

Making the best of Europe's Sparsely Populated Areas

On making geographic specificity a driver for territorial development in Europe

Alexandre Dubois and Johanna Roto

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Nordic co-operation

Nordic co-operation

takes place among the countries of Denmark, Finland, Iceland, Norway and Sweden, as well as the autonomous territories of the Faroe Islands, Greenland and Åland.

The Nordic Council

is a forum for co-operation between the Nordic parliaments and governments. The Council consists of 87 parliamentarians from the Nordic countries. The Nordic Council takes policy initiatives and monitors Nordic co-operation. Founded in 1952.

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Stockholm, Sweden, 2012

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

Texts and maps stemming from research projects under the ESPON programme presented in this report do not necessarily reflect the opinion of the ESPON Monitoring Committee.

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Preface

This Nordregio Working Paper is based on the work performed by Nordregio in the framework of the ESPON GEOSPECS - Geographic Specificities and Development Potentials in Europe – applied research project, undertaken during the period 2010-12.

While geographic specificities have gained momentum in the official discourse on regional development policies, there is little understanding of how this framework can be pertinently used in the design and operationalisation of Cohesion Policy. In that respect, the GEOSPECS project argues that “taking account of Geographic Specificity in the design of policies is therefore not about defining indicators and criteria of geographic specificity. The objective is rather to understand how geographic specificity influences the performance of any territory, all other factors being equal” (GEOSPECS Final Report 2012). Based on this understanding, the main objectives of the project were (ESPON Homepage):

- “To provide a coherent transversal framework to characterise the past trends, state and potential future developments of geographical specificities for territorial policy and regional development” and,
- “To facilitate the integration of this sense of commonality and of the discourses constructed to justify specific treatments, on the basis of geographic specificities, in European territorial cohesion strategies”

In this framework, Nordregio’s main task was to investigate how sparsity and peripherality, which are the main geographical features of Europe’s sparsely populated areas, create specific challenges to local development, and to reflect on how regional development policies may help these territories grasp development opportunities based on their territorial potentials. In that respect, this Working Paper should be viewed as a continuation of Nordregio’s previous contributions (Gløersen et al., 2006; Gløersen et al. 2009) to the debate on regional development policies for sparsely populated areas.

The policy relevance of this working paper is related to the topic itself as it is currently high on both EU and national regional policy agendas, i.e. regional development in a sparsely populated environment,

and mostly because it deals with issues that regional policymakers and stakeholders have themselves identified as central in order to promote local development in sparse territories. As part of the GEOSPECS research design, regional policymakers and stakeholders provided inputs and influenced the thematic scope of the study through consultation, based on a questionnaire sent to identified European stakeholders, and participation in a joint Policy Workshop, in December 2011. This interaction between the research team and stakeholders enabled us to focus, early on in the process, on the thematic scope to be addressed. Three main issues viewed as the main challenges by stakeholders when it comes to Sparsely Populated Areas’ ability to exploit their territorial potential were highlighted in the consultation, namely:

- the remoteness from / difficulty to access larger agglomerations,
- small-size of the local economy and labour market, and
- unfavourable demographic patterns.

At the same time, stakeholders emphasised in the consultation that sparsely populated areas are endowed with some important territorial assets that need to be better exploited and utilised for future development opportunities. Social capital, i.e. the close relationship and trust between local and regional actors, was seen as the most important asset. The availability of diverse natural resources, e.g. minerals or energy sources, opens up the possibility to promote amenity-driven and resource-based development as a springboard for the consolidation and diversification of regional and local economies.

During the Policy Workshop, it became ever clearer that the various concerns relating to the three development challenges outlined above are in fact shared by stakeholders from all areas with geographic specificities. Hence, our contribution on sparsely populated areas focused on how remoteness, small-size and uneven demographic change impact sparsely populated areas and influence the capacity of local and regional economies to take advantage of their territorial potential and local competitive advantage.

Executive Summary

Delineation of Sparsely Populated Areas (SPA)

1. While sparsity corresponds to a certain demographic reality 'on the ground', i.e. long distances between small and scattered settlements, the notion of sparsely populated areas associates this geographical phenomenon with specific political, socio-economic and cultural processes that have been and remain instrumental for understanding development challenges and opportunities in those areas.
2. The delineation and mapping of Europe's sparsely populated areas needs to relate to the perception of the relative isolation of certain communities vis-à-vis their surrounding communities. The use of population potential measures based on 45 minute isochrones and 50 km 'as the crow flies' radius provides a relevant measurement of this relative isolation.
3. Two main categories of territories faced with sparsity are identified: Sparsely populated areas proper are areas (i.e. grid cells) of Europe which can reach out to less than 100 000 inhabitants within a 50 km radius and 45 minute car-drive; Poorly Connected Areas are areas of Europe that fall below this threshold only when measured using the 45 minute car-drive.
4. Three other territorial levels are used to provide compatible and complementary delineation of sparsely populated areas in connection to administrative units: sparsely populated localities are LAU2-units that have at least 90% of their area covered by sparsely populated areas; Regions faced with demographic sparsity are NUTS 3 regions that contain at least one sparsely populated locality; Sparse Territories are aggregations of sparsely populated localities based on geographic contiguity and/or cultural and political proximity.
6. Sparsely populated areas in Europe have varying accessibility to large urban conurbations: while sparsely populated areas in Central Spain are often within 2-3 hours of metropolitan areas, many parts of sparsely populated areas of Northern Scotland and the Nordic countries are located further than a 5 hour-drive from large regional centres. Sparsely populated areas thus have different preconditions for fostering local development through enhanced urban-rural interactions.
7. Sparse territories often extend over several administrative regions, counties or provinces; hence a certain degree of institutional fragmentation exists when it comes to development strategies targeting these territories. An integrated perspective on the development of sparse territories often necessitates new forms of territorial governance.

Conflicting demographic trends in the periphery

8. Even if unfavourable demographic patterns characterise the sparsely populated areas as such, there is a dual demographic process of growth and decline going on. On the one hand the intra-regional migration flows to regional centres and other larger settlements are increasing the population in most of the cities in the region. On the other hand, most of the most remote and sparse parts of the SPAs have suffered both substantial population losses and demographic thinning out. This demographic polarisation makes sparsity an even more acute issue in these areas
9. The natural population decrease can, in the longer perspective, be considered as more devastating than the recent out-migration as relatively more young people and females leave the sparse regions. The population in the sparsely populated areas is not only becoming older and increasingly more male, the declining number of young people threatens the whole fabric of social services and impacts significantly on the potential future availability of manpower
10. In addition, declining overall population and qualitative change in the population structure, e.g.

Multiple territorial contexts

5. Sparsity and peripherality are often associated locational disadvantages of sparsely populated areas, as they prevent these areas from accessing the advantages inherent to agglomeration and central locations.

ageing, also generates significant challenges in terms of access to services of general interest, both in terms of depended age classes (e.g. schools, healthcare) and general accessibility (e.g. lack of public transport).

neighbouring them. This is particularly important for those sectors that are perceived as central to the development of sparsely populated areas, i.e. the primary sector, manufacturing and tourism.

What competitive advantage for SPA?

11. Although the primary sector often remains dominant in terms of the production of value-added, the regional economies of sparse territories across Europe often display a rather diversified employment structure. There is no such thing as a 'generic' regional economy in sparse territories. Yet, sparse territories located in the same 'corner' of Europe, i.e. the Nordic countries, the British Isles or Central Spain, tend to have similar employment structures. Thus, designing and implementing regional development policies for sparse territories may necessitate a macro-regional approach rather than a pan-European one.
12. An analysis of the employment structure at the local level reveals that economies in sparsely populated areas consist of a patchwork of local specialisation. In the sparse territories of the Nordic countries, Central Spain and the British Isles, the most common specialisations are in the primary sector (Agriculture, Forestry, Fishing and Mining), energy production, the manufacturing sector and tourism accommodation (Hotel and Restaurant).
13. As a result of significant natural resource endowments and the traditional role of sparsely populated areas as the locus for their exploitation feeding wider industrial production networks, concentration of manufacturing activities can be identified especially in the Nordic and Central Spanish sparsely populated areas. Regional development strategies may take advantage of these small 'clusters' by creating new forms of proximity that would bring these actors together and make them jointly more visible and robust in terms of international competition.
14. Local economies in sparsely populated areas are embedded in several regional economic spaces. Because territorial competition is essentially occurring between 'peer' local economies, i.e. local economies sharing similar geographical and socio-economic preconditions, understanding local competitive advantage entails the more precise positioning of local economies vis-à-vis other 'sparse' local economies, that is to say, belonging to the same 'corner' of Europe (in our case Nordic SPA, Iberian SPAs or British/Irish SPA), to the same Sparse Territory, or directly

Improving the connectivity of SPA

15. Beyond the symbolic value of 'bridging' the connectivity gap between core and periphery, the development of new large-scale infrastructures needs to be well thought out in order to serve the requirements of increased connectivity in relation to the economic actors of the localities they connect. Previous experiences show that more industrial areas usually benefit from improved road infrastructure or rail-cargo linkages, whereas service-oriented local economies may benefit from improved air and high-speed train connectivity.
16. The inclusion of economic actors located in sparsely populated areas in the 'online market', made possible by the development of broadband and internet infrastructure, has shown promising potential for enabling many peripheral small firms to find new markets in more distant locations in Europe and beyond.

Policy discussion: What strategies for the future of Europe's SPA?

17. Contemporary regional development policies emphasise the need to maximise growth potential and competitiveness in all European territories in order to achieve the same goals at the continental scale. For sparsely populated areas and other areas with geographic specificity, this entails a new approach that aims at both overcoming their structural challenges, linked to their locational disadvantage, and promoting their identified development opportunities.
18. The growth potential of sparsely populated areas should not be compared to that of urban regions, but should instead be put in the perspective of their current economic performance and their exploitable territorial capital.
19. The 'Nexus model' approach proposed by the GEOSPECS project illustrates the effects that geographic specificity, and in our case sparsity and peripherality, may have on socio-economic processes, leading to the identification of 'challenges' and 'opportunities'.
20. Traditional regional policy tends to focus public intervention on initiatives aiming at overcoming the structural challenges of sparsely populated areas. It is, however, unlikely that the locational

disadvantage faced by SPA can be permanently overcome in the near future. This means that development strategies need to focus on developing the 'soft factors' that may have a substantial leverage effect on local economies through, for instance, improving the local entrepreneurial culture.

21. Relevant development strategies will need to introduce a functional territorial dimension in addition to the traditional administrative one. Because sparsity does not stop at politically-defined borders development strategies need to identify the coherent functional 'regional' level, for instance our delineated sparse territories, in order to synergise the potentials available based on the emerging interdependencies arising between sparsely populated localities.
22. The connectivity of economic actors in Europe's sparsely populated areas can be improved in three main ways: developing local corridors between local economies, creating larger economic critical

mass from within; fostering the participation of economic actors in the 'online market'; and facilitating and brokering arenas of interaction, i.e. fairs or conventions, between economic actors.

23. Demographic polarisation in sparsely populated areas requires a dual approach to the design and implementation of territorial development strategies: the 'cluster' policy-approach targeting growing urban centres; the 'embeddedness' policy-approach enabling remote rural places to jointly adapt to their new context for economic development etc.
24. The small size of local and regional economies in Europe's sparsely populated areas, and its corollary, limited local demand, means that economic growth potential is strongly correlated with the capacity of firms, and especially of the smaller ones, to engage into business relations with actors located in other (larger) regional economies. Internationalisation thus needs to be addressed by territorial development strategies.

How to characterise Europe's Sparsely Populated Areas?

Sparsely Populated Areas entered the vocabulary of European regional policy-making after Sweden and Finland's accession to the EU. Since then, the territories of Northern Sweden and Northern and Eastern Finland have been referred to as northern sparsely populated areas. The Green Paper on Territorial Cohesion oversaw something of a turnaround in the policy debate on sparsely populated areas as it suggested that SPA can also be found in other parts of Europe.

While in the last decade we have seen some important advances on the research front as regards identifying, delimiting and understanding the specific socio-economic context of sparsely populated areas (Gløersen et al. 2006, 2009), these achievements have largely been concentrated on the northernmost areas of Europe. While this study seeks to build upon the methods of its forerunners, it differentiates itself by adopting a wider geographical scope and thus by identifying the other territories in Europe that could also be termed 'sparsely populated' while analysing their main territorial development features.

While sparsely populated areas have been debated in the context of European and national regional policy for several decades, little attention has been given to the importance to the precise delimitation of the phenomenon as a prerequisite for the development of adequate and pertinent policy interventions. Gløersen acknowledged that "quantitative evidence plays a major role" (2012b: 444) in the processes of integrating the concerns of development in sparsely populated areas in European

Territorial Cohesion policy. As a matter of consequence, it seems evident that, if quantitative evidence has to be central in informing policymakers, it ought to be grounded on a sound geographical delimitation of these areas.

Such an exercise cannot be the mere compilation of various national perspectives as "the thresholds for characterising a region as sparsely populated areas not the same in Sweden and in France" (Gløersen, 2012b: 445). This is due to the fact that sparsity is not a physical phenomenon, but rather the perception of the relationship between the natural and the human is certain spaces. While being described in spatial terms, sparsity is essentially a political, socio-economic and cultural phenomena related to the margins of human settlement. Hence, these geographic categories "need to be reinvented at the European level" (Gløersen, 2012b: 445).

In spite of the attention given to Sparsely Populated Areas in the debate on European Regional Policy, it appears that no real effort has been made to produce a coherent and pertinent delimitation of such areas. As Gløersen (2012b: 445) suggested, this is mainly due to the fact that these delimitations are essentially thought of as instruments to distribute, rather than tools to understand the specificity of these territories in a European perspective. Consequently, although it is important that a delimitation of Sparsely Populated Areas feeds the policy debate, it should be clear that the scientific soundness of the delimitation is a necessary condition for its policy usefulness and pertinence.

An overview of existing definitions of Sparsely Populated Areas in Europe

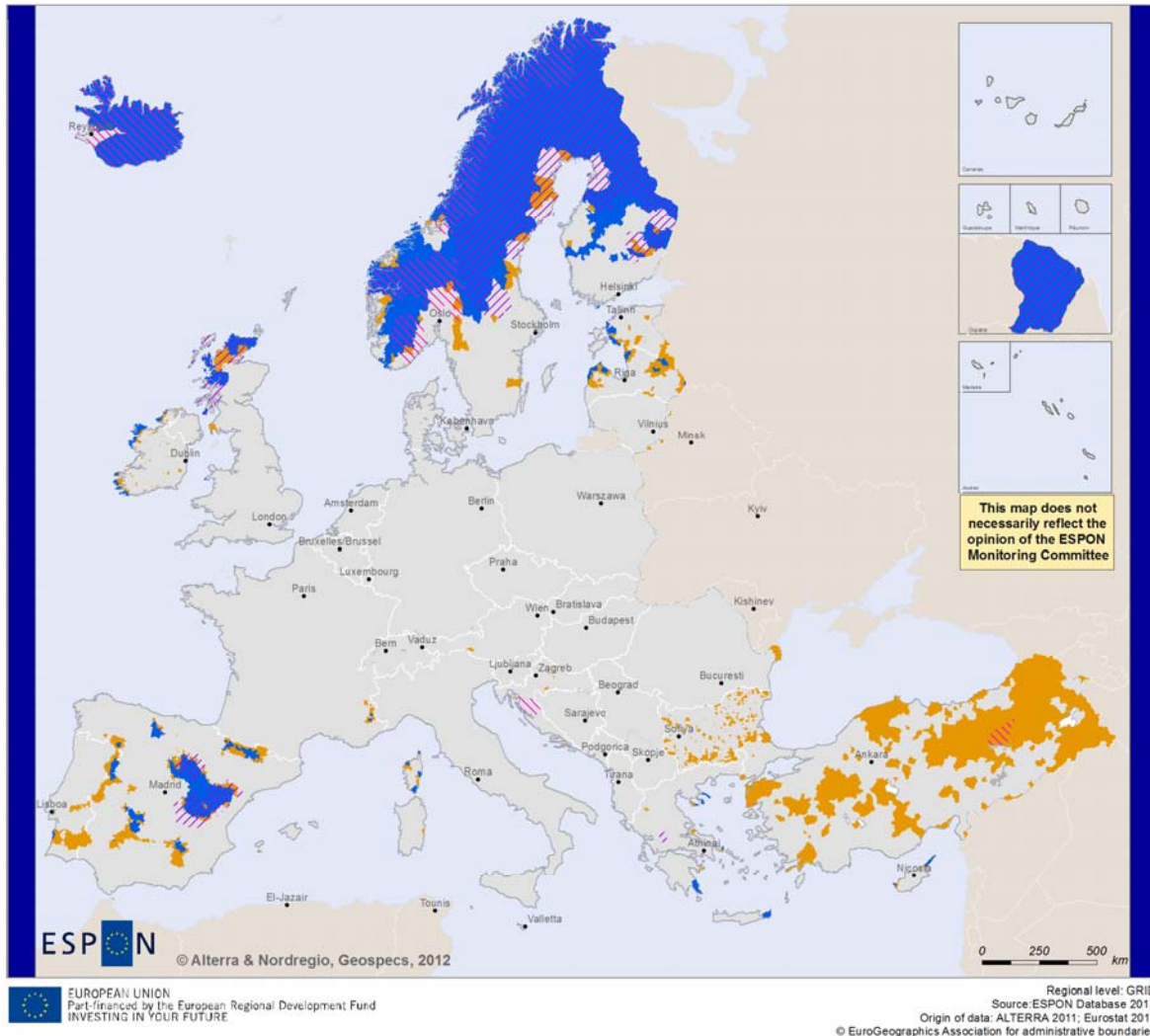
Two delimitations have recently been used by the European institutions. The first, developed by the European Commission in the framework of the Green paper on Territorial Cohesion, is based on a certain threshold (12.5 inh. /km²) of population

density at the NUTS III level (figure 1). The main objective of this delimitation is to provide a list of Sparsely Populated Regions to European policymakers to assist them in the allocation of available support funds. Because it uses administrative

boundaries to identify a phenomenon that is territorial in nature, it appears that the Green Paper definition misses the fundamental understanding of sparsity as the perception of the living conditions for

communities, i.e. both people and businesses, especially in terms of relative isolation and remoteness from the main agglomerations and between neighbouring small communities.

Figure 1: *Sparsely populated LAU2s after GEOSPECS and NUTS3s after the Green Paper on Territorial cohesion*



Sparsely Populated Regions

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

Sparsely populated NUTS3 regions after 12.5 inh./km² delineation

- ▨ Sparsely populated NUTS3 regions after Green Paper
- ▨ Regions with < 12.5 inh./km² outside the EU

The delineation of sparsely populated regions in the Green Paper based on population density at NUTS 3 level is not sufficiently precise to identify all the 'pockets of sparsity' found in Europe. While the regional administrative level plays an important role in developing strategies to tackle the impacts of sparsity, delineation of the phenomenon itself should not be based on that level, as it underestimates the territorial extent of the phenomenon over the continent.

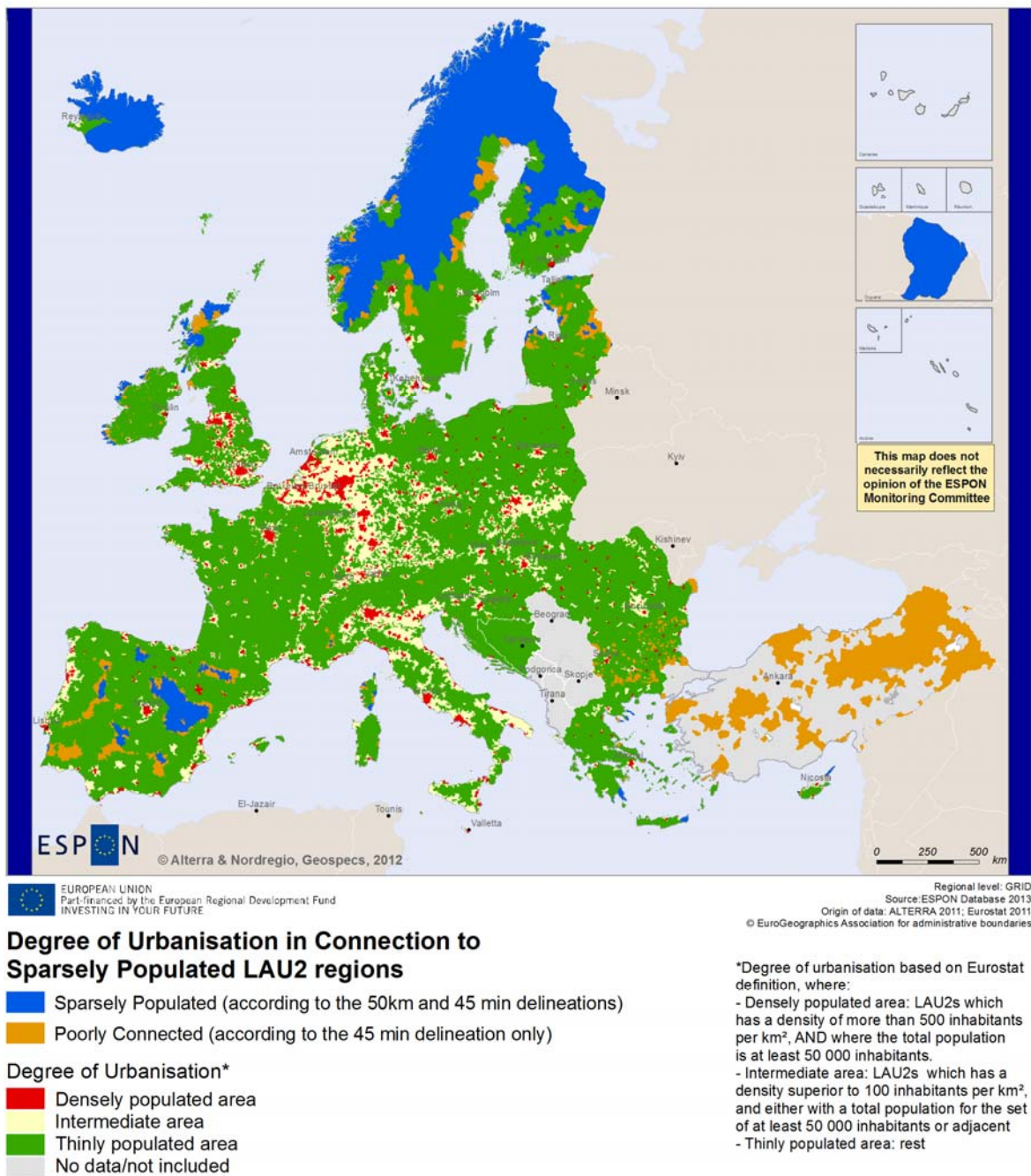
The second delimitation was developed by Eurostat and is also based on population density in administrative divisions. In its urban-rural inspired typology of European territories, Eurostat identifies a category of territories which are labelled 'thinly populated areas' (note how it avoids the term 'sparsely' in order to distinguish itself from the Commission's definition) (figure 2). In our understanding, Eurostat's delimitation is fundamentally biased as it identifies 'thinly populated areas' as the non-urban areas of Europe, and thus delimitates them as a 'left-over' of more 'densely populated areas'. Thus, Eurostat does not delimitate sparsity per se, but rather identifies various degrees of urbanity, and the 'thinly populated areas' are thus those areas of Europe with the least urban quality: 'Thinly Populated Areas' are defined by default. Furthermore, the rather high threshold in the Eurostat delimitation in relation to the definition of 'densely populated areas' misses a fundamental feature of the territorial dynamics in Sparsely Populated Areas, which is the presence of dynamic, but smaller, local/regional urban centres at the fringe or within them. For instance, regional centres in the northern part of the Nordic countries such as Umeå in Sweden, Oulu in Finland or Tromsø in Norway, play an important function as an interface between urban areas and sparsely populated areas. Yet, in the Eurostat typology, these cities become 'invisible'. This feature is the direct result of methodological choices, i.e. the use of measurements of combined population size and density at the municipal level (LAU2), that are simply not adapted to an understanding of the

territorial specificity of Sparsely Populated Areas in Europe.

The European Commission has revised this Eurostat degree of urbanisation using population grid cells of 1 km² as the main criteria instead of LAU2s. This revision gives greater comparability between the countries as it is not limited to administrative divisions. The focus nevertheless remains on European urban areas as the new criteria for thinly-populated areas (with the alternative name: rural area) is that more than 50% of the population lives in clusters of contiguous grid cells with a density of less than 300 inhabitants per km² and a maximum population of 5 000. This revised classification is implemented from reference year 2012 onwards. The revision however does not exclude the above-mentioned problems as the contiguity of grid cells means direct or diagonal (i.e. cells with only the corners touching) connection and the gaps in the urban cluster are not filled (i.e. cells surrounded by urban cells). Thus the differences in settlement pattern or connectivity are not taken into account.

The GEOSPECS project provided a pertinent arena for developing a tailor-made, state-of-the-art methodology for delimitating Sparsely Populated Areas by focusing on what is understood as the key features of sparsity, i.e. the relative isolation of communities from other regional communities due to a loose settlement structure. Hence, the resulting delimitation becomes more pertinent to use as an input in the regional policy-debate as it provides a sound, understandable basis for developing adapted local and regional strategies for these territories.

Figure 2: Degree of urbanisation and sparsely populated LAU2s



Existing delineations of Sparsely Populated Areas, such as Eurostat's, are too broad to cover most of the non-urban territories in Europe. Our typology of sparse localities is developed with the specific purpose of identifying those areas of Europe for which sparsity is a major territorial issue.

Sparsity: simple demographic feature or complex social construct?

Delineating sparsely populated areas cannot be reduced to the technical exercise of computing quantitative indicators leading to the identification of quantifiable criteria. As is suggested by Gløersen (2012a), delineating sparsely populated areas necessitates that new approaches to cartography be pursued. This means that the technical process of delineation ought to be aided by the understanding of the socio-spatial processes shaping sparsely populated areas. In the GEOSPECS project, we propose to delineate 'sparsity' on several geographical levels in order to provide a sound scientific base that is sufficiently flexible and adapted to informing territorial policies on how best to match the specific needs arising at multiple territorial levels. Our underlying argument in respect of understanding and delineating territorial sparsity is that it ought to be, first and foremost, understood as a specific living environment shaped and imagined through the tight relationships between 'islands' of European population and their respective territory.

Our overarching argument steering the direction of the work proposed in this study is that sparsity can be defined a political, socio-economic and cultural construct, and that sparsely populated areas are the spatial representation of these phenomena. This idea leads back to the understanding of peripherality argued by Anderson, that is to say that "peripherality can be seen to be culturally specific, a social construct, best explained within the interplay of culture and economics" (Anderson 2000: 93). As a matter of consequence, to be pertinent, the spatial delimitation of sparsity needs to take into account these multiple perspectives.

A political construct

The issue of sparsely populated areas was originally connected to the regional policy debate in the Nordic countries, and was only introduced into the European regional policy debate much later. Indeed, its emergence in the debate on European regional policy also has Nordic origins, as it can be traced back to the Treaty of Accession to the EU negotiated by Finland, Norway and Sweden in the mid-1990s. During the negotiations, these countries argued in favour of a new Structural Funds strand specifically dedicated to their most sparsely populated regions (Gløersen 2009). In the end, only Finland and Sweden joined the EU (in 1995), and this demand was then implemented through Protocol 6 of their Treaty of Accession to the EU (Gløersen 2009). Thus, the idea that 'sparsely populated areas' constitutes a specific type of

territorial context necessitating adequate and adapted public interventions was established. Moreover, the emergence of the debate on sparsity in the European policymaking context facilitated the entry of a new type of actor into the process, namely, regions. Indeed, through the instruments of EU Regional Policy, regions have taken a leading role in steering the debate on the challenges and opportunities of SPA, e.g. through the transnational Nordic network of regional authorities NSPA (Northern Sparsely Populated Areas), and with regards to the implementation and operationalisation of public interventions.

In the early 21st century, it became evident that the geographical focus of cohesion policy was about to shift towards the (greater) challenge of reducing socio-economic disparities between old and new member-states, and particularly the most rural and remote parts of the latter. Hence, the debate for continued support to sparsely populated areas entered a new phase in the midst of the negotiations for the 2007-13 Structural Funds Programming Period. The result of this process was firstly territorial, i.e. from an essentially Nordic focus to a wider pan-European one. In the Green paper on Territorial Cohesion (European Commission 2008), sparsely populated areas were identified in other parts of Europe, such as Northern Scotland, Central Spain and Southern Greece. In spite of this, some official EU documents, such as the Treaty of Lisbon (2007), still refer to 'northern' sparsely populated areas. Nevertheless, this 'mainstreaming' of the issue initiated a process of shifting the debate from 'uniqueness' to 'specificity'. Moreover, another important shift related to the underlying argument for continued public support to these territories: interventions need to enable growth while previously they were essentially targeted at 'fixing' development obstacles and 'market failures'.

Thus the issue of sparsity, and more specifically the challenges and opportunities it entails, has become a defining component of the policy agenda that needs to be incorporated at the different levels of European territorial governance: for localities and regions, it is a matter of economic attractiveness and the continued existence of its social model; for the member-states, it is a matter of ensuring the competitiveness of territories through labour-market integration (regional enlargement through the lens of economic development; and for the EU, it is a matter of territorial cohesion, i.e. promoting well-functioning regional economies that contribute to the overarching goal of European welfare.

In the national policy context the absence of SPAs varies with it often being used in the context of rural policies but also in relation to other regional support measures. In the Nordic countries the definitions of 'sparse' are often related to population density below a certain threshold and distance or accessibility to urban centres. Reference to a number of additional socio-economic criteria is also included in some countries (Hedström & Littke 2011). Taking Northern European countries as an example, the following classifications exist:

- Finland: SPAs are cited in connection with rural areas where 'the rural development programme for mainland Finland 2007-2013' classifies Finnish municipalities into the four categories of urban areas, urban-adjacent rural areas, rural heartland areas and sparsely populated rural areas. The sparsely populated rural municipalities (totalling 143 municipalities) are mostly to be found in eastern or northern Finland (MMM 2012).
- Norway: The Ministry of Local Government and Regional Development (Kommunal- og regionaldepartementet) is the main responsible national authority for regional and district policy. In their classification Norway is divided into seven support zones. The zones indicate the municipality's eligibility for national aid in respect of transport, investment and differentiated payroll tax. These criteria are mostly socio-economic and do not as such refer to 'sparsity' (NOU 2012).
- Sweden: Three definitions for 'sparse areas' exist. The former National Rural Development Agency (Glesbygdsverket; now under Tillväxtverket) defines 'sparsely populated areas' as areas located more than 45 minutes travel time from built-up areas (3000 or more inhabitants). In the definition provided by the Swedish Board of Agriculture 'sparsely populated areas' are land areas located 60 km from Stockholm, Gothenburg or Malmö, or 30 km from other settlements with over 1000 inhabitants. The Swedish Board of Agriculture's definition also covers municipalities outside larger settlements and with a population density below 5 inhabitants /km². In the Swedish Association of Local Authorities and Regions definition the municipality is cited as a 'sparsely populated municipality' if less than 70% of the municipality's population is living in the settlements and the overall population density is below 8 inh./km². (Tillväxtanalys 2011a)
- Scotland: The Scottish Government's (2012) urban/rural classification is based upon two main criteria relating to total population and travel time accessibility. The classification is available in both a 6-fold and 8-fold classification. The 6-fold classification distinguishes between urban, rural, and remote areas through six categories, while the

8-fold classification also distinguishes between remote and very remote regions. Rural areas include settlements with less than 3000 inhabitants. Remote areas are located more than a 30 minute drive from a settlement with a population of 10 000 or more and Very Remote areas are located more than a 60 minute drive from such locations.

A socio-economic construct

The main challenges linked to economic development in sparsely populated areas are connected to the obstacles it entails with regards to Marshallian types of locational advantages: labour market pooling, access to a wide range of local suppliers or local knowledge spillovers (Lublinski 2003). More specifically, a strong argument made by the proponents of public support to sparsely populated areas refers to the need to compensate for high transportation costs. Lublinski (2003: 457) identified transportation cost advantages as grounded on the assumption that "transactions and cooperation may be less costly in proximity due to the fact that trust is more easily developed between geographically proximate agents".

Historically, in the Nordic countries the emergence of sparsely populated areas is tightly connected to the construction of the modern states and its welfare system, as the exploitation of natural resources located in those areas fed the national process of industrialisation and modernisation. Thus, the understanding of sparsely populated areas as a socio-economic construct needs to be contextualised with regards to national processes of urbanisation, migration and modernisation.

Traditionally, one feature that led a territory to be labelled 'sparsely populated' is that it was usually deemed unsuitable for large-scale agricultural activities, due to its harsh climate (either cold or dry) and difficult topography (many SPAs are also mountainous areas). Hence, the notion of sparsity is also a historical legacy of being designated a non-cultivated rural place. In the pre-Industrial period, when communities had to be self-sufficient in terms of food, this meant that these territories were less attractive for settlers to develop economic activities). The only economic 'hotspots' in these regions were on the coasts (especially in Scotland, NSPA and Iceland) where the climate is milder and local production is based on fisheries or on the trade and transport of other regional products like timber and minerals. These economic potentials shaped the SPA territories in the pre-industrial era: access to natural resources, mostly non-usable hinterland, and communities concentrated on the coast¹ or along other waterways.

¹ For more information on this subject, the reader should refer to the works of Niemi (1976) and Brox (2001).

The Industrial Revolution triggered a new development path for SPAs. Industrialisation throughout Europe was strongly dependent on the large-scale exploitation and consumption of material used in manufacturing processes: wood (timber, tar), coal, or ores (i.e. iron ore). Most of the SPAs had significant quantities of these resources (especially in the NSPA and Central Spain), giving a new impetus to the settlement of these territories: new towns were developed around, for instance, mines or paper-mills. The development of hydro-electricity in order to meet the national demand for energy in relation to these expanding industrial activities was also an important milestone in the development of the SPA.

Another useful aspect as regards better understanding sparsely populated areas is related to the history of settlement and urbanisation in these areas. This history relates to both the political environment and to the industrialisation of the SPAs. As such, the historical legacy manifests itself differently across Europe. In the Nordic countries, the main period of development coincided with rapid industrial development and the years after the Second World War, with a rather broad array of cohorts arriving. In most of the NSPA counties population increased rapidly after the war, in the 1950s and 1960s, and peaked in the 1980s or 1990s. For example in Lappi and Oulu counties in Finland the population increased by some 40% during the period 1940-1980 and by some 30% in Finnmark and Troms counties in Norway. In contrast, these regions have witnessed a population decrease during the last 20-30 years, excluding the regional centres of Oulu and Tromsø themselves.

In Iceland the overall population increase has been rapid during the 20th century and even in those settlements outside the capital region total population has doubled during the last 50 years. Iceland was however hit hard by the global financial crisis in 2008, which extended into 2009. The crisis has resulted in the greatest ever out-migration from Iceland with the total population change being negative, for the first time since 1887 (Lindqvist et al 2010). In 2010 however total population began once again to increase.

In the Spanish context, the situation is rather different. Although the SPAs of Central Spain do not have particularly good agricultural land compared to other Spanish regions, they included numerous small villages and rural settlements. After General Franco's Plan de Estabilización in 1959, there was a rural exodus, especially during the 1960s and 1970s. The population declined sharply as people emigrated to the industrial areas of the large cities and the coastal towns, where tourism grew exponentially. During the second half of the 20th century, the provinces of

Cuenca, Soria and Teruel lost almost 40% of their total population.

Industrialisation and urbanisation affected the SPAs in Scotland earlier than the other SPAs and therefore also the development trends have had a different timeframe. The whole of Scotland has long suffered from net out-migration, both to the rest of the UK and abroad. However, since the 1960s, net out-migration has greatly reduced and over the last 50 years Scotland has experienced relative stability in population terms. The population of the whole of Scotland reached its all-time peak of 5.24 million in 1974 before falling to 5.05 million in 2002 and then rising to a new high over the last decade. This same pattern is visible also in the Scottish SPAs; in recent years most of the SPAs have seen small increases in population with increasing birth rates and net in-migration although the main increases have been taking place in the larger settlements (Scottish Government 2012).

A cultural construct: conciliating modern image and traditional identity

The cultural anchorage in the broader national consciousness in the Nordic countries has its roots in history, which means that it is also embedded in language. In all Nordic languages there is a specific expression for qualifying sparsely populated areas: in Scandinavian languages, *glesbygden*, and, in Finnish, *harvaan asutut alueet*, both referring to the idea of an internally scattered settlement structure. In Scotland or Spain, the terms given to SPA refer more to their peripheral location (remote), their socio-economic structure (rural) or their overall development challenges (fragile, less-favoured).

Identifying sparsity as a cultural construct may lead to a tension between how the territory perceives itself and its future, and how it is seen from the outside. Specific reference to the traditional importance of such territories in a broader spatial and historical perspective may lead to a mismatch between their identity and their image, and may also challenge the extent to which such territories may generate alternative futures. More than a decade ago, Anderson (2000: 95) argued that "regardless of their cultural authenticity, these studies sparkle with 'charming and enchanting' expressions; rural, bucolic, arcadia and idyllic; all paint a contrast to industrialisation." These studies picked out the 'traditional' culture as a way of life for the periphery to emphasise the difference from urban centres. They emphasise the 'otherness' of peripherality". Hence, peripheral and sparse territories become trapped by the image that others want them to project:

Old places are venerated because they have stood in time. Accordingly one may argue that the old and the authentic of the periphery somehow offer a chance to confirm our pasts and to corroborate our future (Anderson, 2000, p102)

Indeed, it is not only their traditional importance but also the importance of their traditions that should not be underestimated. Sparse territories which today are understood as peripheries may, previously, have been important economic centres and thus the old historic, linguistic, religious, social etc., traditions and networks attached to these places can influence the social, economic and demographic activities of today in surprising ways (Apostle and Hovgaard 2002: 160).

An important part of the long-standing cultural anchorage of NSPAs relates to pioneer settlement and the presence of the Sámi people, the only designated 'indigenous' people in the European Union. The Sámi people have their own language, traditions and, not least, resource-based livelihoods such as reindeer herding, fishing and hunting. In territorial terms the traditional living area of the Sámi people has legal basis. In Finland and Norway the administrative Sámi

living area is defined. In Finland the 'Sámi native region' that covers the northernmost part of Lapland is defined in and protected by the Finnish constitution (17 § and 121 §) to be autonomous on issues relating to the Sámi culture and language. In Norway the administrative area is cited as 'the application area of the Sámi Parliament subsidy schemes for business development' and it accounts for around 50 per cent of the area in Norway north of Saltdalen. In all three Nordic countries the preservation of the ancient rights of the Sámi people was translated into territorial terms by the delineation of *siidas*, i.e., a local Sámi community, or a "reindeer herding district," a member- and area-based economic unit. The ancient reindeer herding *siidas* have been the basis for the geographically-delineated economic reindeer herding entities of today. In this sense, there is a close connection between the 'cultural' and the 'territorial' in respect of the perpetuation of 'tradition' and 'identity' in the NSPA.

In conclusion, it seems important to note that the delimitation and analysis of sparsely populated areas developed in the context of this report aims to consolidate the underlying socio-economic dynamics that shape these territories and to identify the main challenges and opportunities that will influence their future development.

A four-level approach to the delineation of sparse territories

In human geography terms sparsity represents a rather complex notion. In this respect, it is unlikely that a single approach to delineating these territories could provide the necessary base for a good understanding of the specific development opportunities and challenges they face. In order, as far as possible, to retain this complexity, while also providing a clear basis for an analysis of SPAs, the delineation methodology developed in GEOSPECS takes a four-level approach to the notion, each level producing a specific understanding of sparsity related to one of the three main 'constructs' cited above.

- Sparsely Populated AREAS: portrays sparsity as a contiguous territorial phenomenon not bounded to administrative boundaries, mainly revealing two types of territorial structure made up of either several large 'massifs' (NSPA, Central Spain, Northern Scotland, Turkey, Iceland) or small 'islands' (in the Alps, for instance). The resulting cultural perception of sparsity and anchorage in the identity of the communities is likely to differ between the large-scale phenomenon (in the case

of 'massifs') and the scattered, fragmented one (in the case of 'archipelagos').

- Sparsely Populated LOCALITIES: essentially raises the issue of sparsity in the light of difficulties in matching the labour market supply and demand in small economies, i.e., the small size of the local economy, combined with its relative isolation from other surrounding local markets, leads to a lack of diversity in the labour market, making it more complicated for the labour market to reach an equilibrium point between the supply side (labour force) and the demand side (firms and public authorities).
- REGIONS faced with demographic sparsity: essentially acknowledge that the regional level is a much appropriate level for the synthesis to be made between the territorial challenges and opportunities linked to sparsity and the policy apparatus.
- SPARSE TERRITORIES: designates territorial entities of SPA based on a subdivision of our sparsely populated localities into coherent

territorial ensembles, geographically, administratively and socio-economically, in the spirit of how Lévy (2011) defines territories as belonging to a field of spaces relating to the social world. This level of analysis brings together the notion of 'sparsity' as a measurable topographic feature and as a specific territorial context for the development of socio-economic activities.

Methodology

Low level population potential is specifically used in the definition of sparsely populated areas (Gløersen et al. 2006). The population potential² represents a measurement of the number of persons that are within a reasonable commuting distance of each 'point' in Europe. The commuting space for each point can be conceptualised either as 'isotropic', i.e. one can commute in all directions equally, or as 'directed', i.e. commuting can only occur along certain directions, typically along existing transport corridors. The distance used for the isotropic population potential is calculated by using an as-the-crow-flies measurement within a radius of 50 km. The directed population potential is calculated by using 45 minute isochrones, using detailed road network modelling. Both calculations are made using grid cell data which are later aggregated to different administrative levels depending on the scale of the analysis.

The isotropic and directed models of population potential provide complementary understandings of the structure of the European territory: while the former is purely based on the settlement structure, the latter portrays the (mis)match between the settlement structure and the transport network. However, having low potential according to either of those models may have different implications with regard to policy action and relevance. Consequently, a combination of both methods for

calculating population potential will be used in our delimitation.

Sparsely Populated Areas

Sparsely Populated Areas are defined as the places (i.e. grid cells) in Europe with a population potential below the threshold of 100 000 persons for both the isotropic and directed models. In the isotropic model of population potential, based on Euclidian distance of 50 km (i.e. as the crow flies), this threshold corresponds to a population density of 12.7 persons/km². In the European policy-making spheres, the threshold of 12.5 inh./km² is generally used to identify regions (at NUTS 3 level) that can be labelled as 'sparsely populated'. Using this definition of Sparsely Populated Areas, 17.2% of the ESPON space is sparse in terms of population potential (blue areas in figure 3). These areas are mostly located in Northern Europe and Mid-Spain. A few smaller areas with low population potential were also identified in the Baltic States, Corsica and some Greek islands.

In addition to the former category, another type of area can also be identified, namely, Poorly Connected Areas. These areas have a low population potential (i.e. below the 100 000 inhabitants threshold) according to the directed model (using 45 minute isochrones) but according to the isotropic one (using 50 km -radius). These areas cover 34.6% of the ESPON space (orange areas in figure 3). These Poorly Connected Areas can be found across vast areas of the Balkans, Turkey and in many mountainous areas.

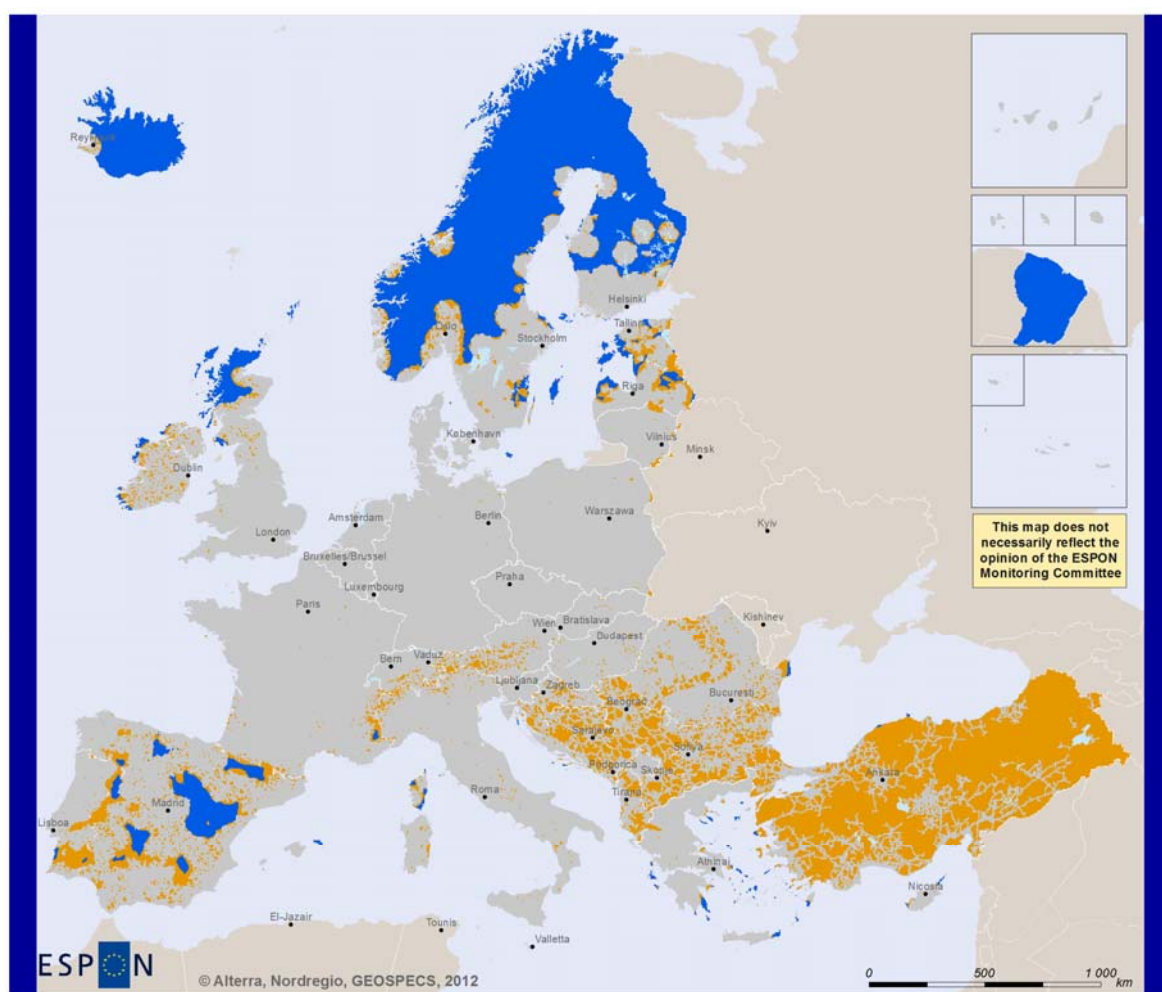
Sparsely Populated Localities

The second level of delimitation corresponds to the aggregation of the population potential data at the local administrative level. For this aggregation, the level used is the lowest level available on a pan-European basis: the LAU2 (formerly NUTS5) level. In this configuration, sparsity is understood as a local phenomenon, because it relates to how a community perceives its socio-economic integration with its surroundings, or more specifically, to the perceived relative isolation of local communities with other communities surrounding them. Consequently, the study proposes that aggregating the population potential grid cell data at the local level provides an insight into those localities that may be vulnerable to geographical isolation. For such communities, sparsity is a major challenge particularly in respect of their capacity for future sustainable development.

² As a basis for the population potential calculations, population data for 2006 from the attribute table of the Eurogeographics EuroBoundaryMap 2006 was used. This file provides population data for all of the ESPON space except Latvia, Portugal, the United Kingdom, the Western Balkans and Turkey. For these countries, the populations of municipalities have been calculated using the CIESIN 2005 1 km² population model and the grid data were then aggregated into EuroBoundaryMap 2008 geometry. In order to calculate isotropic population potentials, the GEOSPECS transnational project group (TPG) has overlain a population grid with the friction grid (both are 5*5 km and developed by the TPG). The method consists of looping over all unique value cells and, for each cell, calculating the population potential by (GEOSPECS 2012:32, 43):

- defining a reachable zone of cells by calculating the cost distance based on the friction grid and a travel time of 45 minutes
- calculating the total population within the zone, by summarising all population grid values
- assigning the total population value to the base cell from the unique value grid

Figure 3: Sparsely populated and poorly connected areas



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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

Regional level: LAU2 (except Turkey LAU1)
Source: GEOSPECS, 2011
© EuroGeographics Association for administrative boundaries
except Western Balkans and Turkey (national sources)

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 50 km 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 is the absence and/or inadequacy of the local transport network that isolates 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.

For each European locality (LAU2; LAU1 for Turkey), the proportion of the total municipal area covered by low potential areas (as defined above) was calculated. In total, 13 868 LAU2 units can be considered as 'partly sparse' or 'totally sparse' as they contain at least one area with population a potential below 100 000 inhabitants. There are, however, significant differences in the numbers of distance- and time-based sparse localities. While there are 2 440 LAU2 units with low potential areas according to the isotropic model, there are 13 834 LAU2 units with low potential according to the directed model. 2 375 LAU2 units have areas that can be classified as being of low potential according to both models. In addition, there are 71 localities, mostly in Spain, that could be classified as sparse according to the isotropic model, but not the directed model: all of these localities are located in the commuter catchment areas of the major cities, along major transport corridors, and are therefore excluded from the analysis.

In order to focus on the LAU2 localities (LAU1 in Turkey) for which sparsity can be seen as a major challenge in local development terms, only localities showing at least 90% of their area covered by low population potential according to either of the models are retained in the delimitation. According to this delineation, there are 1 488 Sparsely Populated Localities and 2 244 Poorly Connected Localities (figure 4). It is notable that all of these identified sparsely populated and poorly connected LAU2 localities are located in 'thinly populated areas' as identified by Eurostat (figure 2); thus demonstrating that our methodology enables us to refine territorially, and consolidate scientifically, previously available delimitations.

Regions faced with demographic sparsity

The regional level is the administrative level at which most European level policies are designed, implemented and monitored. In many instances, the regional level is thought of as a nexus that can bring together the leverages available through European and national territorial policies and instruments (e.g. Structural Funds) and development initiatives emerging at the local level.

In our understanding, sparsity becomes a 'regional' issue when a region contains at least one locality that has been defined as Sparsely Populated or Poorly Connected, i.e., there is at least one local

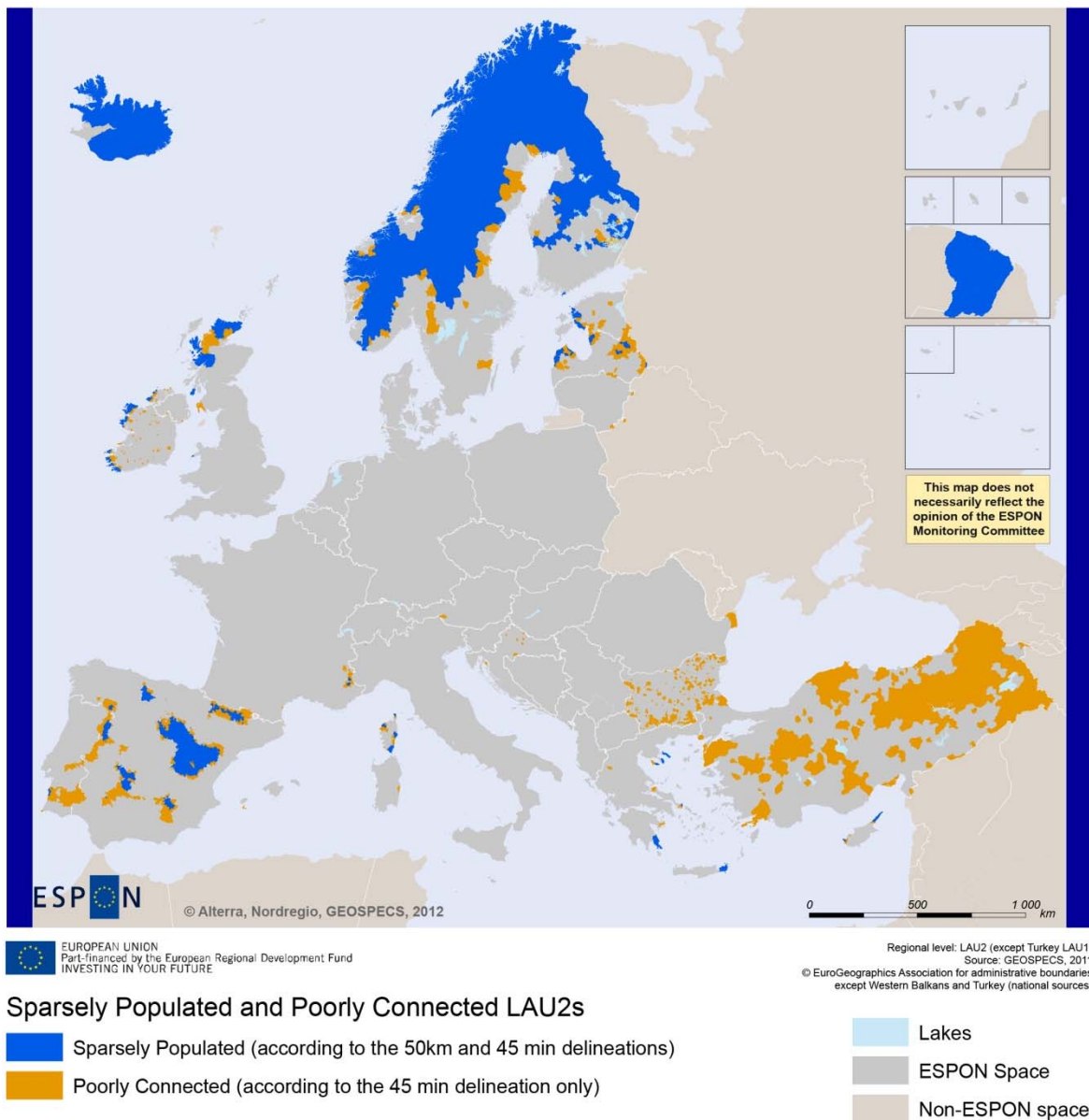
community that is relatively isolated from the rest of the regional economy and labour market. In that regard, developing appropriate public interventions and initiatives that are able to mitigate this risk of territorial exclusion and the development marginalisation of such communities should be put on the regional development policy agenda. Our aggregation has identified 228 regions in Europe at NUTS 3 level that can be labelled as regions faced with demographic sparsity. In order to make it easy to compare the territorial extent of sparse LAU2 and NUTS3 regions, a map combining these two levels is included (figure 5).

Sparse Territories

The previous delimitation identified administrative regions that are partially or totally covered with sparse localities. We introduce here Sparse Territories that correspond to the territorial 'clustering' of Sparsely Populated and Poorly Connected localities that form, to our understanding, pertinent geographical units for the spatial analysis of sparsity at the European level. Moreover, Sparse Territories may be seen as pertinent territorial entities for framing initiatives leading to increased interactions and exchanges in the SPA, especially when it comes to economic cooperation and the provision of services. Finally, Sparse Territories can be seen as coherent territories in the development of integrated 'regional' economic spaces, enabling the design of development strategies based on the compatibility of local specialisation, leading to regional economic diversity and enhanced competitive advantage.

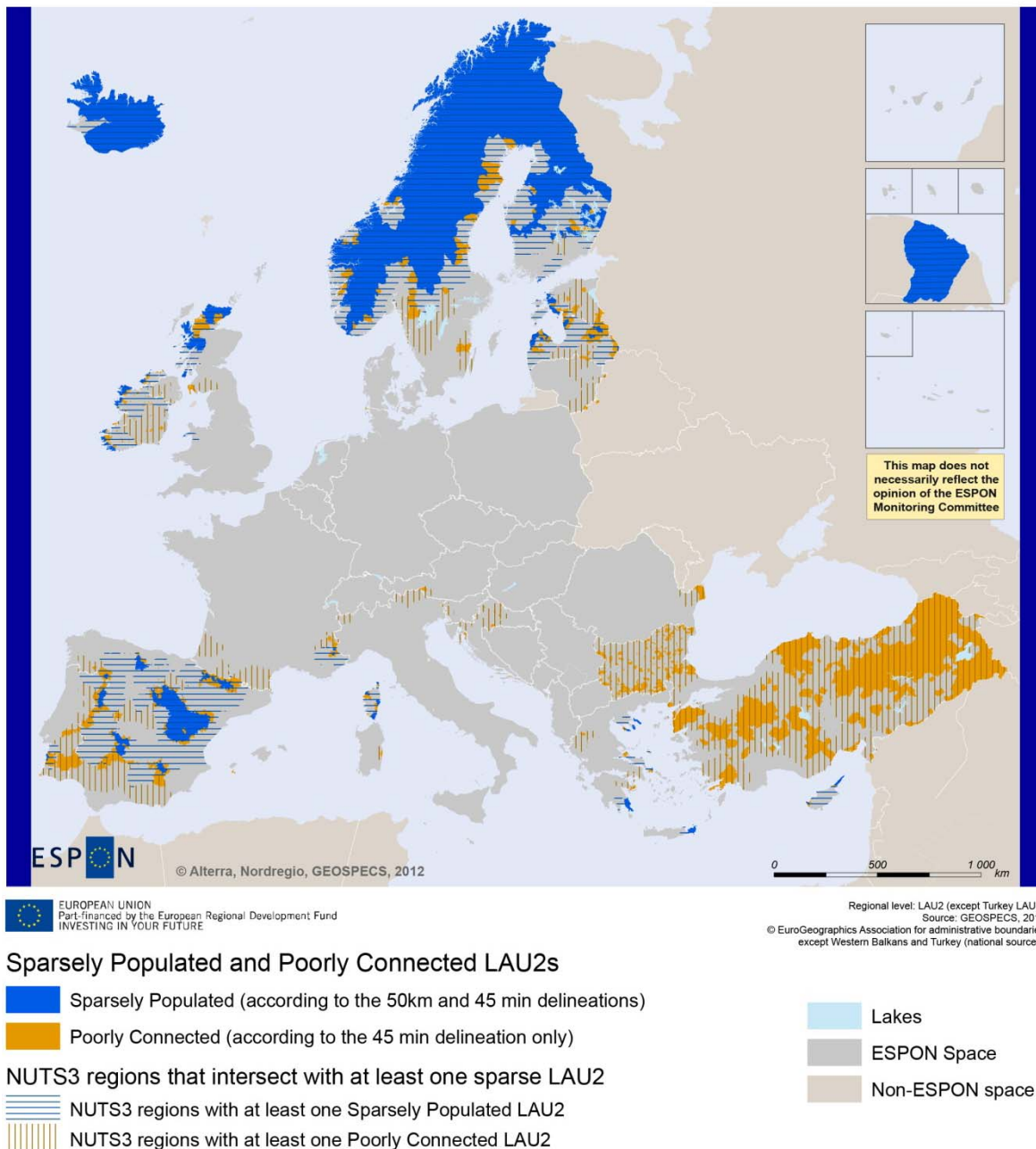
A total of 39 Sparse Territories were identified, based on geographic contiguity and proximity, national belonging and close socio-cultural proximity of sparse LAU2 units (figure 6). In most instances, Sparse Territories are based on the aggregation of the sparse units that are either (1) geographically contiguous (as in Spain) or (2) scattered across a country (as in Bulgaria). In the Nordic Countries, as such an area would have been too large territorially and make little sense policy-wise, the sparse areas in Finland, Norway and Sweden have been divided into large inter-municipal units based on their geographic context and potential accessibility to Metropolitan Urban Areas (MUA) of LAU2 units.

Figure 4: *Sparsely populated and poorly connected localities*



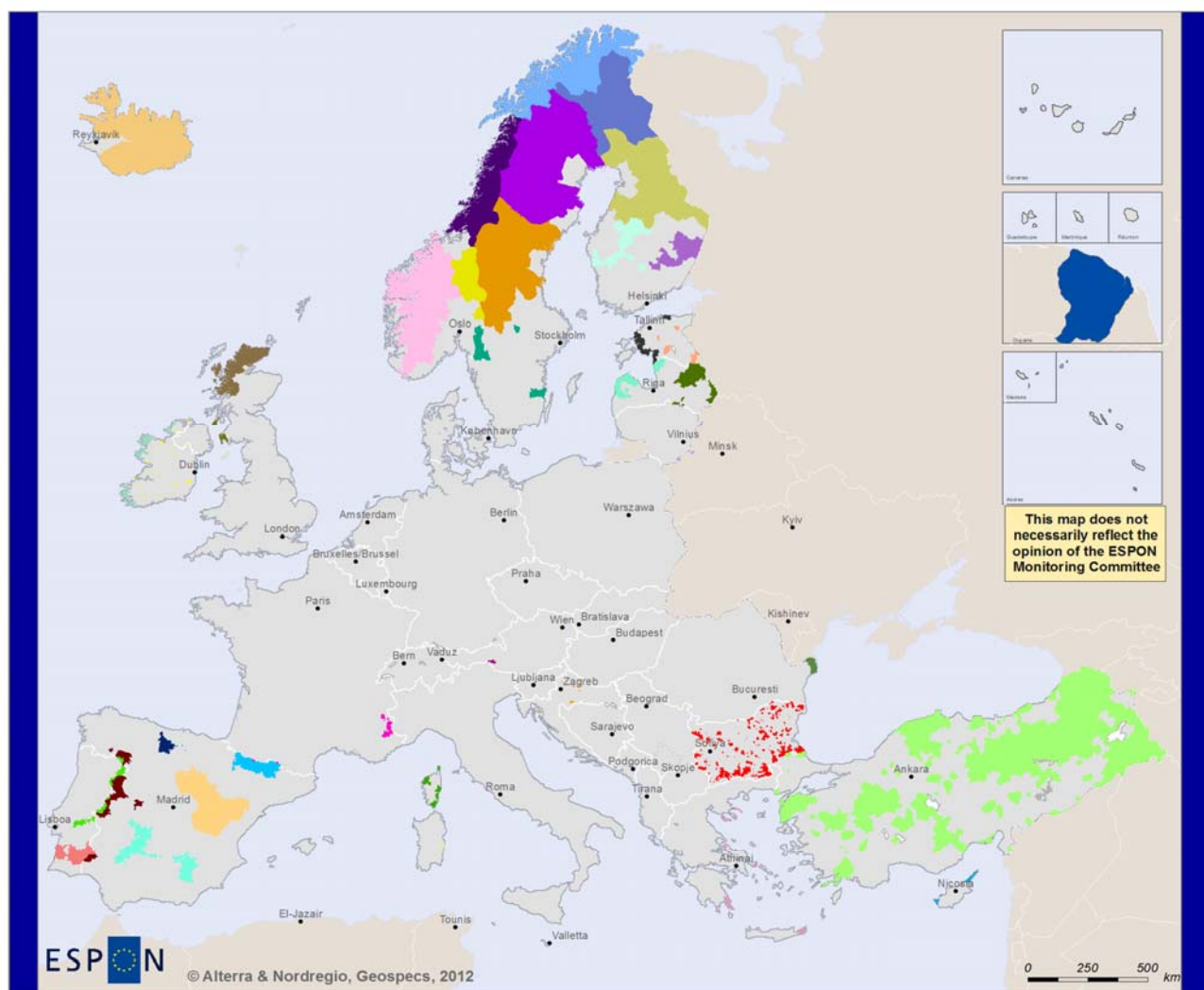
Based on the typology at grid cell level, sparsely populated and poorly connected localities are defined as LAU2 units with more than 90% of the total area covered by SP or PC Areas. The identification of Sparsely Populated Localities and Poorly Connected Localities provides a better picture of the European territories which are faced with extensive challenges related to sparsity.

Figure 5: LAU2 and NUTS3 regions with low population potential



NUTS 3 regions that host at least one sparsely populated or poorly connected locality are numerous and can be located close to major agglomerations (e.g. Helsinki, Ankara or Madrid). Sparsely Populated and Poorly Connected localities are often located at the borders of regional administrative units. Consequently, such units are not suited to building a regional typology of sparsity.

Figure 6: Sparse Territories: clusters of Sparsely Populated and Poorly Connected LAU2s



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Regional level: GRID
Source: ESPON Database 2013
Origin of data: ALTERRA 2011
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Sparse Territories - Subdivision of Sparsely Populated and Poorly Connected LAU2 units

Sparse Nordic Territories

- Iceland
- Northernmost Finland
- Northern & Eastern Fin.
- Ostrobothnia & Mid-Fin.
- Savo and Karelia
- Troms and Finnmark
- Nordland
- Hedmark
- Southern Norway
- Northern Sweden
- Southern Norrland
- Southern Sweden

Sparse/Poorly Connected Western Europe

- French Guyane
- French Alps
- Corsican coast
- Sardinian coast
- Alpine municipalities
- Southern inland in Spain
- Western boundary in Spain
- Northern Spain
- Spanish Pyrenees
- Iberian mountain fringe
- Portuguese border area
- Southern Alentejo

British Isles

- Irish west coast
- Irish countryside
- Scattered areas in UK
- Scottish Highlands

Balticum

- Estonian coast
- Scattered municipalities in Estonia
- Scattered municipalities in Latvia
- Latvia coast
- Scattered municipalities in Lithuania

Eastern Europe

- Scattered municipalities in Bulgaria
- Cyprian outskirt
- Scattered municipalities in Greece
- Scattered municipalities in Croatia
- Romanian Danube delta
- Poorly connected areas in Turkey

A regional typology of sparsity needs to be based on the aggregation of localities that are faced with this issue, and not on classic regional administrative regions (NUTS 2 and 3). Sparse Territories represent a coherent territorial entity for developing policies aimed at addressing the challenges and opportunities inherent to sparsity. This clustering can take two main forms, either as contiguous 'massifs', as in the Nordic countries, Scotland or Central Spain, or scattered 'archipelagos', as in Ireland, Bulgaria or Turkey.

The territorial contexts of Europe's Sparsely Populated Areas

Little focus is given, in the regional studies literature, to explicitly addressing the development challenges and opportunities arising in sparsely populated areas while, in comparative terms, significantly more extensive theoretical discussions on and empirical work dealing with the development of peripheral

regions is undertaken. An important point to raise, before going more deeply into the results of our empirical work, is the need to understand the relationship between the notions of peripherality and sparsity, and more specifically whether sparsity is merely one specific form of peripherality.

Why is remoteness a central notion for sparsely populated areas?

It is a euphemism to state that peripherality has been a central notion in the emergence of Economic Geography as a field of scientific investigation. Indeed, while being a “fundamentally geographical” (Crone 2012) concept, peripherality is often used as an explanatory factor for uneven economic development at different scales, i.e. global, national and intra-regional. This understanding was already advocated by Anderson (2000: 94) when asserting that ‘peripherality’ is “essentially a spatial theory, but linking geography and economic process”.

While it is often used as a generic term in academic and policy debates, there is often little understanding of to what the term ‘peripheral’ actually refers. As cited by Anderson (2000: 93), “Goodall (1987: 350) defines peripherality as the condition experienced by individuals, firms and regions at the edge of a communication system, where they are away from the core or controlling centre of the economy. This emphasis on separation indicates that it is social process, in particular how space is used within the social context, which demarcates periphery”. Consequently, peripherality relates to the idea of remoteness, i.e. their perception of individuals and businesses of being isolated from other communities. Thus, the peripheral position of a region or place emerges in relation to other regions or places. This argument was recently synthesised by Crone (2012) when arguing that “peripherality should be regarded as an inherently relational concept, in that ‘the periphery’ must be defined in relation to something

else (i.e. ‘the core’ or ‘centre’) and in the sense that ‘peripherality’ as a condition is characterised or constituted by relations (between the core and the periphery)”.

This relation between core and periphery is one of the fundamentals of modern economic geography (Fujita and Thisse 2009), and it is often portrayed in terms of unbalanced power relations between a ‘strong’ core and a ‘weak’ periphery. Anderson (2000) puts it in strong terms, but is rather representative of the academic debates, when claiming that “the periphery is best understood as a subordinate of the core”. More recently, Crone (2012) relates the state-of-the-art in studies on peripherality as follows: “Established (economic) understandings of peripherality have tended to focus on the fact that firms in peripheral regions are disadvantaged by higher (distance and time-related) costs associated with the transportation of physical goods (e.g. raw materials, agricultural produce or manufactures) to core European markets (e.g. Keeble et al. 1982; 1988)”.

In relation to this claim, a fundamental argument grounding the present study aims to dismiss the idea that although sharing many territorial features, peripheral and sparsely populated areas cannot be treated as a homogenous category whose economic development is shaped by generic locational disadvantages. Indeed, peripherality and sparsity uncover multiple territorial contexts for developing economic activities and social welfare. If ‘accessing’ is

an important feature to be discussed, it becomes evident that this discussion needs to focus on its contextualisation and thus intends to answer the following basic questions: accessibility to what? For what purpose? (Gløersen et al. 2006).

Crone (2012) highlighted the crux of this discussion when synthesizing the state-of-the-art in peripherality studies:

Classical accessibility studies within Europe have been primarily concerned with the first causal element of peripherality identified by Copus (2001); i.e. greater travel and transport costs associated with remoteness or inaccessibility from centres of economic activity. [...] The resulting accessibility indices attempt to measure the relative peripherality of various regions in terms of their 'market potential'. The practical utility of these exercises is open to question though. In a study of the impact of a peripheral location for manufactured goods with a low value-to-weight ratio, the focus on the costs of transporting goods by road to 'core' markets from peripheral regions may well be appropriate. However, in a study of 'traded' professional services, for example, it might make more sense to focus on the constraints imposed by 'daily accessibility' (via high-speed rail or air) at the level of the individual (Vickerman et al, 1999). These arguments suggest peripherality must be seen as a context-dependent condition that matters in the sense that it has consequences for (impacts on) particular types of actor; e.g. firms or individuals engaged in specific types of economic activity.

[...] A final notable facet of peripherality that deserves attention is its temporality. It is evident that peripherality is dynamic (i.e. it may change over time); regions labelled 'peripheral' might undergo a process of (de)peripheralisation. This temporality may have two dimensions. First, the position of a region on any given measure or indicator of peripherality (and the consequences of this peripherality) may change over time; for example, as a result of infrastructure investments or changes in the cost of transportation. Second, the dimensions of peripherality that 'matter', or the ways in which they matter, might change over time; for example, the shift from a manufacturing-based to a services and knowledge-based

economy may mean transport accessibility for physical goods becomes less important and other forms of accessibility (e.g. business air travel or broadband connectivity) become more so. (Crone 2012)

Thus, a discussion focusing on the development challenges and opportunities entailed by peripherality needs to bring together the issues of scale (what to access), of purpose (why to access) and of modality (how to access). Peripherality ought to be understood as a phenomenon that emerges from the combination of various processes occurring at different scales. While 'peripheral regions' can be referred to in terms of macro remoteness, i.e. long travel time large agglomerations and economic centres at the national and continental scale, sparsity grasps the micro dimension of remoteness, as it deals more with the context for daily accessibility (i.e. commuting catchment areas) and access to services. Yet, these processes are often taking place simultaneously in the case of sparsely populated areas.

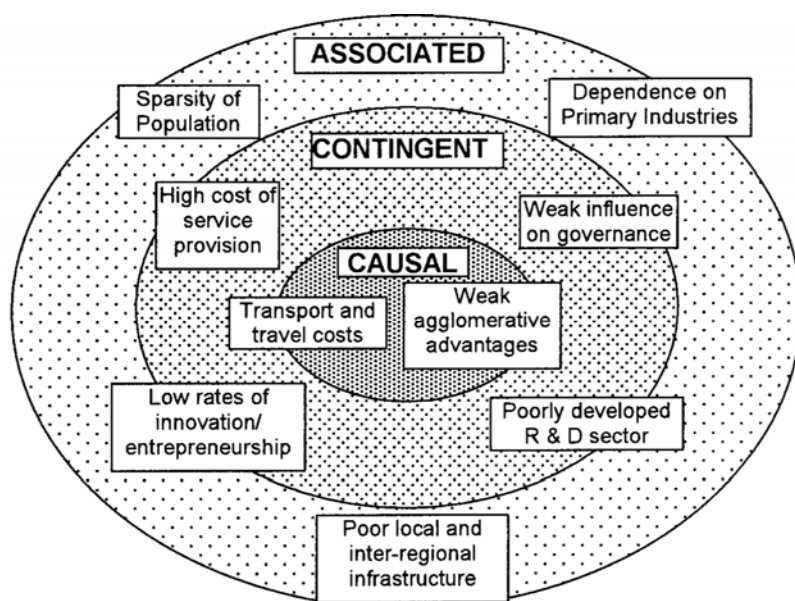
Indeed, about a decade ago, Copus identified the main elements that frame what he termed "peripheral disadvantage":

Conventional concepts of peripheral disadvantage generally include a number of elements. These can be roughly classified into three broad groups, causal, contingent and associated (Figure 7), (although the boundaries between the second and third are very hard to draw). There are two causal elements. The first is, by definition, increased travel and transport cost (expressed either in financial or time penalty terms) resulting from remoteness relative to the main centres of population and economic activity. The second is the absence of agglomerative advantages (external economies of scale, broadly defined) enjoyed by less remote locations. The second group of elements are those which are contingent upon the first, and include for example, the high cost of service provision, and low rates of entrepreneurship and innovation. The third group of elements is often associated with peripherality, although the causal link is less direct. These include sparsity of population, a dependence on primary industries, poorly developed local and interregional infrastructure, poorly developed research and development sector, and a lack of influence in the wider governance arena" (Copus 2001: 540).

In Copus' (2001: 540) model, sparsity is identified as a feature that is “associated with peripherality”, as is the “dependence on primary industries” and “poor local and inter-regional infrastructure” (figure 7). Indeed, as shown in previous studies focusing on sparsely populated areas

(Gløersen et al. 2006; 2009), and as developed in the sections below, these three features tend to combine and are thus central to any understanding of how development obstacles can be overcome and development opportunities can be fostered in Sparse Territories.

Figure 7: *Elements of conventional (spatial) concepts of peripheral disadvantage*



Source: Copus 2001:540

What seems to make sparsely populated areas a specific environment for developing economic activities is that, as Gløersen and his colleagues (Gløersen et al. 2006) argued, “it is reasonable to infer that the benefits of agglomeration/central location define what is missing from the economic

environment of both sparsely populated and peripheral regions”. Hence, investigating economic development in sparsely populated and peripheral areas necessitates the elaboration of alternative development models.

Varied access to urban cores

In the GEOSPECS project, and as reported in this study, Sparsely Populated Areas have been defined and delineated as those areas of Europe that have a relatively low population potential compared to others. In line with Copus' (2001) argument, this definition ought to imply that sparsely populated areas cannot be found in close proximity to large agglomerations: low population potential, and thus sparsity, is a result of long distance to large concentrations of population. Yet, as displayed in

figures 8 and 9, if this precept is often verified for sparsely populated areas in Europe, our results also show that there are many of these areas that are in relative geographical proximity to urban centres of different sizes. Thus it appears that the location of sparsely populated areas in relation to urban centres is something that differentiates such areas between them, rather than defining them.

In the Nordic countries, most Sparsely Populated Areas are located beyond the three-hour

driving-distance³ to the nearest regional centre (or MUA⁴, Metropolitan Urban Area). Moreover, these areas are remote from the main metropolitan areas of the Nordic countries, including the capital regions and other agglomerations with more than 250 000 inhabitants (e.g. Gothenburg or Tampere). However, as the urban structures of the Nordic countries can be characterised as an unbalanced system of cities with large distances between them, the important role of small and medium-sized cities can be highlighted (Hanell 2006). Indeed, there are medium-sized agglomerations that are located at the fringe of the NSPA, such as Umeå and Luleå in Sweden, Oulu in Finland and Trondheim in Norway. These mid-sized cities, often endowed with large universities and industries, play an important role as regional growth centres for the whole NSPA. Furthermore, there are also several mid-sized cities that are located within the NSPA and have the status of regional administrative centre, such as Östersund in Sweden, Rovaniemi in Finland or Tromsø in Norway. Finally, the NSPA are also endowed with many smaller towns such as Kiruna in Sweden, Kajaani in Finland, and Bodø in Norway, some of which even have the status of county capital or being endowed with higher education institutions.

In Scotland, the Sparsely Populated Areas follow the same pattern of long driving-distances and having a peripheral location in respect of national and international hubs. The SPAs are rather remote from the main population concentrations of the Central Belt, located roughly between Glasgow and Edinburgh. The only regional centre that is in the vicinity of the Scottish Sparse Territory is Inverness. But only a small part of the Scottish SPA are located within one hour of Inverness, and most of these areas can be found along road corridors going from Inverness to the North/North-West coast of Scotland.

Compared to these Northern European territories, the Central Spanish Sparse Territory are rather close to large agglomerations. Indeed, the area is located between the agglomerations of Madrid in the West, Zaragoza in the North, Barcelona in the

East and Valencia in the South. Due to this territorial feature, combined with the presence of three small regional centres within the area (Cuenca, Teruel and Soria) there are few places in the Central Spanish Sparse Territory that are located further than 2 hours from an urban core.

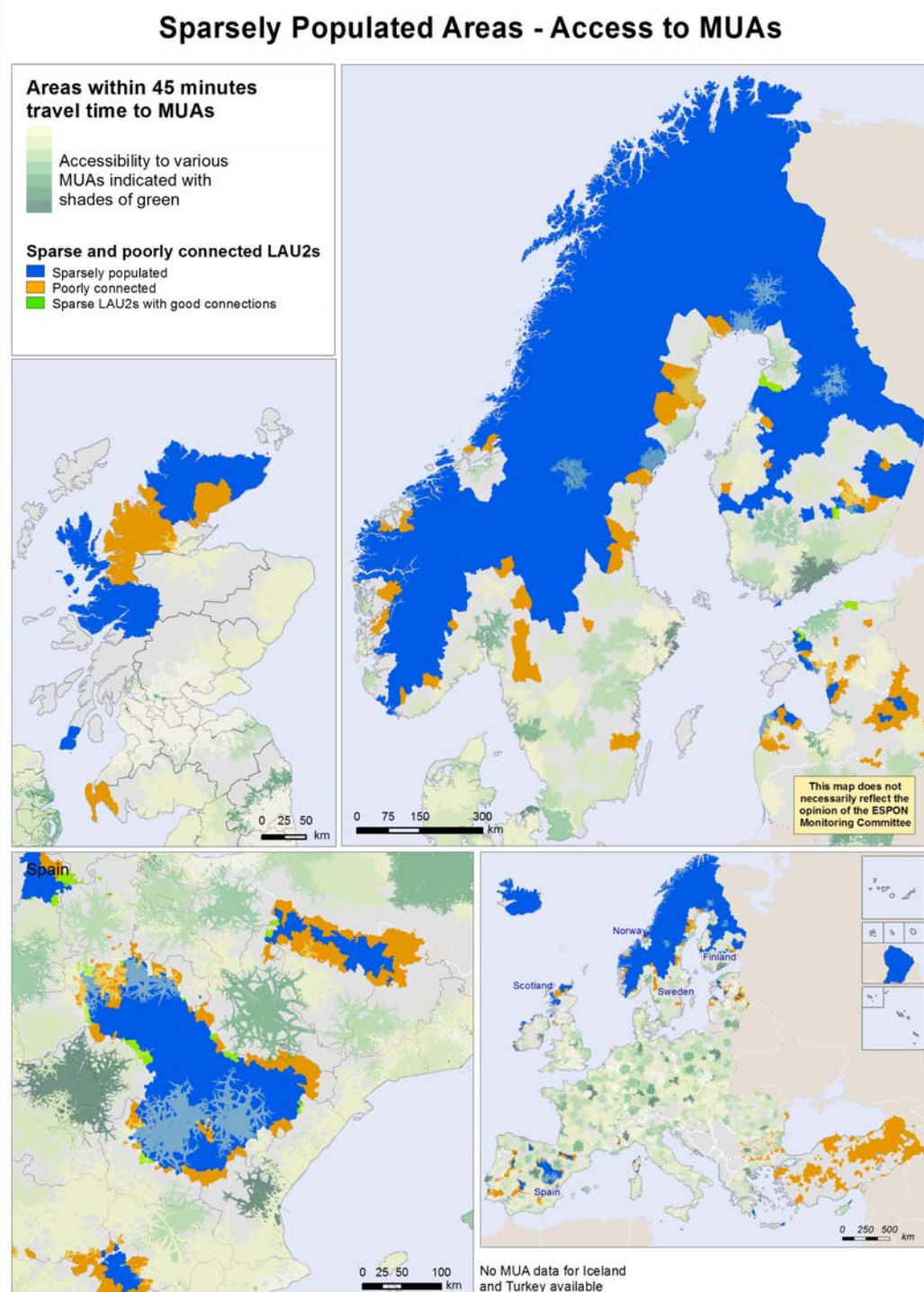
Consequently, two main types of sparsely populated areas, with respect to access to urban cores, emerge. On the one hand, sparsely populated areas of Northern Europe, i.e. in the Nordic countries and Scotland, are rather distant from the main urban centres. This is in line with previous assumptions made in the literature that concluded on a “negative correlation between peripherality and density” (Copus 1996: 44), i.e. a high degree of remoteness from the main urban centres corresponds to a low population density. On the other hand, sparsely populated areas in Central Spain tend to be rather close to the main agglomeration, but still have a low population potential, which is essentially the result of a poor, or selective, transport infrastructure rather than of long ‘as-the-crow-flies’ distances. With selective transport infrastructure we refer to the fact that the Spanish road and rail transport infrastructures are highly polarised towards the main agglomerations and create dense transport corridors between them. Thus the intermediate regions and sparse areas were relegated in stature and became more isolated as i.e. high speed trains do not stop in their regions (Martinez Sanchez-Mateo 2010). This has led to a situation where the areas ‘in-between’ have a low level of access to these main communication infrastructures, even if they seem to be located in close proximity to them in purely geographical terms.

This difference has strong repercussions with regards to the possibility of developing long-distance commuting as an opportunity for the development of sparsely populated areas. While Sandow (2008), in her study of commuting in the sparsely populated areas of Northern Sweden, comes to the conclusion that “the possibilities to commute long distances from sparsely populated areas are more limited for reasons of distance and access to public transportation compared to metropolitan and other more densely populated areas”. We could add that these limitations are even more pressing in the case of Northern European sparsely populated areas, compared to, for example, areas in Central Spain, due to the rather close proximity of the latter to large urban regions such as Madrid or Catalonia.

³ The time distances to the nearest urban core area are calculated using the same impedance grid as for population potentials. Time distances were also calculated individually from each urban core area (GeoSpecs 2012:39).

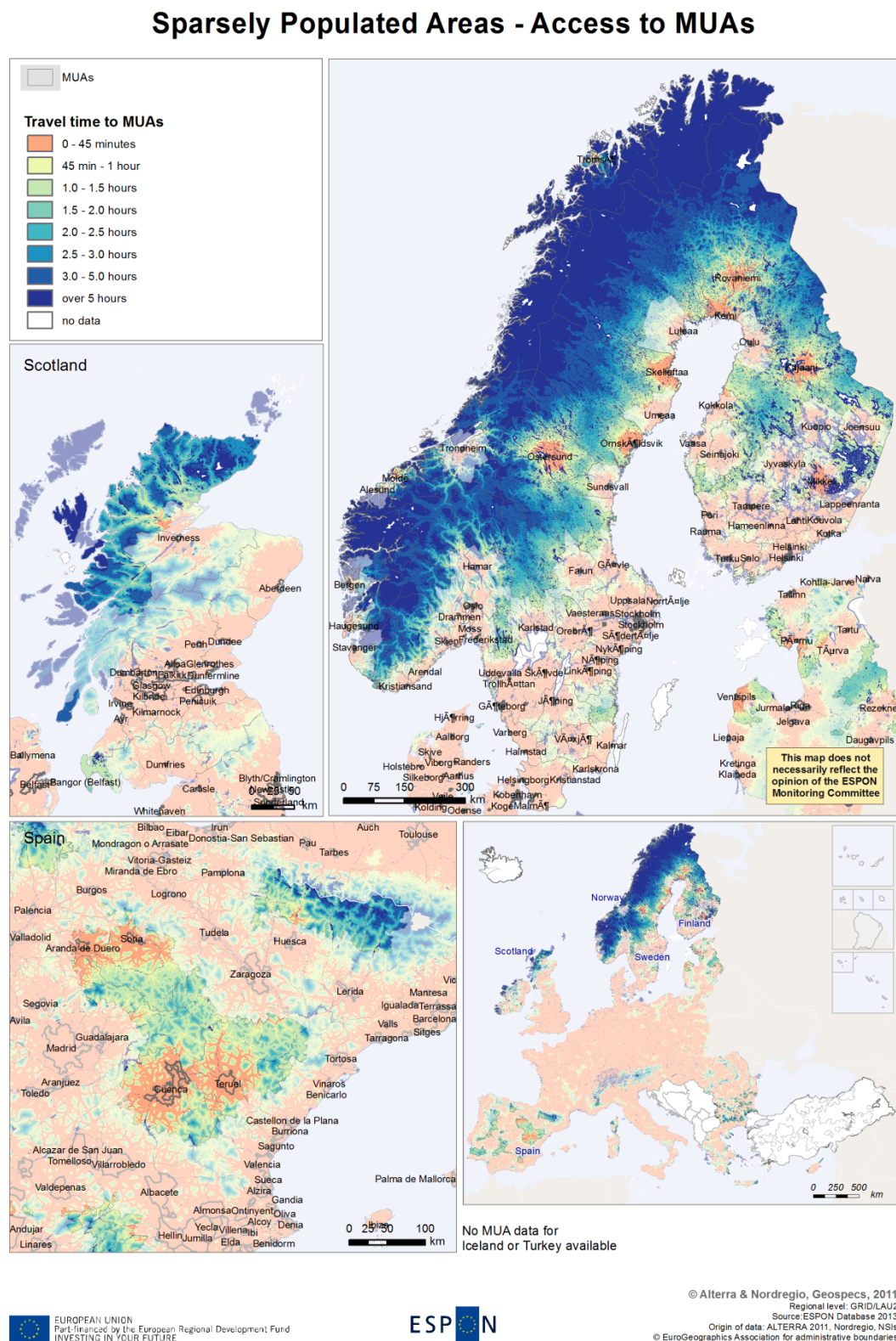
⁴ The data on morphological urban areas (MUAs) and functional urban areas (FUAs) was provided by the ESPON Database project. These MUAs are delineated at the LAU2 level, and are viewed as an acceptable proxy for urban centres in most of Europe. However, in Norway, Sweden, Finland and Denmark a proxy of the largest continuous built-up areas within each MUA identified on the basis of the EuroRegionalMap was used instead. Delineations of Potential Urban Strategic Horizons (PUSH) referring to areas within 45 minutes time-distance of urban centres are based on the distance from the edge of the urban centres. This measurement from the edges takes better account of the spatial extent of the largest urban centres (GeoSpecs 2012:30, 37).

Figure 8: Areas within 45 minutes travel time to MUAs and sparsely populated and poorly connected LAU2s in the main sparse territories



Large portions of sparsely populated areas are located far beyond the commuting catchment areas of the main urban centres of Europe. Hence, territorial development in sparsely populated areas cannot be based on agglomeration economies as in other parts of Europe, thus leading to the development of alternative paths to growth.

Figure 9: Travel time to MUAs in the main sparse territories



Sparsely populated areas in Europe show varying access to urban centres. Most of the SPA in the Nordic countries are located more than 3 hours from the nearest urban centres. In Scotland, the northern tip and the Eastern part of the Highlands are at a distance of more than 2 hours from the main regional centre, Inverness. In Central, Spain, only a few places are more than 1 hour away from Teruel, Cuenca or Soria.

The role of local transportation strategies for increased commuting flows

As noted in the previous section, the limited possibilities for commuting are an important component in understanding the effects of sparsity on local development although the possibilities are the resulting feature of the (mis)match between the settlement pattern and the local and inter-regional transportation networks. As the settlement pattern is changing very slowly over time, especially with respect to the timing of regional policymaking, it should be considered as a given.

By picturing the pattern of settlement in the main sparse territories on a finely detailed geographical scale (1 x 1 km grid cells), it becomes evident that different settlement patterns emerge in areas that show a similar level of population potential or same regional average population density. The sparsely populated areas are not devoid of population concentrations. The small population concentrations are important in structuring the socio-economic development patterns of the regions. An important message from this material is that sparsity may be engendered by various territorial and settlement patterns, from small concentrated village-like structures to 'rural sprawl'. These differences are often the result of specific topographical and historical processes. In mountainous and coastal areas, in Iceland, Norway and Scotland, the inhabitants are clustered mainly along the fjord coastlines and on some valley floors with large non-inhabited areas. In Finland the distinction between city and rural areas is fuzzier, especially when it comes to identifying the limits of cities or settlements. This is also visible in the map where the shades of yellow predominate, meaning inhabited square kilometres with less than 20 inhabitants. In Central Spain the situation is the opposite of the 'rural sprawl' experienced in Finland: the settlement pattern consists of small and compact villages and those uninhabited hinterlands, visually showing red points on a white background on the map. As for Sweden, population distribution in their sparsely populated areas lies somewhere between Finnish and Norwegian settlement patterns.

These differences in settlement pattern are visible also on the national level as indicated in table 1 based on the GEOSTAT study (2012), approximately 40% of the land area of the ESPON space is inhabited on the grid cell level. All the countries with large sparsely populated areas have a lower share of inhabited land area but nevertheless show remarkable differences. In Finland the share of inhabited land area of 34% is relatively high compared to other sparsely populated countries but the average

population density per each square kilometre remains very low at 53 inhabitants. In contrast only 2% of Iceland's land area is inhabited but the inhabited square kilometres have on average 194 inhabitants.

As regards the above-mentioned differences in settlement patterns, and thus gaining in critical mass for local development in European Sparse Territories, any discussion of the possibility of developing commuting flows in sparsely populated areas needs to start by reflecting on the most adapted form of local and regional transportation system for the existing settlement pattern in a given country.

Sandow (2008) points out that commuting in the Swedish sparsely populated areas is rather short (with a peak of 45 minutes) despite the assumption that the scattered pattern of the settlements would foster a longer settlement-to-settlement commuting pattern. Her hypothesis for explaining this is that "in many sparsely populated municipalities the population is rather concentrated in a local centre and a number of minor towns. These towns are geographically so small that one is 'close to' work, shops, other services, friends and relatives". This understanding could indeed be expanded to other European Sparse Territories, as figure 10 shows that these areas are not devoid of the 'urban' concentrations (in dark red) that structure the population distribution. From this result, Sandow (2008: 24) draws the conclusion that "commuting in sparsely populated areas is largely shaped by geographical structure. The main centre in each municipality represents the locus of employment and, due to long distances between these centres; the main part of the population does not commute to a local labour market beyond their own locality". Consequently, the low level of commuting flows outside localities is rather dependent on the capacity of these smaller centres to act as centres for employment and service provision.

National statistics support these arguments. On average two thirds of the people in the Nordic countries live and work in the same municipality. In the geographically large sparsely populated municipalities with distance-related limitations in terms of opportunities to commute to larger settlements or urban areas, the share of the employed population who both live and work in the same municipality is, moreover, even higher. For example, 96% of people who work in Kiruna municipality also live there (Roto 2012: 11). Or as Sandow (2008: 25) puts it, "most people live in the same settlement where they work and, unlike the situation in many metropolitan areas, there is not an overheated housing

market forcing people to settle far from the more densely populated areas, thus creating short commuting distances”. Thus “the small flows of long-distance commuting may be due to a low demand for commuting” (Sandow 2008: 25). Consequently, instead of commuting, people, if they need to work in another locality, tend to prefer to relocate to the new locality rather than to commute long distances, as they perceive the 'cost' to be lower.

Finally, Sandow (2008: 25) also acknowledges that there are, combined with the generally low demand for commuting, some additional and important systemic constraints:

existing commuting patterns might reflect restrictions on commuting, for instance that the demand is in fact larger than actual commuting but not possible to meet with present infrastructure and means of transport. It is important to realise that it takes time for a person living in a sparsely populated area

to overcome the distance necessary to reach a workplace in another town. With transport and road investments, such as improved roads and extended public transportation, strains imposed by a longer commuting distance can be reduced.”

In conclusion, it becomes evident that the discussion on the possibility of developing new commuting flows with regards to Europe's sparsely populated areas need to address features concerning both the demand for commuting, i.e. employment, service provision and the housing market, and supply issues relating to commuting, i.e. local and regional transportation systems. More importantly, such development strategies should be developed at the inter-locality and regional levels, though a necessary precondition here is to understand the internal territorial context and population distribution of the sparsely populated areas.

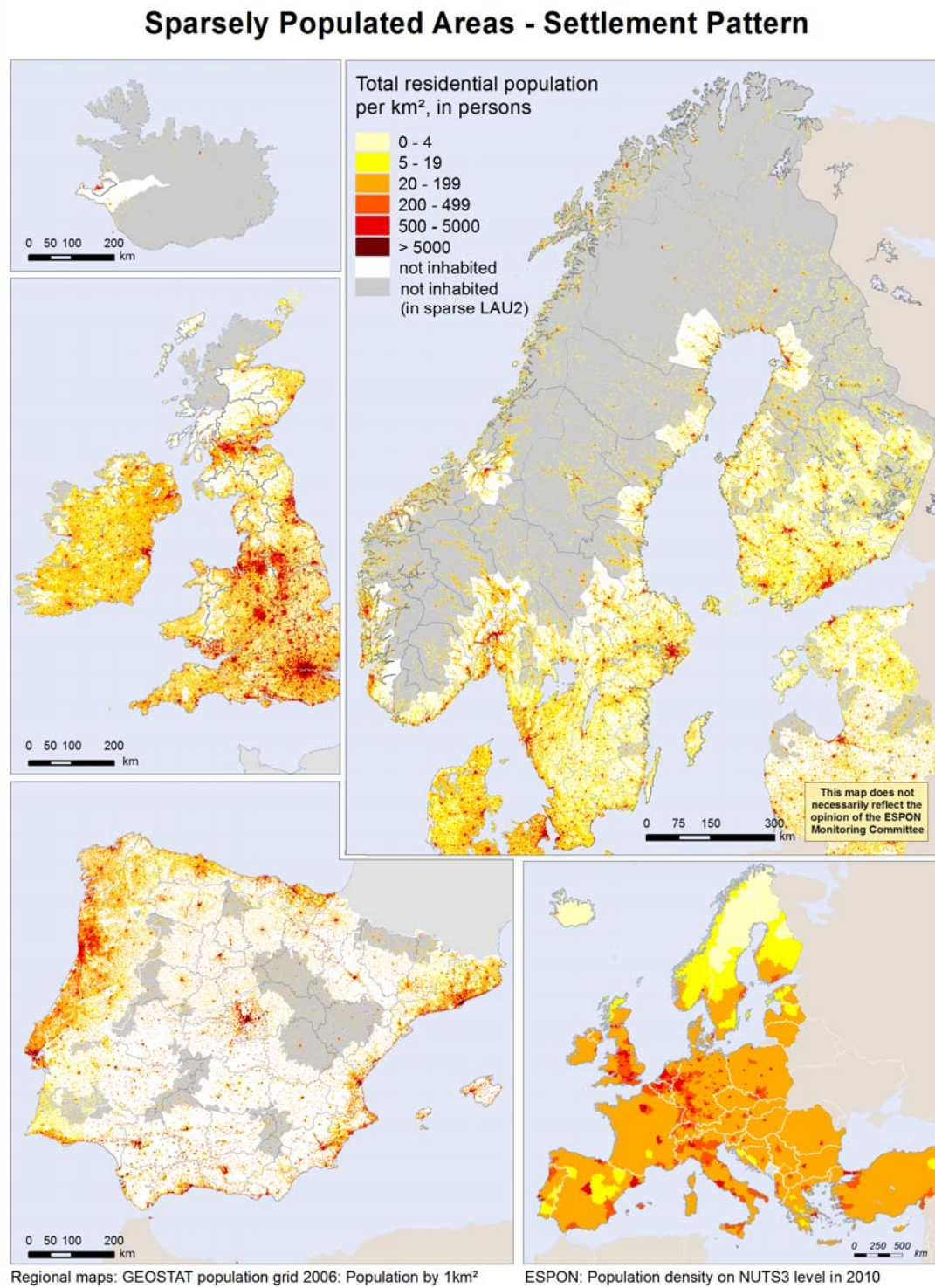
Table 1: Population densities in countries with large SPAs

	Average population density, inhabitants /km2	Inhabited* land area, in %	Average population density in inhabited grids
Finland	18	34	53
Iceland	3	2	194
Norway	16	18	90
Scotland	67	33	207
Spain	92	18	501
Sweden	23	28	83

* Based on 1x1 km grid cell data

Data source: Eurostat; GEOSTAT... 2012

Figure 10: Settlement pattern in the main SPAs



Sparsely populated areas across Europe have different settlement structures. While it is rather concentrated around small villages in Spain, the Swedish and especially Finland inland areas show extensive patterns of rural sprawl.

New forms of governance in focus

The fact that sparse territories often extend over several administrative regions or provinces creates a risk of institutional marginalisation in relation to the specific development issues in the context of regional development policies. This feature often makes it difficult to elaborate and implement policies specifically designed for these territories as it requires new forms of governance.

In the Nordic countries, the establishment of the grouping NSPA Network has enabled regional and local policymakers in the sparsely populated regions of Finland, Norway and Sweden to identify common strategies for the fostering of local and regional development and to speak with one voice at the European level in order to exert greater leverage in terms of securing strategic support and investments from European Regional Policy programmes. In Scotland, the establishment of the Highland Council, covering most of Scotland's mountainous and sparsely populated areas, has enabled development strategies and initiatives that target the whole area to be more easily elaborated.

In Spain, the governance situation in terms of sparsely populated areas is more complex. More or less all of the Spanish sparse territories are located on the periphery of several NUTS2 regions (Comunidad Autónoma, Autonomous Community) which represent the main regional administrative level in Spain. Therefore, while sparsity is a dominant component in a number of NUTS3 regions, those regions are rarely promoted as functional units in a Spanish regional policy context.

Although regional policy in Spain does not explicitly address the issue of sparsity, there are some interesting examples of 'grassroots' movements that aim to promote a more coherent approach to development in sparse territories. One such movement with the slogan "Teruel Existe" ("Teruel Exists") was founded in 1999 to press for greater recognition for, and investment in, the province. It provides a platform for provincial authorities, institutions and sympathisers seeking to change the long-standing neglect of the province in relation to both Spanish and Aragonese territorial policies. Their focus is mainly oriented to transport and infrastructure projects as well as better emergency medical transport and mental healthcare. As a result of the campaign, several transport projects to Teruel have been pushed and monitored, resulting in better accessibility conditions for the province. One major achievement has been the construction of a motorway between Zaragoza and Sagunto but other crucial projects such as a direct rail connection to Madrid or

more appropriate rail connections to/from Teruel are still the subject of protracted discussion.

The 'Teruel exists' movement shows that bottom-up governance initiatives have the capacity to lead to major improvements for regional actors enabling them to take better advantage of development opportunities in the future. One major focus was to reduce the isolation of the local actors by structurally connecting them to other localities and especially to the surrounding main agglomerations, such as Madrid and Zaragoza.

Clearly, it seems that bottom-up approaches to governance are needed in the Spanish context in order to deal with sparsity, both in terms of overcoming structural challenges, but also to help develop new opportunities for local development. The provinces constituting our case study region are, in territorial and governance terms, at the margin of the national and regional (NUTS 2) entities. Consequently, it is unlikely that the issues specific to their territory (i.e. sparsity) are taken up and appropriately addressed by those administrative levels.

Role of international cooperation programmes

The role of cross-border and transnational bodies should also be noted here, especially in connection to the situation in Northern Europe. Both cross-border and transnational cooperation programme areas exist, with their focus on, and priorities in, the development of 'remote and peripheral areas.' It should also be noted that the development of cross-border relations in the sparse areas acts as a driver for local economic development, specifically by forcing actors to think 'outside the box', as they need to integrate two (at least) different economic and political systems (GEOSPECS 2012).

The Northern Periphery Programme 2007-2013 (NPP) is part of the European Commission's Transnational Cooperation under the Interreg IVB programme and covers a vast area of Northern Finland and Sweden, Coastal Norway, parts of Scotland and Ireland, the Faroe Islands, Greenland, Iceland and Svalbard. The programme aims to "help peripheral and remote communities on the northern margins of Europe to develop their economic, social and environmental potential". The two main priorities in the ongoing programme period are "Promoting innovation and competitiveness in remote and peripheral areas" and "Sustainable development of natural and community resources" (NPP 2012).

Cross-border cooperation (Interreg IVA) programmes, especially the programme 'North/Sápmi' covering Northern Finland, Norway and Sweden focus on economic development, R&D activities, regional functionality, identity and borderless development opportunities in sparse settings. Other operational programmes with a significant part of their programme area in the

sparsely populated areas are 'Bothnia-Atlantica (FI, NO, SE), 'Sweden-Norway' and 'Northern Ireland, the Border Region of Ireland and Western Scotland'. All of these programmes focus on increasing cooperation within the programme area, improving regional competitiveness and improving access to services (European Commission 2012).

Local Development in the SPAs: characteristics, trends and potentials

Over the last few decades regions all over the world have gone through substantial socio-demographic, economic, political, cultural and lifestyle changes. Many of these changes can be related to urbanisation, referring to the process through which society is transformed from one with predominantly rural characteristics to one which can be characterised as urban. This usually also includes a process of territorial reorganisation, leading to a shift in the location of inhabited areas while impacting population size, structure and the type of economic production process. As such, many sparsely populated areas have been exposed to this type of restructuring, both territorially and in various sectors of human life (Habteselassie et al 2006: 34; Megatrends 2011:22).

The basic nature of the sparsely populated area is nevertheless something of a challenge to the analysis of development trends in these sparse areas. In sparsely populated areas even small changes in population or economic activity may lead to substantial changes in percentage or average values. The moving in or moving out of a small number of persons may have a dramatic impact for example in terms of the relative change of the average age or job development in a specific sector (Habteselassie et al 2006: 38). Therefore careful analysis and the temporal dimension are crucial. For example Hoekveld (2012: 181) defines population decline as a shrinking of the total population in a given region during a period of time of at least 5 years in order to exclude possible conjunctural forms of decrease.

The observed phenomenon of sparsity is the result of various emergent territorial features resulting from the spatial distribution of human settlement across the territory: remoteness from large agglomerations, small and scattered settlements, extended areas of wilderness surrounding small towns; each of these factors contributes to making some areas sparse. Yet, as we have seen in the previous section, across Europe, these factors have a varying level of importance when it comes to structuring our range of SPA. In a nutshell, 'sparsity' in different parts of Europe, for instance in the northernmost parts of Europe, Northern Scotland or Central Spain, although equally labelled as "sparsely populated areas" in fact relate to very distinct territorial contexts.

As the share of population actually living in the sparse areas is relatively low, especially compared to the sparse land area, the weight of these areas i.e. in the national political context can often be underestimated. For example in the Nordic countries altogether some 25% of the land area is covered by municipalities (LAU2) with an average population density below 1 inhabitant per km². At the other end of the scale there are some 30 municipalities in the Nordic capital and metropolitan areas with population densities above 1000. These municipalities cover less than 1% of the Nordic land area but contain 18% of the total population (Roto 2012:17). When looking at the main sparse areas in the ESPON space, the population in these areas, as a share of the total population, varies between 2% in Spain and 24% in Iceland (table 2.).

Table 2: Sparse areas as a % share of their respective country land area and population in 2006

Country	Sparse areas	
	land	population
Spain	17%	2%
Finland	61%	15%
Iceland	92%	24%
Norway	79%	23%
Sweden	59%	8%
Scotland	26%	2%

Numbers refers to the sparse areas %share of the country

Demography: a vital issue for SPAs

There is a complex relationship between sparsity and demographic change. Macro-trends like political and social changes across Europe cannot explain why some areas within one region or with similar starting points experience differing rates of shrinkage or growth in population. Hoekveld (2012: 179, 190-192) proposes that differences in the causes and effects of change that are related both to the temporal dimension and regional and local specificities should be included. The time series analysis of the regional demographic change trajectories shows that first and foremost population change is not a linear but is, rather, a complicated circular process with many different causes and effects which together steer regional development. Secondly population change is linked to a specific regional situation and specific developments occurring within that region, like sparsity, the geographical location within a country, the development of economic sectors and infrastructural connectivity. However, while Hoekveld sees these local specificities potentially both as causes and effects of population change, Rink (2009) argues that local specificities such as the composition of the population, infrastructural connectivity, attractiveness of the housing stock, level of services etc., have thus far only been perceived as being affected by shrinkage and not as causing shrinkage.

This paradox does however highlight the complex relationship that allows us to argue that sparsely populated areas are not static; they are a local specificity that can have specific impacts – and can be affected by demographic change. In addition, the development of one municipality should not be seen in isolation. Moreover, the surrounding municipalities and their characteristics in the urban system need to consider this point in order to explain the levels of change (Hoekveld 2012: 192).

Taking the Sparse Territories in relation to national averages as a starting point for the analysis of the demographic trends, some common development trends can be identified. Most sparse territories (ST) are faced with the demographic challenges of unfavourable age and gender structure and population decrease mostly due to outmigration. The population in such territories is also increasingly concentrating in the local centres and larger built-up areas.

Scales of change: Growing cities and the 'thinning out' of rural areas

Between 2001 and 2006 the population in the EU27+4 grew modestly by approximately 0.4% per annum or in total by 9.8 million persons. Seen from the European point of view all of those countries with

large sparse territories experienced faster population increases on the national level than the EU as a whole on average. In the sparse territories the development trend was however somewhat contrary to the main finding with these areas seeing a minor population decrease. Yet, population change did not follow the same trend throughout the spectrum of Sparse Territories. As such, 3.2 million people lived in sparsely populated LAU2s in 2006 with a decrease of 62 600 persons compared to the 2001 level. At the same time the poorly connected LAU2s were home for 1.8 million people and the population change in those regions was stable. Thus distance seems to have more negative impact on population trends than accessibility.

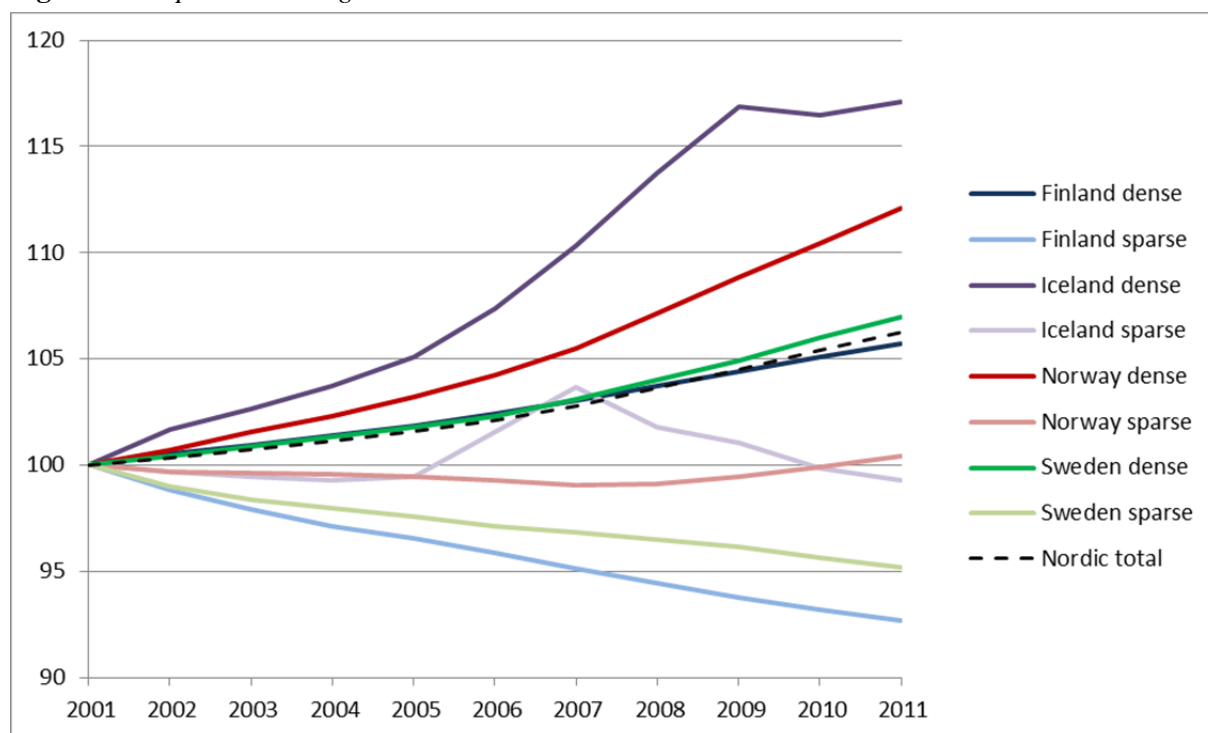
When looking at the population change for Sparse Territories, some broader territorial trends are identifiable. In Northern Europe the population is decreasing in sparse areas and increasing in dense ones (figure 11). In Iceland, Ireland and Cyprus, countries that have experienced a major population increase in the first years of the 21st century, the total population is increasing also in the sparse areas although not as fast, on average, as in the countries as a whole. In Spain the smaller Sparse Territories are experiencing a population decrease while in the Iberian (Cuenca, Soria and Teruel) and the Pyrenees areas we see an increasing population. The Eastern European countries are experiencing overall population decline. The other Sparse Territories are showing diverse trends. However it does not matter if the overall population development trend is positive or negative – the sparse areas generally perform worse than the more densely populated parts of the countries.

The ST's are not only challenged by unfavourable population change rates on the ST level as the changes within the STs can have even more of an impact on territorial development. The STs experience demographic thinning as the population is not only decreasing (or increasing slower than in rest of the country) but also moving inside a ST, towards the local and regional centres. The importance of small and medium-sized cities can be highlighted as the access to larger urban areas within the STs is limited. For example only some 16% of the sparse LAU2s are located – at least partly – within potential commuting areas (PUSH) to MUAs and in almost 80% of these the potential is related to MUA that has a population under 100 000 inhabitants and thus the regional effect of those MUAs is not that extensive. This also indicates that the average population potential of the LAU2 does not as such have a clear effect on demographic development.

Within the ST's the demographic size of the locality correlates well with population change. As a locality we mean a settlement for the Nordic Countries and Scotland and LAU2 unit for the rest of Europe. A settlement is further defined in the Nordic context as a built-up area with more than 200 people with less than 50 (Norway) to 200 metres (Finland and Sweden) distance between the houses. As the smallest localities sited as 'settlements' in Scotland have at least 500 inhabitants we have taken this limit of 500 people as a starting point for the analysis in order to make the comparison between the ST's in various countries more comparable. In figure 12 the population change

in various sizes of sparse settlement in the largest ST's is shown. In almost all the ST, the population is either increasing or showing the otherwise best demographic performance in the largest settlements while the largest population decrease or worst performance can be found outside the settlements or in settlements with less than 500 inhabitants. This same general picture is displayed in an even more nuanced form in figure 13 where the change rates are shown on the settlement level thus more clearly illustrating the fact that population trends within the Sparse Territories also vary significantly, strengthening the notion of demographic polarisation.

Figure 11: Population change in the Nordic countries 2001-2011



Taken as a group, the densely populated areas in the Nordic countries saw a population increase over the last ten years whereas the sparsely populated areas performed worse. In Norway the population in the sparse SPAs remained much the same whereas in the Finnish and Swedish areas the population decrease was substantial. In the period 2005-2008 the population increase in Iceland was at a record high, up to two percent per annum, and was largely a result of the intensive immigration of male workers. As a combined result of the completion of the aluminium smelter building activities and wider global economic changes the migration flows rapidly turned negative and the deficit in 2009 was some 5 000 persons. In 2010 and 2011 international net migration remained negative but due to high nativity the total population of Iceland nevertheless increased.

This strong link between the urban hierarchy and its functional dimensions is particularly visible in Northern Europe where in the main municipal centres and the immediate surroundings population change has been less negative than in the more peripheral areas. Furthermore, it could also be noted that the

'thinning out' process seems to have accelerated in these peripheral areas. As an example of this development, Habteselassie et al (2006: 48) finds a strong correlation between city development and rural development in adjacent areas, in Västerbotten, Northern Sweden. Population increase in the City of

Umeå itself and in its immediate surroundings within convenient commuting distances includes both more employed people and a significant expansion of students at the university. The general pattern of stagnation in the other parts of the region seems primarily related to the restructuring of the large traditional industry sector that has initiated cumulative processes of decline in other sectors and to overall out-migration in relation to educational and job opportunities. As noted previously, distance also matters, as it remains a serious obstacle to maintaining both internal and external relations. The depopulation process creates an increasingly unbalanced demographic structure accompanied by the internal net migration of people to the main centres and their adjacent rural areas (Wiberg 2004: 96).

This ongoing urbanisation within the region in relation to long-term demographic changes over the past 50 years has become a serious and complicated problem in the NSPA. Håkansson (2000) points out that (in Northern Sweden) this has happened despite

the significant national and European Union investments in a great variety of both sector and regional policy measures. The development is however not regular throughout the region and within the area experiencing population decline there are 'pockets' of positive population change (Johansson & Stenbacka 2001), which in some cases have been directly connected to the development of the tourism sector or to other natural resource based activities. The better utilisation of the new businesses and integration of amenity driven development to other sectors of employment can also create new potentials:

Certainly one peripheral region, the Scottish Highlands, is changing. For example the long slow slide of population decline (Champion et al., 1987) has reversed and significant numbers of new businesses have been created (Anderson 1995, cited in Anderson 2000: 96).

Figure 12: Population Change in various sizes of sparse settlements in the largest Sparse Territories in 2006-2011 (ES 2001-2006)

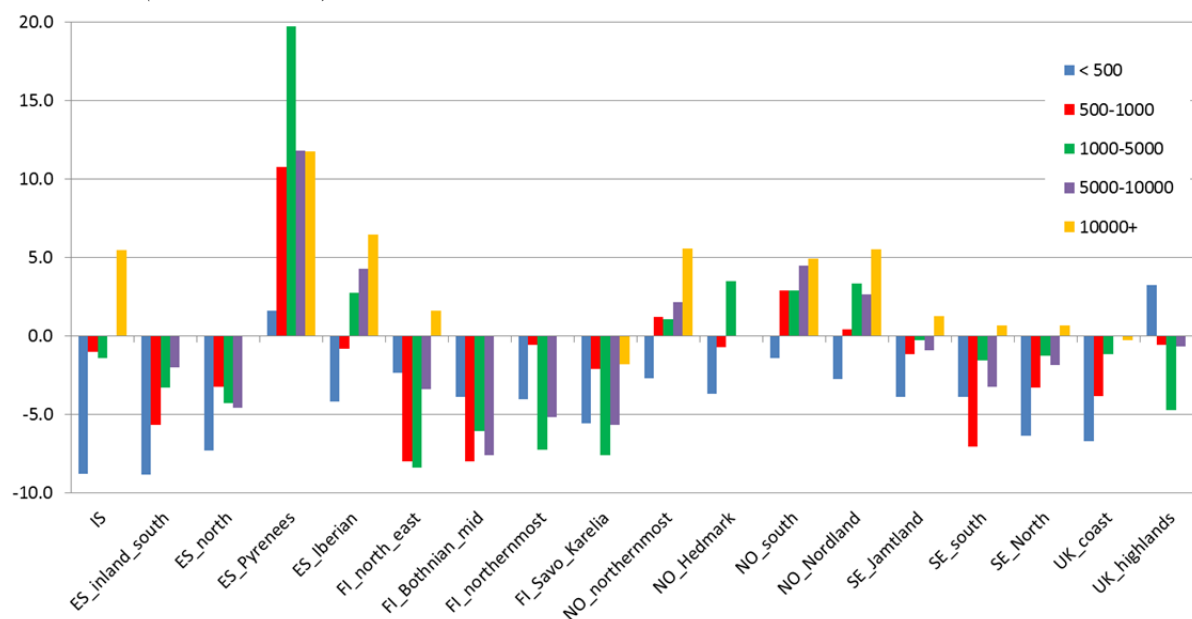
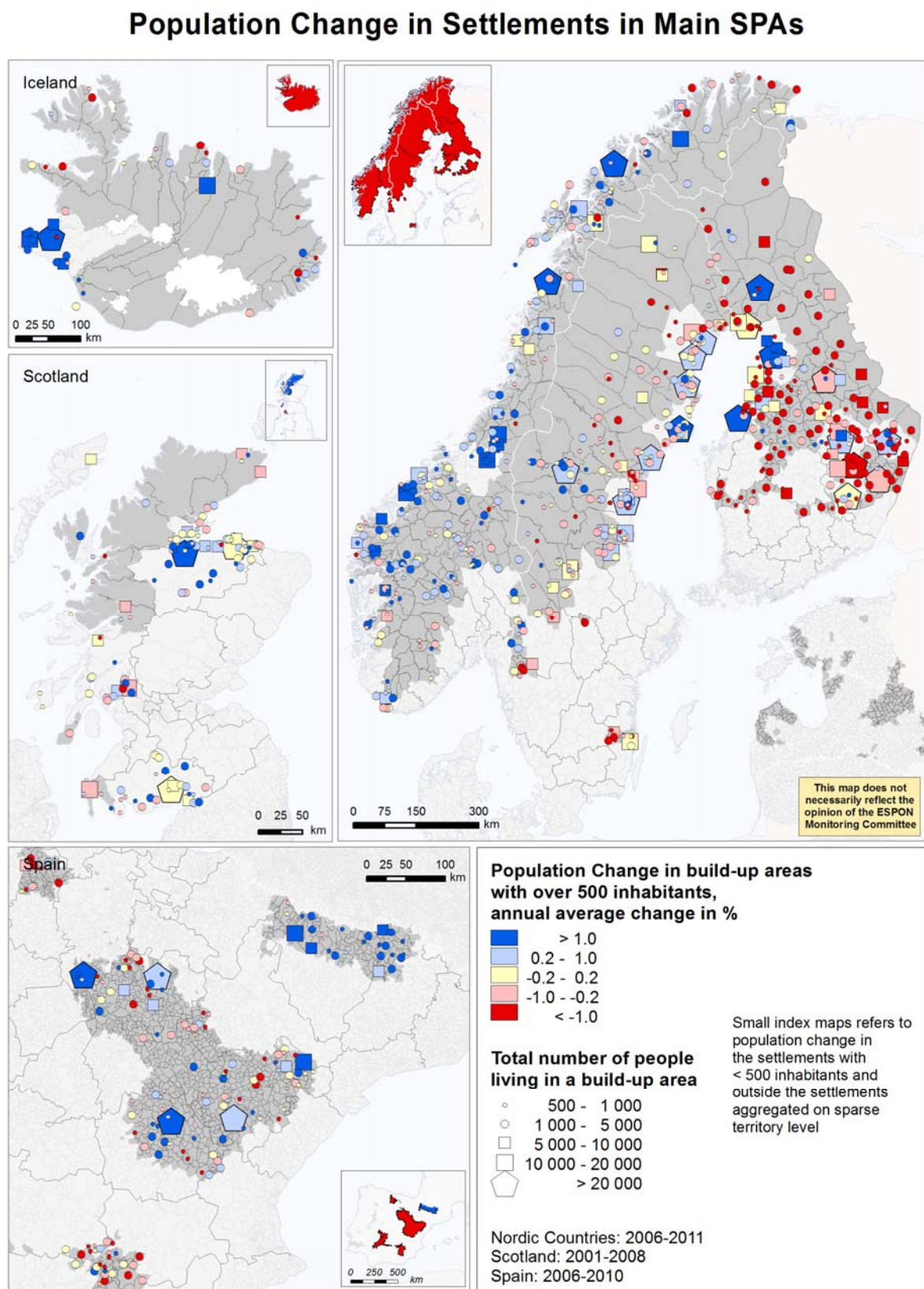
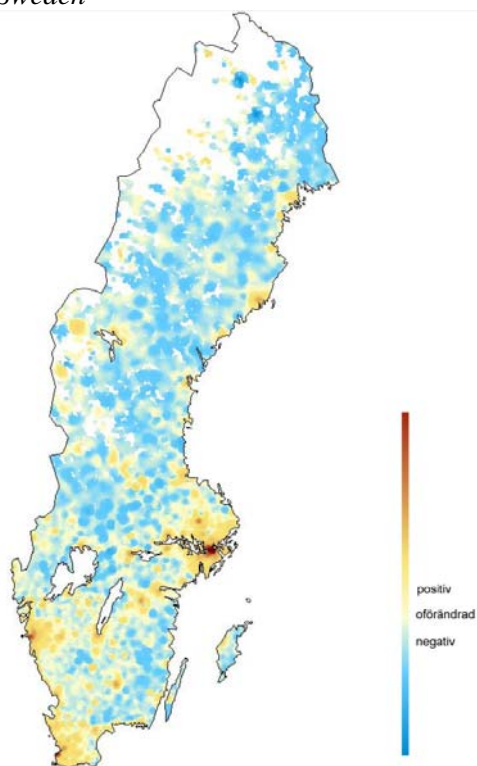


Figure 13: Population Change in settlements 2006-2011 (Spain 2001-2006)



In any case, as discussed above, the settlement pattern is changing very slowly over time. Thus, when looking at the population change beyond the settlements and administrative structures, the conventional picture of a declining population in rural areas and an increasing one in the cities can be challenged. As illustrated in the analysis produced by the Swedish Agency for Growth Policy Analysis some less populated places and localities have indeed witnessed a positive population trend, although the municipality or the region as a whole has seen a decline in population. This is the case even in the more sparsely populated parts of Sweden. In figure 14 the total population change during the 2000s is shown on grid cell level (Tillväxtanalys 2011b).

Figure 14: Population change during the 2000s in Sweden



The blue colour indicates population decline, yellow a stable or unchanged population while orange and red show a population increase between 2000-2010 in grid cell (10x10 km) level. Source: Tillväxtanalys 2011a.

Varying birth rates and increasing importance of migration

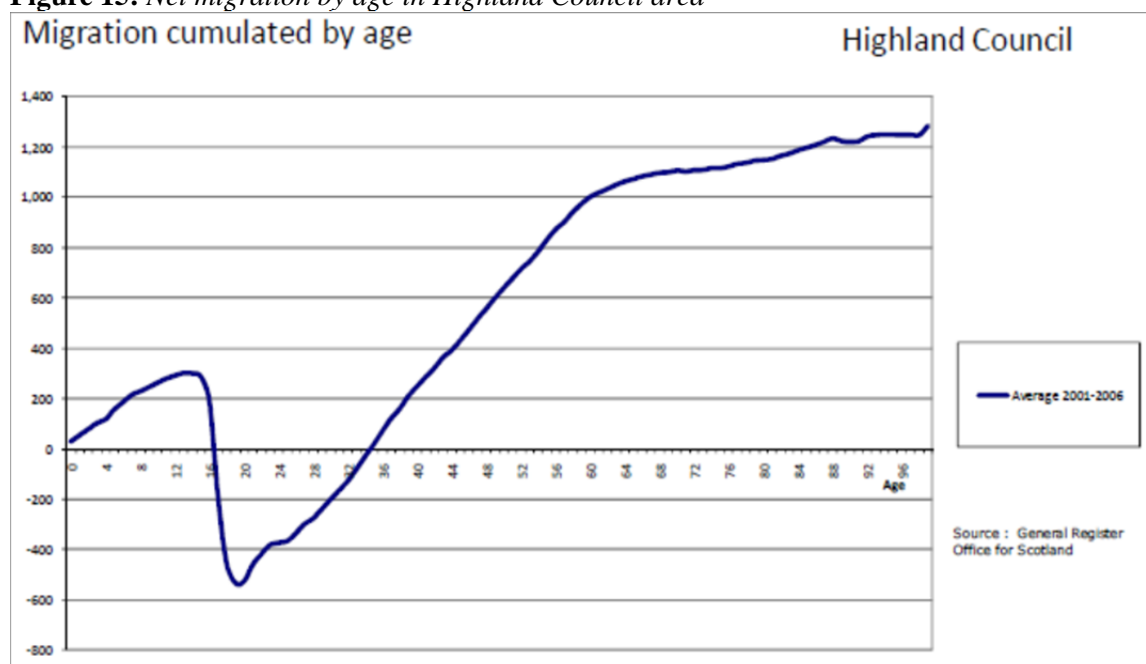
While larger populations are generally perceived as ‘a good thing’ in terms of stimulating development, concerns have been expressed about population

ageing, about the nature, volume and sources of international migration and about rural-to-urban internal migration. The attention paid to population by administrators in remote regions reflects a perceived need to influence population systems in far more direct and immediate ways than may be the case in more densely populated, economically diverse regions (Carson et al. 2010). The demographic problems, like distorted population compositions, caused by low birth rates and negative net-migration, in connection to low population densities, can become a challenge (Lundmark 2005).

Overall population change is a combination of natural population change - the difference between births and deaths - and net migration – the balance between in-migrants to, and out-migrants from, the region. The impacts of these two drivers do however differ and no common dominator for the sparsely populated areas can be given. The negative net birth rates can, however, be seen to be more devastating than the recent out-migration. The decline in the numbers of young people threatens the whole fabric of social services by precipitating school and post office closures and as well as manpower shortages in relation to the elderly care sector – just a few examples of the factors perpetuating a downward spiral. This process limits the demand for manpower, which is disastrous for a local labour market that is small to begin with. The reduction of certain segments of the workforce and inhabitants in terms of age, sex and education has a negative impact on the conditions for economic activity, the balance between supply and demand in the local labour market and the quality of welfare services (Lundmark 2005).

One example of this age specific migration pattern typical for many STs is shown in figure 15. The net migration by age for the Scottish Highlands highlights various issues as indicated in the GEOSPECS’ Highland Council area case study (GEOSPECS 2012): In total the population in the Highlands council area is increasing. On the one hand both elderly people and families tend to move to region. The region is considered to be family-friendly and also attractive to retired people who can afford to buy property. On the other the out-migration of young people in search of higher education and employment opportunities indicates the working life challenges (The Royal Society of Edinburgh 2008). There are real concerns about poor job availability, limited educational opportunities, low wage levels and a lack of career progression opportunities among young people. In addition, a lack of access to necessities such as housing and transport also function as migration drivers (Highlands and Islands Enterprise 2009).

Figure 15: Net migration by age in Highland Council area



Source: Cairngorms National Park Authority, 2010

In many STs, especially in Finland and Sweden, negative net migration combines with the trend towards low birth rates, but two main exceptions can be found. In Iceland and Norway where the population is, in general, younger than in many other European countries and where high birth rates have in some municipalities even compensated for ongoing out-migration. On the other hand, in Spain birth rates are low but due to intensive immigration even to sparsely populated areas many areas have experienced a population increase over the last decade. The ongoing economic crisis in Spain has however had an impact particularly on immigrants' working opportunities as well as a direct impact on population change.

It should however be noted that net migration shows only a small share of overall migration flows. Lindqvist (ed. 2010) notes that in the Nordic countries the focus on net migration hides almost 90% of the overall in- and out-migration flows. This balance between in- and out-migration shows that a remarkable number of people are not only out-migrating but also in-migrating to sparsely populated areas. Habteselassie et al (2006: 37) argues that the most favourable rural options for in-migration have both accessibility and amenity qualities as most migrants to rural areas settle close to towns and cities with few moving to rural areas outside the commuter zones of major towns and cities. It seems, however, that some peripheral rural areas (in Sweden) are also seen as being attractive and this might be explained by these areas having certain landscape qualities, often

combined with high amenity or heritage values, or their offering of recreational opportunities such as winter sports. Studies of migration and counter-urbanisation within the local labour market of Umeå show a preference among out-migrants from the city over small towns and villages within a convenient distance for commuting to the city of Umeå. Other attractiveness factors include proximity to water (lakes, rivers and the sea), villages characterised by agricultural landscapes and accessibility to main roads.

People in the sparsely populated areas – gendered and ageing reality

Compared to the situation in their respective countries and the European average, Sparse Territories are generally characterised by the relatively high proportion of old age persons residing within them (figure 16). This is particularly the case in the ST in the Iberian Peninsula where the share of the young age population is particularly low. In Finland, Sweden and in Central Europe the share of elderly people is also high. In Iceland, Norway and Ireland the population is in general younger, on average, than in Europe although the trend towards an older population is the same. However, there are an equally high proportion of children in many STs especially in northern Europe. Unfortunately the share of children in sparse regions does not necessarily tell us anything about the future potential for the labour supply in these STs. For the Baltic Countries the interpretation of demographic trends is more complex due to the

significant ongoing out-migration of the younger working-age population from these countries.

From a regional development perspective old age groups are often seen as a burden on society whereas the younger age groups are seen as future assets. The truth is however not that simple in the STs where limited access to education and jobs sees a significant share of the younger population out-migrating before entering the labour market and thus the educational investment made locally in children before they become 'profitable' will not be paid back. Therefore the age group related migration pattern should, after Habteselassie et al (2006: 33), be discussed in relation to theoretical notions of the role of social capital and the creative class. On the other hand younger pensioners are often rather healthy and have considerable spending power and as such they can help to support their local economies. The need for care, and thus the potential burden, does nevertheless however rise with age (Roto 2012:38). The more densely populated areas and cities do not only attract younger population elements but also significant numbers of females. In all the main STs there is a clear predominance of males. Taking the Nordic countries as a group there are 101 females per 100 males whereas in the Nordic STs only 98 females per 100 males. In Spain and among the working aged population more generally the gap is even larger. The main reasons why women move to cities or outside the STs generally relate to the availability of educational opportunities or to the lack of advanced jobs in sparse regions.

Providing better services in a changing demographic environment

Since the adequate provision of services of general interest plays a vital role in territorial attractiveness, the existing lack of services in SPAs is a disadvantage when it comes to attracting newcomers, as well as stabilising the existing population distribution. What was once identified in the case of the Nordic countries seems to hold true in the context of Spanish sparsely populated areas: "The combination of falling population especially outside the main settlements, extremely low densities and high levels of inhabitant dispersion has always provided obstacles for economic activity and provision of public services" (Gløersen 2006). In addition, changes in the demographic structure are shifting, territorially, the demand for specific services, especially among those most dependent on them.

Besides declining overall population stocks, the qualitative change in the population structure, e.g. ageing, adds also challenges in terms of access to services as this population has specific needs when it comes to social and healthcare services. Yet, an

important feature of the accessibility debate in sparsely populated areas is that accessibility is assumed to be performed by individual car. In that respect, Escalona-Orcao and Díez-Cornago (2007) acknowledge that policy makers and planners assume that most local travelling is done by car, and thus the mobility problems of people who cannot drive are simply not addressed.

As such, the services of general interest, together with appropriate levels of accessibility, are viewed as essential in achieving socially sustainable areas and in avoiding the social exclusion that populations in such sparsely populated areas might be suffering from (Farrington and Farrington 2005). In a study on access to health services in the province of Teruel, Escalona-Orcao and Díez-Cornago (2007) have shown that the overall level of access to services has improved in recent times, but at the same time they also point to the risk of a two-speed process, with the growing local centres being better off while the situation in the depopulating rural parts becomes ever more critical.

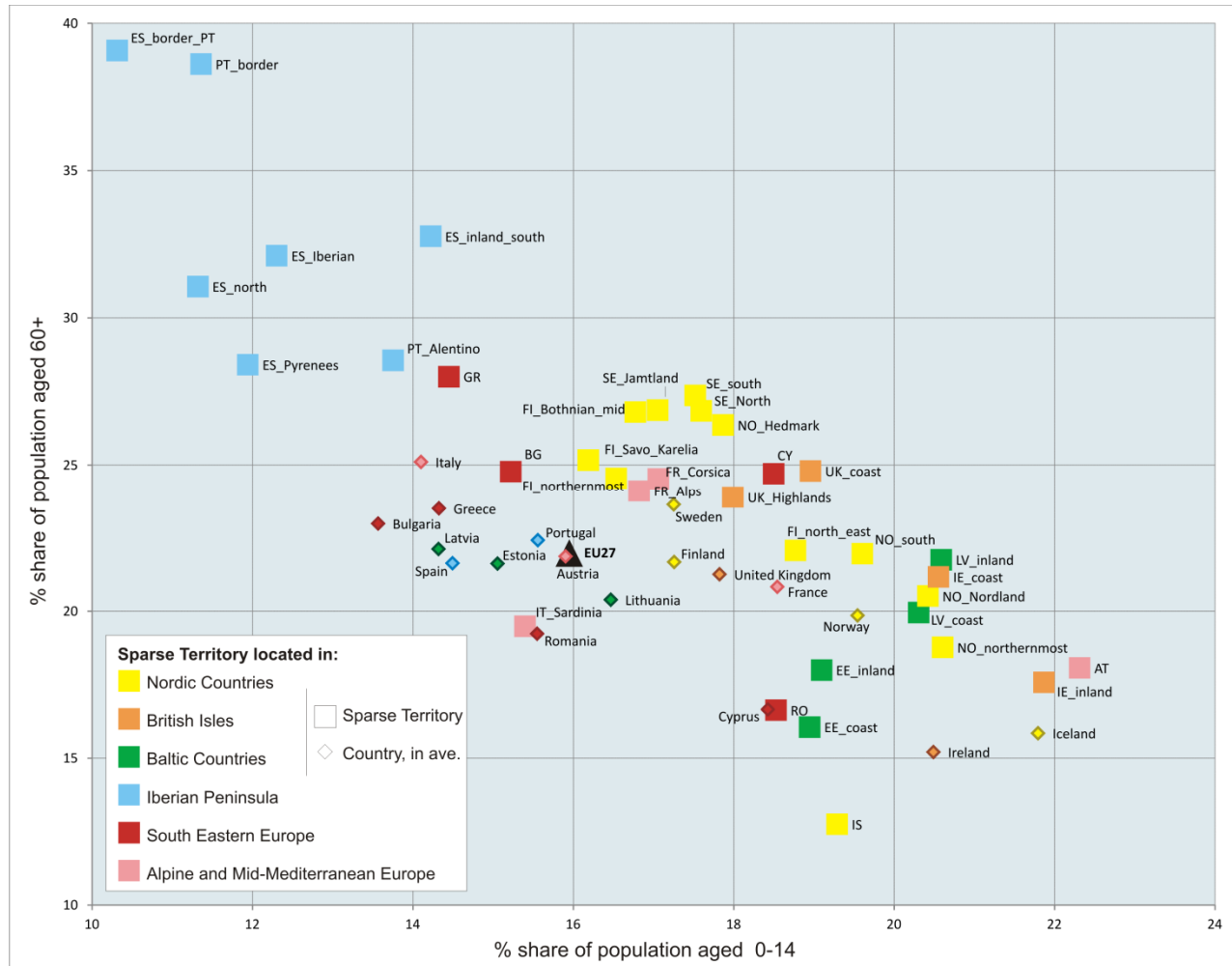
In the province of Teruel, ongoing rural depopulation with the spatial redistribution of the remaining residents has had contrary effects on accessibility to basic services: there has been an improvement in accessibility for the majority of the population as a result of population concentration in higher order settlements and there has been deterioration in accessibility for the territory as a whole, due to the progressive reduction of demand thresholds in most settlements. Consequently, the risk of social exclusion and situations of injustice brought about by poor accessibility only appear to affect a small percentage of inhabitants living in small and isolated settlements. However, the fact that these settlements are distributed throughout an extensive territory gives it a very low level of accessibility and highlights the magnitude of the problem (Escalona-Orcao and Díez-Cornago, 2007, 307).

In conclusion, it becomes evident that addressing the issue of service provision in European sparsely populated areas needs to be broken down territorially. Indeed, the most acute situation concerns the demographically declining and thinning 'rural' parts of such territories: population losses combined with a shift in the population structure engenders a higher demand for specific services, especially healthcare, services which localities and regions have difficulty in fulfilling, both from a practical and a financial perspective. At the same time, the

consolidation of population levels in smaller local and regional centres provides an impression of an overall improvement in service provision throughout the region. This two-speed development in respect of

service provision in sparsely populated areas is, to a certain extent, a result of the institutional fragmentation, relatively speaking, of these territories

Figure 16: *Balance between the share of young and old population in the Sparse Territories and in their respective countries*



How to understand local competitive advantage in relation to the SPAs?

In the early stages of globalisation studies, the main focus of attention was placed on the emergence of global centres of command and control, i.e. the Global Cities (Sassen 1991; Soja 1999). To a certain extent, the discourse on global cities corresponded to the high point of the core-periphery model, which blends spatial and economic development, and which viewed even large metropolitan areas as being in the periphery of a handful of global cities (London, New York, Tokyo etc). The international development policy realm, e.g.

the World Bank and the European Commission, has followed this path and almost deified the role played by metropolitan areas in fostering economic growth. Other types of territories were often indistinguishably regrouped under the term 'rural areas'. Yet, if the emergence of 'global cities' represented the most emblematic sign of globalisation, it is widely acknowledged now that globalisation indeed affects all territories, from the most remote and rural to the multi-million inhabitant cities. In that framework, working with the notion of 'geographic specificity',

and especially in the case of sparsely populated areas, enables us to open this 'black box' and discuss the diversity of development opportunities available in such areas.

From the early texts discussing the effects of globalisation on rural areas some central ideas emerged, ideas which to this day feed our discussion on geographic specificity. These early texts principally discuss – in our area of interest – the fact that globalisation might change the perception from and of rural areas as 'remote'. As explained by Ward and Hite (1998: 252), “rurality and remoteness from markets has generally been defined with respect to a single, central market”. Consequently, globalisation processes provide the opportunity, in theory at least, for non-urban economies to reach out to multiple markets, instead of being shackled to a single core market (either regional or national). In that respect, local and regional economies increasingly have open to them the opportunity to be engaged in multiple economic spaces, especially across national and regional borders.

A second major idea relates to the understanding of local and regional competitive advantage that globalisation has forwarded, particularly as introduced by Porter (1985). This notion of competitive advantage corresponds to the ability of each territory to effectively optimise the use of its human, capital and natural resources, and to regenerate its industrial and economic productivity. Yet, When Kilkenny (1998: 277) claimed that “with low transport costs, rural places are in competition with each other”, she suggested that the competition will increase between places that share a relatively similar locational and competitive advantage.

More recently, Malecki (2007: 638) highlighted the existence of this new level of competition between territories by stating that “Cities and regions compete for investment by companies and by governments, for skilled workers, and for tourists; in all of these competitive situations, one place or a few places are chosen and others are not.” He continued by advocating that “the scale of competition may be global [...]. Competition is perhaps keenest within the set of 'peers' – places considered similar in size and scope and likely to be attracting investment, skilled workers, and tourists from one another” (Malecki, 2007: 638).

There is no such thing as a generic profile for 'sparse' regional economies

Sparse Territories, our regional level of aggregation of sparse localities, show a variety of economic profiles. Whereas sparsity as a territorial phenomenon can be identified in different parts of Europe, it does not

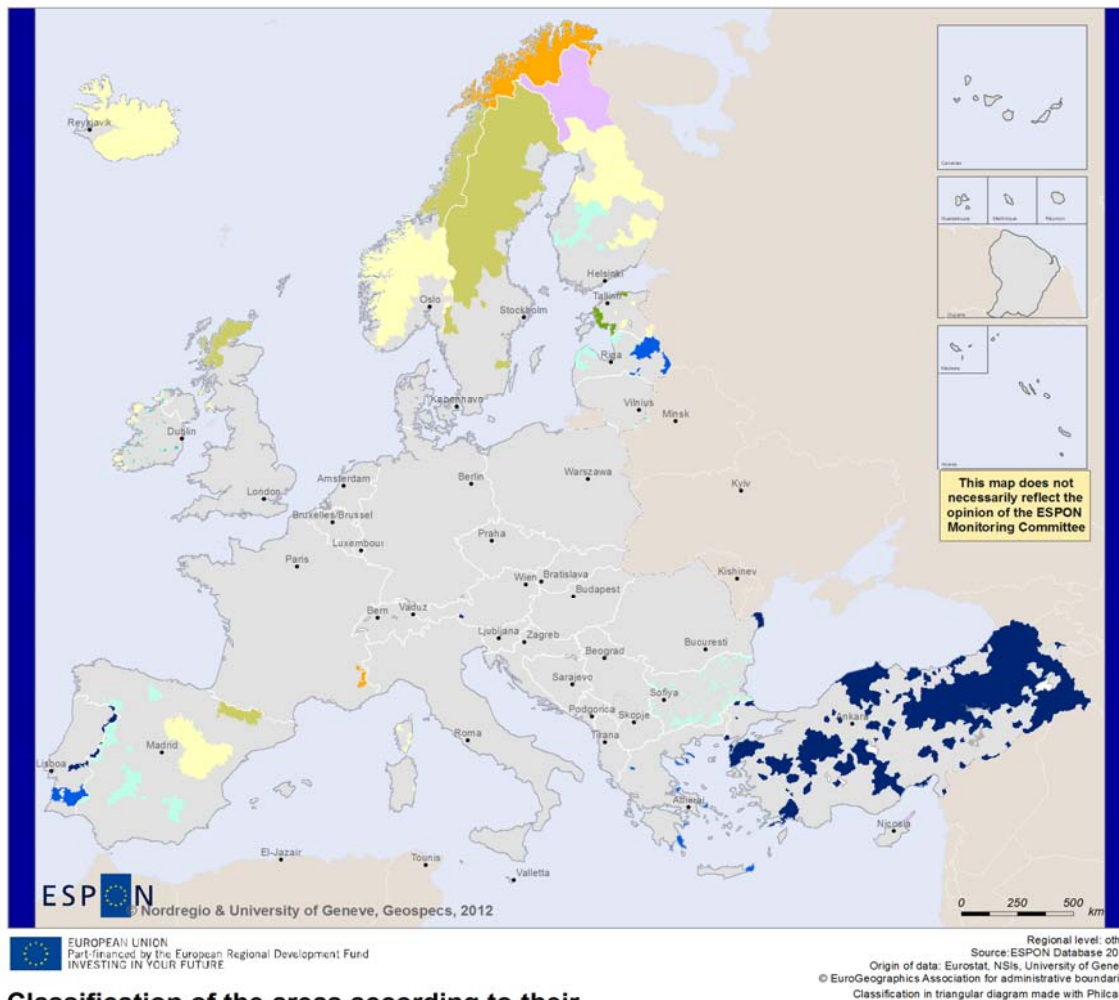
seem to engender similar types of economic specialisation across such territories. Hence, local and regional economic development, while undoubtedly impacted and framed by sparsity, cannot be reduced to this feature as other processes may be as decisive. By first looking at the employment profile of the SPA according to the three sectors of activities (primary, secondary and tertiary), one can identify a rough overview of the variety of these regional economic profiles, using the Sparse Territories as analytical units (figure 17).

First of all, it is important to note that several sparse territories have economic profiles that are relatively close to the European average (Primary: 9%; Secondary: 26%; Tertiary: 65%). This is the case for ST located in Southern Norway, Mid and Eastern Finland, Iceland and Central Spain. Another frequent profile, characterised by a slightly larger proportion of persons working in the secondary sector and correspondingly fewer in the primary sector, can be found in Mid- and Northern Sweden, Mid-Norway, Highlands and Islands (Scotland) and the Pyrenees. ST with a strong or very strong overrepresentation of employment in the primary sector can be found in the Western and Southern parts of the Iberian Peninsula, in South-Eastern Europe (Greece, Bulgaria, and especially in Turkey) and in the Eastern parts of Latvia.

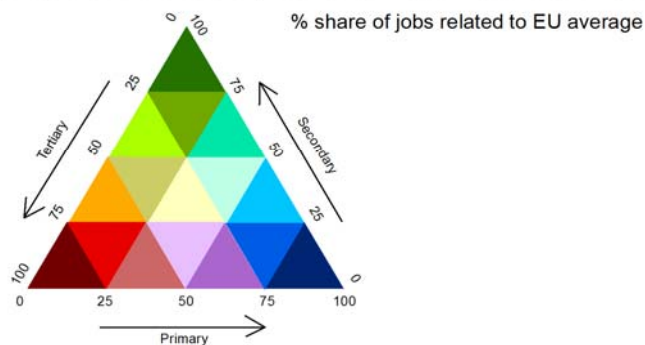
The simple three-sectoral approach to outlining the employment structure shows that, if there is no single economic profile across the range of sparse territories across Europe, there seem to be signs of geographical inertia, meaning that Sparse Territories located in the same 'corner of Europe' tend to have economic profiles that are rather close to each other. To investigate further this issue, a factorial analysis was undertaken using NACE 1-digit data at the sparse territory level (Figure 18).

This analysis confirms the understanding that sparse territories belonging to the same macro-regional zone, e.g. the Nordic countries, the Iberian Peninsula or the British Isles, often have an employment structure that is much more similar to their national or macro-regional neighbours than to other delineated sparse territories in other parts of Europe. In figure 18, this geographical inertia clearly emerges: Sparse Territories in the Iberian Peninsula have relatively similar profiles, with a relative overrepresentation of employment in Hotels and Restaurants (i.e. services to tourists) and Construction. Similarly, the relative importance of employment in the different branches of SPA in the British Isles, in the Baltic countries and in the Nordic countries resemble each other.

Figure 17: Employment structure by three main sectors in European sparse territories

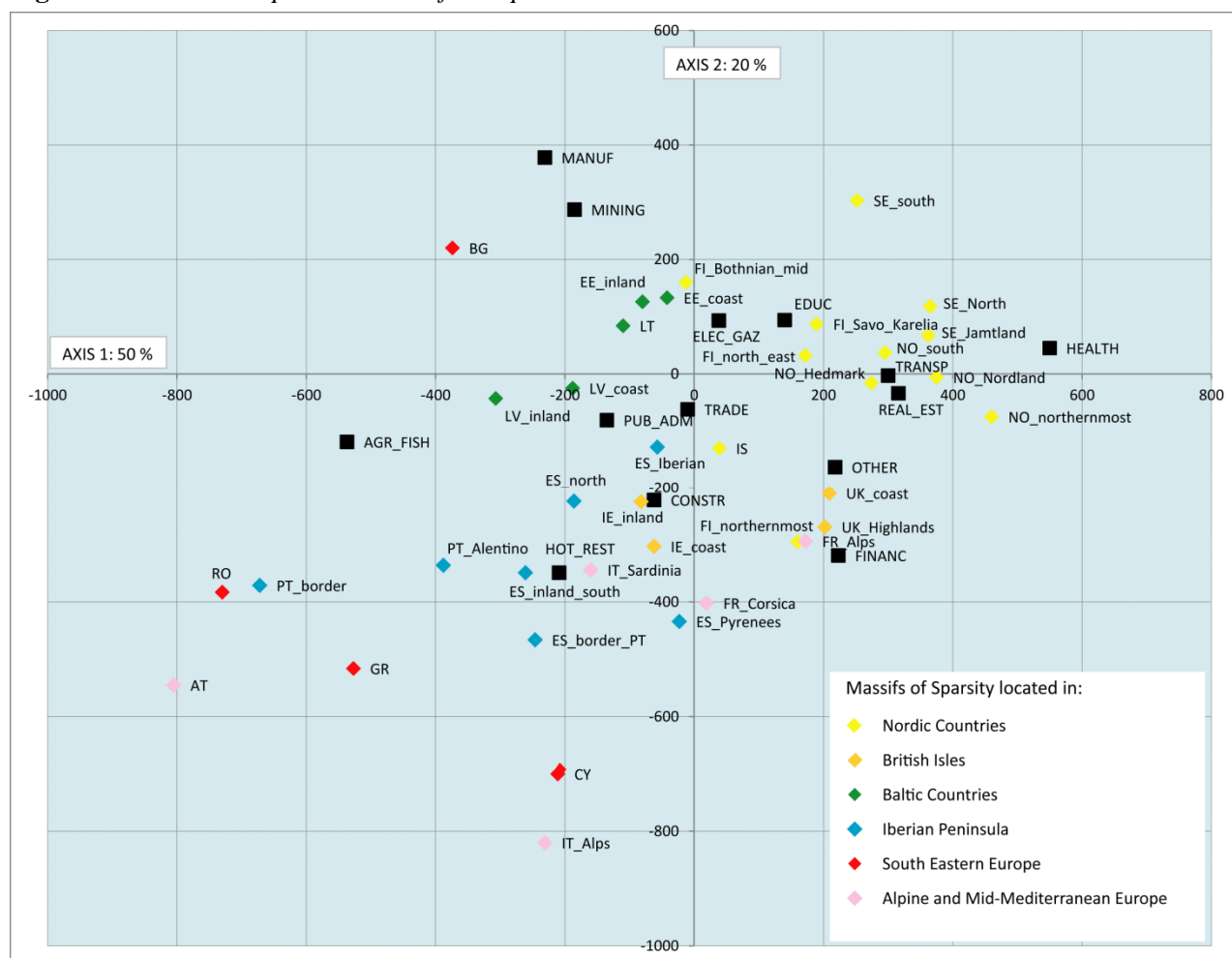


Classification of the areas according to their proportion of employees in the three main sectors



When compared to the European average and to each other the sparse territories of Europe exhibit varying employment structures. In the Nordic countries, territories are more specialised in the secondary sector (light green) or in a combination of the secondary and tertiary sectors (orange and purple). In Southern Europe, sparse territories are more structured around the primary sector (shades of blue). The large variation of economic profiles stresses the necessity to elaborate tailor-made development strategies adapted to the economic structure of each sparse territory.

Figure 18: Economic specialisation of the Sparse Territories



The previous results stress the relevance of an approach to regional economic development based on geographic specificity in the debate on territorial and local development, especially when combined with a macro-regional approach. Indeed, as sparse territories located in the same European macro-region tend to have similar economic structures, the development of specific approaches to tackling development challenges and fostering development opportunities makes sense in that context. This means that within broad European macro-regions, sparse territories have developed rather similar economic structures and profiles, because they are, on the one hand, originally subject to the same territorial preconditions, and on the other hand, the objects of similar types of public policies and initiatives.

A diversity of local economic profiles

The relative geographic inertia of the regional economic structure highlighted in the previous section supports the idea that large 'macro-regions' provide a coherent territorial ensemble for understanding the

complex structure of local and regional economies in sparsely populated areas.

Advocating a certain degree of coherence in respect of the economic profile of trans-regional ensembles of sparsely populated areas is not the same as claiming that these regions constitute a homogenous assemblage of local economies. Local economies have their own specialisations which are generally the result of their specific individual economic development paths. Performing a cluster analysis on employment in different NACE categories however enables us to pinpoint, within the three main 'macro-regions' of sparsely populated areas, the diversity of economic profiles available within each of these territories by comparing the employment structure at the NACE-1 digit level across the studied localities.

In the British Isles (figure 19), the north-western coast of Ireland shows a clear specialisation in manufacturing activities, while in the Connemara area many localities have specialised in the Tourism Accommodation sector (Hotels and Restaurants). In South West Scotland, the few sparsely populated localities, for instance the Stranraer localities from

which a ferry to Belfast departs, are profiled as local transport clusters. In the Scottish Highlands and Islands, the localities show no specific specialisation, with the notable exception of Caithness which is specialised in the mining and in the energy sector bolstered by offshore oil extraction in the North Sea. Yet, the lack of specialisation in the Highlands and Islands is essentially due to a statistical effect caused by the fact that Scottish localities are much larger than in other sparsely populated areas in the British Isles.

In Spain and Portugal (figure 20), there seem to be signs of geographical inertia when it comes to local economic specialisation: in the western parts of Iberia, the most common economic profile corresponds to an over-representation of Agriculture and Forestry activities, while in the Pyrenees, it is a specialisation in Tourism Accommodation (i.e. Hotels and Restaurants). Yet, the largest of the Spanish sparse territories, located in North-East central Spain, reveals a more complex patchwork of local economic profiles. In and around the main regional centres, i.e. Cuenca, Teruel and Soria, local employment is strongly devoted to public services, i.e. Education, Health and Administration services. Other smaller regional centres show specialisations in Tourism Accommodation (Alcaniz or Sigüenza). At the north-western tip of the Soria Province, many small localities have an over-representation of manufacturing jobs. Finally, in the Eastern part of the Teruel Province, several localities have an over-representation of mining employment.

In the Nordic countries (figure 21), local economic profiles tend to be correlated with the exploitation of natural resources and show signs of national inertia. In the northern parts of Swedish Norrland, the local labour-market is over-represented with Mining (Gällivare and Kiruna), Energy production (Jokkmokk) or Tourism Accommodation (Åre, Idre or Malung). In the Finnish inland areas, several localities have an over-representation of local employment in Forestry. In the three Nordic countries, localities with strong local employment in manufacturing activities can be found scattered, often located in small local centres. Finally, many sparsely populated localities in the Nordic countries display an exceedingly average profile, essentially due to their large geographical extent.

Clearly, in all three cases presented above, the specialisation of local economies often revolves around activities that deal with the exploitation of land or underground natural resources or amenities: forested areas (Forestry), mountain landscapes (Tourism), minerals (Mining), rivers (Energy production). The economic specialisations that are not the result of the direct exploitation of such resources include manufacturing, although the presence of manufacturing was originally linked with industrial

processing of minerals, as well as with public services. Hence, sparsely populated areas show a rather limited range of economic profiles, and very little in the business-oriented sectors of the Tertiary Industry (Trade, Telecom and Transport, Business Services).

Yet, specialisations may also widely benefit economic actors located outside these local economies. For instance, as shown by Lundmark in the case of the forestry sector in Northern Sweden, “employment in forestry and other forest-related activities can take place in rural areas, but the refining of timber often takes place in the urban centres along the coast” (Lundmark 2006: 6). Consequently, when addressing the issue of economic specialisation, especially in the case of nature-based activities, it is necessary to acknowledge that these small local economies feed a much larger production system which connects rural and urban areas.

While most of these specialisations still provide a sound basis for local economic development, the lack of a more diversified profile may be detrimental to the development of these regions at large in the future. Indeed, Simmie and Martin (2010: 30) acknowledge that a local economy with a successful specialisation can become more conservative and thus less resilient in the long term, which can become problematic as “the important attribute of regional economic resilience is the adaptive capacity of a local economy”. Moreover, Simmie and Martin (2010) stress the role of variety (i.e. diversity of activities) in regional development as diversified regional economies are thought to be more conducive to the creation of innovation than more specialised ones. Consequently, one of the main challenges facing local and regional development strategies for sparsely populated areas is to be able to use these existing specialisations as a springboard for the development of other specialisations in the future.

In that respect, development strategies aiming at increasing the variety of economic specialisation need to promote not only intra-sectoral exchanges in an enlarged territorial perspective, thus creating the regional critical mass necessary for enhanced global competition for this sector, but also inter-sectoral initiatives to foster innovation spillovers from one sector to another. In the sparsely populated areas in particular however, the benefits of having robust traditional nature-based activities need to be better transmitted to emerging economic activities, such as tourism.

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 the reduced importance of resource

extraction and refinement. Tourism, then, is an example of a sectoral shift from the dominant industry and public sector employment towards a more diversified economy in which both tourism and the traditional sectors are represented. To further draw on the framework 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: 10).

In that respect, the restructuring of local economies in sparsely populated areas need not only consist in a radical “shift from goods production to service provision” (Lundmark 2006: 10), but should rather accompany local economic development through the consolidation of existing nature-based specialisations and the emergence of a new realm of activities “less vulnerable to change” (Lundmark 2006: 10).

Sparse Territories, but no industrial deserts

While being faced with the most challenging geographical conditions in terms of the fostering of economic development, essentially due to the long distance to markets and the limited local demand for goods and services (Virkkala 2007), sparsely populated areas can hardly be considered as lagging areas as their level of socio-economic welfare and performance is usually around or above the European or respective national average.

Unlike most rural areas in Europe, whose local economy was strongly structured around agriculture, the economic legacy in sparsely populated areas often relates more of an industrial heritage. First, the harsh climatic conditions historically made it very difficult to develop an efficient and profitable agricultural sector in such areas. Second, the presence of underground resources, such as coal or minerals, that were necessary in the process of industrialisation, essentially throughout the 20th century, turned these ‘peripheral’ regions into valuable assets in relation to the development of modern national welfare states. This industrial legacy can still be felt as sparsely populated areas often show higher concentrations of employment in the manufacturing sector than their

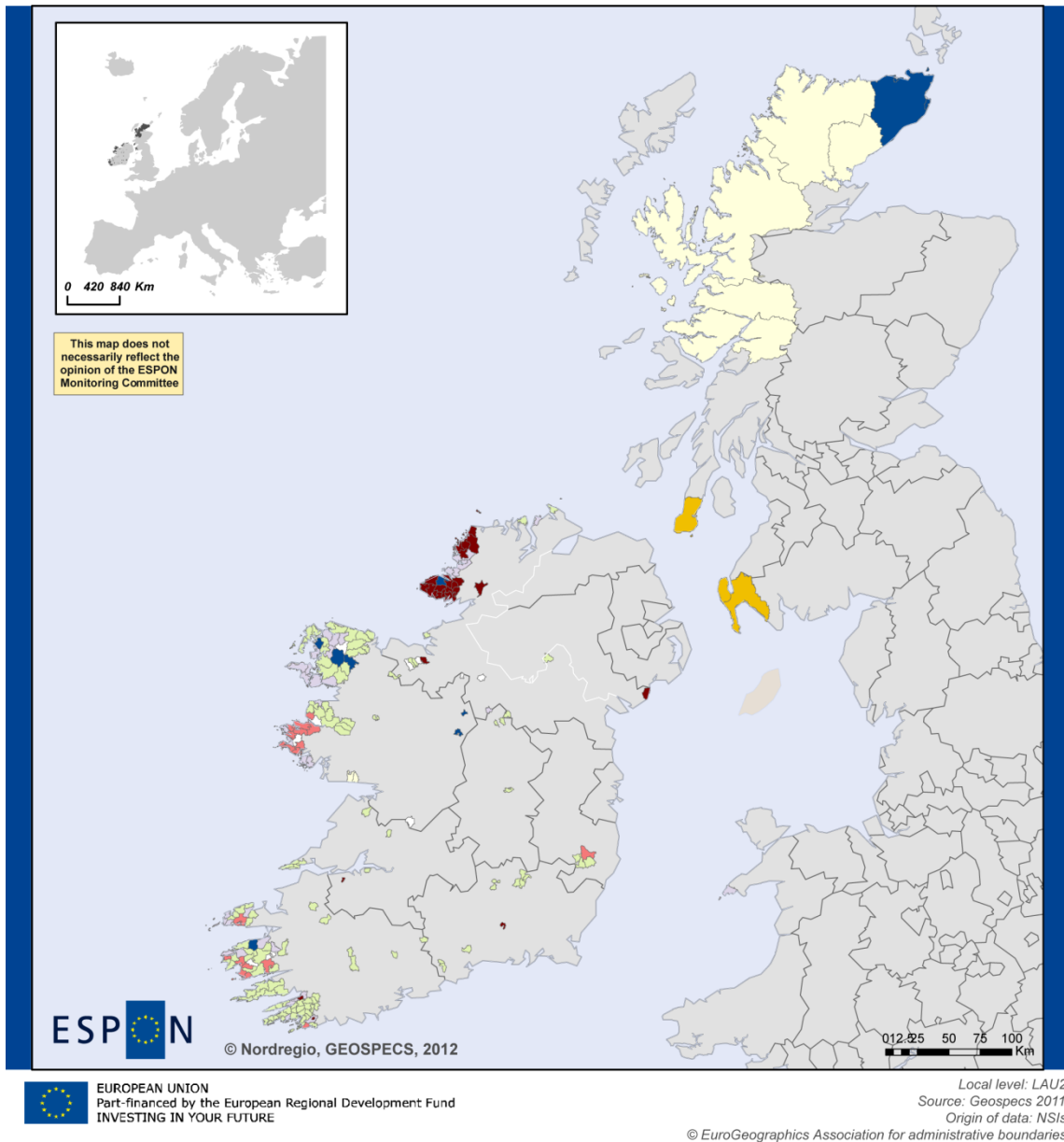
population potential, and thus economic weight, would have otherwise allowed.

The measurement of the variations in the density of manufacturing jobs in the Nordic countries (figure 22) and Spain (figure 23) enables us to highlight the specificity of sparsely populated areas as ‘manufacturing clusters’ outside the main agglomerations. Not surprisingly, the largest concentrations of manufacturing jobs are located in and around the largest concentrations of population. Yet, beyond these areas, important pockets of manufacturing concentrations nevertheless exist with several of them located in our sparsely populated areas. In Sweden (figure 22), in the inland area of the Norrland region, between Östersund and Kiruna, a string of small local concentrations of manufacturing employment can be found along the existing railway corridor. In the North-Eastern part of Finland a number of regional manufacturing ‘hotspots’ also exist.

In Spain (figure 23), the pattern is even more evident. It appears indeed that several sparse territories host important national concentrations of manufacturing activities (in dark red), for instance at the north-east end of the sparse territory between Madrid and Catalonia, at the northern tip of the Palencia province in the North of the country, or around Almadén and Cordoba to the South-West of Madrid.

The presence of several manufacturing clusters in sparsely populated areas may indicate that the elaboration and implementation of adapted ‘cluster policies’ with a view to fostering the continued development of such activities may be worthwhile initiatives. Virkkala (2007: 512), in her investigation of networking by small manufacturing firms in peripheral regions of the Nordic countries, which may still play a non-negligible role in fostering industrial development acknowledged that “the key question for the development of these areas is how to overcome the problems of distance and how to create new forms of proximity in the innovation processes of the business”. Creating new forms of proximity may be achieved through the further development of tangible and intangible assets necessary for fostering further interactions between firms located across these ‘pockets of manufacturing’, thus creating a regionally enlarged pool of manufacturing firms. Such initiatives should aim at improving the internal and external connectivity of these communities, thus enabling firms to pool their resources (e.g. labour-force, supplies) and develop extra-regional trade relations, and the fostering of collaborative ties between firms.

Figure 19: Cluster analysis of employment in British and Irish sparse LAU2s



Ascendant Classification of Sparsely Populated and Poorly Connected Localities in Great Britain and Ireland (LAU2)

Major deviations from average profile -
Overrepresented activities

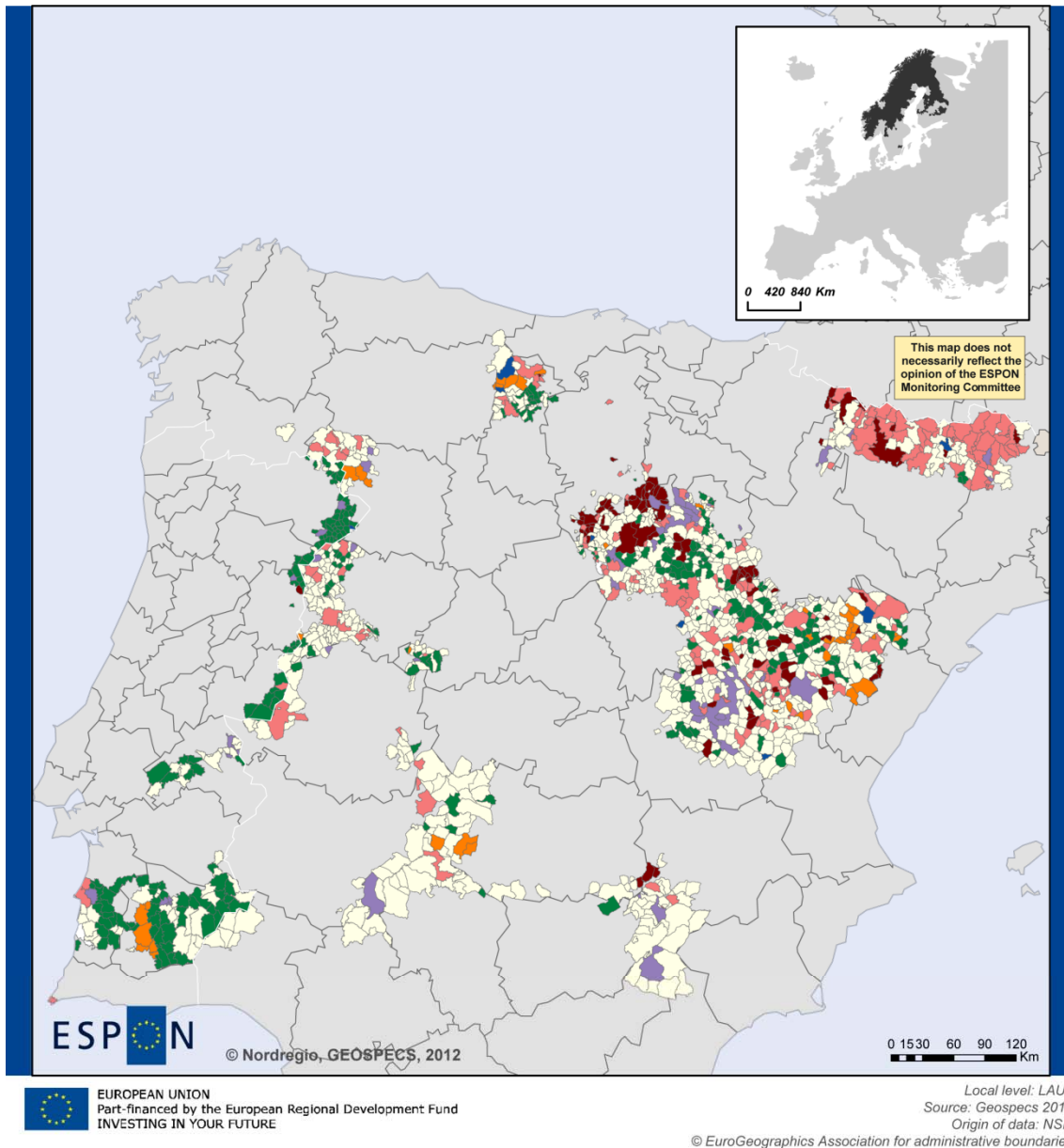
- Mining and Energy
- Hotel and Restaurant
- Transport, Telecom and Public Administration
- Manufacturing

Minor deviations from average profile -
Overrepresented activities

- Close to average - Agriculture
- Close to average - Communication and Public Services
- Close to average - Public Services
- No data

Cluster analysis identifies the main distinctive feature of a locality's economic profile, in employment terms, compared to its 'peers', i.e. the ensemble of sparse localities in Great Britain and Ireland. It provides an important insight for local and regional stakeholders into understanding the competitive advantage of different localities at this territorial level.

Figure 20: Cluster analysis of employment in Iberian sparse LAU2s



Ascendant Classification of Sparsely Populated and Poorly Connected Localities in Iberian Peninsula (LAU2)

Major deviations from average profile -
Overrepresented activities

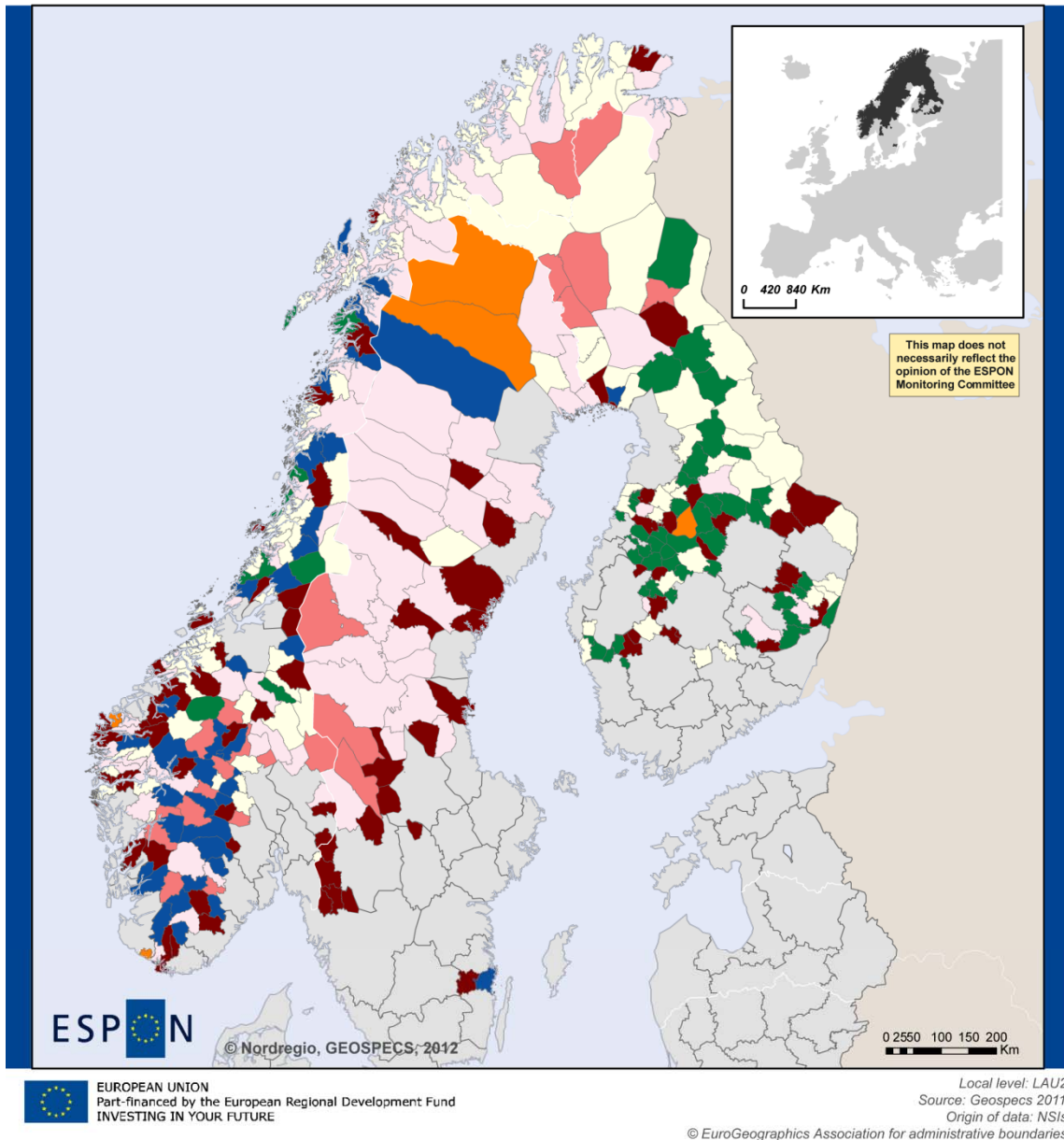
- Agriculture, Forestry and fishing
- Mining
- Public Services (Education, Health, Administration)
- Manufacturing
- Energy and Mining
- Hotel and Restaurant

Minor deviations from average profile -
Overrepresented activities

- Close to average - Construction

Cluster analysis identifies the main distinctive feature of a locality's economic profile, in employment terms, compared to its 'peers', i.e. the ensemble of sparse localities in Spain and Portugal. It provides an important insight for local and regional stakeholders into understanding the competitive advantage of different localities at this territorial level.

Figure 21: Cluster analysis of employment in Nordic sparse LAU2s



Ascendant Classification of Nordic Sparsely Populated and Poorly Connected Localities (LAU2)

Major deviations from average profile -
Overrepresented activities

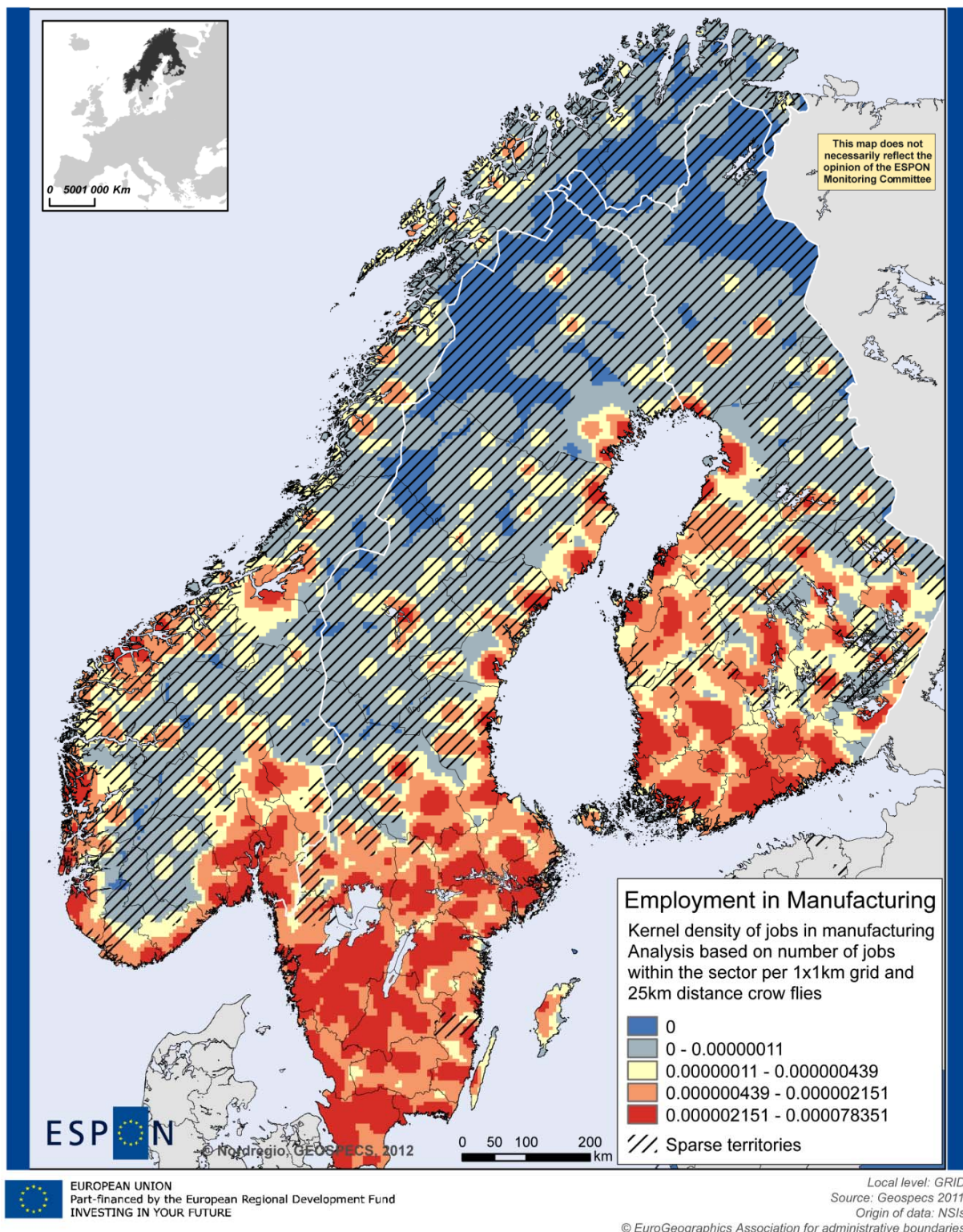
- Energy
- Mining
- Agriculture, Forestry and fishing
- Manufacturing
- Hotel and Restaurant; Personal Services

Minor deviations from average profile -
Overrepresented activities

- Trade and Business Services
- Agriculture, Construction and Finance
- No data

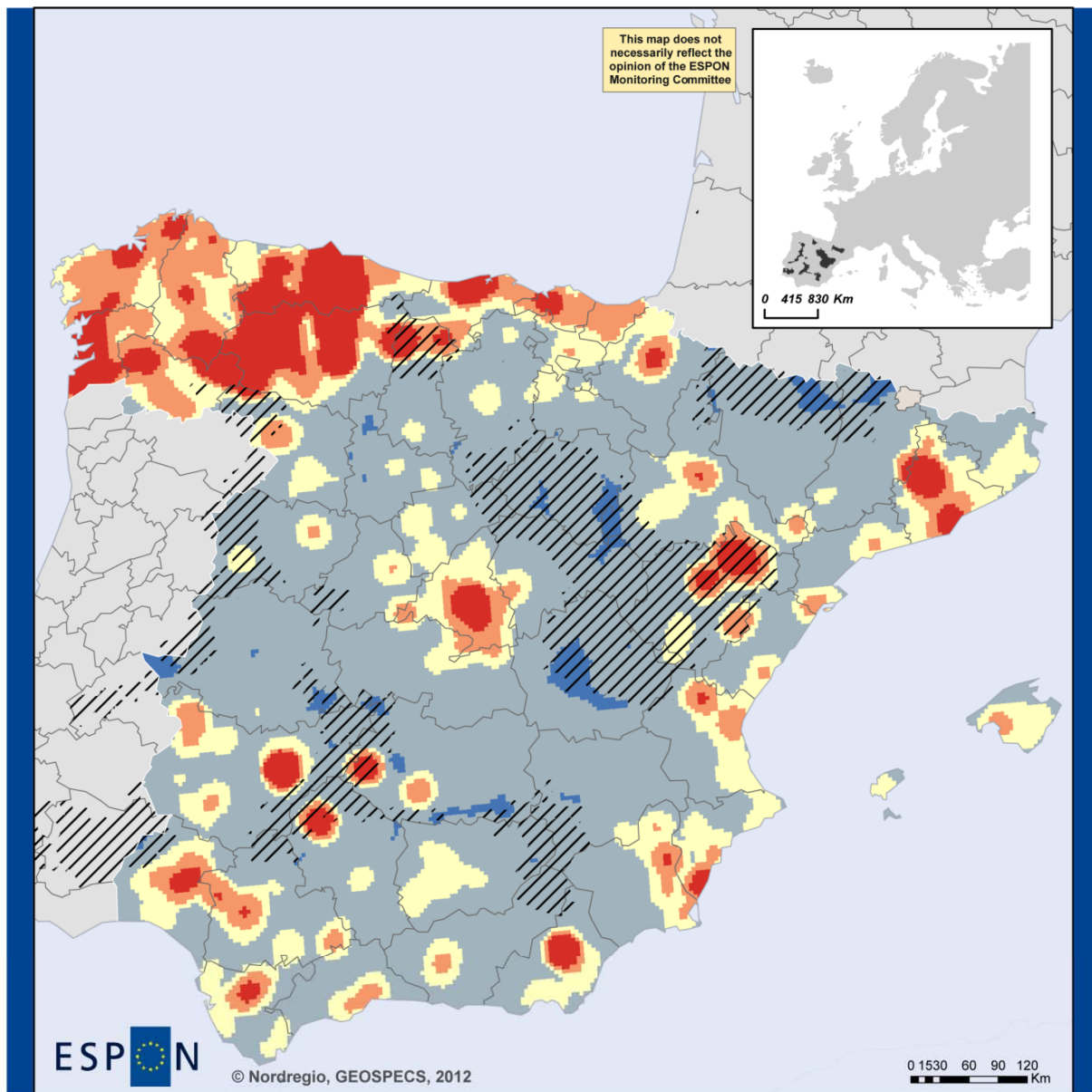
Cluster analysis identifies the main distinctive feature of a locality's economic profile, in employment terms, compared to its 'peers', i.e. the ensemble of sparse localities in the Nordic countries. It provides an important insight for local and regional stakeholders into understanding the competitive advantage of different localities at this territorial level.

Figure 22: *Employment in manufacturing in the Nordic Countries, kernel density analysis*



The map displays the density of employment in manufacturing within a 25km radius of each location in the Nordic countries. While it tends to stress the urban structure of the Nordic countries, it also enables us to show that the sparsely populated areas are not areas devoid of industrial and manufacturing potential. In the North Swedish inland and in Eastern Finland there are areas that show local concentrations of employment in manufacturing.

Figure 23: Employment in manufacturing in Spain, kernel density analysis



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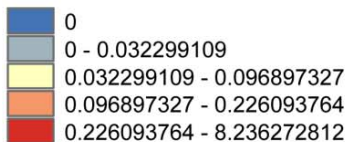
Local level: LAU2
Source: Geospecs 2011
Origin of data: NSIs

© EuroGeographics Association for administrative boundaries

Employment in Manufacturing

Kernel density of jobs in manufacturing

Analysis based on number of jobs within the sector per LAU2 and 25km distance crow flies



/// Sparse territories

The map displays the density of employment in manufacturing within a 25km radius of each location in Spain. Major industrial concentrations can be found in North-West of Spain (Galicia) as well as in the main agglomerations. As for sparsely populated areas, it appears that several sparse territories host important local concentrations in manufacturing, for instance at the north-east end of the sparse territory between Madrid and Catalonia, or at the northern tip of the Palencia province in the North.

Local economies in the SPAs need to be embedded in multiple economic spaces

Traditionally, local economies are thought of as being embedded in economic spaces delimited by rigid administrative boundaries: a locality that belongs to a region that belongs to a nation-state that belongs to the European Union. We argue that, on the contrary, local economies belong to and are engaged in multiple economic spaces that are not necessarily organised in a hierarchical manner.

The most obvious of these spaces are the national and international ones. These levels are easily identified as they represent the main units of economic policies and regulation. Clearly, recent work has highlighted the relevance of the sub-national or regional as an important economic space of belonging for local economies and for understanding growth mechanisms. For Huggins and Williams (2011), the regional dimension is especially interesting as a way to organize initiatives for local economic development, and not the least in the context of a globalized economy.

Yet, all too often, this regional dimension is understood in terms of administrative regions (e.g. NUTS 2 or 3). This is a bias resulting from the significant institutional involvement of policymakers in economic development processes in the European Union: territorial development policies tend to “produce geographical proximity institutionally as a privileged mode of economic interactions” (Torre and Rallet, 2005, 52).

Our argument is that there is not one single regional dimension, but rather several, overlapping ones. With regards to economic development, the regional dimension needs to be addressed as coherent territories for developing pertinent local economic development strategies and for coordinating economic interactions. In the context of sparsely populated areas, we have already touched upon the relevance of the macro-regional and 'sparse territory' level for understanding local competitive advantage. In this respect, we claim that the notion of geographic specificity and its multiple materialisations (mountainous areas, islands, sparsely populated areas etc.) brings more territorial coherence to the idea of regional economic spaces that are not entirely based on administrative divisions but rather on the identification of similar levels of challenges and development opportunities.

Local development strategies thus need to embrace this multiple territorial embeddedness, while local competitive advantage needs to be identified in relation to these economic spaces.

Recent literature (Audretsch and Keilbach, 2004; Huggins and Williams, 2011) has emphasised the role of various geographic spaces in shaping

different conditions for economic development, as competitiveness varies across geographic space and as regions develop at different rates depending on drivers of growth. Consequently, different regional economic spaces may foster different development opportunities. For local economies, belonging to multiple economic spaces brings a greater variety of development opportunities than if regional economic spaces are only considered as mono-dimensional, and not least when based on administrative realities (e.g. NUTS 2 or 3).

For policymakers and stakeholders, gaining an insight into their localities' economic peculiarity in relation to different regional economic spaces is a necessary step in elaborating pertinent public interventions and initiatives. In order to do that, we have performed a multi-scalar territorial analysis on local employment in three central sectors for sparsely populated areas: the Primary sector (Agriculture, Fisheries, Forestry, Mining and Energy), the Manufacturing industry and the Hotels and Restaurants sector, which represent the core of the Tourism industry.

Multi-scalar Territorial Analysis⁵ enables us to map the relative position of a locality's performance in a certain indicator, in our case employment in the primary, manufacturing or Hotels and Restaurants sectors, compared to other localities in three different regional contexts: the macro-context, consisting of all sparsely populated localities in the trans-national zones identified previously (the British Isles, the Iberian Peninsula or the Nordic Countries); the meso-context, consisting of sparsely populated areas located in the same Sparse Territory (as delineated on map 6); and the micro-context, consisting of contiguous and surrounding localities. Each of these three regional contexts is important economic spaces for local economies. For each locality, the combination of these three contexts is both unique and specific, and it enables us to identify how the proportion of jobs in different sectors in each locality differentiates itself from the ones experienced by other localities belonging to any of these three economic spaces.

Local competitive advantage is understood here as the identification, for a locality, of a significant employment concentration in a certain sector of activity (in our case we have chosen the threshold of 150% of the average at each level) compared to that found in other economic 'peer' localities, i.e. localities belonging to one of the same macro-meso-micro contexts. The results consist of 9 different analyses (3 sectors * 3 trans-national zones) that have been compiled on three maps (figures 24 to 26). On each of these three maps, the localities in dark red correspond to localities that have a local competitive advantage in

⁵ The Multi-scalar Territorial Analysis was performed using the Philcarto software <http://philcarto.free.fr/>

all three regional contexts; in pink, a local competitive advantage at the macro and meso contexts only (i.e. compared to the localities belonging respectively to the same trans-national zone and sparse territory); in dark orange a local competitive advantage on the macro and micro contexts (i.e. compared to the localities belonging to the same trans-national zone and with surrounding localities).

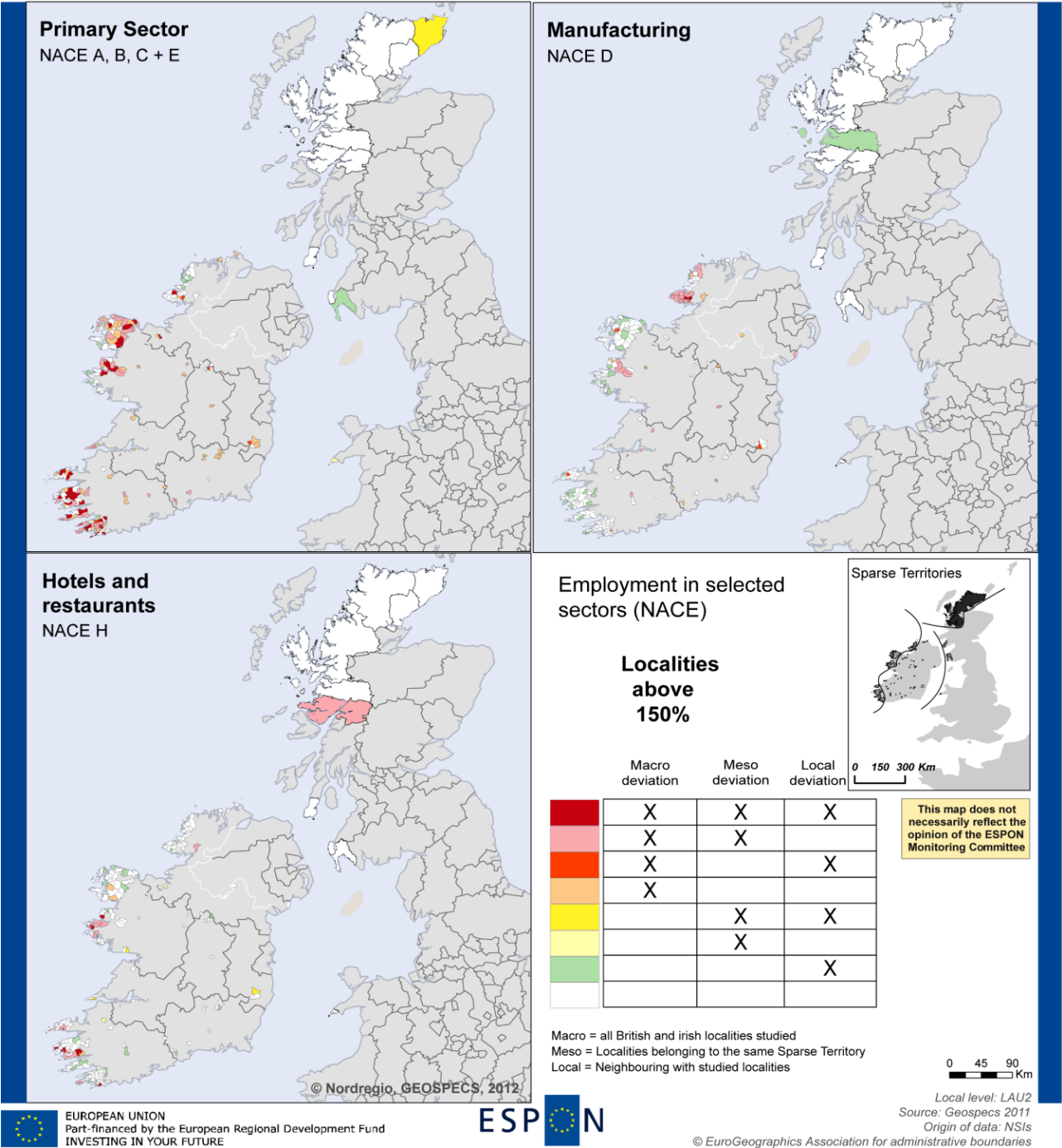
To give a more concrete example, let us have a look at the map displaying the results of the multi-scalar analysis for the sparsely populated localities in the Nordic countries (figure 26).

In the top-left corner, the results of the analysis for the primary sector are displayed. It appears that the localities of Gällivare and Kiruna are coloured dark red. This means that both enjoy a relative concentration of jobs in the primary sector which is

50% above the average calculated for all sparsely populated localities in the Nordic countries (macro), for localities in the Northern Sweden sparse territory (meso) and for the localities that surround each of them (micro). In this case, only the micro level is different for Gällivare and Kiruna.

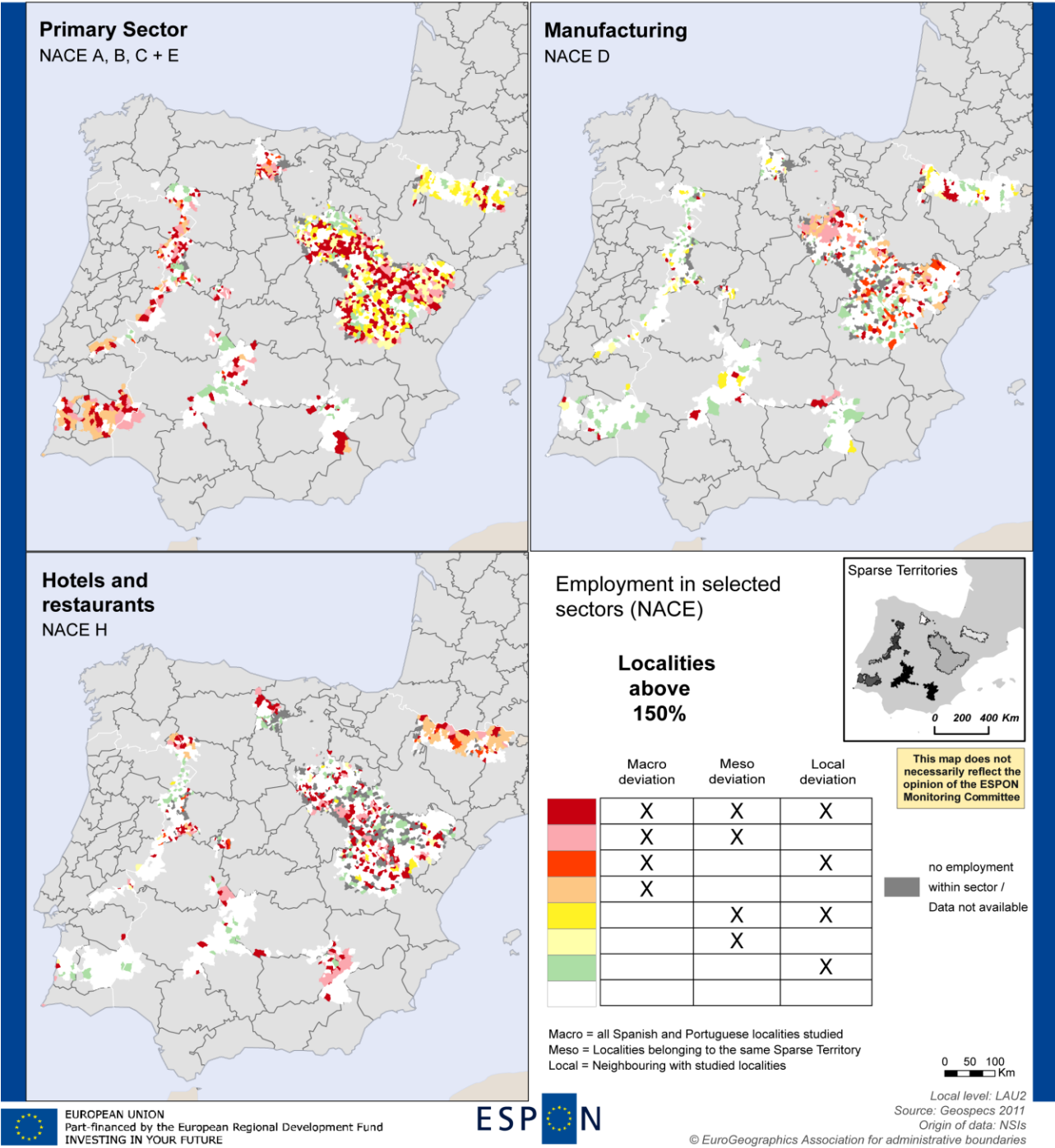
In the top-right corner, the localities of Kiruna and Gällivare are both in blank, which mean that their proportion of jobs in the manufacturing industry is below 150% of the proportion found in their respective macro-meso-micro contexts: Kiruna and Gällivare have no local competitive advantage when it comes to manufacturing. Finally, in the bottom-left corner, Kiruna appears in dark red, and Gällivare is in blank: Kiruna has a strong local competitive advantage in Tourism Accommodation, while Gällivare has none.

Figure 24: Multiscalar analysis of employment in British and Irish sparse LAU2s



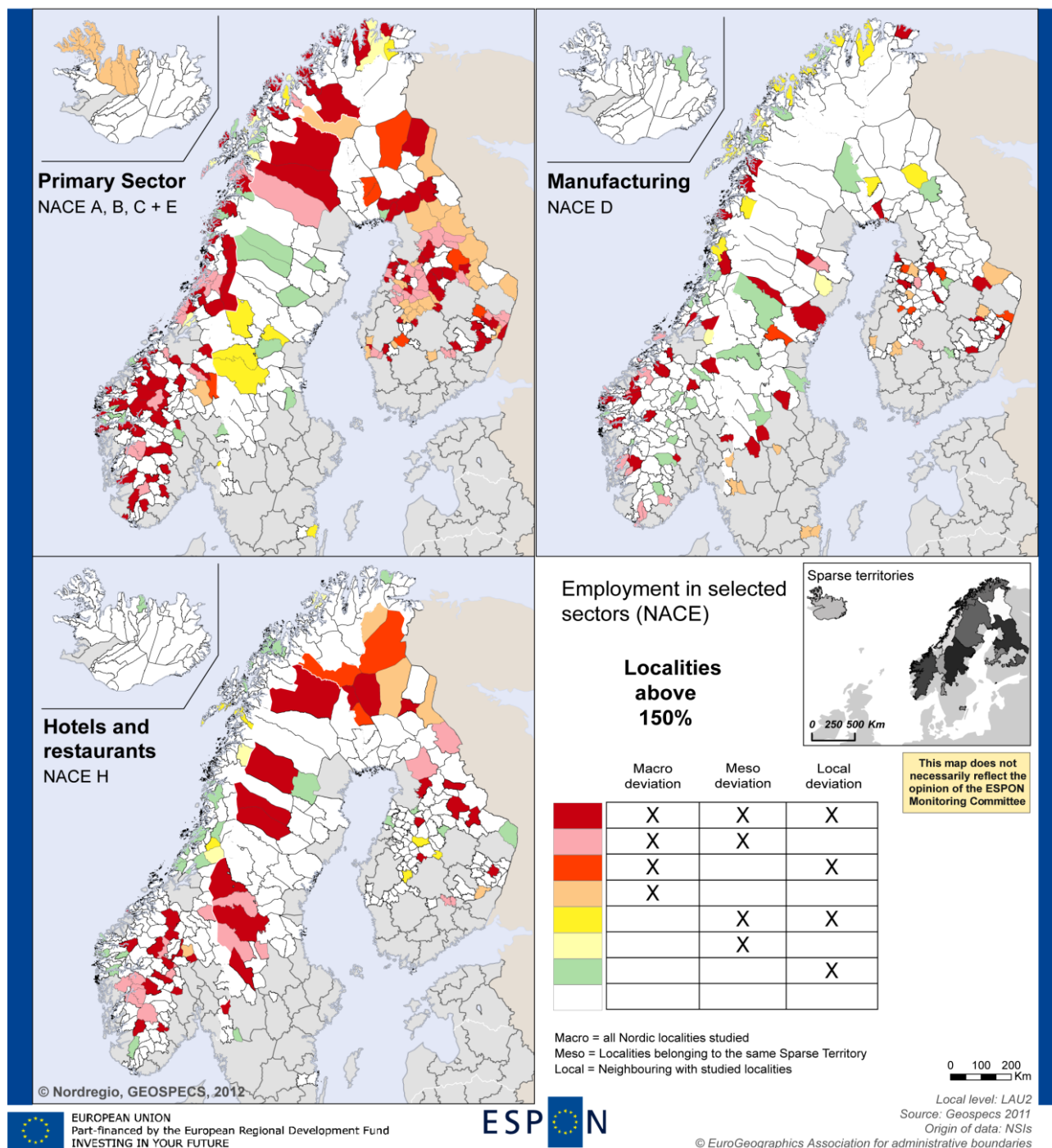
Multiscalar analysis enables us to identify the localities that can draw on a particularly strong clustering of activities, in terms of employment, compared to other localities at three different levels: macro, consisting of all sparse LAU2 in Britain and Ireland, meso, consisting of all localities belonging to the same Sparse Territory, and micro, consisting of contiguous localities. The analysis is performed for three types of activities which are central to development in sparse territories, namely, the Primary sector, Manufacturing and Hotels and Accommodation. The localities in dark red are the ones that host a marked employment clustering in the respective activity at all three levels.

Figure 25: Multiscalar analysis of employment in Iberian sparse LAU2s



Multiscalar analysis enables us to identify the localities that can draw on a particularly strong clustering of activities, in terms of employment, compared to other localities at three different levels: macro, consisting of all sparse LAU2 in Spain and Portugal, meso, consisting of all localities belonging to the same Sparse Territory, and micro, consisting of contiguous localities. The analysis is performed for three types of activities which are central to development in sparse territories, namely, the Primary sector, Manufacturing and Hotels and Accommodation. The localities in dark red are the ones that host a marked employment clustering in the respective activity at all three levels.

Figure 26: Multiscalar analysis of employment in Nordic sparse LAU2s



Multiscalar analysis enables us to identify the localities that can draw on a particularly strong clustering of activities in terms of employment compared to other localities at three different levels: macro, consisting of all sparse LAU2 in the Nordic countries, meso, consisting of all localities belonging to the same Sparse Territory, and micro, consisting of contiguous localities. The analysis is performed for three types of activities which are central to development in sparse territories, namely, the Primary sector, Manufacturing and Hotels and Accommodation. The localities in dark red are the ones that host a marked employment clustering in the respective activity at all three levels.

SPAs in the international resource economy

As already noted SPAs do not have a typical economic structure although the specialisation of local economies does often revolve around activities that deal with the exploitation of land or underground natural resources or amenities (Lundmark 2006; Neil and Tykkyläinen 1998). These territorial assets can also often be better exploited and utilised for future development opportunities. As the economic and employment profiles presented in the previous chapters refer to statistics and thus to the situation as in 2008, we would like to highlight the following ongoing development trends per sector or amenity when thinking about the future potentials of the SPAs. As the availability of diverse natural resources opens up not only the possibility to promote amenity-driven and resource-based development but also the consolidation and diversification of regional and local economies in a sustainable way.

Future of mining and quarrying activities in the SPAs

Historically, mining and quarrying was an important source of employment and wealth in the main SPAs. Today the development opportunities in these industries display rather different paths. In Scottish and Spanish STs the mining industry is predominantly based around coal with Teruel and Soria provinces in particular remaining significant coal producers (Rubio and Royo 2007). The environmental impacts of coal, such as the high CO₂-emissions or pollution due to residues, do however represent a significant challenge to the future of the industry. In Scotland coal production has been on the decline since the 1980s while in Spain a number of quarries have been closed down in recent years or are expected to be in operation only until 2018 after the recent decision by EU industry ministers to cut coal mining state subsidies (Diario Aragonés 2011).

In terms of metals the situation is however rather different. Metals are one of the main resource-based building blocks in respect of current and future development in employment and the economy in the NSPA. In recent years mining activity volumes have expanded significantly in both Finland and Sweden, as well as in Norway, though here only to a lesser extent, due to the increasing demand for metals and rising world market prices. This has also impacted on future prospects in the industry as in the Nordic STs several new mining projects are ongoing (Loukola-Ruskeeniemi ed. 2012:11; SGU 2012). High demand and increased market prices also saw the reopening of a gold mine in Scotland in 2007 and in Spain

discussions have been ongoing over the reopening of the iron ore mines in Teruel and Cuenca (GEOSPECS 2012).

Almost 90% of Europe's iron ore requirements come from Northern Sweden. Northern Sweden and Finland also contribute significantly to the EU's production of gold, silver, zinc and copper – the metals that have seen the highest global market price increases. Moreover, the recent increase, both in terms of turnover and employment, in the mining industry has been remarkable with further employment gains likely as new mines continue to open. In addition, an expanding mining industry will also create investments in infrastructure, logistics, and construction and R&D activities, thus increasing employment in these other sectors. Thus the mining industry is seen as providing the basis for the future welfare of many regions although it should be better integrated with the rest of the economy in order to secure sustainable long term development. (GEOSPECS 2012; Loukola-Ruskeeniemi ed. 2012:11) In Northern Norway and Scotland expanding oil and gas activities both in the North Sea and in the Arctic Sea are also having a significant effect on regional development (GEOSPECS 2012).

Such mining activities, as with the other larger development projects planned in the STs, are however dependent on external financing and often on foreign investment and are thus heavily dependent on international markets and the overall economic situation. Finally, the environmental impacts of mining activity, such as with the use of specific hazardous chemicals like cyanide in the extraction of gold, and possible resource management conflicts between different activities make it hard to estimate the real or aggregate employment and economy effects of mining (GEOSPECS 2012).

Renewable energy and the greener economy

In relation to the Europe 2020 targets, the EU countries should cut their greenhouse gas emissions by 20% compared to their 1990 level with at least 20% of their energy now coming from renewable sources (European Commission 2010). For the SPAs these goals represent both a challenge and an opportunity. Most SPAs are already significant producers of renewable energy, or enjoy favourable conditions in their desire to develop renewable energy because of their endogenous potentials, namely, hydropower and biomass in the NSPA or geothermal and hydro power in Iceland.

Due to rising energy requirements and other technical developments many new forms of renewable energy production have great potential in the SPAs. All of the main STs have reasonable potential for wind power and for better utilisation of biomass. In NSPA wind energy can be seen as one of the most potentially profitable new energy sources, in Spanish STs wind power is already the main source of renewable energy (Simon et al., 2009) and in Scotland a great opportunity for offshore wind farms exists. Indeed, the world's first deep-water offshore wind project is currently operating close to the Moray Firth, some 15 miles off Caithness, in 45 metres of water (Scottish Enterprise, 2010). In addition, solar energy can be seen as having great potential in the Spanish STs and in Scotland various marine energy sources, such as wave, tidal and underwater current-based power, can be highlighted (GEOSPECS 2012).

In addition to electricity and heating there is also potential in developing biofuel production in the regions. In the NSPA the bio-energy production potential comes from the forests and other sources (ÅF-Infrastructure and Infraplan, 2010) whereas in Spain it is mostly related to agricultural activities.

As such, it is clear that the potential for larger scale renewable energy production exists in the SPAs though such potentials have not yet been adequately exploited. One of the main reasons for this is often identified as the lack of capacity in the national grid, in combination with high construction and maintenance costs due to topography and prevailing weather conditions. This is mainly due to the distances to major industrial centres and cities where the demand is greatest. A risk exists that the development of the grid will not proceed as quickly as the development of energy sources (Forum for Renewable Energy Development in Scotland 2009; GEOSPECS 2012; ÅF-Infrastructure and Infraplan 2010). In addition, the lack of capital and environmental aspects also has an impact here.

From a renewable energy potential point of view, the establishment of electricity-intensive industry in the SPAs is an interesting option as its location near the energy sources both reduces the need for new investment in transmission lines for long transfers and transmission losses between electricity

production and end consumer providing thus a more environmentally friendly option (ÅF-Infrastructure and Infraplan 2010). But due to other costs mostly related to transport and long distances few initiatives of this type have actually taken place, though the Karahnjúkar hydropower station in Eastern Iceland which provides energy for the Alcoa aluminium plant (Megatrends 2011: 159) does provide one such example.

Cross-sectoral use of other natural resources

Other natural assets ought also to play an important role in future local and regional development in the SPAs. The limited size of the regional economy requires that innovative approaches to developing new added-value to existing activities are pursued. In that respect, the development of cross-sectoral activities, such as the better exploitation of primary production and/or unspoilt nature for tourism purposes, has good prospects. For example in Scottish Highlands the famous rugged landscape and whisky are important factors in attracting tourists whereas in the NSPA the vast protected land areas with their Arctic elements and Sámi culture undoubtedly add to the regional attractiveness of these areas and thus increase the total number of tourists. In Spain the potential associated with developing ecological agricultural products seems likely to be quite high. Even though the importance of tourism to SPAs is unlikely to rival that of the larger traditional tourist resorts with better accessibility and more attractive climatic conditions, it is nevertheless expected that the relative levels of tourism experienced by many SPAs will increase substantially in the coming years (GEOSPECS 2012).

At the same time, this combination of agriculture, natural assets and tourism contributes to higher-than-average levels of seasonal employment – coupled with the obvious seasonal cycles of agricultural activity as year-round employment is often a key issue in maintaining population and economies in these sparse settings (GEOSPECS 2012; Scottish Government 2008).

Improving the connectivity of SPAs

Developing a strategic transport infrastructure

In what remains one of the most important contributions to the debate on territorial development in various sectors in sparsely populated areas, Gløersen et al. (2009: 72) raised the following question: “What infrastructure strategies do the NSPA need?”

This question may seem trivial but it aims to raise awareness among researchers and policymakers that there needs to be greater reflection on the link between infrastructure investments and territorial development. Indeed, historically, there was an understanding that what was needed to foster territorial development in peripheral regions was more infrastructures: more roads, more railways, and more airports. While the overall envelope available for infrastructure investments at the European level still corresponds to a large share of the Community's budget, the benefits of such investments need now to be pondered and proved before they are accepted. Consequently, local and regional policymakers need to demonstrate the strategic pertinence, added-value and long-term sustainability of these investments.

The development of transport infrastructure remains an important part of regional development strategies as they are believed to alleviate the relative geographical isolation and potential economic marginalisation of peripheral regions. Yet, Gløersen et al (2009) notes that infrastructure development may have adverse effects in the periphery as it may reinforce the peripheral position of such places in the overall regional system. Consequently, it is important that infrastructure developments are adapted to the socio-economic reality of these regions in order to maximise the leverage effect (figure 27).

It should be clear by now that infrastructure development alone is not sufficient to regenerate the economic potential of peripheral regions. The need for specific infrastructure improvements vary depending on the economic profile of the local economies. Indeed, in a study investigating the impact of investments in high-speed trains and motorways on local development in a sparsely populated region of southern Spain, each type of infrastructure tends to bring different advantages in terms of what economic activities they best support: “HSR effects and contributions tend to focus on tertiary developments and high-tech activities, whereas motorways facilitate mainly the development of primary and industrial activities” (Garmendia et al. 2011). Localities with a strong manufacturing presence are less sensitive to the creation of faster access to the neighbouring

metropolitan area (i.e. Madrid), as fast access is predominantly required for those sectors that benefit from frequent face-to-face interactions, such as tertiary sector enterprises. As such, it would be expected that the new HSR infrastructure will strongly support the development of Cuenca, and its adjacent municipalities, as a growth centres, while having less of an impact on the rest of the case study area (GEOSPECS 2012). Overall, rail infrastructure tends to polarise the accessibility structure in Spain, thus mainly benefiting a limited number of cores and corridors. However, compared to road transportation, its speed enables connections to be made more efficiently to places that are located at a distance from each other, in the Spanish context.

In our understanding, transport development strategies for peripheral and sparsely populated regions need to overcome a number of persistent flaws. First of all, most infrastructure developments are thought of, by default, as improving the connectivity of these territories outwards, i.e. to other regions and cities located beyond the sparse territories. In the European policymaking context, this usually means to be connected to a Trans-European Network project. Yet, Gløersen et al. (2009:72) notes that “the relative absence of transnational TEN in north-Nordic regions does not need to be a problem, insofar as the primary accessibility challenges are found within region and between neighbouring regions”. Consequently, developing intra-SPA connectivity may be a sounder alternative to upgrading the transport system than direct core-periphery linkages. In Sweden, some rail infrastructure investments are implementing this idea of increasing inwards connectivity: the Botniabanan, connecting the main coastal cities between Umeå and Härnösand, or the Norrbottenbanan, connecting Piteå to Luleå, are expected to create a leverage effect in terms of improving the flow of goods and persons within these Swedish sparse territories.

The second important point here is the lack of a holistic perspective on transport development strategies, both from European and regional policymakers. Indeed, the importance given to TEN-T projects for European integration gives the connectivity of peripheral regions to these networks a highly “symbolic value” (Gløersen et al. 2009: 72). Yet, in our opinion, the TEN-T programme tends to replicate the development model of High Speed Train as it was originally thought of in France in the 1980s, i.e. as a “plane on rails” (Plassard 1991). Yet, it is by now surely obvious that such a model is only viable as a means to connect the main agglomerations in the most densely populated parts of Europe. In order to

connect peripheral areas to larger agglomerations it is clear that point-to-point transport infrastructures, e.g. sea and air transportation, are the most highly adapted to the reality 'on the ground' and better able to fulfil the intended outcome. In that respect, the accessibility to seaports and airports for the transportation of, respectively, goods and individuals is an important comparative advantage for sparsely populated areas. The latter emphasises the importance of the regional road and rail networks as important assets in fostering the long-distance connectivity of the most remote places in the sparse territories.

Figure 28 displays the accessibility to airports from localities in the main sparse territories of Europe. In the Nordic countries, sparsely populated areas are scattered with small regional airports. In Finland and Sweden, these airports are essentially connected to the main national airport hub (i.e. Helsinki or Stockholm). Connectivity to this hub enables passengers to continue their journey to other distant places in Europe or to other continents. In Norway, these regional airports are additionally inter-connected which allows for more intense intra-SPA air connections. In Central Spain, such regional airports are not available and the closest airports are the national (Zaragoza, Valencia) or international (Madrid, Barcelona) hubs that are about 2-3 hours away by car travel. While these airports offer a larger array of potential direct destinations, it requires more effort for potential passengers to reach them. In Scotland, while there are a handful of local airports located on remote islands and the northern tip, other regional (Inverness, Aberdeen) or national (Glasgow) airports are located outside the limits of the sparse territory.

In conclusion, it seems essential that transport strategies for Europe's sparsely populated areas are further elaborated and developed in the context of a multimodal, holistic perspective on accessibility, i.e. finding a balance between different transportation means, with a combination of inwards and outwards connectivity improvements, enabling them to bolster the varying needs of the different local economies composing the sparsely populated areas.

The role of ICT in promoting the inclusion of SPAs in the global economy

The issue of the enhanced connectivity of SPAs needs to be dealt with both in terms 'hard', transport network infrastructure (Solvang & Hakam 2010), as described in the section above, but also in terms of 'softer' innovation and knowledge networks (Virkkala 2007). For the latter, such strategies are strongly related to the development of Information and Communication Technologies as a gateway to the global economy for economic actors located in

Sparsely Populated Areas. In short, the development of ICT can be seen as a necessary condition of avoiding the economic marginalisation of SPAs.

Clearly, the mainstreaming of Information and Communication Technologies has a mode of social and economic interactions combined with the improvement of the spatial coverage of such digital networks that creates development opportunities for local economic actors, as digital networks allow people and businesses to develop and sustain interactions at a distance.

Traditionally, economic relations in remote rural regions can be characterised by a "predominant reliance upon the local market due to the rural firms' remoteness from extended markets and limited numbers and density of business networks" (Galloway et al. 2011: 255). Within such a framework, the possibilities for economic development in the SPAs are limited due to the low level of local demand in goods and services (Virkkala 2007). For sparsely populated areas, the development of digital networks have provided new opportunities for consolidating social relations and collaboration locally, and engaging local firms in international trade relations.

In a study on internet usage by small firms in rural Scotland, Galloway et al. (2011) provide more concrete inputs to this discussion. Indeed, they acknowledge that if "the internet is further theorized as having the capacity to reduce the disadvantages inherent to rural location, such as isolation from markets, relatively less networking and support provision", they make clear that empirical evidence show that ICT often promote greater integration of internal local markets before the integration with larger external markets (Galloway et al. 2011). Consequently, whereas the expected impact of internet use, as a symbol of globalisation, on the networking of rural firms would be increased extra-local integration, the observed processes tend to favour the integration of previously fragmented rural business communities to increase the level of embeddedness, through tighter regional networking relations across sparse territories.

Another example relating to the experience of the use of internet by a small knife-retailer company in Teruel is illustrative of the potential of ICT in fostering the growth of peripheral small firms. The firm portrayed started its retailing activities in 1999 and is now selling its products to more than 80 countries, with a global reputation due to it being the principal supplier of iconic films such as 'The lord of the rings' and 'Braveheart' (Hernandez et al. 2009). For the authors, the example-firm they portray emphasises the potential for successful rural online entrepreneurship to exploit "the internet to gain access to niche markets at a world-wide level" (Hernandez et al. 2009: 369), and develop their

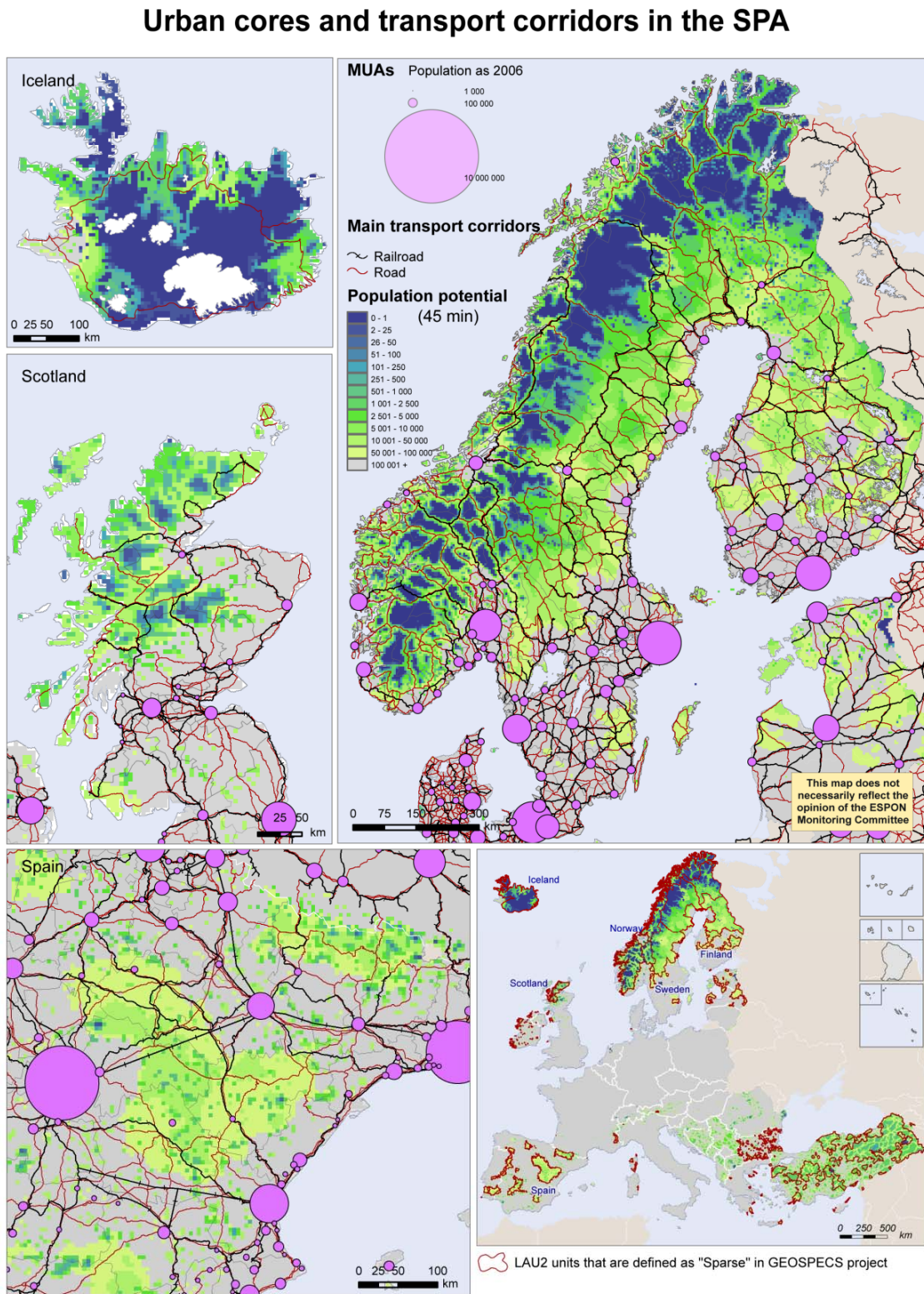
activities in spite of their remote geographical location. The authors go even further in acknowledging that “The Internet has permitted the creation of many businesses which would not have been viable with a bricks-and-mortar structure. E-business lacks face-to-face contact, so only retailers who design websites based on meeting customer needs and who manage to create value will survive and prosper” (Hernandez et al. 2009: 369). As a matter of consequence, being in the ‘online market’ was a central feature of their business model that made it possible for the company to develop and prosper from their peripheral location.

Yet, even digital networks necessitate ‘hard’ infrastructure. In that respect, the challenge for sparsely populated areas is the cost-efficiency of building the ICT-infrastructure as the network needs to cover an extended area endowed with (comparatively to urban areas) few and scattered potential customers. In that respect, the development of ICT has become a central issue in regional development policies in several European countries. For instance, from the beginning of their emergence in the 1990s, the development of ICT has been a cornerstone of national regional development policies in the Nordic countries and is now seen as a way of fostering the integration of all regions, including the most peripheral and sparsely populated ones, in the global economy. For instance, for the attribution of licenses to operators for the exploitation of mobile networks, almost the entire population (98%-99%) is required to be covered. In practice, this means that

the operators need to develop ICT networks even in the parts of the country where it would be less profitable otherwise (extensive physical networks needed and few customers). As a result, and as shown in the Fifth Cohesion report, despite the extensive coverage of SPA in Sweden and Finland, they both belong to the group of countries that have the best overall coverage (despite sparsity) and the least differences between densely populated areas and SPA (figure 29).

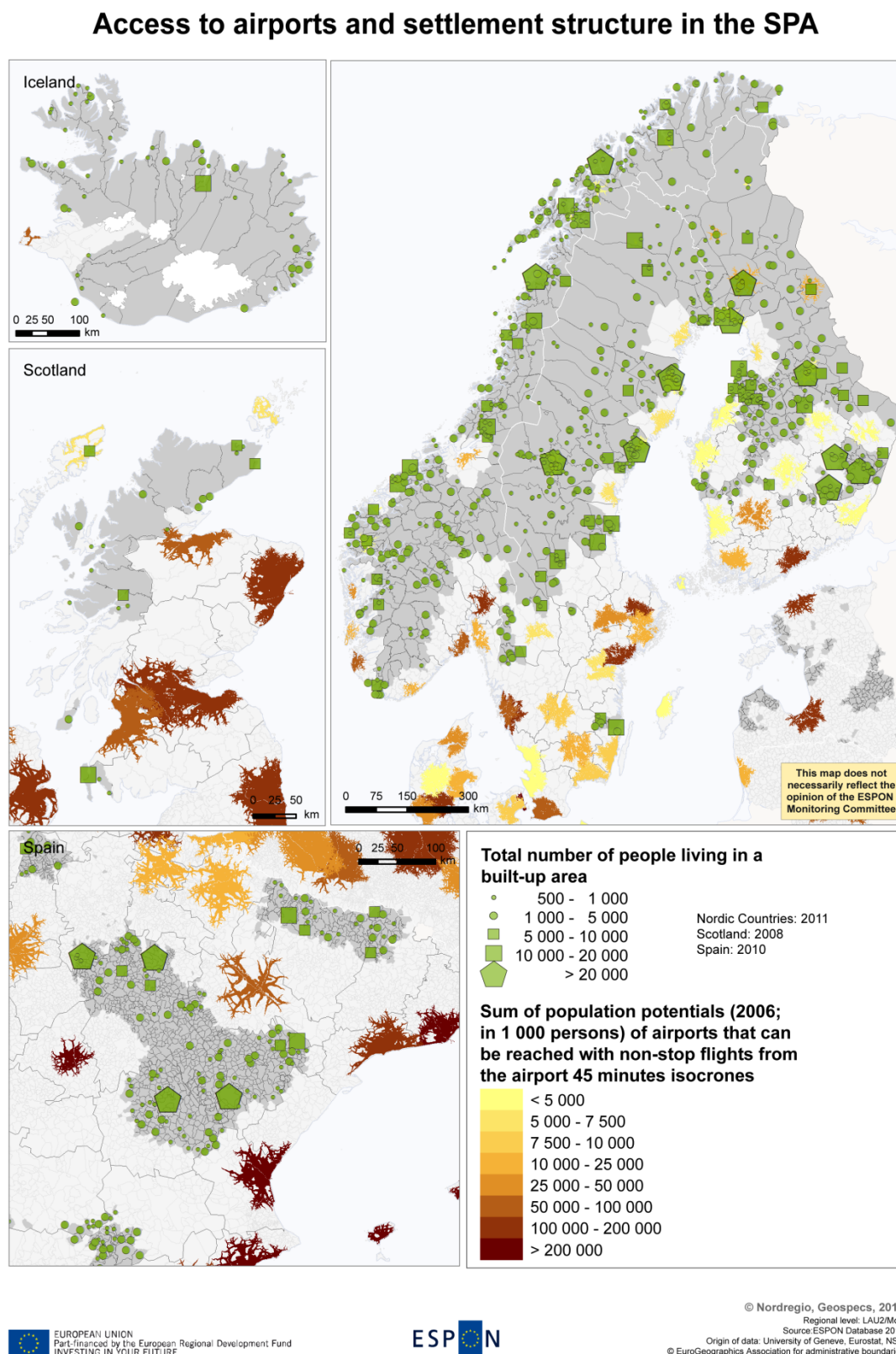
In this respect, the addition of European Structural Funds has enabled national and regional stakeholders to develop ambitious strategies for the development of ICT in remote places. For instance the project “Broadband for the Far North” (Övre Norrland, Objective 1 2000-06) has enabled the outermost regions of Northern Sweden to access broadband. It has had practical implications for education, health and industrial research. It has enabled over 300 villages in Norrbotten to have broadband and once the work had been completed at the end of 2006, 93% of the regional population gained access to broadband (DG Regio homepage). Likewise in the Finnish region of Itä-Suomi, the ERDF project “Wireless Access for Rural Areas” (Objective 1 2000-06) aimed at improving the access of remote rural areas to broadband services. Today, nearly 98% of households and businesses in the 14 municipalities concerned are eligible for high-speed Internet access, compared to only 74% when the project was launched in 2004 (DG Regio homepage).

Figure 27: Territorial context of the main sparse territories



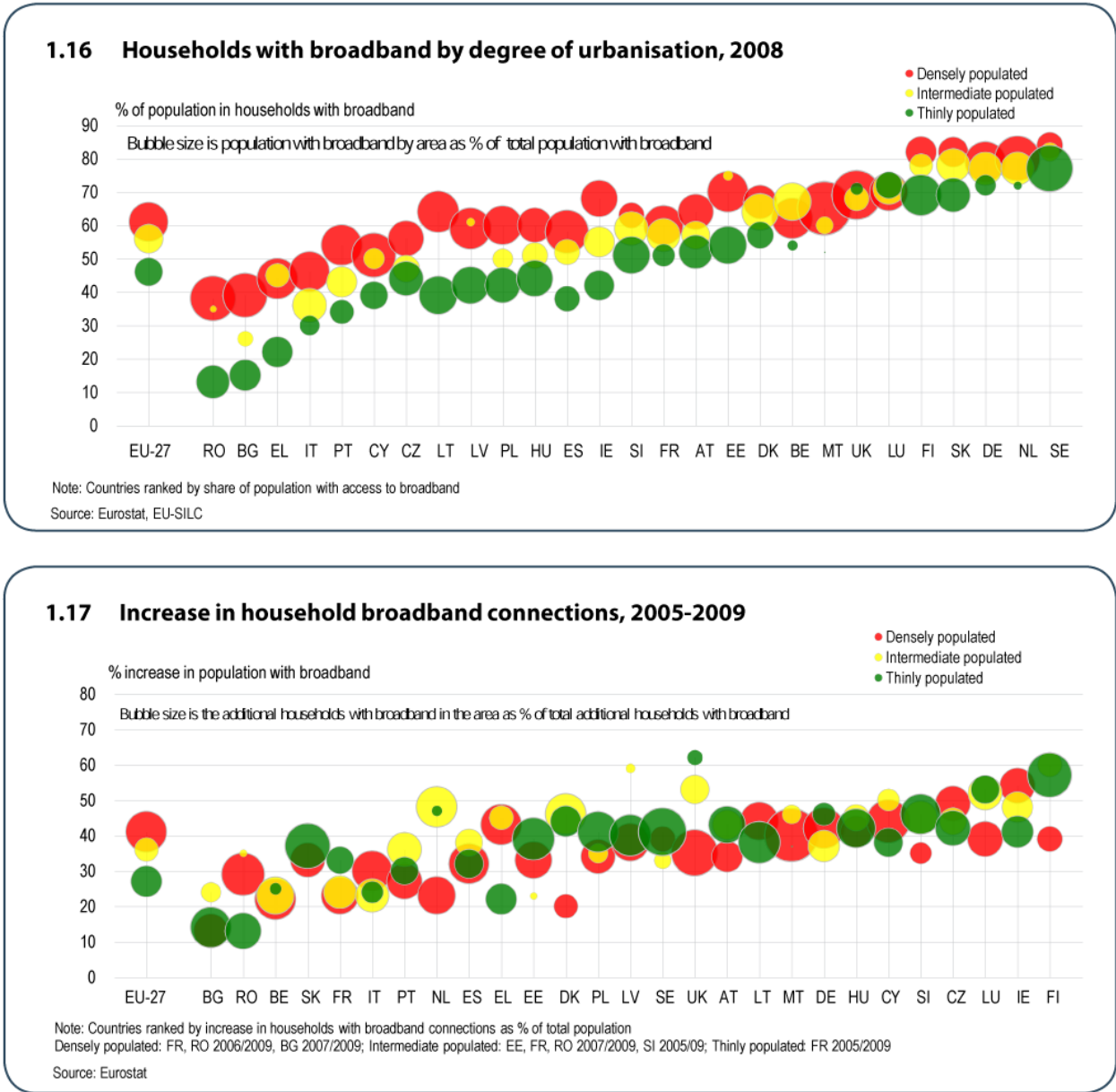
Transport corridors are important for creating a fair level of access to surrounding urban cores as well as for promoting more internal exchanges within the SPA.

Figure 28: Population change in the various sized settlements and areas within airport PUSH in the main sparse territories



Small settlements in the Nordic SPA often have close access to local airports with few connections. In Scotland and Central Spain, distances to airports are longer but the airports are often larger in terms of potential direct destinations. Delineations of Potential Urban Strategic Horizons (PUSH) refers to areas within 45 minutes time-distance from airports (GeoSpecs 2012)

Figure 29: *Households with broadband (above) and increase in connections (below)*



Source: European Commission (2010b)

Sparsely Populated Areas – What strategies for the future?

The GEOSPECS project provided new analytical findings and policy insights with the overarching aim of informing the policy debate on how the European objectives of the EU 2020 Strategy can be territorialised. A starting point for this is the acknowledgement that, while areas with geographic specificities are explicitly referred to in the Treaty of Lisbon, there is little understanding of how this notion may be useful not only for the elaboration and implementation of European Structural Funds, the prime instruments of EU Cohesion Policy, but also as a 'red thread' for designing and operationalizing regional and local development strategies that make the most of Europe's territorial potentials, in order for Europe to achieve its ambitious goals at the horizon of the year 2020.

In their insightful analysis of development policies in sparsely populated regions, Nuur and Laestadius (2010:294) claim that:

In the last few decades, the debate on regional development policies towards peripheral regions has focused on the two interrelated issues of, on the one hand, strategies to induce the emergence of small- and medium-sized firms (SMEs) in place of

the manufacturing industries that previously dominated the economic landscape of today's peripheral regions; and, on the other, the ability of information and communications technology (ICT) to allow peripheral regions to overcome the disadvantages of their position in terms of knowledge formation, which is accepted to be the genesis of regional development.

They further pursue their analysis by advocating that “we are witnessing the onset of a new regional development policy with a focus on growth and within which knowledge formation to promote the emergence of new industry appears to be centre stage” (Nuur and Laestadius, 2010, 294). Hence, it becomes clear that future development strategies for sparsely populated areas need to focus on mechanisms that can promote increased economic growth and welfare. Yet, the difficulty for policymakers is that traditional ‘recipes’ for growth promoted in Europe can hardly be applied primarily because of the difficulties associated with drawing on economies of agglomeration as a growth mechanism.

Exploring alternative ways to growth

While the GEOSPECS project stresses the fact that it is not possible to address these issues in a general, generalised or indeed generalisable manner, this Working Paper aims to provide a contribution to the debate on how to improve the conditions for regional and local development in Europe's sparsely populated areas. In relation to the analysis undertaken here, it has been shown that, if sparsely populated areas can be identified in different parts of Europe, all belonging to various territorial contexts, which means various ranges of challenges to overcome and potentials to draw upon, that this simple fact implies that it is highly unlikely, and highly undesirable, to

elaborate 'generic' regional development strategies that could be applied in an 'indiscriminate' manner to all of Europe's sparsely populated areas.

On the contrary, a truly 'place-based' approach to regional and local economic 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 level of performance seen in 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 (GEOSPECS Final Report 2012: 52).

The latter argument emphasises the fact that economic development at the continental level needs to be perceived as an integrated system of inter-regional interdependencies that needs to go beyond the

simplistic core-periphery, or by the same token urban-rural, approach to territorial development. Hence, the debate on economic development in sparsely populated areas is not about how to make these regional economies more competitive than urban regions, which would be an unrealistic, but rather about how to make sparse territories more competitive than they currently are, and how they can better exploit the territorial capital at their disposal.

The Nexus model

Local development is invariably conditioned by the interactions between a set of challenges and opportunities. While these challenges and opportunities are different for each region, sparsely populated areas tend to be exposed, to a certain extent, to similar types of challenges and opportunities. More importantly, in the case of sparsely populated areas, there has been a tendency for regional policy to focus on the challenges and overlook the potentials of existing and future opportunities for local development.

In order to provide a structured input to the policy debate, a 'nexus model' was elaborated for each geographic specificity in the GEOSPECS project. The 'nexus model' aims to (GEOSPECS Final Report 2012):

- 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
- 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

- 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.

Hence, the added-value of the nexus model is not to provide the blueprint for local and regional development strategies, but to “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” (GEOSPECS Final Report 2012: 50).

The added-value of the 'nexus model' is to bring attention to the fact that developing a 'place-based' approach to regional and local development necessitates a careful and relevant identification of the obstacles, levers and potentials to growth which is specific to each territory, and differs in particular from the 'mainstream' development models found in urban regions.

A chicken-and-egg problem

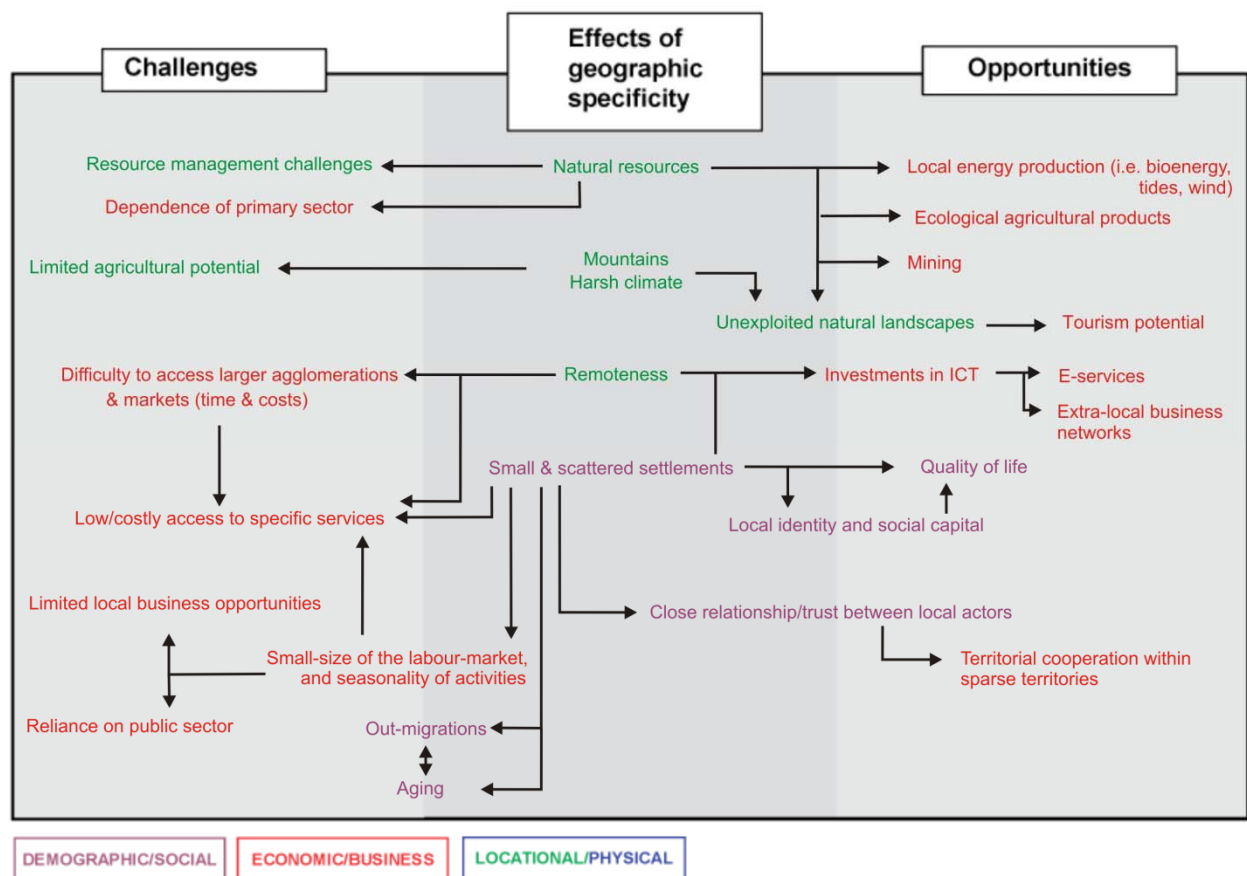
The challenges resulting from peripherality and sparsity are by now well-known. Remoteness, combined with the existence of small and scattered settlements, a reliance on natural resource exploitation and harsh climate, together they create a specific territorial context for socio-economic development. In view of the mainstream and contemporary approach to territorial development (See e.g. World Bank 2009), based on agglomeration economies and spatial clustering, this territorial context does not

represent a fertile ground for economic growth and local development. As such, the focus of European regional development policies have been placed on overcoming these structural challenges, mainly through 'hard' infrastructure investments (ADE 2012), especially transport, in order to align the development model of these territories to the mainstream one. Within that line of argument, geographic specificity is viewed “as an obstacle to be overcome, rather than an opportunity to be harnessed” (ADE 2012).

A new approach to territorial development in sparsely populated areas necessitates, on the contrary a, “move away from viewing geographic specificities as 'handicaps' and towards recognising their assets, balancing 'compensation' and 'promotion' efforts, and taking 'non-market values' or positive externalities into consideration in policy instruments” (GEOSPECS Final Report 2012: 71). The first step in achieving this is by acknowledging that, while sparsely populated areas require “permanent compensatory measures that address structural and permanent imbalances” (GEOSPECS Final Report 2012: 66) resulting from their locational disadvantage, they also require policy initiatives that are able to build upon identified

development opportunities and foster local economic development. Indeed, compensatory measures need to be permanent as it is unlikely that the structural challenges faced by sparsely populated areas can be overcome ‘once and for all’. Hence, regional development strategies for Europe’s SPA need to explore development models that can simultaneously alleviate the negative effects of locational disadvantages and mobilise the territorial potential and assets of these territories by playing on the 'soft factors' of development that require smaller financial investments while still, potentially, having important leverage effects on the local and regional economies.

Figure 30: The Nexus Model for Europe's Sparsely Populated Areas



Sparse Territories: a functional perspective on sparsity needed

Administrative regions, corresponding to NUTS II or NUTS III units, play an important role in the design, elaboration and operationalisation of Cohesion Policy.

At the European level, the identification of sparsely populated regions is based on population density criteria at NUTS II or NUTS III level. As we have

already seen in the early sections of this Working Paper, while such administrative regions may prove to be useful in identifying the sparse regions discussed here, from a continental perspective, it is clear that these units may not be pertinent for developing regional development strategies that are able to efficiently mobilize local resources.

One reason for this is that such ‘sparsely populated regions’ are not usually covered only by sparsely populated areas, but also contain mid-sized urban centres which are usually growing. The strong focus of EU Cohesion Policy on promoting regional competitiveness may thus trigger a use of the funding allocated to the region as a compensatory measure to target development initiatives in the regional centres, for which the regional ‘return on investment’ may be higher and faster, at the expense of initiatives and commitments necessary for the long-term development of the remote and rural parts of the region.

A second reason is that sparsity does not stop at politically-defined borders (GEOSPECS final Report 2012). In concrete terms, this means that sparsely populated areas often extend over several administrative units, such as regions, counties or provinces. Within each of these administrative units, the sparsely populated areas are usually geographically peripheral and institutionally marginalised. Hence, we argue that the design and of policy responses at NUTS 2 or NUTS 3 level does not allow for the elaboration of integrated territorial development strategies for sparsely populated areas. On the contrary, development strategies ought to be conceived and operationalised, designed, as much as possible, on the basis of functional territories.

Functional economic spaces are not usually 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 various territorial ensembles that may overlap and intertwine: an individual local economy can be embedded in, or integrated into, a number of these territorial ensembles (GEOSPECS Final Report 2012). 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 with administrative boundaries (GEOSPECS Final Report 2012).

Our 39 Sparse Territories, defined as ‘clusterings’ of sparsely populated localities, represent the first attempt to identify coherent functional territories that could serve as a pertinent ‘regional’ level for elaborating development strategies. Sparse Territories could thus serve as a place for enhanced territorial cooperation, understood as cooperation between institutional and economic actors from different territorial entities with the aim of identifying synergies resulting from interdependency (Faludi and Peyrony 2011). For local and regional stakeholders, developing strategies in the framework of such functional territories would make it possible to better mobilise existing local assets and enhance local competitiveness by finding synergies among localities and pooling their financial and human resources in order to gain leverage effects for local development.

How to efficiently connect the SPA?

Improving the connectivity of sparsely populated areas has traditionally be performed through compensatory measures used for the development of ‘hard’ infrastructure that connects sparsely populated areas to the nearest big market. The rationale behind this is that the development of the periphery is conditional on its connectivity to the regional, national and continental cores. Such policies have been implemented at European (TEN-T Networks) and national level (e.g. in France) with mixed results. In that respect, we argue that, while improvements in hard infrastructure such as transport links is needed in order to alleviate the locational disadvantage induced by sparsity and peripherality, such projects are usually

more ‘symbolic’ than truly efficient in relation to local development.

In order to serve the purpose of local development, the design of such large-scale transport projects need to take into consideration the specific connectivity needs of the local economic actors. Indeed, as the experience of the high-speed transport network development in South Central Spain shows (Garmendia et al. 2011), local economies specialised in industrial production or services necessitate improved connectivity through different modes of transportation: while efficient road transportation seems more adapted to the former, high-speed trains may be more suitable for the latter. Economic restructuring in peripheral regions will not result

‘mechanically’ from increased connectivity. It needs on the contrary to be accompanied by incentives aiming at the creation of a new entrepreneurial culture in these areas that would enable local economic actors to take better advantage of the new opportunities.

Promoting a new entrepreneurial cultural in the periphery necessitates finding ways to foster stronger connectivity within sparse territories. Recent transport initiatives in the Nordic countries have aimed at improving the level of connectivity between communities located in and around sparse territories. Yet, as is the case with the Botniabanan in Northern Sweden, connecting Umeå to Härnösand, these new stretches tend to bring the communities in the most urbanised parts of these territories, such as the coastal areas of Northern Sweden, closer together. Hence, such initiatives may run the risk of isolating even more the remote inland communities and trigger an enhanced polarisation process in the region. Thus it is a matter of some urgency that policymakers identify new ways of connecting more closely together the most remote communities. Here, we propose three paths for reflexion:

- *Improved local corridors*: an inadequate local transportation system can be seen as a factor leading to functional marginalisation in the SPA. While there is potential for the Poorly Connected Areas to gain critical mass through the creation of a better local transportation network, it is unlikely that sparsely populated areas (in the Nordic countries, Scotland or Central Spain) will achieve significant gains by upgrading the local transportation system. Yet, based on the identification of shared local specialisation and competitive advantage, opportunities exist to develop specific functional corridors that may increase opportunities for firms in the same sector but located in surrounding localities to develop collaboration and exchanges, gain critical mass

and capitalise on the shared social capital among remote localities.

- *Enhancing virtual connectivity*: the efforts made in the Nordic countries to build ICT infrastructure and foster e-service and e-business has enabled them to avoid the complete marginalisation of local business communities from the global economy. For economic actors located in the periphery, the internet and the ‘online market’ creates new opportunities both to develop stronger trans-local economic interactions and to reach out to more distant trade partners. As insightfully illustrated by Hending (2012), it is important to acknowledge that a paradigm shift has occurred when it comes to connectivity in the sense that “local society has no GPS-coordinates but an IP-address”.
- *Promoting temporary meeting places for economic actors*: increased connectivity between economic actors does not need to be permanently set up in time and space. The economic geography literature increasingly stresses the fact “while geographical proximity is essential to knowledge transfer”, “short- or medium-term visits are often sufficient for the partners to exchange – during face-to-face meetings – the information needed for cooperation” (Torre, 2008, p870). In that sense, the organisation of fairs, conventions or seminars that bring together regional and extra-regional actors may act as an efficient ‘middle way’ in order to build upon the advantages of face-to-face interactions, but based on the temporary mobility of actors rather than on permanent co-location of actors (Torre 2008; Ramírez-Pasillas 2007). The role of regional policymakers and stakeholders should be to facilitate the work of institutional actors, such as trade organisations, Chambers of Commerce, business support organisations or Local Development Agencies, to create such meeting places in order to reach out to and engage with the most remotely located firms.

What strategies can capitalise on the SPA demographic paradox?

As our analysis of demographic trends in Europe’s sparsely populated areas shows, con-current processes of demographic growth and decline exist which affect these areas: on the one hand, the most remote and sparse parts of the SPA have consistently lost population in recent years while on the other, most of the larger local and regional urban centres located either in the SPA or in their direct vicinity have

increased in size. The thinning-out of remote areas combined with the growth of urban centres creates a strong pattern of demographic polarisation that renders sparsity an even more acute issue in these areas.

This process is not without impact on the elaboration of local development strategies in the SPA. Indeed, growing urban centres in the vicinity of

SPA imply an increased potential for economic actors to draw on economies of agglomerations in those areas. In terms of policymaking, it means that the use of cluster policies in those centres may arise creating new opportunities for local development. The 'relevance of cluster policies' (Lundmark and Pettersson 2012) for SPA can only be concretised through carefully crafted policy initiatives that take advantage of the particular economic context of those areas and avoid the fallacies of 'generic' cluster policies 'copied-and-pasted' from practices in urbanised regions.

Nevertheless, it is obvious that the most problematic issue for policymakers is to understand how per se to promote local development in the sparsely populated areas. These areas are becoming sparser losing ever more in the way of critical mass in terms of their local economy and labour-market. Clearly, the polarisation trends witnessed in the SPA show that traditional regional development policies based on growth poles thinking which would "generate positive spread-effects in surrounding areas" (Habteselassie, Pettersson and Wiberg 2006: 35) are not working. Hence, it is necessary to design local development strategies that provide incentives enabling better advantage to be taken of the opportunities found in those areas. Such incentives

would, for instance, aim at fostering economic collaboration and exchanges between the usually tightly-knit local communities bringing them 'closer' to each other. Indeed, Local embeddedness, i.e. the strong social relations between economic actors, has long been understood in the economic geography literature (Atterton 2007; Fløysand and Sjøholt 2007) as a distinctive feature of small communities in sparsely populated areas, and as a comparative advantage for the development of these communities.

In terms of policymaking, it would appear sensible to foster a process of cross-fertilisation in respect of these locally embedded relations among localities that belong to the same functional territory, and thus promote the emergence of joint social capital and embedded socio-economic relations beyond the limits of isolated localities. Indeed, as argued by Wiberg (2004: 102), "the smaller and the industrially weaker a local community is, the more important is the ability to work in networks within a wider range. The networking outside the local community must be more intense since the preconditions do not offer the advantages of geographic proximity". By targeting such initiatives, local firms would be able 'act locally', i.e. based on trust and kinship, within a wider functional territory.

Expand the relational capital of the SPA

Although more carefully crafted 'urban' and 'rural' strategies are needed in order to take better advantage of the diversity of opportunities found in the sparse populated areas, it is important they are not elaborated as parallel or decoupled processes. Indeed, in sparsely populated areas, the urban and rural economies show strong interdependencies. An example of these interdependencies is given by Lundmark (2006) for the north of Sweden:

In terms of the economic landscape, activities that were formerly connected primarily to rural areas have become economically concentrated in the urbanised areas of a sparsely populated region (Johannisson et al. 1989). Employment in forestry and other forest-related activities can take place in rural areas, but the refining of timber often takes place in the urban centres along the coast (Lundmark 2006: 6).

Hence, while specific 'rural' and 'urban' strategies are instrumental in identifying the adequate

leverages that take advantage of the diversity of relational assets available in the SPA, i.e. respectively local embeddedness or localisation economies, integrated spatial development strategies at the regional level need to create channels between actors located in urban and remote rural places. In order to do so, the GEOSPECS project suggested several lines of approach that could be explored:

- *Spatial extension of firms' business networks*: Efforts to increase the 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 organisations, trade organisations etc.) 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 to mutualise the transportation and transaction

costs currently borne by a small proportion of the firms, with a higher cost per firm. One example here is that of the Nordic Business Link, which aims to promote the stronger integration of north Finnish, Norwegian and Swedish small firms working in the 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' in relation to 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. This combination of traditional and new nature-based sectors in combination with other sectors can boost local development as with a more diversified economic base such localities are not so dependent on seasonality or on global economic trends. Moreover, the focus on the need to create more diversified jobs could also help to attract a more qualified labour force. Or as cited in one NSDs article (2012)(local newspaper in northern Sweden) 'the (rural, mining) municipalities that manage to attract females, are the winners of the future'.

Engage firms in extra-regional networks

If some critical mass can be gained endogenously in sparse territories through a denser web of collaboration and trade ties among regional economic actors, it is unlikely that enhanced circularity alone would be enough in order to sustain growth. Indeed, as a characteristic feature of the local economies in sparse territories is the limited local demand (Virkkala, 2007) in goods and services, it appears evident that growth becomes strongly related to the capacity of firms to reach out to embrace extra-regional, and especially, international markets.

While it is unlikely that small firms located in the periphery will be able to sustain market presence in a wide range of distant markets, globalisation has nonetheless opened up the possibility of these firms

diversifying the range of markets they can reach out to, and thus reducing the risk of economic vulnerability. Yet, such strategies are not without risks. Indeed, as claimed by Nuur and Laestadius (2010, 302), "globalization has exacerbated the problems of these regions as competitive emerging economies close some of the doors hitherto open to the peripheries of the old industrial countries". Hence, an important ingredient of development strategies in the periphery is to find avenues leading to improved international visibility for regional firms. Regional development strategies and policy practices in the Nordic countries already see internationalisation as a necessity for peripheral regions.

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