



First ESPON 2013 Synthesis Report  
ESPON Results by summer 2010

# New Evidence on Smart, Sustainable and Inclusive Territories



The ESPON 2013 Programme

Coordination Unit  
70, rue de Luxembourg  
Esch-sur-Alzette  
LUXEMBOURG  
Phone: +352 545580700  
Fax: +352 545580701  
Email: [info@espon.eu](mailto:info@espon.eu)

The present publication was processed by the ESPON CU, supported by a drafting team involving Kai Böhme, Cliff Hague, Sabine Zillmer and Peter Schön. The final editing of the publication was done by the ESPON CU based on comments from the ESPON Monitoring Committee.

The publication is based on reports from ESPON project available by summer 2010. These reports were prepared by transnational project groups of researchers and experts implementing Applied Research projects and Targeted Analyses for ESPON. A list of the project is available at the end of this publication.

Information on the ESPON programme and projects, the complete reports and partners involved can be found on [www.espon.eu](http://www.espon.eu)

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

ISBN: 978-2-9599669-5-8

The report is the first Synthesis Report published by the ESPON 2013 Programme.

© The ESPON 2013 Programme and the partners of the projects mentioned

The ESPON Programme is managed by the Ministry of Sustainable Development and Infrastructure Department for Spatial Planning and Development, Grand Duchy of Luxembourg.

Reproduction is authorised provided the sources is acknowledged and a copy is sent to the ESPON Coordination Unit.

Printed in Luxembourg, October 2010

Printed on paper produced environmentally friendly

Layout and graphic design by bee media + technology, Austria

#### Disclaimer

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

The mission of the ESPON 2013 Programme is to support policy development in relation to EU Cohesion Policy. It does this by providing evidence and knowledge about European territorial structures, trends, perspectives and policy impacts which enable comparisons amongst regions and cities and which supports the understanding of European territorial diversity.

The current policy debate at European level is focusing on three main avenues:

- The implementation of the new Treaty Aim of Territorial Cohesion.
- The contribution of Cohesion Policy measures to the Europe 2020 Strategy of Smart, Sustainable and Inclusive Growth within Europe.
- The content of an EU Cohesion Policy after 2013.

The challenge for ESPON is to support evidence based policies in European regions, cities and larger territories that reflect the current dynamics and build on the diversity of territorial potentials embedded in each region and city.

The ESPON 2013 Programme meets this challenge by commissioning applied research on themes defined by policy makers in the field, and then disseminating the main results and key messages for place-based policy processes.

The European perspective upon national, regional and local development is becoming an intrinsic component of smart, sustainable and inclusive growth - strategic goals that can only be met through the active contributions of all European regions and cities.

In a swiftly changing world, place-based policies need to include a larger territorial context in order to understand and harvest the existing development potentials and so improve European competitiveness.

One important option for added value is to see opportunities to grow stronger through territorial cooperation, through networking or in concrete cooperation strategies with neighbouring regions and cities building on comparative advantages and together creating higher critical mass.

This ESPON report presents a synthesis of results from the first major Applied Research projects undertaken by the ESPON 2013 Programme. It is also garnished with examples from Targeted Analyses supporting the use of results by Member States, regions and cities. The first research themes have focused on the functionality of major urban agglomerations, the diversity of development options for rural regions, demography and migratory flows, the risks for regional economies of energy price fluctuations, territorial impacts of climate change and progress in techniques in support of territorial impact assessment of EU sector policies.

The report is the first in a series of three ESPON Synthesis Reports which all aim to communicate major ESPON results on numerous ongoing research themes relevant for integrated, place-based policy considerations.

You are invited to use the ESPON results, data and maps available which can all be accessed for free on [www.espon.eu](http://www.espon.eu).

# Table of contents

	<b>Executive summary</b>	<b>page 6</b>
	Navigating Europe's position in a changing world	page 7
	Polycentric Europe: smart, connected places	page 7
	Diverse Europe: the cohesion challenge	page 8
	Sustainable Europe	page 9
	Working together for competitiveness and cohesion	page 10
<b>1</b>	<b>Europe in a challenging world</b>	<b>page 11</b>
1.1	How has the crisis affected unemployment across Europe?	page 19
1.2	The global context of competition	page 20
1.3	Territorial Cohesion	page 29
1.4	The territorial dimension in Europe 2020	page 30
<b>2</b>	<b>Polycentric Europe: smart, connected places</b>	<b>page 31</b>
2.2	Gateways, polycentric development and accessibility	page 36
2.3	Connected rural regions	page 40
2.4	Cross-border links	page 46
2.5	Territorial impact assessments for smart place development	page 48
2.6	European macro-regions – paths for synergies?	page 52
<b>3</b>	<b>Diverse Europe: cohesion challenges</b>	<b>page 55</b>
3.1	Territorial differences in wealth	page 56
3.2	Demographic challenges	page 60
3.3	Energy challenges	page 67
3.4	Geographical challenges	page 70
3.5	Challenged areas turning into success stories	page 76
3.6	Future perspectives – labour force scenarios	page 77
<b>4</b>	<b>Sustainable Europe</b>	<b>page 82</b>
4.1	Europe's ecological footprint	page 83
4.2	Climate change and the regional economies	page 87
4.3	Urban sprawl and high energy-use commuting	page 90
4.4	Landscapes, culture and biodiversity as economic assets	page 95
4.5	Recovery supported by renewable energy	page 96
<b>5</b>	<b>Use and debate ESPON results</b>	<b>page 102</b>
5.1	Diversity – a strength if used effectively	page 103
5.2	ESPON results can support place-based governance	page 104
5.3	Next steps in the ESPON 2013 Programme	page 105
	<b>List of ESPON Projects and Acronyms</b>	<b>page 106</b>

## List of maps

Map 1.	Illustrating the Multi-Level Approach: The example of population growth, 2001-2006 (I)	page	15
Map 1.	Illustrating the Multi-Level Approach: The example of population growth, 2001-2006 (II)	page	16
Map 2.	Unemployment in Europe, March 2010	page	21
Map 3.	Typologies of countries' profiles for trade exports, 1967-2006	page	23
Map 4.	Networks of multinational firms by Metropolitan Area, 1986-2006	page	27
Map 5.	Balance of internal and external subsidiaries by Functional Urban Area, 1986-2006	page	28
Map 6.	World City Network, 2008	page	32
Map 7.	Centrality within NBIC networks, 1986-2006	page	35
Map 8.	City network for one-day business trips, 2009	page	37
Map 9.	GDP per capita versus potential multimodal accessibility, 2006	page	39
Map 10.	Disparity levels between Metropolises and the surrounding region, 1995-2004	page	42
Map 11.	Transport policy options and their implications for emissions, 2005	page	51
Map 12.	Discontinuities of GDP per capita, 2008	page	57
Map 13.	Typology of the demographic status, 2005	page	61
Map 14.	Migration flows, 2006-2007	page	64
Map 15.	Impact of migration on population in 2050	page	66
Map 16.	Proportion of employment in industries with high energy purchases, 2005	page	69
Map 17.	Access to urban nodes - Case Study on areas with geographical challenges	page	71
Map 18.	Structural types of rural areas, 2006	page	75
Map 19.	Change in labour force 2005-2050	page	79
Map 20.	Change in Working Age Population, 2000-2007	page	80
Map 21.	Ecological footprint, 2006	page	84
Map 22.	Human Development Index, 2007	page	85
Map 23.	Climate change in Europe, 1961-2100	page	91
Map 24.	Workers commuting to another NUTS 2 region, 2005	page	94
Map 25.	Solar Energy Output	page	97
Map 26.	Wind Power Potential, 2005	page	99

The decade up to the financial and economic crisis saw better balance and more polycentric development at European scale. The financial and economic crises however slowed the general progress and growth and impacted on the economy of nations, their regions and cities asymmetrically and with different force.

How can place based actions contribute to Europe's recovery from the financial and economic crisis that struck in 2008? What concrete measures by regions and cities can support the Europe 2020 Strategy and a smart, sustainable and inclusive growth path? How can the EU aim of Territorial Cohesion become an inherent result of this process?

Place-based policy making to realise the territorial potentials of European regions and their diversity has a key part to play. A stronger focus on the territorial dimension can improve the coordination and efficiency of public policies and private investments. Territorially targeted measures make use of Europe's diversity to strengthen economic growth and reduce imbalances in territorial development and enhance social cohesion. Recovery and growth strategies need knowledge and understanding of the territorial structures and dynamics shaping development across Europe, benchmarking the position of regions and cities.

ESPON meets this need through applied research projects analysing development across 31 countries. ESPON also drills down into greater detail through a related series of "targeted analyses" which are custom-built by trans-national groups of stakeholders. The new research results and their concrete use point the way to integrated action for territorial development at every scale from local to European, underlining their potentially positive contributions to economic recovery and the Europe 2020 strategy as well as to Territorial Cohesion and a balanced and polycentric Europe.

Headline findings are:

- Europe's position in the world is changing: there is not only the economic challenge from Asia and the Americas; other challenges with a global dimension include an aging labour force and demographic change, energy supply and demand, and the possible impacts of climate change.
- Europe's competitiveness depends greatly on its global cities and metropolitan regions, where enterprises can benefit from agglomeration economies and networks linking global market places.
- Connectivity is important. Liveable and smart places have good connections and an attractive environment. Metropolitan regions need good accessibility to each other and to global markets. The number and quality of connections to hubs and urban centres are important preconditions for efficient functional integration of all parts of all parts of the EU.
- Europe has many smart rural regions that are well connected to the global economy, accessible to urban centres and have turned local assets into development opportunities.
- Accessibility of regions and cities is increasing through infrastructure investments which benefit the economic competitiveness of the se places. Europe's high-speed rail network could play a greater role in the development of a polycentric Europe: still too often national networks do not look sufficiently ambitious beyond borders.
- Vulnerability to climate change impacts is a concern especially in regions where adaptation and mitigation strategies are not sufficiently in place or effectively enforced.
- Good governance and territorial co-operation are vital at every geographical scale, including partnerships at the level of city-regions and larger macro-regions, as well as across policy sectors.

## Navigating Europe's position in a changing world

Europe, its member states and their regions, is more exposed to global shocks and international competition than at any time before. As the world becomes more interdependent this trend will continue and shape policy thinking in all sectors and at all geographical scales. On a number of baseline measures and trends – population, total GDP, oil and gas reserves, land area – Europe is small, somewhat fragmented and less strongly positioned compared with the dynamism of Asia, the strengths of North America, resource-rich Russia and Africa, and the ascendancy of South America.

- Europe's share of the world's economy is declining: 50 years ago, the six founding members of the European Community had a share of about 21% in the world economy. Today's 27 EU members together have about the same share. The 31 countries in ESPON have a share that is estimated to be about 27% (2008 figures).
- Europe's population is expected to peak soon, and then decline by as much as 40 million by 2050 on some scenarios, while the population growth continues in countries in the Neighbourhood such as Turkey and those in North Africa and offers potentials for the European labour market.
- Climate change is likely to impact on the development of Europe through hotter summers and water shortage in the south, greater flood risks and snow melting in winter sports areas, sea level rise and increasing damage through winter storms in the north – according to currently prevailing models.
- Increasing global competition, an aging and more diverse population, and rising energy costs could put pressure on the European social model.

Europe is however still a continent rich in economic terms, with economic strength and specialisation and corresponding human resources and skills. Also the European territory, with a dense network of places built through history, has many competitive advantages vis a vis other continents. Understanding and unleashing territorial development opportunities can stimulate further a smart, sustainable and inclusive growth trajectory in Europe. A place-based approach, integrating sector contributions, can unlock development potentials in all regions and cities, and increase territorial cohesion, at the European scale, and within nations as well as at regional and local levels.

## Polycentric Europe: smart, connected places

Europe is one of three global regions with significant concentration of enterprises of worldwide importance. Europe and many of its regions are strongly integrated into the global economy e.g. via locations of multinational firms. There is, however, a considerable territorial concentration when it comes to the location of the decision-making powers and ownership relations. Within Europe, London and Paris stand out in the sheer number of subsidiaries that are controlled from there. However, international firms in other metropolitan regions and even quite small cities also exercise substantial control over subsidiaries in the rest of the world. Examples of such headquarters cities are Geneva, Basel, Trieste, Arnhem, Lausanne, Clermont-Ferrand, Munich, Frankfurt, Edinburgh or Stockholm. In contrast, companies in the city regions in Ireland, Wales, Northern England, Portugal and eastern Europe are to a large extent controlled by headquarters in other countries.

Nanotechnology, biotechnology, information technology and cognitive science (usually abbreviated to NBIC) are expected to drive the next innovation wave by 2020. The largest capital cities and economic centres are the key hubs in these innovation networks. Other urban regions such as Barcelona, Glasgow, Edinburgh, Gothenburg, Hannover, Stuttgart, Munich or Milan have the potential to become more specialised nodes. The research capacity of higher education institutions and private companies in these locations is a vital asset for recovery through smart connected places. The challenge is to ensure that Europe's research and enterprise networks are connected to global knowledge networks, yet also motors for jobs and growth in their own regional economies.

Places that can be reached for day-return business trips have an economic advantage. The network of urban areas where one-day business trips are possible shows a clear European core-periphery pattern. For most metropolitan areas, air is the prime transport mode for inter-metropolitan links, though high-speed rail connections play an important role for links between cities within a country. At present, rail connections are less attractive for cross-border contacts, because of the prevailing national orientation of networks.

There are also innovative rural regions that profit from their global connectivity. Innovative and high-tech companies with worldwide trading and links can be found in rural areas in Finland, Norway, southern Germany and other parts of Europe. Also the natural resource base of rural areas allows them to be players in global markets, linking directly to clients around the world. Regions in the Nordic Countries seem to overcome their peripheral location by capitalising on strengths in relation to ICT, research, educational and environmental opportunities. The diversity and economic potential of rural Europe can however be even best utilised in an overarching rural development approach embracing the strengths of all sectors present. This means moving beyond the traditional view of the countryside as a place mainly defined by agriculture.

### **Diverse Europe: the cohesion challenge**

Traditionally Europe has been divided by national boundaries. Overcoming internal and external borders creates new economic opportunities. 23% of cities in the ESPON space have the potential to build cross-border metropolitan regions by linking up with cities on the other side of the border which are within commuting distance. These regions are mainly concentrated along borders stretching from the Benelux countries to Northern Italy, but also along those situated between Slovenia, Hungary, Slovakia and Poland.

Seizing territorial development potentials requires cooperation between different stakeholders. Transnational and macro-regional development strategies that bring together stakeholders from different countries and sectors are being used as one way forward in the Baltic Sea Region and Danube Area. By encouraging the development of smart and connected places such co-operation contributes to regional growth and to the overall development and competitiveness of Europe in a globalised world.

There remain major differences between east and west in Europe. Scenarios up to 2050 show many regions, especially rural regions in Eastern Europe, facing significant problems related to their shrinking labour force and aging population. It will be increasingly difficult to sustain services of general interest in such regions unless new ways of provision can be developed. While Europe is aging and its population figures are expected to peak soon, Turkey and the neighbouring countries south of the Mediterranean Sea show opposite demographic trends. They have a young population which is expected to increase substantially over the coming decades. These diverging demographic trends affect employment structures and the foundation of our social systems, and they will pose new questions about immigration and cooperation across and beyond European borders.

At a very local level, accessibility to the nearest urban centre, good secondary networks and levels of service provision are important development factors. The Treaty on the Functioning of the EU (art. 174) mentions among others that some islands, mountainous and peripheral regions need particular attention. These types of regions actually comprise very different territories. For example, in the Alps there are major urban hubs as well as small mountainous villages with very poor access to basic services; the spectrum of European islands stretches from island states with a broad range of functions and services to islands with high dependence on tourism and poor connections to the mainland. Place-based policy making can make better use of the unique internal territorial diversity of such regions by applying a tailor-made mix of policies. However, some of these types of regions which are linked to territorial cohesion are characterised mainly by smallness and remoteness. Consequently they cannot easily gain the benefits of economies of scale, as limited accessibility restricts the size of internal markets.

Better understanding of the potential territorial impact of policies is vitally important for efficiency and cohesion. For example, even though currently planned improvements to transport networks will further enhance accessibility within Europe, serious congestion problems are likely by 2030, especially in the traditional core area of Europe. At the same time, improvements to internal accessibility in the eastern Europe are probably necessary to spread development benefits more widely.

Territorial impact assessment is an important evaluation tool for place-based policy making. Territorial impacts of EU sector policies show how far and where such policies contribute to delivery of territorial cohesion and economic development. At local or regional level, better coordinated EU sector policies have the potential to increase the competitiveness of an area. Techniques for doing territorial impact assessments being developed and tested within ESPON are a step towards supporting synergies and greater policy coherence.

### **Sustainable Europe**

External shocks are moderating thinking about regional economies. While competitiveness remains vitally important, new concepts are emerging: energy security, adaptation to climate change, regional resilience and capacity to bounce back.

A huge amount of Europe's fixed capital is invested in urban agglomerations. Such settlements are mainly on a coast or on the banks of great rivers that carry runoff from across a wide, often transnational water system. Climate change makes these urban areas in the north and west vulnerable to increased flood risks that could be extremely damaging in economic disruption, but also social and environmental terms. Urban areas are also at risk during spells of intense heat. There is a strong urban dimension to climate vulnerability, and a significant climate change dimension to Europe's future economic competitiveness.

Similarly in rural territories climate change would impact of traditional economic sectors such as agriculture, forestry and tourism. Some mountain areas may need to diversify away from snow-based winter tourism. Changes in biodiversity may also be expected and call for a new profiling of a region's natural and ecological assets. A longer growing season in some regions could enhance agricultural productivity and create opportunities for new crops and regional products and processing industries, such as wine-making in more northern regions than before. Along some coasts consequences of rising sea levels may raise concern and need preventive action.

Currently, energy policies are primarily shaped by national governments acting mainly in isolation from one another, and with little regard to regional variations in need or potential. Many of the areas with most to contribute to a resource efficient Europe, one of Europe 2020's Flagship Initiatives, have a peripheral location, and have often been seen by European and national policy-makers as places that are lagging compared to the core. Better regional knowledge and maps of untapped energy reserves are needed as a basis for developing longer-term plans. The "energy vulnerability" of regional economies however varies significantly across Europe. The main factors are the degree of energy efficiency in regional industries and the level of energy efficiency in the local housing sector.

To achieve a resource efficient Europe, integrated action is needed not just at the EU level, but also across macro-regions, and at national, regional and local level too. Europe's "green agenda" needs to be tuned to local specificities and its implementation must work with regional realities.

Well-intentioned EU policies can have unintended effects on regional assets related to landscapes, biodiversity and identity. For example, one unanticipated outcome of the Common Agricultural Policy has been a reduction in landscape diversity in several regions. These include northern regions in the Iberian Peninsula and, to lesser extent, southern ones also; the central and southern Adriatic coast in Italy, plus Calabria and Sicily; Thessaly and Kentriki Makedonia in Greece, as well as in many regions in south-eastern and central Poland.

Regions and cities need to be proactive towards external shocks and in delivering in relation to a greener economic development. Territorial analysis can underpin and inform a mindset of ensuring security for the economy and the citizens. It can help policy makers to take resilient decisions and create a policy mix that is right for the place. Territorial analysis implies “think global, act local and integrated” in the spirit of sustainable development. Such an approach informs business as well as public bodies.

### **Working together for competitiveness and cohesion**

Public policy makers at different administrative levels take decisions on the location of public activity. Many policy decisions also indirectly influence location decisions in the private sector. This makes a place-based approach important at all levels of government that seek to encourage business growth and attract new investment and at the same time create liveable places. Public policy with a territorial perspective can support many important factors of production. Communications infrastructure is an obvious example, whether it involves a local road improvement or international connectivity through a hub airport. Labour markets, skills and skill gaps have a territorial dimension. The quality of the regional and local environment is a crucial consideration for sectors such as health or tourism. Security of premises and other assets from the damaging effects of extreme weather events is another concern of businesses and citizens that is influenced by place-based public actions.

A territorial development strategy that is clear in its messages to investors as well as to local stakeholders can reduce uncertainty and risk and be part of the process of restoring business confidence and creating attractive places. However, such strategies are only useful if they are implemented effectively. For this, capability is needed at regional and local level. Such capability is currently not evenly spread across the ESPON space. Territorial cooperation can help spread know-how and share good practice. Regions good at governance and partnership are probably best placed in the process of recovery.

Today more than ever, regional and local strategies require an evidence base, key indicators and benchmarking against similar European territories. Territorial insights provided by ESPON can be important points of departure for stakeholders from the local to the national level, and in the private sector as well as in the public sector, to assess development potentials as well as challenges.

Last but not least, ESPON invites everybody to look at the project reports on which this ESPON report is based. They are available at [www.espon.eu](http://www.espon.eu). You are encouraged to use the material for your own work, to deepen and further develop it by adding detailed information about your own area, or discuss it with the ESPON community at one of the regular public events.