ESPON

European Perspective on Specific Types of Territories

Applied Research 2013/1/12

Inception Report | Version 02/09/2010

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This report presents a more detailed overview of the analytical approach to be applied by the project. This Applied Research Project is conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

Information on the ESPON Programme and projects can be found on www.espon.eu

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This basic report exists only in an electronic version.

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Table of contents

Figures

Tables

1. Introduction

The purpose of the ESPON GEOSPECS project is to explore how one could facilitate the achievement of strategic targets of the European Union and of European countries by taking better account the diversity of development preconditions linked to geographic specificities. Among these strategic targets, one may in particular mention:

- Long term economic growth,
- Socially balanced development,
- Ecologically sustainable development,
- Sustainable management of natural resources,
- Promotion of high quality of life and defence of a European model of society,
- Promotion of cultural diversity,
- Cross-border integration within Europe and along Europe's external borders.

The following types of geographic specificities are considered:

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

The specific development perspectives of densely populated areas within each of these types of areas will be assessed.

Territories with geographic specificities will be collectively referred to as "Territorial Diversity Areas" or "TeDi areas" in the report. By opposition, the notion of "mainstream territory" can be interpreted as the uncritical application of economic conceptions of space to policy making. Krugman's New Economic Geography incorporates the dynamics of concentration and dispersion of economic activity and the productive advantages of spatial closeness in its modelling[1], but does not take into account the diversity of regional contributions to the balanced long term development of the economy. Its uncritical application

[1] Krugman, Paul, (1995) *Development , Geography and Economic Theory*, Cambridge, Massachusetts: MIT Press.

to policymaking therefore logically leads to a focus on metropolitan areas, where economies of scale and agglomeration can be maximised. Even when there is no explicit political strategy to concentrate growth in urban and densely populated regions, the notion of "mainstream territory" will tend to be assimilated to these territories insofar as their prosperity suffices to generate a favourable evolution of macroeconomic indicators.

The case studies of the ESPON TeDi project (Nordregio *et al.*, 2010) have shown that the rationale for growth and sustainable development within TeDi areas is not necessarily the same as the one that prevails at the European level. Local and regional stakeholders formulate development targets, strategies and needs in terms of public policy interventions that are different from those of "mainstream territories". The specificity of TeDi areas does not only lie in their geographic preconditions. There are also significant particularities in terms of socio-economic structures, institutional arrangements and development ambitions. This implies that benchmarking methods are not appropriate, insofar as they presuppose a general model of development that would constitute the norm and target for regional development in Europe.

The four central research questions that will be addressed by the TPG are

a) To what extent can the types of geographic specificities listed above contribute to the understanding of the diversity of development preconditions and ambitions across Europe? Or, in other words, how can these categories be useful for policy-making?

b) Against what types of targets should the development potential of TeDi areas be assessed, and what bodies have the capacity to define these targets?

c) How can one measure the degree to which individual TeDi areas exploit their development potentials?

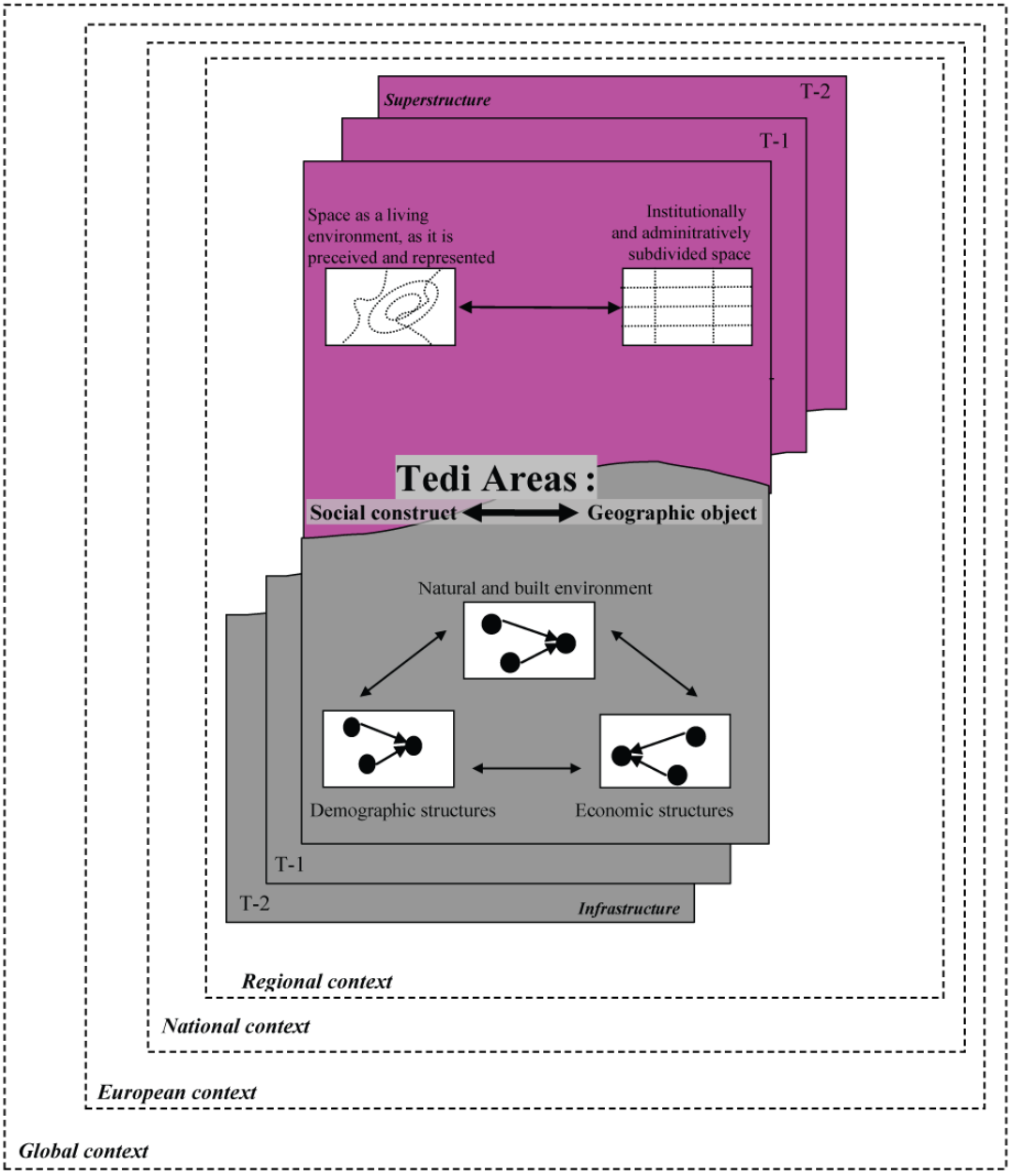
d) What examples of good practice can one observe in terms of identifying development potentials and drawing social, economic and ecological benefits from them?

The project shall on the basis of the results obtained in these four respects formulate recommendations on policy options susceptible of making European, national and regional policies more efficient. The focus is on improving the framework conditions for local development in areas concerned by one of multiple types of geographic specificity.

The efficiency of policies needs to be related to the strategic objectives of the European Union, as they are described in recent policy documents such as the Europe 2020 strategy or the Green paper on Territorial Cohesion, but also in the European Treaties and founding principles of key European institutions. Section 2

provides a succinct overview of these reference documents and of the key strategic targets of relevance for the analysis of TeDi areas.

While all types of TeDi areas describe a physical or institutional specificity that creates a specific geographic development context, they are also culturally and politically constructed categories of regions or landscapes, as illustrated in Figure 1. Their understanding therefore requires that one considers them not only as denominations of various subsets of the European territory, but also as cultural and political phenomena. Section 3 introduces some key questions in view of designing a conceptual framework for each type of TeDi areas that takes into account their dual nature.



Adapted from Michelet (2008)

Figure 1 Dual Nature of TeDi areas: social constructs and geographic objects

This provides a basis for how one may use previous research results on TeDi areas and on European territorial diversity, including previous ESPON studies, for the purpose of GEOSPECS (section 4). Their relevance depends on the degree to which their scale of analysis, geographical scope and conceptualisations of territorial diversity are compatible with the GEOSPECS approach.

The ways in which these studies and reports circumscribe TeDi areas are in turn a major source for the elaboration of the spatial reference framework of GEOSPECS, i.e. the delineation principles and methods to be used and their concrete implementation in geographic information systems. This determines the ways in which existing data sources may be exploited for the purpose of the study, the perspectives of data compilation and the indicators that one may consider to develop (section 5).

As a complement to these pan-European approaches, the project will carry out a series of case studies, exploring the stakeholders and key issues of their social and economic development processes. The preliminary list of the case study areas is described in section 6.

The theoretical framework for such qualitative analyses of the relations between a geographic specificity on the one hand and social and economic particularities, on the other, are dealt with in section 7. Causal processes creating obstacles to growth and leading to socially or ecologically unsustainable situations, or on the contrary making the exploitation of specific potentials possible, need to be highlighted. The TPG proposes to use the “syndrome” concept to explore this aspect of the study. This will make to possible to consider the multiple, and sometimes mutually reinforcing, parallel processes through which a geographic characteristics may lead to particular social, economic or environmental specificity. It is also a way of challenging notions of linear causality.

Section 8 describes the distribution of work packages among partners, the breakdown of the project’s budget on the individual partners per budget line, the timetable up to Interim report. It also provides an overview of deliveries and outputs envisaged by the project.

2. Relevant strategic targets of the European Union

The central socio-economic targets of the European Union are described in Article 3 the Treaty. Among these one not only finds the mention to "territorial cohesion", but also the references to key themes for European policymaking such as "competitiveness", "economic growth", "social market economy", "full employment", "environmental protection" and "innovation". GEOSPECS will explore the nature and extent of the potential contributions of territories with geographic specificities to the achievement of these targets.

Text Box 1 Socio-economic targets of the European Union

Consolidated version of the Treaty on European Union, Article 3

"The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.

It shall combat social exclusion and discrimination, and shall promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child.

It shall promote economic, social and territorial cohesion, and solidarity among Member States.

It shall respect its rich cultural and linguistic diversity, and shall ensure that Europe's cultural heritage is safeguarded and enhanced."

Source: Official Journal of the EU, C 83, Volume 53, 30 March 2010

The ambitions of "sustainable development" and "high level of protection and improvement of the quality of the environment" are further specified in the 6th Environmental Action Plan (6th EAP) of the European Union[2]. This plan identifies 4 priority areas, viz. Climate change, Nature and biodiversity, Environment and health, Natural resources and waste. A hypothesis to be tested by the GEOSPECS project is that one may facilitate the formulation of strategies to deal with these

[2] http://ec.europa.eu/environment/newprg/intro.htm

issues in a politically, socially and economically viable ways by taking into account the geographic specificities of regions. The underlying rationale is that the compromises between the different dimensions of sustainable development need to formulated differently depending on the geographic context.

The ways in which this diversity of development preconditions, strategies and goals may be combined to promote a territorially coherent development across Europe is one of the central dimensions of Territorial Cohesion. The Green Paper on Territorial Cohesion[3], which bears the subtitle "*Turning territorial diversity into strength*", considers three main aspects. These are known as the "three Cs":

- "*Concentration: overcoming differences in density*", emphasizing the importance of ensuring a balanced and sustainable territorial development in all European regions
- "*Connecting territories: overcoming distance*", inter alia by facilitating the access to services of general interest
- "*Cooperation: overcoming division*", by encouraging territorial cooperation at different scales.

Rather than expressing goals as such, the "three Cs" correspond to a method and strategy to achieve the overall ambition of Territorial Cohesion. GEOSPECS will need to assess the degree to which these proposals are adapted to the challenges and opportunities of TeDi areas.

The Europe 2020 document[4] drafted by the European Commission and adopted by the European Council on 17 June 2010[5] provides an operationalization of the strategic ambitions of the European Union in a 2020 perspectives. It first defines three "mutually reinforcing priorities" of "smart growth" (developing an economy based on knowledge and innovation), "sustainable growth" (promoting a more resource efficient, greener and more competitive economy) and "inclusive growth" (fostering a high-employment economy delivering social and territorial cohesion). It also defines quantitative (or "headline targets") concerning employment rates, R&D and innovation, reductions in greenhouse gas emissions, renewable energy sources and energy efficiency, secondary and tertiary education and poverty. Among the seven "flagship initiatives" initially presented by the European Commission in the *Europe 2020* document, the Council resolutions focuses on the digital agenda for Europe. The targets and initiative, and the ways in which they have been taken on board by the Commission, will guide the quantitative and qualitative analyses of GEOSPECS, in view of ensuring the policy relevance of the project results.

[3] http://ec.europa.eu/regional_policy/consultation/terco/paper_terco_en.pdf

[4] http://ec.europa.eu/regional_policy/sources/docoffic/working/regions2020/index_en.htm

[5] http://ec.europa.eu/eu2020/pdf/115346.pdf

The TPG has also defined 8 transversal themes for the analysis of all types of TeDi areas with geographic specificities (see Table 1). The choice of transversal theme makes it possible to cover the strategic ambitions of the European Union of most relevance in the context of GEOSPECS. The rationale for the choice of each transversal theme is described in part B of the application form.

The purpose of these themes is to establish the basis of a transversal discourse on the relevance of "territorial diversity" in sectoral and territorial policies. The project shall identify situations where the adaptation of strategies and measures to the diversity of territorial contexts can improve their efficiency, increase their positive side-effects and/or reduce their negative externalities. It shall also assess whether certain categories of TeDi areas are more relevant than others within specific policy fields.

Table 1 List of transversal themes

Transversal theme	**Partner number**	**Name**
Economic vulnerability / robustness facing globalisation	PP5	Nordregio, SE
Accessibility, connectivity, services of general interest	PP2	Alterra, NL
Role of Information and Communication Technologies	PP6	Louis Lengrand & associés, FR
Residential attractiveness - Selective attractiveness	PP4	University of the Aegean, GR
Regional identity and cultural heritage as factors of development / Demographic dynamics	LP	University of Geneva, CH
Protected areas and biodiversity as factors of development	PP3	Perth College UHI, UK
Natural resource exploitation	PP9	Coastal and Marine Resources Centre, IE
Ecological vulnerability / climate change	PP10	Umweltbundesamt Österreich, AT

3. The specific types of territories analysed by GEOSPECS

As previously mentioned, the categories of territorial diversity covered by GEOSPECS are both denominations of subsets of the European territory and cultural and political phenomena. They have been used in a variety of contexts and many different purposes; the understanding and delineations of territorial diversity are correspondingly diverse. Furthermore, they differ from one part of Europe to another, as the needs to distinguish specific landscape types differ. Additionally, the understanding and delineations are in some cases scale-specific, as they will be different at the regional, national and European levels. Conceptualising each category of geographic specificity and circumscribing the concerned territories is therefore neither a trivial exercise, nor a question that can be resolved through the mapping and measurement of geographical features alone.

The present section introduces some of the key interrogations to be addressed in view of establishing a solid conceptual basis for the analysis of each geographic specificity.

Mountain areas

The first examples of policy interest in mountain areas date from the last third of the 19th century in Alpine States, starting with Switzerland and were in relation to the ecosystem services provided by their forests that could be endangered or lost through excessive levels of forest harvesting. Targeted legislations to maintain economically active populations in mountain areas were furthermore introduced in the 1920s in Switzerland, the 1950s in Italy, the 1960 s in Austria and France.

The Alpine countries were the first to develop transnational approaches to mountain regions: The International Commission for the Protection of Alpine Regions was founded in 1952. At a sub-regional level, working communities were established for different parts of the Alps between 1972 and 1982, in the Pyrenees in 1983 and the Jura in 1985. In 1975 the EU published a Directive on mountain and hill-farming in less-favoured areas. This constituted the first European document to recognise that - due to physical constraints - specific resources needed to be directed to agriculture in mountain areas. At a global scale, mountains have also been considered in the UN Framework Convention on Climate Change, in a Programme of Work for Mountain Diversity, under the Convention on Biological Diversity (2004) and through designation of the year 2002 as the “International Year of Mountains” by the General Assembly of the UN. The Mountain Partnership was created as a “voluntary alliance of partners dedicated to improving the lives of mountain peoples and protecting mountain

environments around the world" at the World Summit on Sustainable Development in 2002. Mountain areas are mentioned in Article 174b of the EU Treaty.

Mountain areas often function as borders between regions and nation states. This is one of the reasons for which attempts at delimitating regions at the level of NUTS 3 regions have not produced satisfactory results (see for example Monfort (2009)[6] and the critique of this delimitation by the CPMR Islands Commission[7], observing that "*much of the Alps, the Abruzzo mountains, or the Pyrenees have quite simply disappeared*"). The 2004 study Mountain Areas in Europe: Analysis of mountain areas in EU member states, acceding and other European countries (Nordregio et al.) created a delineation at the level of municipalities (LAU 2), which were then grouped into so called *massifs* (mountain ranges). Mountain areas were in this study approached as areas with rough topography, high altitude and/or constraining climatic conditions. This latter criterion was included to reflect the assimilation of Nordic sub-arctic regions to mountainous areas in

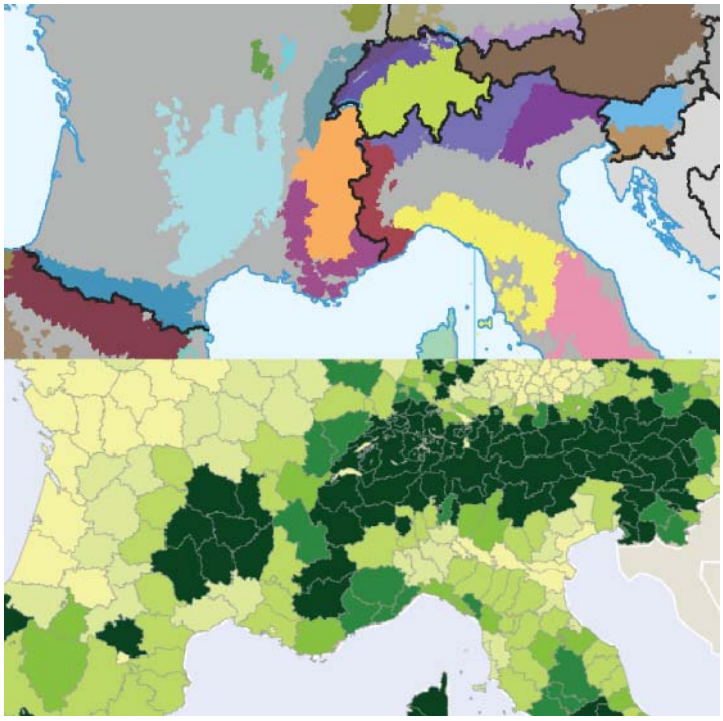


Figure 2 Massifs (top) and Mountainous Regions (bottom): two ways of approaching mountain areas

In the bottom map, dark green colours correspond to high proportions of mountain dwellers in the regional population.

[6] http://ec.europa.eu/regional_policy/sources/docgener/work/2009_02_geographical.pdf

[7] http://www.commissiondesiles.org/pub/news/73_eng_critical_note_on_dg_regio_w_paper.pdf

agricultural policies. It was not included in the similar delimitation of mountain areas produced for the recent EEA report *Integrated Assessment of Europe's Mountain Areas*[8].

The choice of scale is a central issue for the delimitation of mountain areas, as illustrated in Figure 3. While the NUTS 3 level produces some serious anomalies, the LAU 2 level is too fine a resolution for policy issues. Groupings of LAU 2 in *massifs* have been the geographical basis for spatial planning in French mountain areas, but they may be difficult to relate to existing policies in other countries. A possible way forward may be to combine analyses at the level of massifs with other considering the degree of mountainousness of NUTS 3 regions. This degree of mountainousness may, depending on the perspective, be considered in terms of population in mountain areas (i.e. massif areas) or of proportion of mountainous area.

GEOSPECS will therefore adopt a LAU 2-based delimitation of Mountain areas, and explore how the degree of mountainousness of NUTS 3 regions may contribute to the statistical understanding of mountain-related challenges and opportunities.

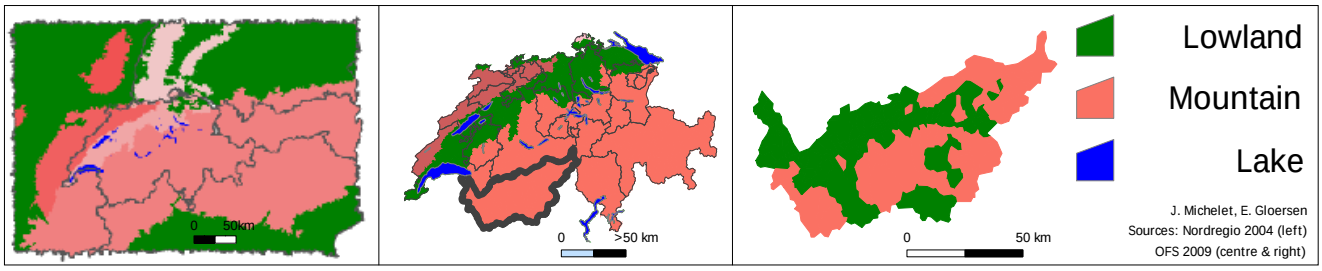


Figure 3 Scale and context dependency of mountain delimitations

The differences in the delimitation of Mountain areas in the 2004 European study for DG REGIO (left map), for the purpose of Swiss national spatial planning (middle map) and by the new regional policy of the Canton of Valais adopted in 2008 (right map) illustrate the scale and context dependency of mountain delimitations.

Islands

The policy interest in islands was first raised in 1986 by a report by the European Economic and Social Committee (EESC) about the handicaps of islands and the need for a coherent policy by the European Economic Community. Since 1986, insularity has recurrently been referred to in policy documents and reports by the EESC, the Committee of the Regions and the European Parliament. During the preparation of the Amsterdam Treaty the Greek Government, the Commission for Peripheral and Maritime Regions and other States with islands took initiatives for

[8] These European processes are described in Bernard Debarbieux , Gilles Rudaz (2010) *Les faiseurs de montagne - Imaginaires politiques et territorialités : XVIIIe-XXIe siècls,* CNRS.

the legal recognition of insularity. Islands are mentioned in Article 174 of the EU Treaty.

The general definition of islands is quite simple, as one can consider all territories surrounded by bodies of water and without a fixed link to the mainland to be insular. The operationalisation of this notion however proves complex, because of the large number of islands and islets that may thus be identified, questions related to the status of archipelagos and so-called double insularity (islands in the vicinity of other larger islands). The Eurostat publication *Portrait of the Islands* (1994) considered four additional criteria: an area of at least 1 km^2; a distance of at least one km to the continent; a permanent resident population of at least 50 inhabitants and no presence of an EU capital city. Many of these criteria were applied to ensure that data would be available for the identified set of islands, and not because they are justified from a conceptual point of view.

Among the main socio-economic characteristics of insularity, one may mention small size of population and small markets, limited surface and limited resources, remoteness, isolation and low accessibility and fragile natural environments. However, the challenges related to these issues are more or less substantial depending on the size of islands and their remoteness. The socio-economic meaning of insularity is not the same in Sicily, Lipari or Lampedusa.

Thresholds used in different European legislation are different as small islands can be those with less than 100.000 (CAP regulation) or 3.100 (taxation), having an area of than 2.300 square kilometres or producing less than 1000 tonnes of waste. A recent proposition of classification for island regions coming from DG REGIO considers the market size as the central limiting factor of insularity. This classification distinguishes 5 classes of islands, the threshold levels being 1 million, 250.000, 100.000 and 50.000 inhabitants.

GEOSPECS will first further specify the islands concept, proposing criteria for the classification of different forms of insularity. On this basis, a set of insular territories that may be characterised statistically will then be proposed.

Sparsely populated areas

Issues related to regional development challenges in Sparsely Populated Areas (SPA) emerged in the European Regional Policy debates in connexion to the negotiations for the accession of Finland, Norway and Sweden in the 1990s[9]. The national governments of these countries emphasized that remoteness, extremely low population densities and constraining climatic conditions create special challenges for economic and social development, and these need to be

[9] http://eur-lex.europa.eu/en/treaties/dat/11994N/htm/11994N.html#0354020033

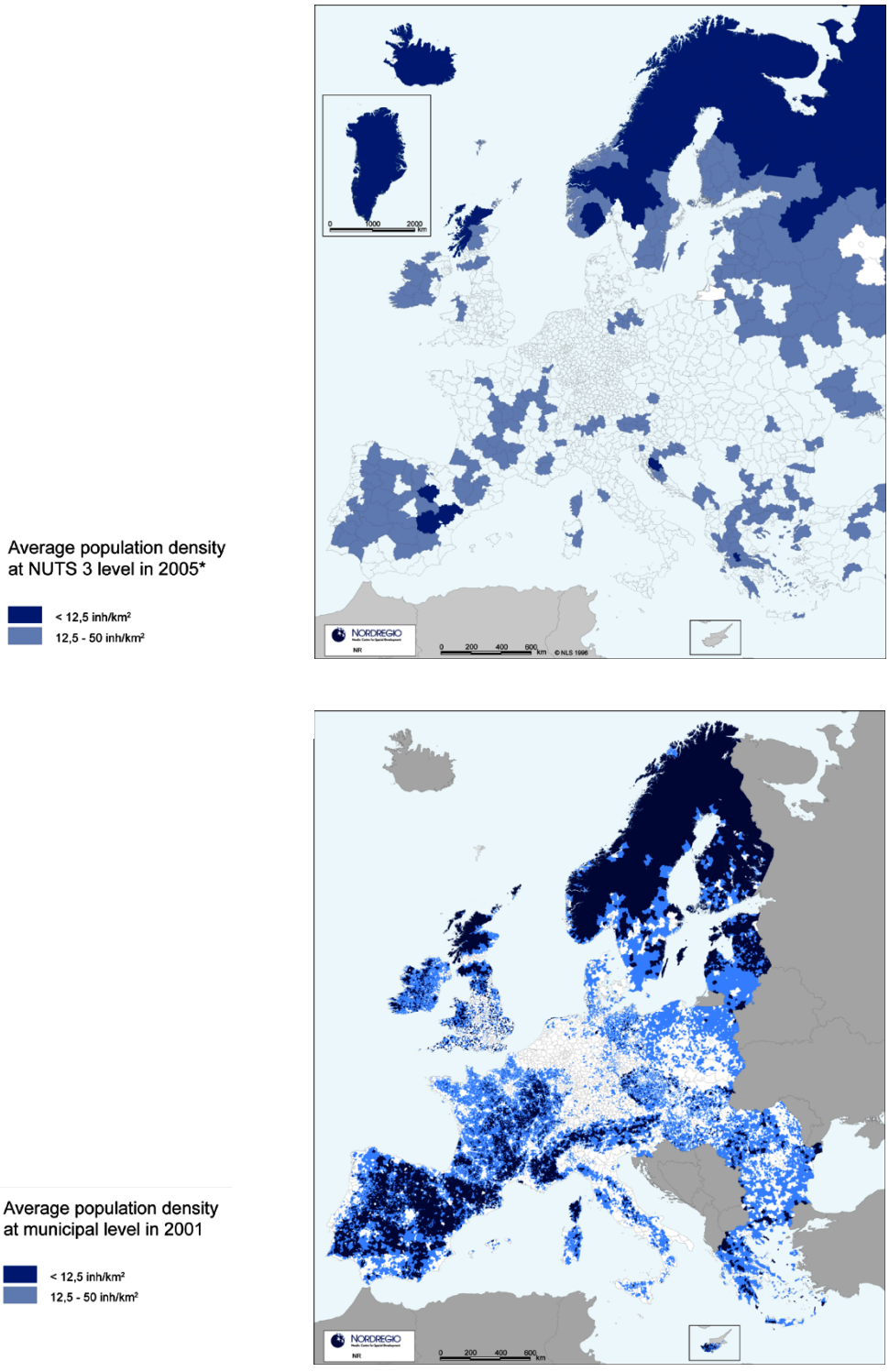


Figure 4 Scale-dependency of measures of population density

The application of the population density thresholds of 12,5 and 50 inh./km^2 at the NUTS 3 and LAU 2 scales illustrates the scale dependency of measures of population density. Neither of the measures can be considered better than the other, insofar as both fail to reflect the degree to which local communities are confronted to problems linked to an insufficient mass of population to allow for a cost-efficient delivery of services and a diversified and balanced labour market.

taken into account through adequate policies (Gløersen et al 2009)[10]. As a result of this, a specific Structural Funds Objective ('Objective 6') was set up in the period 1994-1999, and sparsely populated areas were included in the 'Objective 1' area between 2000-2006. For the programming period 2007-2013, the specific support scheme to sparsely populated areas was continued, in addition to

the available funding through the Regional Competitiveness and Employment and European Territorial Cooperation schemes. This specific fund for sparsely populated regions amounts to 35 € per inhabitant and per year (Dubois, 2006)[11].

In the *Green Paper on Territorial Cohesion*, the European Commission identifies *"18 Sparsely Populated Regions, all rural and almost all border regions*". Sparsely populated areas are defined as "*NUTS3 regions with a population density of less than 12.5 inhabitants per square km*".

In a short document entitled "*What are sparsely and rural areas?*" the former Swedish Agency for Rural Development (*Glesbygdsverket*) acknowledges that multiple definitions are needed to reflect the different types of situations of demographic sparsity and to cover the variety of connected social and economic issues. As a matter of consequence, various agencies or authorities within Sweden have applied different definition to the notion of sparsely populated areas. This diversity would be even greater at the European level. Furthermore, the definition of sparsity is scale-dependent. As illustrated by Figure 4, the application of identical population density thresholds at the NUTS 3 and LAU 2 scales produces very different results.

The GEOSPECS project will explore the possibility of using population potentials for the identification of sparsely populated areas. A population potential is basically the calculation of the sum of the individuals that can be reached from any point of the European continent within a given distance. This distance can be Euclidian (e.g. 50 km) or a time-distance (45 minutes). The TPG will need to consider what types of distances can be computed across the ESPON study area.

Outermost regions

Outermost regions are defined on an institutional basis; no discussion is therefore possible on their delineation. Their shared characteristic is to be remote from the European continent. The degree to which they are integrated in another continental context however remains to be assessed, as these territories in many ways function as European outposts. All of the outermost regions are islands except French Guyana.

[10] http://www.nordregio.se/inc/openitem.asp?id=89079&nid=2112

[11] http://nordregio.shotcode.no/filer/Files/jon0602.pdf

There have however been attempts at assimilating North-Nordic peripheral regions to Outermost regions, based on the idea that these territories are so remote from European core areas that they can be considered to be disconnected from Europe. Such ideas have been expressed by Finnish authorities during the adoption process of the Treaty of Amsterdam (approximately 1996-1997), emphasising the specificity of Finnish Lapland. They also appear in successive reports and resolutions of the Council of Europe[12]. In a 2007 report, while it is noted that « *problems encountered in some islands and some mountain regions are of the same nature as those of peripheral regions and areas with low background densities*", it is also argued that "*strategic development perspectives do not only depend on the distance to central Europe, but rather on the potential to integrate in the world economy and on the sustainable development of their regions*"[13]. In other words, whereas distance to the European continent may be main the shared characteristic of outermost regions, this is not necessarily their most central development challenge. Instead, the focus may need to be on the economic, social and institutional structures within each of the Outermost region. One could in this respect argue that Outermost regions need to be studied within their respective geographic context (e.g. Caribbean arc for Martinique and Guadeloupe, the Amazonian basin for French Guyana) rather than as a group.

Border regions

Borders and cross-border areas have been a central preoccupation of European regional policies, to such an extent that it can be difficult to approach the specific situation of the concerned areas without incorporating the 20 years of debates, policy measures and dedicated programmes. Since 1990, the European Union has provided financial support for internal and external cross-border co-operation through a number of initiatives and programmes. The first important support instruments for internal cross-border co-operation was the Community Initiative INTERREG (launched in 1990), which was continued as INTERREG IIA during the previous programming 1994-1999. In 1994, PHARE CBC (Cross-Border Co-operation) was established for cross-border co-operation along external borders and covers border regions in Central European countries. Other, less developed, EU instruments supporting external cross-border co-operation, include TACIS CBC (for some of the border regions of countries of the ex-Soviet Union), MEDA

[12] Linge, Inger (Rapporteur) (2005) *L'ultrapériphérie : un défi au développement équilibré et durable du territoire* européen, CPR (12) 4 Partie II , projet de recommandation, Chambre des Régions, 7 p.

https://wcd.coe.int/com.instranet.InstraServlet?Index=no&command=com.instranet.CmdBlobGet&InstranetImage=341656&SecMode=1&DocId=872076&Usage=2

[13] Linge, Inger (Rapporteur) (2007) *Défis et opportunités pour les régions périphériques et à faible densité démographique*, CPR(14) 7REP, Chambre des régions, 9 p.

https://wcd.coe.int/ViewDoc.jsp?Ref=CPR(14)7REP&Language=lanFrench&Ver=original&Site=COE&BackColorInternet=DBDCF2&BackColorIntranet=FDC864&BackColorLogged=FDC864

(for Mediterranean non-member countries) and CARDS the new programmes for Western Balkan countries). Technical assistance to internal and external border regions was provided by the LACE-Programme, which was initiated/managed by the Association of European Border Regions and supported by the Commission. From 2007, The "European Neighbourhood and Partnership Instrument" (ENPI) replaced a number of previously existing external funding instruments (i.e. MEDA, TACIS, various other support programmes) and created a more flexible and policy-driven approach for territorial co-operation. The 15 ENPI cross-border co-operation programmes identified for the external EU-borders receive financial assistance of € 1.18 billion and support cross-border contacts and co-operation between local and regional actors and the civil society. The Commission's approach to cross-border co-operation under ENPI has also been determined by a specific "ENPI Cross-Border Cooperation Strategy Paper".

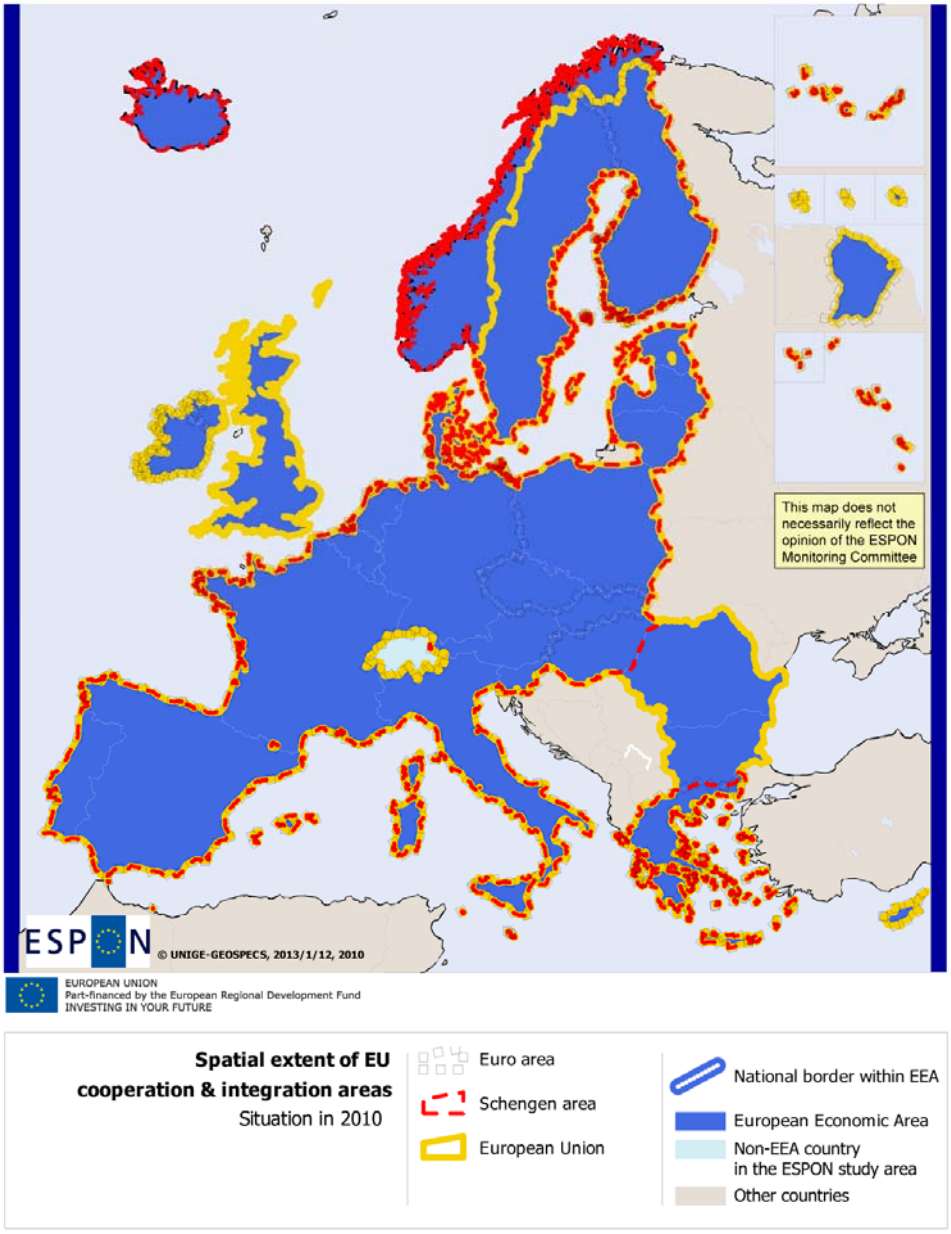


Figure 5 Mutiplicity of borders statuses in Europe

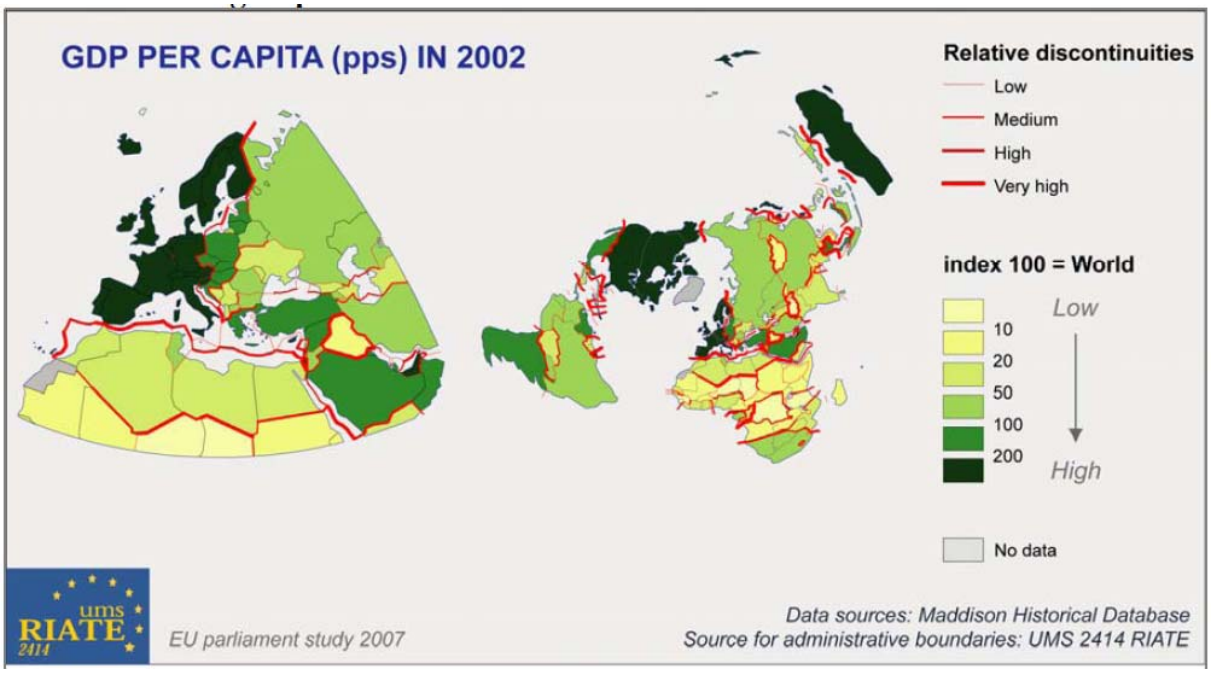


Figure 6 Discontinuities as a measure of the social and economic impact of borders

Discontinuities along national borders may be compared to those identified at the NUTS 2 or 3 scale, in view of assessing their relative importance.

A European border region can therefore in many respects be assimilated to one that is eligible to support from INTERREG IVA or ENPI programmes. From the perspective of GEOSPECS, such a pragmatic stance may however be problematic as a starting point for the analysis, insofar as it is not based on any initial hypothesis on the reasons for which the societies and economies of border would be specific. Cross-border related dynamics are furthermore not limited to border regions, insofar as the network and exchange dynamics induced by them in many respects extend far beyond regions situated in the vicinity of borders. Additionally, even if integrative cross-border dynamics may currently be the main characteristic of the vast majority of border regions across Europe, the possibility of borders as a source of isolation and reduced possibilities of exchange needs to be envisaged.

In order to cover the wide diversity of border situations, the TPG includes researchers with specialist competence on European external border and cross-border Metropolitan regions. Borders will also be a component in the analysis of all other geographic specificities, in view of exploring the specificity of border situations in e.g. mountainous, sparsely populated, insular, coastal or outermost contexts.

Coastal areas

Coastal areas are in some respects similar to border regions, insofar as one deals with the relations between a linear geographic object and regions whose dynamics are more or less influenced by their proximity to it.

For the purposes of the Demonstration Programme on Integrated Coastal Zones Management (ICZM) (1996-1999), the coastal zone was defined as "*a strip of land and sea of varying width depending on the nature of the environment and management needs. It seldom corresponds to existing administrative or planning units. The natural coastal systems and the areas in which human activities involve the use of coastal resources may therefore extend well beyond the limit of territorial waters, and many kilometres inland*".

It can be said that the coast is delineated by various actors in accordance with their use of the coast and the legal framework that applies to particular use(s). For example, at a pan-European scale, delineation of coastal areas in the context of conservation of areas and species of ecological importance is set out under the Habitats and Birds Directives. At Member State level, the Water Framework Directive requires River Basin Districts to be delineated according to hydrographic units. At a national level, areas will be delineated for the licensing of activities such as aquaculture and other commercial uses; while at local levels, bye-laws and similar instruments can be applied to routine or seasonal uses (e.g. recreation activities) of the coast. As a result while the term coast may have a common understanding within specific sectors, this may not be true across sectors leading to a lack of cohesion between various actors in the same geographic area.

Maritime spatial planning (MSP) is also a theme of particular relevance in coastal areas. Coastal zones are the "hinge" between maritime and terrestrial development. Drainage areas or land-based impacts from activities such as agriculture and urban growth are relevant in the context of MSP. This is why terrestrial spatial planning should be coordinated with MSP, and ICZM is the process to facilitate this.

The ambition of MSP is to provide a framework for arbitrating between competing human activities and managing their impact on marine and coastal environments. Its role is to balance sectoral interests and achieve sustainable use of marine and coastal resources in line with the EU Sustainable Development Strategy. It thereby seeks to enhance the competitiveness of the EU's maritime economy, and to promote growth and jobs in line with the Lisbon Agenda.

As European cross-sectoral policies evolve, it is likely that we will have more integrated terrestrial (land-use) planning system on land and an improved MSP at sea, but there is a risk that the coast will fall outside of both. One of the aims within GEOSPECS is therefore to place the focus on the coherence between both these systems. The delineation of coastal areas will therefore seek to

circumscribe the areas and actors that allow coast to function as a "hinge" between terrestrial and maritime development dynamics.

Inner peripheries

It is trivial to note that situations of economic and social peripherality are not limited to the outer margins of any given territory. The distances that contribute to determine the conditions for economic and social development are not the Euclidian ones to a hypothetical "centre", but linked to the configuration of physical, social, economic, institutional and cultural networks. "Peripheries" may therefore very well be situated in areas that what would geometrically be characterised as the centre of a given territory.

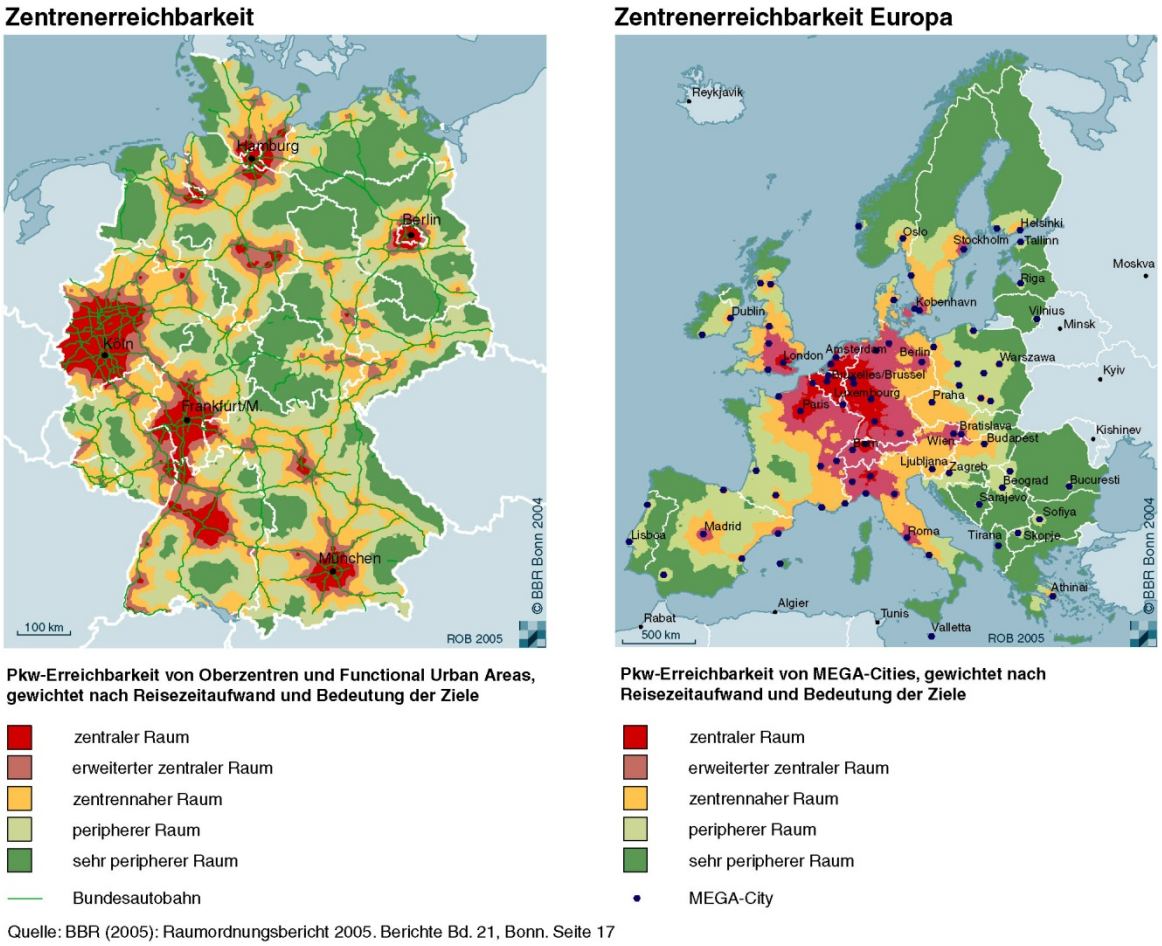
The reproduction of centre-periphery dynamics at multiple levels (Europe, states, regions, cities and their hinterland) makes it tempting to approach peripherality as a fractal phenomenon. The Federal German Spatial Planning Report (*Raumordnungsbericht*) of 2005 illustrates this scale-dependency of situations of peripherality (Figure 7). Regions such as northern Hessen or western Thuringia are characterised as very peripheral from the national point of view (left map), but are nonetheless considered to belong to the European core area (right map). One could imagine reproducing the same types of contrasts at other scales, for example by comparing the situation of deprived urban neighbourhood with the relative position of the metropolitan region they belong to. The differences between centre-periphery relations at these various scales however imply that notion of "inner periphery" embraces a wide diversity of situations. For the purpose of GEOSPECS, it therefore appears necessary to focus on the contrast between the national and European scales.

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

Two types of uses of the term "inner peripheries" can be identified in the literature: In the book *European Inner Peripheries in the 20th Century*[14], they are approached as peripheral areas within Europe (as opposed to those outside the borders of Europe) and defined as "*a region within a state that is organised in such a way that its assets benefit the inhabitants of other regions*". This allows for the characterisation of Wales, Galicia and Andalusia as "*inner peripheries*", in spite of the fact that they are situated on the outer margins both in their

[14] Nolte, Hans-Heinrich (1997) *Europäische innere Peripherien im 20. Jahrhundert*, Franz Steiner Verlag, 316 pages.

respective national context and from a European point of view. The notion of inner periphery is approached from an institutional point of view.



Quelle: BBR (2005): Raumordnungsbericht 2005. Berichte Bd. 21, Bonn. Seite 17

Figure 7 Scale dependency of measures of peripherality

Jirí Musil on the other hand describes the peripheral regions of the Czech republic as "inner peripheries" because they are mostly "*located in the inner parts of the country, mainly along the borders of the administrative regions (kraje)*"[15]. Granville and Maréchal similarly identify the Walloon region as a European inner periphery because it is situated between by major metropolitan regions[16]. The rationale is in both cases a geometric one.

This latter approach appears more promising from the point of view of GEOSPECS, focusing on territorial structures rather than on institutional ones. It will furthermore be necessary to construct a robust line of reasoning underpinning the hypothesis that the spatial category "inner peripheries" would

[15] Musil, Jirí (2008) "Inner Peripheries of the Czech Republic as a Mechanism of Social Exclusion" in *Sociologicky casopis. Czech Sociological Review*, vol. 44, no. 2, pp. 321-348.

[16] Granville, Olivier and Maréchal, Luc (1999) « La Wallonie au centre de l'Europe : comparaisons interrégionales » in *Les Cahiers de l'Urbanisme*, n° 27, Dec. 1999, pp. 8-15.

facilitate the understanding of social and economic processes. This implies that one has to avoid a tautological approach according to which regions would be assigned to this category on the basis of their low economic and social performance. Instead, the defining features of inner peripheries could include local differentials of accessibility, of connectivity and possibly also of population density.

4. Preliminary Review of Previous Studies of Relevance

There is a limited number of European studies on geographic specificities, which form a body of core reference documents for GEOSPECS. The only pan-European combined analysis of multiple forms of geographic specificities is the 2009 Regional policy working paper by Philippe Monfort[17]. The ESPON TeDi project has produced parallel analyses of mountainousness, insularity and demographic sparsity on the basis of eight case study areas[18].

There are two key studies on Mountain, namely the 2004 study produced for DG REGIO[19] and the forthcoming study for the EEA coordinated by the Centre for Mountain Studies of Perth College[20].

The 2003 Planistat and Bradley Dunbar study remains the main pan-European study on islands[21]. The 1994 Eurostat publication *Portrait of Islands*[22] provides some additional inputs. The ESPON Euroislands project furthermore provides a solid base for further investigations of insularity.

The 2006 Nordregio study on sparsely populated areas analysed the situation of the concerned regions in Finland, Norway and Sweden[23]. It was complemented

[17] Monfort, Philippe (2009) Territories with specific geographical features, European Commission, Regional Policy Working Papers no. 2009-02.

[18] Nordregio et al. (2010) Territorial Diversity (TeDi) Targeted Analysis 2013/2/8, Final Report.

Gløersen, Erik and Dubois, Alexandre (2010) *Handbook of Territorial Diversity*

[19] Nordregio (2004*) Mountain areas in Europe – Analysis of mountain areas in EU Member States, acceding and other European Countries*, study for the European Commission, DG REGIO, Nordregio report 2004:1, 271 p.

[20] Centre for Mountain Studies, Perth College UHI (forthcoming) *Integrated assessment of Europe's mountain areas*, EEA report.

[21] Planistat and Bradley Dunbar et al. (2003) Study on the islands and outermost regions / Analyse des régions insulaires et des régions ultrapériphériques de l'Union européenne, Study commissioned by the European Commission DG REGIO.

[22] Eurostat (1994) *Portrait of Islands*, European Commission.

[23] Nordregio (2006) Northern Sparsely Populated Regions in the European Union and in Norway, Nordregio report 2006:2, 173 p.

by a prospective study in 2009[24]. A 2007 article by Escalona-Orcao and Díez-Cornago refers to this former study and provides useful inputs on comparable situations in Spain[25].

As far as coastal areas are concerned, the The PlanCoast (2006–2008) INTERREG IIIB CADSES project has produced a series of national reports and a handbook[26] that provide useful inputs. A series of reports have furthermore been commissioned by DG MARE on the legal aspects[27], economic benefits and potentials of Maritime Spatial Planning that may be of use. Finally, the report entitled "*The changing faces of Europe's coastal areas*" published by the European Environment Agency in 2006 offers series of maps and statistical data that will constitute a useful starting point.

There are numerous studies and evaluation reports studies on development potentials and challenges in Outermost regions. The 2007 studies on the identification and estimation of the quantifiable effects of handicaps specific to outermost regions and of measures to reduce these handicaps produced for the European Commission[28] and the report by the French statistical agency INSEE on whether ultraperipherality define a growth model[29].

There is also a wide range of European studies on border regions available, in particular focusing on the analysis of cross-border cooperation and integration and on the evaluation of policy measures within these fields. However, no transversal analysis that attempts to systematise the administrative-regulatory, socio-economic, cultural and ecological impacts of border situations exists. The typology of European border regions proposed by Topaloglou, Dimitris Kallioras, Panos Manetos and Petrakos[30] offers a first basis for analysis. Studies on the integration effects help identifying the theoretical basis and practical challenges for the analysis of the economic impact of EU enlargement in border regions[31]. As

[24] Nordregio (2009) Strong, Specific and Promising: Towards a Vision for the Northern Sparsely Populated Areas in 2020, Nordregio report 2009:2, 78 p.

[25] Escalona-Orcao, Ana Isabel and Díez-Cornago, Carmen Area (2007) "Accessibility to basic services in one of the most sparsely populated areas in Europe: the province of Teruel (Spain)" in *Area,* Vol. 39, no. 3, pp. 295-309.

[26] http://www.plancoast.eu/php/plancoast-downloads.php?id=8

[27] MRAG et al. (2008) *Legal Aspects of Maritime Spatial Planning*, Framework Service Contract, No. FISH/2006/09 – LOT2, Final Report to the European Commission, DG Maritime Affairs & Fisheries

[28] Louis Lengrand et associés and Université Libre de Bruxelles (2006) *Etude sur l'identification et l'estimation des effets quantifiables des handicaps propres aux régions ultrapériphériques et des mesures applicables pour réduire ces handicaps*, Study commissioned by the European Commission.

[29] INSEE, AFD, IED (2007) *L'ultrapériphéricité définit-elle un modèle de croissance ?* http://www.afd.fr/jahia/webdav/site/afd/users/admiguadeloupe/public/Etude%20RUP.pdf

[30] Topaloglou, Lefteris, Kallioras, Dimitris, Manetos, Pano and Petrakos, George (2005) "A Border Regions Typology in the Enlarged European Union" in *Journal of Borderland Studies*, Vol 20, No 2, pp. 67-89.

[31] Niebuhr, Annekatrin and Stiller, Silvia 2002 *Integration Effects in Border Regions – A Survey of Economic Theory and Empirical Studies*, Hamburgisches Welt-Wirtschafts-Archiv (HWWA) discussion paper 179, Hamburg Institute of International Economics.

integration progresses, the cross-border dynamics become the most relevant specificity of border regions. The emergence of "Cross Border Regions" has been analysed by multiple authors[32]. The analysis of the specific situation of cross-border metropolitan region will build on the interim results of the ESPON Metroborder project.

Among the on going ESPON applied research projects of relevance, one may in particular mention:

- TRACC (Transport Accessibility at Regional/Local Scale and Patterns in Europe), insofar as all forms of geographic specificity entail some forms of limitations to mobility, and that mesures of accessibility will be needed to assess their extent;
- EDORA (European Development Opportunities in Rural Areas), considering that a larger proportion of TeDi areas are rural than in Europe as a whole;
- DEMIFER (Demographic and Migratory Flows Affecting European Regions and Cities), whose data will facilitate the assessment of the demographic situations of TeDi areas
- Secondary Growth Poles, as these constitute the major component of the urban infrastructure in most TeDi areas.
- CLIMATE (Climate Change and Territorial Effects on Regions and Local Economies in Europe), considering the particularly strong exposure of TeDi areas to climate change (e.g. mountains, coastal areas, islands).

The characterisation of urban nodes and delimitation of Functional Urban Areas that is carried out by the ESPON FOCI project will be used to describe the position of TeDi areas in relation to the European urban network, and to identify high density areas situated within TeDi areas.

Finally, the results from ESPON 2006 projects will be built upon, in particular ESPON 1.1.2 (urban-rural), 1.3.1 (Natural hazards), 1.3.2 (Natural heritage) and 2.1.3 (Impact of Common Agricultural Policy).

Niebuhr Annekatrin (2008) "The impact of EU enlargement on European border regions" in *International Journal of Public Policy*, Vol. 3, No 3-4 / 2008, pp. 163 – 186.

Krätke Stefan (1998) "Regional integration or fragmentation? The German-Polish border region in a new Europe" in *Regional Studies*, Vol. 33, No. 7, pp. 631-641.

[32] Perkmann, Markus (2003) "Cross-Border Regions in Europe: Significance and Drivers of Regional Cross-Border Co-Operation" in *European Urban and Regional Studies,* Vol. 10, No. 2, pp. 153-171.

Reitel B (2006) "Governance in cross-border agglomerations in Europe. The examples of Basle and Strasbourg" in *Europa Regional*, Vol. 14, No. 1, pp. 9–21.

5. Spatial reference framework and Perspectives of Data Compilation

GEOSPECS defines a two steps approach in data gathering, compilation and mapping. In a first step, delineations of the different types of TeDi areas will be produced. In a second step, these TeDi areas will be described base on demographic, economic, physical and locational indicators at various scales, in order to allow classification and/or typologies of the predefined areas.

The Spatial reference framework is the combined system of delineations, statistical, grid layers, elevation models, network models and points (such as urban centres and infrastructures) on the basis of which the TeDi areas will be characterised.

Delineation of TeDi areas

As far as delineations are concerned (WP2.1), the objective is to avoid "re-inventing the wheel" by building on existing delineations whenever possible. The objective is to propose pan-European delineations that are coherent with our conceptual understanding of each specificity. This implies that delineations are initially produced or compiled without considering issues of data availability. In a second phase, one may consider whether these first delineations can be approximated to the NUTS 3 or 2 level to facilitate the compilation of data. It is also possible to consider "regions concerned by geographic specificity" separately from the "TeDi areas" as such. This point is further elaborated below.

For the delineation of mountains, the U.S. Geological Survey GTOPO30 offers a high resolution elevation model (1*1 km) with world coverage. It is therefore of particular interest for the extension of existing delimitations (Nordregio 2004) to candidate countries and potential candidate countries. The EEA CLC2006 coastline covers most of the GEOSPECS area to the exception of outermost territories, Iceland, Norway, Montenegro and Turkey. For these countries, the coastline will be completed by worldwide Eurogeographic COAS2006 dataset. If COAS2006 will allow the TPG to draw maritime and terrestrial extensions of coastal areas, the detailed descriptions on the environment and type of coastal areas (attributes from the CLC2006 coastline and Eurosion databases) will obviously lack for those countries.

Transport network models will also be used for delineation purposes. If islands are to be approached as territories without a fixed link to the continent, a road network model is required for their identification. Approaching sparsely populated areas in terms of population potential may also best be done by considering time-distances, that would need to be calculated with the help of a road network model. Similarly, inner peripheries may be defined on the basis of differentials in accessibility and population potential.

For inner peripheries, sparsely and densely populated areas, population data are required for the delineation. CLC 2000 population grid provides information for EU27, Croatia and Liechtenstein. The dataset can be completed by national grids for Finland, Norway, Sweden and Swizerland. In Iceland, the Western Balkans and Turkey calculations would have to be based of LAU 2 data only. A first review of data availability shows that the TPG should be able to compile municipal population figures for Turkey[33] and the West Balkans[34] (see Annex 1). The exception is Kosovo, for which no data are available online. In the majority of countries however, the most recent census data are from the early 2000's and the databases are not directly accessible online.

The TPG will also test the potential of the Landscan™ global population distribution from OAK Ridge National Laboratory[35]. This grid population data has the same 1x1 km resolution as the CLC2000. Its main advantages are a worldwide coverage and the availability of annual revisions since 1998. GEOSPECS could benefit of its global perspective in term of comparability of results among EU27+5, outermost regions and candidate countries. It will however be important to test the reliability of estimation methods and background data used when constructing this grid data set.

Data requirements for the characterisation and classification of TeDi areas

It was agreed at the kick-off meeting in Luxemburg that it does not necessarily make sense to produce a list of indicators at this early stage of the project, as the choice of indicators is largely determined by the delimitation of geographical specificities and the spatial framework. Instead, we propose a list of potential data sources and headlines for the data compilation and analysis.

In addition to the well-known difficulties of collecting data at the appropriate scale, the TPG identifies three central challenges in the statistical characterisation of TeDi areas. First, a methodology must be defined to combine data by geographical unit, grid data, network data, point data and linear data in a unique and coherent assessment. Second, results at different geographical scales must be compared and confronted to produce a balanced picture of the socio-economic performance, opportunities and challenges of each territory. Finally, the analysis of Outermost regions requires that one considers them within their geographical context. This implies collecting data for areas that have up to now not been the object of ESPON analyses, e.g. in the Caribbean Arc or South America.

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[33] http://www.turkstat.gov.tr/jsp/duyuru/upload/vt_en/vt.htm

[34] AL: http://www.instat.gov.al/, BA: http://www.fzs.ba/Eng/index.htm, HR: http://www.dzs.hr/default_e.htm, KS: http://www.ks-gov.net/kos-estia/files/Contacts.htm, MK: http://www.stat.gov.mk/english/glavna_eng.asp, ME: http://monstat.org/EngPrva.htm, RS: http://webrzs.stat.gov.rs/axd/en/index.php

[35] http://www.ornl.gov/sci/landscan/index.shtml

1. Combining different types of data

The characterisation of areas with geographic specificities will be based on the combination of multiple types of data:

- Data by geographical unit: Overviews of existing databases (ESPON and Eurostat) and the draft technical report of the ESPON Database project[36] indicate that the TPG will face major difficulties when trying to gather data at below NUTS2/3 levels. In addition, the situation at LAU2 level should prove even much worse, challenging the will to provide multiple scale analysis at least for local perspective. Indeed, beside population census, there is a general lack of (accessible) data at LAU2 level in most candidate and potential candidate countries. This may lead to challenging situations when trying typologies at local level.

  The TPG will not only consider standard statistical areas, but also geographical units delimited on the basis of functional areas such as the functional urban areas delimited by the ESPON FOCI project insofar as the corresponding Shapefiles are made available.

- Grid data: In cases when grid data lack for some countries, the TPG will strive to complete them by the smallest level of data available. In addition to grid data on population and topographical features discussed above, the EEA provides various sets of useful indicators for the project. Environmental data (air pollution, air quality, soil sealing, ground water, protected areas, biogeographical regions and Global land cover) encompass the entire ESPON area to the exception of the Outermost regions.

- Network data: The previously described road network model will also be used for the characterisation of all types of geographic specificities, especially as the basis for calculation of accessibility.

- Point data: Transport infrastructure such as ports and airports, or other key infrastructure such as universities, are included in the analysis on the basis of point data.

- Linear data: Analyses of discontinuities have been previously developed in ESPON (e.g. ESPON 3.1 and forthcoming ESPON synthesis report). This type of linear data are particularly useful for the understanding of the specific situation of border or coastal regions, but may also be useful as a complement to analyses based on gradients. Comparing discontinuities calculated between NUTS 0, NUTS 2 and NUTS 3 regions may furthermore contribute to the understanding of the territorial differentiation of social and economic performances. A dialogue has been established with the ESPON

[36] ESPON Database project (2010) Analysis of the availability and the quality of data on Western Balkans and Turkey

Database TPG in view of incorporating analyses of discontinuities in GEOSPECS. In the case of coastal areas, linear data describing the type of coastline, the environment and the extent of built-up areas, as well as trends in these different respects, have been identified and will be exploited.

The spatial reference framework will define methods in view of combining results drawn from these different types of data sets.

2. Multiscalar analysis of TeDi areas

Previous studies have shown that internal contrasts may be a more significant distinguishing feature of TeDi areas than their overall social and economic performance. In view of producing the multiple scale analyses that are require to reveal these contrast, the TPG will seek to compile series of data with the greatest possible degree of detail and continuity.

One of the major challenges for GEOSPECS will be to gather LAU 2 data for the Western Balkans and Turkey. From first investigations, it seems that Turkey has set up a relatively complete statistical database accessible via web tools. While some basic indicators such as population are available at municipal level (see above), others like employment or tourism exist only at regional/provincial levels. Concerning the Western Balkans countries, a rapid overview of national statistical websites informs that municipal population data should also exist. This first review indicates that the TPG will face major difficulties when trying to assess the situation of TeDi areas of candidate countries in a multi-scalar perspective.

Instruments for multiscalar analysis have previously been set up as part of the ESPON programme, e.g. in the Hyperatlas. By comparing local indicators to European, national and regional average values, and by synthesising these multiple indexes in a typology, a synthetic picture of the relative position of each territory may be produced. The TPG will seek to apply these types of multi-scalar methods to the analysis of TeDi areas.

3. Considering Outermost regions in their geographical contexts

GEOSPECS will focus on the economic, social and institutional structures within and around each of the Outermost region in order to match their respective challenges. Therefore, the TPG will have to rely on various databases such as the World Bank or FAO databases. The advantage of the FAO indicators is the fact that they allow regional and not only national characterisation. Mapping regional characteristics will require an adaptation of the ESPON layout, in view of considering the outermost regions within their respective geographic context rather than as isolated European outposts as is currently the case. A specific map layout will therefore be elaborated for the representation of Outermost regions; general maps of Europe produced by GEOSPECS will use the standard layout.

6. Preliminary selection of case study areas

A preliminary list of case study areas has been established by the TPG. As it has not been possible to organise an overall discussion between all partners on this issue, the overall coherence of this selection remains to be verified. This list may therefore still be amended.

Mountain areas:

- The **Highlands and Islands** (UK) are an example of peripheral mountain areas with a major insular and coastal component.
- The **Jura** massif (FR, CH, DE) illustrates the specific challenges of middle mountains and of cross-border mountain areas.

Islands:

- **Gotland** (SE) a middle size coastal island in Sweden that is administratively a NUTS 3 region. It has a number of daily links with the mainland and high levels of economic performance compared to the EU average even if it is not one of the most developed regions of Sweden. It has managed to tackle some of the issues that islands face, especially the ones concerning environmental management and energy. Residents enjoy a high level of services, both public and private, especially compared to islands in southern Europe. However, insularity affects its population and economic activity.
- The **North Aegean Region** (GR) a newly established island Region with 10 inhabited islands, of which 5 are middle sized and 5 are small. There are border issues related to its closeness to the Turkish coast and important accessibility communication and transport difficulties both between and within these mountainous islands The population has declined from the 1950s until the 1980s and since it is slightly increasing (0,4% in 1991-2001), but the age structure and education levels are deteriorating.

Sparsely populated areas:

- **Tornedalen** (SE, FI NO), a cross-border region of the high north where new mines are set to be open in the near future. This may give us some interesting insights on the role of natural-resource-driven local development compared to "non-natural" ones. There are also interesting contrasts between coastal parts and the inland.
- **Teruel** (ES) a mountainous region in the heartland of Spain challenging the idea that sparsity would be an exclusively Nordic issue.

Outermost regions:

- **French Guyana** (FR), a very large (83,500 km^2) regions where the population of only 220,000 people lives in the suburbs of Cayenne or along

the coastal area. Ethnic diversity and intense demographic growth (nearly 2% per year) are central issues, as well as illegal migration from neighbouring countries. 96% of the territory is covered by the rainbow forest and constitutes a worldwide hot spot for its fauna and flora. A model for the sustainable management of this intense growth remains to be defined.

- The **Canary Islands** (ES) archipelago consists of seven diverse islands with a maximum distance between them of 460 km. The Canary Islands currently has a population of 2 million inhabitants and a density of 281.8 inh/km^2. The economy is primarily based on tourism. Thanks to this, the Canary Islands represent the most developed Outermost region and are now close to the EU-27 average in terms of GDP per capita. However, the extensive development of tourism has generated various problems in terms of land planning and environmental protection.

Border regions,

- **Luxembourg** (LU, FR, DE, BE) and **Geneva** (CH, FR) are very similar in terms of functional integration but very different in terms of institutional integration. These two middle-size European metropolitan centres of less than one million inhabitants with a high level of internationalisation and a specialised economy based on knowledge intensive service sectors have been described as “global specialists” because of their important role as hubs for wealth management, commodity trade finance, insurance and reinsurance, or investment funds. In institutional terms, Luxembourg is very different to Geneva in the sense that no cooperation area adapted to the current scale of the functional metropolitan area has yet come to fruition (see Map 2 and 3). The fact that the two case studies are very similar in terms of economic structure is all the more important if we intend to study intra-firms networks located in cross-border metropolitan areas in Europe as is planned in the GEOSPECS project.
- The **German-Polish-Czech** cross-border region is characterised by both good practice turning a geographic specificity into a strength and overcoming structural development obstacles. For example through the full integration of labour markets in 2011. While there are development potentials due to common history, remaining mental barriers due to difficult history in the German-Polish and German-Czech border regions, lacking language skills are a significant obstacle. Strong regional differentials in wages and prices on the other hand function as an impetus for cross-border functional relations.

Coastal areas:

- **Belgian coast**: Belgium has a relatively short coastline comprising of beaches, dunes and polders. Human influences have resulted in the fragmentation and loss of natural dune systems. Artificial nourishment frequently occurs. Coastal defence structures characterise the majority of the coastline length (in 1994, about 70% of the total length). There are major pressures from human activities on the ecosystems present. There are two beach reserves and three nature reserves along the Flemish coast. The area is a densely populated, urban coastal strip. There has been a decrease in traditional agriculture and fishing industries. Tourism is the most important economic activity in the coastal region. Due to its geo-economic central location in the European core, the coastal region forms the setting for transport, logistics and distribution e.g. ports of Zeebrugge and Ostend. The Belgian government has been very proactive in developing a Maritime Spatial Planning system for the Belgian Part of the North Sea.
- **Celtic Sea area** (IE, UK): The Celtic Seas region contains wide variations in coastal topography, including sand dunes, bays, estuaries and numerous sandy beaches. The large range of habitats in the region supports a diverse fish fauna. Traditionally fishing has been the predominant maritime activity, given the diverse range of fish fauna and commercially important species occurring in the area. More recently there has been ongoing development of tourism, recreation, marine aggregate extraction and offshore renewable energy. OSPAR Region III also contains a number of internationally important ports and harbours. In terms of demographics, the general pattern is one of declining numbers in the largest city centres, growing populations in the suburbs of major towns, and stable or declining populations in more rural and remote regions.

Inner peripheries:

- **Wallonia** (BE), which in spite of its very central European position and contiguity to the European decision-making centre of Brussels has experienced major difficulties overcoming the economic and social crises linked to de-industrialisation. It appears as a relatively less prosperous and urbanised region in the middle between the European core metropolitan regions of Paris, London and the Ruhr. There are however signs of a progressive, albeit slow, improvement of the situation.
- **Northern Hessen and Thuringia** (DE) Large rural peripheries at the edge of core industrial, low accessibility and a disruption of sensitive economic structures due to increasing attractivity of main core areas such as the Ruhrgebiet characterise this area. However, the development of

tourism and recreational business activities show that some assets have been identified and are being exploited.

High population density areas within TeDi areas:

- The **Valais** (CH) is characterised by extreme contrasts in terms of population density, between a lowland area of 313 km2 with 210,000 inhabitants (610 inh/km^2) and a mountain area of 4911 km2 with 90,000 inh (18 inh/km^2). The case study will focus impact of these contrasts on the social and economic development of the canton.
- The island of **Malta** (excluding Gozo and Comino) has a population of 376,530 concentrated in area of 246 km^2, comparable to that of the Valais lowland. This implies that there is a very population high density of 1528 inh/km^2.

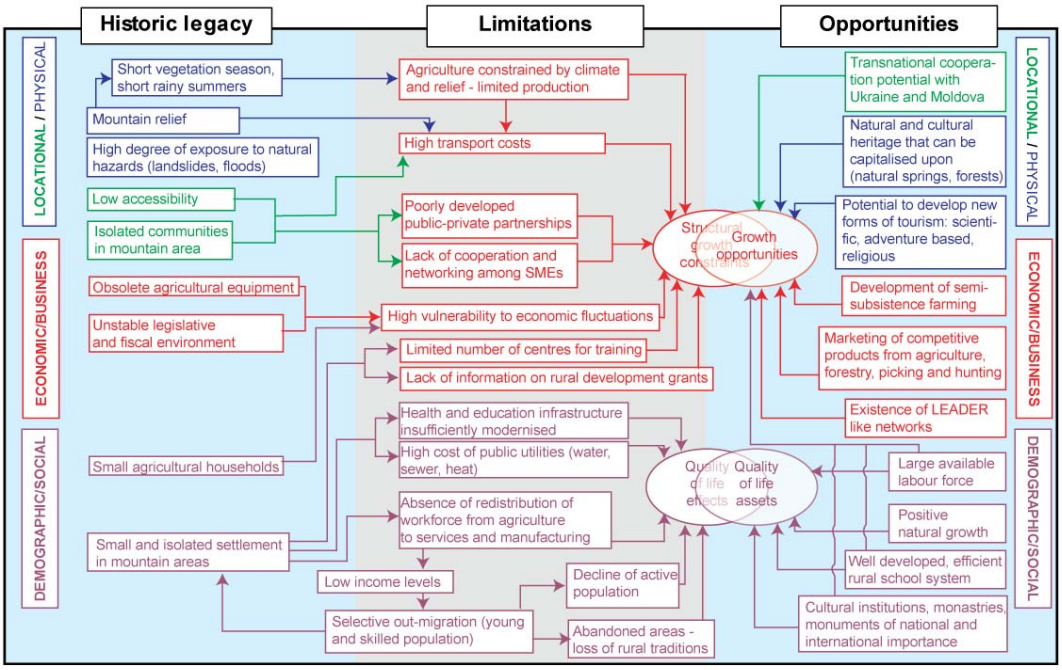
7. Systematising the knowledge of causal processes in TeDi areas: the syndrome-based approach

GEOSPECS will explore the different ways in which our understanding of complex social, economic and ecological phenomena could be improved through the categorisation of TeDi areas and be used in designing effective policies. Typically, the challenge of combining different dimensions of sustainable development has been addressed by circumscribing the reflection and the policy measures to a specific type of territory. However, the content of discussions on the regulatory frameworks needed for prosperity and robust development may be different in TeDi areas than in "mainstream territories". The analysis will therefore not only focus on causal processes linking geographic specificity to particular types of regional and local development preconditions, but also seek to identify concurrent socio-economic patterns that may be associated with categories of TeDi areas.

We use the concept of "syndrome" to describe these "typical combinations of pertinent co-factors" that are not necessarily connected in a causal sense. As suggested by the medical metaphor, the "syndrome" is a recognisable pattern, resulting from a certain number of interactions or feedback loops. The research question is whether one can identify one or multiple syndromes associated with each category of geographic specificity. In other words, the TPG will explore the extent to which one would be able to recognise an area as "mountainous", "insular" or as being characterised by any other type of geographic specificity simply by observing the regional development processes and trends, independently of our knowledge of its geographic features. For this purpose, the TPG will identify the most characteristic features of the development processes in individual regions or groups of regions, and compare them in order to identify any recognisable patterns. The process of validating or rejecting the hypothetical existence of syndromes related to categories of geographic specificity will therefore produce a wide range of policy-relevant evidence.

Contrary to what could be inferred by the medical metaphor, the syndrome-based approach is not meant to identify "regional pathologies" associated with geographic specificities; rather, it is interpreted neutrally, as a "complex of concurrent trends and processes". It therefore includes both structural development constraints and opportunities. The syndrome-based approach has previously been applied in this way by the ESPON TeDi project. The instrument used to organise the evidence and communicate the results has been the

flowchart type of diagram[37] (see Figure 8), showing processes leading to structural development constraints from left to right, and those leading to development opportunities from right to left. Vertically, different dimensions of local and regional development are distinguished. This model may be further developed as part of the GEOSPECS project by further specifying the intermediary processes leading to the emergence of regional strengths and opportunities and by adapting the vertical development dimensions to the specific situation of each type of area.



Source: ESPON Tedi project, Nordregio et al. (2010)

Figure 8 Syndrome diagram for the Romanian mountainous region of Suceava

The elaboration of syndrome models for categories of areas, rather than individual regions as illustrated in Figure 8, may require more elaborate types of logical connectors between phenomena expressing alternatives and uncertainties. We may for this purpose apply the classification of modes of interaction between syndromes proposed by Schellnhuber et al. (1997) to the phenomena and processes observed in TeDi areas. This classification includes "coincidence", as the weakest form of concurrence, "coupling" occurring when different types of explanatory factors lead to similar types of effects, "reinforcement" and "attenuation" when there are positive or negative feedback loops.

[37] This type of representation was initially introduced by Andrew Copus in the Nordregio study *Northern Peripheral, Sparsely Populated Regions in the European Union and in Norway*, (Glørsen et al., 2006)

By focusing on similar patterns and trends, rather than on performance levels, the syndrome-based approach will make it possible to identify parallels between European regions that may contrast quite significantly in terms of wealth, infrastructure, standards of living, etc. TeDi areas that have successfully overcome handicaps linked to their geographic specificity through targeted policy measures and/or well-adapted economic initiatives may nonetheless continue to experience the permanent effects of geographic specificity. One purpose of the syndrome-based approach is to highlight such characteristic elements that do not necessarily lead to statistically observable differences, insofar as processes generating constraints and opportunities compensate for each other.

The development path of TeDI areas must also be taken into account when assessing whether syndromes related to each category of geographic specificity can be identified. Because TeDi areas may be at different stages of development, it can be useful to represent the evolution of different characteristic features and to identify significant stages of development. Parallels between regions may then be drawn by comparing different points in time rather than the current situation.

The syndrome approach will be the point of convergence of the quantitative and qualitative evidence compiled from pan-European analysis and the case studies. It will make it possible to identify parallels and differences between groups of regions without resorting to benchmarking. Syndrome diagrams will be produced for each type of geographic specificity if “typical combinations of pertinent co-factors” are identified. These diagrams will express the socio-economic relevance of each category, and may serve as a justification for targeted policy measures.

8. Next steps: timetable and orientation of the project previewed towards the Interim report

The timetable for the different work packages is indicated in Figure 9. The upper two lines, i.e. the delineation, physical description and compilation of socio-economic data correspond to the main deliveries in the interim report of 2 March 2011. This presupposes that the spatial reference framework for the project is finalised rapidly.

In parallel, the choice of case study areas and first steps in their analysis, together with the organisation of the first consultations with stakeholders will prepare for analyses focusing on the development processes of TeDi areas and the policy options regarding possible interventions in the second phase of the project, from March 2011 to February 2012.

The distribution of work packages between the partners remains unchanged as described in the Application.

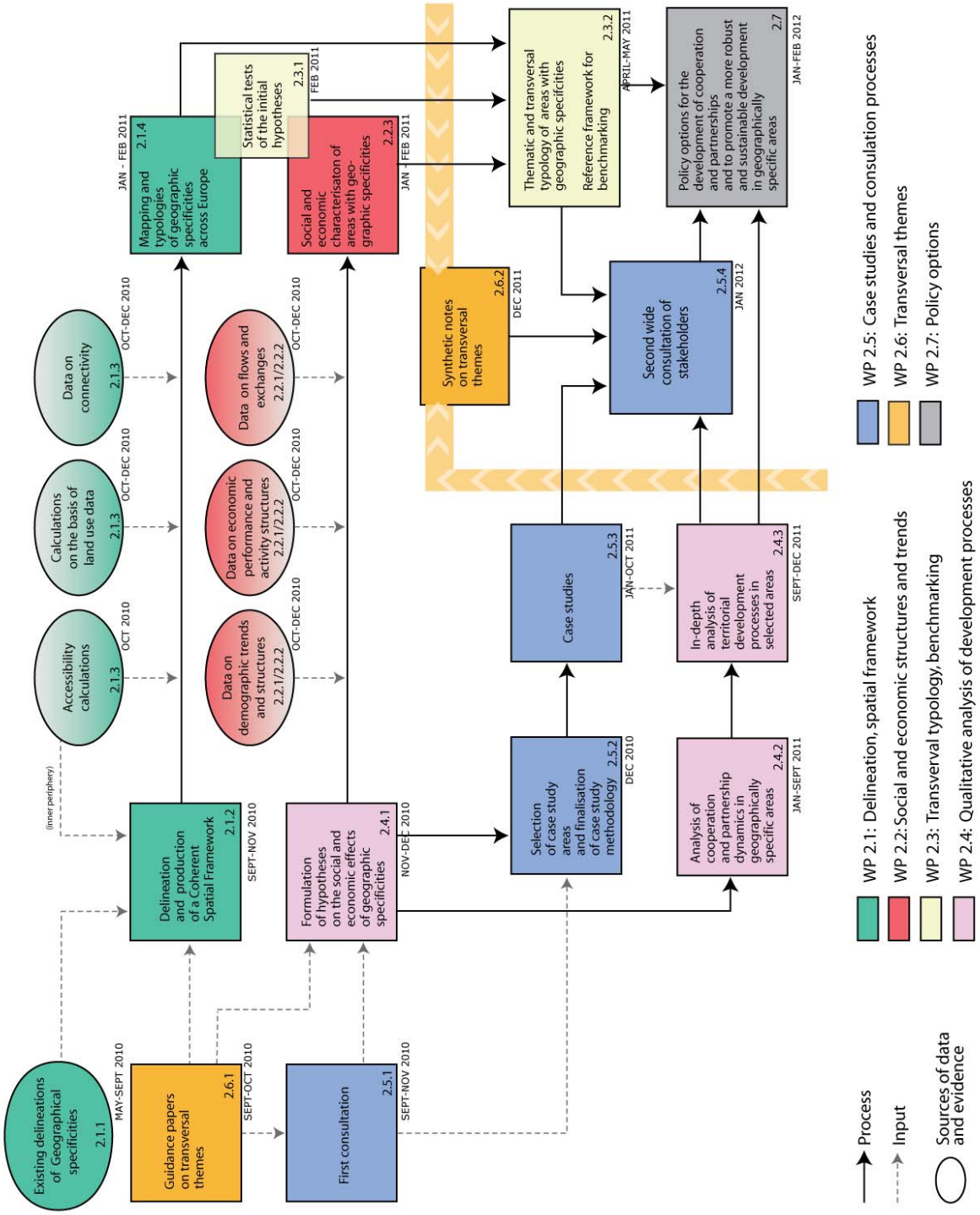


Figure 9 Timetable for individual work packages and succession of event

9. Conclusion: Key issues the further analysis

Based on the points raised above, a certain number of key challenges in the analysis of territorial diversity across Europe can be identified:

- A spatial reference framework, including the delineations of the seven types of specificities considered and the different types of data used for their analysis, must be designed. This implies that NUTS 2 and 3 regions do not offer a sufficient basis for the delineation and analysis of geographic specificities across Europe, but that other types of approaches are needed.
- This spatial reference framework includes the identification of relevant geographic contexts for Outermost regions. They cannot be approached as outposts of Europe as has been the case in ESPON up to now.
- The TPG will separate an initial delineation, which focuses on the conceptual coherence and does not take into account issues of data availability, and a second one identifying areas that may be characterised statistically. This intermediary step is needed to assess the geographic extent of geographic specificities across Europe.
- The dissociation of geographically specific areas and “regions with geographic specificities” may facilitate this two-stage process. The statistical analyses would then primarily characterise NUTS regions of which a portion of the territory is geographically specific, rather than the geographically specific area as such.
- The scale dependency of the delineations of some geographic specificities needs to be taken into account. The TPG will need to select the scales of analysis of most relevance from the point of view of a pan-European study such as GEOSPECS and incorporate this scale-dependency in the later analyses. This implies that the policy options formulated on this basis will also be scale-dependent.
- The range of geographic specificities included in the present study is of an exploratory nature. Their respective weight in the later cross-analysis of geographic specificities will depend on the degree to which each category contributes to the understanding of territorial diversity across Europe.

The central contention of the present report is that one needs to consider the diversity of development strategies and ambitions across Europe, as well as the different types of contributions to European wealth, prosperity and sustainable development, to understand territorial diversity. The geographically specific areas will analysed on this basis.

Annex 1: List of sources of local area data identified in the Western Balkans

Albania (http://www.instat.gov.al/) municipal data of 2001 census exist

Bosnia and Herzegovina (http://www.fzs.ba/Eng/index.htm) population by 10 cantons available. Census data at municipal level exist, but are not available for download.

Croatia (http://www.dzs.hr/default_e.htm) population census 2001, with data at the municipal scale .

Kosovo (http://www.ks-gov.net/kos-estia/files/Contacts.htm)

Macedonia (http://www.stat.gov.mk/english/glavna_eng.asp) census 2002 by municipalities

Montenegro (http://monstat.org/EngPrva.htm) census 2003 by municipalities

Serbia (http://webrzs.stat.gov.rs/axd/en/index.php) census 2002 by municipalities, maybe something for 2008

www.espon.eu

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.