

Second ESPON 2013 Synthesis Report
ESPON Results by early 2013

Territorial insight:
Where to focus what types of investments



Colophon

ESPON 2013 Programme

Coordination Unit
4, rue Erasme
L-1468 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 42 59 91 4700
Fax: +352 42 59 91 4701
Email: info@espon.eu

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Information on the ESPON Programme and projects, the complete reports and list of partners involved can be found at www.espon.eu

The ESPON website always presents the latest developments in the ESPON Programme and findings from ESPON projects. It offers the opportunity to consult in detail ESPON publications, tools, project reports and indicators available in the ESPON database.

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The content of this report is based on the results of applied research projects by transnational teams of research taking part in the ESPON 2013 Programme. As such, the maps and texts do not necessarily reflect the opinion of the ESPON Monitoring Committee.

EU Cohesion Policy has a vital role to play in Europe's recovery from the economic and financial crisis. Evidence-informed policy decisions play an important role in this process. The ESPON 2013 Programme supports policy development in relation to EU Cohesion Policy by researching European territorial structures, trends, perspectives and policy impacts. ESPON's findings show Europe's territorial diversity, and make comparisons between regions and cities. The comparable information on territorial dynamics provided by ESPON can be used for the development of integrated approaches in the framework of the European Structural and Investments Funds (ESIF) 2014 to 2020.

The ESIF are a key mechanism for delivering smart, sustainable and inclusive growth, the central themes of the Europe 2020 Strategy that guides the EU's economic recovery. The present report connects territorial evidence from ESPON to the eleven key themes for investment of the ESIF. In doing so, it offers an evidence base pointing to where to focus what types of investments.

Policies in European regions, cities and larger territories need to be well aware of current dynamics and to build on the particular strengths of each region and city. ESPON undertakes applied research on topics defined by policy makers, such as innovation, accessibility, energy, or the green economy. The current ESPON Programme launched its first projects in 2008 and the majority of its applied research was commissioned before the eleven key themes of ESIF were known. Nevertheless, for all eleven themes ESPON results show important territorial differences and framework conditions that need to be considered for an efficient and effective use of the investment through ESIF programmes and for achieving the objectives of Europe 2020.

Seeing the development potentials and challenges of an area in a European perspective is becoming an intrinsic component of smart, sustainable and inclusive growth - strategic goals that can only be met through the active contribution of all European regions and cities.

This ESPON report draws on the work of transnational research teams from all over Europe working together in numerous ESPON projects. It presents a synthesis of results from the research undertaken up to the start of 2013. It is garnished with examples from targeted analysis projects supporting the use of results by Member and Partner States, regions and cities.

The report is the second in a series of three ESPON Synthesis Reports envisaged. They all aim at communicating ESPON evidence to policy makers, practitioners and organisations who make and implement integrated, place-based policy.

ESPON has also published various other reports and information material that can be helpful in developing activities under the future ESIF. For instance, ESPON Evidence Briefs condense key research results in an easy-accessible manner and Territorial Observations elaborate in a short and concise way a particular topic. ESPON has recently also delivered territorial evidence to all 66 European Territorial Cooperation (ETC) Programmes under Structural Funds in order to support the development of the programmes to be carried out in the 2014-2020 period.

All ESPON publications are available at the programme's website.

You are invited to use ESPON results, data and maps which can be all accessed for free on www.espon.eu.

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EU Cohesion Policy post-2013 focuses on eleven investment themes where European cities and regions need to improve their performance in order to contribute to smart, sustainable and inclusive growth. In seeking better integration to maximise the benefits from investment of public money, all key themes of the future European Structural and Investment Funds (ESIF) need to take account of Europe's territorial diversity. Local and regional preconditions shape the potentials and challenges for competitiveness. This understanding can help ESIF instruments to capitalise on the development opportunities of all cities and regions, and contribute positively to recovery from the economic crisis.

Different types of cities and regions need different types of investments. The analysis carried out by ESPON projects can assist programmes and policy makers to improve their territorial targeting and regional economies. This will also help to strengthen a place-based approach for the development of future ESIF Programmes, as well as the selection and delivery of projects to be funded.

Key territorial development patterns – increasing urban focus

The discussion of territorial patterns for each ESIF thematic objective has provided a rich picture, highlighting the current state of Europe's development and identifying key drivers of change. There are some patterns that are common for many of the eleven themes, but also some differences.

For a long time thinking about competitiveness and cohesion was shaped by the idea of a strong, high-performing core and a territorially diverse periphery with different development challenges to overcome. This binary model is no longer appropriate. There are north-south divides, and west-east divides. Convergence regions in the west that were doing well during the boom years have been severely hit by the crisis, while some eastern regions appear to be further along the road to recovery. Capital cities remain strong and attract young, skilled people, but some secondary cities risk losing gains they had made before the crisis. Accessible rural regions have to cope with some of the negative features of growth, while many remote regions struggle with a shrinking and aging population. There are affluent mountainous areas, but cities within the core are striving to avoid decline. Places everywhere have to adapt to climate change, but some are doing better than others. Energy security looms as a continental threat, but there are areas with exceptional potential for renewable energy development.

Territorial concentration tendencies. For most of the investment themes of the future ESIF, and in particular with regard to the official indicators of the Europe 2020 Strategy, there are tendencies towards territorial concentration. These are most evident in demographic change and economic wealth, which then shape the trajectory for other forms of development. In short, attractive and wealthy cities and urban regions currently draw people and economic activity, with the core and northern parts of Europe being particularly strong.

The importance of cities and urban agglomerations. The indicators used to describe smart, sustainable and inclusive growth, point at the importance of Europe's urban areas. The cities, which increasingly are functionally integrated with their hinterlands, are crucial to Europe's competitiveness globally. However, they are also places where environmental and social challenges are intense.

Global cities rule, but... Worldwide networks can be accessed from virtually any place in Europe. Europe's biggest cities are the main gateways to the world. They are transport hubs, nodes in the global financial systems, places for world-class research and innovation networks. The importance of these global metropolitan areas for the European economy is unquestionable. However, the competitive advantages of agglomerations have limits. Agglomeration costs, such as congestion, are increasingly perceived as a counterbalancing disadvantage for businesses and residents. Territorial development and globalisation are about more than centrality. Even smaller places now can be very well connected with the global economy, e.g. through e-commerce or specialised products.

Importance of second tier cities. While the discussion about global gateway cities suggests some form of hierarchical urban system, analysis of a wider range of European cities reveals complex roles and networks. In general capital cities have a dominant role in the economy. However, the economies of Milan and Munich are larger than those of their national capital cities. 12 of Europe's largest urban economies are not capitals. Furthermore, in 15 out of 25 countries the second tier cities outperformed their national capitals in their economic performance (PPS GDP per capita) between 2000 and 2007. Overall, second tier cities and territorial decentralisation of investments can boost national economic performance, and with it Europe's overall competitiveness. More investment in second tier cities should be considered when (a) the gap with capitals is large and growing; (b) the business infrastructure of second tier cities is weak; and (c) there is clear evidence about the negative externalities of capital city growth. The stakes and the potential rewards in terms of economic growth, territorial balance and cohesion are high.

Shrinking cities and regions. Some regions, and even some cities, are experiencing demographic decline and/or significant aging processes. Imbalances in regional and local gender ratios can accelerate demographic decline. While many cities and regions still perform well on the indicators used, long-term scenarios suggest that they will face increasing challenges in future. These processes may lead to a series of inner peripheries, shrinking and often poorly accessible cities in Europe's core with similar problems to sparsely populated areas.

Dynamic neighbourhood. Europe's neighbourhood is very diverse, but what happens there affects territorial developments in European cities and regions. There is a need to be aware of the territorial dynamics of the neighbourhood. Regional hubs in the EU neighbourhood are already playing an important economic role internationally, e.g. Istanbul, Moscow, Tel Aviv, Cairo. EU cities and regions are increasingly connected to these places. Some regions in the neighbourhood are rapidly changing from an origin of unskilled labour migration to a destination for highly skilled labour emigration, or becoming new markets and competitors for international trade links and transport hubs.

Key territorial patterns – different development stages in the north/centre and the south/east

Centre-north power-house. For the ESIF investment themes and indicators, the territorial analyses reveal a difference between the centre-north of Europe and the rest. The centre-north comprises the core of Europe, but also the Nordic Countries, which hitherto had not been included in conventional definitions of the core as the area between London, Paris, Milan, Munich and Hamburg, the so-called Pentagon. This centre-north part of Europe tends to be wealthier than most of the rest of Europe. There are also differences in education, R&D, the provision of services of general interest, infrastructure, and environmental conditions. Broadly speaking, this area of Europe – shifted somewhat to the east – has lower levels of exposure to climate change impacts, better adaptive capacity and hence less vulnerability than the southern parts of Europe.

Eastern growth poles. Generally, eastern Europe still tends to perform less strongly with regard to many indicators, in particular those driven by economic factors. This reflects its 20th century legacy, but there are exceptions. As one example, eastern European regions and cities tend to be above the European average when it comes to the education levels of their population, though most of them are still below the European average when it comes to lifelong learning participation. In general, up until the economic and financial crisis, eastern Europe was catching-up in many areas, and partly even leading on economic growth rates. This growth has been driven mainly by the development of the major urban areas, and in particular the capital cities, and their capacity to participate in the European and global service economy. While this is a force for growth and cohesion at European level, it carries a risk of widening disparities within countries between the capital city region and the smaller towns and rural regions. This varies between the countries, and might be seen as an intermediate development step. Nevertheless, the tendency towards economic and demographic concentration is also reflected in social disparities; some eastern Europe regions have high levels of their population at risk of poverty.

Western Cohesion Regions. Across the different ESIF themes, the territorial patterns reveal that the areas known as Cohesion Regions, prior to the EU enlargements to the east, have suffered setbacks. This is true in particular for Greece, Portugal, large parts of Spain, southern Italy and to some degree Ireland. The economic crisis has reopened disparities between these areas and the more prosperous centre-north of Europe or even to parts of eastern Europe. These differences seem to be reflected in a number of indicators, e.g. unemployment, the provision of services of general interest, and the “at risk of poverty” rate. These regions also include the parts of Europe where adverse climate change impacts could be most significant. However, there are also potentials here which are important at a European scale, e.g. for development of renewable energy.

Rethink the role of rural regions. Europe has a rich legacy of rural landscapes, but rural Europe is changing. While many rural areas, particularly in eastern Europe or remote regions, remain agricultural, relatively poor and are losing population, the rural economy elsewhere has become increasingly service-based. There is on-going restructuring in the primary and manufacturing sectors. Vicinity to urban centres is an important influence on rural development. Villages and small towns close to urban agglomerations can attract in-migrants by their accessibility to jobs, education, services of general interest and other key infrastructure, all within easy reach of the countryside. This intensifies the functional relation between urban and rural areas. Meanwhile, some deeply rural areas have natural resources that service urban centres or are important for Europe as a whole, e.g. water, green energy sources, or forests that absorb carbon dioxide. Valorisation of these ecosystem goods and services will be important to the future development of such regions. Overall, the development path of rural areas tends to be largely influenced by the performance of their respective country and the degree of disparities within the country. This is evident in economic and demographic development, but also with regard to the provision of infrastructure and services of general interest.

Coastal and maritime potentials. Coastal regions often have significant development potential, but also experience development pressure that needs to be managed intelligently. They may be able to capitalise on the potentials of blue growth. Coastal areas attract tourism, but also have ports that are vital for freight transport. Marine energy potentials include both new fossil energy sources, e.g. in the eastern Mediterranean and the Arctic, but also renewable energy sources, e.g. wave-power or offshore wind farming.

Tapping the specific assets of a peripheral location. The specific geographical character of a region needs to be understood when analysing regional potentials and challenges. Regions have unique characteristics, opportunities and ambitions: any ranking in terms of their “performance”, e.g. in terms of Gross Regional Product, needs to take account of these. To ensure that policy interventions are appropriate, the potentials that are intrinsic to the place need to be identified, along with the nature of any geographical challenges that are specific to the place. Soft factors such as traditional culture and regional identity can be drivers for development, supporting both competitiveness and cohesion. In this respect, the value of landscapes or wilderness areas, should not be overlooked.

Territorial governance matters. Governance capacity underpins the development and management of local and regional development and effective use of Structural Funds. To achieve maximum effect there needs to be agreement amongst a range of stakeholders, from the public and private sectors and from civil society. Through the ESIF themes local actions can help the achievement of European objectives, but projects need to be designed and delivered using territorial evidence.

Key territorial challenges for ESIF objectives

Territorial evidence needs to be taken into account for each of the ESIF investment themes in order to develop effective and efficient programmes and projects. The following provides a quick overview of some of the main territorial concerns for each theme.

Strengthening research, technological development and innovation. The capacity to turn knowledge and innovation into regional growth varies from one region to another. Territorial analysis of innovation patterns offers hints on where increased investments in R&D or in human capital is more likely to result in increased innovation and economic growth. Applying innovations and knowledge generated in other regions and translating it into marketable products and services can be a successful strategy for regions with low R&D levels but high levels of entrepreneurship.

Enhancing access to, use and quality of information and communication technologies. The use of and capacity to benefit from ICT, e.g. through use of e-commerce, differs between countries more than between regions. Overall, the exploitation of e-commerce is relatively low across the Mediterranean countries (Greece, Spain Italy, Cyprus), Portugal and large parts of eastern Europe. In addition to national patterns, there are also rural-urban disparities in ICT access within countries. Countries with low ICT endowment tend to show wider disparities between regions, e.g. within Spain or Italy. Employment in the ICT sector is an important development factor: in some regions the ICT sector accounts for up to 9% of the total employment and a substantial part of the growth in productivity.

Enhancing the competitiveness of SMEs. SMEs are important to Europe's competitiveness, as 99% of European enterprises are considered to be SMEs, which contribute 60% to European GDP. Pre-conditions for successful SMEs' development differ widely across Europe. So do the needs of SMEs. A regional economic environment open to extra-European trade can be important. This can be found in large parts of Belgium, Ireland, Finland, the Netherlands, Switzerland and southern Germany. Access to services of general economic interest can matter to SMEs. Provision of such services is generally better in western countries, while in the Member States that joined in 2004 and 2007 only the capital regions of Prague, Bratislava and Budapest are above European average. Within the urban hierarchy, it is generally the metropolitan regions that have higher shares of extra-European trade.

Supporting the shift towards a low-carbon economy in all sectors. Access to renewable energy is an important dimension of a low-carbon economy. The regions with most potential for wind, wave, tidal and solar energy are often in peripheral locations, so there is potential to integrate energy and environmental aims with European competitiveness and territorial cohesion aims. However, some countries have difficulties reaching their targets for renewable energy and the EU aim of 20% of energy from renewable sources by 2020 may be at risk.

Promoting climate change adaptation and risk prevention and management. The impact of climate change is most likely to be most severe in southern regions and some of the areas with geographical specificities, notably islands, coasts and mountains. Furthermore, there is a north-south difference in adaptation capacity, exacerbating the vulnerability of regions in the south where e.g. access to water resources will be a particular issue requiring new approaches to governance and not just new and costly technologies. There are also threats to bio-diversity and cultural heritage, and there will be impacts on and new challenges for the agricultural and forestry sectors as well as for tourism.

Protecting the environment and promoting resource efficiency. There is potential for eco-system goods and services to contribute to efficient resource use, regional economic growth and territorial cohesion – provided benefits generated from natural resources can be retained in local communities. Natural resources are a key part of territorial capital and therefore are an important asset in the endogenous development of regions and cities.

Promoting sustainable transport and removing bottlenecks in key network infrastructures. Modernisation of transport is important for a resource-efficient Europe. European transport policy aims at increasingly substituting aviation by high-speed rail for journeys of up to 3-4 hours. Where they exist, high-speed train services offer cities accessibility to other agglomerations within 300 minutes. For instance, cities in southern Italy are connected to cities in southern France or in Slovenia; cities in Brittany are connected through fast trains with cities in Belgium and Germany. The Channel Tunnel also connects London and the south-east of England by train to Benelux and to northern France, including Brussels and Paris. However, international cross-border connections are poorer in eastern Europe.

Promoting employment and supporting labour mobility. Labour mobility between European countries is still low compared to domestic migration between regions. The extent to which the big agglomerations attract migrants seeking jobs, and the demographic changes that result, will pose new challenges for regional economies and for access to adequate labour supply in many regions. Portugal and some neighbouring Spanish regions, southern Italy, Greece, eastern Germany and most regions in the countries which joined the EU in the accession rounds 2004 and 2007 are likely to face serious declines in their labour force due to a combination of an aging population and out-migration. Gender ratio imbalances related to the 20-27 year old age group are particularly pronounced. They are an effect of territorial developments and structures, but also negatively influence future territorial developments.

Promoting social inclusion and combating poverty. Social inclusion and poverty are highly linked to national systems and policies. Consequently there are considerable differences between countries. The highest rates of “at risk of poverty” are revealed in a geographical arc running east and south from Poland to Greece, in southern Italy and Spain, but also in the UK. In general, cities are better off when it comes to poverty in terms of financial means, and also provide better access to social services of general interest.

Investing in education, skills and lifelong learning. Regions on the Iberian Peninsula and in Turkey and Greece are places where most progress is needed on measures to enhance levels of education. They have high numbers of early school leavers and low numbers of young people with tertiary education. The Nordic Countries, UK, Switzerland and Netherlands show high rates of participation of adults in training and education activities. In these countries, typically, adults can access education fairly easily for different types of learning.

Enhancing institutional capacity and ensuring an efficient public administration. The success of future ESIF programmes in extracting maximum value from the money invested will depend greatly on governance and institutional capacity at regional and local level. New skills and ways of doing things will be needed. Easy results for the territorial co-operation objective are likely to be achieved by simple forms of co-operation, such as exchanging experience, exploring economies of scale by sharing tools to tackle a common problem or advising each other on how to solve similar problems.

The year 2020 has become an important horizon for Europe. The period from 2014-2020 defines the Multi-Annual Financial Framework which seeks to steer deficit and debt on to a more sustainable path. Consequently, the Common Strategic Framework (CSF), which brings together the Cohesion and Structural Funds, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund, also runs from 2014 to 2020. In turn, the CSF has a key role to play in delivering throughout Europe the objectives and targets of Europe 2020, the EU's strategy for recovery from the financial and economic crisis.

1.1 The ESIF 2014-2020

A more integrated approach. The Europe 2020 strategy is based on smart, sustainable and inclusive growth. These are inter-connected, not separate, concerns. The ESIF shapes them into investment priorities. Eleven thematic objectives are identified in the ESIF. They are used to structure this report and are:

- Strengthening research, technological development and innovation;
- Enhancing access to and use and quality of information and communication technologies;
- Enhancing the competitiveness of SMEs, the agricultural sector and the fisheries and aquaculture sector;
- Supporting the shift towards a low-carbon economy in all sectors;
- Promoting climate change adaptation and risk prevention and management;
- Protecting the environment and promoting resource efficiency;
- Promoting sustainable transport and removing bottlenecks in key network infrastructures;
- Promoting employment and supporting labour mobility;
- Promoting social inclusion and combating poverty;
- Investing in education, skills and lifelong learning;
- Enhancing institutional capacity and ensuring an efficient public administration.

In Competitiveness and Transition Regions, budgets will be targeted on energy efficiency, renewable energies and SME competitiveness and innovation. In Convergence Regions the focus is broader, and institutional capacity building is recognised as important. Pan-European infrastructure networks are highlighted as ways to unlock potential.

A new emphasis on urban areas. Supporting investments in the poorest Member States and regions remains a fundamental principle of cohesion policy. However, there is also a new emphasis on urban areas. This reflects the recognition that these places are critical for Europe's competitiveness and cohesion. In addition, an integrated and bottom-up approach to development is sought through provision for Community-Led Development.

Investment of ESIF programmes between now and 2020 will help sustain the recovery of the EU's social market economy. To achieve this, synergies must be identified and built into programmes and projects, so that every Euro spent supports a range of desired outcomes. This will make the new round of cohesion spending efficient and effective. Key questions are where can European spending achieve most impact, and how can action nationally and in cities and regions add value?

Cohesion spending can benefit from a stronger territorial dimension. Ultimately Europe's competitiveness is the aggregate of actions in firms and on farms, and on the highways, railways and shipping routes that connect the continent to itself and to the world. How Europe recovers depends on where talented people choose to live, and on how well they are able to sustain services of general economic interest through a period of austerity. There is a territorial dimension to the crisis and to the recovery. The ESIF programmes can benefit from a stronger territorial dimension, not least in the Partnership Contracts between national and regional governments and the Commission, to make the optimal contribution to achieving jobs and growth.

An integrated territorial approach: Blue Growth

EC DG Mare's Blue Growth initiative is an example of an integrated and innovative approach to development that shows how smart, sustainable and inclusive growth are mutually supporting aims. It is a long-term strategy to support growth in the maritime sector as a whole. It embraces economic, social and environmental aspects of Europe's seas, and actively seeks synergies between policies in different sectors. Blue Growth focuses on activities such as:

- short-sea shipping
- coastal tourism
- offshore wind energy
- desalination
- use of marine resources in the pharmaceutical and cosmetics industries.

For example, concerns about the impacts of biofuel development on land use and water supply are driving bio-technology research on the use of algae for biofuels. Blue bio-technology holds the promise of high value niche products for health, cosmetics and industrial bio-materials sectors. Similarly, high quality bathing waters and pristine habitats have high recreational value: such growth potential requires local or regional scale action to sustain the environmental quality, capture the economic potential and foster the capacity of SMEs to take advantage and create local jobs.

“Territory” is not confined to the land. EC DG Mare's Blue Growth work shows how innovation can create jobs and growth in an inclusive and environmentally sustainable manner. Such integrated thinking needs to be embedded in future actions within the ESIF programmes. Territorial action is needed to deliver such growth, but Blue Growth also demonstrates that a “territory” is not confined to the land.

1.2 Territorial Cohesion

The EU has worked towards achieving economic and social cohesion. Economic cohesion means addressing divergent economic performance of Member States and regions. As the EU economy becomes more integrated, economic weaknesses in some regions affect the whole continent. Similarly, social cohesion is a means to make best use of human capital across the whole of the Union.

In writing territorial cohesion into the Lisbon Treaty, the EU was recognising two things. Firstly, that Europe needs to draw on the development potentials of all cities and regions to further its development, and secondly that people should not be disadvantaged by where they live and work. Territorial cohesion reinforces economic and social cohesion.

Diversity is an asset: each place needs to play to its own strengths. Like other continents, Europe is marked by economic and social differences between countries, between cities and rural regions, between capitals and provincial towns, and between neighbourhoods within a city. However, territorial cohesion does not propose that everywhere should be the same. Diversity is an asset: each place should play to its own strengths, and reap the benefits of trade and other forms of interaction with other places within and beyond the Union. The relatively dense and polycentric nature of Europe creates exceptional opportunities for cities to gain agglomeration economies through well-connected networks. Similarly, cultural landscapes and the quality of the natural environment are valuable assets that can underpin rural regional development. By sharing knowledge while cherishing their special qualities regions can develop in ways that capitalise on their uniqueness. Building on comparative advantages in this way boosts both competitiveness and cohesion. The importance of co-operation and networking is recognised through the Territorial Cooperation strand of the ESIF.

Some regions have special geographical challenges. The Lisbon Treaty associated territorial cohesion challenges with some types of regions. Border areas, for example, are often disadvantaged by the barrier that a border imposes. In somewhat similar ways, islands and coastal areas can be “cut-off” by the sea. Mountainous areas may also face special difficulties in terms of accessibility. In sparsely populated

areas there may just not be a sufficient critical mass of consumers to sustain services. Europe's outermost regions also have special situations. To move towards greater territorial balance means to achieve better opportunities in such areas. There are also other parts of Europe currently blighted by high unemployment and significant out-migration especially of young people.

1.3 The Territorial Agenda 2020

Development opportunities of different regions vary. The ESIF does not elaborate the territorial dimension of Europe 2020. This is done in the Territorial Agenda 2020, which was prepared under the Hungarian presidency in 2011 and agreed by the Member States' ministers responsible for spatial planning and territorial development. The report connects smart, sustainable and inclusive growth to the EU's commitment in the Lisbon Treaties to territorial cohesion. Indeed it argues that the recovery sought in Europe 2020 can only be achieved "if the territorial dimension of the strategy is taken into account, as the development opportunities of the different regions vary".

Territorial priorities. The Territorial Agenda 2020 identified territorial priorities. These were:

- Polycentric development – spreading development between Europe's core and periphery, or nationally between capitals and secondary cities, rather than overconcentration on a major centre;
- Integrated development in cities, rural and special regions (e.g. islands, mountains, etc.) to achieve synergies and make better use of the assets that are unique to that place;
- Territorial integration in cross-border and transnational functional regions. This means achieving economies of scale and widening markets (for products but also for labour) to enhance competitiveness. However, it can also be a necessary step to managing natural resources such as rivers or seas that transcend administrative boundaries.
- Ensuring global competitiveness of the regions based on strong local economies. Regional and local economic development is fundamentally important to retain human capital and increase economic resilience.
- Improving territorial connectivity for individuals, communities and enterprises. Enhancing and sustaining services of general interest – whether transport or telecommunications, schools or hospitals – is a key element in territorial cohesion.
- Managing and connecting ecological, natural and cultural values of regions.

1.4 ESPON – evidence and methods to inform actions for cohesion

For each of the themes in the ESIF, policy makers are going to need territorial evidence to base their actions on. ESPON is a significant and unique source of such evidence. Thus this Second Synthesis Report is structured so as to directly connect the EU 2020 focus on smart, sustainable and inclusive growth, the eleven key themes in the ESIF, and ESPON evidence.

Trans-national research teams drawn from across Europe have been researching these and other questions in the current ESPON Programme since 2008. They do not have all the answers, but they have created the best available collection of data, indicators and maps about territorial development in the 27 EU countries, plus Iceland, Liechtenstein, Norway and Switzerland.

This research allows us to look at Europe in its global context (whether in relation to climate change, or to trading patterns or business networks). As well as covering European and national scales, the data allows us to drill down to regional scale or in some cases to an even more local level.

The report that follows presents the latest evidence. It draws on work in ESPON projects that were complete or nearing completion in January 2013. More than previous reports it discusses Europe's Neighbourhood and Europe's seas. It offers "Pointers for Policy" which suggest issues and approaches that policy makers might consider in the light of ESPON's findings. However, the story is still unfolding and will be updated in the Final Synthesis Report of the ESPON 2013 Programme.

2 - Smart growth in a territorial perspective

Smart growth is a key component of the Europe 2020 Strategy. It is taken forward by many European and national policies. The ESIF are expected to make a sizable contribution to smart growth. Broadly smart growth means improving Europe's economic performance by focusing on research and innovation, the digital society and the competitiveness of SMEs and a range of different sectors.

The contribution which any city or region can make to these aims depends on its history and current situation – its portfolio of businesses, public and private institutions, people, accessibility and natural resources. This territorial diversity is an important asset to achieving smart growth. At the same time, work towards smart growth will have territorial impacts, which lay the ground for changing development opportunities in different ways in different places. This chapter discusses some territorial variations that shape the pre-conditions to contribute to smart growth, and their effects.

The big picture:

- Capital cities and metropolitan regions are of utmost importance, but second tier, non-capital, cities can play a crucial role in Europe's push for smart growth. Investment and growth in second tier cities can stimulate economic growth nationally and in large parts of Europe, and achieve higher impact than investments of the same magnitude in capital cities.
- Regions can engage in research and innovation in different ways. Some regions are good at translating innovations from elsewhere into marketable products; others feed off their own strong science base. To make best use of funds, it is necessary to analyse the regional innovation system (e.g. the kind of sectors represented, position in international value chains, existing and potential knowledge transfer networks etc.). Depending on a region's profile, investment in human capital may be more effective than investments in R&D.
- Access to and use of information and communication technology (ICT) is increasingly important for smart growth. Regional differences with regard to ICT are mainly shaped by national patterns (e.g. the effects of national policies and investment strategies), so action at national level is likely to be the most effective way to improve overall European performance. In addition, in countries with rather low ICT endowment, there are also clear differences between urban and rural areas.
- Demographic change will increasingly impact on the potential for smart growth in many regions most notably in regions where the labour force is shrinking and aging. Regional gender imbalances also pose challenges to regional development and may accelerate aging and demographic decline. Gender needs to be factored into regional development policy making.

2.1 Territorial driving forces for smart growth

Supporting smart growth means steering a complex system of drivers for development. The presence and combination of these drivers differs from one region to the next. Nevertheless, three things stand out: (a) the risk of increasing regional polarisation, (b) the importance of second tier cities, and (c) the importance of governance and the national policy level.

2.1.1 Territorial concentration

Overall, a territorially blind approach to strengthening key components of smart growth (e.g. innovation or education) is likely to amplify territorial concentration tendencies, and may fail to support important growth potentials deriving from territorial diversities. In other words, there is a risk of increasing disparities between regions, where regions which are already in a better position become stronger, pulling further away from others.

This self-reinforcing cycle affects both the attractiveness of places and thus migration tendencies, as well as the financial capacity of different places to provide services of general economic interest.

Changing migration patterns may amplify territorial concentrations. Every year about 2 million people move from one country to another within EU27+4, and approximately 7 million people migrate from one NUTS 2 region to another within a country in EU27+4. The financial crisis has changed patterns of migration and attractiveness. Before the crisis European migration patterns were shaped by work-related mobility (largely moves to big cities) and by lifestyle-related mobility (such as moves to the sun or the countryside). Since the crisis, work-related mobility has become stronger and lifestyle-related mobility weaker. As jobs became scarce, the economically stronger regions have become more attractive to young, mobile and well-educated people. These migration tendencies reinforce existing regional development disparities; skilled human capital, which is so important in a knowledge economy, is becoming more and more concentrated in the stronger regions.

Gender imbalances influence the attractiveness of regions. Regions experiencing net out-migration face the challenge of a vicious circle, especially when there are age and gender imbalances in the migration flows. Since younger workers are most prominent in work-related out-migration, the demographic profile changes. In turn this is likely to result in further decline of already low natural population increase. The result is an aging population and increasingly more deaths than births. Crucially, in many regions the young women tend to aspire more to enter higher education and are more mobile than their male counterparts. This reduces the number of potential child-bearers in the region, making it harder to sustain population numbers, and further reducing the attractiveness of these places for young, mobile and well-educated workers. In the long run this may even affect the prospects of existing business to find sufficient employees with the right skills.

Concentration trends of services of general economic interest. The discussions of ICT (chapter 2.3) and services of general economic interest (chapter 2.4.2) point to additional concentration trends in infrastructure. Services of general economic interest in transport, mobility and communication are very important in establishing and running a business and operating in the marketplace. They support the basic needs of businesses.

In times of severe budget constraints, there is a risk that regions that are economically and demographically disadvantaged will fall behind in provision of affordable, top-level services of general economic interest. The competitive advantage offered to businesses by more affluent regions is likely to increase when they have the financial means to deliver higher-standard services.

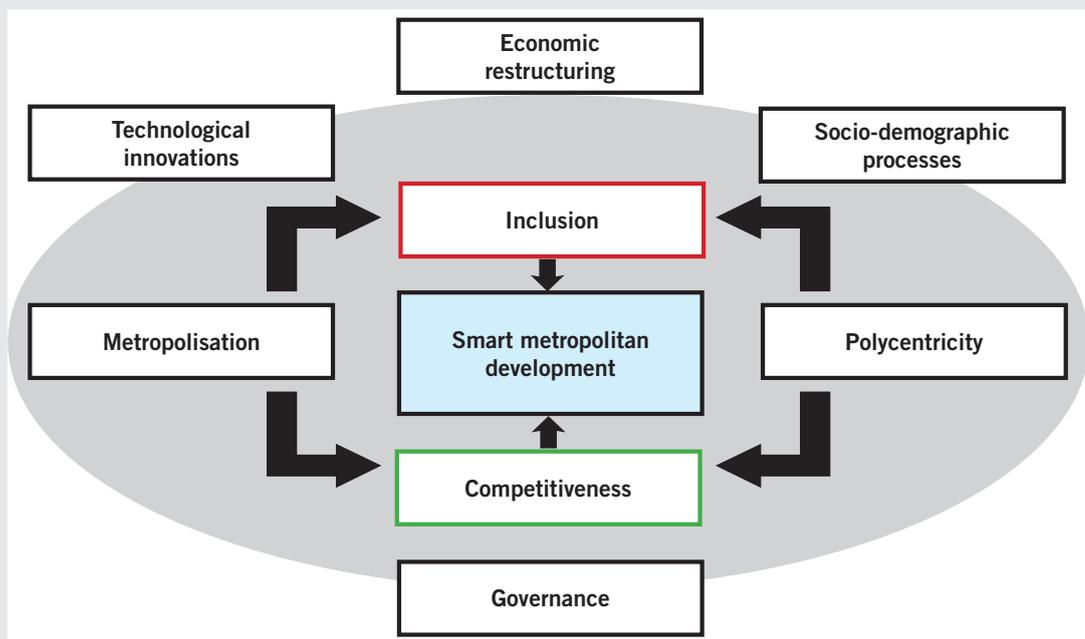
2.1.2 European cities

Analysis of economic growth areas, global gateways and innovation hotspots indicates the potentials of cities to contribute to national and European economic growth. Investments in second tier cities with good growth potentials tend to show better possibilities for financial returns than investments in the main hotspots. Polycentric development and networks connecting cities can help boost their critical mass and impart advantages of agglomeration.

Example: 'smart metropolitan development'

A smart metropolitan area can be understood as a functionally integrated metropolitan area where processes of both competitive and inclusive development take place. Governance is important to achieve this integration. Competitiveness is characterised by high standards of economic performance, knowledge intensive, innovative and creative activities and international embeddedness (i.e. accessibility and attractiveness for international businesses and congresses). On the other hand, inclusion aims at equal opportunities accessible to all. It allows participation in processes of change, regardless of individual circumstances, and ensures that all people can cope with changing circumstances for the goal of a cohesive society. Furthermore, the idea of smart metropolitan areas addresses processes of metropolitanisation, such as the spread of settlements and labour markets across traditional administrative units, as well as the development of the larger territorial context (polycentric development). In central Europe, for example, strategic co-operation between Bratislava, Budapest, Ljubljana, Prague and Vienna could strengthen the position of each and of the Danube area as a whole.

Figure 1 Understanding smart metropolitan development



Source: ESPON POLYCE

Secondary cities contribute to growth and cohesion. Europe's second tier cities are strong players in global markets. This does not undermine the importance of global gateway cities. Structurally, capital cities dominate most national economies, but there are clear signs of the importance of second tier cities. Between 2000 and 2007, in 15 out of 25 EU countries (i.e. excluding the small island states of Malta and Cyprus) one or more second tier cities achieved a higher rate of GDP growth than their capital cities, and a higher rate than the national average. These secondary cities boosted national growth but also increased territorial cohesion. However, this was during a boom period when there was national support and investment. Since the crisis hit, the capitals have performed better than the second tier cities, and the GDP gap has begun to reopen. The case for an active policy of investment in second tier cities is strongest when (a) the gap with capitals is large and growing; (b) the business infrastructure of second tier cities is weak because of national underinvestment; and (c) there is clear evidence about the negative externalities of capital city growth.

For innovation and R&D, the results presented in chapter 2.2 suggest a beneficial link between decentralised systems and innovation. Secondary cities are important places for strengthening innovation and the translation of innovation into economic growth.

2.1.3 Matters of governance and national context

Smart growth depends also on good governance at all levels of decision making. Despite the focus on the regional level, a region's performance is largely determined by its national context. This is shown in chapter 2.3 when discussing access to ICT infrastructure and use of ICT services. As in other domains the nation state and good national policy making plays a crucial role.

Need for a territorial approach. Smart growth requires a territorially differentiated approach to policy making going beyond one-size-fits-all. This links to multi-level governance processes that take into account development potentials and challenges and their drivers at different levels, from the local to the supra-national.

Integrating territorial diversity into the design of policies is not about defining territorial indicators and criteria, and then rolling out pre-defined measures for territories which match the criteria. The objective is rather to understand how to make best use of the unique territorial characteristics that will influence the development of a region or city. This requires a place-based dialogue.

Understanding regional development processes. The purpose of policies is to optimise social, economic and environmental performance. This needs an understanding of the processes that explain current patterns and trends, and of potential opportunities and threats. For a number of regional types, ESPON has developed "nexus models", which explore the links between the defining features of a place and its challenges and opportunities. These can help policy-makers to identify possible fields of action. They can be used to build a shared understanding amongst stakeholders of the most promising interventions for the development of a locality or region.

The combination of development opportunities and challenges in one model helps to identify not only the obstacles that need to be overcome, but also the economic added value that should be expected from these measures. The figure 2 illustrates the case of sparsely populated areas. The colour around the edges of the boxes denotes locations and physical issues (green), demographic and social issues (red) and economy and business (blue).

2.2 RTD & innovation

Innovation is considered as a key to Europe's economic future. There are very many different types of innovations. Some are completely new products or services, but innovations can also take the form of improvements or efficiency gains to existing products or services.

There is a rapid increase of knowledge flows into Europe via technology trade (illustrated by payments for royalties and license fees). Europe successfully imports knowhow from elsewhere and adapts it. This suggests that Europe does not invest enough in R&D, and underlines the need for increasing private and public investments in R&D, as aimed for in the Europe 2020 Strategy.

The Europe 2020 Strategy does not specify where European R&D investments should be increased in order to achieve the aim of investing 3% of GDP in R&D. Territorial analysis shows significant differences between different places in the potential to translate increased R&D investments into economic growth.

2.2.1 Territorial patterns of innovation

Europe needs places for research and places for capitalisation. Looking at innovation in Europe, it is important to distinguish between places where innovations emerge and places where innovations are turned into marketable products or services. These are not necessarily the same places. In other words, the actors in a region can innovate by (a) exploiting knowledge produced in the region; (b) using knowledge from outside the region; or (c) by imitating innovation that is produced elsewhere. The actors in a region adopt one of these modes of innovation according to their regional conditions. Specific territorial characteristics, such as functional specialisation, play a role when translating innovation into employment dynamics. Moreover, the preconditions for knowledge creation, for turning knowledge into innovation, and for turning innovation into growth are all embedded in the culture of each region.

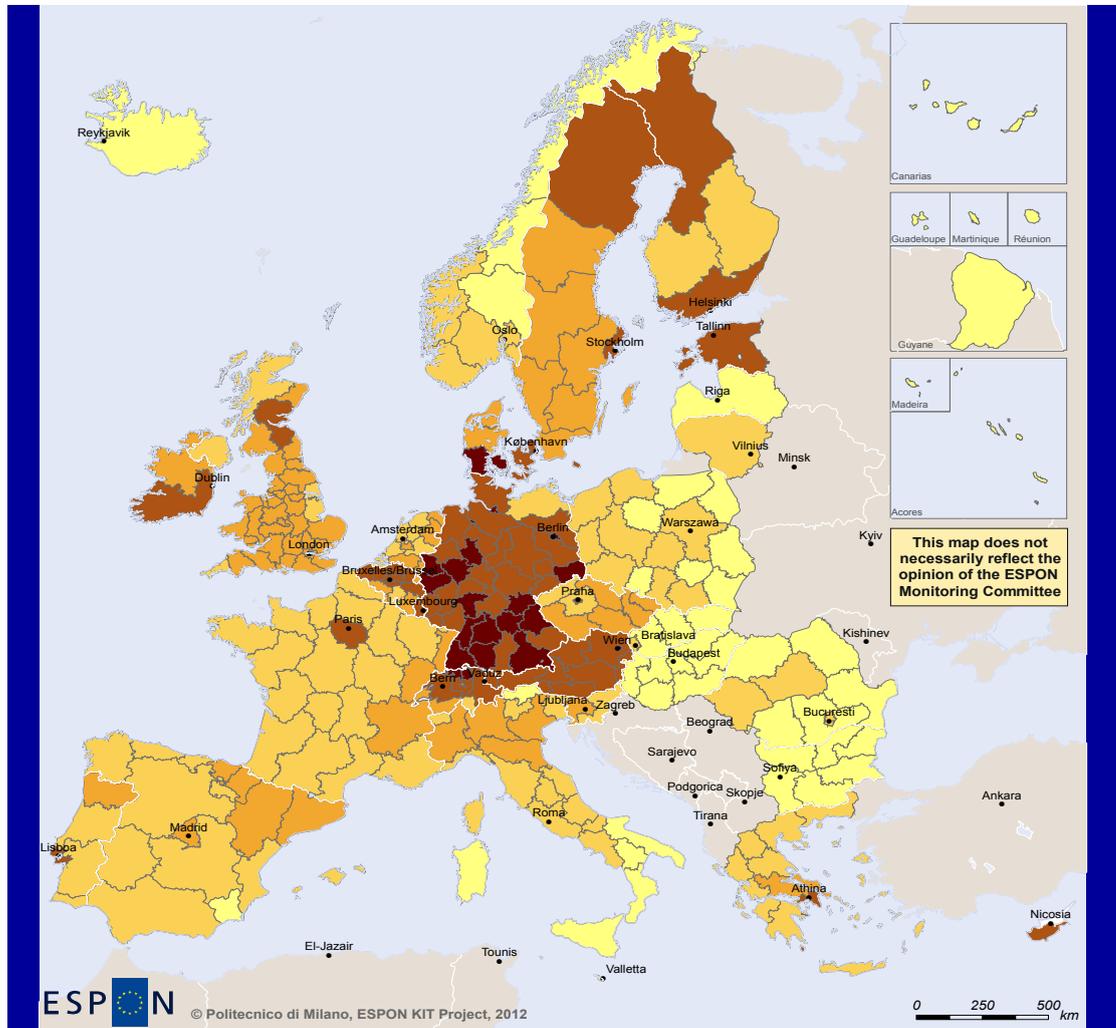
The capacity to turn knowledge and innovation into regional growth varies. Territorial analysis of innovation patterns offers first hints on where increased investments in R&D or human capital are more likely to result in increased innovation and economic growth.

R&D regions of excellence. Regions with high R&D endowment and a high degree of knowledge, coming from regions with a similar knowledge base, are mostly located in Germany, along with Vienna, Brussels, and southern Denmark. These regions in the "European science-based area" already have high levels of R&D investment, and they might benefit from additional R&D investments.

Regions strong in knowledge production and R&D in applied science, with a high degree of knowledge coming from regions with a similar knowledge base, are mostly located in central and northern Europe, namely in Austria, Belgium, Luxembourg, Switzerland, Germany, Estonia and some capital regions in other countries. In this "Applied science area", i.e. regions that already have high levels of R&D investments, additional R&D investments can be very efficient, enabling profiles and excellence to be further developed.

In other types of innovation regions, it is further investments in their knowledge base and entrepreneurship that will be most useful, helping them to strengthen their capacity to make use of innovations and knowledge produced elsewhere. Some of these regions are becoming quite successful e.g. in the field of product innovations.

Map 1 Territorial patterns of innovation




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

Regional level: NUTS2
 Source: ESPON KIT Project, 2012
 Origin of data: EUROSTAT, 2012
 © EuroGeographics Association for administrative boundaries

Types of innovation regions

-  Imitative innovation area
-  Smart and creative diversification area
-  Smart technological application area
-  Applied science area
-  European science-based area
-  No data

“European science-based area”. These regions are strong in producing knowledge and innovation in the field of general purpose technology with a high generality and originality of science-based local knowledge. They have high R&D endowment and a high degree of knowledge coming from regions with a similar knowledge base.

“Applied science area”. These regions are strong in knowledge production and R&D in applied science, with a high degree of knowledge coming from regions with a similar knowledge base.

“Smart technological application area”. These regions have a high product innovation rate, and high creativity, which is based on translating external basic science and applied science knowledge into innovation. They have a limited degree of local applied science and R&D endowment.

“Smart and creative diversification area”. These regions have a low degree of local diversified applied knowledge, and internal innovation capacity. At the same time, they have high degrees of local competences, creativity and entrepreneurship, drawing on external knowledge.

“Imitation area”. These regions have low knowledge and innovation intensity, entrepreneurship, and creativity.

Where to invest in R&D? R&D expenditure needs critical mass but also shows decreasing returns. Still, R&D is more efficiently used in those regions that invest heavily in R&D, such as those in the “European science-based area” and, to a lesser extent, in the “Smart technological application area” and in the “Applied science area”. Regions characterised by lower levels of R&D spending, achieve little benefit from further investments in R&D for improving their economic performance. Before boosting investments in R&D in a region, its regional innovation system (the kind of sectors represented, position in international value chains, existing and potential knowledge transfer networks etc.) needs to be analysed in detail.

Regional development can also benefit from the import of knowledge from outside, i.e. that not all knowledge and innovation utilised for strengthening regional development needs to be produced in the city or region itself. However, there needs to be capacity and human capital that allows people and firms to grasp and use new knowledge.

Where to invest in Human Capital? The effect of knowledge embodied in human capital (measured as the share of population holding a tertiary degree) has a higher impact on regional production than R&D expenditure has. The highest impacts of investment are in places where the knowledge embodied in human capital is rather low. In weak regions, human capital is a more important precondition for growth than R&D. Moreover, investments in human capital show strong decreasing returns: in regions where it is present in high quantities, further investment has only marginal impacts on growth. However, regions innovating in the absence of a strong local knowledge base can be as successful as more knowledge-intensive regions in turning innovation into a higher economic growth rate.

Because higher levels of R&D investments and human capital in regions imply decreasing rates of return on additional investments, the most effective investments are likely to be in areas that have a properly developed base in the fields but are not necessarily leaders. This is a strong argument for looking into second tier cities with good potentials in a particular field.

Overall, territorial analysis of innovation and R&D patterns underlines the importance of secondary cities for strengthening innovation and the translation of innovation into economic growth. It suggests a link between decentralised urban systems and innovation. Consequently, the identification of regional specificities in patterns of innovation is essential if ESIF programmes are to be used effectively to build targeted strategies and make efficient investments.

Examples: Urban development driven by innovation

Tampere (Finland) is an excellent example of local elites using national programmes to turn a classic manufacturing city into a successful information-based city. Tampere is the second largest city region in Finland. It has reinvented itself economically during the past two decades. It has restructured significantly, based upon intensive innovation systems. The service sector has become more important but manufacturing also remains strong, partly due to the emergence of knowledge-intensive industries like ICT, and partly due to the renewal of more traditional industries like engineering. The public sector remains the largest sector, but many of the jobs are knowledge-intensive because of the two universities, the University Hospital and other educational and research institutes. In recent years Tampere city-region has been among the fastest growing sub-regions in Finland. Tampere performs better than Helsinki and the Finnish average with regard to innovation (mainly measured as number of patents).

Munich (Germany) is one of the most successful cities in Europe based on long term investment in innovation and education, powerful regional government and public private partnership working. Munich underlines the significance of innovation as a driver of success. It has pursued innovation longer and more systematically than most other European cities. The process involves many stakeholders within the state, the universities and the private sector. The partnerships are complex and overlapping and the process is self-reinforcing. Munich has a powerful culture of consensus between stakeholders and networks. Effective multi-level governance ensures that the weight of the Federal Government and Land innovation programmes are brought to bear, but they are also tailored and embedded because many of Munich's key research and business support organisations play a pivotal role in implementing these programmes. Munich's innovation system has grown incrementally and is characterised by continuity, institutional thickness, trust, co-operation, a complex web of relationships and supply of high level skills. Therefore it is deeply embedded within the city.

2.2.2 Pointers for Policy

European level

- The capacity to turn knowledge and innovation into regional growth varies from one region to the other. Territorial analysis of innovation patterns offers first hints on where increased investments in R&D or human capital are more likely to deliver increased innovation and economic growth.
- Applying innovations and knowledge generated in other regions and translating them into marketable products and services can be a successful strategy for regions which have low R&D levels but high levels of entrepreneurship.

National level

- The national level is a key driver for stimulating developments in R&D, innovation and higher education.
- Decentralised innovation systems and the strengthening of secondary cities can deliver higher returns on investments in R&D and human capital.

Regional and urban level

- To make full use of the different types of innovation potentials in a region or city requires administrative and institutional capacity to link the various processes.

- Each region should analyse its regional innovation system, and use the findings to shape policy and investment to match in its own 'pattern of innovation'.
- In regions with limited R&D levels, the provision of organisational and structural assistance can help to exploit the potential for delivering higher levels of knowledge output. This is more important than increasing investments in R&D and it is expected to ensure better economic performance in the long run.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects KIT, SGPTD, AM CER, POLYCE.

2.3 ICT use and quality

Europe's spending on, and use of, ICT lags behind other major global economic areas such as the USA or Japan. Smart growth aims at rebooting Europe's economy and helping Europe's citizens and businesses to get the most out of digital technologies. The Digital Agenda is an important Flagship Initiative under the Europe 2020 Strategy.

ICT is an important service of general interest to ensure economic development and quality of life in a time of global competition. This is linked to connectivity, the economy of flows and networking. It brings about obligations to ensure the provision of ICT infrastructure and services in accordance with certain standards in respect of quality, availability, accessibility and affordability – on behalf of the "general interest".

Already ten years ago, the ICT sector was responsible for 5% of European GDP, and contributed to around half of the growth in EU productivity. In 2011, the ICT sector stood for 5% to 9% of the employment in some regions. ICT is a critical factor for future growth. In Europe, there are large differences between regions and between cities as regards ICT infrastructure and the potential to translate increased ICT investments into economic growth. In many cases differences between regions in Europe are related to national differences.

2.3.1 Access to affordable ICT infrastructure

Many entrances to the Information Society. Access to ICT infrastructure is a basic precondition for any participation in the digital society. In earlier years, households or companies with access to broadband were often used as indicators to describe levels of access to ICT infrastructure. Technological progress in ICT has changed the meaning of such indicators. The significant increase in fast, public wireless internet connections means that broadband is no longer the only or best way to access the internet. Similarly the indicator on access to computers has changed its meaning as computers are no longer the essential precondition for accessing the internet, when it can be done by smart-phones and tablets.

Having said this, it remains necessary to invest in affordable ICT infrastructure and overcome territorial differences in the availability, quality and price of internet access. Although there are many parts of Europe where the internet can be accessed by several means, there are still places without access or with poor coverage.

Digital advantage of Scandinavia and north-west Europe. Less than half of the households in Bulgaria, Romania or Greece have internet access. Indeed, the territorial differences are considerable for all kinds of internet access indicators. This can be easily illustrated by looking at the percentage of households with access to high-speed internet – other relevant indicators show similar regional differences, albeit their data coverage is not as good. The figures range from some Swedish regions and Iceland with above 75% for broadband penetration, to less than 15% in some Romanian regions, in 2006-2009. The digital divide between the Northern Periphery (including Iceland), Scandinavia and the north-west, on the one hand, and the rest of Europe, on the other, is notable. Regions in eastern Europe and the Mediterranean Basin have much lower percentages, especially in Romania.

To be connected to the internet – by a computer, phone or by other means – implies that the individual can afford to be connected. The devices are not free, and nor is the price of access to enable a connection. How much an individual can use the internet – and the devices needed to access it – is dependent on factors such as income, age and educational level.

2.3.2 ICT use

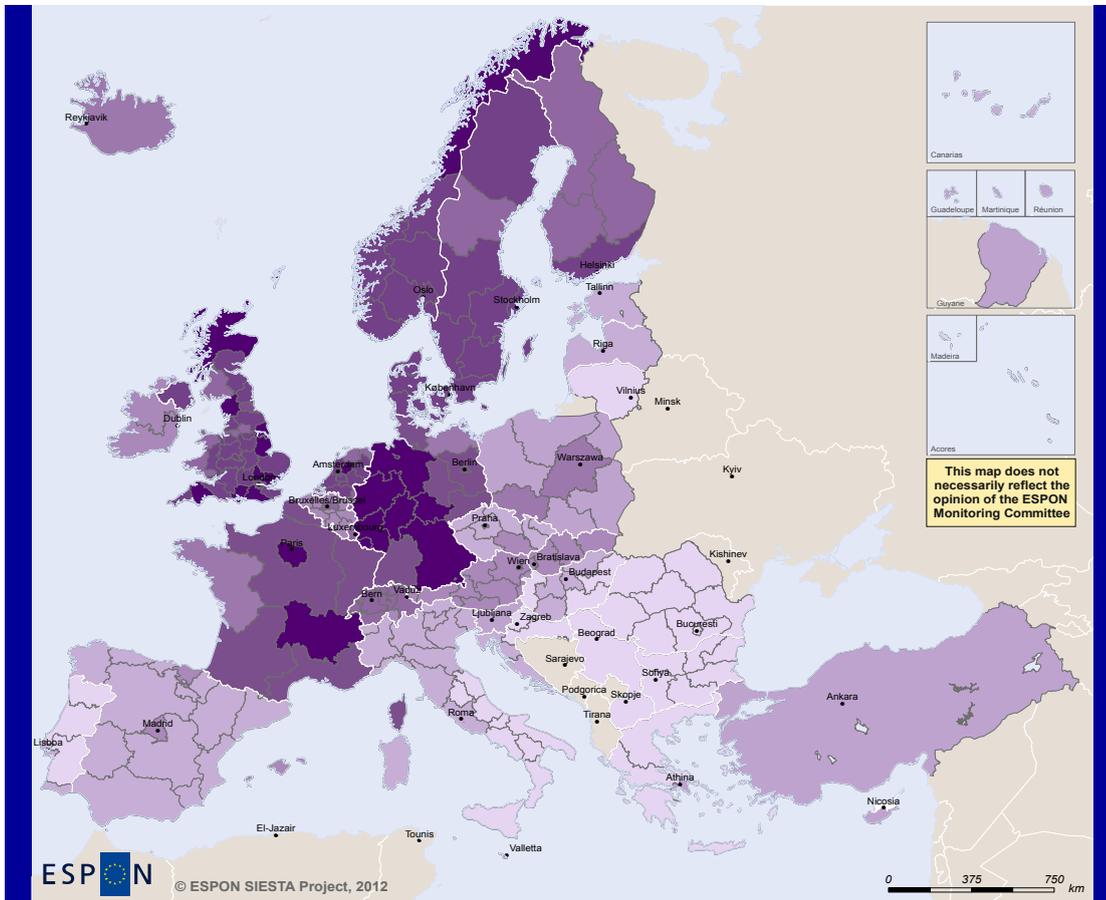
ICT infrastructure on its own does not contribute to economic growth. It is the commercial use of ICT that is important for smart growth. In 2011 the internet was used for commercial purposes by 34% of the EU population. The Digital Agenda aims at increasing this figure to 50% by 2015.

Economic potential of e-commerce. E-commerce and ICT-employment are two aspects of ICT as a means to smart growth. E-commerce, in terms of who ordered goods or services over the internet for private use, also illustrates indirectly whether the internet is being used for commercial purposes, i.e. how far it is penetrating business practice across Europe. The European Commission estimates that the gains consumers might make from using e-commerce could amount to 1.7% of the EU's GDP, if 15 % of all retail sales in the EU were e-commerce and the obstacles to the internal market were removed.

E-commerce is more used in countries in the centre-north of Europe. Today, the use of e-commerce differs mainly between countries and only to a limited degree between regions within a country. Map 2 shows a clear divide between east and west and between north and south, with the north-west of Europe being most advanced. In the UK, Norway, Finland, Germany or other countries where the internet is widely accepted and used, there are only limited regional variations. In contrast, e-commerce exploitation is low across the regions of the Mediterranean countries (Greece, Spain, Italy, etc.), Portugal and large parts of eastern Europe. In these countries, even in capital cities and large metropolitan regions, e-commerce is not widely utilised. Investments that brought these countries up to the norms of the centre-north of Europe could contribute to smart growth, increased competitiveness and territorial cohesion.

Higher shares of ICT employment in urban areas. The regional distribution of ICT employment is uneven. In general, an urban-rural divide is evident. There is a concentration of the ICT sector (i.e. high share of people working in the ICT sector) in more innovative areas and where economies of agglomeration are possible, thus creating cumulative effects. Most capital city regions, as well as some other international metropolitan areas, display high ratios of employment in the ICT sector. In contrast to these areas, a wide range of rural areas in Turkey, Greece, Romania and Croatia, but also a few regions in western EU Member States, have hardly any employment in the ICT sector.

Map 2 E-commerce, 2010



ESPON
© ESPON SIESTA Project, 2012

Regional level: NUTS0, NUTS1 and NUTS2
Source: ESPON SIESTA Project, 2012
Origin of data: EUROSTAT, 2012
© EuroGeographics Association for administrative boundaries

Individuals who ordered goods or services over the internet for private use, 2010 (share of 16-74 years, %)

- Below 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 75
- Above 75
- No data

Notes:
DE, FR, EL, RS and PL are shown at NUTS1 level.
TR is shown at country level and data for this country were provided by Turkstat.
Data for CH was provided by Swiss Statistics web site: <http://www.bfs.admin.ch/bfs/portal/en/index.html>
Data for BH11, BG12, BG13, BG21, BG22, BG23 and FI2 are not available for 2010.
These regions are shown for 2007.
TR data corresponds to 2011.
UKE1 data are not available for 2010 and are shown for 2009.

The map shows the share of individuals aged 16 to 74 who ordered goods or services over the internet for private use, including, but not limited to, clothes, food, books, computer software and electronic equipment. In doing so, the map shows also indirectly whether the internet is being used for commercial purposes, i.e. how effectively it is penetrating in business across Europe. The use of e-commerce mainly differs between countries and only to a limited degree between regions within the same country. Overall, there is quite a clear division between East and West, but also between North and South. The north-west parts of Europe possess the highest percentage of persons who bought or ordered goods or services. The internet is widely used for business purposes in Finland, Norway, or Germany, and regional variations are quite small. At the same time, e-commerce exploitation is low across the regions of the Mediterranean countries and large parts of Eastern Europe. In these countries, e-commerce is not widely used for business purposes, even in capital cities and large metropolitan regions.

2.3.3 A territorial view

National patterns and rural-urban patterns are decisive. The examples above underline that there are considerable territorial differences when it comes to the possibilities for European regions to contribute to and profit from smart growth linked to ICT. In broad terms, two main territorial patterns can be observed - differences between European countries, and differences between urban and rural areas. Knowledge about these differences can inform decisions about future investments in ICT infrastructure and support systems for increasing the quality of ICT services and their use.

As ICT is considered a service of general interest, it is important for Europe to ensure a minimum standard of infrastructure, quality and affordability in all its regions. This would guide ESIF investment efforts to the less endowed areas. (For further discussions on services of general interest see also chapters 2.4.2 and 4.3.2)

To keep up with the growing worldwide competition it is also important to further develop and push those regions that are already strong. However, world-class ICT requires a critical mass and also shows decreasing returns. This may provide arguments for increased investments in those areas not at the very top currently, but with good potentials to get there.

Regions in wealthier countries benefit more from ICT. National policies have shaped the roll-out of ICT infrastructure, the development of ICT related businesses and the use of ICT by citizens and businesses. This is linked to the general economic wealth in a country, with investments and educational levels creating the markets for ICT uses. Thus, in the best performing countries both rural and urban areas are well covered by broadband facilities, as is the case in Sweden, Finland, Denmark or the Netherlands.

Rural areas in economically weaker countries face disadvantages. There are still places where there remains a polarisation between rural and urban areas in ICT infrastructure and use. Examples of such disparities include the internet in Iceland and technical infrastructure in Romania and Poland – although this has improved immensely since EU accession. This polarisation weakens the closer the rural areas are to cities. The notable development difference between urban and rural areas is here becoming less relevant.

Most importantly, a reduction of the differences in terms of ICT networks and infrastructure has direct effects on delivery of other services of general interest. Some services are conditioned by the availability of infrastructure (e.g. ICT networks) and grow relatively quickly once infrastructure is in place. In this way, ICT infrastructure can have an important leverage effect on other services.

The differences are less pronounced when it comes to the use of ICT (assuming that access is available). Indeed, e-commerce can be seen as a force narrowing the gap between urban and rural consumers in terms of their choice of, and access to, goods and services.

2.3.4 Pointers for Policy

European level

- The use of e-commerce differs mainly between countries and only to a limited degree between regions within a country. Investments that brought countries in eastern and southern Europe up to the norms of the centre-north of Europe could contribute to smart growth and territorial cohesion.
- In addition to national patterns, ICT also shows rural-urban patterns within countries. In particular, countries with low ICT endowment show rather large disparities between regions, e.g. Spain or Italy.

National level

- To improve global competitiveness, a strengthening of the ICT sector is not only needed in the large metropolitan areas. New ICT regional growth poles are important for a coherent policy framework moving beyond the current territorial concentration of the ICT sector.
- Countries with low ICT profiles need to watch out for domestic disparities when it comes to access to ICT infrastructure, services provided and use of ICT.

Regional and urban level

- Each region should strengthen the digital society depending on its own preconditions. For areas with low access to ICT the development of the necessary infrastructure should be the prime focus. For other areas, the development of high quality e-services should be a major target. This is linked to the number of people working in the ICT sector as well as the use of ICT services by enterprises and citizens.
- Affordability of ICT access and services as well as the increase of digital literacy of enterprises and citizens should not be forgotten.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects KIT, SIESTA, SeGI, TIGER, EDORA.

2.4 Competitiveness of SMEs

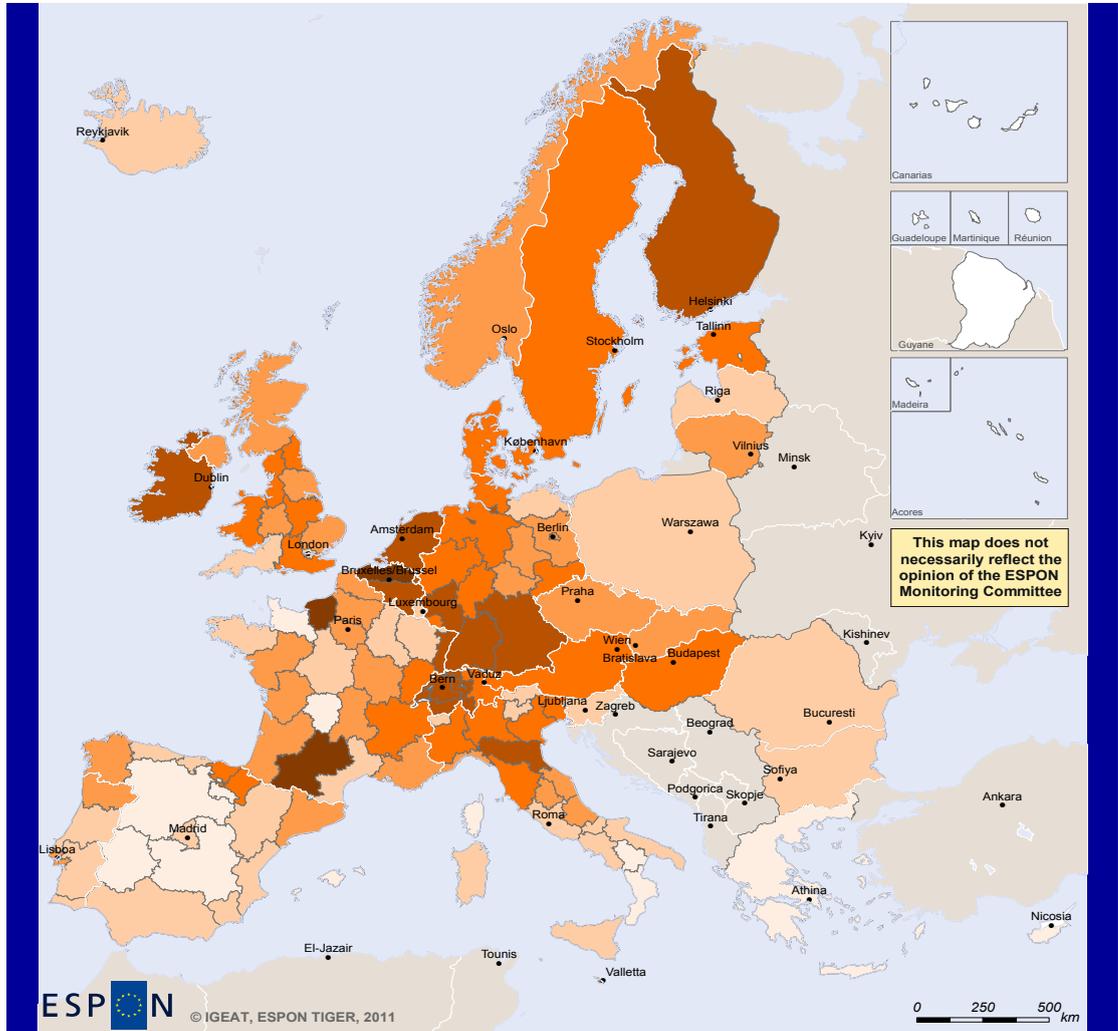
A thriving SME sector is essential for smart growth, jobs and innovation. More than large enterprises, SMEs are dependent on their territorial context, where proximity plays a key role, in particular for access to the kind of tacit knowledge that is seen as vital for innovation.

The following sections discuss territorial framework conditions which can facilitate the development of SME's in a region or city. They include the openness to international trade, the provision of services of general economic interest, and specific examples in the areas of natural resources, infrastructure and demographic development.

2.4.1 Global competitiveness

Smart growth and the role of private enterprises cannot be discussed in isolation from international flows. Attention is drawn to two aspects with clear territorial features. Firstly, openness to external trade varies between countries and regions. Secondly, five general types of areas shall be presented.

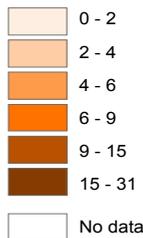
Map 3 Openness to extra-EU & neighbourhood trade




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Regional level: NUTS0 (PL, CZ, SK, BG, RO, EL, SI, AT, NL, NO, SE, FI, IE) NUTS1 (DE, BE, UK), NUTS2 for the rest
 Source: IGEAT, 2010
 Origin of data: EUROSTAT, national institutes, IGEAT Calculations 2012
 © EuroGeographics Association for administrative boundaries

Openness rate 2007 - 2009
Extra EU Exports / GDP



Note:
Excluding EU Neighborhood to avoid border effects.

The openness of regions has been assessed by the ratio between extra-EU and neighbourhood exports and regional GDP. Extra-EU and neighbourhood exports exclude all exports within the ESPON space as well as its immediate neighbourhood (Western Balkans, Near East, former-USSR and north Africa). The map shows the extra-European exports (excluding those to the direct EU neighbourhood) as a share of the regional GDP (in 2007-2009), the figures vary from 0.1% in Corsica to 31% for Flanders. The most open economies were in Belgium, two French regions (Midi-Pyrénées & Haut Normandie), Ireland, Finland the Netherlands, most of southern Germany, large parts of Switzerland and two Italian regions (Friuli-Venezia Giulia & Emilia Romagna).

Openness to extra-European trade varies between regions. The unequal openness to the global economy reflects, and is a product of, uneven development. It can be argued that in today's world, even relatively closed local economies are globalised to a certain extent. However, there is no evidence that the wealth of European territories mainly depends on their openness.

There is diversity in the openness to extra-EU trade, as illustrated in Map 3. This implies that global trends affect regional economies across Europe rather differently. Looking at extra-European exports (excluding those to the direct EU neighbourhood) as a share of the regional GDP (in 2007-2009), the most open economies were in Flanders (Belgium), followed by Midi-Pyrénées and Haut Normandie (France), and regions in Ireland, Finland the Netherlands, Germany, and Switzerland.

Allowing for more complexity, five types of regions can be distinguished with regard to global trade and flows, also including different types of enterprises:

- **Gateway cities.** Global and national gateways are deeply involved in various types of global and European networks. These are largely capital city areas and larger urban regions such as Barcelona, Frankfurt or Munich. They generate nodal advantages that reflect their strategic positions in the service and finance economy. In particular, in eastern Europe, capital cities have benefited from higher growth rates since joining the EU, notably due to their increasing capacity to participate in the European and global service economy. However, this has resulted in territorial polarisation within central and eastern European countries despite the good economic performance of most regions. Bulgaria is particularly notable for the disparity between growth in Sofia and elsewhere. In comparison, in the dense and populated core of Europe the growth of major gateway cities has been less evident over the last ten years.
- **Low vulnerability areas.** These are territories standing high in the international division of labour because of their technological know-how and capacity to maintain a position at the top of value chains. They have benefited, and may benefit further, from globalisation, although they are very sensitive to changes in global demand, as illustrated by the recent global crisis. There are two sub-categories. The first is territories with large companies, but also SMEs that depend on major firms (southern Germany, Sweden). These places seem stronger because of their capacity to meet the necessary R&D threshold. The second group are dynamic territories characterised by well-interconnected SMEs (central north Italy, western Flanders etc.). These seem more vulnerable despite their permanent rise in the value chain.
- **In-between areas.** These territories have been more active in attracting huge investments in medium technological segments of value chains. They include some regions of northern Spain and some areas in Portugal, as well as central European regions. The Mediterranean regions of this group are now fragile due to their higher labour costs compared to central European countries, while they are also unable to move up the value chain and compete on higher technological levels where agglomeration economies benefit the most developed areas in Europe. They also depend on large non-national corporate firms, which may further affect their vulnerability. The challenge for these regions is to reinforce the territorial embeddedness of large foreign firms. There is probably no other way for these regions than strengthening research, human capital, and the capacity for innovation, allowing them to move up in the value chains. These are matters that can be addressed through the targeted use of ESIF.
- **High vulnerability areas.** These are areas specialised in labour intensive sectors and low-cost functions. This group includes regions located in southern and eastern Europe, and especially in the Balkans. These territories rely on SMEs at the bottom of value chains in labour intensive segments of sectors like clothing. They cannot rise in the value chain because they face intense competition from eastern Asia and the European neighbourhood. In eastern Europe, they have been able to maintain competitiveness due to their position in integrated European value chains, and their proximity to European markets. Many of these regions need to strengthen their structural assets and reinforce their human capital as well as their basic infrastructures.

- **Non-globalised territories.** Many territories still have very few economic relations outside Europe. These “non-globalised” regions are less exposed to outside competition because they are specialised basic service economies. They are mainly in some Mediterranean regions, in Spain, Portugal, southern Italy or Greece.

Strategies for supporting SMEs in order to contribute to smart growth should vary depending on which type of region is being targeted.

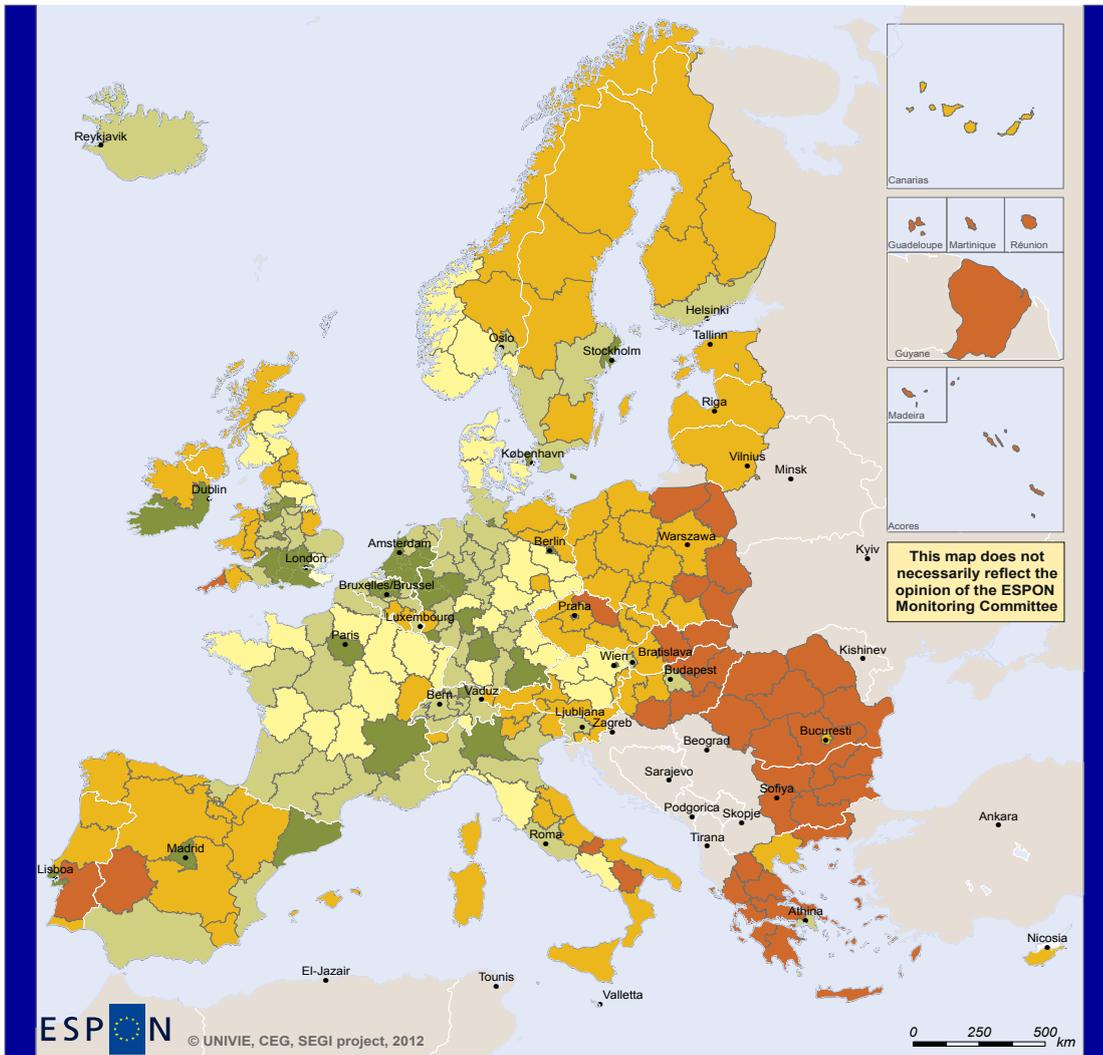
2.4.2 Services of general economic interest

SMEs depend on the regional access to, and quality of, services of general economic interest. In particular, services of general economic interest in the fields of transport, mobility and communication are of key importance to establishing and running a business and interacting with suppliers, customers and markets. These services support the basic needs of businesses and enterprises, avoiding what might otherwise become situations of market failure.

Levels of services of general economic interest are higher in western Europe. On a European scale, western countries show relatively better performance on services of general economic interest, while in the Member States that joined in 2004 and 2007 only the capital regions of Prague, Bratislava and Budapest are above average. On a regional level, it is generally the metropolitan areas that score higher. In most countries capital regions are ranked higher than other regions – most obviously in the geographically outer rim of the EU in the north and west like in Finland, Sweden, Norway and UK and in the southern countries - Spain, Portugal and Greece. In some cases (like Berlin or Lisbon) there is even a gravity effect, with the lowest national service provision in the neighbouring regions of the capitals. Island regions are usually below the European average since infrastructures of high connectivity and wide operating range, like motorways, are absent or constricted in these territories.

The hypothesis that services of general interest for businesses ‘follow’ their costumers is more persuasive than assuming that these services play a ‘trailblazer’ role. It means that regions of high economic power also trigger and foster enhancement of economic services of general interest.

Map 4 Regional typology of economic services of general interest



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Regional level: NUTS2
 Source: EUROSTAT, 2012
 Origin of data: EUROSTAT 2012
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Typology on service of general economic interest, 2009-2010
 (standard-deviation from European average)

- Below average (-5.2 to -2.5)
- Moderately below average (-2.5 to 0.5)
- Around average (-0.5 to 0.5)
- Moderately above average (0.5 to 2.5)
- Above average (2.5 to 11.2)
- No data

Notes:
 With use of the following indicators,
 z-transformed; i.e. expresses deviation
 from mean in standard deviation:

1. High ranked transport infrastructure
 Length of motorways in km per 1000 km² in 2009
2. High quality ICT infrastructure
 Percentage of households with access to broadband in 2010
3. Vital business surrounding
 Persons employed per 100 000 inhabitants in PR and consultancy in 2009
4. Public finance
 National public expenditures on economic affairs per inhabitant in 2009

This map on services of general economic interests brings together indicators on (a) high ranked transport infrastructure (length of motorways in km), (b) high quality ICT infrastructures (percentage of households with access to broadband), (c) vital business support (share of persons employed in PR and consultancy), and (d) public finance (national public expenditure on economic affairs per inhabitant). With regard to these indicators, regions in western countries show relatively better performance on services of general economic interest than regions in the Member States that joined in 2004 and 2007. On a regional level, it is generally the metropolitan areas that score higher.

2.4.3 Specific territorial development conditions for the private sector

SMEs do not as easily change locations, countries or continents as multinational companies do. Accordingly SMEs tend to have better tacit knowledge on the development potentials of their specific location. At the same time they are also more exposed to the development challenges deriving from the location.

A few examples of relevant territorial settings can be given, which largely stand for the three different dimensions - natural resources, infrastructure endowment and human capital:

- **Natural resources example: Maritime (energy) economies**

The maritime economy is changing in large parts of Europe, with the changes having potentially profound effects on marine and coastal businesses. This trend is especially visible in the energy sector. In northern Europe, traditional activities have matured and will eventually decline (e.g. oil resources in the North Sea), whilst new activities enter the development phase (e.g. offshore renewables). At the same time some areas in southern Europe are likely to be able to exploit new offshore natural gas (e.g. Cyprus and Greece). Such changes in maritime energy patterns will have territorially differentiated effects and also impact on the livelihoods and development opportunities of smaller businesses in the areas, even those not linked directly to the energy business. In a similar way, though less dramatically, changes in other sectors of the maritime economy affect SMEs in maritime regions. Examples include changes in sea transport, fishing, fish farming, bio-tech, maricultures or tourism.

Apart from the maritime sector, the natural resource dimension which shapes business opportunities can also comprise other natural resources of worldwide interest such as wood, peat or iron ore products, worldwide branded agricultural products (e.g. Porto, Rioja, Tokaji, Champagne, Gruyère cheese, Parma ham) or worldwide tourist attractions based on local specificities (e.g. the castle of Neuschwanstein in Germany, Kleinwalsertal in Austria, the Icehotel in Sweden or the Blue Lagoon on Iceland).

- **Infrastructure example: Areas with specific development conditions**

Areas with specific territorial development conditions include islands, coastal, peripheral, mountainous or rural areas. The characteristics of these areas are extremely diverse. However, often they have low population density and/or low GDP levels. Their main development obstacles are linked to a lack of quality or reliability of transport services, long distances to the nearest markets, insufficiently developed secondary networks or inadequate access to key infrastructures such as airport, maritime ports or multimodal hubs. Poor quality secondary roads are an important additional concern. These disadvantages impact on the development path of local businesses, as they restrict access to labour and the size of the market, while increasing the costs and efforts for receiving goods and delivering products to a wider national or international clientele.

- **Human capital example: Demographic profiles**

A region's age profile and gender ratio influences the labour market. While "attractive" regions enjoy the advantages of a young and dynamic labour force, others are confronted with an aging and declining labour force. The demographic characteristics of the labour force can be a concern for companies needing to replace or recruit more staff, as well as shaping local demand for services and products. While demographic decline and out-migration of young people is widely recognised as an important development issue, there is much less focus on the unbalanced gender ratios of some regions. Nevertheless, an unbalanced gender ratio poses severe long-term challenges for a region as it can accelerate demographic decline. Lack of jobs and access to higher education are widely regarded as the most important reasons for selective migration processes. A 'lack' of women in all age groups is found in predominantly rural and agrarian regions, and is especially visible in regions in eastern Germany, but to a lesser extent also on the Iberian Peninsula, in the Nordic Countries and in eastern Europe. (Further discussions on demographic development and gender imbalances can be found in chapter 4.2).

In addition to these three dimensions, institutional settings and governance structures in an area are also important. These settings differ widely between countries, regions and even places in Europe and shape the development potentials and challenges for businesses in a region. Governance and institutional capacity is discussed in chapter 5.

Examples: Actions strengthening areas with geographical specificities and limited labour markets:

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

2.4.4 Pointers for Policy

European level

- A regional economic environment open to extra-European trade can be important for the economic perspective of an area, and is strongest in large parts of Belgium, Ireland, Finland, the Netherlands, Switzerland and southern Germany.
- Global gateway locations are mainly capital city areas and larger urban regions such as Barcelona, Frankfurt or Munich.
- Regions specialised in labour intensive sectors and low cost functions are highly vulnerable. Most of these regions are located in southern and eastern Europe, especially in the Balkans.
- The provision of services of general economic interest is better in western countries, while in the Member States that joined in 2004 and 2007 only the capital regions of Prague, Bratislava and Budapest fare above average. On a regional level, it is generally the metropolitan areas that score higher.

National level

- Demographic development patterns and in particular regional gender ratio structures pose a wide range of potential challenges to regional development in Europe.
- Predominantly rural and agrarian regions are characterised by a lack of women, especially in eastern Germany and to a lesser extent also the Iberian Peninsula, Nordic Countries and eastern Europe.

Regional and urban level

- Beyond Cohesion Policy a range of relevant fields of action need to be considered at regional and local level to strengthen areas with geographical specificities that limit their labour markets.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects SEMIGRA, ATTREG, GREECO, SeGI, DEMIFER, TeDi, TIGER, PURR, EDORA.

3 - Sustainable growth in a territorial perspective

A global market opportunity. The EU's sustainable growth objective aims to enhance resource efficiency, promote more water efficiency and use of waste as a resource, to address climate change and strengthen the resilience of territories to climate risks. The major goal is to help the EU to be economically competitive in a low carbon world by becoming more efficient in resource use and creating new business opportunities. The EU is currently a world leader on energy and climate policy and a key aim is to stimulate world markets to move towards a sustainable energy future. As more countries adopt targets to reduce greenhouse gas emissions, so the demand for clean energy products will increase. Innovation will be a critical factor in shaping competitiveness in the markets for green buildings, renewable energy technologies, energy-efficient lighting or low-emissions transport. However, at present the US and China offer the best investment opportunities for renewable energy.

The EU's 2020 sustainable growth headline targets are expressed in the "20/20/20" formula. It stands for a 20% reduction in greenhouse gas emissions compared to 1990 levels; plus 20% of our energy to come from renewable resources, and finally a 20% increase in energy efficiency. Each country then sets its own targets within these, so as to collectively achieve the desired outcome for the EU.

Sustainable growth is a means of increasing competitiveness, and not purely a matter of environmental protection. The aim is growth that is in harmony with the environment, and less vulnerable to economic crises. What kind of interventions in what places can steer regions and Europe as a whole onto the path to sustainable growth?

The big picture

- The cities are crucial to sustainable growth, both as centres of innovation and production, but also in their consumption of land and energy, and their emissions.
- Peripheral regions contribute eco-system goods and services that are vital to Europe but do not have market prices.
- EU targets for emissions reductions by 2020 will be achieved, but renewables targets are likely to prove more problematic.
- There is a north-south divide that impacts on progress towards sustainable growth. In part this reflects the exposure to climate change, and the physical barriers created by mountains such as the Pyrenees. However, there are also aspects of governance that need to be addressed.

3.1 Territorial driving forces for sustainable growth

EU policies are important drivers. The idea of a "Resource Efficient Europe" is central to the Europe 2020 recovery strategy, and underpins the political support for sustainable growth. The recognition in the Transport White Paper that "business as usual" cannot be an option through to 2050 is another important driver for sustainable growth. The supportive policy context will build investor confidence, for example for investment in new cleaner technologies for motor vehicles. The environmental benefits from such innovations will be widely felt and appreciated. However investments and jobs are likely to be concentrated on strong science-based and auto-manufacturing regions where the innovation, development and production will be undertaken.

Many EU Directives have territorial impacts, some intended, others not. In particular, many environmental measures can conflict with priorities in other sectors or in regional development strategies. This is not to argue that such environmental measures are wrong. Rather what is needed is better co-ordination across policy in different sectors, and greater awareness amongst policy makers from different sectors of the potential territorial impacts that measures will have.

Innovative governance can be a driver. Eco-systems, air and water do not recognise administrative boundaries. Consequently, cross-border co-operation is necessary to achieve sustainable management of these shared resources. This applies no matter whether the borders are between local government areas, EU Member States or over external borders. Thinking and working at the scale of functional territorial units, rather than being blinkered by boundaries, is a fundamental part of the territorial approach, It is especially important when seeking resource efficient and environmentally sustainable solutions.

Sustainable growth can assist convergence and territorial cohesion. Many of the natural resources on which Europe depends are located in the periphery or offshore. In conserving and managing these, peripheral regions are making their own specialist contribution to Europe's prosperity, diversity and identity. Water, landscapes, carbon-sequestration in forests, pipelines and electricity transmission and the development of renewable energy are all examples. Valuing these resources and putting them at the heart of regional development strategies could advance sustainable growth across Europe. Recognition of this should be an important driver of policy.

Globalisation and Europe's position in the international division of labour is driving development. The shift from primary production and manufacturing to services fosters the spread of cities and the use of land. The renewables industry is growing, but not evenly across Europe. In part these differences reflect natural endowments and local potential for different types of renewable energy. However, government policies and incentives are also an influence. Similarly, climate change is a driver for sustainable growth.

3.2 A shift to a low carbon economy

The shift to a low carbon economy concerns, among others, issues such as greenhouse gas emissions, use and production of renewable energy and land use matters. All of these show different territorial patterns. The shift to a low carbon economy is a vital step towards mitigating the impacts of climate change (see chapter 3.3 for more on climate change).

3.2.1 Greenhouse Gas Emissions and Renewable Energy

Growth can be de-coupled from greenhouse gas emissions. Since 1990 total greenhouse gas emissions in the EU have been reduced by 10%, while the economy has grown by 40%. Growth can be de-coupled from emissions. Reducing greenhouse gas emissions has a strong economic dimension, since greenhouse gases are produced, directly or indirectly by almost all major industries. However, not all countries are starting from the same base line. Most of the greenhouse gasses originate from the production and use of fossil fuels, including the production of electricity and heat in the energy industries. These sources of emissions are not evenly distributed across Europe or even within one country, where different regions have different energy producers.

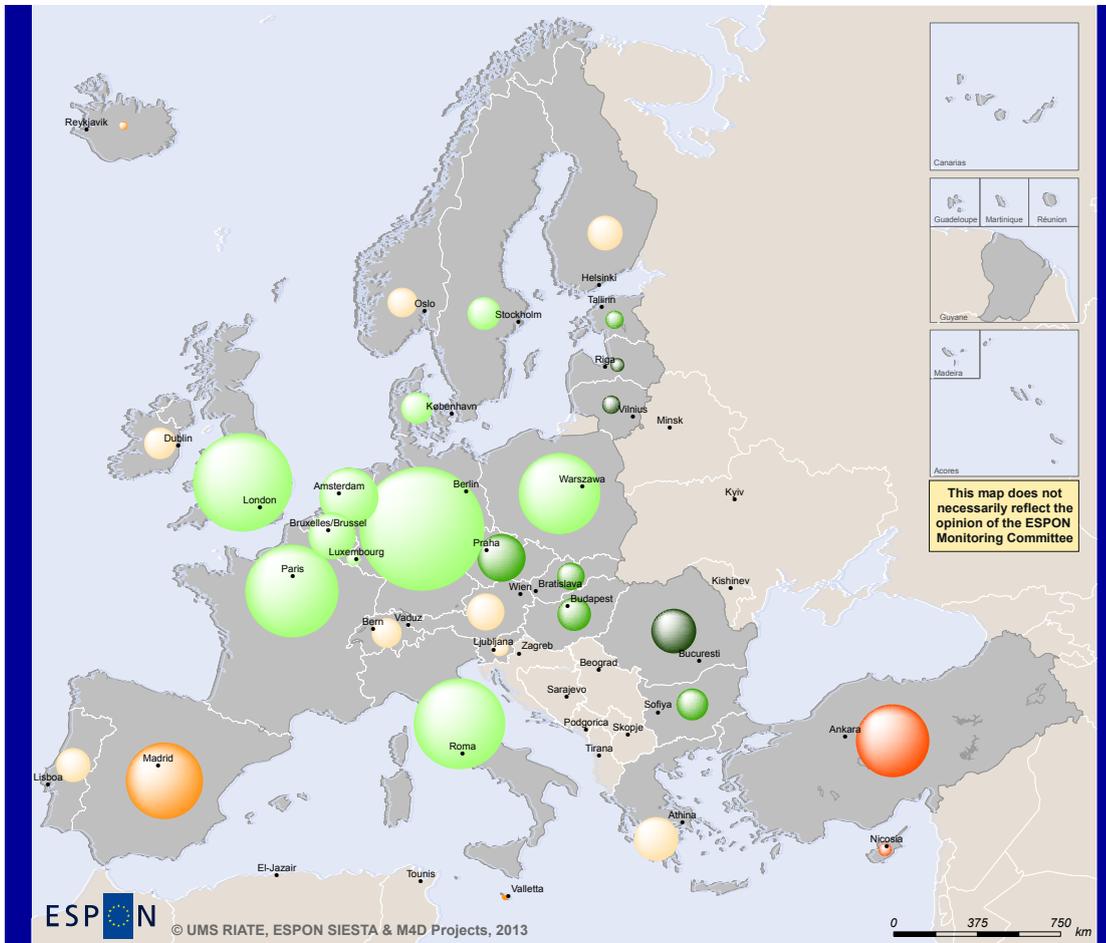
Data from 2009 reveals that Germany is the largest single emitter of greenhouse gases, accounting for around 20% of the EU27 total. Other large countries follow - the UK (12.2%), France (11.2%) and Italy (10.6%). Overall EU 15 produced 80.6% of the emissions in 2009, which was 4.3 percentage points above their share in the 1990 base year. These figures need to be considered in relation to either the population or total GDP of the countries.

Emissions reduction on-target, but not because of sustainable growth. The economic crisis has delivered part of the required reductions in emissions. This has undermined the assumptions on which the EU's Emissions Trading System was constructed. In effect, with growth in output stalled, surplus allowances and international emission reduction credits have been accumulated and their market value has fallen. By 2010 the EU 27 was already 14% below its 1990 emissions level: the 20% by 2020 will be reached. However, this success means that the incentive for transformation to a low carbon economy through investment in innovation has been reduced.

Significant reductions have been achieved in eastern Europe. From 1990 to 2009 Latvia and Estonia achieved reductions of 59.6% and 58.9% respectively and there was also very significant progress in Bulgaria, Lithuania, Romania and Slovakia (all over 45%). These changes reflected the closure or modernisation of heavy industry in the Baltic and Danube regions. Within EU 15, the largest absolute and relative reductions were achieved in the UK (-27%, explained by a switch from coal to natural gas) and Germany (-26.3, for which industrial restructuring in the former East Germany played a part).

In contrast, Cyprus and Malta have recorded significant increases in emissions levels since 1990, while Turkey has the highest increase, and notable increases also occurred in Spain, Portugal and Iceland.

Map 5 Greenhouse gas emissions in 2010



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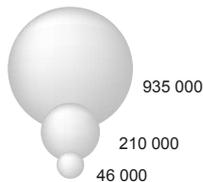
Regional level: NUTS0
Source: EEA
Origin of data: EEA, 2013

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Index 1990 = 100

- 42 - 50
- 50 - 75
- 75 - 100
- 100 - 125
- 125 - 150
- 150 - 198

Greenhouse gas emissions, 2010
in thousands tons of CO₂ equivalent



Notes:

The aggregated greenhouse gas emissions are expressed in units of CO₂ equivalents. 2009 for TR.

The indicator does not include emissions and removals related to land use, land use change and forestry (LULUCF); it does not include emissions from international aviation and international maritime transport. CO₂ emissions from biomass with energy recovery are reported as a Memorandum Item according to UNFCCC Guidelines and not included in national GHG totals.

The EU as a whole is committed to achieving at least a 20% reduction of its greenhouse gas emissions by 2020 compared to 1990.

- This objective implies:
- Reduction of 21% in emissions from sectors covered by the EU ETS (emissions trading scheme) compared to 2005 by 2020;
 - Reduction of 10% in emissions for sectors outside the EU ETS.
- To achieve this 10% overall target each Member State has agreed country-specific greenhouse gas emissions limits for 2020

The colours on the map show greenhouse gas emissions by each state in 2010 in relation to their level of emissions in 1990. The size of the circle for each state signifies the total amount of emissions in 2010 (in thousands of tons of carbon dioxide equivalent). Many states have achieved reductions from their 1990 level of emissions: the deeper the green colour, the greater the reduction that has been achieved. However, as the orange and red shades show, Turkey, Spain, Iceland, Cyprus and Malta have all recorded notable increases; though, as the size of the circles demonstrates, the total amount of emissions in any of these countries is still much less than that in any of the larger EU countries – Germany, UK, Poland, Italy and France.

The potential for reducing emissions is proportionately higher in poorer Member States. ESIF programmes can be an important instrument to stimulate the public and private investment required. Greater energy efficiency could improve economic competitiveness, create jobs, reduce energy poverty and reduce greenhouse gas emissions. There is also great potential for innovation and smart growth in it. Barriers to be tackled include: inadequate domestic energy prices and lack of payment discipline; insufficient information on suitable technologies; too few contractors and service companies; and financing constraints.

Renewable energy off-target. Renewable energy is any energy source that derives directly or indirectly from natural processes related to sunlight, heat stored in the earth or gravitational forces and that is constantly, naturally replenished. Renewable energy includes hydroelectricity, biomass, wind, solar, tidal and geothermal energies. There are wide variations in the extent to which countries are already using renewable energy, as the tables below show. However, on present performance, most of Europe's regions seem unlikely to be able to meet the Europe 2020 targets for renewable energy.

Table 1 The countries with the highest share of renewable energy in gross final energy consumption

MS	Region NUTSO	Share of renewable energy in gross final energy consumption (Year 2009) [%]
NO	Norway	64.9
SE	Sweden	47.3
LV	Latvia	34.3
FI	Finland	30.3
AT	Austria	29.7

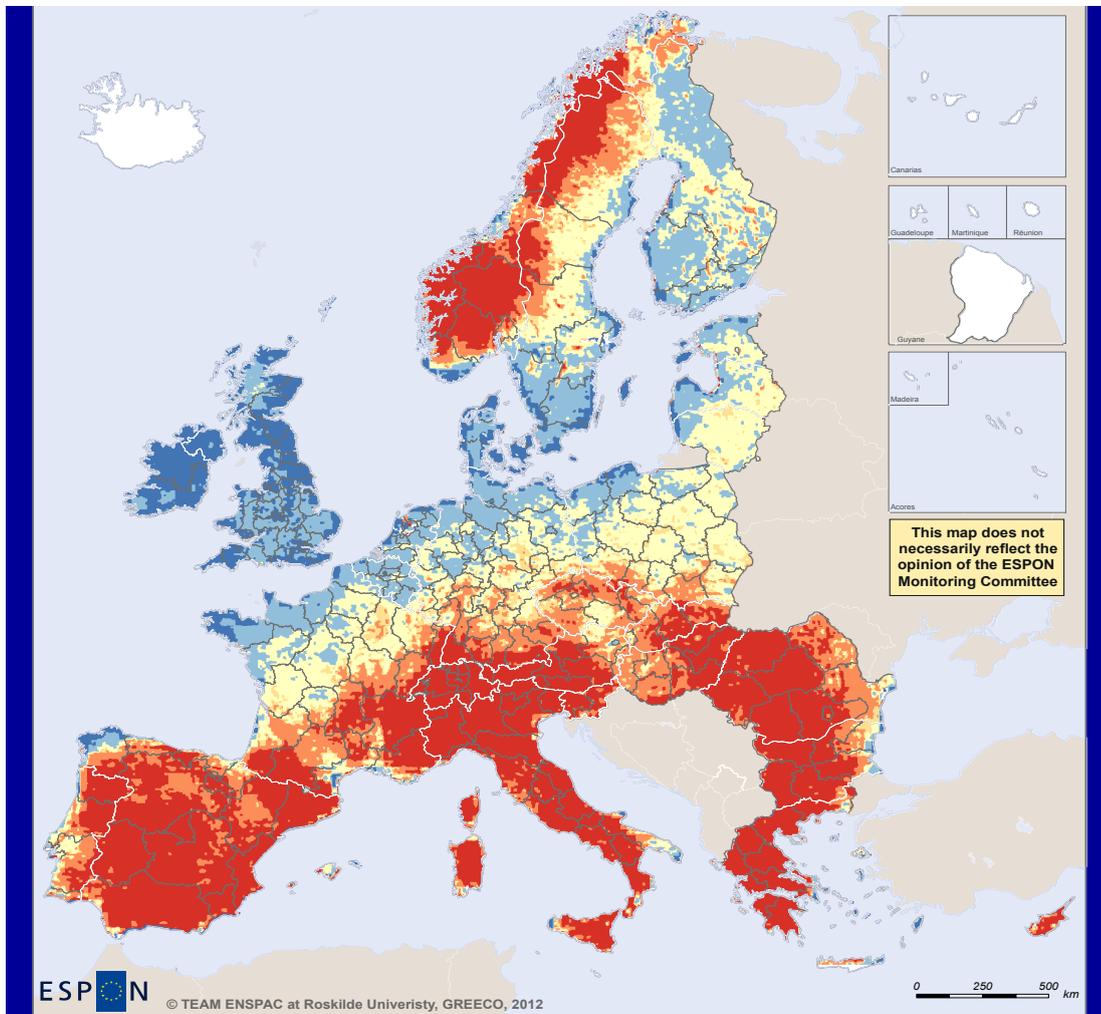
Source: ESPON SIESTA

Table 2 The countries with the lowest share of renewable energy in gross final energy consumption

MS	Region NUTSO	Share of renewable energy in gross final energy consumption (Year 2009) [%]
MT	Malta	0.2
LU	Luxembourg	2.7
UK	United Kingdom	2.9
NL	Netherlands	4.1
BE	Belgium	4.6
CY	Cyprus	4.6

Source: ESPON SIESTA

Map 6 On-shore wind energy costs

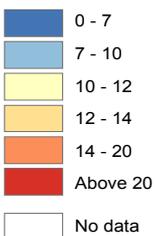


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Regional level: Grid
 Source: ESPON Database, ESPON GREECO Project, Roskilde University, 2013
 Origin of data: European Environmental Agency, 2009 and International Energy Agency, 2012
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On-shore wind energy costs, 2015-2020
 (€ cents/kWh)



Notes:
 The map presents the levelised cost of electricity generated by onshore wind turbines of the most efficient type expected to be installed in the period 2015-2020 (3.5MW wind turbines).

The wind data are collected from European wind speed measurement stations used in an assessment of the European wind power potential by the European Environmental Agency (2009) and adjusted to the wind energy potential expected at 100 m above ground depending on land cover class and landscape roughness. The cost data are from the International Energy Agency (2012).

The levels of remuneration in the form of feed-in tariffs and other financial arrangements differ widely by country but 8 and 10 c/kWh could be useful reference levels for the 2015-2020 period

The map shows the long-term potential costs of producing electricity from on-shore wind farms. The costs are measured in cents per kilowatt hour. The areas shaded in blue are those where it is cheapest to produce energy from wind. These are mainly the British Isles and coastal regions in northern Europe. The costs are based on a number of assumptions. For example these include state-of-the-art wind power generation by 3.5MW turbines, and recent cost assumptions for 2015-20 used by the International Energy Agency. Natura 2000 protected sites and designated nature areas have been excluded, along with residential areas, airports, highways and other areas not compatible with wind energy generation. The calculation also recognises that the extent of wind farms are constrained by their visual impact on the landscape, and so assumed a minimum distance between wind farms of 4km and consequently a power density of 1.2 MW/km.

The EU strategy is to ensure that renewable energy sources and technologies are economically competitive by 2020. Different national targets have been set that take account of different baselines, natural endowments and economies to meet the EU target of 20% of energy from renewables by 2020. For instance, Romania has to increase the share of renewables by another 1.6 percentage points to reach its target of 24 % by 2020; Sweden by another 1.7 to reach its target of 49%. Estonia, Slovakia and Austria have also nearly reached their targets already. In macro-region terms, the Baltic Sea region, the Mediterranean Basin and the Danube Space have countries that are closer to achieving their national target (with a few exceptions, which include The Netherlands, France and Denmark). In contrast, the arc that includes north-west European regions and France has more progress to make.

Wind in the west, sun in the south, could aid competitiveness and territorial cohesion, but better grid connections are needed. Wind power is highly variable in its distribution; north western Atlantic areas have the strongest average wind speeds, followed by other western Atlantic areas, the North Sea and southern Baltic. Within Europe these areas are best placed for development of energy from wind, whereas southern Europe (and Europe's neighbourhood in North Africa) has the potential for harnessing energy from the sun. All these regions with high potential are in relatively peripheral locations. Successful renewable energy development could therefore increase competitiveness and territorial cohesion. However, Europe still lacks the grid infrastructure that would enable renewables to develop and compete on an equal footing with traditional energy sources. Grid connections are needed so that fluctuations in supply from different types of renewables can be managed better, by increasing the flexibility of electricity systems.

Europe's seas can contribute to a low carbon economy. Europe's main cluster of offshore wind farms is in the southern North Sea, with a second cluster in the Irish Sea. Western coastal areas fully exposed to the Atlantic have the greatest capacity to develop wave power, followed by open areas in the North Sea and Mediterranean. Effective tidal power is restricted to channels and estuaries where ocean conditions and other physical factors favour strong tidal surges. The UK's and northern French seas hold the greatest potential in this regard. However, no wave energy schemes are yet beyond the trial stage. The seas might also help in the storage of carbon dioxide. For example, exhausted North Sea oil and gas areas, connected to land through disused pipelines, might in future provide a place for long-term storage of carbon dioxide.

3.2.2 Greening the economy

Green investments can create new jobs and help lift regions and Europe out of the economic downturn. The European Commission and the UN Environment Programme characterise the green economy as "patterns of consumption and production are sustainable and enable all citizens to have access to resources while conserving the quality and quantity of the world's shared resources. This implies primarily the decoupling of economic growth and well-being from energy and resource consumption".

The shift to a green economy requires the addition of a territorial dimension to conventional economic thinking, integrating place-based concerns with waste and pollution to the more traditional and largely place-blind focus on production and consumption, for example. Economic activities (and supporting infrastructure) take up space, and reduce the space left for other species and ecosystems, and ultimately can threaten biodiversity. As shown by the discussion of Blue Growth in Chapter 1, there is also a maritime dimension to a green economy.

The capacity of a region to grow its green economy is influenced by its environmental assets, such as wind or sunshine. However, these are not the only forces shaping the transition. Governments can exert influence by use of policy instruments including technical standards and prohibitions, tax and subsidy incentives (and disincentives), information about green solutions and support of citizen and corporate environmental responsibility. Similarly partnerships with universities and research centres can boost eco-innovation in a region. These are all part of a region's characteristics, which will fashion regional competitive advantages with regard to a green economy transition.

A green economy is expected to rely more on local conditions than the previous economic model. Labour markets (skills and costs of the workforce), governance structures, territorial development strategies and policies, and agro-ecological conditions are anticipated increasingly to influence economic productivity, and consequently territorial specialisation. Small and medium sized towns may be particularly well-placed to take advantages of the opportunities opened up by the green economy.

Example: Sustainable tourism

Germany, Poland and the Czech Republic meet in the “Three Corners” region. After 1989 there was a dramatic rise in the unemployment rate all across this region. The economy had previously been based on heavy industry and mining. While the economic restructuring has not been an even process everywhere, there has been a general shift from manufacturing to services.

Sustainable tourism has been identified as offering cross-border development potential. The Central Mountains have traditionally been important for winter sports, hiking and general recreation. While tourism fell off sharply after 1989, it is now booming again. Dresden, Jelenia Gora and Karlovy Vary are important urban tourist centres, offering sites of cultural interest. A further attraction for sustainable tourism is the 1220 km long Elbe Bike Trail, leading from the Giant Mountains in northern Bohemia all the way to the mouth of the Elbe in the North Sea. Thus the region’s economy has shifted to a more resource-efficient growth model.

Cohesion policy can have a positive impact for a competitive green economy, especially for less developed regions. The engagement with the green economy differs between north and south of Europe. Things to look for in developing a green economy would include: territorial assets/territorial capital (e.g. cultural landscapes, natural and cultural heritage); critical green mass: i.e. green networks, ecological corridors and preservation of areas of high ecological value; ways to conserve and enhance the environmental quality of urban areas and coastal zones; sustainable tourism; or rural business clusters linked to supply chains (e.g. local food production, local restaurants, and experience tourism such as using local homes to accommodate visitors).

3.2.3 Land use and development on greenfield land

Extension of artificial surfaces is outstripping population growth. Between 1990 and 2006 Europe’s population grew by 5%. In the same period the proportion of the territory classed as artificial surface increased from 4.1% to 4.4%, an 8.8% increase on the 1990 figure. The most dramatic changes in land use are the shift from land-based economic activity (agriculture, forestry, mining and quarrying) towards the uses associated with knowledge-intensive, service-based economies. The driving forces here are globalisation and Europe’s position in the global division of labour.

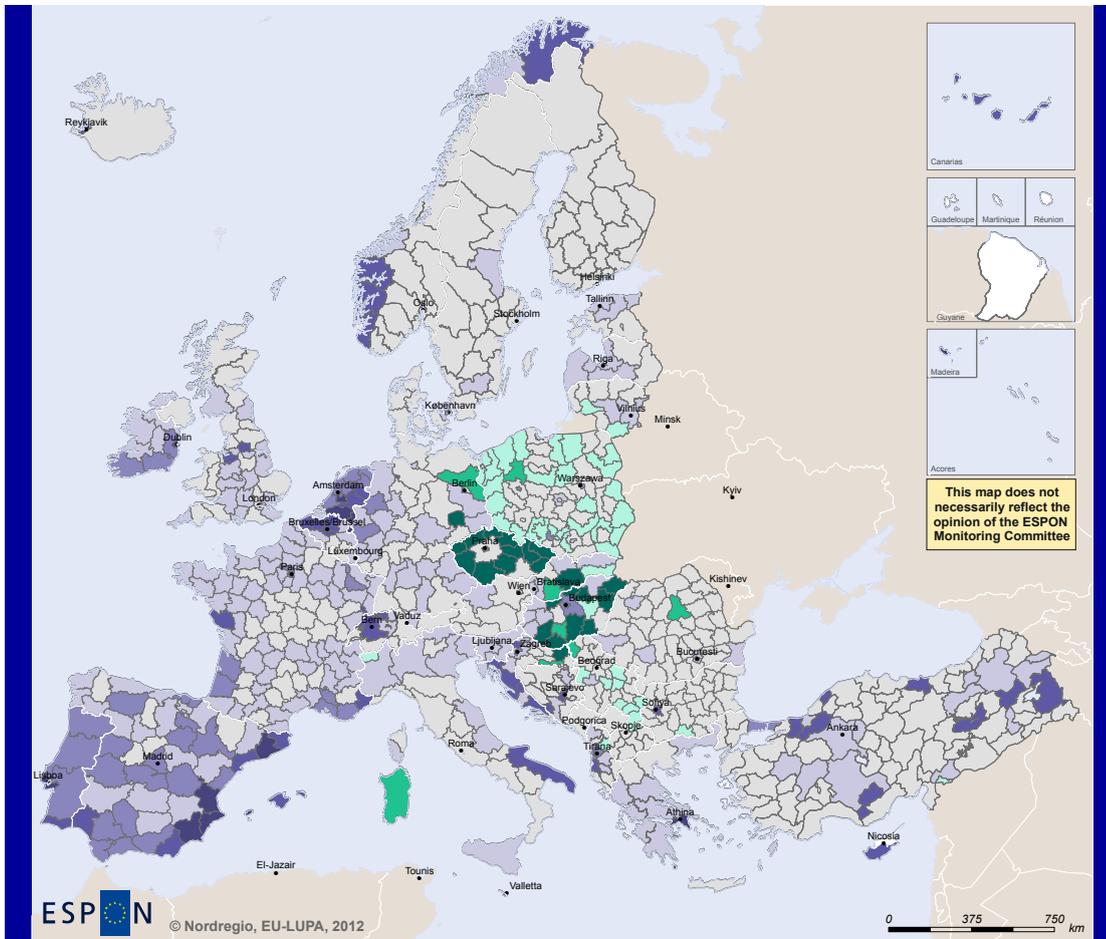
There is evidence that political changes have also been significant drivers of land use changes. Analysis of time series data for 1990-2000 and 2000-2006 from the CORINE database shows that in some cases almost 30% of the land area of a region has undergone some change. Vast changes can be observed in Spain, Portugal, Ireland, the Czech Republic and the Netherlands. Some of the most significant changes between 1990 and 2000 were in the Iberian Peninsula. After Spain and Portugal joined the EU in 1986 traditional agricultural units were broken up and turned into more intensive forms of production. Conversions of agriculture and forestry land have been the primary drivers of change. Similarly, land restitution in eastern central Europe together with the movement towards EU accession in 2004 also drove change. A similar pattern might be anticipated in current and future candidate countries, though in 2000-06 changes were less pronounced in the Western Balkans.

In some places it is not the amount of land use change that is striking but the degree of intensification caused by types of economic activity that were new to the region. In Norway, for example, between 2000 and 2006 there was development of intensive mining, hydrocarbon extraction and other heavy industrial activities in rural and remote locations.

Hot-spots of change. As our urban areas spread they consume land, a vital resource for food production or for the forests that help to absorb carbon dioxide emissions. The Resource Efficient Europe Flagship Initiative under the Europe 2020 Strategy sets the goal of no net land-take by 2050. This is likely to pose problems for regions such as those around major cities, where growth in producer services and the knowledge economy is anticipated, along with population in-migration. The hot-spots of land use change since the mid-1990s are shown in Map 7. They have been in some regions of the Mediterranean coast, Belgium, The Netherlands, Spain, Portugal and Ireland, and much of it was linked to the speculative property boom. Tourism has put particular pressure on coastal areas.

Many regions located along the coast or in close proximity to large urban centres are experiencing decentralisation and sprawl of urban functions. Examples include inland regions surrounding Madrid, Geneva, Zurich, Paris and Brussels, along with coastal regions in Spain, France, Italy and Croatia. There is a general trend observed over the last 20 years where urban sprawl is less associated with residential development and more with other industrial and commercial developments. However, there are some exceptions like the Mediterranean coast, and specifically in Spain where second homes and speculation were driving factors for urban sprawl in the period 2000-2006. Many eastern cities also show a different trend with the development of new residential areas dominant over new industrial and commercial ones.

Map 7 Land change hotspots, 1990-2006

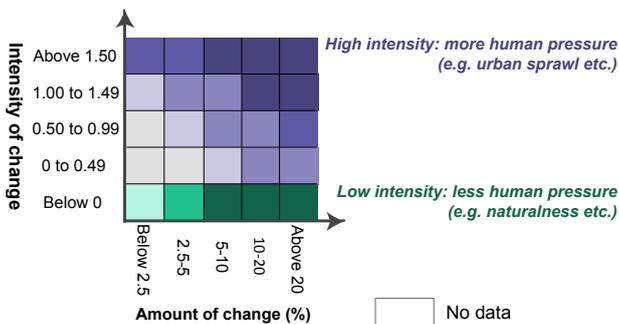


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Regional level: NUTS2/3
Source: Nordregio, 2012
Origin of data: EEA, 2011

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Land change hotspots 1990-2006



Notes:
Reference period: 1990-2006
except EL (1990-2000), AL, BA, CH, FI, IS, MK, NO, SE, TR (2000-2006)

The x-axis shows the amount of land that has undergone change during the given years (in percent) while the y-axis indicates the change in intensity that resulted from those changes. Therefore, regions in grey represent those with relatively stable land cover characteristics. Increasingly darker shades of green or purple identify "hotspots" of change where high intensifications or extensifications are coupled with increasing levels of overall land change are evident.

The map of land use change hotspots highlights places where the amount and the intensity of land use change was greatest during the period 1990-2006. The darker the shading, the more land use change there has been. The more purple the colour, the more intense that change has been, e.g. from agriculture to urban use. The greener the colour, the more the change has been towards less intensive use of land, e.g. the abandonment of farmland. The regions in light grey are places where there has been less change. The map reveals intensification hotspots in some coastal Mediterranean regions and around some major urban centres, with several hotspots in Turkey, a country that is still urbanizing. In contrast the extensification hotspots are mainly in Sardinia and regions in eastern central Europe, reflecting rationalisations of agriculture.

Contaminated land – a challenge for ESIF Funds. Rehabilitation of urban land and buildings has been an important focus for the Structural Funds. Such actions offer an integrated approach to sustainable growth. They improve the environment, often in poor regions, help conserve good quality agricultural land, and create jobs and new development opportunities. The challenge still remains most acute in central and eastern Europe; for example, it is estimated that 40% of the Budapest area is brownfield land. The cost of remediation of contaminated sites is very high, and so will not be undertaken by the private sector while markets are depressed. Further problems are uncertainties about land ownership and the need to upgrade infrastructure to support dense urban populations.

3.2.4 Pointers for Policy

European level

- Europe's greenhouse gas emission targets will be achieved, but renewable energy targets are more problematic. The regions with most potential for wind, tidal and solar energy are all in peripheral locations, so there is potential to integrate energy and environmental aims with competitiveness, territorial cohesion and energy security. However, there will need to be investment in better grid connections to capture this potential competitive advantage.
- The green economy potentials are tapped differently between the north and south of Europe. ESIF investments need to take account of this.
- ESIF investments will be needed to tackle the backlog of contaminated land in central and eastern Europe, particularly in poorer regions. A pro-active approach to restoration and reuse of brownfield land will be essential to achieving the Europe 2020 Flagship Initiative goal of no net land-take by 2050.

National level

- All government departments need to be aware of national targets for emission reductions and renewable energy use, and ensure that they are embedded in practice.
- Many levers to support the development of a competitive green economy rest with national governments. Governments can exert influence by use of policy instruments including technical standards and prohibitions, tax and subsidy incentives (and disincentives), information provision about green solutions and support of citizen and corporate environmental responsibility.

Regional and urban level

- Regional strategies are needed to capitalise on environmental assets and human capital to stimulate and support a transition to a competitive green economy. The strategies could address territorial assets/territorial capital (e.g. cultural landscapes, natural and cultural heritage); critical green mass, i.e. green networks, ecological corridors and preservation of areas of high ecological value; ways to conserve and enhance the environmental quality of urban areas and coastal zones; sustainable tourism; and rural business clusters linked to supply chains.
- Look for Blue Growth opportunities: for example, fisheries are now part of the ESIF, and there could be opportunities to address the land/sea interface.
- Reuse of brownfield and contaminated land is a challenge but a key to an integrated approach to sustainable growth.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects SIESTA, GRECO, GEOSPECS and EU-LUPA.

3.3 Climate change

As well as creating jobs and growth, a greener economy can also help Europe and the world to tackle climate change. While Europe is expected to be less severely affected than other global regions, few now doubt that Europe's climate is changing, with extreme weather events becoming more frequent. The economic and social costs of floods, heat waves and wildfires are now embedded in the consciousness of businesses, policy makers and the general public. Of course, not everywhere has direct experience of these catastrophes. Climate change has a territorial dimension too, affecting different regions in different ways. Similarly, some places are better prepared than others.

Sustainable growth requires policy makers everywhere to engage with the challenges posed by climate change – but the challenges and the best responses to them will be different in different places. While the main sectors affected are likely to be agriculture, forestry, tourism and energy, territorial approaches are needed to reduce regional vulnerability and to develop, implement and enforce adaptation. Mitigation of climate change through a shift to a low carbon economy has been discussed in chapter 3.2.1 above.

3.3.1 Climate change impacts and adaptation capacities

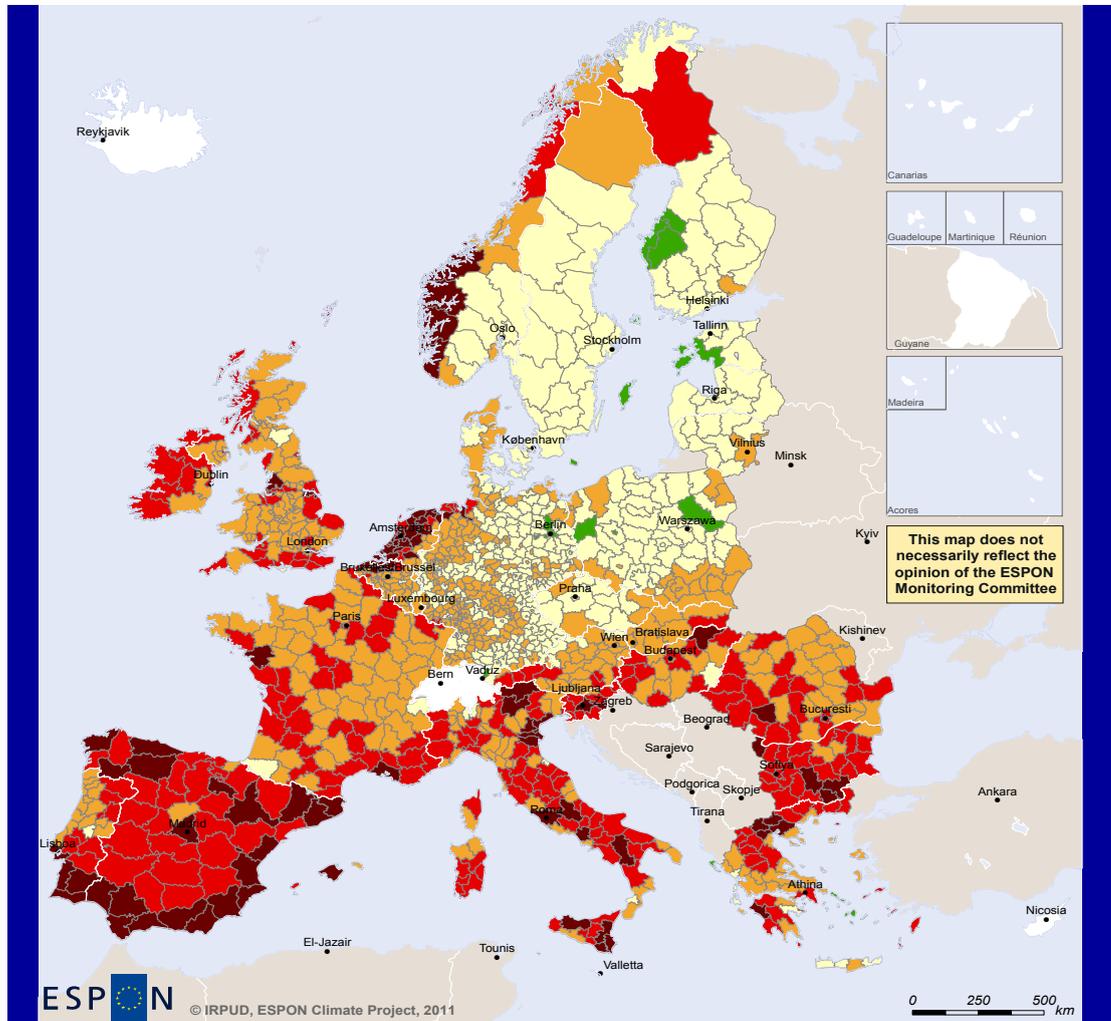
Hotspots for climate change impacts are mostly in Southern Europe. Map 8 shows the overall territorial distribution of climate change impacts in Europe. Crucially, the impacts of climate change are not just environmental; the map factors in potential economic, social and cultural impacts. The aggregate potential impacts vary considerably. Hotspots are mostly in the south of Europe – i.e. the big agglomeration areas and summer tourist resorts along the coasts. However, there are also impacts on other specific types of regions. For example, some mountainous regions may find winter sports tourism threatened as the climate gets warmer. There seems to be some negative impacts in some areas in northern Scandinavia. This results mainly from the sensitivity of the environment and flood-prone infrastructure.

Climate change is likely to have particularly severe physical impacts on Atlantic coasts in the north of Europe, where there is expected to be sea level rise and increasing river floods. The low lying coastal regions of Belgium and the Netherlands are faced with this threat. Similar problems seem likely to impact on Venice and the Po Valley in Northern Italy. While large parts of the core of Europe seem likely to be relatively unaffected, there are also risks of river flooding in north-west Europe and Scandinavia.

Perhaps the most notable economic differences in relation to climate change are between the north and south of Europe. Germany and the UK, both countries with large economies, may expect only a low to marginal economic impact. In contrast, summer tourism is important to the regional economy of large parts of southern Europe. More intensive heat may undermine this activity, though there could also be new opportunities for tourism at other times of the year, while more northerly regions which begin to experience a warmer climate might find that they have new tourism opportunities too. In the Mediterranean, the drier and hotter climate will also increase the risks of forest fires. The economic impact in south eastern Europe is a consequence of the impact on agriculture, which is still important there. Already water shortages are evident in Cyprus, for example, where seasonal demand from tourists competes with irrigation for a limited supply of water. Access to water is likely to become an increasingly important issue in southern Europe.

There are also risks posed to fragile ecosystems, biodiversity and cultural heritage sites, while warming of seas is likely to result in fish species moving north to cooler waters. Some of the most vulnerable ecosystems are in northern Scandinavia, where currently they are protected, but statutory protection cannot resist the impacts of climate change. In Italy it is the combination of a dense network of cultural heritage sites and the growing risk of river flooding that makes this a risk hotspot.

Map 8 Aggregated potential impact of climate change



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Regional level: NUTS3
Source: IRPUD, ESPON Climate Project, 2011
Origin of data: see data sources of the individual impact dimensions
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Aggregate potential impact of climate change

- highest negative impact
- medium negative impact
- low negative impact
- no/marginal impact
- low positive impact
- No data

Notes:
Weighted combination of physical (weight 0.19), environmental (0.31), social (0.16), economic (0.24) and cultural (0.1) potential impacts of climate change.
Weights are based on a Delphi survey of the ESPON Monitoring Committee.
Impact calculated as combination of regional exposure to climatic changes and recent data on regional sensitivity.
Climatic changes derived from comparison of 1961-1990 and 2071-2100 climate projections from the CCLM model for the IPCC SRES A1B scenario.

Norway: reduced data

The map was compiled by weighting the various impacts predicted in well-established climate change models. The weighting of the various impacts was done by drawing on the opinions of members of the ESPON Monitoring Committee who between them represent the 31 ESPON countries. A method of collecting and comparing opinions, then inviting reconsideration was used so as to build towards a consensus. The resulting weightings were: physical impacts 0.19; environmental 0.31; social 0.16; economic 0.24; and cultural 0.10. The map is based on the aggregate scores derived from these weightings. While the picture would change if the weightings were varied, the map gives a valuable impression of the overall likely pattern of impacts. It suggests that the main negative impacts will be felt in coastal regions, though more generally southern Europe faces more negative impacts than northern Europe. There are a few regions, coloured green and mainly in the Baltic Sea Region, which might actually get net positive impacts.

3.3.2 Adaptation to a changing climate

Stronger adaptation actions are needed in southern and south-eastern Europe. Adaptation (e.g. flood management work) is extremely important locally and regionally. Analysis of regions' capacity to adapt to climate change highlights the scale of the climate challenge that southern Europe is likely to face. A medium to high negative impact is projected for countries in the Mediterranean and south east Europe. However, they seem to be less able to adapt than more northern countries where the severity of the problem is likely to be less. Such a situation undermines competitiveness and territorial cohesion, by potentially deepening existing socio-economic imbalances between the core of Europe and its southern and south-eastern periphery.

ESIF need to focus on vulnerable regions. The combination of likely impact and adaptive capacity shapes a region's vulnerability. Urban agglomerations - mainly in the south - are vulnerable for several reasons. Cities have their own heat islands, which raise local temperatures. Long term urban heat might pose a risk for human health, and seems likely to lead to additional energy demand for cooling, putting additional pressures on energy supply systems, and costs on businesses and households. Adaptation strategies, especially in regions that are confronted with particular economic or social challenges, would seem to be a potential area for action within the new ESIF. Where river floods in water systems that cross national borders are a concern, cross-border actions are needed.

Example: Vulnerability and adaptation to water shortage in Spain

One impact of climate change that will need to be addressed in Mediterranean regions is the supply and demand for water. Water resources were one of 15 sectors identified in Spain's National Adaptation Strategy in 2006. Vulnerability to climate-induced water shortages along Spain's Mediterranean coast varies. The Costa del Sol and Costa Tropical show up as combining high exposure with low adaptation capacity, which is mostly attributable to low income. The scale of its tourist industry also makes the Costa del Sol particularly sensitive to impacts. The Costa Blanca also has high exposure, high sensitivity and low adaptive capacity. In contrast, Mallorca, Valencia, the Costa de Almeria and the Costa Calida have medium exposure, high sensitivities but medium to high adaptive capacities – for example there is large desalination capacity in Costa de Almeria. Consequently their vulnerability is assessed as “medium”. Finally, the least vulnerable areas are the islands of Ibiza and Menorca and the tourist areas of Catalonia. Here low exposure combines with medium to high sensitivity but medium to high adaptive capacity.

Adaptive measures might include reductions in per capita water use in the tourist industry, through water saving strategies in hotels, or landscaping practices that avoid high water-using species, and restricting developments such as swimming pools and golf courses. Spatial planning practices can play a part in mitigation and adaptation by restricting urban sprawl and better managing urban and tourist growth. While new water producing technologies are likely to be pursued, they will be costly, and governance could also be an effective way to tackle the water issue, e.g. through joint management of water cycles by agricultural and urban interests, and exchanges of water rights of different qualities.

3.3.3 Pointers for Policy

European level

- ESIF need to focus on vulnerable regions and stimulate better adaptation practices. The impact of climate change is most likely to be most severe in peripheral regions and some of the areas identified in the Lisbon Treaty in relation to territorial cohesion, notably islands, coasts and mountains. Thus climate change is working against territorial cohesion at EU level. North-south differences in adaptation capacity could further undermine cohesion. There are also threats to bio-diversity and cultural heritage, and there will be impacts on the agricultural, forestry and tourism sectors.

National level

- Increased risk of river floods may require cross-border action. Flooding will impose extra burdens on business, insurance and infrastructure providers in Atlantic coastal regions in Northern Europe and in the Po Valley. Increased heat, especially in urban agglomerations, will put more strain on health and energy systems, especially in the south.

Regional and urban level

- Regions will need to develop adaptation strategies. Regional economies specialising in winter sports or summer tourism may have to adapt their offer to consumers, and their business models. Other regions where temperatures get warmer may be able to capture an increasing share of the tourist market.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON CLIMATE project.

3.4 Resource efficiency & environmental protection

The Flagship Initiative for “A Resource-efficient Europe” in the EU 2020 Strategy argues that continuing our current patterns of resource use is not an option. So how can territorial evidence inform more efficient use of resources?

3.4.1 Competitiveness, territorial cohesion and the environment

Environmental Directives have positive, but also some negative, territorial impacts. To help protect Europe’s environmental resources, the Commission has issued a number of Directives. The intended benefits are not necessarily evenly spread: for example, the Directive on environmental noise will have more impact in busy urban areas than in a quiet rural region.

Achievement of the targets of a Directive can also vary between territories. For example, the detrimental environmental impacts of use of fertilisers in agriculture led to the Nitrates Directive. It requires member states to monitor surface waters and groundwater for nitrate pollution. There are a number of regions that currently fail to meet the required standards. These are in eastern and central Spain, Brittany, the south of the Netherlands, Belgium, some regions in the west of Germany, Finland and regions in Poland.

The EU Directive on Air Quality points policy makers to the need to curb harmful emissions, many of which come from heavy traffic in congested urban areas. While this Directive brings environmental and health benefits, the impacts on a regional economy are likely to be negative because of the investments required to implement it. Directives that do not have an in-built territorial check can have unintended territorial consequences and impact on other areas of activity. For example, it is poorer urban regions in eastern Europe that have the greatest sensitivity to the air quality measure and so are the most affected by it. ESIF targeted on those regions might help to deliver progress on air quality.

More generally the EU has sought to protect the environment by requiring the use of Environmental Impact Assessment and Strategic Environmental Assessment for major development proposals and policies. However, even these methods do not necessarily focus on where impacts will be experienced.

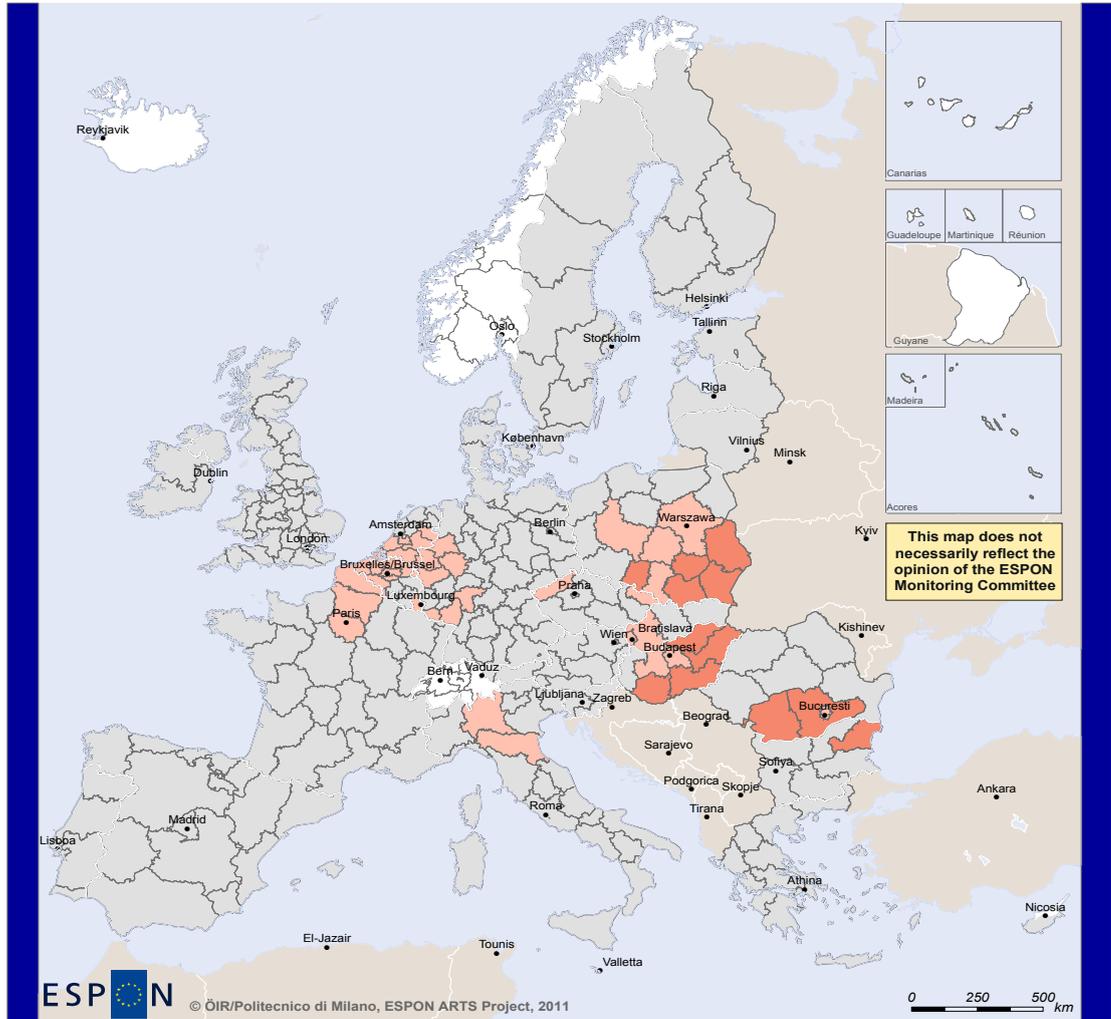
Territorial Impact Assessment (TIA) can be used to anticipate impacts of Directives. Because EU Directives have different impacts on different places, ESPON has developed user-friendly methodologies for assessing the potential territorial impacts of Draft Directives. These methods can be used by national, regional and local administrations to explore the possible positive and negative impacts of proposed EU Directives on places within their areas. The techniques were developed through a participatory process, working with practitioners, and do not depend on access to extensive data sets. Use of them can enhance governance capacity.

Natural resources are a key part of territorial capital and therefore are an important asset in an endogenous regional development strategy. This insight has developed most in rural regions, where it has been underpinned by the EU's LEADER and LEADER+ programmes. Projects under these programmes have brought together a range of stakeholders in a region to build partnerships that work to improve the rural economy, environment and quality of life. This bottom-up and integrated approach is now being extended across the ESIF funds.

Europe's countryside economies have increasingly been driven by leisure, tourism and other services, rather than by the traditional primary sector. Therefore, environmental management is increasingly a part of a regional economic strategy. An audit of natural and landscape resources can be an important part of developing that strategy.

Less developed regions can be important contributors of eco-system goods and services. One key challenge for growing competitiveness, especially in regions such as mountainous areas where development is difficult and restricted to conserve the environment, is to capitalise on the region's eco-system goods and services. The Convention of Biological Diversity defines an eco-systems approach as '...a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way'. The types of territorial cohesion regions identified in the Lisbon Treaty often provide goods and services that do not carry a market price, and so are not reflected in measures such as GDP, even though they may be important to Europe as a whole.

Map 9 Regions affected by directive on air quality



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Regional level: NUTS2
Source: ESPON ARTS Project, 2012
Origin of data: ESPON Database, EUROSTAT, EEA (Corine Land Cover), 5th Cohesion Report, BOKU University, DG AGRI
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**Regions affected by Directive on air quality
branch a (negative impact on economic growth)**

- Not affected
- Minor impact
- Moderate impact
- No data

Note:
With regard to branch a, the assumption is that the measures are successful in reducing traffic in non-compliance areas, and hence in reducing emissions of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air. Indirect effects are perceptible in the environment due to less contamination of soil and water and a reduction of acid rain (which also harms historical buildings, and hence cultural heritage, and natural habitats of species and agricultural crops). Traffic reduction measures are also seen as potentially improving urban quality of life, human health, and hence, indirectly, promote economic growth. It could also reduce economic activity in the same urban areas. This could either harm growth or just shift it to more sustainable modes, which may actually have a positive effect on the economy. The measures are expected to increase the complexity of spatial projects in urban areas, which could also negatively impact economic growth.

The Directive requires all regions in the EU to measure air quality. However, action is then only required in those regions where measurement shows that threshold figures have been exceeded. Thus, as the map shows, many parts of Europe are not really affected by the Directive. Urban regions are impacted more than rural regions as urban traffic is a major factor in this measure of air pollution. The impact on economic growth in such regions is mainly negative since investment is needed to counter the problem. However, measures to reduce air pollution from vehicles are also likely to lead to reduced CO2 emissions and better health, and so deliver wider benefits as well as economic costs. Thus care must be taken in interpreting results.

The worst affected regions in the map are in Romania and Bulgaria. This is because these are regions where economies are not strong; therefore, they are more sensitive to measures impacting on economic growth than are more economically buoyant regions affected by the same measures.

For regional development the key question is, how can the benefits from such goods and services be retained in the local community? Can regional assets such as water, or forests for carbon sequestration, be used in a way to deliver socio-economic and environmental well-being? Actions impact on eco-systems which in turn impact back on societies. Often, large scale external interests acquire access to the natural resources and are able to exploit them with little local benefit. If these problems can be overcome, an eco-system goods and services development strategy, especially in poorer and more peripheral regions, and regions with special geographies such as islands or mountains, has great potential to contribute to territorial cohesion and sustainable growth.

The barrier to releasing the potential of a territory can often be in the minds of policy-makers. The Cambrian Mountains of Wales is not a rich region in terms of GDP, but it has the potential to become a pioneering laboratory for environmentally sustainable rural initiatives. However, the challenge is to create the kind of interventions that will encourage local stakeholders and communities to grasp the potential of eco-system goods and services. Sometimes cross-border co-operation will be required to make best use of a natural resource. The “Three-Countries-Park” in the Aachen-Liège-Maastricht area is an example. This innovative initiative embeds the principles of a landscape vision within regional policy, while also connecting them at the European scale. Such co-operation is a further example of how environmental protection can contribute to regional economies and build territorial cohesion.

3.4.2 Europe's maritime resources

There is increasing recognition that Europe's seas are a vital environmental and economic resource, but also that they are under great pressure. Coasts are often intensively developed, yet sustainable management of the seas and oceans is vital for Europe. Most of the seas are shared with other countries in Europe's neighbourhood, so joint actions are needed. For example, there are pollution concerns in the Baltic Sea and in the Mediterranean.

Data shows that volumes of pesticides reaching the coast are quite common along much of the coastline of Europe's seas. The heaviest loads are associated with rivers draining large and/or intensively developed catchments, such as the Rhine, Rhone, Seine, Vistula, Po and Dnipro.

Example: The Arctic - international co-operation needed for sustainable growth

Perhaps nowhere better exemplifies the complex and intertwined potential of natural resources for Europe's future than the Arctic, currently Europe's least intensively used sea. The sub-arctic parts of these waters support some of the largest fish stocks and fisheries in the world, notably in the Barents, Norwegian, Iceland and Bering seas. In European terms, the Arctic is a wilderness area. There are significant oil and gas reserves. Yet this is a pristine and fragile environment, Europe's least resilient sea, where climate change is having significant impacts. International co-operation is essential for sustainable growth in this unique region.

3.4.3 Pointers for Policy

European level

- Directives seeking to protect environmental quality need to be given an ex-ante territorial impact assessment, so as to increase integration by anticipating potential impacts on sensitive regions and conflicts with other policy fields.
- ESIF investment could be used to tackle problems that poorer urban regions face in Romania and Bulgaria in meeting requirements of the Air Quality Directive, which otherwise could inhibit growth there.
- Co-operation with countries in the neighbourhood is essential for sustainable management of Europe's seas.
- There is potential for an eco-system goods and services approach to contribute to territorial cohesion – provided benefits can be retained in local communities.

National level

- Sector ministries (e.g. those responsible for environment, transport, agriculture etc.) need to be aware of the territorial impacts of policies and EU Directives, and review such potential impacts against territorial policies.

Regional and urban level

- Endogenous development has underpinned the LEADER programme approach to rural development. Local environmental resources can be a key asset for such integrated strategies, which are now being embedded across other Funds in the ESIF.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects: ARTS, EATIA, ESaTDOR, GEOSPECS, PURR and LP3LP.

3.5 Sustainable transport

Modernisation of transport is important for a resource-efficient Europe. The important role of transport infrastructure (i.e. networks and transport services) for territorial development in its most simplified form implies that areas with better access to the locations of input materials and markets will, other things being equal, be more productive, more competitive and hence more successful than more remote and isolated areas. This is why the Community Strategic Guidelines on Cohesion 2007-2013 saw transport infrastructure and accessibility as necessary conditions for economic growth in the Union, having a direct impact on the attractiveness of regions for businesses and people. However, the impact of transport infrastructure on territorial development has been difficult to verify empirically.

There seems to be a clear positive correlation between transport infrastructure endowment or the location in interregional networks and the levels of economic indicators such as GDP per capita. However, in most countries this correlation may merely reflect historical agglomeration processes rather than causal relationships today. Put more simply, a place may be well connected because it has been an important economic centre for a long period of time, rather than being economically strong because of its transport infrastructure.

Attempts to explain economic growth and decline as being caused by transport investment have not been very successful. This may be because in countries where the transport infrastructure is already highly developed, further transport network improvements bring only small additional benefits. A different situation can be observed in some regions in eastern Member States where the lack of modern infrastructure (motorways, high-speed trains) is still a major barrier to economic development, and where the rapid increase of freight flows by road on the main transport corridors between western and eastern Europe was not followed by new road, rail or multimodal transport investment.

“Business as usual” is not sustainable. Transport initiatives also need to take account of concerns over emissions and long-term sustainability. A “business as usual” scenario to 2050 would see Europe’s transport 90% dependent on oil; carbon dioxide emissions running 30% above 1990 levels; a widening accessibility gap between central and peripheral regions; and increasing costs in terms of noise and accidents. The challenge then is to achieve high quality mobility services while using resources more efficiently. In practice, transport has to use less and cleaner energy; better exploit a modern infrastructure, and reduce its negative impact on the environment and key natural assets like water, land and ecosystems. In the future, rising energy prices and the need to reduce greenhouse gas emissions of transport are likely to increase transport costs. This will have impacts on regional development: economically weaker regions already facing high transport costs will be most sensitive to such changes.

EU Transport White Paper

Looking to 2050, Europe’s Transport White Paper has set ambitious targets for more sustainable transport systems. The targets include:

- No more conventionally-fuelled cars in cities
- 40% use of sustainable low carbon fuels in aviation; at least 40% cut in shipping emissions.
- A 50% shift of medium distance intercity passenger and freight journeys from road to rail and waterborne transport.
- All of which will contribute to a 60% cut in transport emissions by the middle of the century.

The White Paper argues that one of the major challenges in the field of transport is to break the system’s dependence on oil without sacrificing its efficiency or compromising mobility.

Transport improvements have been an important element in previous Structural Funds programmes. However, one perverse impact is that transport improvements often have negative environmental impacts. Better accessibility gives rise to more movements of goods and persons over longer distances, and these movements generate more energy consumption and greenhouse gas emissions. At regional level, transport corridors attract development. This can result in urban sprawl, undermining the Europe 2020 Flagship Initiative goal on land-take (see chapter 3.2.3).

3.5.1 Urban accessibility

International urban connectivity for road and rail is mainly restricted to continental Europe and to neighbouring countries. The highest accessibilities here are within the Benelux countries and towards northern France and western Germany, but there are also good links between Portugal and Spain, Spain and France, France and Switzerland and Italy. For road there are also many fast city-to-city connections between eastern Germany and Poland and the Czech Republic, and between Austria and Slovakia and Hungary, as well as between Italy and Slovenia and Croatia. From most locations in western and central Europe, at least one regional city can be reached by road within 60 minutes, and from many places even more than ten can be reached. In eastern Europe, generally only one or two cities are within reach. This has impacts on competition in services and on travel to work and labour market areas.

High speed rail services connect cities that are nationally peripheral to major agglomerations in other countries. European transport policy aims at increasingly substituting aviation by high speed rail for journeys of up to 3-4 hours, while regional aviation can remain a sensible option for peripheral areas that do not have enough critical mass. Where they exist, high-speed train services offer cities accessibility to other agglomerations within 300 minutes. For instance, cities in southern Italy are connected to cities in Southern France or in Slovenia, cities in the Brittany are connected through fast trains with cities in Belgium and Germany. The Channel Tunnel also connects London and the

south-east of England by train to Benelux and to Northern France, including Brussels and Paris. However, international cross-border connections are poorer in eastern Europe.

From most European cities others European cities are within five hours reach, by air. This is important for competitiveness and territorial cohesion, particularly for the peripheral and outermost regions such as northern Scandinavia and Iceland, Cyprus and Malta, Portuguese, Spanish and Greek islands, and cities in East Europe. The hub-and-spoke model continues to be promoted by the airline industry for long-haul connections, with a centralised airport collecting a wide range of its passengers to connect to the rest of the country or world. This concentration model is likely to further increase the size of core European transport hubs, increasing their global connectivity.

The 'blue banana' is still imprinted on Europe's accessibility patterns. The area in Europe with highest accessibilities ranges from London via Benelux and Paris, along the river Rhine valley towards northern Italy. For road and rail, and even for passenger flights, the shortest travel times by far are within this part of Europe. This reflects the dense network of cities (and consequently the short geographical distances between them), but also the high-standard transport infrastructures in these areas.

Despite recent efforts to overcome the Pyrenees barrier, the Iberian Peninsula is still poorly connected to the rest of Europe. There are few road and rail links taking less than the five hours threshold, and even for passenger flights average travel times from Portugal or Spain to other countries are quite long.

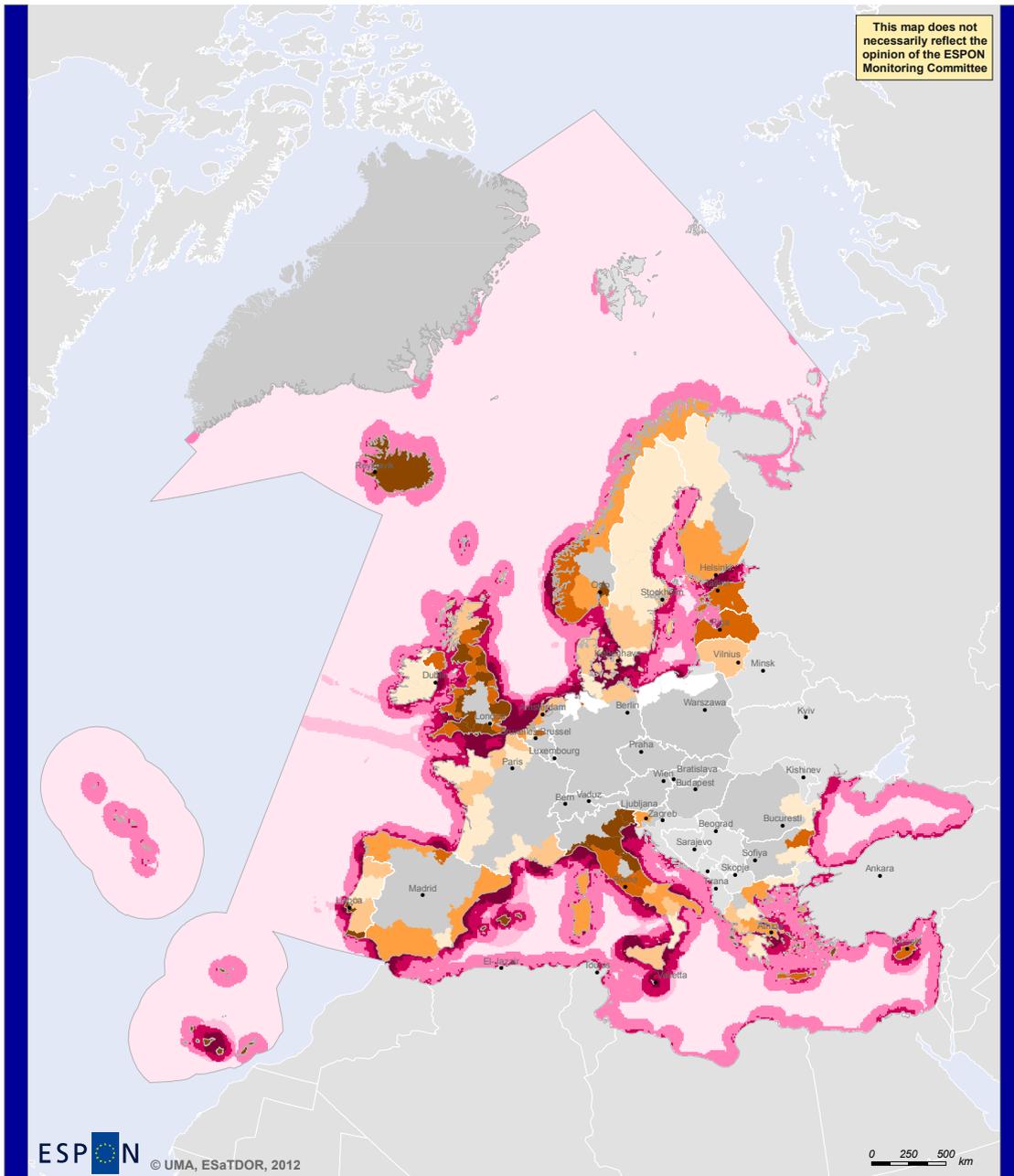
However, no significant differences can be observed for performance in regional and local accessibility between regions located at the European periphery and regions located at the European core. This finding supports a critical approach of the concept of centre-periphery in Europe and could change the debate on territorial cohesion and development. It also highlights the relevance of using a multi-scalar approach.

3.5.2 Freight and Shipping

The best freight connectivity is on the Atlantic rim between Benelux and Germany. The largest container ports are in this part of Europe and there is also a dense network of landward connections. While the Mediterranean also has large container ports, they are not as large as those in northern Europe, and their connectivity to inland areas is not so strong. However, Mediterranean ports are better positioned in the international shipping routes to Asia. If better connections can be provided with the European hinterland, there is potential for port expansion in this part of Europe.

Combined transport (rail plus another mode) is the most dynamically growing segment of rail freight. Promoting the accessibility for rail hubs able to handle containers, for example, could be considered a key strategy for the development of regions. However, unless a large growth of rail freight volumes is expected in the future, there are organisational reasons for intermodal centres not covering all the European territory in a homogenous fashion. Below a certain threshold of throughput, intermodal centres – which are usually private facilities – are not economically sustainable. It is therefore reasonable that they collect freight from a catchment area which can extend beyond a specific region. This means that established centres have built a competitive advantage in infrastructural and logistical terms. This advantage is unlikely to be easily reduced by other regions in the future. This is another example of a concentration tendency.

Map 10 Typology of cold- and hotspots of maritime activities



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Regional level: NUTS2
 Source: ESPON ESaTDOR Project, 2012
 Origin of data: ESPON ESaTDOR Project, 2012
 © EuroGeographics Association for administrative boundaries
 Sea boundaries: OSPAR Convention, EU Integrated Maritime Policy and EEZ

**Intensity of maritime activities
 Land (Economic significance)**

- Very low intensity
- Low intensity
- Medium intensity
- High intensity
- Very high intensity
- No data

**Intensity of maritime activities
 Sea (Environmental pressures and flows)**

- Very low intensity
- Low intensity
- Medium intensity
- High intensity
- Very high intensity

Notes:
 The land typology is based on employment in the maritime sector (e.g. employment in fisheries, shipbuilding, other traditional maritime services, other sectors associated with the maritime cluster, tourism sector and transport sector).

The sea typology represents the union of data present in 'Environmental Pressures Composite Map (organic + invasive species + inorganic)' which represents the pressures suffered by coastal areas; and 'Flows Composite Map' which identify the hottest spots or zones of European Maritime flows. Consequently, the final typology shows the human impacts on and pressures suffered by the sea.

The synthesis of three composite indicators (environmental pressures, flows 2008, economic significance 2009) is the basis for this typology map showing coldspots and hotspots of maritime activities on land and at sea. The indicator “Environmental Pressures” attempts to capture natural changes and human impacts such as nutrient and organic inputs and pollution, and incidents of invasive species introduced through shipping. “Flows” tries to capture the movement of goods (including container traffic and liquid energy products), data and people across maritime regions. “Economic significance” attempts to show the economic importance of coastal areas through mapping employment clusters in different maritime sectors, such as shipbuilding, tourism, transport and fisheries. The picture that emerges is that the channel area between the south-east of England and Belgium, Netherlands and Germany is the main hotspot, with very high intensity both on land and on the sea. Other hotspots include the northern Adriatic and Malta and other islands in the Mediterranean.

The significance of shipping should not be overlooked. Europe (EU/EEA) has the world’s largest shipping fleet, representing 41.6% of the world’s vessels (measured in Gross Tonnage) directly employing some 300,000 seafarers on board merchant vessels and another three million in related jobs. Around 90% of the European Union’s trade with third countries passes through European ports. Traffic intensity in the Mediterranean accounts for 30% of total world maritime traffic, while the Atlantic and the North Sea contain some of the busiest shipping routes in the world. In addition to freight, approximately half the shipping activity in the Greater North Sea consists of ferries and roll-on/roll-off vessels on fixed routes. The Baltic Sea is also heavily trafficked and the Black Sea has strategic links with the Caspian and with the Mediterranean via the Bosphorus, where crossings are naturally limited in terms of frequency of passage and size of ships.

Demand for short sea shipping is likely to increase. Each year short-sea shipping accounts for the transport of roughly 1.7 billion tons, of which 600 million tons is with neighbourhood countries. The 1 billion tons of intra-EU shipping accounts for 40% of all EU transport. Annual growth rates of 3 to 4% are anticipated for the next decade. There are 800,000 jobs. Growth in Turkey, Russia, Ukraine and north Africa is expected to increase the demand for short-sea shipping. Road congestion is also expected to increase the competitiveness of shipping.

Hotspots along coasts. Shipping and ports are not the only activities in the zone where land and sea meet. As Map 10 shows, where there is intensive use of maritime resources, there is also often intensive activity on the adjacent land. The area between Benelux, northern Germany and the south of England shows up as a hotspot. Also notable are the northern Adriatic and parts of the northern Mediterranean coast.

3.5.3 Pointers for Policy

European level

- The EU White Paper on Transport shows that “the status quo is not an option” and sets ambitious targets to decouple increasing mobility from increasing use of oil and escalating emissions. Cohesion spending has assumed that transport infrastructure and accessibility are necessary conditions for economic growth. However, the impact of transport infrastructure on territorial development has been difficult to verify empirically. Furthermore, ESIF investment in infrastructure in transport corridors could stimulate urban sprawl, undermining the goal in Europe 2020 of no net land-take by 2050.
- ESIF investments which improved inland connections to Europe’s Mediterranean ports could increase their potential for expansion as links to Asia.
- Lack of modern transport infrastructure (motorways, high-speed trains) is still a major barrier to economic development in eastern Europe.
- The Iberian Peninsula is still poorly connected to the rest of Europe.

National level

- Investment in transport infrastructure improvements in countries already served by good networks is unlikely to yield significant economic gains.

Regional and urban level

- Transport costs are likely to increase in future. This will impact particularly on regions for which transport costs are already high – e.g. more remote or island regions – especially where their regional economies are already weak.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects TRACC and ESaTDOR.

4 - Inclusive growth in a territorial perspective

Inclusive growth is an important dimension of the Europe 2020 Strategy. Inclusive growth focuses both on the pace and pattern of growth, and it brings together two aspects which usually have been dealt with separately in policy-making and research: poverty and growth.

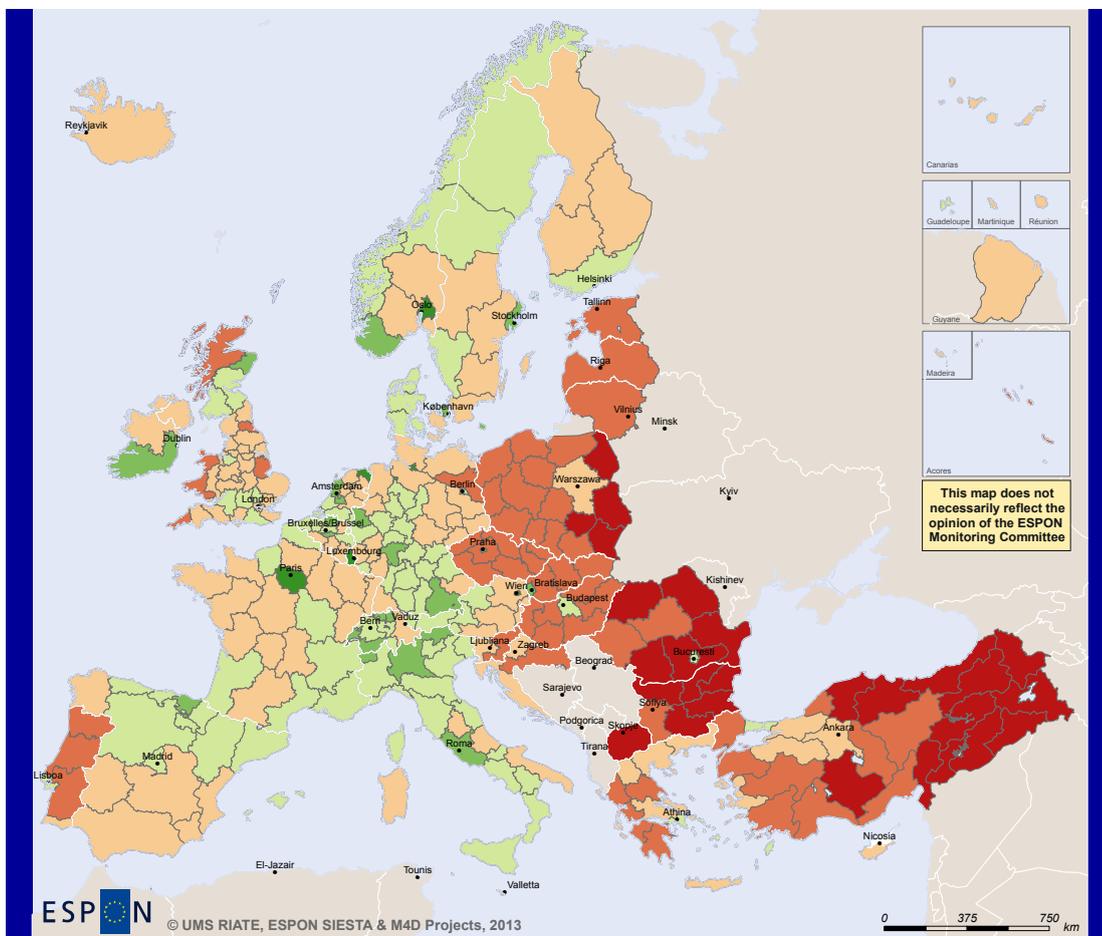
Territorial evidence allows us to look for ways to raise the pace of growth by utilising more fully parts of the labour force trapped in low-productivity activities or completely excluded from the growth process. Labour productivity measures the amount of goods and services produced by each member of the labour force or the output per input of labour. Map 11 shows that (in 2010) areas with high labour productivity are mainly located in capital city regions and metropolitan areas in the European core. Particularly low labour productivity is mainly to be found along the eastern regions in Poland, large parts of Bulgaria and Romania and a number of Turkish regions.

In territorial terms, inclusive growth raises important questions about the mobility of labour and regional difference in the labour force, as well as regional differences in poverty and education levels. There are also concerns about the infrastructure and mechanisms to help individuals to escape poverty and benefit from lifelong learning that can increase their prospects in the labour market.

The big picture:

- Labour mobility is strengthening centralisation trends. Demographic change is a threat to labour supply and economic development in many regions. Portugal and some Spanish regions, southern Italy, Greece, eastern Germany and most regions in the countries which joined the EU in the accession rounds 2004 and 2007 be confronted with considerable labour shortages.
- National policies of Member States are the major drivers of education systems including lifelong learning, social transfer systems and most social services of general interest.
- In general cities are better placed than rural areas in respect to poverty and for access to social services of general interest. Furthermore, access to and availability of public and private services and functions provided in cities can also be crucial for citizens in rural areas. If these services and functions are not offered in more rural settings, people require easy access to them in nearby cities.

Map 11 Regional labour productivity, 2010



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Regional level: NUTS2
Source: ESPON Database, ESPON M4D, UMS RIATE
Origin of data: Eurostat, NSIs of Norway, Liechtenstein and Switzerland, 2013
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**Regional labour productivity,
EU27=100, 2010**

Under EU27 average	Above EU27 average
6,5 - 50	100 - 125
50 - 75	125 - 150
75 - 100	150 - 306
No data	

Notes:
Labour productivity per person employed was calculated as the ratio of the regional GDP in millions of PPS between the total number of employees.
GDP in 2009 at NUTS3 level (2008 for Turkey), adjusted to the NUTS0 value in 2010.
EU27 average: 56 600 euros per employed person.

Labour productivity measures the amount of goods and services produced by each member of the labour force or the output per input of labour. The map shows labour productivity per person employed. This is calculated as the ratio of the regional GDP in millions of PPS between the total number of employees. Areas with high labour productivity are mainly located in capital city regions and metropolitan areas in the European core. Particularly low labour productivity is mainly to be found along the eastern regions in Poland, large parts of Bulgaria and Romania and a number of Turkish regions.

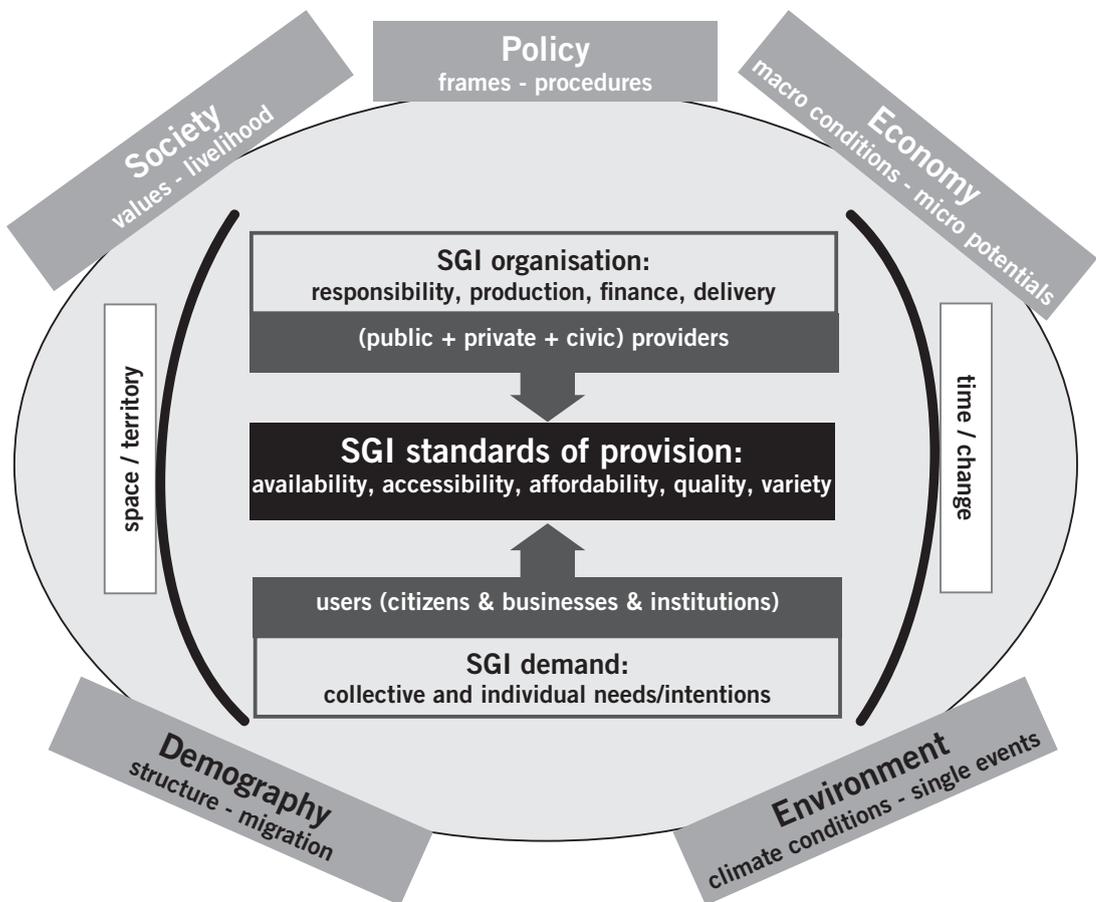
4.1 Territorial driving forces for inclusive growth

Inclusive growth builds on a complex system of drivers for development. The presence of each of these drivers differs from one region to the next. Many aspects supporting inclusive growth (e.g. labour market, education, social policies) are directly or indirectly linked to the provision of social services of general interest.

As shown in Figure 3, the contributions to inclusive growth by European cities and regions are highly influenced by their demographic and economic development. This is followed by social and environmental factors and political factors.

Inclusive growth a territorial challenge. Overall, there is a risk of increasing social disparities in Europe. The drivers are national differences in social and societal systems and the expected consequences of demographic change, which becomes a dividing line between countries as well as between regions within a country. Furthermore, inclusive growth has a clear urban dimension. Cities are the places that offer best access to social services of general interest, including education. They also tend to have better economic performance, which is linked to lower levels of early school leavers.

Figure 3 The drivers of services of general interest



Source: ESPON SEGI

Macro and micro levels define the context. Inclusive growth requires economic growth which is broad-based across sectors, and inclusive of all of the country's labour force. This understanding of inclusive growth implies a direct link between the macro and micro determinants of growth.

Indeed, some of the indicators reviewed below show that regional patterns and the development of an area can be influenced by actions taken at city or regional level. For example, initiatives to enhance local attractiveness and provision of good quality services of general interest can attract people to a region and stem the loss of skilled workers.

However, national level policy is also very influential, for example in education systems, lifelong learning provision and social transfer systems.

Demographic change might alter the picture. Inclusive growth is highly influenced by the current economic situation of an area. This directly affects unemployment or income levels. At the same time, demographic developments can also have impacts. Some regions face rather dramatic demographic changes over the next decades. In particular regions in the east and rural regions are expected to face an ageing process and a declining labour force. This will pose new challenges in sustaining services and supporting older people.

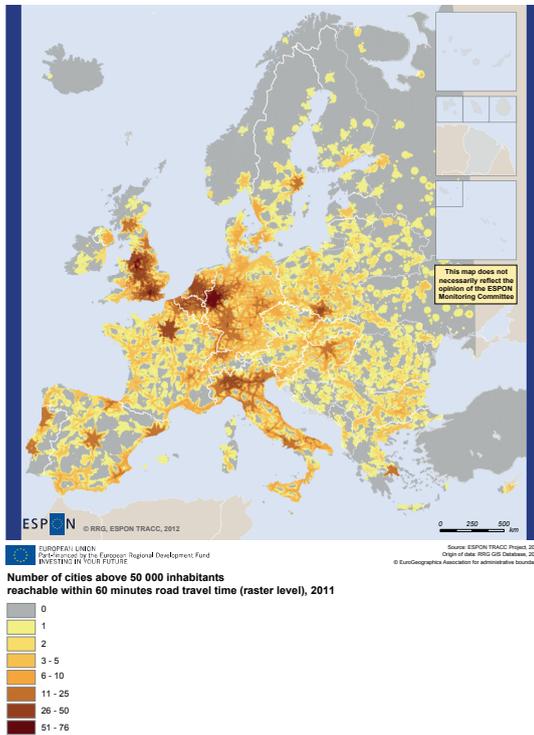
This implies a potential centralisation or concentration of the active labour force and net migration to prosperous and generally attractive (mainly urban) regions in the future. To mitigate the impacts of demographic change, adversely affected regions need to enhance and market their attractiveness for specific target groups, and in particular keep an eye on the gender balance. Selective outmigration can increase demographic and economic decline.

Accessibility to the nearest urban centre matters. The various dimensions discussed later in this chapter underline the importance of cities as centres for the provision of services, as well as areas for growth and jobs. Accordingly accessibility to the nearest urban centre is crucial.

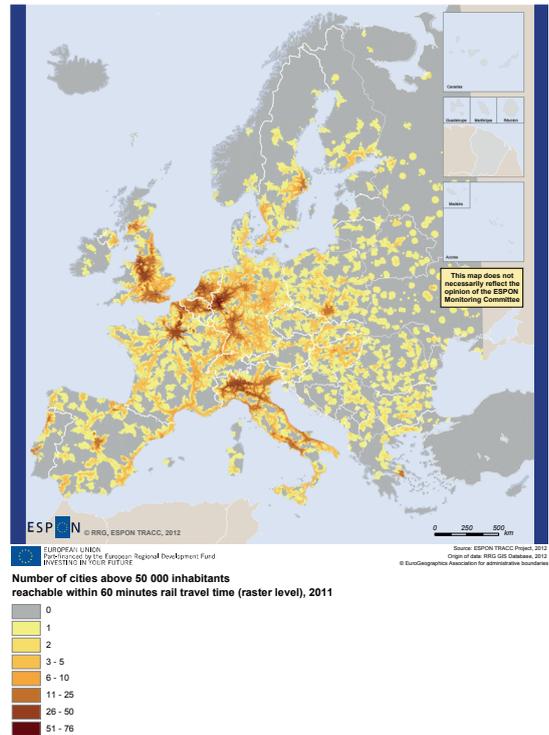
In other words, access to and availability of public and private services and functions provided in urban nodes is crucial for citizen's daily life. If such functions are not offered in small towns and villages, or rural areas, people require easy access to them in nearby cities. The greater the number of cities that can be reached from a given location in reasonable time, the greater the opportunities are provided for economic and social activities and for general interactions.

In this respect areas with long travel times to urban centres and/or low population density face particular development challenges.

Map 12 Availability of urban functions by road, 2011



Map 13 Availability of urban functions by rail, 2011



The maps show regional accessibility to urban functions, expressed as the number of cities reachable within one hour rail travel time (Map 13) and one hour road travel time (Map 12). The two maps show how many cities with more than 50 000 inhabitants can be reached within 60 minutes from any location. The higher the number of such regional cities, the higher the accessibility and thus the higher the attractiveness of a location is. Cities with at least 50,000 inhabitants are selected as destinations, assuming that only cities of that minimum size provide a full basket of public and private services and functions. The analysis of raster data for both road and rail highlights the agglomerated areas in Europe. Accessibility is highest in the Ruhr area, England, Paris, in the Benelux countries and in northern Italy. Some capital city regions in other countries (for instance Stockholm, Madrid, Budapest or Athens) also stand out, as do some other regions based on large conurbations such as Oslo-Gothenburg-Malmö-Copenhagen, Barcelona-Valencia-Murcia, Lyon, Saxony, Naples, and Upper Silesia.

At least one city lies within 60 minutes reach in western and central Europe. From most locations in western and central Europe, at least one regional city can be reached by road within 60 minutes, and from many places even more than ten can be reached. In eastern Europe, generally only one or two cities are within reach. Locations from where only one city can be reached provide basic urban services. Usually, people from there do not have any option of where to go, they are bound to just one city. Locations from where more than one city can be reached, offer options to visit different cities offering a wider, more competitive range of services. These locations provide more freedom of choice and more opportunities.

Remote areas and inner peripheries. The maps also show those regions in Europe that do not have access to urban functions at all within reasonable travel time. Such areas are not only located in the far North (northern peripheral sparsely populated areas) or in the Alpine space, but they also cover so-called 'inner peripheries' which are surprisingly common in many European countries. Prominent examples of these are Mecklenburg-Vorpommern (Germany), many parts of France or Spain, or areas in Poland or the Czech Republic. Map 13 shows that for availability by rail the extent of these areas is even bigger in almost all countries.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects TRACC, SeGI, SIESTA, M4D, PURR.

4.2 Labour force & labour mobility

A productive labour force is the main driver for economic growth and new jobs and income for the individuals. Therefore labour market and labour force indicators are important for discussing inclusive growth.

At the same time, there are limits on how much labour market and labour force indicators can say about inclusiveness. Labour market variables are rather indirect indicators of social exclusion and poverty, as a range of social, cultural and policy factors play a decisive role.

Example: Labour force challenges and rural development

Vidzeme is one of five Latvian planning regions. It is beyond the commuter catchment of Riga, and demographic decline is the most serious threat to sustainable development. Population numbers are expected to continue to decrease, ageing will continue, and outmigration to urban areas and abroad will not cease. Outmigration and structural problems in education and employment result in a lack of qualified workers. Population and income decline shrinks local demand.

Population decline leads to higher service delivery costs, or withdrawal of services in remote areas. In turn, access to services declines because of growing service costs. Austerity policies have taken a toll, since public financing for many sectors has drained away, reducing the general quality in health, public transportation and postal services.

There is a local consensus that under current circumstances, depopulation processes cannot be stopped. Therefore population decline can only be compensated by creating more jobs and attracting people from metropolitan areas and larger towns. Although urban migrants arriving to rural areas can be an important asset to develop alternative activities and promote economic innovation, current levels of social inclusion and tolerance towards outsiders is not seen as assisting them.

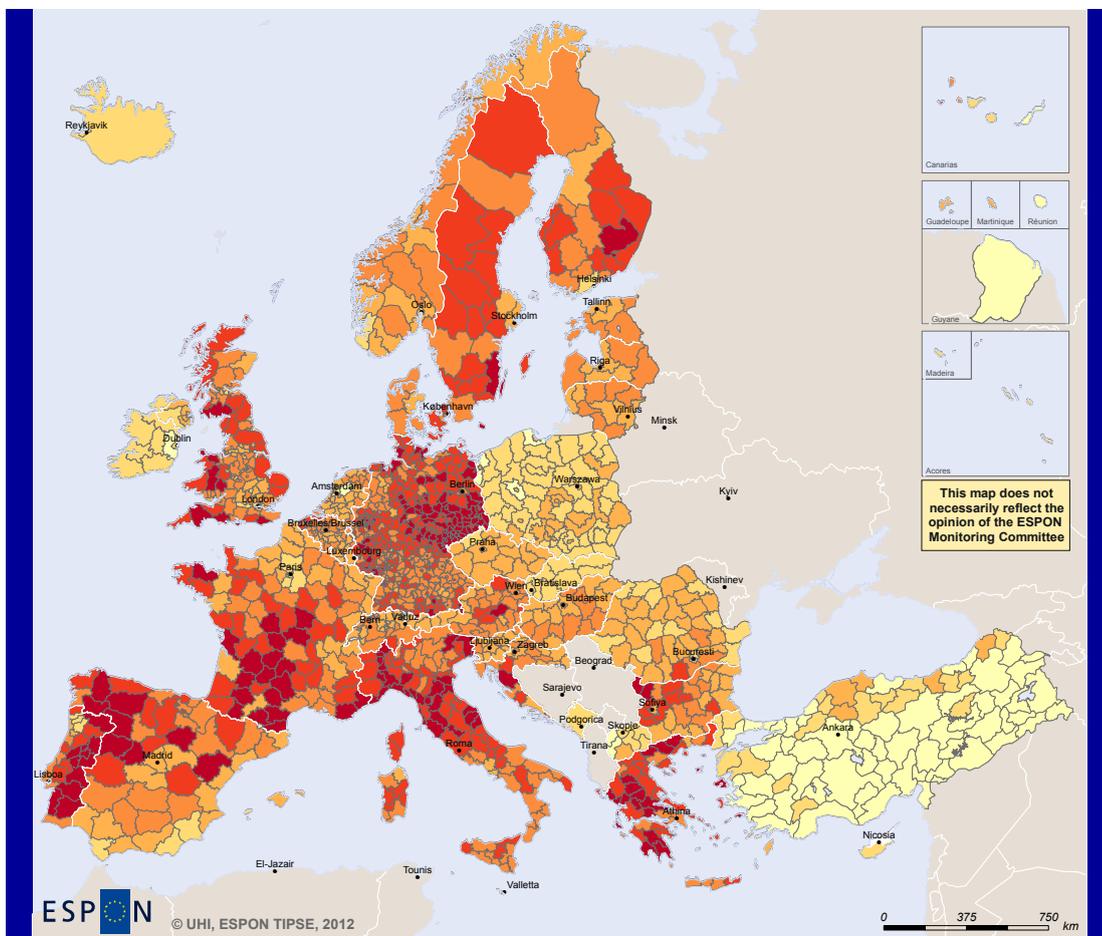
4.2.1 Territorial labour market perspectives

Territorial differences in labour markets are currently marked by huge variations in unemployment between different regions. However, the future prospects of places also need to be considered, since demographic changes are likely to become increasingly significant. Differences between age groups (depending on where in the lifecycle people are) and also gender differences provide important information on future development perspectives.

Centre and north reach employment targets. The Europe 2020 Strategy aims at 75% of the active population being employed. However, in the economic crisis the share of the active population who are in work varies greatly across Europe. Despite the crisis, the Europe 2020 target is already exceeded in a number of regions in the Nordic Countries, the UK, the Netherlands, Germany, Switzerland, Austria, Cyprus and single regions in Portugal and Italy. However, most European regions have not achieved the employment aim so far and it is questionable whether they will be able to do so by 2020. Furthest away from the 75% target are regions in Turkey, Serbia, Kosovo and southern Italy, whose rates are below 50%.

Centre and east to be most affected by demographic change. Ageing and demographic change will change the labour force pictures over the coming decades. In large parts of Europe, the active labour force is expected to shrink. Overall, it is expected that Portugal and some neighbouring Spanish regions, southern Italy, Greece, eastern Germany and most regions in the countries which joined in the EU in the accession rounds 2004 and 2007 will face declines in the labour force. At the same time, large parts of the UK, some regions in France, northern Italy and Spain are expected to see a growing labour force. These demographic developments suggest that the European labour force landscape will look different once the economic crisis is overcome and demographic changes become more visible.

Map 14 Old age dependency rate, 2011

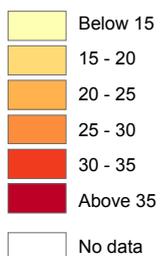


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Regional level: NUTS3
 Source: ESPON TIPSE, 2010
 Origin of data: Eurostat, 2012
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Old age dependency rate, 2011

Population aged 65 years and more / population aged 15-64 years (%)



The map shows the ratio between the total number of persons of an age when they are generally economically inactive (aged 65 and over) and the number of persons of working age (from 15 to 64). In some regions in Germany, Portugal, Spain, Italy and Greece, the ratio of the number of elderly people (aged 65 and over), compared to the number of people of working age (from 15 to 64) is above 25%. On the other hand, there is a rather young population in Turkey, Iceland, Ireland, Poland, Slovakia, large parts of the Czech Republic and Romania, as well as single regions in a wide range of countries, and in the southern neighbourhood across North Africa. In general urban and metropolitan areas tend to have a younger population.

Europe's getting older. The change in age not only affects the number of people available for the labour market, but also the number of people to be supported by the working population (e.g. pensioners and children). In some areas the ageing processes will substantially change the ratio between working people and pensioners. This can be expressed by the old age dependency ratio.

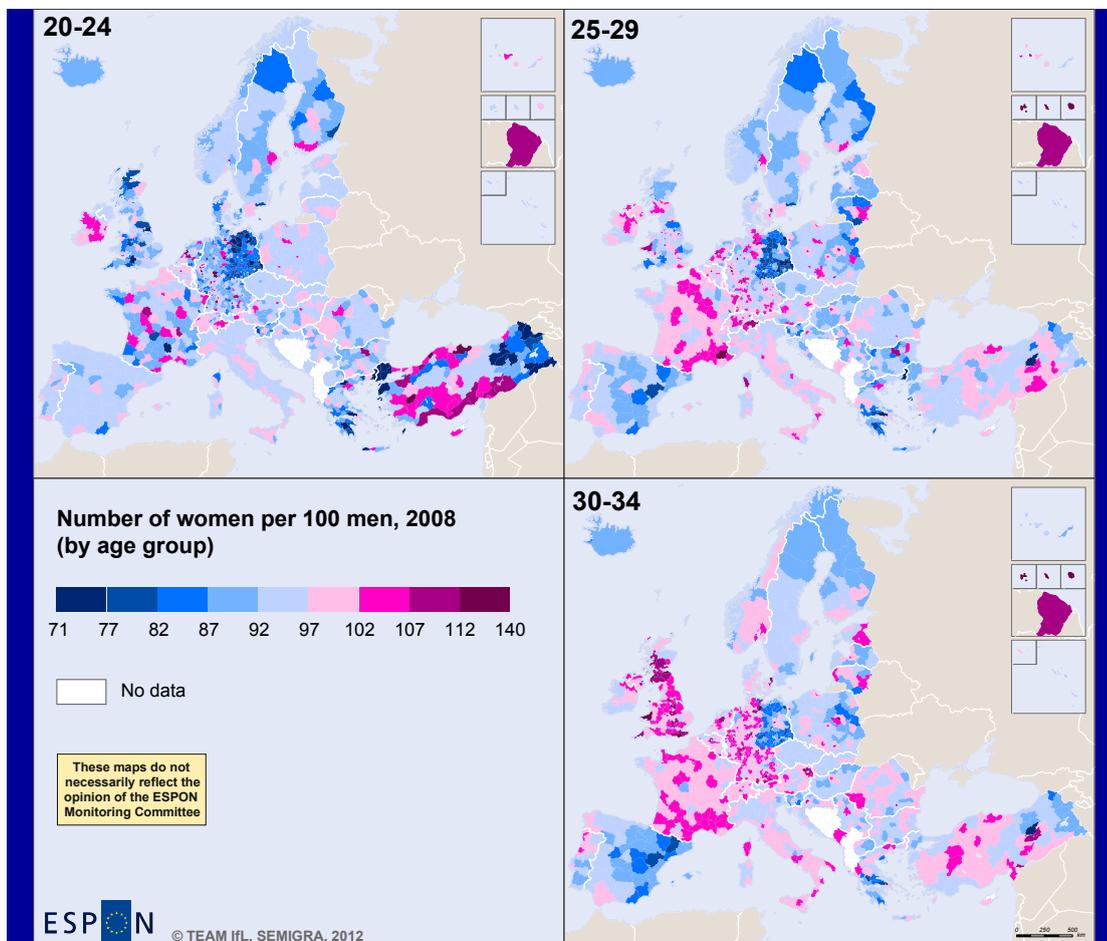
Youth unemployment is a serious challenge in the Mediterranean and the Baltic Sea regions. In many regions the potential of a young population is considered as a development asset. However, at present youth unemployment is the dominant issue in many regions. Youth unemployment is low in German, Austrian, Swiss, Norwegian and Dutch regions, as well as in the capital regions of the Czech Republic, Slovenia and Slovakia and other scattered areas in eastern Europe. In many cases these regions have developed a specialisation of young people in technical skills that give them jobs. In contrast, large parts of the Baltic Sea Region, and in particular southern Europe and the Balkan countries have high youth unemployment rates.

Women outnumber men in urban centres. It is not only the number of young people and their share of the total population that will influence the future availability of labour in a region. Also the gender balance can provide useful insights. Gender ratio imbalances are an effect of territorial developments and structures, and they condition future territorial developments. The mobility of young women is an important factor for local economic development. Imbalanced gender ratios are (in most cases) a local phenomenon caused by gender-selective migration.

Men outnumber women in rural areas. Regions with a surplus of males in early adulthood tend to be peripheral rural areas, while females outnumber men in the urban centres and their hinterland. In general, a 'male-oriented' economic structure is an important explanation for a lack of women. A 'lack' of women in the age group 20 to 34 years is found in predominantly rural and agrarian regions. This is especially visible in regions in eastern Germany, but to a lesser extent also in the Iberian Peninsula, in the Nordic Countries and in eastern Europe.

Regional gender ratios depend on the national context. At a European level, it appears that the European core area composed by mainly UK, France, Benelux and western Germany, Switzerland and to some degree Italy is mainly characterised by female surplus, in particular in the age group 30-34. The rest of Europe is more characterised by balanced gender ratios and regions with a male surplus. A few countries, notably Turkey, stand out with a mix of regions with either male or female surplus.

Map 15 Number of women in the age group 20 to 24, 25 to 29, 30 to 34 per 100 coeval men, 2008



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Regional level: NUTS 3
Source: Own calculations, 2011
Origin of data: EUROSTAT and national statistical offices, 2011
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The maps show the number of women per 100 men for different age groups. The maps cover three different age groups which are important moments in typical European lifecycles today: (a) 20-24 years – getting higher education, (b) 25-29 years – getting a foothold in the labour market, and (c) 30-34 years – founding a family. Overall, a ‘lack’ of women in the age group 20 to 34 years is found in predominantly rural and agrarian regions. This is especially visible in regions in eastern Germany, but to a lesser extent also in the Iberian Peninsula, in the Nordic Countries and in eastern Europe.

4.2.2 Attractive places for the mobile labour force

In the long run a wide range of European regions and cities will need to attract labour from other parts of Europe or the world to ensure an adequate labour supply for employers in the region. Shortages of qualified labour are already evident in some industries in some rural regions. Europe's ageing society is likely to intensify such situations. Consequently, labour mobility is important. In EU27+4 about 6.5 million people move between NUTS 2 regions within the same country and about 2 million people move from one of the 31 countries to another, every year.

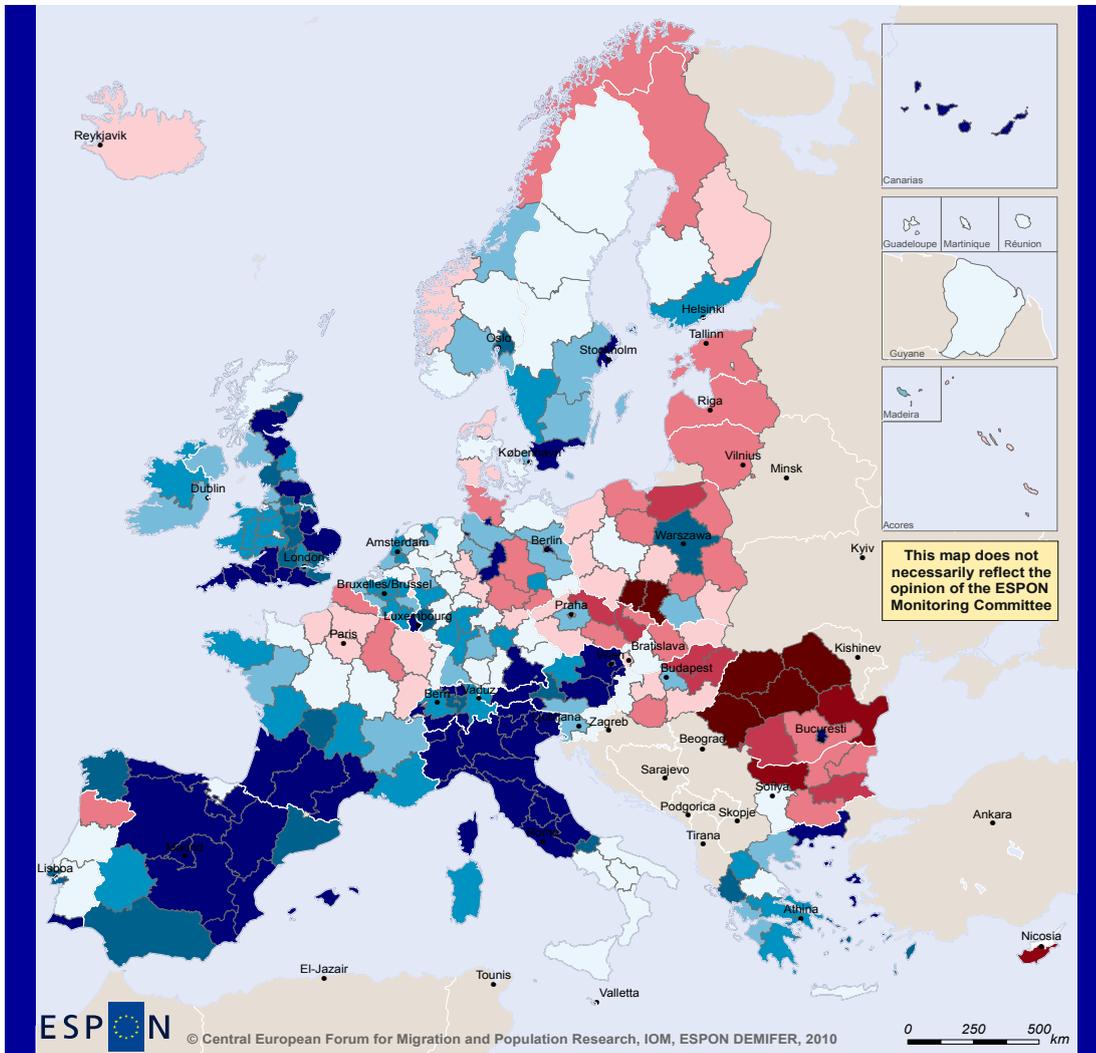
It needs more than job-opportunities to attract migrants. Migration between regions or countries is often driven by other factors than a new job. Regions seeking to attract new residents need to look at their amenity value, heritage and accessibility as part of a basket of factors of attractiveness. Comparing labour market statistics and economic performances, the most attractive regions do not have the highest average GDP per capita, nor the tightest labour market for highly skilled workers. Nevertheless, regions with the lowest net migration rates and low visitor arrival rates consistently do exhibit lower GDP per capita and employment rates for workers with all forms of qualification.

Different population groups prefer different types of places. Different population groups distinguished in terms of demographic profiles and motivations respond to different territorial assets. Flows by age groups show some distinctive characteristics with regards to where they are occurring. Capital cities remain attractive in terms of pulling in large numbers of younger and middle-aged adults. However, they also have a net outflow of older aged adults. In contrast, non-capital city regions, on average, have a net inward attraction for all these three age groups. A “silver age drain” seems to be occurring from the northeast to the southwest of Europe. Within individual countries there is a similar movement towards regions offering higher place amenities, a better climate, and convenient properties, or inland regions well-known for their amenities. In contrast, Europe's urban powerhouses are places which many workers leave when they retire. The mobility drivers for this group are different from those of the younger working age group. Interestingly, student exchanges, a type of medium-term mobility, seem to favour “amenable areas” rather than places with the most famous and established universities. Some gender differences can also be identified: women are more mobile than men.

Migration trends propel centralisation. Overall the trend is towards increased population in more densely populated areas across Europe and within countries. Population loss is severe in eastern countries and peripheral regions. Eastern European capital cities are reinforcing their positions: Prague has proved to be the most attractive place in the 2004 enlargement area. Even within the de-populating north and east there is generally an on-going processes of centralisation around the capital cities.

Scenarios on the impacts that migration may have on regional labour forces in 2050, suggest that larger metropolitan and capital city regions, as well as large parts of Spain and Italy are expected to benefit from migration. The most severe effects on regional labour markets are expected from out migration in large parts of Romania, Cyprus and Bulgaria (see Map 18).

Map 16 Impact of migration on the labour force, 2050

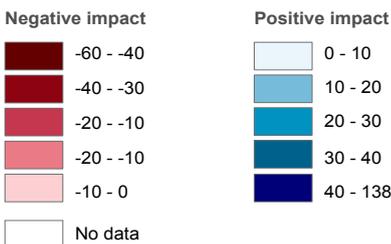


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Regional level: NUTS2
Source: ESPON DEMIFER Project, 2012
Origin of data: EUROSTAT, National Statistical Institutes, estimations, 2009-2010
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Impact of migration on Labour Force, in 2050

Difference in population (%)



Notes:
Impact of migration on labour force in 2050
calculated as the difference between the
Status Quo and No Migration scenarios
in % of the labour force in the No Migration scenario.

The map provides a hint of the impact of immigration on the future labour force. The map only reflects the gains and losses caused by migration. If natural population development was to be considered, the picture would show even greater disparities between regions. Migration impact was assessed by two reference scenarios: The *Status Quo* scenario simulates the state of population in 2050, if demographic regimes to 2050 continue unchanged. The *No Migration* scenario shows natural regional population changes due to births and deaths. The impact of migration on labour forces was calculated as the difference between the *Status Quo* and the *No Migration* scenarios as a percentage of the labour forces in the *No Migration* scenario.

4.2.3 Pointers for Policy

European level

- Labour mobility between European countries is still low compared to domestic migration between regions.
- Women outnumber men in urban centres. Gender ratio imbalances are both an effect of territorial developments and structures and a condition influencing future territorial developments.
- It is expected that Portugal and some neighbouring Spanish regions, southern Italy, Greece, eastern Germany and most regions in the countries which joined in the EU in the accession rounds 2004 and 2007 will face serious declines in the labour force.

National level

- Concentration trends due to labour mobility, and the processes of demographic change, will pose new challenges for regional economies and their access to adequate labour in many regions.

Regional and urban level

- Increasing the attractiveness of a city and region and in particular avoiding selective migration (age and gender imbalances) are key aspects for securing the labour market in the long-run.
- Imbalanced gender ratios are (in most cases) a local phenomenon caused by gender-selective migration. Regions with a surplus of males in early adulthood tend to be peripheral rural areas, while females outnumber men in the urban centres and their hinterland.
- Capital cities and major agglomerations might consider why so many people move out when they retire. Does this imply some dissatisfaction with the quality of life in the city, and if so might this threaten the city's capacity to retain key workers in the future?

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects DEMIFER, SEMIGRA, ATTREG, TIPSE, EDORA, PURR.

4.3 Social inclusion & poverty

Social inclusion and poverty affect individuals and their chances in society. However, looking at specific factors of social inclusion and poverty, there are considerable differences between Europe's cities and regions. In other words, it does matter where an individual lives – not only at the very local level of a neighbourhood. Territorial evidence can provide additional information on where to target investment in employability and social security systems.

The long-term unemployed are one group of people at risk of poverty. However, being at risk of poverty is also influenced by disposable household income, which in turn is linked to social transfer services. Social inclusion is also affected by a range of factors.

4.3.1 At risk of poverty

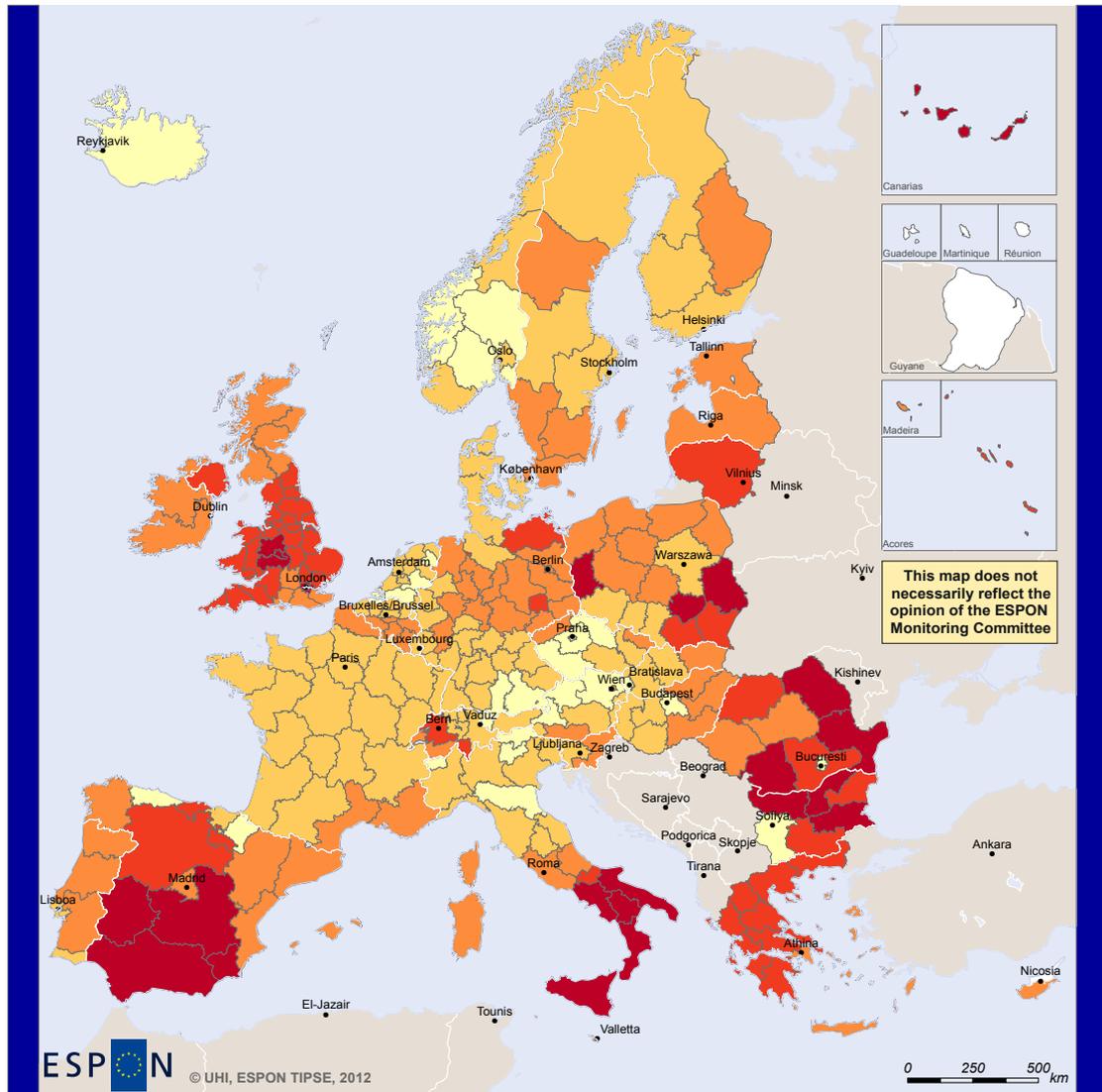
Inclusive growth should keep people out of poverty. While "at risk of poverty" is a standard indicator, the understanding and definition of poverty differs between countries. The standardised indicator shows the share of people with an equalised disposable income (after social transfers) below the "at risk of poverty" threshold, which is set at 60 % of the national median equalised disposable income after social transfers. In other words, it takes account of the ability of a person or household to afford the kind of lifestyle that most people in that country enjoy.

The eastern and southern fringe plus UK regions are at risk of poverty. The highest rates of at risk of poverty are revealed in an arc running east and south from Poland to Greece, in southern Italy and Spain, but also in the UK. The lowest levels are found in Austria, the Czech Republic, southern Germany and northern Italy. Some of the larger cities of the eastern Member States (e.g. Budapest, Bucharest), Madrid in Spain and Oslo in Norway, appear as “islands” of lower rates of poverty, whilst London stands out for the opposite reason. There are considerable domestic disparities. In particular Spain, Italy and Bulgaria are characterised by large disparities between their regions. This hints at some urban-rural contrasts.

Risk of poverty levels to be nuanced in northern Europe. Another indicator relevant for discussing poverty is the average disposable income (in purchasing power standard – PPS). Although not directly comparable to the “at risk of poverty rate”, the average disposable income provides to some extent an independent “cross-check”, since the data is generated in an entirely different way. Comparing the two indicators there are two differences in the geographical pattern. The first is the relatively modest disposable incomes in the Nordic Countries. The second is the relatively high average disposable income in most UK regions, which is a reminder that the average can mask substantial inequalities (which are highlighted by the indicator on “at risk of poverty”).

Social transfers through welfare systems are very important influences on poverty. An analysis of the social transfers per capita shows that the Nordic welfare state tradition, although widely perceived as under threat, is still associated with high levels of expenditure per head, especially in Denmark. Other regions with high levels of social transfers are found in east Germany, Austria, France, Belgium, the Netherlands and Ireland. Most of eastern EU Member States are estimated to have relatively small social transfers per head. This is to some extent explained by differences in prices.

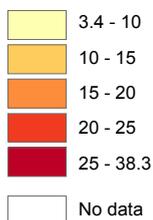
Map 17 At risk of poverty rate, 2010-11



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Regional level: NUTS2, NUTS1 (BE, EL, HU)
Source: EUROSTAT, 2012
Origin of data: EU-SILC, 2010-2011
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Population at risk of poverty, 2010-2011
as a share of total population (%)



Notes (Eurostat definition):
Persons at-risk-of-poverty are those living in a household with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers). The equivalised income is calculated by dividing the total household income by its size determined after applying the following weights: 1.0 to the first adult, 0.5 to each other household member aged 14 or over and 0.3 to each household member aged less than 14 years old.

Reference year:
2010 for BE, BG, DE, DK, IE, EL, FR, IT, IS, CY, LU, MT, NL, PT, SK, UK and CH
2011 for CZ, EE, ES, LV, LT, HU, AT, PL, RO, SI, FI, SE and NO

Eurostat defines the at-risk-of-poverty rate as the share of people with an equivalised disposable income (after social transfers) below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers. This indicator does not measure wealth or poverty, but low income in comparison to other residents in that country, which does not necessarily imply a low standard of living. In this way it takes account of the ability of a person or household to afford the kind of lifestyle that most people in that country enjoy.

4.3.2 Social services of general interest

Social inclusion and poverty is also affected by the availability and affordability of social services of general interest (e.g. education and health care). In general, better provision of these services goes hand in hand with the demographic-territorial and financial potentials of a country or region.

Western and urban areas tend to be better off – but there are exceptions. Taking this into account, the regional typology of social services of general interest points out a few regions far above the European average in Italy, France and around national capital cities (like London, Copenhagen, Prague, Vienna, Bratislava and Bucharest). Most parts of the western Member States (except the UK, Portugal, Luxembourg and Greece) and Iceland provide above European average levels of social services of general interest.

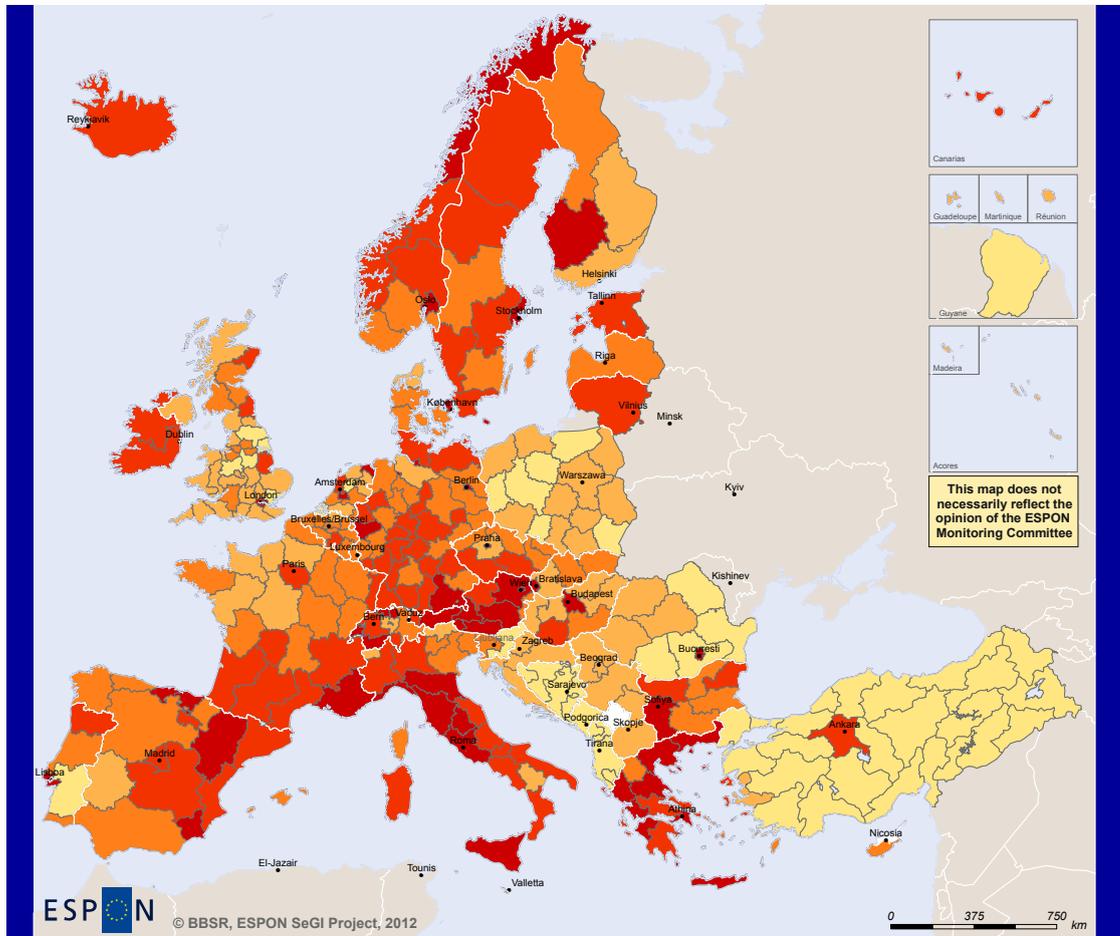
Rural areas in the east are among those particularly challenged. Regions far below European average are mostly located in east and south Europe. A number of rural regions in Poland, Romania, Bulgaria, Greece, Portugal and the UK show the lowest levels of social services of general interest.

National policies matter for domestic disparities. There are also differences between countries, in disparities of service provision among their regions. Among the larger countries, Norway, Sweden Germany, Switzerland and Spain have small disparities between their regions, with no places far below or far above the average. In contrast, the UK, Italy, the Czech Republic and Romania show high regional disparities, with some regions far below and others far above the European average.

Probing more deeply, there also differences between different types of services. For example, employment agencies are one type of social service of general interest. The Netherlands, Estonia, large parts of the UK, and a number of regions in the Nordic Countries have a large number of employment agencies (Map 19). On the other hand employment agencies are comparably rare in most parts of Italy, Croatia, Turkey and large parts of eastern Poland and Bulgaria.

The number of doctors and physicians per inhabitant (Map 18) is an indication of access to health care services. The statistics reveal rather large regional differences within countries. Often metropolitan or urban areas have higher ratios.

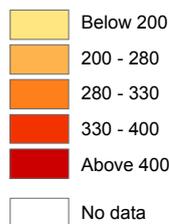
Map 18 Doctors and physicians, 2008



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Regional level: NUTS1/2
Source: ESPON SeGI-Project, 2012
Origin of data: EUROSTAT, National Statistical Offices, 2011 (cf notes)
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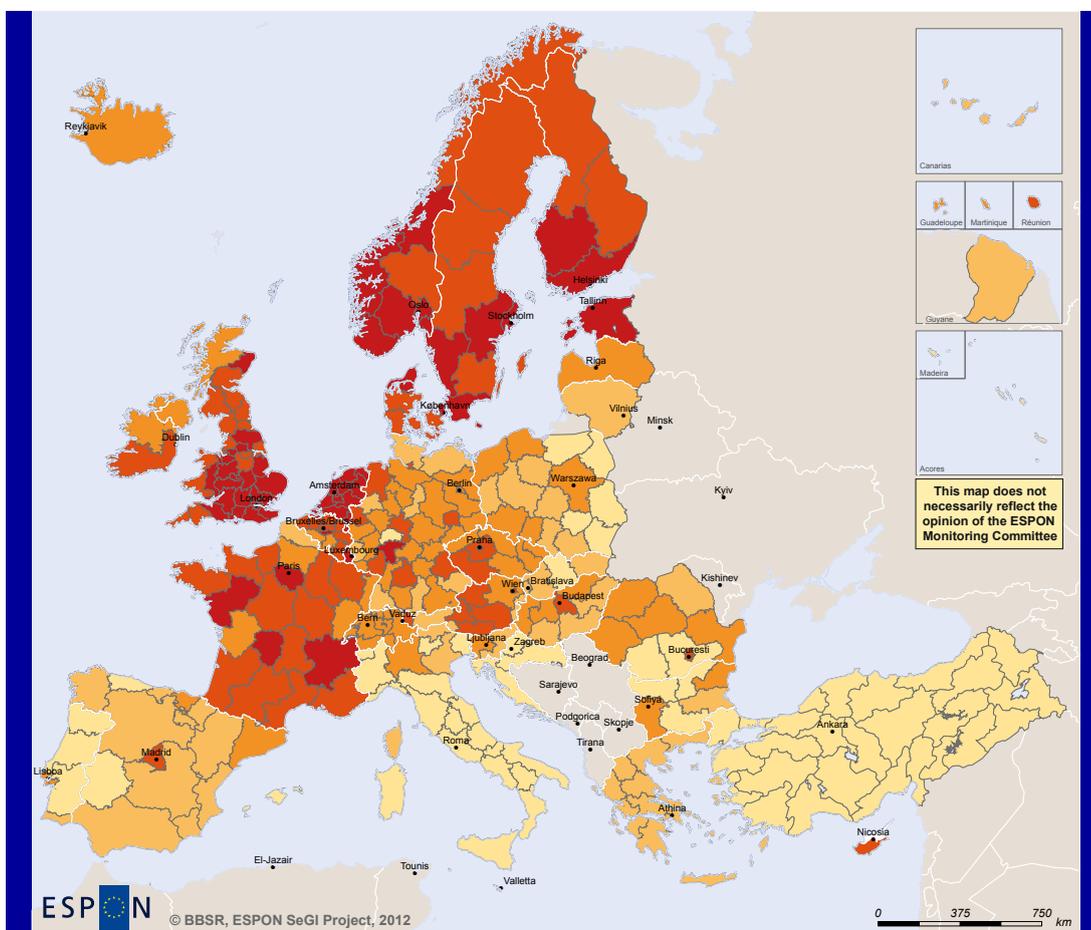
**Number of doctors and physicians
per 100 000 inhabitants, 2008**



Notes:
* Albania: World bank data 2009,
Bosnia and Herzegovina: World bank data 2005,
Belgium: disaggregation by number of employed in health sector,
Germany: disaggregation of NUTS 1 data by data from the Federal Statistical Offices,
Ireland: NUTS 0, Luxembourg: 2007,
Montenegro: World bank data 2007,
Macedonia 2006, Malta 2009,
Serbia: World bank data 2007: NUTS 0,
United Kingdom: disaggregation of data for England and Wales by data from national Statistical Office

Access to doctors and physicians, as well as to employment agencies, are considered as social services of general interest. The above maps show the ratios of doctors and physicians, and of employment agencies per 100,000 inhabitants in a NUTS 2 region. Thus, they provide a first picture on where access to social services of general interest may promote or hinder social inclusion. However, they do not say anything about the quality or affordability of the services. However they provide a first picture of where access to social services of general interest may promote or hinder social inclusion.

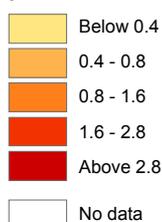
Map 19 Employment agencies, 2009



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Regional level: NUTS1/2
Source: ESPON SeGI-Project, 2012
Origin of data: EUROSTAT, 2009 (cf notes)
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Local units active in employment agencies per 100 000 inhabitants, 2009



Notes:
* Croatia, Greece and Switzerland: NUTSO;
Denmark: 2008
Iceland and Turkey: National Statistical Offices

4.3.3 Pointers for Policy

European level

- Social inclusion and poverty is highly linked to national systems and policies. Consequently there are considerable differences between countries. The highest rates of “at risk of poverty” are in an arc running east and south from Poland to Greece, in southern Italy and Spain, but also in the UK. In such places it could be especially valuable to have a strong social dimension in ESIF projects.
- In general, cities are better off, both when it comes to poverty in terms of financial means, and for access to social services of general interest.

National level

- Sustaining social services of general interest areas (characterised by accessibility to the nearest urban centre, good secondary networks and levels of service provision) is important for maintaining population and jobs in less prosperous areas. Rural areas in the east are particularly challenged.
- In some countries there are wide regional variations in access to social services of general interest, which could mean that people's life chances are partly dependent on where they live.

Regional and urban level

- Affordable and easy access to social services of general interest and innovative solutions to providing such services in areas with low and declining population density are important for supporting inclusive growth.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects SeGI, TIPSE, FOCI, TANGO.

4.4 Education & lifelong learning

Social inclusion and the possibility for individuals to participate in the labour market are increasingly linked to education. Access to affordable high quality education and lifelong learning are a main policy concern, because they are considered to be important for labour market integration and for increasing Europe's global competitiveness. The objective is to develop the education systems as a cornerstone for jobs and growth. It embraces a wide range of education concerns including the quality and education levels of young people, our future work force, dropouts from the school system, and lifelong learning to sustain the competitive edge of the active work force.

4.4.1 Regional education profiles and learning mobility

Different territorial patterns concerning higher education. The tertiary education level is used to illustrate the position of higher education in Europe. It matters for smart growth. What proportion of inhabitants aged 30 to 34 have a tertiary education? Capital cities and large urban agglomerations tend to have a higher presence of this age group than do their surrounding regions. Many regions in the UK, Ireland, the Nordic Countries, Spain, France, Switzerland, and the Benelux countries have a high share of young qualified people, as do Estonia, Lithuania and Cyprus. Surprisingly, economically strong countries such as Germany and Austria have rather low shares of these young academically qualified people, a discrepancy that can be explained by the educational systems in these countries. South-east Europe and the Danube Region, Portugal and Turkey have a lower proportion of this age group educated to tertiary level.

Early school leaving is more common in economically weaker regions. The percentage of pupils who leave formal education early is another frequently used indicator. It illustrates how well an education system manages to provide perspectives for those not progressing to higher education. Not surprisingly, this indicator shows almost the reverse pattern to the geographical distribution for achievement of upper secondary education level. More important, there is a relation between the shares of early school leavers and socio-economic processes. The areas with less economic development have the highest levels of early leavers, while more developed and diversified economic regions have fewer early school leavers. There are relatively few early school leavers in Swedish regions, but regions in northern Portugal and Spain have a high rate of early school leaving and a local economic structure based on manufacturing and agriculture where there is still a demand for low qualified labour.

Regions on the Iberian Peninsula, in Greece and Turkey are among the most challenged in education. The combination of the two indicators discussed above shows some regions with low rates of tertiary education and high numbers of early school leavers. These regions are to be found in Turkey, Portugal and Greece.

Learning mobility and selective migration accelerate differences between regions. These indicators provide a rather static picture, whereas a key aspect of education is that it is intertwined with mobility. Young people (age 18-25 years) often move to access education or for their first job. This is the age group with the highest levels of mobility. “Learning mobility” is an important factor and should be considered positively. Lack of jobs and/or access to higher education are widely regarded as the most important reasons for the selective migration processes that lead to imbalanced gender ratios at local and regional level. The kind of migration linked to learning mobility can develop into a “brain drain” from local communities (for more details on selective migration see chapter 4.2). In such places labour and skills shortage can force companies to leave the region or to outsource activities. Falling numbers of children puts pressure on the educational and social infrastructure, and can lead to vicious circles in which schools close, so young families move away, and further private and public services are withdrawn. Such situations compound regional differences in economic performance and educational achievement. Given the importance of higher education institutions in a knowledge-based economy, regional economic development needs to explore ways to make most effective use of available schools, colleges and universities.

Example: Higher education as a driver for development

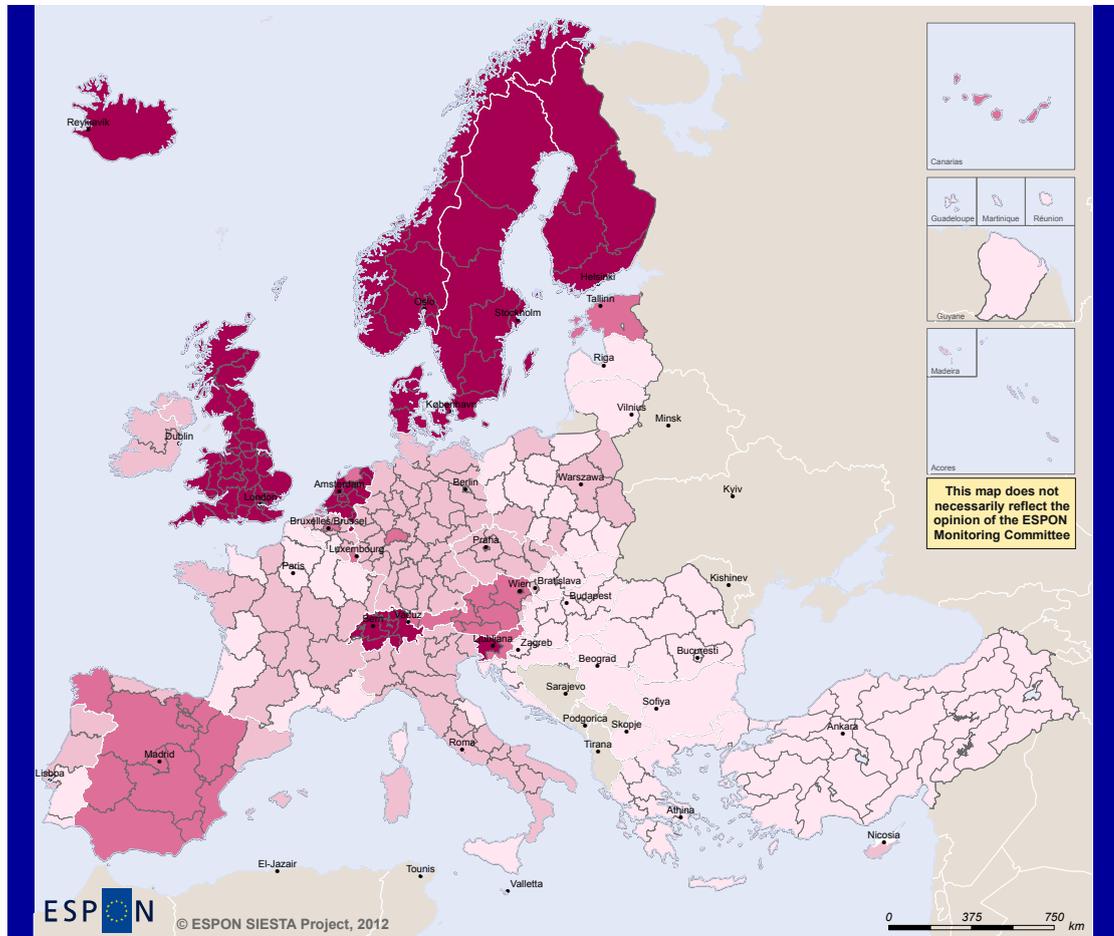
Cornwall is a peripheral and mainly rural part of England. Under the 2007-13 funding programme it is a Convergence Region, and in the previous funding round it had Objective 1 status. One issue that it has identified is the need to use university level education to help businesses and to retain qualified young people. The Combined Universities in Cornwall (CUC) have developed as a partnership linking six universities and colleges in the region. This enables CUC to have campuses in several towns, reducing the need for students to migrate or travel so as to access education. CUC works with businesses to address their needs, support the development of a knowledge-based economy, and also the development of new niche technologies related to Cornwall’s regional assets. There are Innovation Centres and a Research Knowledge Transfer Team. All of this is seen as key to attracting inward investment and the development of high value added firms able to compete nationally and globally. Thus CUC demonstrates how inclusive growth and smart growth can be integrated in practice.

4.4.2 Lifelong learning - a matter for national policies

Education no longer stops when leaving school. Today lifelong learning is essential for individuals as well as for regional or national economies. However, the approach to lifelong learning differs widely between countries depending on national policy contexts and socio-cultural backgrounds.

High levels of lifelong learning in the north. The Nordic Countries, UK, Switzerland and Netherlands are at the forefront in the participation of adults in education and training, followed by Spain and Austria. In these countries, typically, adults can access education fairly easily for different types of learning. A second group of countries covers the remaining regions of western Europe, with median levels of lifelong learning participation. These countries usually have less tradition of adult learning, but the socio-economic context does not impose great difficulties for development of the sector. In western Europe in general there are several training programmes with partnerships with the private sector (associations of companies, unions, etc.) and universities.

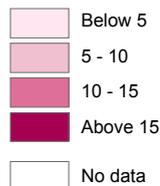
Map 20 Participation of adults in education and training, 2009



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Regional level: NUTS0 and NUTS2
Source: ESPON SIESTA Project, 2012
Origin of data: EUROSTAT, 2012
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Participation of adults in education and training, 2010
as a share of adult population (share of 25-64 years, %)



Notes:
RS, BG, MK, CY, IS, EE, LV, LT, LU, MT are shown at country level

The map shows the share of adults aged 25-64 years who stated that they had received education and training in the four weeks preceding the survey. The denominator consists of the total population of the same age group, excluding those who did not answer to the question on 'participation in education and training'. The information collected relates to all kinds of education and training regardless of the respondent's current and possible future job. The patterns of participation are mainly national, and the Nordic Countries, UK, Switzerland and Netherlands are at the forefront, followed by Spain and Austria.

Low levels of lifelong learning in the east. The lowest levels of lifelong learning can be found in eastern European regions, where lifelong learning activities are a relatively recent development and there was a lack of funding. Lifelong learning is very likely to increase here thanks to European Social Fund (ESF) investment, which has already achieved results in Spain and Slovenia. The ESF acts as an important driver for lifelong learning.

4.4.3 Pointers for Policy

European level

- Regions in Portugal, Greece and Turkey are among the most challenged in terms of the ratios of early school leavers and tertiary education level attainment.
- The Nordic Countries, UK, Switzerland and Netherlands are at the forefront in the participation of adults in education and training. In these countries, typically, adults can access education fairly easily for different types of learning.
- ESIF programmes can be a catalyst for building partnerships between public and private sector institutions and education providers that can deliver skills needed by business while also helping to reduce out-migration of skilled young people from a region.

National level

- Education, and in particular lifelong learning, is strongly shaped by the national traditions and policies. This needs to be considered in areas with weak lifelong learning traditions in order to create the policy and socio-economic context for increasing lifelong learning as an important dimension of smart and inclusive growth.
- The location of higher education facilities shapes patterns of learning mobility. This can result in a brain drain for some regions that are a large distance from higher education facilities.

Regional and urban level

- Access to education and in the long-run the labour market are important for inclusive growth in all cities and regions. Partnerships linking universities and local colleges can bring access to higher education closer to school leavers in rural regions that have traditionally struggled to retain their ambitious and talented young people.
- Learning mobility and the risk of selective migration, as well as the link between early school leavers and the general economic development in an area are important ingredients for development strategies in challenged regions.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects SIESTA, SEMIGRA, TANGO, ATTREG.

5 - Institutional capacity in a territorial perspective

Governance and institutional capacity are widely recognised by researchers as key factors influencing on regional development. Territorial governance is concerned both with the governance of territory and with the territorial dimension of governance. Reference has already been made to the importance of governance to the delivery of smart growth (chapter 2.1.3) and sustainable growth (chapter 3.1). This chapter therefore highlights some key practices and challenges in and across Europe.

The big picture

- The new round of ESIF programmes seeks to achieve better integration so that each Euro spent achieves multiple aims. This requires new approaches to governance and enhanced institutional capacity.
- Patterns of governance are imprinted by history and tradition. Thus eastern Europe, southern Europe and Scandinavia, for example, all have distinctive approaches to governance that influence their progress towards smart, sustainable and inclusive growth.
- The national level of government remains very important, especially in the governance of social services of general interest.
- The evidence collected by ESPON and techniques developed in the programme can be used by policy makers to underpin many aspects of the 2014-2020 ESIF programmes.

5.1 Territorial driving forces for institutional capacity

Creating a path to recovery. The driving force for territorial governance and enhanced institutional capacity is the need to find a path for recovery from the economic crisis. Integrated approaches are needed which respect the environment, and build regional resilience, competitiveness and territorial cohesion. The details vary from country to country, region to region, and the national level of government is clearly a significant influence on outcomes. Everywhere and at every scale from European to local there needs to be a territorial perspective. This is necessary to achieve better co-ordination of policy between scales and across any one scale. At times when spending is constrained, it is more important than ever to achieve multiple outcomes that fulfil the aims of different programmes and stakeholders. The ideal of cohesion demands some consistency and shared focus if it is to be achieved.

Commitment to territorial cohesion is a driving force for institutional capacity. Perhaps the greatest driving force could be a sense of solidarity and a full embrace of the idea that people's opportunities should not be skewed by the place in which they live. Commitment to territorial cohesion and inclusive growth is a fundamental driving force for development of the institutional capacity to take informed territorial actions. However, as was noted in chapter 4.3, while in some countries including Norway, Sweden, Germany, Switzerland and Spain regions are almost equally well endowed with social services, regions in the UK, Italy, Czech Republic and Romania show bigger differences in regional endowment.

Delivery of smart and sustainable growth requires institutional capacity. Linked to this driver is another, the recognition that Europe needs to achieve a new form of growth, one decoupled from carbon dependency and one that prioritises the conservation of the continent's natural and cultural heritage. This is why new ideas, new skills and new forms of institutions and policy making are needed. Chapters 2 and 3 have shown a general pattern at European scale: the northern parts of Europe, particularly Scandinavia, have generally made most progress in achieving smart and sustainable growth, and western Europe still leads southern and eastern Europe. For example, adaptation to climate change could be seen as a measure of institutional capacity at regional and

local level, as that is a key scale for such work. As chapter 3.3 showed, although a medium to high negative impact is projected for climate change in countries in the Mediterranean and south east Europe, adaptation there is less than in more northern countries where the severity of the problem is likely to be less. Institutional capacity is vitally important for the efficient and effective use of ESIF money.

Example: Campania - how better territorial governance could make ESIF investment more effective.

Interviews with stakeholders in Campania (Italy), a Convergence Region, revealed perceptions that the significant potential for economic development has been undermined by poor territorial governance, inefficiency, decline in social cohesion and civic sense, the lack of accountability and the presence of organised crime. Coordinated actions at all levels of government were identified by interviewees as necessary to improve the quality of life (and especially security and service provision) in urban centres in Campania. They also advised that Cohesion funding should be streamlined, and that better coordination was needed between different European and national funds, along with better integration of policies to maximise benefits.

Urban leadership in a knowledge economy. Last, but by no means least, the driver for new institutional capacity is innovation and an entrepreneurial outlook. While in principle every region has the potential to be innovative, this report has shown how Europe's cities have become increasingly important as hubs in the knowledge economy. One of the features of an agglomeration is the opportunities it offers for cross-overs of knowledge and the capacity to attract and access the skills of talented people.

5.2 Territorial approaches for new governance

Ideas about territorial governance are still developing and being debated. A working definition of territorial governance is: Territorial governance is the formulation and implementation of public policies, programmes and projects for the development of a place/territory by:

- integrating relevant policy sectors,
- co-ordinating the actions of relevant actors and institutions, particularly considering multi-level interplay,
- mobilising stakeholder participation,
- being adaptive to changing contexts, and
- addressing the place-based/territorial specificities and characteristics.

These five dimensions to territorial governance provide pointers to how to achieve added value through smart, sustainable and inclusive growth. Territory or place is not necessarily defined by administrative boundaries.

Territorial governance involves employing a territorial approach in development strategies and decisions. It can be seen as a means to achieve territorial development via the organisation of new “constellations of actors, institutions and interests”. Territorial governance has also been defined as the process of organisation and co-ordination of actors to develop territorial capital in a non-destructive way in order to improve territorial cohesion at different levels.

Territorial governance requires a different form of organisation, procedures and skills, in other words new institutional capacity. This becomes clear from research on approaches to building integrated regional strategies. Integration involves a number of agencies and stakeholders agreeing joint solutions. Successful territorial development can no longer be achieved through top-down public sector action. The skills and resources of the private and voluntary sectors are needed. This also means that planning for regional development must be done in a more inclusive way, less hierarchical and with co-operative networks and partnerships. In addition, action at regional scale needs also to be aligned to policy at national and transnational scales but also at local scale. These principles are very important for effective use of ESIF.

Across many parts of Europe a search for increased regional competitiveness, together with the economic crisis, has seen significant institutional changes. Simplified administrative structures have appeared, often based on co-operation rather than direction, and involving multiple stakeholders. One example can be found in Sweden's Region Västerbotten, which is described in the box below. Similar partnership-based styles of governance were observed in the examples of Tampere and Munich that were featured in Chapter 2.

Example: building consensus amongst stakeholders for a regional strategy

The Västerbotten Region in Sweden is a legally constituted body based on co-operation by the municipalities in this sparsely populated region. It has a Regional Development Strategy which is in line with the national strategy and the EU Baltic Sea Strategy, and also includes the EU 2020 Strategy of seeking smart, sustainable and inclusive growth. It is the link between such aspirations from EU and national scales to the development plans at local levels.

The key vehicle for implementation of the Västerbotten Regional Development Strategy is the Regional Growth Programme. This targets sources of investment and particularly EU funds. It is revised annually. All of this is backed by a number of regional structures for co-operation and consensus building. These have played a key role in involving people in building the regional strategy and taking it from something owned by the state to a regional and local concern. While this Swedish model cannot be simply transplanted to other countries with different political cultures, it does demonstrate the kind of institutional capacity needed to deliver the territorial dimension of the Europe 2020 Strategy.

5.3 Territorial co-operation as a factor for jobs, growth and quality of life

Territorial co-operation is an objective of Cohesion Policy and also the basis of European Neighbourhood Policy. There is a legal instrument to facilitate territorial co-operation, the European Grouping for Territorial Cooperation (EGTC). In addition there are many other networks that link cities or regions in forms of co-operation, such as Twin Cities.

Aims of territorial co-operation. Territorial co-operation is expected to contribute to economic development and competitiveness, territorial integration, good neighbourhood relations, reduction of negative border effects between weaker/stronger regions, city networking, labour markets, and unification of natural ecosystems divided by borders. It can be a means of delivering added value and making more effective use of scarce resources. Territorial integration means jointly solving cross-border problems on both sides of the border by means of co-operation.

Territorial co-operation can take different forms. Five different types of territorial co-operation can be identified. These are: twinning city co-operation; cross-border co-operation (e.g. INTERREG A); inter-regional co-operation (e.g. INTERREG B); transnational co-operation (e.g. INTERREG C); and transcontinental co-operation (i.e. co-operation with non-EU territorial units in other continents).

Factors likely to make territorial co-operation a success. There is evidence that institutional capacity is particularly important. The probability of success of territorial co-operation measured by socio-economic development is highest when co-operation is based on simpler forms of collaboration such as: exchanging experience, sharing tools to tackle a common problem or advising each other on how to solve similar problems, rather than more advanced forms of co-operation such as jointly implementing common actions or investments to solve local problems. This may be because more ambitious forms may simply require more learning to bring desired effects. The experience and stability of partners also influence the chances of success. The probability of success is also found to be higher when the domains of co-operation are cultural events, tourism, economy, natural environment or physical infrastructure, rather than educational exchange, social infrastructure, risk prevention or joint spatial planning. This is explained by the fact that those domains are easier to implement.

Resourcing territorial co-operation – use of partners' funds and EU money. Sources of resources for co-operation also have been found to make a difference. The most successful territorial co-operation projects were funded from partners' own or EU sources rather than public-private partnerships, foreign partners or national funds other than partners' own resources. It also matters who the stakeholders initiating co-operation are. Probability of success is higher if they are NGOs and local and regional government, rather than Euro-regions and other cross-border institutions, national government, EU bodies, development agencies or chambers of commerce.

**Example: Institutional capacity building through territorial co-operation.
Experience from France, Italy and Poland**

Analysis of nine case studies of territorial co-operation in regions across France, Italy and Poland highlighted three important components of capacity building. The first was an ability to come to terms with EU rules and procedures. Experience in managing Structural Funds was found to make a big difference in this respect. Second was the ability to use EU funds and procedures to bring forward and implement projects and strategies which local actors already had in mind or developed. The capacity to integrate different project ideas and match them to different funding streams is important here. Finally, there is the capacity to use the experience gained through EU funding to improve the overall quality of administrative action: in other words, to mainstream the key principles and lessons. Partnership, environmental sustainability, equal opportunities and evaluation were particularly highlighted.

5.4 European patterns of territorial co-operation

Despite its potential benefits, there are still barriers to the implementation of effective territorial co-operation across Europe as a whole and over its boundaries. Co-operation across EU borders is still cumbersome administratively. The great majority of leaders in INTERREG projects are partners from countries who were EU members before 2004. However, there are signs of progress in that the EGTC instrument is regarded in post-2004 Member States as of major assistance in organising territorial co-operation for less experienced actors.

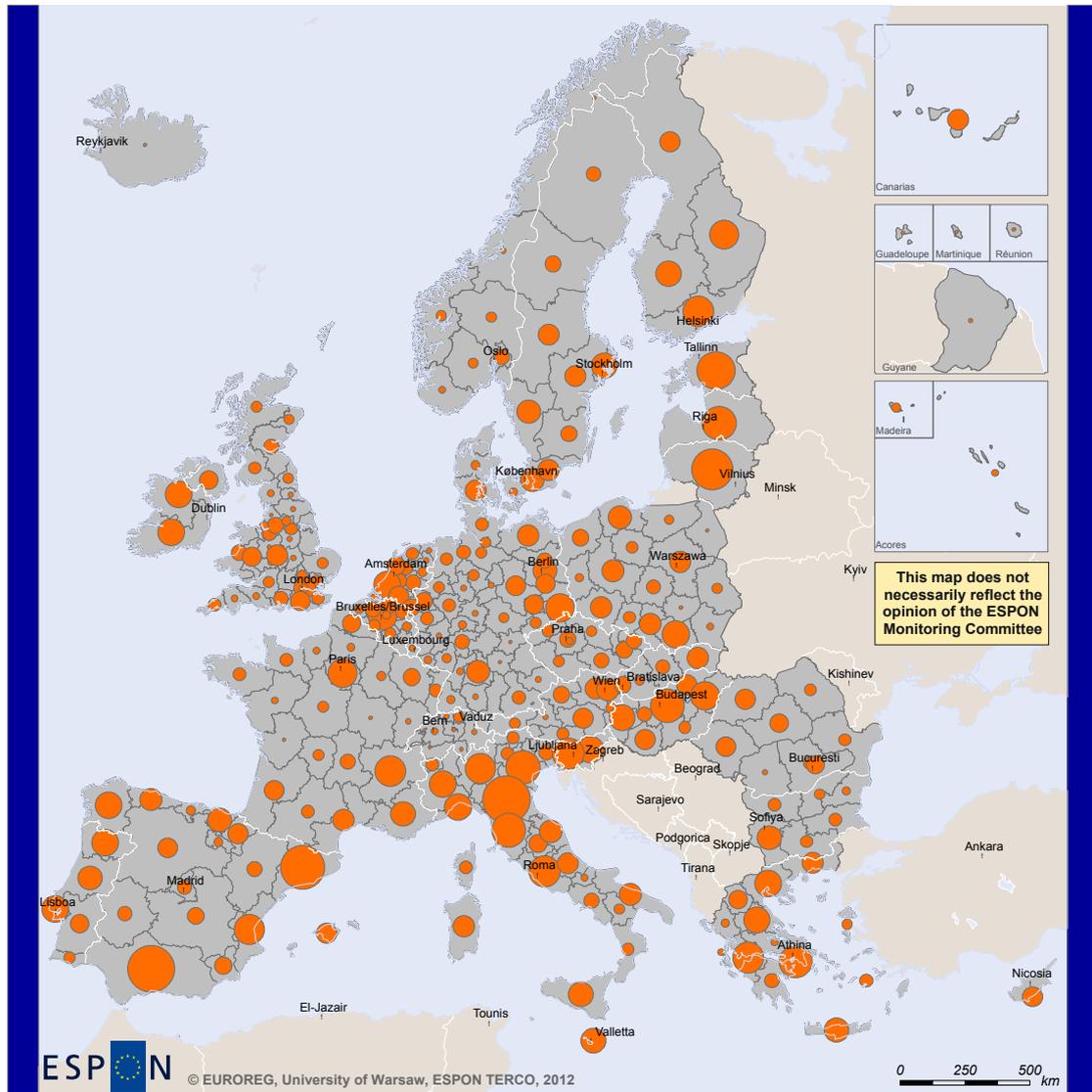
Municipalities in Germany, France and Italy have most twin city links. The number of twinning city agreements in any country depends on the size of the country, but also on the number of municipalities / communes / cities that can enter into such agreements. The largest number of twinning city agreements with foreign countries are in Germany (3,300), France (2,500), Italy (2,000), followed by Poland (900), Spain (900) and the United Kingdom (800).

There are some clear patterns in these twinning arrangements, with a very high number of mutual agreements between communes / cities of France and Germany (650), France and Italy (350), Germany and Poland (310), France and the UK (240), Germany and Italy (220), and Germany and the UK (220). Despite these patterns of concentration, all NUTS 2 regions in the ESPON space have at least one involvement in city twinning.

Regions with the highest ratio of twinning agreements per authority are in the Nordic countries (except Denmark) and the Ruhr region. The country with the lowest ratio of agreements per capita is the UK, where the lowest units of administration are large (and so there are relatively few of them), and have little financial autonomy. Overall the selection of twins is influenced by proximity and historical and cultural links.

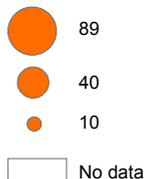
Communes and cities in western Europe are particularly likely to have links with twins in the USA, while Spain, Portugal and north Italy have twins in Latin America.

Map 21 Interreg C III and IV partners



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

Number of project partners in INTERREG IIC and IVC programmes, situation in January 2011



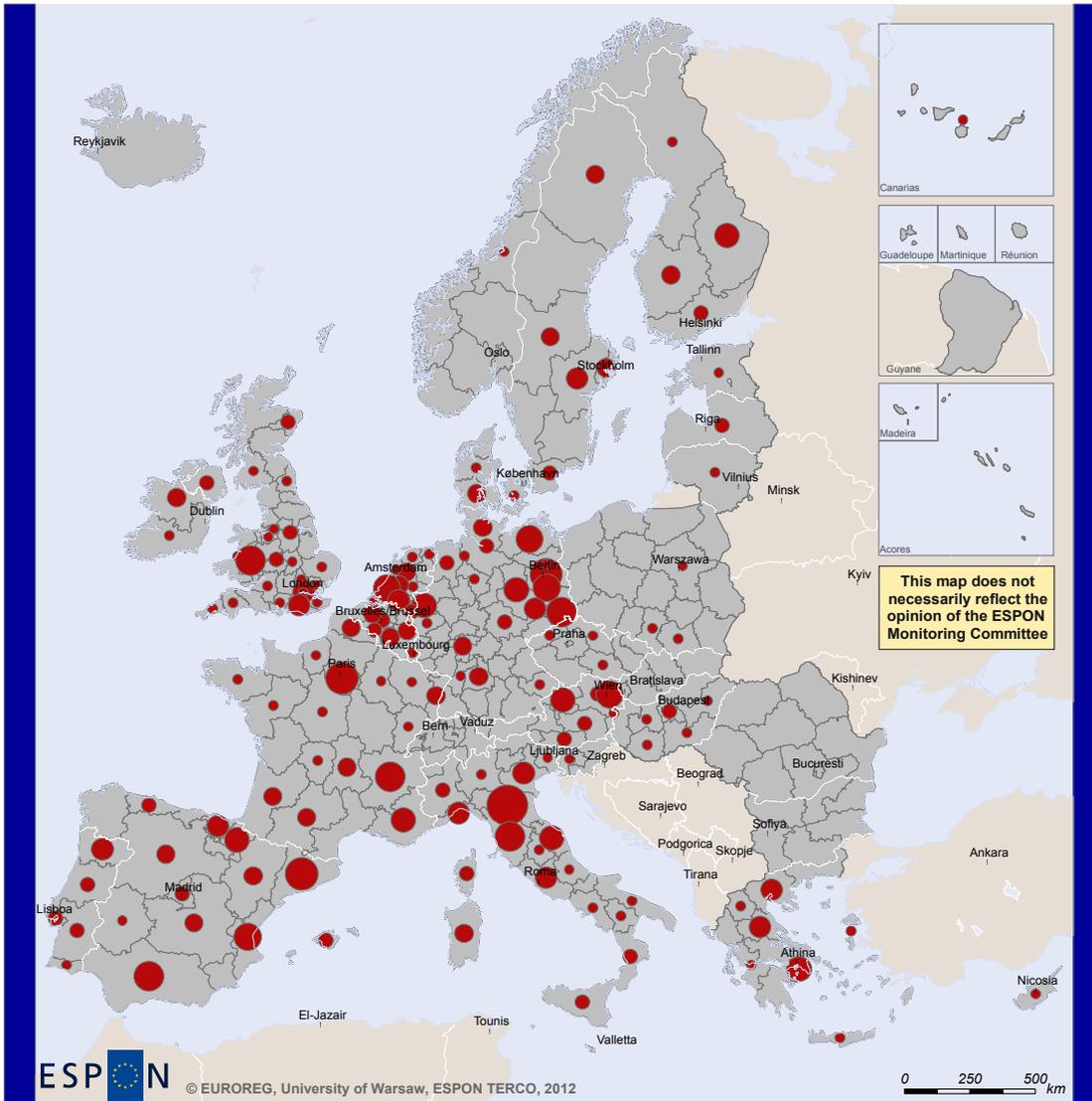
Regional level: NUTS 2
Source: ESPON Database, EUOREG, University of Warsaw, 2012
Origin of data: EUOREG, University of Warsaw, 2012
© EuroGeographics Association for administrative boundaries

Notes:
INTERREG is designed to stimulate cooperation between member states of the European Union on different levels and is financed under the European Regional Development Fund (ERDF). INTERREG III refers to the third programming period (2000-2006) and INTERREG IV to the fourth programming period (2007-2013).
Interregional cooperation (Strand C of the INTERREG Programme) aims to improve the effectiveness of regional development policies and instruments through large-scale information exchange and sharing of experience (networks). This is financially the smallest strand of the three strands of the INTERREG Programme. The programmes cover all EU Member States.

Under INTERREG IIC and IVC initiative 384 projects were implemented (as of January 2011), that had over four thousand partners.

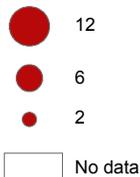
The first of these two maps shows the number of partners from each NUTS 2 region which were involved in INTERREG C inter-regional co-operation projects during the 2000-06 and 2007-13 phases of the programme. It shows a very polycentric pattern, with significant involvement all across Europe. The Baltic States, for example, show a notable level of involvement, given that in population terms they are small countries. The second map shows the spread of lead partners in these same projects. The role of a Lead Partner can be demanding, and requires good administrative practices and leadership skills. The pattern here is still polycentric, but much more skewed towards states who were EU members before 2004.

Map 22 Interreg C III and IV lead partners



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

Number of lead partners in INTERREG IIIC and IVC programmes, situation in January 2011



Regional level: NUTS 2
Source: ESPON Database, EUROREG, University of Warsaw, 2012
Origin of data: EUROREG, University of Warsaw, 2012
© EuroGeographics Association for administrative boundaries

Notes:
INTERREG is designed to stimulate cooperation between member states of the European Union on different levels and is financed under the European Regional Development Fund (ERDF). INTERREG III refers to the third programming period (2000-2006) and INTERREG IV to the fourth programming period (2007-2013).
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Under INTERREG IIIC and IVC initiative 384 projects were implemented (as of January 2011), that had over four thousand partners.

Maps 23 and 24 show the pattern of involvement in INTERREG C, which supports transnational territorial co-operation. They reveal that although there is considerable involvement of partners from all across Europe, the role of Lead Partner is not so often taken by partners from eastern Europe. The picture is similar for INTERREG B projects over the same period. Given this imbalance, and the role that Lead Partners play, there is a risk that projects may be shaped more by the perceived needs of western partners than eastern partners. However, the map of all partners does show that more peripheral regions appear to be relatively more active than those in the core area of Europe.

Example: Territorial integration through co-operation

The Northern Periphery Programme is an example of co-operation contributing to territorial integration, as it increased accessibility through providing advanced information and communication technologies and transport within the programme area. In addition, the programme integrated sparsely populated areas by providing services of general interest to remote and peripheral regions.

Other practical examples of territorial integration include the provision of cross-border healthcare access e.g. cross-border Centres for Public Health on the Greece-Bulgaria border; developing missing cross-border transport links between Finland and Russia; and retaining water in upstream regions to avoid floods in downstream regions e.g. on the Poland-Germany border.

5.5 Using ESPON to build institutional capacity

Territorial governance and territorial co-operation require an evidence base. A key part of institutional capacity for territorial governance is the capacity to access, interpret and use territorial evidence in policy making. Here the ESPON programme itself is a major resource. It offers the possibility to provide a European-wide context for more locally framed and practical co-operation projects. It can also assist in developing and collecting evidence on factors likely to make territorial co-operation a success as a contributor to regional development. ESPON can also be used for benchmarking of regions and cities and for monitoring regional performance.

A number of regional ERDF programmes have been directly supported with tailor-made ESPON evidence and analyses, and a wide range of national and regional stakeholders have engaged in ESPON targeted analysis projects in order to make targeted use of ESPON results for their policy development.

The network of national ESPON Contact Points can contribute to building institutional capacity by supporting the capitalisation of ESPON results in the transnational context.

Examples: Using ESPON to support territorial co-operation

A number of ESPON applied research projects targeted directly territorial co-operation areas. Among these are:

- North West Europe
- Baltic Sea Region
- North Sea Region

ESPON has developed short factsheets for each of the 66 cross-border and transnational territorial co-operation areas, highlighting their territorial advantages and disadvantages in a European perspective. Further evidence packages are elaborated for six co-operation areas:

- Slovakia-Austria
- Alpine Space
- Atlantic Area
- North-West Europe
- North Sea Region
- South Eastern Europe

Eighteen European border and cross-border areas worked with ESPON to use the findings from ESPON research to support decentralised cross-border spatial development planning. Multi-themed territorial analyses were carried out for six cross-border areas:

- The Upper Rhine along the land borders between France, Germany and Switzerland;
- The entire Spanish-French land border (Pyrenees);
- The land border between Greece and Bulgaria;
- An area covering parts of the Northern Finland-Russian land border (Euroregion Karelia);
- Euroregion Pomerania along the borders between Poland, Germany (land border) and Sweden (maritime border); and
- Extremadura/Alentejo straddling the Spain / Portugal border.

Additionally, seven shorter “data fact sheets” were prepared for:

- EUREGIO (EUREGIO)
- Öresundskomiteen (The Öresund Committee)
- Duna-Körös-Maros-Tisza Euroregion (Danube-Kris-Mures-Tisa Euroregion)
- EuRegio Salzburg-Berchtesgadener Land-Traunstein
- Regione Autonoma Friuli Venezia Giulia (Autonomous Region of Friuli Venezia Giulia)
- VšĮ Nemuno euroregiono Marijampolės biuras (PI Nemunas Euroregion Marijampole Bureau)
- Ems Dollart Region.

In addition territorial co-operation areas and issues have been addressed by a wide range of ESPON projects.

5.5.1 Pointers for Policy

European level

- Simple forms of territorial co-operation, like exchanging experience, sharing tools to tackle a common problem or advising each other on how to solve similar problems, seem to yield the best results in relation to building territorial cohesion.
- Institutional capacity is crucial for effective use of ESIF and partly depends on experience, but is also influenced by traditions and cultures of governance in different parts of Europe.
- There is scope for programmes like INTERREG to make better use of ESPON and for them and ESPON to be more closely aligned.

National level

- A network of national ESPON Contact Points can be an important resource in support of the uptake of ESPON territorial evidence at transnational and national level, contributing to building institutional capacity.

Regional and urban level

- The mainstream principles from EU funding programmes should be looked into, particularly partnership working, environmental sustainability, equal opportunities and evaluation and monitoring.
- ESPON should be used to inform project development, benchmark partners, and gain insights and inspiration.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects TERCO, TANGO, SCALES, SURE, USESPON, SMART-IST, TranSMEC, TerrEvi, ULYSSES, North Sea STAR.

6 - Beyond Europe – A neighbourhood perspective

Territorial development in Europe impacts on its neighbouring regions and vice versa. To understand the development in one's own city, region or country, one needs to know what is going on in the surroundings and how that affects the development of one's own area. Today no region, city or town can conduct their development in isolation.

Although the focus of ESPON is on improving the understanding of territorial development and diversity within Europe, various projects and discussions address also Europe's neighbourhood. From this a number of key territorial development opportunities can be seen:

- A growing market, particularly represented by the large cities of the neighbourhood, where the demand for consumer goods and services is likely to be driven by a growing middle class: businesses need to look at the opportunities on a city by city basis, not just by countries.
- A need to improve transport links to growing markets, particularly those in Asia where removal of historic blockages (particularly at border controls and on railway systems) could improve efficiency and save energy.
- The already significant but potentially growing contribution to Europe's energy needs by oil and gas from the neighbourhood. Along with this goes the potential of new pipelines and electricity grids that can help diversify sources and reduce dependency.
- The synergies between an ageing European population, which is also dwindling in eastern EU regions and on the other side of Europe's eastern border, and the youthful and growing population in the southern and south-eastern neighbourhood countries, which goes along with the potential to attract talented human capital from this neighbourhood.
- The expected growth in shipping and in particular in short-sea shipping. This could sustain the development of hub cities and gateways linked to stronger movements of people and goods between the EU and its neighbourhood, with most such centres within the EU being located in otherwise relatively peripheral regions.
- The existing patterns of co-operation and science-informed policy-making across borders as seen, for example in VASAB and the Barents Sea.
- The diversity of the neighbourhood in terms of its economy etc. is a significant strength in terms of the opportunities it opens.

At the same time ESPON findings concerning the European neighbourhood point to a number of territorial development challenges:

- The divides between living standards in the EU countries and countries in north Africa and the Levant. Though these gaps are narrowing, there is also a widening gap between capital cities and remote rural regions in countries within the neighbourhood. Working for territorial cohesion has to be a dynamic and on-going process that looks across borders but also into nation states.
- The increasing pressure on the coasts and the seas that requires transnational maritime spatial planning and proper regulation and enforcement.
- The extreme dependence of some neighbourhood countries' economies on the extraction and sale of oil and gas to Europe at a time when Europe is seeking to move towards more use of its own renewable energy potential. The potential impacts of fracking add to future uncertainty about the dependence of economies on oil and gas, especially if there are concerns about security and costs of energy extraction.

- Climate change which will impact everywhere, but in a particularly adverse manner (drought and worse heat waves) in the Mediterranean neighbourhood. Linked to this is the threat of water shortages.
- Costs of pollution and congestion in the very large cities, with the attendant threats of social conflicts unless greater social inclusion can be achieved.

These are only first glimpses of what can be said about territorial structures and trends in Europe's neighbourhood areas and also the impacts these may have on territorial development opportunities and challenges in Europe. More on this can be found in the ESPON Report on the Paphos seminar held in December 2012.

Further information on issues addressed in this chapter can mainly be found in the reports of the ESPON projects ITAN, TIGER.

ESPON web-tools to support ESIF programmes and actions

Regional development and cohesion has an economic dimension and a social dimension as well as an important environmental dimension. It involves careful weighing and trade-offs between what may be conflicting demands. While territorial strategies and policies normally have territorial boundaries, today it is necessary to look at the wider territorial context and to appreciate the importance and strengths of other places and the connectedness to other nodes and networks, as well as to new markets.

A territorial dimension can aid integration of different sector policies, foster synergies and so deliver the added value necessary in times of constrained resources. Joint economic development through exploring comparative advantages, is likely to provide higher benefits for the regions and cities involved.

ESPON has published a wide range of reports providing new European territorial evidence that can be used in designing and developing projects under the eleven ESIF themes and for future territorial co-operation initiatives. In addition to the reports from each of the research projects there are:

- ESPON Territorial Observations - a publication series, which presents concise policy relevant findings from new ESPON research.
- ESPON Factsheets for territorial co-operation programmes. These can help programmes to better assess their comparative advantages or disadvantages in a European perspective.

Furthermore, ESPON has developed a number of web-tools, which allow everybody to find relevant datasets and maps, or carry out simple territorial analysis:

- ESPON 2013 Database Portal - provides regional information provided by ESPON projects and EUROSTAT.
- ESPON MapFinder - provides access to the most relevant ESPON maps from ESPON projects and reports.
- ESPON HyperAtlas - allows comparison and analysis of a region's relative position at European, national and local scale for a wide range of criteria.
- ESPON Typologies - nine regional typologies for additional analysis of regional data to be considered in the European context.
- ESPON territorial indicators - these can help local and regional authorities to assess their development perspective by comparing the own region with other European regions.
- ESPON TIA – tools and guidelines for territorial impact assessments can help to raise awareness about potential territorial impacts of future policies, directives, programmes and initiatives.

All ESPON reports and web-tools are freely available at www.espon.eu

List of ESPON projects and project partners

Acronym	Project name	Project partners
FOCI	Future Orientations for Cities	Free University of Brussels, Belgium
		Autonomous University of Barcelona, Spain
		Centre for European Regional and Local Studies (EUROREG), Warsaw University, Poland
		National Technical University of Athens, Greece
		Institute of Geography of Lausanne University, Switzerland
		ENPC School, France
		Géographie-cités, France
EDORA	European Development Opportunities in Rural Areas	University of the Highlands and Islands, United Kingdom
		Nordregio - Nordic Center for Spatial Development, Sweden
		University of Newcastle upon Tyne, United Kingdom
		University of Valencia, Spain
		University of Patras, Research Committee, Greece
		The Irish Agriculture and Food Development Authority, Ireland
		University of Gloucestershire, United Kingdom
		University of Ljubljana, Slovenia
		Johann Heinrich von Thünen-Institut (vTI) - Federal Research Institute for Rural Areas, Forestry and Fisheries, Institute of Rural Studies, Germany
		Federal Institute for Less-Favoured and Mountainous Areas, Austria
		Dortmund University of Technology, Germany
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
		Institute of Economics Hungarian Academy of Sciences, Hungary
		Higher Institute of Agronomy, Portugal
		Scottish Agricultural College, United Kingdom
IOM International Organization for Migration / Central European Forum for Migration and Population Research, Poland		
DEMIFER	Demographic and Migratory Flows Affecting European Regions and Cities	Netherlands Interdisciplinary Demographic Institute (NIDI), The Netherlands
		University of Vienna, Austria
		IOM International Organization for Migration / Central European Forum for Migration and Population Research, Poland
		University of Leeds, United Kingdom
		Netherlands Environmental Assessment Agency, The Netherlands
		Nordregio - Nordic Center for Spatial Development, Sweden
		National Research Council (CNR), Italy

Acronym	Project name	Project partners
CLIMATE	Climate Change and Territorial Effects on Regions and Local Economies in Europe	Dortmund University of Technology, Germany
		Geological Survey of Finland, Finland
		Norwegian Institute for Urban and Regional Research, Norway
		University of Newcastle upon Tyne, United Kingdom
		Potsdam Institute for Climate Impact Research, Germany
		Aalto University Foundation, Finland
		Budapest University of Technology and Economics, Department of Environmental Economics, Hungary
		VÁTI Hungarian Nonprofit Limited Liability Company for Regional Development and Town Planning, Hungary
		National Institute for Research and Development in Construction, Urban Planning and Sustainable Spatial Development, Romania
		Agency for the Support of Regional Development Kosice, n.o., Slovakia
		Autonomous University of Barcelona, Spain
		Netherlands Environmental Assessment Agency, The Netherlands
		Swiss Federal Institute WSL, Switzerland
ReRisk	Region at Risk of Energy Poverty	Fundación Tecnalia Research & Innovation, Spain
		Nordregio - Nordic Center for Spatial Development, Sweden
		National Technical University of Athens, Greece
TIPTAP	Territorial Impact Package for Transport and Agricultural Policies	Polytechnics of Milan - DIG, Italy
		University of Newcastle upon Tyne, United Kingdom
		Vrije Universiteit, The Netherlands
ATTREG	The Attractiveness of European Cities and Regions for Residents and Visitors	University 'Rovira i Virgili', Spain
		European Institute for Comparative Urban Research (EURICUR), The Netherlands
		Ca' Foscari Venice University, Italy
		Catholic University of Leuven - Department K.U.Leuven Research & Development, Belgium
		University of Coimbra, Portugal
		Centre for Regional and Tourism Research (CRT), Denmark
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
		University of Ljubljana, Slovenia
		University of the West of England, Bristol (UWE), United Kingdom

Acronym	Project name	Project partners
EU-LUPA	European Land Use Patterns	Fundación Tecnalia Research & Innovation, Spain
		Autonomous University of Barcelona, Spain
		Alterra, The Netherlands
		Nordregio - Nordic Center for Spatial Development, Sweden
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
TERCO	European Territorial Cooperation as a Factor of Growth, Jobs and Quality of Life	Centre for European Regional and Local Studies (EUROREG), Warsaw University, Poland
		European Policies Research Centre, United Kingdom
		Free University of Brussels, Belgium
		University of Joensuu / Karelian Institute, Finland
		University of Thessaly, DPRD, Greece
		Autonomous University of Madrid, Spain
TRACC	Transport Accessibility at regional/ local scale and patterns in Europe	Spiekerman & Wegener Urban and Regional Research (S&W), Germany
		Charles University in Prague, Czech Republic
		RRG Spatial Planning and Geoinformation, Germany
		MCRIT S.L., Spain
		University of Oulu, Department of Geography, Finland
		TRT Transport and Land Use, Italy
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
SGPTD	Secondary Growth Poles and Territorial Development in Europe; Performance, Policies and Prospects	European Institute for Urban Affairs, United Kingdom
		Metropolitan Research Institute, Hungary
		University of Tampere, Finland
GEOSPECS	Geographic Specificities and Development Potentials in Europe	University of Geneva, Switzerland
		Alterra, The Netherlands
		Perth College, United Kingdom
		University of the Aegean - Research Unit, Greece
		Nordregio - Nordic Center for Spatial Development, Sweden
		Louis Lengrand & Associés, France
		CEPS/INSTEAD - Centre for Populations, Poverty and Public Policy Studies, Luxembourg
		Leibniz institute of Ecological and Regional Development, Germany
		National University of Ireland Cork (CMRC), Ireland
		Environmental Agency, Austria
E-Cubed Consultants Ltd, Malta		

Acronym	Project name	Project partners
KIT	Knowledge, Innovation, Territory	Polytechnics of Milan - BEST, Italy
		University of Cagliari - CIREM Section CRENoS, Italy
		Autonomous University of Barcelona, Spain
		London School of Economics - LSE, United Kingdom
		University of Economics in Bratislava, Slovakia
		Cardiff University, United Kingdom
TIGER	Territorial Impact of Globalization for Europe and its Regions	Free University of Brussels, Belgium
		University of Reading, United Kingdom
		French National Centre for Scientific Research, France
		European, American & Intercultural Studies Dpt., Sapienza University of Rome, Italy
		Jönköping International Business School, Sweden
		National Institute of Geophysics, Geodesy and Geography, Bulgaria
ESaTDOR	European Seas and Territorial Development, Opportunities and Risks	University of Liverpool, United Kingdom
		Norwegian Institute for Urban and Regional Research, Norway
		MCRIT S.L., Spain
		University of Malaga – European Topic Centre Spatial Information and Analysis, Spain
		University of Valencia - Institute for Local Development, Spain
		Leibniz Institute for Baltic Sea Research, Germany
		Institute for Environmental Studies, VU University, The Netherlands
		University of Thessaly, Greece
		Constanta Maritime University, Romania
SeGI	Services of General Interest	Royal Institute of Technology (KTH), Sweden
		University of Vienna, Department of Geography and Regional Research, Austria
		Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany
		Centre of Geographical Studies - IGOT-UL, Portugal
		University of Akureyri, Iceland
		Norwegian Institute for Urban and Regional Research, Norway
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
		PlanIdea Knowledge Center Nonprofit Ltd., Hungary
		Academy of Economic Studies of Bucharest - Research Centre for Macroeconomic and Regional Forecasting (PROMAR), Romania
		Navarra de Suelo y Vivienda S.A., Spain
		University of the West of England, Bristol (UWE), United Kingdom

Acronym	Project name	Project partners
ARTS	Assessment of Regional and Territorial Sensitivity	Austrian Institute for Regional Studies and Spatial Planning, Austria
		Polytechnics of Milan - DIG, Italy
		Delft University of Technology, The Netherlands
		Netherlands Environmental Assessment Agency, Netherlands
SIESTA	Spatial Indicators for a "Europe 2020 Strategy" Territorial Analysis	University of Santiago de Compostela, Spain
		French National Centre for Scientific Research, France
		Adam Mickiewicz University in Poznan, Poland
		Mediterranean University of Reggio Calabria, Italy
		Hellenic Open University, Greece
		University of Bucharest, Romania
		University College Dublin, Ireland
MCRIT S.L., Spain		
ET2050	Territorial Scenarios and Visions for Europe	MCRIT S.L., Spain
		TERSYN European Agency Territories and Synergies, France
		Free University of Brussels, Belgium
		Research Centre for Economic and Regional Studies, Hungarian Academy of Sciences, Hungary
		Polytechnics of Milan - BEST, Italy
		IOM International Organization for Migration / Central European Forum for Migration and Population Research, Poland
		Spiekerman & Wegener Urban and Regional Research (S&W), Germany
		Research Institute for Knowledge Systems, Netherlands
		Warsaw School of Economics, Poland
		Nordregio - Nordic Center for Spatial Development, Sweden
		University of Thessaly, Greece
		Institute of Studies for Integration of Systems, Italy
		Ersilia Foundation, Spain
GREECO	Regional Potential for a Greener Economy	Fundación Tecnalia Research & Innovation, Spain
		Nordregio - Nordic Center for Spatial Development, Sweden
		Spiekerman & Wegener Urban and Regional Research (S&W), Germany
		The Regional Environmental Center for Central and Eastern Europe (REC), Hungary
		Roskilde University - Department of Environmental, Social and Spatial Change (ENSPAC), Denmark

Acronym	Project name	Project partners
TANGO	Territorial Approaches to New Governance	Nordregio - Nordic Center for Spatial Development, Sweden
		Delft University of Technology / OTB Research Institute, Netherlands
		Polytechnic of Turin, Italy
		University of Newcastle upon Tyne, United Kingdom
		Research Centre for Economic and Regional Studies, Hungarian Academy of Sciences, Hungary
		University of Ljubljana, Faculty of Civil and Geodetic Engineering, Slovenia
ITAN	European Neighbour Regions	French National Centre for Scientific Research, France
		Free University of Brussels, Belgium
		Nordregio - Nordic Center for Spatial Development, Sweden
		MCRIT S.L., Spain
TOWN	Small and Medium-Sized Towns in their Functional Territorial Context	Catholic University of Leuven - ASRO - Planning & Development Research Group, Belgium
		University of the West of England, Bristol (UWE), United Kingdom
		University 'Rovira i Virgili', Spain
		Charles University in Prague, Czech Republic
		University of Tours, France
TIPSE	Territorial Dimension of Poverty and Social Exclusion in Europe	Nordregio - Nordic Center for Spatial Development, Sweden
		University of the Highlands and Islands, United Kingdom
		University of Newcastle upon Tyne, United Kingdom
		Research Centre for Economic and Regional Studies, Hungarian Academy of Sciences, Hungary
		ILS Research Institute for Regional and Urban Development gGmbH, Germany
		National Centre for Social Research, Greece
		James Hutton Institute, United Kingdom
ECR2	Territorial Impact of the Financial and Economic Crisis	Cardiff University, United Kingdom
		Aristotle University of Thessaloniki, Greece
		Research and Technology Transfer Centre Leipzig, Germany
		University of Gdansk, Poland
		University of Tartu, Estonia
		University of Manchester, United Kingdom
		Experian plc, United Kingdom
CAEE	The Case for Agglomeration Economies in Europe	University of Manchester, United Kingdom
		National Institute for Regional and Spatial Analysis, National University of Ireland, Maynooth, Ireland
		Technical University of Catalonia, Spain
		Advanced National School of Humanities and Social Sciences, France

Acronym	Project name	Project partners
EUROISLANDS	The Development of the Islands – European Islands and Cohesion Policy	University of the Aegean - Research Unit, Greece
		Centre for Regional and Tourism Research (CRT), Denmark
		University of Malta, Malta
METROBORDER	Cross-border polycentric metropolitan regions	University of Luxembourg, Luxembourg
		Swiss Federal Institute of Technology Zurich, Network City and Landscape, Planning of Landscape and Urban Systems (ETHZ, NSL - PLUS), Switzerland
		CEPS/INSTEAD - Centre for Populations, Poverty and Public Policy Studies, Luxembourg
		Free University of Brussels, Belgium
SURE	Success for Convergence Regions' Economies	Interdepartmental Research Centre L.U.P.T. - Territorial Town Planning Laboratory - University of Naples "Federico II", Italy
		University of Basel - Urban and Regional Studies, Institute of Geography, Department of Environmental Sciences, Switzerland
PURR	Potential of Rural Regions	Norwegian Institute for Urban and Regional Research, Norway
		London South Bank University, United Kingdom
		Vidzeme University College, Latvia
SS-LR	Spatial Scenarios: New Tools for Local-Regional Territories	Polytechnics of Milan - DIG, Italy
		Autonomous University of Barcelona, Spain
TransMEC	Transnational Support Method for European Cooperation	blue! Advancing european projects, Germany
TeDi	Territorial Diversity in Europe	Nordregio - Nordic Center for Spatial Development, Sweden
		Panteion University - Regional Development Institute, Greece
		CEFIDEC - Training and Innovation Center for Development in the Carpathians, Romania
		University of Geneva - Geography Department, Switzerland
EATIA	ESPON and Territorial Impact Assessment	University of Liverpool - School of Environmental Sciences, United Kingdom
		University of Oporto, Faculty of Engineering, Portugal
		University of Ljubljana, Biotechnical Faculty, Slovenia
		Delft University of Technology, The Netherlands

Acronym	Project name	Project partners
ULYSSES	Using Applied Research Results from ESPON as a Yardstick for Cross-border Spatial Development Planning	Fundación Tecnalia Research & Innovation, Spain
		Karlsruhe Institute of Technology (KIT), Institute of Urban and Regional Planning, Germany
		Democritus University of Thrace, Greece
		University of Aveiro, Portugal
		Lappeenranta University of Technology, Finland
RISE	Identifying and Exchanging Best Practices in Developing Regional Integrated Strategies in Europe	University of Birmingham - Centre for Urban and Regional Studies (CURS), United Kingdom
		Delft University of Technology / OTB Research Institute, Netherlands
		University of Copenhagen - Forest & Landscape, Denmark (FLD), Denmark
		University of Umeå - Centre for Regional Science (CERUM), Sweden
		Nordregio - Nordic Center for Spatial Development, Sweden
POLYCE	Metropolisation and Polycentric Development in Central Europe: Evidence Based Strategic Options	Vienna University of Technology - Centre of Regional Science, Austria
		University of Ljubljana, Faculty of Civil and Geodetic Engineering, Slovenia
		Slovak University of Technology, Bratislava, Slovakia
		University of Szeged, Hungary
		Czech Technical University in Prague, Faculty of Architecture, Czech Republic
		University in Prague, Faculty of Science, Czech Republic
		CEPS/INSTEAD - Centre for Populations, Poverty and Public Policy Studies, Luxembourg
		Polytechnics of Milan, Italy
TPM	Territorial Performance Monitoring	Free University of Brussels, Belgium
		Territorial Studies Institute, Spain
		Navarra de Suelo y Vivienda S.A., Spain
		National Institute for Regional and Spatial Analysis, National University of Ireland, Maynooth, Ireland
		ILS Research Institute for Regional and Urban Development gGmbH, Germany
		Catholic University of Leuven - Department of Architecture, Urbanism and Planning - Unit Planning & Development, Belgium
BEST METROPOLISES	Best development conditions in European metropolises: Paris, Berlin and Warsaw	(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
		Institute for Regional Development and Structural Planning (IRS), Germany
		Paris Region Planning and Development Agency, France
		Nordregio - Nordic Center for Spatial Development, Sweden
		Spiekerman & Wegener Urban and Regional Research (S&W), Germany

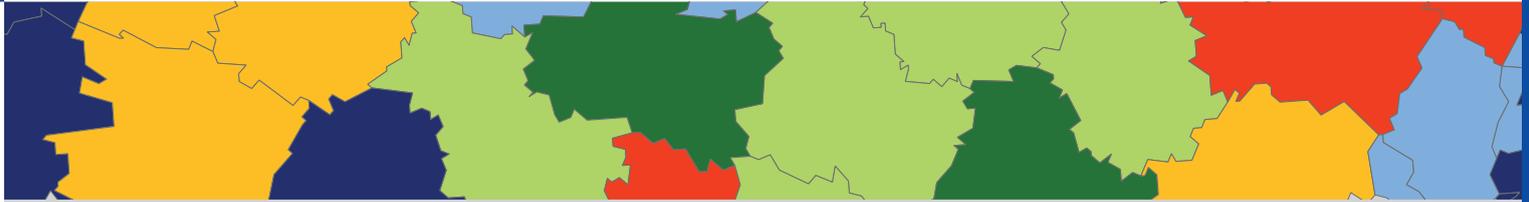
Acronym	Project name	Project partners
SEMIGRA	Selective Migration and Unbalanced Sex Ratio in Rural Regions	Leibniz Institute for Regional Geography, Germany
		Royal Institute of Technology (KTH), Sweden
		University of Oulu, Kajaani University Consortium AIKOPA Adult and Continuing Education, Regional Research Group, Finland
		Research Centre for Economic and Regional Studies, Hungarian Academy of Sciences, Hungary
		University of Miskolc, Faculty of Economics, Hungary
SMART-IST	Smart Institutions for Territorial Development	Polytechnics of Milan - DiAP, Italy
		Polytechnic of Turin, Italy
		Institute for Social Research, Italy
		Lyon Normal Superior School, France
		Autonomous University of Barcelona, Spain
ADES	Airports as Drivers of Economic Success in Peripheral Regions	University of Genova, Department of Sciences for Architecture, Italy
		BAK Basel Economics AG, Switzerland
		Knowledge and Innovation Intermediaries Consulting Ltd., Greece
		Jyväskylä University School of Business and Economics, Finland
AMCER	Advanced Monitoring and Coordination of EU R&D Policies at Regional Level	Innova Europe, Belgium
		Technopolis, France
		Magnetic Resonance Center, Italy
		Taso Developments, Spain
		University of Vaasa, Finland
		Leibniz University Hannover, Germany
		University of Sheffield, United Kingdom
		Deusto Foundation, Spain
		Chamber of Commerce and Industry of Paris ESIEE Paris, France
University of Lugano, Switzerland		
GROSEE	Growth Poles in South-East Europe	University of Bucharest, Romania
		National Technical University of Athens, Greece
		Union of Architects of Bulgaria, Bulgaria
		"Alexandru Ioan Cuza" University, Romania
KITCASP	Key Indicators for Territorial Cohesion and Spatial Planning	National University of Ireland Maynooth, Ireland
		London South Bank University, United Kingdom
		Technical University of Catalonia, Spain
		University of Akureyri, Iceland
		Vidzeme University of Applied Sciences, Latvia
LP3LP	Landscape Policy for the 3 Countries Park	RWTH Aachen University, Department of Landscape Architecture, Germany
		Wageningen University, Landscape Architecture Group, The Netherlands
		Free University of Brussels, Belgium

Acronym	Project name	Project partners
LIVELAND	Liveable Landscapes: A Key Value for Sustainable Territorial Development	Fundación Tecnalia Research & Innovation, Spain
		Alterra, The Netherlands
		HHP Hage+Hoppenstedt Partner, Germany
		Navarra de Suelo y Vivienda, S.A, Spain
		Nordregio - Nordic Center for Spatial Development, Sweden
		The Regional Environmental Center for Central and Eastern Europe, Country office Ljubljana, Slovenia
NSS	North Sea Star – North Sea Spreading Transnational Results	University of Liverpool, United Kingdom
		Delft University of Technology, The Netherlands
		Norwegian Institute for Urban and Regional Research, Norway
		Leibniz Institute for Baltic Sea Research, Germany
		University of Oldenburg, Germany
		University of Malaga – European Topic Centre on Spatial Information and Analysis, Spain
ESPON Database 2013	ESPON Database 2013	University Paris Diderot - Paris 7, France
		University Joseph Fourier Grenoble 1, France
		Autonomous University of Barcelona, Spain
		Free University of Brussels, Belgium
		“Alexandru Ioan Cuza” University, Romania
		French National Centre for Scientific Research, France
		University of Luxembourg, Luxembourg
INTERCO	Indicators of territorial cohesion	University of Geneva, Switzerland
		National Technical University of Athens, Greece
		Nordregio - Nordic Center for Spatial Development, Sweden
M4D	Multi Dimensional Database Design and Development	University Paris Diderot - Paris 7, France
		National Centre for Geocomputation, Ireland
		University Joseph Fourier Grenoble 1, France
		Autonomous University of Barcelona, Spain
		French National Centre for Scientific Research, France
ETMS	European Territorial Monitoring System	MCRIT S.L., Spain
		Autonomous University of Barcelona, Spain
		University of Geneva, Department of Geography and Environment, Switzerland
		Nordregio - Nordic Center for Spatial Development, Sweden
		GISAT s.r.o., Czech Republic
ESPON ATLAS	ESPON ATLAS - Mapping European Territorial Structures and Dynamics	Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany
		Spiekerman & Wegener Urban and Regional Research (S&W), Germany
		VÁTI Hungarian Nonprofit Limited Liability Company for Regional Development and Town Planning, Hungary

Acronym	Project name	Project partners
ESPON DeTeC	Detecting Territorial Potential and Challenges	Nordregio - Nordic Center for Spatial Development, Sweden
		Austrian Institute for Regional Studies and Spatial Planning, Austria
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
TerriEvi	ESPON Scientific Platform and Tools Project 2013/3/7 Territorial Evidence Packs for Structural Funds Programmes (2012-2013)	Metis GmbH, Austria
		t33, Italy
		Faculty of Geography and Geology Iasi, Romania
RIMAP	Design and Development of Rich Internet Online Mapping Tool	AIDICO, Spain
BSR-TeMo	Territorial Monitoring for the Baltic Sea Region	Nordregio - Nordic Center for Spatial Development, Sweden
		University of Gdansk, Poland
		Aalto University Foundation, Finland
		RRG Spatial Planning and Geoinformation, Germany
		(IGSO) S. Leszczycki Institute of Geography and Spatial Organization - Polish Academy of Sciences, Poland
		BGI Consulting Ltd., Lithuania
		Geomedia LLC, Estonia
CityBench	ESPON CityBench for benchmarking European Urban Zones	Geodan Holding, The Netherlands
		University Jaume I, Spain
NORBA	Nordic-Baltic Dialogues on transnational perspectives in spatial planning	University of Eastern Finland / Karelian Institute, Finland
		University of Akureyri, Iceland
		Norwegian Institute for Urban and Regional Research, Norway
		Royal Institute of Technology (KTH), Sweden
		University of Tartu, Estonia
		State Regional Development Agency, Latvia

Acronym	Project name	Project partners
INTERSTRAT	ESPON in Integrated Territorial Strategies	Royal Town Planning Institute, United Kingdom
		Centre for European Regional and Local Studies (EUROREG), Warsaw University, Poland
		Free University of Brussels, Belgium
		Ministry of regional development and public works, Bulgaria
		Panteion University of Social and Political Sciences, Greece
		National Institute for Regional and Spatial Analysis, National University of Ireland, Maynooth, Ireland
		University of Rome "Tor Vergata" - Dept. DET, Italy
		"Alexandru Ioan Cuza" University, Romania
		Ministry of the Environment and Spatial Planning, Slovenia
CADEC	Capitalisation and Dissemination of ESPON Concepts	University Paris Diderot - Paris 7, France
		Netherlands Environmental Assessment Agency, Netherlands
		Spanish Observatory for Sustainability, Spain
		Free University of Brussels, Belgium
		"Alexandru Ioan Cuza" University, Romania
		Institute of urban design and spatial planning URBION, Slovakia
		State Regional Development Agency, Latvia
		Ministry of regional development and public works, Bulgaria
		University of Rome "Tor Vergata" - Dept. DET, Italy
SCALES	Breakdown and capitalisation of ESPON results on different scales	Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany
		University of Luxembourg, Luxembourg
		Federal Office for Spatial Development, Switzerland
		Austrian Conference on Spatial Planning, Austria
		VÁTI Hungarian Nonprofit Limited Liability Company for Regional Development and Town Planning, Hungary
		Office for National Economic Planning (ONEP), Hungary
ESPONTrain	Establishment of a transnational ESPON training programme to stimulate interest to ESPON2013 knowledge	Panteion University of Social and Political Sciences, Greece
		University of Rome "Tor Vergata" - Dept. DET, Italy
		Institute for Spatial Development, Czech Republic
		"Alexandru Ioan Cuza" University, Romania
		Ministry of regional development and public works, Bulgaria
		Ministry of Infrastructure and Spatial Planning, Slovenia
		University of Tartu, Estonia
		Research Institute of Territorial Planning of Vilnius Gediminas Technical University, Lithuania
		Town Planning and Housing Department, Cyprus
MEPA-Malta Environment and Planning Authority, Malta		

Acronym	Project name	Project partners
ENECON	ESPON Evidence in a North European Context	Norwegian Institute for Urban and Regional Research, Norway
		University of Eastern Finland / Karelian Institute, Finland
		University of Akureyri, Iceland
		Royal Institute of Technology (KTH), Sweden
		University of Tartu, Estonia
		State Regional Development Agency, Latvia
		Research Institute of Territorial Planning of Vilnius Gediminas Technical University, Lithuania
		Danish Centre for Spatial Planning, Denmark
USESPON	Use ESPON	Royal Town Planning Institute, United Kingdom
		University Paris Diderot - Paris 7, France
		Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany
		Panteion University of Social and Political Sciences, Greece
		Centre for European Regional and Local Studies (EUROREG), Warsaw University, Poland
		University of Luxembourg, Luxembourg



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The ESPON 2013 Programme supports policy development in relation to the aims of Europe 2020. It provides comparable information, evidence, analysis, and scenarios on territorial dynamics, which reveal territorial capital and development potentials of regions, cities and larger territories.

This Synthesis Report presents findings highlighting the importance of the territorial dimension for each of the 11 investment priorities of the European Structural and Investment Funds (ESIF).

The purpose of the report is to communicate important findings of the ESPON 2013 Programme, and to nourish policy development for different territories in Europe through a dialogue among policy makers, practitioners and researchers. As part of this dialogue you are welcome to engage with ESPON via www.espon.eu.