RTPI
mediation of space · making of place

Evidence from ESPON to support smart, sustainable and inclusive growth

Christabel Myers
JOHT Resources Ltd

RTPI Research Report no.2
March 2014

EVIDENCE FROM ESPON TO SUPPORT SMART, SUSTAINABLE AND INCLUSIVE GROWTH

Introduction

The European Union funded ESPON[1] research programme aims to support policy makers for different 'territories' – whether national, regional,[2] city, rural or island-based – achieve the EU 2020 goals for 'smart, sustainable and inclusive growth'. This report outlines ESPON results which may support European Structural and Investment Funds (ESIF) activities in the UK. More broadly, this information should also be useful for any regional or local decision-makers who wish to promote some of the objectives included in smart, sustainable and inclusive growth – from strengthening research and development and innovation, to promoting social inclusion and combating poverty.

Smart, sustainable and inclusive growth

Europe 2020 is a strategy to help Europe emerge stronger from the economic crisis and prepare the EU economy for the next decade. The European Commission has identified three key drivers for growth, which will be supported through actions at both EU and national levels:

- **Smart growth –** fostering knowledge, innovation, education and digital society;
- **Sustainable growth** – making EU production greener and more resource efficient while boosting competitiveness; and
- **Inclusive growth** – enhancing labour market participation, skills acquisition, and the fight against poverty.

ESPON resources

ESPON has a huge bank of information that is available online including datasets, indicators, maps and research results of relevance to ESIF activities, including:

- ESPON 2013 **Database** containing data sets from all ESPON projects, and some Eurostat and European Environment Agency data;
- ESPON **Mapfinder** which provides access to relevant ESPON maps resulting from ESPON projects and reports, according to the interests of the user;
- ESPON **HyperAtlas** which allows for comparison and analysis of a region's relative position at European, national and local scale for a wide range of criteria, with an online map finder tool;
- ESPON **Typologies** which provides nine regional typologies for additional analysis of data;
- TerrEvi **Evidence Packs** for ESIF programmes. These provide relevant ESPON data, maps and indicators on smart, sustainable and inclusive growth, for ten areas, two of which include the UK or part – North West Europe and the North Sea (though the latter is not yet published). Indicators provided are shown against the ESIF Thematic Objectives. The aim is to enable Structural Funds programmes to compare themselves with other European areas or places.

[1] ESPON stands for the European Observation Network for Territorial Development and Cohesion.

[2] In an ESPON and European context the term 'region' generally refers to an area below the national level. In the UK context this could mean the whole country of Scotland, Wales, Northern Ireland and the nine former government office areas of England. See the Annex for a note on statistical units referred to in this report.

Results of projects carried out by cross country teams (called Applied Research and practitioner driven Targeted Analysis projects). The reports are online too. Most have executive summaries and final reports. Some results of interest to UK stakeholders are held in accompanying scientific reports (setting out the results of surveys or methodology) and Annexes. Many contain newly generated indicators and maps, generally based on data gathered by country, region or groups of districts. Many of the projects collect more local level evidence from case studies and a few supplement official higher level data by generating their own data sets.

What this report contains

The results of over 40 projects of particular relevance to ESIF activities are outlined in the following sections of this report, as follows:

- 10 Thematic Objectives under which ESIF spending is allowed, chosen by the four countries of the UK as spending priorities, and related European Rural Development, Agriculture and Food activities. The initials in brackets after each Thematic Objective title indicate whether this is a priority theme for England (E), Northern Ireland (NI), Scotland (S) or Wales (W).

The 10 Thematic Objectives are:

1: Strengthening research and development and innovation;
2: Enhancing access to, and use and quality of information and communication technologies;
3: Enhancing the competitiveness of small and medium enterprises;
4: Low carbon economies;
5: Climate change adaptation;
6: Environmental protection;
7: Sustainable transport;
8: Promoting employment and supporting labour mobility;
9: Promoting social inclusion and combating poverty;
10: Investing in education, skills and lifelong learning.

- Local Contexts: urban, rural, and cross border

- Tools to help with prioritizing/integrating strategies; governance arrangements; benchmarking; assessing the impact of proposed policies/action; and identifying complementary use of European Cooperation Programme funding.

For each of these sections project results are described by:

- Key messages;
- Comparative position: In terms of global, European and regional (below national level) comparisons where available; and
- Assisting local strategies: including for example methodology and finer level case studies results.

All of the projects referred to by acronym in these sections are listed in full at the end of the report.

Annex

The annex to this report comprises more information, including:

- Further diagrams and maps related to particular thematic objectives, local contexts and tools;
- A case study table showing UK case studies by project and location;
- A note on statistical units – NUTS and LAUs – referred to in the text and reference list.

Further information

Full results and reports can be found on the ESPON website, using the relevant project acronym. All ESPON results are free and can be accessed at www.espon.eu.

Briefings on particular projects, and news and briefings on the UK's participation in ESPON, are provided by the UK's ESPON Contact Point at www.rtpi.org.uk/espon

Contents

Thematic Objective 1: Strengthening Research and Development (R&D) and Innovation (priority across the UK)

Key messages

Regions should adjust their goals and actions according to their balance of R&D assets and knowledge. Several ESPON reports (KIT, AMCER, SIESTA) point to evidence which shows that "one size fits all" policies in this field are inappropriate. Both R&D and knowledge (or innovative capacity) are needed to turn R&D into productive use and growth. The capacity to do this varies amongst regions. At one end of the spectrum, some regions strongly link their innovative performance to their 'internal' science and formal knowledge bases. Others are more likely to rely on diverse sources of knowledge, possibly from existing technical and managerial capabilities in the region. At the other end, some regions obtain knowledge from 'external' economies through cooperation and networking. Regional policies should be 'embedded' in the local context and local assets; and connected to the external world so as to capture external knowledge (KIT).

Universities and other higher education institutes have a decisive part to play in research and innovation activities, enabling some medium and small sized cities to 'punch above their weight' in economic terms. Cost cutting in the higher education sector could therefore have undesirable consequences for innovation initiatives (SIESTA).

Regional policies should also reflect the role of businesses, including SMEs, in R&D. Areas with a high proportion of investment in R&D are also those with the highest proportion of business expenditure on R&D (SIESTA). SMEs too have a key part to play in linking research to innovation (AMCER).

Supporting infrastructure and connectivity are key for competitiveness. At city or metropolitan level, securing good infrastructure linking research/science and business facilities is important, as are social and environmental supporting infrastructures. Embedding local research and innovation activity into European research networks and building up research links across city clusters or urban groupings is essential for supporting agglomeration economies (highly populated areas of production in the form of large urban centres or corridors) and competing globally (SIESTA, TIGER).

Comparative position

World position: Europe appears to be lagging significantly in investment in R&D compared to other world innovation leaders such as Japan and the US (see the SIESTA table showing Business expenditure on R&D as a percentage of GDP).

Within Europe: Cross border/agglomeration economies are emerging, led by Smart Growth policies based on knowledge and innovation, and requiring action on education, R&D promotion, innovation itself and digital society. One such corridor is that between Austria and London. Within the UK London and the South East, the Cambridge area and the Edinburgh and Dundee areas are also picked out as high performing R&D and innovation areas.

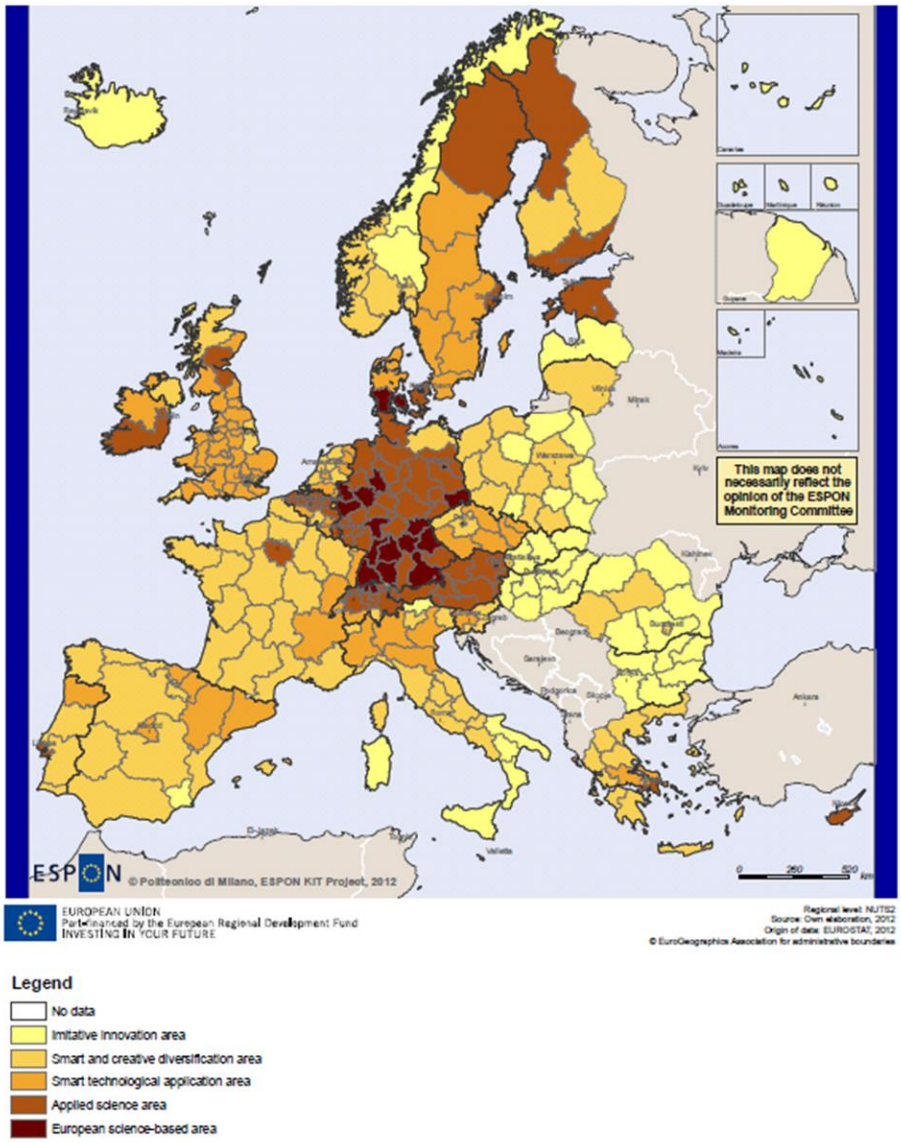
SIESTA provides a detailed description of the nature of research in Europe including tendencies for specialisation in one or more of the NBIC fields (nanotechnology, biotechnology, or information technologies or cognitive science), with the UK as a whole being a major NBIC cluster, although the benefits of this are fairly localised. Germany in the other hand has a more distributive tendency, with R&D success in one region being passed to another (SIESTA R&D Annex).

Regional Level: The map below (KIT) illustrates the differences and similarities at regional level, NUTS3 (see Annex for explanation of this and other statistical units referred to in the text), across Europe in terms of balance between R&D and innovation (including that in products, processes, organisations, and marketing). The only places with the highest internal R&D endowment and with strong knowledge and innovation production – called 'European Science' – are in the centre and north of Europe (parts of Germany and Scandinavia). The UK is described mostly as 'Smart Technological', characterised by a high product innovation rate, limited degree of local applied science, high creativity to convert external knowledge into innovation. The East of Scotland (including Edinburgh and Dundee) is deemed an 'Applied Sciences' area (high knowledge production based on applied sciences).

Assisting local strategies

KIT proposes **particular policy measures** to rebalance R&D and Innovation according to where countries and regions are placed in the typology shown below.

Territorial Patterns of Innovation in Europe (KIT)



SIESTA provides a suite of **Smart Growth indicators and maps** at regional level (Scientific Report). AMCER provides an **approach for assessing and monitoring an area's levels of R&D** based on analysis of participation in the cooperation part of the EU funded Framework 7 (FP7) research programme. Looking at factors such as level of participation and who participated in FP7 activities in the region can indicate collaboration patterns, the main R&D sectors in a region which might be targeted in the future, and how far higher education and SMEs are already engaged. This approach was tested out in nine **case studies** including the East of England.

Thematic Objective 2: Enhancing access to, and use and quality of, Information and Communication Technologies (E, S, W)

Broadband provision, allowing very fast open and competitive internet networks, is a crucial element in the EU's growth strategies (Europe 2020) for the coming decade.

Key messages

In the face of world competition, more effort is needed to ensure rollout and take up of broadband for all at increased speeds, through both fixed and wireless technologies and to facilitate investment in the new, very fast, open and competitive internet networks that will be the arteries of a future economy.

There is a significant rural-urban divide in the provision of high speed and high quality connections due to the difference on return on investment in these areas. Rural areas, with lower population densities than urban areas, offer lower returns on investment than do urban areas. Such areas are often also disadvantaged in terms of transport, and declining populations and a higher proportion of older people make investment in broadband less attractive. However, national policies to support broadband infrastructure play a greater part in influencing provision. Differences between countries are greater than differences within them (SIESTA map 3.17).

Comparative position

World: Over the last decade, Europe has maintained its position as a world leader in terms of internet users. However, the number of internet users in less developed regions of the world such as Asia and Africa has grown rapidly in the last decade and the gap with European levels of usage is narrowing. TIGER maps show that European internet usage was between 20-50% of the population in 1999. In 2009 that had grown to between 50-100%. The increase of internet users in the rest of the world rose from 5-10% to 20-50% over the same period, a faster growth rate. This is putting the competitive position of Europe at risk in this respect.

Europe: There is a marked difference in the broadband penetration rate (the percentage of households having high speed connections to the internet) between the high rates of sometimes 75% in the Northern periphery (including Iceland and Scandinavia) and parts of the North West, and the lower rates in the rest of Europe (for example, less than 15% in Romania). This pattern reflects both attractiveness for private investment in agglomeration economies such as the London-Paris-Vienna corridor and degrees of national intervention in broadband provision in more remote areas.

Regional: KIT and SeGi maps of households using a high speed internet connection, in 2006-2009 and 2010 respectively (see the KIT Map below), show most of the UK in a "high" usage group, London/south of England and the far north of Scotland in the "very high" group (with Scandinavia and Iceland), and Northern Ireland in a moderate usage group. SeGi also identifies the South West tip of England and Aberdeenshire and mid Wales (Powys) as in a more moderate usage group (SeGi Map 2, p.39, Annexes 1-7, Scientific Report).

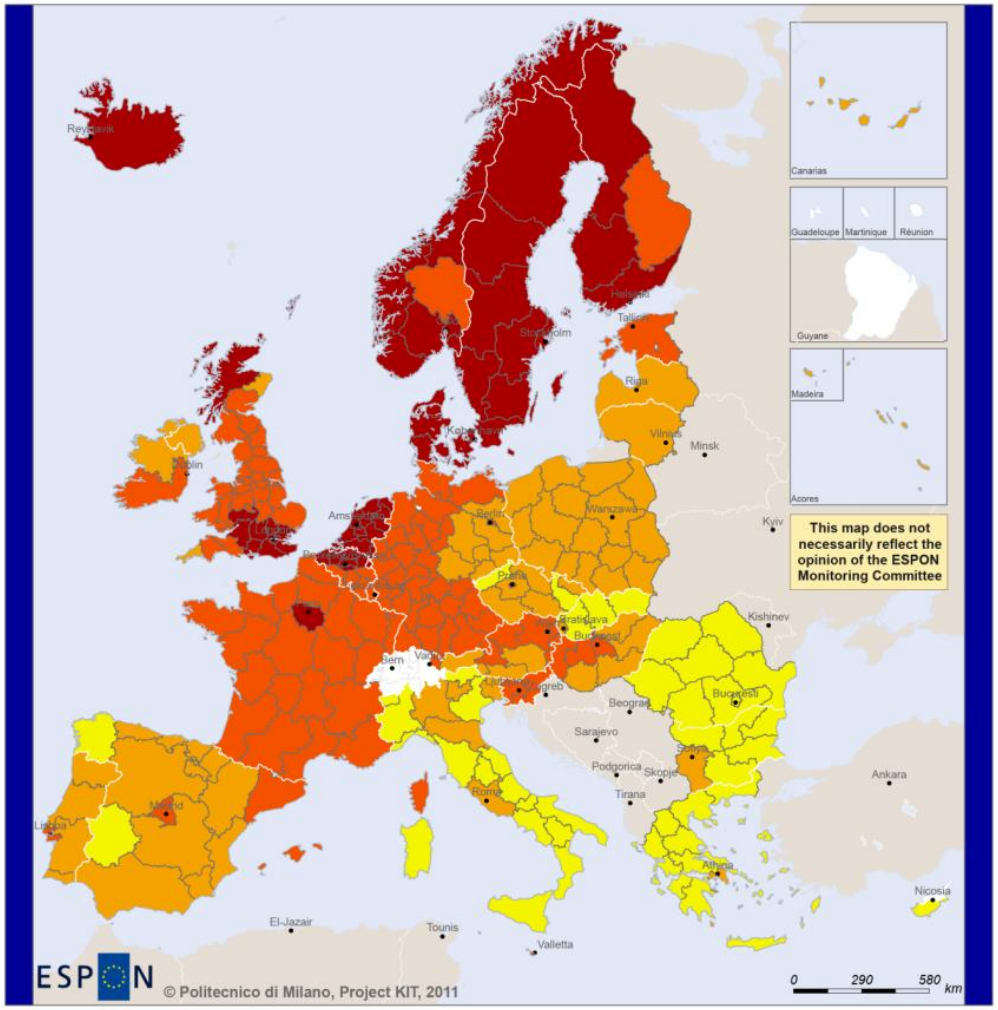
Assisting local strategies

SIESTA has developed a suite of **maps and indicators** which may assist the measurement of relative regional digital position. These include: people working in the ITC sector; individuals who have never used a computer (possibly indicating ITC skills shortages); ICT patent application to the European

Patent Office; and individuals who ordered goods or services over the internet for private use (the UK is well ahead of other countries in this respect). Accompanying tables pick out NUTS 2 areas (English counties) in the top, median and bottom shares. For example, of people working in IT, Berkshire is in the top 10 NUTS 2 areas in Europe (Scientific Report and Annex E).

SeGI identifies high quality ICT Infrastructure as one of three **indicators of economic health**, although researchers have concerns that the data for urban areas may not accurately reflect growth of urban areas beyond official boundaries. These indicators are applied in a number of **case studies** including Gloucester; the case studies identified the tension between commercial viability and rural coverage (Annex).

Households using internet connection, 2006-2009 (KIT)



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Source: Politecnico di Milano, 2011
Origin of data: EUROSTAT ICT surveys, 2006-2009
© EuroGeographics Association for administrative boundaries

Households using a high speed Internet connection
(Average percentage over 2006-2009)

- Low (9.00 - 29.50)
- Moderate (29.50 - 45.25)
- High (45.25 - 61.00)
- Very high (61.00 - 84.00)
- No data

Thematic Objective 3: Enhancing the Competitiveness of Small and Medium Enterprises (priority across the UK)

ESPON addresses the competitiveness of small and medium enterprises (SMEs) most explicitly in the context of rural areas, including those with 'territorially specific' characteristics (mainly inaccessibility), such as mountainous, peripheral, island and low density.

Key messages

Tailor-made policies are needed to support SMEs in rural areas, particularly since their importance to the local economy is very high. In considering growth prospects in rural areas and those with specific characteristics, EDORA, TeDi, GOESPECS and PURR all promote the need for tailor made or micro level policies which stem from analysis of an area's assets and prospects.

Conditions for entrepreneurship are more challenging in remote rural areas. EDORA highlights the role of SMEs in diversification as an essential ingredient of the 'New Rural Economy'. However, this will be easier to achieve in rural areas accessible from urban centres. The project compares conditions for entrepreneurship in rural areas close to urban centres compared with those for remote areas – for example, the innovative and fast growing SME sector comprising urban-rural immigrants in relatively high density rural parts of North Yorkshire which are close to urban centres, in contrast to the remote low density rural areas of the Highlands of Scotland with a strong tradition of 'pluri activity' and multiple job holding. Emigration from rural areas can reduce market opportunities for SMEs and infrastructure improvements may have the undesirable effect of exposing embryonic SMEs to competition.

In remote areas, the development of new enterprises, especially in the agriculture and tourism sectors, should be very closely linked with local education opportunities. TeDI, which looked at areas with geographical characteristics (including mountains, islands, low population density areas, many of which may also have weaker local economies), identifies this as a key way of addressing the lack of tradition and skills to establish innovative new enterprises in many of these areas.

Gender-aware policies are needed to address the tendency for women in particular to leave rural areas in their late teens to mid thirties, and a lack of tradition of female entrepreneurship in these areas. Support such as business mentoring and family friendly working practices are needed to address these problems (SEMIGRA).

More joined-up management of land-sea relationships are needed to support local economic activity such as fishing, particularly in the most intensely used seas around the UK (ESaTDOR).

Comparative position

Europe/Regional: Compared with other European countries, most of the UK's rural areas are relatively close to urban areas. These areas are termed "consumption countryside" in EDORA's typologies of rural areas (described further in Local Contexts/Rural, further below). Only the Scottish Highlands and Islands and north west Wales (Anglesey) are identified as 'very remote'.

ESaTDOR provides maps showing the economic use of the different seas surrounding the UK and other coastal regions of Europe, including employment in fisheries as a percentage of total employment in the region and relative GDP per head compared with the national and coastal average (see the Annex to this report). The main areas with the highest employment in fisheries of

total employment (between 1.2 and 8.27%) in North and Atlantic Seas are the west coast of Norway, in the UK the Highlands and Islands and North East of Scotland, Hull/the Humber and the East of England); NW France and NW Spain. The North/West of Scotland (excluding Angus/Aberdeen), and Hull/Humber Estuary also corresponded with much lower than average GDP per head. The project also provides figures for declining fishing production, for example around the North East Atlantic (Scientific Report Annexes: Atlantic Sea and North Sea Profiles).

Assisting local strategies

EDORA examined a number of factors including business development in nine **case studies**, the locations chosen to exemplify its typologies. These include the North Yorkshire County Council area and Skye and Lochalsh, the former with a relatively high density of population and the latter with low density of population. The project also provides **Working papers,** including one on business development, to support the case studies, and a UK country profile of rural enterprise (Scientific Report).

Further issues, approaches and case studies relevant to SMEs and entrepreneurship in remote rural areas are considered later in this report, in employment (Thematic Objective 8) and on rural areas (Local Contexts).

Thematic Objective 4: Low Carbon Economy (priority across the UK)

Key messages

Achieving Europe 2020[3] sustainable growth targets (for Greenhouse Gas, GHG, emissions, renewable energy and energy efficiency) does not mean that sustainable development is being achieved. Other factors such as recycling and sustainable transport are also important. Though they are not effectively dealt with by indicators, they are particularly relevant to achieving sustainable cities and regions (SIESTA).

Energy efficiency can make an important contribution to a low carbon economy and assist competitiveness, contributing to new jobs (SIESTA). In this context SIESTA proposes that moving towards a green economy is the route to recovery from the recent economic crisis. It opens up economic opportunities to become more low carbon and less resource intensive whilst still developing skills and competitiveness and also addressing climate change issues.

Policy development for renewables needs to make faster progress in developing the electricity grid and provide stability for investors, avoiding retroactive change. The challenge is to develop a strategy that will facilitate large scale use of renewables in the longer term (SIESTA). However, ReRISK points out that energy policies tend to be established at national level and are currently in a period of transition, being re-established for the longer term. It is important that these policy frameworks allow regions to reduce their vulnerability to rising energy prices and improve their adaptive capacity to renewable energy in the longer term. ReRISK highlights that a move towards lower carbon use is particularly needed in transport, including for those areas with high reliance on air transport (both peripheral areas and major European air/transport hubs).

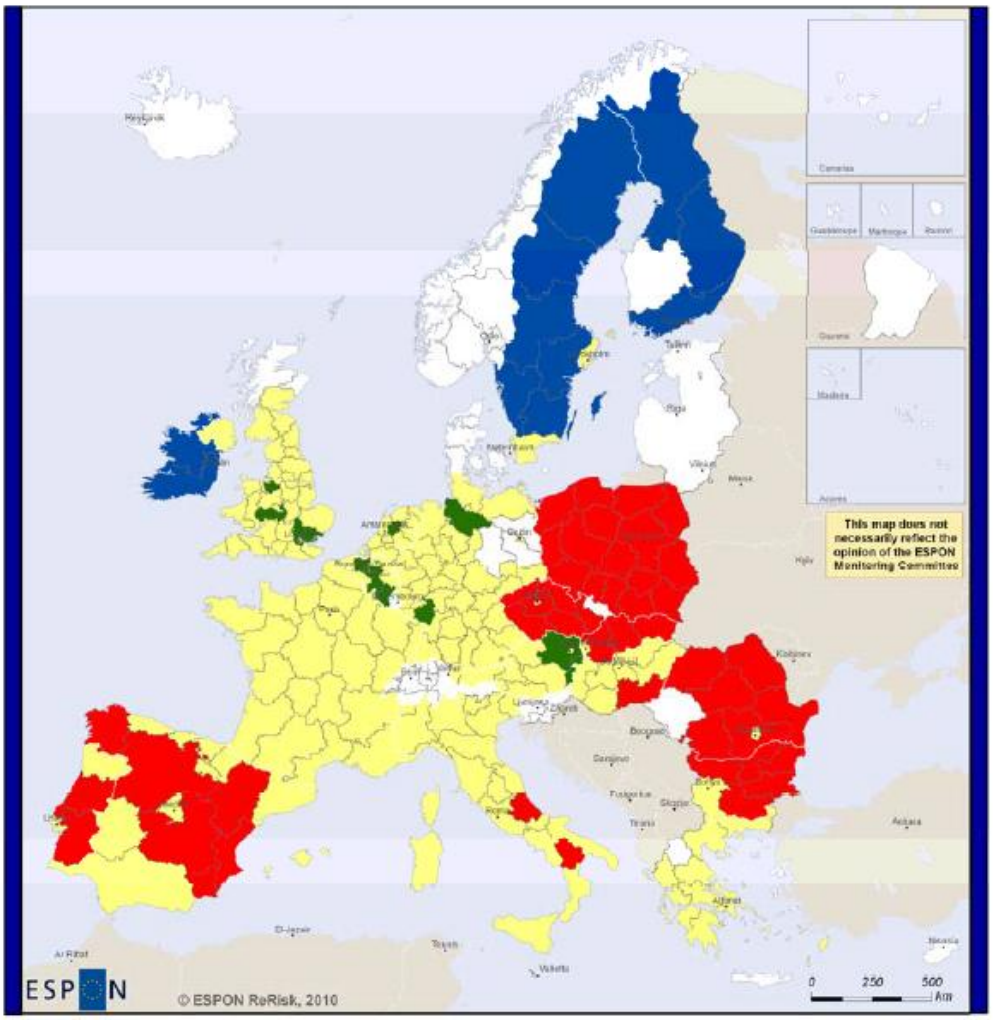
Comparative position

Europe/Regional: Europe 2020 has sustainable growth as one of its three pillars, seeking a target of 20% reduction in GHG emissions from 1990 levels, 20% of energy to come from renewable sources and 20% increase in energy efficiency. SIESTA indicates these are likely to be achieved - the economic crisis has in part led to a decrease in GHG emissions and intensity of energy use. Mapping of GHG emissions at regional level indicates that highest GHG emission levels are around the major urban areas of Europe. Istanbul has the highest level of emissions. The Shetland Islands and Western isles were among the 15 NUTS 3 areas with lowest GHG emissions in 2009. However, the UK as a whole had the second highest level of GHG emissions in 2009 across the EU27 after Germany – this despite having achieved the highest GHG emissions reduction over the 10 years from 1990 of 18.2%.[4] SIESTA looks at GHG emissions, renewable energy and energy efficiency at NUTS3 level providing tables and narrative (Annex B Draft Scientific Report) and maps (Draft Final Report Atlas, for example p.33; GHG emissions comparison 2009 with 1990 in Europe; see also the Annex to this report).

[3] Europe 2020 goals are those adopted by the European Union in pursuit of Smart, Sustainable and Inclusive Growth. They include goals or targets for: Employment; R&D/Innovation; Climate Change/Energy; Education, Poverty/Social Exclusion.

[4] Details in Annex B Draft Scientific Report: Green Economy, Climate Change and Energy. Maps are provided in the Draft Scientific Report.

Regional Typologies of Energy Poverty (ReRISK)



The UK is one of five member states with the lowest share of renewable energy in its energy consumption mix, along with the Netherlands and Belgium (2009). The Nordic countries have the highest share. Furthermore, the UK is the member state furthest away from its national target (followed by Ireland and France). However, the UK is one of five member states with the lowest levels of 'energy intensity' (used as a measure of energy efficiency) in the economy (Estonia and Bulgaria have the highest levels) (SIESTA). Energy poverty analysed at regional level indicates some huge disparities. Analysis in ReRisk shows the regions most vulnerable to energy price rises are largely in Eastern Europe.[5]

[5] p.44 ReRisk Final Report.

Assisting local strategies

GREECO is developing a **method for assessing a region's green economy and potential** for moving towards a greener, and thus a more low carbon, economy. It focuses on nine sectors with 'green' potential that also receive significant levels of cohesion funding. It will be developing regional typologies (at NUTS 2 level) based on potential for green economic development. When the final report for this project is issued, its finding could well be relevant to local ESIF programme bodies engaged in developing these sectors and a greener economy more broadly. **Case studies** include one on Cornwall.

ReRISK uses **indicators** to identify regional (over-) dependencies on industrial sectors with high energy consumption. It makes use of indicators on industrial energy spend, regional wealth creation and employment to identify industrial process which, at regional level, seem to be making inefficient use of energy. It uses the same **methodology to identify regions at risk of 'carbon leaking'** – companies who move outside the EU as a result of carbon tax introduction. Lincolnshire and East Yorkshire are indicated as vulnerable to this in relation to companies that manufacture inorganic base chemicals in the area and have above average energy expenditure. ReRISK looks at four scenarios around political responses to high energy prices, and discusses these in the context of its regional typologies (see ReRisk Typologies Map above and p.60 Final Report for summary table). The four **scenarios** are useful additions to consider in moving towards a low carbon economy and the policies that might be needed.

ReRISK uses cluster analysis to develop **regional typologies** that look at economic and social vulnerabilities to energy prices, mapped with opportunities for renewable energy development (solar and wind) and climatic conditions. It develops five typologies. Northern Ireland, Southern and Eastern Scotland, Northern England, parts of East Anglia and South West England are all identified as 'with problems and potential (1a)';[6] Wales and most of the remainder of England are identified as 'well off, with trouble ahead (1b)'; and there are three pockets of 'wealthy and commuting' in England (3; around London, Bristol and Cheshire). No data was indicated as available for the Highlands and Islands.

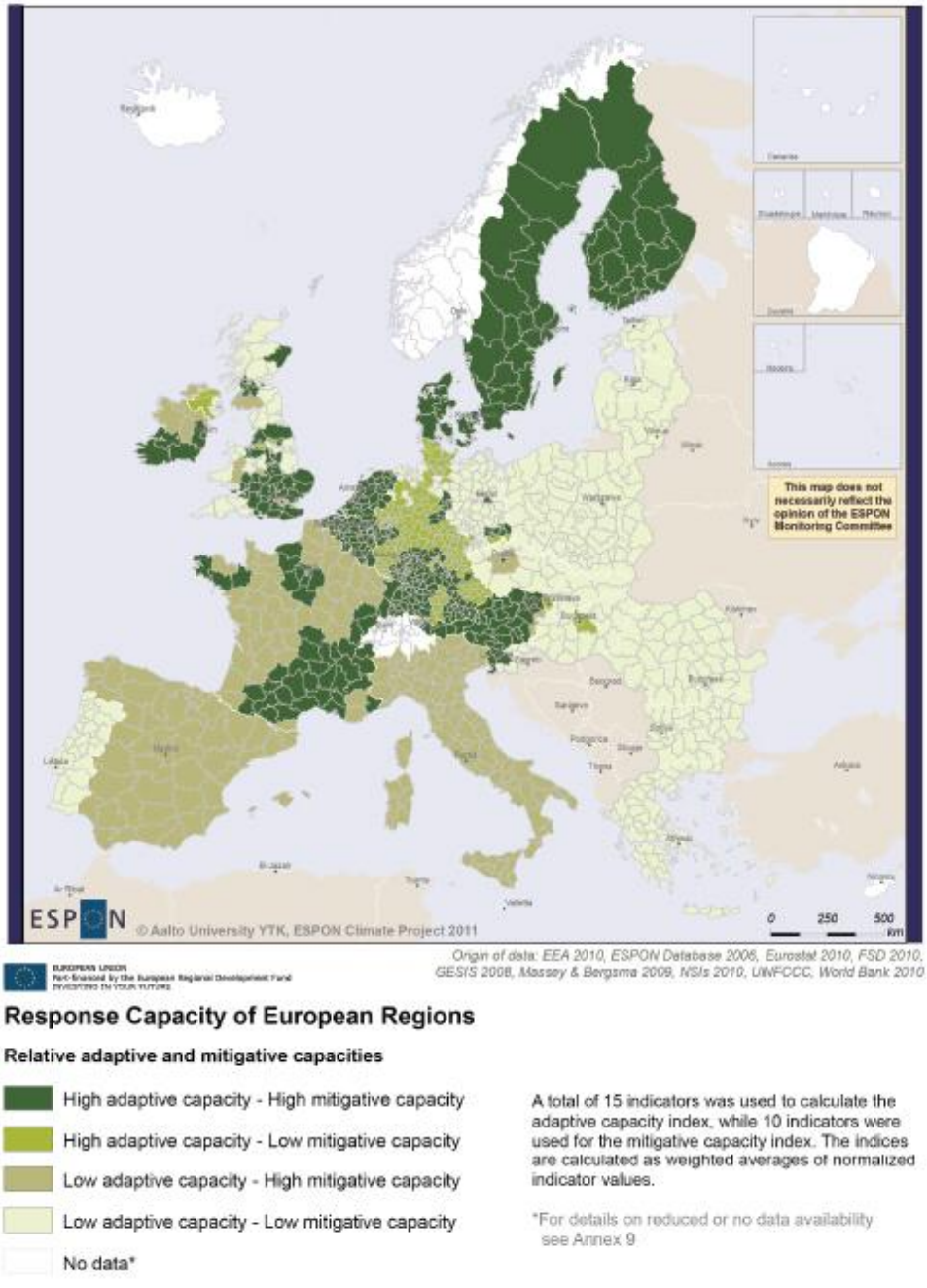
[6] 1a – characterised by low levels of employment in sectors with high energy purchase and good renewable energy potential, hence relatively robust to energy price changes. 1b – characterised by high levels of industrialisation and medium employment levels in sectors with high energy purchase, and with limited wind and PV renewable energy potential. 3 – has similar characteristics to typologies 1a and 1b but with much higher levels of commuting and low potential for wind and PV power meaning it needs to look for alternative renewable energy e.g. power from waste.

Thematic Objective 5: Climate Change Adaptation (E, S, W)

Key messages

Future cohesion policy needs to pay attention to effort and investment to mitigate the impacts of climate change. The adaptive capacity of areas to climate change will be a key driver in addressing on-going territorial disparities in Europe. Adaptation measures could relate to building adaptive capacity, reducing risk and sensitivity, increasing coping capacity and capitalising on climate change. Tourism and agriculture are two sectors that could experience most impact and where adaptation measures should seek to build on new development opportunities whilst avoiding poor outcomes.

Response Capacity of European Regions (ESPON Climate)



Although potential impacts of climate change on migration patterns are relatively small compared to other factors driving migration in Europe, strategies should address them. Long-term planning may also help. Migration can be a short term response to a climatic event such as a storm. It can also be a long term adaptation response to a changing environment. The DEMIFER report suggests that seasonal migration is already an important adaptive measure used in some countries.

Comparative position

Europe/Regional: ESPON-CLIMATE assesses the impact of climate change using five measures of sensitivity – physical, economic, social, environmental and cultural, then combined into an overall measure of impact. The spatial distribution of combined climate change impacts across Europe shows that a significant number of areas of high negative impact will be in Southern Europe. Areas in Northern Europe are also indicated – in the Netherlands, Norway and, in the UK, Lancashire. Areas of medium negative impact are again prevalent in Southern Europe and in largely coastal areas further north (including around the Wash, South Coast of England, Cornwall, around the Severn Estuary, Cheshire and parts of the Scottish West coast). All of the Republic of Ireland is in this category. Much of England and Scotland and all of Wales and Northern Ireland are shown as areas of low negative impact (see map above and page 4, Executive Summary). However, when taking into account adaptive capacity, vulnerability to climate change is shown as low or marginal negative impact across all of the UK with the exception of Lincolnshire and the Scottish islands (medium negative impact). Countries in the south of Europe show the greatest vulnerabilities to climate change.

Climate change will have an impact on migration rates. Temperature changes and declining precipitation will have a more severe effect in Southern Europe and the Mediterranean regions, for example where large metropolitan areas could be particularly affected because of urban heat island effects. The UK will be more affected by heavy rainfall, especially along the Atlantic coast, for example, the Highlands and Islands of Scotland, and by sea level changes.

Assisting local strategies

ESPON–Climate develops a **regional vulnerability assessment methodology and regional typologies** of climate change exposure, sensitivity, impact and vulnerability. Adaptive and mitigative capacities are mapped (in the Final Report) to show the response capacity of regions to climate change impacts. As the map above indicates, there are differing response capacities across the UK.

Thematic Objective 6: Environmental Protection (E, W)

Key messages

Much more needs to be done to integrate the maritime environment into territorial planning to ensure sustainable development. The EU has already put in place a number of initiatives for good environmental management of the marine environment including Integrated Coastal Zone Management and Integrated Maritime Policy. However, more joined-up management of the land-sea continuum will be particularly important for economic growth strategies in areas including coastal locations. Inter-dependencies can extend quite far inland (ESaTDOR).

The term 'green economy' should not be confused with development of the environmental goods and services sector. Green growth is being seen as contributing to the 'smart' and 'sustainable' growth that Europe 2020 is promoting. An economy can become greener through the implementation of environmental and energy efficiency measures and behaviour changes, but not necessarily through developing new environmental goods and services business (whose production processes may not be green or produce green products) (GREECO).

Managing the impact of policies on land use and resources and reconciling conflicting uses is vital. EU-LUPA identifies the importance of land use planning and management in doing this. It highlights the important role of Strategic Environment Assessments and Environmental Impact Assessments in evaluating impacts on land resources. These are considerations that will be important in economic growth plans.

Comparative position

Europe: ESaTDOR identifies that early governance arrangements in regional seas stemmed from a concern about deteriorating environmental quality and a desire to take action to address this. The project is therefore concerned that effective governance is put in place to reconcile different interests including between environmental and development interests. It suggests existing arrangements tend to be ad hoc and lack integration, and cites the Baltic Sea as the best example of integrated governance for land-sea territorial development. It also suggests designation of additional Marine Protected Areas would help safeguard ecosystems services and could help a push for ecotourism and sustainable fishing in the marine environment.

Regional: EU-LUPA notes that Europe is dominated by rural landscape and agricultural activity. Predominantly urban areas are limited (Belgium, the Netherlands, in some regions of Germany and in Paris and London), meaning that where there are other urban centres, these are still in a regional context which has a strong rural component.

Assisting local strategies

ESaTDOR develops five **maritime region typologies** and two **spatial scenarios** that could provide useful tools for local ESIF programme bodies to stimulate debate about future development trajectories and their environmental implications. Of the five typologies, two are relevant to the UK – core maritime areas and regional hubs (see the map and table in the Annex to this report and ESaTDOR Scientific Report).

ESaTDOR's **mapping of environmental pressures** using three environmental indicators shows that pressures are highest around ports and estuaries. The Scientific Report suggests that economic developments that will impact on the marine environment pressures include:

- Increased shipping leading to increased trans-shipment of non native species in ballast water and potential for negative impacts on the marine environment;
- Societal pressures to adopt more sustainable fishing practices;
- Negative impacts of visitors on the marine environment, for example litter;
- The potential marine conservation benefits of offshore wind farms as they are effectively no fishing zones (where it suggests further research is needed to identify what these might be).

GREECO is focusing on the **potential for developing a greener economy across nine sectors** that have a spatial dimension and would be positively influenced by the development of a greener economy. These are bio economy (forestry, fishing, agriculture), building and construction, energy production, green research and eco-innovation, manufacturing, tourism, transport, water management, and waste management. It will be developing regional typologies based on potential for green economic development.

EU-LUPA develops **regional typologies of land use change** (based on 16 years of change). This indicates, for the UK, that Scotland, Wales, Northern Ireland, East Anglia and North Yorkshire are all classified as areas of low intensification due to agricultural and forestry changes. Much of the rest of England is classified as medium intensification as a result of diverse urban processes. Devon, Dorset and Somerset and areas to the west of London as medium intensification as a result of urban sprawl combined with agricultural and forestry changes, whilst Cheshire and West Yorkshire are areas of high intensification due to residential and economic sprawl (map on p.34, Main Report), It also maps land use functions to assess change over the period 2000-2006. Six functions are mapped: work: leisure and recreation; food and bioenergy; housing and infrastructure; abiotic resources and biotic resources.

ESPON-Climate case studies include one on coastal aquifers; amongst its study areas is the Atlantic Coast in Scotland.

Thematic Objective 7: Sustainable Transport (E, W)

Key messages

ESPON emphasises the importance of connectivity within and between urban centres in Europe and to the rest of the world, via 'gateways' to assist growth of agglomeration economies. Multi-modal networks and public transport planning is vital and needs to encompass the wider metropolitan area not just focus on the city centre. An integrated approach is needed encompassing the development of smaller urban centres, the location of housing and the development of the transport infrastructure (BEST METROPOLIS).

Critical issues of congestion, safety and emissions also need to be addressed both for environmental and economic reasons (BEST METROPOLIS).

Sea transport plays a crucial part in European connectivity. Development of European seas could have differing impacts relevant to transport. A 'Europe of Maritime Flows' where economic globalization remains dominant could mean that the European Core Maritime areas (the Channel and southern North Sea) remain a central gateway for import and export of goods, with implications for associated infrastructure (on both land and sea). Developing self-sufficient maritime regions will include a role for short sea shipping development to support for endogenous growth, again with implications for associated infrastructure (ESaTDOR).

Accessibility to means of transport is a key need for economic development in areas of 'geographic specificity' (defined by GEOSPECS as sparsely populated areas, cross border areas, islands, mountain and outermost regions, coastal areas and inner peripheries). However, ADES, which looked at airports as drivers of growth in remote areas, concluded that skills were a more important factor in some cases, and EDORA pointed to risks of increasing accessibility to remote rural areas, including accelerating outmigration and exposing business there to competition.

Comparative position

Europe/Regional Assuming that transport policy across Europe delivers what is currently planned to 2030 (a baseline scenario), territorial impact assessment carried out by TIPTAP indicates that increased congestion will result, especially in northern metropolitan countries, with the worst negative impacts in the UK and Denmark.[7] Congestion is likely to be particularly bad in Greater London, Bristol, Cardiff, Greater Manchester, Liverpool and Merseyside. Safety could be a particular issue for a large part of central England, from London along the main western and northern corridors, and southern Scotland (Edinburgh and Glasgow). Almost all EU countries would go over the emissions threshold implying a need for renewed transport policy counter-measures including alternative transport modes to car, cultural campaigns, road pricing and selected new infrastructure (TIPTAP).

Local strategies

GEOSPECS, building on TeDI results, develops **typologies of geographically specific areas**, defined as sparsely populated areas, cross border areas, islands, mountain and outermost regions, coastal areas and inner peripheries which tend to have weak or failing markets. It uses **transport as a key indicator**. Through its **case studies**, the project shows that **data for more local areas** compiled at

[7] See TIPTAP map, p.37 Final Report; and in the Annex to this report.

LAU2 level (formerly NUTS 5) can provide evidence for policymaking, picking up on local specific circumstances. It advocates that more could be done to develop such quantitative analyses, for example using a 45 minute potential drive time to assess potential for development. This is used in case study analysis by other projects such as PURR.

TRACC proposes a **suite of accessibility indicators** for judging accessibility on global, European and regional levels, by person and freight. Examples of regional level indicators include: availability of urban functions (cities of over 50,000 within 60 minutes by road and rail); and time travel to regional centres and to health care. The project is testing these indicators on a series of **case studies** using NUTS 3 data for European level indicators and LAU2 data for the case studies (see Table E1 in the Annex to this report and the project Interim Report; the Final Report is not yet published).

ESaTDOR develops five **maritime region typologies** and two **spatial scenarios** (as noted in Theme 6) that could provide useful tools for debate about future development trajectories and their implications for transport policy including land-sea transport interactions. The transport connectivity of the five typologies is given in the table below. They were compiled using economic activity on land, environment (marine and coastal) and flows (through the seas of people, goods and services). Two categories are relevant to the UK – core maritime areas and regional hubs.

Typology of Maritime Areas	**European Core (includes the Channel and southern North Sea)**	**Regional Hub (covers the remainder of the UK)**	**Transition**	**Rural**	**Wilderness**
Transport Flows	Great international connectivity, global hinterland	Nationally significant and some international connections, European scale hinterland	Nationally and regionally significant connections and hinterland	Limited connectivity, local/ regional hinterland with some more significant sectors/ seasonal extensions	Remote areas, limited connectivity. Very small local hinterland, some extensions

TIPTAP's territorial impact assessment tool for transport policies (and agricultural policies) is based on complex methodology although the **maps showing the impact of different criteria** could be used to consider the impact of transport policy on economic growth and congestion costs (Scientific Report). TIPTAP uses three macro criteria of territorial impact: efficiency (of resource use, for example land); quality (of living and working environment); and identity (including social capital and competitive advantages).

Thematic Objective 8: Promoting Employment and Supporting Labour Mobility (priority across the UK)

Key messages

Maximising the size of the labour force is a key to growth. Employment matters to smart growth policies since, according to SIESTA's calculations, in general smart growth (evidenced by human resources in science and technology and broadband penetration) takes place when employment is high. Large concentrations of employment are needed for growth (KIT). Employment also helps to reduce poverty and social exclusion.

Major threats to large labour forces in Europe come from unemployment and demographic trends and migration. Lower birth rates and increased life expectancy are slowing down population growth and reducing the working age population. This is a major risk for European competitiveness as the working age population in other parts of the world continues to rise. Migration has exacerbated workforce depletion in many parts of Europe, traditionally rural areas though less prosperous urban centres have also experienced net outmigration (DEMIFER, SIESTA). Without changes in the levels of fertility, mortality and migration the overall ESPON population will reduce by about 40 million until 2050, a decline of about 8% (DEMIFER).

Policies are needed to maximise employment (numbers in work) and productivity and reduce migration through, for example: support for particular demographic groups, for example older people beyond traditional retirement age, women, parents, disabled; improving working conditions; and improving education and skills (see Thematic Objective 10 for more on this aspect).

What attracts migrants to a particular place may not simply be better economic prospects (ATTREG). Migration pulls have traditionally been considered to centre on greater economic prospects and tighter labour markets (more jobs than workers) in the area of in migration. However, ATTREG, looking at what attracts migrants to a particular place, points to some other factors in play. The most attractive region types do not have the highest average GDP per capita, nor the tightest labour market for highly skilled workers. However, regions with the lowest net migration rates and low visitor arrival rates consistently exhibit lower GDP per capita and employment rates for workers with all forms of qualification in the subsequent period.

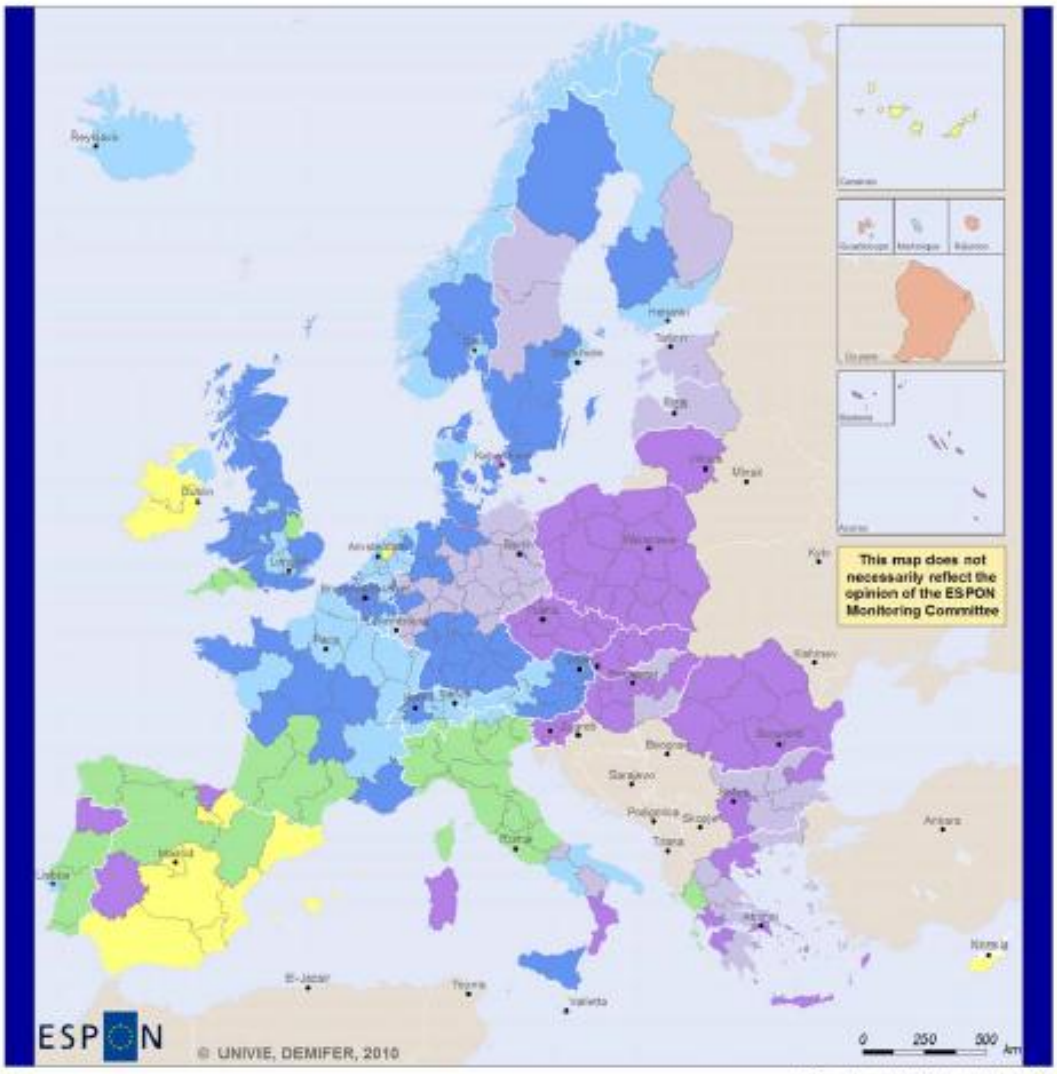
ATTREG found that for younger people, urban centres and accessibility to other places via a busy airport were key attractions. For the middle age group, top attractions were culture rich regions and greater accessibility. Older working age adults were attracted to regions associated with a lower population and fewer cultural features. This led ATTREG to propose that many capital cities including inner London, and some other major economic hubs of Europe like Bavaria and the region of Frankfurt, may become so attractive that they reach a threshold beyond which they will experience problems retaining the older working age groups due to declining urban quality and high prices.

Diversification and improved working conditions are key for strengthening rural employment. Diversification might not be easy to achieve in remote rural areas, especially those subject to selective outmigration of young people, which weakens the labour force, and reduces attractiveness of an area to incoming business. Employment in these areas is likely to continue to remain in traditional rural activities and/or dependent on locally generated employment within SMEs. In 'countryside consumption' rural areas, close to urban centres, prospects for employment in non-traditional activities and retention of a balanced workforce are much greater (Annex 1, p.118 Working paper 2: Rural Employment). GEOSPECS argues for policies to secure improvements in

working conditions: in rural/remote weak economies which are subject to, for example, low wages and lack of career prospects in the forestry industry, seasonal employment in tourism. SEMIGRA highlights the support, such as child minding, needed to retain female labour and working parents in rural areas.

Comparative position

Typology of Demographic Status in 2005 (DEMIFER)



EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2, except UKI NUTS1
Source: ESPON 2013 Database 2010
Origin of data: Eurostat, NSIs 2008/09
© EuroGeographics Association for administrative boundaries

					Age Group 20-39 (%)			Age Group 65+ (%)			Natural Population Increase (per 1000)			Net Migration (per 1000)		
					2005						average per annum 2001-2005					
Type	Classification	Cases	Population		avg	min	max	avg	min	max	avg	min	max	avg	min	max
1	Euro Standard	79	127 915 217	25.41%	25.68	22.57	28.72	17.46	15.33	20.30	0.01	-2.67	2.47	3.43	-2.11	9.36
2	Challenge of Labour Force	61	116 767 795	23.20%	30.43	28.33	33.84	14.51	10.60	18.96	-0.78	-4.76	2.89	0.08	-7.35	9.19
3	Family Potentials	55	104 556 600	20.77%	28.15	24.80	36.32	14.57	11.13	16.96	3.72	1.06	9.00	2.12	-3.51	9.59
4	Challenge of Ageing	33	63 838 208	12.68%	26.87	21.52	31.19	20.83	18.51	26.51	-1.74	-6.19	1.43	9.42	4.14	16.99
5	Challenge of Decline	38	50 166 688	9.97%	26.32	21.47	30.04	19.49	15.89	22.55	-1.39	-10.35	-0.59	-1.20	-11.25	3.70
6	Young Potentials	15	38 542 821	7.66%	32.26	29.36	35.86	14.45	8.70	19.03	3.61	-0.15	9.78	17.10	9.96	26.30
7	Overseas	5	1 555 069	0.31%	30.40	27.02	32.55	9.04	3.71	11.81	13.56	8.40	25.28	-1.78	-8.18	9.07
EU27+4	ESPON Space Average	286	503 342 399	100%	27.82	21.47	36.32	16.63	3.71	26.51	0.33	-10.35	25.28	3.16	-11.25	26.30

No data

World/Europe: DEMIFER and SIESTA provide comparative analysis of various aspects of employment, unemployment and age related demographics at global and Europe wide levels. The latter are at national and sometimes NUTS 3 levels, in the form of maps, graphs and commentary. The EU as a whole had a 68.6% employment rate in 2011, well below those for the US and Japan (70.4% and 74.9% respectively). Within Europe there are huge variations by country and within countries though not clearly on an urban-rural basis. The majority of regions in Northern and Western Europe, including those in the UK, are above the 75% target employment rate set in Europe 2020, although the UK's workforce along with those in Iceland and Norway, contracted much more severely than those of neighbours in the recent economic crisis.

Youth unemployment is particularly low in some countries such as Norway, the Netherlands and Germany but high in some neighbouring countries such as Sweden and Finland, pointing to the presence or absence of state mechanisms to support employment of this age group (SIESTA).

Considering older age groups**,** SIESTA also shows that men and women in most European countries stop working at around the age of 63 to 65, increasing to 68 for women in Turkey and 70 for men in Iceland.

Regional: DEMIFER provides comparative data and maps showing unemployment, youth unemployment and migration trends across Europe. Migration varies across countries and regions within them. DEMIFER brings together demographic and migration data to provide a typology of areas with common characteristics (see the map on the previous page). Over a quarter of European regions (NUTS 2 level) have experienced a decline in the potential labour force since 2000. However, DEMIFER's typography shows most of the UK's regions as being the subject of demographic and migratory trends which strengthen the labour force, in line with what the project has defined as a European Standard demographic structure. Above that category, London, the East Midlands, Manchester and Northern Ireland show strong population development and a young age structure. The South West and Lincolnshire in England are identified as facing "the challenge of an ageing population".

Within the DEMIFER typology though there are sometimes huge differences between places in the same region or city. The UK has a high degree of such variation. DEMIFER's case study on West Yorkshire (Annex) shows that Leeds (stronger economically than Bradford) has been attracting migrants from the latter for which the loss is only counterbalanced by international immigration. FOCI shows data related to district inequalities in employment within urban areas across Europe (see Thematic Objective 9 for more details).

Assisting local strategies

GEOSPECS's **approach to strategy making for rural areas** with distinct characteristics focuses on assets and challenges, not performance comparison. Its **case study** analysis such as that of the Highlands Council, area, Scotland starts off with three headings: Challenges; Legacy (locational, economic, and social); and Opportunities. The **accessibility indicators** proposed by TRACC (see Thematic Objective 7, also the Annex to this report), include those relating to jobs within a region, using a 60 minute travel time by road or rail/public transport, and to those requiring inter regional travel within a day. GEOSPECS demonstrates how this can be used in its case study analysis including that of the Highlands, Scotland (Scientific Report Annex Case Study no. 24).

DEMIFER's Atlas shows components of demographic structures, migratory flows and change **scenarios** and its **case studies**, including West Yorkshire and London, illustrate local level migration dynamics. ATTREG case studies on attractiveness of regions include one on Cornwall.

Thematic Objective 9: Promoting Social Inclusion and Combating Poverty (priority across the UK)

General approach

The starting point for ESPON research in this area is the EU's target for reduction of poverty and social exclusion. 'Inclusive growth' means that in parallel with striving for economic growth, policies are needed to ensure that all benefit from growth. Two key aspects of this are fighting poverty and social exclusion. The EU's target is to see reductions in the number of people at risk of poverty or social exclusion at least by 20 million by 2020. Statistical definitions of those at risk include people in one of the following three conditions: at-risk-of-poverty; severely materially deprived; or living in households with very low work intensity. The EU's target might mean reducing those at risk from an estimated 23.5% of the total population (2010) to below 19.5%.

Key messages

Some ESPON projects have looked at spatial patterns of poverty below national and regional levels, revealing marked differences in poverty across city districts and otherwise hidden rural poverty. The traditional view of the distribution of poverty in Europe has been of urban poverty in the west and north of Europe and rural poverty in the south and east.

TIPSE is exploring the spatial patterns of poverty and social exclusion at a finer level. Using small area data from Nordic countries and World Bank software the project team has mapped 'at risk of poverty' data for those countries. Results so far reveal much rural poverty, especially at inland borders, between the Nordic countries.

The project is looking in finer detail too at social exclusion indicators, including those concerning access to services and social environment indicators. It is using ten case studies located in varied geographic contexts, from remote rural to metropolitan, to help understanding of the processes of social exclusion. Eilean Siar in the remote Western Isles of Scotland (NUTS 3 level) is one of the case studies already completed.

Peripheral areas such as Eilean Siar face particular challenges regarding the process of social exclusion due to selective outmigration and often less dynamic economic development. Social exclusion of immigrants or ethnic groups, especially in economic crises, can take the form of restricted opportunities to integrate into the labour and housing markets and unequal representation in higher education institutes (TIPSE Interim Report Annex 3).

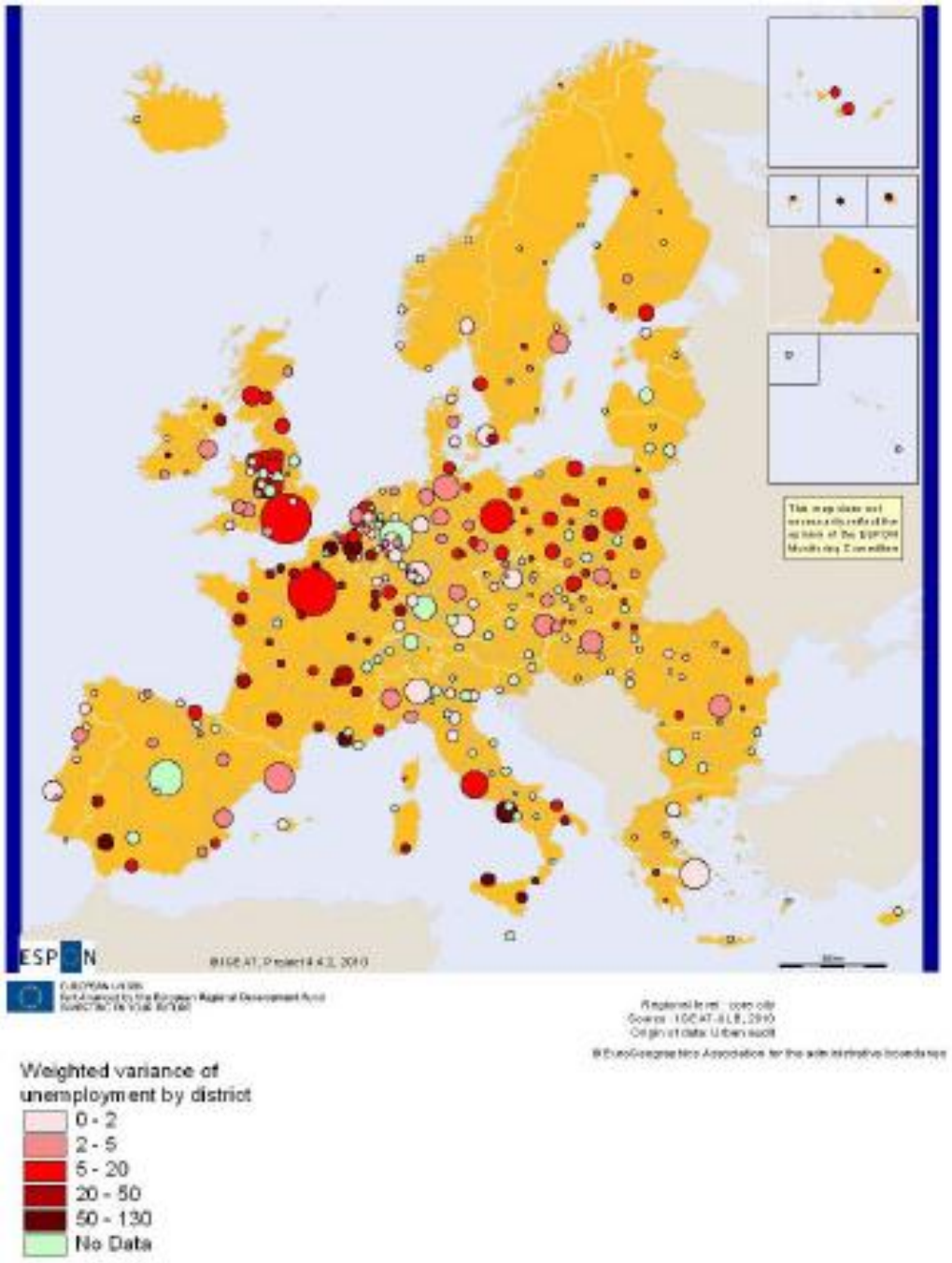
There are also marked differences in poverty levels within urban areas, shown by the FOCI project which looked at social polarization within European cities. It concluded that socio-spatial polarisation has increased in line with socio-economic polarization (the more global the city, the more demand for very high skill high wage and low wage service workers).

Comparative position

European: Official data on the three conditions of 'At Risk' is generally limited to NUTS level 1 and 2 so comparisons between European countries at levels below the national and regional are limited. SIESTA's Atlas shows how countries are positioned in relation to the target reduction in poverty levels. Western and Northern countries are already below the EU's target of 19.5% for poverty reduction, except for the UK and Ireland.

Regional: The UK has a relatively high starting point for GDP per head, compared with other EU countries, but it has the greatest difference between lowest and highest GDP per head. Regional differences in the UK are much smaller, once social transfers (benefits) are taken into account, implying that social rather than local factors are much more influential in causing poverty. SIESTA also looks at long term unemployment as a percentage of employment, given the significance of the former in causing poverty. The UK is within the top ten EU countries with the lowest percentage.

District Gaps in Unemployment Rates (FOCI)



From the TIPSE case studies and data available at NUTS 2 level, Scandinavian countries, for example Sweden and Finland, and Germany show relatively modest levels of within-country income

inequality. Southern European states, for example Greece and Spain, and the UK show higher levels of inequality. 'Map 1 At Risk of Poverty Rate 2010-2011' shows that most of the UK is in a high category of "at risk" percentage of population (20 to 25%), with the West Midlands and parts of inner London at greater risk (25 to 38%) and Scotland and the South East at lesser risk (15 to 20%) (maps 1, 2, 3).

From FOCI analysis, the highest levels of difference in socio-spatial inequality are in the UK, France, Belgium and some cities in southern Europe. FOCI illustrates differences between districts within cities based on weighted variance in unemployment rates by district (see the FOCI map on the previous page).

Assisting local strategies

TRACC (referred to previously, and see the Annex to this report) also provides **accessibility indicators** which might contribute to social exclusion processes, measuring differences in travel time such as daily access (60 minutes) to urban centre/jobs, secondary schools, and health care.

See also TIPSE's **case studies,** including that on Eilean Siar, Western Isles.

SeGi provides **'access to services' indicators** for example, number of hospital beds per 100,000 population, quality of services (based on consumer views), though it uses Eurostat data only available at NUTS 0 or 1. FOCI, provides a series of indicators of social cohesion in European cities, although it is based on limited data (Scientific Report).

Thematic Objective 10: Investing in education, skills and life long learning (E, S, W)

Key messages

Lifelong learning and skills development is essential to sustaining a competitive, green and smart workforce and avoiding poverty and social exclusion. A focus of European policy is on continued learning for post 25 year old adults to retirement age, given the vulnerability of unskilled older workers to unemployment and the need generally to extend working lives.

Attention should be given to public services and health care skills: SIESTA picked out public services (using a broader definition including police, armed services, health and university workers as well as government administrators) as a sector which should not be run down too much since SMART growth tends to take place when public employment is more robust. It also highlights the projected shortage of professionals (1 million by 2020) in the European healthcare sector.

Policies for education and skills provision in rural areas should reflect gender specific needs and those of home grown and incoming businesses. SEMIGRA points out the support needed especially for young women, for example business coaching and mentoring to combat low cultural expectations of women as entrepreneurs in rural areas. TeDi identified the importance of working with local education and skills providers in specific territories (rural/remote/mountainous) to 'grow', rather than import, entrepreneurial activities. EDORA emphasised that even in the more accessible rural areas, education and training policies need to address the marked difference in skills between those found in rural areas (based on traditional rural employment activities) and those required by, for example, the food industry and alternative energy sectors which might be attracted to rural areas.

Comparative position

Europe: SIESTA's atlas (maps 63-67) shows that lifelong learning across European countries, measured in the participation of adults in education and training, does not show much variation at national levels. It points out that there is a positive correlation at the regional scale between lifelong learning participants and employment rate. It also points to a correlation between adult learning and tertiary education – countries with higher education levels are more likely to have higher participation of adults in education and training. The UK is in the median of countries in this respect.

Assisting local strategies

TRACC's set of **accessibility indicators** (referred to earlier in Thematic Objective Section 7 and see the Annex to this report) again provides one for availability of secondary schools – the number of secondary schools within 30 minutes of road travel time. This is applied in its **case studies**.

LOCAL CONTEXTS

Urban

Key messages

Maximising the performance of urban areas and building up their connectivity is key to global competitiveness. The starting assumption for ESPON research is that global growth is being driven by agglomeration economies – concentrations of production and services in areas of dense (and therefore more productive) labour found in urban areas. So ESPON research generally emphasizes the importance of maximizing the performance of urban centres, particularly the capitals and other large centres; and building up their connectedness – within an urban centre and its surrounding area; between cities and their city networks; and between urban agglomerations in Europe and others globally.

TIGER looked at connectivity between European 'gateway cities' and other global economies. It concluded that London as the dominant European gateway is highly interconnected with other European gateway cities and its global linkages are of vital importance to Europe (Scientific Report working paper 6). It concluded, though, that there a lack of evidence to show that strengthening of major gateways would enhance competitiveness. Instead it argues for strengthening connectivity between urban centres to reinforce agglomerations of urban areas and corridors such as that already established between London and Austria.

More investment is needed in second tier cities. SGPTD concludes that there is clear evidence of the negative effects of over investment in capital cities, which in the long run risks unsustainable development and underperformance, and argues for more investment in cities such as Leeds (see Figure 1). The project assessed the performance of 124 second tier European cities containing almost 80% of Europe's metropolitan population and found that many had growth rates at least equal to or higher than their respective first tier (usually capital) cities in the decade before the economic crisis started in 2007-8. Investment is needed particularly where the gap between a capital city and the second tier is large (the UK has one of the largest gaps) and growing. Local leadership and governance capacity are also key drivers.

Governance at the metropolitan level is a key aid to achieving superior economic performance according to CAEE, looking at the role of metropolitan areas (one capital and three non capitals including Manchester) in agglomeration economies. None of the governance arrangements in the four cases studied had a strong and direct influence over patterns of spatial economic change, which were more the product of business level locational decisions. However, they did play a key role in shaping the business environment through, for example, corporate tax policy; supporting knowledge intensive activities and speedy, clear public planning decisions. Growth over 1996-2006 in Greater Manchester south (containing Manchester airport) was comparable to London and the financial strength of its combined metropolitan governance is considerably greater than any other outside London.

Small and medium sized towns (SMTs) may have potential for greater economic performance through working together and/or as host to knowledge based activities. TOWN is considering the changing role of SMTs particularly as residential and/or productive centres and their potential as prospective knowledge intensive hosts. Using a new definition of urban settlements, adopted by the OECD and EU in 2011, the project is mapping the spatial distribution of SMTs in the urban hierarchy

in ten areas including Wales where 26% of the population (of nearly 3 million) live in SMTs. It is also considering the scope for SMTs to work together.

Assisting local strategies

Several **case study** based projects have helped a number of cities to identify how they could strengthen their individual contributions to the development of agglomeration centres and linkages between them, using a number of techniques such as analysing strengths, weaknesses, opportunities, threats. BEST METROPOLISES carried out evaluations of Paris, Berlin and Warsaw based on seven themes including, for example, economic development strengths, multi level accessibility, and attractiveness for living and working (which, unusually for ESPON, included housing conditions and social housing systems); and identified tools for benchmarking progress. GROSEE looked at the relationship between each of three SE Europe capitals (Athens, Bucharest and Sofia) and their surrounding areas and at the linkages between the capitals. POLYCE similarly identified how the roles of each of five medium sized central Europe cities (Vienna, Bratislava, Ljubliana, Prague and Budapest) could be enhanced; and the role they could play together in the development of the central European agglomeration economy.

Rural

General approaches

Both macro and micro level analysis reflecting top down (regional) and bottom up (local) factors are needed to identify more locally focused development, building on particular assets of an area. Intangible assets (for example, human capital) are key in helping an area reach its potential (EDORA and PURR).

Advocating this approach, EDORA's 'New Rural Paradigm' argues that rural areas rapidly changing socio-economically and their prospects and policy approaches should be re-evaluated. It identifies socio economic drivers of rural change and from this develops three sets of rural 'typologies' (descriptors each with a spectrum of subcategories) which could affect what rural policy approach may be needed. These are:

- Rurality accessibility;
- Economic re-structuring;
- Performance (in relation to different types of capital – human, financial etc).

PURR develops a four stage methodology, combining quantitative and qualitative information, for assessing the territorial potential of rural areas:

- Top-down: Collect information including: Benchmarking the area in its wider context; and Stakeholder perspectives on the area context.
- Bottom-up: Analysis-led including: Assessing the territorial potential: and Policy options and future development.

GEOSPECS takes a similar place/asset based approach to identifying the development potential in areas with geographic specificities (which it defines as cross-border, island, mountain, outermost and sparsely populated regions, together with coastal areas and inner peripheries. Not all of these will be rural areas (e.g. coastal areas) and the report does not discuss rurality specifically. However in reality the areal GEOSPECS areas (mountain, island, outermost and sparsely populated areas) are likely to be rural[8] and are likely to have weak economies.

Key messages

It is important to consider urban-rural linkages and how metropolitan hinterlands can assist the competitiveness of the urban area (POLYCE).

However, rural areas are capable of endogenous growth, not just that associated with agricultural policy. Urban areas should not be seen as the sole drivers of economic growth. Two areas with potential for policy development to support this are: bridging linkages from rural areas to the wider world for new knowledge and market information whilst also bonding linkages within an area to disseminate innovation; and developing short supply chains and 'relocalisation' to retain value, social capital and environmental benefits (EDORA).

[8] GEOSPECS area based designations relevant to the UK include areas designated as mountains in England, Scotland and Wales; areas sparsely populated in Scotland; areas covered by both mountain and sparse population designations also in Scotland; and islands in Scotland and the Isle of Wight in England.

A key challenge for rural cohesion policy is nurturing intangible assets such as skills, institutional capacity, entrepreneurial culture and networking. To this end policies need to be locally led but supported with advice and policy 'top down'. The LEADER approach is given as an example of this (EDORA).

Two key actions are: identifying rural potentials; and then making an area's assets work together. This might require both fiscal and non fiscal policy measures. The package of measures needs to be tailor made for an area and not a universal response (or, if universal, can be adapted to suit local circumstances (PURR).

Strategies for addressing common challenges of geographically specific areas, such as seasonal employment and lack of transport and other services, should consider potential for developing high quality niche products based on local features, and increase connectivity of businesses. Connections are being made between high biodiversity in areas of geographic specificities and their provision of ecosystems service – for example the importance of mountain regions as 'water towers' for coastal areas or the importance of forests for carbon sequestration. GEOSPECS suggests that policies need to reflect the value of such services (and other externalities they might provide) and how their populations can be supported to deliver these, rather than 'compensating' for having handicaps. ICT can help mitigate remoteness and lack of SGIs. Strategies should be centred on the local level (whilst also taking account of the wider context) and offer more flexible governance arrangements – the LEADER approach/community led local development is again suggested as one with potential (GEOSPECS).

Age and gender sensitive policy responses to economic and life expectations and aspirations of young people, especially women, in rural areas are needed to counteract regional selective depopulation processes (SEMIGRA). Case studies indicate that professional ambitions and social relations are more important to girls, with security more important to boys, suggesting that policies targeting female migration may need to consider personal relationships more.[9]

Comparative position

Europe/Regional: In terms of EDORA's rural typologies, agrarian regions broadly cover an arc from Finland, through the Baltic States to Greece, Southern Italy, SW France and the southern part of the Iberian Peninsula. The consumption countryside covers most of the Nordic countries, Germany, Italy, Southern France, coastal Spain and Portugal and more rural parts of the UK and Ireland. There is a concentration of 'depleting' regions in Eastern Europe. Rural UK[10] as defined in EDORA's typologies is shown on Map E1 below.

Looking at the representation of young women in rural areas, regions characterized by a major deficit of women in the age groups (20-34) are predominantly rural and are mainly located in Eastern Germany (SEMIGRA). The UK presents quite a mixed picture – largely a mix of four categories (p.9 Final Report).

Assisting local strategies

EDORA makes use of its three **rural typologies** as a suggested framework for analysis, using the 'EDORA cube', (structural type of rural area, spatial type and extent of accumulation or depletion;

[9] Analysis at the European level is given in Annex 1 to the Final Report.

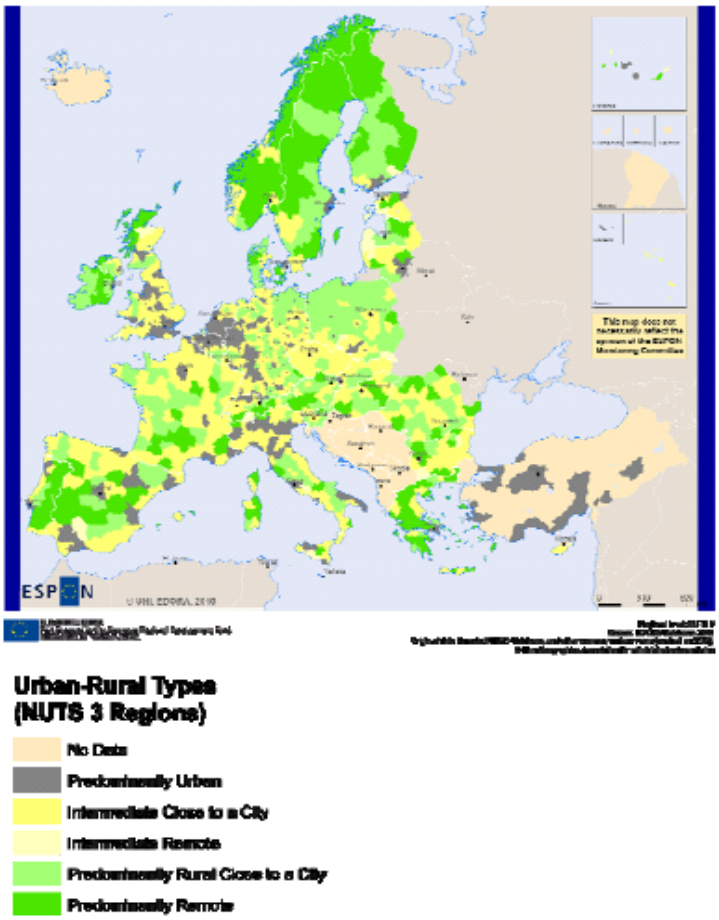
[10] EDORA has a country profile for each EU country. These are in Final Report, Annex 2 with a specific UK profile which summarises the data findings by rural typology (type of area – remote to accessible).

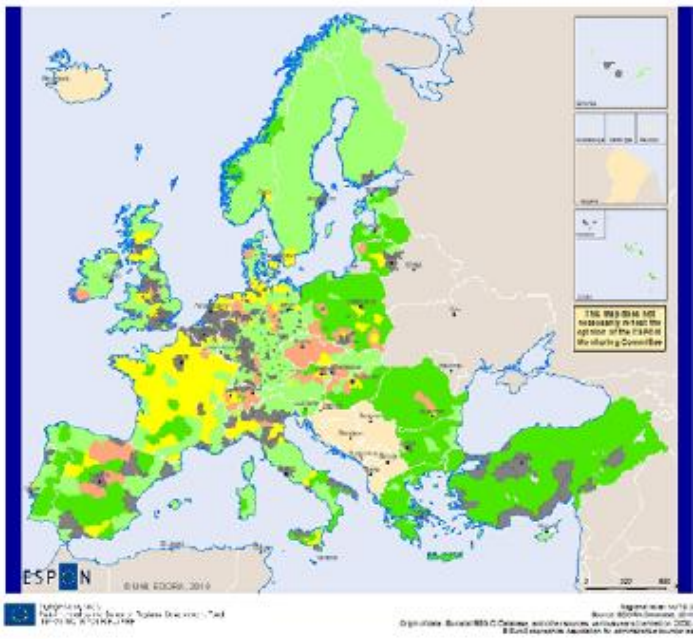
see map E1 and Cube diagram (Figure E1, Annex to this report). They could help define EU rural policy objectives and interventions.

EDORA has also developed future perspectives for rural change based on four **scenarios** taking into account of climate and economic change. These range from gradual climate change and a deregulated economy to rapid climate change and a highly regulated economy (See the Annex to this report, and Executive Summary/Chapter 5 Main Report).

EDORA goes on to describe three '**meta-narrative**s' which could influence future policy areas (Parts A & B, p.45). These are: agri-centric; rural-urban; and globalisation. The relevance of these at the policy level lie in the extent to which they interact with the different types of rural areas and the need for sectoral policies to be considered in terms of overall territorial impact (see the Annex to this report). This approach is applied in EDORA's **case studies**.

EDORA Typologies (EDORA)

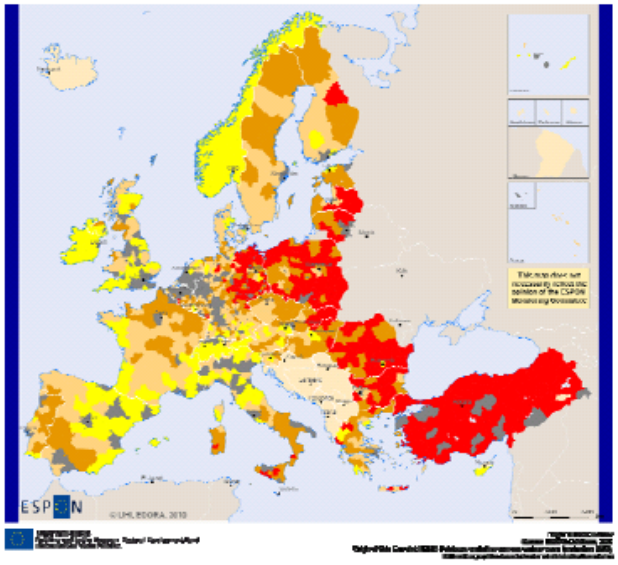




Structural Types (Intermediate and Predominantly Rural NUTS 3 Regions)

- No Data
- PU Regions
- Agrarian
- Consumption Countryside
- Diversified (Strong Secondary Sector)
- Diversified (Strong Private Services Sector)

Note: A simplified classification procedure was necessary in CH and TR, due to missing data. However it is anticipated that acquisition of a wider range of indicators would not materially change the outcome.



Performance (A-D) Types (Intermediate and Predominantly Rural NUTS 3 Regions)

- No Data
- PU Regions
- Depleting
- Below Average
- Above Average
- Accumulating

Note: The type allocations to TR and CH is based upon a reduced set of indicators, and should not be considered fully comparable with the typology for the EU27.

Source: page iv EDORA final report parts A & B

The PURR **benchmarking** step makes use of 8 themes with data at NUTS 1, 2, and 3 levels for each; they are economy, demography, transport and accessibility, natural assets, natural risks, climate change and environment, energy, rural areas, social and cultural, and governance. Indicators from EUROSTAT and ESPON were used and are listed in the final report, with the data given for each of the five **case studies**. Stakeholders are an important component in the PURR methodology and a stakeholder discussion template was developed for use in the five case study areas (Annex 3, p.268 Final Report).

GEOSPECS uses a **Nexus model of development factors**[11] that will enable policy development to look at opportunities and challenges and inter-relationships between actions. The Nexus model uses a standard set of 68 questions which include governance, economic vulnerabilities, accessibility and connectivity, demography, residential attractiveness, identity, natural assets and exploitation and vulnerability to climate change.[12] Use of the Nexus model in the GEOSPECS area **case studies** has illustrated common threads of closely knit local communities and strong ties and sense of identity as assets for local development, with landscape and natural assets contributing to tourism and residential attractiveness and quality of life. Competition for space, exploitation of marine resources and coastal climatic conditions are common threads in coastal areas.

[11] The Nexus model looks at defining features, challenges and opportunities and the intermediary processes (such as transport, size of labour market) that might link between defining features and the challenges/opportunities. It is a graphic way of seeking to present information and links.
[12] Questions are listed in Appendix E of the Final Report.

Cross Border

Key messages

Smart, sustainable and inclusive growth tends to be limited by borders and spatially focused cooperation is needed to identify and realise potential in cross border areas. Cross border areas can act both as separators (for example, there are different tax and employment systems) and interfaces (for example, permeability of borders leading to multi-cultural societies; cross border commuting). Policies need to overcome discontinuities and support cross border co-operation. They need to focus on the positive benefits that could arise from such co-operation not on separate benchmarking of the different cross border areas (GEOSPECS).

Economic activities tend not to be concentrated near borders and public authorities may have little interest in investment in such areas. Borders also appear to limit diffusion effects. However they have growth potential. The challenge is the development of place based approaches that make use of their potential and opportunities (ULYSSES). These strategies need to be explicitly adopted by the governments either side of the border if they are to influence territorial development.

Cross border co-operation can help to avoid conflicting climate change adaptation processes. Capacity to adapt to climate change challenges will be low in areas where cross border co-operation is weak (GEOSPECS and ESPON-Climate).

Assisting local strategies

GEOSPECS (see Rural above for its general approach) describes cross border areas which can include both remote rural and major metropolitan areas, as linear. It **defines cross border areas as those within a 45 minute drive time of a border**. It defines the relevant UK border area in this way as that between Northern and Southern Ireland.

METROBORDER provides an **approach to analysis of cross border metropolitan areas**, in particular their organisation and ways to make better use of their potential. It defines cross border metropolitan areas as those with several urban centres on either side of the border having the potential to operate in a complementary way, through co-operation in a complex multi-level context. Whilst METROBORDER defines its cross border metropolitan areas as all based in mainland Europe with one exception (Copenhagen/Malmo), the principles of its discussion could have resonance in other 'border' situations relevant to the UK.

METROBORDER uses **indicators** (cross-border commuting, public transport, the similarity of GDP per capita and residents citizenship) identifying that presence of a knowledge intensive or high tech sector is important in driving the extent of cross border employment. Improving transport performance, making best use of spatial planning and strong governance tools could all be important in achieving cross border potential and achieving critical mass.

ULYSSES uses applied research results from other ESPON projects to look at key EU territorial issues at a cross border level; cross-border polycentric development; patterns of urban/rural relationship; levels of accessibility and connectivity; effects of demographic change; and extent of attainment of Lisbon/Europe 2020 and Gothenburg objectives. It provides an approach for **assessing cross border institutional capacity.** The two stage approach comprises a 'status-analysis' stage (identifying opportunities and challenges) followed by an 'action-decision' stage, setting out a potential strategy.

The approach, including a quantitative analysis plus SWOT (identifying strengths, weaknesses, opportunities and threats) was applied in its six cross border **case study areas** (none in the UK).

GEOSPECS uses a **Nexus model of development factors** that will enable policy development to look at opportunities and challenges and inter-relationships between actions. The Nexus model uses a standard set of 68 questions.[13] This could be used in cross border areas to help build ESIF integrated growth strategies.

[13] The questions are listed in Appendix E of the Final Report.

TOOLS

Several ESPON projects provide approaches and tools which may help the setting of priorities, preparation of integrated strategies, action programmes, and governance arrangements, and monitoring of progress.

Setting priorities and preparing integrated strategies

RISE provides a **tool-kit to guide preparation of integrated regional strategies**, based on a study of how this could be achieved in four regions of varying nature – rural, urban, metropolitan – including the West Midlands**.** It illustrates how it is possible to govern and create integrated strategies in a complex environment with a multiplicity of semi autonomous stakeholders. Sharing a common vision is a key element in achieving collaboration between stakeholders. 'Spatial positioning' can reveal new functional boundaries and stakeholders.

SS-LR demonstrates **how scenarios can be used at city scale** with NUTS 3 data or below that level to expose key issues to be addressed. Applying the approach to Barcelona, five key issues were identified: how to switch from low to high value economic activities; where development should be located; managing attractiveness and securing higher value tourism; enhancing links between smaller cities and between industrial areas in the region; and addressing the large numbers of unskilled unemployed.

Governance arrangements

TANGO provides a **framework for assessing the strength of governance arrangements** for drawing up and implementing strategies and action programmes. It includes five dimensions (coordination, integration, mobilizing stakeholders, adaptability, realizing place based specificities) and, within them twenty components (Figure 6, p.26 and the Annex to this report). These are drawn from experience, (both good and bad) in 12 case studies of governance arrangements in a variety of places including two in the UK – North Shields Fish Quay (neighbourhood) and Manchester (metropolitan) (see Annexes for full case studies, Summaries in Draft Handbook).

A key and growing issue facing effective place based governance is that the boundaries of places for which policies and/or action is being decided are becoming "soft or fuzzy" i.e. not following administrative boundaries. This is an issue particularly for cross border governance, rural areas close to urban centres, dynamic urban centres outgrowing administrative boundaries and conglomerates. Some of TANGO's **case studies** illustrate how this issue has been approached in these sorts of places. Some of the projects highlighted in previous sections – such as EDORA (Scientific report: working paper 7G Institutional Capacity) and BEST METROPOLISES (Case Studies) – also address or provide experience on this issue.

Benchmarking

ESPON is preparing a webtool, CityBench, to help stakeholders **benchmark their cities against others**, on issues such as demographic challenges, economic challenges, social disparities/polarization, urban sprawl and greenhouse gas emissions.

Taking a bottom up approach, the KITCASP project also provides a **benchmarking tool**, based on a set of twenty key indicators under five policy themes (economic competitiveness and resilience, integrated spatial development, social cohesion and quality of life, environmental resource

management). This is designed for policy makers to use in the preparation of territorial development/spatial strategies (see the Annex to this report). The project was instigated by five stakeholders including the Scottish Government, all peripheral in relation to the core of Europe. Guidelines were developed on the use of the indicators in territorial policy development and spatial planning at a national level. The data available on a consistent basis across the five was limited in detail to NUTS 3 level, though local data collected below that was also used where possible. Despite the data limitations the indicator set could provide a good starting point for harmonising data analysis across countries, bearing in mind the increased requirements for more consistent monitoring of the impact of EU funds support (APPENDIX E Regional Indicators, F Guidelines for National Stakeholders G Available National data sets for Stakeholder Areas).

Impact assessment

Two ESPON projects have developed simple **tools for stakeholders to assess the impact on particular places of proposed policies or changes to regulations**. ARTS applied its methodology to 12 EU directives. Using three Excel based matrices and NUTS 2 level data, it identified regions where the impact of the 12 directives is felt the most, got example for the Directive on the use of biofuels, where one impact is increased soil sealing, Inner London, and – because of imports – Merseyside and Greater Manchester. The project explains how a 'standard quick check' can be done and if necessary extended into an 'advanced' quick check (Annex 7 and 8: Standard and Advanced Versions). It argues that this methodology can also be used to test the impact of policies and programmes at national and regional levels, as well as cross border and transnational regions.

EATIA**,** instigated by the UK national level**,** provides a simple assessment tool based on questions, which might take about two days worth of time to do. It tested its methodology extensively with practitioners at different levels. Assessing an EU level policy change would require national and regional/local level stakeholder web based input. Feedback from the testing was positive – "whilst the approach seems daunting, it is actually straightforward when applied" (Annex 3: UK testing report). As with ARTS, EATIA could be used below the EU level, for example as part of Regulatory Impact Assessment or at local level as part of Strategic Environment Assessment.

Use of European cooperation funds

European Cooperation programmes provide a potential source of funding to help develop and/or implement ESIF strategies. Some ESPON resources have been specifically designed to help potential users of European Territorial Cooperation Funding (for cross border, transnational and interregional cooperation) with for example, choice of topic, partner search, preparing evidence for applications and monitoring indicators.

TerrEvi Factsheets provide **evidence bases** for cross-border and transnational cooperation areas, including:

- Cross border: Western Scotland-Northern Ireland-Ireland; Ireland-Wales; France (Manche)-England; Four Seas (England, France, Belgium, Netherlands);
- Transnational: North Sea; Northern Periphery; North West Europe; Atlantic Area.

Each factsheet includes **indicators to help comparisons**, including the situation of the programme with the European average, other programmes and the countries involved and factors of interest to that programme. The Typologies project provides nine **typologies which could assist partner search**.

Providing an example of **indicators which could be used to assist monitoring of territorial development across a transnational area,** the BSR-TeMo project is identifying indicators from ESPON data for that purpose in relation to the Baltic Sea Region.

The TERCO project provides pointers to **maximising benefits of using transnational programme funding.** Surveying past users of these funds, it found the main benefits of the cooperation programmes to be capacity building and dissemination of new management ideas. UK respondents especially liked the flexibility to address a wide range of issues and additional funding to enable projects with similar themes to build synergies between them. The most successful projects were found to be those exchanging experience, sharing tools to tackle a common problem or advising each other on how to solve similar problems. Those involving jointly implementing common action or investments to solve local problems weren't as successful.

Factors for success include: focusing the cooperation on cultural events, tourism, economy, natural environment or physical infrastructure rather than educational exchange, risk prevention or social infrastructure; and having NGOs and local government bodies as partners and funders

ESPON PROJECT TITLES

Priority 1 = Applied research LP = Lead Partner
Priority 2 = Targeted Analysis LS = Lead stakeholder
Priority 3 = Scientific Platform LP = Lead Partner

ADES: Airports as Drivers of Economic Success in Peripheral Regions. Priority 2: Final Report Feb 2013. No UK Partners; LS Provinca of Savona, Italy.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/ades.html

AMCER: Advanced Monitoring & Coordination of EU R&D Policies at Regional Level. Priority 2 Project: Final Report Dec 2012. UK Partners: University of Sheffield; LS Tuscany Region, Italy.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/amcer.html

ARTS: Assessment of Regional and Territorial Sensitivity, Priority 1: Final Report July 2012. No UK Partners. LP: Austrian Institute for Regional Studies and Spatial Planning.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/arts.html

ATTREG: Attractiveness of European Regions and Cities for Residents and Visitors. Priority 1: Final Report Jan 2012. UK Partners: University of the West of England.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/attreg.html

BSR-TeMo: Territorial Monitoring for the Baltic Sea Region. Priority 3: Interim Report Nov 2012. LP Nordregio, Sweden.
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/bsr-temo.html

BEST METROPOLISES: Best Development Conditions in European Metropolises. Priority 1: Final Report Jan 2013. No UK Partners. LP Polish Academy of Sciences, Poland.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/bestmetropolises.html

CAEE: Case for Agglomeration Economies. Priority 2: Final Report June 2010. UK LP University of Manchester. UK Stakeholder: UK: Manchester Enterprises.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/CAEE.html

CityBench: For benchmarking European Urban Zones. Priority 3: Intermediate deliverable April 2013 (Final Deliverable due Feb 2014): LP Geodan Holding, NL.
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/citybench.html

DEMIFER: Demographic & Migratory Flows affecting European regions and cities. Priority 1: Final Report Sept 2010. UK Partners: University of Leeds.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/demifer.html

EATIA: ESPON and Territorial Impact Assessment. Priority 2. Final Report June 2012. LP: UK University of Liverpool. LS: UK Department for Communities.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/EATIA.html

EDORA: European Development Opportunities for Rural Areas. Priority 1: Final Report August 2011. UK Partners: UHI Millennium Institute, Inverness. University of Gloucestershire, Scottish Agricultural College, Newcastle University.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/edora.html

ESaTDOR: European Seas and Territorial Development, Opportunities and Risks. Priority 1: Final report April 2013. UK LP: University of Liverpool.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/ESaTDOR.html

ESPON-CLIMATE: Climate Change and Territorial Effects on Regions and Local Economies. Priority 1: May 2011. UK Partner, Newcastle University.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/climate.html

EU-LUPA: European Land Use Pattern. Priority 1. Draft Final Report June 2012. No UK Partners. LP Labein-Tecnalia Technology Centre, Spain.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/EU-Lupa.html

FOCI: Future Orientation of Cities. Priority 1: Final report Dec 2010. No UK Partners. LP Free University of Brussels - IGEAT, Belgium.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/foci.html

GEOSPECS: Geographic Specificities and Development Potentials in Europe. Priority 1 Final Report December 2012. UK Partners: University of the Highlands and Islands (Perth College, Centre for Mountain Studies).
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/geospecs.html

GREECO: Territorial Potentials for a Greener Economy. Priority 1. Interim Report November 2012. No UK Partners. LP Fundation Technalia Research, Spain.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/greeco.html

GROSEE: Growth Poles in SE Europe. Priority 2: Draft Final Report Dec 2013. No UK Partners or Stakeholders. LS: Romania, Ministry of Regional Development
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/grosee.html

KIT: Knowledge, Innovation, Territory. Priority 1 project: Published November 2012. UK Partners: London School of Economics, Cardiff University.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/kit.html

KITCASP: Key Indicators for Territorial Monitoring. Priority 2: Draft Final Report July 2013. LS: Scottish Government Directorate for Built Environment.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/kitcasp.html

METROBORDER: Cross Border Polycentric Metropolitan Regions. Priority 2. Final Report December 2010. No UK Partners. LS Feneral Office for Spatial Development, Switzerland.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/metroborder.html

POLYCE: Metropolisation and Polycentric Development in Central Europe. Priority 2: Final Report May 2012. No UK Partner or stakeholder: LS: Austria: Dept. of Urban Development & Planning, City of Vienna.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/polyce.html

PURR: Potentials of Rural Regions. Priority 2: Final Report June 2012. UK Stakeholders: N Yorkshire County Council, Welsh Assembly Government, Dumfries & Galloway Council. UK Academics: London South Bank University.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/purr.html

ReRISK: Regions at Risk of Energy Poverty. Priority 1.. Final Report November 2010. No UK Partner LP INNOBASQUE, Spain.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/rerisk.html

RISE: Regional Integrated Strategies in Europe. Priority 2: Final Report July 2012 LS: UK: Birmingham City Council. Lead Partner: UK: University of Birmingham.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/rise.html

SeGi: Indicators and perspectives for services of general interest in territorial cohesion and development. Priority 1: Draft Final Report: Jan 2013. UK Partners: University of the West Of England.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/SeGI.html

SEMIGRA: Selective Migration and Unbalanced Sex Ratio in Rural Regions. Priority 2: Final Report June 2012. UK Stakeholders/Partners: None. LS Ministry for Regional Development & Transport, Federal State of Saxony-Anhalt, Germany.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/semigra.html

SGPTD: Second Tier Cities and Territorial Development in Europe. Priority 1: Final report June 2012. UK Partners: LP: John Moore University, Liverpool. Other UK Partner: University College London.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/SGPTD.html

SIESTA: Spatial Indicators for a "Europe 2020 Strategy" Territorial Analysis. Priority 1: Final Report Aug 2012. UK Partners: None. LP University of Santiago de Compostela, Spain.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/siesta.html

SS-LR: Spatial Scenarios: New Tools for Local-Regional Territories. Priority 2: Final Report: July 2010. Lead Partner & Stakeholder: Italy: Polytechnic of Milan; Spain: Barcelona Provincial Council.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/SS_LR.html

TANGO: Priority 1: Draft Final Report June 2013.. UK Partner: University of Newcastle.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/tango.html

TeDi: Territorial Diversity. Priority 2: Final Report Feb 2013. UK Partners: None LS Ministry of Local Government & Regional Development, Norway.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/espontedi.html

TERCO: European Territorial Cooperation as a Factor of Growth. Priority 1: Final Report March 2013 UK Partner: EPRC-University of Strathclyde.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/terco.html

TerrEvi-Factsheets: Cross-border and transnational Cooperation Areas. Priority 3. Nov 2012. LP Sweden: Nordregio.
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/terrevi_factsheets121128.html

TerrEvi-Evidence Packs: For Structural Funds Programmes. Priority 3 Project: Interim Report March 2013. LP Austria: Metis Gmbh, Vienna.
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/terrevi_TerritorialEvidencePacks131122.html

TIGER: Territorial Impact of Globalisation for Europe & its Regions. ESPON Priority 1: Final Report June 2012 UK Partners: University of Reading.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/tiger.html

TIPSE: Territorial Dimension of Poverty and Social Exclusion in Europe. Priority 1. Interim Report Dec 2012 (Final Report due May 2014). UK Partners: University of the Highlands & Islands, Millennium Institute, University of Newcastle upon Tyne.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/tipse.html

TIPTAP: Territorial Impact Package for Transport and Agricultural Policies. Priority 1.. Final Report January 2013. UK Partner, University of Newcastle.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/tiptap.html

TOWN: Small & Medium Sized Towns in their Functional Territorial Context. ESPON Priority 1: Interim Report Jan 2013. UK Partner: University of West of England, Bristol.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/town.html

TRACC: Transport Accessibility at Regional/Local Scale and Patterns in Europe .Priority 1. Interim Report February 2011. No UK Partners. LP Spiekermann & Wegener, Urban & Regional Research, Germany.
http://www.espon.eu/main/Menu_Projects/Menu_AppliedResearch/tracc.html

TYPOLOGIES: Interim Report June 2009: Priority 3 No UK Partners. LP Lelbniz Institute for regional Development. Germany.
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/typologycompilation.html

ULYSSES: Cross-border spatial development planning. Priority 2. Final Report January 2013. No UK Partners. LS Alsace Region, France.
http://www.espon.eu/main/Menu_Projects/Menu_TargetedAnalyses/ulysses.html

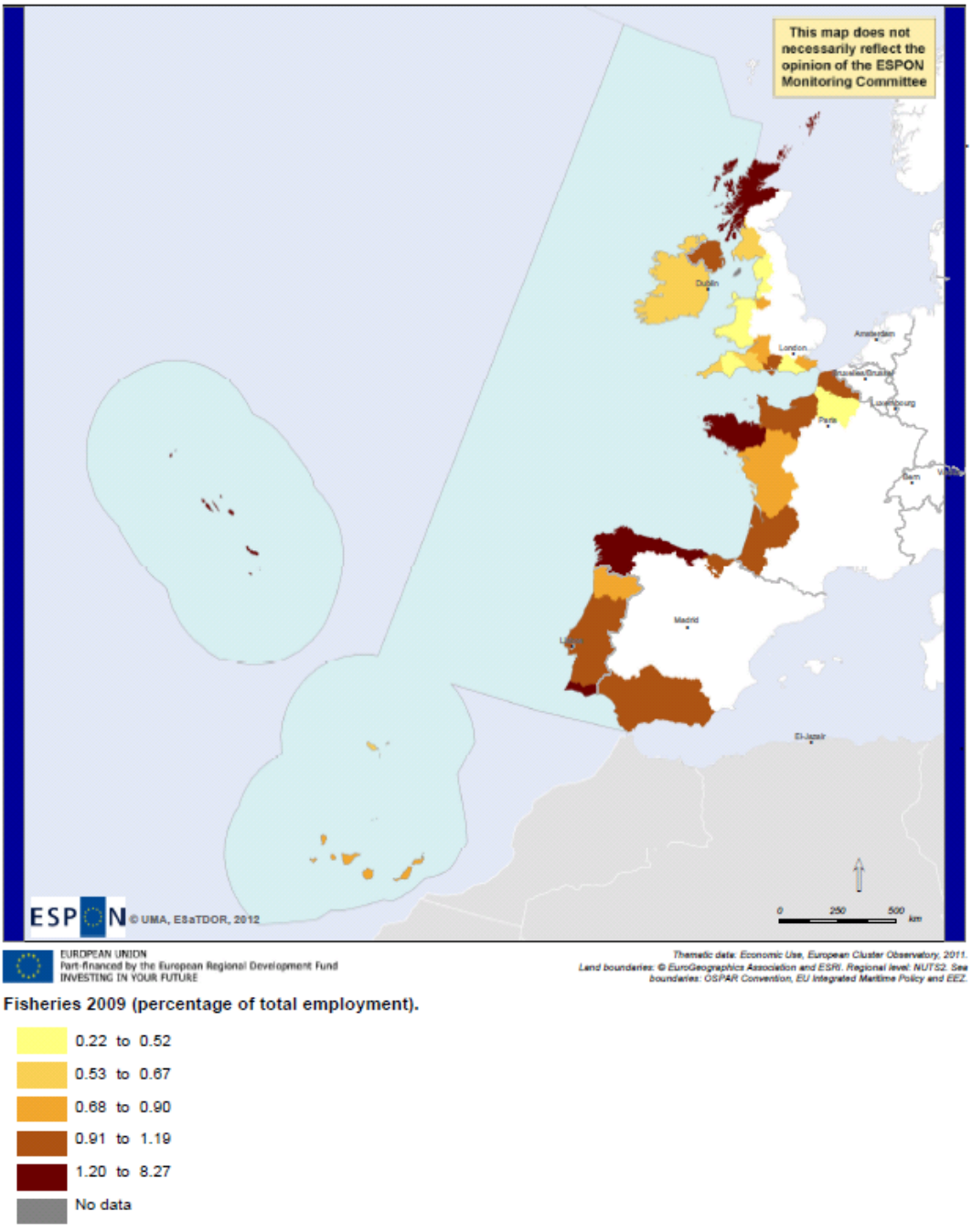
ANNEX

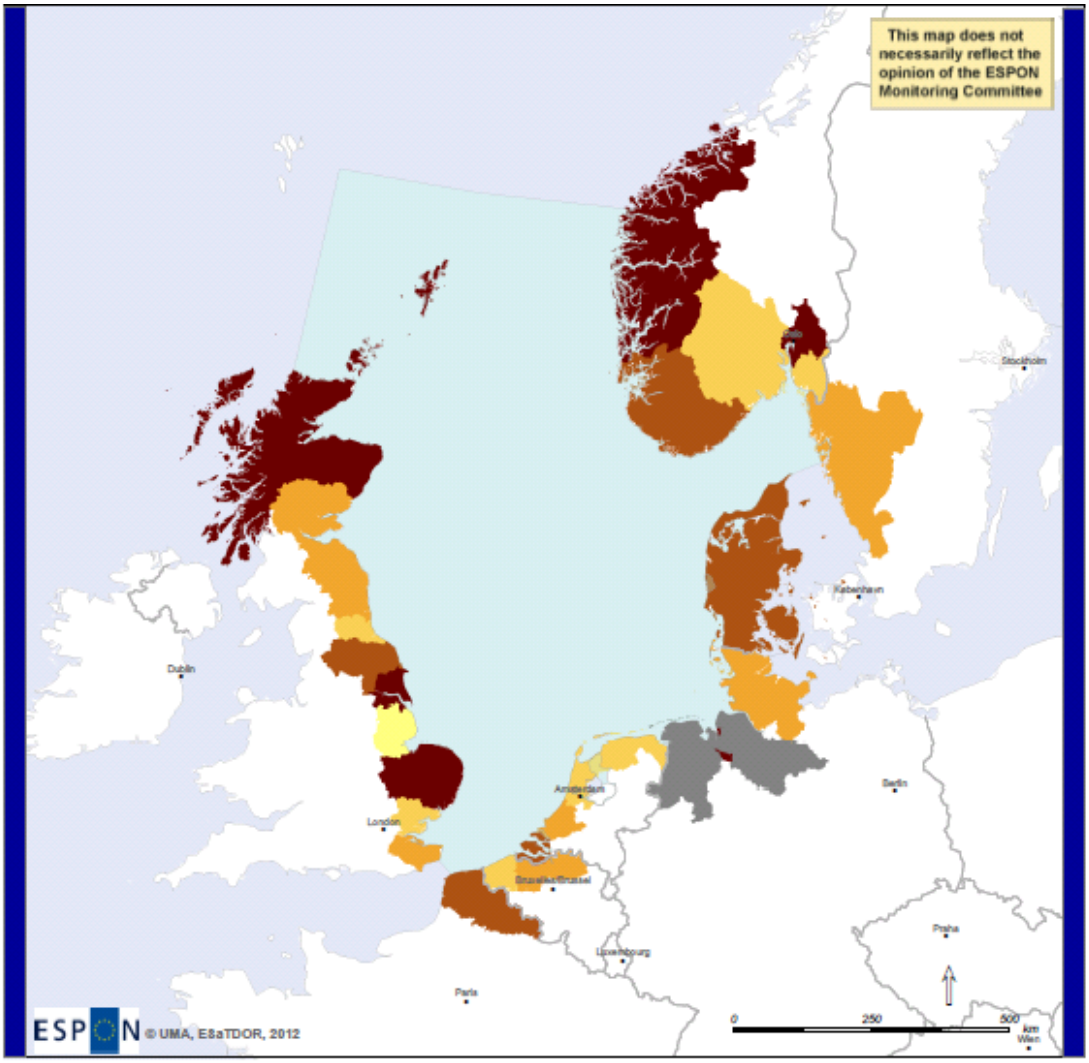
This Annex provides supplementary information to the main report, using ESPON results. It provides:

- some additional maps and diagrams;
- an explanation of NUTS areas;
- the case study table.

Theme 3: Competitiveness and SMEs

Employment in Fisheries (Atlantic and North Sea) (ESaTDOR)





EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

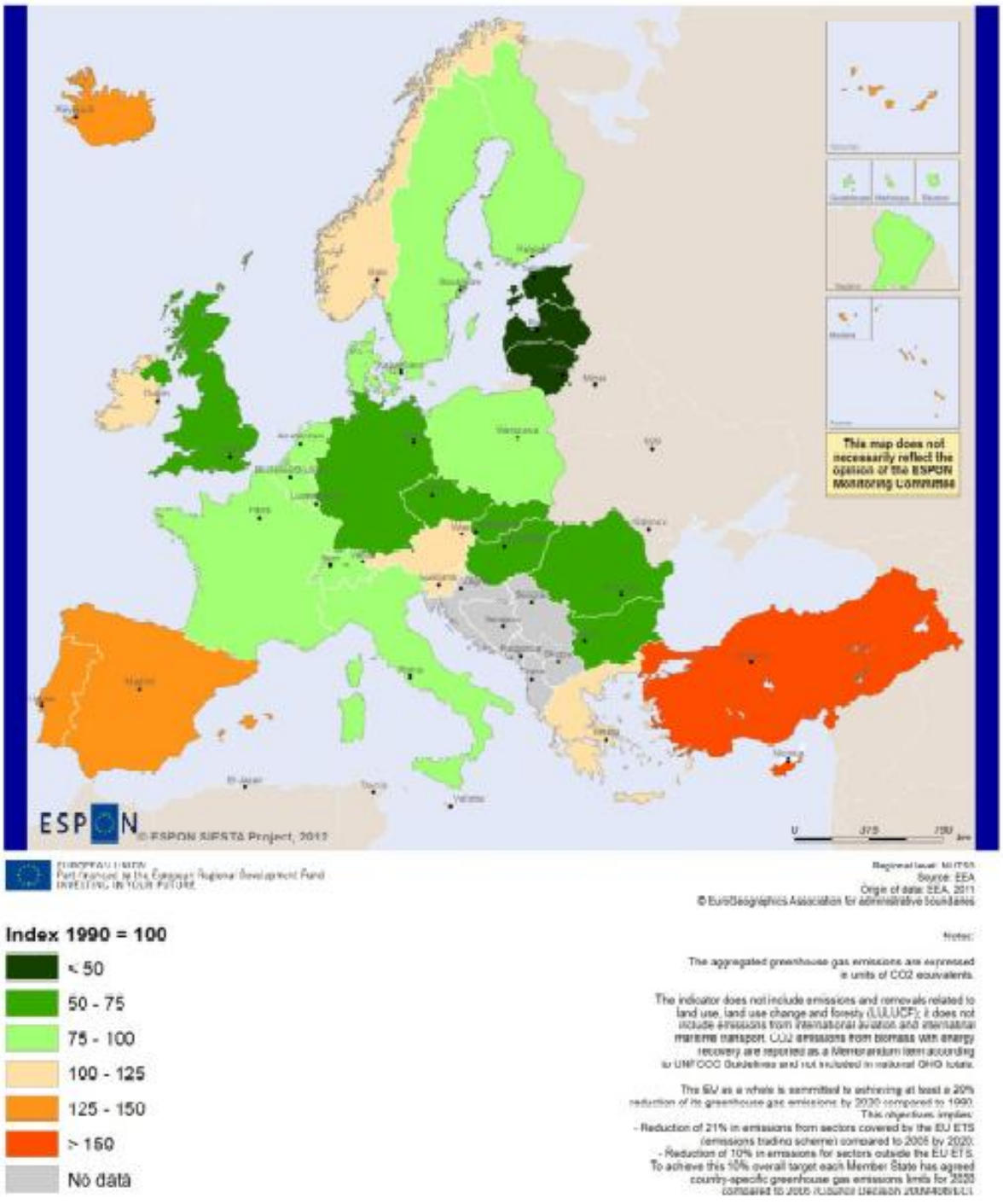
Thematic data: Economic Use, European Cluster Observatory, 2011.
Land boundaries: © EuroGeographics Association and ESRI. Regional level: NUTS2.
Sea boundaries: OSPAR Convention, EU Integrated Maritime Policy and EEZ.

Employment in Fisheries 2009, (percentage of total employment).

- 0.22 to 0.52
- 0.53 to 0.67
- 0.68 to 0.90
- 0.91 to 1.19
- 1.20 to 8.27
- No data

Theme 4: Low Carbon Economy: Maps

GHG Emissions in Europe, 2009 compared to 1990 (SIESTA)



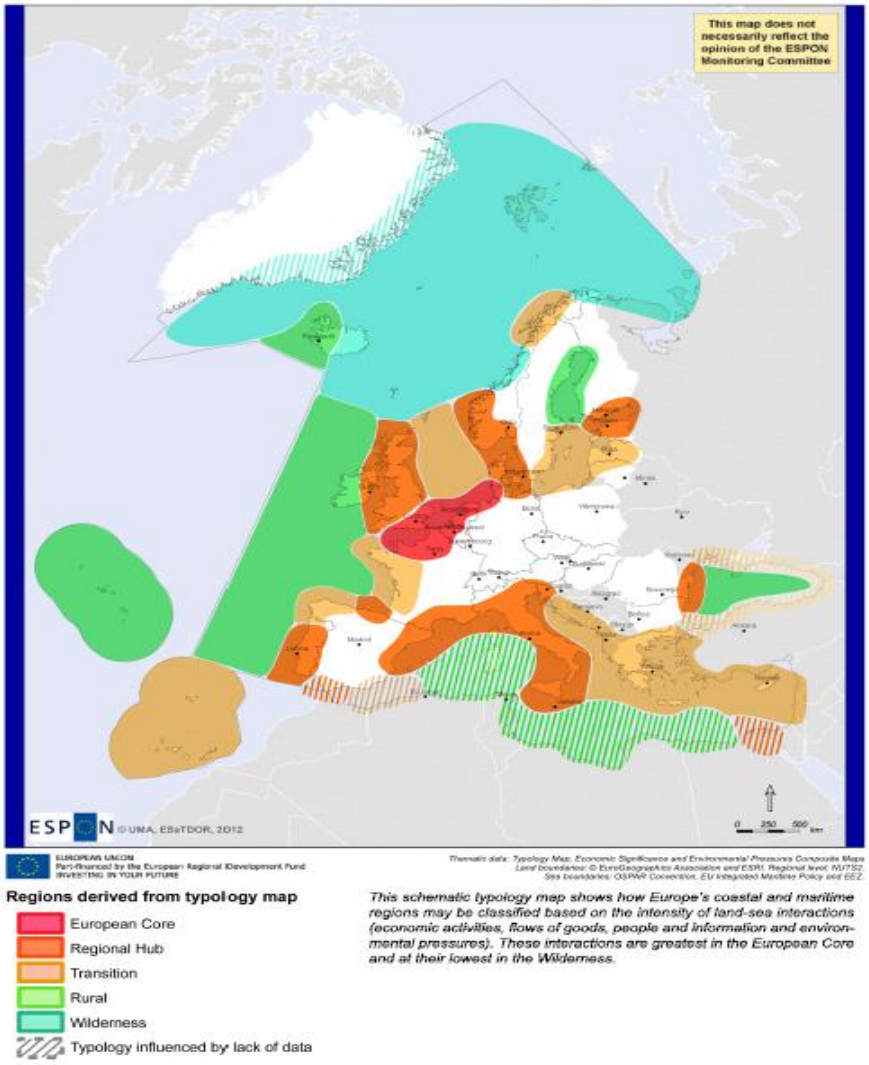
Theme 6: Environmental Protection

ESaTDOR maritime typologies; Table and Map

Typology of Maritime Areas	European Core (includes Channel and southern North Sea)	Regional Hub (covers remainder of UK)	Transition	Rural	Wilderness
Environmental pressures	High environment-al pressure associated with human uses.	Significant environment-al pressures.	Medium environment-al pressures.	Low environment-al pressure.	Limited environmental pressure.

(for ESaTDOR map of environmental pressures, see p.51 Scientific Report).

Typology of European Maritime Regions (ESaTDOR)



Theme 7: Sustainable Transport

Page 37 of TIPTAP scientific report – TIA of transport policy – congestions costs (see also page 36 – economic growth).

Territorial Impact of Transport Policy (TIPTAP)

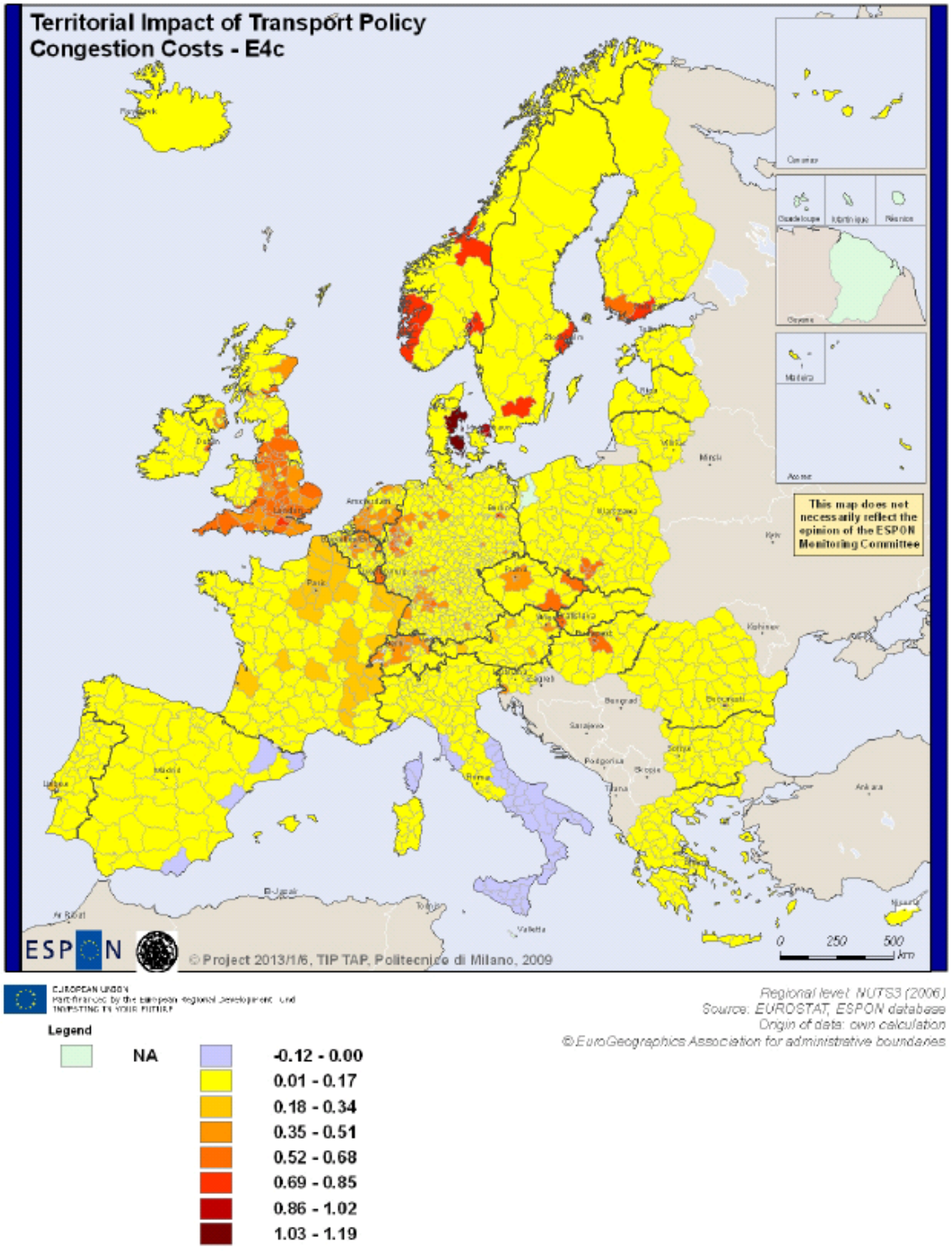


Table E1. TRACC set of accessibility indicators

Spatial context	*Basic characteristics*	*Generic type of accessibility indicator*		
		Travel cost	***Cumulated opportunities***	***Potential***
Global	***Travel***	***Access to global cities*** Travel time (intermodal) to global city (New York, Tokyo)	***Global travel connectivity*** Number of flights from European airports to intercontinental destinations reachable within three hours	***Global potential accessibility travel*** Intermodal accessibility to intercontinental flights of European airports weighted by destinations as mass
	Freight	***Access to global freight hubs*** Travel time/cost (intermodal) to major intercontinental terminals (Shanghai, Detroit)	***Global freight connectivity*** Intercontinental container throughput of European sea ports reachable within 24 h travel time	***Global potential accessibility freight*** By road and rail to container throughput of European sea ports
Europe	***Travel (traditional)***	***Access to top ten MEGAs*** Average fastest travel time to top ten MEGAs	***European daily accessibility travel*** Daily accessibility to population by road, rail, air	***European potential accessibility travel*** To population by road, rail, air, multimodal
	Travel (new)	***Travel speed*** Average travel speed by road and rail	***Urban connectivity*** Urban connectivity by road, rail, intermodal	***European potential acc. intermodal travel*** To population intermodal (all modes)
	Freight	***Access to nearest maritime ports*** Average generalised cost to nearest three maritime ports	***European daily accessibility freight*** GDP accessible within allowed lorry driving time	***European potential accessibility freight*** Accessibility potential to GDP by different modes
Regional	***Travel (Europe-wide)***	***Access to high-level transport infrastructure*** ICON based access time to motorway exits, rail stations, airports	***Availability of urban functions*** Cities > 50.000 within 60 minutes by road and rail	***National potential accessibility travel*** To national population by road and rail
	Freight (Europe-wide)	***Access to freight terminals*** ICON based access time to freight terminals	***Availability of freight terminals*** Freight terminals within 2 h by lorry	***National potential accessibility freight*** To national GDP by lorries and rail freight
	Travel (case studies, traditional)	***Access to regional centres*** Travel time to nearest regional centre by road and public transport/rail	***Daily accessibility of jobs*** Jobs accessible within 60 minutes by road and public transport/rail	***Regional potential accessibility*** To population by road and public transport/rail
	Travel (case studies, to services of general interest)	***Access to health care facilities*** Travel time to nearest hospital	***Availability of secondary schools*** Number of secondary schools within 30 minutes of road travel time	***Potential accessibility to basic health care*** Potential accessibility to general practice surgeries

Local Contexts: Rural

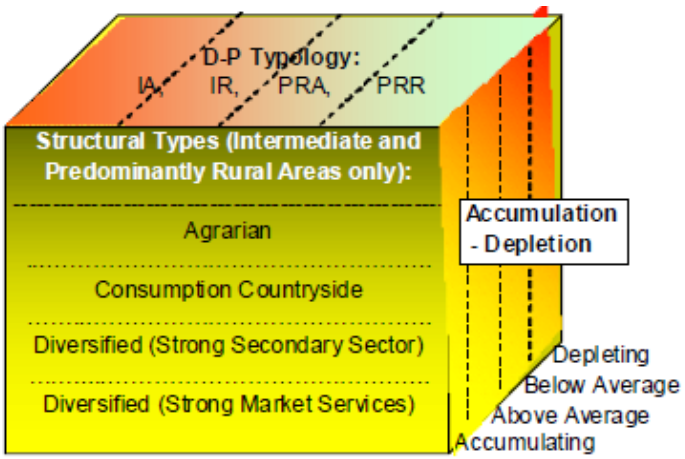


Figure E1: The EDORA Cube – a 3 dimensional framework for analysis
Note: IA = Intermediate Accessible, IR = Intermediate Remote
PRA= Predominantly Rural Accessible PRR = Predominantly Rural Remote

EDORA Climate Change Scenarios

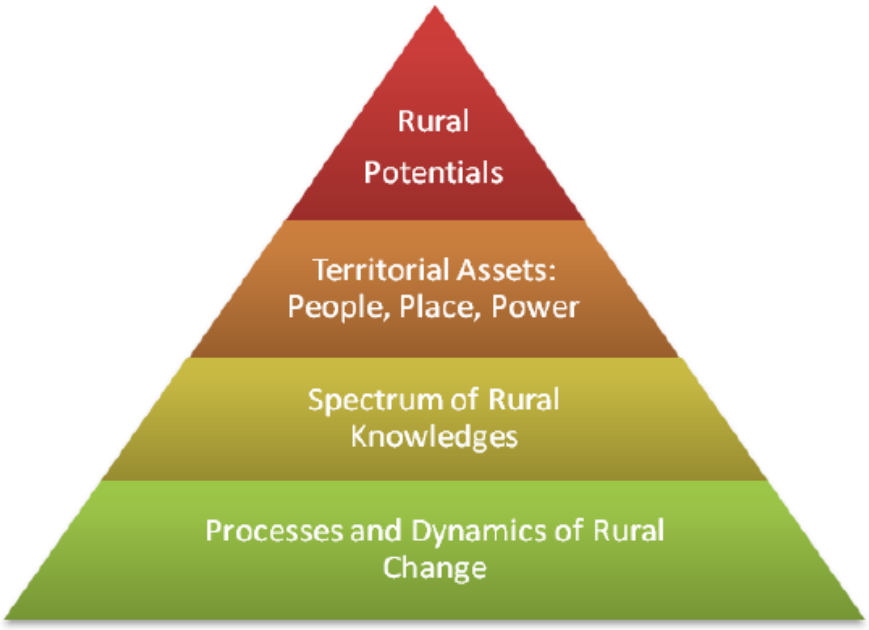
- Gradual climate change and a de-regulated market economy; described as close to 'business as usual' and likely to lead to increasing regional differentiation. This is seen as the most likely scenario.
- Gradual climate change and a highly regulated economy' where a shortage of capital limits the response to climate change with significant impacts on economic activity and quality of life.
- Rapid climate change and de-regulated market economy; which attaches a premium to land as a valuable resource, suggests increasing intensification of agriculture, concentration of rural production in corporate hands, more R&D but with benefits most likely in accessible rural areas.
- Rapid climate change and a highly regulated economy; suggesting more of a sustainability approach to development in the primary and secondary sectors and a slow down/reversal in tertiary sector development.

The EDORA Meta narratives

Meta Narrative	Opportunities	Challenges	Policy Domains
Agri-centric	Increased agricultural competitiveness in some areas Diversification Remuneration for rural amenities (consumption countryside) Quality products, short supply chains, regional appellation	Loss of agricultural competitiveness in some areas leading to low income or abandonment Decline in farm employment even in competitive areas Environmental effects of intensification in competitive areas Difficulty in valuation of public goods	Agriculture Rural development Human capital (training and skills) Land use
Rural-urban	Counter-urbanisation (increased population and economic activity) in intermediate and accessible rural areas ICT facilitating new activities Establishment of the new rural economy	Sparsity (especially in remote rural areas) Peripherality Selective out-migration from remoter regions Accelerated demographic ageing Difficulty in provision of services (of general interest) Pump effects of infrastructure improvements	Infrastructure Tele-communications Land use planning Transport Services of general interest
Global -isation	Wider markets for rural products Rapid diffusion of innovation Increase in 'primary segment' jobs Expanded opportunities for international tourism	Restructuring- loss of competitiveness for traditional activities Rationalisation of globally controlled activities likely to concentrate into accessible rural, intermediate or urban regions Loss of local control over economic activities and employment Loss of regional distinctiveness leading to reduced residential or tourism attraction	Competition Trade Employment Social inclusion Tourism

Source: EDORA Final Report Parts A & B, p.45.

PURR discusses different strategic approaches that might range from a high risk approach involving significant leadership e.g. creating new demand, to a relatively low risk approach such as promoting rural tourism in an area with a national park near to an urban centre. Stakeholders need to consider the consequences of their choices around strategic approaches. Stakeholders are an important component in the PURR methodology and a stakeholder discussion template was developed for use in the five case study areas. This is based on structured thinking working from the bottom to the top of a 'rural potentials pyramid' (below) as developed by the project and particularly for use in Step 2 of the PURR methodology:



Tools

Tango: Governance

Dimension 1: Coordinating actions of actors and institutions

1) Distributing power across levels
2) Distinguishing modes of leadership
3) Structures of coordination
4) Dealing with constraints to coordination

Dimension 2: Integrating policy sectors

5) Structural context for sectoral integration
6) Achieving synergies across sectors
7) Acknowledging sectoral conflicts
8) Dealing with sectoral conflicts

Dimension 3: Mobilising Stakeholder participation

9) Identification of stakeholders
10) Securing of democratic legitimacy and accountability
11) Integration of interests/viewpoints
12) Insights into territorial governance processes

Dimension 4: Being adaptive to changing contexts

13) Institutional learning.
14) Individual learning and reflection
15) Evidence of forward-looking actions
16) Scope of flexibility/experimentation

Dimension 5: Realising place-based/territorial specificities and impacts

17) Criteria/logic of defining intervention area
18) Coping with hard and soft/functional spaces
19) Utilisation of territorial (expert) knowledge
20) Integration of territorial analysis

Figure 6: The 20 components of territorial governance as a framework for synthesising the 12 case studies

KITCASP Benchmarking

Table A2: Final Inventory of Key Indicators for Territorial Cohesion and Spatial Planning		
Indicator		**Unit of Measurement**
Policy Theme: Economic Competitiveness and Resilience		
1	GDP per capita/ GVA per capita	€ per inhabitant
2	Employment rate of population aged 20-64	% (total work force)
3	Total R & D expenditure as % of GDP	% of GDP
4	Balance of external trade	% of total trade
5	Economic structure	% employment by sector (Primary, Secondary, Tertiary)
Policy Theme: Integrated Spatial Development		
6	Population density Population change	Number of people per Km^2 Absolute values for change in population
7	House completions	Absolute values or % of total housing stock
8	Modal split	% of total number of trips (bus, rail, car, bicycle)
9	Land use change	% of total (building, roads, domestic, green space, agricultural, woodland, water, etc.)
10	Access to services (hospitals and schools)	Travel time (minutes) to hospitals/schools
Policy Theme: Social Cohesion and Quality of Life		
11	Population aged 30-34 with tertiary education	% of total population aged 30-34
12	Population at risk of poverty	% of total population at risk of poverty
13	Green space accessibility	% of total population within 500 metres of public managed green areas (active and passive)
14	Well-being index	Index Score
15	Dependency ratio	% of total population
Policy Theme: Environmental Resource Management		
16	Renewable energy production (wind, hydro, biomass, etc.)	Megawatts and % by renewable energy type
17	Greenhouse gas emissions	Tonnes CO_2 eq. per individual
18	Population at risk of flooding (living in flood-prone areas)	% of total population
19	Number and status of protected European habitats and species	Number and Conservation Status (EU defined status of Natura 2000 sites - SACs and SPAs and Annexed species)
20	Water quality status	Absolute values on the actual status or objective met/failed (as per WFD for groundwater, rivers, lakes, estuarine, coastal)

What are NUTS and LAU?

They are statistical units based on administrative areas used by the EU to enable comparison e.g. of unemployment levels. The administrative units corresponding with 'levels' of NUTS and LAUs for countries in the UK are as follows:

Level	England	Scotland	Wales	N Ireland	UK
NUTS 1	Regions**	Scotland	Wales	N. Ireland	12
NUTS 2	Counties/Groups of Counties	Combination of Council areas/LECs/ parts	Groups of UAs	Groups of Counties	37
NUTS 3	Counties/Groups of Counties	As above	As above	Groups of UAs	139
LAU 1	Districts/UAs	As above	UAs	Districts	415
LAU 2	Ward*/Division*	Ward*/or (rarely) part	Divisions*	Wards*	C10,000

LECs = Local Enterprise Councils

UAs = Unitary Authorities

- = Electoral unit

** = Former Government Offices for regions areas: now Regions for statistical purposes

NUTS = Nomenclature of Units for Territorial Statistics

LAUs = Local Administrative Units (LAU1 – formerly NUTS 4; LAU2 – formerly NUTS 5)

Source: Office For National Statistics website

List of UK case studies in ESPON reports

UK Case Studies in ESPON reports	Strengthening R&D and innovation	ICT	SME Competitiveness	Low Carbon economy	Climate change adaptation	Environmental protection	Sustainable transport/networks	Employment and labour mobility	Social inclusion and poverty	Education, skills and learning	Tools	Urban	Rural	Cross Border	Case studies in non UK locations
AMCER	Thematic; biotech, ICT, food sector. Regional testing - East of England, UK														Italy, Slovakia - thematic. 8 other regions for regional testing.
ATTREG								Cornwall							6 case studies
CAEE												Manchester			3 case studies
Best Metropolises						√						√			3 city benchmarking studies (Paris, Berlin, Warsaw)
Demifer								London, West Yorkshire including/contrasting Leeds and Bradford							10 case studies
EDORA			Skye & Lochalsh, North Yorkshire					Skye & Lochalsh, North Yorkshire					Skye & Lochalsh, North Yorkshire		7 case studies
ESPON Climate					Atlantic coast in Scotland - part of coastal zone aquifers case study									Atlantic coast in Scotland - part of coastal zone aquifers case study	6 case studies
ESTaDOR							North Sea and Atlantic Sea profiles and governance case studies								4 sea profiles and case studies (Arctic, Black Sea, Baltic Sea, Mediterranean)
EU LUPA						√									4 case studies
GEOSPECS			Highlands and Islands. Celtic Sea					Highlands and Islands. Celtic Sea					Highlands and Islands. Celtic Sea. Outer Hebrides	Highlands and Islands. Celtic Sea. Outer Hebrides	13 case studies
GREECO				Cornwall		Cornwall									8 case studies
GROSEE												√			3 city case studies
Metroborder														√	2 case studies, Upper Rhine, Luxembourg Greater Region.

UK Case Studies in ESPON reports	Strengthening R&D and innovation	ICT	SME Competitiveness	Low Carbon economy	Climate change adaptation	Environmental protection	Sustainable transport/networks	Employment and labour mobility	Social inclusion and poverty	Education, skills and learning	Tools	Urban	Rural	Cross Border	Case studies in non UK locations
POLYCE							√					√			5 city case studies
PURR			Cambrian Mountains, Dumfries & Galloway, North Yorkshire										Cambrian Mountains, Dumfries & Galloway, North Yorkshire		2 case studies; Norway, Latvia
ReRISK				√											4 case studies. 3 regional typology examples
RISE															
SeGI		Gloucester													8 case studies
Semigra													√		5 case studies
SGPTD												Leeds			8 second tier city case studies
SS-LR											√				3 case studies - Barcelona, Turin, Herault
TANGO											Greater Manchester. North Shields				10 case studies
TIGER												London			
TIPSE									Eilean Siar, Western Isles						9 case studies
TOWN												Wales			9 typologies for town sizes/densities
TRACC						√	√	√	√	√					7 case studies
ULYSSES														√	6 case studies. 7 Fact sheets

About the research

The EU funded ESPON research programme aims to support policymakers for different territories – whether country, region, city, rural area, or island-based – to achieve EU 2020 goals for smart, sustainable and inclusive growth. This report outlines ESPON results which may support European Structural and Investment Funds (ESIF) activities in the UK. This report is based on research conducted for the RTPI by Christabel Myers and JOHT Resources Ltd.

Further information

The report is available on the RTPI website at: www.rtpi.org.uk/espon

About the RTPI

The Royal Town Planning Institute holds a unique position in relation to planning as a professional membership body, a charity and a learned institute. We have a responsibility to promote the research needs of spatial planning in the UK, Ireland and internationally.

More information on our research projects can be found on the RTPI website at: www.rtpi.org.uk/knowledge/research/

You are also welcome to email us at: research@rtpi.org.uk