



# European Perspective on Specific Types of Territories

Applied Research 2013/1/12

Final Report | Version 20/12/2012



This report presents the final results of an Applied Research Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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## List of abbreviations

CBMR	Cross-Border Metropolitan Region
CSF	Common Strategic Framework
CLLD	Community-Led Local Development
EAFRD	European Agricultural Fund for Rural Development
EEA	European Economic Area
EFF	European maritime and Fisheries Fund
EFTA	European Free Trade Association
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
ESF	European Social Fund
FUA	Functional Urban Area
GDP	Gross Domestic Product
GRP	Gross Regional Product
ICT	Information and Communication Technologie
IP	Inner peripheries
LAU	Local Area Unit
LFA	Less Favoured Area
MUA	Morphological Urban Area
NUTS	Nomenclature Unifiée des Territoires Statistiques
OR/OMR	Outermost Regions
PCA	Poorly Connected Areas
PUSH	Potential Urban Strategic Horizon
SGI	Services of General Interest
SPA	Sparsely populated areas
TFEU	Treaty on the Functioning of the European Union
TPG	Transnational Project Group
TSP	Territorial State and Perspective of the European Union



## A Executive summary

Regions with specific territorial features have received increasing attention in recent years, most notably in article 174 of the Treaty on the Functioning of the European Union (TFEU) and the Green Paper on Territorial Cohesion. These key policy documents identify certain territories – cross-border, island, mountain, Outermost and sparsely populated regions – in two ways: as having particular challenges, and as having particular assets, many of benefit to Europe as a whole. Two other types of such ‘geographic specificities’ have also been recognised: coastal areas and inner peripheries. While there have been a number of studies of groups of these areas, or individual types of territories (e.g., coasts, mountains) at the European scale, there has been no previous comprehensive study of all of these particular types of territories. A further challenge identified in many past studies, as well as by stakeholder organisations concerned with such regions, has been that descriptive statistics and maps at the NUTS 3 (or 2) level are inadequate or even misleading for understanding the states and trends of these territories, an essential prerequisite for effective policy development and implementation to contribute to the ‘Europe 2020’ strategy for smart, sustainable and inclusive growth.

With this background, the objectives of the ESPON GEOSPECS project, with regard to the six of the seven ‘geographic specificities’ mentioned above (referred to below as “GEOSPECS areas”<sup>1</sup>) are as follows:

- to develop a coherent perspective on GEOSPECS areas;
- to identify development opportunities in these parts of Europe;
- to assess the extent of socio-economic diversity within each category;
- to explore how one could facilitate the achievement of strategic targets of the EU and of European countries by taking better account of the diversity of development preconditions linked to geographic specificities;
- to identify the potential role of territorial cooperation and partnership and assess the need for targeted policies for GEOSPECS areas, focusing on the identification of the appropriate administrative level.

This study has broken new ground in a number of ways:

- given that the ‘Europe 2020’ targets are ‘spatially blind’ and that achieving them will require efforts at regional and local levels, the project approaches GEOSPECS areas from the viewpoint of local and regional communities and their preconditions for growth and balanced development. Thus, this is the first ESPON project to base all its analyses on delineations and data at the LAU2 level<sup>2</sup>, considering specific characteristics of 125,049 administrative units across the ESPON space (apart from Bosnia and Herzegovina and the Former Yugoslav Republic of Macedonia, for which such data were not available);
- many of these analyses are based on the concept of potentials of population and travel time, recognising that individual municipalities<sup>3</sup> should not be

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<sup>1</sup> inner peripheries were not considered, and are the subject of a separate report

<sup>2</sup> Local Area Unit – level 2 (LAU2) consist of municipalities or equivalent units in the EU27 countries

<sup>3</sup> The terms «municipality» and “locality” are used as a synonyms of LAU2 at the European level. In some ESPON countries, the term “municipality” refers to administrative units that do not correspond to the LAU2 level.

analysed in isolation from each other when considering development opportunities and challenges; it is more relevant to focus on areas of interaction around each point;

- the project questions the value of benchmarking, arguing that it is more appropriate to consider a specific territory's development potentials, opportunities and challenges according to relevant data, defined by the identification of the territory's inherent and inherited characteristics and key challenges and opportunities, presented in "nexus models";
- these models and the common data sets provide a common framework for presenting and comparing the development processes of territories and their links with geographic specificities across Europe; thus, they may also be regarded as the beginning of a process to deepen and strengthen the evidence base required to develop policies across the diversity of European situations.

This analysis faced multiple challenges:

- all territorial development issues and processes are potentially relevant, insofar as they *may* be influenced by geographic specificity;
- the identification of the GEOSPECS areas requires a conceptualisation of each category of geographic specificity ("GEOSPECS categories"), constructed in order to organise the perception of territories and facilitate communication;
- there are extensive overlaps between the various types of geographic specificities and their occurrence in European regions with contrasted development levels;
- the focus on development opportunities (i.e., situations where a critical factor prevents local and regional stakeholders from taking advantage of an identified resource or asset) leads to complex questions on why these have not yet been realised. The GEOSPECS project has sought to systematise the analysis of these situations by considering that unexploited opportunities result from a lack of local coherence between natural resources, human capital and the institutional context.

The project included a number of complementary activities:

- delineation of geographic specificities and analyses both for each specificity and for overlaps between them;
- analyses of economic, social and environmental transversal patterns both for GEOSPECS areas as a whole and in 15 case study areas;
- stakeholder consultations, both for each GEOSPECS category and jointly;
- syntheses of analyses using "nexus models", and proposals of options for policy development.

### **Delineations of GEOSPECS areas**

Given the project objectives, 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. Equally, delineations that deviate substantially from local and regional understandings of the different GEOSPECS areas may not function in a project that investigates how identities and

geographic specificities interact, thus the NUTS 3-based definitions of some GEOSPECS areas used in previous studies were not appropriate. All delineations are based on LAU2 units<sup>4</sup>. In order to undertake Europe-wide analyses for GEOSPECS areas, each category was subdivided into units of analysis.

*Mountains:* The delineation is based on altitude, terrain roughness and slope, building on studies conducted for the European Commission's Directorate-General for Regional Policy and the European Environment Agency (EEA). Mountains cover 28.7% of the EU27 and are home to 16.9% of its population. For the ESPON space, the proportions are 41.3% and 25.4%. A total of 16 massifs were defined, adapted from the previous EEA study.

*Islands:* All territories that are physically disjoint from the European mainland or the main islands of the British Isles (UK and Ireland) are considered as insular, including parts of municipalities, but excluding inland islands. The typology recognises islands with a fixed connection to the mainland as a separate category and uses a multi-level approach (NUTS 1 to LAU2), as the socio-economic impacts and political significance of insularity differ depending on its occurrence at the national, regional or local scale. In total, 319 islands were identified. They cover 3.5% of the EU27 and are home to 4% of its population. For the ESPON space, the proportions are 4.7% and 3.4%.

*Sparsely Populated Areas (SPAs):* Traditionally, SPAs are identified on the basis of population densities, with threshold levels of 8 inhabitants/km<sup>2</sup> for Regional Policy and 12.5 and 8 inhabitants/km<sup>2</sup> in the guidelines for national regional aid. The resulting delineations are largely determined by administrative boundaries. For this project, SPAs have been delineated on the basis of population potentials, i.e. the number of persons that can be reached within a maximum generally accepted daily commuting or mobility area from each point in space. Two approaches were used, with a threshold of 100,000 persons (i.e. 12.7 persons/km<sup>2</sup> within 50 km) to: 1) to delineate SPAs, based on the isotropic distance, i.e., the possibility to commute 50 km from a point in all directions equally; 2) to delineate "poorly connected areas" (PCAs), based on population potential using 45-minute travel times along road networks, as a proxy for the maximum generally accepted commuting distance. SPAs were clustered into 39 'Sparse territories'.

*Coastal zones:* As various types of coastal effects are associated with different ranges of mobility and interaction, a general delineation of coastal zones was not produced. To identify these various ranges, two key hypotheses were tested: whether areas within commuting distance (45 minutes by road) of the coastline and whether those that are contiguous to the sea exhibit specific socio-economic patterns compared to their respective national or regional situations. LAU2 areas within 45 minutes of a coastline cover 21.6% of the area of the EU27 and are home to 36.0% of its population. The proportions across 70 parts of the ESPON space are, respectively, 22.9% and 34.7%.

*Border areas:* GEOSPECS identifies different types of *border effects*. Because the ranges of mobility and interaction associated to these different types vary, a general delineation of border areas was not produced. A particularly significant time-distance is 45 minutes, as a proxy for the maximum generally accepted commuting distance. LAU2 areas within 45 minutes of a borderline cover 22.0% of the EU27 and are home to 19.5% of its population. For the ESPON space, the proportions are 18.8% and 17.6%. A total of 117 national border areas were identified.

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<sup>4</sup> Except for Greece and Turkey (LAU 1) and Slovenia (subdivisions of LAU 2)

*Outermost Regions (ORs)*: As ORs are legally defined, their delineation is given. Nevertheless, GEOSPECS made two advances for their understanding: by analysing them in their geographic contexts; and by using LAU2 data to analyse their internal territorial structures. ORs cover 2.3% of the EU27 and are home to 0.8% of its population. Each OR was considered as a unit of analysis.

These GEOSPECS areas may be separated into two groups:

- “areal notions”: mountain areas, islands, SPAs, and ORs;
- “linear notions”: borders and coasts. Associating areas to these “lines” requires hypotheses on the types of proximity that can be relevant from the point of view of socio-economic development.

In order to analyse how proximity to an urban area influences the socio-economic effects of geographic specificity, urban areas (both >100,000 and >750,000 inhabitants) were also delineated.

There are many overlaps between different GEOSPECS areas. Inevitably, the majority of the area and population of islands is also coastal. For mountain areas, about a fifth of their area and a quarter of their population is coastal, about 15% of their area and population are within 45 minutes of a border, and a third of their area is sparsely populated. In addition, almost a fifth of their population is in urban areas with a population >100,000. At least a third of the area of islands is sparsely populated; for those without a fixed link, over half of their population lives in urban areas with a population >100,000; this rises to three-quarters for islands with a fixed link. Half of the area, and three-quarters of the population, of SPAs/PCAs is mountainous, and over a quarter of their area is within 45 minutes of a border and/or a coastal area. It is also worth noting that almost half the population living within 45 minutes of both border and coastal areas lives in urban areas with a population >750,000.

## **Key findings**

The scope of the project covered a wide variety of geographic specificities. As each requires specific sets of quantitative and qualitative methods to produce analyses that fully reflect the types of opportunities and challenges they face, a key focus was on frameworks for analysis. Following the delineations described above, these comprised analyses based on innovative methods, using new datasets to illustrate the quantitative description of each specificity; transversal analyses, providing examples of cross-cutting themes of particular importance for geographically specific areas, but raising different types of issues; and the production of nexus models to identify key linkages. The project therefore offers a methodological framework and a database, at the level of the 125,049 LAU2 units in the ESPON space, which opens new perspectives for multi-scalar analysis and can be further exploited in targeted analyses focusing on specific parts of Europe, as well as studies of individual geographic specificities.

Data availability largely influenced the analyses. Given the novel character of the data and the indicators that have been constructed, only a small proportion of the potential innovative quantitative analyses could be explored. There were important variations with regard to the scales of analysis considered relevant, the ways in which different levels of analysis are related to each other, and the territorial contexts used to produce comparisons. This findings demonstrate that GEOSPECS areas cannot be analysed as one group, as well as the diversity within each GEOSPECS area with regard to many variables and, hence, that quantitative analyses of each geographic specificity should be carried out as separate projects,

based on compilations of LAU2 data and data processing at the level of the ESPON programme as a whole.

The nexus diagrams not only help to distinguish territorial development policy issues relate to each GEOSPECS area or case study, but can function as tools to identify possible fields of action and construct a shared understanding of the most relevant socio-economic processes for the development of a locality or region, and the corresponding challenges and opportunities. The combination of development opportunities and challenges in one model helps to clarify not only the obstacles that need to be overcome, but also the resulting added value that should be expected, whether in economic terms or in terms of positive externalities. The diagrams allow the identification of two types of public interventions: permanent compensatory measures to address structural or permanent imbalances; and targeted interventions to address specific situations, such as the lack of infrastructure or to begin a process.

The quantitative data, literature review, and the 15 case studies were used to investigate a range of transversal themes.

*Economic themes:* No 'typical economic structure' of any type of GEOSPECS area could be identified. However, many of the case study areas – especially in mountains, islands, ORs, and SPAs – featured above-average public sector employment. Many of the specialisations of GEOSPECS areas are directly or indirectly linked to their specificity, but this is not necessarily an advantage, given trends towards rationalisation and mechanisation and hence the need for smaller labour forces. Given the seasonality of tourism, which is a widespread source of income in GEOSPECS areas, year-round employment is often a key issue for maintaining populations and economies. Here, high-quality niche products can offer new opportunities. Accessibility to means of transport and services of general interest (SGI) is a key need for economic development; their lack is a widespread challenge for many GEOSPECS areas, but less for coastal and border areas. ICT can also offer great potential for mitigating remoteness and lack of SGI. However, while there are some good examples, usually deriving from public investment, there are many regions which are far behind.

*Social themes:* Significant proportions of most GEOSPECS areas have high residential attractiveness, due particularly to their environmental assets, but often also to their social and cultural capital, including both history and the 'closely-knit' communities found in small communities, for example in mountains, islands, SPAs and ORs. A resulting challenge is often that older people wish to migrate to these areas, thus increasing house prices. One outcome is that younger people can no longer afford to live there and therefore leave: a trend often compounded by a lack of educational and employment opportunities. Thus, while some GEOSPECS areas have stable or growing populations, others are characterized by population decline, typically with high proportions of older people. This trend is particularly found in SPAs and less accessible parts of mountains and islands: the key risk is that population levels may fall below a critical threshold for maintaining SGI and a sustainable labour market.

*Environmental themes:* Some GEOSPECS areas have abundant natural resources, and their economies depend on their exploitation: examples include marine aggregates and fishing in coastal and island areas, and mining in SPAs and mountains. Apart from borders, all GEOSPECS areas have renewable energy resources with great potential, though their ability to develop manufacturing activities based on these sources of energy and raw materials is often limited, and their development may face further challenges when distances to markets are large. Many GEOSPECS areas (especially ORs, mountains, islands, and coasts) are also characterised by relatively high levels of biodiversity; and the coverage of protected areas is, on average, higher in all types of GEOSPECS areas (except borders) than

the European average. Increasingly, connections are being made between biodiversity and the provision of other ecosystem services; here again, some GEOSPECS areas are vital in the European context. For instance, mountains are the 'water towers' of Europe; coastal ecosystems provide not only food but habitats for diverse economically-valuable and other species; and the forests of mountains and SPAs – and French Guiana, an OR – are important for carbon sequestration. Nevertheless, the characteristics of many GEOSPECS areas make them particularly vulnerable to climate change: especially coasts, islands, and ORs, threatened by sea level rise and increased frequencies of extreme events; mountain areas whose economies depend on snow for skiing; and ORs and islands where availability of freshwater may become an increasing challenge. Even though border areas may not face specific impacts from climate change, adaptive capacity may be low where cross-border cooperation is weak.

### **Diverse contexts for policy**

In policy terms, the GEOSPECS project has been undertaken within two particular contexts: 'Europe 2020', and the existing and planned consideration of GEOSPECS areas, both jointly and separately, in European (as well as some national) policies.

As noted above, GEOSPECS areas may be separated into two groups: areal (mountain areas, islands, SPAs, and ORs) and linear (borders and coasts). This differentiation refers not only to their overall characteristics, but to their policy contexts. The former group are similar in terms of their constraints and challenges – such as remoteness, physical and climatic conditions, and limited population and provision of services of general interest – and these have been recognised through compensatory policy instruments such as the Less Favoured Areas (LFA) scheme and specific funding packages for SPAs and ORs. Mountain areas, islands, and SPAs are also the focus of an Intergroup in the European Parliament. In contrast, border areas and coasts, in general, do not share these constraints and challenges; though specific policy measures have been implemented to address those that they do face, e.g., European Territorial Cooperation and the Recommendation on Integrated Coastal Zone Management (ICZM).

There is great diversity within each GEOSPECS category, as illustrated by the following examples. The total populations of islands vary hugely, and there are major variations in population density: high in southern Europe and low in northern Europe. The employment structure in mountain massifs varies greatly at every spatial scale. While most parts of SPAs in Spain are within two hours of a large urban centre, people living in SPAs in northern Europe have to travel long distances to urban centres. Border areas include both remote mountains and major metropolitan centres. In addition, as noted above, GEOSPECS areas overlap, so that all or part of many regions can be characterised as belonging to multiple such categories. However, regional or local stakeholders often characterise themselves as 'belonging' to a particular specificity. Finally, the regions of Europe as a whole are very diverse.

The nexus models, both for the case study regions and for each GEOSPECS area overall, have proved very valuable for assessing the key challenges, opportunities and, particularly importantly, the processes that link them. The development of these models underlined the fact that policies to foster both cohesion and competitiveness need to be targeted at the regional scale; generic policies based on indicators of performance for any GEOSPECS area are unlikely to achieve the aims of either Cohesion or Competition policy. In addition, many GEOSPECS areas provide a wide range of positive externalities to Europe as a whole. As market values are not assigned to these, the vital contributions of these areas to Europe are rarely

internalised in accounts of any type; this implies a need to reflect more strategically on how the long-term provision of these services and how the population of GEOSPECS areas could be supported to ensure this – rather than being ‘compensated’ for ‘handicaps’.

### **Options for policy development**

The following sections aim to contribute to answering the following questions:

- To what extent can GEOSPECS categories inform political debates on how overall European targets, such as those formulated by ‘Europe 2020’, should be “territorialised”? Could policies help to ensure that the specific contributions of GEOSPECS areas become more efficient or sustainable?
- Do GEOSPECS areas face specific challenges in the endeavour of contributing to the achievement of ‘Europe 2020’ objectives? Could targeted measures help them overcome some key obstacles and improve their overall contribution to European “smart, sustainable and inclusive growth”?

#### *Multi-level governance*

Territorial cohesion is about ensuring a balanced spatial distribution of activities and people, which requires coherence among policies for different sectors and levels. Three particular challenges may be recognized:

- vertical coordination: a balance between ‘top-down’ and ‘bottom-up’ approaches. A key need is for coordination between levels in future Cohesion Policy, particularly for regional and local authorities to be involved in the process of defining and implementing Partnership Contracts. This implies their involvement with both national and EU institutions and, with regard to GEOSPECS areas, the need to move beyond both a hierarchical understanding of multi-level governance and a strict focus on administrative units, recognising the opportunities and challenges shared within territorial ensembles, e.g. a mountain massif, an archipelago, or a cluster of SPAs.
- horizontal coordination. While the need for this is certainly not exclusive to GEOSPECS areas, it may be that it is in such areas that sectoral policies interact most dramatically. The European Commission’s proposal for a Common Strategic Framework (CSF), applying to a range of funding instruments, is of key importance in this context.
- territorial cooperation. This is relevant for GEOSPECS areas because they do not stop at politically-defined borders. The existing and emerging macro-regional strategies, for both coastal and mountain areas, may be regarded as relevant in this context. Equally, border areas are a type of GEOSPECS area; and cross-border cooperation can be a key factor in ensuring smart, sustainable and inclusive growth which takes advantage of specific attributes, rather than being benchmarked against the performance of other regions.

#### *Towards balanced social and economic development in GEOSPECS areas*

Taking advantage of the specific attributes of GEOSPECS areas may require both permanent compensatory measures that address structural and permanent imbalances and focused “one-off interventions” that focus on specific situations. However, this principle has different implications depending on the GEOSPECS category. Border areas often primarily require specific, spatially-focussed efforts.

For SPAs, mountains, islands, and ORs, key strategies may include efforts to increase the connectivity of firms, and both intra- and inter-sectoral enlargements. A key point, however, is that such strategies should be designed at the level not of NUTS 2 or NUTS 3 regions, but of individual islands or valleys, and of functional regions.

In such contexts, the proposals for the CSF and the associated Partnership Contracts offer promising perspectives for GEOSPECS areas, though it would be desirable if this multi-fund programming applied not only to the Structural Funds, but also the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF), which are particularly relevant for many mountainous, sparsely populated, coastal and insular areas. More flexible arrangements, in which actors at different levels could contribute more actively to the design and implementation of Cohesion Policy, are needed to address the specific challenges and opportunities of GEOSPECS areas; here, Community-Led Local Development (CLLD) offers promising perspectives.

Beyond Cohesion Policy, the analysis of GEOSPECS areas permits the identification of a range of relevant fields of action in these areas, such as:

- addressing seasonality in employment, by fostering multiactivity through better integration with employment opportunities across multiple sectors and, in some cases, informal economies;
- more systematic public policies to promote access to ICT;
- investment in local small- or medium-scale renewable energy production, underpinned by dedicated monitoring of energy-related issues;
- innovative methods of service provision, to maintain the attractiveness of GEOSPECS areas for not only residents, but also visitors;
- specific measures to develop higher education that specifically addresses the key characteristics and needs of GEOSPECS areas, particularly to stem out-migration, provide key skills, foster the return of graduates, and generally contribute to enhancing the quality of life.

As exemplified by these points, while geographic specificity may be a relevant dimension for sectoral policies, it also requires a holistic approach within each territory. Recognising the risk of encouraging inward-looking approaches to territorial development through a focus on GEOSPECS categories, the objective should be to organise balanced and mutually beneficial forms of cooperation both between GEOSPECS areas and with their surroundings, such as piedmonts for mountain areas, mainlands for islands, or cities for SPAs. The experience of cross-border cooperation programmes could be of particular relevance.

#### *Capitalizing on ecosystem services, recognising environmental vulnerability*

Many GEOSPECS areas provide ecosystem services that are of value not only within these particular areas, but also at the European scale. Yet the continued delivery of these vital services may be compromised by on-going processes and, increasingly, as a result of climate change, which may cause both gradual and very rapid changes, particularly as the result of extreme events. Specific measures have been developed and implemented to address such issues at various scales, particularly for the EU and individual States, as well as for particular GEOSPECS categories. However, the success of such measures is variable, and Member States need to take further action maintain or improve the quality of populations of key species and ecosystems, recognising both their intrinsic value and their various current and potential



contributions to development. Here, the cross-compliance measures in the CAP are of relevance for all GEOSPECS areas, as are proposals under Article 9 of the proposed regulation on the CSF Funds. However, the implementation and evaluation of such policies, as well as European Territorial Cooperation and ICZM, need to take the positive externalities (including ecosystem services) of GEOSPECS areas more into consideration.

These instruments are also of relevance in the wider context of addressing both shorter- and longer-term aspects of environmental vulnerability, both for GEOSPECS areas in general and for particular geographical specificities, such as coasts and islands – for which the EMFF is also of key relevance. In relation to climate change, measures for both mitigation and adaptation are relevant and are considered in the CSF Funds proposals. Both the Europe 2020 20-20-20 headline indicator for climate change and energy and proposals for the Structural Funds to support the shift towards a low-carbon economy are key for mitigation, and would also support the development of many GEOSPECS areas. Adaptation to climate change inevitably requires integrated approaches, and thus instruments such as ICZM, River Basin Management Planning, Flood Risk Management Plans and, more widely, the EEA's Ecosystem Assessment Platform are relevant. While the greatest needs are probably for coasts (and implicitly, islands), as these are most vulnerable to climate change, integrated policies are necessary to address both the challenges and opportunities of all GEOSPECS areas, taking into account both continued long-term trends and the added challenges of climate change. Finally, while planning for future scenarios, and policies to move towards desirable ones, are essential, so is the necessary knowledge and expertise. Thus, Cohesion Policy should support specialised education, training and research that recognizes the particular challenges and opportunities of GEOSPECS areas.

#### *Policy options at the European level*

The local and regional economic returns of economic activities are often limited, creating socially and economically unsustainable situations. Hence:

- rather than installing a policy or funding line "per geographic specificity", development should take into account the particular situation of each region, not only individually, but in relation to adjacent regions.
- further progress should be made in moving away from viewing geographic specificities as "handicaps" and towards recognizing their assets, balancing "compensation" and "promotion" efforts, and taking "non-market values" or positive externalities into consideration in policy instruments.
- challenges and opportunities should be addressed jointly, e.g. by identifying the resources and possibilities that could be exploited if specific key social obstacles were overcome.
- the "monolithic" character of the EU2020 strategy needs to be challenged, incorporating the different types of ambitions and strategies across Europe, and actively supporting local communities in formulating development models adapted to their specific conditions.
- there is a need to focus on improving frameworks for dialogue between the European, national and regional levels.

## **Options for evidence-informed policies for GEOSPECS areas**

The GEOSPECS project has shown that data compiled at the LAU2 level can provide essential evidence for policy-making at the level of regions defined by geographic specificity, recognizing that the development strategy for any area must take its specific context into account. Thus, an improved framework for dialogue between the European, national, regional and local levels is needed, making it possible to reflect unique patterns of opportunity and challenges in each territory and including:

- a general method for the assessment of local situations, with a focus on potentials and challenges, rather than on comparisons of performance;
- support to the formulation of development models adapted to local conditions;
- better access to data: A European observatory of local development conditions is needed, to maintain and update such a database and produce targeted analyses, e.g. supporting Community-Led Local Development (CLLD) initiatives. There is a window of opportunity to establish such an observatory now, with new availability of data from 2010-2011 censuses.
- improved quantitative analyses of local situations, e.g., calculating “45 minute potentials” for diverse indicators. Such data are a real alternative to data at the NUTS 3 level for assessing the contexts for local development and would be particularly useful in GEOSPECS areas, often characterised by strong intra-regional contrasts. However, a structure to produce and disseminate them is needed.
- a “matrix approach”, i.e., a catalogue of indicators for application across Europe, allowing the potentials and needs of each territory to be studied and taken into consideration adequately. This type of approach would probably be most applicable to Cohesion Policy – but would require the definition of “smarter” indicators that go beyond the current focus on GDP.
- new indicators that reflect the important “positive externalities” that GEOSPECS areas, in particular, may be able to offer to Europe as a whole.

## B Report

# 1. Mapping Europe's 'geographically specific territories'

## 1.1 Introduction

Regions with specific territorial features have received increasing attention in recent years. Most significantly, article 174 of the Treaty on European Union (TFEU) reads as follows:

*"In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion.*

*In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions.*

*Among the regions concerned, particular attention shall be paid to rural areas, areas affected by industrial transition, and regions which suffer from severe and permanent natural or demographic handicaps such as the northernmost regions with very low population density and island, cross-border and mountain regions."*

Additionally, Article 349 of the TFEU states that specific measures shall be adopted to take account of the structural social and economic situation of the Outermost Regions, which is compounded by "remoteness, insularity, small size, difficult topography, climate and economic dependence on a few products". Consequently, the Council shall adopt specific measures for these regions.

Thus, in policy terms, regions with territorial specificities are currently approached as a subset of disadvantaged and least favoured regions, and their specificities are described as "handicaps". They are primarily identified in the context of efforts to reduce disparities between European regions. The significant number of sparsely populated, insular, border, and mountainous regions with economic and social performance levels around or above European averages are therefore not targeted by this provision.

The Territorial Agenda of the EU 2020, agreed in 2011,<sup>5</sup> adopts a similar approach, as it only deals with specific types of territories by referring to "areas with specific geographic challenges and needs (e.g. structurally weak parts of islands, coastal zones and mountainous areas)" and otherwise considers coastal zones and mountainous areas from a natural risk management perspective.

The European Commission's 2008 Green Paper on Territorial Cohesion<sup>6</sup>, takes a different angle. Its subtitle, "Turning territorial diversity into strength", suggests that geographic specificities could also represent a chance for the concerned regions and for Europe. The first cited examples of this diversity – "the frozen tundra in the Arctic Circle", "the tropical rainforests of Guyane", "the Alps" and "the Greek islands" – are sparsely populated, outermost, mountainous and insular areas, respectively. The

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<sup>5</sup> <http://www.eu2011.hu/files/bveu/documents/TA2020.pdf>

<sup>6</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0616:FIN:EN:PDF>

Green Paper furthermore defines territorial cohesion as “a means of transforming diversity into an asset that contributes to sustainable development of the entire EU”. However, the section entitled “regions with specific geographical features” introduces mountainous, insular, sparsely populated, coastal and outermost regions as areas that “face particular development challenges” – even if their subsequent description emphasises their combined assets and handicaps and the coexistence of positive and negative development trends. The ambivalent understanding of Europe’s extensive and diverse geographic specificities, as an asset (trends and current situation) as well as a source of territorial development challenges, shapes the political context for the present study.

In the working paper “Territories with specific geographical features” published by the Directorate General for Regional Policy, Monfort (2009) calculated performance indicators for mountain, island, sparsely populated, border and outermost regions. He concluded that while these regions are “by nature, [...] less accessible and on average services are more distant from their population”, “each category includes a wide variety of situations”. Therefore, “specific regional development programmes” for these categories of regions are likely to be “ineffective”.

The European Commission’s legislative proposals for the EU Cohesion Policy 2014-2020<sup>7</sup> include an additional allocation for outermost and sparsely populated regions of 926 million Euros and the possibility of modulating co-financing rates from the Funds to a priority axis to take account of “areas with severe and permanent natural or demographic handicaps” defined as “island Member States eligible under the Cohesion Fund, and other islands except those on which the capital of a Member State is situated or which have a fixed link to the mainland”, “mountainous areas as defined by the national legislation of the Member State” and “sparsely (less than 50 inhabitants per square kilometre) and very sparsely (less than 8 inhabitants per square kilometre) populated areas”. These provisions were identical for the 2007-2013 Structural Funds programming period.

Among the innovative measures for the 2014-2020 period, the renewed focus on Community-led local development (CLLD) is particularly relevant for these various territories with specific geographical features. Building on, for example, existing LEADER action groups and the URBAN pilot project, the European Commission wishes to fund programmes for capacity building, local public-private partnerships, networking and exchange of experience. The focus is on specific sub-regional territories that can be urban, rural, coastal, cross-border, mountainous but that must be implemented by the local community. Considering that geographic specificities are factors of territorial identity around which local and regional actors coalesce, they may play an important role in the further bottom-up process leading to the definition of CLLD projects.

Such policy processes and discussions provide the context for the GEOSPECS (GEOgraphic SPECificities and Development Potentials in Europe) project. With its focus on identifying possible effects of geographic specificity on regional and local development processes, it is intended to contribute to these processes and discussions. It specifically addresses six types of geographically specific areas (or ‘GEOSPECS areas’): border areas, coastal zones, islands, mountains, Outermost Regions, and sparsely populated areas.

Its objectives are:

- to develop a coherent perspective on GEOSPECS areas;

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<sup>7</sup>[http://ec.europa.eu/regional\\_policy/sources/docoffic/official/regulation/pdf/2014/proposals/regulation/general/general\\_proposal\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/pdf/2014/proposals/regulation/general/general_proposal_en.pdf)

- to identify development opportunities in these parts of Europe;
- to assess the extent of socio-economic diversity within each category;
- to explore how one could facilitate the achievement of strategic targets of the EU and of European countries by taking better account of the diversity of development preconditions linked to geographic specificities;
- to identify the potential role of territorial cooperation and partnership and assess the need for targeted policies for GEOSPECS areas, focusing on the identification of the appropriate administrative level.

This analysis faces multiple challenges:

- 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 ("GEOSPECS categories"<sup>8</sup>). This conceptualisation needs to consider that each category has been constructed in order to organise the perception of territories and facilitate communication. None of the GEOSPECS categories are in other words "given"<sup>9</sup>.
- Third, the extensive overlaps between the various types of geographic specificities and the fact that they can be found in European regions with contrasted development levels imply that a benchmarking of GEOSPECS areas against European target values and/or average performances is not meaningful.
- Fourth, the focus on development opportunities leads to complex questions on why these have not yet been realised. In other words, an "opportunity" is a situation where a critical factor prevents local and regional stakeholders from taking advantage of an identified resource or asset. Drawing on the ESPON TeDi (Territorial Diversity in Europe) project (Nordregio et al., 2010), GEOSPECS has sought to systematise the analysis of these situations by considering that unexploited opportunities result from a lack of local coherence between natural resources, human capital and the institutional context (see Figure 1).



**Figure 1 The three dimensions to be put into coherence for the exploitation of territorial development opportunities**

<sup>8</sup> In addition to the six GEOSPECS categories analysed in the present report, the category of "Inner Peripheries" was considered; however, it was concluded that this is not a geographic specificity. Inner Peripheries are therefore dealt with in a separate report.

<sup>9</sup> While the delineation of Outermost Region can be characterised as "given", this GEOSPECS category is, as described in section 3.2.7, a policy construct.

## Project process

The GEOSPECS project was undertaken by a consortium of research institutes: the “Transnational Project Group” (TPG) with specialist competence for specific GEOSPECS categories. Three of the TPG members also had a coordination role (see Table 1).

Following agreement on the conceptual understanding of each category, the TPG carried out delineations at the LAU2 level, corresponding to municipalities in most European countries. Data were then compiled at this scale to characterise the GEOSPECS areas, and 15 case studies were carried out to further investigate interactions between factors.

**Table 1 Transnational Project Group**

Name	Responsibility
University of Geneva, CH	Overall coordination
Centre for Mountain Studies, University of the Highlands and Islands, Perth, UK	Mountains, coordination (case studies and stakeholder involvement, policy aspects)
Alterra, Wageningen University, NL	Inner peripheries, coordination (data)
E-cubed consultants, MT	Islands
Nordregio, SE	Sparsely Populated Areas
Louis Lengrand & Associés, FR	Outermost Regions
Coastal & Marine Research Centre, Cork, IE	Coastal areas
Eureconsult, LU	Border (coordination)
CEPS Luxembourg	Border (Cross-Border Metropolitan Regions)
Leibniz Institute of Ecology, DE	Border (External - New Member States)

To take due consideration of the opinions and policy demands of key stakeholders, the project included two stakeholder consultations. The first took the form of a written questionnaire which was sent out to, and answered by, stakeholders specifically concerned with the different geographic specificities. The second consultation was a stakeholder conference, which took place in Brussels on 8 December 2011, bringing together about 30 representatives of geographic specificities. Both processes enquired into the stakeholders’ views on policy needs for “their” areas. The stakeholder conference focused particularly on the Commission’s proposal for a future (2014-2020) Cohesion Policy.

The TPG has previously delivered an inception report, an interim report and a draft final report. Responses to comments on these reports from the ESPON Coordination Unit and Monitoring Committee members have been incorporated in the present report. This report only presents key policy-relevant findings; the complete findings can be found in the Final Scientific Report and its annexes.

## GEOSPECS areas and categories

The first task for the TPG was to specify principles and characteristics for the delineation of each category, as specified in Table 2 and 3. Following the conceptualisation of each category, hypotheses on their possible socio-economic effects were formulated so as to circumscribe the scope of enquiry. In other words,

the enquiry focuses on identifying hypothetical causal connections between the different concepts of geographic specificity and socio-economic performance. Quantitative analyses guide this reflection, as they help to identify socio-economic patterns and trends that may constitute a challenge or, in contrast, a potential lever of growth and development. However, quantitative evidence can neither confirm nor invalidate the existence of a “disadvantage” or “advantage” in GEOSPECS areas, considered the high probability of spurious correlations when comparing geographically specific areas to the rest of Europe.

As the GEOSPECS project is, in many ways, the logical continuation of the ESPON TeDi project, it is necessary to briefly summarize some of the main conclusions from TeDi as the foundation for any further discussions. TeDi considered *mountainous*, *insular* and *sparsely populated* areas in Europe, and concluded that:

It is necessary to encourage the formulation and implementation of *locally designed* development strategies. Europe is diverse, and no model can be applied across all of Europe.

Even when designing development strategies at the local level, we must not consider regions in isolation. Each region (or locality) interacts with its neighbouring territories, and often functional integration is needed.

**Policymakers should focus on development *opportunities* – rather than *limitations* – and thereby identify endogenous growth potentials of areas.**

The Europe 2020 strategy should be tailored to territorial specificities by adapting objectives and strategies at the regional and sub-regional scale.

The GEOSPECS project does not aim to benchmark GEOSPECS areas against European average values. Rather, it seeks to understand how each type of specificity may influence socio-economic development processes, and potentially lead local and regional stakeholders to formulate 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 therefore based on LAU2 units, as this is considered to be the scale at which delineations meeting the criteria described above may be met.

The TPG has nonetheless sought to maintain the greatest possible congruence between the delineations based on the analysis of the 125,049 LAU2 units of the ESPON space and the ESPON typology. However, the focus on conditions for economic and social development has induced some significant differences in the approach.

The TPG decided that Inner Peripheries should not be considered as a geographic specificity. The reason for this is that Inner Peripheries are defined on the basis of a diversity of historical processes, leading a centrally located territory to be disconnected from physical, social and economic networks and to experience relative or absolute decline. In other words, there are no purely geographic criteria for the delineation of Inner Peripheries. For this reason, it was decided that Inner Peripheries should be addressed in a separate report.

**Table 2 Principles used to delimit GEOSPECS areas**

<i>Nature of extension for GEOSPECS areas</i>	<b>Outermost</b>	<b>Islands</b>	<b>Mountains</b>	<b>Sparsely populated</b>	<b>Border</b>	<b>Coastal</b>
	◄◊►	○	↔↔↔	↔	◊ ◄ I ►	(◊) ◄ I ►
	<b>Designated politically as a part of Europe situated in a non-European geographic context</b>	<b>Defined as territories surrounded by bodies of water, irrespective of context</b>	<b>Defined on the basis of topographic contrasts with immediate neighbourhood</b>	<b>Defined on the basis of local population potentials, irrespective of wider geographic context</b>	<b>Defined on the basis of distance to a politically defined borderline</b>	<b>Defined on the basis of proximity to a maritime space, which in some respects is politically delimited</b>

<b>Legend for symbols:</b>		
◊ = 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 3 Conceptual and methodological interpretation of GEOSPECS areas**

<i>Category of GEOSPECS area</i>	<b>Outermost</b>	<b>Islands</b>	<b>Mountains</b>	<b>Sparsely populated</b>	<b>Border</b>	<b>Coastal</b>
<i>Delineation principle</i>	Given		Based on threshold values		Based on distances to a line	
<i>Nature of specificity</i>	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	
<i>Data used for delineation</i>	Not applicable		Topography	Population potential	Time-distance, Euclidian distance, topological distance (e.g. contiguity)...	
<i>Most relevant territorial context</i>	Macro-regional context		Buffer zone with mutual influence	Macro-regional context	Buffer zone with mutual influence	



## 1.2 Where are Europe's 'geographically specific territories'?

The delineation of geographical specificities has been an extensive and crucial step for the TPG to consider the demographic, economic and environmental characterisation of these territorial specificities. This section has two objectives: to briefly summarise the delineations and basic information on area and population resulting from the respective delineations; and to analyse how GEOSPECS areas overlap in ESPON space and in the EU.

### 1.2.1 Principles of delineations at EU27 and ESPON space levels

As indicated in section 1.1, the delineation of various geographic specificities is based three types of definition principles:

- "Given" either geographically or politically: Outermost Regions and islands;
- "Based on threshold values": mountain (morphological) and sparsely populated (demographical) regions;
- "Based on driving time-distances" to a line: coastal and border regions.

Furthermore, GEOSPECS categories can be separated in two groups:

- Mountain areas, islands, sparsely populated areas, and Outermost Regions are "areal notions", defined on the basis of the properties of parts of the European territory;
- Borders and coasts are linear notions. Associating areas to these "lines" requires hypotheses on the types of proximity that can be relevant from the point of view of socio-economic development.

For the latter categories, such issues are not addressed by the European Commission's regional typologies, in which participation in cross-border cooperation programmes in the 2007-2013 programming period is the defining feature for border regions (Monfort, 2009; Dijkstra and Poelmann, 2011)<sup>10</sup>. Coastal regions are defined on the basis of the proportion of the NUTS 3 population living in municipalities within 10 km from the coast; no justification of this distance threshold has been provided<sup>11</sup>.

In addition, as explained above, the TPG recognised that it is not possible to delineate geographically specific areas at the NUTS 3 level – such as the delineations of the Fifth Cohesion Report in the ESPON typology – in the context of the GEOSPECS project.

Furthermore, the TPG has chosen not to make a general delineation of border areas and coastal zones, considering that these are defined on the basis of different types of proximity (socio-economic, environmental etc.) to a borderline or a coastline. The analyses mainly consider areas within 45 and 90 minutes travel time to/from a borderline or a coastline. However, these thresholds do not cover all types of border and coast effects. For example, differences in wealth and legislation between neighbouring countries can influence national economies as a whole. 'Border area' is

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<sup>10</sup> The Interim report of the ESPON Typology project suggest to classify border regions on the basis of the ratio between the size of a NUTS 3 region and the length of its border and the density of border crossings. (Spatial Foresight et al., 2009)

<sup>11</sup> A 10 km landward extension from the coastline is widely used by European institutions, e.g., the European Environment Agency (2006).

therefore a complex notion, analysed in detail in section 3.2.5 of the Scientific Report.

Recognising that the GEOSPECS project is part of the ESPON 2013 Programme, the TPG has sought to maximise congruence with ESPON typologies. However, it has been necessary to adopt significantly different methods to create meaningful delineations for the analysis of development opportunities and challenges (as explained in section 1.1). The comparison of the delineations of GEOSPECS categories at the LAU2 level in GEOSPECS with the NUTS 3 typologies of ESPON provides information on the impact of these methodological differences on the number of persons and areas identified as geographically specific (see Annex C).

Overall, these comparisons demonstrate the need for multi-scalar analyses to understand patterns of geographic specificity. This has concrete implications for the design of policies taking into account the geographic specificities of territories, as further described in chapter 3.

### **1.2.2 Delineation of GEOSPECS areas**

This section provides summaries of the delineation approaches used: further detail, maps and references are in Annex A and in the Scientific Report.

Given the project objectives, only delineations that, for example, distinguish highland areas from their respective piedmont, and make it possible to consider phenomena such as double insularity, are operational. Equally, delineations that deviate substantially from local and regional understandings of the different GEOSPECS areas may not function in a project that investigates how identities and geographic specificities interact, thus the NUTS 3-based definitions of some GEOSPECS areas used in previous studies were not appropriate. All delineations are based on LAU2 units<sup>12</sup>. In order to undertake Europe-wide analyses for GEOSPECS areas, each category was subdivided into units of analysis.

*Mountains:* The delineation is based on altitude, terrain roughness and slope, building on studies conducted for the European Commission's Directorate-General for Regional Policy and the European Environment Agency (EEA). Mountains cover 28.7% of the EU27 and are home to 16.9% of its population. For the ESPON space, the proportions are 41.3% and 25.4%. A total of 16 massifs were defined, adapted from the previous EEA study.

It is important to note that this delineation, which is based on a single set of criteria applied across ESPON space, has been produced for analytical purposes. It is not proposed as an alternative to the designations of EU Member States with respect to their mountain Less Favour Areas (LFA), as referred to by article 18 of Council Regulation 1257/1999. These mountain LFAs are designated using different criteria in each country<sup>13</sup>.

*Islands:* All territories that are physically disjoint from the European mainland or the main islands of the British Isles (UK and Ireland) are considered as insular, including parts of municipalities, but excluding inland islands. The typology recognises islands with a fixed connection to the mainland as a separate category and uses a multi-level approach (NUTS 1 to LAU2), as the socio-economic impacts and political significance of insularity differ depending on its occurrence at the national, regional

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<sup>12</sup> Except for Greece and Turkey (LAU 1) and Slovenia (subdivisions of LAU 2)

<sup>13</sup> This point is further elaborated in EEA (2010), section 7.4

or local scale. In total, 319 islands were identified. They cover 3.5% of the EU27 and are home to 4% of its population. For the ESPON space, the proportions are 4.7% and 3.4%.

*Sparingly Populated Areas (SPAs):* Traditionally, SPAs are identified on the basis of population densities, with threshold levels of 8 inhabitants/km<sup>2</sup> for Regional Policy and 12.5 and 8 inhabitants/km<sup>2</sup> in the guidelines for national regional aid. The resulting delineations are largely determined by administrative boundaries. For this project, SPAs have been delineated on the basis of population potentials, i.e. the number of persons that can be reached within a maximum generally accepted daily commuting or mobility area from each point in space. Two approaches were used, with a threshold of 100,000 persons (i.e. 12.7 persons/km<sup>2</sup> within 50 km) to: 1) to delineate SPAs, based on the isotropic distance, i.e., the possibility to commute 50 km from a point in all directions equally; 2) to delineate "poorly connected areas" (PCAs), based on population potential using 45-minute travel times along road networks, as a proxy for the maximum generally accepted commuting distance. SPAs were clustered into 39 'Sparse territories'.

*Coastal zones:* As various types of coastal effects are associated with different ranges of mobility and interaction, a general delineation of coastal zones was not produced. To identify these various ranges, two key hypotheses were tested: whether areas within commuting distance (45 minutes by road) of the coastline and whether those that are contiguous to the sea exhibit specific socio-economic patterns compared to their respective national or regional situations. LAU2 areas within 45 minutes of a coastline cover 21.6% of the area of the EU27 and are home to 36.0% of its population. The proportions across 70 parts of the ESPON space are, respectively, 22.9% and 34.7%.

*Border areas:* GEOSPECS identifies different types of *border effects*. Because the ranges of mobility and interaction associated to these different types vary, a general delineation of border areas was not produced. A particularly significant time-distance is 45 minutes, as a proxy for the maximum generally accepted commuting distance. LAU2 areas within 45 minutes of a borderline cover 22.0% of the EU27 and are home to 19.5% of its population. For the ESPON space, the proportions are 18.8% and 17.6%. A total of 117 national border areas were identified.

*Outermost Regions (ORs):* As ORs are legally defined, their delineation is given. Nevertheless, GEOSPECS made two advances for their understanding: by analysing them in their geographic contexts; and by using LAU2 data to analyse their internal territorial structures. ORs cover 2.3% of the EU27 and are home to 0.8% of its population. Each OR was considered as a unit of analysis.

These GEOSPECS areas may be separated into two groups:

- "areal notions": mountain areas, islands, SPAs, and ORs;
- "linear notions": borders and coasts. Associating areas to these "lines" requires hypotheses on the types of proximity that can be relevant from the point of view of socio-economic development.

In order to analyse how proximity to an urban area influences the socio-economic effects of geographic specificity, urban areas (both >100,000 and >750,000 inhabitants) were also delineated.

There are many overlaps between different GEOSPECS areas. Inevitably, the majority of the area and population of islands is also coastal. For mountain areas, about a fifth of their area and a quarter of their population is coastal, about 15% of their area and population are within 45 minutes of a border, and a third of their area is sparsely populated. In addition, almost a fifth of their population is in urban areas

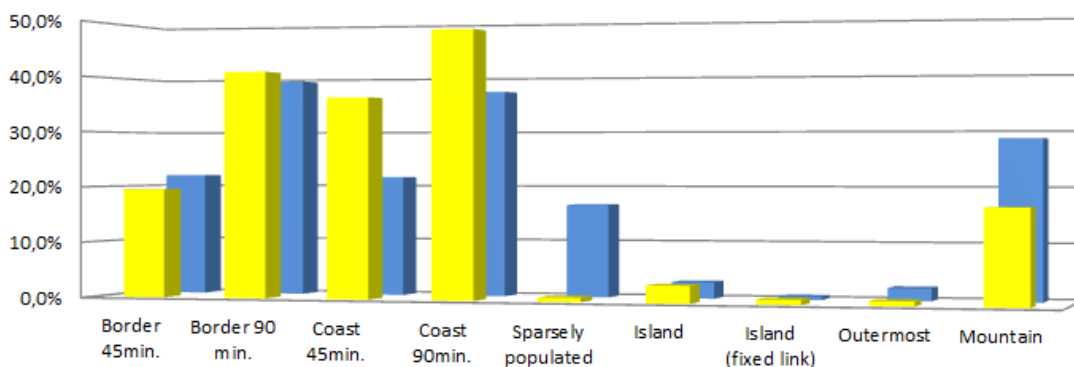
with a population >100,000. At least a third of the area of islands is sparsely populated; for those without a fixed link, over half of their population lives in urban areas with a population >100,000; this rises to three-quarters for islands with a fixed link. Half of the area, and three-quarters of the population, of SPAs/PCAs is mountainous, and over a quarter of their area is within 45 minutes of a border and/or a coastal area. It is also worth noting that almost half the population living within 45 minutes of both border and coastal areas lives in urban areas with a population >750,000.

### 1.2.3 Overall characteristics of GEOSPECS categories

As shown in Figure 2 (EU27) and Figure 3 (ESPON space<sup>14</sup>), the relative importance of GEOSPECS categories varies depending on whether the one considers their spatial extent or their population.

Considering their spatial extent, mountain areas occupy the greatest proportion of the EU's area (28.7%). Next come areas within 45 minutes from borders and coasts (both about 22%) and SPAs (16.7%). There is a major difference between these four largest categories, and the three others. Islands without a fixed link cover only 2.9% of the area of the EU, Outermost Regions 2.3%, and islands with a fixed link 0.6%.

Another way to interpret the relative importance of various specificities considers the proportion of the population of the EU living within each GEOSPECS category. From this perspective, areas within 45 minutes from a coastline host the largest share of the population (36%), followed by areas within the same distance from borders (19.5%) and mountain areas (16.9%).



	Border 45min.	Border 90 min.	Coast 45min.	Coast 90min.	Sparsely populated	Island	Island (fixed link)	Outermost	Mountain
■ UE27 (Pop)	19,5%	40,7%	36,0%	47,9%	0,8%	3,1%	0,9%	0,8%	16,9%
■ UE27 (Area)	22,0%	39,4%	21,6%	37,3%	16,7%	2,9%	0,6%	2,3%	28,7%

Sum of percentages may exceed 100% due to the fact that many specificities overlap

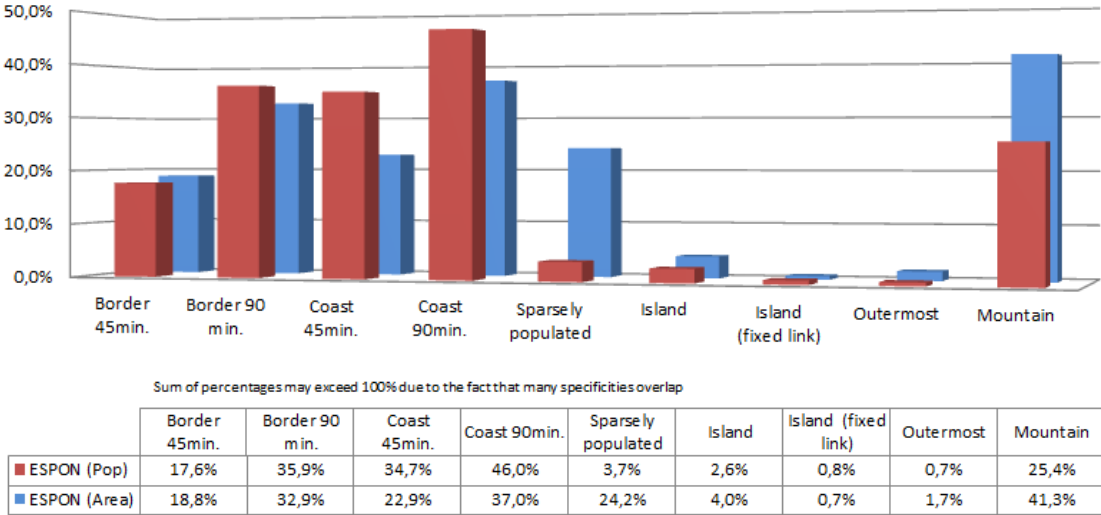
**Figure 2 Proportion of population and area within the different GEOSPECS areas (EU27)**

<sup>14</sup> Excepting the Former Yugoslav Republic of Macedonia and Bosnia and Herzegovina, where no LAU1 or LAU2 digital maps were available, making the delineation process impossible.

An alternative classification of GEOSPECS categories can be made on the basis of the ratio between the proportions of area and population. On one hand, there are geographic specificities where the population tends to “concentrate” (coasts, borders and islands) and, on the other, geographic specificities that tend to be more thinly populated than the European average (SPAs and, to a lesser extent, mountains). Outermost Regions include both types, with both relatively densely populated islands and the sparsely populated rainforest of French Guiana.

The overall patterns are similar when one considers the ESPON space as a whole (Figure 3). Nonetheless, there are some significant differences in the relative importance of the mountain, sparsely populated and island categories, reflecting patterns of geographic specificity in ESPON countries not belonging to the EU.

Parts of Iceland, Norway and Turkey comprise sparsely populated or poorly connected municipalities<sup>15</sup>. Similarly, for mountains, Switzerland, Liechtenstein, Iceland, Norway, Western Balkans and Turkey all have a particularly high proportion of mountain areas<sup>16</sup>. The proportion of mountainous areas therefore rises from 28% in the EU to 41% for the ESPON area as a whole.



**Figure 3 Proportion of population and area within the different GEOSPECS areas (ESPON space)**

Regarding islands in general, the fact that the proportion of area is more than one-third higher in the ESPON space than in the EU, while the proportion of population is 15% lower, is mainly due to the inclusion of Iceland and, to a lesser extent, the relatively sparsely populated islands of Norway. In parallel, the relative size of the Turkish population in the ESPON space and the limited population of Turkish islands contribute to reducing the relative share of island population.

<sup>15</sup> See section 3.2.3 of the Scientific Report: IS : 72,814 inhabitants & 94,715 km<sup>2</sup>; NO : 1,050,784 inhabitants & 256,014 km<sup>2</sup>; TR : 16,709,234 inhabitants & 326,202km<sup>2</sup>

<sup>16</sup> See section 3.2.1 of the Scientific Report: AL: 23,291 km<sup>2</sup> & 2,050,514 inhabitants; CH: 38,234 km<sup>2</sup> & 6,501,651 inhabitants; IS: 86,810 km<sup>2</sup> & 68,384 inhabitants; LI: 160 km<sup>2</sup> & 35,168 inhabitants; ME: 13,089 km<sup>2</sup> & 670,734 inhabitants; NO: 267,466 km<sup>2</sup> & 2,655,169 inhabitants, RS: 38,462 km<sup>2</sup> & 3,986,789 inhabitants; TR: 643,988 km<sup>2</sup> & 48,308,333 inhabitants; XK: 10,903 km<sup>2</sup> & 2,33,024 inhabitants.

#### **1.2.4 Units of analysis**

In order to undertake Europe-wide analyses for GEOSPECS areas, subdivisions into units of analysis were needed:

Mountain areas were subdivided in 16 massifs<sup>17</sup>, adapted from the subdivision used by the EEA (2010). These massifs are more extensive than those used in the study for the Directorate-General for Regional Policy (Nordregio, 2004), which focused on identifying mountain units recognised by national stakeholders. However, the smaller number of massifs makes European comparisons easier.

For islands, the TPG identified 319 islands and island municipalities. Multiple islands belonging to one municipality were considered as one unit, substantially decreasing the number of island units in the data set. This rationalisation applies to Greek islands which form part of the same municipality, as well other islands in Norway, Finland and Sweden. Multiple municipalities which form part of one island have been grouped together. Where part of an island is covered by one or more insular municipalities, while another part is covered by a municipality which is partly on the mainland, only the municipalities that are entirely insular are considered.

Sparsely populated areas (SPAs) have been subdivided into 39 "Sparse territories", defined as "clusters" of SPAs that form relevant geographical units for developing a spatial analysis of SPA and coherent territories for developing integrated 'regional' economic spaces<sup>18</sup>.

For coastal areas, the TPG identified areas within 45 minutes and within 90 minutes of individual coastlines. These areas may overlap, as a single municipality can be within these travel times from multiple coastlines (e.g. in Denmark, a number of LAU2 are within 45 minutes of both the Baltic Sea and the North Sea). The coastal areas have also been subdivided by country.

Similarly, the TPG identified areas within 45 minutes and within 90 minutes of each border between two countries. These areas may overlap, as a single municipality can be within these travel times from multiple borders (e.g. Basel is within the border areas between Switzerland and Germany and between Switzerland and France). Border areas have been subdivided by country.

Each Outermost Region has been considered as one unit of analysis.

The units of analysis have been analysed as both geographical units for which overall indicators can be calculated, and territorial contexts for the assessment of internal disparities.

#### **1.2.5 Recognising the overlaps: Cross-analysis of delineations**

A major difficulty that arises when trying to assess whether a geographical specificity is associated with particular sets of development potentials or limitations is that several specificities often overlap in the same geographical space.

A further key factor is accessibility to urban areas, as this favours development potentials within all kind of territories. It is of particular relevance in geographic specificities where settlement patterns tend to be sparse, such as SPAs, mountain areas, and certain islands (see Map 1). Indeed, urban areas act to concentrate

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<sup>17</sup> See section 1.2.1 in Scientific Report

<sup>18</sup> See section 3.2.3 in Scientific Report

demographic and economic activities upon which regional development strategies can build.

To analyse how proximity to an urban area influences the socio-economic effects of geographic specificity, areas within a daily commuting distance of 45 minutes by road from urban centres with a FUA population of >100,000 were delineated. This method is directly inspired from the ESPON 2006 project "Urban areas as nodes of polycentric development" ("ESPON 1.1.1")<sup>19</sup> which coined the acronym "PUSH" ("Potential Urban Strategic Horizon") to designate these areas (see section 2.3. of the Scientific Report).

Due to the large number of potential overlaps – 49 if one includes areas within commuting distance of urban areas (Tables 5 and 6) – the TPG focused on overlaps that are most likely to reinforce or reduce development constraints in GEOSPECS areas (see for example, Map 2).

The full matrix with cross-delineation of GEOSPECS categories can be found in Annex B. This annex contains percentages of population and area belonging to two GEOSPECS categories in the entire ESPON space. Similar matrices have been computed for each country.

Mountains have been considered by the TPG as one of the most relevant categories for cross-delineations. Indeed, mountain massifs act as barriers that have often influenced the geographic context for social and economic development in all other categories, e.g. through additional infrastructure costs. The rough terrain of mountainous coasts, for instance, generally makes them less suitable for human settlement and use, as shown by the fact that, though nearly 40% of the total coastal area is mountainous, this includes less than 20% of the coastal population. Similar effects can be observed on islands, SPAs and, most markedly, in ORs, which are 75.2% mountainous, yet these areas include only 12.2% of their population. Mountains also reinforce border effects by adding topographic barriers to administrative ones. Finally, rough terrain limits the range of potential daily commuting distances to urban areas; though it is noticeable that 20.8% of the area of urban areas with a population >100,000 is mountainous, and contains 14.9% of the population of such areas.

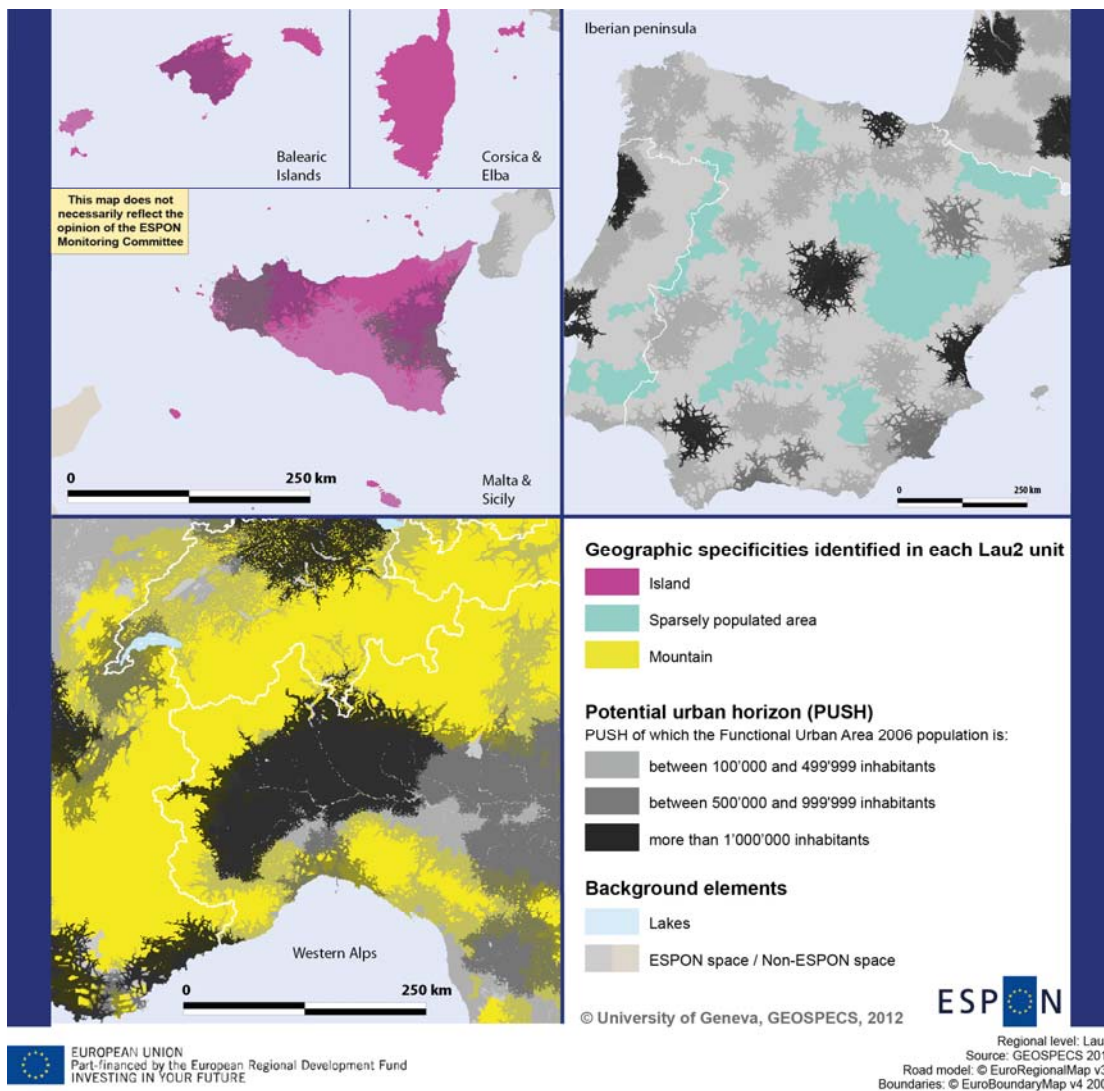
In coastal zones, rough terrain tends to concentrate a large proportion of the population in the PUSH. In most cases, these areas also act as interfaces with the global economy, hosting major harbours. Their role is therefore of particular relevance not only for the coastal zone itself, but for entire national economies. However, a significant proportion (26.8%) of coastal areas is also sparsely populated, containing less than 2% of the total population of these areas. This underlines the considerable variation in the population densities – and thus levels of development – of coastal zones. Nevertheless, looking at the less populated parts of coastal zones provides useful insights into factors of attractiveness for the category.

A similar pattern is found for border areas, with significant proportions being sparsely populated, but also large proportions of the total population in urban areas; about a half being in cities of >750,000 depending on whether a 45- or a 90-minute threshold is used.

On islands, the existence of a fixed link appears to have significant implications. For example, though the proportion of the area of islands with a fixed link in SPAs is lower than for those without (34.6% vs. 42.3%), the proportion of population is higher (4.1% vs. 1.2%). The differences are even greater with regard to

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<sup>19</sup> [http://www.espon.eu/main/Menu\\_Projects/Menu\\_ESPON2006Projects/Menu\\_ThematicProjects/](http://www.espon.eu/main/Menu_Projects/Menu_ESPON2006Projects/Menu_ThematicProjects/)



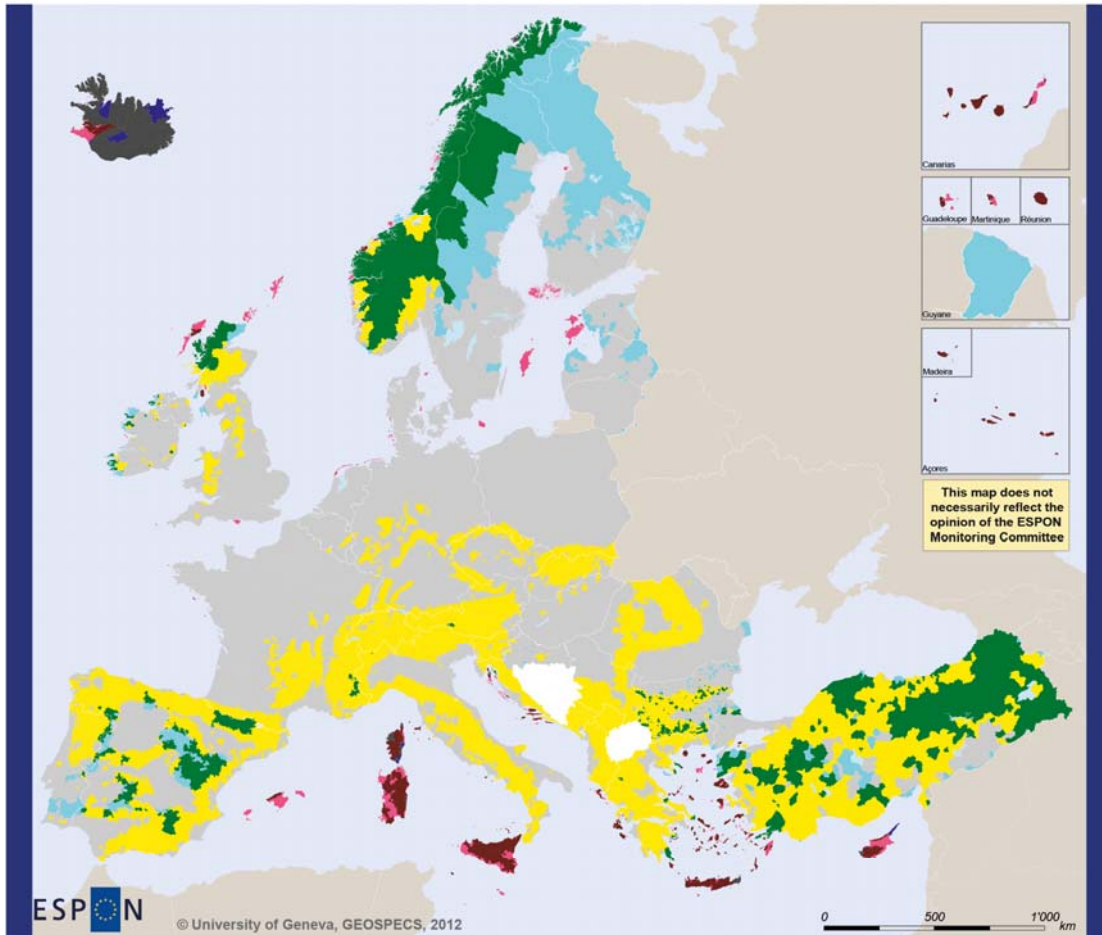
**Map 1 Overlay of islands, sparsely populated areas and mountains to urban areas**

*The map shows different types interrelations between GEOSPECS categories and urban areas. For islands of limited extent, the entire population has access to the largest urban centre. One can therefore distinguish between more rural islands (e.g. Gozo and Minorca), and those with a good urban endowment (e.g. Malta and Majorca). It can be noted that a larger island such as Corsica has no urban centre comparable to those of the two latter islands.*

*On the Iberian Peninsula, SPAs are the zones situated between commuting areas to cities. The situation is different in Europe's Northern Periphery, where distances to the nearest metropolitan region are much greater.*

*As illustrated by patterns observed in the western Alps, mountains can function as barriers to the extension of urban areas (e.g. Milan and Torino, which appear as piedmont cities even if their potential commuting areas extend into the margins of the Alps), but they can also host urban areas (e.g. along the Brenner corridor to the East and from the Swiss Plateau (Mittelland) to Grenoble).*

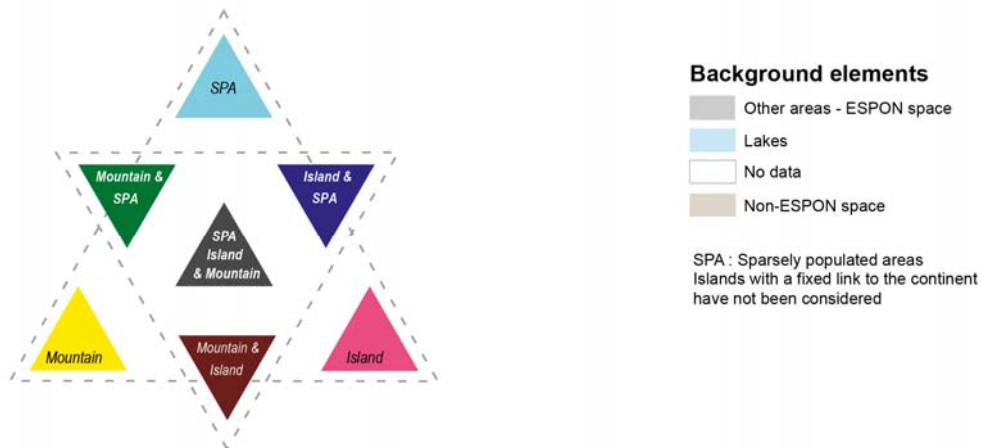




 EUROPEAN UNION  
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Regional level: Lau 2  
 Source: GEOSPECS 2011  
 Boundaries: © EuroBoundaryMap v4 2008; except Western Balkans and Turkey (GEOSPECS)

### Geographic specificities identified in each LAU 2-unit



### Map 2 Demographic sparsity, mountainousness and insularity

*The map shows which "areal" geographical specificity (see Tables 2 and 3) can be identified in each LAU2 unit. The co-presence of multiple specificities does not necessarily imply that there are greater development challenges, insofar as this may be compensated for by other factors such as a natural resource or good connectivity. However, the positive and negative effects of these different specificities combine, and contribute to produce a unique local and regional precondition for social and economic development.*

mountainousness, though the relationships are reversed: both the mountainous proportion of the area and population of islands with a fixed link is lower than for those without (39.9% vs. 71.9%; 54.5% vs. 6.2%). This suggests that a fixed link may mean that it is less necessary to establish settlements on particularly rough terrain. Conversely, islands with fixed links have greater proportions of their area and population in urban agglomerations >100,000 than those without such links.

Finally, ORs present some interesting relationships. 83.8% of their area is sparsely populated, mainly in French Guiana. Conversely, they include very densely populated areas, with 0.6% of their total area comprising urban areas >100,000, but containing 23.3% of their population.

All of these findings are interesting, but represent the aggregation of very different sets of factors across Europe. They should therefore be regarded more as hypotheses to be investigated in more detailed studies, rather than clear sets of relationships.

## **2. Key findings**

Given the wide range of geographic specificities addressed in this project, analyses have necessarily been limited to the most important aspects for each of them. Considering the diversity of GEOSPECS areas, in terms of development issues and relevant scales of analysis, heterogeneous sets of maps and analyses are presented for each geographic specificity. The objective of the present section is to describe how the different geographic specificities can be approached both quantitatively and qualitatively, based on their respective characteristics. Territorial patterns and trends observed within different geographic specificities are not compared.

Data availability has largely influenced the analyses undertaken. However, given the novel character of the data that have been compiled and the indicators that have been constructed, the TPG has only explored a small proportion of the potential innovative quantitative analyses that could be envisaged. Data at the level of the 125,049 LAU2 units of the ESPON space open new perspectives for multi-scalar analysis. Analyses of these data are the primary basis for the first section of this chapter. The second uses both these data and findings from 15 case studies, the third focuses on these case studies, and the last on "nexus models" developed to illustrate key linkages for both case studies and each GEOSPECS category.

### **2.1 Key issues: demography, economy and accessibility**

The results of the quantitative analyses are presented in chapter 4 of the Scientific Report. The present section synthesises key results for some recurring themes and issues, i.e. age structures and demographic trends, patterns of employment, tourism and accessibility.

#### **Age structures and demographic trends**

For a number of geographic specificities, comparisons between age structures in GEOSPECS areas and national average values show contrasting patterns. In mountain areas, some massifs have significantly lower proportions of children (e.g. Pyrenees and Massif Central in France, Polish Middle mountains), while others have high proportions of children (e.g. Polish Carpathians). Similarly, areas within 45 minutes of a coastline may have higher proportions of elderly people than the national average (e.g. in Greece and along the North Sea in the UK), or lower proportions (e.g. in Bulgaria and Latvia). In the ORs, French Guiana stands out due to exceptionally high birth rates (27.7 ‰, compared to 12.9 ‰ on average in France), as well as children, 35 to 49% in most LAU2 areas. At the other end of the scale, the Canary Islands have relatively high proportions of elderly people, especially in rural and isolated areas.

Demographic trends have particularly been analysed in SPAs, as population decline is a particularly important issue in areas that run the risk of falling below critical population thresholds for maintaining service provision levels and a sustainable labour market. Unfortunately, it has only been possible to compile data at the LAU2 level on total population for the years 2001 and 2006. Current initiatives to compile harmonised LAU2 population figures for previous decades would, if successful, make it possible to carry out a wide range of statistical analyses in GEOSPECS areas, to be complemented by data from recent censuses.

## Patterns of employment

Multi-scalar analyses of patterns of employment have been produced for a number of GEOSPECS categories. In ORs, factorial analyses of employment patterns shows that the French, Spanish and Portuguese ORs have distinct profiles, respectively characterised by an over-representation of public services (France), hotels, restaurants and construction-related activities (Spain), and agriculture and fisheries (Portugal). To identify internal structures of employment within ORs, it is thus more meaningful to produce ascendant classifications of LAU2 employment profiles with these national groups, than across all ORs.

Similarly, in mountain areas, a first map compared the relative weights of the primary, secondary and tertiary sectors of activities in Europe's 16 massifs subdivided into their national parts and showed, for example, the relative over-representation of agriculture in the Carpathians of Romania, compared to those of Slovakia. An ascendant classification of employment structures in LAUs areas in the Carpathians confirmed this contrast, but also makes it possible to identify the more local contrasts and similarities across national boundaries.

In SPAs, the focus on local contrasts seemed less relevant, as the main urban areas are per se excluded from this GEOSPECS category. The combination of a comparison of the relative weights of the primary, secondary and tertiary sectors and factorial analysis of employment structures by branch shows that employment profiles are relatively similar within large trans-national areas such as the Nordic countries, the Iberian peninsula, and south-eastern Europe. This suggests that, from the point of view of employment structures, sparsity could more meaningfully be approached within these trans-national areas.

For coastal areas, there is no general "employment profile" from either a European or a national perspective. Some coastal areas have a strong overrepresentation of the fisheries sector compared to national average values (e.g. Gulf of Cádiz in Spain, Iceland). Only the Danish and French coastal areas along the North Sea have a significant over-representation of the manufacturing sector, while transport and storage activities are most over-represented along the coastlines of Slovenia, Cyprus and Belgium. Considering this diversity of situations, a general factorial analysis is less meaningful; patterns of employment mainly reflect differences in national employment structures.

## Tourism

Tourism is evoked as an important sector of activity and/or potential development opportunity for most GEOSPECS areas. In the quantitative analyses, the proportion of employment in hotels and restaurants (NACE [Statistical Classification of Economic Activities in the European Community] branch H) is often used as a proxy for the relative importance of tourism. The example of the Alps, where this indicator could be crossed with the number of beds per LAU2 area<sup>20</sup>, shows the added value and limitations of each of these proxies. Close to major cities, one finds many municipalities with significant proportion of employment in "branch H", but no accommodation. Conversely, in many intermediate areas between the outer borders of the Alps and the high-altitude skiing resorts, many LAU2 areas have proportions of employment that are relatively lower than one might expect, considering the number of beds. This gives some indication of the differentiated effect of a number of tourists (estimated on the basis of the commercial offer for overnight accommodation) and employment. It also illustrates that the leisure economy also includes services for

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<sup>20</sup> See section 4.2.1 of the Scientific Report.

neighbouring urban areas, for owners of second homes, and for the local permanent population.

Trans-national comparison of employment in tourism in ORs makes it possible to highlight the relative weakness of the tourism sector in the French ORs, which contradicts the general perception of these regions in France.

The analysis of tourism for islands has identified different patterns according to groups of islands, distinguishing not only between the more tourism-intensive Mediterranean islands and the rest, but also showing that medium-sized islands with populations of 100,000 to 1 million have the highest proportions of employment in tourism.

In coastal areas, the focus is on the concentration of tourism activities in a limited number of LAU2 areas contiguous to the coast. With few exceptions, employment rates in hotels and restaurants are higher along the coastline than within the area within commuting distance from the coast. The extent of these differences gives an indication of the extent to which tourism is concentrated on the coast. However, differences between portions of the coastline also play a role, calling for detailed analyses of individual coastal areas to identify those with the highest degree of concentration of tourism in a limited number of locations.

### **Accessibility**

Access to urban areas and to key infrastructure such as airports is of key importance, and can generally be hypothesized as having a greater direct influence on socio-economic patterns and trends than geographic specificities per se. Different analyses have therefore subdivided GEOSPECS areas on the basis of their access to urban areas. In the analysis of Northern SPAs, Sparse Territories with relatively greater access to urban centres have been analysed separately. The analysis for islands separates them according to their total population. Mountain massifs have been characterised on the basis of the proportion of area and population living within commuting distance of cities of different sizes, showing major differences between, for example, the Carpathians where only 23% of the mountain population is within commuting distance of an urban area, and Central European middle mountains which are almost entirely within commuting distance of such centres. Cross Border Metropolitan Regions have been analysed separately from other border areas, and a separate typology of these areas has been produced.

Comparisons of access to airports between mountain areas and national average values show that, for almost all countries, the proportion of people living within 45 minutes of an airport is lower in mountain areas than for the country as a whole. However, the extent of this difference varies considerably.

### **Conclusions**

The different ways in which the same indicators have been processed and interpreted illustrate the various types of concerns in different GEOSPECS categories. Furthermore, there have been important variations with regard to the scales of analysis considered relevant, the ways in which different levels of analysis are related to each other, and the territorial contexts used to produce comparisons. This demonstrates both that GEOSPECS areas cannot be analysed as one group, and the diversity within each GEOSPECS area with regard to many variables.

The GEOSPECS project therefore demonstrates that quantitative analyses of each geographic specificity should be carried out as separate projects. At the same time,

these analyses require compilations of LAU2 data and data processing which are most efficiently carried out at the level of the ESPON programme as a whole. This calls for an alternative organisation of data collection and quantitative analysis.

## **2.2 Social, economic and environmental patterns in GEOSPECS areas**

In order to assess the social, economic and environmental patterns and trends that may be associated with the GEOSPECS categories, the TPG defined 9 transversal themes which were analysed both quantitatively for the six categories and using 15 case studies (see section 2.3 and Map 3):

- Accessibility and access to services of general interest
- Economic vulnerability / robustness facing globalisation
- Residential attractiveness
- Role of Information and Communication Technologies
- Natural resource exploitation
- Ecosystem services
- Protected areas and biodiversity as factors of development
- Vulnerability of human-environment systems to climate change

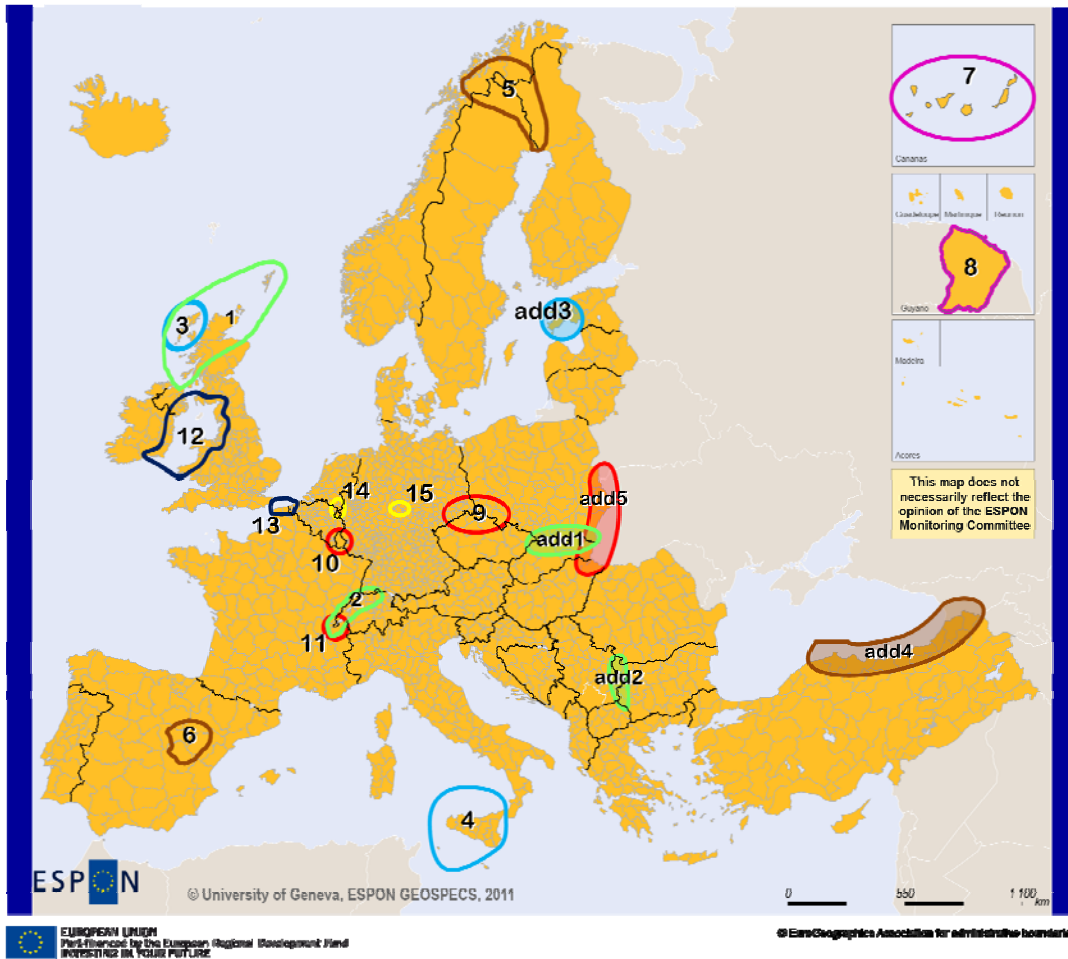
The complete results of the analysis of these transversal themes can be found in chapter 6 of the Scientific Report and in its Annex 46. The present section presents a synthesis of these findings.

### **Accessibility and Services of General Interest**

As remoteness is the main characteristic of ORs, these areas face the most challenges deriving from limited accessibility. When the European mainland is considered, islands, SPAs and mountain areas are most limited in terms of accessibility. Coastal areas and border areas fare much better in comparison.

If access to an airport is taken as an indicator for general accessibility of an area, this confirms the picture: on average across Europe, 52% of population lives in a LAU2 area in which more than 50% of territory has access to an airport of over 150,000 passengers per year within 45 minutes travel time. This figure is strikingly higher in coastal areas (63%), similar in border areas (53%), but significantly lower for islands (37%) and mountain areas (31%), and negligible in SPAs (2%) and ORs (almost 0%).

If the presence of urban agglomerations is taken as an indicator for access to many different services, a similar picture emerges: on average across Europe, 83% of the population live in or around urban areas of over 100,000 inhabitants. In coastal and border areas, this number is even higher (87% for both), but lower for mountains (64%) and islands (57%), significantly lower in ORs (23%), and (unsurprisingly) negligible for SPAs (1%).



### 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 Limburg
- (15) Werra-Meißner-Kreis, Hessen

### Map 3 GEOSPECS case study areas

The "additional cases" (add1-5) correspond to synthetic notes on specific issues in additional study areas (see section 2.3)

The case studies confirm that low accessibility is a major concern for many GEOSPECS areas. Stakeholders have noted the remote location and resulting high transport costs in several case studies: first and foremost, both OR case studies (French Guiana and the Canary islands), but also in the Outer Hebrides, the Scottish Highlands, Torne valley, the Spanish SPAs, and Sicily.

The age structure of the population is also relevant in this regard, as a society with a high proportion of elderly (above 60) requires more services in the health sector (care homes, hospitals, etc.), whereas a society with a high proportion of children (under 15) requires more education services. While the age structure of coastal and border areas, and even islands and mountains, overall does not differ significantly from the European average, the proportion of elderly is higher in SPAs (24%) than the European average (21%). Most significantly, it is the OR that differ, with 15% of elderly (compared to 21% on the European average) and 21% of children (compared to 17%)<sup>21</sup>. Nevertheless, individual mountainous or insular regions can feature a strong over-representation of older population segments, as confirmed by the case studies.

### **Economic vulnerability and resilience**

It is impossible to identify one “typical” economic structure or labour market profile that could be dubbed “the mountain economy”, “the island economy”, etc., as each category of geographic specificity is much too diverse. Nevertheless, many (but not all) of the case study areas feature an above-average share of employment in the public sector – often due to a generally low diversification of economic activity. This is, however, much more true for mountainous, insular, sparsely populated and outermost areas, and only rarely for coastal and border areas. Often, these areas of “classical” geographic specificity (mountains, islands, SPAs, ORs) are characterized as being “small economies” (i.e. with a small market and only limited availability of workforce) – and are also often removed from urban agglomerations – where investment (from outside) is consequently less attractive.

Many of the “specialisations” of GEOSPECS areas are directly or indirectly linked to their geographic specificity as, for instance, the strong emphasis on tourism in many of these areas (such as mountainous or coastal landscapes largely perceived as “beautiful” by visitors, offering opportunities for outdoor recreational activities). Some “specialisations” rely on natural resources that only occur in particular (geographically specific) areas, such as fishing around coastal areas and islands, or mining and forestry in SPAs. A focus on renewable energies is an opportunity in almost all geographically specific areas, since many renewable energy resources are linked to geographic specificities, as discussed below. A concentration on this type of “typical” activity is not necessarily an advantage, as many of these activities – such as fishing, mining, agriculture, or forestry – require decreasing labour forces due to rationalisation, mechanisation, etc.; and primary products of low added value do not generate high income for these areas. In addition, both agriculture and tourism tend to be marked by seasonality of employment. Many of the examples of particularly successful specialisations in case study areas are those which focus on niche products of high quality: watchmaking in the Jura massif, whisky production in the Scottish Highlands, organic farming in Sicily and Central Spain, aquaculture specialised in seed mussels along the Irish Sea coast, aquaculture and the extraction of marine aggregates on the Belgian coast, even financial services in Luxembourg and Geneva.

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<sup>21</sup> These numbers consistently exclude Turkey, as the data on age structure for Turkey were not comparable with the other European countries.



## **Residential attractiveness**

In terms of intangible assets / social capital, it has often been stated that rural areas and small towns feature particularly tight interpersonal relations (e.g., Ward and Hite, 1998). "Closely-knit" communities were found to characterise many GEOSPECS case study areas. Again, this is only true for those areas that were characterized as "small economies" (SPAs, ORs, some islands and mountain areas), but not for any of the coastal or border case studies. Although these high levels of 'bonding' social capital are also an asset in economic terms, it is important to point out that this should be complemented by openness towards extra-local actors, as local communities will rarely be able to generate development purely from within. This ties in with the topic of residential attractiveness, since an area that is not attractive for residents will inevitably lose population, and thereby the basis for sustainable local development.

Excluding many border areas, the most prominent heritage of many types of GEOSPECS areas is their environmental capital: the beauty of the landscape (and sometimes unique wildlife) is a source of pride and is considered to be one of the main advantages of living in these areas. Environmental capital is even greater for those regions that can boast more than one type of landscape (such as the Highlands and Sicily). This not only attracts residents through the process of amenity migration, but also tourists, and thus contributes to employment opportunities.

In many cases, a rich history and culture complement the environmental assets, and this may be linked to the geographic specificity, particularly for coasts, where the historic importance of ports is an element of cultural heritage; and island and mountain areas and ORs, where isolation adds to the preservation of traditions. As mentioned, social capital is strong in the form of preserved traditions, tightly-knit communities and even values such as courteousness – but more so in the more isolated areas, i.e. islands, SPAs and many mountain areas. This is valued highly by many residents, but can also be perceived as "suffocating". Border areas, for their part, can have particular social capital in that they are places where different cultures meet and are thus exposed to different influences: multicultural, "open" societies can therefore emerge in these areas – but this is not necessarily the case, as identity-based, exclusionary behaviour can also develop in border areas.

The combination of the various elements of attractiveness makes such areas desirable living spaces. However, this can in turn cause conflicts, as when a significant inflow of pensioners and second-home owners drives up house prices, which can exclude younger population segments who can no longer afford housing. Evidence of this was found in the Highlands and the Outer Hebrides case studies, in both coastal case studies and, to some extent, in the SPAs of Spain and Tornedalen. In combination with outmigration of younger people (due to lack of employment opportunities and/or education institutions), this means that these areas have rapidly ageing populations, which in turn puts pressure on welfare systems. Evidently, even though natural capital and social capital are important factors in choices of residence, they cannot compensate for a lack of job opportunities and of access to services.

## **Information and communication technologies (ICT)**

ICT are often said to overcome the main disadvantage of GEOSPECS areas that are remote in terms of distance from markets and economic activities, as well as centres of service provision. Some case studies show examples of the application of these technologies (e.g., telemedicine projects in Finland and French Guiana, homeworking in the Scottish Highlands, "e-democracy" approaches in Finland). However, most of

these projects have been pilot initiatives subsidized by national or European public funds. Another example is the University of the Highlands and Islands in Scotland (an institution with 13 campuses across this extensive and mountainous SPA), which has particularly embraced the advantages of virtual interaction.

On the supply side, geographic specificities pose challenges. As many GEOSPECS areas are sparsely populated or remote or both (again, this is mainly true for ORs, islands, SPAs and mountains), private investors have few incentives to supply these areas with broadband or mobile phone connections. Telecoms connectivity is inherently more commercially attractive in urban areas due to lower deployment costs per user. Broadband coverage in SPAs generally lags behind that of densely populated ones. In the Highlands and Islands of Scotland, a major effort of public investment in ICT (in the past two decades) has propelled the area into the same league as the national average in terms of internet and mobile phone coverage. Similar public efforts have been undertaken in Scandinavian countries. These successful examples show that public intervention is necessary, or at least useful, in areas where the market does not supply the infrastructure. Nevertheless, even though the variation between GEOSPECS areas and other areas can be large within individual countries, variations between countries are even larger. For example, while in Sweden or the Netherlands, 77 - 79% of households have broadband coverage, in Greece this figure is only 34% and, in Romania and Bulgaria, less than 25%.

### **Natural resources**

As some GEOSPECS areas offer an abundance of natural resources, their exploitation is important in terms of their economies and employment profiles. For example, one particularity of coastal areas is the possibility to extract marine aggregates. This type of resource exploitation is growing in the waters off the Belgian coast, where the aggregates are utilised for construction and for land reclamation and the re-nourishment of eroding beaches. In both coastal case study areas and the islands of the Outer Hebrides, fish are cited as important natural resources, though overfishing is a problem. In the former, expansion of the aquaculture sector is noted as an opportunity to partly compensate for the declining fishing industry.

SPAs are often associated with resource exploitation – not only because resources occur there (which is more of a coincidence), but also because their exploitation does not conflict with human settlements or, in many cases, the need to preserve areas of high biodiversity, and therefore has less potential for creating environmental conflicts. In Teruel and Soria, SPAs in Central Spain, the extraction of ornamental rocks (e.g., alabaster) and construction materials (e.g., clay) plays a role, but it is the exploitation of coal that has had the largest economic and physical effect. Around 65% of Spain's coal is produced in Teruel, and its exploitation is integral to the national energy supply. In the Torne valley (on the border between Finland and Sweden), mining is also important, as is forestry, as the region contains some of Europe's most extensive forests.

One general characteristic of GEOSPECS areas (apart from borders) is that they are associated with high levels of renewable energy resources. Hydropower is an important opportunity in mountain areas; offshore wind, wave and tidal energies can be exploited from coasts and islands; SPAs often offer resources for biomass energy generation (and enough land for large-scale wind power installations); solar energy can be exploited in ORs due to their proximity to the Equator (and as most of them are islands, marine energies are also an opportunity). Nevertheless, while the development of these various types of resources can be beneficial for the

development of local/regional economies, their distance to major areas of demand and underdeveloped grid capacity are often key constraints to their development.

### **Ecosystem services**

As the natural capital of GEOSPECS areas (generally excluding border areas) is one of their main assets, this can be an opportunity in economic terms, as it either attracts residents (and visitors), or provides opportunities for the exploitation of resources, thus contributing to generating income for the area. However, the natural capital of these areas is also a value *per se*. These areas provide vital ecosystem services to the European continent. Some are generic to any ecosystem (photosynthesis, soil stabilisation, nutrient cycling, etc), but others are particular to certain types of GEOSPECS areas. Mountain ecosystems play a key role in the water cycle for Europe as a whole. They influence temperature and precipitation patterns, and modulate the runoff regime. Water from both rain and snow is stored on and in mountain vegetation and soils and gradually released. It transports sediments downstream, providing nutrients for lowland areas, replacing fluvial and coastal sediments, and contributes to groundwater recharge in lowland areas (EEA, 2010). Coastal ecosystems have always played important roles in providing food, not only by directly generating a variety of seafood products such as fish and shellfish, but also by providing nursery habitats for many commercially important marine species. Other services include shoreline stabilization, bioremediation of waste and pollutants, and a variety of aesthetic and cultural values (European Commission, 2011). SPAs (but also some ORs, especially French Guiana) have extensive forests which are not only a resource, but important in terms of carbon sequestration.

Although there is much academic debate as to how these services can be adequately valued, they do not currently receive any market pricing – a reason why they are also referred to as “positive externalities”. If the true value of the natural capital of GEOSPECS areas were taken into account, it would become apparent that these areas are immensely valuable for Europe as a whole, even if they often do not generate as much value in terms of GDP.

### **Protected areas and biodiversity as factors of development**

Biodiversity is regarded as an ecosystem service *per se*; and certain aspects of biodiversity also provide other ecosystem services (e.g., pollination, attractive ecosystems for recreation, medicinal plants). The existence of high levels of biodiversity is one of a number of factors that governments typically take into consideration when they designate protected areas. With the exception of SPAs, GEOSPECS areas tend to be characterised by higher levels of biodiversity and areal proportions of protected areas than the European average – particularly ORs, mountains, and islands. These characteristics indicate the high value of their natural capital of these geographical specificities, which is often reflected in their value as factors of development. In some cases, this is through the direct use of biodiversity (e.g., for agriculture, fishing, plants collected for human consumption and medical purposes, animals for hunting). Specific types of tourism, such as whale- or bird-watching, also relate to particular species. More generally, protected areas contribute to development because they are attractive locations for many types of recreation and tourism. A particular set of examples relates to the many border areas with particularly high levels of biodiversity – and often protected areas – because human interventions have been limited for political reasons. Nevertheless, while biodiversity and protected areas may provide opportunities for development, its scale must consider the vulnerability of the concerned species and ecosystems. This is

particularly true along coasts, whether for tourism, fisheries, or other economic sectors, and also in mountains, where the most attractive and highly biodiverse locations are often also prime sites for facilities for mass tourism.

### **Vulnerability to climate change**

The vulnerability of a particular region to climate change depends on the interaction of diverse factors. Geographic specificity can influence some of those factors; the case studies show that geographic specificity makes many areas more vulnerable to climate change impacts overall. This coincides with many research findings, recently compiled in the ESPON CLIMATE project (ESPON & IRPUD, 2011). This concluded that the overall hotspots of *physical impacts* are almost all located on or close to coasts, especially at river mouths. The assessment of the combined *economic impacts* of climate change shows that the south is more vulnerable, since large parts of Southern Europe are dependent on (summer) tourism, but also agriculture, which are projected to be negatively impacted by increasing temperatures and decreasing precipitation. Given that tourism plays a particular role in many island and coastal territories in Southern Europe (as also confirmed by GEOSPECS case studies), they will be particularly hard hit. The Alps as a premier tourism region are also identified as a hotspot, which mainly due to projected decreases in snow cover. Regarding the *aggregated potential impacts* of climate change, the following regions emerge as hotspots: the South of Europe, i.e. the large agglomerations and summer tourist resorts along the coast; mountains; and the densely populated Dutch/Belgian coast.

The concentration of physical structures and economic activities along parts of the European coastline accounts for high risks of damage due to sea level rise, storms, erosion and flooding. The intensely urbanised Belgian coast is a prime example of a region at risk.

For the ORs, the main impacts are heat-related - decreasing water availability and increasing water stress - as well as increasing hazard potentials related to extreme climate events (tropical cyclones, inundation, heavy rainfalls, floods, etc). The Canary Islands are an example of a region that already faces difficulties in accessing sufficient freshwater supplies. In addition, much of the settlement and economic activity is concentrated along the coasts. As the ORs are generally less developed than mainland Europe, their adaptive capacity is accordingly lower.

For mountain areas, climate change will impact on the annual days of snow cover: a decrease of at least 30 days is predicted – for all of the GEOSPECS mountain case studies. This, in combination with increased rainfall and more extreme weather events (and glacier ablation at higher altitudes), will increase risks from natural hazards, and also affect water supplies downstream. Mountain areas relying on winter tourism will be negatively affected in economic terms. For every °C increase in temperature, the snow line will, on average, rise by about 150 m in elevation (OECD, 2007). Yet, in the Tatra and West Stara Planina case studies, for instance, major investments in ski infrastructures are planned, though this does not appear sustainable in the face of climate change.

Many SPAs are characterized by a traditionally strong role of natural resources and the primary sector in regional economies. Since agriculture and forestry are generally very climate-dependent, such territories are, in principle, more climate-sensitive than regions with a more diversified economic structure.

Islands will be mainly affected by sea level rise, storms and flooding. In the case of southern islands (e.g., Sicily), climate change may negatively impact the economically important tourism sector, when temperatures become uncomfortable in

the peak summer months. In addition, Sicily already faces difficulty in accessing sufficient freshwater, a challenge that will increase with climate change.

Border areas do not in general face specific climate change impacts, but their adaptive capacity may be reduced in cases where cross-border cooperation is still weak.

As many GEOSPECS categories are associated with high levels of biodiversity (particularly ORs, mountains, islands and coasts), these – often unique – ecosystems are at particular risk of being lost altogether, as species cannot adapt to climate change fast enough.

## 2.3 Targeting geographically specific areas – evidence from case study areas

The purpose of the 15 case studies was to obtain more in-depth understanding of how geographic specificity influences the social, economic and environmental performance of territories and creates development opportunities and challenges. The analyses were primarily qualitative, based on existing literature and interviews with key stakeholders in each area. In addition, synthetic notes on specific issues were prepared for a further five study areas.

The analyses of the case study areas showed that all are searching for the “right” path to development – and this almost exclusively refers to economic development, i.e. the generation of (economic) value. However, the discourse varies. For many areas, discussions centre strongly on the area’s handicaps or challenges, which should be *compensated for* by policies, in order for the area to be able to exploit its full potential. In other areas, the focus is more on assets or opportunities, which should be *promoted*. A third perspective – although less frequently voiced in ongoing discussions about Structural Funds, regional competitiveness and “headline goals” – is that of overarching values which are less easily quantifiable.

The common question is: What can policy do - which levers can be applied – to aid these areas in their path towards development? The tables in the Annex F attempt to give an overview of these elements for each case study area. The case studies were prepared to evaluate how geographic specificities influence development paths. Each table should be read with this in mind: it focuses on development challenges and opportunities *deriving from geographic specificity* and is thus not a complete SWOT analysis. In addition, as the case studies focussed on a limited number of transversal themes, not every possible issue is included.

The first two columns present elements of the case study areas where a lever could be applied to *compensate for* challenges or to *promote* assets. As argued in chapter 3, much of the debate so far has concentrated on how GEOSPECS areas can be compensated for their “structural handicaps”, with a view to “levelling the playing field” for these areas. However, in this context, the underlying assumption is that all regions in Europe should be moving towards the same objective, namely competitiveness, however defined. On one hand, this raises the question whether the concept of competitiveness can be applied to regions at all and, on the other hand, whether it is a useful approach. The TPG argues that this is the wrong approach. Policy-makers should be reluctant to imitate a successful model that has its origin in a different environment without accounting for region-specific contexts. A successful model relies on a number of interdependencies between different factors. Instead of

proclaiming common objectives for every region (and accordingly benchmarking each against the common average), it would be necessary to seek to identify how regional resources can help generate a more robust internal economy, and on this basis increase the sustainability of local communities. Instead of generally compensating for any perceived disadvantage, it would then be necessary to counteract only those disadvantages that prevent the region from exploiting its full potential.

The third column is entitled “non-commodified values”. The phrasing stems from an attempt to expand the concept of “ecosystem services”, discussed above. In this context, the concept refers to something broader than only services from ecosystems, which are usually associated with ecology or the *natural* environment (although this is not strictly speaking true). Here, “non-commodified values” are deemed to mean *any value that does not normally receive market-pricing*. The column could equally have been termed “positive externalities” or “public goods”.

This column intends to broaden the debate, with a view to a more long-term perspective. While ongoing political discussions are typically reduced to the immediate generation of monetary value (growth), many elements (assets) of an area have an intrinsic value, which deserves to be maintained for future generations, even if it does not generate immediate added value. These resources (in the widest sense of the word) will be the basis for life for future generations, but also enrich people’s lives today, by creating cultural values, recreational opportunities, health benefits, and other values. A region with a comparatively low GDP can thus create a wide range of other values. If the true value of natural capital were taken into account, as espoused by ecological economics<sup>22</sup>, many GEOSPECS areas might be able to offer much more than urban agglomerations, which are the classical nodes of competitiveness. In an ever more densely populated world, putting ever more pressure on the natural environment, these aspects deserve consideration, and are being gradually included in political debates.

It should be noted that the column deliberately leaves out (ecosystem) services that would be common to *all* of these areas. For instance, photosynthesis, air purification, carbon sequestration, soil stabilization, nutrient cycling and pollination can be expected of *any* terrestrial ecosystem, hence a listing for each case study area would be redundant. A ranking of the *extent* to which each case study area provides these services could be created; however, this exercise would require a quantitative approach and go far beyond the scope of this project. Hence, the focus is on values/services that are specific to that case study area. More generally, some ecosystem services are exclusive to geographically specific areas. Examples are mountains which play a key role in the water cycle for Europe as a whole, or coasts which provide particular food resources such as fish.<sup>23</sup>

Annex F contains a summary of all case studies according to this model. For reasons of space, only two examples (of the Highland Council area and Geneva CBMR) are reproduced here, as Tables 4 and 5. Typically, the model would contain elements such as those listed below (examples from case studies shown in brackets).

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<sup>22</sup> For example, in The Economics of Ecosystems and Biodiversity (TEEB) study: <http://www.teebweb.org/>

<sup>23</sup> More detailed analysis of these specific services can be found in chapter 6 of the Scientific Report, in the section on “Biodiversity and protected areas as factors of development”.

#### Compensation of constraints:

- Low diversification of economy / dependence on public sector (Outer Hebrides)
- Access to island time-consuming & costly (Sicily)
- Services of general interest provided at lower levels (higher costs per head due to low population densities and long distances) (Tornedalen)
- Small size does not attract investment (sparsely populated areas in Spain)
- Environmental degradation due to overdevelopment of the coast by tourist structures (Belgian coast)
- Ageing society / high share of elderly (Irish Sea)
- Dependency on imported products / higher costs (Canary Islands)

#### Promotion of assets:

- High living quality (natural capital, strong sense of identity, close-knit communities, particular traditions) (Outer Hebrides)
- Attractive area for tourists, brand as "sea and sun" destination (Sicily)
- Availability of natural resources (Tornedalen)
- Potential for renewable energy exploitation (Belgian coast)
- Multicultural society (Geneva Cross Border Metropolitan Region [CBMR])
- Building relations with African neighbours: trade increasing (Canary Islands)
- Permeable border facilitates daily commuting (Jura massif)

#### Non-commodified values:

- Ecological richness (French Guiana)
- Potential for exploiting renewable energy sources: direct use value + option value (Outer Hebrides)
- Recreation value hinging on activities particular to coasts (swimming, boating...) and unique landscape (Irish Sea)
- Interface (melting pot) for many cultures (Sicily)
- Living area of the only indigenous people of the EU (Tornedalen)
- Resources of worldwide importance (forests, iron, construction materials) (Spanish SPAs)
- Regeneration of a resource: Belgian North Sea as an important spawning and nursery ground for some commercial fish species (Belgian coast)
- Gateway between EU and non-EU countries (Polish-Ukrainian border)

**Table 4 Example: Highland Council area, United Kingdom**

	Levelling the playing field (Compensation of constraints)	Enhancing endogenous development (Promotion of assets)	Non-commodified values
Economic structure	<p>Low diversification of economy / dependence on tourism &amp; public sector</p> <p>Long travel times (due to dispersed settlements and terrain) - deters new enterprises makes some goods more expensive</p> <p>Services of general interest are provided at lower levels (higher costs per head due to low population densities and long distances)</p>	<p>Attractive area for tourists (unique landscapes + outdoor activity opportunities + Highland image)</p>	<p>Recreation value hinging on</p> <ul style="list-style-type: none"> <li>- unique landscape + outdoor activities</li> <li>- cultural elements</li> </ul>
Society	<p>Ageing society (due to immigration of old &amp; outmigration of young)</p> <p>High house prices (due to influx of older people) are sometimes unaffordable for younger</p>	<p>Attractive area for residents (living quality due to quality of environment and close-knit communities)</p>	<p>Unique cultural heritage including specific products (e.g. whisky), garments (e.g. kilts), traditions (e.g. Highland dances), Gaelic language + strong sense of identity: <i>cultural value + heritage value</i></p>
Environment	<p>Lack of grid capacity may hinder efficient exploitation of renewable energies</p>	<p>Potential for renewable energy: wave &amp; tidal, wind (offshore &amp; onshore), hydro</p>	<p>High levels of biodiversity supported by Highland landscape: <i>preservation value / intrinsic value</i></p> <p>Potential for exploiting renewable energy sources: <i>direct use value + option value</i></p>

**Table 5 Example: Geneva CBMR**

	Levelling the playing field (Compensation of constraints)	Enhancing endogenous development (Promotion of assets)	Non-commodified values
Economic structure	<p>Competition for space leads to high land/real estate prices</p> <p>Public transport network across border insufficient</p>	<p>International finance centre</p> <p>Concentration of international organizations</p> <p>Research cluster</p> <p>Many opportunities for (well-paid) employment in the canton Geneva (also for residents of surrounding areas)</p> <p>Image of natural charms in combination with historic &amp; architectural assets</p> <p>Projects to improve public transport network</p>	<p>Recreation value hinging on:</p> <ul style="list-style-type: none"> <li>- landscape</li> <li>- cultural elements</li> </ul>
Society	<p>Border as a limit for spatial planning: in Geneva city development of housing does not keep up with rapidly increasing population</p> <p>High number of internationals / commuters creates slight exclusionary sentiments among some parts of Genevan population</p>	<p>Strong links between both sides of border via commuters: French areas function as "suburbs" for Geneva city without border being an obstacle</p> <p>International &amp; multilingual environment: creativity</p>	<p>Multicultural society: learning process: <i>cultural value</i></p>
Environment	<p>Urban sprawl (consumption of natural areas) + high resource use and waste production</p>		



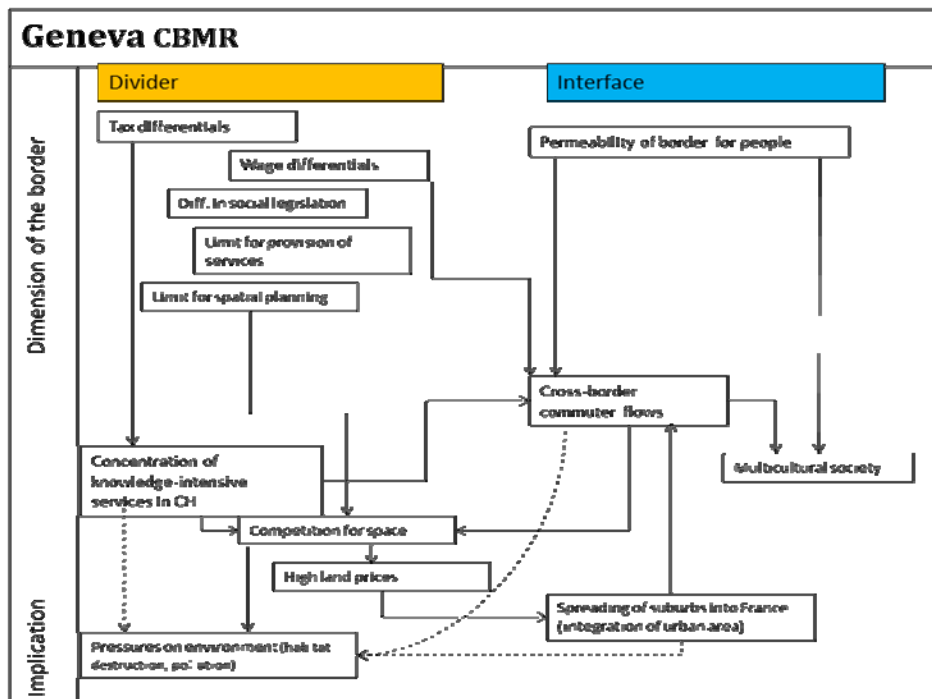
This approach works better for some geographic specificities than for others. When discussing the compensation of natural handicaps (or constraints), the promotion of assets and non-commodified values makes sense particularly for islands, and in mountains, SPAs and ORs. These areas have long been subject to a discourse of compensation, and elements of this discourse are evoked throughout this report. Particularly typical examples are difficulties of access, low levels of public services in SPAs, the dependence of ORs on imports due to their remoteness and small market size, or the difficulties of mountain farmers compared to lowland farmers. In order to achieve territorial justice, many have claimed that these areas should receive compensation of some form (monetary or exemption from particular regulations). To counterbalance this “negative” discourse, the assets of these areas are then sometimes evoked (as an opportunity for development and GDP growth), or, perhaps more abstractly, the vital contributions that these areas make to the general well-being of humanity as a whole (the non-market values that are often related to the preservation of natural capital).

However, this type of discourse is less pertinent for other GEOSPECS categories, namely border areas and coasts. The underlying assumption of the logic of “compensation” is that all – or at least most – of the respective areas face the same challenges, because the challenges are *structural*: for islands, mountains and ORs, they derive from geographic preconditions; for SPAs, the challenges are inherent in the definition of “sparsely populated”, as the logic of a market economy makes it inevitable that levels of service provision will be lower.

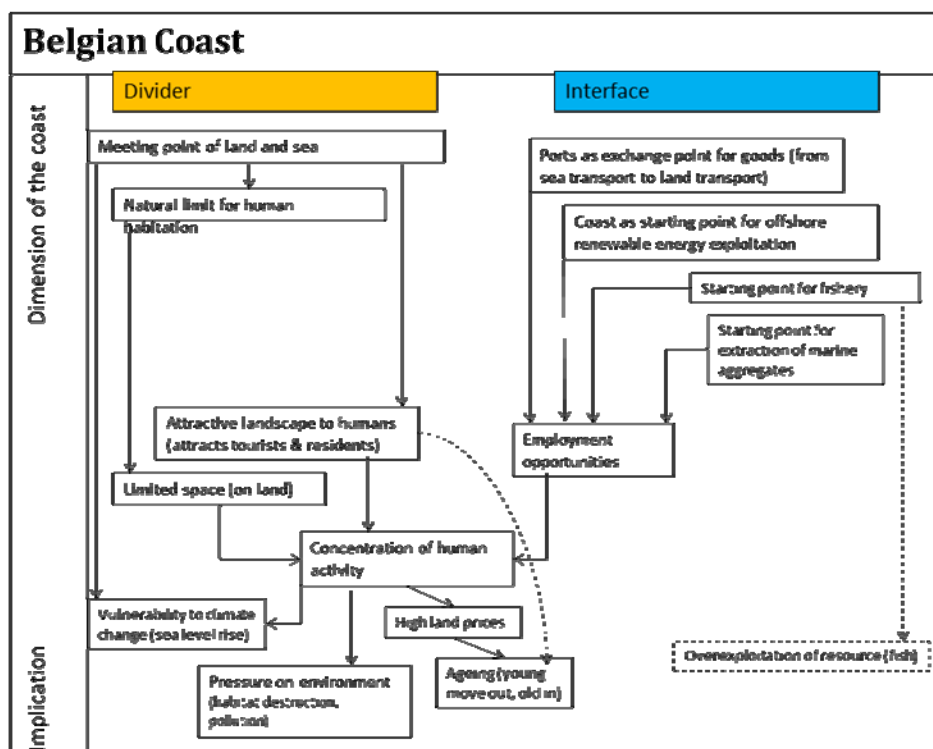
This is not true for borders or coasts. As the case studies show, both of these GEOSPECS categories are very diverse; some of the richest and most attractive areas of Europe are borders or coasts. The Luxembourg CBMR has the highest GDP per capita of the entire EU, and the Belgian coast is a successful node for transport and logistics, as well as an attractive and thus densely populated living space.

Even though these areas certainly face *challenges*, which policymakers need to address, these challenges do not follow the logic of *compensation for a structural handicap*. For instance, the Belgian coast faces severe environmental degradation due to the impacts of intense anthropogenic activity. Fish stocks in the Irish Sea are depleting. Soaring house prices in Luxembourg and Geneva lead to the exclusion of those unable to afford them. The challenges of the border area between Germany, Poland and the Czech Republic are those of an economy in transition. While all of these issues call for political solutions, they are only indirectly linked to the respective area’s position at a border or at a coast, and thus the logic of compensation is hard to apply.

Instead, a different characteristic appears to unite borders and coasts: conceptually, both can be regarded as *lines* that function as *separators*. The coast obviously separates land from the sea. Borders separate different political administrations with respective rules, different economic spheres with different levels of development, different cultures with different languages, etc. At the same time, these lines have an important role as *interfaces*: economic and cultural exchange takes place across borders; ports on coasts are a focal point for transport, the exchange of goods, and logistics.



**Figure 4** Model of socio-economic processes in areas with a 'linear' geographic specificity: example of the Geneva CBMR



**Figure 5** Model of socio-economic processes in areas with a 'linear' geographic specificity: example of the Belgian coast

The TPG does not regard borders or coasts exclusively as lines, as indicated in section 1.2. A coastal *zone* is a strip of variable width measured from the coastline (depending on the type of use for which it is being defined), whereas a border *area* is often characterized as a “buffer zone” where different cultures meet (given that lines between different cultures can very rarely be traced sharply). However, both coastal zones and border areas *refer to* a conceptual line.

Overall, it may be more logical to look at borders and coasts in terms of being separators and interfaces. The corresponding socio-economic processes are synthesised in Figure 4 and Figure 5 above.

## 2.4 Nexus models: identifying key linkages

One challenge in the analysis of the socio-economic effects of geographic specificity is that GEOSPECS areas are influenced by a wide range of factors, some of which stem from geographic specificity, while others are related to inherited features, macro-economic contexts, and institutional structures. With the aim of narrowing down the potentially infinite set of relationships and highlighting the most relevant ones from the perspective of the geographic specificities, a graphic modelling approach was developed and applied to all case study areas.

This “nexus of development factors” or “nexus” approach<sup>24</sup> is inspired by the notion of “syndrome concept”, introduced in environmental analysis in the 1990s (Petschel-Held et al., 1995). It is inspired by medical science and is initially a way of approaching ‘typical combinations of pertinent cofactors’ when confronted with complex situations of unsustainable development with numerous parallel dimensions. As in a medical syndrome, the situation of territories with geographic specificities is characterized by a number of associated symptoms of disadvantage which, although they mutually reinforce the overall disadvantage experienced by these regions, are not necessarily connected in a causal sense.

The term is used to avoid the pitfalls of reductionism, whereby these complex situations could be reduced to a series of measurements focusing on specific problems, and of analogous modelling, whereby the production of a virtual reality through mathematical simulations reproducing observed quantitative structures is presumed to offer the understanding needed for policy interventions. In the former case, one loses sight of the totality, and the importance of interactions between various types of processes is ignored. In the latter case, models reproducing observed trends are so complex that they are of little help when trying to communicate politically about the relevant processes (Schellnhuber et al., 1997).

Within GEOSPECS, models showing the nexus of development factors – “nexus models” in short – have are used to approach one of the three “analytical dimensions” (see section 1.3 of Scientific Report), focusing on opportunities and obstacles/challenges. The objectives are as follows:

- To illustrate where policymakers could “apply the lever” in order to either *overcome challenges* or *make use of opportunities* in a path to the development of the particular area.

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<sup>24</sup> In earlier reports, the term “syndrome” approach was used. However, ESPON Programme stakeholders criticised the term “syndrome” for its negative connotations. “The terms “nexus of development factors” and “nexus approach” were therefore introduced as alternatives.

- To provide a common framework for the presentation of development processes, and their links with geographic specificity, in the very different contexts of mountainousness, insularity, sparsity, proximity to a border or coast, or status of Outermost Region, in order to identify parallels and differences between specificities;
- To turn the focus away from benchmarking of areas, and towards the identification of development potentials and opportunities, on one hand, and key challenges that could be addressed by targeted policy measures, on the other. As such, the nexus model reflects a shift in the strategic focus of regional policy from convergence to the realisation of growth potentials and promotion of sustainable development;
- To better identify “softer processes” in geographically specific areas. While the geographic specificity as such may not be mutable, policy measures may target the intermediary processes through which they have an economic and social impact.
- To propose a tool to communicate and disseminate results that would be clear and concise, while at the same time reflecting the complexity and uniqueness of each regional situation.

The point of departure has been the corresponding models developed as part of the ESPON TeDi project. However, as part of the process of producing the GEOSPECS nexus models, alternative approaches were introduced:

- The graphic representation of the nexus model was revised, to improve its communicative value;
- A standard set of 68 questions was developed, to guide the production of each model (see Annex E).

Most importantly, such models have been developed at two different levels:

- To visualise the situation of each case study area, identifying its respective combination of geographic specificities and the effects it may have;
- To synthesise the main social, economic and environmental causal processes related to a given GEOSPECS category across the ESPON space.

Models of the first type are presented as part of the case studies, in chapter 5 of the Scientific Report. General models on each category of geographic specificity are listed in Annex D.

The nexus models for case studies illustrate multiple similarities between the areas that have been analysed, irrespective of whether they are mountain regions, islands or SPAs. The closely-knit local communities, strong ties between local actors and particularly developed sense of local identity are primarily interpreted as an asset for local development. The specific roles of landscapes and unspoilt nature as a basis for tourism and as factors contributing to residential attractiveness and quality of life are also mentioned repeatedly for these categories, as well as for coastal areas. The specific development conditions for coastal areas are otherwise mainly linked to competition for space, the exploitation of marine resources, and the effects of coastal climatic conditions.

The synthetic “nexus models” prepared for each GEOSPECS category overall synthesise findings for each geographic specificity. In this case, the model does not try to give an overview of inter-related processes within one particular area (and

thus evidently does not consider overlaps), but attempts to summarize the set of processes that can be said to take place in *all* areas of this GEOSPECS category. Two examples, for SPAs and mountain areas, are provided as Figure 6 and Figure 7. While this exercise runs the risk of generalization, the TPG finds it useful to give a first coarse impression of the processes that are important for the GEOSPECS category. Again, the division into challenges and opportunities illustrates that no geographic specificity is exclusively “disadvantaged” or “handicapped”.

A number of parallels between different GEOSPECS categories are striking. Limited external accessibility and the lack of critical mass are recurring components of the “defining features”. They produce similar effects in mountain areas, islands, SPAs and ORs, generating not only challenges, such as structurally imbalanced migration patterns and limited access to services, but also opportunities based on strong local identities and other factors of quality of life. Coastal areas are, in this respect, quite different, as the main general demographic imbalance results from high demand from a wealthy, older population pushing other groups out.

Many of the opportunities identified are based on “soft factors” such as social cohesion, trust, tradition and adaptive capacity. These aspects concern all types of geographic specificity, and suggest that policies focusing on self-perceptions and internal branding could be further developed as instruments to counter the imbalanced demographic flows and brain-drain characterising many GEOSPECS areas.

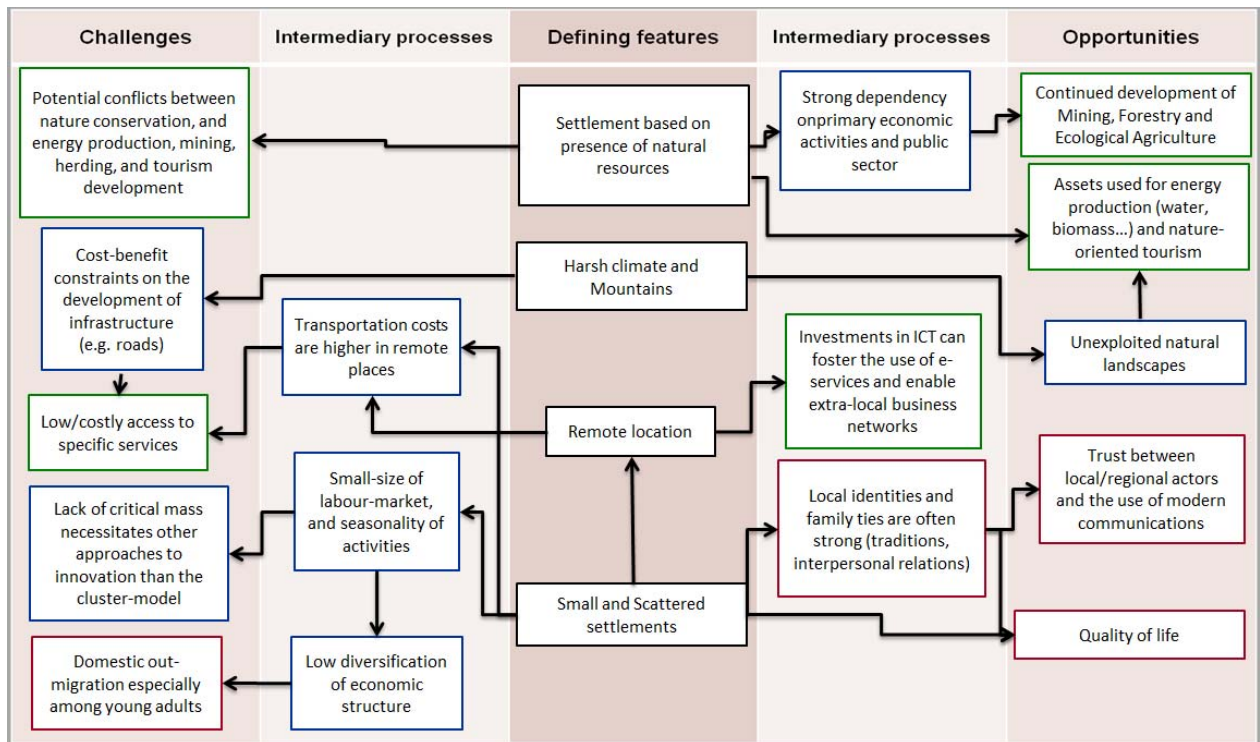
For border regions, the TPG found that it was not meaningful to construct a synthetic nexus model, considering the diversity of situations. The comparison of the nexus models for the Polish-Ukrainian region and Luxembourg CBMR illustrates this (see section 5.2.5 of the Scientific Report).

### **From nexus models to strategies**

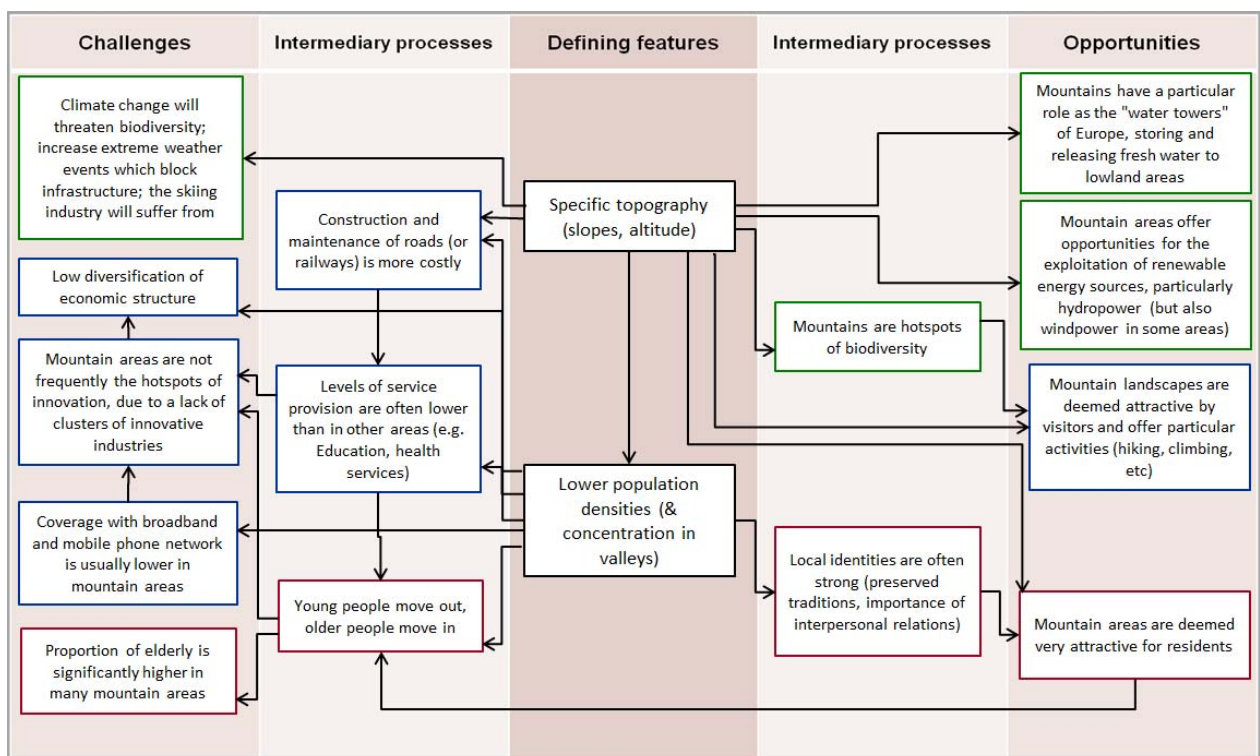
Nexus models should not only help to identify territorial development policy issues related to each GEOSPECS category or case study area. They can also function as tools to identify possible fields of action, and be an instrument in a process of constructing a shared understanding of the most relevant socio-economic processes for the development of a locality or region, and the corresponding challenges and opportunities.

The combination of development opportunities and challenges in one model helps to identify not only the obstacles that need to be overcome, but also the economic added value that should be expected from these measures. Thus, in GEOSPECS areas where public interventions are deemed necessary, the underlying aim is to demonstrate that European, national or regional efforts are justified. Inversely, nexus models could also become an instrument to identify situations where the appropriate strategy would be controlled depopulation, because the level of public intervention needed to overcome identified challenges is out of proportion with the expected returns. The range of “returns” to be taken into account is to be defined politically: it may include not only economic returns, but a wide range of positive externalities, including ecosystem services and the preservation of traditional ways of life.

**Figure 6 Nexus model for sparsely populated areas**



**Figure 7 Nexus model for mountain areas**



Two groups of public interventions may be identified on the basis of nexus diagrams:

- structural and permanent imbalances may require permanent compensatory measures. For example, in the context of a knowledge society where higher education is encouraged, there will tend to be a net out-migration of young people from areas with no higher education opportunities. Without compensatory measures, this leads to ageing and population decline.
- Other situations require specific, focused public interventions. For example, public-private partnerships or subsidies may compensate for inadequate or missing ICT infrastructure in small and isolated communities. In other cases, public authorities may need to get a process started (so-called "pump priming"). In both cases, strategies for handling the end of the public intervention need to be clearly formulated.

The stakeholder consultations have shown that GEOSPECS stakeholders are generally keen to demonstrate that geographically specific areas should not be given political attention on principle or for reasons of "spatial justice", but because they are convinced that these areas have more to offer for Europe as a whole. Nexus diagrams can be one instrument to demonstrate how this may be achieved.

## 3. Targeting geographically specific areas

### 3.1 Policy context

The delineation of GEOSPECS areas at the European level has shown that GEOSPECS categories are not simply defined by physical features that can be circumscribed on the basis of quantitative criteria. On one hand, the geographic categories “island”, “mountains”, “coast”, “sparsely populated” and “border” area are embedded in the national territorial policy discourses of the concerned countries. Most of them have more or less long-standing traditions of addressing the specific challenges and opportunities of these areas through dedicated measures, or have debated the need for such measures. On the other hand, the understanding of each European citizen regarding these notions contributes to shaping the ways in which he or she perceives European territories and their interactions. These “general understandings” of GEOSPECS categories are important factors 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. To facilitate dialogue between the European, regional and local levels, quantitative analyses and discussions of GEOSPECS categories need to be based these “general understandings” of the different GEOSPECS categories.

However, these “general understandings” may vary across Europe. A simple compilation of national delineation criteria would therefore not create a coherent European basis for the understanding of territorial diversity. It is necessary to (re-)construct GEOSPECS categories from a European perspective. This has been attempted in the Fifth Cohesion Report, in the Green Paper on Territorial Cohesion and in subsequent working papers of the European Commission (Monfort, 2009; Dijkstra and Poelman, 2011). The GEOSPECS project is an additional input to the construction of European categories of territorial diversity.

Whether geographically specific areas perform differently, from an economic or social point of view, compared to other territories is therefore of secondary importance. The main issue is whether GEOSPECS categories could help in designing policies that would be more efficient and better suited to meet the key objectives of the EU and its Member States.

The starting point of the TPG’s work has been the “Europe 2020” strategy for smart, sustainable and inclusive growth. In a discussion that mostly refers to the regional and local level, it is important to keep in mind that the five headline targets<sup>25</sup> pertain to the EU *overall*, and are not to be achieved by *each* region individually. Instead, the headline indicators are translated into national targets<sup>26</sup>, adapted to the preconditions and requirements of each Member State. The targets themselves are “spatially blind”, but presuppose the implementation of measures that are adapted to each territorial context. Normative European positions on how this should be done,

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<sup>25</sup> The five headline indicators are:

- Employment: 75% of the 20-64 year-olds to be employed
- R&D / innovation: 3% of the EU's GDP (public and private combined) to be invested in R&D/innovation
- Climate change / energy: greenhouse gas emissions 20% lower than 1990; 20% of energy from renewable; 20% increase in energy efficiency
- Education: Reducing school drop-out rates below 10%; at least 40% of 30-34-year-olds completing third level education
- Poverty / social exclusion: at least 20 million fewer people in or at risk of poverty and social exclusion

<sup>26</sup> See: [http://ec.europa.eu/europe2020/pdf/targets\\_en.pdf](http://ec.europa.eu/europe2020/pdf/targets_en.pdf)



e.g. in GEOSPECS areas, would probably not be appropriate, considering the diversity of local and regional situations. Hence, it is necessary to formulate general principles on the diversity of regional and local contributions to overall economic and social performance and sustainable development: as found in the ESPON TeDi project, “high European performance in terms of economic and social development is not simply the sum of high local and regional performances” (Nordregio et al., 2010, p. 58).

Any discussion on policy development must recognise that, while each region in Europe should make best use of its assets to contribute to the achievement of the Europe 2020 targets, and the success of Europe 2020 will depend on the efforts made at the regional and local levels (Böhme et al., 2011), this does not imply that all regions should be compared against the same benchmarks. Instead, a more functional approach is needed, acknowledging that the high performances of some areas, e.g. metropolitan areas, is possible because other areas provide strategically important inputs such as water, energy, food, and opportunities for leisure and recreation. The “territorialisation” of general targets, such as those of Europe 2020, needs to take into account the reality that different types of regional specialisation create different levels of economic return. Furthermore, economies of scale and agglomeration, combined with a higher degree of circulation of income within the region, allow regions with large and diversified economies to benefit more from their productive activities than small and specialised ones. The question is whether one should conclude that all regions should focus on economic sectors with the highest economic returns, or that Europe’s population should concentrate in a few metropolitan areas. Such an uncritical application of economic theories, e.g. developed as part of New Economic Geography (Krugman, 1991), does not take into account the diversity of regional contributions to balanced long-term economic and social development: or, as Böhme et al. (2011) put it, “the EU 2020 priorities should be spelled out for different territories in line with their potentials and specificities.”

From the perspective of GEOSPECS categories, this raises two types of questions:

- To what extent can GEOSPECS categories inform political debates on how overall European targets, such as those formulated by Europe 2020, should be “territorialised”? Could policies help to ensure that the specific contributions of GEOSPECS areas become more efficient or sustainable?
- Do GEOSPECS areas face specific challenges in the endeavour of contributing to the achievement of Europe 2020 objectives? Could targeted measures help them overcome some key obstacles and improve their overall contribution to European “smart, sustainable and inclusive growth”?

While Europe 2020 defines the overall direction of the EU in the coming years, it is evident that the discussion on geographic specificities takes place against the backdrop of – first and foremost – a long-standing discussion on territorial cohesion, as well as the existing policies at EU level (particularly Cohesion policy and Agricultural policy) and at national and regional levels.

## **3.2 Recognising diversity**

A fundamental challenge when dealing with GEOSPECS areas is that it is impossible to make a general, generalizing, or generalizable statement that applies to all of them. Mountains, islands and SPAs appear to have a (limited) number of common features, and have been collectively addressed in different studies (Monfort, 2009; Nordregio et al., 2010; ADE, 2012). In addition, these three types of territories are addressed collectively at a political level, as they form the focus of the European

Parliament's Intergroup 174, which refers to the respective article in the consolidated version of the TFEU (which also refers to cross-border regions). The feeling that mountains, islands and SPAs have the highest number of common characteristics was also voiced at the GEOSPECS stakeholder conference in December 2011. While there are arguably parallels to ORs, it is not possible to integrate borders and coasts into this same framework.

A study by ADE (2012) investigated the effectiveness of ERDF and Cohesion Fund support in islands, mountains and SPAs. Focussing on six case studies, it came to the conclusion that common types of territorial features are apparent in the respective regions, but that these can be divided into "natural constraints" (i.e. non-changeable, such as the geographical remoteness of an island) and "structural constraints" (which could theoretically be changed, but only in the long run). Indeed, the idea of structural constraints was echoed in the GEOSPECS stakeholder conference in the form of "severe structural handicaps" – particularly by stakeholders from islands. However, it is hard to argue that either a coastal region or a border region would face certain structural handicaps simply *because* it is a coast or a border.

In a next step, ADE (2012) summarized the challenges deriving *from* (the combination of) these characteristics: "the demographic challenges are common to all of the studied regions, which are negative natural growth rates, out-migration of young people (often women) and an ageing population." Again, these findings cannot be extended to coastal or border areas in general. One key reason is that some of the most densely populated areas of Europe are cross-border areas (e.g. Luxembourg and Geneva), or coasts (e.g. the Belgian coast). These are hubs of settlement and economic activity, certainly not suffering from a lack of access to services. Yet, while neither coastal areas nor border regions can be assimilated to the "classical" categories of geographic specificity, they do appear to have common features, both referring to a line which first and foremost acts as a barrier. The coastline separates the land from the sea, whereas the border line separates administrative units, political systems, economic spheres, languages, cultures, etc. However, both also act as interfaces for exchange (see a more detailed elaboration in the chapter 5 of the Scientific Report).

In contrast, it is possible to assimilate ORs to this framework. The characteristics of islands, mountains and SPAs (particularly remoteness, small size, extreme climate conditions) also apply to ORs. The associated challenges often appear stronger for these regions; this is partly for historical reasons. The term "remoteness" gains a different dimension when speaking, for instance, about French Guiana, situated on a different continent. The analytical focus therefore rather needs to be on the integration of these territories in their respective continental context, and the specific challenges that a European regulatory and institutional framework may pose in this respect. In the two GEOSPECS stakeholder consultations, representatives from ORs recurrently stated that they consider these areas as "particular" and not comparable with the other GEOSPECS categories, as the issues they face are so much more severe than for any region within mainland Europe. While this is a valid point, the GEOSPECS TPG considers that – even though the *intensity* of challenges is stronger – the challenges of ORs can be traced back to the same characteristics as mentioned above for islands, mountains, and SPAs.

According to these different preconditions, stakeholders voice different demands for the different GEOSPECS categories. As all of these are made within an existing context, it is necessary to very briefly summarize the most important existing EU policy provisions for geographically specific areas.

**Mountains:** Mountain agriculture is a well-established topic of European policy-making. The aid scheme to farmers in Less Favoured Areas (LFA) has included special provisions for mountain areas since 1975, since these regions are subject to handicaps due to altitude (climate) and topography.

**Islands:** Many islands are classified as LFAs (under the “specific handicaps” clause of the scheme) within the framework of the Common Agricultural Policy. When it comes to Competition rules, different thresholds apply for the allocation of State Aid. In the scope of EU environmental legislation, special rules for the treatment of waste apply to small islands.

**SPAs:** The need for a particular status and development actions in the *Northern SPAs* has a legal basis in Protocol 6 of the Accession Treaty for Sweden, Finland and Austria, and was further recognised in the extension of the ‘mountain’ category of LFAs to areas north of 62°N after the accession of Sweden and Finland. In the proposed legislative package of EU regional, employment and social policy for 2014-2020, SPAs are foreseen to receive a specific additional allocation (along with ORs).

**Outermost Regions:** ORs benefit from special treatments through targeted additional funds and instruments, in both Agricultural Policy (under the *Programme of Options Specifically Relating to Remoteness and Insularity POSEI*) and Cohesion Policy (in which they receive an additional allocation to compensate for the handicaps which cause additional production costs). In the proposed legislative package of EU regional, employment and social policy for 2014-2020, ORs are foreseen to receive a specific additional allocation (along with SPAs).

**Coasts:** In 2002, the European Parliament and the Council adopted a Recommendation on *Integrated Coastal Zone Management (ICZM)*, followed by a review and a consultation. While most coastal Member States have adopted management strategies for their coastal zones, this is not (yet) a binding EU policy. Other policies affecting the coastal zone are issue-oriented, concerning, for example, water management, pollution, bathing water, nitrates, shellfish, conservation, renewable energy, climate adaptation, floods and erosion.

**Border areas:** INTERREG was launched in 1989. Financed by the ERDF, it stimulates cooperation between regions, among which cross-border cooperation programmes are the most important. In the current financial period, it forms objective 3 “Territorial Co-operation” of Cohesion Policy.

This partly confirms what has already been mentioned above: mountains, islands, SPAs and ORs have something in common. Stakeholders and lobby groups concerned with all of these regions have repeatedly made the point that they deserve compensation for a certain handicap – be it remoteness and distance to markets (ORs, SPAs, islands), low population densities (SPAs), particular geophysical conditions (mountains, islands, ORs), particular climatic conditions (mountains, ORs); and the associated problems, such as high transportation costs (islands, ORs), lack of access to services (SPAs, islands, ORs, mountains), higher production costs for agriculture (mountains), and dependence on imports (islands, ORs). The above-mentioned policy approaches at EU level are all in this logic of compensation. Servillo (2010) calls the “topological conditions” the “second dimension of territorial cohesion”, with the main policy measures being compensatory, “meant to reduce or eliminate disadvantages, mainly in relation to accessibility to services of general interest”. Similarly, ADE (2012) commented that the ERDF “views geographic specificity as an obstacle to be overcome, rather than an opportunity to be harnessed”.

The picture for coasts and borders is different. Here, compensation is less of a focus (although this logic is not unheard of, for instance the claim that border areas – by

definition peripheral – suffer from underdeveloped transport infrastructure). By contrast, in coastal zones the most pressing issue appears to be the management of the manifold demands placed on the (narrow) coastal space by many different actors. The conflicts of interest that result from the high number of activities in coastal zones are reflected in policy documents. In general, coastal and marine policy in Europe is driven by the negative impacts from human activities on natural coastal and marine resources. However, coastal zones are not *by nature* disadvantaged (and would thus require compensatory measures); rather, the challenges of coasts derive from varied human activities, which in turn result from the inherent attractiveness of coasts (as a “beautiful” living and recreational space, as a logistics hub, as a starting point for transport, for fisheries, for the exploitation of natural resources, etc.).

Equally, border areas require policies designed to overcome discontinuities, or (phrased more positively) to encourage cross-border cooperation. This has been the goal and focus of European Territorial Cooperation and previous INTERREG programmes. The overall aim is to diminish the impact of national borders in favour of the equal economic, social and cultural development of the whole territory of the EU.

This picture is further substantiated by demands made by stakeholders with regard to the future development of EU policies. For instance, in the first GEOSPECS stakeholder consultation, only representatives from coastal areas (in contrast to those from other GEOSPECS categories) were explicitly *not convinced* that an integrated European policy towards their specificity would be necessary. While some found that coasts are too diverse for this kind of approach, others pointed out that existing policies (ICZM, as well as others, such as the Marine Strategy Framework Directive) are good instruments that just need to be adequately implemented and financed. For coastal areas, insufficient coordination between different existing measures caused greater concern (instead of a possible compensation of perceived handicaps). Another particular characteristic of coastal areas is their direct and inevitable vulnerability to the impacts of climate change, especially linked to sea level rise – also reiterated by the Territorial State and Perspective of the European Union 2020 (Ministry of National Development of Hungary, 2011): “*the aggregated estimates of climate change impacts masks large sectoral and regional variability; however, coastal systems are affected everywhere*”.

In the GEOSPECS stakeholder conference, participants were asked to name some policy requirements for “their” areas. The discussion soon centred on Cohesion Policy in the upcoming (2014-2020) programming period. One stakeholder claimed that the “unifying challenge” is to retain a “critical mass of population” in the areas, as some areas would simply “die out” without financial support from the EU or other public bodies. For this reason, support the provision of sufficient services of general interest was claimed to be necessary. This is strongly linked to the general “viability” debate: do people in sparsely populated or remote areas “deserve” to have access to the same level of services as everyone else, even if this is economically unprofitable, or should they accept the disadvantages of the areas that they chose to live in? This is a highly moral question, to which different countries give different answers, and the TPG is certainly not in a position to take sides in this matter. Nevertheless, the provision of sufficient services is, again, an issue mainly in SPAs, islands, mountains and arguably ORs, but not *per se* in coastal or border areas – and can, as such, not be deemed a “unifying challenge” for all GEOSPECS areas.

Finally, recognition of commonalities and specificities, opportunities and challenges does not prevent competition between GEOSPECS categories with regard to financial allocations. In discussion on the future of EU Cohesion Policy, some stakeholders

were adamant to point out that only SPAs and ORs will profit from a specific earmarked allocation, which raised the question why other geographically specific areas should not deserve similar treatment. Some stakeholders also questioned why urban areas have been allocated a share of the Cohesion Policy package, even though there is no legal basis for this in the treaties, yet while the consolidated version of the TFEU specifically mentions a number of geographic specificities, they do and will not receive an earmarked allocation.

### **3.2.1 Diversity within GEOSPECS categories**

In addition to this observed diversity between different GEOSPECS categories, there is an equally strong diversity *within* GEOSPECS categories. While it is intuitively obvious that a Mediterranean island and a Scandinavian island, for example, will face different challenges, the GEOSPECS project confirms this diversity through both quantitative evidence and case studies.

For instance, quantitative analysis shows that:

Population density varies strongly between different islands (somewhat qualifying the claim made above that “all” islands have low population densities). While the average density is 106 persons/km<sup>2</sup> on Mediterranean islands, it is 16 persons/km<sup>2</sup> on Norwegian islands and those in the Barents Sea. The total population on islands is also very variable, from Sicily and Sardinia with more than 1 million inhabitants, down to 123 identified islands and island municipalities with less than 2,000 inhabitants.

Employment structure in mountain massifs varies. While about 9% of people are employed in the primary sector in the Carpathians and the Iberian mountains, only 3% of people work in agriculture in the Pyrenees and the British mountains.

While long distances to the nearest urban agglomeration are a key challenge of Northern SPAs, the SPAs of central Spain are located between a number of urban agglomerations, with only very few places more than 2 hours away from an urban core.

Average income levels are approximately three times higher in the main urban centres of French ORs than in their most remote rural areas.

Border areas include both cross-border metropolitan regions with major, daily commuting flows and mountain ranges with only a few passes, some of which are accessible for only part of the year. Crossing the border line can be difficult or trivial.

To cite only a few examples from the case studies:

- Mountains: while the tourism sector accounts for a significant share of employment in the Scottish Highlands, few people in the Jura massif rely on tourism for employment, as industry remains very strong.
- Islands: while the Outer Hebrides have extremely low population densities, Sicily has an overcrowded coast, and all the environmental and social pressures deriving from such high density.
- Borders: while the Luxembourg CBMR has the highest GDP per capita levels of the entire EU, along with a multi-lingual population, the border triangle between Germany, Poland and the Czech Republic is still challenged by the consequences of economic and political transition, and language barriers remain strong.

This diversity is an indication that it would not be meaningful to look for general, statistically significant differences between economic and social performances of GEOSPECS categories as a group and the rest of Europe. Any such differences can generally be considered as “spurious correlations”, linked to the over- or under-representations of more or less wealthy and advanced regions within each GEOSPECS category. In general, an exercise of benchmarking the performance of GEOSPECS areas against a European average does not advance the discussion in the right direction. Instead, the endogenous opportunities and challenges of each area should be taken into account, as discussed below.

### **3.2.2 Beyond GEOSPECS areas: regional diversity in Europe**

While the diversity between and within GEOSPECS categories has been noted above from a European perspective, a view from the regional perspective reveals even more diverse situations. Geographic specificities can clearly overlap in a particular region, as discussed in section 1.2.5. Thus, a particular region can be faced with a combination of geographic specificities, which can reinforce both challenges and opportunities. Among the GEOSPECS case studies, the Highlands of Scotland are a particularly good example, as they include mountainous areas, SPAs, long stretches of coast, and islands. The Canary Islands are not only an OR, but also mountainous islands; the border triangle between Germany, Poland and the Czech Republic is mountainous as well; the sparsely populated Torne valley is also a cross-border region, as is the Jura massif; and so on.

It is important to note that the particular geographic specificity highlighted by regional and local stakeholders in these areas is generally determined by cultural, and in some cases also political factors, rather than by the relative importance or presumed socio-economic impact of the chosen specificity. The same point was made in the stakeholder consultation. One participant pointed out that she represents a region that is mountainous, coastal and sparsely populated, and went on to say that this kind of overlap creates challenges when implementing policies in practice. Others added that this is an argument against developing any “policy per geographic specificity” at European level (e.g. a “mountains policy”, an “islands policy”, “SPA policy”), as this kind of approach would create a very complex, potentially confusing situation for local authorities who implement measures on the ground.

Clearly, the described diversity of European regions is not exclusively attributable to geographic specificities, as a multitude of very different factors come into play. The most far-reaching of these may well be the climatic conditions, which create both North-South and West-East gradients; the mixed European history, which makes for a West-East gradient, in particular; and the strong core-periphery orientation which characterises the European territory in economic terms.

All factors taken together also determine how an individual region does and can deal with the impact of global challenges. “Regions 2020” (European Commission, 2008), for instance, tried to analyse the combined impact of globalization, demographic change, climate change and energy challenges (at NUTS 2 level). The resulting map “Intensity of multiple risks for European Regions” more strongly reflected a North-South gradient than any typology of geographic specificities – but the final paper also took care to note that “the outermost regions will be in the front line for many of these challenges”.

### 3.3 Nexus models as instruments for policy design

As shown in the previous section, GEOSPECS areas are extremely diverse, even within the same category, because geographic specificity is only one of many factors influencing the social, economic and environmental performance of any given territory. Taking account of geographic specificity in the design of policies is therefore not about defining indicators and criteria of geographic specificity, from which territories requiring dedicated sets of measures could be identified. The objective is rather to understand how geographic specificity influences the performance of any territory, all other factors being equal.

This is based on the idea that the purpose of policies is not only to correct differences and imbalances between territories. They also seek to optimise social, economic and environmental performance based on an understanding of the processes that explain current patterns and trends, and of potential opportunities and threats. The models showing the nexus of development factors – “nexus models” in short – introduced in section 2.4 have been developed for this purpose.

This approach has several advantages:

It demonstrates that geographic specificities prompt both challenges *and* opportunities: in order to achieve balanced development, it will be necessary to give due consideration to both, instead of focussing exclusively on one set or the other.

It demonstrates that geographic specificities entail a number of effects that, in turn, *influence each other*. A geographic specificity does not have simple linear effects; rather, a complex net of processes plays a role in each area. Recognition of this fact implies that any policy measure can have effects on several characteristics of the area – or, conversely, that several measures may be necessary to influence one particular aspect of the area.

Not only do the *effects* of geographic specificities influence each other but, in many areas, the geographic specificities themselves overlap. Such overlaps frequently serve to reinforce a (positive or negative) effect of geographic specificities. For instance, in the Scottish Highlands, the mountainous, sparsely populated and also coastal character of the area work together to form a landscape that both attracts tourists and creates potentials for renewable energies (“opportunities”), and entails challenges, as the combination of these specificities makes the area particularly inaccessible (making transport more expensive) and limits the number of enterprises (in turn favouring an over-reliance on public sector employment). This proves that policies need to be adapted to a specific situation; it is not enough to focus separately on the “mountain aspect” or “island aspect” (etc.) of a region.

Previous analyses of territorial development in Europe have come to similar conclusions. For example, ADE (2012) found that – in terms of ERDF intervention in geographically specific areas – “there is definitely a strong focus on ‘hard’ infrastructure”. Similarly, Copus & Hörnström (2011) claim that there is a “need to measure intangible assets better”. Here, the “nexus of development factors” model again shows its strength, as it makes apparent the levers not only for “hard” infrastructure (such as roads and internet connections), but also for “softer” measures (relating to intangible assets such as human and social capital).

It may be constructive to reiterate that the notions of challenges and opportunities were rather controversial in the GEOSPECS stakeholder consultations, and a topic of

strong debate in the stakeholder conference. Some participants stated that, as some handicaps (e.g., the remoteness of an island from the mainland) will *always* be challenges, some territories may find it more onerous to achieve the same (EU) goal than others, so that funding allocations should reflect this (following a logic of compensation). Other stakeholders disagreed, stating that it makes more sense to fund opportunities - rather than address problems - when trying to set a territory on a positive development path. One noted that a strategy that focuses on *existing* assets runs the risk of "killing in the egg" entrepreneurial activities that are not in line with existing assets, and could therefore hamper diversification of the economy.

In general, this discussion positions itself in the debate on "cohesion versus competitiveness" (Lennert & Robert, 2010, Dabinett, 2011). On one hand, the compensation of geographical handicaps could create "a level playing field" and thus lead to cohesion or spatial justice. On the other hand, the promotion of assets ("territorial capital") would be more in the logic of underpinning competitiveness. However, one may also argue that measures to "level the playing field" are part of a general line of argument focusing on the idea that increased competitiveness would be the key objective of the regions, rather than economic and social sustainability. An alternative approach would be to promote assets ("territorial capital") without focusing on external trade. This would imply that one focuses on how regional resources can help to generate a more robust internal economy, and on this basis increase the sustainability of local communities.

The nexus models for individual territories, as exemplified for the case studies (see section 2.4 and section 5 of the Scientific Report) are in this respect a starting point. They separately synthesise central challenges and opportunities, as well as intermediate processes leading to them. As such, they not only propose an overall assessment of the situation of the territory that is being considered, but illustrate the different ways in which policymakers could "apply the lever" in order to promote more balanced development. The nexus model can therefore serve multiple purposes in the process of designing policies for a given region or local community:

Help to generate a consensus on the territory's most significant distinctive features;

- Be a starting point for a cross-analysis of challenges and opportunities, by identifying situations where addressing a challenge would make it possible to exploit an opportunity, or where, in contrast, focussing on an opportunity would compensate for an identified challenge or alleviate its effects;
- Identify intermediate processes and soft factors that public policies may cost-efficiently influence, rather than trying to change defining features, or act directly on challenges and opportunities.

By synthesising the main social, economic and environmental causal processes related to a given GEOSPECS category across the ESPON space (see Annex A), the nexus models define the "syndrome", i.e. a set of 'symptoms' of advantage or disadvantage, with which it can be associated. As in a medical syndrome, the situation of territories with geographic specificities is characterised by a number of associated symptoms of disadvantage which, although they mutually reinforce the overall disadvantage experienced by these regions, are not necessarily connected in a causal sense. Thus, these models may be used to elaborate perspectives on how European policies may deal with geographic specificity (Gløersen, 2012). Recurring issues such as internal and external accessibility, lack of critical mass and the importance of soft factors, such as strong local identities and quality of life, for economic and social development suggest that corresponding sectoral policies could significantly improve development perspectives in GEOSPECS areas. This presupposes an understanding of the specific processes related to GEOSPECS areas, but not necessarily dedicated sets of measures for them.



The nexus models of both case study areas and GEOSPECS categories also suggest that some regions need different sets of economic rules to function in a sustainable way. Proactive and permanent public policies would be required to overcome challenges such as volatile unemployment in islands, lack of innovation hotspots in mountain areas, or youth out-migration within and from SPAs. This implies that these features are identified as forms of “market failure”; it is then a political decision to compensate for them or reduce their impact on the overall development of the concerned territories, justified according to the positive externalities they generate.

Discussions over the preservation of such externalities are confronted by economic realities. However, a functional approach on the diverse contributions of regions to overall performance may make it possible to go beyond dualistic debates which ask the question of what proportion of resources one should respectively devote to cohesion (equity) and competitiveness (economic growth). ESPON Project 3.2, *Scenarios on the territorial future of Europe*<sup>27</sup>, presumed that differences between cohesion and competitiveness would be increased by the concentration of activities in metropolitan areas and a more or less extensive “area of concentration of growth and activities” extending from the European core area or “Pentagon”. Analyses in the GEOSPECS project demonstrate that the scales at which these processes of concentration or diffusion occur in GEOSPECS areas are more complex and must consider the intra-regional scale. European debates on cohesion and competitiveness therefore need to focus on models of growth and development within regions, rather than on the convergence or divergence of regional levels of performance. Stakeholder dialogues have, furthermore, shown that the main concern is not to obtain subsidies but to be given the opportunity, through adapted regulatory frameworks, to preserve local communities in areas where there is an economic potential.

Finally, it is noteworthy that the perspectives on challenges and opportunities, although very relevant, focus on the short to medium term: more precisely, on how to generate economic growth (and thereby improve the living situation of the population) in this timeframe. Potential exists to broaden the debate on policy interventions to a more long-term perspective with a focus on “non-commodified” values or “positive externalities”. This aspect is further elaborated below.

Suffice it to say at this point that, at times, stakeholders will argue that regions with geographic specificities generate or maintain “positive externalities” or “irreplaceable resources” which benefit the population of Europe as a whole by increasing overall well-being. This refers, in the first instance, to natural capital, with the ensuing provision of vital ecosystem services as well as natural resources, as well as to social capital (contributing to Europe’s diversity and attractiveness), e.g. by helping to solve problems linked to demographic overconcentration in cities. Whether or not these externalities should be economically “internalised” by assigning market values to them, it will be necessary to reflect more strategically on what these services mean to the European continent, and how they can be adequately valued. This is part of a broad and long-standing debate on the internalisation of externalities (both positive and negative). Within this, the “pricing of ecosystem services”<sup>28</sup> has received attention in recent years.

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[http://www.espon.eu/export/sites/default/Documents/Publications/ESPON2006Publications/SpatialScenarios/espon3.2\\_60p\\_final\\_16-7-2007-c.pdf](http://www.espon.eu/export/sites/default/Documents/Publications/ESPON2006Publications/SpatialScenarios/espon3.2_60p_final_16-7-2007-c.pdf)

<sup>28</sup> For further consideration of ecosystem services and their values, see section 6.2.5 of the Scientific Report.

## 3.4 Multilevel governance

Territorial cohesion is about ensuring a balanced spatial distribution of activities and people. This requires coherence: ensuring that relevant policies from various sectors and levels form a coherent whole – a point reiterated many times during the consultation on the Green Paper on Territorial Cohesion. Coherent territorial governance requires vertical coordination, horizontal coordination, and territorial cooperation (cooperation between different territorial entities with the aim of identifying synergies resulting from interdependency) (Faludi & Peyrony, 2011). Why these three elements are particularly relevant when dealing with geographic specificities is set out below.

### Vertical coordination

The question *at which level* of policymaking to take geographic specificities into account is not trivial. During the stakeholder consultations (and more widely in policy documents), claims abounded that “top down” and “bottom up” approaches need to be balanced, since neither can achieve satisfying results *on its own*. As always, there is a long way from this general assertion to its practical implementation.

The term “multilevel governance” has a mixed history (see Faludi, 2011). While, from a scientific point of view, it is a complex concept (including public and private actors), in political rhetoric it is often used synonymously with coordination between tiers of *government*, i.e. spatially bounded public authorities (e.g., in the Committee of the Regions’ White Paper on Multilevel Governance<sup>29</sup>). Similar to the concept of subsidiarity, it is meant to give each level of *government* its proper place in a hierarchical constitutional order (Faludi, 2011).

It is probably this latter sense that stakeholders had in mind when they insisted on the importance of vertical coordination during the stakeholder conference. The discussion centred on the setup of Cohesion Policy in the forthcoming programming period (2014-2020). Many stakeholders commented on coordination issues, pointing to missing links between the different levels. For instance, the “partnership contract” approach suggested by the Commission was criticized for only linking the European to the national level, while leaving aside the interests of the regional level. For some Member States, stakeholders regarded the national level as “not ready” or “unclear” about territorial diversity. Thus, they demanded a role for the regional and local authorities in the process: the national level should be committed to coordinate with (or “listen to”) the regional authorities, and funds intended for the regions should not be diverted to national problems and/or national priorities by way of the Partnership Contracts. This implied a need for the early identification of problems/potentials by the regional authorities, leaving enough time to communicate the requirements to the national level. The “particular attention” to be paid to GEOSPECS areas according to the words of the Treaty would not be the sole responsibility of the European level, as regional and national actors would be actively involved.

It thus becomes clear that, for the regional stakeholders, the main issue is to “make their voice heard” at EU level. This is an issue of great importance, not only for the adequate consideration of geographic specificities, but beyond that: as one commentator has stated, “only thus will we avoid the failure of the EU 2020 strategy, as was the case with its predecessor, the Lisbon strategy which did not adequately engage local and regional authorities” (Banks, 2011).

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<sup>29</sup> <http://web.cor.europa.eu/epp/Ourviews/Documents/White%20Paper%20on%20MLG.pdf>

However, with particular consideration for geographic specificities, it may be helpful to move beyond this hierarchical understanding of multilevel governance and beyond a strict focus on administrative units. Economic spaces are usually not delineated by administrative divisions, but by common challenges and development opportunities experienced by a collection of local communities. In this way, **local economies belong to certain territorial ensembles** ("massifs" of mountain areas, islands or archipelagos for insular territories, "clusters" of SPAs). These economic spaces often overlap: an individual local economy can be embedded into, or integrated in, a number of these territorial ensembles. For local economies, an integrated development strategy thus needs to take into account this multiple territorial anchoring. Similar observations can be made for spaces of cultural identification and habitats/ecosystems, which are typically not congruent to administrative boundaries.

This comes close to what Marks and Hooghe (2003) refer to as "type II multilevel governance"<sup>30</sup> which "conceives of specialized jurisdictions that, for example, provide a local service, solve a common pool resource problem, monitor water quality in a particular river [...]. The scales at which jurisdictions operate vary finely, and there is no great fixity in their existence" (Faludi, 2011). However, it can also be described by the better known "place-based policy" of Barca: a "place" is "endogenous to the policy process"; it is a "contiguous area within whose boundaries a set of conditions conducive to development apply more than they do across boundaries" (Barca, 2009). "Places", in this terminology, are thus not pre-given as physical objects. Instead, they are formed and framed through specific practices and may be considered as social constructs. For GEOSPECS areas, this logic appears particularly relevant. Taking again the accessibility of islands as an example, it becomes clear that a targeted transport measure will be more relevant for the island as a whole (being removed from the mainland and thus reliant on sea or air connections) than for an area comprising both insular and mainland parts – thus defining the "place" for this particular measure. When nature conservation measures are defined, it will make more sense to consider an ensemble of coastal habitats (with all their particularities) than to consider a pre-defined region that may comprise coastal and inland habitats. A set of sparsely populated municipalities will face similar obstacles when trying to supply services to their citizens. When Barca refers to "places" as "functional areas", this does not correspond to areas organized around a node or focal point, with the surroundings linked to the node by, for example, transportation and communication systems, commuter flows, and economic linkages. "Functional areas" can be delineated on the basis of a number of social, cultural, ecological and economic interactions.

In addition, this type of approach allows the consideration of overlaps – not only between geographic specificities but also of "jurisdictions" for a particular topic, each with a different boundary. This kind of "fluid" understanding of place does not make policy implementation easier, but reflects more adequately the situation in GEOSPECS areas. This is not, however, a call for the establishment of new layers of government or new formal institutions, but rather for more effective forms of communication and cooperation (not limited to formal public authorities).

### **Horizontal coordination**

Many authors have criticized the excessive fragmentation of European policies, dispersed between many Directorates-General, offices, initiatives, programmes, and

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<sup>30</sup> In contrast, "type I multilevel governance conceives of dispersion of authority to jurisdictions at a limited number of levels [...]. The membership boundaries do not intersect [...]. In this form of governance, every citizen is located in a Russian Doll set of nested jurisdictions." (Faludi, 2011).

national traditions (Vanolo, 2010). The idea of the need for better coordination between sectoral policies has been fully developed in the Green Paper on Territorial Cohesion, and the responses to the Green Paper in the consultation were almost unanimous in demanding stronger coordination of European policies with territorial dimensions and impacts (European Commission, 2009b). The need for coherence between rural and regional policies has been mentioned particularly often (Copus & Hörnström, 2011; European Commission, 2009b; Ministry of National Development of Hungary, 2011). The goal of territorial cohesion is to reduce regional disparities by increasing the coherence of sectoral policies with spatial impacts, and regional policy (Copus & Hörnström, 2011).

This demand is certainly not exclusive to regions with geographic specificities. However, some stakeholders find that it is particularly important for these. Along with general considerations (such as the more effective delivery of coordinated policies), it is mentioned that it is often in these economically, socially and environmentally fragile areas that sectoral policies interact most dramatically and rapidly<sup>31</sup> (Euromontana, 2009; AEM, 2009; CPMR Islands Commission, 2009).

This concern is being addressed in the current Commission proposal for the next programming period, by proposing a “Common Strategic Framework” (CSF) which would apply to the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund, and also the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EFF). In this way, the most important funding lines are given a common orientation: to focus on the implementation on Europe 2020. This proposal was warmly greeted by stakeholders during the GEOSPECS stakeholder conference.

### **Territorial cooperation**

Territorial cooperation is relevant for GEOSPECS areas for several reasons. First, geographic specificities do not stop at borders; though it should be recognised that many borders have been drawn at a topographic barrier, such as a river or along the summits of a mountain range, and that coasts are a natural border. When considering the functional integration of these territories (see above), it is necessary to take into account cross-border (but also transnational) interactions and interdependencies. The TeDi project (Nordregio et al., 2010) noted that “the European level has an obvious role to play in promoting such territorial cooperation beyond national borders. Using the established instruments for territorial cooperation and adapting them to the specific conditions of TeDi areas is therefore a promising option”<sup>32</sup>. Recognising that border areas in mountain massifs, or border areas at coasts, share similar issues, the outcomes of GEOSPECS can help to design better territorial cooperation. The importance of GEOSPECS categories in current adopted or emerging macro-regional strategies is obvious, as the Alpine and Carpathian initiatives are built around mountain massifs, while the Baltic, Adriatic-Ionian and Atlantic initiatives focus on coastal zones.

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<sup>31</sup> For example, in mountain areas, agricultural activity structures both the landscape and the economy, so that the integration of agricultural policies to transversal dynamics (regarding tourism, and culture, for instance) is more apt to achieve results for all parts of society (see reaction to Green Paper from the Comité de Massif des Pyrénées).

<sup>32</sup> Both “TeDi area” and “GEOSPECS area” refers to an area *with geographic specificity*. The difference is that TeDi referred to mountains, islands and sparsely populated areas, whereas GEOSPECS addresses mountains, islands, sparsely populated areas, border areas, coastal zones, Outermost Regions, and Inner Peripheries.

Border regions are – secondly – in themselves a type of specificity considered by the GEOSPECS project. Territorial cooperation brings benefits such as the creation of a critical mass for development, approaches to decrease or limit the fragmentation of ecosystems, and the building of mutual trust and social capital (Ministry of National Development of Hungary, 2011). Therefore, cooperation across administrative borders is a factor for enhancing smart, sustainable and inclusive growth; and the dismantling of barriers along borders is at the heart of European integration. This is common knowledge, and the INTERREG programme has been stimulating cooperation since 1989. However, the logic of INTERREG programmes has been criticized for often still failing to address the actual cross-border aspects; the SWOT analysis of many INTERREG programmes resembles the logic of the Convergence programmes, in that they analyse variables such as GDP/head and population size, instead of focussing on cross-border issues such as transport *flows*, workforce *mobility*, population *migration* (Böhme et al, 2011). This is an illustration of a point made above: the issue for GEOSPECS areas is not to be benchmarked against the performance of other areas, but rather to take advantage of their specific attributes (e.g., in the case of border areas, positive changes resulting from cross-border cooperation).

### **3.5 Towards balanced social and economic development in GEOSPECS areas**

As mentioned above, taking advantage of the specific attributes of GEOSPECS areas may require a combination of permanent compensatory measures that address structural and permanent imbalances and focused public interventions “one-off interventions” that focus on specific situations.

This principle has different implications depending on the GEOSPECS category. The general typology of border effect (see Table 11 p. 125 of the Scientific Report) suggests that most borders primarily require specific, spatially-focussed efforts, particularly to overcome negative border effects resulting from different regulatory and administrative systems and to bridge infrastructure systems on each side of the border. At the other end of the scale, ORs require permanent measures to compensate for their handicaps. This is primarily due to institutional and political barriers which make a radical shift in development strategies impossible. The situation might change if the respective governments stopped supporting traditional sectors and reduced the attractiveness of employment in public services, and focused on developing competitive export-oriented activities. However, considering the social risks of such a strategy in ORs with high unemployment, and the likelihood of limited political support, the need for permanent compensatory schemes remains. Temporary efforts, e.g. encouraging better use of ICT and promoting sustainable modes of energy production, can reduce the extent of structural imbalances in ORs, but will not remove the need for perennial compensatory schemes.

In SPAs, various strategies can be envisaged to overcome the barrier of isolation:

- Efforts to increase connectivity of firms (especially small ones), in terms of both 'hard' infrastructure improvements, e.g., bringing together local communities through road and rail investments and developing access to global 'gateways' such as seaports, and 'soft' networking, e.g., by developing more collaborative attitudes between local economic actors both public (local

and regional economic development organizations, trade organizations...) and private (small firms).

- Intra-sectoral enlargement: an enlarged labour-market makes it possible for firms involved in a sector to pool resources, e.g. labour force and supplies, and mutualise transportation and transaction costs currently borne by a small proportion of the firms, with a higher cost per firm. One example is the Nordic Business Link, aiming to promote stronger integration of north Finnish, Norwegian and Swedish small firms working in renewable energy, environmental engineering, services connected to IT or telecom technology sectors, and especially to support firms to further develop their networks and know-how on international markets.
- Inter-sectoral enlargement: using traditional economic activities as a springboard to develop emerging economic activities, thus fostering innovation spillovers and capital investments across sectors. As argued in the case of economic restructuring in mountainous and sparsely populated municipalities of Northern Sweden: "Adopting the framework of Neil and Tykkyläinen (1998), mountain municipalities in Sweden are examples of geographically peripheral areas that have undergone employment change and subsequent restructuring through reduced public spending and reduced importance of resource extraction and refinement. Tourism, then, is an example of a sectoral shift from the dominating industry and public sector employment towards a more diversified economy in which both tourism and traditional sectors are represented. To further draw on the framework by Neil and Tykkyläinen (1998), forestry and related industries also play a part in the restructuring process. Although the significance of forest resource extraction and refinement on employment has decreased, it is still one of the most important export products in the northern economies of Sweden and Finland." (Lundmark, 2006, p10)

Comparable approaches could usefully be transposed to other types of geographic specificities such as mountain areas and islands. However, for these categories, it is particularly clear that policies should not be designed at the level of NUTS 2 or NUTS 3 regions. Challenges in terms of demographic and economic critical mass and internal and external connectivity occur and need to be addressed at the level of individual islands or valleys, and of regions.

The nexus models have also demonstrated that the challenges of GEOSPECS areas derive from interactions between a variety of factors, including direct effects of geographic specificity, social and economic features inherited from previous periods, and a number of intermediate processes. Addressing them in a coherent and coordinated way presupposes an understanding of how these different factors co-exist and interact, and cross-sectoral strategies and measures.

Proposals for a coordinated and integrated multi-fund delivery framework in European Cohesion Policy for the forthcoming programming period (2014-2020), with operational programmes combining funding from the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF) to facilitate joint planning, implementation, monitoring and evaluation therefore offer particularly promising perspectives for GEOSPECS areas. However, as highlighted by the study of Artmann et al. (2012) on rural-urban development, it is regrettable that this multi-fund programming only applies to the Structural Funds and not to the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF), which are particularly relevant for a number of mountainous, sparsely populated, coastal and insular areas. The coordination with these funds will, as previously mentioned, be organised at the level

of the Common Strategic Framework (CSF) and of the national Partnership Contracts. While this is, as described in section 3.4, an improvement compared to the previous situation, one may question the extent to which it will make it possible to take proper account of the specific challenges of GEOSPECS areas. First, specific situations for balanced social, economic and environmental development linked to geographic specificity are primarily observed at the sub-regional level, e.g. remote valleys and individual small islands. Second, the functional areas linked to geographic specificity are in many cases transnational, e.g. many mountain massifs, coastal areas facing a shared sea and, obviously, border regions. More flexible arrangements, in which actors at different levels could contribute more actively to the design and implementation of Cohesion Policy, are needed to address the specific challenges and opportunities of GEOSPECS areas.

Community-led local development, also promoted by the European Commission as an instrument for the 2014-2020 Structural Funds Programming Period, in this respect offers promising perspectives. This is based on previous experiences under the LEADER programme, the Urban Pilot Projects and the URBAN Community initiative programmes funded by the ERDF and the EQUAL initiative funded by the ESF (European Commission, 2012). However, the approach to Community-led local development will be defined by the Member States in their Partnership Programmes, and their thematic focus will be limited by the Operational Programmes under which they seek funding. While this may generate some interesting experiences dealing with socio-economic challenges linked to geographic specificity in some parts of Europe, it is therefore unlikely to trigger a change in the orientation of European policies.

However, the analysis of GEOSPECS areas permits the identification of a range of fields of action of relevance for these areas that can be approached independently from Cohesion Policy:

- Seasonality in employment, e.g. in tourism, needs to be integrated with other employment opportunities and other sectors. Arrangements to facilitate these forms of multi-activity would contribute to improving the perspectives of balanced development in GEOSPECS areas.
- ICT is a major potential driver for growth in all GEOSPECS areas but, as often noted, private actors alone will not provide the necessary levels of access to ICT and broadband internet. Considering the positive externalities of such investments, more systematic public policies to promote access to ICT across Europe appears as a promising option of particular relevance for GEOSPECS areas. While the Structural Funds objective "Connecting Europe Facility for transport, energy and ICT", with a budget of 50 billion Euros in the proposal of the European Commission, could contribute to addressing this issue, it will be necessary to specifically focus on areas where the market basis for the provision of ICT services by private companies is limited.
- Most GEOSPECS areas have a particular potential for local, small- or medium-scale energy production. Investments in alternative renewable sources of energy could therefore be expected to have a particularly strong impact in these areas. The current European monitoring of renewable energy production, based on the 2009 Directive on the promotion of the use of energy from renewables<sup>33</sup>, only focuses on the national level. To take better

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<sup>33</sup> Directive 2009/28/EC of the European Parliament and of The Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

URL: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:EN:PDF>

account of the specific preconditions of coastal, mountainous, insular and sparsely populated areas for the production of renewable energy, and the particular vulnerability of some of these areas to uncertainties with regard to energy supply, requires dedicated monitoring of energy related issues in these areas.

- Service provision: Developing innovative methods of service provision is important to maintain the attractiveness of GEOSPECS areas for not only residents, but also visitors. The challenge from the European perspective is that expectations with regard to service provision vary considerably from country to country; it is therefore difficult to define a "standard level" against which each territory can be benchmarked and the need for improvements can be assessed. However, the diffusion of methods to provide services more cost-efficiently in areas with limited populations can be useful in all regions. Even if the ESPON SeGi project notes that "that there is little evidence to suggest that liberalisation has had a negative impact on overall performance, at least as far as affordability and the provision of universal service is concerned" (Rauhut, Borges et al., 2011) in its interim report, evidence from the GEOSPECS case study areas suggests the need for continuous monitoring of how regulatory frameworks for service provision affect GEOSPECS areas.
- Higher education: Out-migration of young people seeking higher education is a key issue in a number of GEOSPECS areas. The promotion of smart growth as part of the Europe 2020 strategy risks accentuating these imbalanced demographic flows. It is therefore all the more important to develop compensatory measures, encouraging young people from GEOSPECS areas to return after graduation, and other graduates to move to these areas. Branding measures, addressing perceptions of these areas, and measures that enhance the quality of life for young people in GEOSPECS areas experiencing such migratory patterns can therefore contribute to improve their development perspectives.

As exemplified by these points, while geographic specificity may be a relevant dimension for a number of sectoral policies, it also requires a holistic approach within each territory. There is also a risk of encouraging inward-looking approaches to territorial development through a focus on GEOSPECS categories; yet, the objective should be to organise balanced and mutually beneficial forms of cooperation both between GEOSPECS areas and with their surroundings, such as piedmonts for mountain areas, mainlands for islands, or cities for SPAs. The experience accumulated in cross-border cooperation programmes, within the fields of both cooperation and comprehensive planning, could be a source of inspiration in this context.

### **Ecosystem services and environmental vulnerability**

As noted in Section 2.2, many GEOSPECS areas provide ecosystem services that are of value not only within these particular areas, but also at the European scale. At the same time, the continued delivery of these vital services may be compromised by on-going processes – such as biodiversity loss, the degradation of ecosystems, and pollution – and, increasingly, as a result of climate change, which may cause both gradual changes and very rapid ones, particularly as the result of extreme events such as floods, storms, droughts, and fires. Specific measures have been developed and implemented to address such issues at various scales, particularly for the EU and individual States, as well as for particular GEOSPECS categories.



At the scale of the EU, the conservation and effective management of valuable species and ecosystems are particularly addressed through the Birds and Habitats Directives, complemented by national and, in some cases, sub-national legislation – and also in States outside the EU. These instruments are especially relevant for GEOSPECS areas because of the high levels of biodiversity and high proportions of protected areas that most of these – with the main exception of SPAs – contain. Nevertheless, despite the protection afforded through these EU instruments, only a small proportion of the concerned habitats and species are in a favourable conservation status (though this assessment is also complicated by lack of data for many habitats and species, especially from the countries of southern Europe) (European Commission, 2009a). These assessments, dating from 2006, can only be linked to GEOSPECS areas to a certain extent. Nevertheless, it should be noted that coastal habitat types are among those under the greatest pressure, from tourist and urban development. The only GEOSPECS category for which specific data are available is mountains, with overall, 21% of habitats in favourable status, 60% in unfavourable status, and 18% unknown (EEA, 2010). It should be noted, however, that while the proportion in favourable status appears low, one criterion for listing was threat or historical decline – but also that, for almost all EU Member States, the proportion of habitat types in mountains is higher than outside them.

Such findings suggest the need for further action by Member States to maintain or improve the quality of populations of key species and ecosystems, recognising not only their intrinsic value but also, as discussed in section 2.2, their various current and potential contributions to development. In this context, the cross-compliance measures for key species and habitats included in the CAP are of relevance for all GEOSPECS areas, as are the proposals under Article 9 of the proposed regulation on common provisions for the CSF Funds in the 2014-2020 Structural Funds Programming Period “Protecting the environment and promoting resource efficiency”. However, a particular need is for the implementation and evaluation of such policies to be based to a greater extent on recognition of the positive externalities (including ecosystem services) of GEOSPECS areas, as recommended, for instance, by The Economics of Ecosystems and Biodiversity (TEEB) study<sup>34</sup> and currently being taken further in a study launched by the European Commission<sup>35</sup>. More specifically, future cross-border actions to protect and conserve fragile ecosystems and valuable landscapes within European Territorial Cooperation, as in past INTERREG programmes, should be encouraged. Similarly, ICZM increasingly takes ecosystem services into account: a trend that appears of particular relevance given the high pressures on coastal habitats that should be taken into account in the emerging Marine Spatial Planning (MSP) Directive.

In the wider context of addressing both shorter- and longer-term aspects of environmental vulnerability, the same instruments are also of relevance both for GEOSPECS areas in general and for particular geographical specificities, such as borders and coasts. For the latter, as well as for islands, two pillars of the 2014-2020 EMFF – sustainable and inclusive territorial development, and integrated maritime policy – also offer particular potential. In relation to climate change, measures for both mitigation and adaptation are relevant, and are particularly considered under the thematic objective ‘Promoting climate change adaptation, risk prevention and management’ of the CSF Funds. Mitigation, addressed specifically in the 20-20-20 headline indicator of Europe 2020 for climate change and energy, includes actions relating to the development and efficient use of the energy resources, especially renewables, which are especially abundant in GEOSPECS areas

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<sup>34</sup> <http://www.teebweb.org/>

<sup>35</sup> <http://www.teebweb.org/InformationMaterial/TEEBUpdates/tabid/1137/Default.aspx>

(except border areas). Again, proposals for the 2014-2020 Structural Funds to support the shift towards a low-carbon economy are key; and equally would support the development of many GEOSPECS areas. For ORs in particular, such measures have already been very valuable.

Measures for adaptation to climate change inevitably require integrated approaches, and thus instruments such as ICZM, River Basin Management Planning (Water Framework Directive), Flood Risk Management Plans (Floods Directive) and, more widely, the Ecosystem Assessment Platform established by the EEA<sup>36</sup> are relevant. As discussed in section 2.2, the greatest needs are probably for coasts (and implicitly, islands), as these are most vulnerable to climate change. However, as discussed in previous sections, integrated – rather than primarily sectoral – policies are necessary to address both the challenges and opportunities of all GEOSPECS areas, taking into account both continued long-term trends and the added challenges of climate change. Finally, while planning for future scenarios, and policies to move towards desirable ones, are essential, so is the knowledge and expertise necessary to move in these directions. Recognising the particular challenges and opportunities of GEOSPECS areas, as exemplified in the nexus models, implies also the need for specialised education, training and research focussing on these particular areas, which should be implemented through actions taken, in particular, through the 2014-2020 Cohesion Policy.

### **Policy options at the European level**

Other issues raised in the case studies concern the limited local and regional economic returns of economic activities, creating socially and economically unsustainable situations.

Hence:

- It is not necessary to install a policy or funding line “per geographic specificity”. Rather, it makes more sense to establish development strategies that take into account the particular situation of each region, i.e. applying a case-by-case evaluation (since a number of factors – whether deriving from different geographic specificities or other origins – interweave in each area to create the particular situation). In this regard, it is necessary to consider the regions not only individually, but in relation to their adjacent regions. Neighbouring regions within the same territorial ensemble will face similar situations, and cooperation between them can unleash synergies (this includes interactions across administrative boundaries). This should go hand in hand with further horizontal coordination of policies.
- Further progress should be made in moving away from viewing geographic specificities as “handicaps” and towards recognizing their assets. This means that while it should not be denied that regions with these specificities face challenges, there is a need to balance “compensation” and “promotion” efforts. In the long run, it would be necessary to reflect on how “non-market values” or positive externalities can be valued adequately – instead of focusing purely on growth in GDP. This would be complemented by a reconsideration of the current benchmarking/indicator system.
- Challenges and opportunities should be addressed jointly, e.g. by identifying the resources and possibilities that could be exploited if some key social obstacles were overcome. Better account should be taken of specific forms of

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<sup>36</sup> <http://biodiversity.europa.eu/ecosystem-assessments/>

ecological vulnerability associated with some GEOSPECS categories when formulating development objectives

- The “monolithic” character of the EU2020 strategy needs to be challenged, incorporating the different types of ambitions and strategies across Europe, and actively supporting local communities in the formulation of development models that are adapted to their specific conditions. The objective, as previously noted by ESPON TeDi, is to focus on identifying how GEOSPECS areas may manoeuvre to design development strategies that are not dependent on agglomeration economies, and on the need these areas may feel to free themselves from norms, regulations and standards imposed by core regions (Giraut, 2009).
- There is a need to focus on the improvement of frameworks for dialogue between the European, national and regional level, with less focus on benchmarks and a more robust method for assessing potentials, discussing on-going potentials and identifying the key processes to be targeted by policy measures.

## **4. Options for evidence-informed GEOSPECS policies**

### **Addressing methodological shortcomings and data gaps**

Given the primary focus on LAU2 data, the key challenge for the TPG was the lack of tools for analysing and mapping LAU2 data within the ESPON programme. Consequently, the TPG constructed a new mapping template and compiled new administrative boundary maps, relying on the networks of partner organisations to compile boundary maps in the Western Balkans and Turkey. While these actions allowed the TPG to overcome the most important initial data gaps, the resources that had to be allocated to these preparatory tasks exceeded the budget forecasts.

The capacity of individual ESPON projects to compile new LAU2 data for the ESPON space from national sources is limited. For GEOSPECS, the TPG compiled data on employment per NACE categories for 32 ESPON countries, opening new perspectives of research on territorial structures. Wider collection of LAU2 data is possible, but this would require the allocation of additional resources. Compiling and processing historical LAU2 data is particularly challenging, not least because of changes in boundaries. The construction of a framework for the integrated analysis of LAU2 data for different years, e.g. making it possible to estimate data for one set of LAU2 boundaries on the basis of data corresponding to a variety of boundaries, would greatly facilitate this type of endeavour.

### **An improved framework for multi-level dialogue**

The variety within and between GEOSPECS categories makes it impossible to make any claims that hold true for all these categories. The GEOSPECS areas are as diverse as Europe as a whole, including both highly successful regions (in economic terms) and lagging regions. Other analyses have come to the same conclusion (Monfort, 2009; Ministry of National Development of Hungary, 2011). In addition, the categories included in the project are diverse, ranging from truly “geographic” specificities (mountains, islands, coasts, ORs) to others that are more “demographic”

(SPAs) and “political” (borders). Arguably, other areas could claim “specificity” in a similar manner (regions in economic transition, peripheral areas, deprived districts of large cities, arctic zones, etc).

The final report of the TeDi project noted that “observing the recurring features in this respect, such as access to services of general interest, modern logistics and communication centres, vicious demographic circles leading to continued demographic decline and depopulation, one can hypothesise that the most efficient way of addressing the development of TeDi areas may not be a ‘mountain’, ‘island’, or ‘sparsely populated areas’ policy, but coordinated strategies addressing these key themes in a balanced territorial development perspective” (Nordregio et al., 2010). For GEOSPECS, such “recurring features” could not be identified if all categories are taken into consideration simultaneously. However, it holds true that a “policy per geographic specificity” is not the best way forward, given the diversity of situations within each specificity. Beyond the strong diversity within categories, it is mainly the vast potential for overlaps (i.e. the plethora of local situations created by the overlapping of different geographic specificities and other characteristics) that would make such an approach difficult to implement at local or regional level.

The reasons for a region being “lagging” derive from the interplay of several factors, and it should be recognised, first, that the presence of more than one geographic specificity in a region can reinforce a challenge and, second, that other – historical, economic, social, etc. – factors also play a role independent of geographic specificity. Furthermore, such statements apply to not only challenges but opportunities. A development strategy thus has to take the specific context of the area into account. In other words, a *case-by-case approach* is more valid than attaching particular funding lines to geographic conditions.

This implies that the key need is to propose an improved framework for dialogue between the European, national, regional and local levels, making it possible to reflect unique patterns of opportunity and challenges in each territory. This improved framework would include:

- ***A general method for the assessment of local situations***, with a focus on potentials and challenges, rather than on comparisons of performance. Nexus models could be part of such a general method. European initiatives to promote a more systematic recourse to stakeholder involvement through foresight workshops and visioning exercises would make it possible to further enhance the focus on possibilities in each area, and to pinpoint key obstacles to local development with greater precision.
- ***Support to the formulation of development models adapted to local conditions***. The case studies have shown that, while local actors are well aware of challenges and opportunities, they do not necessarily have the resources and capacity to produce a development model that would evaluate the consequences of their specific development conditions. Instead, there is a tendency to import external models that are not necessarily fully adapted.
- ***Better access to data***. GEOSPECS has shown that local data of sufficient quality to assess local situations can be compiled, but that this requires an appropriate framework and substantial efforts. A ***European observatory of local development conditions*** is needed, to maintain and update such a database and produce targeted analyses, e.g. supporting community-led local development initiatives. There is a window of opportunity to establish such an observatory now, as data from decennial censuses that have been held in many European countries in 2010-2011 are becoming available.

- **Improved quantitative analyses of local situations.** The GEOSPECS project has demonstrated that it is possible to construct datasets that focus on each local area's context for social and economic development, rather than considering individual LAU2 areas as "isolated islands". The calculation of "45 minute potentials" has been applied to population in the project, but could be used for many other indicators, e.g. unemployment, dependency ratios, and income levels. These calculations are technically complex and require significant computing power. However, once produced, such indicators can easily be made available for local and regional actors or feed into targeted analyses of individual local areas. It would be necessary to create a structure to produce and disseminate such data, which are a real alternative to data at the NUTS 3 level when assessing the contexts for local development.
- **Alternative methods for analyses at the NUTS 2 and 3 levels.** Analyses at the level of NUTS regions will remain a major basis for the design and implementation of European policies. However, local data such as those collected by GEOSPECS, and data based on "45 minute potentials", can be used to produce alternative indicators that do express not an average regional profile, but the proportion of inhabitants or employees experiencing patterns or trends that call for public interventions (e.g. number of persons living in a functional context with declining population, high unemployment or high age dependency rates). This type of approach would be particularly useful in GEOSPECS areas, which are often characterised by strong intra-regional contrasts.

In the stakeholder conference, the idea of a "**matrix approach**" was discussed, i.e., a catalogue of indicators could be applied across all of Europe (in which geographic specificities and their effects would be indicators alongside others). This would allow the potentials and needs of each territory to be studied and taken into consideration adequately. The combination of characteristics would indicate which sector(s) require(s) intervention. It appears likely that this type of approach would be most applicable to Cohesion Policy. In any case, this would require the definition of "**smarter**" indicators that go beyond the current focus on GDP.

Indicators are also a more general matter. Current EU policies (particularly Cohesion Policy) focus strongly on benchmarking, i.e. comparing a region to the "European average" and, on this basis, assessing the need for intervention (or not). On one hand, this attempt to level out differences between regions without due consideration for their specific potentials (and underlying processes) is not apt to lead to an answer that is appropriate across all parts of the region. Even more importantly, however, it does not reflect the important "positive externalities" that these regions may be able to offer to Europe as a whole. As noted above, many of these regions provide **goods and services that do not receive market pricing** (and thus are not reflected in figures of GDP etc.), ranging from strategic reserves of natural resources to services such as carbon sequestration, air purification, hazard prevention, and recreational values for visitors. The need to define new indicators has been recognized, at not only European but also national level, where a number of political initiatives have formed to debate benchmarks for development, but also "limits for growth" in more general terms.

## References

- ADE (2012). *Study on the relevance and the effectiveness of ERDF and Cohesion Fund support to Regions with Specific Geographical Features – Islands, Mountainous and Sparsely Populated areas*. Final Report: Volume 1. Report prepared by ADE at the request of the European Commission.  
URL: [http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/pdf/eval2007/geographical\\_final1.pdf](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/geographical_final1.pdf)
- AEM - EUROPEAN ASSOCIATION OF ELECTED REPRESENTATIVES FROM MOUNTAIN REGIONS (2009). *Position of the Executive Board on the Green Paper on Territorial Cohesion*.  
URL: [http://ec.europa.eu/regional\\_policy/archive/consultation/terco/pdf/4\\_organisation/86\\_aem\\_en.pdf](http://ec.europa.eu/regional_policy/archive/consultation/terco/pdf/4_organisation/86_aem_en.pdf)
- ARTMANN, J., HUTTENLOHER, C., KAWKA, R. AND SCHOLZE, J. (2012). *Partnership for sustainable rural-urban development: existing evidences*. Study commissioned by the European Commission n° 2011.CE.16.0.AT.017, German Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBsR) and Deutscher Verband für Wohnungswesen, Städtebau und Raumordnung e.V.
- BANKS, M. (2011). *Regions 'crucial' to success of EU 2020 strategy*. Online article of 13 December 2011 on TheParliament.com.  
URL: <http://www.theparliament.com/latest-news/article/newsarticle/regions-crucial-to-success-of-eu-2020-strategy/>
- BARCA, F. (2009). *An Agenda for a Reformed Cohesion Policy. A place-based approach to meeting European Union challenges and expectations*. Independent Report prepared at the request of Danuta Hübner, Commissioner for Regional Policy.  
URL: [http://www.eurada.org/site/files/Regional%20development/Barca\\_report.pdf](http://www.eurada.org/site/files/Regional%20development/Barca_report.pdf)
- BÖHME, K., DOUCET, P., KOMORNICKI, T., ZAUCHA, J. & ŚWIĄTEK, D. (2011). *How to strengthen the territorial dimension of 'Europe 2020' and the EU Cohesion Policy*. Report based on the Territorial Agenda 2020, prepared at the request of the Polish Presidency of the Council of the European Union. Warsaw.  
URL: [http://www.mrr.gov.pl/rozwoj\\_regionalny/Prezydencja/Documents/Background\\_report\\_territorial\\_dimension\\_of\\_EU2020\\_CP.pdf](http://www.mrr.gov.pl/rozwoj_regionalny/Prezydencja/Documents/Background_report_territorial_dimension_of_EU2020_CP.pdf)
- COPUS, A. & HÖRNSTRÖM, L. (eds.) (2011). *The New Rural Europe: Towards Rural Cohesion Policy*. NORDREGIO Report 2011:1. Nordregio, Stockholm.
- CPMR ISLANDS COMMISSION (2009). *Green Paper on Territorial Cohesion: Submission by C.P.M.R Islands Commission*.  
URL: [http://ec.europa.eu/regional\\_policy/archive/consultation/terco/pdf/4\\_organisation/94\\_cpmr\\_islands\\_en.pdf](http://ec.europa.eu/regional_policy/archive/consultation/terco/pdf/4_organisation/94_cpmr_islands_en.pdf)
- DABINETT, G. (2011) *Promoting Territorial Cohesion and Understandings of Spatial Justice*, Paper for the DG Regio, Regional Studies and Slovenia Government Office for Local Self-Government and Regional Policy Conference: What future for Cohesion Policy? An academic and policy debate. Sava Hoteli Bled, Slovenia, 16 – 18 March 2011.  
<http://www.regional-studies-assoc.ac.uk/events/2011/mar-slovenia/papers/Dabinett.pdf>
- DEBARBIEUX, B. & RUDAZ, G. (2010). *Les faiseurs de montagne*, CNRS Editions, Paris.
- DIJKSTRA, L. & POELMAN, H. (2011). *Regional typologies: a compilation*. Regional Focus no 01/2011, European Commission, DG REGIO, Brussels.
- EEA (2006). *The changing faces of Europe's coastal areas*. EEA Report No. 6/2006. European Environment Agency, Copenhagen.

EEA (2010). *Europe's ecological backbone: recognising the true value of our mountains*. EEA report No 6/2010. European Environment Agency, Copenhagen.

ESPON & IRPUD (2011). *ESPON Climate – Climate Change and Territorial Effects on Regions and Economies*. Applied Research 2013/1/4. Final Report. Scientific Report. TU Dortmund University.

URL: [http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/CLIMATE/ESPON\\_Climate\\_Final\\_Report-Part\\_C-ScientificReport.pdf](http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/CLIMATE/ESPON_Climate_Final_Report-Part_C-ScientificReport.pdf)

EUROMONTANA (2009). *The Green Paper on Territorial Cohesion 'Turning territorial diversity into strength' - Response to consultation*.

URL: [http://ec.europa.eu/regional\\_policy/archive/consultation/terco/pdf/4\\_organisation/114\\_euromontana\\_en.pdf](http://ec.europa.eu/regional_policy/archive/consultation/terco/pdf/4_organisation/114_euromontana_en.pdf)

EUROPEAN COMMISSION (2008). *Regions 2020. An Assessment of Future Challenges for EU Regions*. Commission Staff Working Document.

URL: [http://ec.europa.eu/regional\\_policy/sources/docoffic/working/regions2020/pdf/regions2020\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docoffic/working/regions2020/pdf/regions2020_en.pdf)

EUROPEAN COMMISSION (2009a). *Composite report on the conservation status of habitat types and species as required under Article 17 of the Habitats Directive*.

URL: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0358:FIN:EN:PDF>

EUROPEAN COMMISSION (2009b). *Territorial Cohesion: unleashing the territorial potential*. Background Document to the Conference on Cohesion Policy and Territorial Development: Make Use of the Territorial Potential on 10-11 December 2009, Kiruna, Sweden.

URL: [http://ec.europa.eu/regional\\_policy/archive/consultation/terco/kiruna\\_20091211.pdf](http://ec.europa.eu/regional_policy/archive/consultation/terco/kiruna_20091211.pdf)

EUROPEAN COMMISSION (2011). *Guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones with particular attention to port development and dredging*.

URL: [http://ec.europa.eu/transport/maritime/doc/guidance\\_doc.pdf](http://ec.europa.eu/transport/maritime/doc/guidance_doc.pdf)

EUROPEAN COMMISSION (2012). *Factsheet on Commission-led local development – Cohesion Policy 2014-2020*.

URL: [http://ec.europa.eu/regional\\_policy/conferences/od2012/doc/community\\_en.pdf](http://ec.europa.eu/regional_policy/conferences/od2012/doc/community_en.pdf)

EUROSTAT (2010). *Portrait of EU coastal regions, Statistics in Focus: Agriculture and Fisheries*. 38/2010. European Commission.

FALUDI, A. (2011). *Multi-level (Territorial) Governance: Three Criticisms*. Paper published on the online platform CoesioNet.

URL: <http://www.sciencespo.fr/coesionet/sites/default/files/Faludi%20-%20Multi-level%20%28Territorial%29%20Governance%20-%20Three%20Criticisms.pdf>

FALUDI, A. & PEYRONY, J. (2011). *Cohesion Policy Contributing to Territorial Cohesion – Future Scenarios*. In: *European Journal of Spatial Development*. Article no. 43.

GLØERSEN, E. (2012) "Renewing the Theory and Practice of European Applied Territorial Research on Mountains, Islands and Sparsely Populated Areas" in *Regional Studies: The Journal of the Regional Studies Association*, Vol. 46, No. 4, 1 April 2012, pp. 443-457.

GIRAUT F. (2009) « Innovation and territories; The contradictory effects of marginality » , *Revue de Géographie Alpine/Journal of Alpine Research* 97(1).

URL: <http://rga.revues.org/index785.html>

KRUGMAN, P. (1991). *Geography and Trade*. MIT Press, Cambridge.

LENNERT, M. and ROBERT, J. (2010) The territorial futures of Europe: 'Trends', 'Competition' or 'Cohesion', *Futures*, Vol. 42, Issue 8, pp. 833-845.

- HOOGHE, I. (2003). *Unraveling the Central State, but how? Types of Multi-level Governance*. In: American Political Science Review, Vol. 97:2, pp. 233-243.
- LUNDMARK, L. (2006) *Restructuring and Employment Change in Sparsely Populated Areas: Examples from Northern Sweden and Finland*, Akademisk avhandling, Kulturgeografiska institutionen, Umeå universitet, GERUM 2006:2  
URL: <http://umu.diva-portal.org/smash/get/diva2:144557/FULLTEXT01.pdf>
- MINISTRY OF NATIONAL DEVELOPMENT OF HUNGARY (2011) *The Territorial State and Perspectives of the European Union, 2011 update, background document for the Territorial Agenda of the European Union 2020*.  
URL: [http://regionalspolitika.kormany.hu/download/8/fa/00000/Territorial%20State%20and%20Perspectives%20of%20the%20EU%20%28TSP%29\\_.pdf](http://regionalspolitika.kormany.hu/download/8/fa/00000/Territorial%20State%20and%20Perspectives%20of%20the%20EU%20%28TSP%29_.pdf)
- MONFORT, P. (2009). *Territories with specific geographical features*. European Commission, Regional Policy Working Paper no. 2009-02.
- NORDREGIO (2004). *Analysis of mountain areas in EU Member States, acceding and other European countries*. Report prepared for the European Commission. Stockholm, Nordregio.
- Nordregio, University of Geneva, CEFIDEC, Panteion University, Islands Consulting Services, University of Akureyri (2010). *Territorial Diversity (TeDi) Targeted Analysis 2013/2/8, Final Report*.  
URL: [http://www.espon.eu/export/sites/default/Documents/Projects/TargetedAnalyses/ESPONTEDI/TeDi\\_Final\\_Report-14-05-2010.pdf](http://www.espon.eu/export/sites/default/Documents/Projects/TargetedAnalyses/ESPONTEDI/TeDi_Final_Report-14-05-2010.pdf)
- OECD (2007). *Climate Change in the European Alps - Adapting Winter Tourism and Natural Hazards Management*. Organisation for Economic Cooperation and Development, Paris.
- PETSCHHEL-HELD, G., BLOCK, A., SCHELLNHUBER, H.J. (1995) *Syndrome des Globalen Wandels – Ein systemarerer Ansatz für Sustainable-Development-Indikatoren*. In: Geowissenschaften, Vol. 13:3, pp. 81-87.
- RAUHUT, D., BORGES, L. et al. (2011) *SeGI - Indicators and perspectives for services of general interest in territorial cohesion and development*, Applied Research 2013/1/16, ESPON Interim Report, version 14/10/2011
- ROYLE, S.A. (2001). *A geography of islands: Small island insularity*. Routledge, London and New York.
- SCHELLNHUBER, H.J, BLOCK, A., CASSEL-GINTZ, M., KROPP, J., LAMMEL, G. et al. (1997) *Syndromes of global change*. In: GAIA, Vol. 6:1, pp. 19-34.
- SPATIAL FORESIGHT, EUROFUTURES FINLAND, IRS (2009) *ESPON Typology compilation, Scientific Platform and Tools 2013/3/022, Interim Report*.
- VANOLO, A. (2010). *European Spatial Planning Between Competitiveness and Territorial Cohesion: Shadows of Neo-liberalism*. In: European Planning Studies, Vol. 18: 8, pp. 1301-1315.
- WARD, W.A. & HITE, J.C. (1998). *Theory in Rural Development: An Introduction and Overview*. In: Growth and Change, Vol. 29:3, pp. 245–258.



# ANNEXES



## Annex A. Delineations of GEOSPECS categories at LAU2-2 level

### Mountains

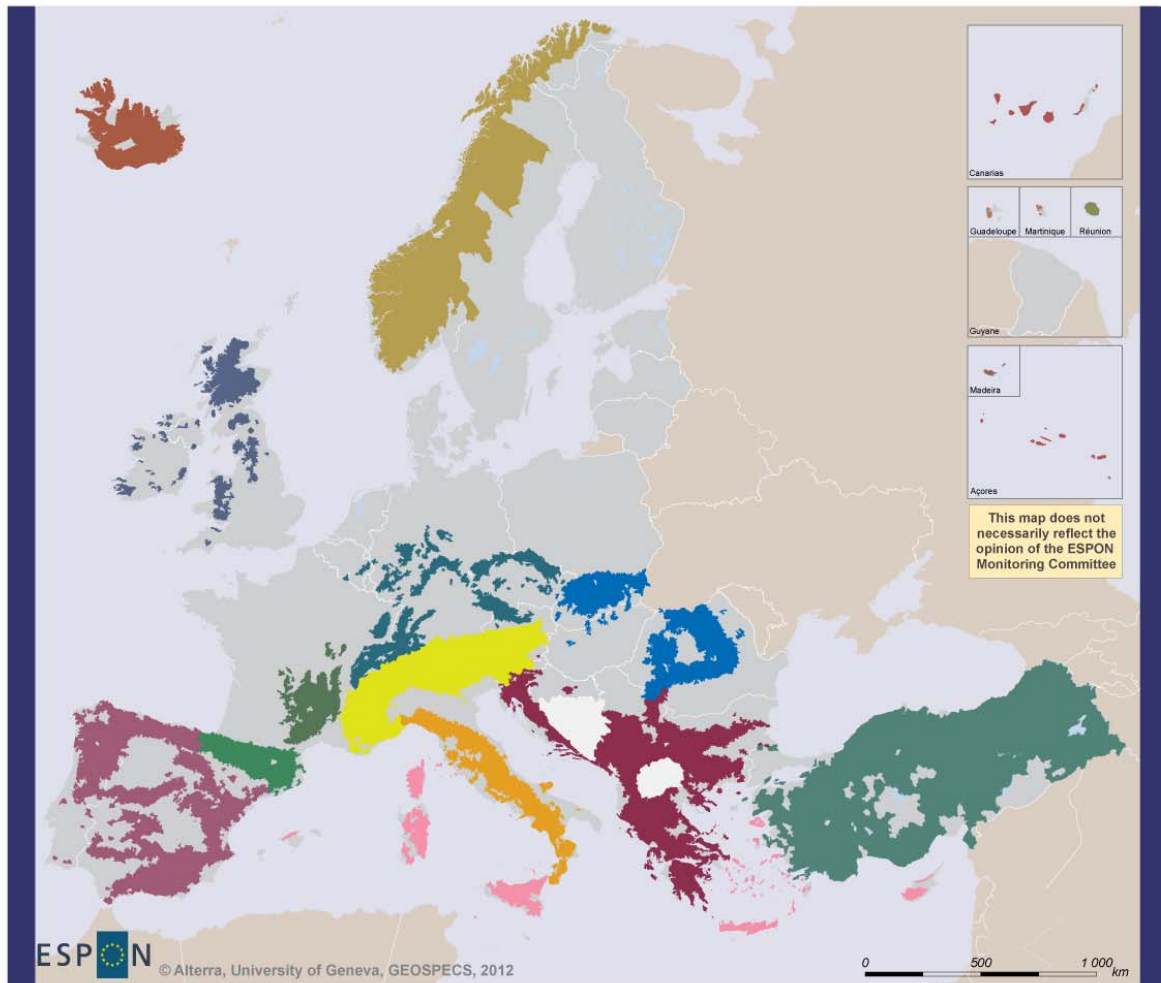
In pre-modern times, a mountain was defined in relation to the observation site, usually located below. From the 18th century, mountains became increasingly defined according to objective criteria, particularly altitude and slope. Once mountains had been accordingly defined, further concepts emerged, such as "mountain people", "mountain agriculture", and "mountain tourism" (Debarbieux & Rudaz, 2010). At the national level, individual countries established policies for mountain forests from the mid-19th century, and for mountain agriculture from the 1930s, the latter recognising the particular challenges of production in these difficult environments. In 1975, the EU recognised such challenges through the Directive on 'mountain and hill farming and farming in less favoured areas', which has been modified several times. Member States define the area to which this Directive applies within their national territories, using criteria of altitude and slope. Similar criteria have also been used by certain countries to define mountain areas for tourism or regional policy and, in two parts of Europe – the Alps and the Carpathians – to define the area to which international conventions apply.

The delineation of mountains builds on previous work for the European Commission (Nordregio et al., 2004) and the European Environment Agency (EEA, 2010) using the criteria of altitude, slope, and terrain roughness, derived from a digital elevation model (DEM). This approach recognises the need for more stringent criteria at lower altitudes. These criteria were applied for each kilometre square (grid cell) of the ESPON space to delineate it as mountainous or non-mountainous. It should be noted that the Fifth Cohesion Report started from similar principles, as it defined NUTS 3 mountain regions as those where at least 50% of the population lives in a mountainous area or at least 50% of the land area is mountainous, in both cases using the same topographic criteria. However, such an approximation at the level of NUTS 3 regions loses the mountain perspective: groups of grid cells with rough topography are combined with others that are not mountainous. This also makes it difficult to analyse mountain-piedmont relationships, as these two types of areas are usually included in the same regions.

The delineation is slightly modified from that used by the EEA (2010). The 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. Isolated mountainous areas of less than 10 km<sup>2</sup> were not considered, and non-mountainous areas of less than 10 km<sup>2</sup> within mountain massifs were included. Continuous mountain areas of less than 100 km<sup>2</sup> were then identified, and designated as exclaves which were excluded from the mountain delineation except on islands of less than 1000 km<sup>2</sup>. Non-mountainous groups of LAU2 units of less than 200 km<sup>2</sup> surrounded by mountain areas were identified as enclaves and included in the delineation. For analytical purposes, the mountain areas were grouped into 16 massifs, following the delineations of the EEA (2010), with some modifications (Map 1). The border of the Carpathians is for example that used for UNEP's Carpathian Environmental Outlook<sup>37</sup>

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<sup>37</sup> <http://www.grid.unep.ch/activities/assessment/KEO/index.php>



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Regional level: LAU2 (except Turkey LAU1)  
Source: GEOSPECS, 2011  
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except Western Balkans and Turkey (national sources)

#### Massif names

 Alps	 Icelandic mountains	 ESPON Space
 Apennines	 Indian Ocean Island mountains	 No data
 Atlantic Islands mountains	 Massif central	 Non-ESPON space
 Balkans/Southeast Europe	 Mediterranean island mountains	 Lakes
 Caribbean Island mountains	 Mountains of the British Isles	
 Carpathians	 Pyrenees	
 Central European Middle mountains	 Scandinavian mountains	
 Iberian mountains	 Turkish mountains	

### Map 1 Massif areas in the ESPON space

*The notion of massif is inspired by French policies for mountain areas and is used to designate mountainous territorial units. It was applied at the European level in 2004 (Nordregio et al., 2004). In this study, massifs were identified on the basis of national perceptions. Thus, their definition and naming are based not only on geophysical parameters, but also on socio-cultural ones. For the present study, larger European massifs have been defined, starting from those defined by the European Environment Agency (2010).*

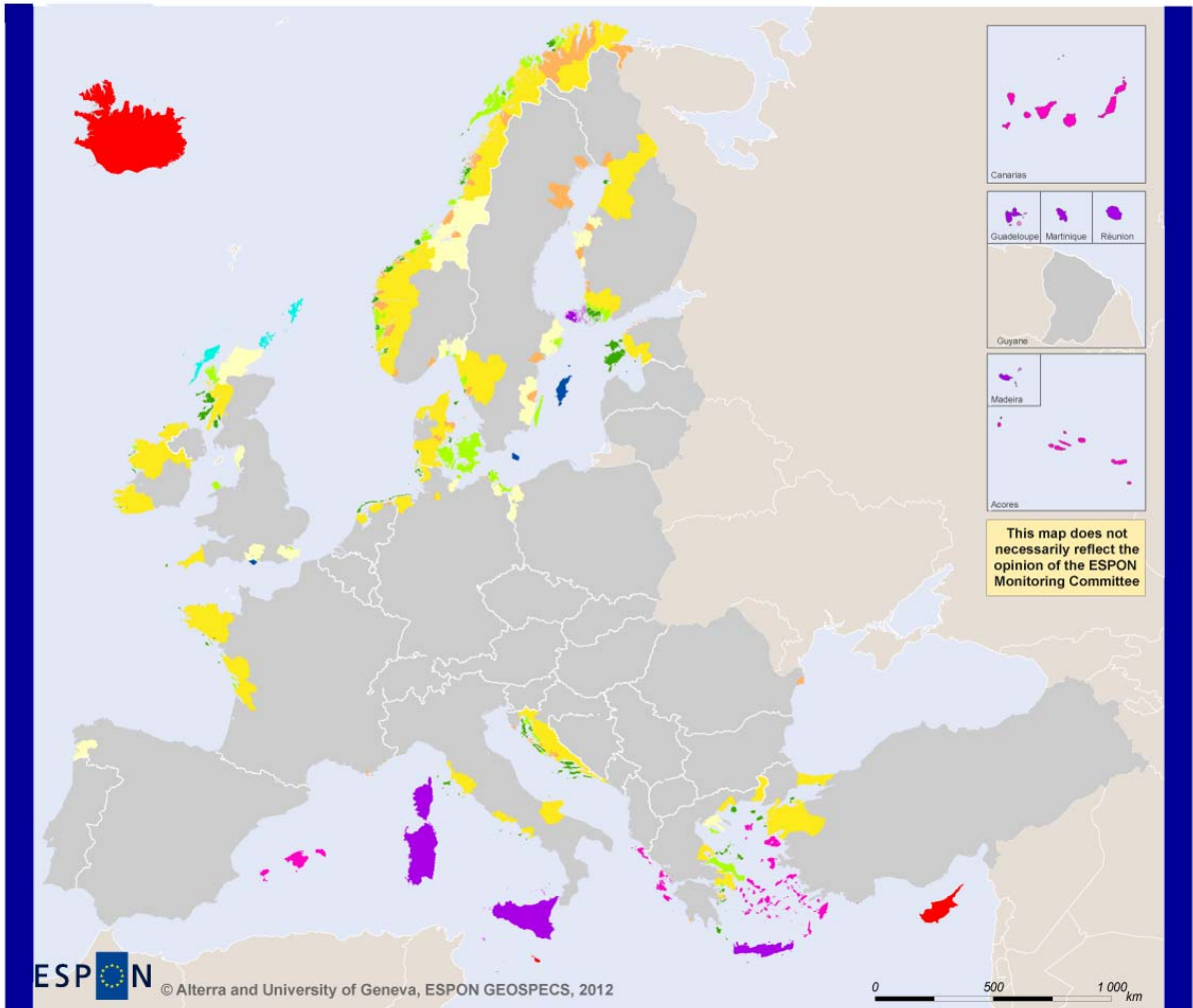
## Islands

The concept of island is closely linked to that of insularity: the situation of isolation and inaccessibility of a place surrounded by sea (Royle, 2001). This situation can be further compounded by higher degrees of isolation from other islands and the respective continent: isolation that is typically not only physical. Many islands are both peripheral to, and dependent on, main centres of political, social and economic activity. While they may have some level of self-administration, they tend to have little political power at higher levels. However, in this respect, situations are very diverse. It is of key importance to distinguish the degrees of autonomy of island states, island regions, and other islands and the different notions of "mainland" that prevail in each case. The situations of "double insularity" (islands beyond the coast of another, larger island) and of archipelagos also need to be considered separately (Figure 3).

While island societies tend to exhibit homogeneity and social cohesion, they are particularly vulnerable to external influences, particularly when they become dependent on a seasonal tourism industry. The environment and unusual species of islands are often elements that attract tourists; yet these are often particularly fragile.

The delineation of islands started by identifying all territories that are physically disjoint from the European mainland. Given the focus of the study on the social and economic relevance of insularity, the 601 islands connected to the mainland by a fixed road link – most in the Nordic countries – were then excluded. It is recognized that such links do not negate insularity and may be comparable to regular ferry services.

A total 319 "island territories", defined as an individual municipality comprising multiple islands, or a single island with one or more municipalities, can be identified in the extended ESPON space. Of these, 75 have a fixed link to the continent. They have a total population of 4.6 million inhabitants of whom 2.5 million live on the island of Sjælland (Copenhagen). The 244 remaining islands have a total population of 15.6 million. In addition, many islands are part of a municipality that is not entirely composed of one or more islands. Municipalities with a significant insular component were defined as those including islands with a total area of at least 10 km<sup>2</sup> or where the insular area comprises at least 8% of the municipal area. Overall, 67 such LAU2 areas were identified in the ESPON space, with a total population of around 1.4 million inhabitants, including 500,000 in the city of Göteborg in Sweden. A further 51 mainland NUTS 3 regions in the ESPON space comprise insular LAU2 units without fixed links, and 24 with fixed links. The corresponding figures within the EU are, respectively, 36 and 24 mainland NUTS 3 regions.



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#### Island delineation

##### NUTS 0 level: Small island states

- Main island
- Secondary island municipalities: situations of double insularity

##### NUTS 1/2 level island regions

- Main island
- Secondary islands municipalities: situations of double insularity
- Archipelagos

- ESPON space
- Other countries

##### NUTS 3 level island regions

- One main island
- Archipelagos

##### LAU 2 level: Island municipalities

- Entirely insular municipalities with a fixed link to the mainland (from one or more islands)
- Other entirely insular municipalities

#### Regions and municipalities with significant insular component

- NUTS 3 regions including island municipalities with a fixed link to the mainland
- NUTS 3 regions including other island municipalities
- Municipalities within significant insular component: > 8% of the municipal territory or total island area > 10km<sup>2</sup>

## Map 2 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).*

## Sparsely populated areas

The concept of Sparsely Populated Areas (SPAs) originated in the Nordic countries; such areas were typically characterized by land that was not suitable for agriculture but, from the Industrial Revolution, gained value because of its large-scale natural resources (wood, coal, metal ores). The exploitation of these resources was enabled by the establishment of towns and, often, the development of hydroelectricity; however, population densities across most of these regions remained low. Following the accession of Finland and Sweden to the EU in 1995, sparsity gained European recognition as a unique characteristic of the northernmost regions of these countries. More recently, sparsity has also been recognised in other parts of the EU, albeit to a lesser extent, notably northern Scotland and central Spain. However, it should be stressed that, unlike other geographic specificities, the concept of SPA is dynamic, as population densities change over time.

Traditionally, SPAs are identified on the basis of population densities, with threshold levels of 8 inhabitants/km<sup>2</sup> for Regional Policy<sup>38</sup> and of 12.5 and 8 inhabitants/km<sup>2</sup> in the guidelines for national regional aid<sup>39</sup>. However, the resulting delineation is largely determined by administrative boundaries. Therefore, SPAs have been delineated on the basis of population potentials, i.e. the number of persons that can be reached within a maximum generally accepted daily commuting or mobility area from each point in space. Two approaches were used. The first evaluated SPAs based on the isotropic distance, i.e., the possibility to commute 50 km from a point in all directions equally. The second evaluated the population potential using 45-minute isochrones along road networks ("poorly connected areas": PCAs). The application of a common threshold of 100,000 persons (i.e., 12.7 persons/km<sup>2</sup>) allowed the identification of SPAs and PCAs) (covering respectively 17.2% and 34.6% of the expanded ESPON space) (Figure 4). A number of small islands were excluded from this delineation, even if they technically meet the criterion of low population potential, as their situation is more adequately analysed under the heading of 'insularity'.

The extent of economic and social development challenges linked to sparsity does not depend on the proportion of "sparse" or "poorly connected" areas at the regional or national level. The focus is not on uninhabited areas, but on local communities that are economically vulnerable because of the small size of the labour market and where the limited "reachable population" makes it difficult to deliver private and public services cost-efficiently. Thus, Sparsely Populated Localities and Poorly Connected Localities were identified as LAU2 units with at least 90% of their area defined as SPA or PCA. Finally, given that EU territorial policies and instruments are mainly applied at the NUTS 3 level, regions with low population potential, i.e., including at least one of the localities just mentioned, were identified. Such regions cover most of the Nordic and Baltic states, Turkey, Ireland, and Spain.

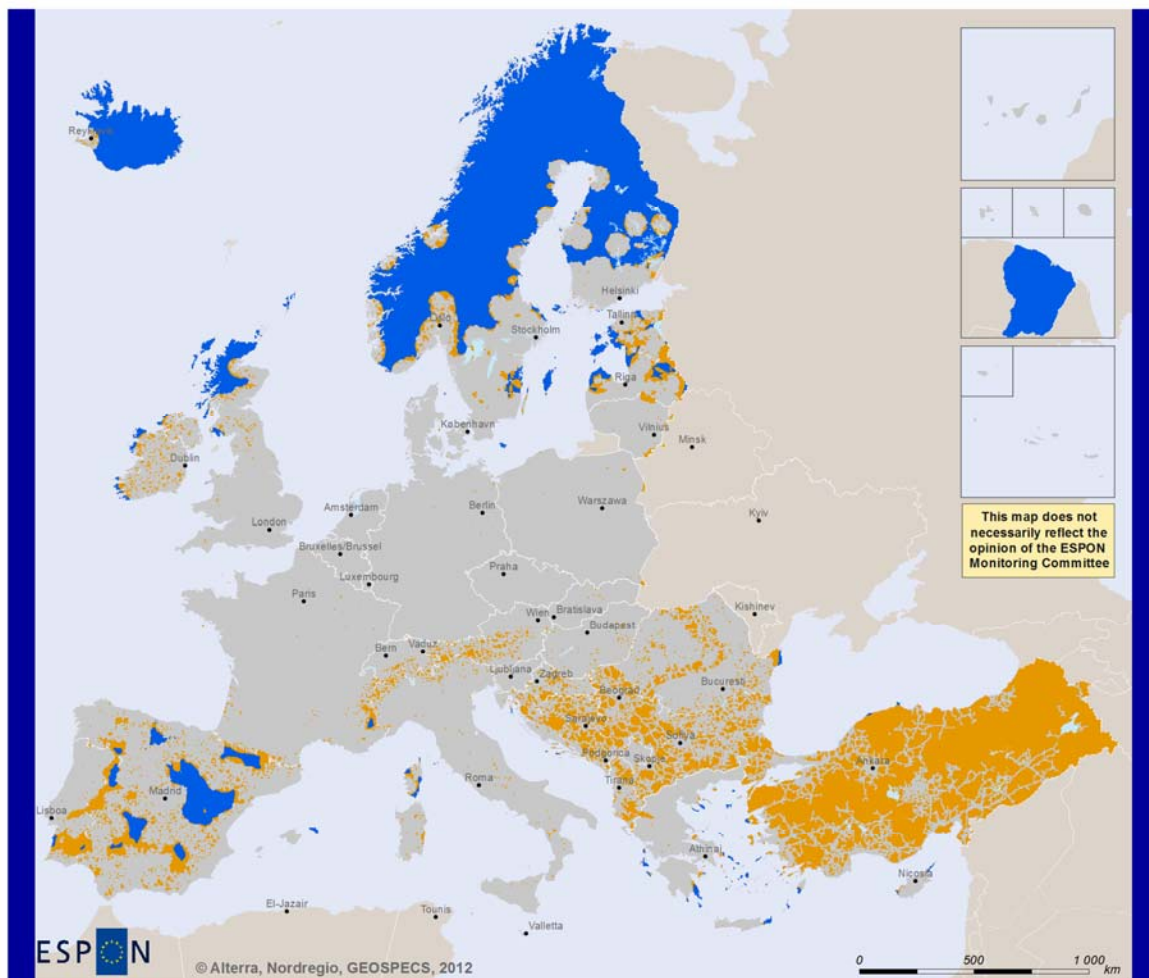
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<sup>38</sup> Protocol No 6 on special provisions for Objective 6 in the framework of the Structural Funds in Finland, Norway and Sweden

URL: <http://eur-lex.europa.eu/en/treaties/dat/11994N/htm/11994N.html#0354020033>

<sup>39</sup> Guidelines on National Regional Aid For 2007-2013 (2006/C 54/08)

URL: [http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/c\\_054/c\\_05420060304en00130044.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/c_054/c_05420060304en00130044.pdf)



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Regional level: LAU2 (except Turkey LAU1)  
 Source: GEOSPECS, 2011  
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 except Western Balkans and Turkey (national sources)

### Areas with Low Population Potential

Population Potential in Persons in Areas below 100 000 Inhabitants Potential according to 50 km and 45 Minutes Delineations

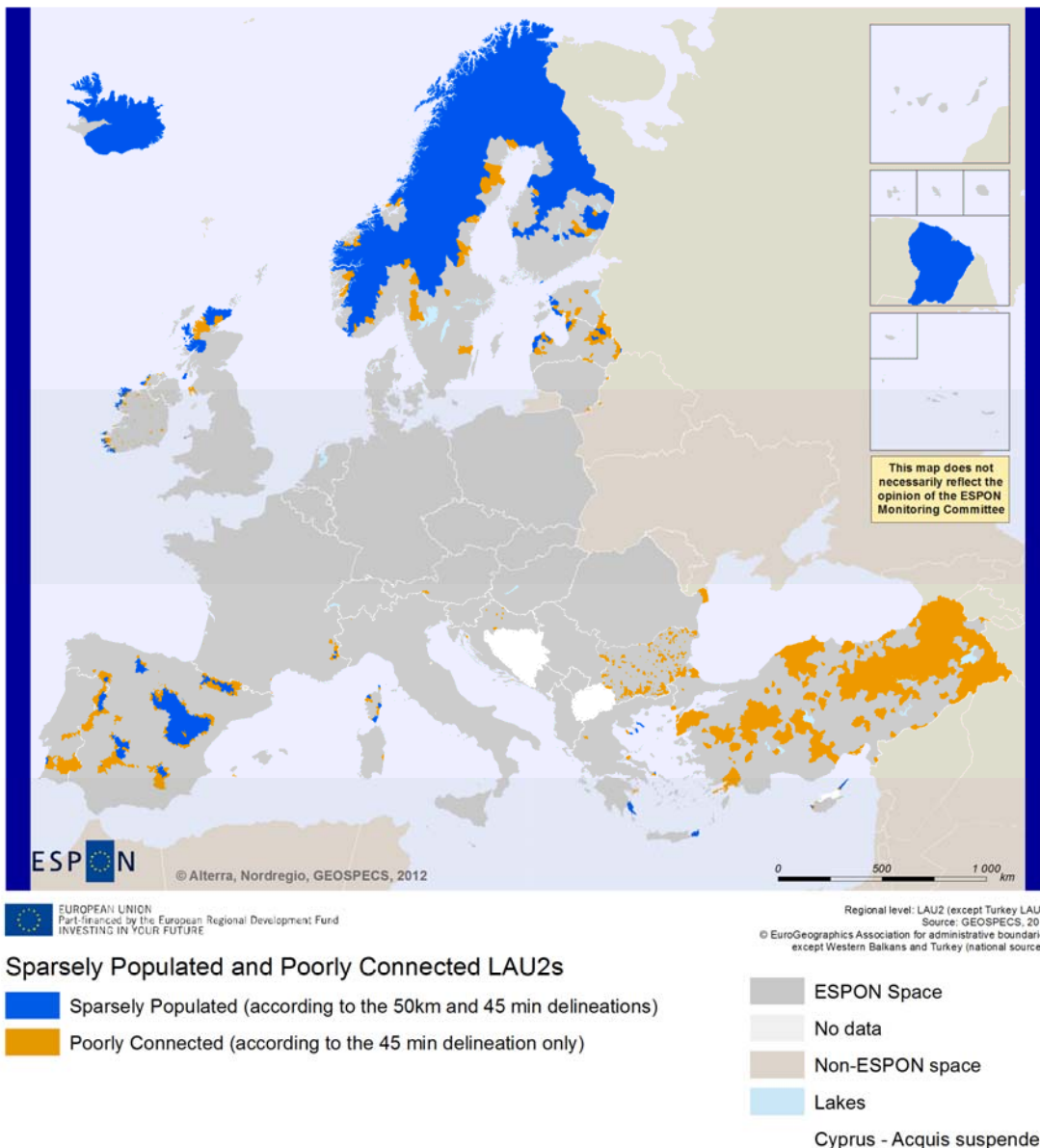
- Poorly Connected (according to the 45 min delineation only)
- Sparsely Populated (according to the 50km and 45 min delineations)

- Lakes
- ESPON Space
- Non-ESPON space

### Map 3 Sparsely populated and poorly connected areas

*Sparsely populated and poorly connected areas are the two resulting categories in our typology. Sparsely Populated Areas are areas of the European territory that have a population potential below the 100,000 inhabitants threshold for both the 50km and 45-minutes calculations; Poorly Connected Areas are areas that fall below this threshold only for the 45-minutes calculation. The differentiation is central to the understanding of locational disadvantage related to sparsity and the role played by local transport systems: while for SPA local transport infrastructure does not provide leverage to compensate for the low level of human resources available, for the PCA it the absence and/or inadequacy of the local transport network that isolate them from neighbouring communities. In addition, there are some small areas located within the 45 minutes distance but beyond the 50 km radius, located in a scattered pattern along the main transport corridors.*





**Map 4 LAU2s with more than 90% of the total area covered by SPAs**

*The map distinguished between Sparsely Populated Localities and Poorly Connected Localities, i.e. areas from which one cannot reach 100,000 inhabitants within 45 minutes and 50 km, respectively. Many localities in Europe contain at least some areas with a low potential population potential. However, in GEOSPECS, the focus has been on LAU2 units where this is a predominant a feature. Only localities with over 90% sparsely populated areas have therefore been selected.*

*Population densities have not been used because they fail to take into account the geographic context of each LAU2 unit. Furthermore, they are largely determined by the way in which administrative boundaries are drawn.*

## Coastal areas

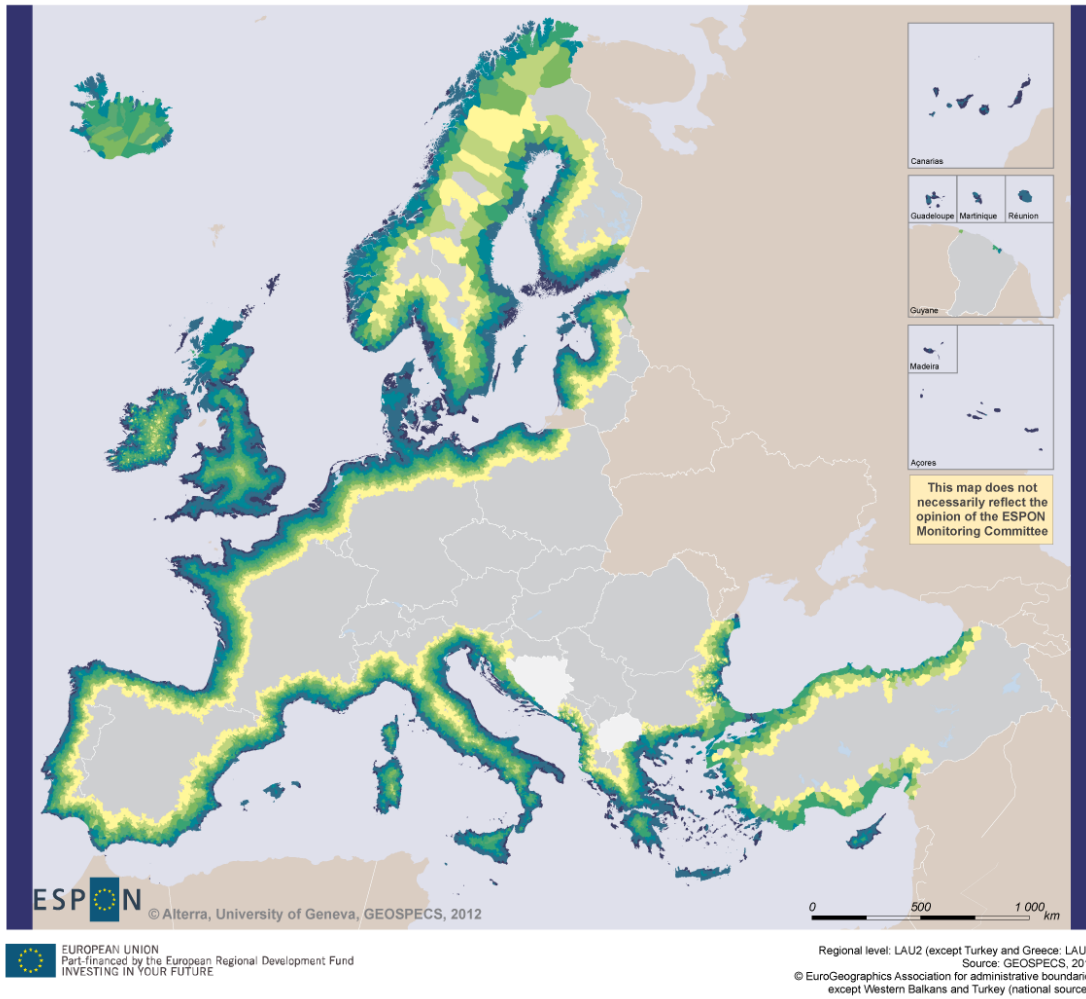
Coastal areas function as interfaces between terrestrial and marine systems. The *coastline* is the physical environment where marine and terrestrial systems meet, geomorphologically varying from major indentations to long stretches of sandy beach. From a functional socio-economic perspective, the *coastal zone* is an area where the proximity to the coastline has a direct effect on socio-economic structures, trends and development perspectives, e.g. in terms of employment opportunities and residential attractiveness.

A vast array of actors have interests in coastal zones, as they serve as fishing grounds (i.e. sources of food), focal points for trade and transport, and recreational spaces, but are also the habitats of a number of ecologically important species. Ports in their function as gateways have historically attracted industry and population, a reason why some coasts are densely populated. The conflicts of interest that result from the high number of activities in coastal zones are reflected in policy documents. In general, coastal and marine policy in Europe is driven by the negative impacts from human activities on natural coastal and marine resources, resulting in a host of policies that concern, for example, water management, pollution, bathing water, nitrates, shellfish, conservation, renewable energy, climate adaptation, floods and erosion.

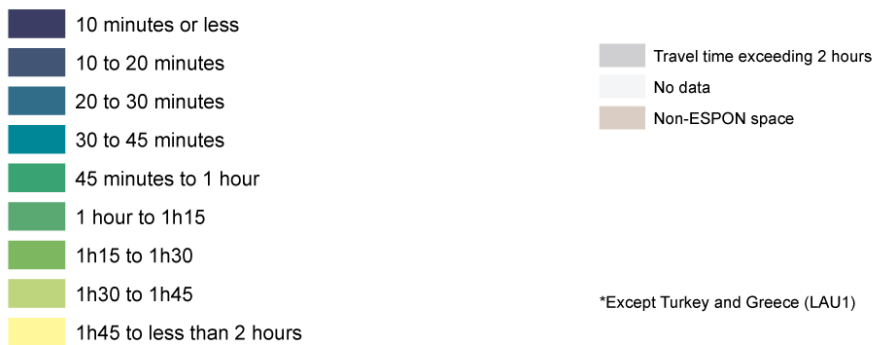
Eurostat (2010) defines EU coastal regions as "regions with a sea border, regions with more than half of its population within 50 km of the sea and Hamburg". Such an approach may be relevant from a governance perspective, as proximity and contiguity makes the coastal dimension relevant for territorial policy making. However, when seeking to understand how proximity to the coast influences socio-economic structures, trends and development perspectives, it is more relevant to consider the distance of individual communities (i.e. LAU2 units) to the coast. One can also consider the specific effects of contiguity and of proximity to so-called "landing points" where resources from the sea or transiting across the sea arrive.

Therefore, the TPG did not consider it meaningful to produce a fixed delineation of coastal zones. The objective is, on the contrary, to identify the various ranges of mobility and interaction associated with the different types of coastal effects. Two of the hypotheses that were tested were whether areas within commuting distance to the sea (45 minutes by the road) (Figure 5) and those that are contiguous to the sea exhibit specific socio-economic patterns compared to their respective national or regional situations.

## Travel time to the coast



### Average travel time to the coast from LAU2 units\*



### Map 5 Average travel times to the coastline from LAU2 units

*The TPG does not consider it meaningful to produce a fixed delineation of coastal zones. The objective is, on the contrary, to identify the various ranges of mobility and interaction associated with the different types of coastal effects.*

## Border areas

Border areas differ from other GEOSPECS categories in that they primarily refer to a human construct: a politically-defined border designed to organise the sovereignty of States. However, the reality of these borders is multidimensional because it also involves – at the same time – other important features (e.g., natural obstacles, economic discontinuities, socio-cultural dividing lines) which generally affect socio-economic dynamics in border areas.

This multidimensional reality of European borders generates a variety of positive or negative consequences in the concerned border areas (i.e. “border effects”) which, in practice, are also interlinked by complex cross-relations and cross-impacts or feedback loops. These effects influence the socio-economic development of an area that may be more or less distant from a political border (i.e. not only immediately at the border line), depending on the theme or the specific issue at stake<sup>40</sup>.

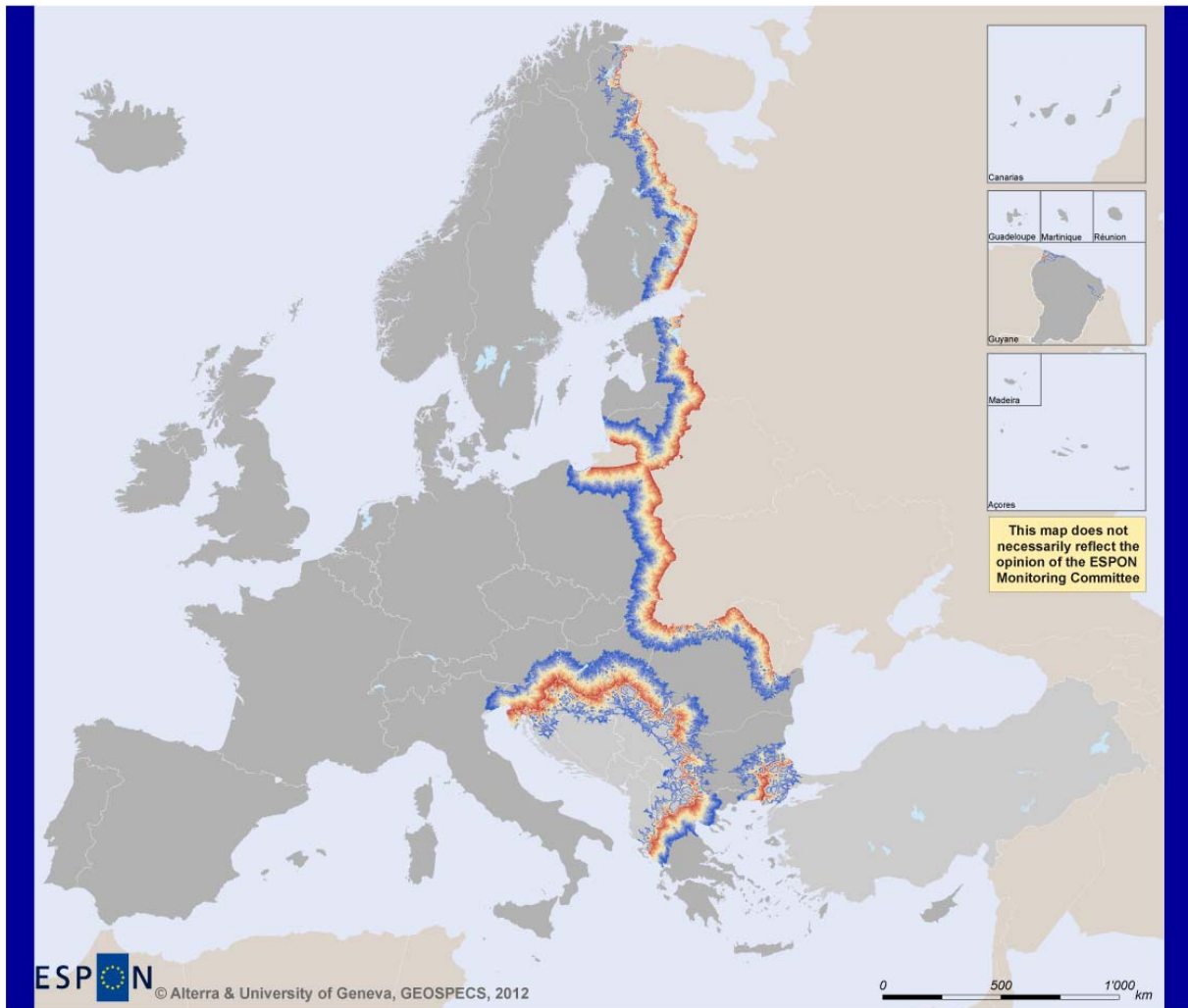
The dynamic EU integration process has created an array of new opportunities for internal flows and exchanges by successively dismantling many obstacles which previously resulted from the more rigid function of the classical nation-state borders. However, barriers and obstacles continue to exist at the *internal* EU/EEA borders and, especially along the *external* EU/EEA borders, they have in some respects been further strengthened.

This creates in all border areas, whether located along the *internal* or *external* EU borders, a pattern of “half-circle social and economic relations”: socio-economic exchange relations and other interactions with the domestic hinterland are generally more intense than across the border, because the latter do not yet function in a way that comes close to what is normally experienced in the domestic context. This also leads, to varying extents, to a degree of “territorial non-integration” between areas immediately adjacent to a common border.

Consequently, the TPG did not consider it meaningful to produce a general delineation of border areas following administrative boundaries (i.e. the NUTS 3 regions determining eligibility for cross-border co-operation programmes supported by the European Regional Development Fund [ERDF]). Instead, they were delineated on the basis of a 45-minute travel distance to a politically defined borderline which corresponds to a reasonable proxy for the maximum generally accepted commuting and daily mobility distance. A mapping of variants of this time-distance parameter (< 45 min or > 45 min) shows considerable variability in the extent of border areas (Figure 6).

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<sup>40</sup> see Table 11 of the Scientific Report



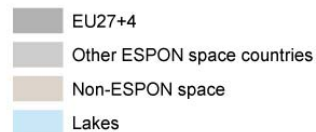

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Regional level: NUTSO  
 Source: GEOSPECS 2011  
 Boundaries: © EuroBoundaryMap v4 2008; except Western Balkans (GEOSPECS)  
 Road models: © EuroRegionalMap v31 20090116\_TRAN\_ROAD.gdb;  
 except Bulgaria, Outermost regions, Western Balkans and Turkey (Open Street Map)

## Travel time by road to the external borders of the EU and the EFTA countries (EU27+4)

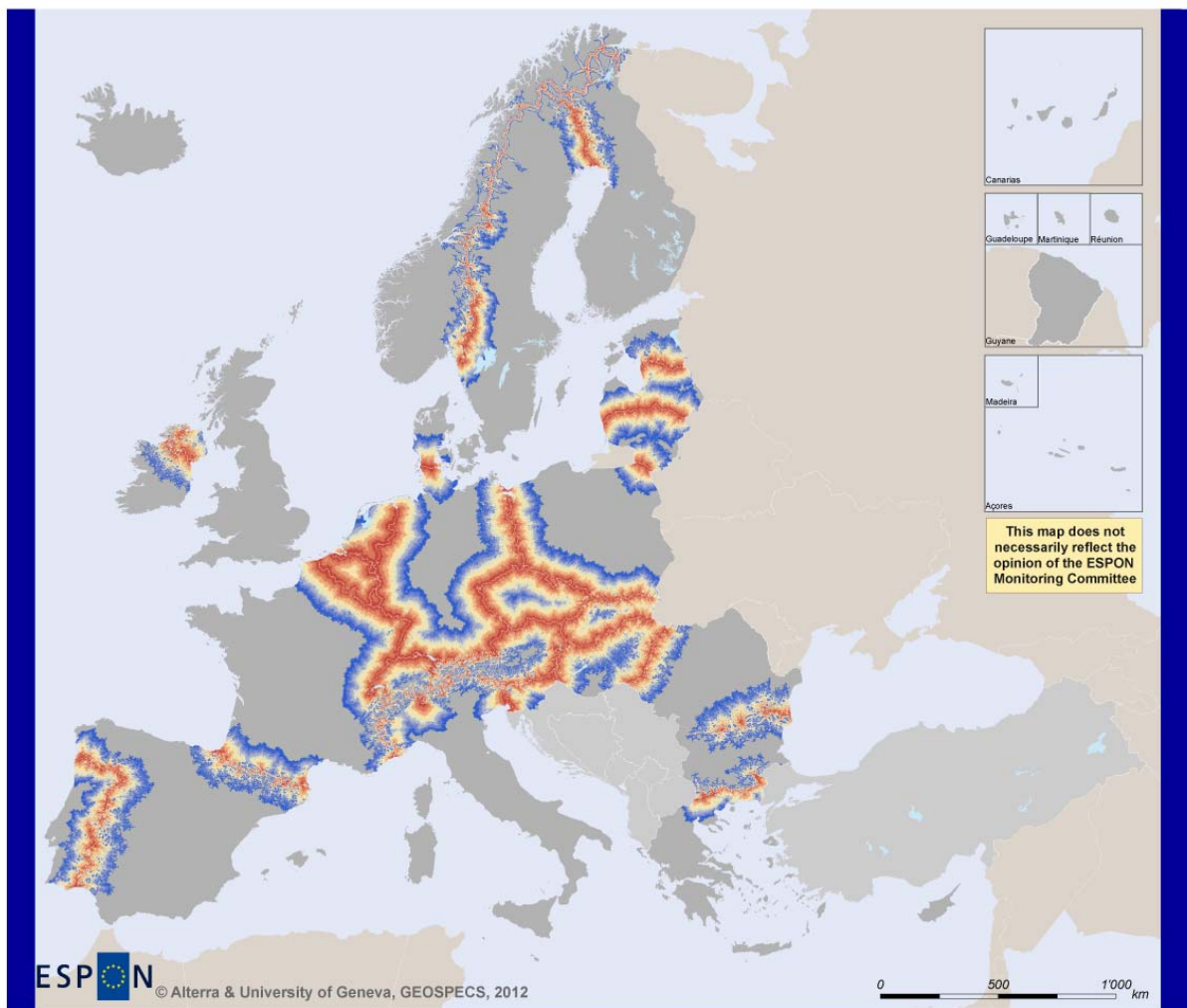


### Background elements



EU27 + 4: The 27 European Union member states and the 4 European Free Trade Association (EFTA) countries Iceland, Liechtenstein, Norway and Switzerland

**Map 6** Travel time to the external borders of the EU and EFTA countries



**Travel time by road to the internal borders of the EU and the EFTA countries (EU27+4)**

- 0 - 15 mins
- 15 - 30 mins
- 30 - 45 mins
- 45 mins - 1 hour
- 1 hour - 1 h 15 mins
- 1 h 15 mins - 1 h 30 mins
- 1 h 30 mins - 1 h 45 mins
- 1 h 45 mins - 2 hours

**Background elements**

- EU27+4
- Other ESPON space countries
- Non-ESPON space
- Lakes

EU27 + 4: The 27 European Union member states and the 4 European Free Trade Association (EFTA) countries Iceland, Liechtenstein, Norway and Switzerland

**Map 7 Travel time to the internal borders of the EU and EFTA countries**

## Outermost Regions

Article 349 of the TFEU lists nine Outermost Regions (ORs) and presents the main determinants of this specific EU status. As a political category, accessing the status of OR (or abandoning it) requires validation at the EU level. Following recent decisions, there are now only eight OR (codes correspond to areas shown in Figure 7):

- Four French Départements: Martinique and Guadeloupe (1), French Guiana (2) and Reunion (5);
- One French "Collectivité": Saint Martin (1);
- Two Portuguese Autonomous Regions: Madeira and the Azores (4);
- One Spanish Autonomous Community: the Canary Islands (3).

The Treaties establish a clear-cut difference between ORs and Overseas Countries and Territories (OCTs). While OCTs are part of their mainland but not of the EU (and EU law consequently does not apply there), the ORs are an integral part of the EU, although isolated in the Atlantic Ocean, the Caribbean Sea and the Indian Ocean, as well as on the South American continent. Given their situations, it is officially acknowledged that these regions have to cope with specific constraints – remoteness, insularity, small (usable) area, difficult topography and climate, economic dependence on a few products – the permanence and combination of which severely restrain development capacities. The OR therefore profit from derogations under some EU policies, and from particular compensation programmes under others.

These French, Spanish and Portuguese territories were colonised mostly during the 16<sup>th</sup> century. The new settlers imposed a specific economic model, based on the cultivation of one or a very limited number of crops. In all territories, slaves were imported to sustain the developing economies. The 19<sup>th</sup> century marked a turning point: competition from other colonies became important (as did beet sugar from Europe), slavery was successively abolished, wars and the aftermath of the French Revolution shook the economies.

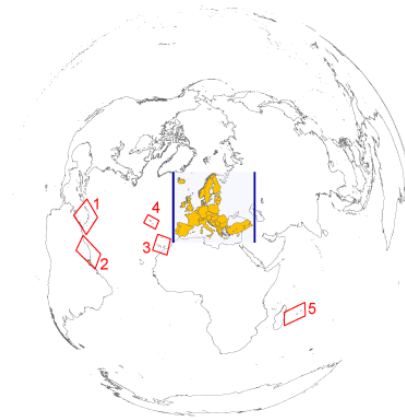
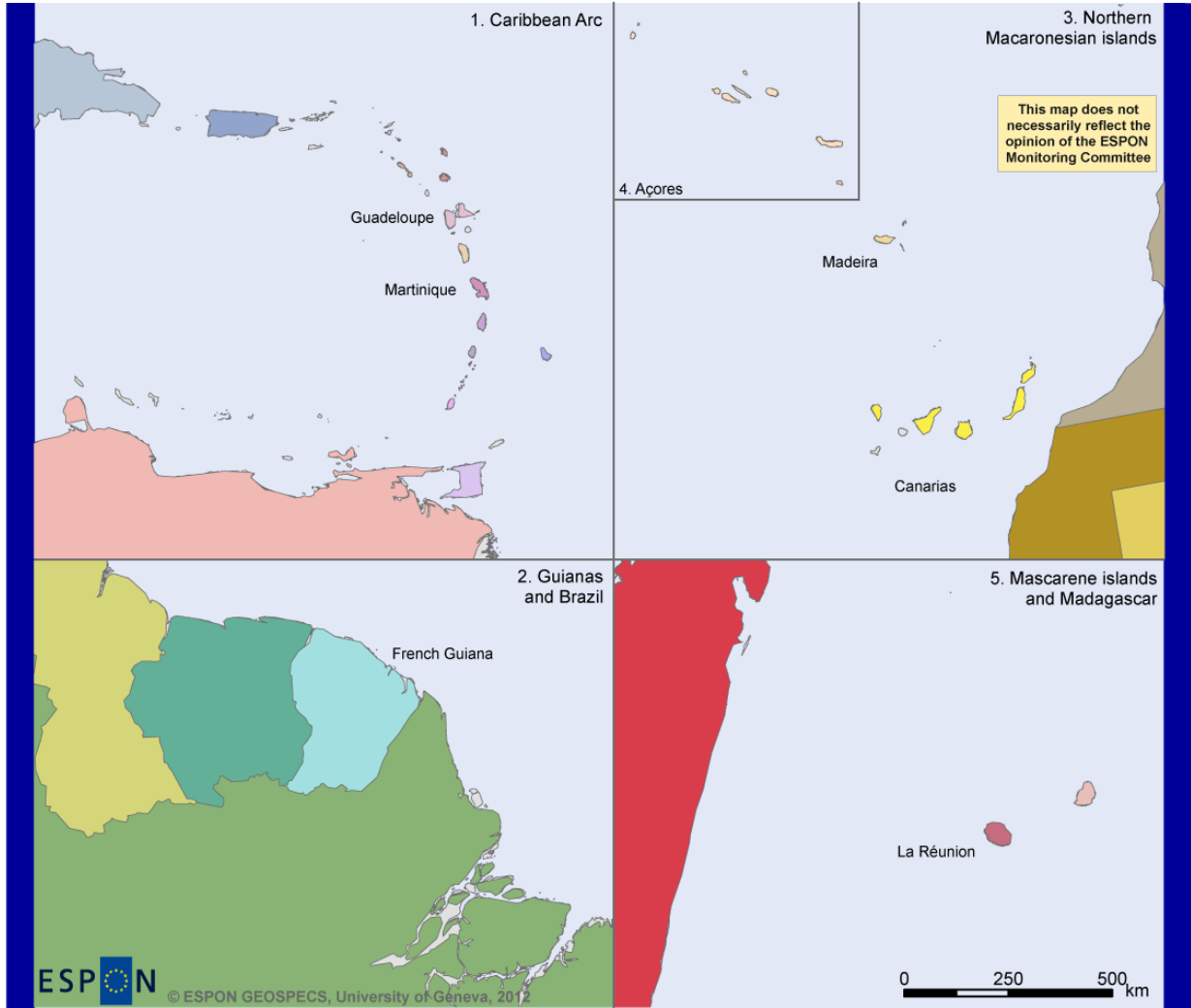
The French ORs became 'départements' in 1946, Madeira and the Azores were granted their autonomy in 1976, and the Canary Islands gained their current status of Autonomous Community in 1982. In all ORs, the economic structure has followed comparable major trends: downturn of agricultural activities in terms of their contribution to GDP; increasing importance of services, especially tourism; and strong influence of the public sector, which became the major employer. However, there are some disparities, and it appears that, while ORs follow a trajectory that is influenced by their status of overseas territories, this common status is less strong than their economic ties with France, Spain or Portugal.

Although being in the first instance a politically constructed category, the Outermost Regions share a number of geographic characteristics, which set them apart from continental EU territories (Table 4).

**Table 1 Geographical constraints of Outermost Regions**

Regions	Remote-ness	Insularity	Double insularity	Small territory	Complex territorial morphology	Specific climatic conditions	Natural risk
Azores	X	X	X	X	X	X	X
Canary Islands	X	X	X	X	X	X	X
Guadeloupe	X	X	X	X	X	X	X
French Guiana	X			X	X	X	
Madeira	X	X	X	X	X	X	X
Martinique	X	X		X	X	X	X
La Réunion	X	X		X	X	X	X






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**Map 8 Outermost Regions and their respective geographic context**

## **Annex B. Cross-analysis of delineations**

**Table 1 Overlaps between GEOSPECS categories (areas)**

ESPON_Area	Border area (within 45 minutes)	Border area (within 90 minutes)	Coastal area (within 45 minutes)	Coastal area (within 90 minutes)	Sparsely populated and PC areas	Island without fixed link	Island with fixed link	Outermost region	Mountain area	Urban area > 100 000 inh.	Urban area > 750 000 inh.
Border area (within 45 minutes)		100.0%	10.9%	20.5%	38.6%		0.1%	4.7%	31.6%	34.2%	11.5%
Border area (within 90 minutes)	57.1%		13.0%	23.5%	25.5%		0.4%	3.3%	29.9%	40.4%	13.9%
Coastal area (within 45 minutes)	8.9%	18.6%		100.0%	26.8%	14.6%	2.9%	3.6%	38.3%	40.8%	13.2%
Coastal area (within 90 minutes)	10.4%	20.8%	61.9%		21.5%	10.8%	1.8%	2.3%	38.6%	39.5%	12.7%
Sparsely populated and PC areas	29.9%	34.6%	25.4%	32.9%		7.0%	1.0%	5.9%	55.9%	0.2%	0.0%
Island without fixed link			82.7%	99.0%	42.3%			6.7%	71.9%	16.7%	3.0%
Island with fixed link	3.8%	17.5%	100.0%	100.0%	34.6%				39.9%	23.3%	15.0%
Outermost Region	51.2%	62.8%	48.8%	48.8%	83.8%	15.9%			12.2%	0.6%	
Mountain area	14.4%	23.8%	21.3%	34.6%	32.9%	7.0%	0.6%	0.5%		17.6%	3.7%
Urban area > 100 000 habitants	18.3%	37.9%	26.7%	41.7%		1.9%	0.4%	0.0%	20.8%		30.4%
Urban area > 750 000 habitants	20.3%	42.9%	28.4%	44.0%		1.1%	0.9%	14.1%	14.1%	100.0%	

*The table reads as follows (using the figures in red font colour as examples):*

*Within border areas (1<sup>st</sup> row), 10.9% of the area is also a coastal area (3<sup>d</sup> column)*

*Within coastal areas (3<sup>rd</sup> row), 8.9% of the area is also a border area (1<sup>st</sup> column)*

**Table 2 Overlaps between GEOSPECS categories (population)**

ESPO <sub>N</sub> Population	Border area (within 45 minutes)	Border area (within 90 minutes)	Coastal area (within 45 minutes)	Coastal area (within 90 minutes)	Sparsely populated and PC areas	Island without fixed link	Island with fixed link	Outermost region	Mountain area	Urban area > 100 000 inh.	Urban area > 750 000 inh.
Border area (within 45 minutes)		100.0%	14.8%	25.6%	0.9%		1.4%	0.1%	22.1%	84.7%	48.1%
Border area (within 90 minutes)	49.1%		17.7%	26.9%	0.7%		1.2%	0.0%	19.3%	84.8%	51.9%
Coastal area (within 45 minutes)	7.5%	18.3%		100.0%	1.9%	7.1%	2.3%	1.9%	17.5%	77.5%	46.5%
Coastal area (within 90 minutes)	9.8%	21.0%	75.3%		1.6%	5.7%	1.7%	1.5%	19.9%	76.7%	45.6%
Sparsely populated and PC areas	4.4%	6.9%	18.0%	20.5%		0.9%	0.9%	0.9%	77.0%	0.3%	0.0%
Island without fixed link			94.2%	99.3%	1.2%			25.3%	54.5%	56.7%	16.7%
Island with fixed link	31.2%	53.2%	100.0%	100.0%	4.1%				6.2%	73.1%	53.6%
Outermost Region	1.5%	1.5%	96.5%	96.5%	4.8%	95.1%			75.2%	23.3%	
Mountain area	15.4%	27.2%	23.8%	36.1%	11.1%	5.6%	0.2%	2.1%		42.7%	17.0%
Urban area > 100 000 habitants	20.6%	41.9%	37.0%	48.6%		2.1%	0.8%	0.2%	14.9%		58.4%
Urban area > 750 000 habitants	20.0%	44.0%	38.0%	49.5%		1.0%	1.0%	10.2%	10.2%	100.0%	

*The table reads as follows (using the figures in red font colour as examples):*

*Within border areas (1<sup>st</sup> line), 14.8% of the population lives in a coastal area (3<sup>rd</sup> column)*

*Within coastal areas (3<sup>rd</sup> line), 7.5% of the population lives in a border area (1<sup>st</sup> column)*

## Annex C. Delineations at NUTS 3 level

Recognising that the GEOSPECS project is part of the ESPON 2013 Programme, the TPG has sought to maximise congruence with ESPON typologies. However, it has been necessary to adopt significantly different methods to create meaningful delineations for the analysis of development opportunities and challenges (as explained in section 1.1). The comparison of the delineations of GEOSPECS categories at the LAU2 level in GEOSPECS with the NUTS 3 typologies of ESPON provides information on the impact of these methodological differences on the number of persons and areas identified as geographically specific. In addition, the delineations of the GEOSPECS project include Turkey as well as most of the Western Balkans<sup>41</sup>, while the ESPON typologies only covered these for the categories of border areas and SPAs.

In the case of border regions, maps 1, 2, 7 and 8 show the differences between a political/administrative and a geographical approach to the same specificity. The ESPON typology, for example, identified coastal NUTS 3 regions participating in cross-border cooperation programs around the Baltic Sea, the English Channel, and the Mediterranean Sea as border regions. The extent to which the socio-economic dynamics in these maritime border areas can be compared to those observed along terrestrial borders can be questioned. Considering terrestrial border areas, the areas within 90 minutes of the border lines (Map 2) fit more closely the border cooperation areas identified by the ESPON typology than the areas within 45 minutes (Map 1), illustrating that border cooperation extends beyond areas of daily mobility to a border. However, maps representing the proportion of population that lives within 45 minutes of the border (Map 7) are more informative when it comes to identifying areas where being close to a border is a major component of regional life and identity. This mainly concerns border areas in a central part of Europe, stretching from the Benelux countries to Romania, as well as Northern Ireland.

Coastal regions have been delineated in the ESPON typology on the basis of the proportion of population within 10 km of the coast, while the GEOSPECS project has considered different time-distances to the coast. The ESPON typology is subdivided in four classes (low, medium, high and very high share of coastal population). With regard to the daily mobility maximum travel time of 45 minutes, there are major variations within the classes with "low" and "medium" shares of coastal populations, as the proportions of population living in LAU2 within 45 minutes from the coast range from respectively 0.4% and 20.4% to 100% (see Figure 1). This is an effect of the variable quality of transportation networks connecting the coast and the interior. Interestingly, the non-coastal regions identified in the ESPON typology also contain 35 NUTS 3 regions – in the United Kingdom, the Netherlands, Belgium and Germany – where more than 80% of the population lives within commuting distance of the coast.

The mountain delineation of GEOSPECS includes Turkey, the Western Balkans, Reunion and Iceland, which are not included in the ESPON typology (Map 5; Map 12). The two delineations are methodologically similar, as they are based on very similar grids of mountain areas. However, these are applied at different levels (LAU2 and NUTS 3, respectively). This explains why the patterns are relatively similar when considering the proportions of mountainous area and population at NUTS 3 level (Map 5; Map 12). The comparison between these maps of proportions of mountain population and area allows regions with populated mountains (e.g., the Alps,

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<sup>41</sup> Excepting the Former Yugoslav Republic of Macedonia and Bosnia and Herzegovina, where no LAU1 or LAU2 digital maps were available, making the delineation process impossible.

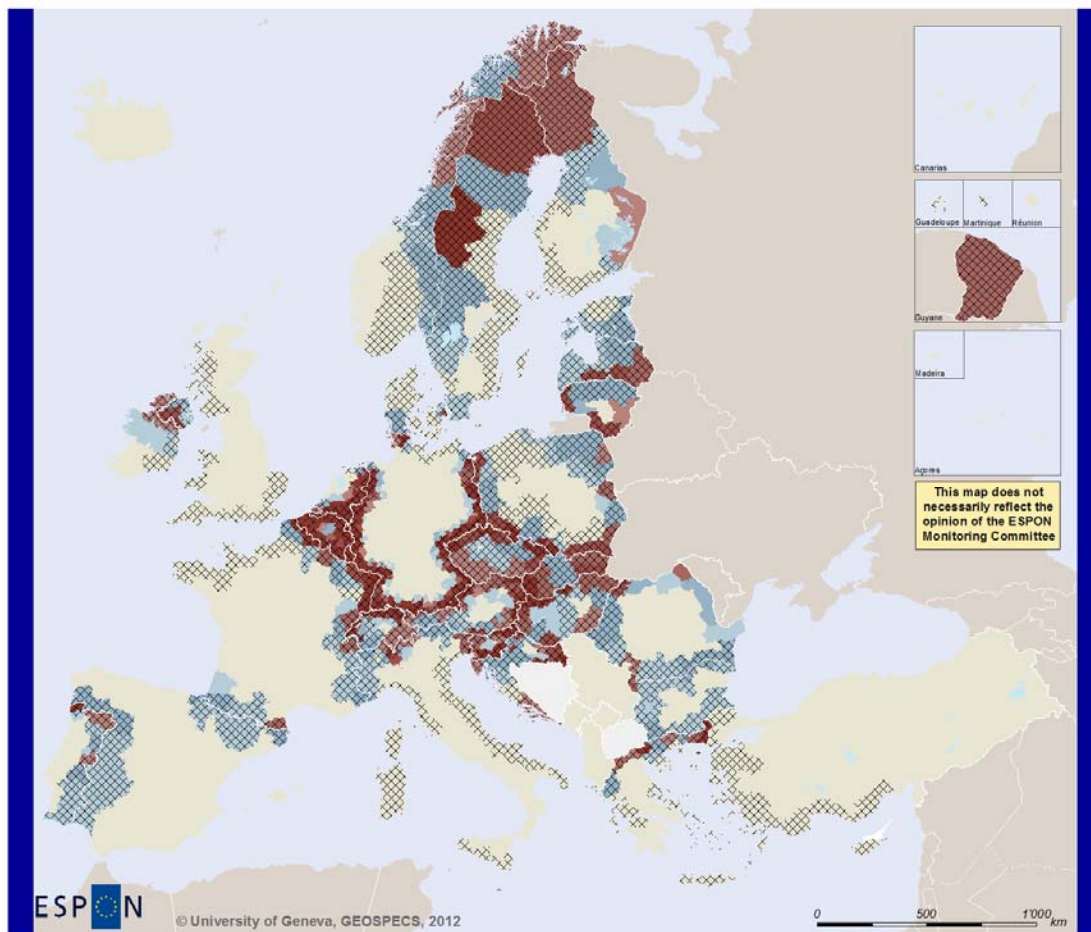
Apennines, Massif Central) to be distinguished from those with populated piedmonts (e.g. the Pyrenees). It appears important to maintain this distinction in the analyses, as the social and economic realities of regional “mountainousness” are likely to be significantly different in each group of regions.

Attempts to map SPAs at the NUTS 3 level makes the limitations of this scale of analysis obvious. Most “archipelagos of sparsity”<sup>42</sup> disappear, e.g., along the Irish coast and the Portuguese-Spanish border, as well as in the Pyrenees, the Alps, Bulgaria, and the Baltic countries. In the Nordic countries, comparing the share of population (Map 11) and area (Map 6) in SPAs at the NUTS 3 level shows the different degrees of intra-regional disparity. While most of the territory of Norrbotten and Västerbotten in northernmost Sweden has been defined as SPA in GEOSPECS, the proportion of the population living in these LAU2 units is very low.

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<sup>42</sup> See Section 3.2.3 of the Scientific Report

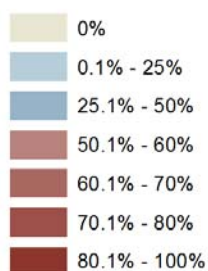
## C.1. GEOSPECS delineation at NUTS 3 level with regard to the area covered by a specificity



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Regional level: NUTS3  
 Sources: ESPON 2008; GEOSPECS, 2011  
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**GEOSPECS delineation of BDA:  
 Percentage of total area  
 accessible within 45min. driving  
 from a border**



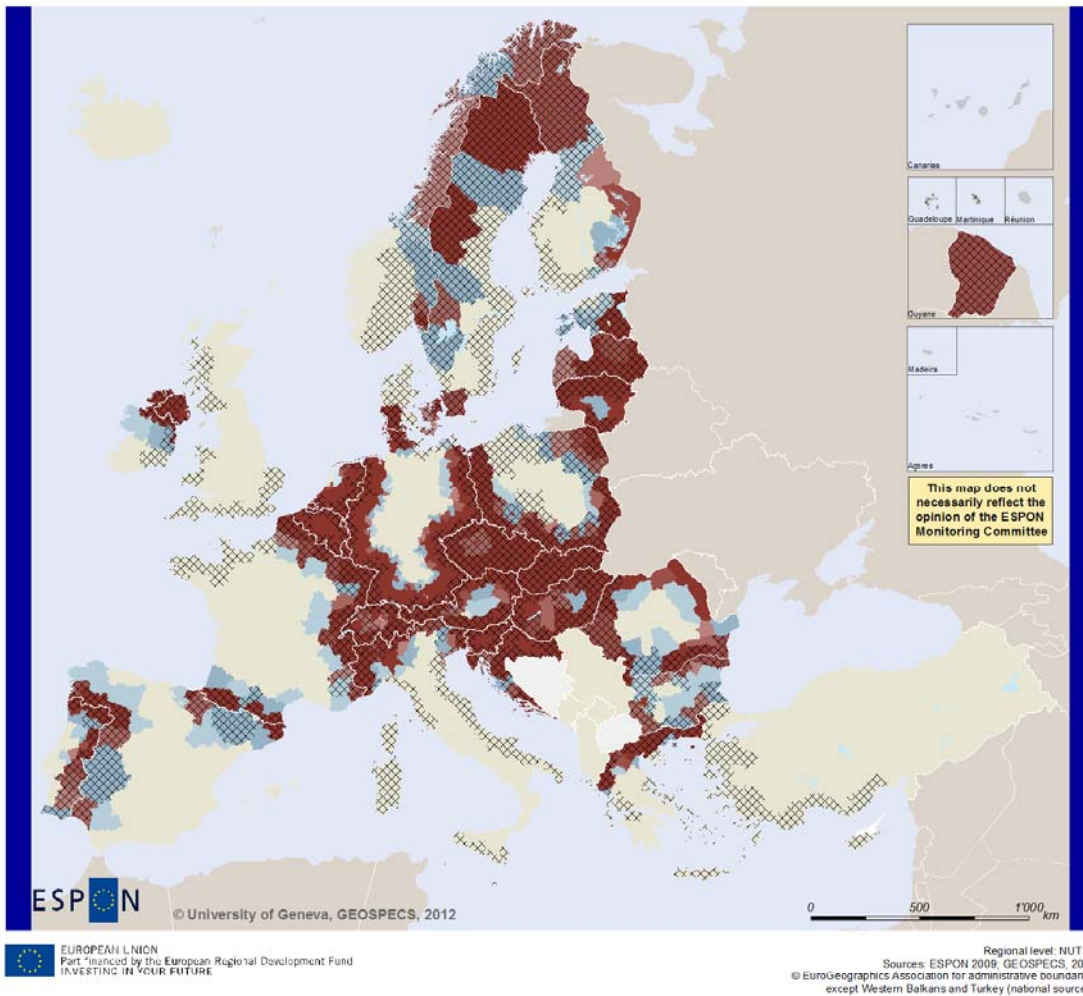
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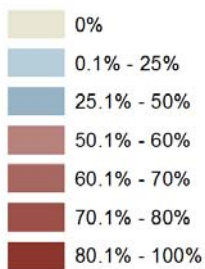
**BDA according to ESPON typology:  
 Regions participating in  
 cooperation programmes**



**Map 1 Border NUTS 3 regions, 45 minutes accessibility (area)**



**GEOSPECS delineation of BDA:  
Percentage of total area  
accessible within 90min. driving  
from a border**



**Background elements**

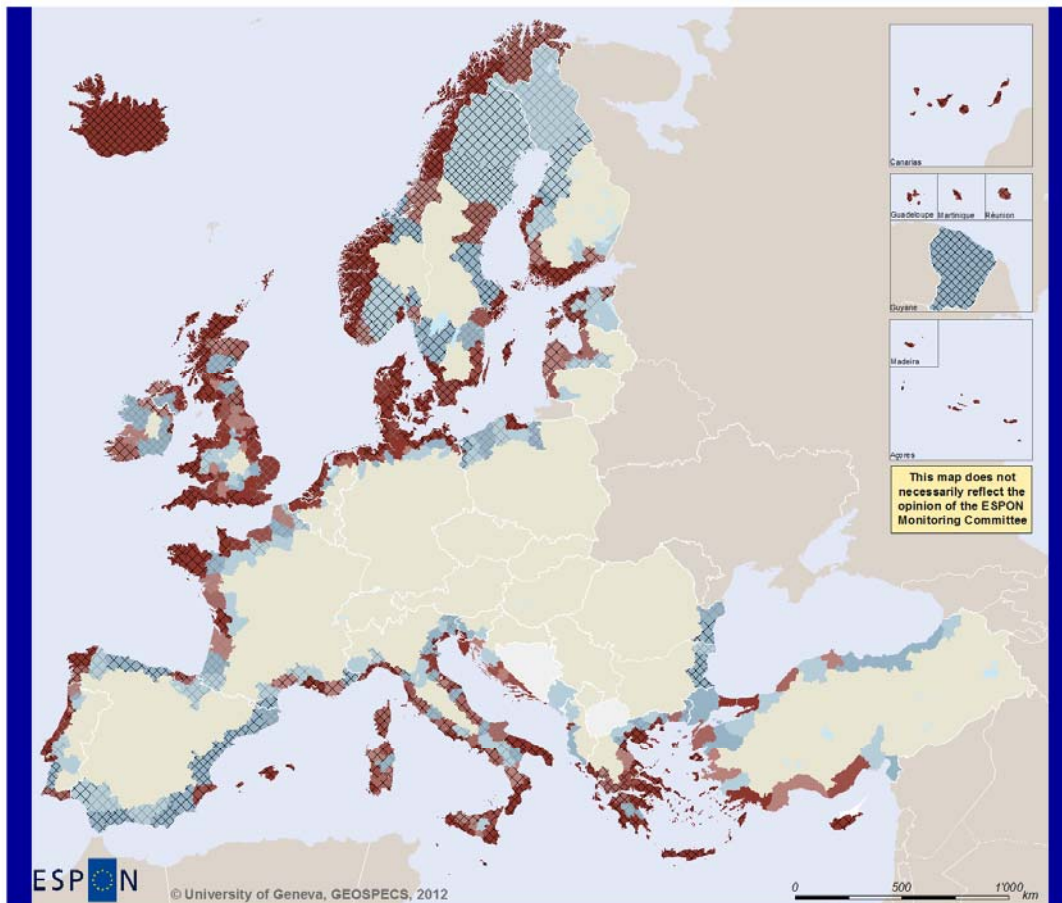


**BDA according to ESPON typology:  
Regions participating in  
cooperation programmes**



**Map 2 Border NUTS 3 regions, 90 minutes accessibility (area)**

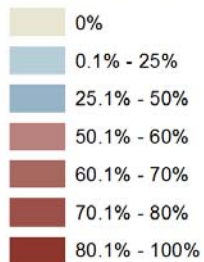




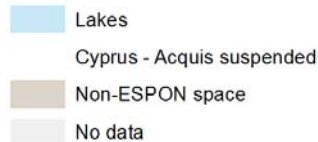
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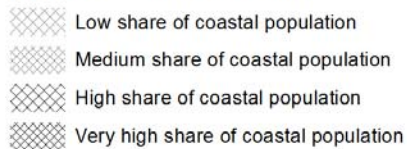
**GEOSPECS delineation of coasts:  
Percentage of total area  
accessible within 45min. driving  
from a coast**



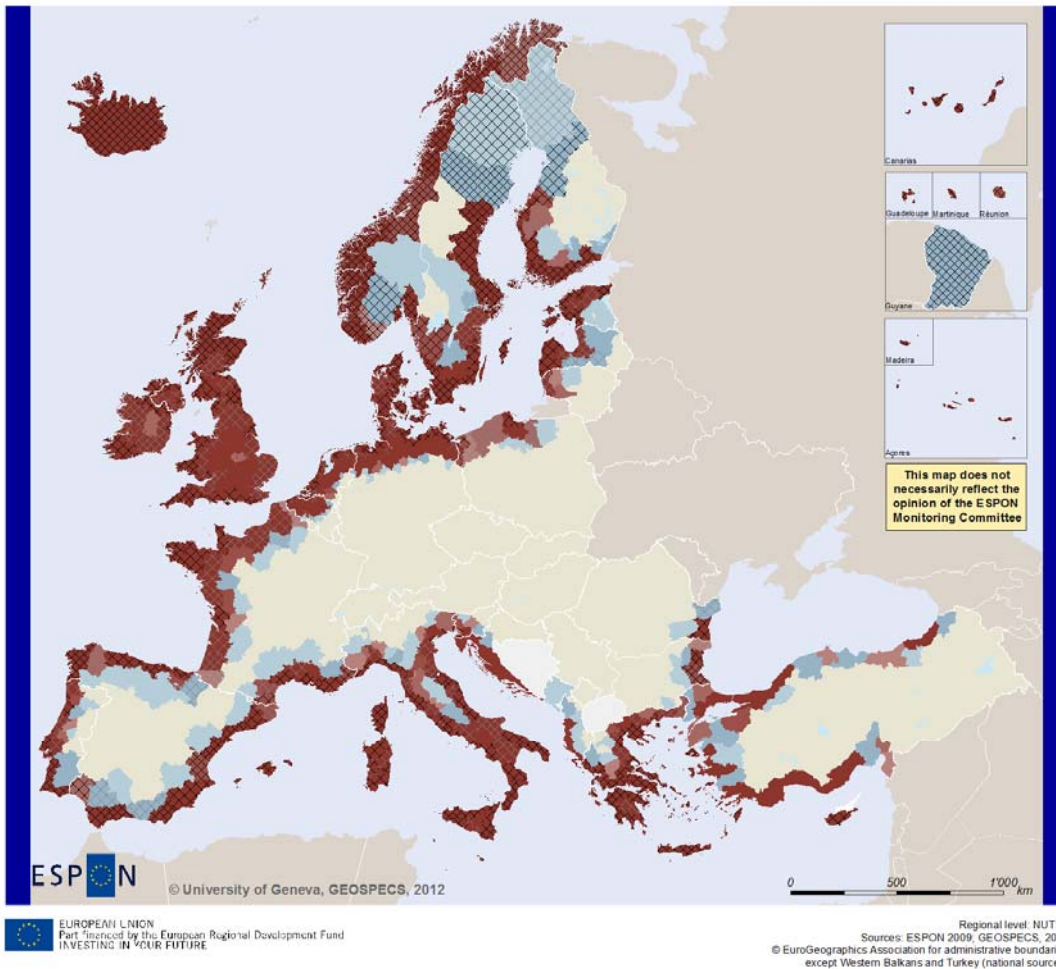
**Background elements**



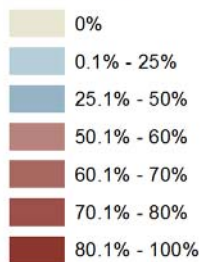
**Coasts according to ESPON typology:  
Share of population living  
within the coastal zone**



**Map 3 Coastal NUTS 3 regions, 45 minutes accessibility (area)**



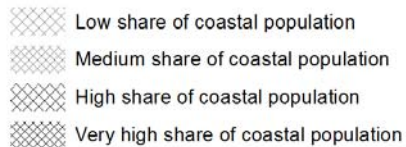
**GEOSPECS delineation of coasts:  
Percentage of total area  
accessible within 90min. driving  
from a coast**



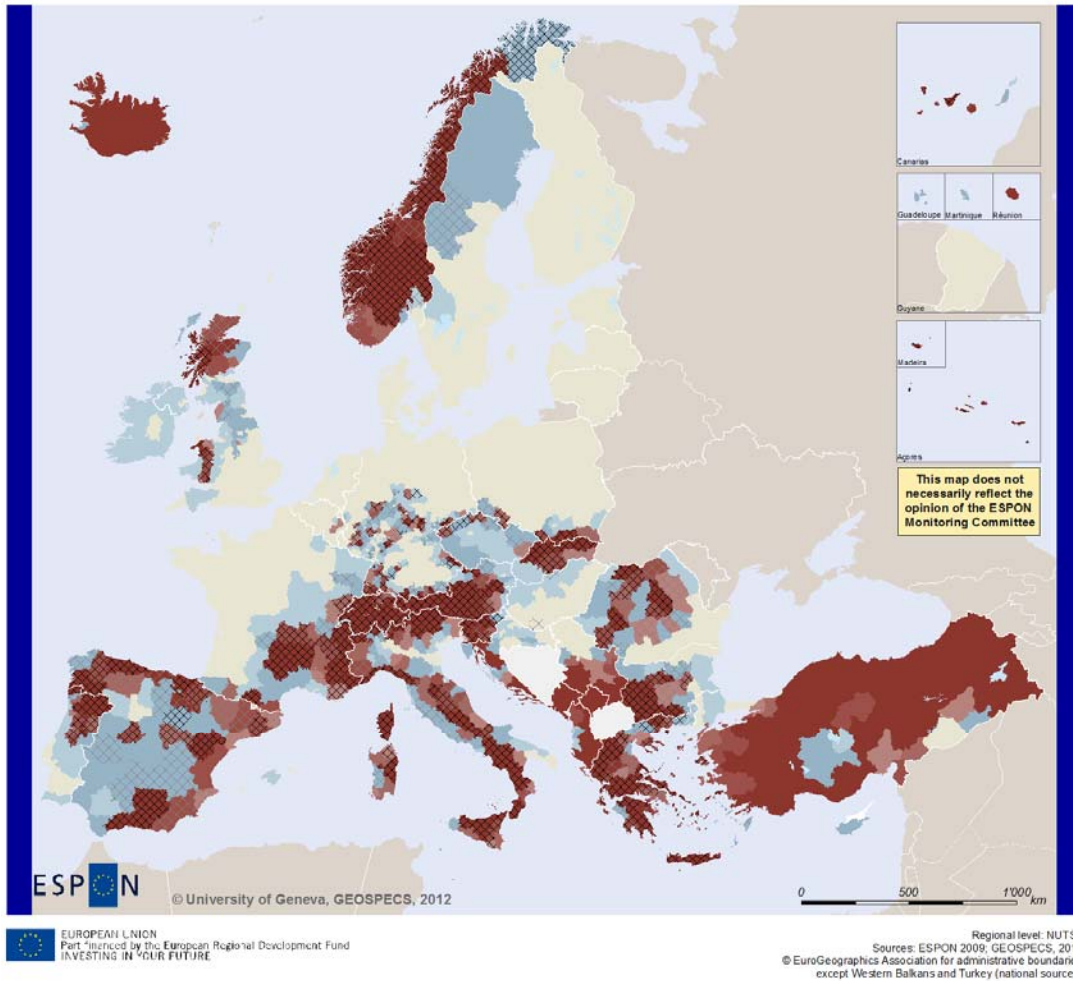
**Background elements**



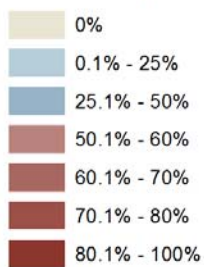
**Coasts according to ESPON typology:  
Share of population living  
within the coastal zone**



**Map 4 Coastal NUTS 3 regions, 90 minutes accessibility (area)**



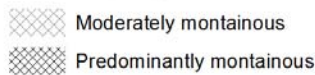
**GEOSPECS delineation of mountain:  
Percentage of total area  
covered by mountainous Lau2**



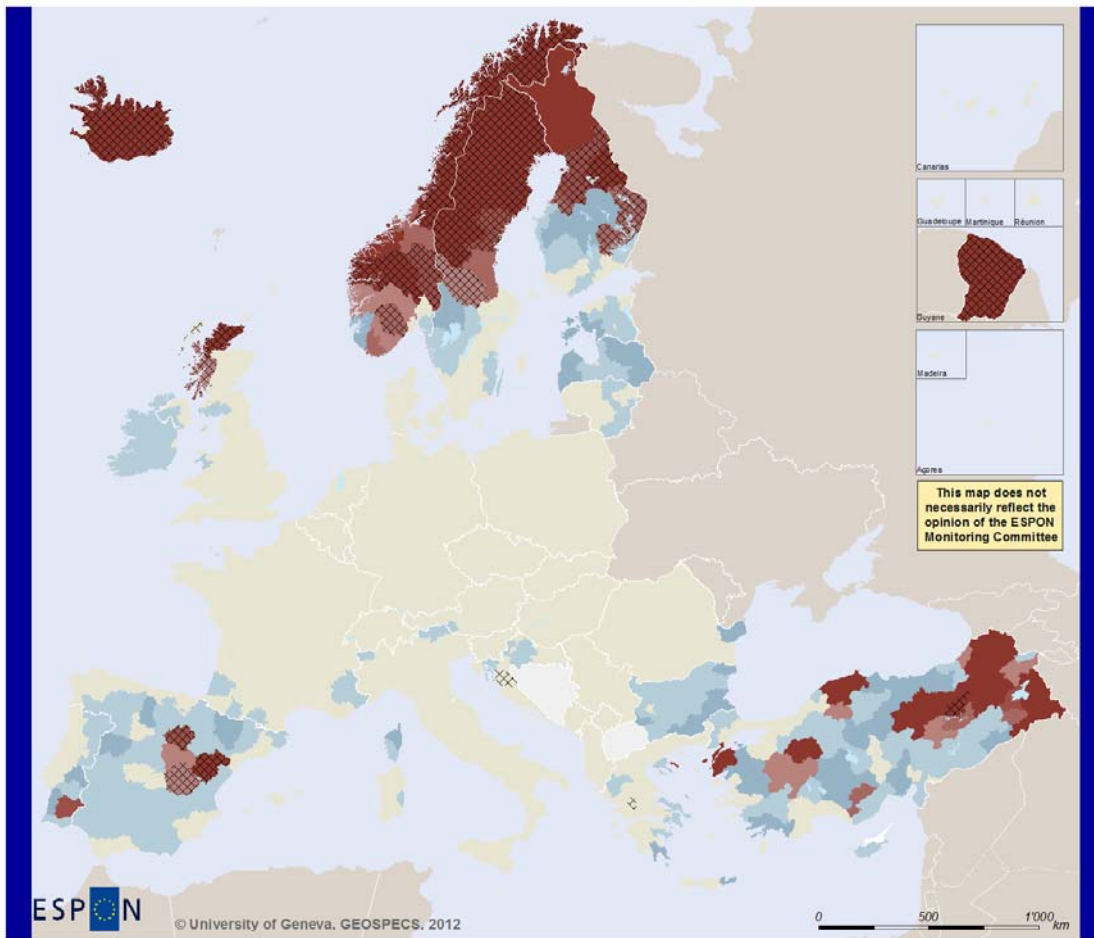
**Background elements**



**Mountains according to ESPON typology:  
Regions affected by mountains  
to a varying extent**



**Map 5 Mountain NUTS 3 regions (area)**

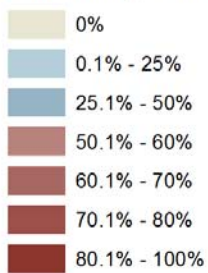


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**GEOSPECS delineation of SPA:  
Percentage of total area**



**Background elements**

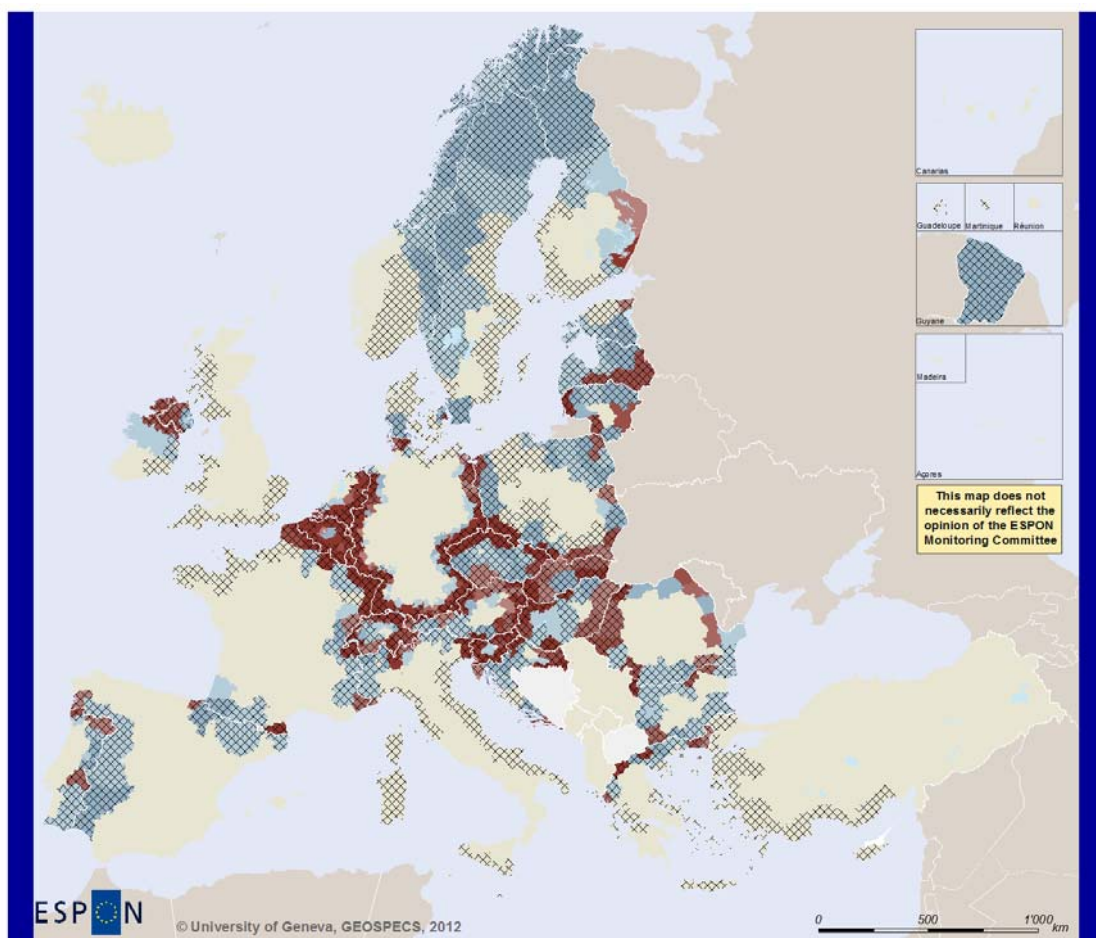


**SPA according to ESPON typology:  
< 12.5 hab/km<sup>2</sup>**



**Map 6 Sparsely populated NUTS 3 regions (area)**

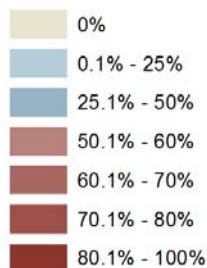
## C.2. GEOSPECS delineation at NUTS 3 with regard to the population within a specificity



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except Western Balkans and Turkey (national sources)

### GEOSPECS delineation of BDA: Percentage of total population located within 45min. driving from a border



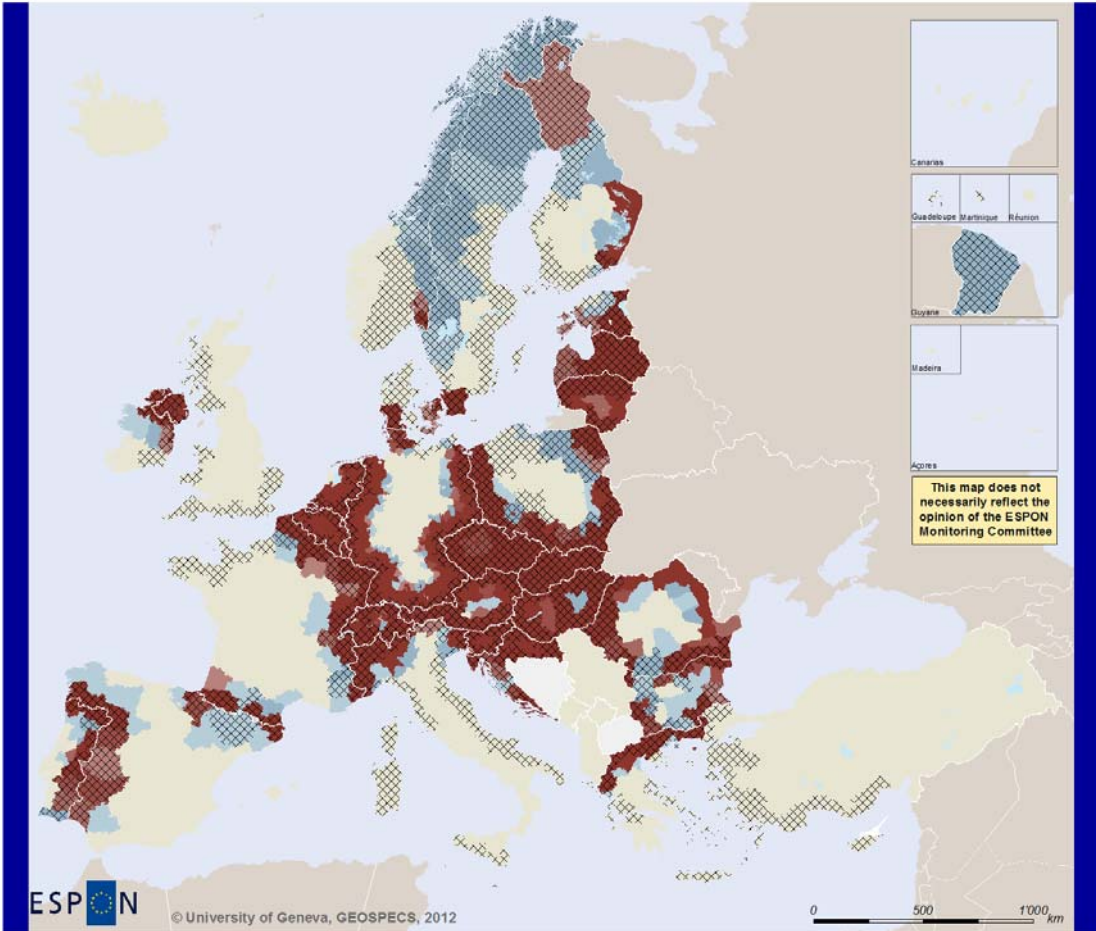
### Background elements



### BDA according to ESPON typology: Regions participating in cooperation programmes



**Map 7 Border NUTS 3 regions, 45 minutes accessibility (population)**



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Regional level: NUTS3  
Sources: ESPON 2008; GEOSPECS, 2011  
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except Western Balkans and Turkey (national sources)

**GEOSPECS delineation of BDA:  
Percentage of total population  
located within 90min. driving  
from a border**

- 0%
- 0.1% - 25%
- 25.1% - 50%
- 50.1% - 60%
- 60.1% - 70%
- 70.1% - 80%
- 80.1% - 100%

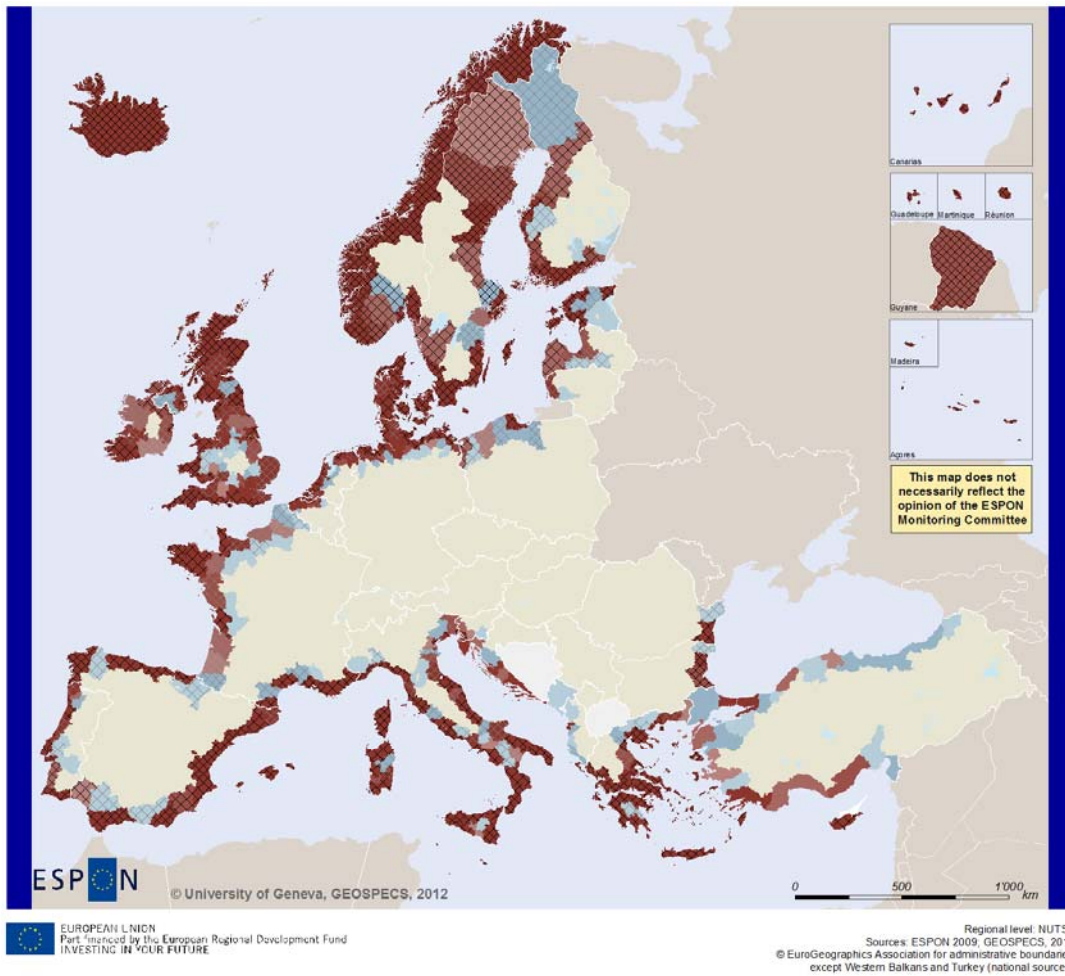
**Background elements**

- Lakes
- Cyprus - Acquis suspended
- Non-ESPON space
- No data

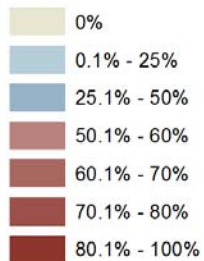
**BDA according to ESPON typology:  
Regions participating in  
cooperation programmes**



**Map 8 Border NUTS 3 regions, 90 minutes accessibility (population)**



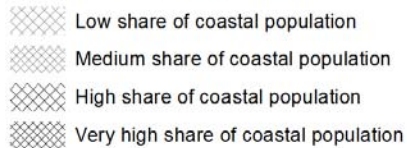
**GEOSPECS delineation of coasts:  
Percentage of total population  
located within 45min. driving  
from a coast**



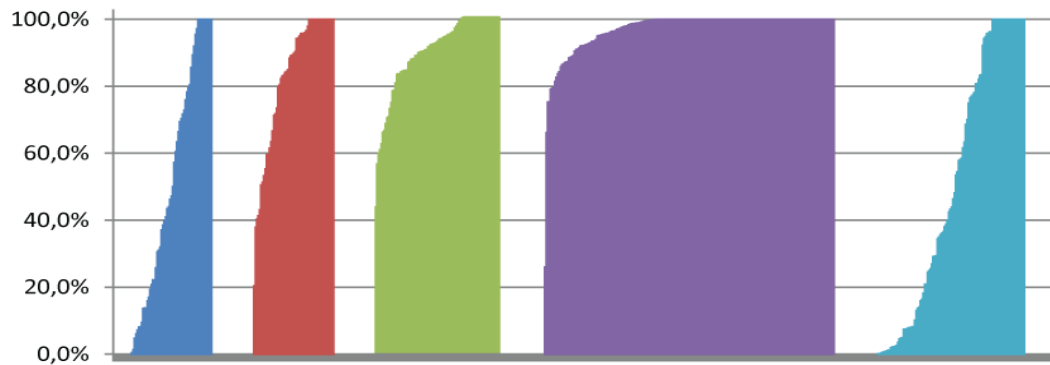
**Background elements**



**Coasts according to ESPON typology:  
Share of population living  
within the coastal zone**



**Map 9 Coastal NUTS 3 regions, 45 minutes accessibility (population)**

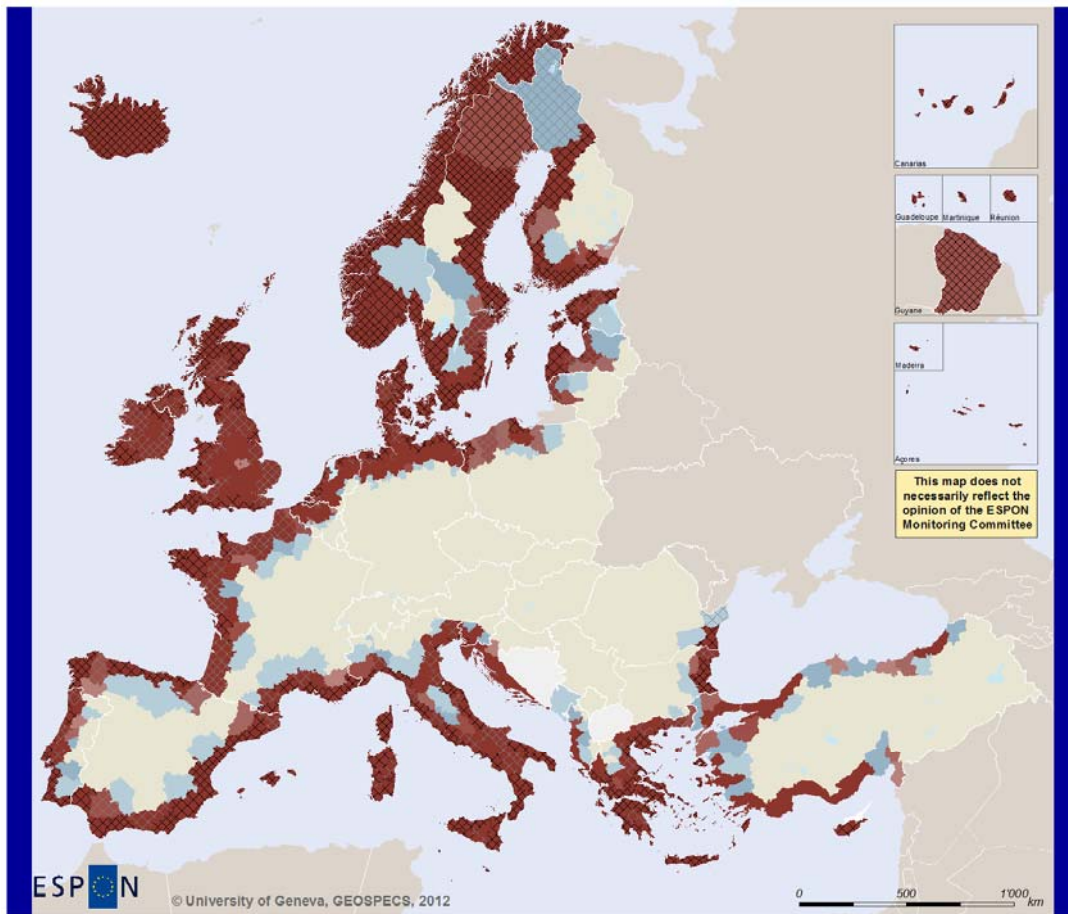


Proportion of population living in LAU2 within 45 minutes from the coast in types of coastal regions identified in the ESPON typology

- with a low share of coastal population (58 regions)
- with a medium share of coastal population (58 regions)
- with a high share of coastal population (89 regions)
- with a very high share of coastal population (206 regions)
- Areas not covered by classification (non-coastal regions)

**Figure 1** Proportions of population living in LAU2 within 45 minutes from the coast in the four classes of coastal regions of the ESPON typology

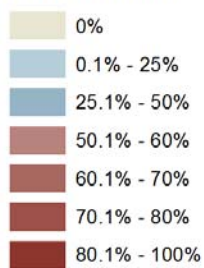




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Regional level: NUTS3  
Sources: ESPON 2009; GEOSPECS, 2011  
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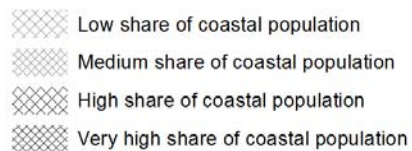
**GEOSPECS delineation of coasts:  
Percentage of total population  
located within 90min. driving  
from a coast**



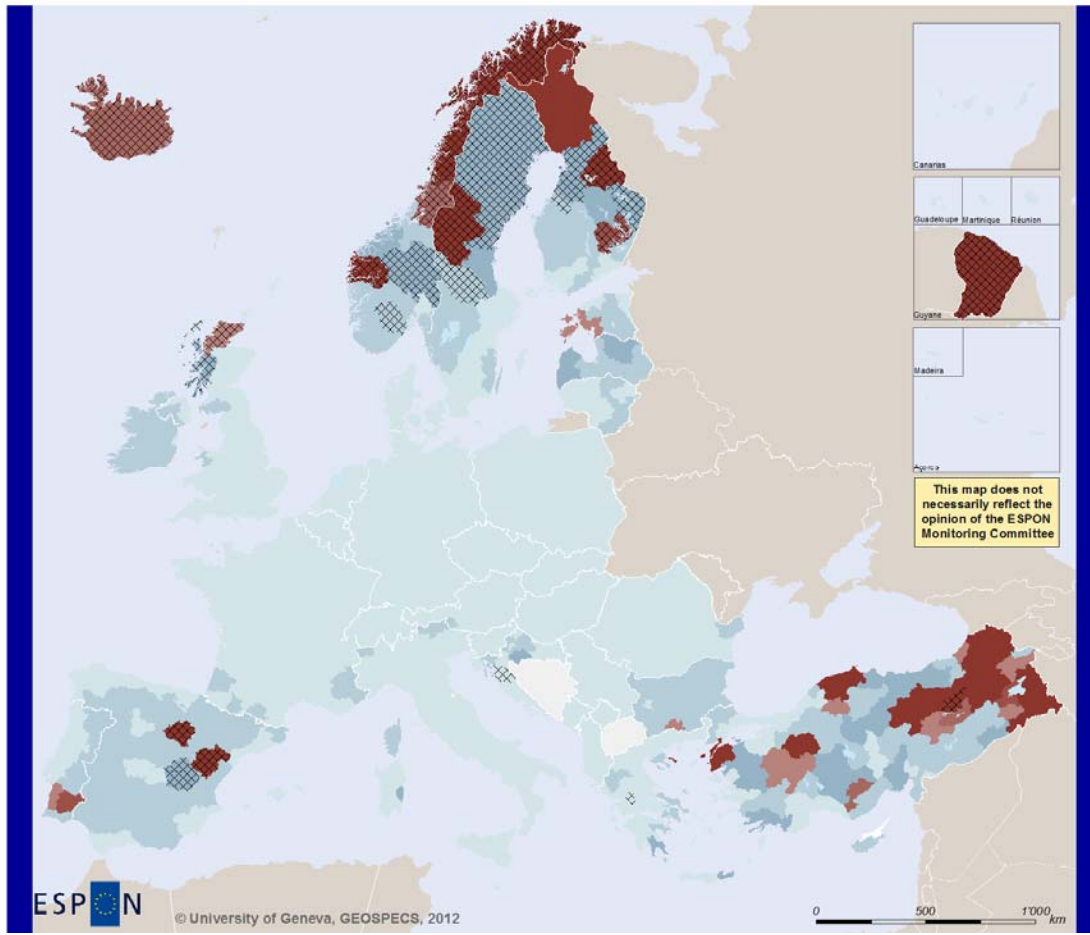
**Background elements**



**Coasts according to ESPON typology:  
Share of population living  
within the coastal zone**



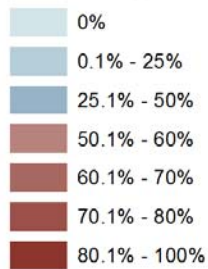
**Map 10 Coastal NUTS 3 regions, 90 minutes accessibility (population)**



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Regional level: NUTS3  
Sources: ESPON 2009; GEOSPECS, 2011  
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**GEOSPECS delineation of SPA:  
Percentage of total population**



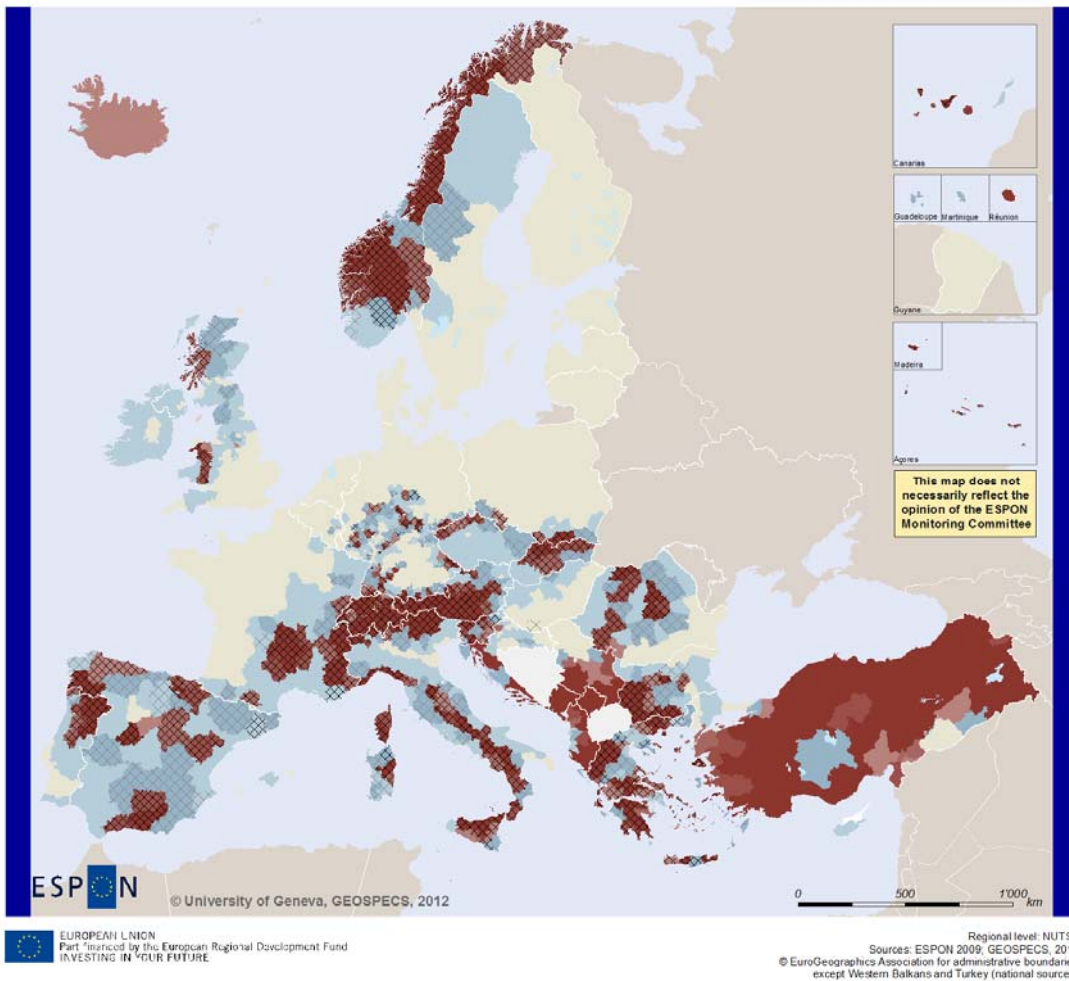
**Background elements**



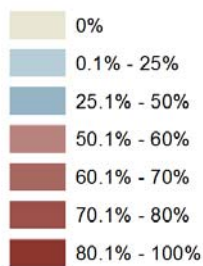
**SPA according to ESPON typology:  
< 12.5 hab/km<sup>2</sup>**



**Map 11 Sparsely populated NUTS 3 regions (population)**



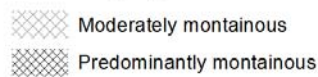
**GEOSPECS delineation of mountain:  
Percentage of total population  
living in mountainous Lau2**



**Background elements**



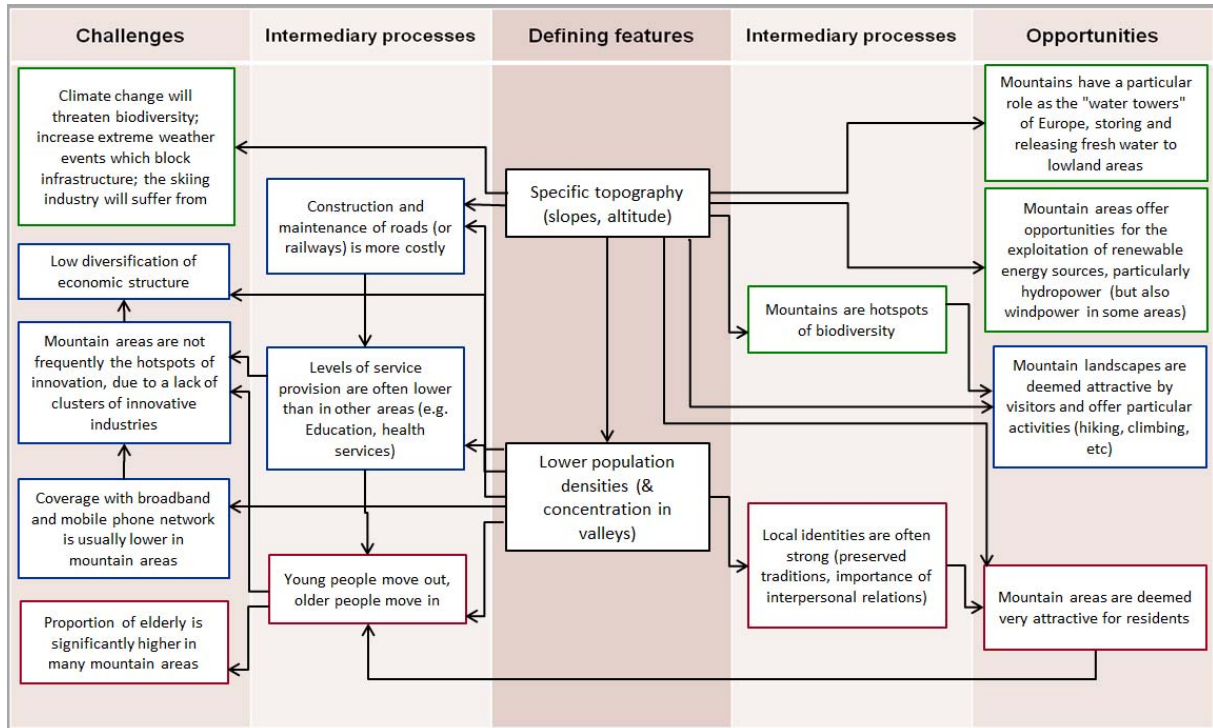
**Mountains according to ESPON typology  
Regions affected by mountains  
to a varying extent**



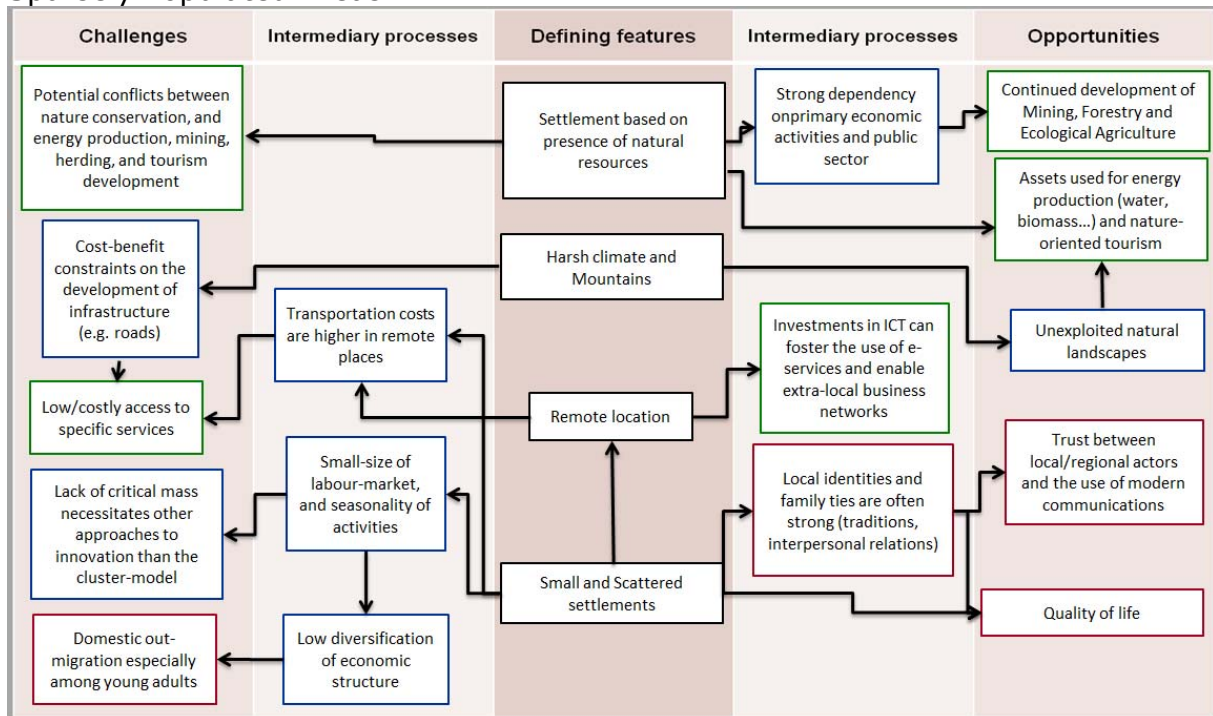
**Map 12 Mountain NUTS 3 regions (population)**

# Annex D. Nexus models

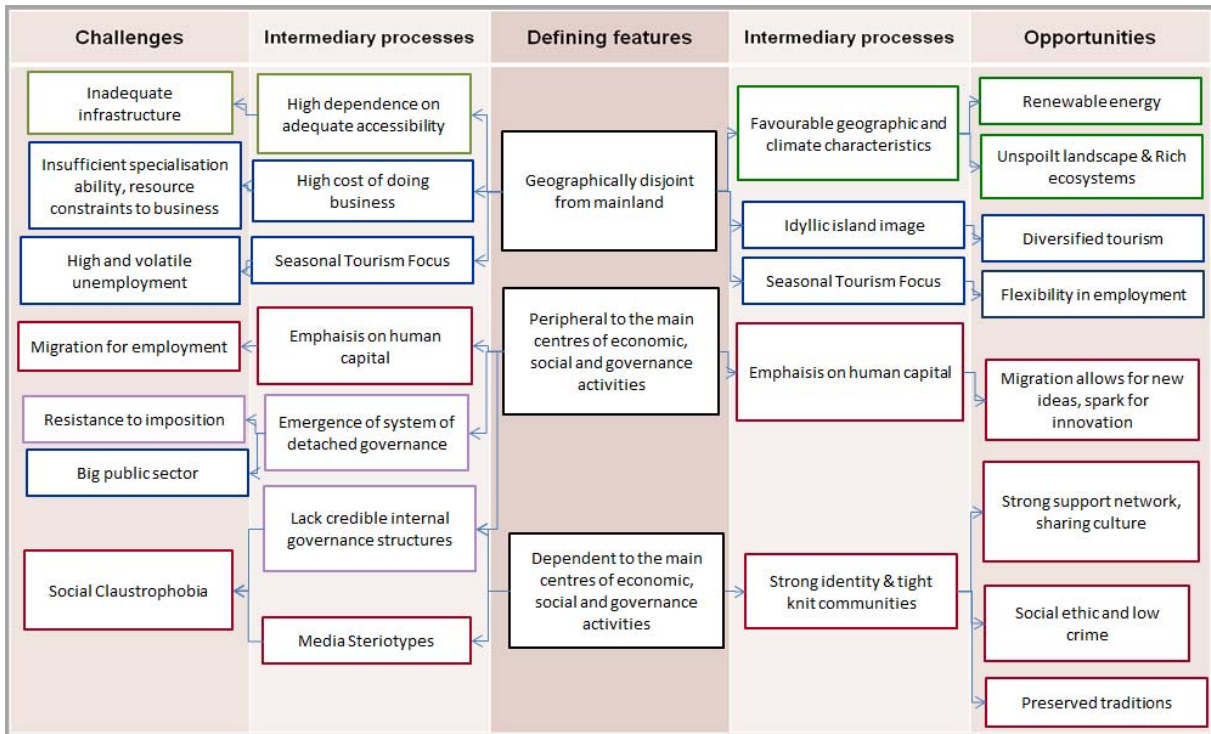
## Mountains



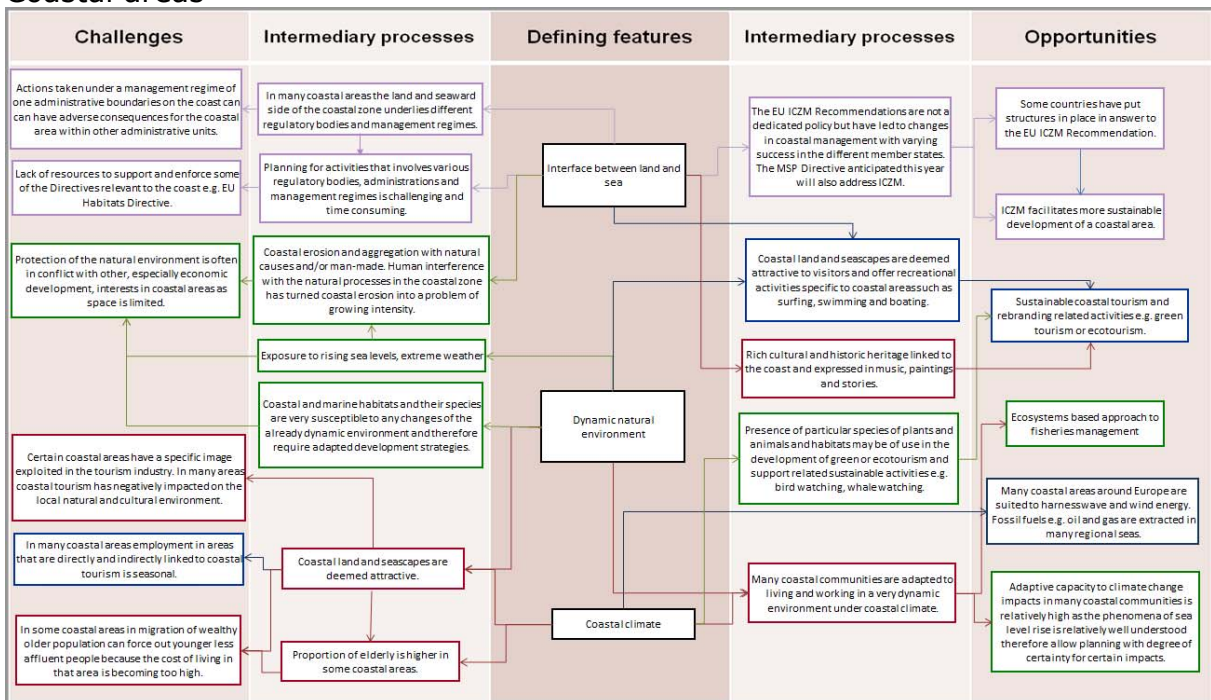
## Sparsely Populated Areas



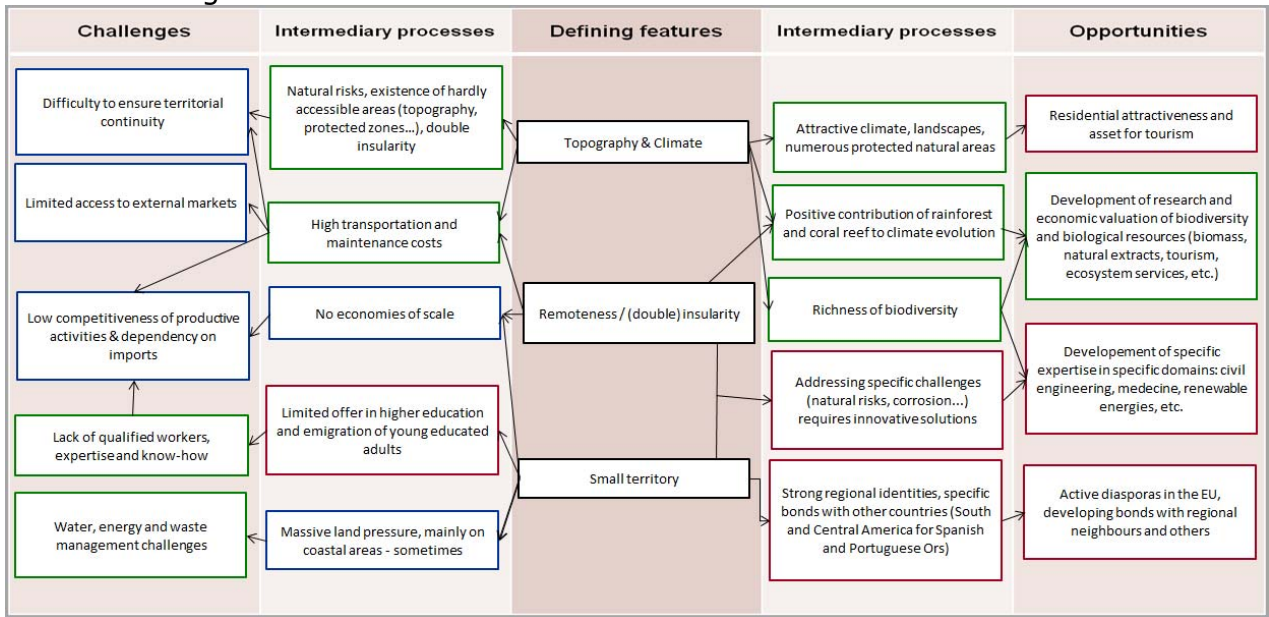
## Islands



## Coastal areas



## Outermost regions



## Annex E. Matrix for the development of nexus models

### *Policies and institutions*

<b>Theme</b>	<b>Sub-theme</b>	
<b><i>Governance (national, internal)</i></b>	<b>Governance structure and empowerment</b>	Can effects of geographic specificity on the functioning of local and regional governance be identified? --> If yes, do currently prevailing governance structures take these effects into account?
		Do discrepancies between the geographic patterns of geographic specificity and the delineation of administrative units (LAU2, regions, NUTS 0) have an effect on the governance of geographic-specificity related issues?
	<b>Multilevel governance</b>	Can dedicated governance structures dealing specifically with geographic-specificity related issues be identified? --> If yes, how does their existence influence development perspectives for GEOSPECS areas?
		Are some of the limitations to growth and/or sustainable development perspectives due to the weakness of institutions at the level of the geographically specific areas? Do dedicated policies for geographically specific areas at national or European level exist? Have they made a significant difference creating development opportunities in these areas and/or contributed to stigmatise them as "problem areas"?
<b><i>Public policies adaptation to context</i></b>	<b>Legal framework and regulations</b>	Are EU/national public policies adapted to the specific conditions in geographically specific areas?
		Are there regulatory obstacles to balanced and sustainable development in GEOSPECS areas?
	<b>Enforcement and means</b>	Is there a discrepancy between the ambitions for GEOSPECS areas and the financial and personal means available to realise them?
		Do measures implemented to promote more balanced and sustainable in GEOSPECS areas fail to produce the foreseen effects because of incapacity to address some key issues?
<b><i>Effects of sectoral policies</i></b>	<b>EU/national sectoral measures</b>	Can specific effects of EU/national sectoral measures be identified in GEOSPECS areas? Do these areas in some respects appear as "not fitting" general development models promoted at these levels?
	<b>National income redistribution and welfare state provisions</b>	Do national welfare state provisions, redistributive systems and other policies leading to transfers of income and wealth between regions have specific effects in GEOSPECS areas?

Economy and business

Category	Theme	Sub-theme
<i>Economic vulnerability / Robustness facing globalisation</i>	<b>Activity structure</b>	Can specific activity structures be observed in the geographically specific area ? (in terms of over-representation of certain sectors of activity, e.g. public and/or primary sector)
		Are there particular patterns of seasonality of employment linked to geographic specificity?
		Can specific forms of multi-activity be identified in the geographically specific area?
		Can specific forms of informal economic activity be observed in the geographically specific area?
	<b>Economic specificity related to geographic specificity</b>	What is the relative importance of the production of goods and services for external markets?
		Can effects of geographic specificity on competitiveness be identified? Is this an obstacle to the development of new economic activities, or an asset that is being capitalised upon?
		Does geographic specificity have an effect of transaction costs  --> within the geographically specific areas ?  --> in economic relations between geographically specific areas and other areas?
	<b>Tourism development</b>	Does geographic specificity create specific opportunities and challenges for the development of tourism?  --> can the main forms of tourism activities related to the geographic specificity be characterised as being either niche or mainstream tourism?
		Are there specific limitations to the development of tourism linked to geographic specificity (e.g. ecological vulnerability)?
		Does geographic specificity affect the possibility of developing tourism activities that would improve perspectives of balanced territorial development on the long term?
<i>Economic vulnerability / Robustness facing globalisation (continued)</i>	<b>Innovative capacities and knowledge</b>	Does geographic specificity affect the possibility of producing / accessing the knowledge needed for local development?
		Does geographic specificity have an influence on the capacity to initiate / implement innovation processes in the geographically specific areas?
		Can "brain-drain" processes linked to geographic specificity be observed?  Has the necessity of adapting to the geographic specificity allowed local communities to develop specific skills and/or innovation capacities?



<b>Category</b>	<b>Theme</b>	<b>Sub-theme</b>
<b>Accessibility, connectivity</b>	<b>Access to regional / external markets</b>	Can effects of geographic specificity on access to external / regional markets be identified?  --> Is this a limitation for the development of economic activities?  --> Does this contribute to improve the economic viability for local producers of goods and services (protecting them from competition from external actors?)
		<b>Transport infrastructures</b>
	Does geographic specificity require specific needs for transport infrastructure and/or maintenance costs?  Does geographic specificity have an effect on the access to transport infrastructure in the geographically specific areas?  --> are there seasonal variations in the access to transport infrastructure?	
	Does geographic specificity have an effect on the reliability of transport infrastructure in the geographically specific areas?  Does geographic specificity have an effect on the congestion of transport infrastructure in the geographically specific areas?	
	<b>Accessibility to services of general interest</b>	Are particular challenges for the provision of services of general interest associated with geographic specificity?
<b>Role of information and Communication Technologies</b>	<b>E-connectivity</b>	Are geographically specific areas characterised by more limited ICT network coverage?  Is there a potential to overcome some of the development challenges in geographically specific areas with the help of ICT?  --> Are these possibilities exploited? If not, why?

## Demography and social issues

Category	Theme	Sub-theme
<b>Demographic structures and trends</b>	<b>Imbalances and dynamics in socio-demographic structures</b>	<p>Is geographic specificity associated with some typical patterns in terms of gender balance and age structure?</p> <hr/> <p>--&gt; Do recent trends indicate that these patterns are maintained, increasing or decreasing?</p>
	<b>Migration trends</b>	<p>Is geographic specificity associated with some typical patterns in terms of migratory trends? (e.g. net migration ratio and age, origin, destination, socio-economic profile of in and out-migrants)</p> <hr/> <p>--&gt; Do recent trends indicate that these patterns are maintained, increasing or decreasing?</p>
<b>Residential attractiveness</b>	<b>Residential attractiveness as a result of geographic specificity</b>	<p>Is geographic specificity associated with some forms of residential attractiveness?</p> <hr/> <p>--&gt; For which category of population? What are the territorial assets that make it attractive (or not)?</p>
	<b>Links between economic growth and residential attractiveness</b>	<p>Can factors of residential attractiveness in geographically specific areas become a basis of economic development?</p> <hr/> <p>--&gt; Are these factors of economic development being exploited?</p>
<b>Regional identity and cultural heritage as factors of development</b>	<b>Geographic specificity as a factor of local and regional identity</b>	<p>Does geographic specificity contribute to foster more strongly asserted local and/or regional identities?</p> <hr/> <p>--&gt; At what scales are identities related to geographic specificity primarily developed? How are these identities inter-related with administrative geographic units?</p> <hr/> <p>--&gt; Are these identities also upheld among persons that have emigrated from the geographically specific area? Are the communities of emigrated used as a leverage for local and regional development?</p>
	<b>Identity/geographic specificity as a basis for external and internal territorial branding</b>	<p>Is geographic specificity a component in the branding of goods and services from the concerned areas?</p> <hr/> <p>How does geographic specificity shape the self-representation of persons living in geographically specific areas? Is this self-representation an asset or handicap when it comes to the promotion of balanced, sustainable territorial development?</p>

## Locational and physical issues

Theme	Sub-theme	
<b>Protected areas and biodiversity as factors of development</b>	<b>Non-commodified resources/Eco-system services</b>	<p>Can non-commodified resources/Eco-system services associated with geographic specificity be identified?</p> <hr/> <p>--&gt; Are they identified as such within geographically specific areas? By external stakeholders benefiting from these non-commodified resources/Eco-system services?</p>
	<b>Protected Areas</b>	<p>Are some forms of natural protection related to geographic specificity directly or indirectly?</p> <hr/> <p>Independently of natural protection measures and policies, do areas with more preserved natural areas tend to emerge in geographically specific areas, e.g. as a result of limited accessibility?</p> <hr/> <p>Can specific types of conflicts between conservation and local/regional development be identified in geographically specific areas?</p>
	<b>Particular plant and animal species as a factor of local development</b>	<p>Is geographic specificity associated with the presence of particular species/plants?</p> <hr/> <p>--&gt; Does this create a need for adapted local and regional development strategies?</p> <hr/> <p>--&gt; Can the presence of these species form the basis for comparative advantage for the development of geographically specific areas? Are they currently used? If not, for what reason?</p>
<b>Natural resource exploitation</b>	<b>Local/renewable energy state &amp; potential</b>	<p>Is geographic specificity linked with specific opportunities/challenges with regards to the production of renewable energy or extraction of fossil energy?</p> <hr/> <p>Is geographic specificity linked with specific opportunities/challenges or needs with regards to energy supply?</p>
	<b>Pollution and overuse of renewable and non-renewable natural resources</b>	<p>Do currently prevailing development models in geographic specific areas display any particular types of dependence on non-renewable or renewable resources, that would jeopardize their sustainability on the long term?</p>
	<b>Particular resources</b>	<p>Is geographic specificity linked to the presence of particular resources other than energy?</p>
	<b>Exploitation of natural resources</b>	<p>To what extent are these resources exploited? To what extent does this exploitation contribute to the perspective of balanced and sustainable development of communities within the geographically specific areas?</p>
<b>Natural resource exploitation (continued)</b>	<b>Access to key resources, Competition/conflicts for land use</b>	<p>Are any particular forms of degradation of land, soil and vegetation cover associated with geographic specificity? If yes, what are the reasons and how can they be overcome / compensated for?</p>

<b>Theme</b>	<b>Sub-theme</b>	
<b><i>Vulnerability of human-environment systems to climate change</i></b>	<b>Risks of natural and human-induced hazards and climate change</b>	<p data-bbox="710 297 1473 365">Is geographic specificity associated with particular threat to the human-natural system in the perspective of climate change?</p> <hr data-bbox="699 416 1535 421"/> <p data-bbox="1013 427 1520 562">Is the adaptive capacity of communities in geographically specific areas in the face of climate change different from that of other areas?</p>

## Annex F. Case studies: Synthesis

### Highland Council area

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Low diversification of economy / dependence on tourism &amp; public sector</p> <p>Long travel times (due to dispersed settlements and terrain) - deters new enterprises makes some goods more expensive</p> <p>Services of general interest are provided at lower levels (higher costs per head due to low population densities and long distances)</p>	<p>Attractive area for tourists (unique landscapes + outdoor activity opportunities + Highland image)</p>	<p>Recreation value hinging on</p> <ul style="list-style-type: none"> <li>- unique landscape + outdoor activities</li> <li>- cultural elements</li> </ul>
Society	<p>Ageing society (due to immigration of old &amp; outmigration of young)</p> <p>High house prices (due to influx of older people) are sometimes unaffordable for younger</p>	<p>Attractive area for residents (living quality due to quality of environment and close-knit communities)</p>	<p>Unique cultural heritage including specific products (e.g. whisky), garments (e.g. kilts), traditions (e.g. Highland dances), Gaelic language + strong sense of identity: <i>cultural value + heritage value</i></p>
Environment	<p>Lack of grid capacity may hinder efficient exploitation of renewable energies</p>	<p>Potential for renewable energy: wave &amp; tidal, wind (offshore &amp; onshore), hydro</p>	<p>High levels of biodiversity supported by Highland landscape: <i>preservation value / intrinsic value</i></p> <p>Potential for exploiting renewable energy sources: <i>direct use value + option value</i></p>

## Jura massif

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Low diversification of economy</p> <p>Slight dependence on Swiss Jura due to concentration of employment (&amp; companies) on Swiss side</p> <p>Parts of French Jura face lack of qualified workforce due to attractiveness of employment in Switzerland</p> <p>Volatility of exchange rate makes cross-border business relations unpredictable</p>	<p>Vibrant industrial sector, image of quality technology (watches, microtech), knowhow</p> <p>Many companies in Swiss Jura because of lower tax rates - employment opportunities</p> <p>Permeable border makes daily commuting easy (from France)</p> <p>Potential for tourism still under-exploited (potential to draw on quality food products and family activities)</p>	<p><i>Reservoir of know-how</i></p> <p>Recreation value hinging on</p> <ul style="list-style-type: none"> <li>- particular half-open landscape</li> <li>- cultural elements</li> </ul>
Society			<p>Cultural heritage including traditions such as cheesemaking, watchmaking: <i>cultural value + heritage value</i></p>
Environ ment		<p>Potential to market high-quality timber but also quality cheeses</p>	

## Outer Hebrides

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Low diversification of economy (dependence on public sector)</p> <p>Access to islands time-consuming &amp; costly</p> <p>Dependence on mainland (for provision of goods &amp; services)</p> <p>Goods more expensive (than on mainland)</p> <p>Services of general interest are provided at lower levels (higher costs per head due to low population densities and long distances)</p>	<p>Attractive area for tourists due to nature &amp; landscape</p> <p>Harris Tweed as a niche product</p>	<p>Recreation value hinging on</p> <ul style="list-style-type: none"> <li>- unspoilt "pure" landscape</li> <li>- remoteness from everyday "bustle"</li> </ul>
Society	<p>Strong outmigration (particularly by young, due to lack of employment opportunities / education)</p> <p>Ageing population (+ slight gender imbalance)</p>	<p>High living quality (natural capital, strong sense of identity, close-knit communities, particular traditions)</p>	<p>Unique cultural heritage including Gaelic language: &amp; traditions such as Tweed making + strong sense of community: <i>cultural value + heritage value</i></p>
Environment		<p>Potential for renewable energies: wind &amp; wave</p>	<p>Potential for exploiting renewable energy sources: <i>direct use value + option value</i></p>

## Sicily

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Low diversification of economy (dependence on tourism &amp; public administration)</p> <p>Underground economy / Mafia (deterrent for new enterprises)</p> <p>Goods more expensive (than on mainland)</p> <p>"Culture" of dependence (dependence on mainland economic centres)</p> <p>Pressure on environment from tourism (waste, infrastructure...)</p> <p>Access to island time-consuming &amp; costly</p>	<p>Attractive area for tourists, brand as "sea and sun" destination</p>	<p>Recreation value hinging on</p> <ul style="list-style-type: none"> <li>- climate (sunshine duration and warmth)</li> <li>- coast and associated "seaside" activities</li> <li>- cultural elements</li> </ul>
Society	<p>Challenge of integrating high number of African immigrants that land on shore</p>	<p>Attractive living area (climate, "culture of Sicilianity", strong ties within community)</p> <p>Multicultural society</p>	<p>Rich history at the crossroads of many cultures: <i>heritage value</i></p> <p>Interface (melting pot) for many cultures: <i>cultural value</i></p>
Environment	<p>Lack of grid capacity may hinder efficient exploitation of renewable energy</p> <p>Water scarcity</p>	<p>Potential for renewable energy: wave, wind, hydro, solar</p>	<p>Living area for unique species: <i>preservation value / intrinsic value</i></p> <p>Potential for exploiting renewable energy sources: <i>direct use value + option value</i></p>



## Tornedalen

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	Focus on primary production and exploitation of raw material leads to dependence on international fluctuations	Availability of natural resources; mining due to increase even more in coming years	Resources of worldwide importance (forests, metals, minerals): <i>direct use value + option value</i>
	Geographical isolation of local labour markets (locally lack of skilled labour)	Upcoming opportunities in mining sector will attract skilled workforce from elsewhere	
	Services of general interest are provided at lower levels (higher costs per head due to low population densities and long distances)		
	Seasonality of employment in tourism	Attractive area for outdoor and "experience" tourism + skiing & ice "brand"	
	High costs to access markets (mainly due to long distances but also situation close to border at margin of national transport system)		
Society	Ageing population		
	Gender imbalance (more male than female)	Sámi people as a "unique selling point"	Living area of the only indigenous people of the EU: <i>heritage value / intrinsic value</i>
Environment		Strong cultural cohesiveness across the border & strong cooperation	
		Potential for renewable energies: hydro, wind, biomass	Potential for renewable energy; Living area for unique species

## Sparsely populated areas of Spain

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Small size does not attract investment</p> <p>Lack of agglomeration / all urban areas are outside daily commuting distance</p> <p>Benefits from resource exploitation may go elsewhere: investors from abroad</p> <p>Pollution from primary extraction reduces attractiveness of area</p> <p>Dependence on public money (importance of public services + CAP + previously coal mining subsidies)</p> <p>Services of general interest are provided at lower levels; higher costs</p>	<p>Natural resources (construction materials, iron, forests) with potential (<i>as opposed to coal mining which relies on subsidies</i>)</p>	<p>Resources of worldwide importance (forests, iron, construction materials): <i>direct use value + option value</i></p>
Society	<p>Access difficult: high-speed infrastructure focusses on connecting agglomerations, leaving SPAs lagging</p> <p>Agriculture less profitable (access to water, temperature differences, terrain)</p> <p>Ageing population (previous outmigration + retirement migration)</p> <p>Gender imbalance</p>	<p>Potential to expand tourism (cultural, historical attractions)</p> <p>Famous agricultural products (wine, oil, ham) + potential for organic farming / niche products</p>	<p>Rich history (+architectural heritage) : <i>cultural + heritage value</i></p>
Environment	<p>Lack of grid capacity may hinder efficient exploitation of renewable energy</p>	<p>Image as "uncrowded" living space with environmental and social capital</p> <p>Potential for renewable energy: particularly wind, also solar and biomass</p>	<p>Potential for exploiting renewable energy sources: <i>direct use value + option value</i></p>

## Belgian coast

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	Environmental degradation due to overdevelopment of the coast by tourist structures	Distribution and logistics focal point (enabled by: central position in Europe, dense road network)  Attractiveness of the Belgian coast as a tourist destination	Strategic position / Belgian coast as trading hub & distribution centre for all of Europe  Recreation value hinging on: - activities particular to coasts (swimming, boating...) - unique landscape
Society	High land prices crowd out younger population	Attractive living space (landscape & environmental capital)	
Environment	Overfishing: depletion of a resource, but also decline of a traditional sector (of employment)  Environmental degradation and decline of biodiversity due to human activities  Risk of sea level rise  <i>(fragmentation of management approaches as an example where "compensation does not work"?)</i>	Potential for offshore renewable energy: particularly offshore wind	Regeneration of a resource: Belgian North Sea as an important spawning and nursery ground for some commercial fish species  Living area for many endangered species: <i>preservation value / intrinsic value</i>  Potential for exploiting renewable energy sources: <i>direct use value + option value</i>

## Irish Sea

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	Decline of heavy industry (steel, shipbuilding...) that was traditionally linked to coastal sites in Ireland	Ports as point of departure for all maritime transport & interface for exchange  Attractiveness of coasts as tourist destinations	Recreation value hinging on: - activities particular to coasts (swimming, boating...) - unique landscape
Society	Environmental and social pressures from the high number of second homes and holiday homes ("ghost estates") Ageing society (high share of elderly)	Attractiveness of coasts as living areas (high scenic value)	
Environment	Overfishing: depletion of a resource, but also decline of a traditional sector (of employment) Destruction of habitats & environmental degradation by extensive human activity  Predicted sea level rise	Potential for offshore renewable energy: particularly offshore wind	Resource of worldwide importance (fish): <i>direct use value + option value</i>  Unique habitats for many species: <i>preservation value / intrinsic value</i>  Potential for exploiting renewable energy sources: <i>direct use value + option value</i>

## Geneva CBMR

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Competition for space leads to high land/real estate prices</p> <p>Public transport network across border insufficient</p>	<p>International finance centre Concentration of international organizations Research cluster</p> <p>Many opportunities for (well-paid) employment in the canton Geneva (also for residents of surrounding areas) Image of natural charms in combination with historic &amp; architectural assets</p> <p>Projects to improve public transport network</p>	<p>Recreation value hinging on: - landscape - cultural elements</p> <p>Multicultural society: learning process: <i>cultural value</i></p>
Society	<p>Border as a limit for spatial planning: in Geneva city development of housing does not keep up with rapidly increasing population</p> <p>High number of internationals / commuters creates slight exclusionary sentiments among some parts of Genevan population</p>	<p>Strong links between both sides of border via commuters: French areas function as "suburbs" for Geneva city without border being an obstacle</p> <p>International &amp; multilingual environment: creativity</p>	
Environment	<p>Urban sprawl (consumption of natural areas) + high resource use and waste production</p>		

## Luxembourg CBMR

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Competition for space leads to high land/real estate prices</p> <p>Service provision restricted to national boundaries in many cases</p> <p>Urban pressure on natural environment</p>	<p>Concentration of knowledge-intensive activities (financial services)</p> <p>Attractiveness for highly qualified workforce (opportunities + high wages)</p>	<p>Multicultural &amp; multilingual society: <i>cultural value</i></p>
Society		<p>Multilingual setting makes access to labour market easy for different nationalities</p> <p><i>borders highly permeable for workers (EU rules on free circulation as example where "promotion works"?)</i></p>	
Environment			

**« Black Triangle » : Border between Poland, Germany and the Czech Republic**

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>After 1989, loss of industry &amp; mining activities (heavy industry sites historically often in periphery of countries) Strong differences in activity structure along borders Strong differences in GDP along borders</p> <p>Accessibility across border insufficient: low number of cross-border rail connections</p>	<p>Ecotourism as a potential: attractiveness of the middle mountain range + cycling route along Elbe Accessibility catching up: number of road crossings increased significantly in last years Position at the crossroads (between Berlin, Prague and Wroclaw) could make it an important transit region (but risks of ecological degradation) Cross-border cooperation advancing</p>	<p>Recreation value hinging on: - mountainous landscape + outdoor activities</p> <p>Strategic position</p>
Society	<p>Services of general interest declining: e.g. decreasing number of students makes maintenance of decent education difficult</p> <p>Language differences along borders</p> <p>Cultural "barriers" at borders</p> <p>Outmigration in German part: particularly young people emigrate and leave old behind)</p>		<p>Interface for different cultures: learning process: <i>cultural value</i></p>
Environment	<p>Strong air pollution (due to mining &amp; industry) in 80s with repercussions still today (forests)</p>		

## Polish-Ukrainian border

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Fortification of EU external border after Poland joined Schengen makes cross-border contacts difficult (although contacts had been flourishing in 90s)</p> <p>Only 6 road and 4 railroad crossing points exist along the border - not sufficient for handling the large transport flows across the border</p> <p>Border crossing takes long time due to customs requirements, queues, visa requirements....</p> <p>For both nations, these areas are among the economically weakest (70% of national GDP) due to peripherality</p>	<p>Strategic position for trade</p>	
Society	<p>Visas hard to obtain for Ukrainian citizens since PL joined Schengen - some lost basis of livelihood</p> <p>Decrease of population (outmigration)</p> <p>Ageing population</p> <p>Lack of identification with border area</p> <p>Flow of illegal immigrants (&amp; asylum seekers) to EU (and sometimes harsh reaction thereto: detention centres); arising xenophobic sentiments</p>	<p>EURO 2012 football championship as trigger for modernization of border crossings</p> <p>LBT (Local Border Traffic Agreement) improves options</p> <p>Diverse culture, ethnicities</p> <p>Common history, cultural affinities, similar languages, cultural events involving both sides of border</p>	<p>Gateway between EU and non-EU countries</p>



## Canary Islands

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>Remoteness (generates costs especially for transport)</p> <p>Limited size of market (no economies of scale)</p> <p>Dependency on imported products (higher costs)</p> <p>Overreliance on one sector: tourism</p> <p>Hardly any industry</p> <p>Hardly any qualified workforce</p> <p>Limited transport options within islands + dependence on air or sea</p> <p>Infrastructure (hospitals, ports...) not efficient as they operate on small scale and on several islands in parallel</p>	<p>Area extremely attractive for tourists due to climate (= &gt; GDP close to EU27)</p> <p>Building relations with African neighbours</p> <p>Strategic "outpost" for EU</p> <p>Research hub (space observatories)</p>	<p>Recreation value hinging on climate (sunshine duration + warmth)</p> <p>Strategic location</p> <p>Knowledge generation</p>
Society	<p>Illegal immigration &amp; drug traffic</p>	<p>Multicultural, diverse society (immigrants of different ages &amp; backgrounds)</p>	<p>Exchange node for cultures / multicultural society: <i>cultural value</i></p>
Environment	<p>High costs for water provision &amp; energy provision</p> <p>Environmental degradation (overdevelopment of touristic and other infrastructure)</p> <p>Risks: fires, floods (&amp; volcano)</p>	<p>Potential for renewable energies: mainly wind and solar</p>	<p>Potential for renewable energy production</p> <p>Ecological richness: <i>preservation value / intrinsic value</i></p>

## French Guyana

	Leverage for "territorial justice" (Compensation of constraints)	Leverage for "territorial development" (Promotion of assets)	Non-economic values
Economic structure	<p>GDP per capita of only 47% of French average and high unemployment rates</p> <p>Reliance on public sector</p> <p>Lack of modernization in primary sector</p> <p>Limited number of cultural &amp; historic attractions limit tourism</p> <p>Cooperation with neighbouring countries still ineffective</p> <p>High cost for maritime freight</p> <p>Road network concentrates on coast,</p> <p>Broadband coverage very low</p>	<p>Resources (gold, wood)</p> <p>Aerospace sector</p> <p>Tourism sector still has potential</p>	<p>Knowledge generation</p>
Society	<p>Illegal immigration (linked to underground economy and drug traffic)</p> <p>Population largely with only low qualifications</p> <p>Service provision lagging: Number of healthcare specialists &amp; number of teachers per pupil lower than on mainland</p>		<p>Exchange node for cultures / multicultural society: <i>cultural value</i></p>
Environment		<p>Potential for renewable energies: mainly hydro and solar, but also biomass</p>	<p>Ecological richness: <i>preservation value / intrinsic value</i></p> <p>Extraordinary importance of rainforests as carbon sinks</p>



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The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN 978-2-919777-14-3