trade, real capital flows and other cross-border interactions"* (Thomson, 2000).

The TPG will focus specifically on these effects by exploring how networks of the headquarters and subsidiaries of the 3000 largest transnational corporations are organised geographically in the cross-border metropolitan regions of Luxembourg and Geneva and in surrounding border regions (the Grande-région and the border from the Jura to the Valais, respectively). One objective of this analysis is to identify how national borders influence the choice of locations in which transnational corporations place their subsidiaries. Different strategies are likely to be identified, depending on the sector.

National borders often correspond to physical features. The analysis of overlaps between border areas and areas belonging to the other GEOSPECS categories, especially mountain areas and coastal zones, is therefore particularly relevant. The latter category is related to the notion of "maritime boundaries", which are dealt with as part of the analysis of coastal zones (see below). Other examples of natural features that may coincide with national borders are rivers, lakes and forests.

National borders also tend to correspond to economic borders. Discontinuities along internal and external borders have previously been identified in the ESPON programme, both for Human Development and for GDP (see Figure 11).

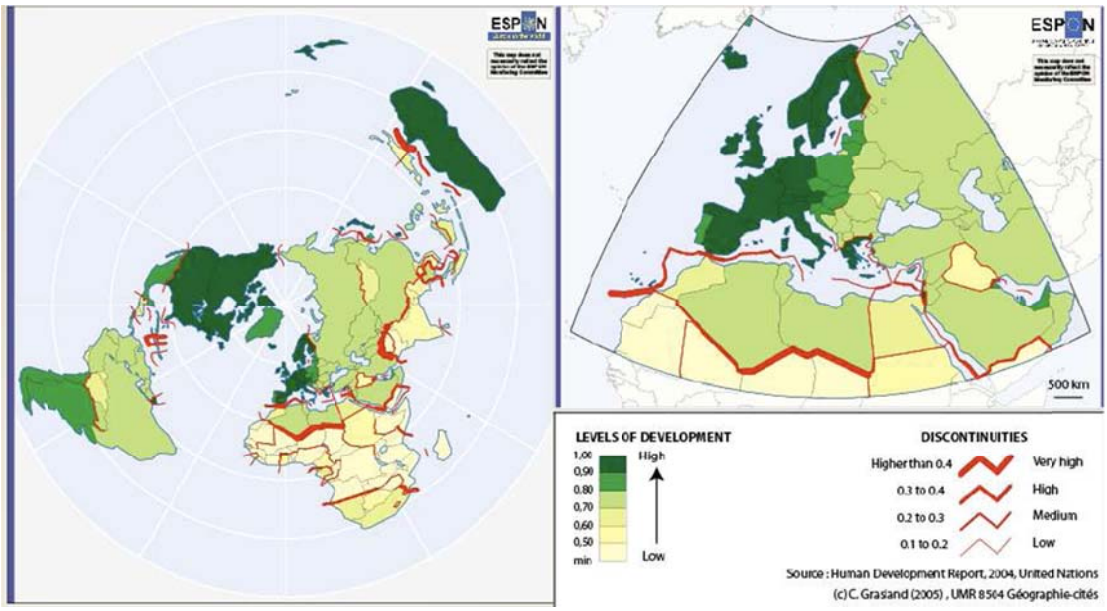


Figure 11 Discontinuities of Human Development Index

Other types of discontinuities can be envisaged, considering a variety of scales from the local to the national, and other indicators. The TPG will explore which discontinuities of relevance for the understanding of socioeconomic structures and trends in border areas may be identified in the ESPON space.

Differences across borders are potential "push factors" and "pull factors" which may generate a wide range of both desirable and undesirable socio-economic developments in the regional/local and cross-border context. Examples of such processes are:

- the stimulation of cross-border trade and the provision of services (e.g., due to the non-availability and/or a diverging quality of products and services on one side of a border);
- the movement of companies or specific production processes from one side of a border to the other (e.g., due to better infrastructure, lower wages / taxes or other monetary advantages),
- cross-border commuting between workplaces (e.g., due to an unfavourable economic situation in the area of residence and the existence of more and better employment opportunities or higher wages on the other side of a border);
- legal permanent migration of individuals from one side of the border to the other (e.g., due to lower living costs, real estate and renting prices or other advantages), which is often also coupled to the emergence of a flow of "in-commuting nationals" (i.e. persons

from one state who live on the other side of the border but still work in their former home country);

- illegal immigration and clandestine employment (e.g., due to diverging living standards/quality of living or civil rights and better earning possibilities) or smuggling (e.g., due to cross-border price differences of goods and/or the non-availability of goods).

The likelihood that the above-mentioned socio-economic developments in the regional/local and cross-border context will actually take place is strongly conditioned by the physical characteristics and political status of a given border (e.g., its permeability) as well as by the regulatory provisions applied on either side (e.g., existing restrictions or hindrances for cross-border mobility of persons, goods and services).

This overall situation, as well as the above-mentioned conditionality, can be well illustrated by the example of cross-border labour market commuting in Europe. While analyses of cross-border labour market commuting may build on the recent and comprehensive study published by the European Commission (CEC, 2009), there are no pan-European data reflecting the extent of this phenomenon along all borders.

Analytical framework for the analysis of border effects

Table 18 synthesises the different types of border effects to be explored by GEOSPECS. A first classification of political statuses of borders is presented in Map 13, focusing on membership of the European Union and the EEA. Similar maps will be produced for the Schengen area and the adoption of the Euro, taking into account both maritime and terrestrial borders. A map of linguistic barriers along borders, assessing the degree to which national borders divide areas with different languages will also be produced. Along borders between countries with languages that are not mutually intelligible, most cross-border commuters need to be bilingual; language differences may also be a significant obstacle to economic exchange and functional integration. Combining these maps

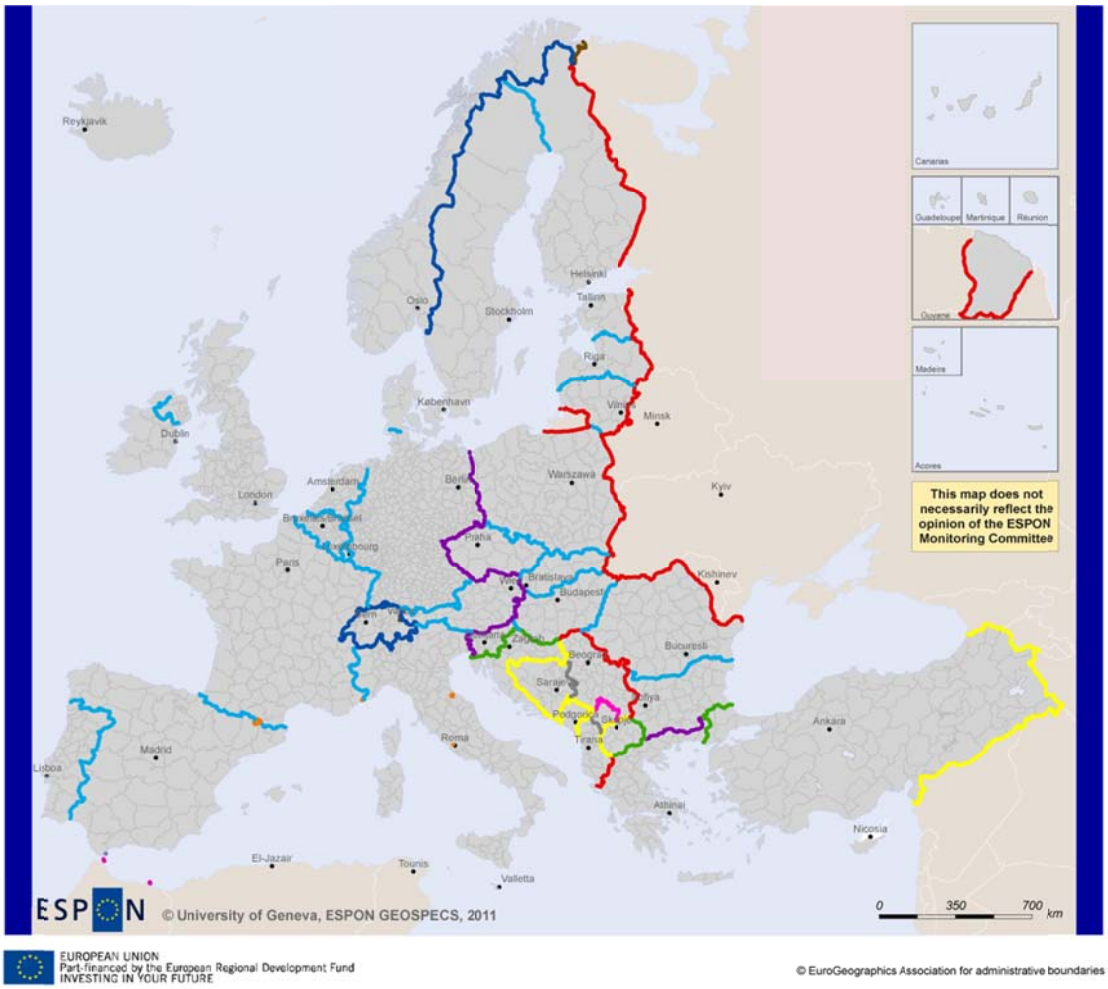
Table 18 Typology of border effects in Europe

Type of border effect	Main reasons for existing border effects	Examples for associated potential negative effects (-) and positive effects (+) in a cross-border perspective
Effects due to the political status of borders and the regulation of cross-border flows and exchanges	Different status of the political border & different degrees of "openness" for economic exchanges & inter-personal relations.	**+** Smooth & free circulation of persons, goods and services (no controls), due to the status as internal EU-border & Schengen border. **+** Smooth & free circulation of persons, goods and services (with some controls), due to the status as internal EU-border & non-Schengen border. - Strongly limited circulation of persons, goods and services (i.e. import restrictions, sanitary prescriptions, visa requirements, lengthy border controls/procedures & waiting times etc), due to the status as external EU-border.
	Different administrative structures/powers, legal systems and public policies meeting at a political border (governance).	- A lack of co-ordination/co-operation and joint planning in the field of public policies due to different administrative structures and powers. - Low quality of public services or social facilities (lacking investment) due to insufficient catchment areas in border / cross-border regions and/or due to legal and financial barriers. - Varying quality in terms of tackling major emergencies, accidents with a cross-border impact due to different legislations and organisation of rescue & disaster prevention services. - Different organisation and functioning of public transport systems and lacking cross-border co-ordination and operation. - Varying levels of crime prevention and public security on either side of the border, due to different legislation and organisation of police forces. - Due to a use of different currencies on either side of a common border, risk of exchange-rate losses and existence of other transaction cost. - Curtailed civil rights of foreigners living as permanent residents on the other side of a border (e.g. voting rights in the home country) or of residents in a border region with respect to aspects on the other side affecting their own quality of life (e.g. installation of waste disposal / incineration facilities, nuclear power plants). + Establishment of activities which

Type of border effect	Main reasons for existing border effects	Examples for associated potential negative effects (-) and positive effects (+) in a cross-border perspective
		provide specialised economic services drawing upon the cross-country differences in customs or tax legislation. - Lengthy customs checks and control procedures due to different checkpoint opening hours, staff shortage or bureaucracy (at the external EU-borders). - Obstacles for border-crossing business activities (esp. for SMEs & small crafts undertakings) due to different legislations on tax, social welfare and education/vocational training or different technical standards & other formal requirements (e.g. special permits, mandatory membership in intermediate professional organisations etc). - Obstacles for independent professions (e.g. doctors, lawyers, architects etc) due to different legislations or an insufficient de-jure or de-facto recognition of degrees, diploma or other qualifications. - Obstacles for cross-border mobility & labour market commuting (i.e. existence of labour market restrictions, different taxation & social systems, different other administrative/regulatory requirements governing e.g. the access to vocational training & further training, lacking information on job opportunities or on required levels of formations/graduations). - Unbalanced sustainable development on either side of a border affecting the level of cross-border living quality due to different environmental and waste disposal legislations. - Limited admission into a hospital or consultation of a doctor on the other side of the border, due to different health care systems and insurance regulations. - Higher cost for cross-border phone calls or cross-border mail delivery.

Type of border effect	Main reasons for existing border effects	Examples for associated potential negative effects (-) and positive effects (+) in a cross-border perspective
Effects due to economic discontinuities (differentials) along national borders	Different levels of significance in economic performance (i.e. observed with respect to the overall situation or a specific issue) of areas located along common border, acting at the same time as as potential "push factors" and "pull factors".	+ Intense cross-border trade / provision of services, due to the non-availability and/or a diverging quality of products & services on one side of a border. + Legal cross-border labour market commuting, due to an unfavourable economic situation on one side of a border and/or more attractive conditions one on the other side (i.e. more & better job opportunities, higher wages etc.). + Flows of legal cross-border permanent migration, due to lower property prices or rent (for individual living & business offices) and/or a better living standard (e.g. wages) on one side of a border. - Dislocation of companies / specific production processes from one side to the other side of a border, due better infrastructure, lower wages / taxes or other monetary advantages existing on the other side of a border. - Illegal immigration &r employment or risk of social conflicts, due to a very unfavourable economic situation / poor living standard on one side of a border and restrictions existing for cross-border mobility (external borders).
Effects due to Cultural & linguistic differences along national borders	Different quality of common historical legacy / ties between both sides of a common border.	+ Due to positively shared historic experiences, existence of positive instinctive attitudes (e.g. mutual trust, a sense of "belonging together" & a common identity). - Due to negative historic experiences and/or the non-existence of common historic ties, existence of negative instinctive attitudes (e.g. traditional prejudices, mistrust / misinformation, a lack of mutual knowledge/understanding or ignorance).

Type of border effect	Main reasons for existing border effects	Examples for associated potential negative effects (-) and positive effects (+) in a cross-border perspective
	Variations with respect to the general cultural & linguistic settings on either side of a border.	- Existence of negative instinctive attitudes (e.g. mental barriers/misunderstandings, mistrust, lack of genuine motivation), due to different cultural/moral concepts and behavioural patterns. - Existence of different official languages and a lack of language proficiency (multi-linguism) on both sides of the border which lead to a communicative barrier among individuals, to difficulties in accessing jobs and to more complicated customs / administrative procedures. + Existence of similar cultural/moral concepts and behavioural patterns existing on both sides of the border, leading to a better comprehension of the neighbours' "way of thinking and behaving" and a high level of mutual trust. + Due to the fact that the same language is spoken on both sides of the border, border-crossing inter-personal and official communication as well as job-access is easier.
Effects due to the physical characteristics of national borders	"Barrier effect" due to a physical obstacle (e.g. high mountain, large river & lake, sea or large maritime separation) in conjunction with a national border.	- Reduced permeability of the border, due to the existence of a physical obstacle and/or a low or even very low density of border crossing possibilities (i.e. by road, rail, ship etc) and/or underdeveloped cross-border transport & communication infrastructures (including public transport services). - Limited economic and inter-personal exchanges or cross-border labour market commuting, due to long distances & long travel times. + High permeability of the border, due to the non-existence of a physical obstacle and/or a high or even very high density of border crossing possibilities (i.e. by road, rail, ship etc) and/or well-developed cross-border transport & communication infrastructures (including public transport services). + Intense economic and inter-personal exchanges or cross-border labour market commuting, due to short distances & travel times.

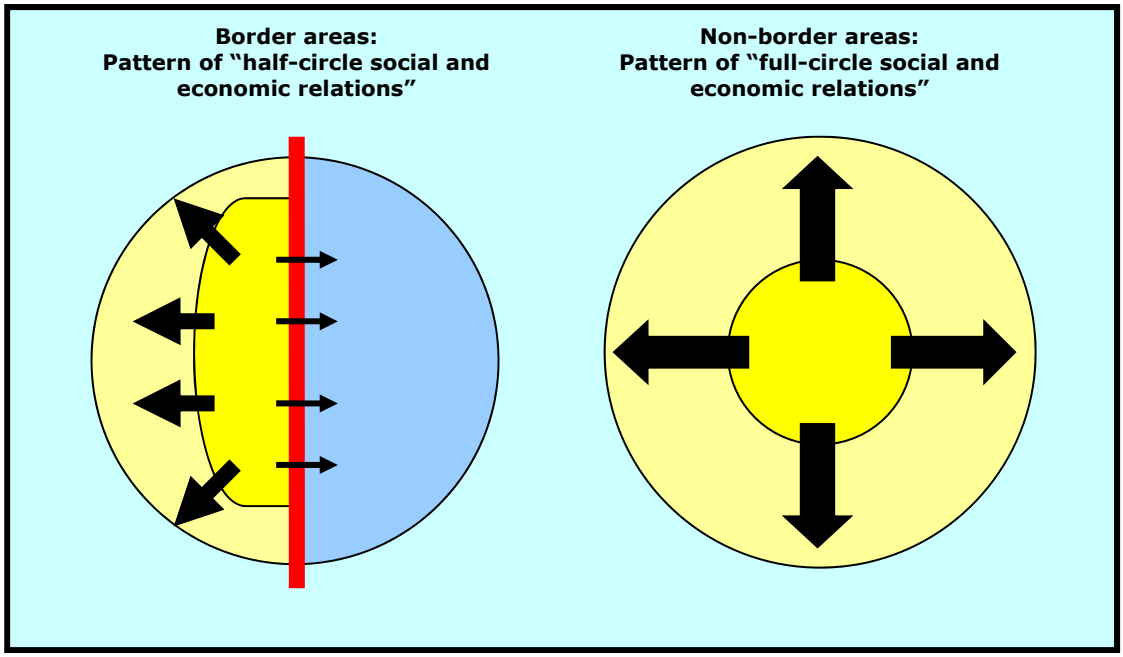


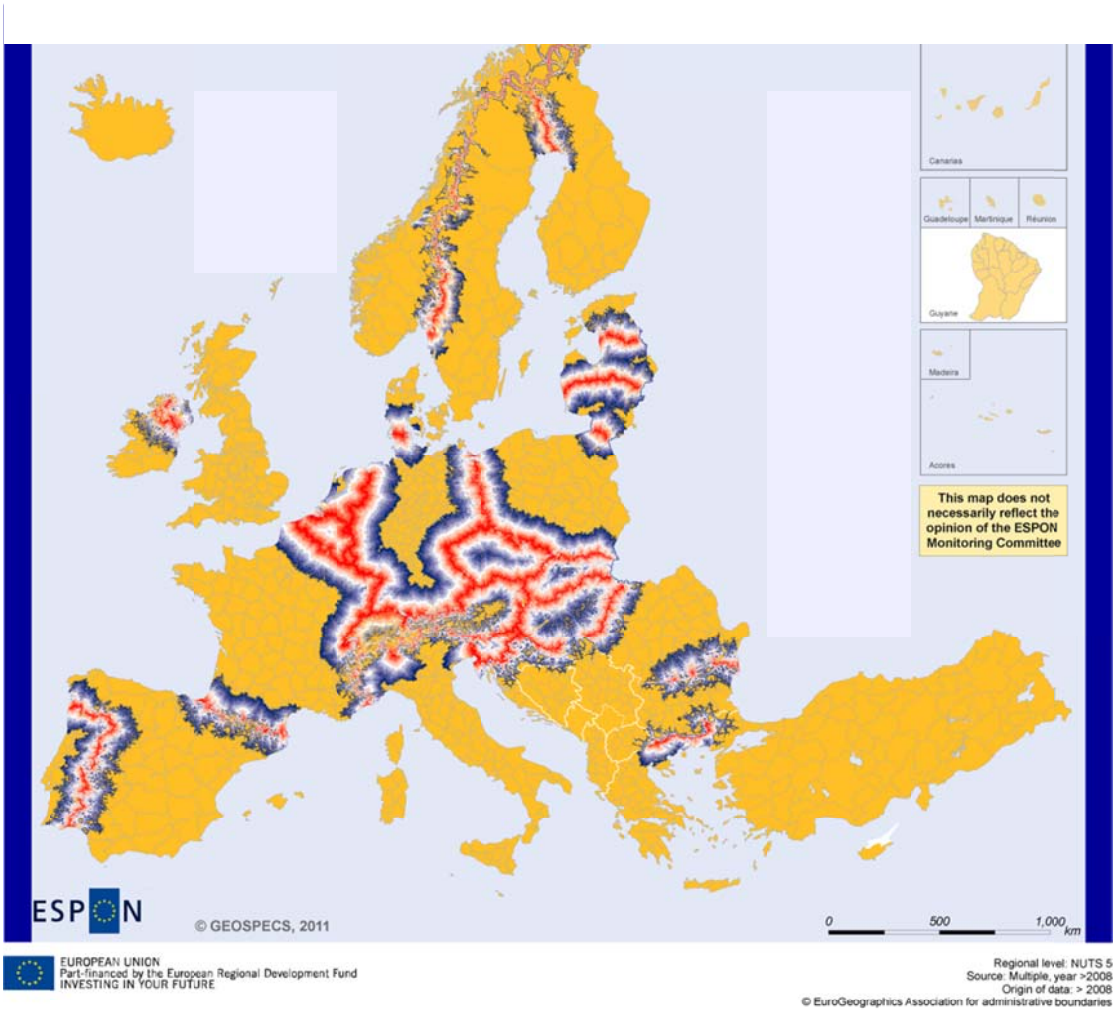
Map 13 Classification of land borders in the ESPON area

with measures of economic discontinuity (see above), the TPG will propose a typology of borders.

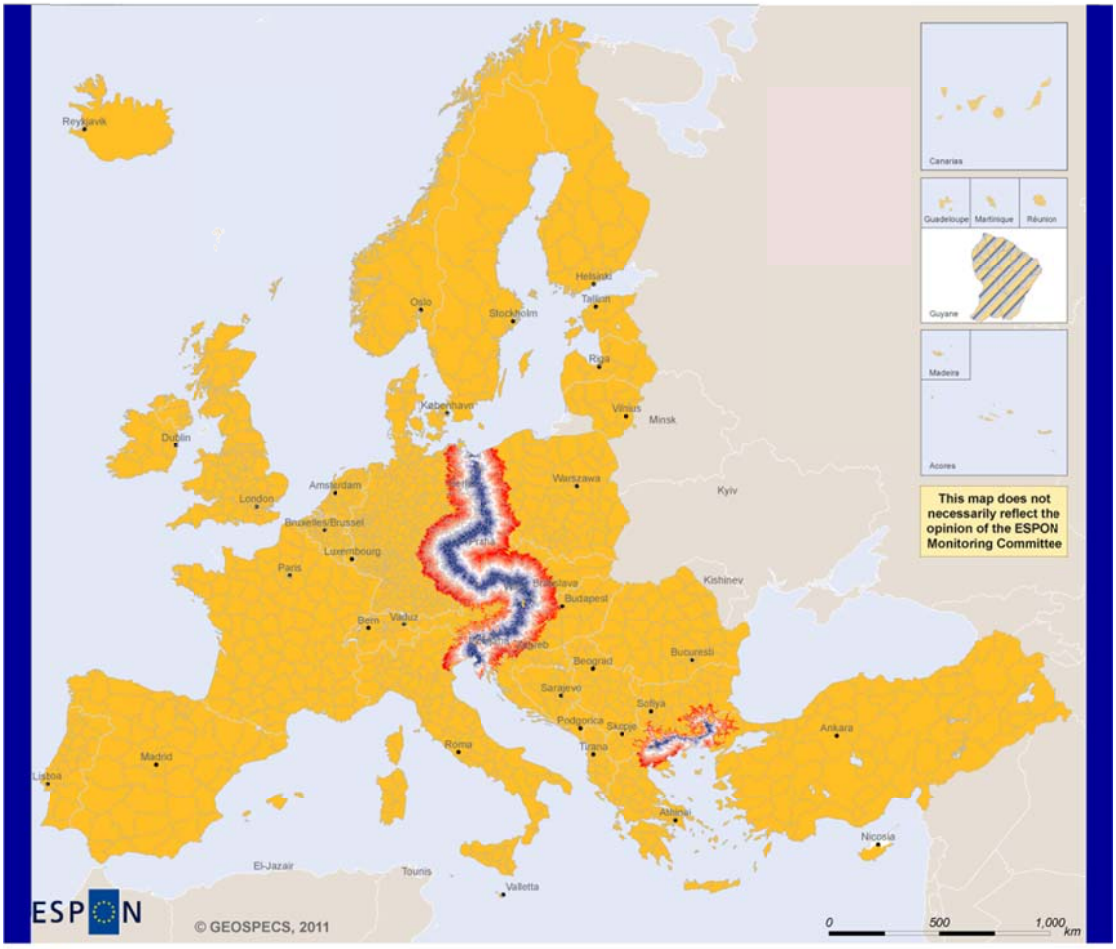
The effects of each type of border on border areas may then be assessed within areas of proximity, as illustrated by Maps 14 to 16, leading to the distinction between border areas functioning as "half circle economies" and "half circle societies" (See Figure 12) and those where the border is an interface allowing the emergence of cross-border functional areas. However, producing a typology of border areas based on this distinction would be complex, as "half-circle" patterns may concern only a subset of socio-economic dynamics within a given border area. The notion of border area is a geographic category with variable geometry. Because the ranges of mobility and interaction associated with the different types of border effects are different, it is not meaningful to produce a general delineation of border areas. However, the 45-minute travel distance to a border corresponds to a reasonable proxy for the maximum generally accepted commuting and daily mobility distance, which will therefore play a key role for a large range of socio-economic processes.

Figure 12 Different patterns of socio-economic relations in border and non-border regions

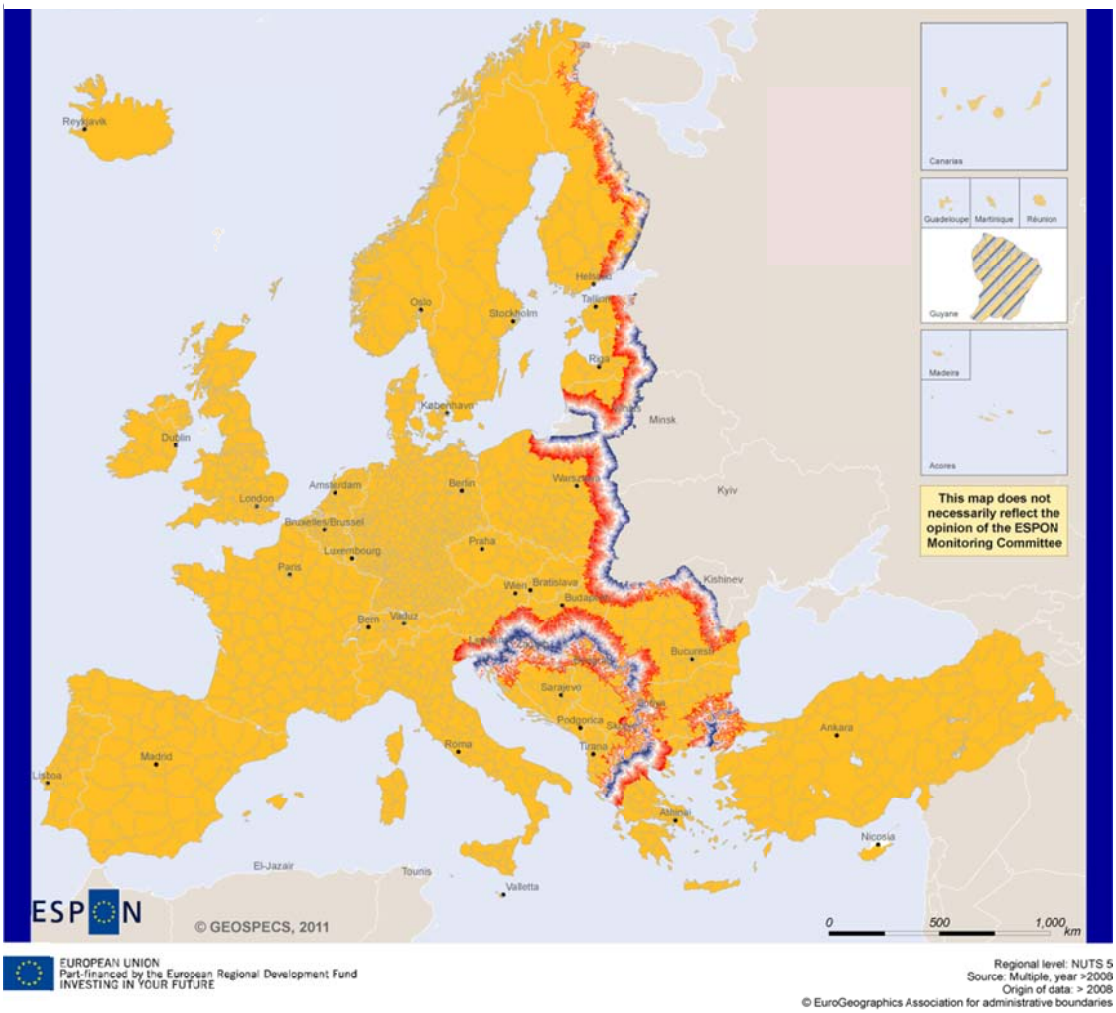




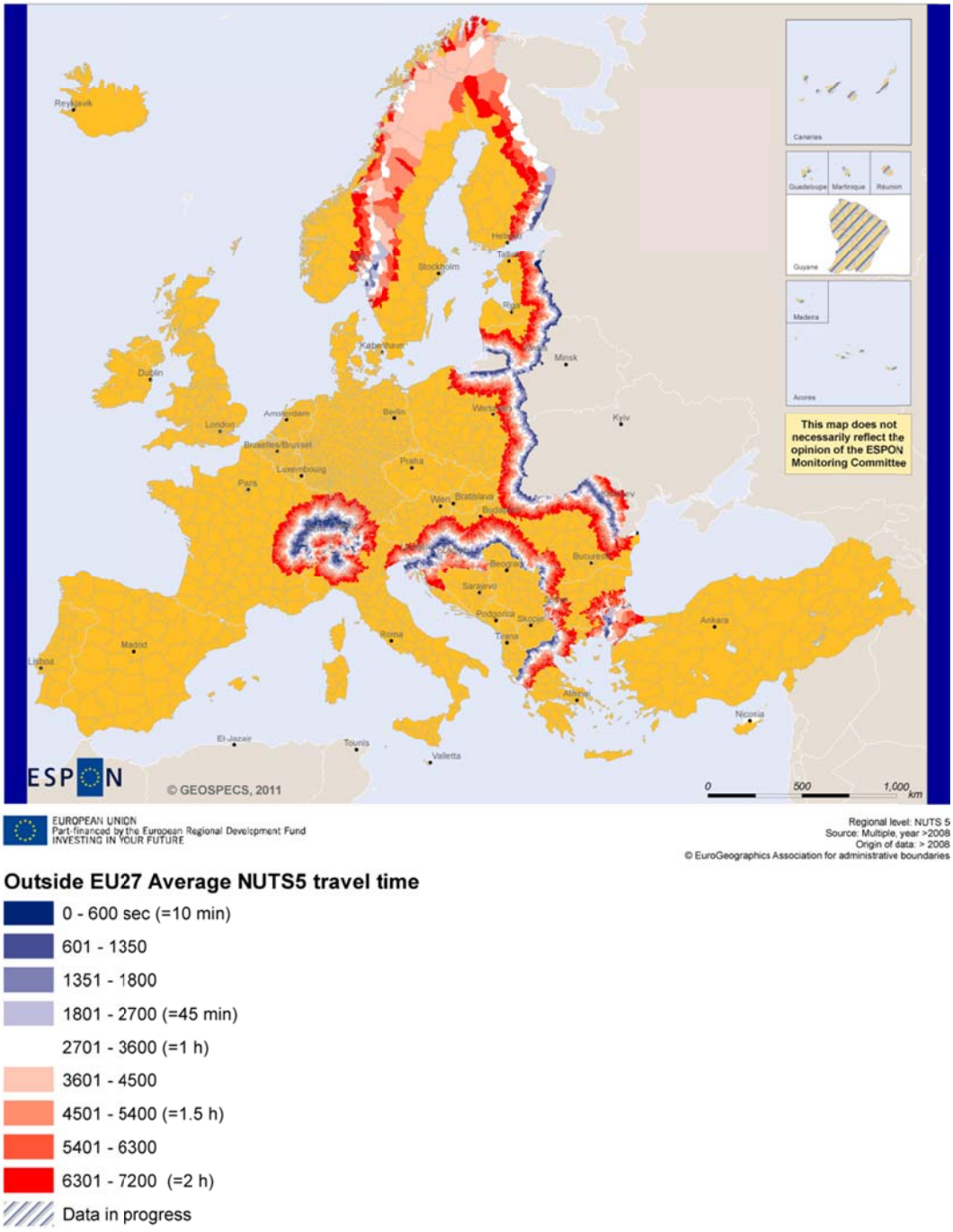
Map 14 Travel time to internal EU borders



Map 15 Travel time to the border between EU12 and EU15



Map 16 Travel time to the external borders of EU27 and EFTA-4



Map 17 Travel time to the external borders of the European Union

Analysing and mapping the age and maturity of decentralised cross-border co-operation initiatives in Europe

Border effects may not be assessed without taking into account the long-standing traditions of cross-border cooperation in Europe, described in Annex 8. The TPG has developed an original approach to take into account the qualitative features of cross-border co-operation. This alternative approach assesses some of the generally recognised and already mentioned factors that strongly condition the success of decentralised cross-border co-operation in order to determine the "level of maturity" of existing decentralised cross-border co-operation along a given border while also taking into account the length of this co-operation. As the project partner responsible for border areas has recently elaborated a very similar concept applying the above-mentioned combination of indicators in the context of the methodological framework developed for the INTERREG III ex-post evaluation,[15] the TPG suggests using this approach for mapping purposes in the GEOSPECS project. Although this approach relates to the prior INTERREG IIIA programme areas,[16] one can still use the available quantitative and qualitative information (with brief up-dating in some cases) which has been gathered for the following indicators:

1. Number of years during which structured and visible cross-border co-operation has existed within parts or all of the INTERREG IIIA programme area.
2. Nature and quality of the directly applicable legal instrument that can be used for establishing decentralised cross-border co-operation within parts or all of the INTERREG IIIA programme area.
3. Nature and quality of existing permanent cross-border co-operation structures established between territorial authorities that operate in parts or all of the INTERREG IIIA programme area.

On the basis of a sorting of the aggregated indicator data (see 0), an overall classification of borders and cross-border areas according to

[15] **PANTEIA:** Ex-Post Evaluation of the INTERREG 2000-2006 Community Initiative funded by the Regional Development Fund, 1st Interim Report to the European Commission DG Regio. Zoetermeer, September 2009.

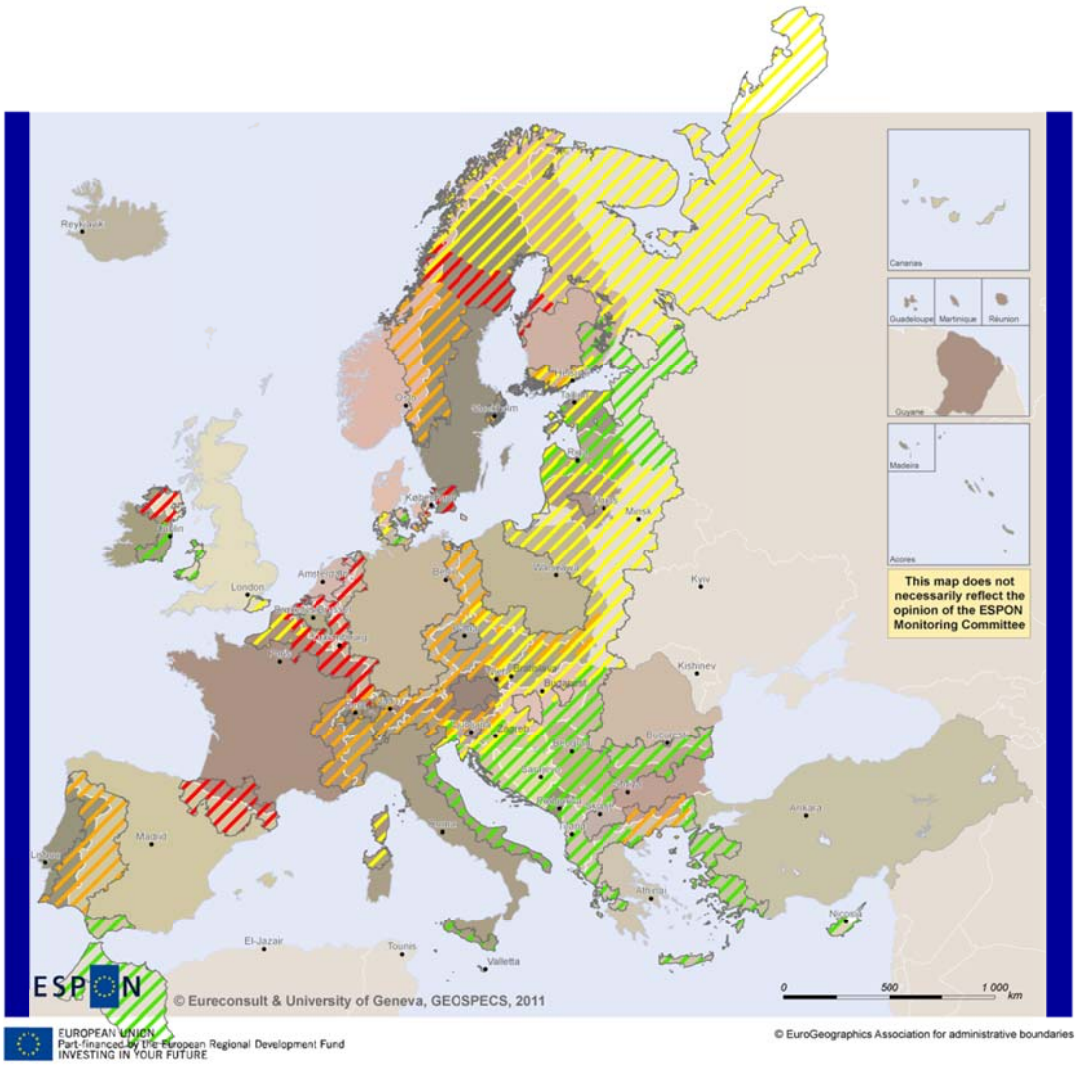
[16] In our opinion this is not necessarily a negative aspect, as nearby all border lines covered by the current cross-border Objective 3 programmes & ENPI-programmes were already covered under the INTERREG III period (except Bulgaria-Romania, Romania-Ukraine-Moldova) and because the delimitation of programme areas was sometimes smaller along some borders under INTERREG III if compared to the recently observable trend towards establishing much larger programme areas which cover an entire border (i.e. according to the Commission's principle for the period 2007-2013: "one border – one programme").

their duration and maturity of co-operation can be established (See Table 19 and Map 18)

Table 19 Classification of borders and cross-border areas

Type-features	Borders & cross-border areas (INTERREG IIIA)
Long-standing co-operation with a very high or high level of maturity	D-NL, Germany-Netherlands D-NL, Ems Dollart IRE-UK, Ireland-N. Ireland D-L-B, Germany-Luxemburg-Belgium D-F, Saarland-Moselle-Westpfalz B-F-L, Wallonie-Luxembourg-Lorraine F-B, France-Wallonie-Flandre D-NL-B, Euregio Maas-Rhein NL-BE, Vlaanderen Nederland F-D, PAMINA F-D-CH, Oberrhein-Mitte-Sud FIN-S-N, Kvarken-Mittskandia E-F, Espagne-France DK-S, Oresund
Long-standing or experienced co-operation with a medium-high level of maturity	I-A, Italy-Austria I-FR, (Itlay France, Alpes) I-CH, Italy-Switzerland F-CH, France-Suisse D-CZ, Bavaria-Czech Republic D-DK, Fyn-KERN FIN-S, Skargarden A-SLN, Austria-Slovenia E-P, Spain-Portugal GR-BUL, Greece-Bulgaria S-N, Sweden-Norway D-PL, Saxony-Poland D-CZ, Saxony-Czech Republic D-A-CH-LI, Alpenrhein-Bodensee D-PL, Brandenburg-Lubuskie A-D, Austria-Bavaria A-CZ, Austria-Czech Republic PL-SLK, Poland-Slovakia D-PL, Mecklenburg-Poland
Experienced or more recent co-operation with a medium-low level of maturity	CZ-PL, Czech Republic-Poland I-SLO, Italy-Slovenia A-HUN, Austria-Hungary Slovenia-Hungary-Croatia Slovakia-Czech Republic S-FIN-N-RUS, Nord Poland-Ukraine-Belarus Hungary-Slovaki-Ukraine FIN-EST, Finland-Estonia UK-F, Espace franco-britannique Lithuania-Poland-Russia A-SLK, Austria-Slovakia Latvia - Lithuania – Belarus FIN-RUS, Karelia I-FR, Sardinia-Corsica-Tuscany

Type-features	Borders & cross-border areas (INTERREG IIIA)
	D-DK, Sonderjylland-North Schleswig
More recent co-operation with a low level of maturity	FIN-RUS, South-East Finland Estonia-Latvia–Russia Hungary-Romania-Serbia&Montenegro Romania-Ukraine-Moldova (*) D-DK, Storstrom-Schleswig-Holstein GR-ALB, Greece-Albania GR-FYROM, Greece-FYROM Bulgaria-Romania (*) IRE-UK, Ireland-Wales I-ALB, Italy-Albania GR-I, Greece-Italy GR-TY Greece-Turkey E-MRC, Spain-Morocco UK-MRC, Gibraltar-Morroco Italy-Adriatics Italy-Malta GR-CYP - Greece-Cyprus
(*) These are not previously existing INTERREG IIIA programme areas	



Map 18 Classification of borders and cross-border areas

Cross-Border Metropolitan Regions

Cross-Border Metropolitan Regions (CBMR) are dealt with separately in GEOSPECS, as a specific type of border areas that have been able to take advantage, since the 1980s, of the progressive erasure of borders in the European Union. CBMR combine both institutional and functional characteristics (ESPON 2010). They are both political constructions driven by a multitude of political actors from several levels, large urban areas transcending national boundaries, and urban centres engaged in globalized network. These regions can thus be defined as regional political initiatives which consider the existence of national borders as a resource for increasing cross-border interactions at the local level and the embeddedness of the metropolitan centre in global networks.

This definition is at the crossroads of two main bodies of literature. First, the definition takes into consideration the fact that CBMR have progressively emerged on the agenda of political actors as a response to increasing competition between metropolitan centres in the globalised world, and as an attempt to somehow counterbalance the supposed hegemony of world cities such as London or Paris. Second, since Herzog's (1990) pioneer work, geographers have tried to define CBMR in terms of not only their morphological form but also the underlying regional processes at work. Two major characteristics have been observed: (1) compared to other metropolitan centres, CBMR exert a cross-border influence on neighbouring countries; (2) CBMR have developed strategic functions in the fields of knowledge-intensive services and industries, and provide a high density and large diversity of high-order service companies embedded in global networks.

Ultimately, the specificity of CBMR is to combine these two aspects, by using the proximity to the border and the density and diversity of metropolitan activities as a resource to enhance the integration of the metropolis in the global networks. The point here is not to minimize the barrier effect of borders, but to recognize that they can also provide opportunities, especially for cities and border regions engaged in a metropolisation process. This is particularly true when the cross-border development strategy which is followed is primarily oriented toward an interconnection of the systems of production and regulation, rather than toward the exploitation of wage and labour law differentials (Krätke 1998).

The delineation of CBMR is based on the *Study on Urban Functions* (ESPON 2007; see also Vandermotten 2007), which identifies 15 metropolitan and polynuclear metropolitan areas in Europe. These urban

regions are very different in nature and size, so that it was necessary to further refine the selection, initially using just the 13 regions which can legitimately be described as "metropolitan", i.e. which include one or more urban centres which are part of globalised economic networks and which exert an influence over their regional or national area. Two main sources were used to identify strategic functions located in urban centres and the embeddedness: Rozenblat and Cicille's (2003) comparative study of European cities and Taylor's (2004) work on world city networks. Arnhem-Nijmegen and Twente-Nordhorn were, on this basis, removed from the analysis. See 0 for the delineation of these areas.

Of these 13 urban regions, two had only a very limited cross-border dimension (Milan, Tilburg-Eindhoven); i.e., over 95% of the total population of the cross-border area lives in the country in which the main urban centre is located. Following the selection process, the 11 following metropolises are recognised as CBMR in Europe: Aachen-Liege-Maastricht, Basel, Geneva, Copenhagen-Malmo, Lille, Luxembourg, Nice-Monaco-San Remo, Saarbrucken, Strasbourg and Vienna-Bratislava. These regions have recently been considered as case studies by the ESPON Metroborder Priority 2 project on Cross-border polycentric metropolitan regions (ESPON 2009, 2010).

Amongst the 11 cross-border metropolitan regions examined by the recent METROBORDER project in Europe (ESPON 2011), three main configurations can be observed:

1) In some cross-border metropolitan regions, structures of cooperation have been created which are relatively well adjusted to the functional urban regions whose territorial development they seek to coordinate. In Basel, for example, institutional cross-border cooperation areas such as the Trinational Eurodistrict of Basel, the Basel Agglomeration Project, or metrobasel have adapted to the current scale of the functional metropolitan region as defined by the Swiss Statistical Office (OFS). In Geneva, the Geneva Agglomeration Project matches quite precisely the cross-border urban area defined by Swiss authorities.

2) In other case studies, no cooperation area adapted to the current scale of the functional metropolitan area has yet come to fruition, either because existing cross-border institutions are limited to a small part of the metropolitan area or because such institutions have been created at a regional level, without taking particularly into consideration cross-border metropolitan regions. Luxembourg is probably a good example of such a mismatch between the functional region and the institutional perimeters, since the functional integration of the border territories into the metropolitan dynamic has not, to date, led to the creation of a political construction able to manage the development of a territory on a cross-

border scale (Sohn, Reitel and Walther 2009). Cross-border cooperation is undertaken either at a micro-level or at the level of the Greater Region, whose size (65,400 km^2) far exceeds the Luxembourg metropolitan functional area (4344 km^2).

3) Some other metropolitan regions experienced a different evolution, being very much integrated from an institutional point of view but lacking strong functional relationships able to promote cross-border integration. The Strasbourg-Ortenau region is probably one of these: strongly engaged in a Eurodistrict that has been transformed into a European Grouping for Territorial Cooperation in early 2010, the region is comparatively weakly integrated from a functional point of view, measured in terms of cross-border commuting or residents' citizenship (Decoville et al. 2010).

An analysis of the level of functional and institutional integration shows that the two dimensions do not necessarily coincide (Reitel 2007, Vandermotten 2007), the construction of a CBMR being marked out by temporary optima which result from a balancing of the opening and closing of borders. Indeed, the preservation of certain fiscal and regulatory cross-border differentials can be of cardinal importance to some regions or European states which might want to use the border as an economic resource and limit the degree of institutional integration with their neighbours. Given these comparative advantages which flow from the exploitation of cross-border differentials, a reduction in certain disparities between the territories could be seen as a threat (Sohn and Walther 2011).

The **border constitutes a resource** when it allows the implementation of an economic "model" based on the comparative advantages of each of the states. Businesses here can undergo a certain functional specialisation, with the headquarters and production facilities being located in the country with the best advantages in terms of tax or labour costs, a possibility already discussed by Lösch (1940) in relation to Switzerland and Germany. Being located close to a border can also allow certain regions to benefit from more developed services in a neighbouring country or comparatively cheaper products. This well-known advantage of border regions generally leads to a strong asymmetry in terms of provision of services and products. The presence of a border also allows advantage to be taken of property resources, as in the cases of Geneva (Insee-OCSTAT 2008), the border between the Netherlands and Germany (Van Houtum and Gielis 2006) and Luxembourg (Carpentier and Licheron 2010), for example. Households wishing to acquire property are able to find accommodation in the neighbouring border area which is both more readily available and cheaper. Finally, the presence of a border also allows territorial actors engaging in cross-border projects to benefit from

additional financial resources from the EU. Since the 1990s, EU-funded programmes established within the context of initiatives aiming to stimulate interregional cooperation have played a significant role in the creation of new cross-border cooperation bodies, from both a quantitative (support for the creation of new initiatives) and a qualitative (transformation of existing less structured cooperative arrangements into more institutionalised bodies) point of view.

The **border can also constitute a recognition factor** for cross-border metropolitan regions, which use this to position themselves vis-à-vis other metropolitan regions in the same country or abroad. In Basel, for example, cross-border projects such as the Trinational Eurodistrict Basel and metrobasel are associated with the necessity of opening up internationally in order to maintain the competitiveness of the city, situated in a region of low demographic growth and subject to competition from Zurich (Reitel 2006). Basel is thus seeking to improve its visibility as an international centre of art and culture, adding a cross-border dimension to events organised in the region, such as the international architecture exhibition IBA Basel 2020 for example. The presence of a border also allows certain actors marginalised in the national systems to increase their autonomy. By means of cooperation and alliances transcending the institutional and territorial divisions, these territorial actors can engage in projects which go beyond their strict national limits. Lastly, the presence of a border offers the possibility of inventing new forms of governance, especially given the great flexibility of the legal and regulatory provisions which constitute the framework of cross-border cooperation. This allows the implementation of institutional structures which function on the principle of networks and not only on that of hierarchy (Blatter 2003).

The Variable Geometry of Coastal Zones

The 2006 European Environment Agency report *The Changing Faces of Europe's Coastal Areas* identifies an estimated 185,000 km of coastline in the European Union, Iceland and Norway (EEA, 2006). The ESPON space is furthermore surrounded by six seas (i.e. the Mediterranean Sea, Baltic Sea, North Sea, Norwegian Sea, Greenland Sea and Black Sea) and by two Oceans (i.e. the Atlantic Ocean and Arctic Ocean). Each of these maritime contexts creates specific sets of potentials and challenges.

The TPG distinguishes between two concepts:

- The coastline is the physical environment where marine and terrestrial systems meet.
- The coastal zone is an area where the proximity to the coastline has a direct effect on socio-economic structures, trends and development perspectives, inter alia because of the need to take into account particular forms of ecological vulnerability and exposure to natural hazards.

While the TPG fully acknowledges the need to consider socio-economic and ecological development perspectives in conjunction, the present section first reviews approaches of coastal areas from these two points of view successively. On this basis, proposals on how to approach coastal zones empirically are presented.

Coastal zones as physically specific environments

Different approaches of coastal zones as physically specific environments have been identified:

- The Eurosion project[17] operates with a Radius of Influence on Coastal Erosion (RICE) when seeking to locate and map erosion risk areas along coastal Europe using CORINE datasets (see Table 20). Though specifically designed for erosion assessment, the use of differing parameters and specific scales is a good attempt at defining the extent of a coastline.
- For the purposes of the Demonstration Programme on Integrated Coastal Zone Management (ICZM) (1996-1999), the coastal zone was defined as *"a strip of land and sea of varying width depending on the nature of the environment and management needs."* This *"seldom corresponds to existing administrative or planning units."*

[17] http://www.eurosion.org

For the purposes of planning and consultation, essential characteristics of the ICZM Programme, the *"natural coastal systems and the areas in which human activities involve the use of coastal resources may therefore extend well beyond the limit of territorial waters, and many kilometres inland"* (EC, 2000a; 2002). ICZM has not been fully implemented across the EU, nor is it evenly represented within regions of the same country (O'Hagan and Ballinger, 2009) and has been assessed with respect to devising a more integrated marine strategy (EC, 2007). Many ICZM debates revolve around integrating planning and licensing regulations with elements that are more specific to the coast than areas further inland. This has involved a *de facto* attempt to delineate coastal zones within the wider region, especially to include near off-shore activities, and therefore the coastal zone is defined by its socio-economic activities in addition to its physical nuances.

- The delineation of coastal zones is also assigned within the context of conservation of areas and species of ecological importance is set out under the Birds and Habitats Directives (EEC, 1979; 1992) combined to form Natura 2000 sites. This has brought about the situation where a significant area of European coastline has become protected.
- The Water Framework Directive (EC, 2000b) requires River Basin Districts to be delineated according to hydrographic units that cross geopolitical boundaries, and this includes coastal zones. It covers freshwater bodies and coastal waters (to 1nm offshore), whereas the Marine Strategy Framework Directive (EC, 2008b) includes the *"seaward side of the baseline from which the extent of territorial waters is measured extending to the outmost reach of the area where a Member State has and/or exercises jurisdictional rights"*, i.e. 12nm offshore.

In addition, coastal zones are covered under various other Directives, such as those relating to oil spill damage compensation (EC, 2001), bathing water quality (EC, 2006a), urban waste water discharge (EEC, 1991a), integrated pollution control (EC, 2008a), nitrate runoff (EEC, 1991b), dangerous substances (EC, 2006b) and surface water quality (EC, 2008c). In many instances, these Directives overlap in their relationship to coastal zones and in their representation of levels and assessments of impact.

In terms of geographical coverage, around 560,000km^2 of land up to 10km from the coastline has been determined using the CORINE Land Cover database – that is, using ecological characteristics and a land quadrate that starts at the (non-specified) coastline (EEA, 2010). CORINE

datasets may be used to delineate coastal zones but these are usually ecologically-based indicators and are more useful for assessing land use change and environmental impact. As mentioned earlier, these data can be used to establish 10km^2 of coastline, but for some socio-economic and cultural delineations this is not useful. In addition, CORINE does not cover all the areas within the remit of GEOSPECS.

Table 20 Estimation of coastal erosion risk using the Radius of Influence on Coastal Erosion (RICE).

Indicator	0 point	1 point	2 points
Pressure scoring			
1) Relative sea level rise (best estimate for the next 100 years)	< 0 cm (per region)	Between 0 and 40cm (per region)	> 40 cm (per region)
2) Shoreline evolution trend status	Less than 20% of the shoreline is in erosion or in accretion (per region)	Between 20% and 60% of the shoreline is in erosion or in accretion (per region)	More than 60% of the shoreline is in erosion or in accretion per region) I
3) Shoreline changes from stability to erosion or accretion beween the 2 versions (CCEr nd CEL) and CEL)	Less than 10% of the shoreline changes between the 2 versions (CCEr and CEL)	Between 10 and 30% of the shoreline have changed between the 2 versions (CCEr and CEL)	More than 30% of the shoreline have changed between the 2 versions (CCEr and CE!.)
4) Highest water level	Less than 1,5 meters	Between 1,5 and 3 meters	More than 3 meters
5) Coastal urbanization (in the 10 km land strip)	Urban areas (in km2) have increased of less than 5% between 1975 and present	Urban areas (in km2) have increased of 5 to 10% between 1975 and present	Urban areas (in lan2) have increased of more than 10% between 1975 and present
8) Reduction of river sediment supply (ratio)	Ratio between effective volume of river sediment discharged and theoretical volume (i.e. without dams) is superior to 80%	Ratio between 50 and 80%	Ratio is less than 50%
7) Geological coastal type	> 70% of "'likely non erodable" segments	likely non erodable segments"between 40% and 70%	< 40% of likely non erodable segments.
8) Elevation	<5% of the region area lies below 5 meters	Between 5 and 10% of the region area lies below 5 meters	> 10% of the region area lies below 5 meters
9) Engineered frontage (including protection structure))	<5% of engineered frontage along the regional coastline	Between 5% and 35% of engineered frontage along the regional coastline	> 35% of engineered frontage along the regional coastline
Impact scoring			
10) Population living within the RICE	<5,000 inhabitants per region	Between 5,000 and 20,000 inhabitants per region	> 20,000 inhabitants per region
11) Coastal urbanization (in the 10 km land strip)	Urban areas (in km2) have increased of less than 5% between 1975 and present	Urban areas (in km2) have increased of 5 to 10% between 1975 and present	Urban areas (in km2) have increased of more than 10% between 1975 and present
12) Urban and industrial living within the RICE	< 10% of the land cover within the RICE is occupied by urban and industrial areas (per region)	Between 10% and 40% of the land cover within the RICE is occupied by urban and industrial areas (per region)	> 40% of the land cover within the RICE is occupied by urban and industrial areas (per region)
13) Areas of high ecological value within the RICE	< 5 % of areas of high ecological value within the RICE per region	Between 5% and 30% of areas of high ecological value within the RICE per region	> 30% of areas of high ecological value within the RICE per region

Soure: CEC, 2004

Coastal zones as a context for economic and social development

At individual State scales, coastal areas are delineated for the licensing of commercial activities; while at local levels, bye-laws and similar instruments can be applied to routine or seasonal uses (e.g. recreation activities) of the coast. In these cases, much of the territorial planning is governed by terrestrial spatial planning as well as local or regional development plans, both of which rely on delineations based on scales that equate to LAU 2 delineations. As a result, while the term 'coast' may have a common understanding within specific sectors, this may not be true across sectors, leading to a lack of cohesion between various actors in the same geographic area.

The coastal zone is delineated differently within different sectors and different methodologies are used to map these. In relation to shipping, for example, shipping lanes historically derived from an analysis of the prevailing winds, but today ship routing is the responsibility of the International Maritime Organisation (IMO), which is enshrined in the Law of the Sea convention and Chapter V of the Safety of Life at Sea (SOLAS) Convention. This recognises the IMO as the only international body for establishing such systems. In contrast, fishing in coastal zones is delineated by the EU, if outside the territorial seas, or by national Governments, if fisheries are within the 12 nautical mile (nm) zone. Delineation measurements in this instance can be variable and so, for the purposes of establishing a workable delineation, it may be prudent to adopt a regional approach. Disputes on maritime boundaries, leading to multiple off-shore and on-shore problems (e.g., limits on the activity of local fishermen, limited functioning of ports and of maritime police control, incoherent management and preservation of the sea / the marine ecosystem, restricted development of tourism, distortions in the well-being of local inhabitants).

Coastal areas also function as internal and external borders of the European Union, the Schengen area and the European Economic Area. The territorial impact of these border functions may, in some respects, be analysed with similar types of methodologies as those previously described for terrestrial borders. However, the notion of "landing point" also needs to be explicitly integrated in the analysis.

For the purposes of delineation and statistical analyses, EUROSTAT utilises the NUTS 3 regions "with a coastline" to designate coastal regions. Similarly, the EUROSTAT GISCO database uses the NUTS 3 regions with a coastline and calculates up to 50km from the coastline when mapping coastal populations. However, areas beyond the 50km limit, such as

Hamburg, are included in the map as they have a "strong maritime influence". This delineation could be applied, with justification, to many other areas beyond the 50km limit. However, it is not clear if it treats 'coast' as the location of the urban influence (e.g., pollution or recreational activities), or if the urban area is influenced by the coast (e.g., by sea level rise or a source of invasive species). Likewise, some locations within the 50km limit may be considered as having little or no maritime influence in either direction.

Methodology for GEOSPECS

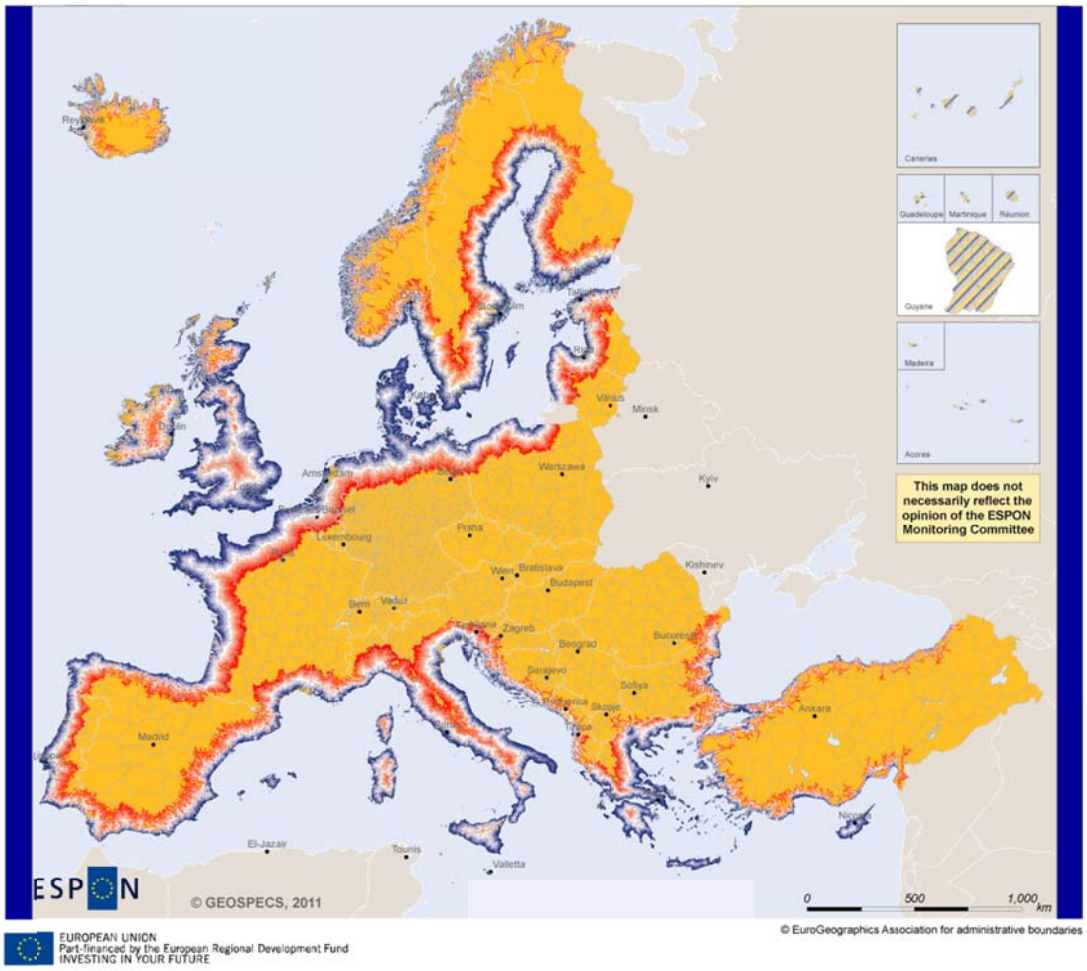
As discussed above, "coastline" and "coastal zones" are concepts with variable geometries. Attempts to harmonise the differing approaches for delineation of coasts are on-going, and at a European level it is recognised that overlaps between key policies, and the resultant effect on management and use of the coast, require consideration and analysis. Boundary definitions, in coastal zones, can be highly arbitrary (Sas et al., 2010). This has led some to call for a classification based on 'homogeneous environmental management units' (Brenner et al., 2006) as a way of incorporating multiple uses and landscapes / seascapes.

In view of assessing the extent to which proximity to a coast may influence economic and social development perspectives for the present study, two approaches need to be combined:

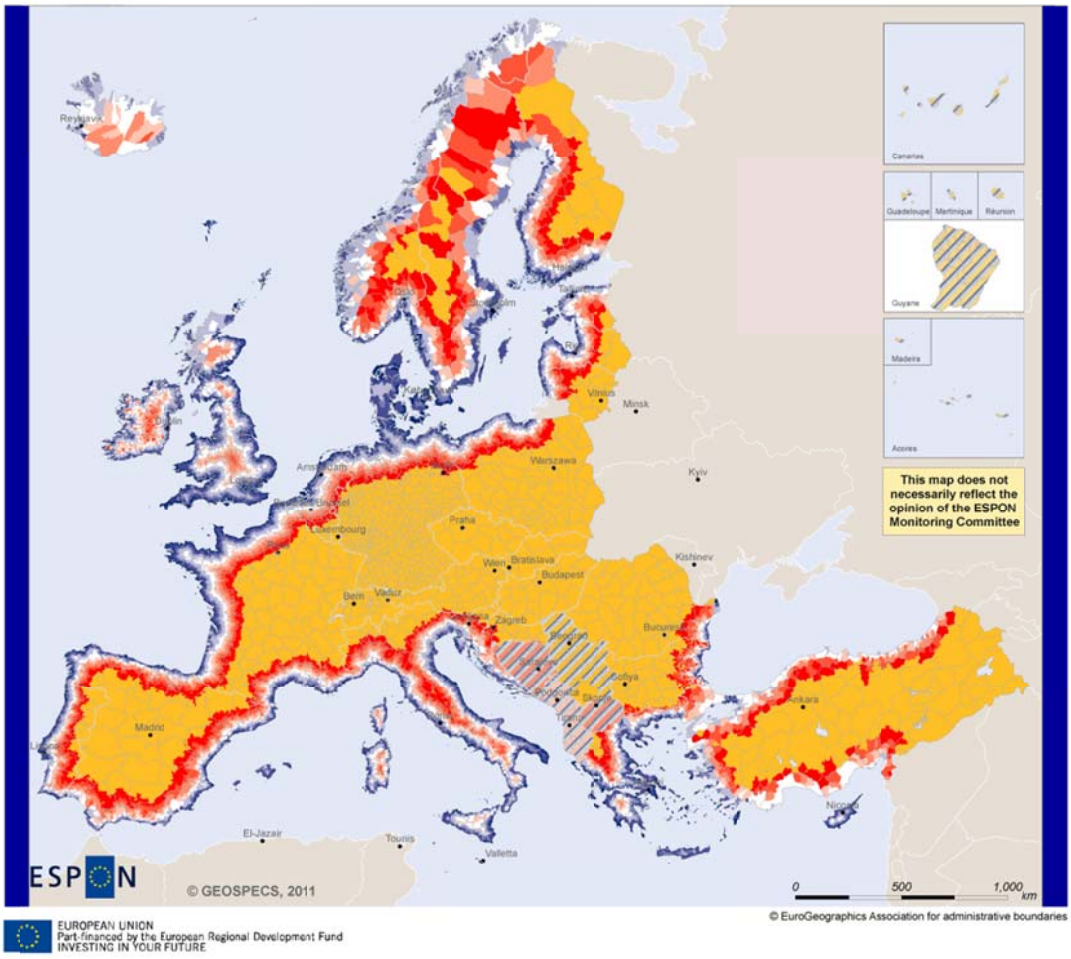
- On one hand, contiguity to a coast creates a series of challenges and threats, with coastal habitats being under increasing threat from issues such as increase in artificial surfaces, population growth, pollution, climate-related invasive species and overexploitation. From this perspective, coastal zones are approached as areas of particular vulnerability. The contiguity to coasts may be approached both at the local (LAU2) and regional (NUTS 3) scales.
- On the other hand, proximity to a coast is generally an asset for tourism development and residential attractiveness. The direct economic and social effects of activities related to the exploitation of marine resources and the operation of maritime "landing points" may furthermore be expected to be observed within coastal functional areas. For the analysis of social and economic trends influenced by proximity to coastlines, the TPG therefore adopts a similar approach for coastal zones as for border areas. This implies that it is not meaningful to produce a general delineation of coastal zones, insofar as the ranges of mobility and interaction associated with the different types of coastal effects are different.

The only database with complete and adequate coverage of all European coastline regions is of NUTS 3 designations that touch the sea. This may be taken further to lower levels such as LAU 2 units. The key issue with the NUTS 3 level is that some parts of these regions are quite distant from the sea and local actors may not recognise this designation. Similarly, some areas that are close to the sea do not appear in the NUTS 3 classification. In addition, there may be a necessity to include the 12nm territorial limit into the mapping area. Thus, a typology that draws on NUTS 3 delineations, but that is mapped using purposefully defined delineations (such as a combination of time-distance relationships to the coast: see Map 19), land use and change, environmental risk, stakeholder perceptions and valuations, energy and urban focal points, and so on may be necessary.

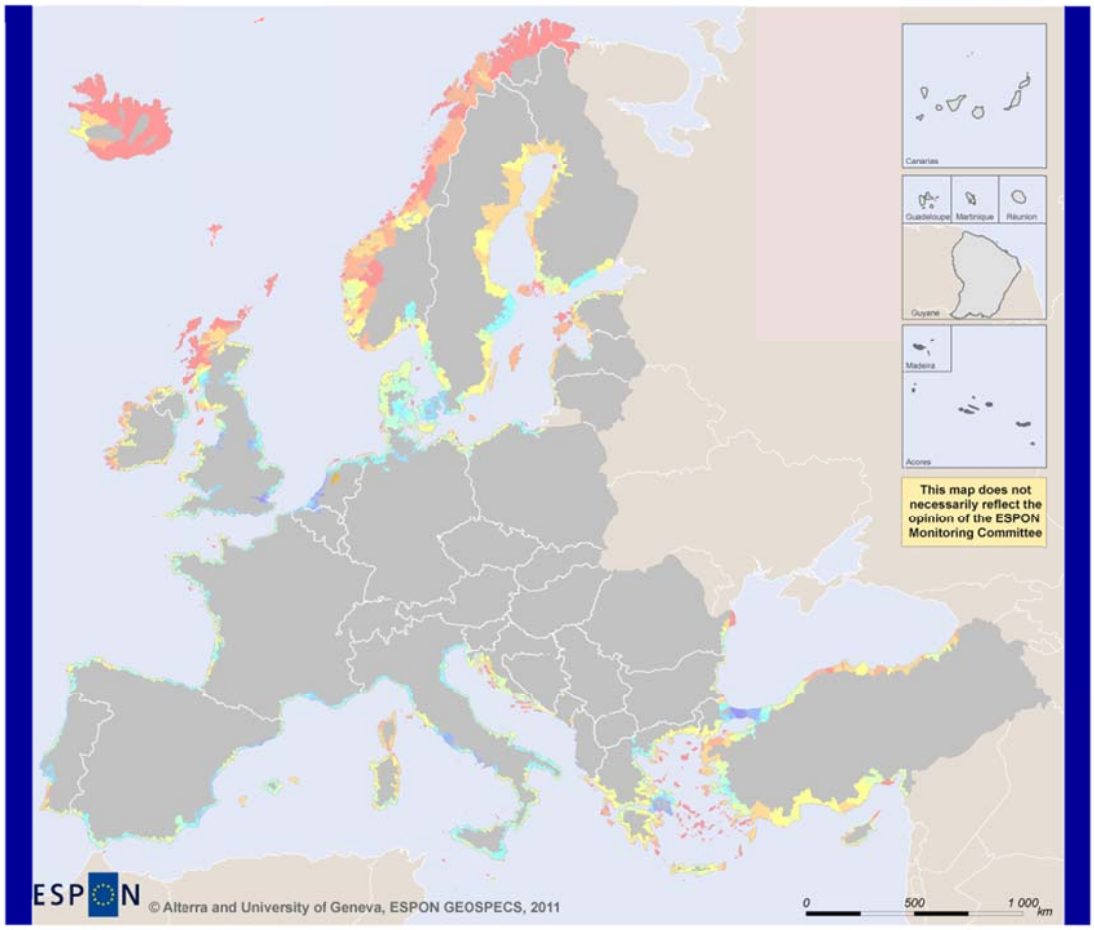
In GEOSPECS, it is also important to consider how the evolution of the coastline is influenced by social and economic development trends at the regional scale. Map 21 illustrates possible ways of approaching these types of dynamics empirically, by calculating the average population that can be reached within 45 minutes from each municipality with a coastline. The spread of observed values, ranging from 26,000 to almost 13 million persons, illustrates the variety of types of coasts. Subdividing the coastal zones in some main types may therefore be a necessary first step in the analysis.



Map 19 Areas within 45 minutes and 2 hours from the coastline



Map 20 **Municipalities within 45 minutes and 2 hours from the coastline**



Map 21 **45 minute population potential in municipalities contiguous to the coastline**

Inner Peripheries

Delineating Inner Peripheries as regions within the core area of the EU is a new concept in the ESPON space. As explained in the inception report, when trying to delineate such regions, the TPG will mainly focus on territorial structures rather than on institutional ones. The main identification of European inner peripheries therefore should be related to the rationale that such areas are situated in the shadow between the major metropolitan regions in Europe. In addition, differentials between geometric features can be used, including differentials in accessibility, functional linkages between the peripheries and metropolitan regions, and in population density. All these differentials can be seen as proxies, which can lead to lower economic and social performance. To begin the delineation process, the initial need is a clear basic idea of the type of peripherality at which GEOSPECS is aiming.

As described in the inception report, the TPG has not been able to identify any references to the term "inner peripheries" in European planning documents. However, the term "peripheries intérieures" is mentioned in section 5.2 of the French version of the European Spatial Development Perspective (ESDP) when describing metropolitan areas of accession countries that would belong to the losers of EU integration. This has been translated to "internal remote areas" in the English version of the ESDP. The nature of this "remoteness", however, remains to be determined.

Two types of uses of the term "inner peripheries" can be identified in the literature. In *European Inner Peripheries in the 20th Century* (Nolte, 1997), they are approached as peripheral areas within Europe (as opposed to those outside the borders of Europe) and defined as "a region within a state that is organised in such a way that its assets benefit the inhabitants of other regions". This allows for the characterisation of Wales, Galicia and Andalusia as "inner peripheries", though they are situated on the outer margins both in their respective national contexts and from a European point of view. The notion of inner periphery is approached from an institutional point of view. Jirí Musil, on the other hand, describes the peripheral regions of the Czech Republic as "inner peripheries" because they are mostly "located in the inner parts of the country, mainly along the borders of the administrative regions (kraje)" (Musil, 2008). Granville and Maréchal similarly identify the Walloon region as a European inner periphery because it is situated between major metropolitan regions (Grandville & Maréchal, 1999). The rationale is in both cases geometric.

A clear example of identifying three different types of peripheral regions in Europe is clearly described in the interview Klaus Kunzmann gave to Nordregio in 2008 describing his view for the future of European space (see Text Box 1).

Text Box 1 Futures for European Space 2020 according to Klaus R. Kunzman (2008).

Futures for European Space 2020; part of an interview with Klaus R. Kunzman, (2008). Kunzmann is a member of the scientific advisory council for European Planning Studies, International Planning Studies, Built Environment, and Planning Theory and Practice.
Complete text available at: http://www.nordregio.se/?vis=artikkel&fid=10602&id=020620101458037103

Peripheries as losers?
Metropolitan concentration, spatial specialisation and fragmentation, and spatial polarisation are some of the consequences of globalisation and technological change. The fierce competition already existing among city regions in Europe for investment, talent and creativity, nurtured by policy advisors, business consultants, researchers and ambitious city leaders, has produced a kind of metropolitan fever. This fever has resulted in the development of ambitious development projects, adorned architecture and impressive bridges, as well as the establishment of mega-events to attract tourists and the media. Such metropolitan fever tends to leave some territories in Europe behind, territories which are geographically disadvantaged or do not have a considerable store of endogenous territorial capital at their disposal nor access to the political power, the freedom or the talent to make use of it. At the beginning of the 21st century, three categories of such peripheries can be distinguished, namely (1) the European periphery; (2) the metropolitan periphery; and (3) the inner metropolitan periphery (see Map 1-3).

The European periphery comprises the territories in the Northern, Eastern and Southern fringes of Europe. Geographical periphery, however, is a question of perspective. The geographical location and the cultural background of the observer, alter the perception of spatial peripheries in Europe. Sardinia, seen from Spitsbergen, is clearly a peripheral region, though this may not be so when seen from Greece. Similarly, Northern Sweden or Finland, seen from Malta, are peripheral regions, though this undoubtedly changes if these regions are viewed from Norway. However, what remains is that peripheral territories in Europe are less accessible and have lower population densities with all the related social implications for the people still living and working in them. And often they are additionally disadvantaged by extreme climatic conditions and the existence of sensitive eco-systems.

The metropolitan periphery is made up of those territories, which, as a rule, are more than 100 kilometres away from the closest metropolitan core. In periods of globalization, metropolitan peripheries are disadvantaged by means of their limited accessibility to the metropolitan core and by size of their labour market, as well as in their access to all of the cultural and social facilities, that only a metropolis can provide. Unless medium-sized cities with significant territorial capital and a strong export-oriented regional economy provide such services, the more active and younger segment of the regional population tends to leave such regions behind, heading for the more attractive metropolitan cores. By more effectively linking these regions to the metropolitan core, the core and a few locations along the European transport corridors will benefit.

Fig.1 The European periphery

Fig.2 The metropolitan periphery

Fig.3 The inner-metropolitan periphery

The inner-metropolitan periphery includes peripheries found in all European metropolitan regions, most prominently in the banlieue of Paris, though also in and around Greater London, in Rome, Madrid and in Berlin. This inner-metropolitan periphery is characterized by a high degree of unemployment and above average crime rates, by a low quality of educational and social infrastructure, low levels of personal security and a significantly lower environmental and aesthetic neighbour-hood quality. The inner-metropolitan periphery is the "no go" area for the winners of globalization, and the refuge of the losers. It is in the inner-metropolitan periphery that formal and illegal migrants from ethnic minorities find their relative freedom, as it is in these places that they can afford to live, and are able to set up their (second) home territories. Obviously, spatial or territorial planning cannot solve all of the spatial development problems in the European peripheries. Each requires rather different and integrated policy actions at all tiers of planning and decision-making. The information power of space-focussed planning and communication competence can however trigger targeted discourses on how to cope with such challenges.

As described by Kunzmann, it is clear that, at the European level, the concept of the GEOSPECS Inner Peripheries more or less overlap his metropolitan peripheries (Text Box 1, Figure 2). However, to extract such areas consistently, more precise criteria need to be set.

In the delineation process in GEOSPECS, the following criteria were taken in consideration and ranked as follows:

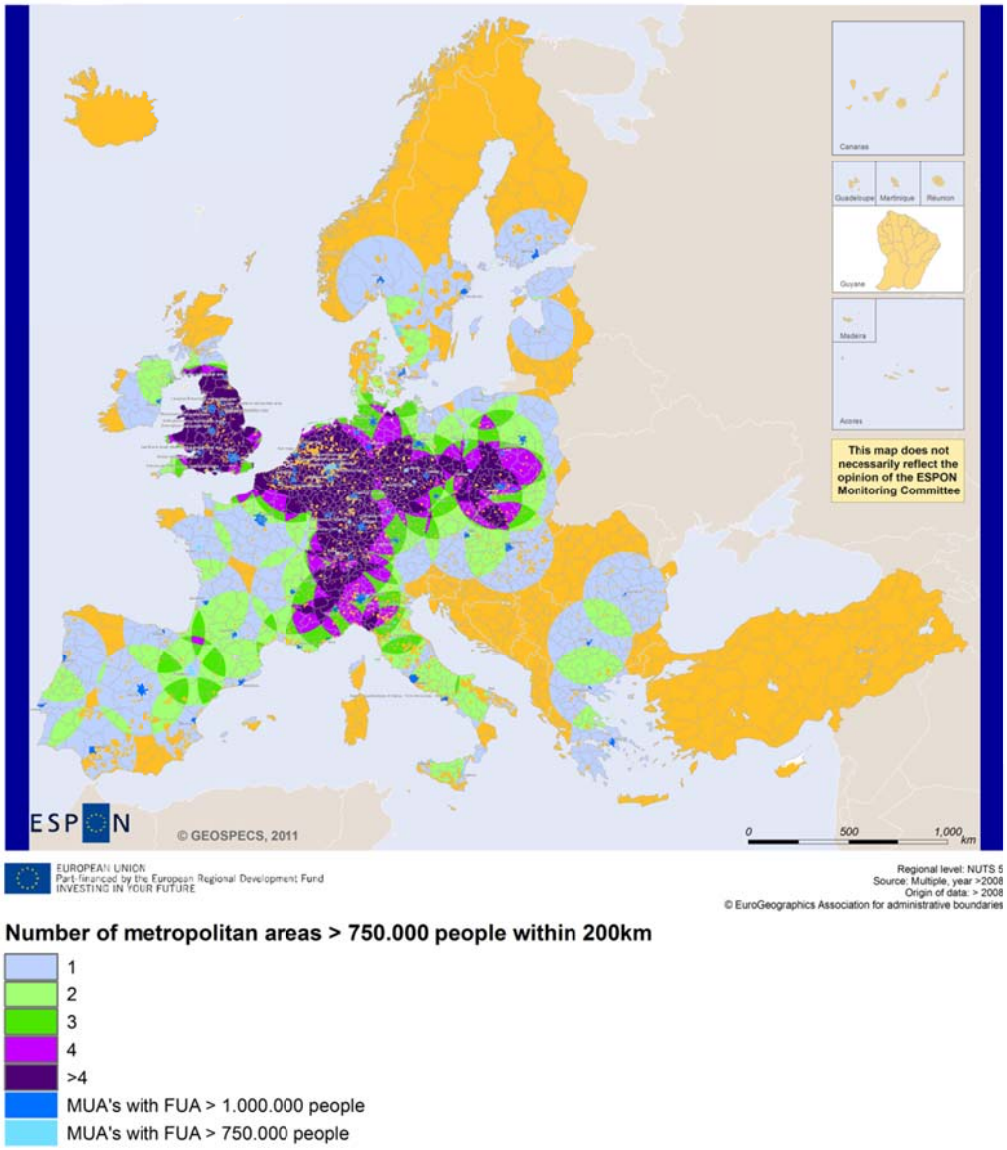
- accessibility to the metropolitan core;
- as a proxy for not being part of the outer European periphery;
- as a proxy for the size of the labour market;
- as a proxy for access to cultural and social facilities;
- the presence of medium-sized cities inside Inner Peripheries as a proxy for a regional economies;
- functional linkages of inner-peripheries:
  - between peripheries and metropolitan core;
  - between peripheries the European (transport) corridors;
- (trends in) regional population[18]

Based on these criteria, the following calculations were performed to extract the selected criteria on map.

'Calculating the accessibility to the metropolitan core' was done in a sequential three-step approach:

First, the proxy for *not being part of the outer-European periphery* was calculated, taking into account the proximity to the metropolitan core of Europe. All areas were extracted which are within 200 kilometres of a MUA with a FUA with over 750,000 people (See Map 22). This map shows areas surrounding and overlapping the main large MUAs in Europe. Only areas with an overlap between two or more MUAs were considered to be a potential inner periphery. This is an oversimplification of the reality as, according to the definition, a region probably does not need to be exactly in between two or more metropolitan European core regions. However as shown in Map 22, the main cores of European areas in between European mega-cities are selected.

[18] which is however not a physical way of delineating territories



Map 22 Areas in the proximity of the metropolitan core of Europe

The second step was to define access to the metropolitan core through the definition of a proxy for the *size of the (potential) labour market*. This was done by calculating the potential population size for each NUTS 5 region within a travel distance of 45 minutes. Areas with access to less than 1.5 million people were considered to have less chance to have access to an adequate labour force and thus to be more remote. For example, the well-known German inner periphery of Thüringen and the Northwest German/North-East Dutch plains could be considered as inner periphery, with however a relative high population potential.

Map 23 Classified potential population size for each NUTS 5 region in the proximity of the main urban centres, within a travel distance of 45 minute

The third step in defining accessibility to the metropolitan core was to calculate travel-time to the centre of the main metropolitan areas within the selected peripheries. These travel times were used as a *proxy for the access to cultural and social facilities*. A maximum travel time of 75 minutes to the main metropolitan areas was seen as an acceptable maximum regular, but not daily, travel-distance. This results in a sub-selection of the areas surrounding and overlapping the main big metropolitan areas in Europe (Map 22). Only those areas > 75 minutes from the main metropolitan areas were considered to be Inner Peripheries from a European perspective. From a regional perspective, these commuter distances can be set much lower (e.g. 45 minutes).

Map 24 Travel time to main metropolitan areas as a proxy for the access to services

The presence of medium-sized cities inside regions selected as Inner Peripheries can be seen as a proxy for *a possible existing functioning regional economy*. Thus, NUTS 5 FUA's and NUTS 5 regions with a travel time of over 45 minutes to the metropolitan areas with a population exceeding 50,000 inhabitants inside the Inner Peripheries were selected as a proxy for an acceptable regional commuter distance.

Combining these criteria results in a map of Inner Peripheries with high and low population potential with and without possible regional economic centres (Map 25). This map shows the basic ideas of a first identification of territories that are physically peripheral, based on proximity to a metropolitan area, travel time and population potential. Probably, from a

European perspective, only the 'Low population potential' - inner peripheries (both green classes) should be taken into consideration.

Map 25 First delineation of inner peripheries at the European scale

Remarks on the proposed delineation method

The (lack of) functional linkages with the surrounding areas is probably the most important factor to describe a region as being peripheral, seen from the region itself. However, from a purely geographic perspective, it is very difficult to extract such linkages generally across Europe. A wide variety of mainly social indicators, which are changing in space and time, could be used. For example, former mining areas like the Walloon region

currently have very different functional connections with the surrounding areas compared to 50 years ago. So although this is probably the most meaningful it was decided to look in detail into these types of linkages at the case study level to have a look if this more bottom–up approach will bring up a more common European perspective.

Some regions considered by experts as inner peripheries do not appear in the selection. For example, the region between Oslo and Stockholm disappeared, as there are more than 400 km between the cities and thus the region is not considered as being in the proximity of a metropolitan area. However, from a Nordic perspective the 200 km threshold should probably be increased. This example shows very clear that, in the current (first) delineation, all thresholds to a large extent are based on expert judgement. It is difficult for such areas to give an objective set of rules which is valid all over Europe; and such objective rules may not be possible (without the use of data describing the real performance and linkages of regions in terms of socio-economic performance).

The TPG deems it too early to state a full set of meaningful statistics at present. On the basis of this first identification of territories that can be physically seen as Inner Periphery, the TPG has identified 39,898 NUTS 5 regions in the ESPON space, inside 470 NUTS 3 regions. These NUTS 5 regions have a total area of 1,206,174 km^2

Table 21 Characterisation of Inner Peripheries (Number of LAU2 units and area)

Inner Peripheries with:	NUTS 5 regions	km2
High population potential	439	12820
High population potential, regional centre inside	2385	63484
Total High population potential	*2824*	*76303*
Low population potential	20037	728522
Low population potential, regional centre inside	17037	401349
Total Low population potential	*37074*	*1129871*
Total	*39898*	*1206174*

Table 22 Characterisation of Inner Peripheries (Number of LAU2 units and area)

	Low population		*High population*		
country		***regional centre***		***regional centre***	***Total***
Albania	DP				
Andorra	465				465
Austria	17724	11192	42	430	29388
Belgium	2989	1956	136	2013	7094
Bosnia and Herzegovina	DP				
Bulgaria	30623	5459			36081
Croatia	425				425
Czech Republic	24338	20898	201	1060	46498
Denmark	4621	9495			14116
Estonia	834	1186			2021
France	129649	99420	395	3201	232666
FYROM	MD				
Germany	37931	44192	5735	28960	116817
Greece	18766	5216			23982
Hungary	22286	358			22644
Ireland	11052	284			11336
Italy	64237	45977	1653	12265	124132
Kosovo	809				809
Latvia	0				
Lithuania	0				
Liechtenstein	119		41		160
Luxembourg'		1300		36	1335
Montenegro	DP				
Netherlands	135	3447	403	6106	10092
Norway	961	405			1367
Poland	114366	22445	144		136955
Portugal	30521	7340		14	37875
Romania	10123	5263			15386
Serbia	DP				
Slovakia	17489	16640	945	1401	36475
Slovenia	363				363
Spain	100788	59315	110	229	160443
Sweden	31935	14997		116	47048
Switzerland	13422	6124	726	4374	24646
Turkey	DP				
United Kingdom	41288	18439	2289	3278	65294
	728322	*401349*	*12820*	*63484*	*1206174*

3.3 Analytical matrix

GEOSPECS investigates the possible contributions of a coherent territorial analysis of seven categories of geographic specificities (GEOSPECS categories) for the design and implementation of European policies aimed to promote a balanced and sustainable development in all parts of the territory. The DG REGIO working paper *Territories with specific geographical features* (Monfort, 2009) observed that mountains, islands and sparsely populated areas are very diverse in terms of socio-economic profile, performance and constraints and concluded that "it is difficult to use such categories as a reference for setting up specific regional development programmes". GEOSPECS will go beyond this general statement by adopting an intraregional approach and by considering a wider range of themes, in view of identifying potential applications of these spatial categories in policy making in spite of these limitations.

The in-depth analysis of each geographic specificity will help to enhance the understanding of the diversity of development preconditions and territorial ambitions across the ESPON space, showing that the different stages of development and potentials one can observe may reflect similar processes occurring in different political and social contexts, and in different historical periods.

GEOSPECS will focus on the interactions between the specific geographic features and the social and economic processes in each category. The analysis of social and economic patterns and trends of the areas characterised by geographic specificities will help in identifying relevant issues and formulating hypotheses on how these interactions take place. However, they will not provide direct evidence on structural handicaps or on specific assets. For this reason, an analytical framework was developed, primarily focusing on the formulation of evidence-informed hypotheses which will be tested through a combination of quantitative and qualitative methods.

The analytical framework is built around nine transversal themes. For each of these (see **Feil! Fant ikke referansekilden.**), the responsible project partner developed a guidance note, which includes definitions of the most important concepts, a synopsis of the academic and policy debates around the theme, and a set of two or three research questions which emerge for the project. The guidance notes were elaborated on the basis of a review of relevant academic literature as well as relevant policy documents. In addition, during the kick-off meeting in September 2010, the partners discussed the transversal themes in interactive workshops, gave each other inputs on their respective themes, and pointed out possible approaches or priorities.

Short versions of the guidance notes can be found in Annex 5. They provide specifications of the research questions suggested in the Analytical Matrix (see Table 24 below). During the implementation phase of the project, these guidance notes will serve as reference documents for the qualitative and quantitative research conducted in the different GEOSPECS areas.

All transversal themes will be analysed with the priorities of "Europe 2020" in mind. Within each theme, the TPG will therefore seek to determine how the characteristics of each GEOSPECS category may be of use when formulating and implementing strategies for "smart growth" (developing an economy based on knowledge and innovation), "sustainable growth" (promoting a more resource efficient, greener and more competitive economy), and "inclusive growth" (fostering a high-employment economy delivering social and territorial cohesion). The analysis will therefore focus on the core research question: 'how may the diversity of geographic specificities across Europe be taken into account for multiple development models and ambitions?' The working hypothesis is that European objectives may not be transposed mechanically to the

Table 23 List of transversal themes

Type of development approach	**Transversal theme**	**Partner name**
Economic	Economic vulnerability / robustness facing globalisation	Nordregio, SE
	Accessibility and access to services of general interest	Alterra, NL
	Role of Information and Communication Technologies	Louis Lengrand & associés, FR
Social	Demographic structures and trends	University of Geneva, CH
	Residential attractiveness	E-cubed consultants, MT
	Regional identity and cultural heritage as factors of development	University of Geneva, CH
Environmental	Protected areas and biodiversity as factors of development	Perth College UHI, UK
	Natural resource exploitation	Coastal and Marine Resources Centre, IE
	Vulnerability of human-environment systems to climate change	Umweltbundesamt Österreich, AT

regional and local levels. Instead, the diverse ways on which individual territories may contribute to "smart", "sustainable" and "inclusive" growth need to be taken into account. If this hypothesis is confirmed, it will call for a European development strategy applying a systemic vision of how

"place-based" policies interact and contribute to overall balanced and harmonious development.

The institutional and governance-related dimension is furthermore important in all transversal themes, insofar as none of the issues can be approached without considering the ways in which they are understood and dealt with by European, national, regional, and local stakeholders.

Together with the outcomes of the consultation process, the transversal themes form the basis of the Analytical Matrix. In this way, it is ensured that the GEOSPECS areas are not analysed exclusively from the perspective of their geographic specificity, but also with a view to common questions, thus making the outcomes comparable.

The analytical framework has been designed to provide a coherent basis for the analysis of different types of geographic specificities. It will shed light not only on the major conceptual differences between the seven GEOSPECS categories, but also on their commonalities, allowing for a general discourse on territorial diversity and its political implications. It therefore not only allows for comparisons between the different GEOSPECS categories, but also considers the specific characteristics of each category.

The starting point for the analytical matrix is the transversal themes – in this way, the opportunities and challenges of areas with geographic specificities will be examined from different angles. Given the differences between the GEOSPECS categories, the relevance of the transversal themes varies among them. In addition, some themes were identified as particularly important for some categories of geographically specific areas in the stakeholder consultation process.

The analytical matrix provides an overview of the ways in which each transversal theme will be dealt with across the different geographic specificities, in view of producing a strong narrative about geographical specificities across the whole ESPON space. In this way, the project shall make it clearer why many geographically specific areas do not fully exploit their potential, and identify examples of good practice overcoming their challenges.

Table 24 Analytical matrix for GEOSPECS areas

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Economic vulnerability / Robustness facing globalisation							
Activity structure (EVR1)	Is mountainousness associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is insularity associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is sparsity associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is proximity to a coast associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is proximity to a border associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is the origin of an IP associated with an over- or under-representation of specific sectors? Are IP associated with lack of jobs in the area? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?	Is OR status associated with an over- or under-representation of specific sectors? How open (more dependent on external forces, fluctuations in the demand on the global commodity market and seasonality of activities) and specialised are the economies?
Tourism (EVR2)	How / to what extent does tourism contribute to the perspectives of more balanced and sustainable development in mountain areas?	How / to what extent does tourism contribute to the perspectives of more balanced and sustainable development in islands?	How / to what extent does tourism contribute to the perspectives of more balanced and sustainable development in SPAs?	How / to what extent does tourism contribute to the perspectives of more balanced and sustainable development in coastal areas?	What are the key types of tourism generated by "border effects"? What role do these forms of tourism play in the concerned areas?	Do IPs play a role as providers of green areas and leisure services for neighbouring metropolitan areas? Is this the reason for becoming IP?	How / to what extent does tourism contribute to the perspectives of more balanced and sustainable development in ORs?

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Economic vulnerability / Robustness facing globalisation (continued)							
Economic specificity related to geographic specificity (EVR3)	Can one identify some main types of "mountain economies"? Can the amenities and resources linked to the mountainous character of the concerned areas help explaining their economic profile?	Can one identify some main types of "island economies"? Can the amenities and resources linked to the insular character of the concerned areas help explaining their economic profile?	Does sparsity lead to specific forms of economic organisation? *Hypotheses / questions:* *- relative weight of SMEs and large corporations,* *- high dependence on external service providers and public services,* *-limited circularity of local economies?* *- difficult balance between the necessity to increase economic interactions outside the region (openness) and within the region (circularity)* *- What would be the advantages of improved connections between small peripheral economies?*	Economic significance of the coast: What share of the economy is accounted for by coast-specific activities such as tourism (?), fishery and maritime freight? Can the amenities and resources linked to the coastal character of the concerned areas help explaining their economic profile? What is the effect of coasts on the regional economic development ("half circle economy")?	Economic significance of the border as a discontinuity: Can one make a typology of the main types of discontinuities (e.g. income, GDP, language, institutional and administrative systems…), and identify their respective effects? (incl. development of cross-border commuting and other cross-border flows) What is the effect of borders on the regional economic development ("half circle economy") and cross-border economic exchanges?	Can one identify some main types of "inner periphery economies"?	What are main destinations of exports and origins of imports ("core Europe" or neighbouring countries)? Can the amenities and resources linked to the OR status of the concerned areas help explaining their economic profile?

	Mountains	Islands	SPA	Coasts	Border areas	Inner Periphery	OR
Accessibility, connectivity and SGI							
Specific transport infrastructure issues related to geographic specificity (ACC1)	What are the typical challenges for building, operating and maintaining transport infrastructure related to mountain areas? What strategies can be identified to deal with these challenges? *Hypotheses / questions:* *- Additional costs linked to topography* *- Effects of seasonally closed connections* *- Specific hazard related to mobility* *- Ecological constraints on the development of transport in mountain areas* *- Functioning of mountain areas as the hinterland of densely populated piedmont areas*	Overcoming insularity: How does reliance on air and sea transport for external connections affect the perspectives of economic development and social well-being? Do fixed links cancel this specificity, or do some specificities remain? *Hypotheses / questions:* *- Population and size of islands are critical factors* *- Double insularity amplifies challenges* *- what is the role of regulatory frame-work and commercial context for the operation of air/sea connections*	What are the typical challenges for building, operating and maintaining transport infrastructure related in sparsely populated areas? Climatic conditions? Protected environmental areas? What strategies can be identified to overcome / deal with these challenges? *Hypotheses / questions:* *- Is distance to markets or access to logistic centres / hubs the main factor?* *- How are cost-benefit ratios used when assessing infrastructure projects in these areas?*	Do specific challenges exist with regard to building, operating and maintaining transport infrastructure in the immediate proximity of a coast? Does specifically coastal infra-structure (ferry connections, pipelines, sub-marine phone lines…) create local and regional spec-ific development opportunities? *Hypotheses / questions:* *- Do coastal areas concentrate many flows and infrastructures without reaping the same economic benefits from this situation as previously?*	What are the challenges connec-ted to building, operating and maintaining of infrastructure across national borders? What strategies can be identified to overcome / deal with these challenges? What difficulties of coordination / conflicts / issues arise with the development of cross-border commuting and other cross-border flows? *Hypotheses / questions:* *- Border areas can be prosperous interfaces, but may also struggle with challenges linked to a peripheral situation caused by political and cultural factors*	What are the main factors leading to lower accessibility in IP compared to neighbouring metropolitan areas? Is it distance to hubs and logistics centres mainly, or does the quality of the infrastructure and/or regularity of transport connections also play a role? *Hypotheses / questions:* *- Some inner peripheries are preserved rural areas, and limited accessibility is part of an assumed strategy, while others are lagging areas in the shadow of metropolitan regions.*	What specific arrangements have been established to facilitate connections between OR and the country to which they belong? To what extent can the OR be said to be functionally integrated in their geographic context? *Hypotheses / questions:* *- Some OR function as national outposts, and their disconnection from their geographic context contributes to limit their economic and social autonomy.*

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Accessibility, connectivity and SGI (continued)							
Services of general interest (ACC2)	Does the production and delivery of services in mountain areas pose specific challenges? (i.e. different from those to be found in equivalent urban and rural areas in the lowland) What strategies can be identified to overcome / deal with these challenges? *Hypotheses / questions:* *- Are issues similar to other areas, but territorial patterns of difficulty of access to SGI nonetheless specific?* *- Specific role of piedmont areas as providers of SGI?* *-foreseeable challenges due to demographic trends*	Does the production and delivery of services in insular areas pose specific challenges? What strategies can be identified to overcome / deal with these challenges? *Hypotheses / questions:* *- Population and size of islands are critical factors* *- Does the isolation of islands from the outside world when there is no ferry or flight create specific demands for local SGI?* *- Can critical population thres-holds for SGI production in island be identified?* *-foreseeable challenges due to demographic trends*	Does the production and delivery of services in sparsely populated areas pose specific challenges? What strategies can be identified to overcome / deal with these challenges? *Hypotheses / questions:* *- What SGI are of critical importance to maintain population levels?* *- How can new forms of PPP help in maintaining access to SGI?* *- Can critical population thres-holds for SGI production in isolated commu-nities be identified?* *-foreseeable challenges due to demographic trends*	In what respects do coastal areas represent a specific situation as far as the production and delivery of services of general interest is concerned?	What strategies can be identified to use the proximity to a border to enable the provision of services to/from another country? What are the main motivations / obstacles to such a strategy? *Hypotheses / questions:* *- Border areas are exposed to a number of regulatory, linguistic and cultural obstacles to an effective operation of SGI.*	To what extent are IP dependent on neighbouring urban centres for the provision of services of general interest? *Hypotheses / questions:* *- The operation of SGI in inner peripheries is increasingly difficult, as these are exposed to a vicious circle in which the higher educated income providers move out, while the elderly and unemployed consumers of SGI remain.* *-foreseeable challenges due to demographic trends*	To what extent are OR dependent on actors / interventions from extra-regional actors of the country to which they belong for the production and delivery of services of general interest? *Hypotheses / questions:* *-Historically inherited administrative and economic systems in some OR makes it difficult to adapt SGI production to local conditions.* *-foreseeable challenges due to demographic trends*

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Accessibility, connectivity and SGI (continued)							
	Are the challenges for service production and delivery in these three types of TeDi areas similar, or are there any major differences?						
Role of information and Communication Technologies							
Impacts of ICT **(ICT1)**	What strategies can be identified to compensate for relative isolation and limited population size in mountain areas through the usage of ICT? What are the difficulties such a strategy is facing?	What strategies can be identified to compensate for relative isolation and limited population size of islands through the usage of ICT? What are the difficulties such a strategy is facing?	What strategies can be identified to compensate for relative isolation and limited population size of sparsely populated areas through the usage of ICT? What are the difficulties such a strategy is facing?	Has ICT contributed to the spatial dissociation of coastal landing points and associated commercial and service functions? (e.g. trade, customs, logistics management) or on the contrary improved the ability of coastal areas to access information and take advantage of opportunities? Is the proximity to transoceanic communication cables an advantage for concerned coastal areas?	How does ICT contribute to the development of cross-border cooperation and integration? *Hypotheses / questions:* *- do people have access to multilingual public web portal, providing administrative information on the different national / regional schemes (taxes, health, public transport, etc.)* *- Are differences between national systems an obstacle (e.g. IT-standards, usage of mobile phone in cross-border areas (roaming))?*	Do IP have lower broadband and mobile phone coverage levels than neighbouring metropolitan areas? *Hypotheses / questions:* *- Can ICT contribute to facilitate new types of working arrangements for the inhabitants of these areas, with distance-working most of the time?*	What strategies can be identified to compensate for relative isolation and limited population size of OR through the usage of ICT? What are the difficulties such a strategy is facing? *Hypotheses / questions:* *- Is the historical presence of national ICT providers in OR an asset or an obstacle?* *- Does ICT contribute to strengthen links between OR and the country they belong to / the rest of Europe?* *- Is it an instrument for territorial cohesion in OR?*
	Hypotheses / questions: *- Does geographic specificity lead to lower mobile / broadband coverage? In what different ways (e.g. technical challenges, limited potential market, limited competition between operators, regulatory frameworks not adapted to local conditions…)* *- Does geographic specificity favour an abandonment of existing services in favour of online services(or are both used as complements)*						

	Mountains	Islands	SPA	Coasts	Border areas	IP	OR
Demographic structures and trends							
Demographic processes **(DEM1)**	Do mountain areas feature a specific age and gender structure of the population?	Do islands feature a specific age and gender structure of the population?	Do SPAs feature a specific age and gender structure of the population?	Do coastal zones feature a specific age and gender structure of the population?	Do border areas feature a specific age and gender structure of the population?	Do IP feature a specific age and gender structure of the population?	Do OR feature a specific age and gender structure of the population?
	Are birth, in and out- migration rates & overall population trends specific in mountain areas?	Are birth, in and out- migration rates & overall population trends specific in islands?	Are birth, in and out- migration rates & overall population trends specific in SPAs?	Are birth, in and out-migration rates & overall population trends specific in coastal areas?	How do contrasts in birth, in and out- migration rates & overall population trends across borders affect border areas?	How do in- and out- migration trends result in population density trends? Are these population trends specific for IPs?	Are birth, in and out-migration rates & overall population trends specific in ORs?
Settlement patterns **(DEM2)**	What are the specific settlement patterns and types of demographic change associated with mountainous-ness? *Hypotheses / questions:* *- Polarising trends occur and a particularly narrow scale in many mountain areas* *- Overall demographic trends vary from massif to massi*	What are the specific settlement patterns and types of demographic change associated with insularity? *Hypotheses / questions:* *- Depending on their size and attractiveness, islands can be struggling either with over-concentration or depopulation*	What are the specific settlement patterns and types of demographic change associated with sparsity? *Hypotheses / questions:* *-SPA are struggling both with demographic "thinning out" processes in most rural parts, and with intense growth in some cities*	What are the specific settlement patterns and types of demographic change associated with proximity to a coast? *Hypotheses / questions:* *-Many of coastal areas are among Europe's most attractive living environments. What differentiates these from the other coastal areas?*	What are the specific settlement patterns and types of demographic change associated with proximity to a border? *Hypotheses / questions:* *- Patterns will be different, depending on whether the border primarily functions as an obstacle or an interface*	What are the specific settlement patterns and types of demographic change associated with Inner Peripherality? *Hypotheses / questions:* *- Patterns will be different, depending on the degree of polycentricism of the country (linked to the urban-rural divide), and whether border functions as obstacle or interface)*	What are the specific settlement patterns and types of demographic change to be found in Outermost Regions? *Hypotheses / questions:* *- Migratory movements between OR and the country they belong to has a major influence on their demographic trends*

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery (IP)	Outermost Regions
Demographic dynamics (continued)							
Migratory movements **(DEM3)**					How are border areas affected by migratory movements (intra-European and extra-European)?		How are OR affected by migratory movements (intra-European and extra-European)?

Residential attractiveness							
Residential attractiveness as a result of geographic specificity **(RAT1)**	To what extent is the degree of residential attractiveness (positive and negative) dependent on the mountainousness of the area rather than on human intervention? To what extent does the residential attractiveness of mountain areas depend on the social and demographic characteristics which are specific to mountain areas?	To what extent is the degree of residential attractiveness (positive and negative) dependent on the insularity of the area rather than on human intervention? To what extent does the residential attractiveness of islands depend on the social and demographic characteristics which are specific to islands?	To what extent is the degree of residential attractiveness (positive and negative) dependent on the sparse population of the area rather than on human intervention? To what extent does the residential attractiveness of SPA depend on the social and demographic characteristics which are specific to SPA?	To what extent is the degree of residential attractiveness (positive and negative) dependent on the proximity to a coast rather than on human intervention? To what extent does the residential attractiveness of coasts depend on the social and demographic characteristics which are specific to coasts?	To what extent is the degree of residential attractiveness (positive and negative) dependent on the proximity to a border rather than on human intervention? To what extent does the residential attractiveness of border areas depend on the social and demographic characteristics which are specific to border areas?	Do Inner Peripheries offer features making them more or less attractive that are *independent* from human intervention? To what extent does the residential attractiveness of IP depend on the social and demographic characteristics which are specific to IP?	To what extent is the degree of residential attractiveness (positive and negative) dependent on the situation as an OR, rather than on human intervention? To what extent does the residential attractiveness of OR depend on the social and demographic characteristics which are specific to OR?

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Regional identity and cultural heritage as factors of development							
Identity **(RID 2)**	Is mountainousness associated with specific ways of using territorial identity and cultural heritage for development purposes *Hypotheses / questions:* *- Is the mountain/lowland opposition drawn upon by economic actors? If yes, in what ways?* *- Are the networks of people identifying with specific mountain areas, but not necessarily living there, particularly strong?*	Is insularity associated with specific ways of using territorial identity and cultural heritage for development purposes? *Hypotheses / questions:* *- Is the island/mainland opposition drawn upon by economic actors? If yes, in what ways?* *- Are the networks of people identifying with specific mountain areas, but not necessarily living there, particularly strong?*	Is sparse population associated with specific ways of using territorial identity and cultural heritage for development purposes? What role do ethnic and cultural minorities play shaping the regional identity? *Hypotheses / questions:* *- Is the sparse (peripheral) / dense (central) opposition drawn upon by economic actors? If yes, in what ways?* *- Are the networks of people identifying with specific sparsely populated regions, but not necessarily living there, particularly strong?*	Is proximity to a coast associated with specific ways of using territorial identity and cultural heritage for development purposes? *Hypotheses / questions:* *- Is the coastal / inland opposition drawn upon by economic actors? If yes, in what ways?*	Is proximity to a border associated with specific ways of using territorial identity for development purposes? Do border communities distancing themselves from the Nation-States they belong to generate specific economic dynamics? Do cross-border linguistic/ cultural/ ethnic differences influence on the development of border areas? *Questions:* *- Influence of "resurgent nations" (e.g. Catalonia, Scania…) in border areas on development trends?*	In what ways, and by which groups/actors, are the identities of IP constructed? Are these identities and the cultural heritage of IP used as a factor of development? *Hypotheses / questions:* *- Are successful Inner peripheries those that are recognised as proposing an alternative lifestyle to neighbouring metropolitan regions?*	Are OR associated with specific ways of using territorial identity and cultural heritage for development purposes? *Hypotheses / questions:* *- Is the OR / continental Europe opposition drawn upon by economic actors? If yes, in what ways?* *- Are the networks of people identifying with specific sparsely populated regions, but not necessarily living there, particularly strong?*

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Regional identity and cultural heritage as factors of development (Continued)							
Geographic specificity as factor in the Protected Designations of Origin **(RID1)**	Is mountainousness a factor for the identification and branding of PDO, PGI and TSG designations in mountain areas?	Is insularity a factor for the identification and branding of PDO, PGI and TSG designations in islands?	Is sparsity a factor for the identification and branding of PDO, PGI and TSG designations in SPAs?	Is proximity to the coast a factor for the identification and branding of PDO, PGI and TSG designations in coastal areas?	Is proximity to the border a factor for the identification and branding of PDO, PGI and TSG designations in border regions?	Is IP status a factor for the identification and branding of PDO, PGI and TSG designations in IP?	Is OR status a factor for the identification and branding of PDO, PGI and TSG designations in ORs?
Residential attractiveness							
Links between economic growth and residential attractiveness (RAT1)	Does mountainousness reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Does insularity reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Does sparse population reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Does the proximity to a coast reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Does the proximity to a border reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Do Inner Peripheries reinforce positive or negative feedback loops between economic growth and residential attractiveness?	Do OR reinforce positive or negative feedback loops between economic growth and residential attractiveness?

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Protected areas and biodiversity as factors of development							
Protected Areas **(PAB1)**	Is mountainousness associated with a particularly high proportion of PA?	Is insularity associated with a particularly high proportion of coverage with PA?	Is sparse population associated with a particularly high proportion of coverage with PA?	Is proximity to a coast associated with a particularly high (or low) proportion of coverage with PA?	Is proximity to a border associated with a particularly high proportion of coverage with PA?	Are IP associated with a particularly high proportion of coverage with PA?	Are OR associated with a particularly high proportion of coverage with PA?
	Hypotheses / questions: *- How do PA function as a resource and/or constraint for local and regional development?* *- How does geographic specificity influence the capacity for implementing "successful protected area tourism"?*						
Particular plant and animal? species as a factor of local development **(PAB2)**	Are there mountain-specific species that contribute to local economic development? In what way? What could be done to take more advantage of these?	Are there island-specific species that contribute to local economic development? In what way? What could be done to take more advantage of these?	Do some species that mainly occur in sparsely populated areas contribute to local economic development? In what way (e.g. hunting)?	Do some species that occur only along coasts contribute to local economic development? In what way (e.g. recrea-tional fishing)?	Do borders that have functioned as unoccupied buffer zones between neighbouring countries host specific species?	not relevant – could be - as part of the cultural identity or restricted development areas	Are there species that don't exist in continental Europe which of particular economic importance?
	Hypotheses / questions: *- are specific losses of biodiversity perceived as a threat for economic growth and/or regional perspectives of sustainable development?*						

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Natural resource exploitation							
Particular resources **(NRE1)**	To what extent do the different mountain ranges function as water towers for surrounding regions? What is the relative importance of mountain forestry resources in Europe? *Hypotheses / questions:* *- Contribution of mountains to the regulation of access to water throughout the year (importance of glaciers)* *- Importance of hydropower production for local / regional / national economy* *- Are mountain forests under-or over-exploited?*	In which islands is the exploitation of marine resources a significant component of the local/regional economy? *Hypotheses / questions:* *- is it possible to distinguish between coastal and offshore exploitation of marine resources?* *- How are island communities involved in strategies for the sustainable management of marine resources?*	What strategically important natural resources are located in SPA? Can vast unoccupied land areas in itself be a resource? *Hypotheses / questions:* *- Can one identify resources in SPA that of which the exploitation is limited because of distance to main markets, incapacity to recruit employees with adequate competences and/ or impossibility of adapting to prevailing models exploitation models (e.g. intensive agriculture)?*	In which coastal areas is the exploitation of marine resources a significant component of the local/regional economy? *Hypotheses / questions:* *- is it possible to distinguish between coastal and offshore exploitation of marine resources?* *- How are coastal communities involved in strategies for the sustainable management of marine resources?*		Are IP associated with particular natural resources (e.g. mining)?	How do OR contribute to supply the exploitation of resources of strategic interest for Europe and/or effectively contributing to local wealth and well-being? *Hypotheses / questions:* *- Can the European regulatory frameworks and international commitments be an obstacle to the sustainable exploitation of OR regions resources (e.g. fisheries)?* *- Is the geographic location of the OR a resource in itself?*

	Mountains	Islands	Sparsely populated areas	Coasts	Border areas	Inner Periphery	Outermost Regions
Natural resource exploitation (continued)							
Clean air and "untouched nature" as a resource (NRE2)	Are mountainous areas associated with better air quality than other areas?	Are islands associated with better air quality than other areas?	Are sparsely populated areas associated with better air quality than other areas?	Are coastal zones associated with better air quality than other areas?	Are border areas associated with better air quality than other areas?	Are IP associated with better air quality than other areas?	Are OR associated with better air quality than other areas?
Renewable energy resources (NRE6)	Does mountainousness entail particular preconditions for the production of renewable energy? (wind, water, solar) If yes, how are these advantages taken advantage of for local and regional development?	Does insularity entail particular preconditions for the production of renewable energy? (wind, water, solar) If yes, how are these advantages taken advantage of for local and regional development?	Do SPA have particular preconditions for the production of renewable energy? (wind, water, solar, bioenergy, peat) If yes, how are these advantages taken advantage of for local and regional development?	Do coasts have particular preconditions for the production of renewable energy? (wind, water, solar, bioenergy, peat) If yes, how are these advantages taken advantage of for local and regional development?		Do IP entail particular conditions for the production of renewable energy? (wind, water, solar) (opportunities)	Do ORs have particular preconditions for the production of renewable energy? (wind, water, solar, bioenergy, peat) If yes, how are these advantages taken advantage of for local and regional development?
Access to key resources (NRE4)		Are enough water resources available on islands? If not, what perspectives are there to adapt the supply of freshwater to the demand?					
Exploitation of natural resources (NRE3)	What barriers/challenges does the mountainousness of the area present to collaborative and communicative practices and policies of natural resource exploitation?	What barriers/challenges does the insularity of the area present to collaborative and communicative practices and policies of natural resource exploitation? What are the environmental issues linked to the exploitation of natural resources?	What barriers/challenges does the sparsity of the area present to collaborative and communicative practices and policies of natural resource exploitation?	What barriers/challenges does the proximity to a coast present to collaborative and communicative practices and policies of natural resource exploitation?	What barriers/challenges does the existence of a border present to collaborative and communicative practices and policies of natural resource exploitation?	Has exploitation of natural resources been a factor in the development of some IP? Why?	What barriers/challenges does the sparsity of the area present to collaborative and communicative practices and policies of natural resource exploitation?

	Mountains	Islands	SPA	Coasts	Border areas	Inner Periphery	OR
Natural resource exploitation (continued)							
Eco-system services (NRE5)	Are there specific eco-system services rendered by mountain areas?	Are there specific eco-system services rendered by islands?	Are there specific eco-system services rendered by SPAs?	Are there specific eco-system services rendered by coastal areas?		*Not relevant*	Are there specific eco-system services rendered by ORs?
Vulnerability of human-environment systems to climate change							
Vulnerability of human-environment systems to climate change **(VCC1)**	Are there climate change related vulnerabilities that are specific to mountains? *Hypotheses / questions:* *- Climate change causes biodiversity loss and threatens ecological balance and delivery of ecosystem services in mountain areas* *- Mountain areas are particularly vulnerable to increases in natural hazard potentials (floods, gravitational mass movements) and to changes in the hydrological cycle*	Are there climate change related vulnerabilities that are specific to islands? *Hypotheses / questions:* *- Climate change may make islands particular vulnerable to floods and extreme weather events* *- who/what sectors /systems/social groups would be most vulnerable to such changes?*	Are there climate change related vulnerabilities that are specific to SPAs? (or do vulnerabilities depend on location and not on sparse population)? *Hypotheses / questions:* *- Northern SPA are in significantly different position than other SPAs. The link with sparsity as such may be weak.* *- who/what sectors /systems/social groups would be most vulnerable to such changes?*	Are there climate change related vulnerabilities that are specific to coasts? *Hypotheses / questions:* *- Climate change may make coasts particular vulnerable to floods and extreme weather events* *- who/what sectors /systems/social groups would be most vulnerable to such changes?*	Not relevant	*Not relevant*	Are there climate change related vulnerabilities that are specific to OR? Is it useful to group OR together in this respect (or does vulnerability depend more on location)? *Hypotheses / questions:* *- OR particularlyexposed to extreme weather events and floods* *- Habitat degradation in OR may follow different patterns than in other parts of Europe.* *- who/what sectors /systems/social groups would be most vulnerable to such changes?*

3.4 Revised list of case study areas

Some revisions have been made to the initial list of case studies proposed in the interim report. First, due to the withdrawal of the University of the Aegean from the TPG, the insular case studies have had to be changed. The alternative case studies, the Outer Hebrides and the region of Sicily, including its numerous satellite islands, are listed subject to the acceptance of E-cubed consultants (Malta) as a new TPG member by the ESPON Monitoring Committee.

The choice of the Outer Hebrides, which is part of the mountain case study area "Highland and Islands", has been made purposely in view of facilitating in depth analyses and exchanges between the partners.

Parkstad is an alternative case study area for "Inner Peripheries", as it was noted in the response to the inception report that there were too many case studies in Belgium. Parkstad is located at the south-eastern end of the Netherlands, on the border to Germany and Belgium.

The limited number of case studies in EU12, Candidate countries and potential candidate countries was also highlighted in the response to the inception report. Considering the complexity of the issues to be dealt with, the TPG has not considered it feasible to propose alternative or additional case studies in these parts of the ESPON area, insofar as its members neither have the local connections nor the language skills needed. However, five so-called "additional cases" have been proposed in the EU-12 and candidate countries. These "additional cases" are not complete case studies of a GEOSPECS area. Instead, the partners focus on a specific theme within the chosen areas; their investigations will focus specifically on this theme, and on how issues related to it are dealt in the country or countries where the case study area is located.

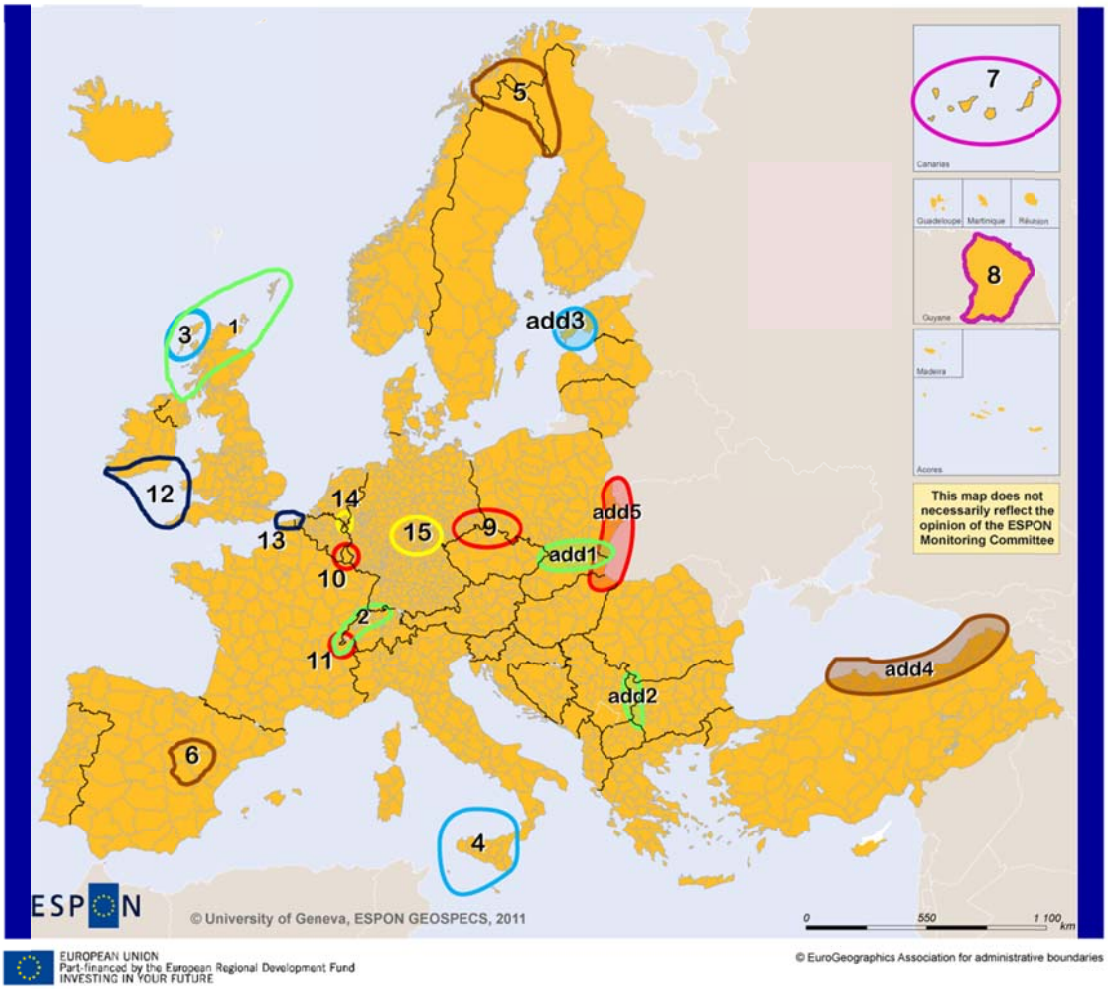
The five additional case study areas are:

- Mountain areas: The Tatra region, on the border between Poland and Slovakia, with a focus on the Impact of Protected Areas Networking on Biodiversity
- Moutain areas: The West Stara Planina on the border between Bulgaria and Serbia with a focus on Landscape and biodiversity as a resource for development
- Islands: Saaremaa in Estonia and Gozo in Malta, with a focus on current debates on the construction of a fixed link. In this analysis, comparisons will be made on the nature of the

debates, the instigators of the need for the fixed link, the reasons behind the proposals and what the islands hope to achieve through this link as related to their development.

- Sparsely populated areas: The sparsely populated coast along the Black Sea in Turkey, with a focus on climate change mitigation. The research will focus on the challenge of designing and implementing collaborative responses to climate change in small and isolated local communities of Turkey with poor infrastructure.
- Border areas: The Polish-Ukrainian border, with a focus on regional identity related issues. These border areas shared a long common past before they were divided in 1945 between Poland and the Soviet Union. From this time on, and until the fall of the Iron Curtain at the turn of the 1990s, the new borders were basically closed, making cross-border relations between Ukraine and Poland limited to interaction at border crossing points. With the collapse of the Soviet Union in 1991, it appeared that cultural and mental barriers to cooperation were disappearing and mutual approaches at the governmental level to cross-border cooperation were starting to emerge. However, due to requirements to securitise the EU external border after the Polish EU accession in 2003, the region is seriously affected by local border conflicts and divisive effects on cross-border cooperation. The aim of the study is to analyse the Polish-Ukrainian border in regard to the different political and institutional status of both countries and its impact on local border conflicts (e.g. border crossing barriers) and on socio-cultural cross-border cooperation (e.g. the 2012 European Football Championship in Poland and Ukraine).

The case study methodology and reporting templates will be finalised shortly after the interim report, on the basis of the analytical matrix. The TPG will consider whether it will be possible to carry out any more "additional cases" on specific subjects. They may be defined in view of providing empirical evidence on specific aspects of the analytical matrix, on the basis of a dialogue between the Lead Partner and the members of the TPG.



Case studies and "additional cases" in ESPON GEOSPECS

Mountain areas
(1) Highland and Islands
(2) Jura
(add1) Tatra region
(add2) West Stara Planina

Islands
(3) Outer Hebrides
(4) Sicily region
(add3) Saaremaa

Sparsely populated areas
(5) Tornedalen
(6) Central Spain
(add4) Coastal areas along the Black Sea

Outermost regions
(7) Canary islands
(8) French Guyana

Border regions
(9) Czech-Polish-German border
(add5) Polish-Ukrainian border
(10) Luxembourg CBMR
(11) Geneva CBMR

Coastal areas
(12) Celtic Sea
(13 Belgian coast

Inner peripheries
(14) Parkstad
15) Rural area in the heart of the metropolitan Saxony triangle

Map 26 Case studies and "additional cases"

4.1 Next steps

Setting up the general framework for analysis, and especially the delineations of GEOSPECS categories and analytical matrix, has required more time than initially foreseen. The immediate next steps will be to finalise the delineations when relevant, for example including parts of the West Balkans, Turkey and Outermost regions that have up to now not been covered for all GEOSPECS categories. A cross-analysis of all delineations will then be carried out, characterising each municipality on the basis of the different GEOSPECS categories to which it belongs and producing a European matrix on the overlaps between the different categories (WP 2.1.4), to be finalised in May 2011 at the latest. It will then be possible to finalise the thematic and transversal typologies of GEOSPECS areas (WP 2.3.2) for September 2011. These typologies will feed into the work on individual specificities, as the overlaps between the delineations of the different categories may provide useful inputs.

In parallel, indicators will be compiled from the datasets listed in the present report based on the issues and questions raised in the analytical matrix and corresponding maps will be produced for each of the concerned GEOSPECS areas and transversal themes (WP 2.2.3). On the basis of a dialogue within the TPG, additional data collection needs will be identified and objectives will be set up taking into account the priorities identified during the consultation process and the available resources of each partner. By experience, such data compilations tend run over long periods, even if one may cover a large proportion of the ESPON space quite rapidly. The objective is therefore to have finalised preliminary maps of the indicators the TPG members will have agreed upon before the summer (WP 2.2.3).

Case studies will be initiated during the same period, as soon as the methodology and reporting templates will have been finalised. The case studies and "additional cases" will be carried out until early November 2011. They will then be synthesised by the Lead Partner and the University of the Highland and Islands in view of the draft final report.

Work on transversal themes is based on different types of inputs. Analyses based on transversal indicators may be initiated progressively, as relevant indicators and corresponding maps are made available; responsibilities for the data compilation will be clarified shortly after the inception report. However, reviews of relevant results in the various case

studies and "additional cases" will only be possible after the delivery of the reports, viz. in November and December 2011.

The second consultation with stakeholders remains foreseen in Janurary 2012, and the policy options will be finalised in February 2012.

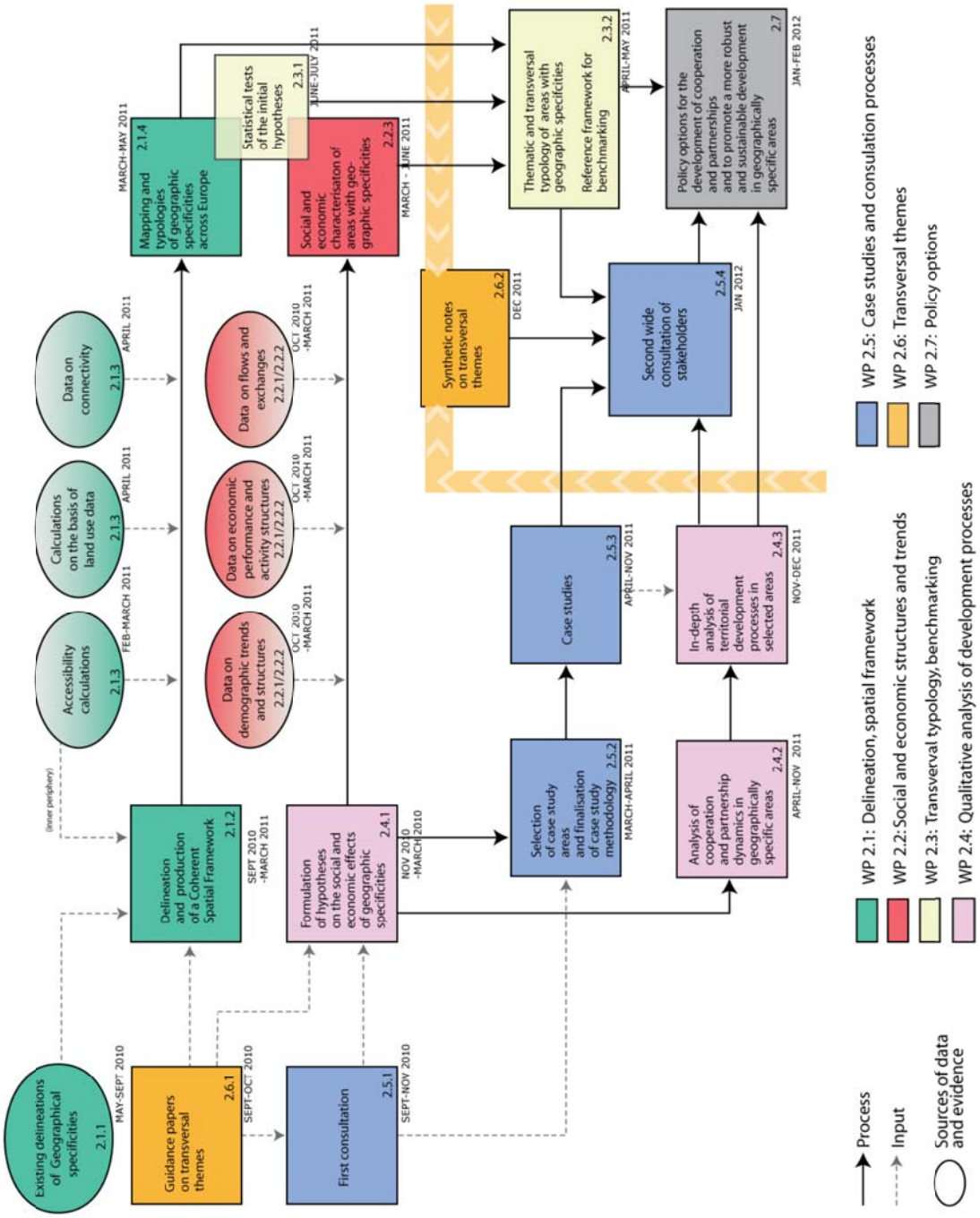


Figure 13 Flow chart with revised timetable

4.2 Risks and challenges

Possible risks and challenges in the next phases of the project include:

- The possibility that some of the delineations proposed in the present report are challenged. Any in-depth revisions of these delineations could create considerable delays, insofar as the general framework of analysis would be revised.
- The challenge of maintaining a good communication within the TPG, considering the number of partners and the fact that their respective objects of study are sometimes quite different. The fact that all partners can relate to a shared set of delineations, and the beginning of empirical investigations on transversal themes should contribute to improve the exchanges within the group. However, the Lead Partner will also seek to improve the internal communication tools.
- Difficulties linked to the access to indicators at the appropriate scale are unavoidable; the challenge will be to design appropriate alternative qualitative approaches when needed.
- Relations with stakeholders have been very diverse, as some have shown considerable interest and made significant contributions, while others have shown relative indifference or criticised the selection of GEOSPECS categories. When preliminary project results are available, this should however generate a wider interest in the project.

4.2 Table of Content envisaged for Draft Final Report

As specified in Annex III of the subsidy contract, the table of content envisaged for the Draft Final Report is indicated below (see Text Box 2). This table of contents is necessarily indicative, insofar the key conclusions of the project are still unknown. However, it reflects the method and philosophy of the project, seeking to identify parallel needs for regulatory adaptations or measures in GEOSPECS areas, rather than looking for statistically significant deviations from average social and economic performance indicators.

Text Box 2 Table of contents

5 Issues for further analytical work and research, data gaps to overcome

C Scientific report

Please reflect on the points mentioned in the project specification

1. Conceptual understanding of GEOSPECS categories
2. The construction of a Spatial Reference framework
3. Delineation methods and tools
4. Thematic and transversal typology of areas with geographic specificities
5. The production of an analytical matrix
6. Social and economic characterisation of GEOSPECS areas
7. Environmental potentials, limitations and threats of GEOSPECS areas.
8. Case study reports
9. Synthetic notes on transversal themes
10. Synthesis on institutional and governance related aspects of geographic specificity.
11. Conclusions of scientific report –perspectives for further research

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6 Appendix

Annex 1 List of GIS files used for the delineation

Map	Code	Comments
"EuroBoundary Map v4" 2008	**M-Ebm08**	It is the main reference local map for GEOSPECS. Precision regarding islands and coastline is the most important reason leading to the choice of Eurogeographic map. TPG has made a reconstitution of NUTS 3, 2, 1, 0 from it. Neighbouring EU countries as well as CC and PCC have also been adapted to the Eurogeographic framework on their borders.
"EuroBoundary Map v5" 2010	**M-Ebm10**	It is used only to add Serbia to M-Ebm08
"EuroBoundary Map v3" 2006	**M-Ebm06**	It is used only regarding LAU2 population 2006 database
ESPON LAU2	**M-EspN5**	Essential for the reason that it goes along with the very comprehensive ESPON NUTS 5 DB which is a major source of indicators for GEOSPECS.
LAU1 map of Turkey	**M-TrN4**	Based on a map originating from Harita Genel Komutanligi (General command of mapping), TPG has worked out a map of Turkey including NUTS4,3,2 levels. Maps of Turkey are fit to the limit of Eurogeographic for coast, borders and lakes.
LAU2 Maps of Western Balkans	**M-WbN5**	LP is in the process of collect local maps for as many WB countries as possible. So far Albania, Montenegro and Kosovo are complete. Getting local administrative entities, even if related data are not available, is not seamless. Along with the CIESIN population models, it allows making delimitation of geographical specificities. Socio-economic description that follows could be completed at higher NUTS levels if needed.
Reference grids 250*250 m 1*1 km 5*5 km	**M-EEA**	In order to transfer results of various analysis in a common project framework European INSPIRE grids were used. The spatial coverage cover all islands, CC, PCC, Turkey but not the outermost regions. These reference grids are based on ETRS89 Lambert Azimuthal Equal Area projection with parameters: latitude of origin 52° N, longitude of origin 10° E, false northing 3 210 000.0 m, false easting 4 321 000.0 m. Origin of grid is calculated from 0 m N 0 m E of projection. Guideline with detailed description of the grid is available from http://www.eionet.europa.eu/gis/geographicinformationstandards.html To prevent a great amount of distortion the current delineation of the outermost regions uses the GCS_WGS_1984 coordinate system which is based on the World Geodetic Survey 1984 (WGS_1984) datum. This is also used by JRC for mapping world datasets like Global Land Cover 2000. The world reference grid has a spatial Resolution 1km at Equator (0.00892857dd) Map Projection Geographic (Lat/Lon) Spheroid WGS84 http://bioval.jrc.ec.europa.eu/products/glc2000/metadata.php?product=Global
FUA & MUA	**M-F&Mua**	They are fundamental to assess local agglomerations in GEOSPECS territorial categories. Version of February 2011 is fully Eurogeographic 2008 compatible. It covers EU 27+4 to the

		exception of LT, LV, RO. For those, TPG is intending to build "simili FUA" by calculating a driving time distance from MUA.
Cross-border metropolitan regions	**M-Cbmr**	Cross-border metropolitan regions defined on the basis of cross-border FUA, MUA and several criteria of size and contiguity.
ESPON Map Kit	**M-EspKit**	It is used to presents maps in ESPON official layout.

Annex 2 Data files used to characterise GEOSPECS areas

Codes in the third column correspond to lines in the analytical matrix (See Table 24 p. 127), followed by three letter codes for the following GEOSPECS categories Mountain (MTN), Island (ISL), Sparsely populated areas (SPA), Border areas (BDA). These relations illustrate how the datasets that have been identified my help addressing issues and questions raised in the analytical matrix.

Database GEOSPECS CODE	Comments	Relation to transversal themes
World Bank NUTS0 DB Gu-WBk	It provides information needed to characterize regional context in outermost regions.	All overseas regions
INTERREG III & IV, ENPI Gu-IR&ENPI	DB on eligible NUTS3 regions for transnational cooperation programs	EVR3-BDA
Eurogeographic LAU2 population 2006 Gu-Egc06	It is the most up to date local data on population. Data are however missing for UK, PT, LT and small parts like the city of Paris. TPG complete them with CIESIN gridded data on population for UK, PT, LT, CC and PCC.	DEM1
ESPON NUTS5 DB Gu-EspN5	It proved to be the most comprehensive socio-economic-environmental local database. It covers EU 27+2 and is directly linked to ESPON NUTS5 Map. It includes data on agriculture, demography, economy, environment, geographical features and infrastructures.	EVR2-MTN DEM1 RAT1
Turkish LAU1 DB Gu-TrN4	It includes most relevant data to describe Turkey within GEOSPECS framework: demography with 10 years trend, level of education, "NACE", households, GDP.	EVR1 EVR3 DEM1 RAT1
NSI LAU2 NACE	Contacts with NSI need to be further proceeded to gather	EVR1 EVR3

Database GEOSPECS CODE	Comments	Relation to transversal themes
Gu-NaceNsiN5	local data on NACE classification. For the moment TPG has gathered data for CH, CY, FI, MT, NO, SE and TR (NUTS4). Then process to complete this database as far as possible is going on.	RAT1 NRE1
NSI grid data Gr-Nsi	In FI, NO & SE, due to size of municipalities, gridded demography is replacing municipal data in the calculation of population potential.	DEM1 RAT1
CIESIN gridded population Gr-Ciesin	It is used in two different ways, depending on the availability of NSI data: • Initial population figures per grid cell have been corrected so that the sum of inhabitants in each municipality fits the demographic data associated with the 2006 Eurogeographic Euroboundary map (Eb-mv3). • In countries for which the 2006 Eurogeographic Euroboundary map provided no demographic data at the LAU2-level, these have been calculated on the basis of CIESIN data.	DEM1
EEA Mountain DB Gr-EeaMdb	1*1 km cells with attributes related to GTOPO30 elevation model: altitude, slope, relation with neighbouring cells. They are "ready to use" material for calculation of mountain.	EVR2-MTN VCC1-MTN
EEA various DB Gr-Eea	EEA proposes useful DB on geographical & environmental dimensions: • land cover (1990 incomplete, 2000, 2006 incomplete) • emissions • air quality • biogeographical regions	PAB1 PAB2 NRE2 NRE3

Database GEOSPECS CODE	Comments	Relation to transversal themes
	• designated areas • etc. Coverage is variable, from EU27+4+CC+PCC to EU27.	
Eurogeographic road model 2009 Nw-EgcRd09	This road model is used to its extent for the calculation of time-distance and for the definition of islands (ie. the ones that have no fixed link with the continent)	ACC1 ACC2
Open street map Nw-Ops	Road network to be used for areas not covered by Eurogeographic road model (outermost regions, CC and PCC) Dear Alterra colleagues, could you precise please	ACC1 ACC2
EuroRegionalMap V30 V31a Comprehensive, up-to-date and pan-European databases covering: hydrography; transport; Settlements; vegetation; named locations; miscellaneous (= monuments, power lines, towers etc) Gu-Erm30Erm31a Nw-Erm30Erm31a Pt-Erm30Erm31a Li-Erm30Erm31a	GU EuroRegionalMap on: • Lake (LAKERESA) • Snow/ice field (LANDICEA) • National park, Nature reserve (PARKA) • Built-up area, populated place (BUILTUPA) • ...	EVR2-MTN PAB1 NRE1 NRE3 VCC1-MTN
	NW EuroRegionalMap on: • Railway (RAILRDL) • Road (ROADL) • Ferry crossing (FERRYL) • ...	ACC1 RAT1
	PT EuroRegionalMap on: • Dam (DAMC) • Power station (POWERP) • Mines (EXTRACTP) • Amusement Park, Monument, ... (LANDMRKP) • Ferry station (FERRYC)	ACC1 RAT1 NRE1 NER3

Database GEOSPECS CODE	Comments	Relation to transversal themes
	• Railwaystation (RAILRDC) • Heliport (HELIP) • ...	
	LI EuroRegionalMap on: • Watercourse (WATRCRSL)	EVR2 NRE2
Van Dijk Nw-VDijk	This database is built on relation among the 3000 largest world firms as well as their relations with their subsidiary companies. It will be implemented in a multi-level approach by GEOSPECS subcontractor Céline Rozenblat	EVR1
5th Cohesion Report Nw-5CohRep	TEN numbers of trains by types (freight, passengers, others) with indication of passenger& freight transported. Airlines with number of flights and passengers, including outermost regions	ACC1 RAT1
Eurostat GISCO Pt-GiscoP/A	GISCO offers alternative database on ports & airports which are important infrastructure for connectivity assessment of GEOSPECS areas in addition to road model. Quality assessment between ERM and GISCO has to be further pursued before final choice.	ACC1 RAT1
EEA waterbase and bathing water directive Pt-EeaWatP Pt-EeaBWatQ	It is the generic name given to the EEA's databases on the status and quality of Europe's rivers, lakes, groundwater bodies and transitional, coastal and marine waters, and on the quantity of Europe's water resources. EEA proposes also assessment of bathing waters quality.	NRE2 EVR2
Coastline Li-ClCoa06	Two complementary models of coastline must be coupled to cover GEOSPECS space. The EEA CLC2006 coastline offers detailed descriptions on the environment and type of coastal areas. Related material includes "Eurosion DB" on coastal erosion trends and factors. It covers most of	VCC1-COA&ISL

Database GEOSPECS CODE	Comments	Relation to transversal themes
Li-EgcCo06	the GEOSPECS area to the exception of outermost territories, Iceland, Norway, Montenegro and Turkey. Detailed descriptions on the coastal environment will obviously lack for those countries. Dear Alterra colleagues, please confirm that the EEA CLC2006 has been fitted to the coast of the Eurogeographic map. You told me you did that job around October 2010 For those countries, coastline will be completed by worldwide Eurogeographic COAS2006.	
Borders DB Li-Border	Originating from ESPON DB and European crossborder policies, but also gathered by the border group, data like differential in tax or in GDP are used for the analysis of discontinuities and gradients.	...-BDA

Annex 3 List of organisations and persons that have contributed to the consultation process

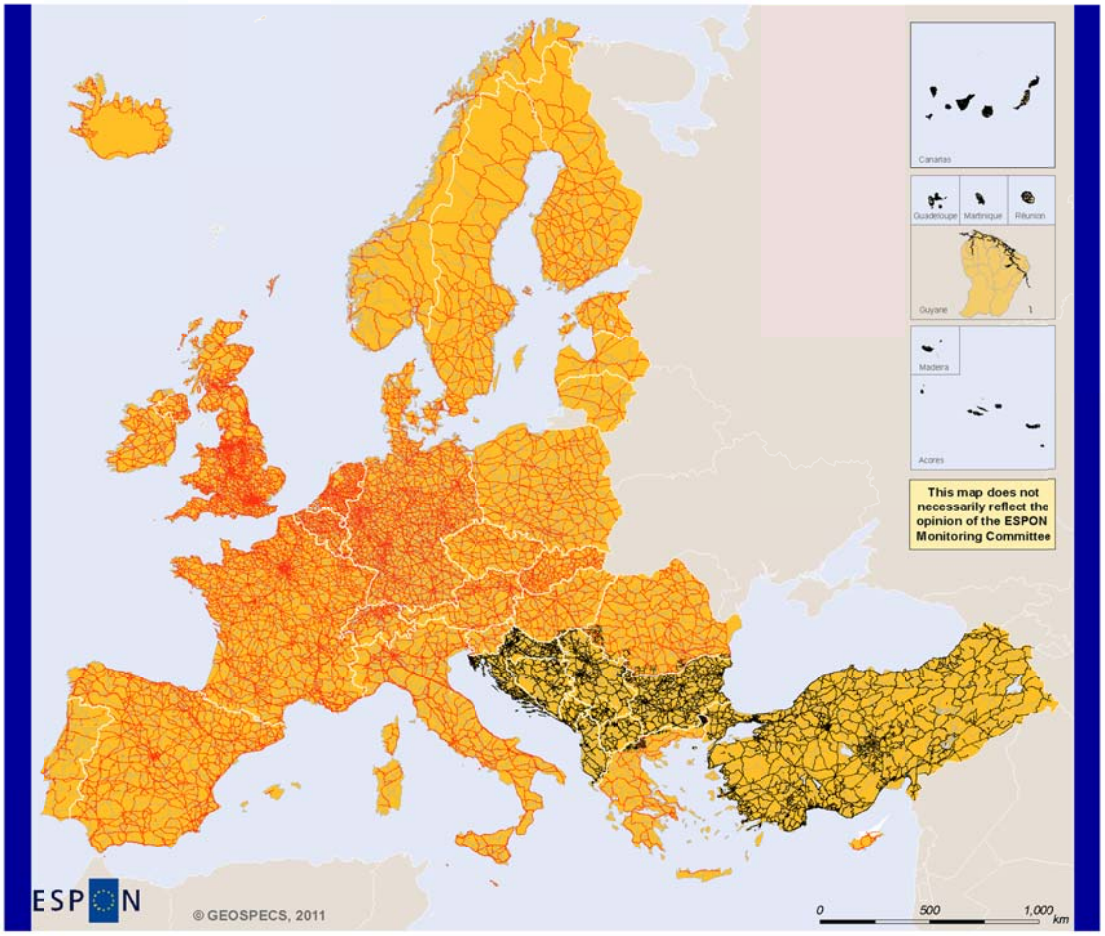
Organization	Area focused on	Name
Mountains		
Euromontana	Europe	Alexia Rouby
Asscoiation Européenne des Elus de montagne AEM	Europe	Nicolas Evrard
Alpine Convention	Alps	Marco Onida
Carpathian Convention	Carpathians	Harald Egerer
Fondation pour le développement durable des régions de montagne	Switzerland	Eric Nanchen
Schweizerische Arbeitsgemeinschaft für die Berggebiete SAB	Switzerland	Thomas Egger
Scottish Government – devolved administration	Scotland (UK)	
Wales regional government	Wales (UK)	
Cyprus: ministerial department with competences in spatial planning	Cyprus	
Tyrol regional government	Tyrol (Austria)	
Islands		
CPMR Islands Commission	Europe	Jean Didier Hache
INSULEUR	Europe	Carine Piaguet
European Small Islands Federation ESIN	Europe	Bengt Almkvist
Islands/Archipelago Cooperation – Skärgården	Finland	
Ireland, regional government	Ireland	
Cyprus - ministerial department with competences in spatial planning	Cyprus	
Gozo business chamber	Gozo (Malta)	Joseph Grech
Ministry for Gozo	Gozo (Malta)	Pat Attard
Gotland, regional government	Gotland (Sweden)	
Scottish Islands Federation	Six Scottish islands (UK)	
Argyll and Bute, regional government	Argyll and Bute (UK)	
Outer Hebrides, regional government	Outer Hebrides (UK)	
Balearic Islands, regional government	Balearic Islands (Spain)	
B7 Baltic Islands network	7 largest Baltic islands	

Organization	Area focused on	Name
Sparsely Populated Areas		
North Finland EU Office	North Finland	Allan Perttunen
North Sweden EU Office	North Sweden	Anna Lindberg
Mid Sweden EU Office	Mid Sweden	Kerstin Brandelius-Johansson
North Norway EU Office	North Norway	Stein Ovesen
Norwegian Ministry of Local Government and Regional Development	Norway	Odd Godal
Finnish Ministry of Employment and economy	Finland	Ilkka Mella
Swedish Agency for Growth Policy Analysis	Sweden	Wolfgang Pichler
Icelandic local authorities EU office	Iceland	Anna Guðrún Björnsdóttir
Cadispa Trust	Scotland (UK)	Geoff Fagan
Scottish Government Directorate for the Built Environment	Scotland (UK)	Graeme Purves,
Border Areas		
AEBR	Europe	Martín Guillermo-Ramírez
NEEBOR	Eastern External Borders	Johannes Aalto
DG REGIO	Europe	Jean Peyrony
Centrope	Border region shared by Austria, Hungary, Slovakia and the Czech Republic	
Euroregion Nestos-Mesta	Border region between Greece and Bulgaria	Alkis Papademetriou
Regional Municipality of Bornholm	Bornholm (Denmark)	
Kreis Ostholstein	Ostholstein (Germany)	
Inner Peripheries		
General Management of Territory Facilities of the Walloon Area	Walloon Region (Belgium)	Ghislain Geron
Dutch Ministry of Infrastructure and Environment	The Netherlands	André Rodenburg & Willemieke Hornis
Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)	Germany	Martin Spangenberg & Thomas Pütz

Organization	Area focused on	Name
Coasts		
CPMR	Europe	Lise Guennal
DG Environment	Europe	Leo De Vrees
EEA	Europe	Eva Royo Gelabert
University of Seville	Spain	Juan Luis Suárez de Vivero
Scottish Association for Marine Science (SAMS)	Scotland (UK)	Tavis Potts
Regional Municipality of Bornholm	Bornholm (Denmark)	
Department for Communities and Local Government, UK Government	UK	
Welsh Assembly Government	Wales (UK)	
Scottish Government – devolved administration	Scotland (UK)	
Department for Regional Development, Government of Northern Ireland	Northern Ireland (UK)	
Outermost Regions		
La Réunion économique	La Réunion (France)	Germain Gultzgoff
French ministry for overseas territories	France	Myriam Aflalo
Delegation of the government of the Canaries in Brussels	Canary islands (Spain)	Isabel Barrios
MCRIT SL	Spain	

Annex 4 Road network model used

ESPON GEOSPECS used the Eurogeographic road model for all countries except the Western Balkans, Bulgaria and Turkey, where Open Street Map is used. The more limited number of secondary roads in Open Street Map creates some bias in the analyses.



Map 27 Road model used for GEOSPECS

Annex 5 Short versions of guidance notes on transversal themes

Economic Vulnerability and Regional Resilience

The vulnerability/resilience approach is chosen to dismiss the misconception that GEOSPECS areas are either *handicapped* or *lagging:* Instead, the TPG proposes a constructive approach to territorial development based on the acknowledgement of alternative territorial development models for which growth is possible outside the larger concentration of people and wealth (i.e. the European metropolitan areas). Also, it promotes the idea that development opportunities are the result of proactive development strategies.

Economic Vulnerability (EV) relates to "inherent conditions affecting a country's exposure to exogenous shocks" (Briguglio *et al.* 2008). Consequently, EV does not have to do solely with the weakness of the structure of a regional economy as such, but with sensitivity to external exposure. EV should not be associated with laggardness. Many territories that are economically vulnerable have reached a high degree of wealth.

Globalisation exacerbates the economic vulnerability of territories as the regional economies are increasingly interdependent. This is definitely also true for GEOSPECS areas, as many of these belong to the "economic periphery".

Features of EV are: economic openness, dependency on few, traditional sectors, export-oriented economies, under-exploitation of existing natural resources, important role of the public sector, dependence on strategic inputs.

Regional Resilience (RR) relates to "the policy-induced ability of an economy to recover or adjust to the negative impacts of adverse exogenous shocks and to benefit from positive shocks" (Briguglio *et al.*, 2008). More broadly, RR can be understood as the collective capacity of regional actors to elaborate development strategies that are flexible enough to adjust to changing external conditions, as it may not be possible at all to 'deflect' the effects of an external shock.

The assumption in this transversal theme is that regional resilience capacity for GEOSPECS areas is based on three main pillars:

- Social capital and Networking: *social capital* relates to the added value produced by the interactions between actors in the region; it can also be understood as the capacity of actors to conceive and implement a strategic vision for the development of the territory. "Actors" include firms, representatives of public authorities,

research and education institutions, trade and commerce organisations. In economic geography studies, the *networking* of firms has been increasingly seen as a key driving force of economic development of territories.

- Amenity-driven or Nature-based regional development: In the USA, amenities are said to be the main driving force behind labour mobility and thus economic growth (Partridge 2009): The choice of households is deemed to be led by the presence of amenities, especially natural amenities (climate, landscape, …). The debate in European policy research regarding the positive externalities on development has been weak. One study (Cheshire and Magrini 2006) has highlighted the importance of (good) weather as a positive factor to population growth. In the EU, the role of boundaries as an obstacle to labour mobility has to be taken into account, despite the Single Market.
- Entrepreneurship and SME support: One shared feature of small economies (as are GEOSPECS areas) is the comparatively high importance of SMEs in total employment. Some authors even argue that SMEs are better suited for driving innovation processes in knowledge intensive industries, due to their more flexible internal structure (Audretsch and Thurik 2009). The importance of the entrepreneurial capacity as a factor for local economic development has been framed in the past (Coffey and Polèse 1984), but this understanding was mainstreamed as a tool for regional policy only more recently (Potter 2010).

Key questions:

Economic Vulnerability:

1.) Is the geographic specificity of the area associated with an over- or underrepresentation of specific sectors? Is this a sign of Economic Vulnerability (given that two of the features of EV are "dependency on few, traditional sectors" and "important role of the public sector")?

1b.) Focus on "dependence on a single sector" as a feature of EV: Does tourism contribute a higher share of income to the economy than in mainstream areas? If yes, is this a sign of Economic Vulnerability (i.e. a sign of dependence of the area on a single sector)?

Regional Resilience:

2.) How does the geographic specificity of the area affect any of the three "pillars" of regional resilience (positively or negatively):

- Capacity to develop social capital and networking,
- Capacity to develop an amenity-driven or nature-based regional development,

- Capacity to develop entrepreneurship and SMEs

2b.)Focus on amenity-led regional development as a factor of RR: Is the geographic specificity of the area associated with "brain drain" (or "brain gain") processes? If yes, can these be counterbalanced by "amenity-led" development strategies (or in the case of brain "gain": Have these processes been encouraged by "amenity-led" development strategies)?

Accessibility and services of general interest

Accessibility

According to ESPON Project 1.2.1. "Potential accessibility is a construct of two functions, the activity function representing the activities or opportunities to be reached and the impedance function representing the effort, time, distance or cost needed to reach them (Wegener et al., 2002)." This definition of accessibility could also be understood as the "ability to access" and possible benefit of some system or entity. Following this conceptual differentiation between accessibility and access, the GEOSPECS project will focus on improving current approaches to determine the access (measured as distance in time instead of Euclidian distance) to urban areas associated with Services of General Interest (see section below). It will consider the specificities of the regions by using different thresholds related to their biophysical characteristics and linked transport modes. For example, in mountain regions the impact of topography on travel times will be incorporated; in island regions access is more dependent on transportation per plane or ship, etc. However, GEOSPECS will not attempt to combine all transportation modes when calculating access in time distance, as this would obscure the important differences between the GEOSPECS categories.

In order to gain a full understanding of the access to urban centres it would be necessary to additionally incorporate the frequency with which transport connections are served and their cost, instead of simply listing possible connections. However this exercise will prove too ambitious to be applied across all GEOSPECS categories at a pan-European level considering the current data availability. Instead, these questions will be addressed at a regional scale within the case studies.

In future, it would also be interesting to measure the "usability" of the transport modes (which should not be confused with accessibility), describing the extent to which a form of transport can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. For obvious reasons of data availability this will also be impossible within this project.

Before attempting to calculate access to urban centres from different points, the TPG shall – in a preliminary step – determine the challenges that the GEOSPECS categories pose to the running of transport infrastructure and to the delivery of services of general interest.

Services of General Interest

No unanimous definition of "services of general interest" (SGI) exists at European level. European policy documents (e.g. the Green Paper on Services of General Interest) mainly refer to services of general *economic* interest. Although these are not defined in the treaty or secondary legislation, in practice "there is broad agreement that the term refers to services of an economic nature which the Member States or the Community subject to specific public service obligations by virtue of a general interest criterion. The concept of services of general economic interest thus covers in particular certain services provided by the big network industries such as transport, postal services, energy and communications" (EU Commission, 2003). But also health, education and social services are frequently listed as services of general interest.

The supply level of SGI in the ESPON space and specifically in the GEOSPECS categories is still characterised by regional disparities, which cannot always be explained by the traditional urban-rural divide. Regional differences exist in the quality of the services provided when the low demand found in many of these areas reaches the limits of economic viability (as it has been mentioned before in the section on Information and Communication Technologies). This refers to the rate of the utilisation of infrastructure for the provision of SGI (BBR, 2006). The tipping point is reached when the critical demand potential needed for the efficient operation of such infrastructure does not exist anymore. Regions characterised by sparse settlement structures and declining demand as a result of demographic changes (such as many of the GEOSPECS categories) have high chances of facing problems with the economic viability of SGI.

Key questions:

1) What are the typical challenges for building, operating and maintaining transport infrastructure that derive from geographic specificity in the different GEOSPECS categories? What strategies can be identified to overcome these? What are the dominant forms of transport?
2) Does the production and delivery of SGI in GEOSPECS categories pose specific challenges?
3) It is assumed that the thresholds to determine economic viability of a SGI will differ between the GEOSPECS areas. Will it be possible to

provide for each GEOSPECS area more specific information about the level of population needed to sustain an adequate level of SGI?

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Role of Information and Communication Technologies

There is no unambiguous agreement on the definition of ICT. They can be understood as a collection of technologies and applications which enable electronic processing, storing, retrieval, and transfer of data to a wide variety of users or clients.

The ESPON project 1.2.3. has found territorial differences in the performance of the "Information Society" (broadband access, penetration rates for households and firms, employment in ICT intensive sectors, etc). Focussing their research on the NUTS 2 level, the project revealed differences in performance not only between different EU countries but also significant intra-country inequalities at least for some countries. It also confirmed the assumption that knowledge production converges in large metropolitan areas.

As ICT operators follow market rules, they tend to prefer investing in dense areas, where they are sure to find a sufficient number of clients. Remote, sparsely populated areas (where the installation of equipment may even be more costly, such as in mountain areas or archipelagos) do not offer sufficient clients, so that they are less attractive to private operators. We therefore assume that many GEOSPECS areas are affected by a lower-than-average ICT coverage (mainly internet, but the same problems exist for the provision of mobile telephone networks etc).

For the purposes of GEOSPECS, the most important question will be: Can ICT contribute to the reduction of territorial imbalances? Whereas some technological "optimists" have claimed that the emergence of the digital economy would kill distance and eliminate scale disadvantages of more peripheral regions by replacing face-to-face interactions (Negroponte, 1995, Friedman, 2005), others have found that virtual contacts are mainly a complement to face-to-face interactions (Veltz, 1996).

In fact, further agglomeration processes have taken place since the spreading of ICT has started. A New Economic Geography (NEG) model based on knowledge externalities (Fujita, Krugman & Venable, 1999) offers the following explanation: When a (large) functional region has achieved an initial advantage in knowledge production due to a large well-educated workforce and a rich supply of ICT capital assets, it will attract additional knowledge-creating and knowledge utilising firms and subsequently highly qualified labour force, which wants to take advantage of the increasing demand for its skills.

Key questions:

1) Does geographic specificity lead to lower mobile phone network / broadband coverage? In what different ways (e.g. technical challenges, limited potential market, limited competition between operators, regulatory frameworks not adapted to local conditions…)?
2) Are ICT solutions/online services a complement to existing services or used as a rationale for the suppression of other services?
3) Specific questions: In the case of border areas: Is ICT making cross-border collaboration and integration easier? In the case of coasts: Is the proximity to transoceanic communication cables an advantage for coastal areas? In the case of Inner Peripheries: Can ICT facilitate new working arrangements (such as distance working)?

Residential attractiveness

Work on the guidance note on "Residential attractiveness" is still in progress, due to a change of project partner responsible for this transversal theme. However, a number of key questions were already identified by the incoming project partner:

1. To what extent is the degree of residential attractiveness (positive or negative) dependent on geographic features in the territory rather than on human intervention in the form of territorial (physical) intervention, social intervention or economic intervention?
2. To what extent does the residential attractiveness of the respective GEOSPECS area depend on social and demographic characteristics of the population which are specific to that GEOSPECS area (e.g. age structure of population, activity structure)?
3. Which are the positive and negative feedback loops between economic growth and residential attractiveness in the respective GEOSPECS areas? Is it possible to establish a ranking between them in terms of speed and magnitude?

Regional identity and cultural heritage as factors of development

The theorist of social psychology Abraham A. Moles (Moles & Rhomer, 1998) propose a series of laws of local identity, according to which the identity of the "place" is all the stronger if:

- There is an "anomaly" in the sensory gradients, i.e. a form of discontinuity that makes it possible to distinguish an "inside" from an "outside" and that will influence mobility patterns,
- The differences between perceived realities on each side of this discontinuity are strong,
- The discontinuity is spatially concentrated (i.e. easily identifiable in space),
- The activities that each individual carries out within the place are numerous and concentrated in time (the "place" is established as a preferred location to carry out activities, compared to the "outside". [Inversely, one may also hypothesise that the identity of some places may derive from their unattractiveness]
- The number of socially, economically or culturally significant objects concentrated within the place is high,
- The place has a denomination, the semantic fields associated with this denomination are wide, and the use of the name of the place to designate these semantic fields is frequent.

GEOSPECS areas are particularly prone to generate processes of territorial identity: The discontinuity is distinct in the case of islands, as areas surrounded by water. For mountains, the discontinuity is less concentrated spatially and the concentration of activities and objects within the mountainous space is more difficult to identify; the main distinction will in these respects be between valleys and highlands. The relation between place and the concentration of activities is even more complex in the case of sparsely populated areas, where the lack of other neighbouring settlements and activities is a major component of the identity of individual places. Coastal areas and borders are characterised by the proximity to a discontinuity which influences patterns of mobility; activities may preferably be carried out within or beyond the border, on land or at sea. These two types of specificities therefore do not directly lead to the designation of places, but may do so indirectly as the proximity to a discontinuity generates specificities which in turn creates other discontinuities. The discontinuities pertaining to outermost regions are generated by their specific institutional setup.

There are important binary relations ("self" and "other") in the formation of territorial identities in most GEOSPECS areas: "mountain and lowland", "insular and continental", "sparse and central/dense", "outermost and metropolitan", "coast and inland".

There are therefore reasons to believe that local and regional identity may play a particularly important role in economic and social development strategies of GEOSPECS areas. The strength of local and regional identities is mainly to be interpreted as strength of GEOSPECS areas compared to "mainstream regions".

The paradox of "territorial identities" as a form of collective identity has been widely commented in the literature, insofar as it may be interpreted as presupposing a deterministic relationship between the environment of individuals and their personal identity. As noted by Jacques Lévy, the association of "ways of life" and "regions" in the traditional French regional geography of Paul Vidal de la Blache and his followers presupposes that the finality of human groups would be to adapt to their environment in view of forming an "organic whole" in which man and nature are united. Territorial identities have furthermore been used as a basis of exclusionary practices and of xenophobia. To avoid these pitfalls when using "territorial identity" as a scientific concept, one has to consider it as a construction or instrument to explore complex systems of collective and individual identity formation within a place. In other words, the purpose of scientific enquiry dealing with "territorial identity" is not to reveal it, but to critically consider the role of the local and regional in processes of *identification* and *identity formation*, as well as discourses associating an "identity" to a piece of land.

It is important to emphasize that territorial identities are not limited to the population of the corresponding territory. Migratory movements and the development of secondary housing have created systems of regional identity that are not necessarily linked to the permanent place of abode.

As territorial identity is a complex issue and correspondingly difficult to measure, the GEOSPECS team proposes to single out an exemplary indicator in order to convey an (approximate) idea of whether GEOSPECS areas are associated with strong territorial identity. European designations for quality agricultural products (protected designation of origin, protected geographical indication and traditional speciality guaranteed) are a good choice in this regard: food and drink products are a major part of the identity of Europe's peoples and regions. Products carrying PDO or PGI designations have characteristics resulting from the terrain and abilities of producers in the region of production with which they are associated (DG AGRI, 2007). They are thus closely linked to the identity of a particular region. Even though this is only one out of dozens of possible indicators for regional identity, the number of quality agricultural products designations has the advantage of being quantifiable – a particularly high number of these designations within an area can be an indication for a strong link of the population with this area.

Key Questions

The GEOSPECS project needs to provide a transversal analysis of the uses of territorial identities in economic and social development strategies, and must in particular ask whether references to the categories of GEOSPECS areas referred to play a role in these processes.

1) Can one identify specificities in the ways territorial identity and cultural heritage is used for development purposes within each type geographic specificity, e.g.
   - in the way "regions of cultural and social identification" are delimited?
   - in the type of actors using identity as a vector of development?
   - in the extent to which out-migrants from the regions are mobilised or contribute to the development process?
   - in the target groups of the instrumentalisation of identity (external (tourism), certain groups within the regional population (ethnic groups), only certain types of economic sectors (agricultural produce, tourism…)
2) Is it possible to make a (rough) European typology of different types of regions with a given geographic specificity on the basis of the uses made of identity in economic and social development processes?
3) Is geographic specificity a factor leading to higher-than-average numbers of PDO (protected designation of origin), PGI (protected geographical indication) and TSG (traditional speciality guaranteed) designations?

Biodiversity and Protected Areas as factors for development

Biodiversity is defined by the Millennium Ecosystem Assessment as the "variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part" (MA, 2005a). The earth is losing biodiversity at breathtaking speed. Within the EU, only about 15% of all species were reported to have a favourable conservation status in 2010, with 52% having an unfavourable status, 29% being "unknown" (EU Commission, 2010).

Biodiversity is essential for life on earth, but its value difficult to measure in monetary terms. Many scientists have tried to put a price tag on **ecosystem services**, i.e. the 'benefits that humans recognise as obtained from ecosystems that support, directly or indirectly, their survival and quality of life' (HARRINGTON *et al.*, in press). Ecosystem services range from provisioning services (timber, water…) to regulating services (e.g. the pollination of plants) to cultural sercives (health and recreational benefits for tourists, etc). To cite only one example: The total economic value of insect pollination worldwide is estimated at € 153 billion (TEEB, 2010).

Unfortunately, the GEOSPECS project will not be able to take these extremely important services into account in an adequate manner, due to the difficulties of properly measuring them. Too many different methods for valuating an ecosystem service exist and too few of these services have actually been quantified to date. For these reasons, the GEOSPECS project will have to focus only on direct use values of ecosystems/biodiversity, leaving indirect use values, option values and non-use values aside. Of the direct use values, we can only measure the actual flows of money, e.g. money spent by tourists for a ski lift, but not the health benefit they receive from skiing, etc.

Protected Areas: The IUCN (International Union for Conservation of Nature) records 7 categories of protected areas. The number of protected areas worldwide grew from 40,000 in 1980 (WORBOYS *et al.*, 2010) to around 138,000 today (WORLD DATABASE ON PROTECTED AREAS: www.wdpa.org).

Nowadays, protected areas are also expected to contribute to regional development. Consensus in the literature is that this is mainly possible through **protected area tourism** (HAMMER & SIEGRIST, 2008). A number of studies have tried to evaluate the contribution of protected areas to regional/local development. While the majority of authors has found a positive impact of protected areas on regional development, this correlation is not guaranteed (GETZNER and JUNGMEIER, 2002).

What are the conditions for a successful development strategy focusing on nature-based tourism? HAMMER and SIEGRIST (2008) identified 14 "success factors of protected area tourism":

General conditions of protected area tourism

1. Adequate resources, especially financial, for the management of the protected area
2. Positive attitude to the protected area and to protected area tourism on the part of the actors involved (including the local population)

Cooperation between the actors involved:

3. Genuine participation (taking actors interests into account)
4. Regular contacts between representatives of the protected area management and local and regional tourism organizations
5. Project-related cooperation between different groups of actors
6. Institutionalization of a responsible body with a broad range of different partners (encourages actors to identify with and support the PA)
7. Conflict resolution through cooperation and exchange of information
8. Good balance of top-down and bottom-up approaches

Design of tourism services and products

9. Intact landscape (the landscape is perceived as attractive)
10. Value for money
11. Target-group oriented, close-to-nature services
12. Experience orientation
13. Consistent marketing strategy
14. Integration of services on offer in protected area tourism into the general services chain

Lastly, apart from these non-consumptive uses of biodiversity, "**consumptive**" recreational activities based on biodiversity can create added value for a region. In this context, these are mainly activities such as hunting, recreational fishing, and the harvesting of mushrooms or wild fruit. Other consumptive uses of biodiversity (i.e. non-recreational ones) cannot be taken into account in GEOSPECS, as this would go beyond the scope of the project given the vast range of human activities (e.g., agriculture, forest-based industries, fishing) that depend on biodiversity. To cite only one example: In 2002 the EUROPEAN ANGLERS ALLIANCE estimated that expenditure for recreational angling (excluding equipment) in the five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) amounted to € 1.07 billion.

With a view to GEOSPECS areas: Many geographically specific areas are hotspots of biodiversity and/or host a comparatively high number of protected areas. Mountain areas, islands and outermost regions all feature a high level of species (including endemic species), due to their relative remoteness from urban centres. Correspondingly, these areas are often home to protected areas. Also, the number of protected areas in sparsely populated areas and border areas is often higher than in "mainstream" areas (which does not necessarily reflect a high level of species diversity, but may just be a question of convenience as a national park in a sparsely populated area is not "in the way" of human activity).

Key questions

1. Is the proportion of territory covered by Protected Areas (PA) particularly high in GEOSPECS areas?

2. How do PA function as a resource and/or constraint for local and regional development?

- If tourist activities take place in these areas, do these fulfil the conditions for "successful protected area tourism" (see above)? If so, please give examples. If no, what are the main obstacles?

3. Are there particular species that contribute to local economic development, or lifestyle?

- If so, in what ways e.g., consumptive (hunting, fishing, collecting fruit, mushrooms, or plants) or non-consumptive (e.g., bird-watching,

animal-watching)? Please provide any quantitative data that are available (e.g., incomes, numbers of people involved, expenditure of tourists, other economic or lifestyle benefits).

Natural Resource Exploitation

Approaches to natural resource exploitation

Natural resources are known to be overexploited worldwide (FEENY et al., 1990) and this may have specific relevance for all of the GEOSPECS regions. In response, many management instruments, such as 'maximum sustainable yield' have been introduced, but these are not *sensu stricto* sustainable in that they aim to bring humans as close as is possible to a tipping point and not to pull back from reaching it in the first place (the ultimate aim of conservation science). Indeed, such management regimes are an example of traditional top-down, command and control regulatory instruments which have been increasingly criticized as generating inefficient, inequitable and unpopular results within environmental policy (KLOSTERMAN, 1985) as well as failing to recognized the need for governance at all levels. Today, resource management is driven using an holistic paradigm (EC 2006c) , and policies such as Integrated Coastal Zone Management (EC 2000a, EC 2002, EC 2007), maritime spatial planning (EC 2010c, EC 2010b), the Marine Strategy Framework Directive (EC 2008b) and the reforms of the Common Fisheries Policy (EC 2010a), all strive to promote an integrated governance approach to the management and exploitation of coastal and marine natural resources. Similar concerns and policies exist for the natural resources and natural capital of other ecosystems such as forests, soils, grasslands and wetlands (LEADLEY et al., 2010, CBD, 1992)

'Bottom-up' and adaptive governance approaches are often seen as more egalitarian, and necessary for successful, long-term ecosystem management (MCCAY and JENTOFT, 1996, LARKIN, 1996).

In addressing issues of stakeholder engagement and community participation in natural resource management and planning, deliberative and collaborative approaches have moved centre-stage in theory and practice over the last two decades (MURTAGH, 2004, HEALEY, 2006, KOONTZ, 2005, MARGERUM, 2002). Though contested by some (TEWDWR-JONES and ALLMENDINGER, 1998) collaborative approaches are seen as mechanisms for emphasizing discursive and interactive processes as a means of identifying priorities and developing strategies for collective action, highly important issues in natural resource allocation and extraction. The aim of deliberation is to encourage a plurality of perspectives in the policy process to overcome narrow self-interest. Therefore, in essence, collaborative planning is proposed as a

model for consensus building based on interactive, inclusive and transparent dialogue and a process of mutual learning among participants and stakeholders.

Finally, social learning has been shown to be a successful mechanism for addressing trans-boundary resource issues (BLACKMORE et al., 2007, BOROWSKI et al., 2008), and there are numerous examples that show that adaptive collaborative approaches contribute to changing ecological perceptions and social responsibility (DAVIDSON-HUNT, 2006, PAHL-WOSTL et al., 2008, TÀBARA and PAHL-WOSTL, 2007, WHITE et al., 2005) as well as conflict issues (WALKERDEN, 2006). Collaborative processes in resource management are necessarily adaptive (BERKES, 2009), and often draw on local knowledge (STENSEKE, 2006) as a source of both identifying the problem and pathways for finding solutions to the problem (GERHARDINGER et al., 2009, MURRAY et al., 2006, TURNER et al., 2000).

How can GEOSPECS areas make use of their specific resources?

Apart from generally addressing practices of natural resource exploitation, GEOSPECS will focus on the access to particular resources for each of the territories, dependent on the characteristics of the territory (e.g. marine resources in the case of islands and coasts, water resources and forests in the case of mountains, etc.) and the way in which the presence of particular resources contributes to local and regional development.

Next to these specific issues, two types of resource are singled out as being important across all GEOSPECS areas:

- The first of these are resources used for the generation of renewable energies: Most GEOSPECS areas offer comparatively high potentials for renewable energies, many of which are not present in "mainstream" areas (tidal energy in the case of islands and coasts, hydropower in the case of mountains, wind energy in the case of sparsely populated areas, etc).
- Secondly, many GEOSPECS areas are associated with a particular quality of nature (a vision of "untouched landscapes") – which is not least named as an attraction for tourists and can in this regard be seen as a resource. Air quality shall in this case be singled out exemplarily as one indicator for the purity of the environment in general.

Key questions:

Exploitation of resources:

1. What are the barriers and challenges that the specificity of the area present to collaborative and communicative practices and policies that may be necessary to address common natural resource issues?

Particular resources in GEOSPECS areas:

2. Does the geographic specificity of the area entail particular preconditions for the production of renewable energy? If yes, how are these conditions taken advantage of for local and regional development?
3. Are GEOSPECS areas associated with better air quality than other areas?
4. How does access to specific (strategic) resources influence regional/local development (e.g. marine resources in the case of coasts and islands, water and forests in the case of mountains, etc)?

Vulnerability and adaptation of human-environment systems to climate change

The Intergovernmental Panel on Climate Change (IPCC) defines vulnerability as

> …"the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity" (IPCC 2007b).

Europe is warming faster than the global average. The observed increase in annual average temperature over European land by 2009 was 1.3°C above pre-industrial levels, and for the combined land and ocean area 1°C above (EEA, 2010b), compared to +0.8°C in the global average (IPCC, 2007c).

Within and across the large-scale regions of Europe, which are affected by climate change in different ways and with different severity, there are specific types of areas that can be expected to be vulnerability hotspots. Areas exposed to climate-driven hazards and extreme events as well as areas with a high concentration of population, infrastructure, and material assets are among the most vulnerable types of locations. It follows that low-lying coastal zones, areas prone to river floods, mountain areas prone to mass movement-related natural hazards, and cities and densely populated areas are particularly vulnerable to climate change (EEA, 2010a; EEA/JRC/WHO, 2008; DG REGIO, 2009).

DG REGIO in 2009 came up with a climate change vulnerability index in European regions (taking into account indicators such as vulnerability of

areas to drought, economic sensitivity of agriculture, fisheries and tourism sectors, change in population affected by river floods, exposure of densely populated areas to coastal erosion). It reveals an asymmetric core-periphery pattern, with the highest cumulated vulnerability projected for the south and east of Europe (Iberian Peninsula, Italy, Greece, Bulgaria, Cyprus, Malta, Hungary, Romania) and southern parts of France. In northern and western parts of Europe, overall vulnerability is generally much lower, with the important exception of lowland coastal regions (North Sea, Baltic Sea) with a high exposure to coastal flooding and erosion (DG REGIO, 2009).

The ESPON CLIMATE project developed sensitivity indicators for different economic sectors – GEOSPECS can use these indicators for a cross-analysis with data from geographically specific areas in order to measure climate change vulnerabilities of these areas.

Key Questions

1. Are there common key vulnerabilities that are specific to any of the GEOSPECS areas, and how are these key vulnerabilities related to the constituting geographic specificities and the specific socio-economic characteristics of these specific areas?
2. How does the climate change vulnerability of GEOSPECS areas differ from that of other European types of territories, i.e. are there GEOSPECS areas that are more vulnerable to climate change than "mainstream" territories, and in what regard?
3. What are the priority adaptation requirements for the key vulnerabilities identified for GEOSPECS areas in order to safeguard, support and exploit development potentials? To what extent do the GEOSPECS areas require different adaptation policies and strategies (and, hence, different kinds of public intervention)?

Annex 6 Tables of insular municipalities and islands with significant island component

Table 25 Island municipalities outside of island regions

Country	Code	Name	Population
DE	DE03045200501	Nordseeinsel Memmert	0
DE	DE03045700501	Insel Luetje Hoern	0
DE	DE01005459039	Groede	13
DE	DE01005419158	Witsum	47
DE	DE01005419025	Dunsum	81
DE	DE01005459050	Hooge	83
DE	DE01005459074	Langeness	134
DE	DE01005419129	S³derende	180
DE	DE01005419015	Borgsum	340
DE	DE01005419083	Midlum	358
DE	DE01005419143	Utersum	406
DE	DE01005419005	Alkersum	426
DE	DE01005419094	Oevenum	481
DE	DE03045200002	Baltrum	481
DE	DE01005419098	Oldsum	563
DE	DE01005419087	Nieblum	621
DE	DE01005403089	Norddorf	638
DE	DE01005419163	Wrixum	659
DE	DE01005403160	Wittd³n	665
DE	DE03046200014	Spiekeroog	789
DE	DE01005403085	Nebel	953
DE	DE03045500021	Wangerooge	969
DE	DE13006119017	Insel Hiddensee	1 092
DE	DE01005459103	Pellworm	1 140
DE	DE01005600025	Helgoland	1 388
DE	DE03045200013	Juist	1 786
DE	DE03046200007	Langeoog	2 003
DE	DE01005400164	Wyk auf Foehr	4 437
DE	DE03045700002	Borkum	5 444
DE	DE03045200020	Norderney	5 904
DK	DK1081825	Laso	2 058
DK	DK1083563	Fano	3 170
DK	DK1082741	Samso	4 130
EE	EE740689	Ruhnu	70
EE	EE570907	Vormsi	241
EE	EE740807	Torgu	375
EE	EE670303	Kihnu	487

Country	Code	Name	Population
EE	EE740483	Mustjala	757
EE	EE740386	Laimjala	793
EE	EE740440	Lumanda	820
EE	EE740301	Kihelkonna	891
EE	EE740634	Poide	953
EE	EE740721	Salme	1 187
EE	EE390175	Emmaste	1 266
EE	EE390392	Korgessaare	1 329
EE	EE740858	Valjala	1 397
EE	EE740592	Pihtla	1 400
EE	EE740373	Karla	1 662
EE	EE390639	Puhalepa	1 723
EE	EE740478	Muhu	1 779
EE	EE740550	Orissaare	2 053
EE	EE740403	Leisi	2 127
EE	EE390368	Kaina	2 180
EE	EE390371	Kardla	3 724
EE	EE740270	Kaarma	3 893
EE	EE740349	Kuressaare	14 919
FI	FI202150	Inio	252
FI	FI202101	Houtskar / Houtskari	674
FI	FI202279	Korpo / Korppoo	884
FI	FI417072	Hailuoto / Karlo	965
FI	FI202533	Nagu / Nauvo	1 427
FR	FR5356130085	Hoedic	111
FR	FR5417221004	Ile-d'Aix	215
FR	FR5329139084	Ile-Molene	221
FR	FR5329433083	Ile-de-Sein	238
FR	FR5356338088	Ile-d'Arz	254
FR	FR5356130086	Ile-d'Houat	311
FR	FR5322428016	Ile-de-Brehat	438
FR	FR5356338087	Ile-aux-Moines	536
FR	FR5329338082	Ile-de-Batz	606
FR	FR5356122114	Locmaria	784
FR	FR5329123155	Ouessant	857
FR	FR5356122241	Sauzon	860
FR	FR5356122009	Bangor	875
FR	FR5356111069	Groix	2 266
FR	FR5356122152	Le Palais	2 526
FR	FR5285310113	L'Ile-d'Yeu	4 880
GR	GR090862	Koinotita Antikythiron	26
GR	GR090861	Koinotita Agkistrioy	960
GR	GR053805	Dimos Alonnisoy	2 429

Country	Code	Name	Population
GR	GR011408	Dimos Samothrakis	2 464
GR	GR081522	Dimos Skyroy	2 552
GR	GR090816	Dimos Ydras	2 757
GR	GR090808	Dimos Kythiron	3 841
GR	GR090814	Dimos Spetson	3 867
GR	GR053820	Dimos Skopeloy	4 581
GR	GR053819	Dimos Skiathoy	6 284
GR	GR012404	Dimos Thasoy	13 103
GR	GR090803	Dimos Aiginas	13 613
HR	HR0800523	Cres	
HR	HR0802526	Mali Losinj	
HR	HR0803638	Rab	
HR	HR1301732	Kali	
HR	HR1303204	Pasman	
HR	HR1303549	Preko	
HR	HR1303794	Sali	
HR	HR1305720	Kukljica	
HR	HR1305754	Tkon	
HR	HR1700272	Bol	
HR	HR1701538	Hvar	
HR	HR1701716	Jelsa	
HR	HR1701970	Komiza	
HR	HR1702674	Milna	
HR	HR1702801	Nerezisca	
HR	HR1703506	Postira	
HR	HR1703581	Pucisca	
HR	HR1703832	Selca	
HR	HR1704138	Stari Grad	
HR	HR1704235	Sucuraj	
HR	HR1704278	Supetar	
HR	HR1704472	Solta	
HR	HR1704928	Vis	
HR	HR1705924	Sutivan	
HR	HR1900256	Blato	
HR	HR1902046	Korcula	
HR	HR1902267	Lastovo	
HR	HR1902682	Mljet	
HR	HR1904022	Smokvica	
HR	HR1904740	Vela Luka	
HR	HR1906009	Lumbarda	
IE	IE2502047319	Whiddy	22
IE	IE2502047050	Bear	187
IE	IE1303157050	Clare Island	194

Country	Code	Name	Population
IE	IE1302067109	Inishbofin	199
IE	IE1102057003	Aran	529
IE	IE1302067110	Inishmore	1 225
IT	IT309049005	Capraia Isola	381
IT	IT416071026	Isole Tremiti	417
IT	IT312059033	Ventotene	694
IT	IT309049016	Rio nell'Elba	1 140
IT	IT309053012	Isola del Giglio	1 413
IT	IT309049011	Marciana Marina	1 911
IT	IT309049015	Rio Marina	2 164
IT	IT309049010	Marciana	2 239
IT	IT415063078	Serrara Fontana	3 119
IT	IT312059018	Ponza	3 214
IT	IT309049013	Porto Azzurro	3 437
IT	IT309049004	Capoliveri	3 541
IT	IT309049003	Campo nell'Elba	4 351
IT	IT415063038	Lacco Ameno	4 636
IT	IT415063004	Anacapri	6 397
IT	IT415063014	Capri	7 247
IT	IT415063019	Casamicciola Terme	8 088
IT	IT415063007	Barano d'Ischia	9 591
IT	IT415063061	Procida	10 652
IT	IT309049014	Portoferraio	12 031
IT	IT415063031	Forio	16 024
IT	IT415063037	Ischia	18 373
NL	NL210088	Schiermonnikoog	986
NL	NL210096	Vlieland	1 127
NL	NL210060	Ameland	3 475
NL	NL210093	Terschelling	4 729
NL	NL270448	Texel	13 708
NO	NO1151	Utsira	209
NO	NO1835	Traena	453
NO	NO1144	Kvitsoy	521
NO	NO1915	Bjarkoy	537
NO	NO1856	Rost	598
NO	NO1265	Fedje	638
NO	NO1857	Vaeroy	748
NO	NO1412	Solund	877
NO	NO2015	Hasvik	1 033
NO	NO1546	Sandoy	1 270
NO	NO1815	Vega	1 308
NO	NO1827	Donna	1 507
NO	NO1818	Heroy	1 725

Country	Code	Name	Population
NO	NO1545	Midsund	1 923
NO	NO1573	Smola	2 192
NO	NO1514	Sande	2 539
NO	NO1141	Finnoy	2 729
NO	NO1244	Austevoll	4 391
NO	NO1517	Hareid	4 637
NO	NO1516	Ulstein	6 813
NO	NO1515	Heroy	8 373
SE	SE1407	Ockero	12 231
TR	TR17004	Bozcaada	976
TR	TR17009	Gokceada	4 698
TR	TR10015	Marmara	4 963
TR	TR34001	Kinaliada	6 568
UK	UK11QD0008	Islay North, Jura and Colonsay	
UK	UK11QD0009	Islay South	
UK	UK11QD0016	Mull	
UK	UK11QD0017	Tiree and Coll	
UK	UK11QD0018	Bute North	
UK	UK11QD0019	Bute Central	
UK	UK11QD0020	Bute South	
UK	UK11QY0030	Arran	
UK	UK1215UH00	Isles of Scilly	
UK	UK1215UHFA	Bryher	
UK	UK1215UHFB	St. Agnes	
UK	UK1215UHFC	St. Martin’s	
UK	UK1215UHFD	St. Mary’s	
UK	UK1215UHFE	Tresco	

Table 26 Island municipalities with one island or more connected to the mainland by a fixed connection

Country	Code	Name	Population
DE	DE01005500046	Fehmarn	12894
DE	DE13005900112	Heringsdorf	9389
DE	DE13005922047	Krummin	253
DE	DE13005922059	Luetow	368
DE	DE13005922088	Sauzin	419
DE	DE13005925038	Karlshagen	3116
DE	DE13005925063	Moelschow	861
DE	DE13005925075	Peenemuende	342
DE	DE13005925095	Trassenheide	971
DE	DE13005925107	Zinnowitz	3719
DE	DE13005926007	Benz	1003
DE	DE13005926017	Dargen	573
DE	DE13005926022	Garz	204
DE	DE13005926036	Kamminke	298
DE	DE13005926043	Korswandt	548
DE	DE13005926044	Koserow	1685
DE	DE13005926052	Loddin	1069
DE	DE13005926078	Pudagla	424
DE	DE13005926081	Rankwitz	659
DE	DE13005926094	Stolpe auf Usedom	395
DE	DE13005926096	Ueckeritz	998
DE	DE13005926097	Usedom	1936
DE	DE13005926105	Zempin	914
DE	DE13005926109	Zirchow	642
DE	DE13005926111	Mellenthin	486
DE	DE13006100005	Binz	5451
DE	DE13006100028	Putbus	4803
DE	DE13006100035	Sassnitz	10813
DE	DE13006115003	Baabe	914
DE	DE13006115010	Gager	416
DE	DE13006115014	Goehren	1291
DE	DE13006115020	Lancken-Granitz	402
DE	DE13006115023	Middelhagen	609
DE	DE13006115038	Sellin	2443
DE	DE13006115040	Thiessow	472
DE	DE13006115044	Zirkow	714
DE	DE13006118002	Altenkirchen	1077
DE	DE13006118006	Breege	787
DE	DE13006118008	Dranske	1398
DE	DE13006118013	Glowe	1062
DE	DE13006118022	Lohme	573
DE	DE13006118029	Putgarten	293

Country	Code	Name	Population
DE	DE13006118033	Sagard	2827
DE	DE13006118043	Wiek	1264
DE	DE13006119001	Altefaehr	1292
DE	DE13006119009	Dreschvitz	804
DE	DE13006119012	Gingst	1467
DE	DE13006119019	Kluis	428
DE	DE13006119024	Neuenkirchen	394
DE	DE13006119031	Rambin	1059
DE	DE13006119034	Samtens	2098
DE	DE13006119036	Schaprode	527
DE	DE13006119041	Trent	836
DE	DE13006119042	Ummanz	690
DE	DE13006120004	Bergen auf Ruegen	14651
DE	DE13006120007	Buschvitz	247
DE	DE13006120011	Garz/Ruegen	2605
DE	DE13006120016	Gustow	647
DE	DE13006120021	Lietzow	306
DE	DE13006120025	Parchtitz	843
DE	DE13006120026	Patzig	524
DE	DE13006120027	Poseritz	1159
DE	DE13006120030	Ralswiek	297
DE	DE13006120032	Rappin	374
DE	DE13006120037	Sehlen	938
DE	DE13006120039	Thesenvitz	407
DK	DK1083410	Middelfart	36771
DK	DK1083420	Assens	480616
DK	DK1083430	Faaborg-Midtfyn	51612
DK	DK1083440	Kerteminde	23524
DK	DK1083450	Nyborg	31508
DK	DK1083461	Odense	186745
DK	DK1083479	Svendborg	58714
DK	DK1083480	Nordfyn	29195
DK	DK1083482	Langeland	13937
DK	DK1083492	Aro	6794
DK	DK1084101	Kobenhavn	503699
DK	DK1084147	Frederiksberg	92234
DK	DK1084151	Ballerup	46914
DK	DK1084153	Brondby	33947
DK	DK1084155	Dragor	13184
DK	DK1084157	Gentofte	68672
DK	DK1084159	Gladsaxe	61945
DK	DK1084161	Glostrup	20618
DK	DK1084163	Herlev	26743

Country	Code	Name	Population
DK	DK1084165	Albertslund	27608
DK	DK1084167	Hvidovre	49422
DK	DK1084169	Hoje Taastrup	46683
DK	DK1084173	Lyngby-Taarbak	51751
DK	DK1084175	Rodovre	36244
DK	DK1084183	Ishoj	20715
DK	DK1084185	Tarnby	39772
DK	DK1084187	Vallensbak	12145
DK	DK1084190	Fureso	37624
DK	DK1084201	Allerod	23609
DK	DK1084210	Fredensborg	39303
DK	DK1084217	Helsingor	61012
DK	DK1084219	Hillerod	46354
DK	DK1084223	Horsholm	24332
DK	DK1084230	Rudersdal	53910
DK	DK1084240	Egedal	40057
DK	DK1084250	Frederikssund	307938
DK	DK1084260	Halsnas	30798
DK	DK1084270	Gribskov	40409
DK	DK1085253	Greve	47672
DK	DK1085259	Koge	56298
DK	DK1085265	Roskilde	81017
DK	DK1085269	Solrod	20852
DK	DK1085306	Odsherred	32980
DK	DK1085316	Holbak	68451
DK	DK1085320	Faxe	35117
DK	DK1085326	Kalundborg	49377
DK	DK1085329	Ringsted	31468
DK	DK1085330	Slagelse	76949
DK	DK1085336	Stevns	21828
DK	DK1085340	Soro	28956
DK	DK1085350	Lejre	26361
DK	DK1085360	Lolland	48634
DK	DK1085370	Nastved	80133
DK	DK1085376	Guldborgsund	63540
DK	DK1085390	Vordingborg	46485
ES	ES7136901	Illa de Arousa, A	4849
FI	FI202040	Dragsfjard	3363
FI	FI202243	Kimito#Kemio	3295
FI	FI202304	Kustavi#Gustavs	929
FI	FI202573	Pargas#Parainen	12063
FI	FI202705	Rymattyla#Rimito	2040
FI	FI202920	Velkua	245

Country	Code	Name	Population
FI	FI202923	Vastanfjard	804
FI	FI215231	Kaskinen#Kasko	1477
FR	FR5285318011	Barbatre	1710
FR	FR5285318083	L'Epine	1705
FR	FR5285318106	La Gueriniere	1543
FR	FR5285318163	Noirmoutier-en-l'Ile	4855
FR	FR5417206093	Le Chateau-d'Oleron	3884
FR	FR5417206140	Dolus-d'Oleron	3145
FR	FR5417206411	Saint-Trojan-les-Bains	1486
FR	FR5417206485	Le Grand-Village-Plage	970
FR	FR5417231323	Saint-Denis-d'Oleron	1172
FR	FR5417231337	Saint-Georges-d'Oleron	3415
FR	FR5417231385	Saint-Pierre-d'Oleron	6177
FR	FR5417231486	La Bree-les-Bains	742
FR	FR5417303019	Ars-en-Re	1312
FR	FR5417303121	La Couarde-sur-Mer	1231
FR	FR5417303207	Loix	703
FR	FR5417303286	Les Portes-en-Re	647
FR	FR5417303318	Saint-Clement-des-Baleines	726
FR	FR5417330051	Le Bois-Plage-en-Re	2293
FR	FR5417330161	La Flotte	2907
FR	FR5417330297	Rivedoux-Plage	2197
FR	FR5417330360	Sainte-Marie-de-Re	3027
FR	FR5417330369	Saint-Martin-de-Re	2597
GR	GR025206	Dimos Kassandras	10464
GR	GR025209	Dimos Pallinis	6327
GR	GR063701	Dimos Leykados	11637
GR	GR063702	Dimos Apollonion	2917
GR	GR063703	Dimos Ellomenoy	3402
GR	GR063704	Dimos Karyas	1165
GR	GR063706	Dimos Sfakioton	1621
GR	GR081501	Dimos Chalkideon	55301
GR	GR081502	Dimos Aidipsoy	6555
GR	GR081503	Dimos Amarynthion	7028
GR	GR081505	Dimos Artemisioy	3780
GR	GR081507	Dimos Aylonos	4461
GR	GR081508	Dimos Dirfyon	5965
GR	GR081509	Dimos Dystion	5173
GR	GR081510	Dimos Elymnion	4912
GR	GR081511	Dimos Eretrias	5740
GR	GR081512	Dimos Istiaias	7025
GR	GR081513	Dimos Karystoy	6775
GR	GR081514	Dimos Kireos	5378

Country	Code	Name	Population
GR	GR081515	Dimos Konistron	3467
GR	GR081516	Dimos Kymis	7088
GR	GR081517	Dimos Lilantion	15971
GR	GR081518	Dimos Marmarioy	2927
GR	GR081519	Dimos Messapion	13077
GR	GR081520	Dimos Neas Artakis	9053
GR	GR081521	Dimos Nileos	2267
GR	GR081523	Dimos Styraion	2813
GR	GR081524	Dimos Taminaion	9701
GR	GR081525	Dimos Oreon	3069
GR	GR081561	Koinotita Kafireos	1186
GR	GR081562	Koinotita Lichados	1039
GR	GR090804	Dimos Ampelakion	6876
GR	GR090813	Dimos Salaminas	30935
HR	HR0800086	Baska	missing data
HR	HR0800744	Dobrinj	missing data
HR	HR0802151	Krk	missing data
HR	HR0802534	Malinska-Dubasnica	missing data
HR	HR0803018	Omisalj	missing data
HR	HR0803603	Punat	missing data
HR	HR0805070	Vrbnik	missing data
HR	HR0902887	Novalja	missing data
HR	HR1303166	Pag	missing data
HR	HR1304898	Vir	missing data
HR	HR1305738	Povljana	missing data
HR	HR1306220	Kolan	missing data
HR	HR1506173	Murter - Kornati	missing data
HR	HR1705886	Okrug	missing data
IE	IE1302067102	Gorumna	1288
IE	IE1303157001	Achill	932
IE	IE1303157074	Dooega	662
IE	IE1303157139	Slievemore	1052
IE	IE2503077165	Valencia	713
NO	NO0111	Hvaler	3821
NO	NO0722	Notteroy	20082
NO	NO0723	Tjome	4566
NO	NO1142	Rennesoy	3412
NO	NO1145	Bokn	770
NO	NO1219	Bomlo	10808
NO	NO1221	Stord	16682
NO	NO1222	Fitjar	2901
NO	NO1223	Tysnes	2795
NO	NO1245	Sund	5584

Country	Code	Name	Population
NO	NO1246	Fjell	20392
NO	NO1247	Askoy	22496
NO	NO1253	Osteroy	7224
NO	NO1256	Meland	5931
NO	NO1259	Oygarden	4077
NO	NO1260	Radoy	4635
NO	NO1503	Kristiansund	17067
NO	NO1531	Sula	7502
NO	NO1532	Giske	6630
NO	NO1554	Averoy	5360
NO	NO1556	Frei	5380
NO	NO1617	Hitra	4021
NO	NO1620	Froya	4059
NO	NO1750	Vikna	4011
NO	NO1755	Leka	595
NO	NO1820	Alstahaug	7306
NO	NO1851	Lodingen	2314
NO	NO1859	Flakstad	1454
NO	NO1860	Vestvagoy	10797
NO	NO1865	Vagan	9021
NO	NO1866	Hadsel	8001
NO	NO1867	Bo	2946
NO	NO1868	Oksnes	4567
NO	NO1870	Sortland	9639
NO	NO1871	Andoy	5245
NO	NO1874	Moskenes	1183
NO	NO1901	Harstad	23228
NO	NO1911	Kvaefjord	3067
NO	NO1917	Ibestad	1630
NO	NO1927	Tranoy	1598
NO	NO1928	Torsken	1005
NO	NO1929	Berg	996
NO	NO1936	Karlsoy	2369
NO	NO1941	Skjervoy	2971
NO	NO2004	Hammerfest	9361
PL	PL3207043	Miedzyzdroje	6464
PL	PL3263011	M. Swinoujscie	40819
SE	SE0120	Varmdo	34933
SE	SE0186	Lidingo	41892
SE	SE0840	Morbylanga	13405
SE	SE0885	Borgholm	11067
SE	SE1419	Tjorn	15022
SE	SE1421	Orust	15188

Country	Code	Name	Population
UK	UK11QT0035	Snizort and Trotternish	missing data
UK	UK11QT0036	Skye West	missing data
UK	UK11QT0037	Portree	missing data
UK	UK11QT0038	Skye Central	missing data
UK	UK11QT0039	Kyle and Sleat	missing data
UK	UK1216UCGB	Walney North	missing data
UK	UK1216UCGC	Walney South	missing data
UK	UK1224UHFY	Hayling East	missing data
UK	UK1224UHFZ	Hayling West	missing data
UK	UK1229UMGN	Leysdown anden	missing data
UK	UK1229UMGQ	Minster Cliffs	missing data
UK	UK1229UMGS	Queenborough and Halfway	missing data
UK	UK1229UMGX	Sheerness East	missing data
UK	UK1229UMGY	Sheerness West	missing data
UK	UK1229UMGZ	Sheppey Central	missing data
UK	UK13NA00MA	Aberffraw	missing data
UK	UK13NA00MB	Amlwch Port	missing data
UK	UK13NA00MC	Amlwch Rural	missing data
UK	UK13NA00MD	Beaumaris	missing data
UK	UK13NA00ME	Bodffordd	missing data
UK	UK13NA00MF	Bodorgan	missing data
UK	UK13NA00MG	Braint	missing data
UK	UK13NA00MH	Bryngwran	missing data
UK	UK13NA00MJ	Brynteg	missing data
UK	UK13NA00MK	Cadnant	missing data
UK	UK13NA00ML	Cefni	missing data
UK	UK13NA00MM	Cwm Cadnant	missing data
UK	UK13NA00MN	Cyngar	missing data
UK	UK13NA00MP	Gwyngyll	missing data
UK	UK13NA00MQ	Holyhead Town	missing data
UK	UK13NA00MR	Kingsland	missing data
UK	UK13NA00MS	Llanbadrig	missing data
UK	UK13NA00MT	Llanbedrgoch	missing data
UK	UK13NA00MU	Llanddyfnan	missing data
UK	UK13NA00MW	Llaneilian	missing data
UK	UK13NA00MX	Llanfaethlu	missing data
UK	UK13NA00MY	Llanfair-yn-Neubwll	missing data
UK	UK13NA00MZ	Llanfihangel Ysgeifiog	missing data
UK	UK13NA00NA	Llangoed	missing data
UK	UK13NA00NB	Llanidan	missing data
UK	UK13NA00NC	Llannerch-y-Medd	missing data
UK	UK13NA00ND	London Road	missing data
UK	UK13NA00NE	Maeshyfryd	missing data

Country	Code	Name	Population
UK	UK13NA00NF	Mechell	missing data
UK	UK13NA00NG	Moelfre	missing data
UK	UK13NA00NH	Morawelon	missing data
UK	UK13NA00NJ	Parc A'r Mynydd	missing data
UK	UK13NA00NK	Pentraeth	missing data
UK	UK13NA00NL	Porthyfelin	missing data
UK	UK13NA00NM	Rhosneigr	missing data
UK	UK13NA00NN	Rhosyr	missing data
UK	UK13NA00NP	Trearddur	missing data
UK	UK13NA00NQ	Tudur	missing data
UK	UK13NA00NR	Tysilio	missing data
UK	UK13NA00NS	Valley	missing data

Table 27 Municipalities with a significant island component

Country	Code	Name	Muncipal area (km^2)	Insular area (km^2)	Percentage island area	Population (2006)
DE	DE01005616045	Seestermuehe	18,2	3,5	19,0	930
DE	DE01005628019	Haselau	13,6	2,2	16,1	1100
DE	DE01006100029	Glueckstadt	12,8	1,4	11,3	11846
DE	DE13005700096	Zingst	50,3	4,5	8,9	3215
DE	DE13005712038	Gross Mohrdorf	29,9	5,2	17,5	871
DE	DE13005919046	Kroeslin	21,3	1,8	8,7	1852
DK	DK1082615	Horsens	521,7	13,8	2,7	79020
DK	DK1082707	Norddjurs	723,4	21,9	3,0	38333
EE	EE370580	Paldiski	60,2	26,7	44,4	4190
EE	EE370890	Viimsi	73,4	26,6	36,2	8409
ES	ES7136004	Bueu	30,8	4,4	14,3	12537
FI	FI204442	Luvia	166,2	12,1	7,3	3321
FI	FI204684	Rauma#Raumo	249,9	22,6	9,0	36601
FI	FI215545	Narpes#Narpio	980,1	26,5	2,7	9468
FI	FI215893	Nykarleby#Uusikaarlepyy	732,9	20,3	2,8	7382
FI	FI519751	Simo	1464,1	10,4	0,7	3621
FR	FR5329139040	Le Conquet	8,8	1,3	15,4	2543
FR	FR5356338106	Larmor-Baden	4,2	0,4	10,6	847
FR	FR5417226484	Port-des-Barques	6,1	0,8	13,4	1805
FR	FR9306198029	Cannes	20,9	2,3	11,1	70610

Country	Code	Name	Muncipal area (km^2)	Insular area (km^2)	Percentage island area	Population (2006)
FR	FR9383297069	Hyeres	133,3	29,7	22,3	55007
GR	GR053864	Koinotita Trikerioy	26,8	3,2	11,9	1703
GR	GR090608	Dimos Voyliagmenis	6,1	1,4	22,2	7489
GR	GR090614	Dimos Layreotikis	36,2	4,3	12,0	10550
GR	GR090812	Dimos Poroy	48,7	23,8	48,8	4653
GR	GR103361	Koinotita Elafonisoy	19,9	18,2	91,4	788
GR	GR103920	Dimos Methonis	96,8	21,7	22,4	2293
HR	HR1305207	Zadar	193,0	111,3	57,7	Not Available
HR	HR1504448	Sibenik	404,3	37,7	9,3	Not Available
HR	HR1505002	Vodice	108,6	9,2	8,5	Not Available
HR	HR1803590	Pula#Pola	53,4	7,6	14,3	Not Available
IT	IT107011022	Portovenere	7,6	1,7	22,6	4045
NL	NL201651	Eemsmond	193,7	11,4	5,9	16695
NO	NO0815	Kragero	301,9	33,7	11,1	10477
NO	NO0901	Risor	191,7	12,2	6,3	6863
NO	NO1004	Flekkefjord	542,6	27,2	5,0	8852
NO	NO1224	Kvinnherad	1126,9	111,8	9,9	13071
NO	NO1266	Masfjorden	555,7	13,0	2,3	1693
NO	NO1411	Gulen	592,3	119,1	20,1	2417
NO	NO1428	Askvoll	322,1	64,8	20,1	3182
NO	NO1441	Selje	225,7	11,0	4,9	2958
NO	NO1534	Haram	259,8	55,8	21,5	8643
NO	NO1547	Aukra	56,9	48,0	84,3	3099
NO	NO1632	Roan	373,4	14,4	3,9	1066
NO	NO1633	Osen	385,5	12,5	3,2	1059
NO	NO1719	Levanger	645,3	28,5	4,4	18080
NO	NO1749	Flatanger	455,2	38,0	8,3	1174
NO	NO1816	Vevelstad	538,1	17,9	3,3	516
NO	NO1828	Nesna	182,2	104,0	57,1	1769
NO	NO1834	Luroy	251,7	116,2	46,2	1971
NO	NO1836	Rodoy	701,4	75,3	10,7	1376
NO	NO1850	Tysfjord	1463,5	26,1	1,8	2118
NO	NO1942	Nordreisa	3438,8	32,2	0,9	4772
NO	NO1943	Kvaenangen	2108,3	39,4	1,9	1387
NO	NO2012	Alta	3849,2	375,8	9,8	17889
NO	NO2014	Loppa	686,8	68,7	10,0	1213
NO	NO2020	Porsanger	4873,3	44,0	0,9	4222
NO	NO2022	Lebesby	3457,6	14,4	0,4	1391
NO	NO2030	Sor-Varanger	3969,7	137,4	3,5	9464

Country	Code	Name	Muncipal area (km^2)	Insular area (km^2)	Percentage island area	Population (2006)
PT	PT11014048	Peniche (Sao Pedro)	2,3	0,8	34,7	Not Available
RO	RO49161231	Sfantu Gheorghe	619,0	10,1	1,6	865
SE	SE0480	Nykoping	1552,6	27,7	1,8	49816
SE	SE0882	Oskarshamn	1084,3	24,4	2,3	26247
SE	SE1480	Goteborg	456,0	24,2	5,3	484942
SE	SE2482	Skelleftea	7213,3	19,1	0,3	71910
SE	SE2514	Kalix	1915,5	85,6	4,5	17483
ME	ME152584	Budva	4,8	0,4	8,4	Not Available

Annex 8 The current status of decentralised cross-border co-operation between regional and local authorities in Europe

Shortly after the Second World War, representatives from border regions in Western Europe joined together to discuss how the negative effects caused by the existence of borders could be either alleviated or even eliminated. These first local and regional initiatives for establishing closer cross-border co-operation were often motivated by the desire to ensure lasting peace and understanding and to raise the development and living standards in the respective border areas. In Western Europe, however, the actors quickly discovered that the lack of appropriate legal framework instruments allowing local and regional authorities to effectively engage in cross-border co-operation (i.e. competencies in domestic legislation, bilateral inter-state agreements, multi-lateral agreements or international treaties) often limited their success in reaching substantial progress.

In 1958, the first permanent cross-border structure in Europe was established on the German/Dutch border by local and regional authorities from both sides of the common border (i.e. the EUREGIO). During the following twenty years (1960-1980), a large number of new cross-border co-operation initiatives developed across borders between Western European countries (D, NL, B, F, UK, CH, AT) and in Scandinavia (DK, SE, FI, NOR). Also the European Commission had already sought in the 1970s to promote co-operation on economic and cultural issues across national borders in the Benelux countries, and between France and Germany. In the 1970s, Western European 'first-level' regions also started establishing new European-wide associations to represent their interests at the Community level. The most long-standing of these structures is the "Association of European Border Regions" (AEBR), which was founded in founded in 1971 and has its legal seat in Gronau (Germany).

The continuing and rapid development of cross-border co-operation between regional and local authorities created a new dimension of

"external relations" across national borders which increasingly had an impact on the foreign policy domain of the classical nation states. Reflecting this, the Member States of the Council of Europe adopted the "Madrid Outline Convention" in 1980 which advocated the creation of legal provisions to support decentralised co-operation in the framework of domestic laws and proposed a number of model agreements to be concluded by Member States as a basis for promoting cross-border co-operation. [19]

In the following 20 years (1990-2010), territorial co-operation in Europe significantly expanded under the influence of a further deepening and widening of the European integration process and the opening up of Central and Eastern European after the fall of the Iron Curtain. Also cross-border co-operation in Europe experienced a considerable expansion during these two decades, which was significantly boosted by the launching of new EU programmes and pilot initiatives covering the internal and external EU-borders which were supported from the Structural Funds and other Community-level funding sources (i.e. Article 10-Structural Funds cross-border pilot initiative from 1988-1889; INTERREG I from 1990-1993; INTERREG IIA from 1994-1999; PHARE-CBC since 1994 & TACIS-CBC since 1996; INTERREG IIIA from 2000-2006; cross-border co-operation supported under Objective 3 along the internal EU-borders from 2007-2013; cross-border co-operation supported under the New Neighbourhood Instrument along the external EU-borders from 2007-2013).

A systematic analysis of the cross-border co-operation – a brief review on main attempts

For a long time, however, the diversity of existing decentralised cross-border co-operation initiatives was not systematically analysed or mapped.

[19] **Council of Europe:** European Outline Convention on Transfrontier co-operation between territorial communities (European Treaties Series /106). Strasbourg, 1999.

The first typologies on cross-border co-operation were only developed during the second half of the 1990s (AEBR/European Commission in 1995/1997/2000; European Parliament in 1996; AMRIE in 1997)[20] and also the terminology used for labelling co-operation as such and for distinguishing specific sub-types of co-operation was far from homogenous (e.g. transboundary, cross-boundary, cross-border).

Only in 2002, a first comprehensive typology was developed in a study produced for the Committee of the Regions which analysed the complex reality of territorial co-operation in Europe and also classified existing cross-border co-operation as well as other co-operation initiatives (inter-regional & transnational).21 In 2004, a DG REGIO study reviewed the current legal framework conditions existing in Europe for territorial co-operation and also elaborated a partial typology for existing and directly applicable legal instruments that are currently used in the context of decentralised cross-border co-operation.[22] In parallel, also a few interesting typologies addressing specific aspects of cross-border co-operation have been made elaborated by individual academic

[20] Association of European Border Regions / Commission of the European Communities: LACE-GUIDE – Practical Guide to Cross-border Co-operation (1st edition1995; 2nd edition 1997; 3rd edition 2000). Brussels/Gronau. European Parliament, Directorate General for Research: (1996): Cross-border and inter-regional co-operation in the European Union. Brussels, 1996 (Regional Policy Series W-19, PE 166.402). Alliance of Maritime Regional Interests in Europe: Cross-border and inter-regional co-operation between maritime regions. AMRIE, Brussels, 1997.

[21] Committee of the Regions: Trans-European Co-operation between territorial authorities. New challenges and future steps necessary to improve co-operation. Office for Official Publications of the European Communities, Luxembourg, 2002.

[22] Commission of the European Communities: Towards a new Community legal instrument for public law based Transeuropean Co-operation among territorial authorities in the European Union (Synthesis Report). DG Regio, Brussels, 2004.

researchers[23] and by European-wide territorial research realised in the context of the ESPON 2006 programme.[24]

Finally, as a part of the AEBR's comprehensive review of cross-border co-operation activities realised over the past 50 years, a new and more wide-ranging typology for border and cross-border regions in Europe was elaborated in 2008.[25]

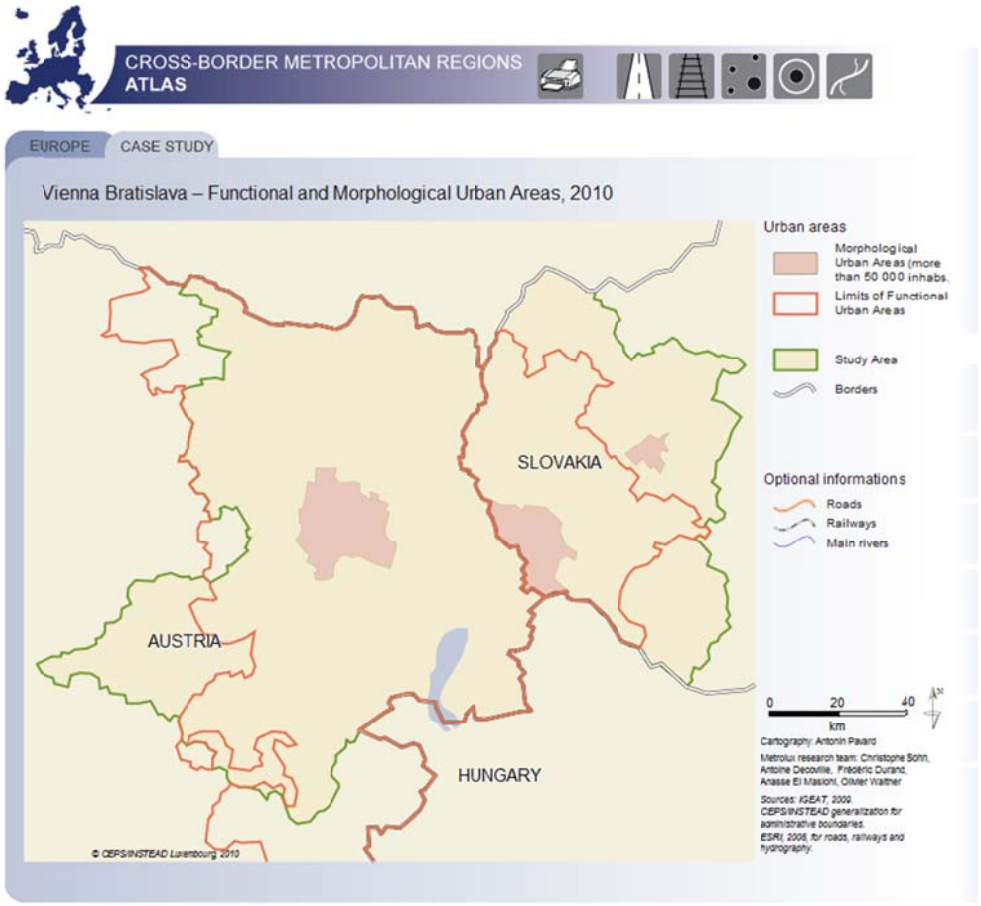
Among all these attempts only one typology is a "comprehensive typology" (AGEG, 2008) which used a multi-criteria approach to classify individual border regions and cross-border regions according to the degree of cross-border integration achieved. The other approaches were all "partial typologies" and focused either on one specific issue or on a few issues that form only part of the complex reality of cross-border co-operation (i.e. existing legal instruments for co-operation; organisational co-operation arrangements established outside of INTERREG; the political or geographical nature of a border; specific context features characterising the co-operation area etc.). Due to this, these prior attempts are only of relatively limited use if an overview on the current capacity level of decentralised cross-border co-operation in tackling existing border problems and obstacles is to be given.

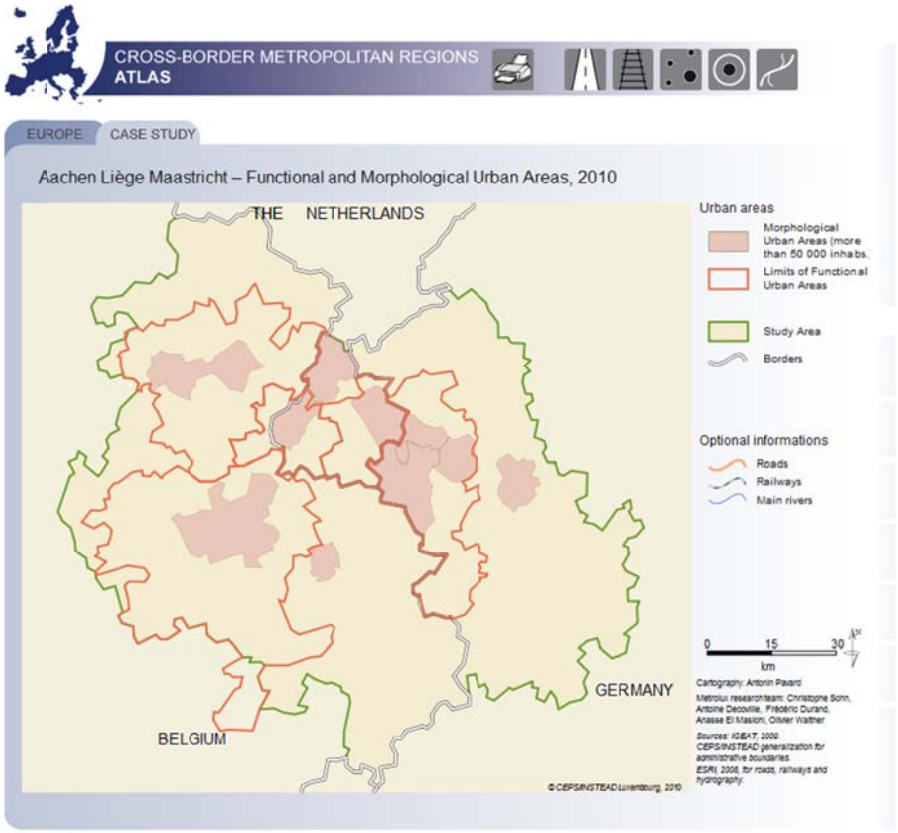
23 Perkmann, M.: Cross-Border Regions in Europe – Significance and Drivers of Regional Cross-Border Co-operation. In: European Urban and Regional Studies 2003/10 (2), pp. 153-171.

24 ESPON project 1.1.3: Enlargement of the EU and its polycentric spatial structure". Final Report. KTH - Royal Institute of Technology, Stockholm. Esch-sur-Alzette and Stockholm (ESPON and KTH), 2006.

25 Arbeitsgemeinschaft Europäischer Grenzregionen: Zusammenarbeit Europäischer Grenzregionen – Bilanz und Perspektiven. Baden-Baden, Nomos, 2008.

Annex 9 Delineation of Cross-Border Metropolitan Regions




CROSS-BORDER METROPOLITAN REGIONS
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CASE STUDY
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GERMANY
BELGIUM
Urban areas
Morphological Urban Areas (more than 50 000 inhabs.
Limits of Functional Urban Areas
Study Area
Borders
Optional informations
Roads
Railways
Main rivers
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Cartography: Antonin Pavard
Metrolux research team: Christophe Sohn, Antoine Decoville, Frédéric Durand, Anasse El Masloni, Olivier Walther
Sources: IGEAT, 2009
CEPS/INSTEAD generalization for administrative boundaries.
ESRI, 2008, for roads, railways and hydrography.
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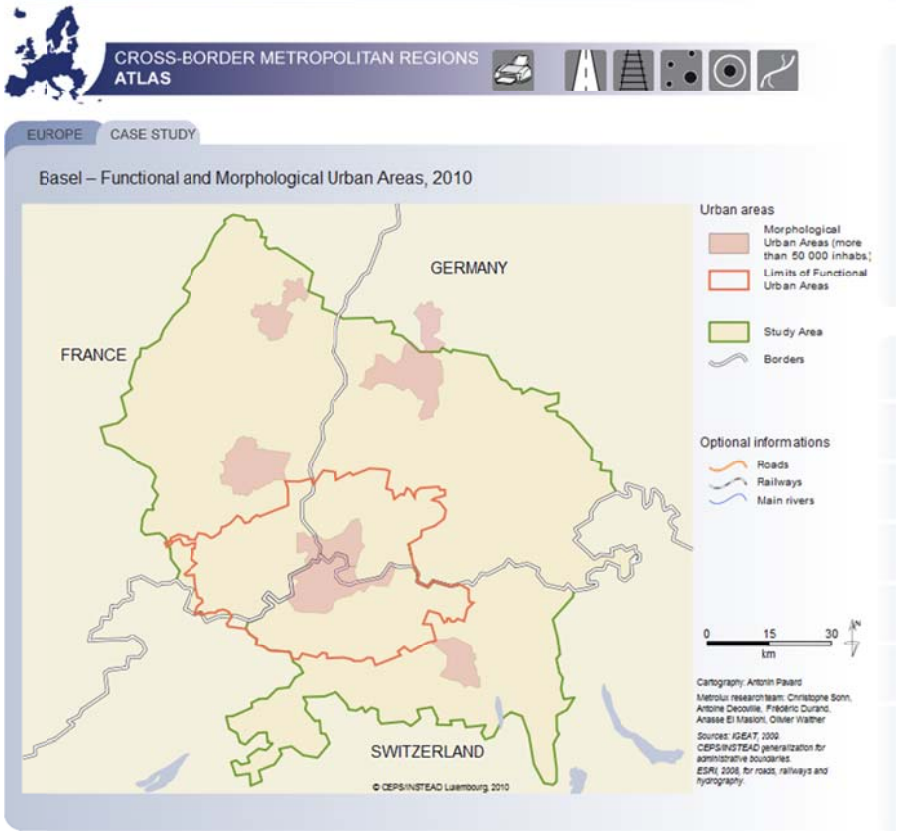
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Limits of Functional Urban Areas
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CEPS/INSTEAD generalization for administrative boundaries.
ESRI, 2008, for roads, railways and hydrography.
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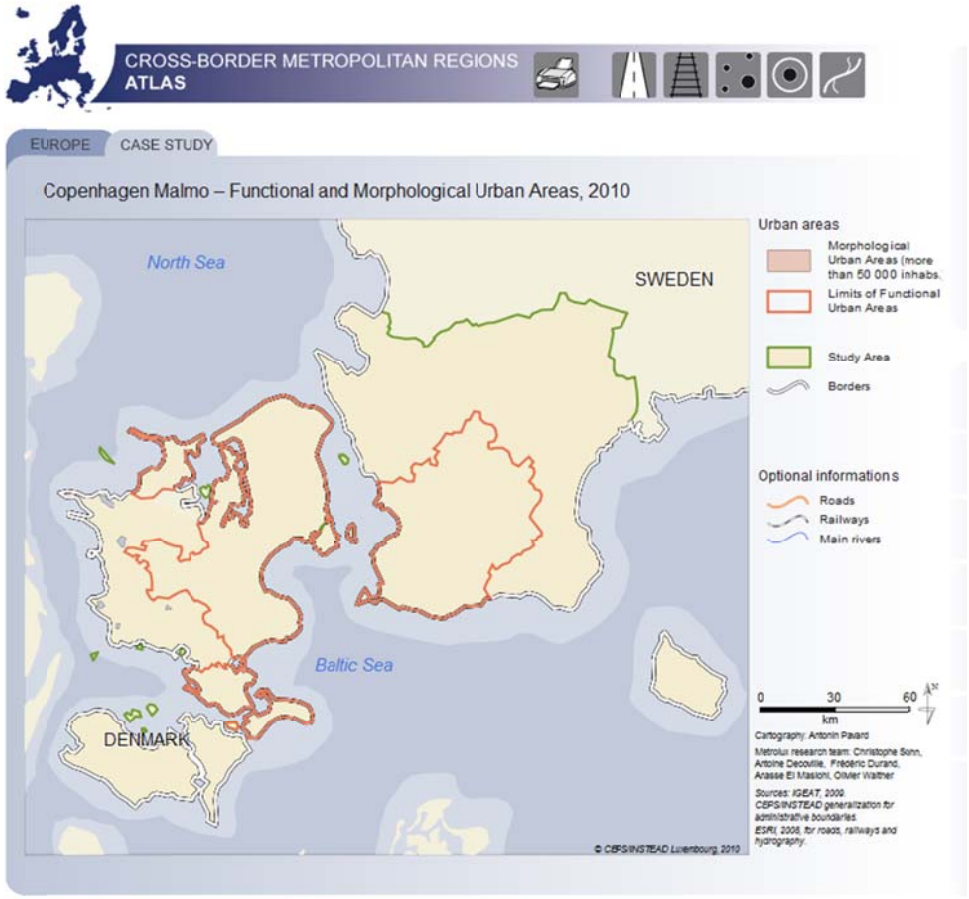
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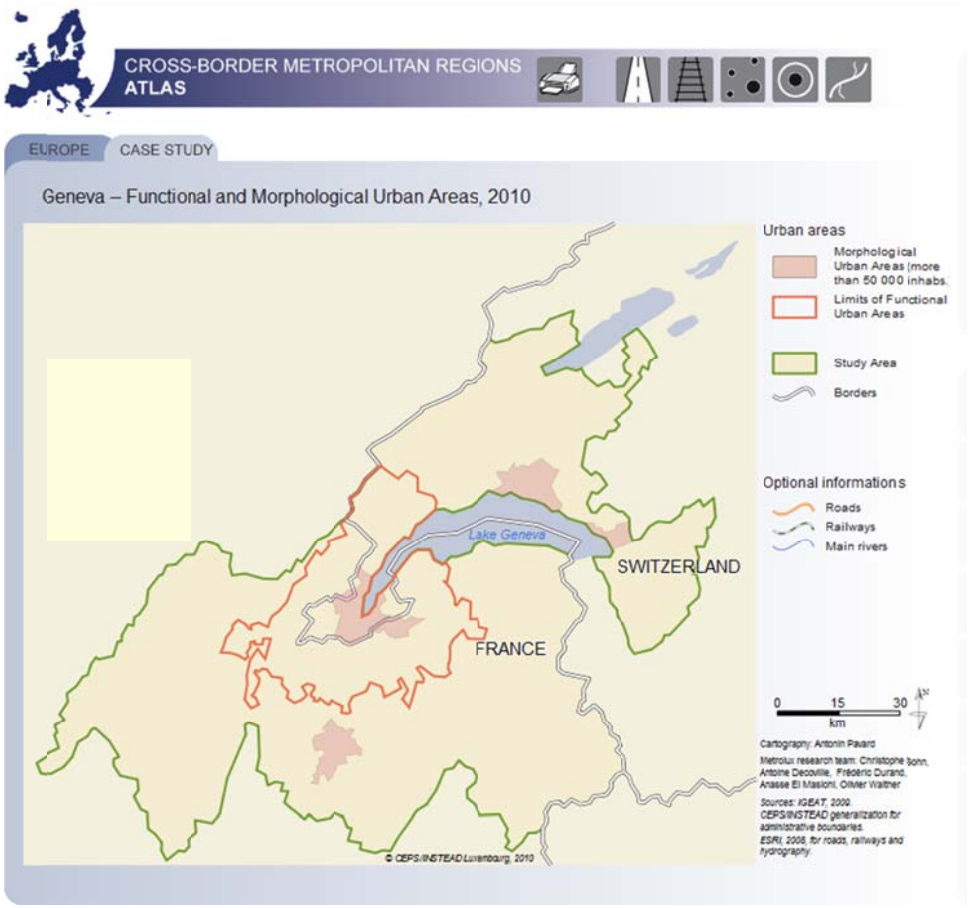
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Sources: IGEAT, 2009. CEPS/INSTEAD generalization for administrative boundaries. ESRI, 2008, for roads, railways and hydrography.
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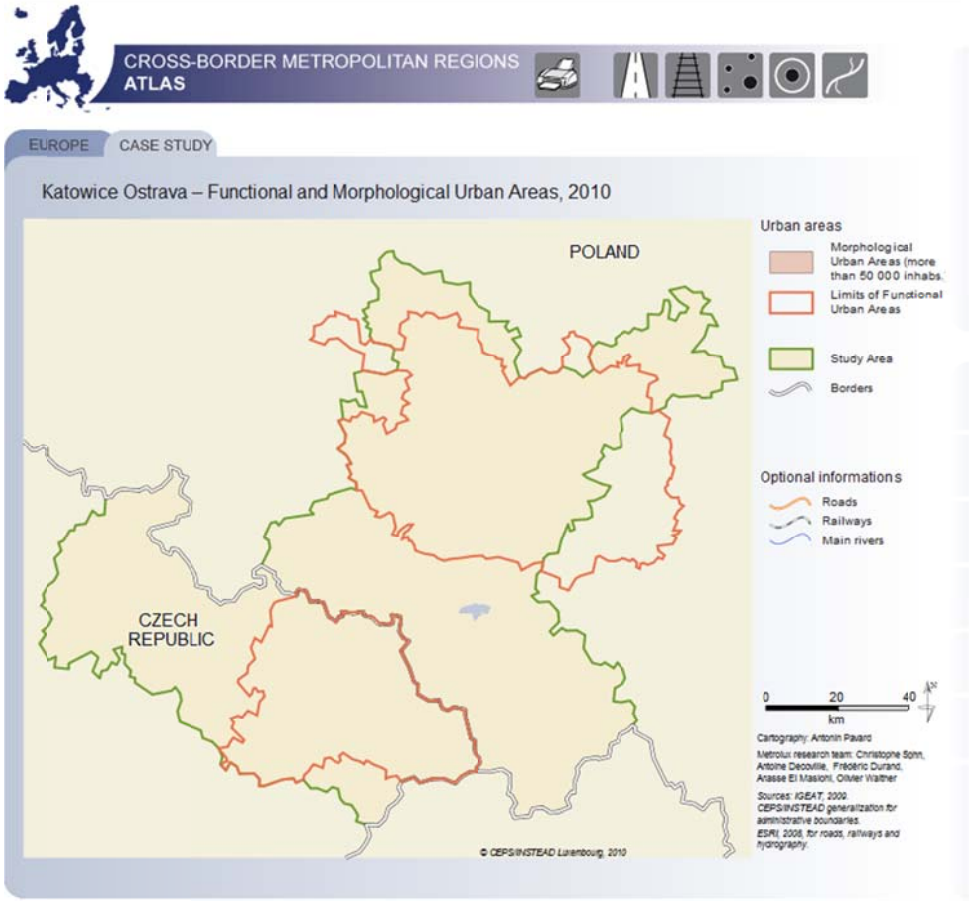
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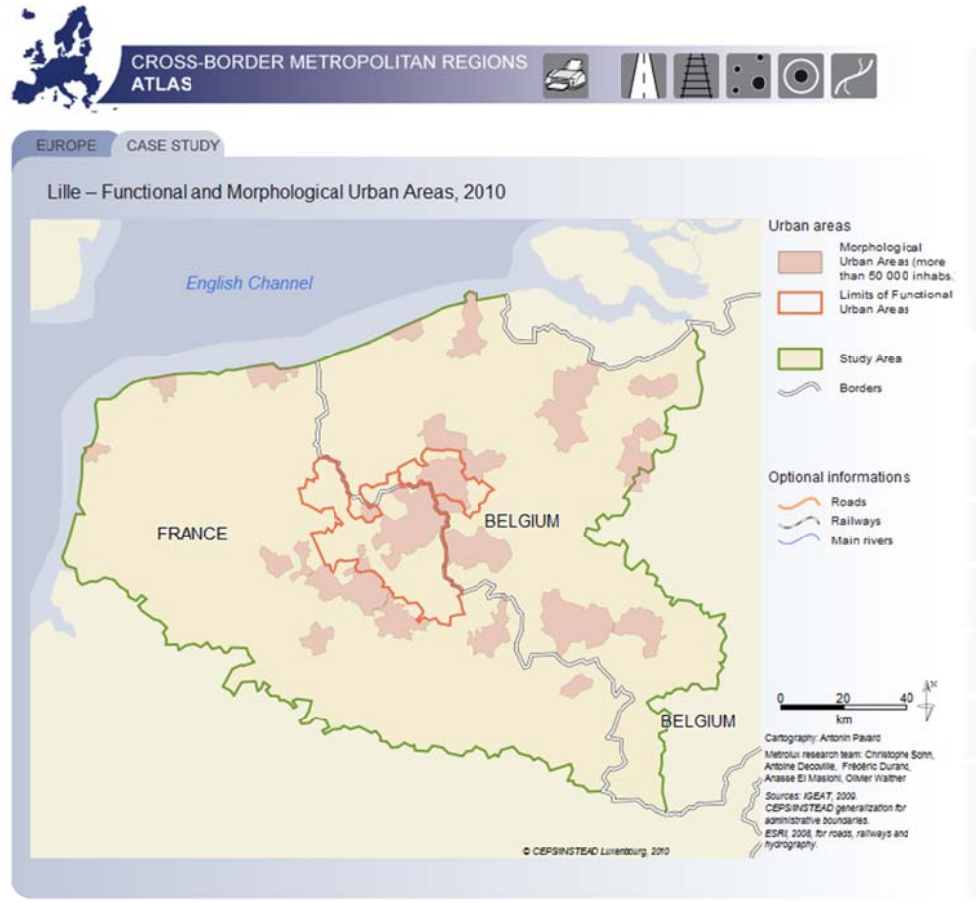
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Sources: IGEAT, 2009. CEPS/INSTEAD generalization for administrative boundaries. ESRI, 2008, for roads, railways and hydrography.
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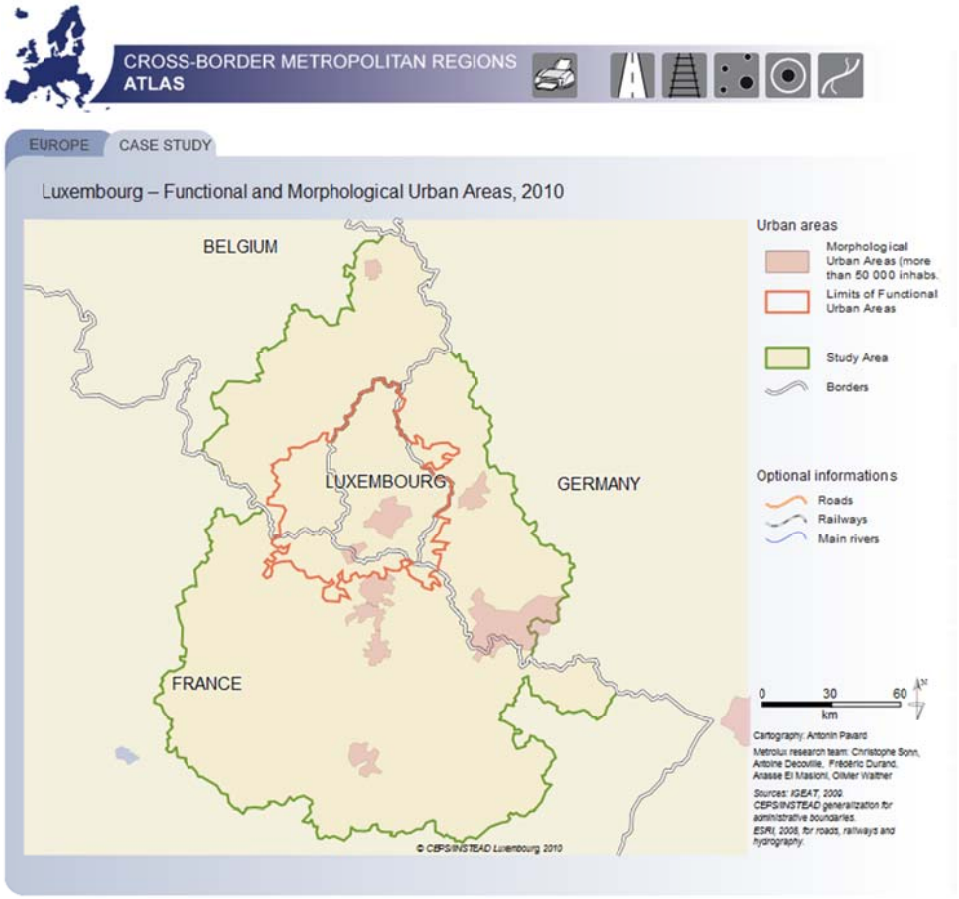
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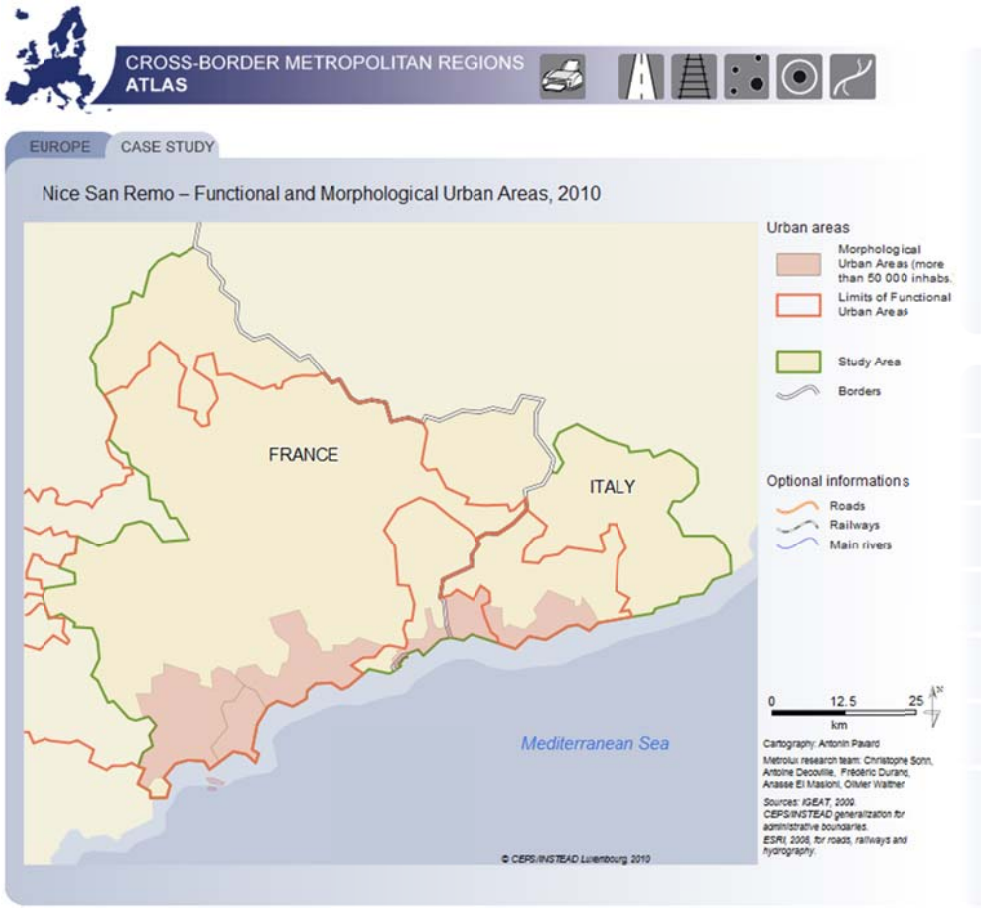
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Sources: IGEAT, 2009. CEPS/INSTEAD generalization for administrative boundaries. ESRI, 2008, for roads, railways and hydrography.
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EUROPE CASE STUDY

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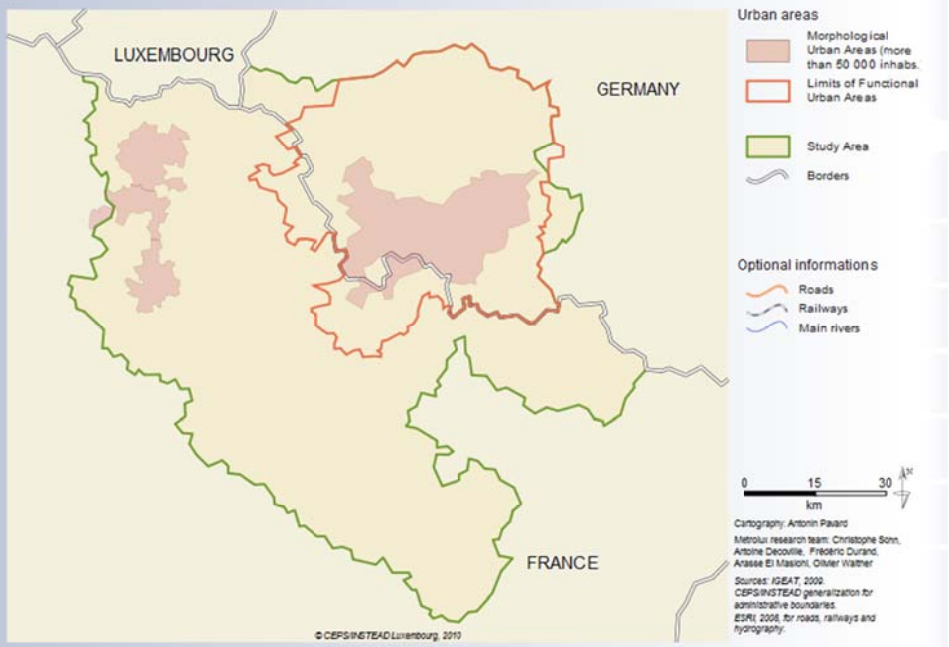

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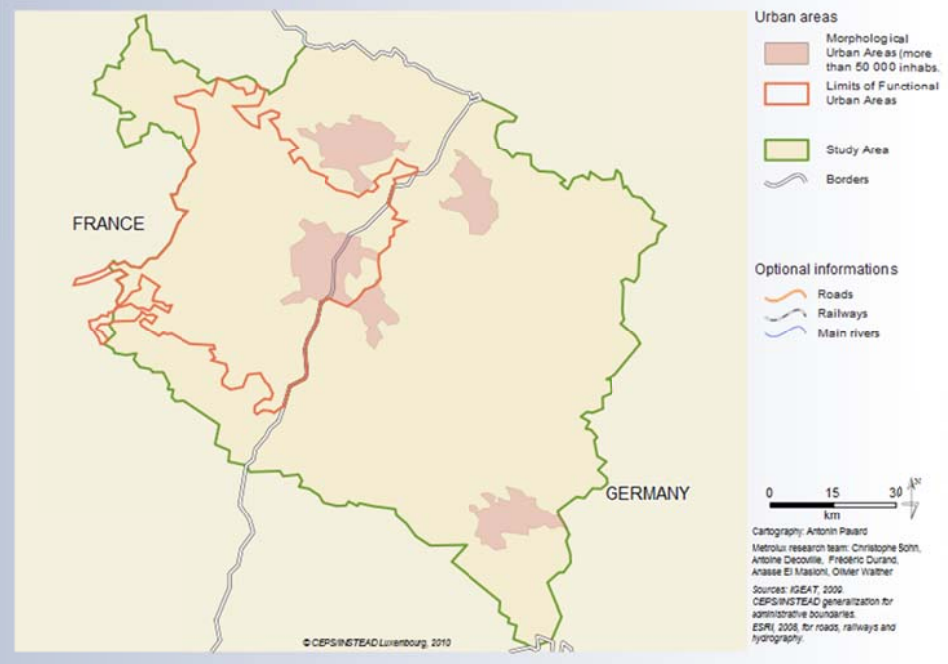

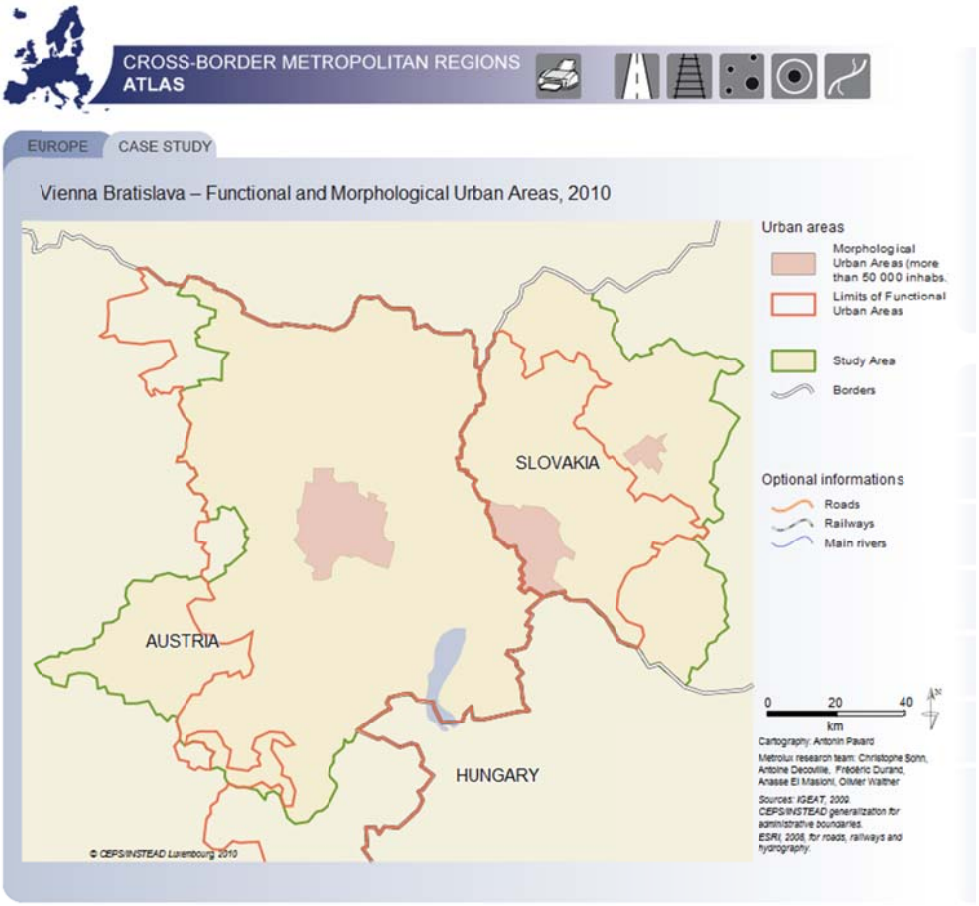
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AUSTRIA
HUNGARY
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Sources: IGEAT, 2009. CEPS/INSTEAD generalization for administrative boundaries. ESRI, 2008, for roads, railways and hydrography.

Annex 10 Age & maturity of decentralised cross border co-operation in Europe (analysed by three indicators according to borders covered by INTERREG IIIA Programmes)

Indicator 1, number of years during which a structured and visible cross-border co-operation exists within parts or all of the INTERREG IIIA programme area: For each year of existence, 2 scoring points are allocated. In order to achieve an alignment to the scoring maximum of 90 which is adopted under the following two qualitative indicators below, the cut-off date has been set at 2003 as the oldest cross-border structure (i.e. Euregio Gronau) was established in 1958 (i.e. 45 years existence = scoring value of 90).

Indicator 2, nature & quality of the directly applicable legal instrument that can be used for establishing decentralised cross-border co-operation within parts or all of the INTERREG IIIA programme area: Under this indicator, the following five qualitative sub-categories and scoring values were considered:

1. "Far-reaching inter-state agreements", which promote decentralised co-operation among territorial authorities and provide them with a wider range of specific legal solutions (ex novo, public law, private law) to further structuring their co-operation (Value considered: 90).
2. "Well-developed inter-state agreements", which promote decentralised co-operation among territorial authorities and provide them only with a range of legal solutions based upon the domestic laws of the contracting parties to further structuring their co-operation (Value considered: 70)
3. "Comparatively weak inter-state agreements", which promote decentralised co-operation among territorial authorities and provide them with no / only very limited legal solutions to further structuring their co-operation (Value considered: 50)
4. No specific inter-state agreement existing, but possible use of specific co-operation provisions in domestic law (e.g. conclusion of co-operation conventions between local / regional authorities from another country) and/or of other national law-based / Community law-based instruments that are not specifically designed for decentralized territorial co-operation (Value considered: 30).
5. No specific inter-state agreement existing and no specific co-operation provisions existing in domestic law, but possible use of domestic law-based / Community law-based instruments that are not specifically designed for decentralized territorial co-operation (Value considered: 10)

Indicator 3, nature & quality of existing permanent cross-border co-operation structures established between territorial authorities that operate in parts or all of the INTERREG IIIA programme area. Under this indicator, the following five qualitative sub-categories and scoring values were considered:

1. Permanent structures, based on public law, that help co-operation on many themes and project level co-operation on specific topics (Value considered: 90).
2. Permanent structures, based on private law, that help co-operation on many themes and project level co-operation on specific topics (Value considered: 70).
3. Permanent structures without a legal basis that help co-operation on many themes and project level co-operation on specific topics (Value considered: 50).
4. No permanent structures that help cooperation on many themes. However, project-level, ad-hoc co-operation on specific topics is possible (Value considered: 30).
5. No permanent structures exist that help co-operation on many themes and no project level co-operation on specific topics (Value considered: 10).

Table 28 Scores of the Cross-border cooperation areas

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
According to coverage by the former INTERREG IIIA programme areas							
1	FIN-S Skargarden	50	Cooperation started 1978 with the creation of Skägardssamarbete.	50	Nordic Convention on CBC between S/SF/DK/NOR	50	Existing CBC structure (Archipelago Cooperation) is based upon a co-operation agreement, but has no legal personality of its own.
2	FIN-S-N Kvarken-Mittskandia	62	Cooperation started 1972 with the creation of the Kvarkenradet.	50	Nordic Convention on CBC between S/SF/DK/NOR	70	Mittskandia has no legal personality of its own, but the Kvarken Council has a de-facto private law base via the member associations formally established on either side of the border.
3	A-D Austria-Bavaria	38	Cooperation started 1994 with the creation of the Euregio Bayerischer Wald / Böhmer Wald.	30	Germany & Austria ratified MOC & 1st add. protocol of MOC	70	Existing CBC structures (Euregios Bayerischer Wald Böhmer Wald, Inn-Salzach, Salzburg-Berchtesgadener-Traunstein, Inntal, Zugspitze-Wetterstein-Karwendel and Via Salina) have either a legal personality of their own (private law based) or a de-facto private law base via the member

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
							associations formally established on either side of the border.
4	A-CZ - Austria-Czech Rep	38	Cooperation started 1994 with the creation of the Euregio Bayerischer Wald / Böhmer Wald.	30	Czech Republic & Austria ratified MOC	70	Existing CBC structures (Euregios Bayerischer Wald Böhmer Wald, Silva Nordica and Weinviertel-Südmähren-Westslovakei) have either a legal personality of their own (private law based) or a de-facto private law base via the member associations formally established on either side of the border.
5	A-SLN – Austria-Slovenia	50	Cooperation started 1978 with the creation of the Working Community Alpen Adria. (**)	30	Slovenia & Austria ratified MOC & 1st add. protocol of MOC	70	Existing CBC structures have a de-facto private law base via the member associations formally established on either side of the border (Euregio Steiermark) or no legal personality of their own (ARGE Kärnten-Slowenien/Karawanken).
6	A-HUN – Austria-Hungary	50	Cooperation started 1978 with the creation of the Working Community Alpen Adria. (**)	30	Hungary & Austria ratified MOC	50	Existing CBC structure (Euroregion West / Nyugat Pannonia) has no legal personality of their own.
7	A-SLK – Austria-Slovakia	12	Cooperation started 1997 with the creation of the Euregio Weinviertel-Südmähren-Westslovakei (**)	30	Slovakia & Austria ratified MOC & 1st add. protocol of MOC; A-SLK agreement in 2003	70	Existing CBC structures (Euroregion Pomoravie & Euregio Weinviertel / Südmähren / Westslovakei) have no legal personality of their own, but a de-facto private law base via the member associations formally established on either side of the border.
8	S-N Sweden-Norway	46	Cooperation started 1980 with the creation of the Gränzkomitten Ostfold-Bohuslän/Dalsland.	50	Nordic Convention on CBC between S/SF/DK/NOR	50	Existing CBC structure has no legal personality.
9	D-NL - Ems Dollart	52	Cooperation started 1977 with the creation of the Euregio Ems Dollart	90	Anholt agreement on CBC	90	Euregio Ems Dollart is a public law based cross-border body.
10	D-A-CH-LI - Alpen-Bodensee	62	Cooperation started 1972 with the creation of the Internationale Bodenseekonferenz (IBK).	30	Germany & Austria ratified MOC & 1st add. protocol of MOC	50	Existing CBC structure (IBK) has no legal personality of its own.
11	D-PL – Saxony-Poland	24	Cooperation started 1991 with the creation of the Euroregion Neisse. (**)	50	Agreement D-PL, including provisions on CBC	70	Euroregion Neiße has no legal personality, but a de-facto private law base via the member associations formally established on either side of the border.
12	D-CZ – Saxony-Czech Rep.	24	Cooperation started 1991 with the creation of the Euroregion Neisse. (**)	50	Agreement D-CZ, including provisions on CBC	70	Existing CBC structures (Euroregions Neisse, Elbe-Labe, Erzgebirge and Egrensis) have no legal personality, but a de-facto private law base via the member associations formally established on either side of the border.
13	D-NL Germany-	90	Cooperation started 1958 with	90	Anholt agreement on	90	Euregio Rhein Waal is a public law based cross-

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
	Netherlands		the creation of the EUREGIO.		CBC		border body, EUREGIO is a private law based cross-border body.
14	**D-PL - Brandenburg-Lubuskie**	**20**	Cooperation started 1993 with the creation of the Euroregion Spree-Neisse-Bober. (**)	**50**	Agreement D-PL, including provisions on CBC	**70**	Existing CBC structures (Euroregions Spree-Neisse-Bober, Pro Europa Viadrina) have no legal personality, but a de-facto private law base via the member associations formally established on either side of the border.
15	**I-AU – Italy-Austria**	**62**	Cooperation started 1972 with the creation of the Working Community of Alpine States.	**50**	Vienna agreement on CBC	**50**	Existing CBC structures (Working Community of Alpine States, Working Community Alpen Adria, Europaregion Tirol-Südtirol/Alto Adige – Trentino) do not have a legal personality.
16	**Italy-France (Alpes)**	**42**	Cooperation started 1982 with the creation of the Working Community Western Alps.	**50**	Rome agreement on CBC	**70**	Some of the existing CBC structures have a legal personality based upon private law (Working Community Western Alps, Conférence des Alpes franco-italiennes), while another has no legal personality (Conférence des Hautes Vallés).
17	**Italy-France (Sardinia-Corsica-Tuscany)**	**26**	Cooperation started 1990 with the INTERREG I programme.	**50**	Rome agreement on CBC	**30**	No CBC structure, but existing project-level co-operation under INTERREG IIA.
18	**Italy-Slovenia**	**50**	Cooperation started 1978 with the creation of the Working Community Alpen Adria. (**)	**30**	Italy & Slovenia ratified MOC	**50**	Existing CBC structure (Working Community Alpen-Adria) has no legal personality.
19	**IRE-UK Ireland-N. Ireland**	**66**	Cooperation started 1970 with the creation of the North West Region Cross Border Group.	**90**	Good Friday agreement, including provisions on CBC	**70**	Existing CBC structures (North-West Region cross-border group; Irish Central Border Area Network – ICBAN; East Border Region ltd; Cooperation Ireland) are partly private-law based cross-border bodies.
20	**IRE-UK Ireland-Wales**	**18**	Cooperation started 1994 with the INTERREG IIA programme.	**30**	Ireland ratified MOC. UK did not ratify MOC, but CBC is possible for local/regional authorities.	**30**	No CBC structure, but existing project-level co-operation under INTERREG IIA.
21	**PAMINA**	**30**	Cooperation started 1988 with the creation of the REGIO PAMINA.	**90**	Karlsruhe agreement on CBC	**90**	Euregio Ems Dollart is a public law based cross-border body.
22	**F-D-CH Oberrhein-Mitte-Sud**	**56**	Cooperation started 1975 with the creation of the Oberrheinkonferenz.	**90**	Karlsruhe agreement on CBC and Basel Agreement on CBC	**50**	Existing CBC structures have no legal personality (Oberrheinrat, RegioTriRhena).
23	**D-CZ – Bavaria-Czech Rep.**	**38**	Cooperation started 1994 with the creation of the Euregio Bayerischer Wald / Böhmer Wald.	**50**	Agreement D-CZ, including provisions on CBC	**70**	Existing CBC structures (Euregio Bayerischer Wald / Böhmer Wald, Euregio Egrensis) have no legal personality, but a de-facto private law base via the

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
							member associations formally established on either side of the border.
24	D-DK – Fyn-KERN	52	Cooperation started in 1977 with the creation of the CBC-area Själland-Ostholstein-Lübeck.	30	Germany & Denmark ratified MOC	70	Existing CBC structure (Association 'Technologie-Region K.E.R.N.' with a relay in the Fyns Amt County) is an association based an German private law.
25	D-DK - Sonderjylland-North Schleswig	26	Cooperation started in 1990 with the INTERREG I programme.	30	Germany & Denmark ratified MOC	50	The existing CBC structure Region Sonderjylland-Schleswig has no legal personality.
26	D-DK – Storstrom-Schleswig-Holstein	26	Cooperation started in 1990 with the INTERREG I programme.	30	Germany & Denmark ratified MOC	30	No CBC structure, but existing project-level co-operation under INTERREG I & IIA.
27	D-L-B - Ger-Lux-Belgium	64	Cooperation started 1971 with the Großregion SaarLorLux.	90	Mainz & Karlsruhe agreements on CBC	70	The larger CBC structures have no legal personality (Großregion/Grande Region, Regionalkommission Saar-Lor-Lux-Westpfalz), but smaller ones are either private or EU-law based structures (EuRegio Saar-Lor-Lux-Rhine asbl, EEIG Islek ohne Grenzen, GLCT Rosport/Ralingen).
28	D-F – Saarland-Moselle-Westpfalz	64	Cooperation started 1971 with the Großregion SaarLorLux.	90	Karlsruhe agreement on CBC	70	The larger CBC structures (Großregion/Grande Region, Regionalkommission Saar-Lor-Lux-Westpfalz), but a smaller one is a private law based structure (Verein Zukunft SaarMoselle Avenir).
29	E-P - Spain-Portugal	26	Cooperation started 1990 with the creation of the Working Community Galicia / North Portugal.	70	Valencia agreement on CBC	50	Existing CBC structures have no legal personality. (Working Communities Galicia-Norte de Portugal, Castilla y Leon - Norte de Portugal, Castilla y Leon - Centro de Portugal, Extremadura-Centro-Alentejo, Andalucia-Alentejo-Algarve).
30	E-MRC – Spain-Morocco	18	Cooperation started 1994 with the INTEREG IIA programme.	10	Spain ratified MOC.	30	No CBC structure, but existing project-level co-operation with Morocco under INTERREG IIA.
31	I-CH – Italy-Switzerland	62	Cooperation started 1972 with the creation of the Working Community of Alpine States.	50	Bern agreement on CBC	50	Existing CBC structures have no legal personality (Regio Insubrica, Communauté de travail de la Regio Sempione, Conseil Valais-Vallée d'Aoste du Grand St-Bernard).
32	DK-S – Øresund	78	Cooperation started 1964 with the creation of the Öresundkomiteen.	50	Nordic Convention on CBC between S/SF/DK/NOR	50	The Öresundkomiteen is a political association for cross-border co-operation with no legal personality.
33	GR-ALB – Greece-Albania	26	Cooperation started 1990 with the INTERREG I programme. (**)	30	Greece did not ratify the MOC, but local authorities can create CBC-structures. Albania did not ratify the MOC,	30	No CBC structure, but existing project-level co-operation with Albania under INTERREG I & IIA.

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
					but local CBC competences do exist.		
34	GR-FYROM - Greece-FYROM	26	Cooperation started 1990 with the INTERREG I programme. (**)	30	Greece did not ratify the MOC, but local authorities can create CBC-structures. Macedonia did not ratify MOC.	30	No CBC structure, but existing project-level co-operation with FYROM under INTERREG I & IIA.
35	GR-BUL – Greece-Bulgaria	26	Cooperation started 1990 with the INTERREG I programme. (**)	50	Greece did not ratify the MOC, but local authorities can create CBC-structures. Bulgaria ratified the MOC. Greece concluded specific CBC-agreements with Bulgaria regarding the EU-PHARE programme support.	70	The Euroregion Rhodopi has a legal personality based upon private law and the Euroregions Nestos-Mesa has a de-facto private law base via the member associations formally established on either side of the border.
36	GR-CYP – Greece-Cyprus	6	Cooperation started 2000 with the INTERREG IIIA programme.	10	Greece did not ratify the MOC, but local authorities can create CBC-structures. Cyprus did not ratify MOC	10	No CBC structure and no project-level co-operation prior to INTERREG IIIA are existing.
37	D-PL - Mecklenburg-Poland	16	Cooperation started 1995 with the creation of the Euroregion Pomerania. (**)	50	Agreement D-PL, including provisions on CBC	70	The Euroregion Pomerania is a private-law based association.
38	D-NL-B Euregio Maas-Rhein	54	Cooperation started 1976 with the creation of the Euregio Maas-Rhein	90	Mainz agreement on CBC	70	Euregio Maas-Rhein has a legal personality based upon Dutch private law.
39	FIN-RUS Karelia	8	Cooperation started 1999 with the creation of Euregio Karelia. (***)	50	CBC-agreement FIN-RUS	50	Euregio Karelia has no own legal personality.
40	FIN-RUS South-East Finland	14	Cooperation started 1996/97 with the INTERREG IIA programme (***)	50	CBC-agreement FIN-RUS	30	No CBC structure, but existing project-level co-operation with Russia under INTERREG IIA.
41	F-CH France-Suisse	60	Cooperation started 1973 with the creation of the Espace Franco-Valdo-Genevois.	50	CBC-agreement F-CH	50	Most of the existing CBC structures have no legal personality (Conseil du Léman; Comité régional franco-genevois; Conférence TransJurassienne), only one is a private-law based association (Association franco-valdo-genevoise pour le développement des relations interrégionales).
42	E-F – Espagne-	40	Cooperation started 1983 with	70	Bayonne agreement on	70	Existing CBC structures have either a legal

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
	France		the creation of the Working Community of the Pyrenees.		CBC		personality based upon Spanish national law (Working Community of the Pyrenees, Consorcio Bidasoa-Txingudi) or EU-law (EEIG "Cross-border agency for the development of the Eurocity Basque").
43	**S-FIN-N-RUS – Nord**	**20**	Cooperation started 1993 with Russia (Barents Euro-Arctic Council), but existed since 1971 between Scandinavian countries (***).	**50**	Nordic Convention on CBC between S/SF/DK/NOR & CBC-agreement FIN-RUS	**50**	Existing CBC structures have no legal personality (Nordkalotten, Tornedalsraadet, Finnmark-Lappland-Murmansk, Barents Euro-Arctic Council).
44	**FIN-EST – Finland-Estonia**	**16**	Cooperation started 1995 with the creation of the EE-FIN 3&3 Regional Cooperation. (**)	**30**	Finland ratified MOC. Estonia did not ratify MOC, but local authorities can create CBC-structures.	**70**	Existing CBC structures either have a legal personality based upon private law (Euregio Helsinki-Tallinn) or do not have a legal personality (EE-FIN 3&3 Regional Cooperation).
45	**NL-BE - Vlaanderen Nederland**	**34**	Cooperation started 1986 with the creation of Euregio Benelux Middengebied.	**90**	BENELUX agreement on CBC	**90**	Euregio Benelux Middengebied is a CBC cross-border cooperation structure governed by public law (Openbare Lichaam) and Euregio Scheldemond is a CBC structure with no legal personality.
46	**B-F-Lux – WLL**	**64**	Cooperation started 1971 with the Großregion SaarLorLux and was further focussed in 1985 with the creation of the Pole Européen de Development.	**90**	Brussels & Karlsruhe agreements on CBC	**70**	The Association Transfrontalière du Pôle Européen de Développement has a legal personality based upon French private law.
47	**UK-F Espace franco-britannique**	**32**	Cooperation started 1987 with the creation of the EUROREGION KENT NORD-PAS-DE-CALAIS.	**30**	France ratified MOC. UK did not ratify MOC, but CBC is possible for local/regional authorities.	**50**	Existing CBC structure (Arc Manche region) has no legal personality 2) and the EUROREGION KENT NORD-PAS-DE-CALAIS does not exist any longer.
48	**Gibraltar - Morroco (UK)**	**18**	Cooperation started 1994 with the INTEREG IIA programme.	**10**	UK did not ratify MOC, but CBC is possible for local/regional authorities.	**30**	No CBC structure, but existing project-level co-operation with Morocco under INTERREG IIA.
49	**F-B – France-Wallonie-Flandre**	**36**	Cooperation was further deepened in 1985 with the conclusion of co-operation agreements Nord Pas-de-Calais / Flanders / Wallonie.	**90**	Brussels agreement on CBC	**90**	The Conférence Permanente des Intercommunales Transfrontalières (COPIT, métropole Lilloise franco-belge) was transformed in 2006 into a GLCT (public law based structure possible under the Brussels agreement) now called "Lille Eurométropole Franco-Belge" (Out of this, in 2008, the first EGTC "Eurométropole Lille-Kortrijk-Tournai" was created.
50	**Italy-Albania**	**18**	Cooperation started 1994 with	**30**	Italy ratified MOC.	**30**	Creation of Adriadic Euroregion only in 2005, but

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
			the INTERREG IIA programme.		Albania did not ratify MOC, but local CBC competences do exist.		existing project-level co-operation with Albania under INTERREG IIA.
51	Greece-Italy	18	Cooperation started 1994 with the INTERREG IIA programme.	30	Italy ratified MOC. Greece did not ratify the MOC, but local authorities can create CBC-structures.	30	No CBC structure, but existing project-level co-operation under INTERREG IIA.
52	Greece-Turkey	26	Cooperation started 1990 with the INTERREG I programme.	10	Greece did not ratify the MOC, but local authorities can create CBC-structures. Turkey did ratify MOC, but there are no explicit CBC-competencies for local authorities	30	Creation of Euroregion Polis-TrakiaKent-RAM Trakia only in 2005, but existing project-level co-operation with Turkey under INTERREG I & IIA.
53	Italy-Adriatics	6	Cooperation started 2000 with the INTERREG IIIA programme.	30	Italy ratified MOC. Croatia & Albania did not ratify the MOC, but in both countries local/regional authorities can realise CBC.	10	Creation of Adriadic Euroregion only in 2005 and no existing project-level co-operation prior to INTERREG IIIA.
54	Czech Republic-Poland	14	Cooperation started 1996 with the creation of the Euroregion Glacensis	50	CBC-agreement PL-CZ	70	Existing CBC structures (Euroregions Glacensis, Praded-Pradziad, Silesia and Tesinske Slezsko-Slask Cieszynski) have no legal personality, but a de-facto private law base via the member associations formally established on either side of the border.
55	Poland-Slovakia	18	Cooperation started 1994 with the creation of the Euroregion Tatry. (**)	50	CBC-agreement PL-SK	70	Existing CBC structures (Euroregions Beskidy and Tatry) are private-law based associations.
56	Slovakia-Czech Republic	6	Cooperation started 2000 with the creation of the Euroregion Biele Karpaty.	50	CBC-agreement SK-CZ	70	Euroregions Bilé-Biele Karpaty and Beskidy have no legal personality, but a de-facto private law base via the member associations formally established on either side of the border.
57	Poland-Ukraine-Belarus	20	Cooperation started 1993 with the creation of the Carpathian Euroregion. (***)	50	CBC-agreements PL-UA & PL-BY	50	Existing CBC structures (Euroregions Carpathia, Bug, Puszcza Bialowieska) have no legal personality.
58	Lithuania-Poland-Russia	12	Cooperation started 1997 with the creation of the Euroregion Nemunas. (***)	50	CBC-agreements PL-RUS, PL-LT & LT-RUS	50	Existing CBC structure has no legal personality of its own (Euroregion Nemunas-Niemen-Neman, Euroregion Saule, Euroregion Sesupe, Euroregion Baltic).

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
59	Hungary-Slovakia-Ukraine	20	Cooperation started 1993 with the creation of the Carpathian Euroregion.	50	CBC-agreements SK-HU, SK-UA & HU-UA	50	The Carpathian Euroregion and the 8 Euroregions Podunajský Trojspolok, Slaná–Rimava, Vagus-Danubus-Ipolia, Ipeľ-Ipoly, Neogradiensis, Kras, Ister-Granum, Kosice-Mickolc-Zemplen do not have a legal personality of their own. But the 8 Euroregions between SK-HU are registered on the Slovakian side as interest associations with a legal personality.
60	Hungary-Romania-Serbia&Montenegro	12	Cooperation started 1997 with the creation of the Euroregion DKMT.	30	Hungary ratified MOC and concluded with RO a general agreement on friendly neighbouring relations. Romania did not ratify MOC. Status with Serbia & Montenegro is unknown.	50	Existing CBC structures (Euroregions DKMT, Haju-Bihar, Middle Danube-Iron Gates) do not have their own legal personality.
61	Slovenia-Hungary-Croatia	50	Cooperation started 1978 with the creation of the Working Community Alpen Adria.	30	Hungary ratified MOC and concluded with SLO & CRO general agreements on friendly neighbouring relations. Slovenia ratified MOC, but Croatia did not ratify the MOC.	50	The Slovenian-Hungarian Cross-border Development Council has no legal personality.
62	Italy-Malta	6	Cooperation started in 2000 with the INTERREG IIIA programme	30	Italy ratified MOC. Status of Malta is unknown.	10	No CBC structure and no project-level co-operation prior to INTERREG IIIA are existing.
63	Estonia-Latvia-Russia	14	Cooperation started 1996 with the creation of the Euregio Pskov-Livonia. (***)	30	Estonia and Russia did not ratify MOC, but Latvia has ratified MOC.	50	Existing CBC structure (Euregio Pskov-Livonia) has no legal personality of its own.
64	Latvia-Lithuania-Belarus	10	Cooperation started 1998 with the creation of the Euroregion Country of Lakes. (***)	50	CBC-agreements LAT-BY, LAT-LT	50	Existing CBC structures have no legal personality of its own (Euroregion Baltic, Euroregion Bartuva, Euroregion Saule, Euroregion Country of Lakes), but for Euroregion Country of Lakes a public enterprise was established in Lithuania to implement euroregional decisions.
Other borders not covered by the former INTERREG IIIA programme areas							
	Bulgaria-Romania	6	Cooperation started in 2000 with PHARE-CBC and in 2001 the first Euroregions Danube South & Inferior Danube Euroregion were	30	Bulgaria & Romania ratified the MOC.	50	The existing Euroregions Danube South, Inferior Danube Euroregion, Rousse-Giurgiu and Association Euroregion Ruse-Giurgiu do not have a legal personality of their own.

Cross-border cooperation areas		Indicator 1		Indicator 2		Indicator 3	
		Value (*)	Add. information	Value	Add. information (****)	Value	Add. information (*****)
			created.				
	Romania-Ukraine-Moldova	**12**	Cooperation started in 1996 with the TACIS-CBC programme and in 1998 the first Euroregion Lower Danube was created.	**30**	Romania, Ukraine & Moldova ratified the MOC.	**50**	The existing Euroregions Lower Danube, Upper Prut, Siret-Prut-Nistru do not have a legal personality of their own.
	...						
	...						

(*) Only the earliest form of structured / visible cross-border co-operation has been taken into account for the start date (other structures might have been created subsequently). For the end date, the year 2003 has been taken as a deadline.
(**) The PHARE Cross-border Co-operation Programme (PHARE-CBC) supported individual projects (1994-1996) and cross-border programmes (1996-2000) in the following countries: Albania, Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia.
(***) Since 1996, the TACIS Cross-Border Co-operation Programme (TACIS-CBC) has supported individual projects along the western borders of the Russian Federation, Belarus, Ukraine and Moldova.
(****) CBC = cross-border co-operation; MOC = "Madrid Outline Convention" of the Council of Europe.
(*****) Considered here are cross-border structures that were created up to 2006 (Entry into force of the EU-regulation on EGTCs) in parts or all of the programme area. Up to this date, their institutionalisation mostly relied on pragmatic solutions adopted by the involved regional/local partners by using all the legal and administrative means available in their respective national laws.
( ) Update of data.

Table 29 Data aggregation & classification of cross border co-operation in Europe

Borders & cross-border areas	Ind. 1	Ind. 2	Ind. 2	Σ
Long-standing co-operation with a very high or high level of maturity				
D-NL Germany-Netherlands	90	90	90	**270**
D-NL - Ems Dollart	52	90	90	**232**
IRE-UK Ireland-N. Ireland	66	90	70	**226**
D-L-B - Ger-Lux-Belgium	64	90	70	**224**
D-F – Saarland-Moselle-Westpfalz	64	90	70	**224**
B-F-Lux – WLL	64	90	70	**224**
F-B - France-Wallonie-Flandre	36	90	90	**216**
D-NL-B Euregio Maas-Rhein	54	90	70	**214**
NL-BE - Vlaanderen Nederland	34	90	90	**214**
PAMINA	30	90	90	**210**
F-D-CH Oberrhein-Mitte-Sud	56	90	50	**196**
FIN-S-N Kvarken-Mittskandia	62	50	70	**182**
E-F – Espagne-France	40	70	70	**180**
DK-S – Oresund	78	50	50	**178**
Long-standing or experienced co-operation with a medium-high level of maturity				
I-AU – Italy-Austria	62	50	50	**162**
I-FR (Alpes)	42	50	70	**162**
I-CH - Italy-Switzerland	62	50	50	**162**
F-CH France-Suisse	60	50	50	**160**
D-CZ – Bavaria-Czech Rep.	38	50	70	**158**
D-DK - Fyn-KERN	52	30	70	**152**
FIN-S Skargarden	50	50	50	**150**
A-SLN – Austria-Slovenia	50	30	70	**150**
E-P – Spain-Portugal	26	70	50	**146**
GR-BUL - Greece-Bulgaria	26	50	70	**146**
S-N Sweden-Norway	46	50	50	**146**
D-PL – Saxony-Poland	24	50	70	**144**
D-CZ – Saxony-Czech Rep.	24	50	70	**144**
D-A-CH-LI - Alpen-Bodensee	62	30	50	**142**
D-PL - Brandenburg-Lubuskie	20	50	70	**140**
A-D Austria-Bavaria	38	30	70	**138**
A-CZ – Austria-Czech Republic	38	30	70	**138**
Poland-Slovakia	18	50	70	**138**
D-PL - Mecklenburg-Poland	16	50	70	**136**
Average of all cross-border border areas	33	48	55	**136**
Experienced or more recent co-operation with a medium-low level of maturity				
Czech Republic-Poland	14	50	70	**134**
Italy-Slovenia	50	30	50	**130**
A-HUN - Austria-Hungary	50	30	50	**130**
Slovenia-Hungary-Croatia	50	30	50	**130**
Slovakia-Czech Republic	6	50	70	**126**
S-FIN-N-RUS – Nord	20	50	50	**120**
Poland-Ukraine-Belarus	20	50	50	**120**
Hungary-Slovaki-Ukraine	20	50	50	**120**

FIN-EST - Finland-Estonia	16	30	70	**116**
UK-F Espace franco-britannique	32	30	50	**112**
Lithuania-Poland-Russia	12	50	50	**112**
A-SLK - Austria-Slovakia	12	30	70	**112**
Latvia - Lithuania – Belarus	10	50	50	**110**
FIN-RUS Karelia	8	50	50	**108**
I-FR (Sardinia-Corsica-Tuscany)	26	50	30	**106**
D-DK – Sonderjylland-North Schleswig	26	30	50	**106**
More recent co-operation with a low level of maturity				
FIN-RUS South-East Finland	14	50	30	**94**
Estonia - Latvia – Russia	14	30	50	**94**
Hungary-Romania-Serbia&Montenegro	12	30	50	**92**
Romania-Ukraine-Moldova	12	30	50	**92**
D-DK - Storstrom-Schleswig-Holstein	26	30	30	**86**
GR-ALB - Greece-Albania	26	30	30	**86**
GR-FYROM – Greece-FYROM	26	30	30	**86**
Bulgaria-Romania	6	30	50	**86**
IRE-UK Ireland-Wales	18	30	30	**78**
Italy-Albania	18	30	30	**78**
Greece-Italy	18	30	30	**78**
Greece-Turkey	26	10	30	**66**
E-MRC – Spain-Morocco	18	10	30	**58**
Gibraltar - Morroco (UK)	18	10	30	**58**
Italy-Adriatics	6	30	10	**46**
Italy-Malta	6	30	10	**46**
GR-CYP - Greece-Cyprus	6	10	10	**26**

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