

Draft ESPON Atlas 2013

European Territorial Structures and Dynamics

Impressum

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

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2. Economic structures and global challenges

In a globalised world, Europe is facing a situation in which in a long-term perspective its GDP is increasing, but its share in the world economy is decreasing due to strong economies emerging such as China, India or Brazil. Economic performance is a major issue for strategic policy development for Europe and for its cities and regions contributing to the overall economic performance.

In the year 2000, the European Union has set in its Lisbon Agenda the strategic goal “of becoming the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion”. Regardless the fact that the original goals set for 2010 were not fully met, also due to the global economic downturn starting in 2007, the objectives of the Lisbon Strategy remain important for Europe and its regions.

The Europe 2020 Strategy adopted by the European Council in 2010 sets out a vision of Europe’s economy for the 21st century. The strategy builds on the Lisbon Agenda, but is based on a broader set of priorities and objectives. The priorities tackle different growth aspects:

- Smart Growth: developing an economy based on knowledge and innovation
- Sustainable Growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive Growth: fostering a high-employment economy delivering social and territorial cohesion.

Europe 2020 as such is not territorial. The development of territorial thinking and approaches is taken up in the Territorial Agendas of the European Union, the first decided by responsible Ministers from all EU Member States in 2007. The Territorial Agenda 2020 adopted in 2011 even states „that the objectives of the EU defined in the Europe 2020 Strategy for smart, sustainable and inclusive growth can only be achieved if the territorial dimension of the strategy is taken into

account, as the development opportunities of the different regions vary.“ Six territorial priorities to contribute to the successful implementation of the Europe 2020 Strategy were defined; one of these is to ensure global competitiveness of regions based on strong local economies.

The Fifth Report on Economic, Social and Territorial Cohesion gives evidence that regional disparities in the European Union are decreasing. But it states also that more developed regions are more competitive, innovation is one of the major keys for this. The 7th Progress Report on Economic, Social and Territorial Cohesion assesses how regions and cities can contribute to smart, sustainable and inclusive growth and Europe 2020 headline targets in the context of cohesion policies. The report shows that cities and regions are faced with different combinations of development problems and growth potentials. This is one of the main reasons cohesion policy uses an integrated approach that can be adjusted to local needs and opportunities. The 8th Progress Report on Economic, Social and Territorial Cohesion highlights the crisis-induced changes that will affect the context and priorities of the new programmes financed by the European Structural and Investment Funds.

Regions and cities play a major role in contributing to the fulfilment of the economic strategies and territorial agendas. The policy documents mostly have a clear implicit or explicit territorial dimension where the diversity of dynamics and potentials of each region and city will define their contribution. Subsequently, monitoring of the territorial aspects related to the strategic goals is as essential as ever.

This theme of the ESPON Atlas, „Economic structures and global challenges“ addresses primarily the territorial variety of hard economic factors and performances. So, the focus is on the elements of the Lisbon Agenda and the smart growth priority of the Europe 2020 Strategy.

Regional Gross Domestic Product (GDP)



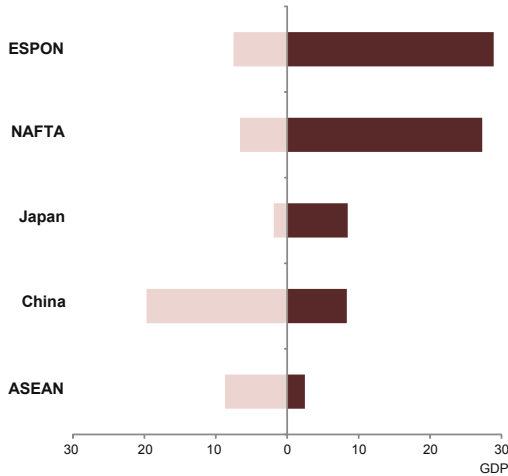
Europe and its regions on the global stage

18 % of the world GDP

was produced within the EU-27 area by 7% of the world population in 2010. In 1950 the figures for the same geographical ensemble amounted to respectively 15% and 28%. This decline is predicted to continue in the next years.

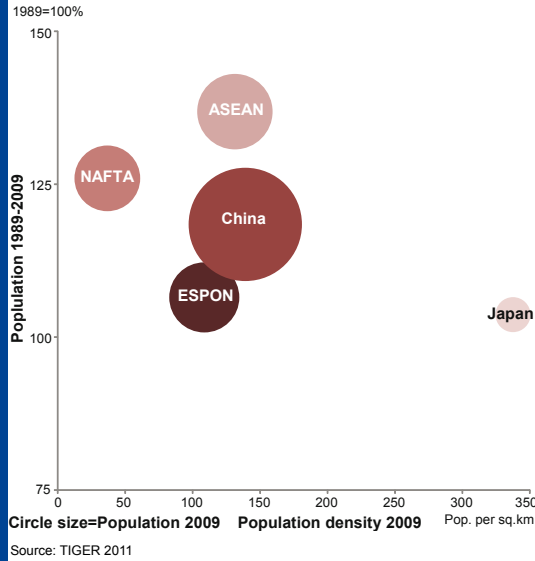
ESPON compared to world

Weigh of world regions by GDP and population, 2009



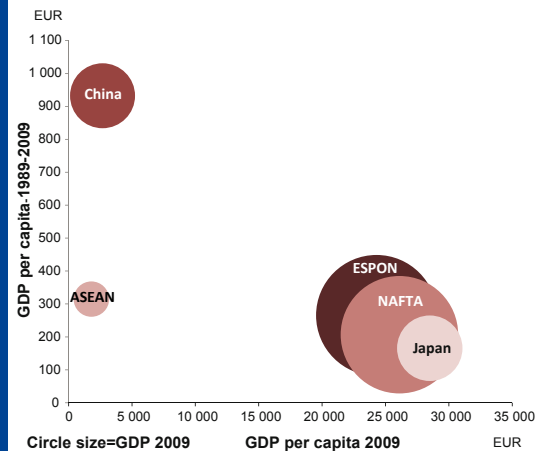
Source: TIGER 2011

Population, 2009



Source: TIGER 2011

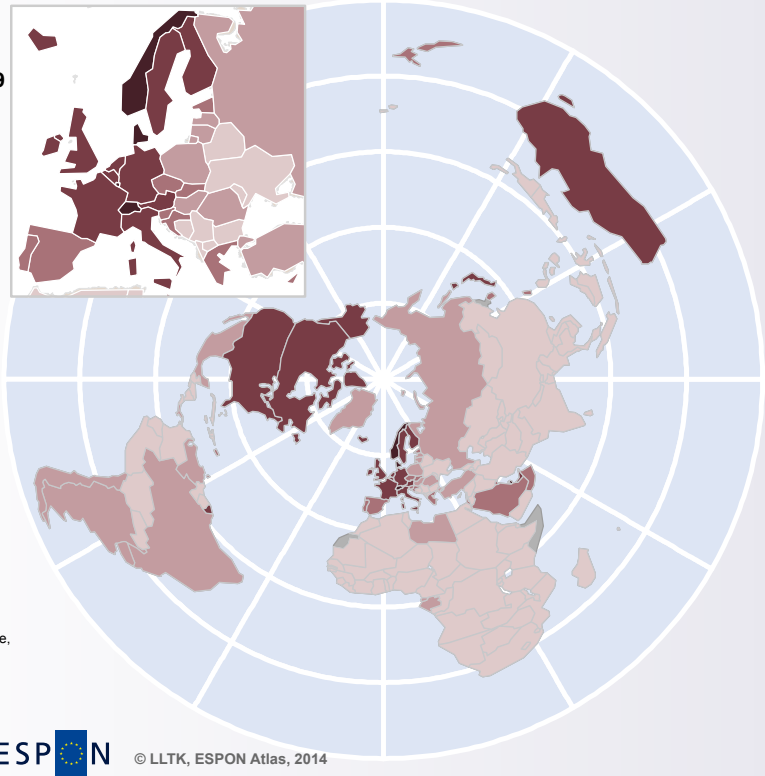
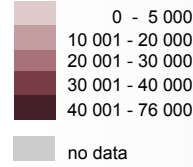
Economy, 2009



Source: ESPON TIGER, 2013

Economic development

GDP per capita, 2009 (EUR)



Regional level: NUTS
Source: ESPON TIGER, 2011
Origin of data: ESPON Database, World Bank
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In the strategic policy documents of the EU, globalization is identified as one of the four main challenges facing European regions in the future. Globalisation has been defined as a growing interdependence between the different territories of the world. However, it should not be understood as undirected interconnections of all territories across the world. Indeed, naive, early readings of globalisation announced the 'death of geography', notably focusing on the potential locational impacts of new communication technologies. ESPON analysis - following many others - demonstrates the inaccuracy of this reading of globalisation. ESPON project - through the analysis of financial, trade, human and knowledge flows - highlights how distance and agglomeration economies have become even more central.

Globalisation is seen as a very positive phenomenon for Europe. The way Europe will benefit from globalisation is clearly associated with its openness. According to the EU2020 Strategy all instruments of external economic policy need to be deployed to foster European growth through our participation in open and fair markets worldwide. Furthermore in the Strategy it is emphasized on the one hand that a part of the growth that Europe needs to generate over the next decade will need to come from the emerging economies as their middle classes develop and import goods and services in which the European Union has a comparative advantage. On the other hand the biggest trading bloc in the world, the EU prospers by being open to the world and paying close attention to what other developed or emerging economies are doing to anticipate or adapt to future trends.

Globalisation depicts the role of states, regions and cities as a decisive factor in the global economy.

The most direct expressions of globalisation are the increase or decrease of GDP. In this sense GDP per capita is very often used as a competitiveness indicator. Thus the most competitive areas are North America, European countries (ESPON space), Australia, Japan, and some major countries in the Middle East. However it is clear that long-term evolution of this indicator reflects wider contrast.

In the last two decades China demonstrated the most impressive economic growth in the world, while developed countries such as Japan, the USA, or Western Europe demonstrated only moderate growth or almost stagnation. Apart from this consideration, traditionally competitive regions still owns the largest share of global production; however major changes are already on the horizon.

Orientation of enterprises is a basic concept in the analysis of globalisation effects of business dynamics

Foreign subsidiaries in FUAs reveal the hegemony of London to attract foreign companies. The second city in this rank, Paris only reaches one quarter of the number of London's foreign subsidiaries. This system of international subsidiaries is particularly complex and multi-scale: Europe /World, Western Europe/ Eastern Europe, exchanges between European countries and inside each country. The balance and the connection between all these levels are the condition of the harmonized development of competitiveness

of European cities. De facto, Northern America is by far the most important region for Europe, especially when firms, services and foreign direct investments are considered. In contrast, the influence of Asian subsidiaries is comparatively lower in Europe; however a growing tendency is foreseen.

Globalisation is characterized by increasing exchanges across economies of the globe and by a growing integration of these economies. Since the end of the nineties, trade as a share of world GDP has reached unprecedented levels.

There are several drivers to the growth of trade of goods and services. The transnational firms, which are the main actors of the integration of value chains at global level, play a central role in the growth. The intra-firm trade is estimated at 30% of total world trade. The other important factor is that the regional integration has largely developed economic exchanges between regional economies through the creation of Custom Union or Free Trade Area. The liberalization of trade is a major driver of trade growth as well. Finally, the new communication technologies as well as the diminishing cost of transports have of course also allowed the development of trade.

Globalisation goes parallel with changes in the world economic geography including the trade of goods and services. The main feature is the global shift from the US, the EU and Japan to Eastern Asia, first of all China. ESPON researchers analysed both the position of Europe in this global shift in trade of goods and services and the territorial diversity by highlighting trends at national level.

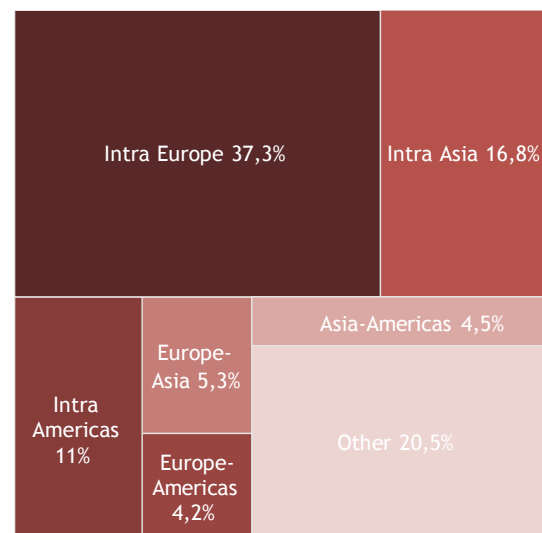
The share of Europe in the world trade seems relatively stable on the long run, at first glance. High level of intra-European trade is the most significant catalyser of this precarious role. All European countries are making at least 60% of their trade with the ESPON space. In line with this, the integration of the European space has been very high in the last decades, the intra-trade is accounting for around 2/3 of the total European trade. However, after decades of growing integration, the signs of relapse have turned up.

Excluding the above mentioned aspect, a significant decline of Europe's role in the world trade becomes visible. That regular from the sixties to the recent period. This loss in position is in line with the general decline in Europe in global stage, especially in population and production. An unfavourable phenomenon is that the already weak influence in the most growing areas (e.g. Southern and Eastern Asia) is also declining. Europe's weigh of trade in Africa and surrounding countries is particularly significant, however in North America and Asia this role is far less dominant. At global scale this and other shifting processes become visible in world economy. The "old core countries" of Europe, North America and Japan are starting to lose their importance, meanwhile Asia, Especially China is growing.

Concerning the openness to extra-ESPON regions – as an excellent indicator representing a country's position in the world – the most typical is the already developed European area such as the Benelux countries, Southern Germany, Switzerland, and other peripheral areas as Ireland and Finland. The new member countries from Southern and Eastern Europe play minor

Trade in the world

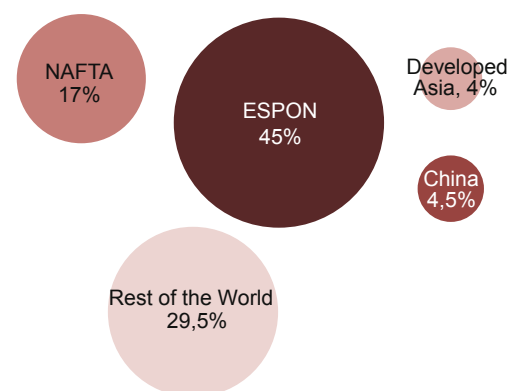
Trade flows between world regions, 2007



as a share of total World trade

Source: ESPON TIGER, 2011

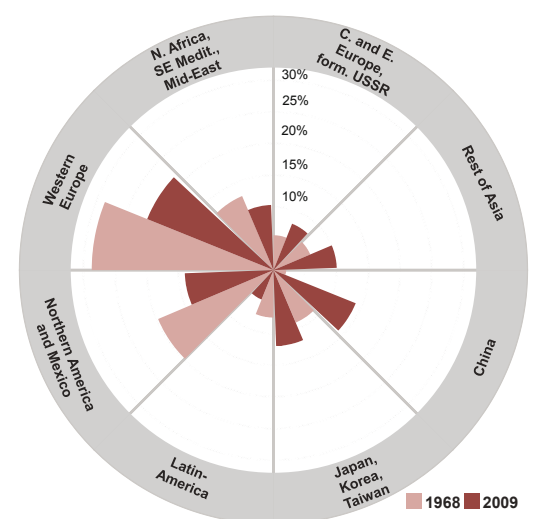
World regions in trade of services, 2010



as a share of total World trade

Source: ESPON TIGER, 2011

Centres of world trade, 1968-2009

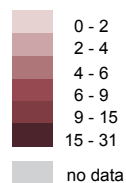


as a share of total World trade

Source: ESPON TIGER, 2011

Openness of European regions

Openness rate 2007 - 2009
Extra EU Exports / GDP



Regional level: NUTS 2,1,0 (2006)
Source: ESPON TIGER, 2011
Origin of data: Eurostat, national institutes, own calculation
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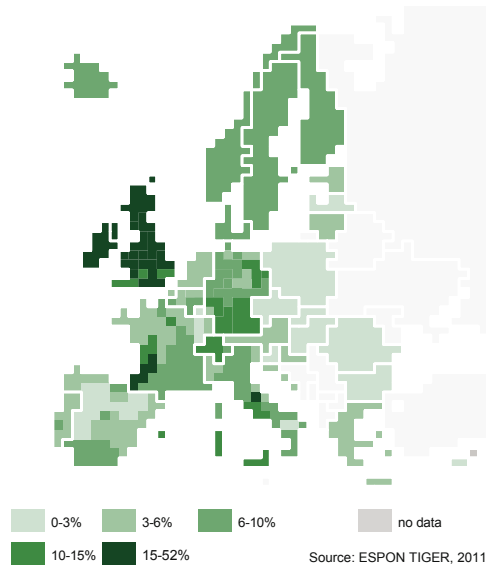
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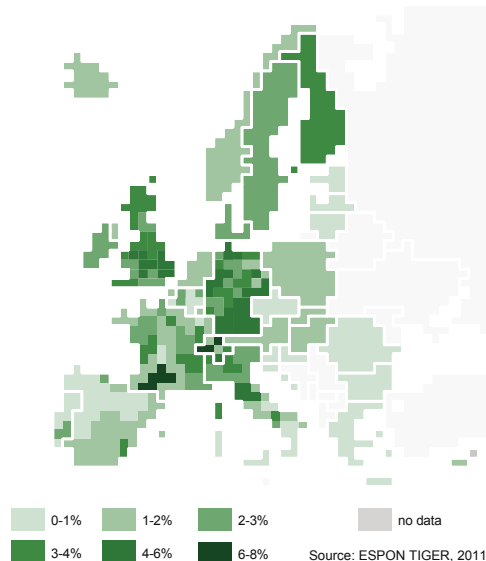
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Trade of Europe

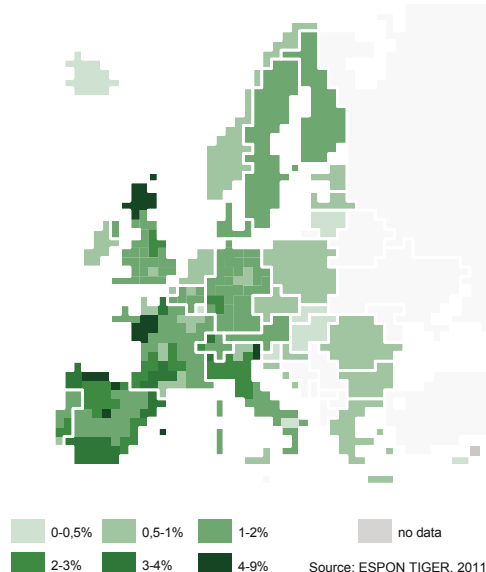
North America



China

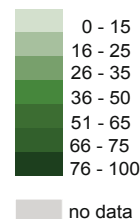


Central and South America



Europe in the trade of countries

Weight of ESPON (%)



Regional level: NUTS 0
Source: ESPON TIGER, 2011
Origin of data: ESPON Database,
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role, and have less weight in extra-ESPON trade. In these countries the aspects of trade are much more focused on internal Europe markets. Despite these processes Europe as a whole still remains the most important trade area in the world, and also a very integrated one.

Europe is strongly affected by global processes and has increased its links with the rest of the world in all types of flows. Europe is a major actor in the global economy. In all types of flows, Europe is the first or second world region in importance:

- it concentrates around 6% of the world population;
- accounts for 20% of inter-regional air connections;
- for 22% of interregional trade of goods and
- 27% of inter-regional trade of services;
- for 31% of interregional in/out flows of FDI;
- 21% of inter-regional migrations;
- 23% of inter-regional student flows.

However, this stronger integration to the global economy impacts the European territories very differently, because they participate with different levels of intensity and have a differentiated capacity to resist the increasing competitive pressure or to take new opportunities relying on the access to new markets.

Europe remains a prosperous area still at the top in the international division of labour, due to its specialization in both medium and high technological goods and knowledge-intensive services as well as to the concentration of top level functions

in global value. However the European decline is evident and will continue in the next decade, whatever the types of relations considered. The decreasing weight of Europe in the world goes hand in hand with the shrinkage of its influence in most parts of the world.

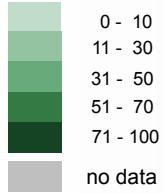
Europe's influence is more and more limited to its neighbours. Hence, it can be defined a functional Europe that goes beyond the ESPON space to include neighbouring countries from the east (former USSR), south-east (Turkey) and south (northern Africa). The functional weight of Europe in the world certainly supports the EU as a global political actor. This results in an active diplomacy signing treaties all over the world, and increasingly with the neighbourhood. Europe is still attractive and remains the main origin of inwards FDI. Northern America is by far the most important region for Europe and the links mainly concern economic relations, especially those related to firms. The neighbourhood regions are also of high importance for Europe. Those areas have strong relations with Europe in human and transportation flows, and to a lesser extent in trade of goods, but they have a lower importance in most other economic relations.

Eastern Asia distinguishes itself by more intense relations of trade in goods and services as well as FDI.

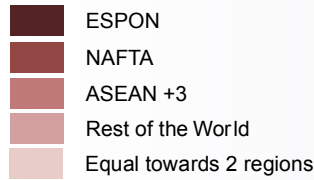
Synthesizing the situation, Europe has become more and more coherent over the time but at the same time more and more limited to its traditional borders. In the same time, Europe's influence has been more restricted to the European neighbourhood, and within the neighbourhood, a shift reveals from Southern and South eastern to eastern neighbourhood after the fall of communism.

World FDI flows

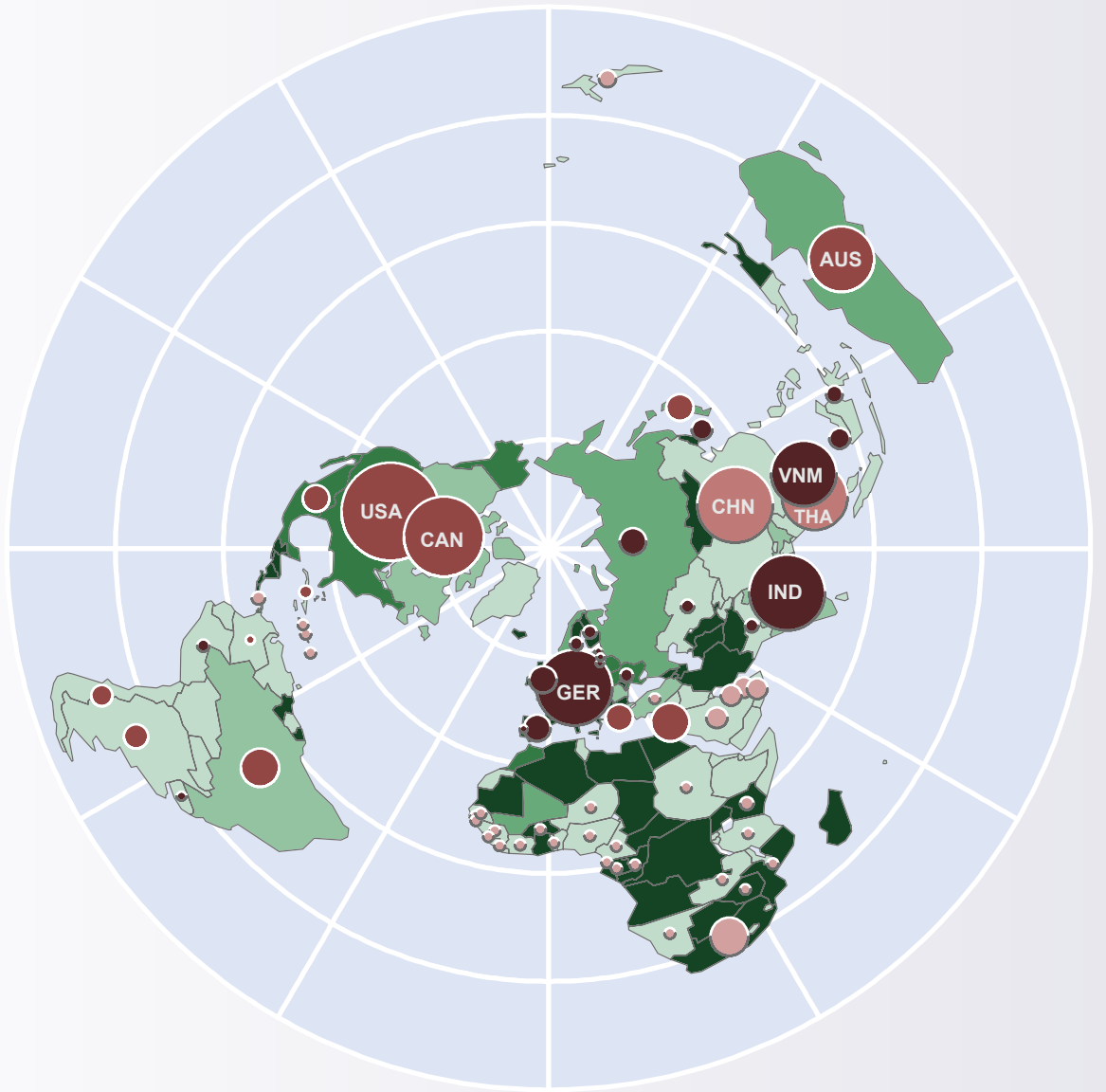
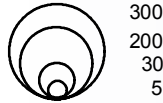
Share of FDI from ESPON (%)



Main destination of the firms to list their shares abroad



Numer of active issuers (headquarters per country)



Regional level: NUTS 0
 Source: ESPON TIGER, 2011
 Origin of data: ESPON Database
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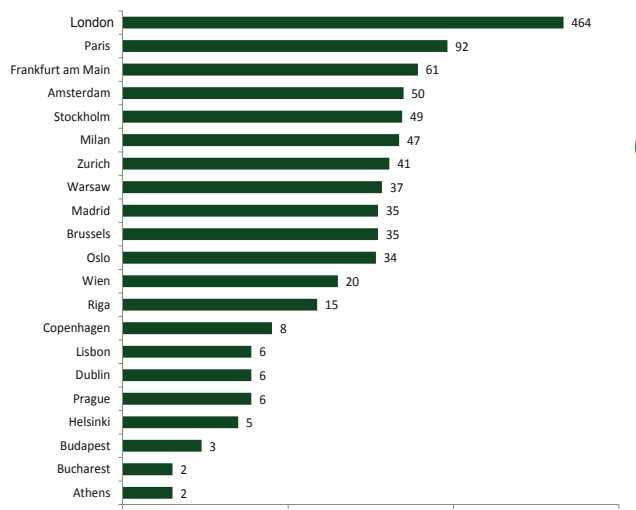


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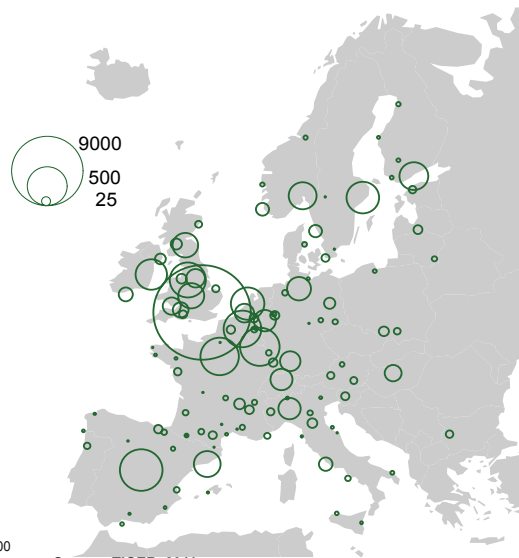
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Foreign issuers in Stockmarkets



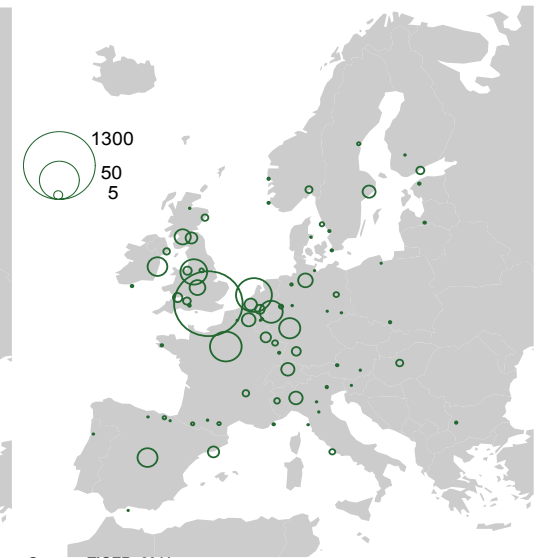
Source: TIGER, 2011

North American subsidiaries in Europe



Source: TIGER, 2011

Asian subsidiaries in Europe



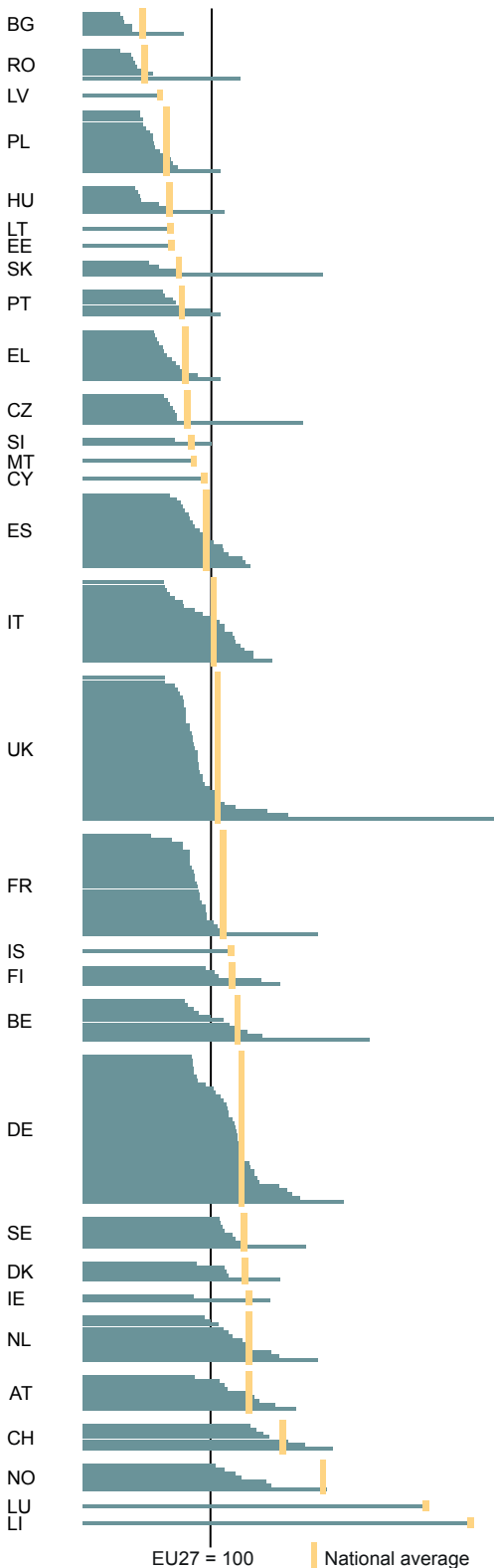
Source: TIGER, 2011

Regional economic performance

26,190 Euro

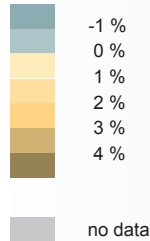
was the average GDP per inhabitant of the ESPON space in the year 2011.

GDP per capita



GDP growth

Real GDP growth rate annual average 2001-2011



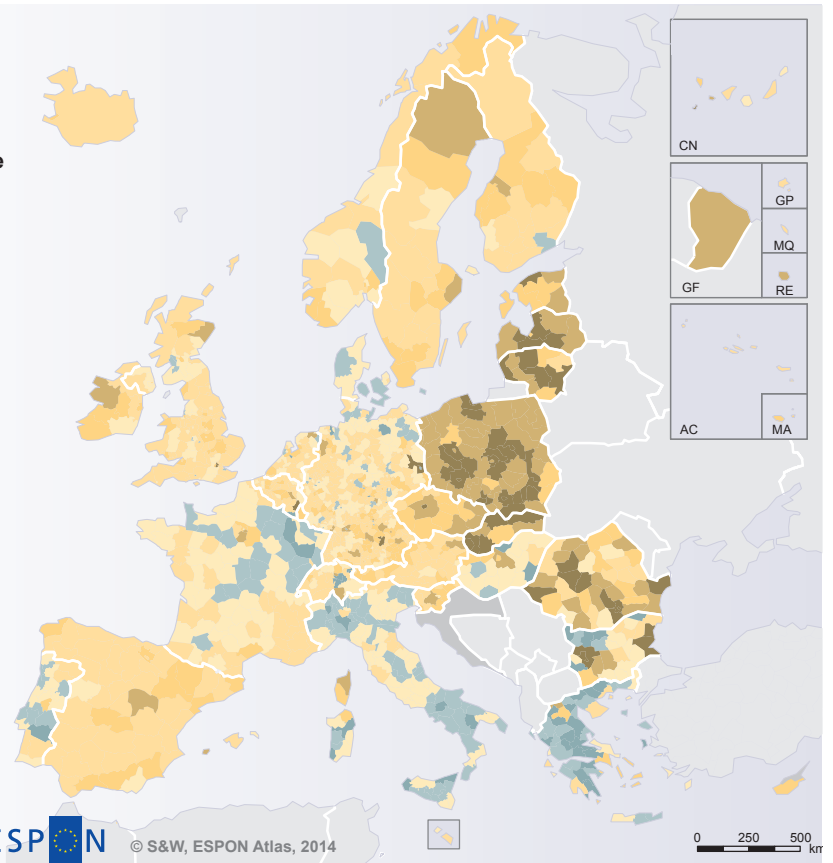
Regional level: NUTS 3 (2010)
Origin of data: Eurostat, 2014
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The standard indicator to measure economic performance is Gross Domestic Product (GDP). It reflects the market value of all final goods and services produced within an area in a given time. To reflect the different price levels in different countries, GDP is often converted to Purchasing Power Standard (PPS).

Economic performance between countries and between regions differs very much in terms of GDP per capita. At the national scale the variation is between less than 50 percent of the EU27 average GDP per capita in Bulgaria and Romania and more than 150 percent of the average in Luxembourg and three non-EU countries of the ESPON space. Remarkable differences do exist within nearly all countries. In many cases this is the gap between rural regions and the good performing capital region, a phenomenon that is most striking in several east European countries. In all countries of western Europe except Luxembourg, there are regions that are clearly underperforming. All regions of the four non-EU countries of the ESPON space have higher GDP per inhabitant than the EU27 average.

The recent economic crises has had a tremendous impact on long-term real GDP growth. Over a period of ten years, most regions in Greece, several regions in Italy, France and Portugal, and some in Germany, Denmark, Hungary and Bulgaria had a reduction in economic output due to losses in the last years. However, annual average real GDP growth rates in other regions are clearly positive. Most remarkably are many regions in EU12 that have an average real GDP increase of three, four or even more percent per year during

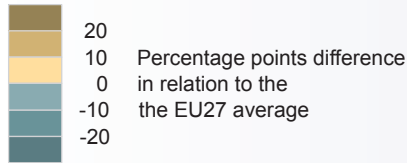
that decade. In most countries there are profound differences of several percentage points yearly.

In consequence, regions moved their relative position compared to the EU average of GDP per capita. Most remarkable gains of more than 20 percentage points occurred despite the hits of the crises in the Baltic States and a few other regions in Eastern Europe. In general, all regions of EU12 improved their relative position, a clear indication of territorial cohesion. Western Europe sees two very different kind of regions, relative winners and relative losers.

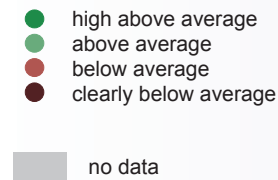
ESPON has established a composite benchmark index analysis of the economic Lisbon performance. The index includes 7 of the 14 so-called Lisbon indicators covering the five domains of employment, innovation and research, economic reform, social cohesion, the environment as well as general economic background. The Lisbon performance index basically shows the capability of individual European regions in improving their economic competitiveness related to the objectives. The ESPON space clearly has regions that are better equipped than others in terms of economic Lisbon performance, and different potential exists. High performing regions have a much higher share of total European GDP than their population share. However, lowest Lisbon performing regions are catching up. Higher regions are divided in two groups, one is keeping its position, the other one is slightly loosing. Stimulating improvements in the competitiveness of underperforming regions and places may support a better balanced territory at regional, national and/or European scale.

Lisbon performance and regional economic development

GDP per capita, 2001-2011 in Purchasing Power Standard (PPS)



Composite Lisbon performance

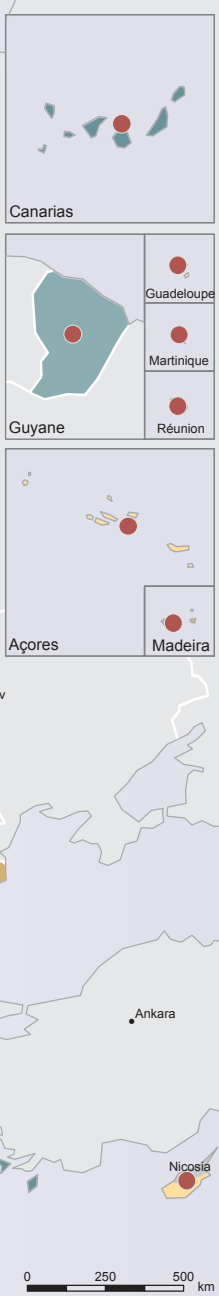


Regional level: NUTS2 (2010)
 Source: ESPON Territorial Observation 3, 2010
 Origin of data: Eurofutures Finland, 2009, Eurostat, 2014
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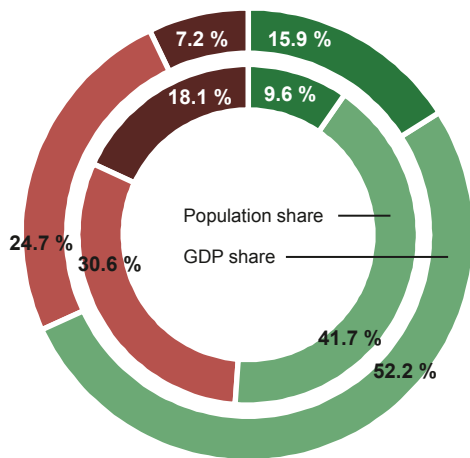
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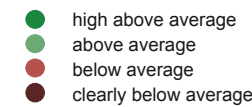
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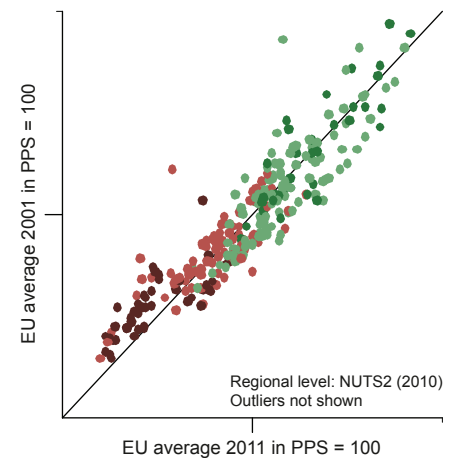
GDP and population by composite Lisbon performance



Composite Lisbon performance



Regional GDP per capita and composite Lisbon performance



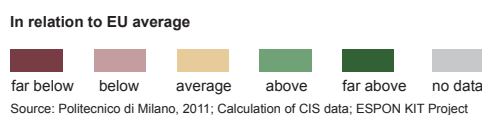
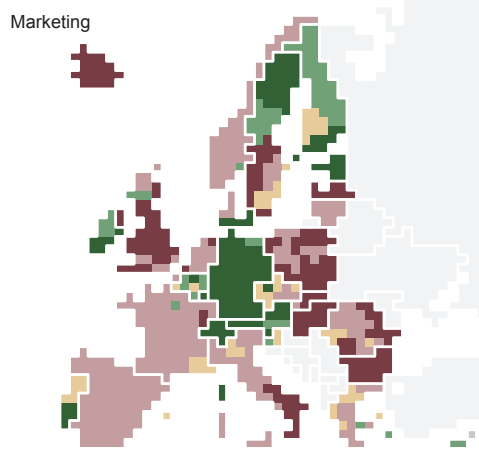
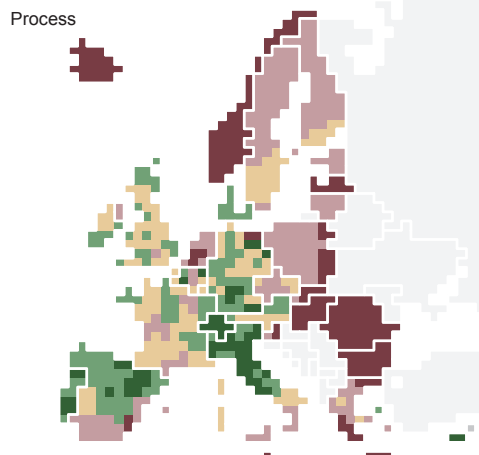
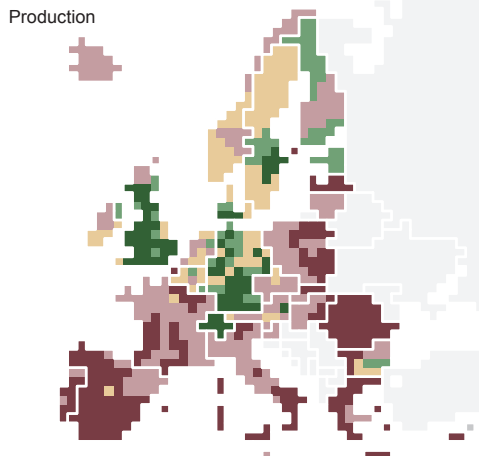
Source: ESPON Territorial Observation 3, 2010
 Origin of data: Eurofutures Finland, 2009, Eurostat, 2014

Territorial patterns of innovation

2.3 million researchers

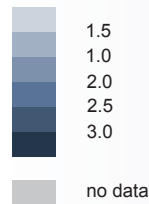
have been engaged 2009 in the EU in the conception or creation of knowledge and products.

Orientation of innovation



Expenditure on Research and Development

Gross domestic expenditure on R&D in % of gross domestic product, 2009

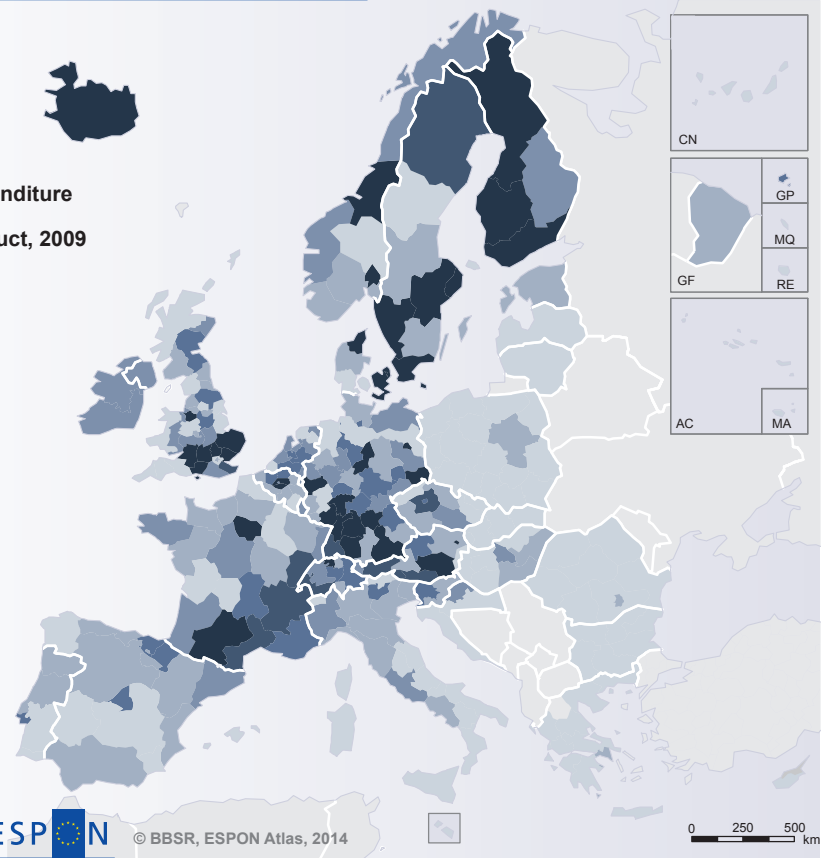


Regional level: NUTS 2, 2006
Source: ESPON database, 2013
Origin of data: EUROSTAT
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Knowledge and innovation are recognized to be the strategic assets for “smart growth” in Europe. The identification of regional specificities in patterns of innovation is essential to build targeted normative strategies for policy goals.

The geography of innovation is complex and the capacity to turn knowledge and innovation into regional growth is different among regions. The orientation of regional innovation shows distinct hotspots related to production, processes and marketing. Three main territorial patterns of innovation could be identified.

At first, there are strong knowledge producing regions, which are whether science based or more applied science oriented. Their endogenous innovation takes place in scientific networks. The local conditions are present to support the creation of knowledge, the local diffusion, the transformation into innovation and the widespread local adoption.

Then come the regions specialised in a smart technological application or smart and creative diversification. They have high product innovation rates and high creativity to translate external basic and applied science knowledge into innovation.

Last but not least you find the imitative innovation regions with in fact low knowledge and innovation intensity. There, creative actors look for lacking knowledge in the external world to adapt already existing innovation.

Translation into policy means for the first group

of regions to foster R&D incentives to attract inventors and high skilled labour. For the second group incentives for creative applications through co-operative research activities or search for new technological solutions will suit best. For the last group of regions, the support of the development of creative projects with multinational corporations might foster the economic base.

The notion of these territorial patterns of innovation makes it clear that knowledge can not be equated with innovation in any case. A territorial relevant aspect to be considered in the policy efforts of making Europe the most competitive knowledge-based economy by raising investments in R&D to increase to the share of R&D expenditures to 3% of the GDP as stated in the EU2020 strategy.

In fact, R&D is more efficiently used in those regions that considerably invest in R&D, which are science-based, applied science oriented or, to a lower extent, oriented to smart technological application area. Regions with a low level of R&D spending will have only little benefit from further investments in this respect. Needed here are investments in intangible assets.

Territorial patterns and orientation of innovation

Regional types of innovation

- European science-based area
- Applied science area
- Smart technological application area
- Smart and creative diversification area
- Creative imitation area
- no data

Orientation of innovation

high above average related to

- Product innovation
- Process innovation
- Marketing and/or organizational innovation

Regional level: NUTS 2 (2006)
 Source: Politecnico di Milano,
 ESPON KIT project, 2011
 Origin of data: EUROSTAT CIS surveys, 2006-2009
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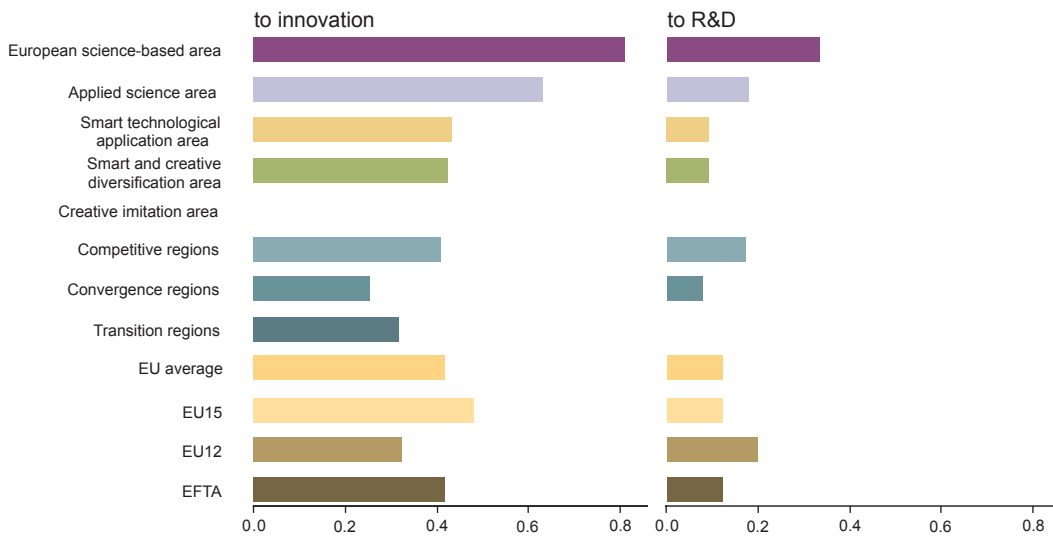


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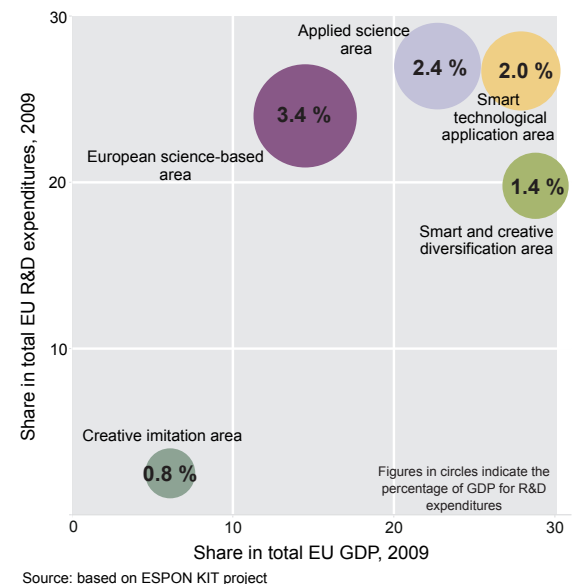
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Elasticity of GDP growth rate



Importance of regional types of innovation



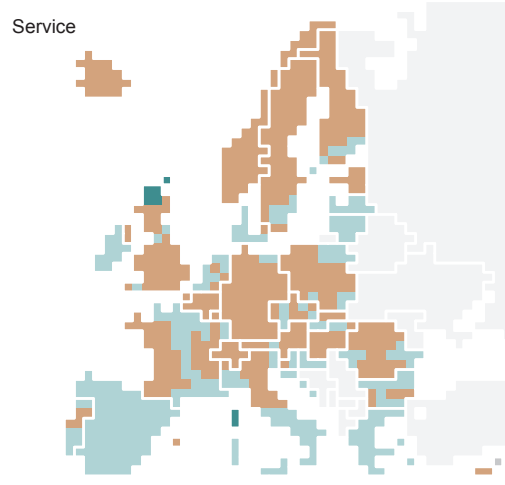
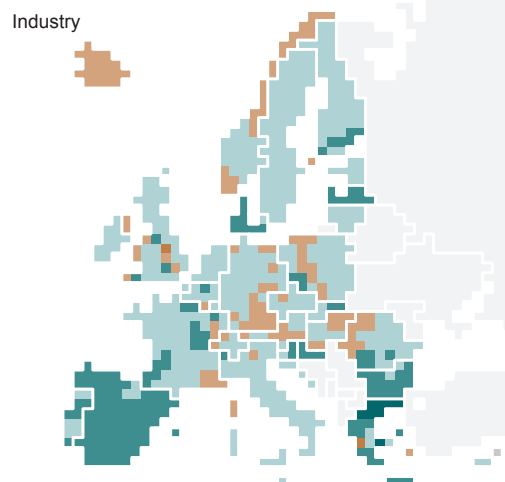
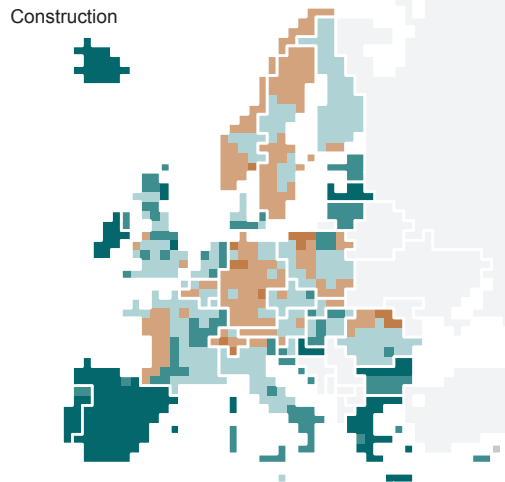
Regional dimension of the economic crisis

The GDP of the ESPON area declined in 2009 compared to 2008 by

774 billion KKS,

the economic power the Czech Republic and the Netherlands together

Development of employment by economic activity



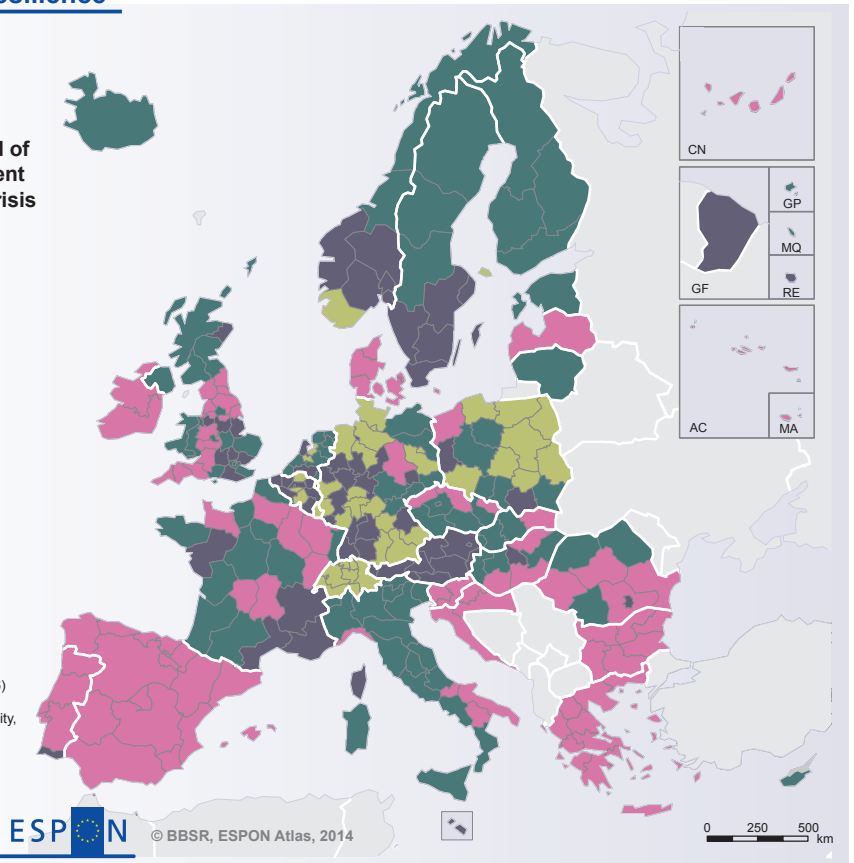
Development of employment in %, 2008-2013
 -40 -20 0 20 no data
 Source: ESPON ATLAS project 2014; Origin of data: Eurostat, 2014

Employment resilience

Development trend of regional employment in respect to the crisis and afterwards

- Resistant
- Recovered
- Not recovered: upturn
- Not recovered: no upturn
- no data

Regional level: NUTS 2 (2006)
 Source: Project ECR2, 2014
 Origin of data: Cardiff University, 2014
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The recent economic crisis has witnessed the most severe economic downturn in the history of the European Union. But as it shows, not all regions experienced economic decline and rates of the beginning recovery vary greatly, some of the European regions are already on their way out of the crisis, but a lot of them are not yet out of the vale.

The effects on employment have been tremendous. Between 2008 and 2009 the number of persons employed decreased by 3.6 million persons, followed by another 1.4 mill. in 2010.

In the regions which were hit the most and which have not recovered yet compared to 2008 (their resilience defined by the point when employment regained its pre-shock peak level) the loss of jobs amounts to 6.1 million persons in 2009 and another 2.5 million in 2010. From 2008 to 2013 the number of person employed decreased in this type of regions by altogether 10.3 million persons.

In the regions seen as being resistant to the crisis and which have already strong signs of recovery, the employment remained by and large stable in 2009 in comparison to the year before.

The question is nevertheless, how stable the process of recovery in employment will be. Recent trends show a further decline in employment in the regions that have not yet recovered compared to the year before the crisis and a slight slowdown on the path of recovery in the so called recovering regions.

Latest data for 2011 on the regional gross dome-

stic product (GDP) show, that the economies in the majority of European regions is growing again compared to the crisis year 2009.

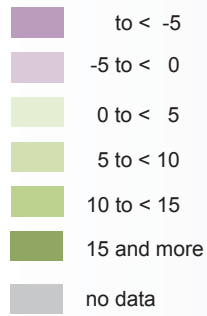
Belgium, Poland, Germany as well as the Baltic and the Scandinavian countries show the highest regional GDP growth rates measured by purchasing power standards (PPS). The rates are much lower in the United Kingdom, France and the Netherlands. The border of economic growth so to speak currently runs along the German-French border. In many regions of northern England, southern Spain and Greece, the economic performance is still declining though.

But the comparison of the economic performance with the time before the crisis indicates that many regions have not yet regained the economic strength of 2008 again, some of them far away from former economic strength. In Greece, Spain and the United Kingdom not one region reached the pre-crisis economic output, whereas the regions of Poland and in South-Eastern Germany have a clear tendency to grow.

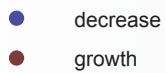
For many regions, the way out of the crisis seems to be difficult. The growth rates since the crisis downturn justify some optimism in economic perspectives in many regions. Regions with a positive development trend can be found in all countries apart from Greece. In northern regions of Spain as well a process of recovery becomes apparent. But as it shows the crisis is not over in all parts of Europe. In some parts the employment keeps on decreasing. Further efforts are needed to prevent a deepening of the gap between regions lagging behind (even more than in the past) and the prosperous part of Europe.

Post crisis development of GDP

Development of GDP in PPS in % since the crisis (2009 - 2011)



Compared to the year before the crisis (2008 - 2011)



Regional level: NUTS 2 (2010)
Source: ESPON ATLAS project, 2014
Origin of data: Eurostat, 2014
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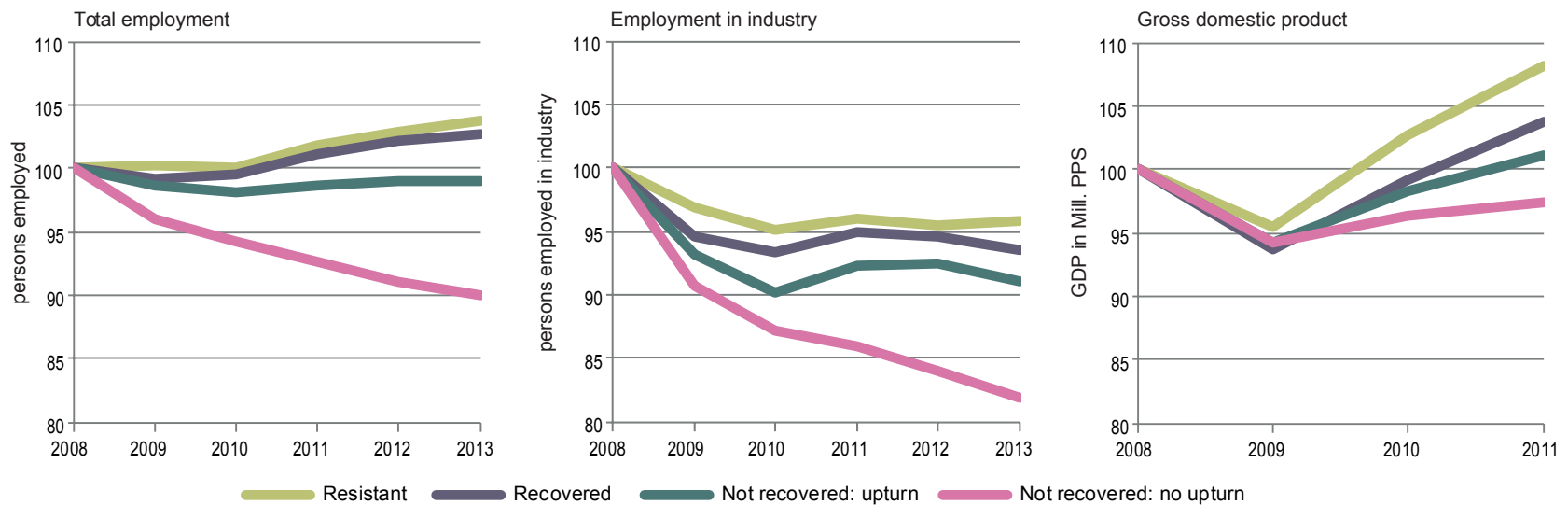


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Development trends in different regional types of employment resilience to crisis (Index 2008 = 100)



Source: ESPON ATLAS based on ECR2 project, 2014; Origin of data Eurostat, 2014

The economic crisis downturn hit some regions in their economic base. Despite signs of recovery, five years after the shock a lot of the regions did not reach the level of former economic strength again.

The post-crisis path needs accompany and development support. The regions which are still beneath the GDP level of 2008 before the crisis in do not show signs of upturn in employment must be prevented to begin lagging behind and to lose track on their transition from less to more developed regions.

The industrial heart of Europe was obviously only affected in some regions from the crisis and is on its way of recovery. Special attentions must be given to some Eastern European regions, where some industrial area did not catch up in this development.

The European service points, main areas of financial services, real estate and advanced producer services and also the innovative basins play an important role in the maintenance of the path of post-crisis re-development. Efforts have been made to foster this process service regions which have not yet reached former strength again.

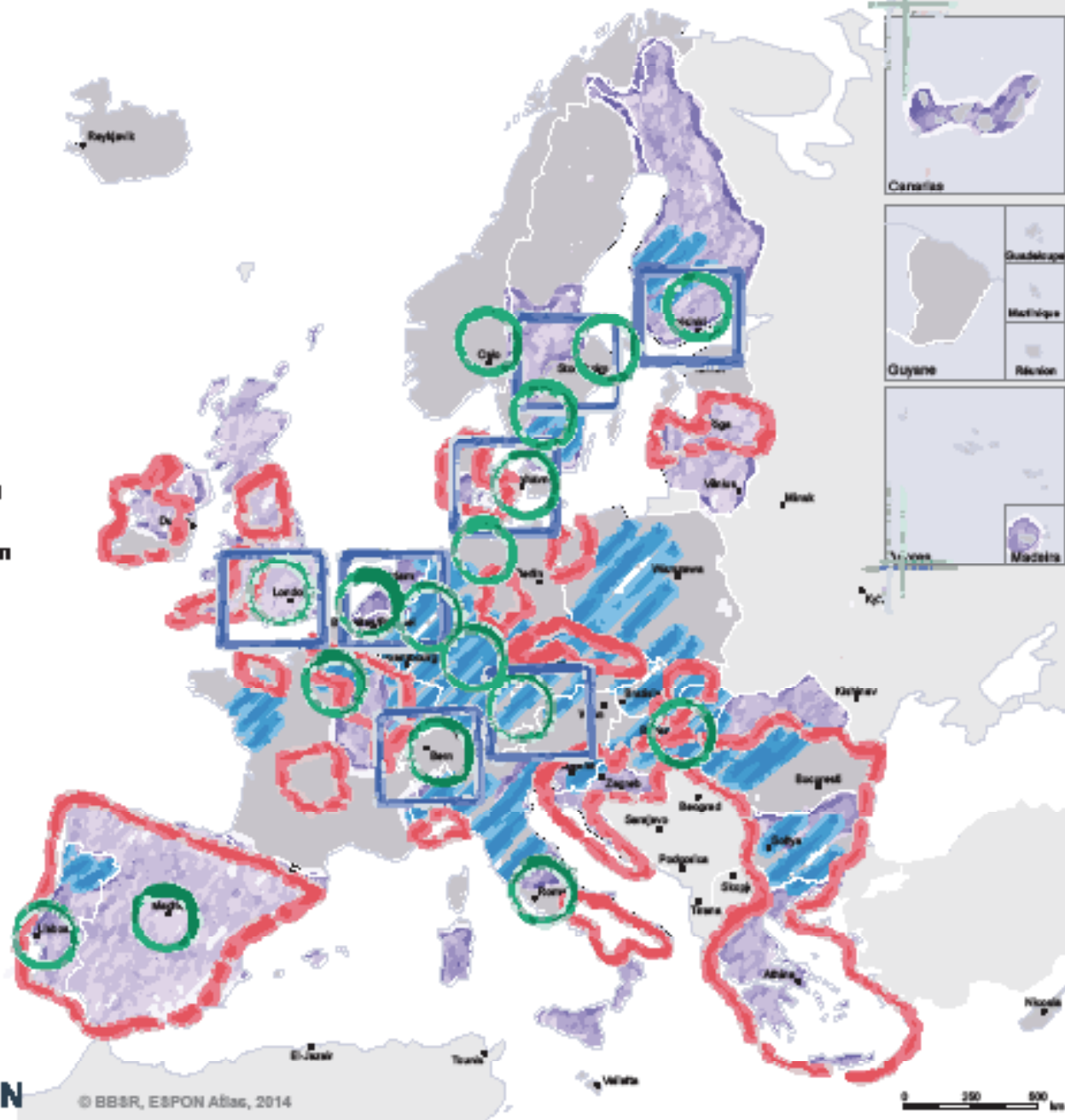
Economic structures - territorial synopsis

Economic engines

-  Innovative business
-  Industrial heart
-  European service points

Post-crisis path

-  GDP below pre-crisis level
-  Missing employment uptake



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The main demographic trends across Europe are the decline in population growth, the ageing of the population, the shift from births to migration as main source of population growth and the reduction in the growth rate of the working age population. These trends not only affect demography, but have strong impacts on labour markets.

If the size and direction of migration flows and reproductive behaviour will not change, the size of the working age population will decline in the next decades, while at the same time the number of elderly people will increase.

This will be a risk for European competitiveness since the working age population in many other parts of the world is expected to continue to grow in the foreseeable future. In addition, disparities across European regions may increase.




Growing regions will have to make sure that a balanced development is maintained.

Shrinking regions should direct its activities towards measures attracting and retaining younger persons in these areas and redressing the exodus from shrinking areas. Where the educational level is too low, the quality of the overall education should be boosted and life-long learning should be encouraged.



Balanced regions will have to work towards retaining favourable trends; they should be attentive that potential intra-regional or urban-rural disparities do not become a problem.

Society and integration - territorial synopsis

Demographic trends

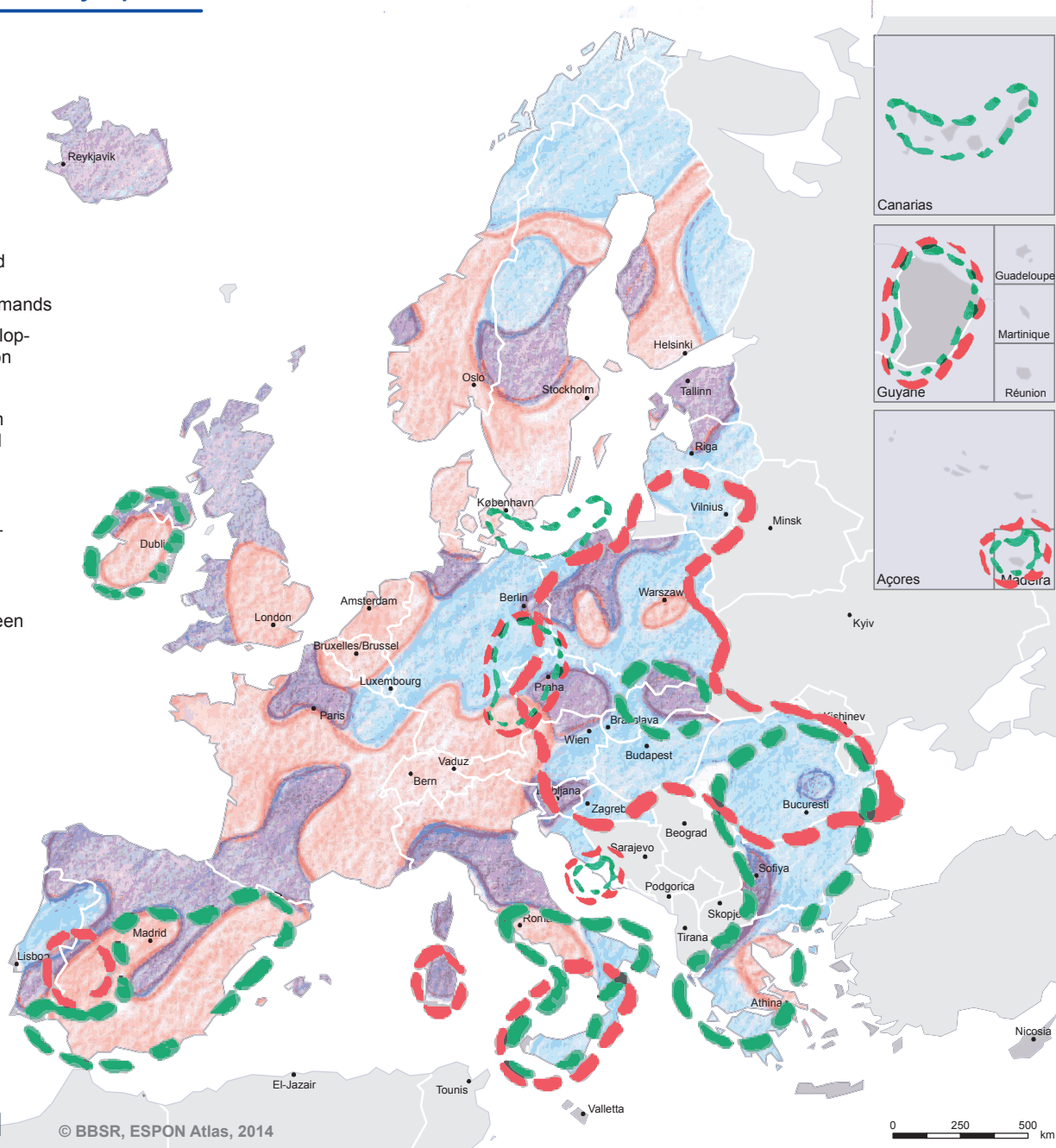
-  Population growth with need of integrated and balanced territorial organisation of demands
-  Shrinking regions with developments needs and stabilisation of the economic base
-  Demographic balanced with need to safeguard territorial potentials

Labour market and education

-  Modernisation and strengthening of regional labour markets
-  Valuation of youth potential, strengthening the link between the education system and the labour market

Poverty and social integration

to be included on basis of TIPSE



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3. Society and integration

Today's European society is deeply influenced by the dramatic changes that took place in the 20th century. While the first half of this period was marked by the two World Wars with its numerous millions of deaths, the second half was on one hand for a long time and for large territories dominated by the Cold War. On the other hand Western Europe saw a process of growing integration, cooperation and hitherto unknown economic prospering. Both economic development and integration have however been threatened by the recent economic crisis.

Although the European Union and its predecessors were mainly built to achieve political goals, they stand, together with its cooperation partners, at the heart of this unique economic and social development. This development convinced more and more European national governments to become member of this community.

The six founding members of the European Coal and Steel Community in 1951 covered an area of 1.3 million km² with a population of roughly 170 million persons. After the joining of Croatia, the 28th EU member, this amounts to 506 million persons on an area of 4.5 million km², which amounts to 7.3% of the world's population. The ESPON area, which includes not only the EU, but also the EFTA members Norway, Iceland, Switzerland and Liechtenstein, even covers 5.1 km² and 522 million persons.

In the more than six decades of European integration, the people in Europe have experienced a strong economic growth, higher and more evenly distributed education, equal rights and a growing participation of all social groups (especially women) to labour markets and society, better health and an overall and strong improvement of the quality of living.

The EU policies, which aim to ensure the free movement of people, goods, services, and capital, lead to an opening of the borders and increased cooperation. Migration between the

European countries and regions grew as well significantly.

In economic terms, Europe has become a major world power. However, its position in the world has drastically changed in the last 20 years. This change was driven by the Globalisation and technological revolutions, especially the Internet.

This change of position comes with a number of territorial challenges, which all affect European society as a whole. European regions are increasingly exposed to globalization and are growingly vulnerable to external shocks. This vulnerability of European is however very unevenly distributed, and regions are hit asymmetrically.

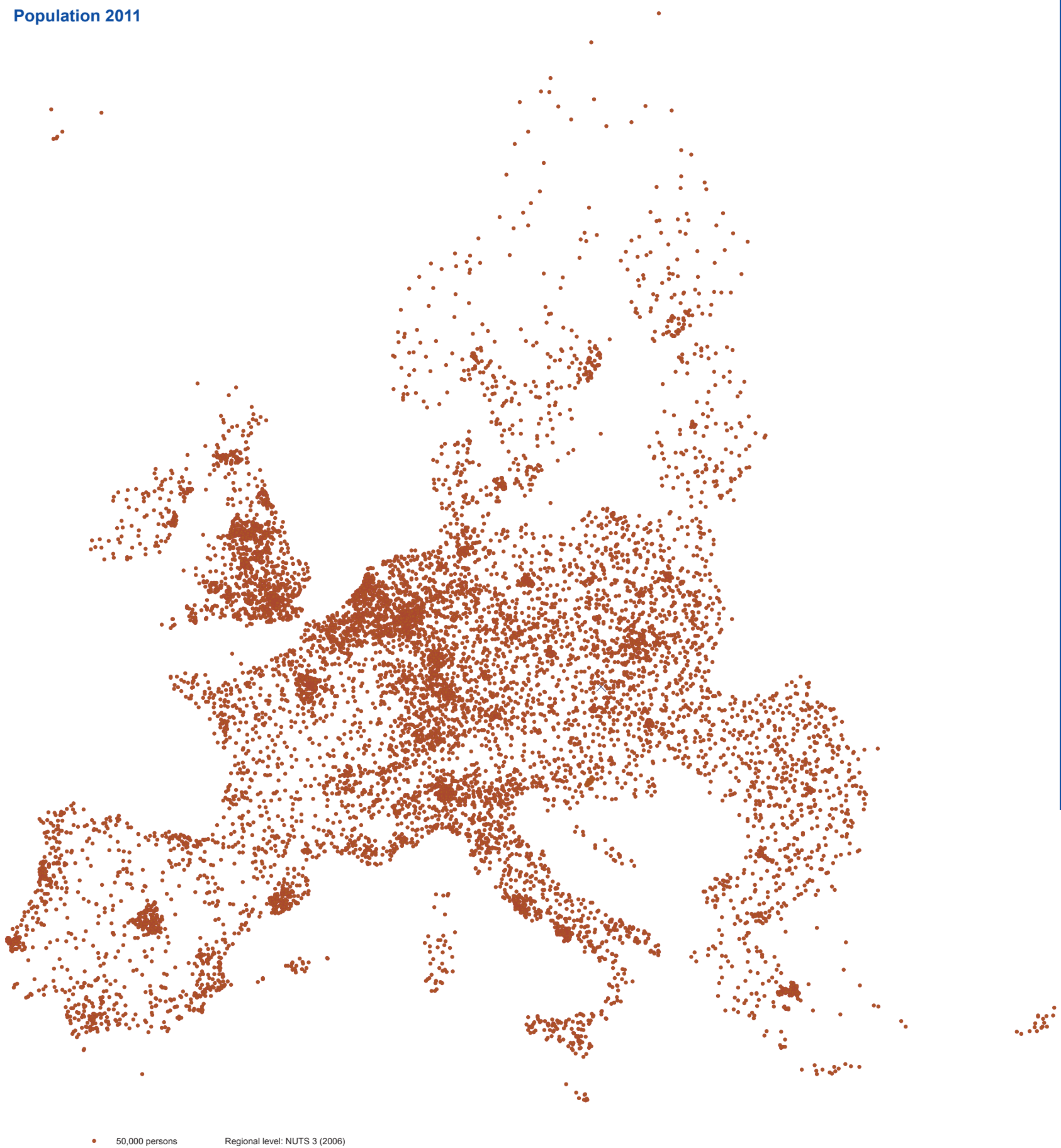
In addition, Europe faces demographic challenges which are increasing and territorially differentiated. Ageing and depopulation will bring about changes in many regions and lead to severe impacts for social and territorial cohesion, public service provision, labour market and housing. Other regions have growing populations and face other pressures.

Intra-European migration grew significantly after the EU enlargement; these mainly East-West migration flows as well as flows from less-developed non-EU countries constitute specific challenges and opportunities.

Although economic welfare and social well-being have grown significantly all over Europe, socio-economic exclusion is still a reality and has been made worse by the economic crisis. It has a strong territorial character: The risk of exclusion is higher in areas with low accessibility, weak economic performance, lack of social opportunities or other particular territorial circumstances.

The global economic downturn has revealed structural weaknesses in many countries and regions of the EU, regardless of their level of economic and social development. The crisis has brought both the growth and convergence experienced before 2007 to a halt.

Population 2011



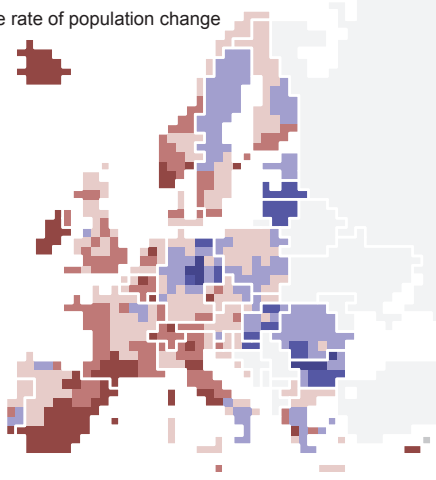
Demographic change

522 million

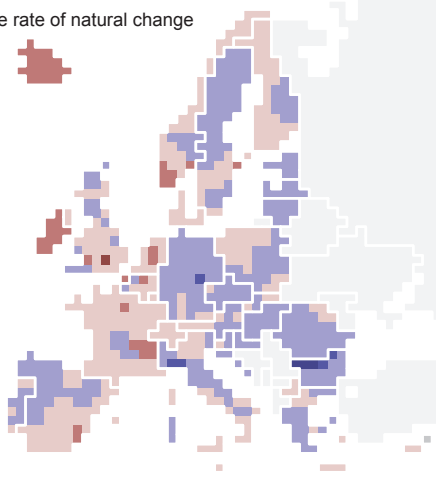
persons were living in the ESPON area in 2011, 7 % more than in 1990. Change rates in this period range from - 16 % in Latvia to + 40 % in Cyprus.

Demographic change (2000-2010)

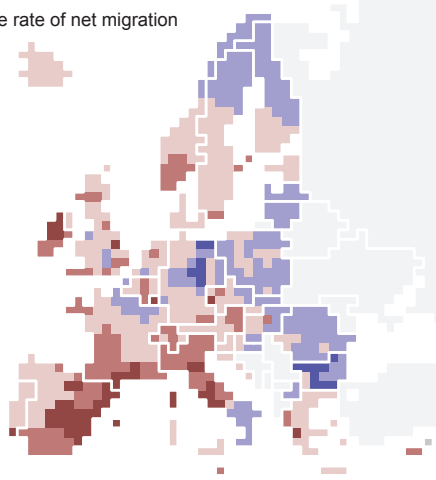
Crude rate of population change



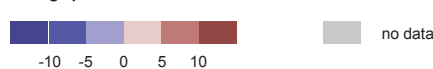
Crude rate of natural change



Crude rate of net migration



Change per 1000 inhabitants



Source: ESPON database

Population development

Population increase, 2000-2011

	Migratory balance	Natural balance
Dark Red	+	+
Orange	+	-
Yellow	-	+

Population decrease, 2000-2011

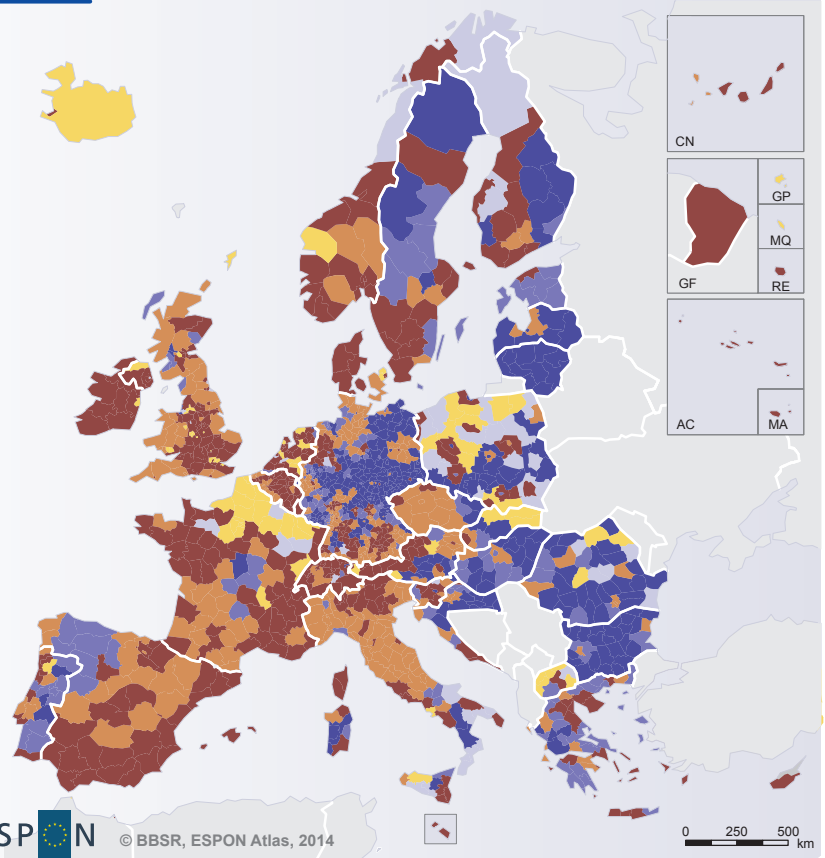
	Migratory balance	Natural balance
Light Blue	-	+
Medium Blue	+	-
Dark Blue	-	-
Grey	no data	

Regional level: NUTS 3 (2006)
Source: Espon database, 20
Origin of data: xxx, year
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The population of Europe is increasing slowly. Since 2000 the annual average growth rate has been below 0.5 per cent per year, which is similar compared to other developed countries but modest in comparison to other world regions.

Population growth is unevenly distributed across the ESPON countries. A trend of East-West polarisation of the pattern of demographic development is visible between 2000 and 2011. Regions with population growth are mainly located in Central-Western Europe while regions with population decline are more dominant in Eastern Europe. Capital regions in Europe are favourable hotspots of demographic development, mainly due to in-migration; in several cases, they also show a considerably high rate of natural change. Particularly in Eastern Europe, the immediate neighbouring regions to capital cities stand out with respect to population growth compared to the inner parts of the capital region.

At European level, natural population development has a very small impact on the increase of the population today. Migration plays a key role for population growth in Europe and has counterbalanced the impact of a negative natural population development in many regions. For the regional contribution to European competitiveness and cohesion it underlines the importance of migration.

The age distribution of the European population shows more a rhomboid than a pyramid, which is due to the baby boomer cohorts resulting from the high fertility rates in several European countries in the mid-1960s. The baby boomers conti-

nue to represent a major part of the working-age population. The first of these large cohorts born over a period of 20 - 30 years are now reaching retirement age.

The age structure of the population in the EU-27 is becoming older, due to increasing life expectancy and consistently low levels of fertility over the past decades. Population ageing is a general process across the EU Member States and is expected to continue in the coming decades.

The relatively low contribution of natural increase to total population growth is the result of two factors: firstly, net migration in Europe has increased considerably since the mid-1980s; secondly, the number of births has fallen, while the number of deaths has increased.

The gap between live births and deaths has considerably narrowed since 1960, which is mainly due to the change of the birth rate, which nearly halved since that time.

Since the number of deaths is expected to increase as the baby-boom generation ages, and assuming that fertility remains at a relatively low level, a negative natural change (more deaths than births) cannot be excluded in the future. The extent of population decline or growth will thus depend even more on the contribution made by migration.

In 2011, 5.2 million children were born in the EU-27. The highest annual total for the EU-27 was recorded in 1964 with 7.7 million live births. Fertility in Europe is among the lowest in the world;

currently, women in Europe on average have 1.5 children, while 2.1 are estimated to be needed to replace the population by itself. Only a very small number of European regions show a stable fertility rate above this.

Fertility rates have dropped considerably in Europe since the beginning of the 1960s; the development in the countries shows a clear regional pattern.

Iceland and Ireland had and still have the highest rates. Northern and Western Europe faced dropping rates already in the 1970ies, but show differences in the last two decades, where the Nordic countries and several Western countries saw a rise again.

Southern Europe saw stronger drops in the 1980s, while Eastern European countries experienced a very steep drop beginning of the 1990s.

At the beginning of the last decade, the total fertility rate in the EU-27 has shown some signs of rising again: After bottoming out between 2000 and 2002, the fertility rate has increased again in most Member States in the nine years to 2011. However, the rise has not been enough to change the direction of the trends in population growth and ageing.

Low fertility rates tend to go hand in hand with high out migration.

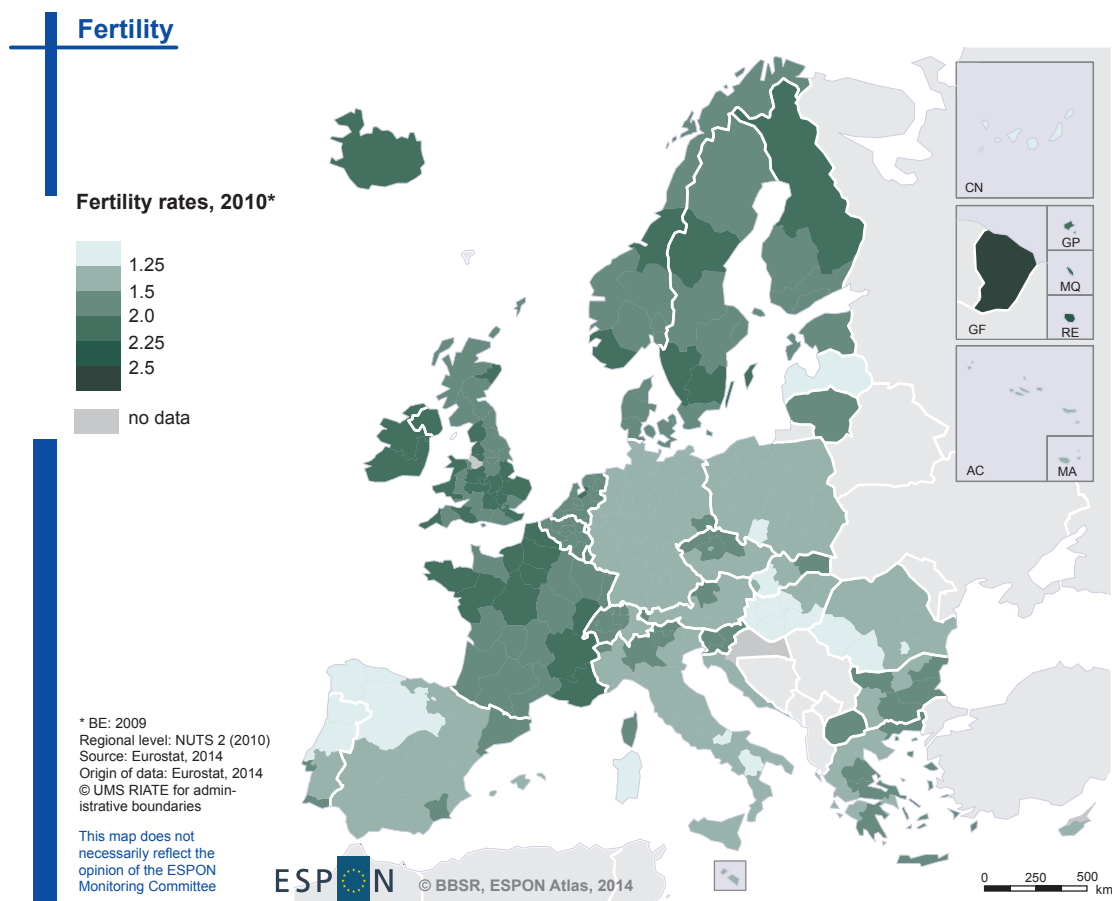
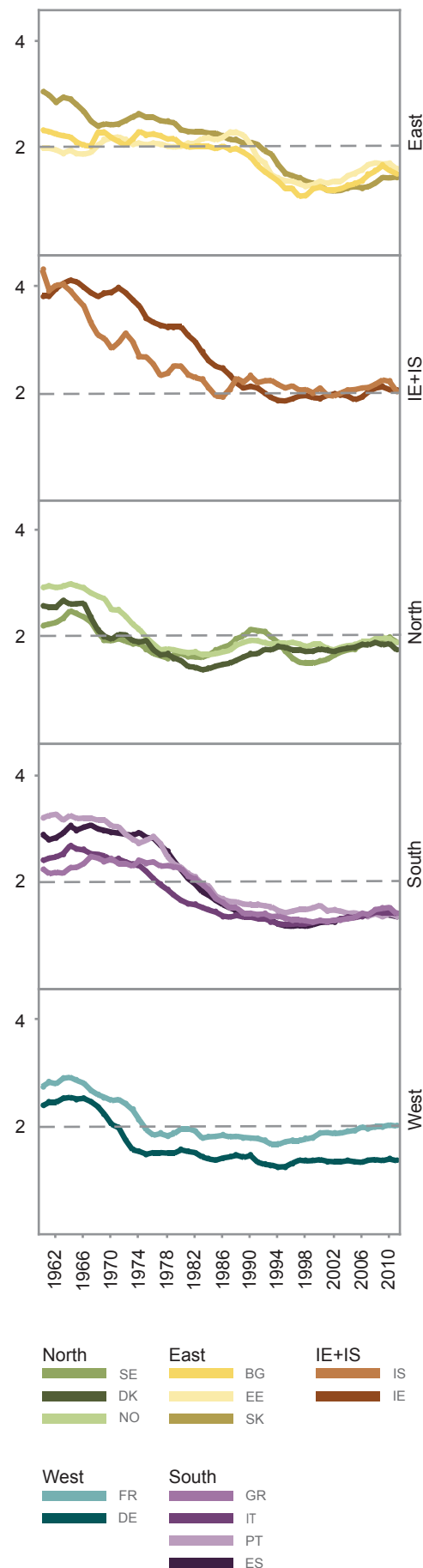
The low level of fertility is the main cause of both the slow pace of population growth and population ageing. The rate of ageing is reinforced by the increase in life expectancy.

Economic development and the improvement in environmental conditions, improved lifestyles, advances in healthcare and medicine, including reduced infant mortality, have resulted in a continuous and rapid increase in life expectancy at birth across Europe during the last century. This process has been going on for longer in Europe than in most other countries of the world, making the life expectancy in Europe one of the highest in the world.

Besides the reduction in fertility, the gradual reduction in mortality is the main factor contributing to the ageing of the population in the EU-27. While life expectancy is rising in all Members States major differences still exist between and within countries (for example, by sex). The gender gap in longevity is slowly narrowing, but still striking, as are the differences between the countries.

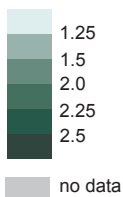
High life expectancy has an upward effect on both population growth and ageing. Regions with low fertility, high life expectancy and negative net migration will experience more ageing than other regions.

Development of fertility rates in the European regions (selected countries)



Fertility

Fertility rates, 2010*



* BE: 2009
Regional level: NUTS 2 (2010)
Source: Eurostat, 2014
Origin of data: Eurostat, 2014
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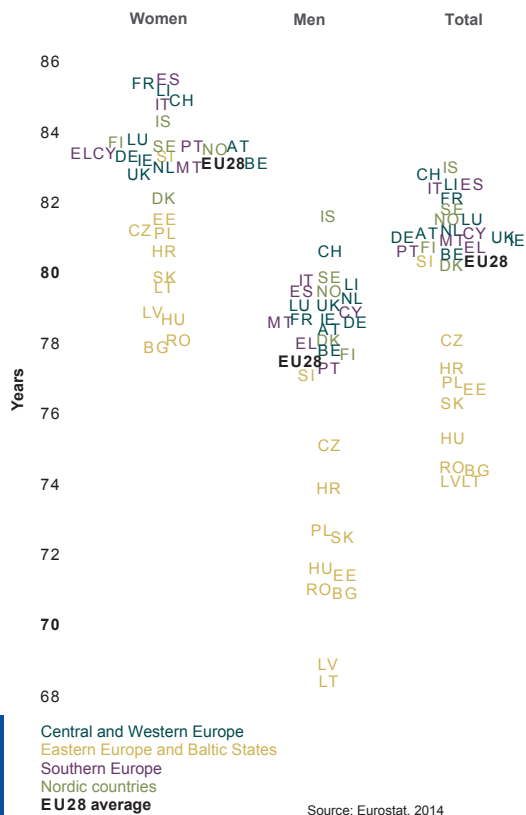
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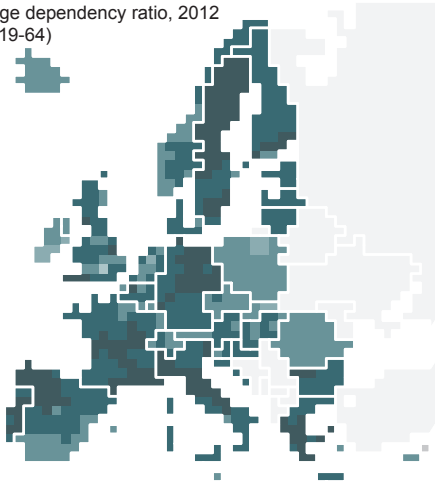
Source: Eurostat, OECD

Life expectancy at birth, 2012

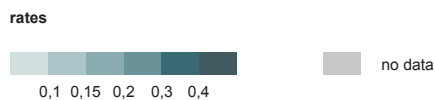
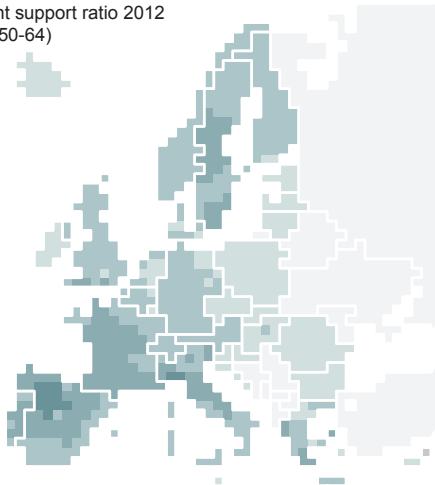


Relation between age groups

Old age dependency ratio, 2012
(65+/19-64)



Parent support ratio 2012
(85+/50-64)



Source: ESPON Database, DEMIFER project

Persistent low fertility, increasing longevity and negative netmigration are the driving forces of population ageing.

The slow pace of European population growth gives rise to the major demographic challenge of population ageing. Although population ageing affects all regions of the world, it is most advanced in Europe.

The statistical relation between age groups can be shown through age dependency ratios. They measure the relation between one age group that in one way or the other supports another age group, which due to its age structure is most likely to be economically dependent to the other, most likely to be economically active, group.

The old age dependency ratio serves as an indicator of the pressure placed on the working age population (age 20 - 64) to take care of the old (age 65+). The increase in old-age dependency is expected to contribute to higher public spending in health, long-term care and pensions.

As the population grows older, also the number of the oldest old (aged 85 and over) grows. This increases the demands on families to provide support for their oldest-old members. This is expressed through the parent support ratio, which relates the very old age groups (85+) to the generation of their (presumed) children (aged 50-64).

The different demographic indicators can be summarised into types of demographic status and development. The DEMIFER typology of NUTS2 regions classifies the demographic structure and the short-term trends in the ESPON area by 2005. It is based on four key variables: the share of the age groups 20 to 39 years and 65 years and over in 2005, as well as the annual average natural population increase and net migration rate during the period 2001 to 2005.

Favourable demographic trends can be observed in the types "Euro Standard" and "Family Potentials". The type "Euro standard" is coming close to the overall average of the ESPON area. The type "Family potentials" has high natural population increases with high levels of fertility. In the Euro Standard regions, the natural population balance is rather stagnating. In both types, the speed of ageing is rather moderate.

The share of working age population is around average; the share of the working age population is still increasing. This growth is driven by increases in the older working age population.

The highest stock of foreign population by absolute numbers is found in the "Euro standard" type. About two thirds of the foreign population in these regions is living there since ten years or longer.

The share of tertiary educated people is highest of all types in the "Family potentials" regions and still high in the "Euro standard" regions. Unemployment is below the overall average, the distribution of long-term and short-term unemployment is quite balanced. In the Euro standard regions,

the labour force participation rate is highest of all regions.

The types "Challenge of Labour Force" and "Challenge of Decline" face a population decline as a demographic challenge. Both regions show a negative natural population balance and a negative migratory balance.

The "Challenge of labour force" regions feature a high share of population in young working ages and a relatively low share of elderly. Although the proportion of the working age population is still well above the overall average, the number of young people will fall steeply in the future as fertility fell sharply after 1990.

In the "Challenge of Decline" regions, it is the elder population which shows above average proportions. The widespread emigration of young people is driving the already prevalent process of demographic ageing even further.

The share of higher educated people is around the overall average in the "Challenge of Decline" regions, but not increasing in younger ages, as it does in all other types of regions. The "Challenge of labour force" regions show the lowest share of tertiary educated persons on average, as well as the lowest labour force participation rates. Both types of regions show high unemployment rates. Long-term unemployment is prevalent in both types.

The two regional types "Challenge of ageing" and "Young potential" are both characterised by challenging disparities, however very different ones. Both types show a strong migratory surplus and therefore an overall population growth.

The "Challenge of ageing" regions are characterized by the highest shares of elder populations among the types and natural population decreases. The impacts of demographic ageing, however, are mitigated by a strong influx of younger migrants. The "Young potentials" regions on the other hand feature a young age structure and show a positive natural population increase. The proportion of the working age population is around average in both types and still increasing.

The majority of the foreign population immigrated during the last ten years. The "Young potentials" regions show the highest proportion of foreign population.

While for "Challenge of aging" the share of tertiary educated persons is rather low, it is the highest of all types for "Young potentials" regions, which however show high rates of only basic education. High unemployment rates can be observed in both types. The majority of all unemployed persons is jobless for less than six months.

The type "Overseas" consists of the French Overseas Territories and the Spanish exclaves of Ceuta and Melilla. It features considerable high shares in the young ages and by far the lowest share of elder population. The strong natural population increase is more than counterbalancing the negative migratory balance.

Demographic status

Typology of the demographic status, 2005

- Favourable trends**
- Euro Standard
 - Family Potentials
- Population decline**
- Challenge of Labour Force
 - Challenge of Decline
- Challenging disparities**
- Challenge of Ageing
 - Young Potentials
 - Overseas
 - no data

Old age dependency ratio, 2012

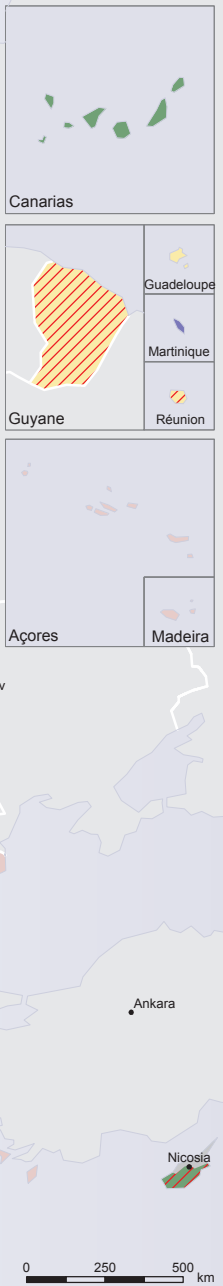
- low
- high

Regional level for demographic change: NUTS 2 (2006)
 Source: ESPON database, DEMIFER project, year
 Regional level for demographic change: NUTS 2 (2010)
 Source: Eurostat, 2013
 Origin of data: xxx, year
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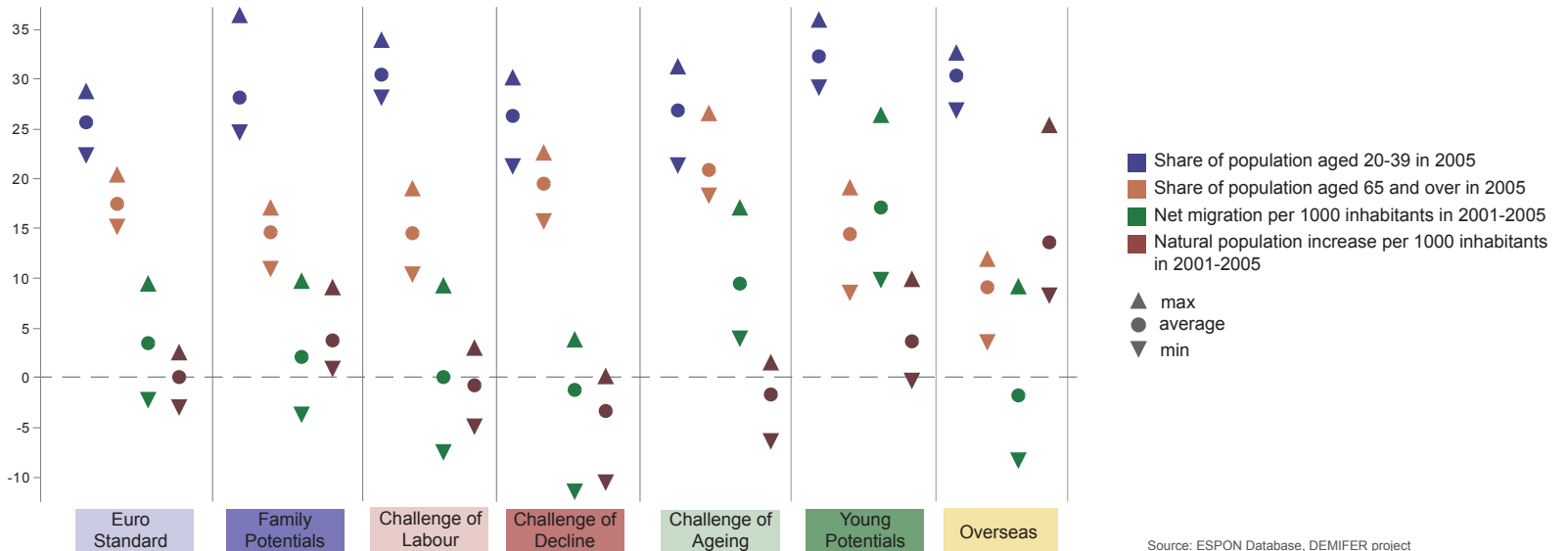
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Characteristics of the Demographic status types



Source: ESPON Database, DEMIFER project

Migration and mobility

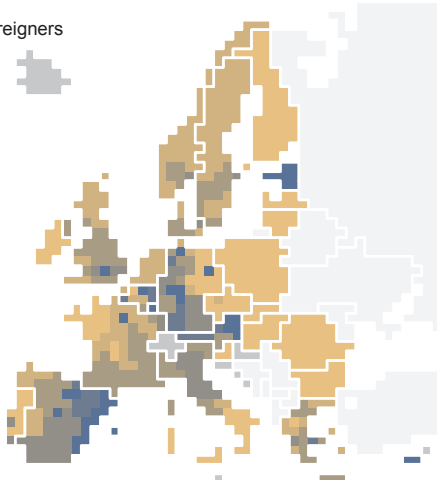
4.7 million immigrants

entered an EU country in 2006, whereas 3.6 million persons were leaving.

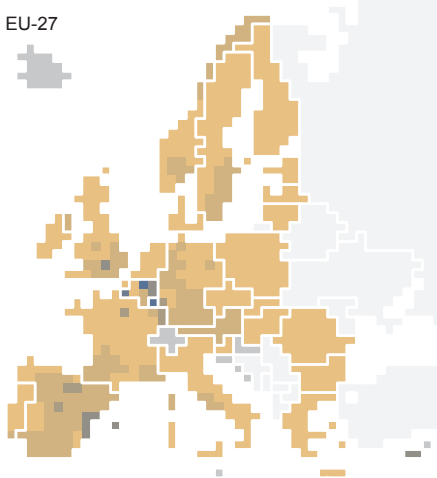
More than half of the immigrants arrived from outside the European Union.

Foreign population, 2007

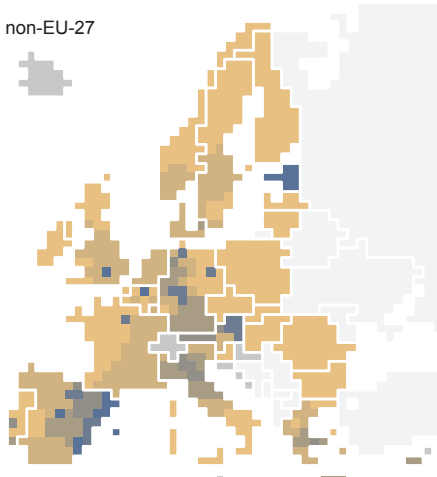
All foreigners



From EU-27



From non-EU-27



Share of foreign population to total population in %

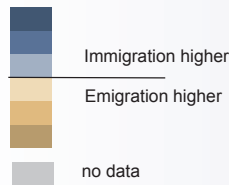
2 4 6 8 10

no data

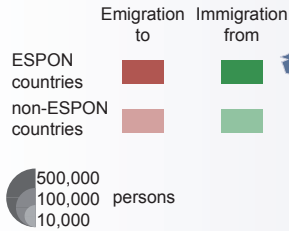
Source: ESPON Database, DEMIFER project NL: NUTS0

Emigration and immigration

Relation of emigration and immigration



Origin and destination of migration

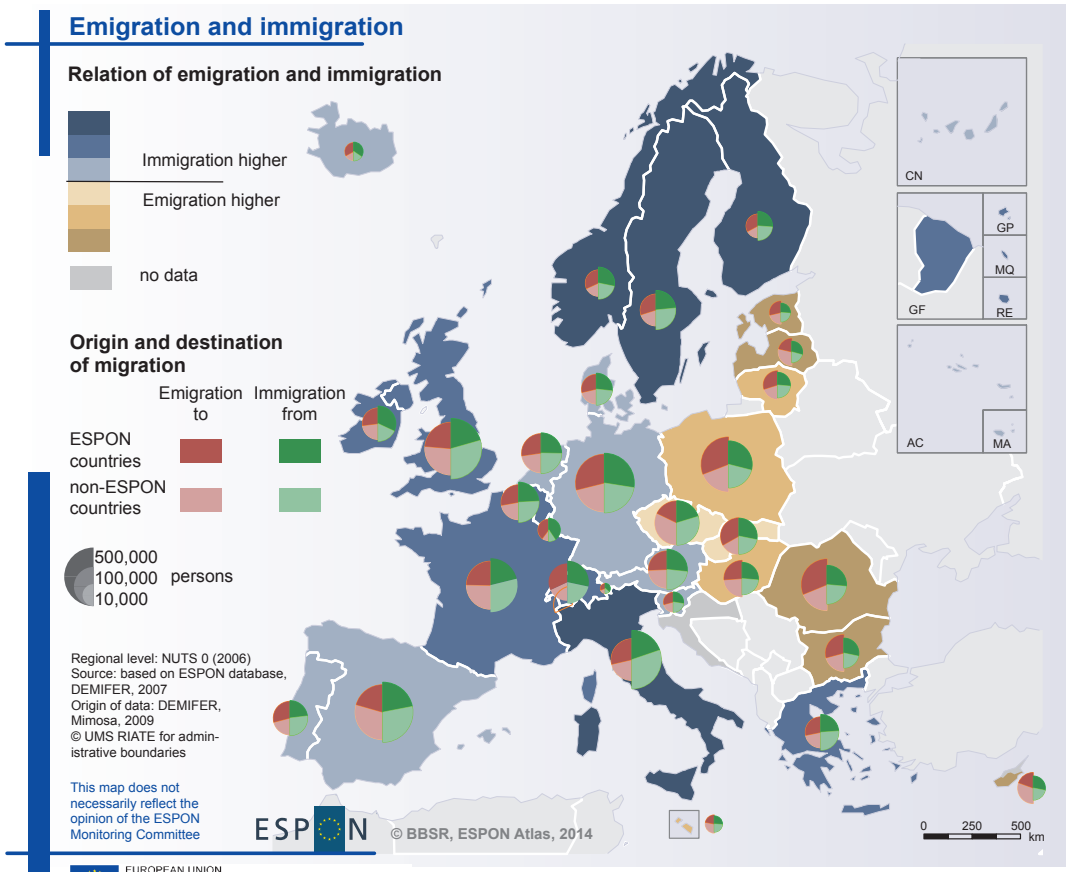


Regional level: NUTS 0 (2006)
Source: based on ESPON database, DEMIFER, 2007
Origin of data: DEMIFER, Mimosa, 2009
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International and long-distance interregional migration flows are usually driven by economic motives and are work-related. In Northern, Western and Southern Europe the countries experience a positive migratory balance, while the Eastern European countries see more people leaving the country than entering - in some cases three times as much.

The migratory balance in the countries' regions can however differ considerably from the countries' overall trend. Outskirt rural regions, but also old industrialised areas very often loose population despite an overall migratory gain of the country. At the same time most of the regions from the former socialist economies are losing population through emigration.

In Eastern Europe, those regions that manage to maintain a positive migratory balance in spite of the overall country's trend owe this mainly to international migration. Western Europe is the preferred destination for all migrants, since only five percent of the international migrants went from one Eastern European country to another.

Regions that are less attractive for migration tend to be so for both internal and external immigrants: There are hardly any declining regions where the internal migration is positive and the external migration negative. Regions where both migration components are negative can mainly be found in Poland, Bulgaria and Romania.

Two thirds of the foreign population have a Non-EU citizenship, and one third a citizenship from another EU country. Immigrants from Non-EU countries are clearly less educated than nationals and EU migrants. Immigrants from EU countries however tend to comprise even a considerably higher share of tertiary educated persons than the national population.

Most of the foreign inhabitants belong to the working ages. This is mainly due to the non-EU population, where the share of foreigners is more than twice as high for the age groups between 20 and 44, compared with the foreign population from other EU countries. There, the age distribution is more balanced.

Migration patterns differ considerably between men and women. Island regions and other peripheral regions see a clear overrepresentation of young men. It is mainly the capital city regions that see a much higher share of young women than young men.

A pronounced exodus of young women often leads to a reduction in births, which can cause a deterioration of educational and social services. This often leads to a vicious circle of decreasing fertility and also produces an overaged society.

Migration patterns also depend on the age of the migrants: Urban regions, especially those that encompass the capitals, often attract young populations and drive out older active ones.

Internal and international migration in the regions

Negative net migration

	Internal migration	International migration
Dark brown	-	-
Light brown	-	+
Yellow	+	-
Lightest yellow	only internal migration	

Positive net migration

	Internal migration	International migration
Dark blue	+	+
Medium blue	+	-
Light blue	-	+
Lightest blue	only internal migration	

Share of foreigners > 10%

no data

Regional level for migration components: NUTS 2 (2006)
 Regional level: NUTS 2; NL: NUTS 0;
 AT, DE, UK: NUTS 1 (all 2006)
 Share of foreigners: no data for CH, HR, IS
 Source: ESPON database, 2007
 Origin of data: Eurostat, NSIs, 2009;
 EU Labour Force Survey 2007
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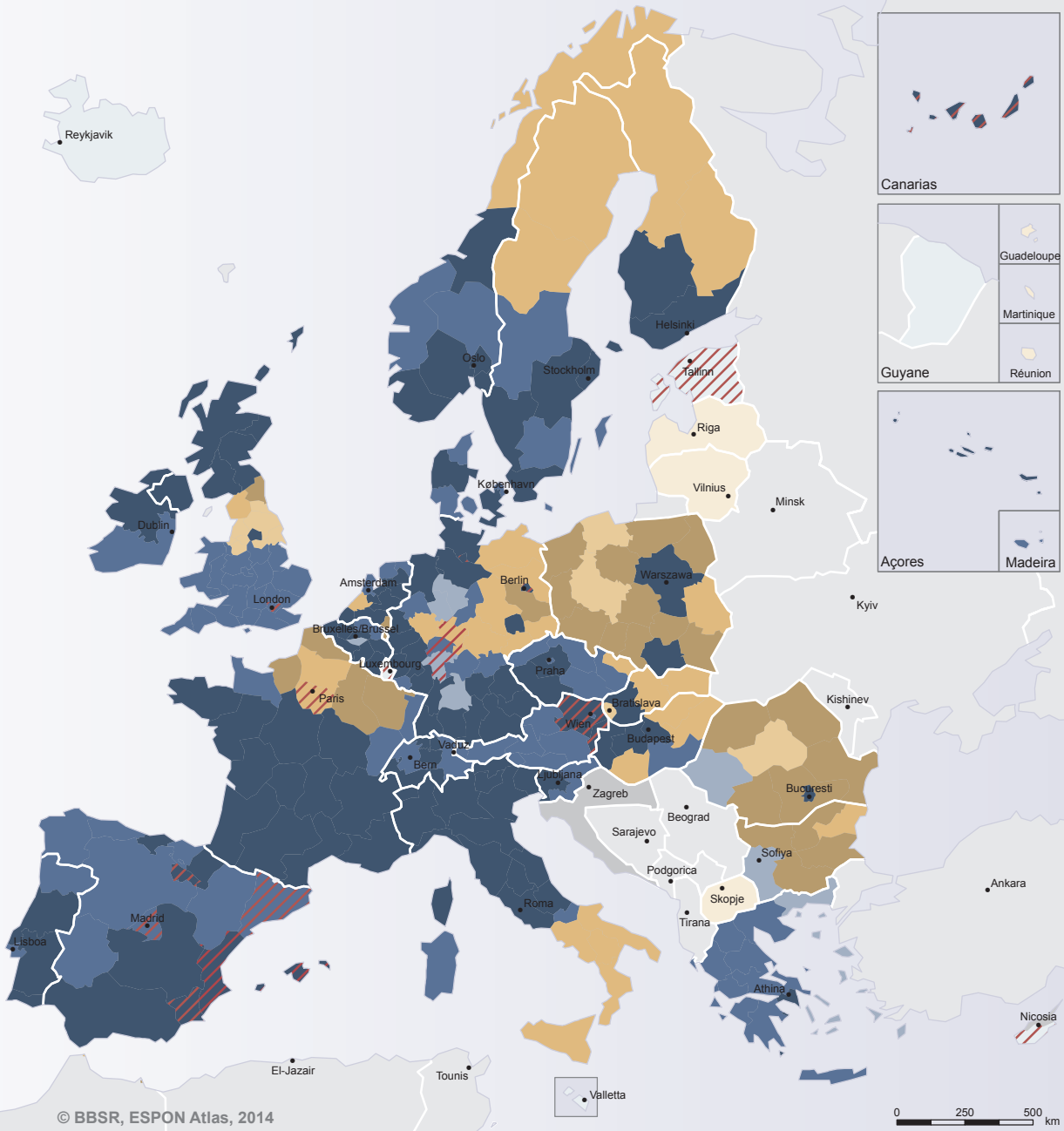
This map does not necessarily reflect the opinion of the ESPON Monitoring Committee



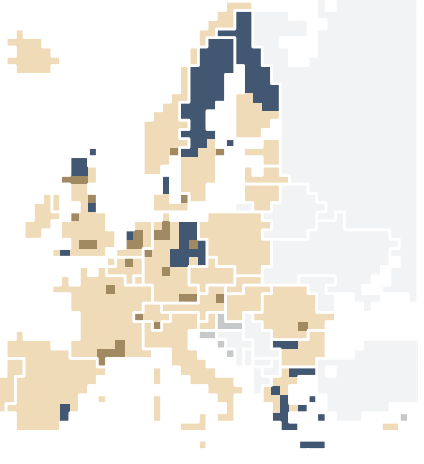
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Strong relative sex overrepresentation, 2005

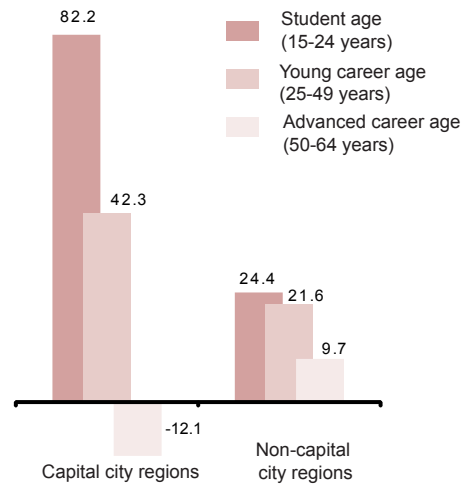


Young women (20-29) no data
 Young men (20-29)

Source: based on ESPON database, DEMIFER, 2005

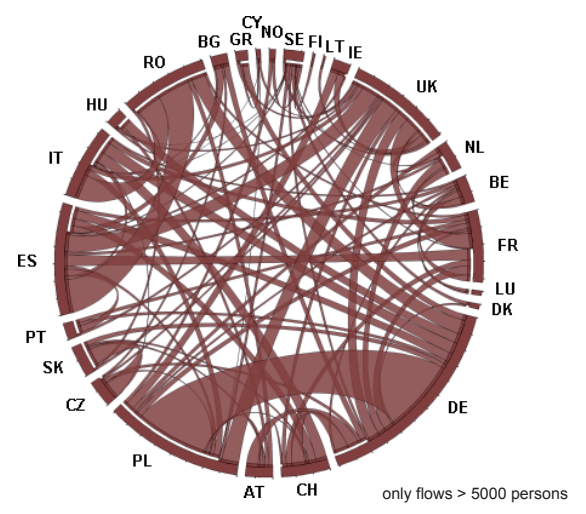
Age group-dependent migration to/from city regions, 2007

Net migrants per 1000 inhabitants



Source: ATTREG Scientific Report, 2011

Migration flows between ESPON countries, 2006-2007 average



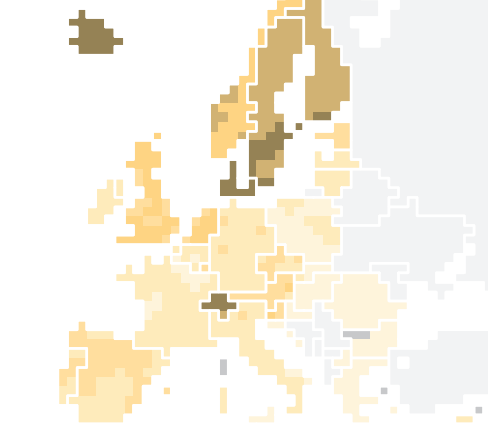
Source: ESPON database, DEMIFER, 2007

28 European universities

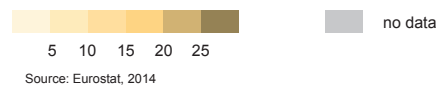
can be found among the world's top 100 universities, the majority of them found in UK and Germany.

Education and labour force

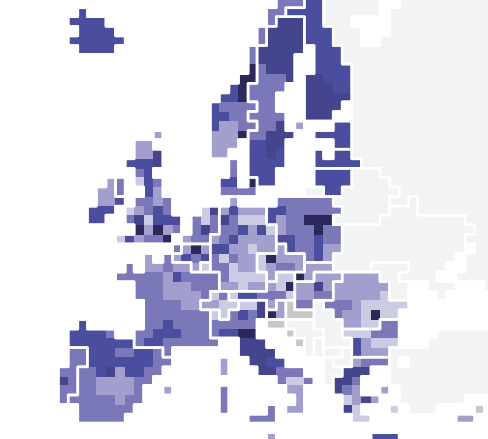
Participation of adults in training



Share of population aged 25-64 years, 2012



University students

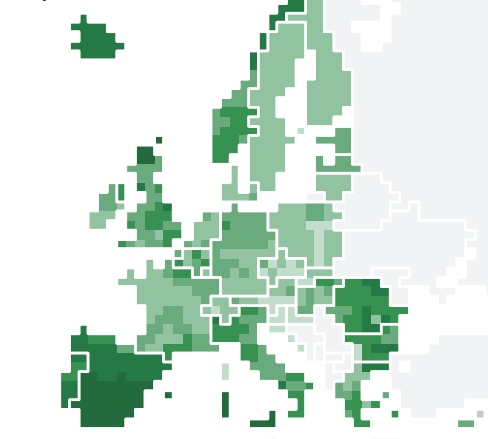


Number of registered university students (ISCED5-6 level) per 1,000 head of pop. aged 15 to 24 years, average 2001-03



Source: ESPON Database, ATTREG project

Early school leavers



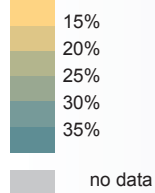
Share of population aged 18-24 in %, average 2011-2013



Source: Eurostat, 2014

Highly qualified population

Share of population with tertiary education, 2010



Share of population in working age (active population, 25-64 years) with tertiary education on total population aged 25-64

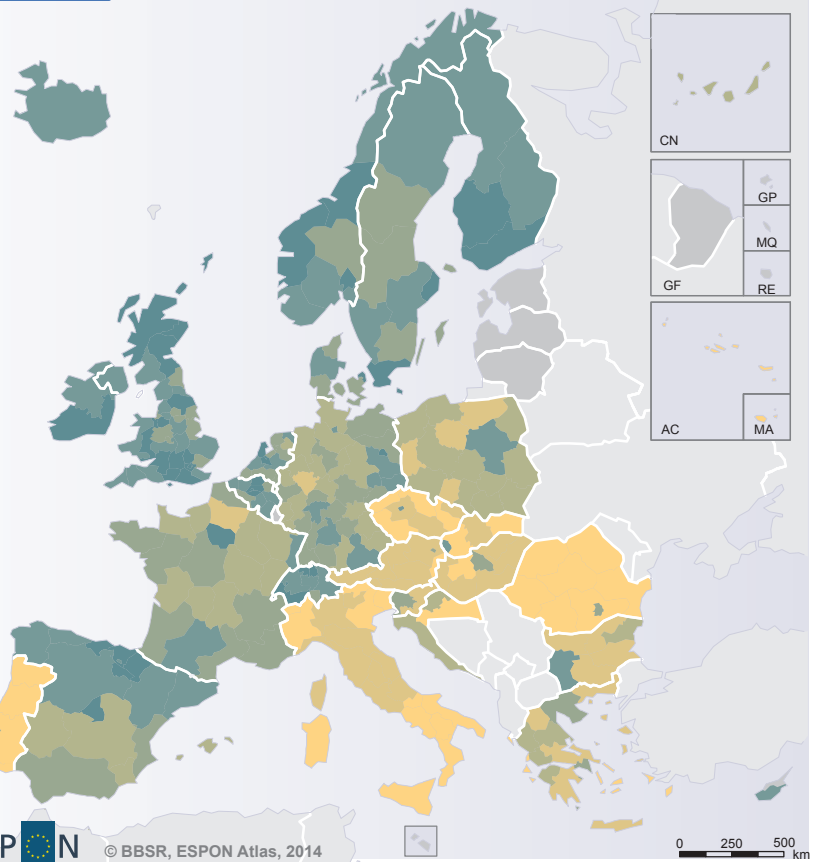
Regional level: NUTS 2 (2006)
Source: ESPON database, INTERCO, 2012
Origin of data: Eurostat, NSIs, 2012
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In order for all citizens to participate fully in society and economy, to prevent poverty and to improve employability, a basic level of education is required. Furthermore, the transition towards a more knowledge-intensive economy will only be possible by increasing levels of education.

Early school leavers bear a higher risk for unemployment, social exclusion, and poverty. The situation in the EU is generally improving: The Eastern European and the Southern peripheral regions with high levels of early school leavers have improved, although rates remain rather high for Romania and Bulgaria. In some economically successful regions in the Nordic countries and Western Europe however rates worsened.

Urban areas in general perform better than their surrounding region, with Ireland showing very strong rural-urban differences. In Spain on the contrary, some cities have had higher drop-out rates than their regions. Here, a high proportion of young people left school during the economic boom years (1997-2007) in order to enter the labour market when lots of low qualification jobs were created in construction, tourism and basic services.

Early school leaving shows a gender gap which is unfavourable for men: with the exception of Bulgaria, young men surpass women in dropping early out of school in all European countries.

Early school leaving is strongly linked to a low regional educational attainment. The regions with a high share of persons with low educational attainment generally provide most of their employment opportunities in agriculture, tourism and construction. Regions with a high proportion of people with low educational attainment in general also have low participation rates of adults in education and training. This double education gap constitutes a major territorial challenge.

Tertiary education covers not only universities, but also colleges, technical training institutes, nursing schools etc. The share of people in Europe with tertiary education is increasing; however, US, Canada, Japan, Korea and Australia out-perform Europe. Some well performing European economies score surprisingly low, which in some cases (e.g. Germany) is linked to the countries' education systems emphasising apprenticeships.

The best scores regarding the quality, acceptance and attractiveness of educational services are recorded in the Nordic countries as well as Italy, France and Spain. The national heterogeneity is usually quite low in most states. Capital regions are favoured, generally because of their scores in tertiary enrolment. In general however it seems that educational services are practically immune to territorial differences and are rather evenly distributed.

Regional Index of Educational Services

Quality of Educational Services



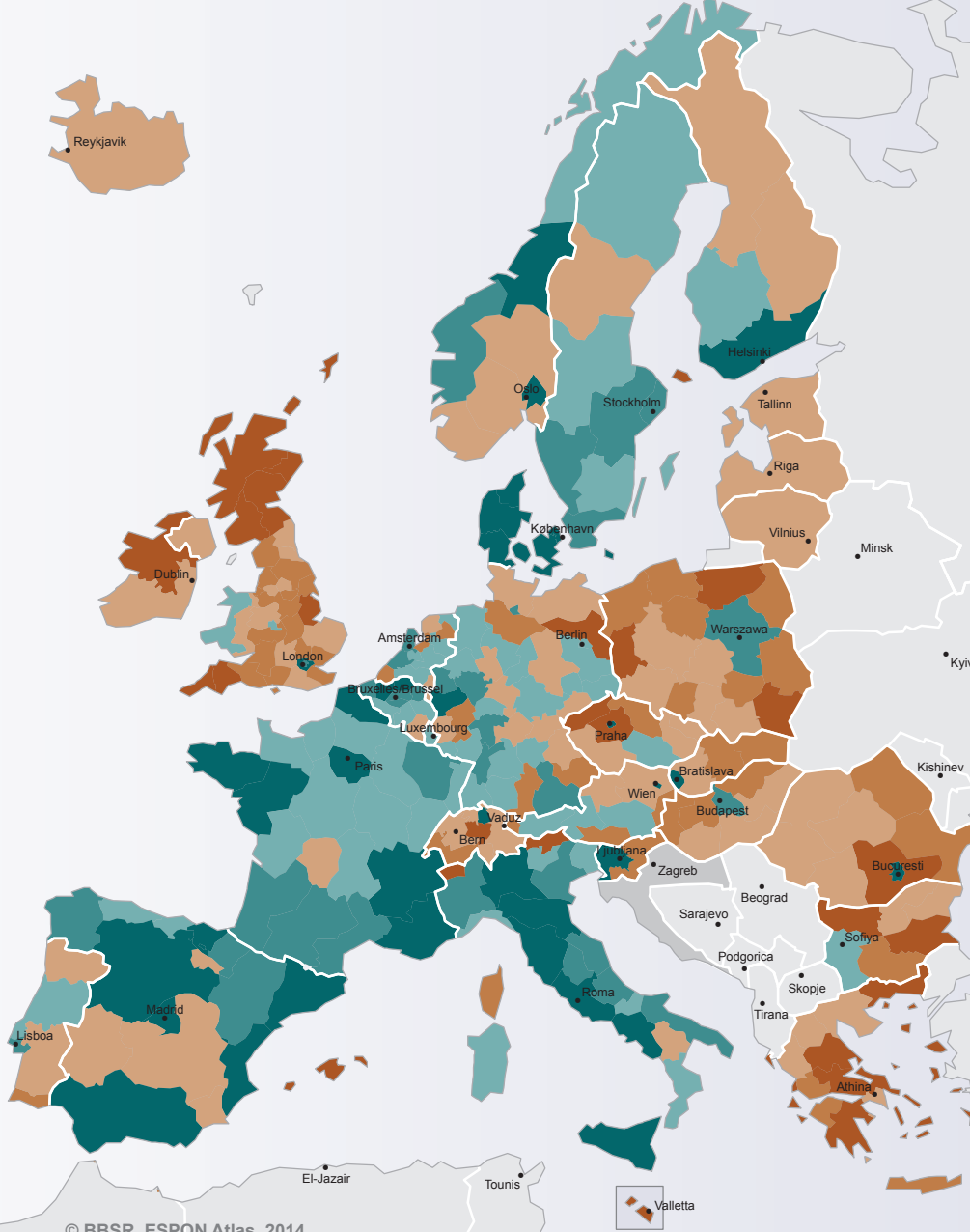
Based on the indicators (all 2009):
 A. Students in pre-primary education per 100 population aged 0 to official school entrance age
 B. Students in upper secondary education per 100 population of relevant age
 C. Students in tertiary education per 100 population of relevant age
 D. National disaggregated expenses EURO on education - per population aged from 6 to 24

Regional level: NUTS 2 (2006)
 Source: SeGI, 2012
 Origin of data: SeGI, 2014
 © UMS RIAATE for administrative boundaries

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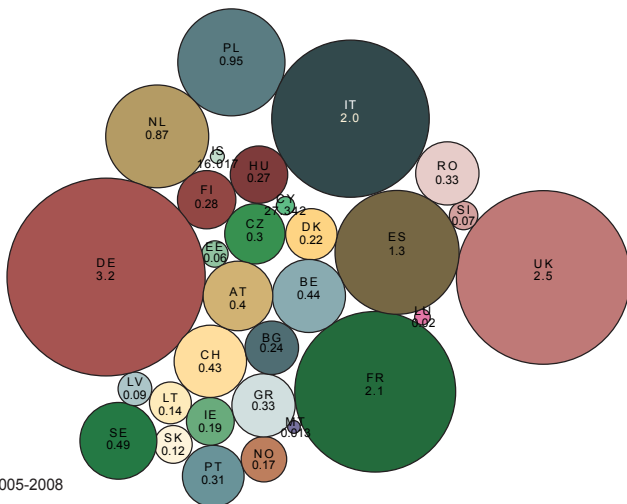
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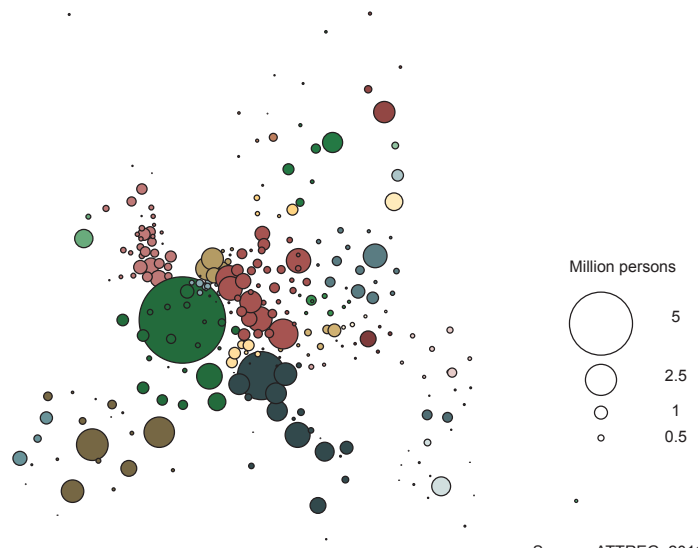
Creative workforce - employment in creative class

By country



Million persons, annual average 2005-2008

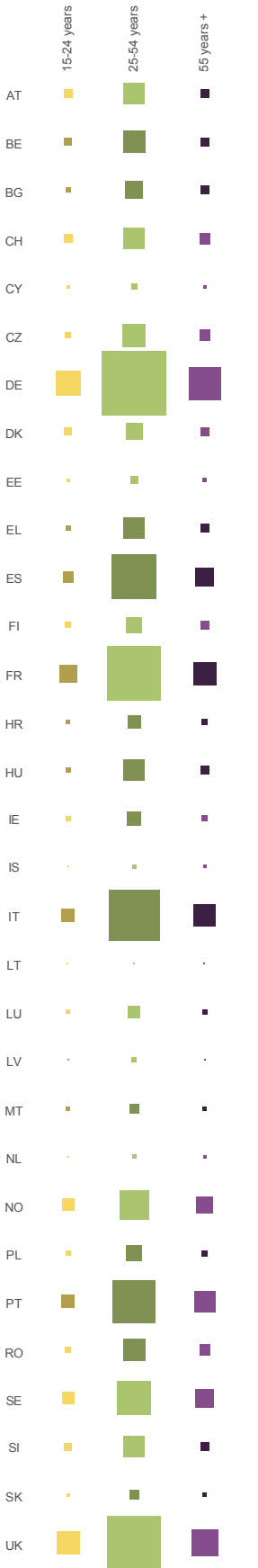
By region (NUTS 2)



Source: ATTREG, 2011

211 million persons were employed in the EU-27 in 2013.

Employed persons per age groups, 2012

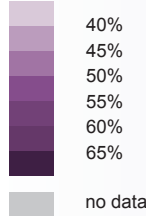


Age-specific employment rate
 above EU average (light green)
 below EU average (dark green)

Origin of data: Eurostat, 2014

Employment

Employment rate of population aged 15 and older, 2012



Regional level: NUTS 2 (2010)
 Source: Eurostat, 2014
 Origin of data: Eurostat, 2014
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The labour force – which comprises both employed and unemployed, actively job-seeking persons – has grown considerably in Europe over the last 60 years. This was caused by a growing population and rising participation in the labour market of several population groups, especially of women.

The economic crisis that hit Europe from 2007 on has had severe impacts on the European labour market. The effects were very asymmetric in the European countries and regions.

One severe impact was on employment. In the period from 2007 to 2011, Lithuania, Estonia, Latvia, Ireland, Greece and Spain suffered most. Construction and manufacturing were the sectors where the labour market was most severely hit by the recession.

In 2012, the EU27 employment rate of women was 12.4 percentage points below the corresponding rate of men. Also on regional scale and in all NUTS 2 regions it was lower. During the crisis, female employment decreased to a lesser extent or even rose; male employment was thus more affected by the economic crisis.

Overall unemployment rates increased as a result of the economic crisis, as did youth unemployment. Since 2000, the unemployment rate at EU level had been dropping from about 9% at the beginning of the 21st century to 7% in 2007 and 2008, but rose to 10.9% in 2013. In the most affected countries, unemployment rates even doubled or tripled in these years.

Lately, unemployment rates declined in the majority of regions; this was however mostly observed in regions with an already lower level of unemployment. Existing disparities in unemployment therefore worsened, both in a European comparison and within most of the individual countries.

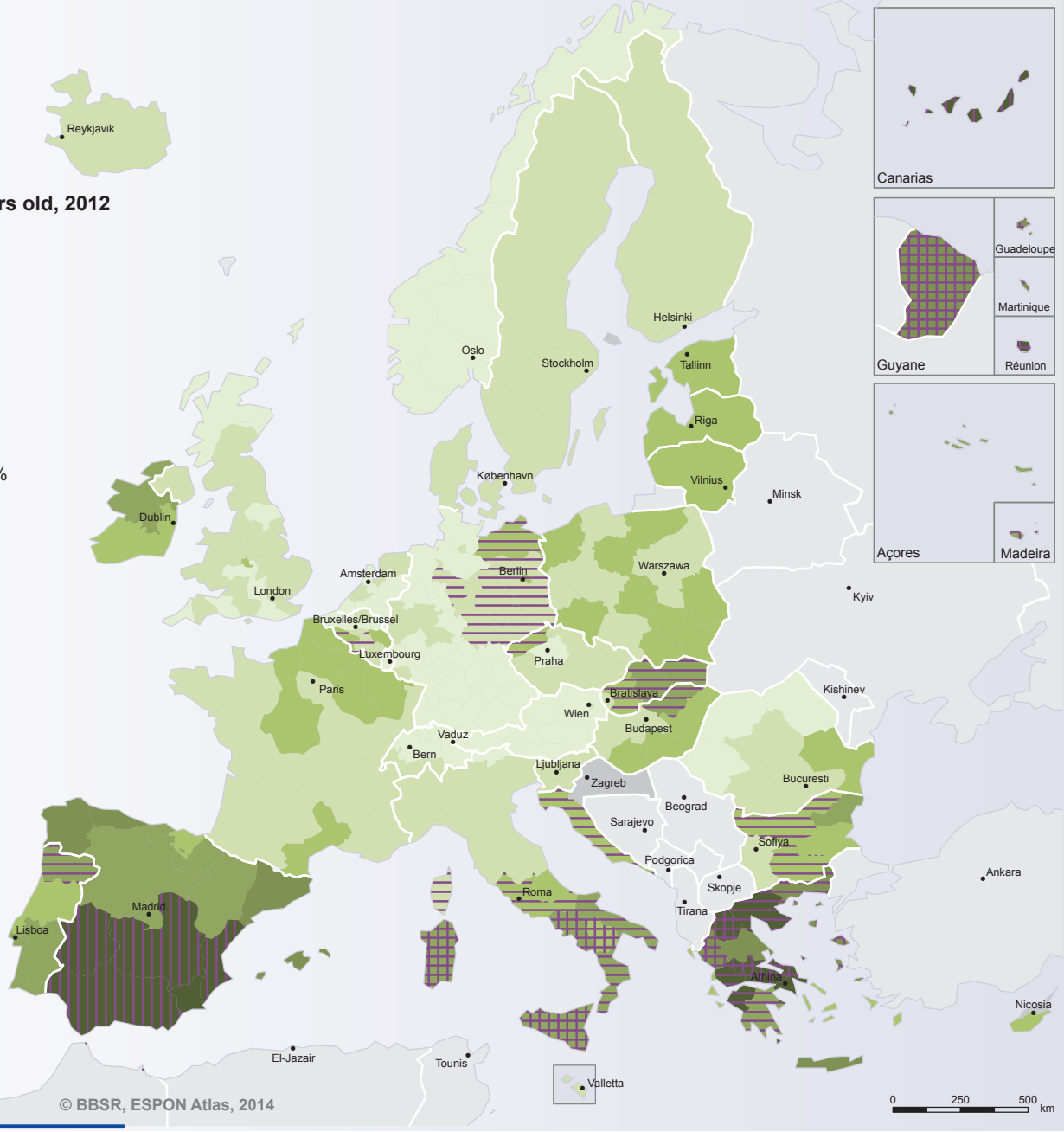
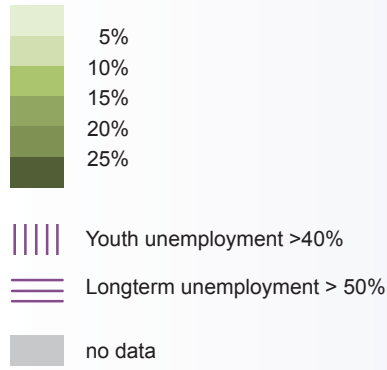
Similar to the employment rate, the gender gap also narrowed for unemployment rates; again, this was mainly due to the fact that men suffered more from the crisis. In 2012, female unemployment rates for the ESPON area were therefore only slightly higher than male, but showed a strong national and regional differentiation. A number of regions in Southern, but also in Eastern Europe see a much more pronounced joblessness of women. However, there is a considerable number of regions where there is an unfavourable relative imbalance for men.

Young people bear a higher risk to be unemployed than adults, even in strong economies. As a result of the economic crisis, unemployment of young people increased even stronger than overall unemployment. In one fifth of the NUTS 2 regions, one out of three economically active young people were unemployed. In 4% of the regions, mostly in Spain and Greece, it was even one out of two. In most of the countries, youth unemployment rose stronger than overall unemployment.

On European level, long-term unemployment (unemployment of more than 12 months) rose only slightly from 2003 to 2012, but Greece and Spain experienced a dramatic increase in relation to the EU average.

Unemployment

Unemployment rate of 20-64 years old, 2012



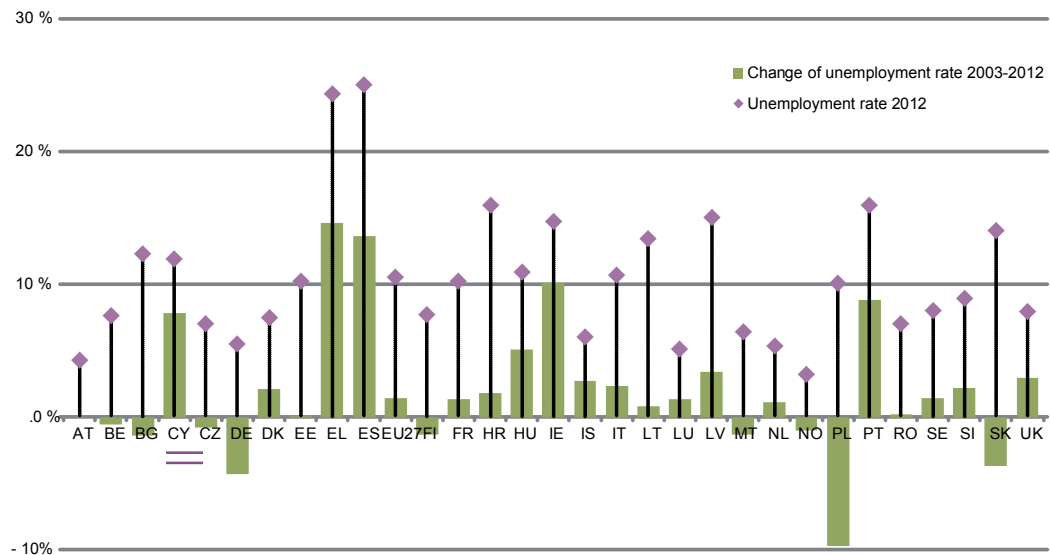
Regional level: NUTS 2 (2006)
 Source: Eurostat, 2014
 Origin of data: Eurostat, 2014
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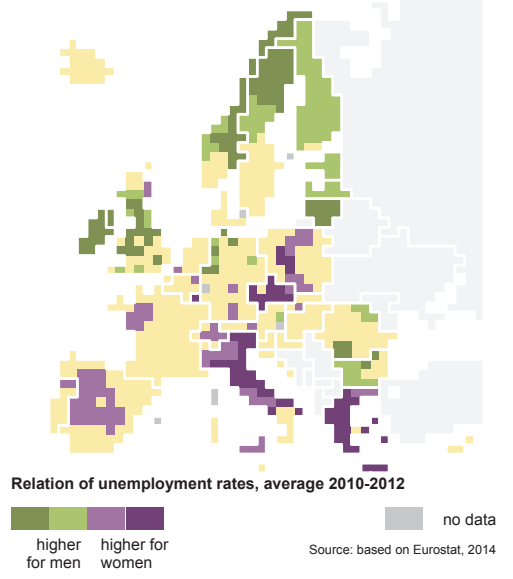
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Unemployment rate: % 2012 and change 2003-2012 (relative %)



Gender imbalances in unemployment



4. Urban and rural areas

Urban and rural is one of the most fundamental territorial divisions, ever since accompanied by specific metaphors connected to living conditions, economic activities and cultural characteristics.

But as diverse as these spatial categories appear are the differences within themselves and the diversity of these territories throughout Europe, also. Talking about urban areas means dealing with small and large cities, urban regions and agglomerations as well as with functional urban areas and metropolitan regions. The same also applies for rural areas, ranging from peri-urban with a smooth transition of urban and rural characteristics to peripheral rural regions.

In European spatial policy the polycentric and balanced territorial development is seen as a key element of achieving territorial cohesion. That means referring to the priorities of the TA2020 related to cities, that Metropolitan and other urban regions are recognized as assets for the development of the whole European territory provided that, and here comes the rural aspect to cohesion, that other regions benefit from their dynamism and they add value and act as centres contributing to the development of their wider regions. The development of the wide variety of

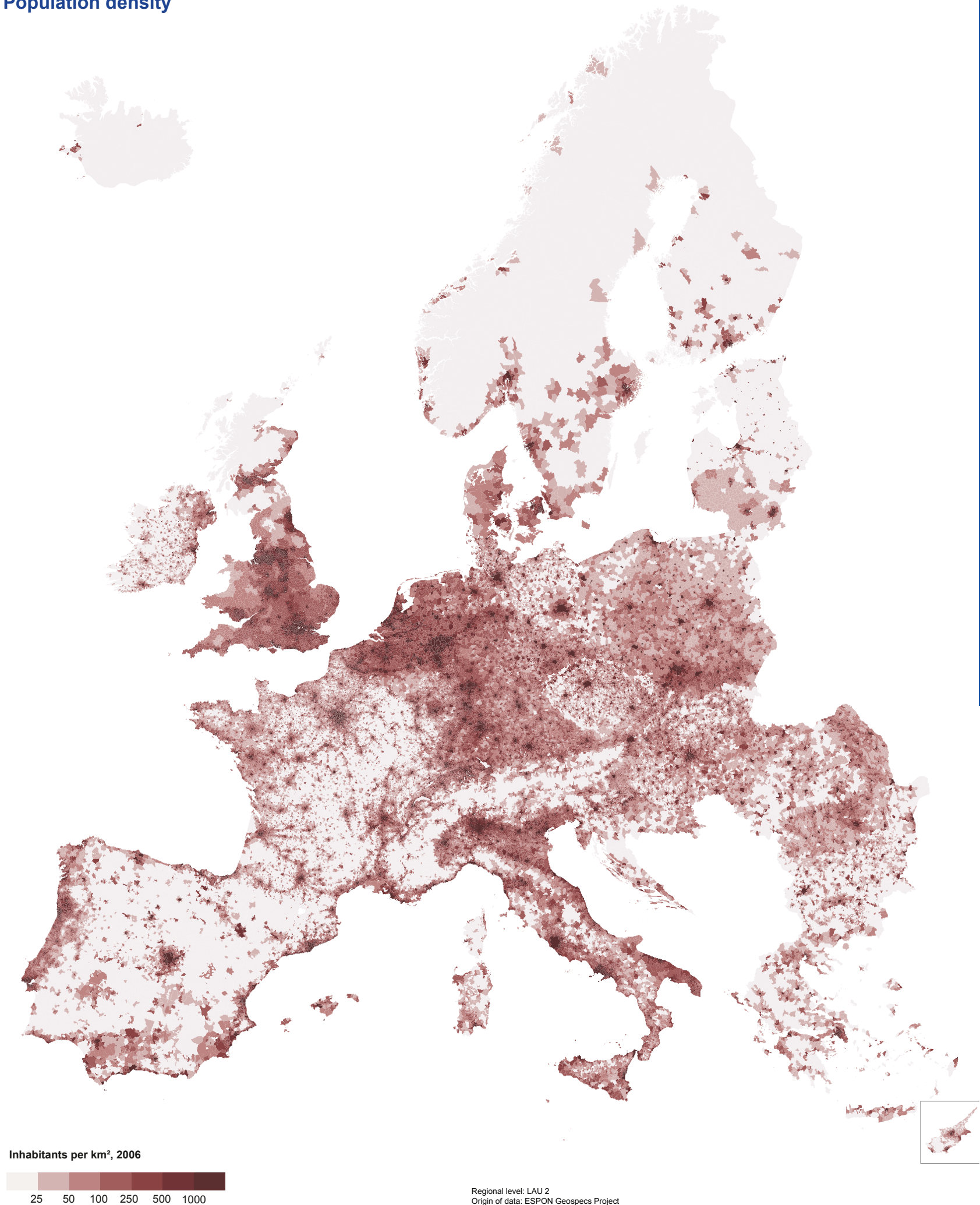
rural areas should according to this take account of their unique characteristics.

Territorial development policy should support the territorial competitiveness of the EU territory also outside the core 'Pentagon area', which covers according to the European Spatial Development Perspective (ESDP) the area defined by London, Hamburg, München, Milano and Paris and is seen as the most urbanised region of the EU. Cities should get the opportunity to improve their performance in European and global competition and promote economic prosperity.

The shift towards an integrated model of urban and territorial development policy in the TA2020 strengthened the urban dimension, pointing at the importance of the interaction of EU-policies, national, regional and urban development policies opens the view on a territorially integrated approach.

In this territorial approach the 'EU2020' strategy is spatially anchored. What is needed is the knowledge of the specific potentials and assets of the different dimensions of the territory, functional regions, cities and rural areas need to be identified to sketch the specific actions to take to the successful implementation of 'EU2020' for cities and regions of the EU.

Population density

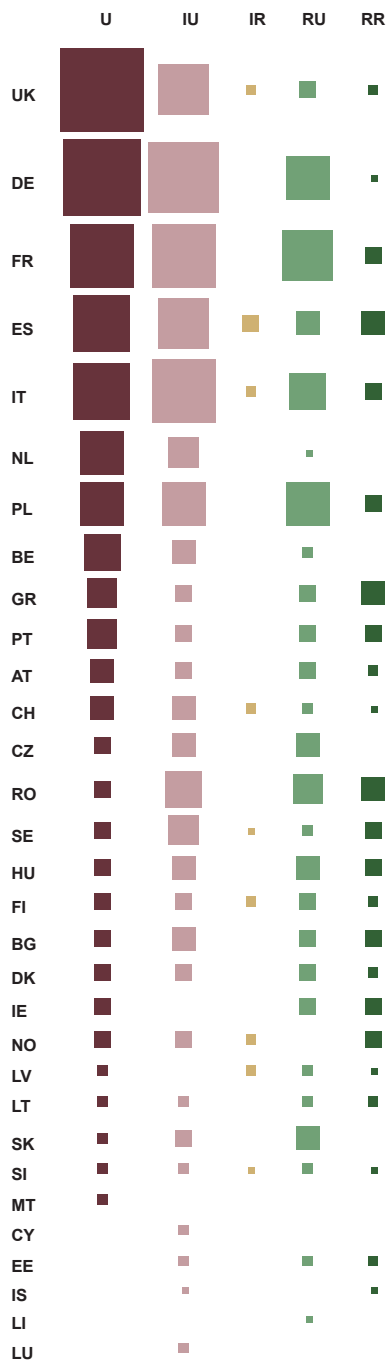


Urban and rural Europe

211 million people

live in urban regions. This is equivalent to the population of France, Spain, Poland and the United Kingdom.

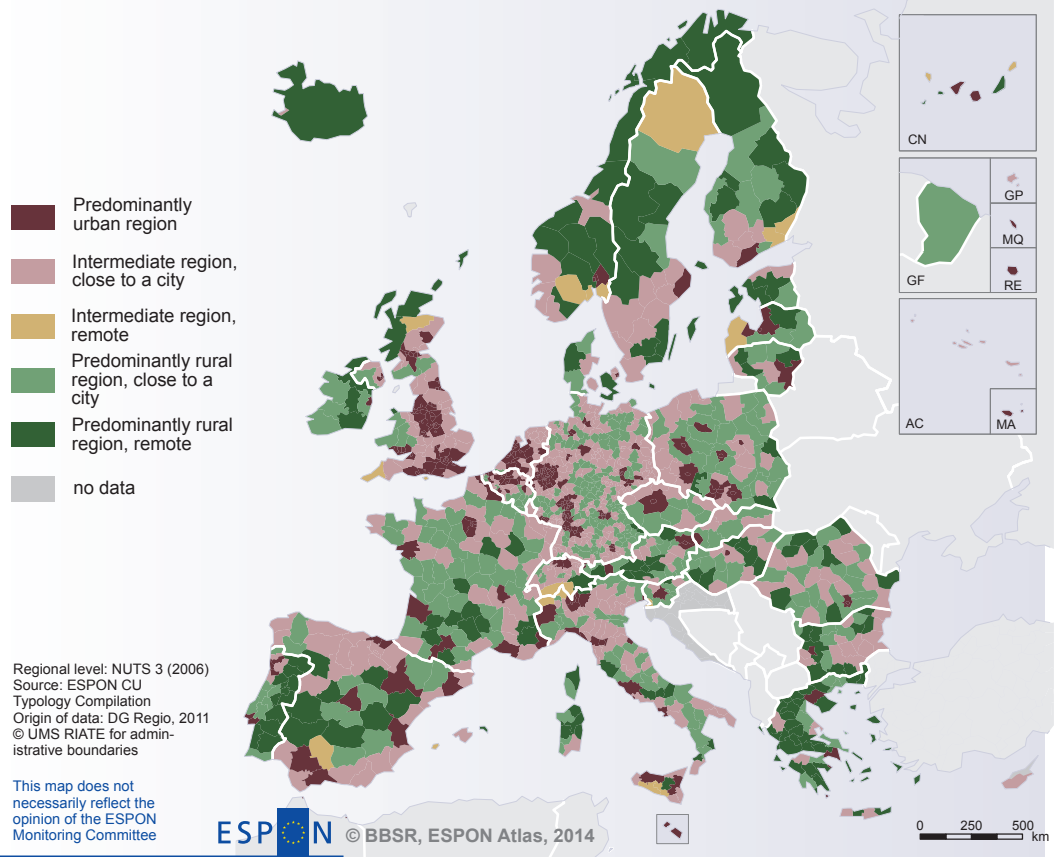
Population by different settlement types 2011



U Predominantly urban region
 IU Intermediate region, close to a city
 IR Intermediate region, remote
 RU Predominantly rural region, close to a city
 RR Predominantly rural region, remote

ESPON Atlas based on ESPON CU Typology Compilation and ESPON DB

Urban-Rural Typology



Regional level: NUTS 3 (2006)
 Source: ESPON CU
 Typology Compilation
 Origin of data: DG Regio, 2011
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The unique togetherness of cities and rural regions maintain and safeguard the development of the European territory. The awareness of mutual interdependencies guarantees balanced progress in their relations to enable and reinforce the joint progress in regional growth.

Defining what is urban and what is rural in European context as such is not an easy task. Different national starting points in city systems and national specifics might define rural areas in some countries that might be of urban character in another one. A European approach based on population density and the size of municipalities finds a comparable interpretation of urban and rural areas, distinguishing between predominately urban and rural areas and takes into account the aspect of vicinity and remoteness also.

Within the 32 ESPON countries altogether 40 % of the people live in municipalities in predominantly urban regions, followed in share by 35 % in the intermediate regions close to a city and 18 % in predominantly rural regions. The variety of the importance within the countries is big, reaching from 71 % for persons living in urban regions in the Netherlands down to 10 % in Romania. In Norway 36 % of the inhabitants live in predominantly rural regions, in the UK this share lays by 1 %, in other countries like Belgium, this regional category does not exist.

Cities and metropolitan regions are crystallisation points in territorial development. They provide central services on different regional levels and concentrate functions in economic, social and cultural fields of global, european, transnational,

national and regional level. The functional diversity of metropolitan regions, both capital regions and co-called second tier cities with distinct importance within national economies, safeguard stability in development.

In the area of metropolitan regions are living 60 % of the European people, in the capital regions alone live 28 % of the European metropolitan population. In the European perspective the capital city regions are the fastest growing regions related to population over the last twenty years whereas the number of inhabitants outside of metropolitan regions increased less. In the overall urban context, the second tier metropolitan regions showed the lowest growth rates. The trends of development in the countries are markedly different. It looks, that the importance of the capital cities influences the development within the city system. In Poland growth in population concentrated in the capital region only, in the UK beside the capital especially the smaller metro regions gained population and in Germany the capital and second tier metro regions were the main areas of urban population growth.

Strong capitals matter to nation states positioning in the global and European dimensions. Strong second tier also matter. They show differences in functionality and size, being whether a Metropolitan European Growth Area or a functional urban area of transnational/national importance. Smaller metropolitan areas and functional urban areas in the intermediate regions and predominantly rural areas have less functionalities reaching mainly transnational /national importance.

Typology of metropolitan areas

Typology of metro regions

- Capital metro region
- Second-tier metro region
- Smaller metro region
- Non-metro region
- no data

FUA & MEGA classification*

- MEGA
- Capital city
- Second-tier city
- Transnational/national FUA
- Regional/local FUA

*FUA: Functional Urban Area
MEGA: Metropolitan European Growth Area

Regional level: NUTS 3 (2006)
Source: ESPON CU Typology Compilation
Origin of data: DG Regio, 2011
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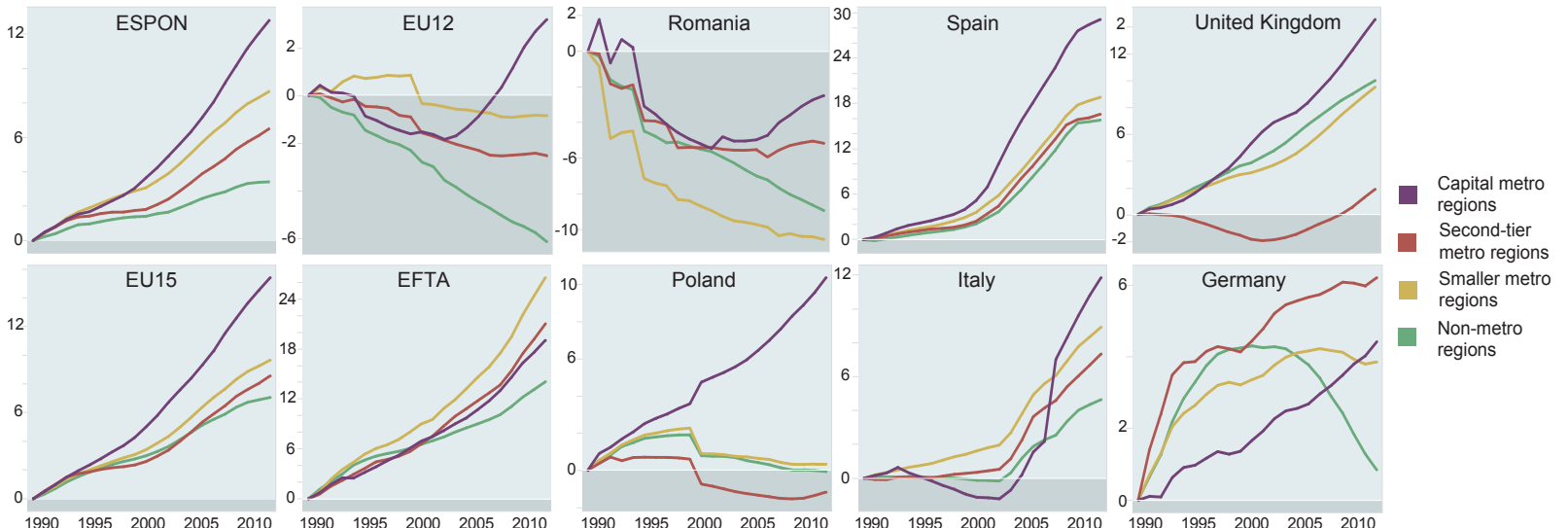
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0 250 500 km

Population development by metropolitan types and selected countries, 1990-2011 (difference in % to 1990)



Source: ESPON DB, ESPON Typology; own calculations

European network of cities

The

10

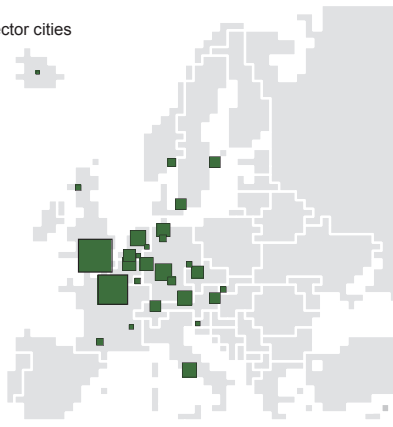
strongest economic metropolitan regions produce

20 %

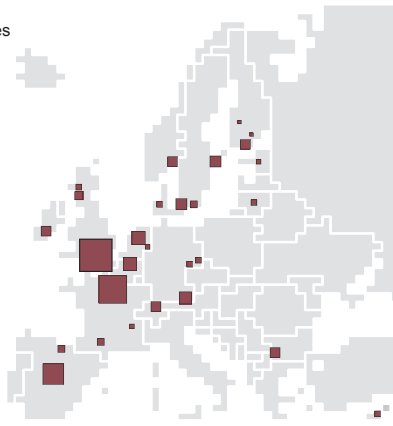
of the GDP of the ESPON area

TOP 30 European cities in different fields

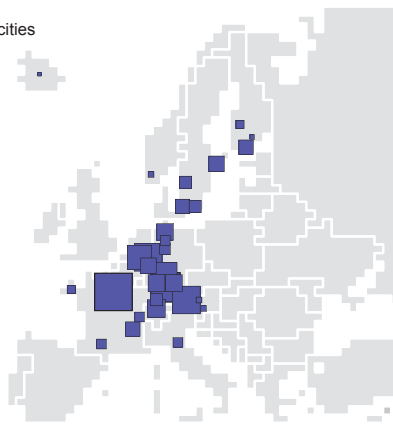
Leading sector cities



Skilled cities



Innovative cities



Size of symbols proportional to number of
 Leading sectors cities - persons employed in financial and real estate sector 2008
 Skilled cities - persons employed with tertiary education 2008
 Innovative cities - patent applications 2006
 Source: ESPON SGPTD

Intra - urban population dynamics

Population dynamics in Larger Urban Zones (LUZ), 2000

- Declining LUZ
- decline in core > decline in periphery
 - decline in periphery > decline in core
 - growth in periphery; decline in core
 - growth in core; decline in periphery
- Growing LUZ
- growth in periphery; decline in the core
 - decline in periphery; growth in the core
 - growth in periphery > growth in the core
 - growth in core > growth in periphery

5,000,000
 1,000,000
 Size of symbols proportional to the population

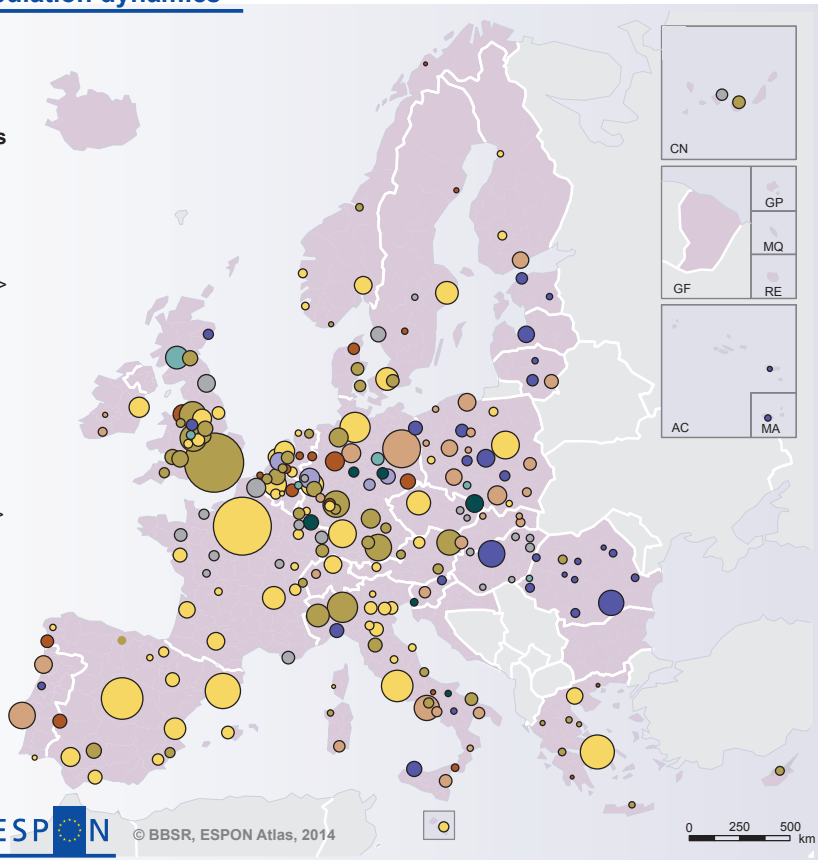
Source: ESPON FOCI, 2010
 Origin of data: Urban Audit, 2009
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The interest in cities is growing in Europe and the, the idea of cities as “growth poles” re-emerges in the debate about policies for competitiveness as policy is oriented to make the European economy more successful in the world.

In the discussion about the contributions that different territories have in puzzle of national competitiveness in the European context, the debate about the economic contribution of cities gained speed and also the question if a concentration of investment in selected cities, for instance in the capitals might be more suitable than spreading investments across a wider set of cities, or to put in other world, might a polycentric urban system be economically better positioned than a central one.

Cities in Europe are on the move, both in demographic and economic respect. The evolution of cities depends on the relation between the urban core and its hinterland in which the stage of the urbanisation process is generally linked to general economic development in the regional and national context.

The urbanisation cycle is composed by urbanisation, sub-urbanisation, counter-urbanisation and finally re-urbanisation. Different cities in Europe are in different phases of this cycle.

In the dense urban and central parts of Europe, many cities are characterized by population growth in both core and peripheries, often faster in the former than in the latter. In Eastern Europe, most of the cities are characterized by the decline of their population with an intense process of suburbanization, while in Mediterranean cities,

population grows with an intense process of sub-urbanization. In the present period, suburbanisation trends are still very topical in southern and Eastern Europe, while re-urbanisation is progressing in the cities of the pentagon.

In the present, the sectoral structure of Europe's cities can be seen as a factor of competitiveness, but in fact, it is also an indication for the historical paths these cities have taken. Territorial development built on an integral capitalisation of sectoral strength based on innovation, economic diversity, skills and human capital, connectivity, place quality and governance capacity. Cities are concentration points of these activities

The sectoral diversity ranges from big metropolises concentrating high level functions in finance and business services, the highest level is to be found in the four major world financial cities London, Paris, Amsterdam and Frankfurt, to cities basing on a solid manufacturing base.

The concentration of economic weight in the big cities in the regional context is obvious, but already on a national level, the concentration of the sum of the produced goods and services is remarkable. In the UK, London produces more than one third of the total national GDP, other major cities play only minor roles. The more polycentric the national city system, the more importance other cities gain in their contribution to the national GDP like it is the case Poland, Italy and Germany.

Economic structure and importance of cities

Typology in terms of structure

- Very high share of high level functions in finance, business and non market service
- High share of high level functions with solid manufacturing base
- Lower share of high functions with very high share of manufacturing
- High share of basic market services
- High share of non market services
- Average with orientation in manufacturing
- Very high share of manufacturing

Type of city

- Capital MEGA
- Second tier MEGA
- MEGA
- Capital city
- Second tier city
- Other city

Size of symbols proportional to the GVA

Share of cities in regional GVA 2007

- 30
- 45
- 60
- 75
- Regions outside metropolitan areas
- no data

Regional level: NUTS 2 (2006)
Source: ESPON FOCI 2010, SGPTD 2012
Origin of data: Eurostat, 2007
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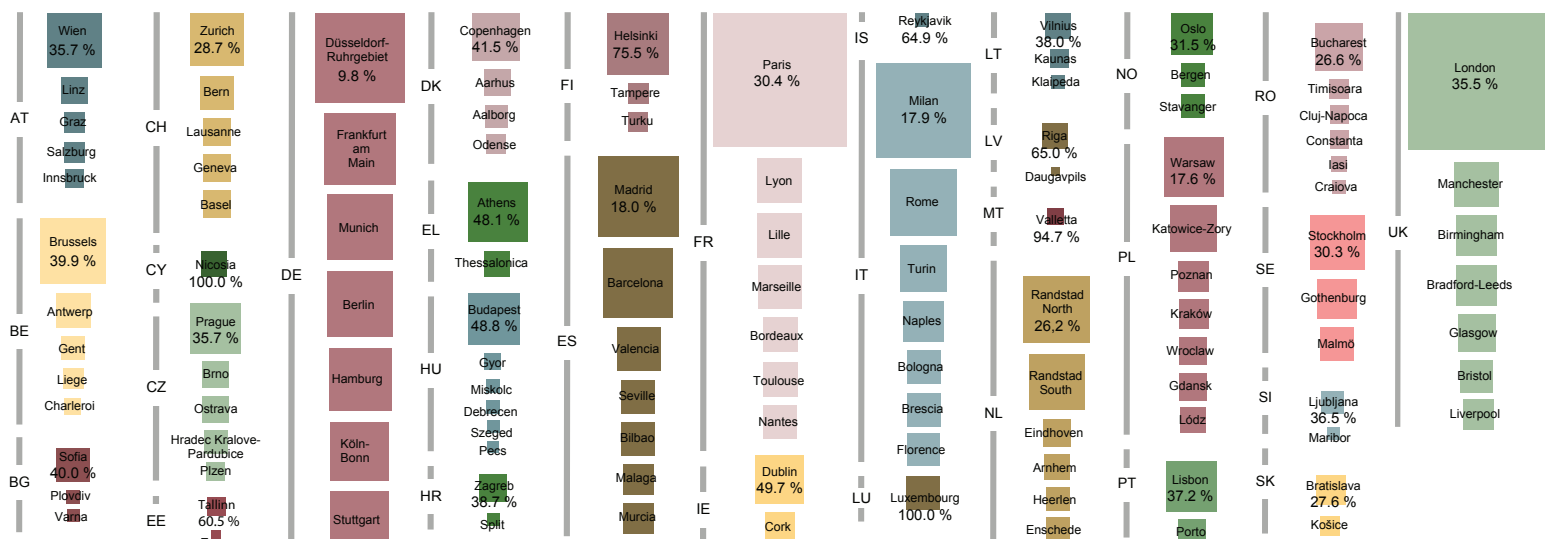


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0 250 500 km

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Gross domestic product of selected metropolitan areas 2011



The size of the squares represents the total GDP in purchasing power standards, the figures indicates the share of the biggest metropolitan area in the respective national total GDP
Source: Based on ESPON FOCI and Eurostat

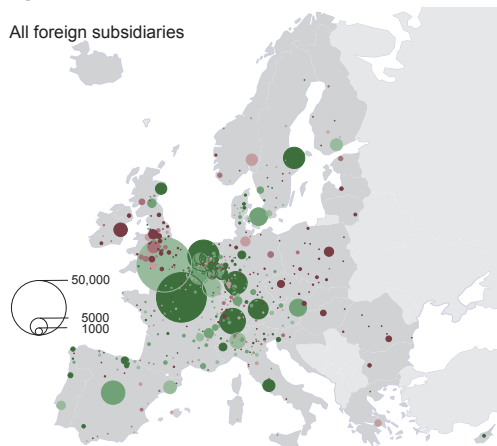
European poles of global integration

53 %

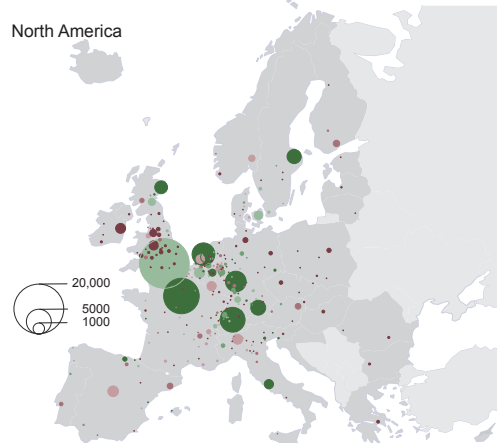
of the global multinational subsidiaries links occur inside Europe

Control balance of foreign subsidiaries by FUA

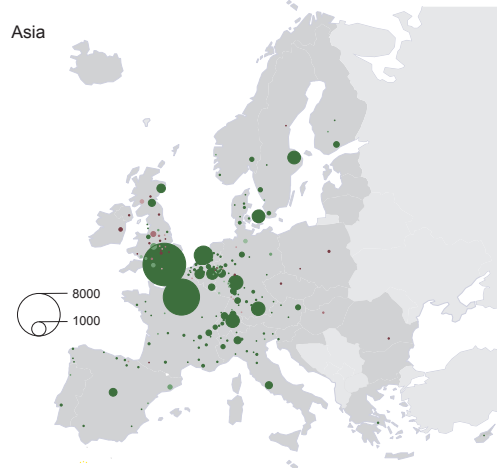
All foreign subsidiaries



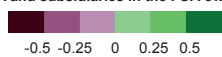
North America



Asia



Ratio of subsidiaries located abroad owned by headquarters in the FUA and subsidiaries in the FUA owned by headquarters abroad

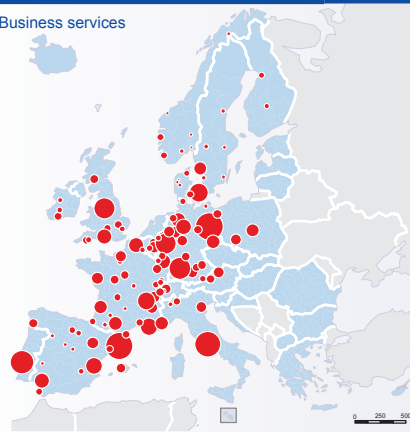


Size of symbols proportional to the number of subsidiaries

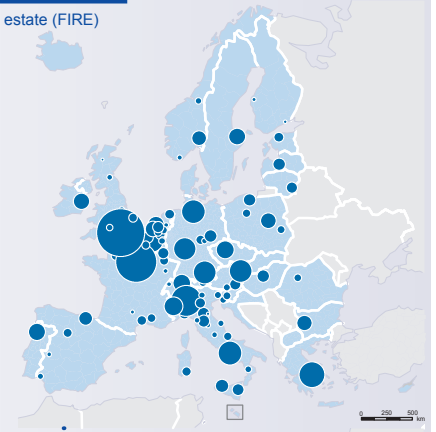
Source: ESPON FOCI project, 2010

Participation of FUAs in global and European networks

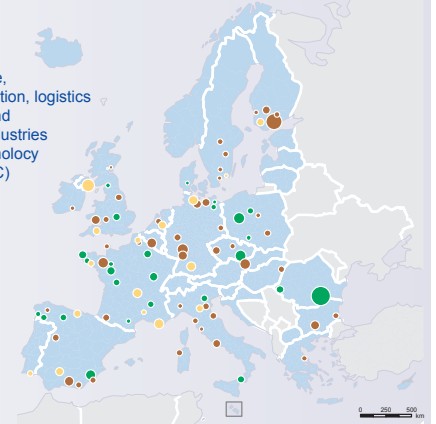
Advanced Business services



Finance - real estate (FIRE)



Wholesale, transportation, logistics cultural and leisure industries high technology (incl. NBIC)



Source: ESPON FOCI, 2010
Origin of data: ORBIS, 2007
CORDIS, 2008
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The role of cities, namely of large and capitals cities as important economic hints between Europe and the rest of the world must not be contested. To access the embeddedness and vulnerability of cities in the global context, the exchange of information and the investments in leading economic activities reveals the potential for a future development. The degree of integration of cities in global and European research networks like the EU Seventh Framework Programme and the involvement into the network of multinational firm and their systems of subsidiaries defines the international participation.

According to the connections in these networks the global position of European cities can be divided between "global cities", namely London and Paris, European cities being well integrated in global networks of leading activities covering urban strongpoints like Amsterdam Brussels or Munich and cities with still noticeable international participation. Cities in all cases represented in a broader context of functional urban areas (FUA).

A deeper view in the leading sectors, advanced business services, finance together with insurance and real estate (FIRE), high tech including including converging technologies, cultural industries and transportation and logistics shows the sector specialisation of cities. A first group for example includes FUA which are preferentially engaged in manufacturing activities, as automobile or aeronautic, but also in older cycles as textile, steel or metallic industries. A second group is specialized in the FIRE activities to find in this group not only the major European financial centers but as well almost all the state capitals

of former Eastern EU countries.

The specialisations in transportation and logistics and also related to cultural and leisure industries refers mostly to rather small cities. The cities with the specialisation in activities of high technology, including the so-called "converging technologies" (Nano technologies, biotechnologies, technologies of information and cognition have not so many but a few specialized connections in the global economy



The position of FUA related to economic power is among others determined by the headquarter functions situated in the city and the network of subsidiaries controlled in other regions and cities. The balance between controlled subsidiaries from a city and the subsidiaries located in this city but controlled from outside, is a good indicator to measure this. On the other hand, the hosting of external controlled subsidiaries and assumed dependencies also shows the strategic importance and dynamic of the city.

At the World scale, European FUA seem to be more controlling subsidiaries than controlled from outside. Without including city internal and respective national subsidiaries, the centre of foreign control might be defined in the rhombus with the corner built by London, Helsinki, Vienna and Madrid. The Eastern European cities and also Mid- UK appears mainly controlled from abroad. This is particular evident for external control by headquarters located in North America. Related to Asia, the degree of European influence is strong at the moment, only Mid - UK and the capital cities of Eastern EU Member States do show some external control from Asia.

Participation of functional urban areas in global and European networks

Global position in economic and research networks

- Global cities
- Well integrated European cities
- Cities with noticeable international participation
- Cities with modest participation
- Cities with low participation

 2,000,000
 500,000

Size of symbols proportional to the population

Source: ESPON FOCI project, 2010
 Origin of data: ORBIS, 2007; CORDIS, 2008
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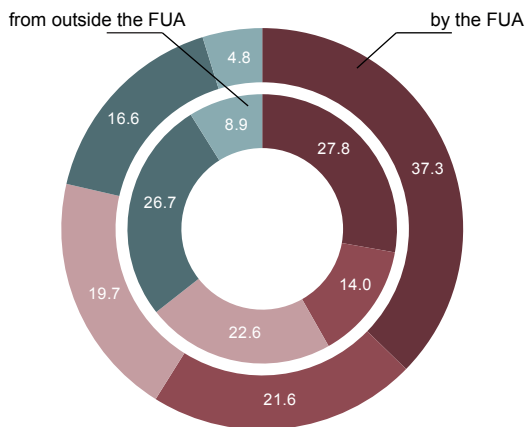
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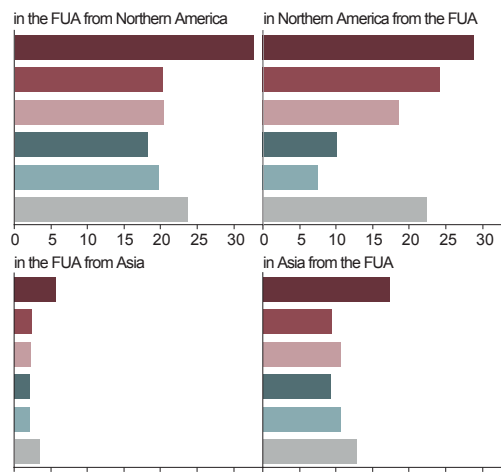
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Structures and control balance of FUA subsidiaries

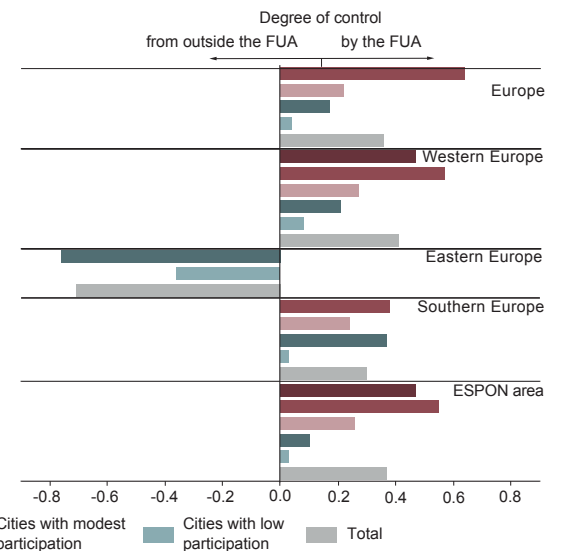
Percentage of subsidiaries controlled



Percentage of international subsidiaries controlled



Control balance of international subsidiaries



Source: BBSR ESPON ATLAS, based on FOCI 2010

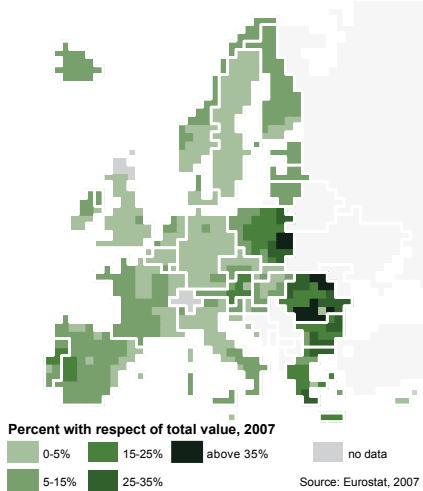
Global cities
 Well integrated European cities
 Cities with noticeable international participation
 Cities with modest participation
 Cities with low participation
 Total

Characteristics and potentials of rural territories

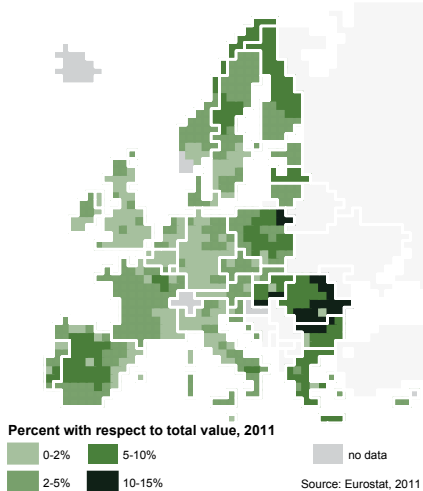
12 hectares

is the land size that an average EU farmer has

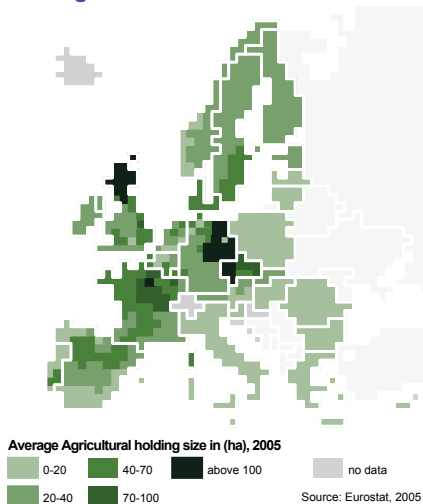
Employment in Primary Sector



Gross Value Added of Agrarian Activities



Average Farmsize



The Structural Typology

Structural Types (Intermediate and Predominantly Rural Regions)

- Predominantly Urban
- Agrarian
- Consumption Countryside
- Secondary Sector
- Private Services Sector
- no data

Regional level: NUTS 3 (2006)
Source: ESPON Database, 2014
Origin of data: EDORA, Nordregio, 2010 © UMS RIATE for administrative boundaries

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Rural areas within Europe represent vital parts of its territory. However, these areas are often more heterogeneous than it seem at first glance.

From textural aspect the structural typology allows us to distinguish between non-urban regions in terms of their socioeconomic performance. The findings of this typology point to economic diversification of Agrarian regions as one of the key objectives for such targeted horizontal programmes. It draws on the discourse regarding territorial and sectoral policy, and the shift from productivism towards new functions highlighting the importance of countryside public goods and the concept of “consumption countryside”.

Rural regions with primary sector dominance in the local economy are mainly concentrated in an arc stretching around the eastern and southern rims of Europe. Some other rural regions have tourism as leading economic attribution, where countryside is less about production and more about consumption, and people visit them for recreational purposes. These territories – Consumption Countryside regions – typically have diversified small scale infrastructure. The rest of the rural space is characterised by diversified regions with a focus on secondary or private sector services, and where employment structure is only slightly different than in urban regions. Consumption ruled countryside and diversified regions with a focus on private

sector services tend to achieve a good level of economic performance and are likely to continue to do well in the immediate future.

Rather than becoming more uniform in character, rural Europe is becoming increasingly diverse. This diversity implies both new challenges and changing opportunities. Many of these lands have slower economic, social or cultural progress, but there are also regions aiming to better connect to European or the global blood flow. Looking from distance, individual processes are merging, and compile together a broader structural change. In rural economies, this is associated with changes in the robustness and capacity of local communities, which are linked in complex ways to rural governance.

The performance of these regions is placed on a continuum between “depletion” and “accumulation” which is determined according to their combined accomplishment in net migration, GDP per capita, average annual change in GDP, average annual change in total employment, and unemployment rate. The geographical pattern of performance depicts a clear concentration of Depleting regions in New Member States. Mediterranean regions mostly down score the average which might be in close connection with structural problems, while highest rates of “accumulation” are found in already developed regions that is rooted in their past.

Performance Typology

Performance Types (Intermediate and Predominantly Rural Regions)

- Predominantly Urban
- Accumulating
- Above average
- Below average
- Depleting
- no data

Population change '06 - '08

- Significant gain
- Extreme loss

Regional level: NUTS 3 (2006)
 Source: EDORA, 2010 DEMIFER.
 Origin of data: EDORA 2010, DEMIFER
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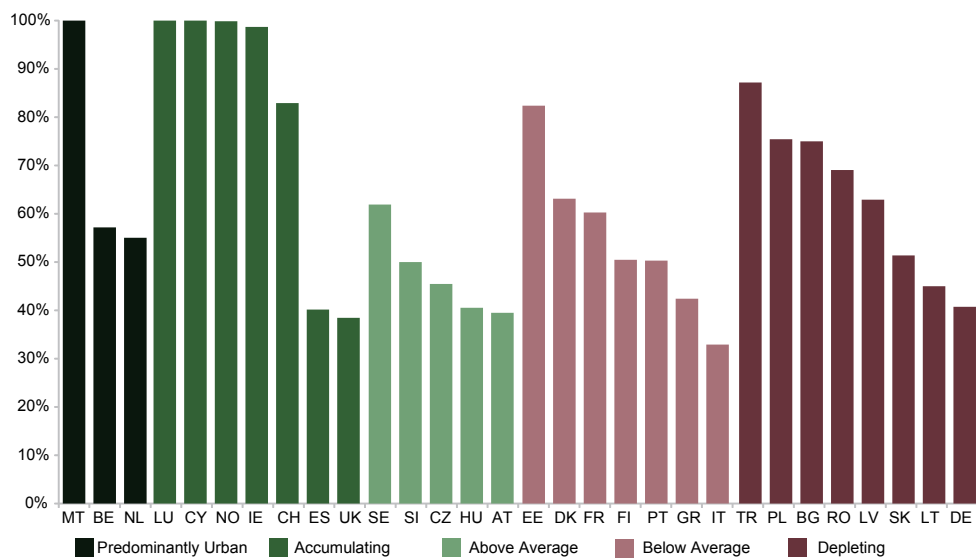


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Share of dominant performance types in European countries, 2010



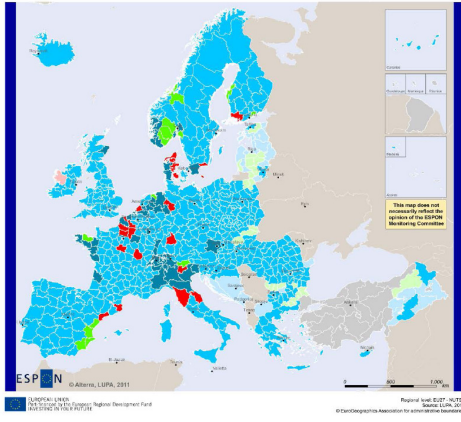
Source: EDORA, 2010

Challenges of changing landscape in Europe

2,25 billion

EUR have been invested by the Structural funds of EU for the rehabilitation of industrial sites.

At this time no data available. Changes in the environmental dimensions in the period 2000-2006.



Level of economical functions

Land Use Change Typology

Land Use Change Types (according to intensification)

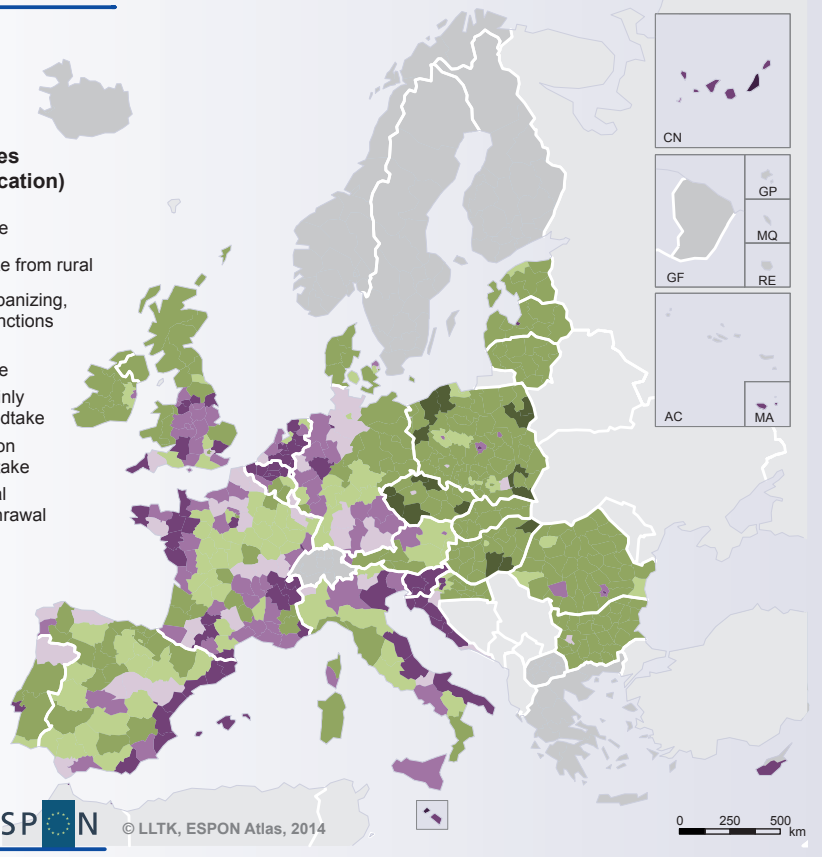
- Very high - Land take
- High - urban landtake from rural
- Moderate / high - urbanizing, maintaining rural functions
- Moderate - rural conversion, land take
- Moderate / low - mainly rural conversion, landtake
- Low - rural conversion with negligible land take
- Extensification - rural conversion, fram withdrawal
- no data

Regional level: NUTS 2/3 (2006)
Source: Nordregio, 2012
Origin of data: EEA, 2011
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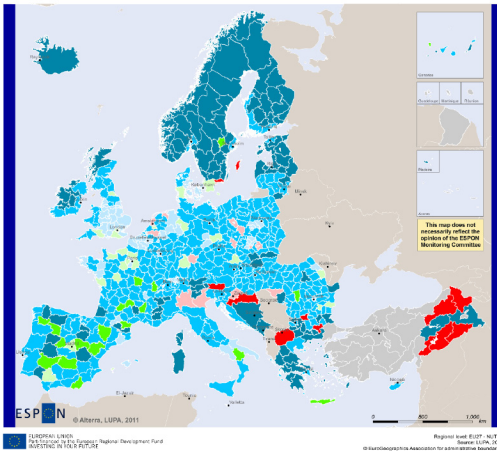
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At this time no data available,

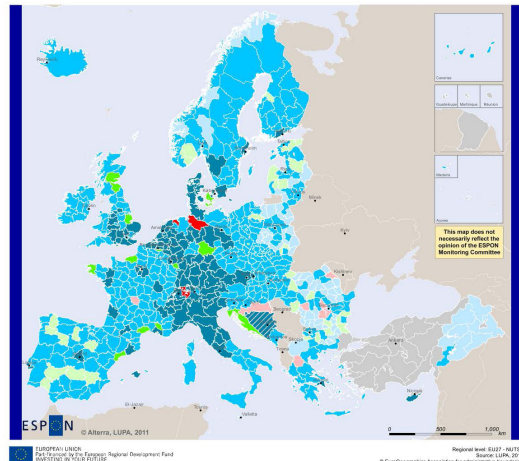
Changes in the environmental dimensions in the period 2000-2006,



Level of environmental functions

At this time no data available,

Changes in the social dimensions in the period 2000-2006,



Level of social functions

Land use in Europe has changed drastically during the last fifty years, primarily in relation to the betterment of human well-being and economic development, while unfortunately causing serious environmental problems. Policy change plays a role in the performance of territories. Understanding the impacts of these land use changes on sustainability is currently a major challenge for the policy and scientific community. Although European policy does not have a specific spatial planning responsibility or competence for planning per se, it sets the framing conditions of planning through different strategies and instruments. Land use implications on the compliance of the key EU policy objectives and targets are crucial due to its cross-cutting nature touching upon many different territorial challenges. Not least, to urbanization and rural-urban relationships, climate change mitigation and adaptation, natural resource management, energy, transport, regional competitiveness and cohesion.

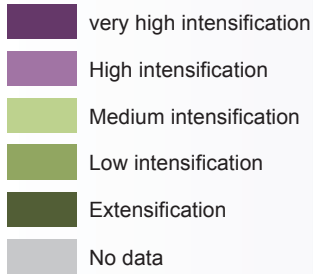
ESPON researches on land use are far from being ad hoc regional policy recommendations. They are general messages for awareness rising. The assessment of the intensity of Land Use Change revealed that there is a clear east-west dimension that could be partly explained due to the enlargement of the European Union in the nineties. A couple of examples are provided which illustrate such phenomena. Large volumes of land use extensification are almost exclusively found in Eastern European member states, particularly in Poland, The Czech Republic and Hungary. This pattern is very dominant in the period 1990-2000 but continues in 2000-2006 as well. The land ownership reforms in Eastern Central Europe during

the 1990s resulted in marked changes, a process which was further fuelled by the expectations regarding future membership of EU in the period up to and after the membership in 2004. Besides, it also revealed that some of the most significant changes between 1990 and 2000 took place on the Iberian Peninsula. Considering that the agrarian reforms in such regions began during the 1970's and ended in the late 1980's, the changes could be partly explained likely due to the ascension of Spain and Portugal to the EU in 1986.

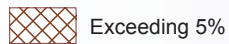
When comparing the Land Use Functions to the Land Use Change typologies a majority of land changes (calculated by area of change) are taking place in regions where extensification is taking place due to agricultural and forest change. And where this is taking place, a vast majority of the regions are characterized as having a neutral performance in terms of provision of work. Urban growth comes at the expense of other land uses. In the core cities there is a clear dominance of new building development on previous agricultural land. This is due to several factors: Firstly most of the available land for urban growth is agricultural. Secondly, agricultural land is in most cases technically more suitable for construction than forest areas both topographically and in economic terms. Thirdly, natural areas are often considered as valuable recreational areas and hence cities have protected them from building activities. Grouping cities by regions highlights some specificity like in Eastern countries about 30% is developed on previous forests. In the large urban zones the agricultural land is still the primary source. However, in Eastern cities most of the land is developed on forests.

Land Change hotspots

Intensity of Land Change



Amount of Land Change (%)



Regional level: NUTS 2/3 (2006)
 Source: EU-LUPA, 2012
 Origin of data: EEA, 2011
 © UMS RIATE for administrative boundaries

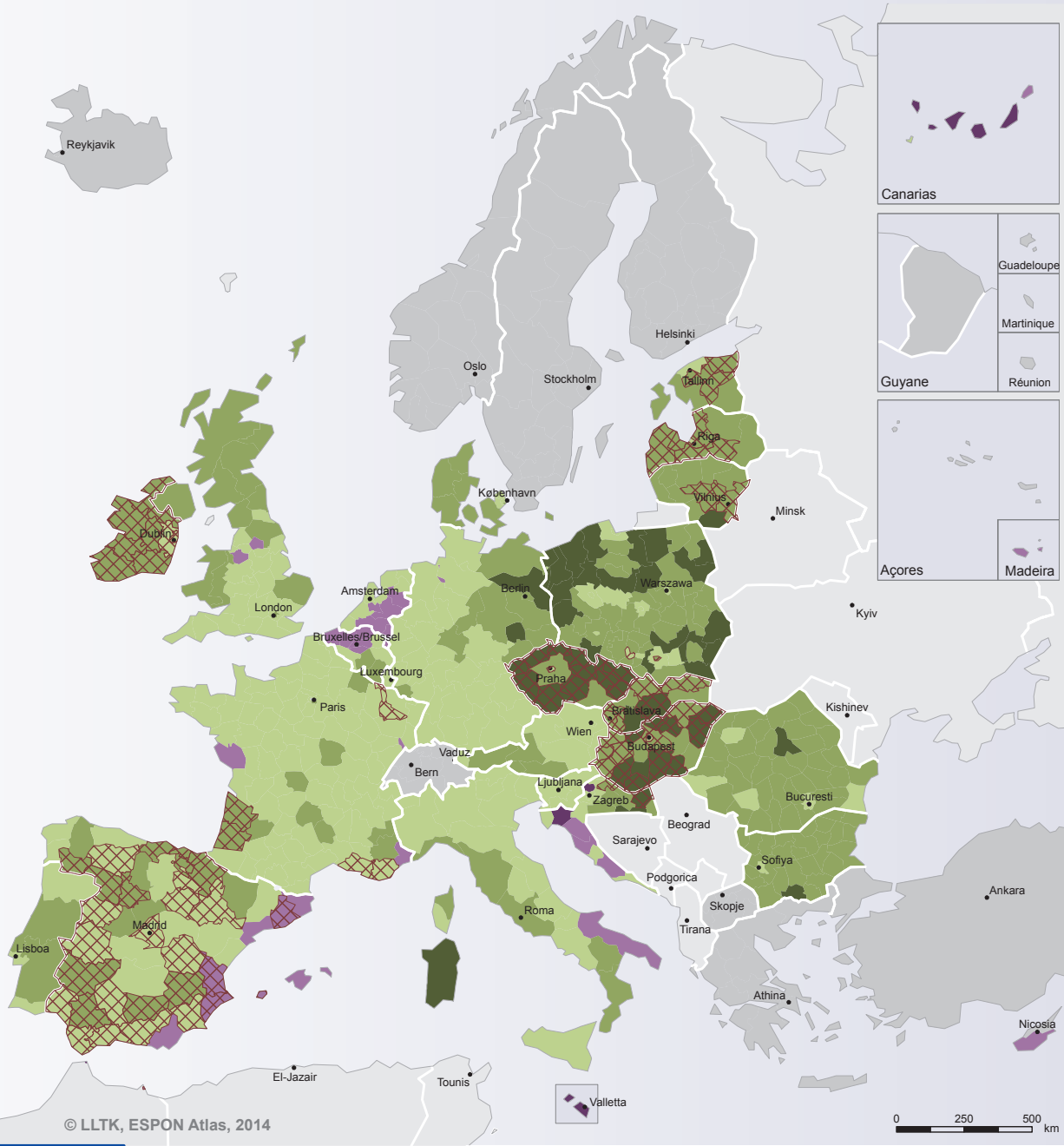
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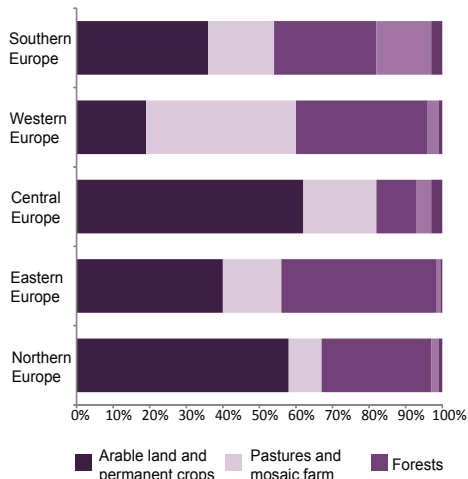
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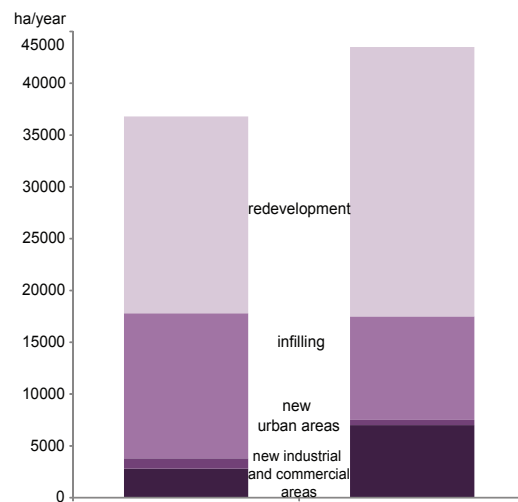
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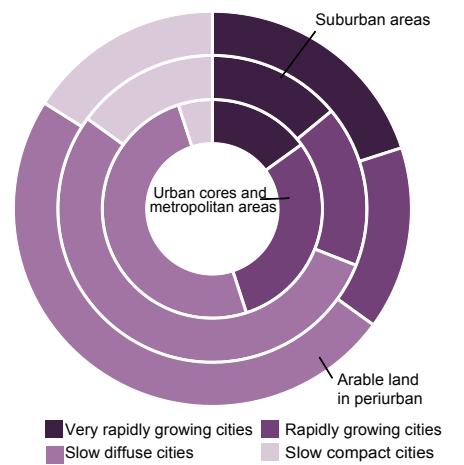
Natural and agricultural land lost due to urban development, 2000-2006



Urban development in Large urban Zones



Distribution of typology of cities in three land use classes, 2012



The rural areas play an important role in the territorial development in Europe. Rural regions are not one homogenous group, they show distinct characteristics depending economically more on agriculture, forming the 'Agrarian Europe' or have a not insignificant part of industrial activities. Regions which could be identified as 'Industrial rural Europe'. Some rural regions are in the interest of different territorial claims like agriculture, natural and ecological aspects or tourism.




Each of this regions needs geographic originated development strategies. The regions in 'Agrarian Europe', mostly not with intensive high technological agricultural production need a solid economic development with the primary sector as base. In the industrial rural regions, mainly situated beside or in between urban spaces the preservation of rurality as such need to be included in territorial strategies as well as questions of territorial exploitation. In the rural areas in the scope of different and divergent interests the questions of spatial consistency are evident.

In the urban areas, the growing regions need integral development strategies to deal with immigration, growing land consumption and related infrastructural needs and adjustments, in some parts of Europe also connected with the question of the duration of growth and for which time periods additional efforts are needed.

Dealing with territorial questions of shrinking in urban areas is dealing with loss of people, public income and tax, labour opportunities and knowledge. On the other side, public service and maintenance of infrastructure have to be adjusted.

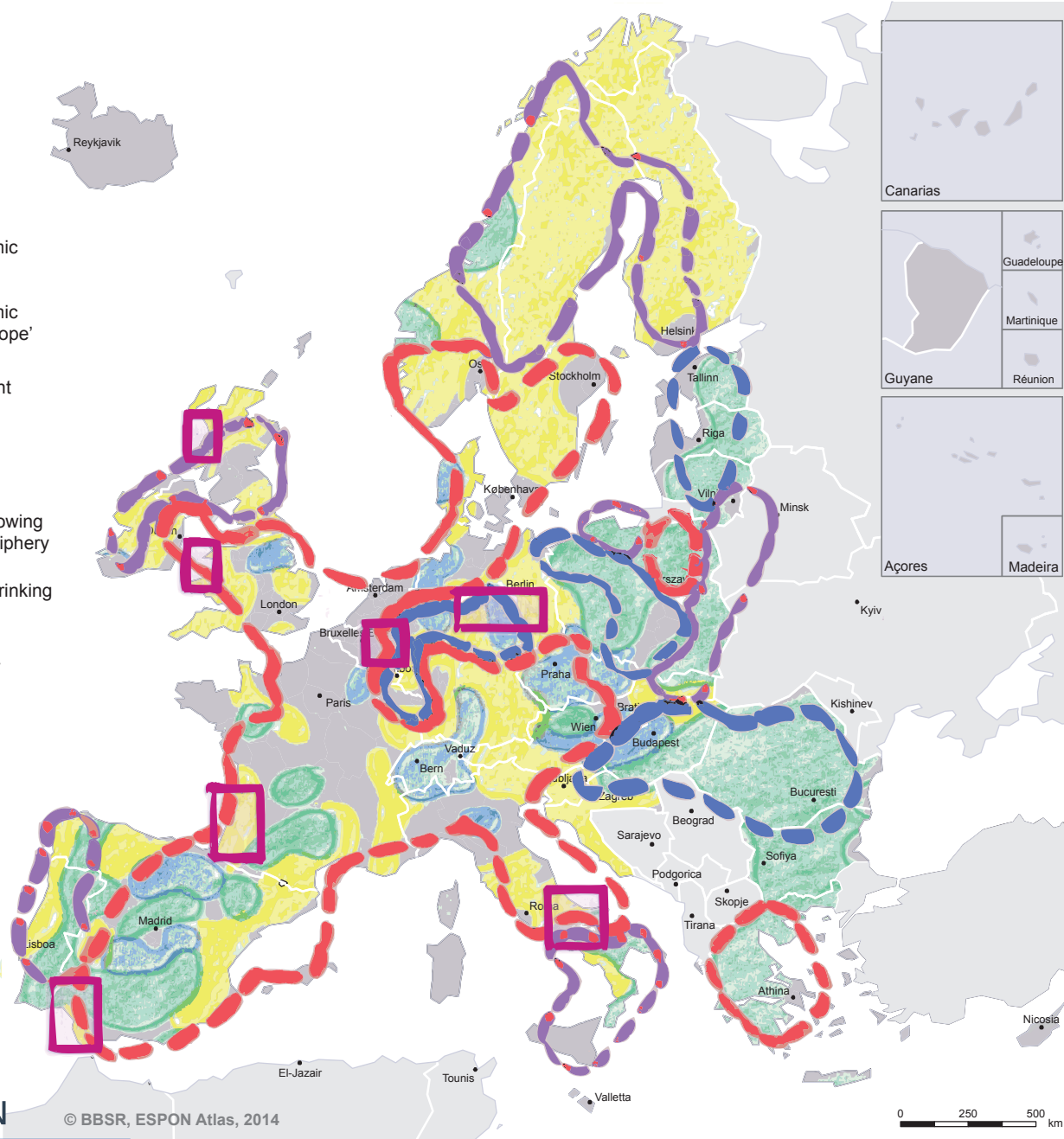
Urban and rural regions - territorial synopsis

Rural Areas

-  Preservation of the economic base in 'Agrarian Europe'
-  Preservation of the economic base in 'Industrial rural Europe'
-  Balanced rural development between different territorial demands

Urban development

-  Integral management of growing urban zone in core and periphery
-  Tailored development in shrinking urban zones
-  Balance of core - periphery development
-  Better adaption of urban labour markets



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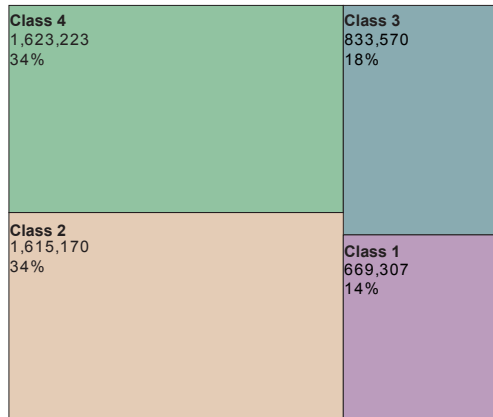
Attractivity of regions

75 %

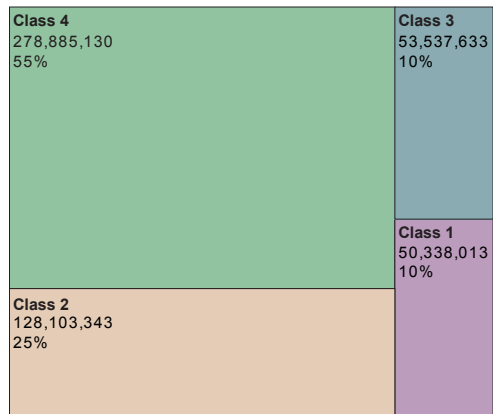
of all Europeans were satisfied with their live in autumn 2011. 56 % expected their life to be about the same in the next year, while 21 % expected an amelioration of their situation and 20 % a worsening.

Characteristics of regional assets types

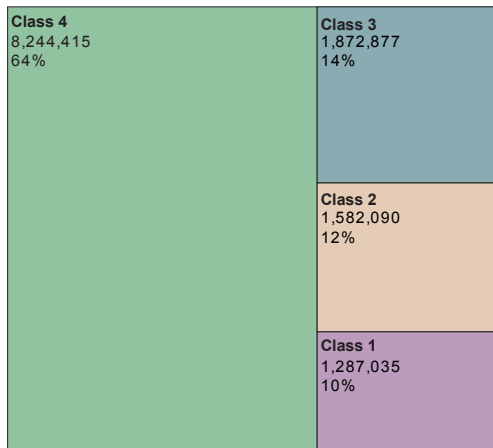
Area 2011 (km²)



Population 2011 (Total)



Gross Domestic Product 2008
(in million EUR, at market prices)



Source: based on ATTREG, 2012, and ESPON Database, 2014

Typology of attractivity

Attractivity for working age groups (15-64 years)

measured through average migration rates 2001-2008

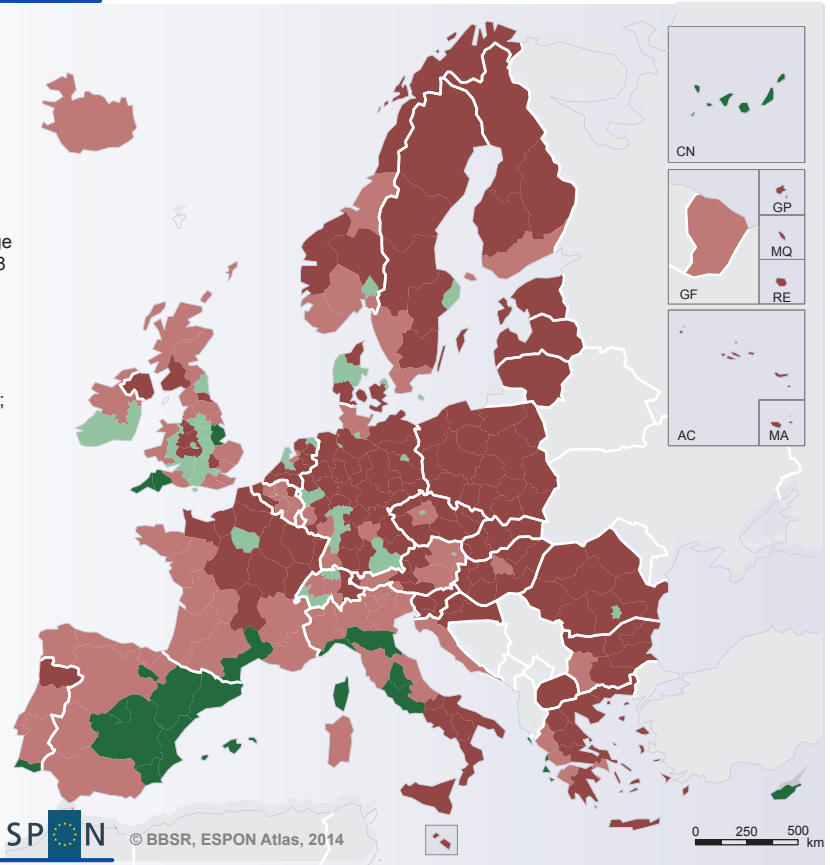
- low for all
- medium for all
- high for 50-64; medium for 25-49; low for 15-24 years old
- high for all
- no data

Regional level: NUTS2 (2006)
Source: ESPON database, 2012
Origin of data: ATTREG, 2012
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Territorial assets influence strongly the pathways of regional and local development, attracting different human flows into regions. The ESPON project ATTREG interpreted territorial attractiveness as a characteristic of places that varies spatially according to its constituting natural and environmental, social, cultural and economic components. The attractiveness of a region is influenced by the availability and quality of certain assets. In the ATTREG project, they were identified through broad regional typologies:

Antropic capital: This capital is mostly defined by urban assets, i.e. the intensity and quality of the built environment and accessibility, and is measured through tourist sights, urban infrastructure and accessibility.

Economic and human capital: This “traditional” set of migration drivers is measured by indicators of wealth, employment structure and quality. Environmental capital include assets that are in part exogenous features of territories (climate) and in part the result of territorial management or specific policy initiatives (landscape protection).

Social and cultural capital: This set of territorial capital relates to soft features of places and their societies. It is determined by the residents’ satisfaction, the age-related composition of the society and dimension of the student community.

Institutional capital. This category expresses potential attractiveness due to specific political structures or policy regimes as well as an efficiency of services. It was measured through the satisfaction with health services, a key public

provision.

The European regions can be divided into four classes which are shaped by different combinations of these typologies of territorial capital.

Class 1: The potential attractiveness is mostly linked to the high provision of environmental capital that they offer, as well as good endowments of antropic elements and economic assets.

Class 2: Compared with those of Class 1, these regions also offer high levels (though lesser) of environmental amenities but are modestly endowed in all other types of territorial capital, which to some extent may downplay their attractiveness at least for a structural work-related mobility.






Class 3: These regions’ countries are characterised by a dynamic socio-economic environment, possibly the result of effective public spending in services of general interest.

Class 4: These areas score moderately well economically and in terms of physical infrastructure and other antropic elements, though they may exhibit signs of congestion in the provision of public services and a possible stratification in their in their social mix, and are less attractive from the environmental point of view.






Some territories that were extremely attractive in the period up to 2007 have become instable in the current crisis. It appears that they may have been “overheating” and that their attractiveness was based on the attraction of flows that were not embedded in the local context.

Regional assets

High availability of assets

-  Antropic assets
-  Economic-human assets
-  Environmental assets
-  Socio-cultural assets
-  Institutional assets

Classes of territorial assets

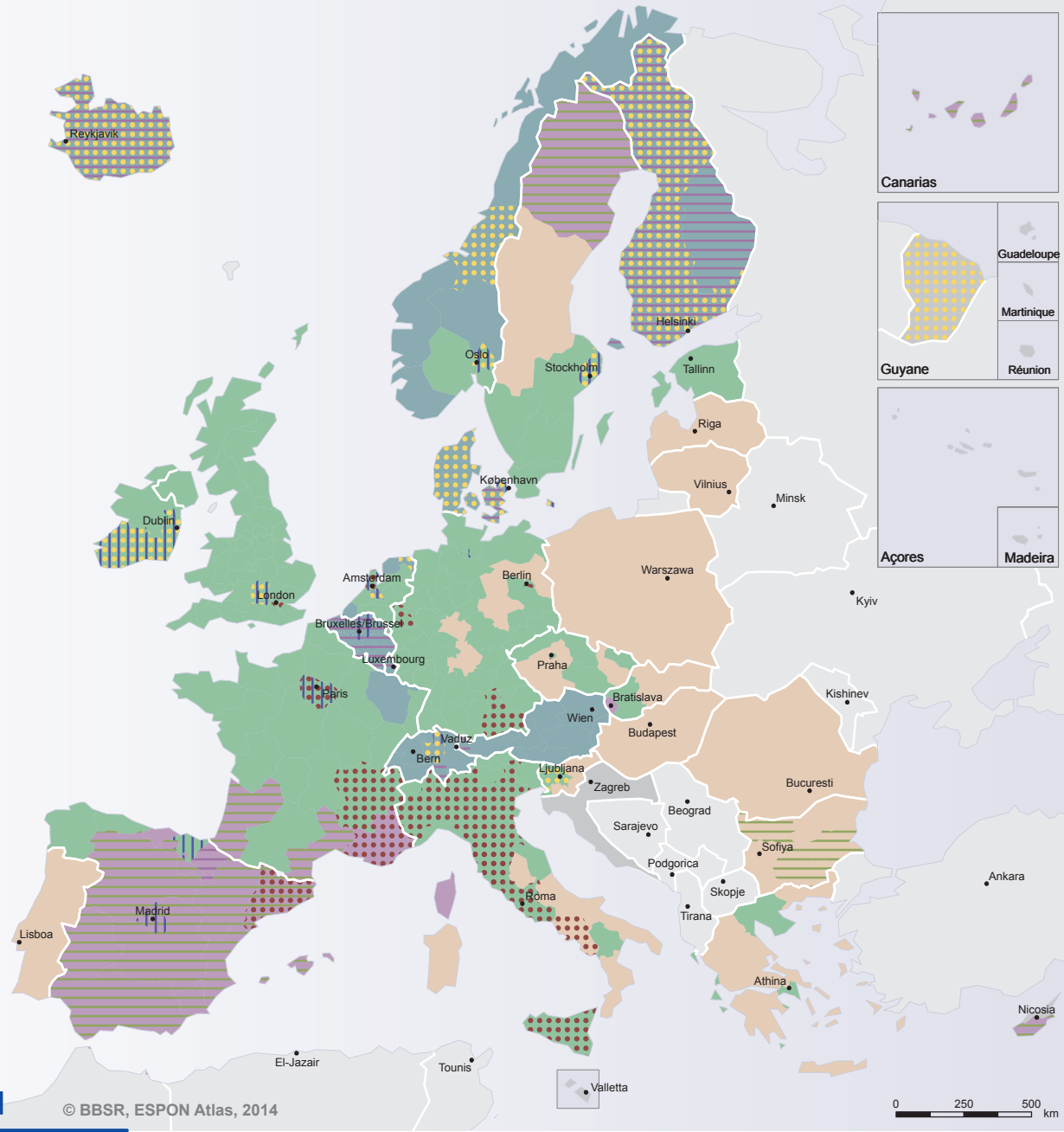
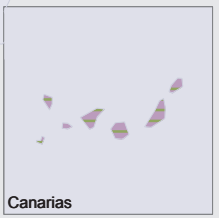
-  Class 1
-  Class 2
-  Class 3
-  Class 4
-  no data

Regional level: NUTS 2 (2006)
 Source: ESPON datbase, 2012
 Origin of data: ATTREG, 2012
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Regional variability of attractiveness indicators

Monuments index, population density, tourist accomodation capacity, metropolitan region, accessibility, airport ranking

Antropic assets



Public sector employment, consumption-related employment, privately marketed service employment, GDP/capita, Highly educated working age persons, Creative workforce

Economic-human assets



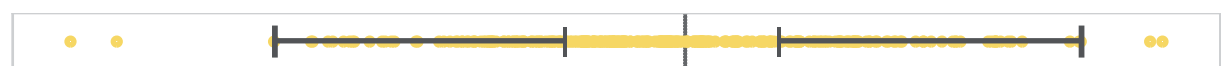
Tourism climate index (warm and cold months), climate variability, share of NATURA 2000 areas

Environmental assets



Satisfied residents, dependency rate, share of university students

Socio-cultural assets



Satisfaction with health services

Institutional assets



NUTS 2 regions

8. Integrated View to Territorial Development

Regional policy has much to deal with investment policy. It supports job creation, competitiveness, economic growth, improved quality of life and sustainable development. These investments support the delivery of the Europe 2020 strategy. On the other side regional policy is also the expression of EU's solidarity with less developed countries and regions, concentrating funds on areas and sectors where they can reach the most difference.

Regional policy aims to reduce the significant economic, social and territorial disparities that still exist between Europe's regions.

Policy documents, actions and funding of the EU during the previous decades have already dealt with territorial issues, but the current crisis and its asymmetric territorial impacts have increased the importance of the territorial approach.

The concept of territorial cohesion has been disseminated among others by the Green Paper, which presented a comprehensive approach and did further nurture the debate around its different understandings. Highlighting the rich diversity of European territory, territorial cohesion aims at turning this diversity into an asset for all places. It is thus ensuring a harmonious and balanced territorial development and contributing to a sustainable Europe. Territorial capital and potential are at the centre of these broad objectives, but the scale and the territory considered may change the way to achieve them.

Europe faces a moment of transformation. The crisis has wiped out years of economic and social progress and exposed structural weaknesses in Europe's economy. In the meantime, the world is

moving fast and long-term challenges – globalisation, pressure on resources, ageing – intensify. The EU must now take charge of its future.

Europe can succeed if it acts collectively, as a Union. EU2020 Strategy helps to come out stronger from the crisis and turn the EU into a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion. Europe 2020 sets out a vision of Europe's social market economy for the 21st century.

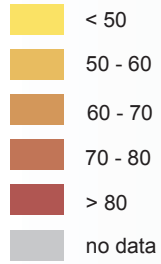
EU2020S has as meaningful subtitle “a strategy for smart, sustainable and inclusive growth”. The document contains a preface of the President of the EC telling that the context of “economic and financial crisis” has motivated the elaboration of this EU2020S for achieving “a sustainable future”, which is “about more jobs and better lives”, acknowledging that the EU “has the capability to deliver smart, sustainable and inclusive growth, to find the path to create more jobs and to offer a sense of direction to our societies”; this constitutes the basic rationale of the EU2020S.

Europe 2020 puts forward three mutually reinforcing priorities:

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

EU2020S aggregate index

EU 2020 Strategy Index



Change in EU2020S index, 2005-2010

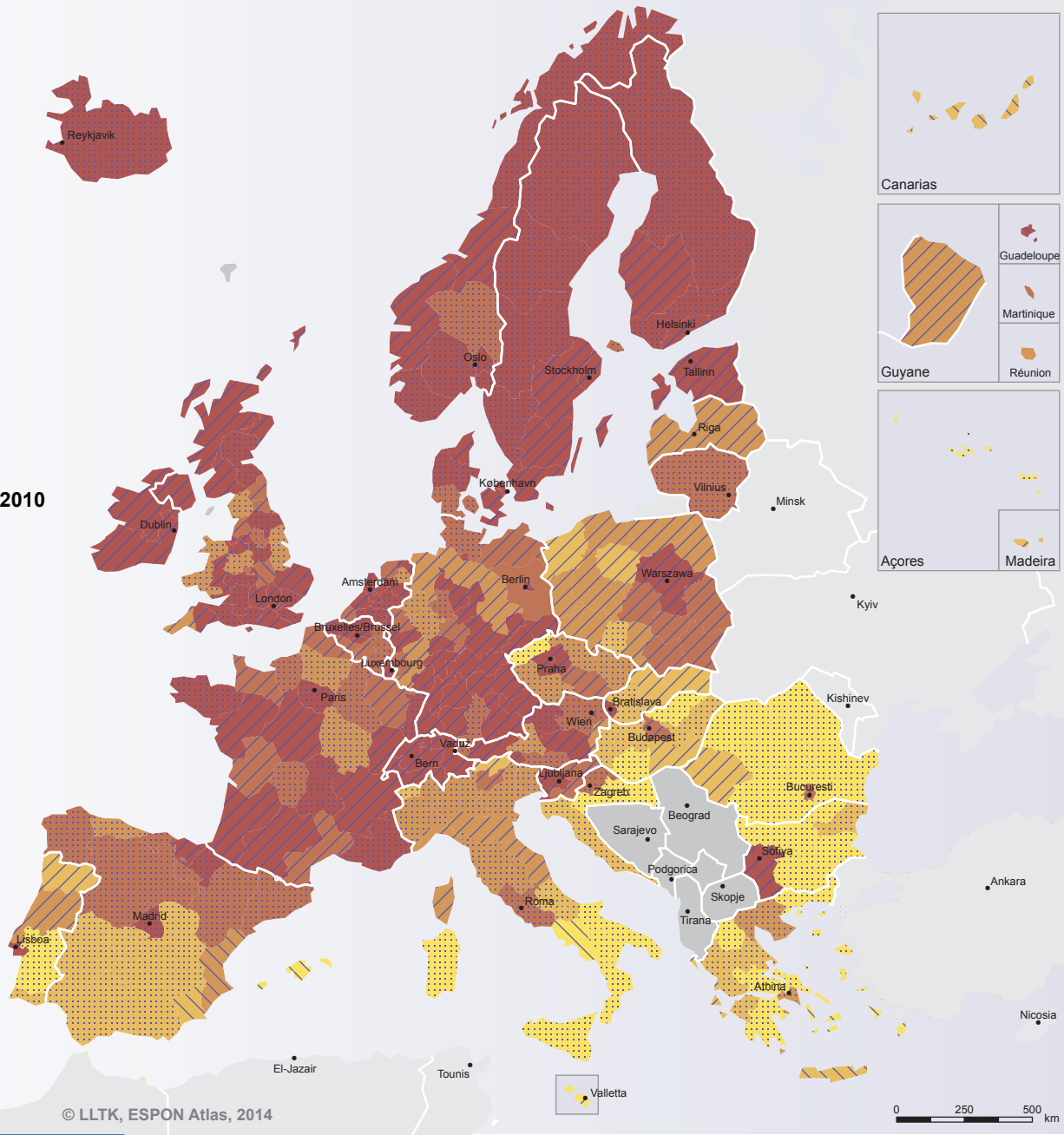
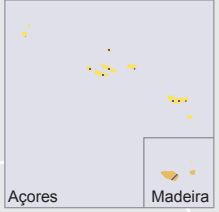
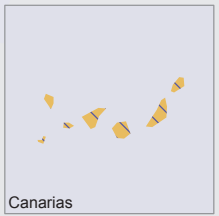


Regional level: NUTS 2 (2005-2010)
 Source: SIESTA, 2012
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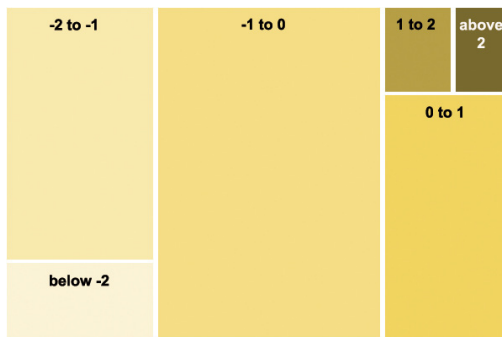
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8.2 Smart, sustainable and inclusive growth

8 headline targets

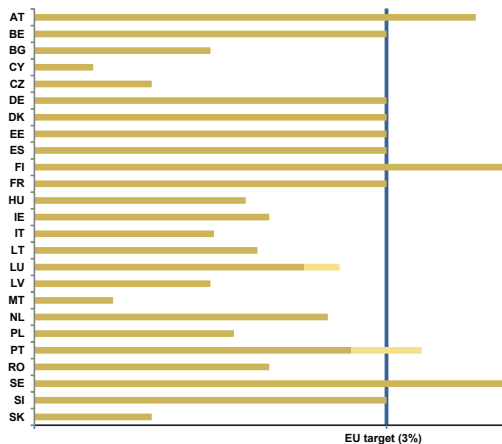
were set up in the EU2020S, five socio-economic and three environmental

Share of population in regions below and above national targets



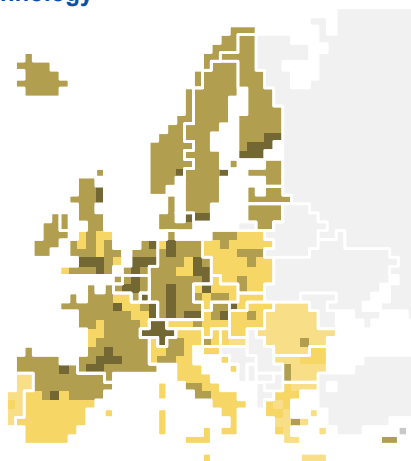
Source: EUROSTAT, 2009

National targets concerning GERD



Source: EUROSTAT, 2009

Human resources in science and technology



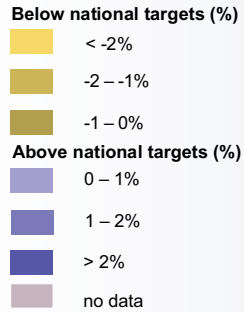
Percentage of active population, 2009



Source: EUROSTAT, 2009

Target of research & development

Distance in percentage of GDP invested in R&D in relation to national targets



Regional level: NUTS2 (2006)
Source: ESPON Siesta, 2012
Origin of data: ESPON Database
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The EU2020Strategy has a meaningful subtitle “a strategy for smart, sustainable and inclusive growth”. The smart approach is at the heart of the strategy. Smart growth means developing an economy based on knowledge and innovation, R&D facilitation, innovation itself and digital society. Such a combination of hotspot fields is the driver of the EU’s future growth and it is planned to positively contribute to the EU economy, favouring higher productivity and increasing its global market share.

The EU2020S underlines the essential role of research and development (R&D) promoting job creation and growth. R&D is the creative work undertaken on a systematic basis in order to increase the stock of knowledge and the use of this stock to devise new applications. The general indicator which is applied in this respect is the share of GDP expended on R&D, commonly known with the acronym GERD (general expenditure on R&D). This measure primarily expresses the regional resources connected to R&D. It includes public and private expenditures; in general. The private one is more significant, but public sector plays a crucial role, notably by supporting fundamental research, and spatially significant, in those regions that do not have a solid private sector in R&D. The EU2020 Strategy sets the headline target of bringing GERD to 3% of GDP by 2020. In parallel with this, each nation has defined their own target values.

Specific regions need to progress to meet or exceed their agreed national targets on the percentage of investment in R&D. Some countries have set their national target identical to the EU. Others were more ambitious by targeting over 3%, being clearly the leaders in this res-

pect by aiming to perform beyond the required. However, most of the countries have set targets below the EU headline and that makes Europe quite heterogeneous as it is very dependent on national decisions. Significantly, the official overall estimations of the EC state that, by amalgamating current national targets, EU’s aim will not be achieved and that is quite worrying in terms of global competition.

Education is future. This phrase is often more important than it looks like. This crucial idea was rapidly taken up by the EU as a key of prosperity, thus also became an important indicator in the EU 2020 strategy. EU2020 educational targets both related smart and inclusive growth. EU education system has major weaknesses that have to be managed. Indeed, the problems seem to be present at all educational levels, but the EU2020 Strategy focuses more on tertiary education because of its obvious connections with the economy, growth, research, innovation and competitiveness.

The headline target set for tertiary level of education is to increase the share of population with tertiary education to at least 40%. 86 out of 311 considered regions already attain this target. Most of them are located in Western Europe, but in a scattered pattern. In general, Northern Periphery countries, North-West regions scores particularly well, over the EU target or the reabouts. Surprisingly outperforming economies such as Germany or Austria and a typically Western country like Italy score very lowly and their regions are generally quite far away from the EU target. In case of Germany and Austria that might be related with its educational system. Urban and

metropolitan regions tend to score better than rural. The above regions sharply contrast with the very low rates of several regions in Europe, especially Eastern, but also including Portugal and, as above mentioned, Italy, Germany and Austria. Beyond the national specificities of these latter countries, the general pattern for South-East Europe (plus Portugal and Turkey) might be the reliance on agricultural production and tourism. In the case of the old Eastern bloc, based on heavy manufacturing, appears to be a key element for understanding lower rates of tertiary education attainment.

Besides the tertiary education it is important to pay attention to compulsory level of education. The headline target of the strategy set for compulsory level of education is to reduce the proportion of early school leavers to less than 10%. Drop-out rate varies among European territories. Contrarily to most of the maps related to EU2020 targets, the pattern in this case "favours" some Eastern Europe countries. In addition, some regions on the Western side are also doing well (e.g. Austria, or Belgium). This East/West divide where the Eastern regions tend to score better is not only attributable to cultural and historical reasons, but also to the importance of the policies in place.

EU2020S targets on inclusive growth deals with employment creation, skills and labour market reform, furthermore, the reduction of poverty and social exclusion. The profound ambition is to increase employment rate and the quality of jobs, especially for those collectives particularly in trouble (women, young people, migrants, older workers, etc.), thus maintaining social cohesion. Employment intends to raise the European economy, to reduce poverty and exclusion, and

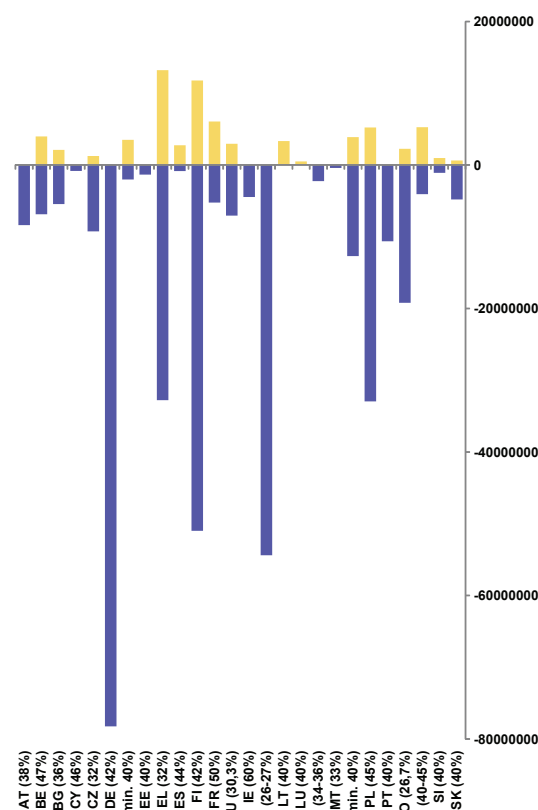
to address the cost of ageing through the pension system in several countries. The commitment to the headline target of an employment rate of 75% for the 20-64 year-old age group by 2020 is ambitious, but it is critical for the sustainability of Europe's social model, welfare, growth and public finances. Fighting against poverty is the main contribution of the EU2020S in the direction of inclusive growth, which basically means growing has to spread to all society and that excluding people in this process is not acceptable. The target, EU2020S set up, is to reduce the number of people at risk of poverty or social exclusion at least by 20 million by 2020. This is the only headline target expressed not as percentage, but a global figure. In 2010 there were more than 115 million people officially considered poor, corresponding to 23.5% of total population, and the reduction of at least 20 million might mean moving below 19.5%.

Poverty has a very clear spatial dimension that cannot be omitted from the EU2020S, and that logically has clear links with the long-term cohesion policy of the EU, when applicable.

The third pillar of the EU2020 Strategy is sustainable growth, which attempts to develop a greener economy. Taking into account that a greener economy must be necessarily resource efficient is quoted that this economy might be especially focused on green technologies that allow for combating climate change and tending to achieve better energy efficiency. In addition, it is evident that resource efficiency is substantial for financial savings, it has obvious security and geopolitical implications that are repeatedly quoted therein (i.e. the need to reduce dependency on non-EU countries) and it has the potential to create jobs

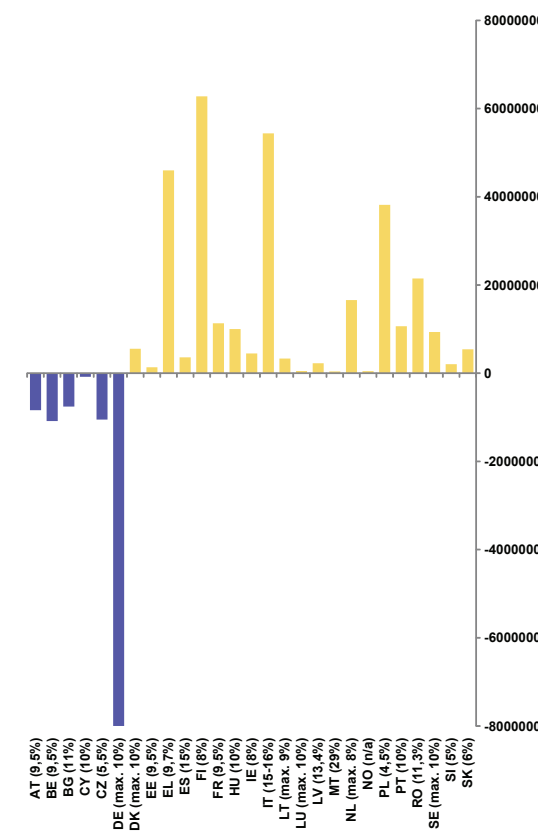
Share of population in regions below and above national targets

Tertiary education



Source: EUROSTAT

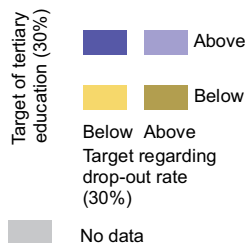
Drop-out rate



Source: EUROSTAT

Targets of education

Tertiary education contra drop out-rate in relation with EU targets



Regional level: NUTS2 (2006)
Source: ESPON SIESTA, 2012
Origin of data: ESPON, CU
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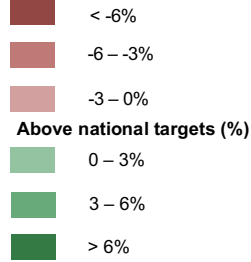
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Target regarding employment rate

Regional employment rate represented to the 2020 national targets



Regional level: NUTS2 (2006)
Source: SIESTA, 2012
Origin of data: ESPON CU
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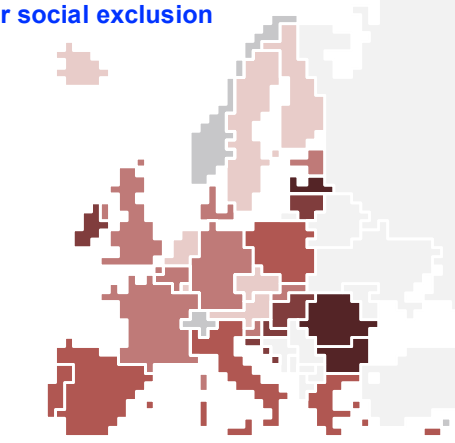
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Population at-risk-of-poverty or social exclusion

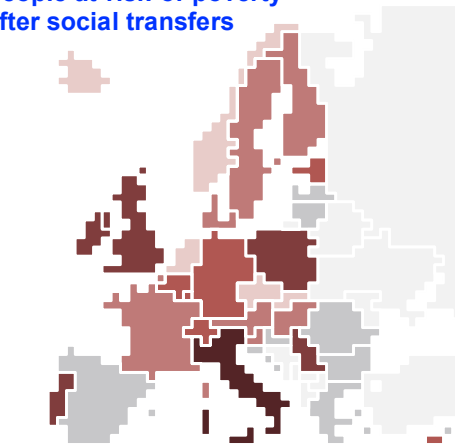


Represented as distance to the EU2020 target (%), 2010

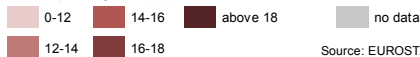


Source: EUROSTAT, 2010

People at-risk-of-poverty after social transfers

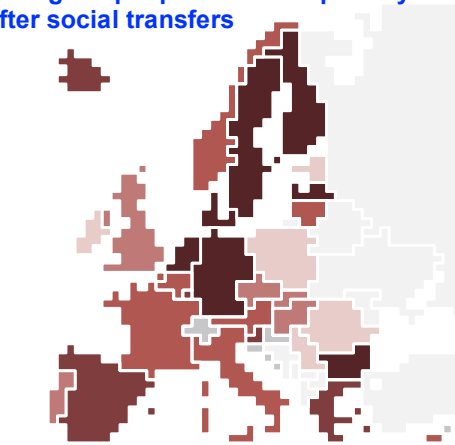


At risk poverty rate (%), 2010

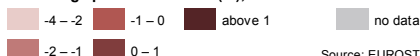


Source: EUROSTAT, 2010

Change in people at-risk-of-poverty after social transfers



Percentage points difference (%), 2005-2010



Source: EUROSTAT, 2010

in this sector; for all these reasons there are connections between resource efficiency and economic competitiveness. In fact, resource efficiency is significant for environment, but it also carries current and potentially strong economic value. The three environmental related targets of the EU2020 Strategy focus energy efficiency and GHG emission.

Related to this, one of the basic strategies is to develop renewable sources for all the motivations that have been mentioned: decrease of international energy dependency, reduction of greenhouse gas emissions, technology and research development, job niche growth, etc. Indeed, one of the headline targets is on renewable sources, particularly in the share of renewable energy in gross final energy consumption, which should reach 20% in 2020.

Scandinavian and Baltic countries (except Lithuania) are the most sustainable in energy consumption. Above the EU target, there are another three states in different parts of the continent (Austria, Portugal and Romania). The remaining countries are under the EU2020S headline target, with extreme situations in island-states and in small countries, as well as the UK. Regarding national targets it can be said that the pattern expresses heterogeneous geographical endowments, but also depend on the ambitions of their respective policies. Consequently the countries which are in a worse situation are not necessarily those which have committed themselves to perform more. In contrast, the countries which have committed less are typically those which are already having a higher share of renewable energy and are conveniently above the 20% target.

The EU2020S proposes another specific headline target on energy which related to the energy

intensity of the economy.

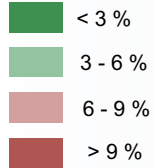
Regarding energy efficiency there is a great divide between the Eastern countries which were socialist economies prior to 1989 and the other longstanding capitalist countries. Concerning the national targets on energy efficiency, the pattern is politically sensitive in the sense that it depends on governmental decisions. Importantly, the European Commission has stated in the reports on the EU2020S progress that member states have taken limited ownership of this target (indeed, some of them do not provide their national targets) and that targets set by countries are worrying as they are completely below expectations (i.e. some countries set targets under 10% while the EU target is to reduce 20%).

Finally the third environmentally target is on reducing 20% of greenhouse gas (GHG) emissions by 2020 compared to 1990, including a possible reduction until 30% if the conditions are right. This intention is consistent with the rationale of the EU2020S, stating that the economy achieving positive growth has to be based, as far as possible, on a low-carbon basis.

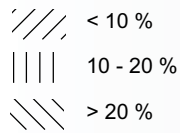
On the one hand, it is clear in the EU2020S that GHG reduction is not only an aim with an environmental rationale, but also it has a clear socio-economic dimension in the sense that there are increasing possibilities for new technologies and it also gives a boost for new jobs related to the development of such a sector. On the other hand reduction of GHG emissions is a critical issue reacting against the fact that climate change is becoming stronger due to human impact and that GHG are artificially generated.

Targets relate to renewable energy and energy efficiency

Share of renewable energy in gross final energy consumption represented as distance to the 2020 national targets, 2009



% of Mtoe to be reduced from 2010 to 2020.



Regional level: NUTS0 (2011)
Source: EUROSTAT, 2011
Origin of data: ESPON CU, 2014
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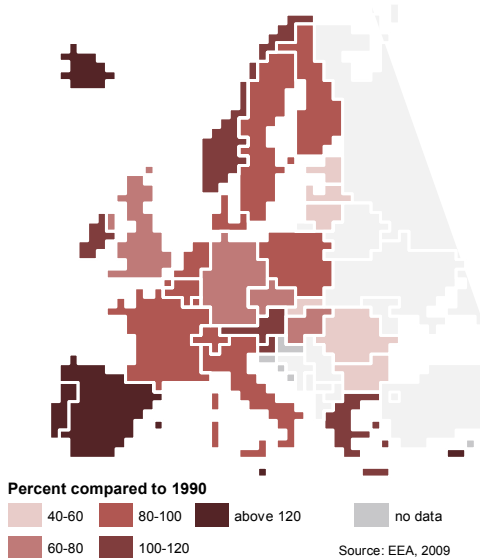
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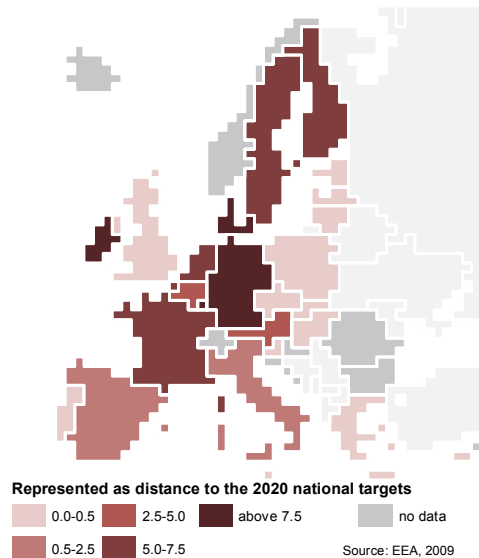
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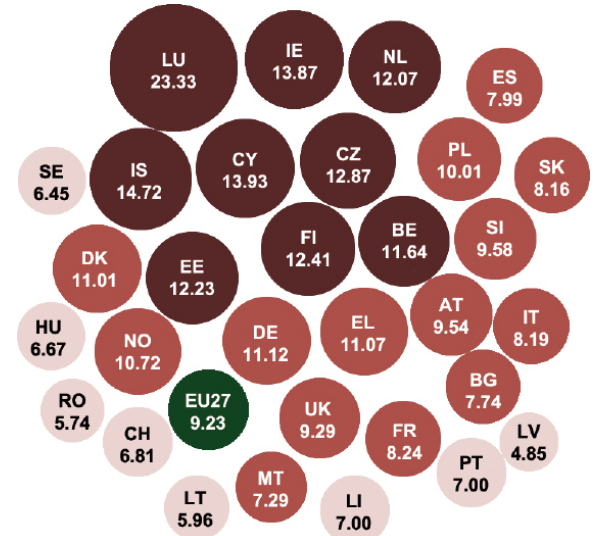
GHG emissions in Europe, 2009



Change in GHG emissions



GHG emission / capita



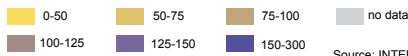
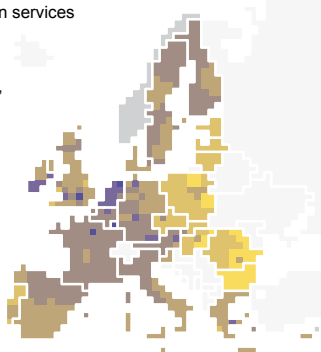
11 out of the 15 examined indicators

evinced conversion.

Territorial disparities

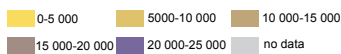
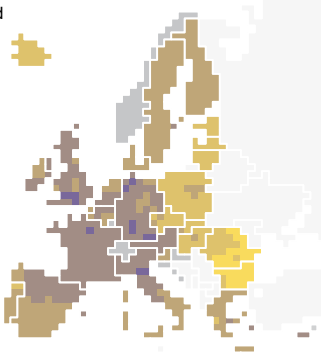
Labour productivity in services and industry, 2007

(in % of EU average, EU average=100%)



Source: INTERCO, 2007

Disposable household income (€), 2007



Source: INTERCO, 2007

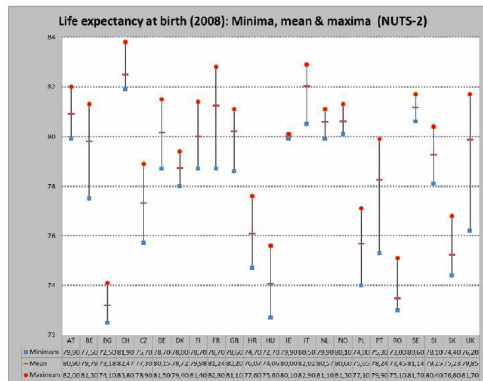
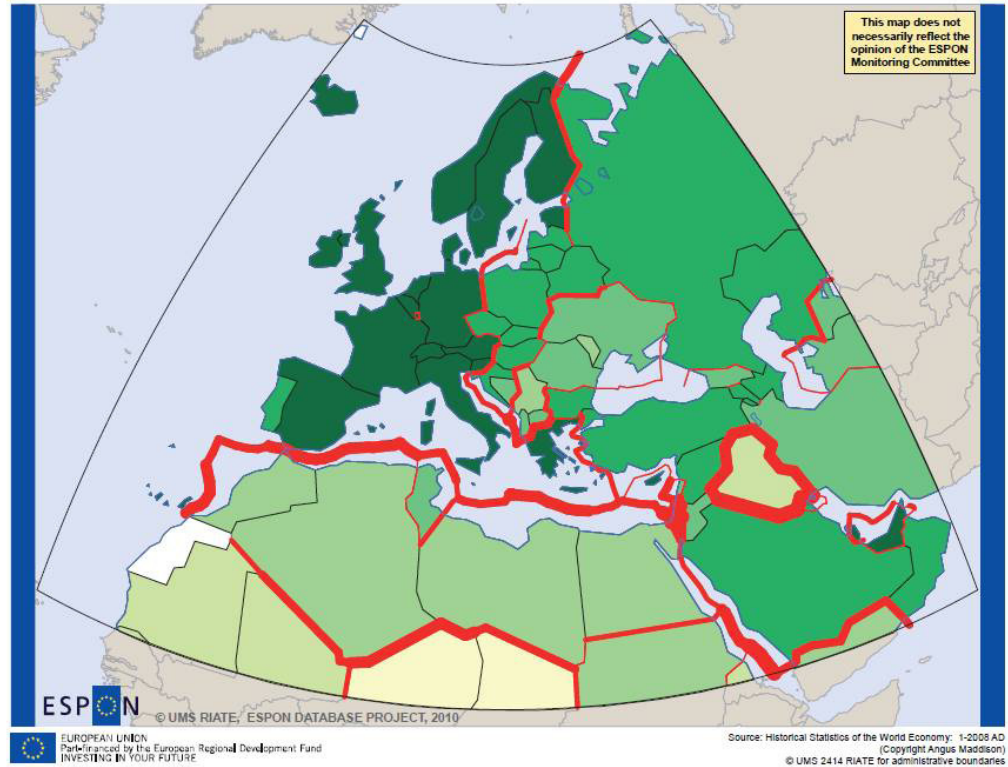


Figure 45. Life expectancy at birth by country – Minima, maxima and averages

At the moment there is no data available for this diagram.

Map 12. Discontinuities of GDP per capita, 2008



GDP Per Capita 2008 (1990 International Geary-Khamis dollars) index 100 = World

Discontinuities (relatives)

At the moment there is no data available for this map.

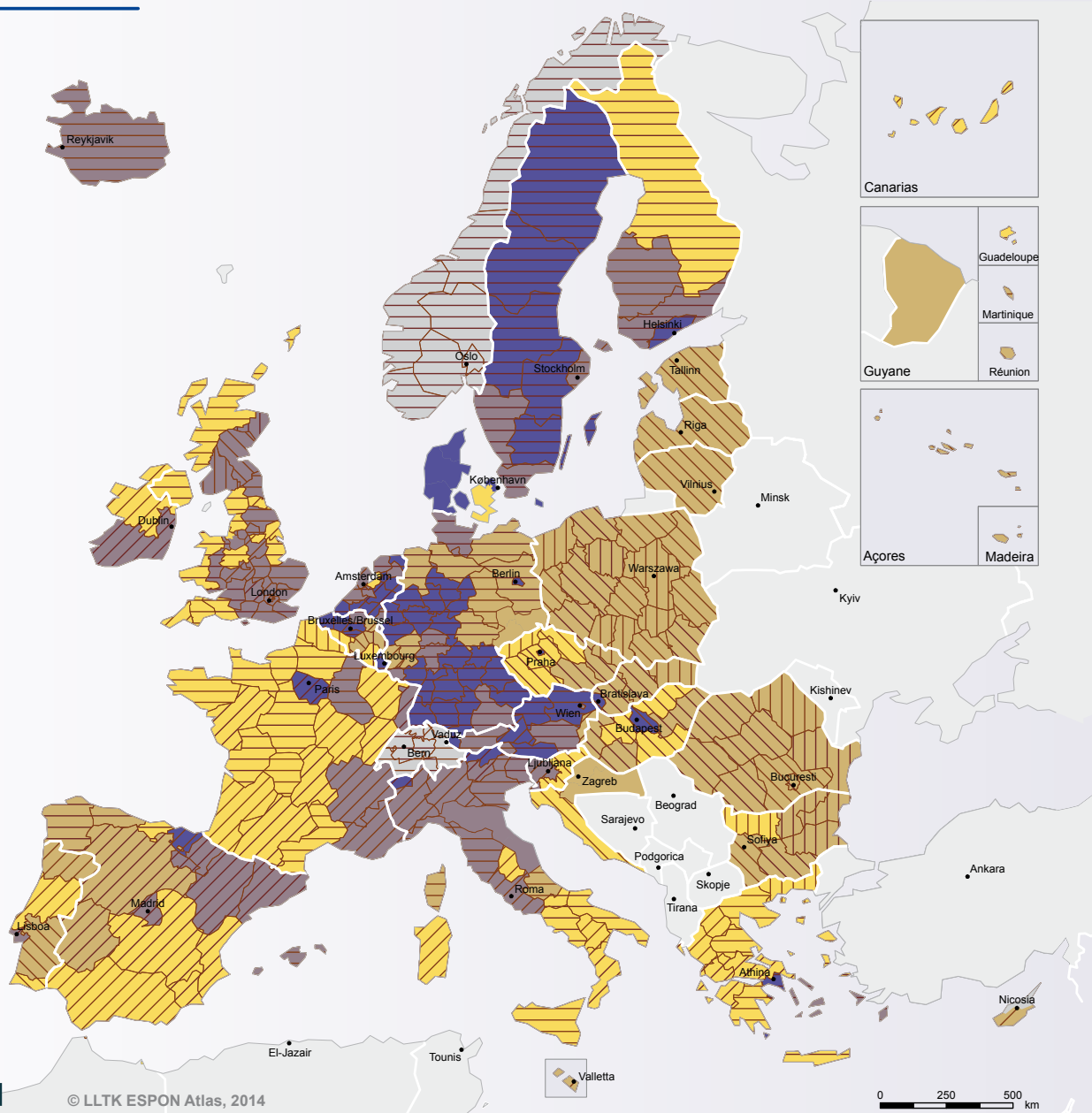
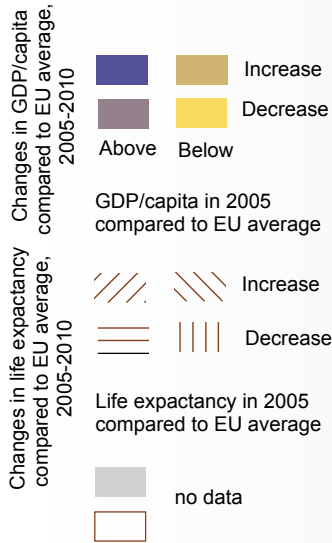
Territorial cohesion has been a priority in the ESPON research framework from the beginning. In polycentric perspective cohesion policy put the focus on the potential of major inter-connected economic centres, seen as urban drivers supporting smart growth and leading to more balanced territorial development through positive diffusion effects. A more inclusive understanding of territorial cohesion points out fair access to services and knowledge through appropriate infrastructures, stating that everyone should have the same development opportunities no matter where he lives. Thus, territorial cohesion can be considered as the territorial dimension of the European social model, taking into account socio-economic disparities at all levels and strengthening both solidarity and competitiveness. Helping specific territories identified in article 174 of TFEU (Treaty on the Functioning of the European Union) belongs to the same tendency, since territorial cohesion in this sense means to enable every territory to find out its own path of development, thanks to its comparative advantages. A significant characteristic of territorial cohesion as a policy objective is that it is a harmonization of different development paradigms, such as regional competitiveness, convergence and sustainability.

According to the results of the ESPON researches there is no general trend towards convergence in all territories. Convergence trends over the past decade were strongest for the objective of so called “strong local economies ensuring global competitiveness”; however, disparities are still medium and high. For GDP/capita, there is a slight trends towards convergence

for remote areas, but departing from very strong disparities, while the disparities between urban regions or region close to cities remain stable. Labour productivity is the only indicator that shows a remarkable trend towards more convergence, but the data covers only national levels. Indicators for measuring “innovative territories” perform heterogeneously, with tertiary education showing convergence trend, while for employment disparities even increased. Indicators under the objective “fair access to services, markets and job” still show the highest existing disparities over all indicators. Only accessibility potential by road and air indicator slight trends towards cohesion, while for the accessibility potential by rail in contrary existing gaps seem to become permanent. Indicators on “inclusion and quality of life” yield the smallest existing disparities for demographic aspects, but these small differences are stable over time. Life expectancy at birth remained almost stable and the general range of values is rather small, but variations among countries are completely different. For the other more socio-economic indicators; disparities are medium to very high, with generally clear trends towards cohesion. There is a clear divide between old and new EU Member States for the indicator Disposable household income; however, countries with the highest disposable income have also the highest disparities among their regions

Territorial cohesion is a very rich concept, fostering a lot of theoretical reflexions while in constant redefinition by the political framework. Indeed, its inherent multidimensionality adds difficulties to the understanding of the concept of territorial cohesion.

Changes in GDP compared to EU average



Regional level: NUTS 2 (2005, 2010)
Source: EUROSTAT (2005, 2010)
Origin of data: Eurostat
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Indicator	Spatial resolution	Years available	Disparities (1)	Trend (2)
Strong local economies ensuring global competitiveness				
GDP per capita in PPS	NUTS 3	1997-2008	high	→
Unemployment rate	NUTS 3	1999-2009	high	→
Old age dependency ratio	NUTS 3	2000-2010	medium	→
Labour productivity in industry and services	NUTS 2	2007	n.a.	n.a.
Labour productivity per person employed	NUTS 0	1995-2010	medium	→
Innovative territories				
Population aged 25-64 with tertiary education	NUTS 2	2008-2010	medium	→
Intramural expenditures on R&D	NUTS 2	2007	high	n.a.
Employment rate 20-64	NUTS 2	1999-2009	small	→
Fair access to services, market and jobs				
Access to compulsory school	NUTS 0, degree of urbanisation	2008	very high	n.a.
Access to hospitals	NUTS 0, degree of urbanisation	2008	very high	n.a.
Accessibility of grocery services	NUTS 0, degree of urbanisation	2007	very high	n.a.
Access to university (SILC data)		2007	n.a.	n.a.
Accessibility potential by road	NUTS 3	2001, 2006	very high	→
Accessibility potential by rail	NUTS 3	2001, 2006	very high	→
Accessibility potential by air	NUTS 3	2001, 2006	high	→

1: Disparities: StDev / Avg = 0-0.2 small disparities; 0.2-0.4 medium disparities; 0.4-0.6 high disparities; >0.6 very high disparities

2: Trends towards cohesion: strong trend towards cohesion → trend towards cohesion →, disparities remained stable —, widening gaps ←

Indicator	Spatial resolution	Years available	Disparities (1)	Trend(2)
Inclusion and quality of life				
Disposable household income	NUTS 2	1996-2007	medium	→
Life expectancy at birth	NUTS 2	2000-2008	small	→
Proportion of early school leavers	NUTS 1	2000-2010	high	→
Gender imbalances	NUTS 3	2000-2009	small	→
Difference in female-male unemployment rates	NUTS 2	1999-2010	very high	→
Ageing index	NUTS 3	2000-2010	small	→
Attractive regions of high ecological values and strong territorial capital				
Potential vulnerability to climate change	NUTS 3	2011	high	n.a.
Air pollution: PM ₁₀	NUTS 3	2009	small	n.a.
Air pollution: Ozone concentrations	NUTS 3	2008	medium	n.a.
Soil sealing per capita	NUTS 3	2006	very high	n.a.
Mortality, hazards and risks	n.a.	n.a.	n.a.	n.a.
Biodiversity	n.a.	n.a.	n.a.	n.a.
Renewable energy potential	n.a.	n.a.	n.a.	n.a.
Integrated polycentric territorial development				
Population potential within 50 km	NUTS 3	2008	very high	n.a.
Net migration rate	NUTS 3	2007	medium	n.a.
Cooperation intensity	NUTS 2	2008	high	n.a.
Cooperation degree	NUTS 2	2008	medium	n.a.
Polycentricity index	n.a.	n.a.	n.a.	n.a.

Table 7. Territorial objectives and top indicators - territorial cohesion analysis

1: Disparities: StDev / Avg = 0-0.2 small disparities; 0.2-0.4 medium disparities; 0.4-0.6 high disparities; >0.6 very high disparities

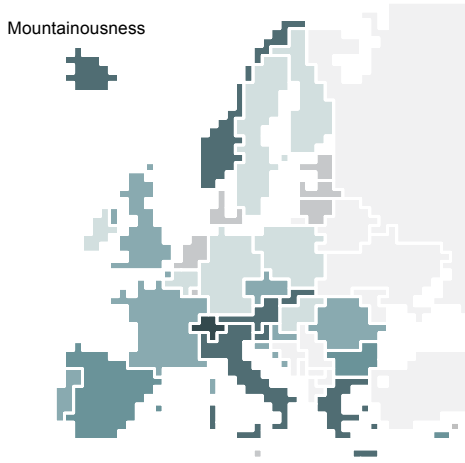
2: Trends towards cohesion: strong trend towards cohesion → trend towards cohesion →, disparities remained stable —, widening gaps ←

Territorial diversity

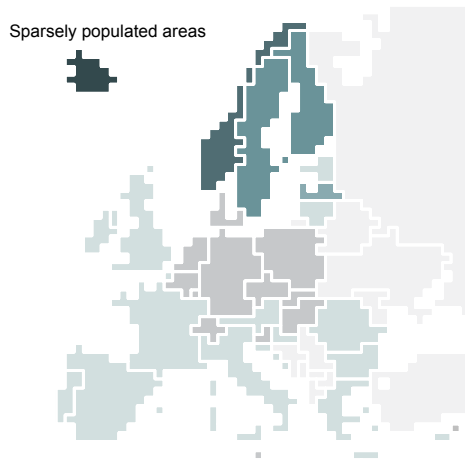
47% of the ESPON is covered by areas with geographic specificities, and home approximately 30% of its population.

Proportion of geographic specificities

Mountainousness



Sparsely populated areas



Island areas



In percentage of national area



Source: GEOSPEC, 2012

Geographic specificities

Mountains, island and sparsely populated area

- Mountains
- Sparsely populated area
- Mountains and sparsely populated area
- Island
- Not relevant
- no data

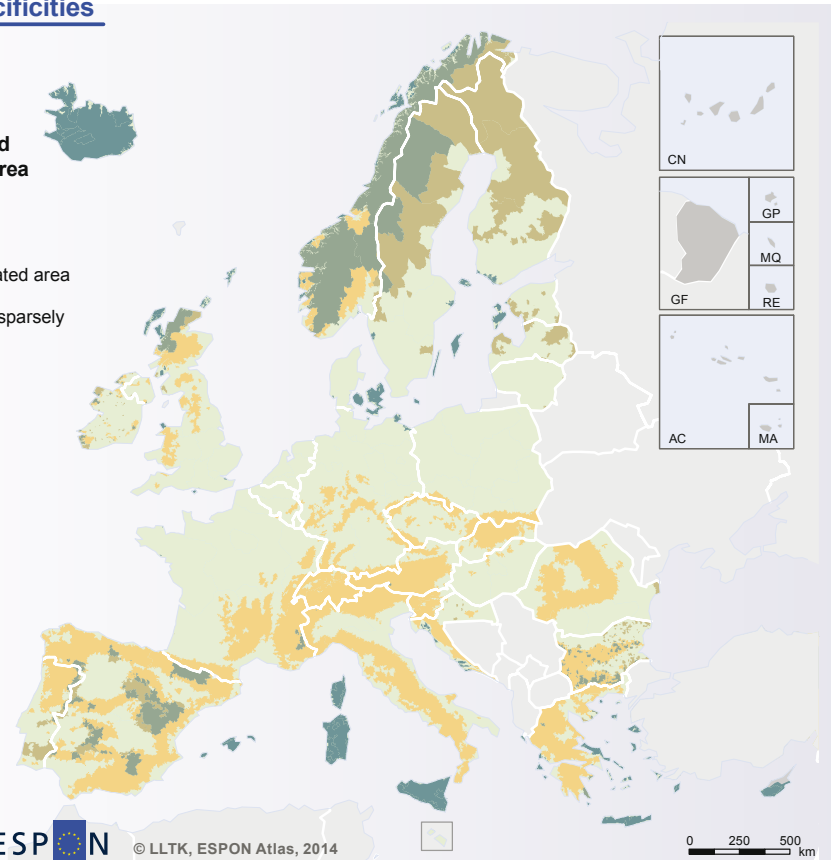
Regional level: NUTS 3
Source: GEOSPEC, 2013
Origin of data: ESPON CU, 2014
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Regions with specific territorial features have received increasing attention in recent years, most notably in article 174 of the Treaty on the Functioning of the European Union (TFEU) and the Green Paper on Territorial Cohesion. These key policy documents among others identify island, mountains and sparsely populated regions – in two ways: as having particular challenges, and as having particular assets, many of benefit to Europe as a whole.

Contrarily environment in some former researches is often seen as an intrinsic natural quality rather than a potential for grounding present and future economic activities. Moreover, the natural space is often defined as a remainder of the artificial or built-up space: the natural quality is defined as a “default setting” rather than as an asset per se

Taking advantage of the specific attributes of specific areas may require both permanent compensatory measures that address structural and permanent imbalances and focused “one-off interventions” that focus on specific situations. However, this principle has different implications depending on the type of categories. A key point, however, is that such strategies should be designed at the level not of NUTS 2 or NUTS 3 regions, but of individual islands or valleys, and of functional regions. In this term territorial cooperation is fundamental for specific areas. Geographic specificities do not stop at borders. When considering the integration of these territories, it is necessary to take into account cross-border and

transnational interactions and interdependencies

The natural capital of these specific areas is one of their main assets, this can be an opportunity in economic terms, as it either attracts residents (and visitors), or provides opportunities for the exploitation of resources, thus contributing to generating income for the area. Furthermore these areas provide vital ecosystem services to the European continent.

With the exception of SPAs, these specific areas tend to be characterised by higher levels of biodiversity and areal proportions of protected areas than the European average – particularly mountains, and islands.

Finally one general characteristic of the specific areas is that they are associated with high levels of renewable energy resources. Hydropower is an important opportunity in mountain areas; offshore wind, wave and tidal energies can be exploited from islands; SPAs often offer resources for biomass energy generation.

Much of the debate and studies on the areas with geographic specificities is often limited to the identification of structural constraints and development obstacles. Although the tangible natural assets of a region are often well known to the researcher and stakeholder communities, the strategies that would make it possible to fully exploiting these territorial potentials often remain to be defined.

Further progress should be made in moving away from viewing geographic specificities as “handicaps” and towards recognizing their assets.

Regions of geographic specificities

Regions of geographic specificities, 2010

- Share of area concerned by geographic specificities 50-75%
- Share of area concerned by geographic specificities >75%
- GDP/capita below european average
- GVA of agriculture is higher than 5%
- Not relevant
- No data

Regional level: NUTS3 (2010)
 Source: GEOSPEC, 2012, Eurostat 2010
 Origin of data: ESPON CU, 2014
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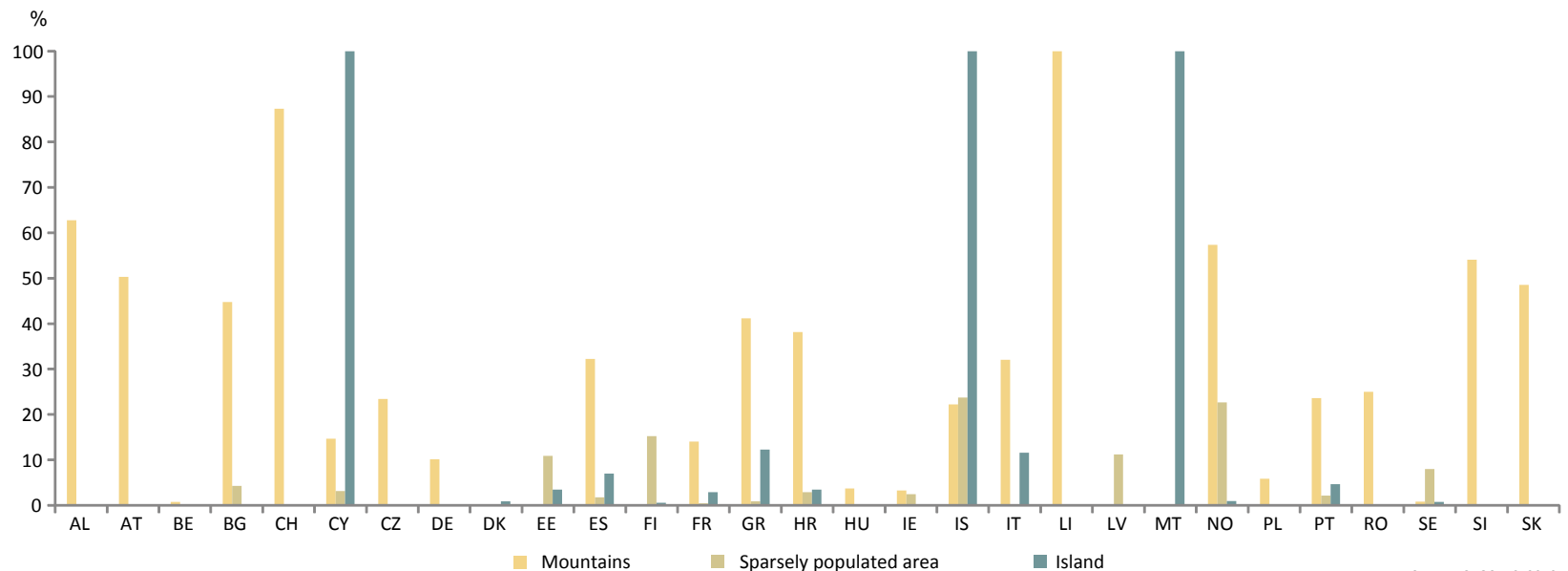
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Share of inhabitants in geographicly specific areas, 2006



Source: GEOSPEC, 2012

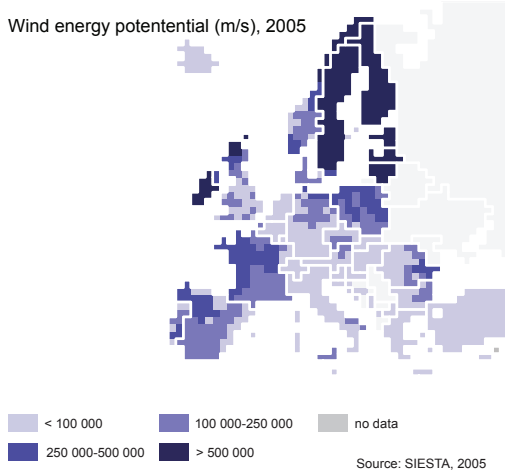
Sustainable environmental development

1538 Mtoe was the primary

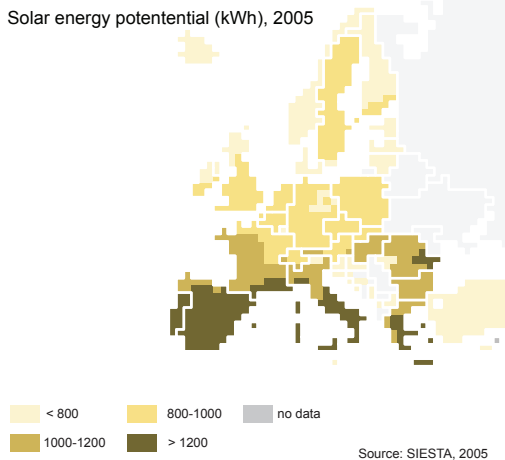
energyconsumption of the EU in 2011, while EU2020 energy targets aim to reduce it to 1474 Mtoe.

Renewable energy potential

Wind energy potential (m/s), 2005

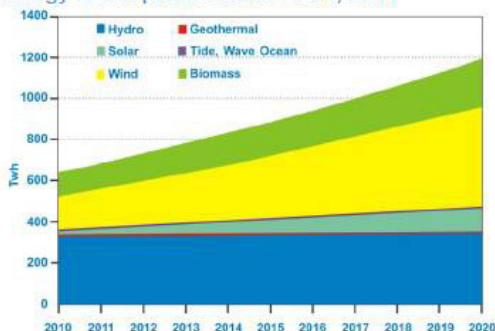


Solar energy potential (kWh), 2005



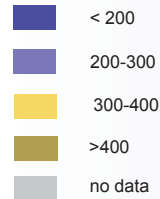
At the moment there is no data available for this diagram.

Graphic 2.5 Planned European electricity production according to national renewable energy action plans. Source: JCR, 2011



Energy intensity of the economy, 2010

Kilogram of oil equivalent per 1000 euros, 2010



Regional level: NUTS0 (2010)
Source: SIESTA project, 2013
Origin of data: ESPON CU, 2014
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In the sense given by the EU2020S primarily envisages that the European economy maintains its leadership in the world and its competitiveness, especially through the delivery of new processes and technologies. In the documentation it is quoted that this economy might be especially focused on green technologies that allow for combating climate change (by means of low-carbon technologies) and tending to achieve energy efficiency. The EU2020S acknowledges that such an approach will prevent environmental degradation, biodiversity loss and unsustainable use of resources. In addition, it is evident that resource efficiency is substantial for financial savings for companies, the public and governments, it has obvious security and geopolitical implications that are repeatedly quoted therein and it has the potential to create jobs in this sector; for all these reasons there are connections between resource efficiency and economic competitiveness. In fact, resource efficiency is significant for environment, but it also carries current and potentially strong economic value.

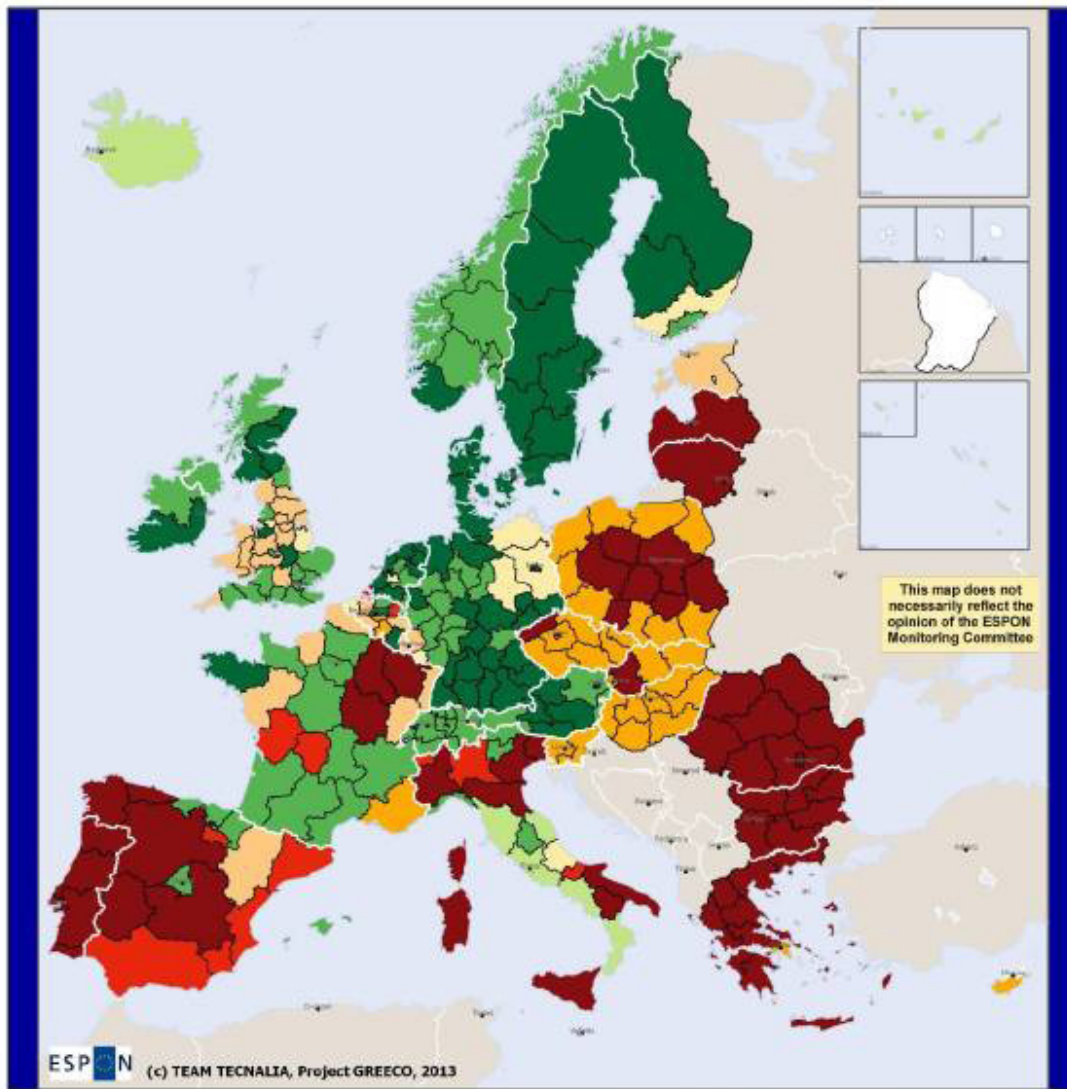
In terms of energy, one of the basic strategies is to develop renewable sources for all the motivations that have been mentioned: decrease of international energy dependency, reduction of greenhouse gas emissions, technology and research development, job niche growth, etc. one of the headline targets of the EU2020S is on renewable sources development, particularly in the share of renewable energy in gross final energy consumption, which should reach 20% in 2020. The EU2020S itself proposes another specific

headline target on energy which is energy intensity of the economy

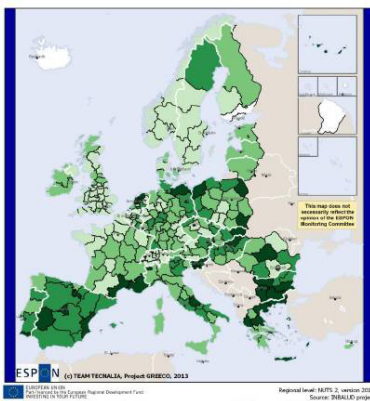
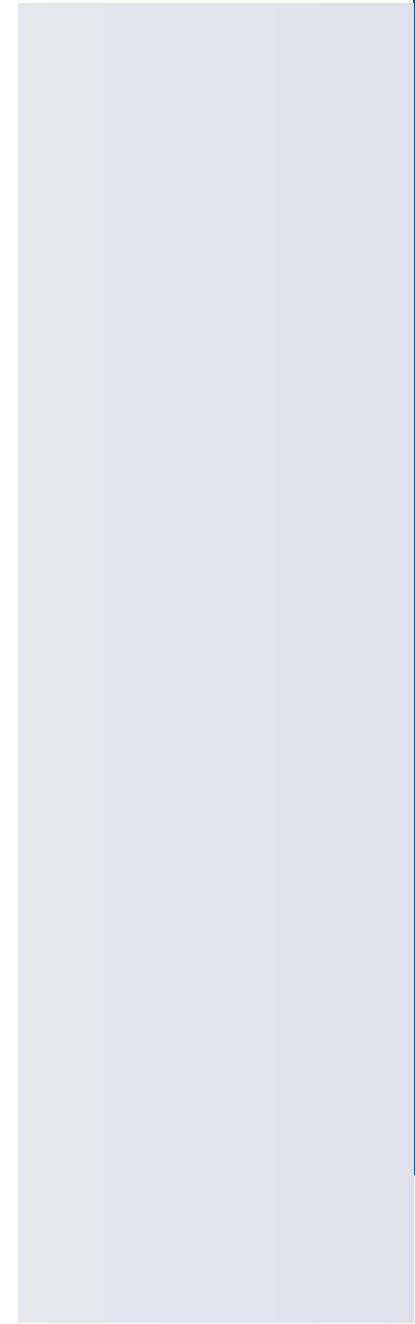
The so called "green economy" is a political rather than a scientific concept. It is defined by the Rio+20 conference 2012 in its final document According to the "The future we want" UN document: The green economy – "in the context of poverty eradication and sustainable development" – "should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems". Measuring regional green economic performance is closely related to the state of the core features of the green economy, namely the environmental sphere, the social sphere, the territorial sphere, the economic sphere and the ecosphere. On the other hand it is determined by the characteristic of the economic sectors as well.

The green economy potential based on the so called green economy factors such as access to technologies, territorial assets and physical conditions Human resources, knowledge and skills etc. According to the result of the combined assessment of green economy performance and potential, both of them seem to be higher in the Pentagon, Nordic countries, some regions of British Isles, and some specific NUTS2 regions located in Mediterranean countries. Contrarily the performance and potential are low in Eastern Europe, in the Balkans and in most region of the Iberian Peninsula.

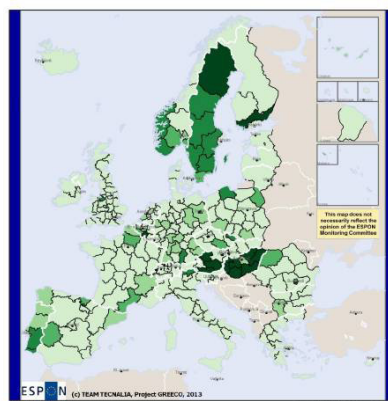
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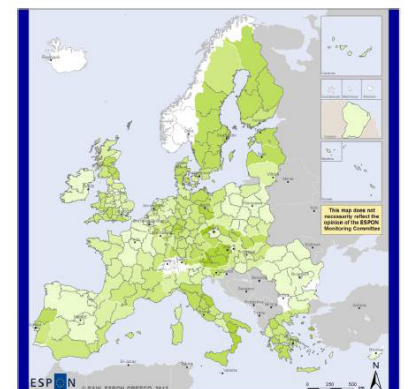
Regional level: NUTS 2, version 2010
 Source: GREECO project, 2013
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Map 5 Share of Natura 2000 area by NUTS 2 region (2009)



Map 7 Number of greentech clusters per million inhabitants (2013)



Map 2 Share of organic farming in total utilised agricultural area in 2007 (Source: DG AGRI, 2011)

At the moment there is no data available for this map.

At the moment there is no data available for this map. 61

At the moment there is no data available for this map.

Europe 2020 Strategy, issued by the European Commission in 2010 constitutes a growth scheme for the decade 2010-2020 aiming to help the EU to recover from the recent crisis through the so-called smart, sustainable and inclusive dimensions of growth.

Smart, sustainable and inclusive growth, envisaged through the EU2020S may have catching-up to do, not only in terms of time but also in terms of space. In relation to the temporal dimension, some of the headline targets are scarcely going to be achieved in a notable number of regions or member states, and indeed the national targets are in general too lenient in the sense that they do not guarantee that the EU2020S overall aims are surely attained. The EC has adumbrated in late 2011 that not all the regions can or should reach the EU2020S targets that have been set. In practice the current gap in a large number of regions means that the EU2020S implementation must be further facilitated and speeded-up by 2020 in the EU as a whole. In relation to the spatial dimension, ESPON researches has demonstrated how smart, sustainable and inclusive dimensions of growth are territorially uneven and dissimilarities across the European space are noticeable and, with regard to several variables, dramatic. This spatial knowledge shall be essentially utilized in order to reach a more complete success.

Regarding cohesion territorial objectives, a number of so-called „top indicators“ were selected and assessed in ESPON researches. According to the results of the assessment there is no general trend towards convergence in all ESPON

territories. Territorial objective of “Strong local economies ensuring global competitiveness” convergence were strong however, disparities are still living factor that must be handled. Regarding the objective of “inclusion and quality of life” disparities were small but existing differences are stable over time.

Regional development policies has adaptation to global challenges, such as depletion of resources and climate change, by choosing a development direction that is not as resource-intensive and is thus more sustainable. Having in mind that the sectors studied are likely to remain a backbone of the EU economies, a greening process seems largely inevitable. At the same time, it is difficult to estimate whether greening is occurring fast enough to be able to effectively address such current and future challenges.

Current greening performance, however, differs significantly across the EU Member States. Besides geographical preconditions, differences in prosperity levels among the countries and regions have a strong impact on penetration of the green solutions. It is highly influenced by the environmental, economic, cultural and other factors. Developing countries are often struggling with fundamental shortcomings and tend to focus on more urgent development problems. In general, the old Member States tend to have a better performance of the green economy sectors, in comparison to the new Member States.

Territorial challenges and opportunities - territorial synopsis

Change in GDP/capita in the year of crisis (% , 2007-2011)

Positive change

- > 10%
- 5% - 10%
- 0% - 5%

Negative change

- 5% - 0%
- 10% - -5%
- < -10%

Area concerned by geographic specificities

- Geographic specificities

EU2020 Strategy

- Significant challenges regarding EU2020 targets

Green economy performance and potential

- Significant green economy performance and potential

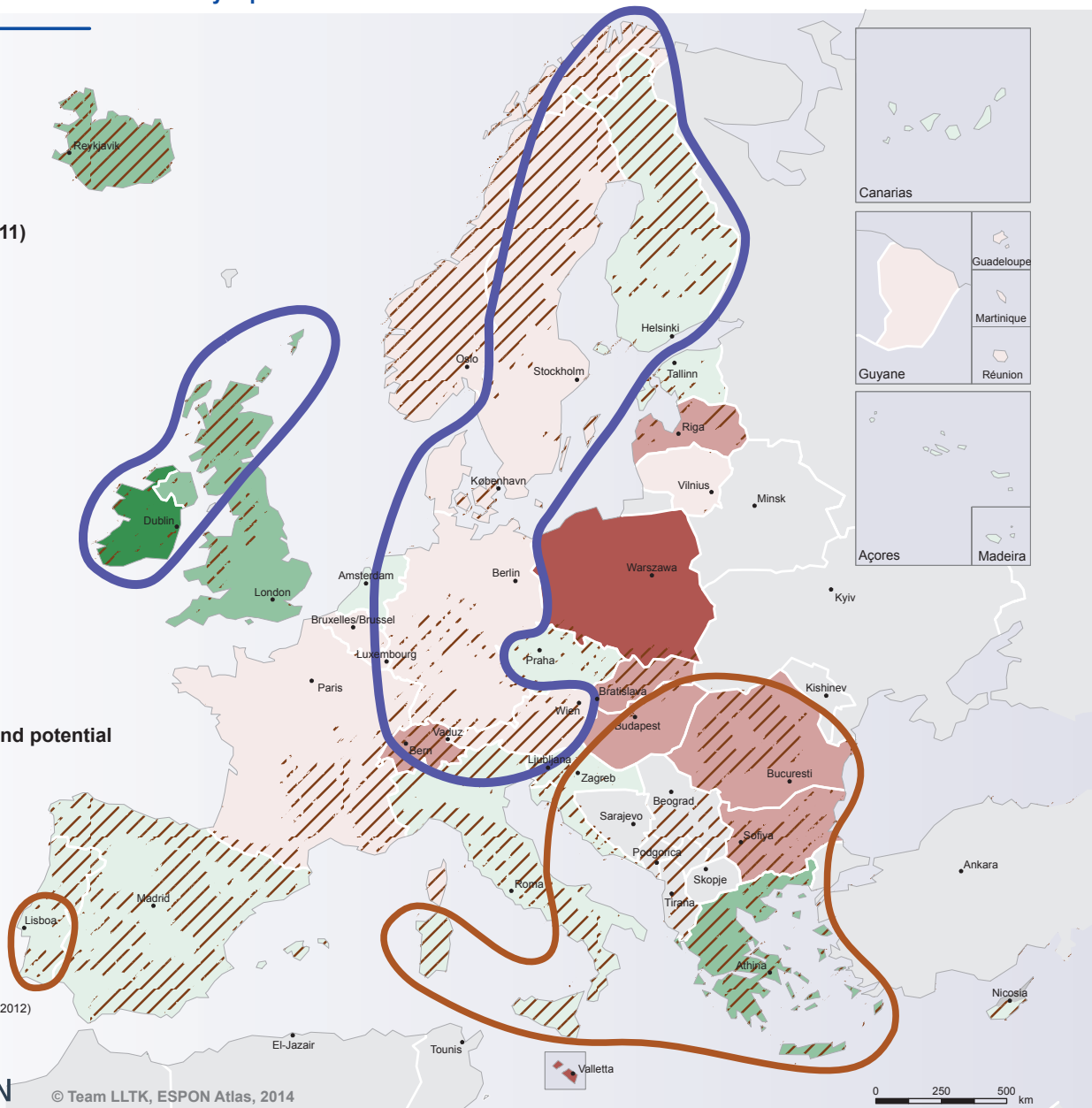
Regional level: NUTS0 (2007-2011)
 Source: SIESTA (2012), GEOSPEC (2012), GREECO (2012)
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9. Governance, Territorial Cooperation and EU Policies

As a main scope of the EU, it always moves further and further in strengthening cooperation between member and non-member sovereign states .

Completion of EU's integration plays a crucial role in protecting and ensuring the stability of democracy in the European continent. Despite the economic crisis EU has been insisted on strengthening of closer integration. Over the 2007-2013 period, the number of European Union member states has increased up to 28. In parallel, the ESPON program is also covering the territories of 32 European countries (the 28 EU Member States plus Iceland, Liechtenstein, Norway, Switzerland). 18 countries coordinate their national economic policies by adopting the euro as their currency. The former member states -have joined before 2004- are almost all on the highest level of integration connected to the Schengen zone and a member of the Euro zone as well. Over the past decade, some of new members joined to the Euro zone too. Totally, more than 333 million EU Citizens euro as their currency and enjoy its benefits now.

The economic growth and stimulating of the employment is a strategic priority for the European Union and the Member States, as well as part of the Lisbon Strategy. The European Union applies common policies for all sectors of the European economy. The common EU policies cover all sectors of the economy include the long established common agricultural policy and competition policy-created by the foundation of the European Communities-, and the later established policies including environmental and cohesion policy and

the internal market.

The EU may be one of the wealthiest region of the world, but there are large territorial disparities between member states and inside individual countries. The wealthiest country, Luxembourg, is more than seven times richer than Romania and Bulgaria, the poorest and newest EU members. The regional policy of the EU expresses directly the solidarity with the less developed countries and regions. The aim is to reduce the significant economic, social and territorial disparities that still exist between regions in Europe. However other policies also have an impact on the development of certain regions, the competitiveness of the evolution of the labor market indirectly. The EU directives and policies have varying effects in the developed and underdeveloped regions, or in new and old Member States.

The stronger regional integration of the continent is served by different types of territorial cooperation; twin cities, cross-border, transnational and interregional co-operations. The European Territorial co-operation plays a determinative role in developing of a European space, and also a cornerstone of integration. With democratic governance, it clearly represents a real European added value, and contributes to the borders should not be a barrier. As a result Europeans are closer to each other than ever, and helping solve the common problems, exchange of ideas and promote strategic work towards common goals.

European integration

Date of EU accession

- before 2004
- 2004
- 2007
- 2013
- non-EU ESPON country

Membership

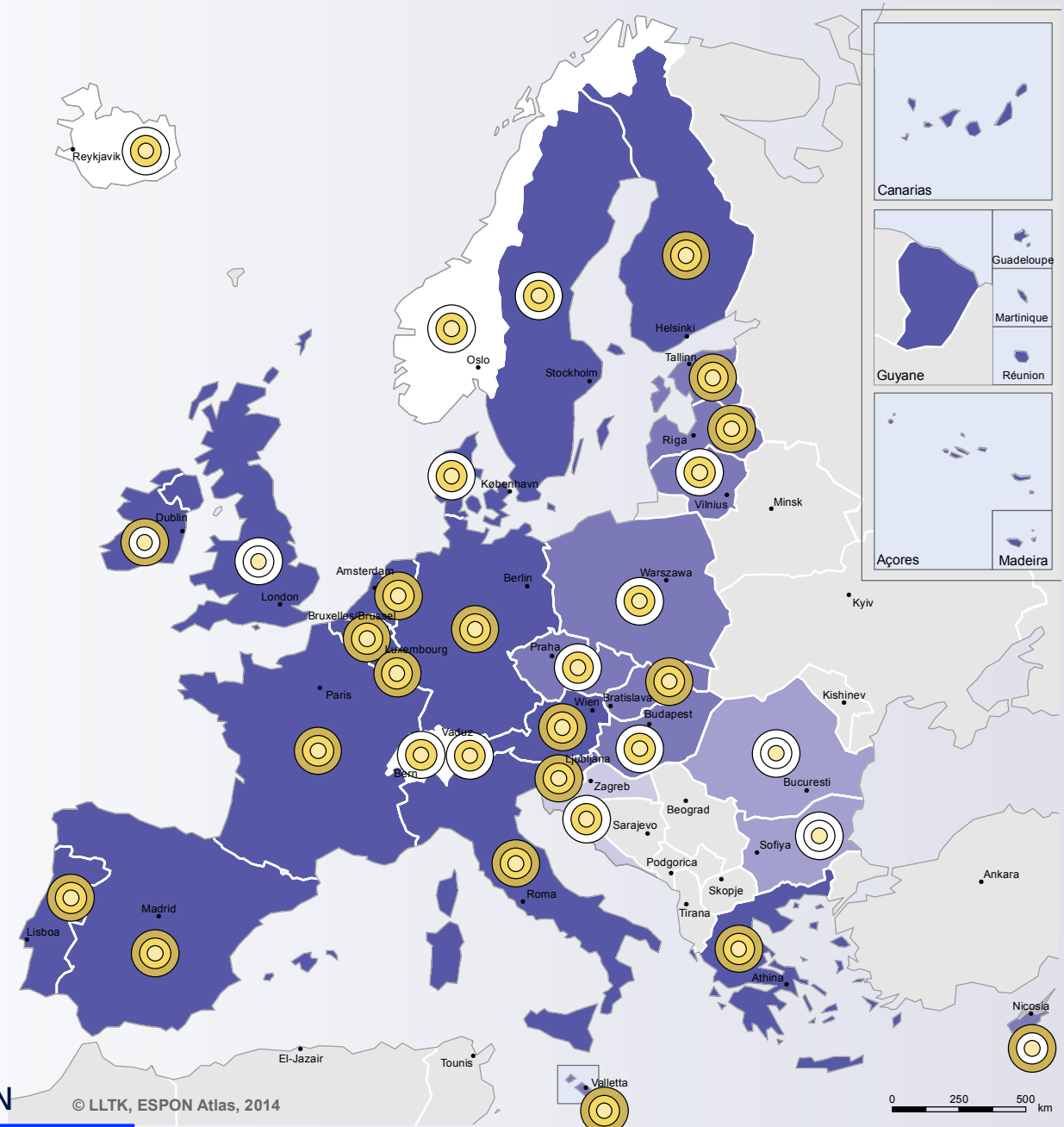
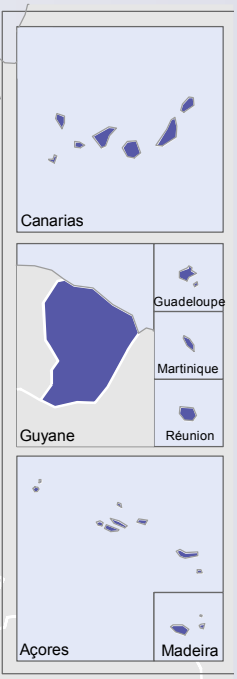
- ESPON Space
- Schengen Area
- Euro Zone

Regional level: NUTS 0
 Source: ESPON,
 European Commission
 Origin of data: ESPON,
 European Commission, 2014
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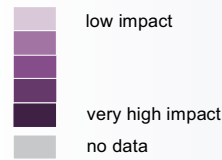
Territorial dimensions of different policies

37.1 % of EU regions

and 39,1 % of its inhabitants affected by the directive on critical infrastructure

Transport policy and economic growth

Territorial impact of transport policy on economic growth

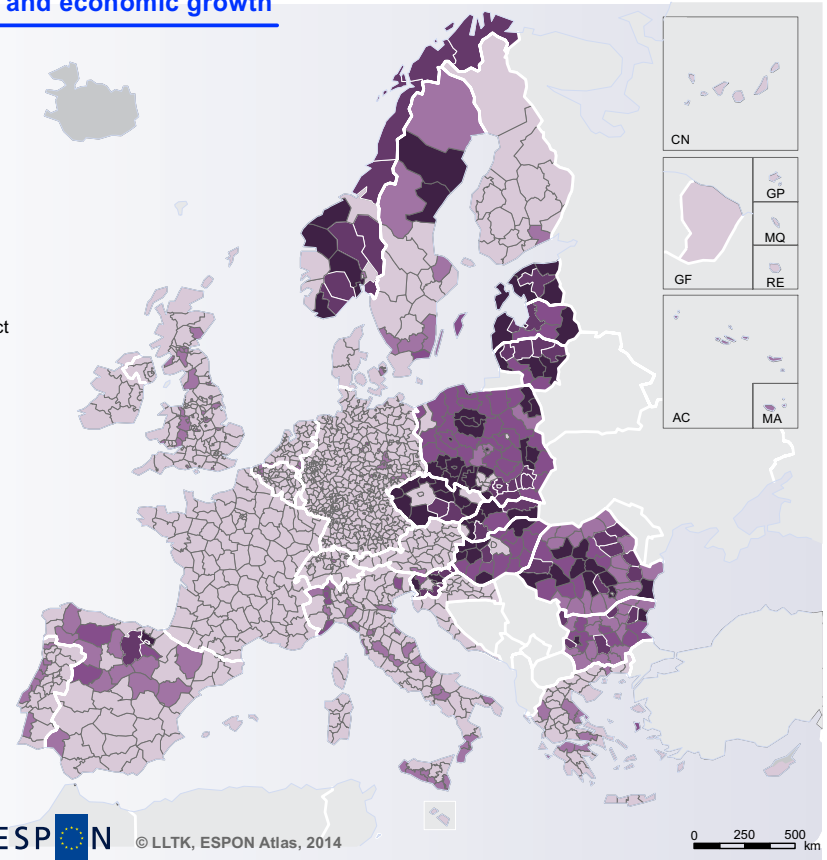


Regional level: NUTS 3 (2006)
Source: ESPON TIPTAP, 2013
Origin of data: own calculation of TIPTAP, 2013
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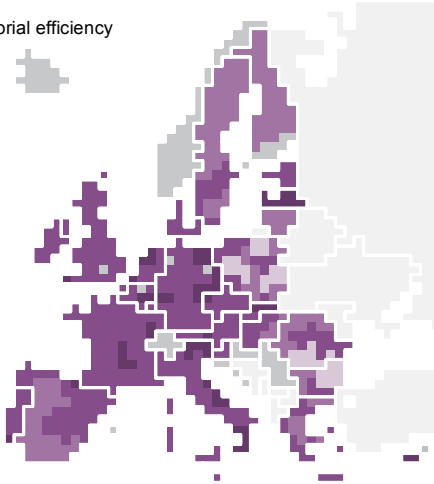
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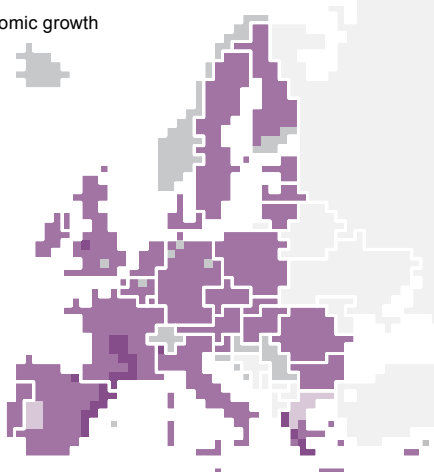


Territorial impact of CAP policy

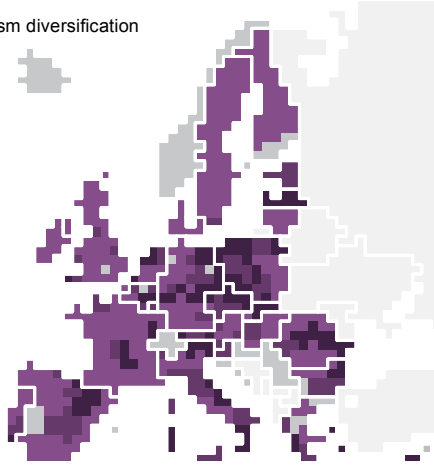
Territorial efficiency



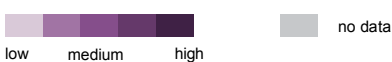
Economic growth



Tourism diversification



Size of impact



Source: TIPTAP, 2013

It has long been recognised that sector policies have territorial impacts, thus policy impact assessment plays a key role in EU policy design and implementation. ESPON put remarkable effort to reveal its necessity in measuring territorial and regional effects of EU sectoral policies and directives already came into force across Europe. Cross-cutting importance if this issue is not an unknown phenomenon for decision makers on different policy debate, it was already introduced during the preparation of the European Spatial Development Perspective (1995-1999). European Commission has started utilizing it from 2002, and later put major effort to further develop it.

Impact assessment may provide detailed evidence for decision makers regarding advantages and disadvantages of a policy choice or approach. Furthermore It can give a precise recommendation on what level of territorial units must the policy be applied, or explains why actions should be immediately performed, and why the proposed response is appropriate. In some cases the results can lead experts, stakeholders and decision makers towards skipping a new policy due to its irrelevant or inefficient effect influence on Europe.

The ESPON Programme has continually strived to bridge the gap between scientific theory and evidence. As a consequence, it took up the role of analysing and assessing the agricultural and transport policy from a closer look.

Transport policy aims among others to connect the continent between East and West, North and South and to promote the economic growth.

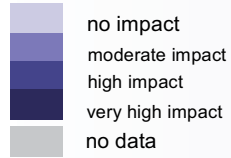
Transport policies has a generalized positive impact throughout Europe, thanks to a sufficiently spread out new infrastructure provision and to processes of growth diffusion. In some areas provision will represent quantum jumps with respect to previous accessibility conditions; moreover, these increases will be highly desirable given the lagging conditions of these areas in economic terms. It looks relevant to highlight the emerging reality of a new central European macro-area, encompassing southern Poland, Czech Republic, eastern Austria and western Slovakia and Hungary.

The Common Agricultural Policy CAP is structured in two pillars:

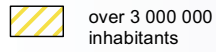
- Pillar 1 supporting farm incomes through direct payments to farmers and market support measures and
- Pillar 2 supporting agri-environment and rural development objectives

On the one hand agricultural policy has a negative impact on regional GDP due to the decrease in income transfers to farmers, except for those regions which are highly performing in catching Pillar 2 resources. On the other hand it has positive impact among others on tourism, which is regarded as an important and appropriate activity in rural areas. It is connected to agricultural policy which, through influencing land management practices, affects the infrastructure such as landscape, which supports tourism. In this context, the diversification by farmers of their activities (e.g. into tourism) can also be regarded as an indirect indicator of innovation or entrepreneurship.

Impacts of directives on critical infrastructure



From the number of topics have impact by directives on critical infrastructure



Regional level: NUTS 2 (2006)
Source: ESPON ARTS, 2013
Origin of data: ESPON Projects, Eurostat, EEA Corine Land Cover, 5th Cohesion Report, BOKU University, DG AGRI © UMS RIATE for administrative boundaries

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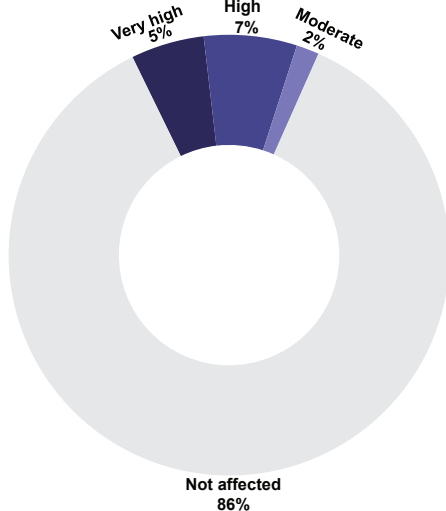
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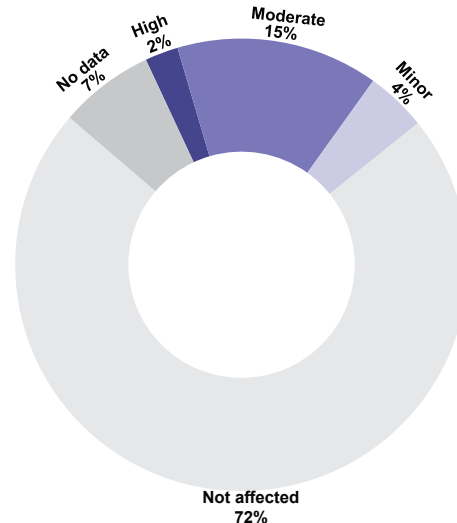
Inhabitants by the level of regional impacts

Directive on sustainable use of pesticides
Healthy life expectancy at birth

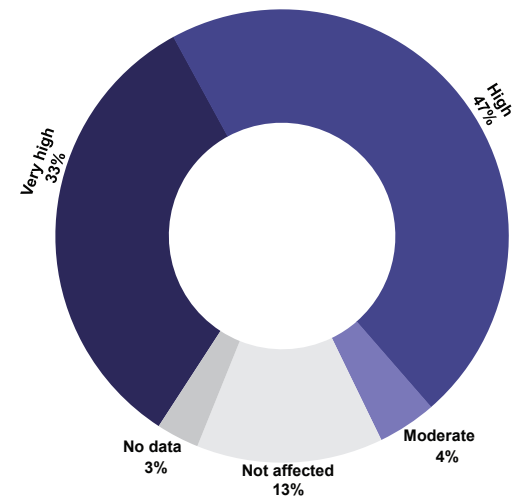


Source: ESPON ARTS, 2013

Directive of clean and energy-efficient road transport
Employment in the secondary sector



Directive of energy performance of buildings
Fossil fuel consumption



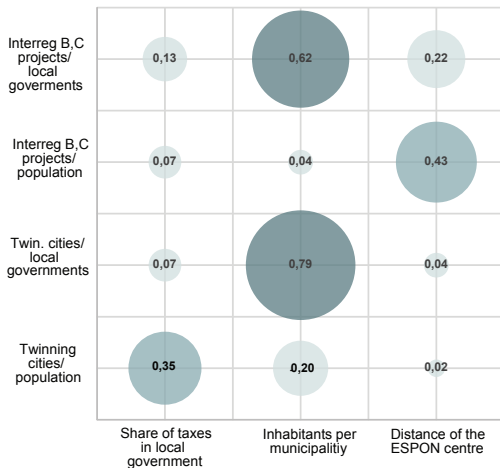
Territorial cooperation towards the long term objectives of territorial cohesion

up to **20** % of communes

have twinning city agreements. The less-developed regions show a greater propensity to engage in twinning city territorial cooperation than well-developed regions

Factors of territorial cooperation

Correlation of TC indicators and determinants



Source: ESPON TERCO, 2012

Determinants of territorial cooperation

Types of regions

- Economic periphery & low attractiveness
 - more favourable situation
 - more problems observed
- Mixed character
 - economic periphery & high attractiveness
 - economically dependent regions
- Economic core
 - City-regions
 - higher attractiveness
 - lower attractiveness
 - no data

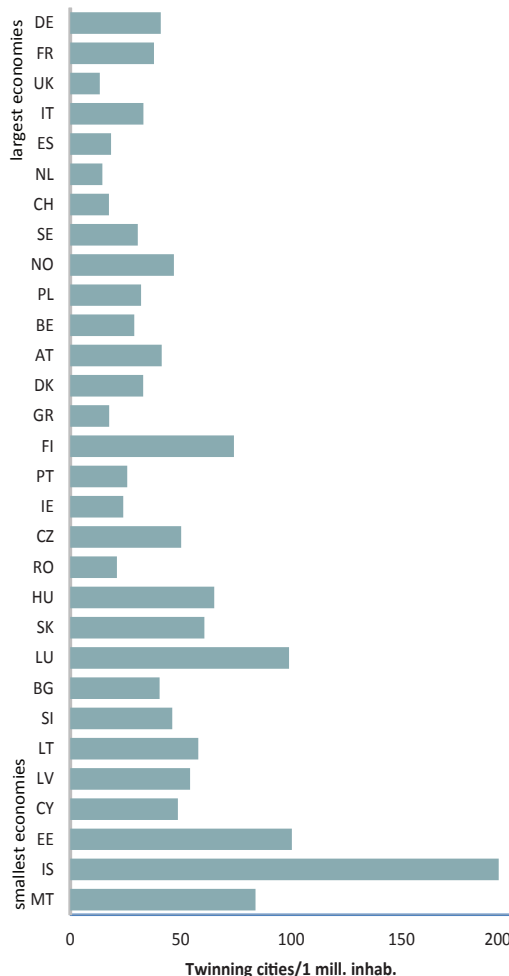
Regional level: NUTS 2, 2006; NUTS 0 for NO and CH
 Source: EUROREG, University of Warsaw, 2011
 Origin of data: ESPON TERCO, 2012
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Development and twinning cities cooperation



Source: ESPON TERCO, 2012

Territorial co-operation is commonly described as an important factor of economic development. Competitiveness and territorial integration has been proven to be successful in reduction of negative border effects between the old and new member states of the European Union. However a successful territorial co-operation is not always unequivocal as it is predicted to do so. Policies and interventions are often fail to bring definite results and answers, even so the promising signs are clearly visible on European level. Salient examples bring the highest, joint socio-economic development to the co-operating territorial units. Recent researches highlight the fact that territorial co-operation have the greatest influence on quality of life, then on quality of natural environment and service provision, rather than on economic growth and job creation. All these revelations lead policy makers to revise their approaches in co-operation. They are, and they will be more and more often focusing on its additional effects which also give essential but sometimes invisible positive contribution to on various flows and exchanges that facilitate development. Among these, the most notable impacts are on tourism, educational exchange and social commuting. The conclusion about success is highly correlating with simpler forms of collaboration including exchanging experience, sharing tools to tackle common problems.

In terms of determinants of co-operation ESPON regions are further classified in three different groups. There are with less desirable perspective called “economic periphery & low attractiveness” regions included practically all of the Central and Eastern European regions. The following type represents a wider heterogeneity called “mixed

characters”, and had to be strongly differentiated internally. Last but definitely not least come the regions with the best performance, these all belong to the so called “economic core”. Digging deeper into this category, further subtypes must be pointed out since significant differences arise. One of them is “direct core regions”, comprising metropolitan areas, while the others made up of the remaining regions of the best developed countries, with the exception of regions classified as “economically dependent” regions. Territorial co-operation is so diverse that cannot be analysed only by its core determinants. There are other perspectives shall be taken into account. It seems quite reasonable to differentiate them according to their prevailing co-operation types. In the Atlas five categories have been taken in order to demonstrate their properties efficiently; these are namely Twinning City, Cross-border, Interregional, Transnational and Transcontinental co-operation.

In view of the modest economic potential, territorial co-operation are well developed in the “peripheral” regions, particularly in Central and Eastern European countries but also in the regions of southern Europe, that may come from the willingness to transfer knowledge from the core regions. Secondly, the “attractive” regions are more engaged in co-operation as part of the INTERREG programme, as this could be manifested in the tourism sector, an important element of their economic base. Thirdly, the “economically dependent” regions are less engaged in co-operation that suggest their potential lack of funds or point to other priorities being chosen by the local governments. Fourthly, in the case of “metropolitan” regions, a high percentage of municipalities

forming these regions are involved in co-operation, which could be facilitated by their good transport accessibility owing to the presence of a major international airport.

At the same time, regions situated in the main types/macro-regions of European space assume different forms of territorial co-operation. Regions classified as “economic core”, largely determine the average, and did not deviate from it in any significant way. On the other hand, Central and Eastern Europe are more deeply involved in twinning city co-operation, given particularly their relatively small economic potential. Conversely, the regions of the peripheral countries of southern Europe are more interested in co-operations reaching beyond the ESPON area and in co-operation funded as part of the INTERREG programme, whereas the economically dependent regions were not significantly involved in such co-operation, which was not pursued on any intensive scale and had relatively the smallest spatial extent.

The INTERREG program represents a broader, and from economical aspect, a significantly determining type of territorial co-operation, and as a result of this, ESPON regions are notably more diverse in this light. Interregional co-operation involves non-contiguous regions across the whole territory of EU. Activities take place as part of ERFD funded projects. Particular programmes are quite diverse, both in terms of the number of implemented INTERREG projects and the number of partners, but also the number of NUTS2 regions the partners came from. Also diversified are the relative measures characterizing the programmes, such as the average number of partners per project, and the number of projects per region in

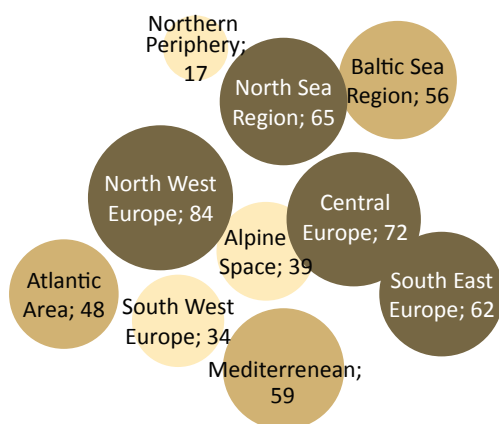
which projects within a given programme were being implemented.

Generally, more INTERREG projects are located in the peripheral rather than the central part of the ESPON area. Looking at INTERREG IIIB the Baltic Sea Region programme depicts the highest activity according to the number of project partners. A large number of projects are also typical for regions located in the Mediterranean or the Atlantic Ocean region – in their case the projects were implemented within more than one programme. In case of some countries – e.g. Germany and Poland – there are significant territorial disparities. Coastal regions have higher activity with a large number of project partners, but in the hinterland, the number of partners implementing projects was significantly smaller. Regions in the seaside and Atlantic regions tend to have greater interest in co-operation. However, in the Baltic Sea basin this reduces relatively.

An important factor determining the European transnational co-operation space is the location of project leaders. They have decisive influence on the subject of projects, with higher level of finance and greater extent of coordination works. The fact is also important that the project leader has a large freedom in selecting partners. In this point of you it is an important to analyse the spatial pattern of lead partners. In the INTERREG IIIB and IVB projects small number of leaders coming from new member states, i.e. from EU12. This confirms the predominance of co-operation within this initiative by partners from old EU countries, which are additionally concentrated in only some regions. This situation results probably from less experience in implementation of projects of entities from the new member states.

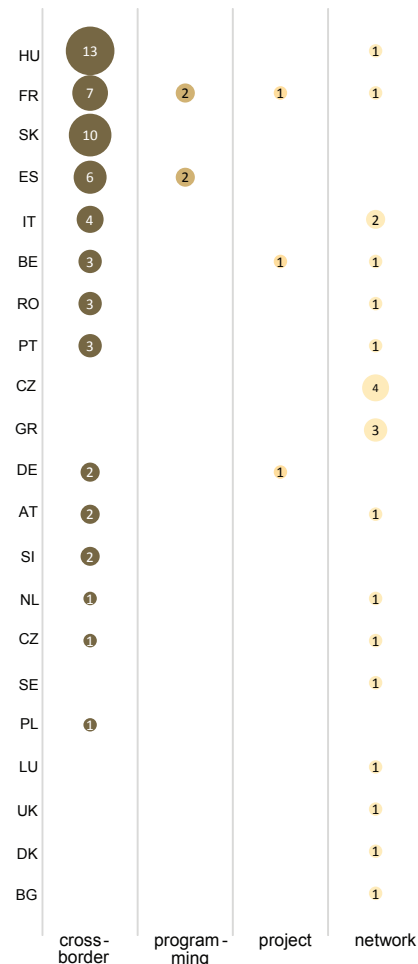
Interreg and EGTC regions

Regions by INTERREG IVB programmes



Source: ESPON TERCO, 2012

EGTCs by types



Source: ESPON TERCO, 2012

Territorial cooperation in different types of regions

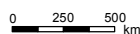
Types of regions

- Twinning city oriented
- INTERREG oriented with high cooperation beyond the ESPON area
- Relatively low range and intensity of cooperation
- Hubs of cooperation (resulting from specific administrative divisions)
- Medium range and intensity of cooperation (consulting the ESPON area average)
- no data

Regional level: NUTS 2, 2006; NUTS 0 for NO and CH
 Source: EUROREG, University of Warsaw, 2011
 Origin of data: ESPON TERCO, 2012
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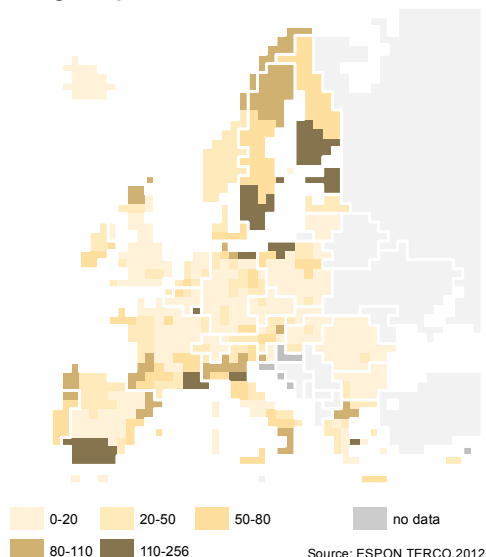
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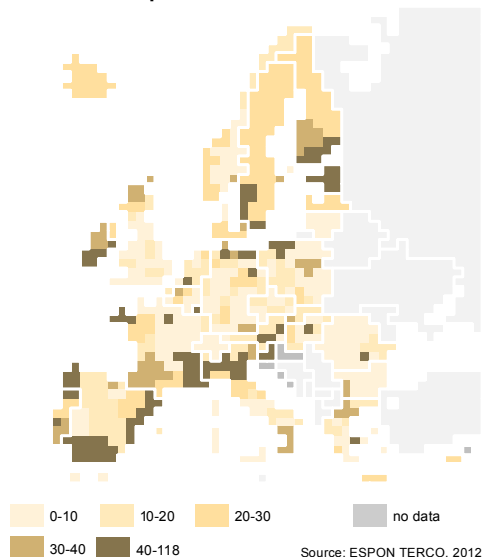
Development and Interreg activities

Interreg partners

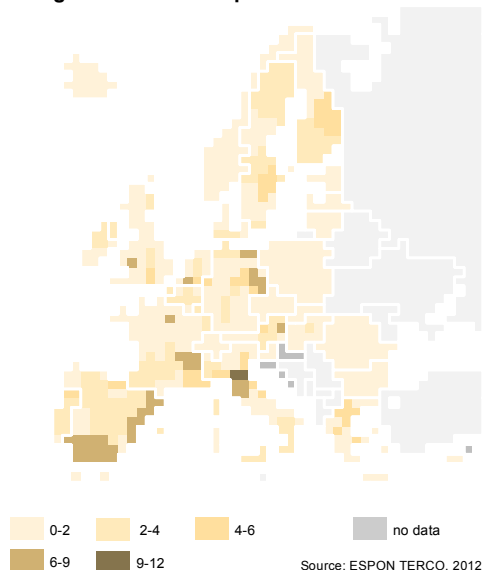
Interreg III B partners



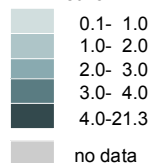
INTERREG IV B partners



Interreg C III and IV lead partners



project partners per 1 min euro



Regional level: NUTS 2 (2006)
Source: ESPON TERCO, 2012
Origin of data: EUREG,
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In order to better understand the spatial diversity, it is also worth looking at the relative data of comparing number of project partners with the population of regions allow us to analyse the intensity of involvement in co-operation within regions. The highest values are dominant in regions with large number of projects, but also those with small population e.g. the Scandinavian regions in the spatial peripheries. In the continental centres, i.e. the so called Pentagon region reflects relative small activity in project implementation. Similar image becomes visible when we project the number of INTERREG projects on the regional GDP. The relatively under developed Central and Eastern European regions or the Iberian Peninsula represent a stronger position.

In terms of new opportunities in co-operation, the European Union created an opportunity for members to establish EGTCs, bodies with legal personality. Thus, the European Grouping of Territorial Co-operation (EGTC) is a co-operation instrument at the community level established for the creation of cooperative groups in Community territory, invested with legal personality, in order to overcome the obstacles hindering territorial co-operation. As a key property, most of the EGTC regions take part in cross-border co-operation, but many countries are also involved in network-type EGTCs. The largest countries and some new members (Hungary, Estonia, or Slovakia) have reached so far the highest level of activity in EGTCs.

Territorial Agenda 2020 states that 'The co-operation and networking of cities could contribute to smart development of city-regions at varying scales in the long run'. Main scopes of twinning cities' co-operation are the following; exchanging experience, advising to solve similar problems,

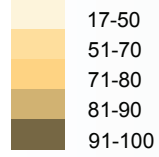
sharing tools to tackle a common problem and common actions to solve local problems.

Number of twinning cities agreements depends on the size of the country, and in particular on the number of communes (cities) that can enter into such agreements. In the majority of European regions only a small percentage of communes have twinning cities agreements. The most active administrative units concerning twinning cities are located in Scandinavian and Benelux countries. Generally speaking twinning city co-operation is mostly privileged by large cities; the scattered municipalities have less opportunity to take their part. Comparing the number of twinning cities agreements to the regional GDP, a high relative share of underdeveloped countries from Central and Eastern Europe can be observed due to the high number of co-operation and relatively low regional GDP.

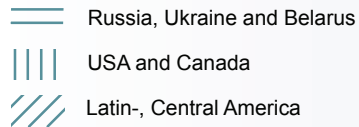
Regions from the periphery (e.g. United Kingdom, or Greece) cooperate with cities over a substantial distance, and some Central European regions choose partners in shorter distance. Basically twinning cities are more active with their closest neighbours, but historical and cultural factors are also determinant. Greater involvement in co-operation outside ESPON space is more typical in regions from the peripheries of Europe. Twinning cities with communes and cities of United States are significantly more frequent in the west of the continent; particularly noticeable is the involvement of Irish local governments' co-operation with communes and cities in the USA. Latin America, Spain, Portugal are particularly active, which reveals the importance of cultural roots, and common history. In case of co-operation with Russia and Ukraine, not only the cultural, but also the spatial closeness is the determinant factors.

Intra and extra ESPON Space twinning cities

Percent of ESPON space twinning cities, 2012



More than 10 twinning cities from



Regional level: NUTS 2 (2006)
Source: ESPON TERCO, 2012
Origin of data: EUREG, 2012
University of Warsaw
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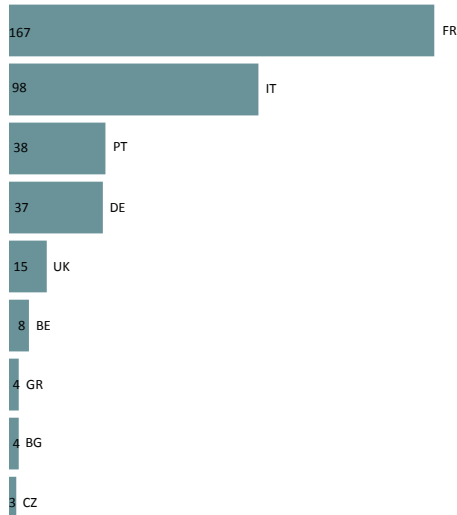
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0 250 500 km

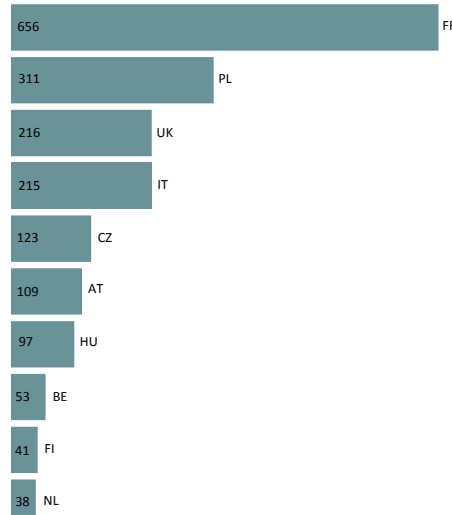
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Twinning cities agreements by countries

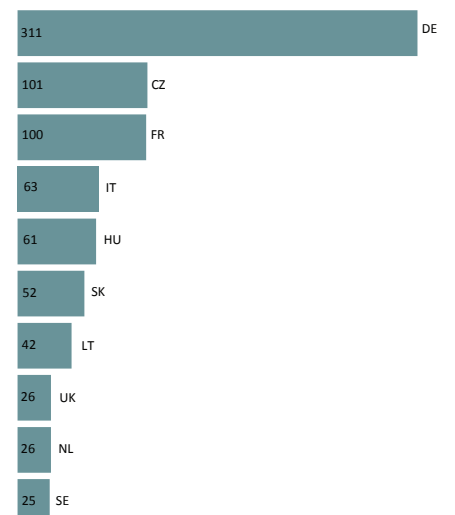
Cities of Spain



Cities of Germany



Cities of Poland



Source: TERCO, 2012

Over the past 10 years, the most important wave of enlargement of the European Union resulted in an increase by 13 new member states, the number of members by 13 countries. The spatial expansion produced financial and social inclusion with all the advantages of more open borders.

Old and new member states are in different positions according to their level of development, and geographical location, which determines the opportunities of territorial cooperation or the effects of different policies on them. In regional cooperation, new member states are sometimes proved to be more active compared to older ones in spite of their lagging in some important field. It is also increased by the fact that they have accumulated experience in pre-accession funds. This is clearly reflected in the facts that a relatively large number of partners from these countries is involved in INTERREG programs that are not necessarily undertaking a leading role yet, but learn faster than it was believed earlier.

In new member states with a relatively small area, a relative large number of regions are affected by the border situation, and the links are also strengthened due to the ethnic minorities in the neighbouring countries.

Other characteristic of the new member states in Eastern Europe is the great number of twinning city partnerships, although these are the lowest in the level of intensity at territorial co-operation. However, the old members of the EU core areas could play a greater role in territorial cooperation compared to their economic development.

As a consequence of different levels in development, certain policies have distinct roles and

impact on countries and regions of the continent. The CAP as one of the most determinative policies reaches a relatively modest impact on economic growth in the majority of regions. However, its alternative effects can be observed significantly on environment quality. Mainly positive outcomes are visible in southern and western European regions, with strong country effects due to the national management of funds allocation among axes of Pillar 2, but the lowest impacts are visible on New Member Countries.

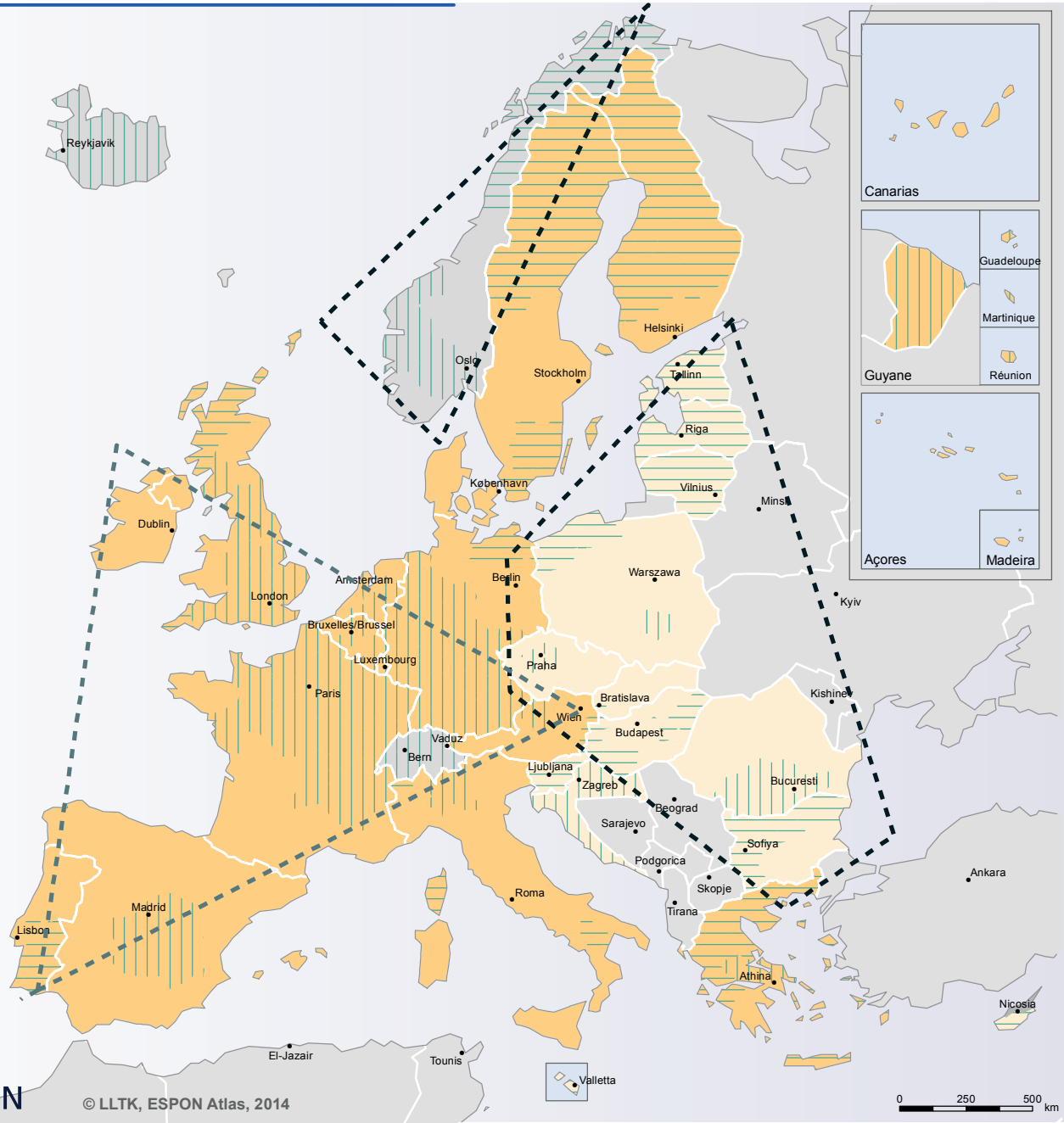
Policies of transport achieve greater impact especially in the economically and infrastructurally developing regions (more impacts will show up in Eastern Countries) and in some northern peripheral regions.

In the future, extension of integration requires further strengthening of the EU's role in policy-making. Although, the enlargement increases the heterogeneity of the union, it becomes more and more important to discover and analyse the territorial impact of policies and directives in order to focus more accurately on their different territorial impacts.

Strengthening of integration enhances territorial co-operation directly. The member states have different activities in certain intensities of cooperation. In order to draw in the less active partners into the circulation, actively participating partners have to share their experiences especially among them. In some cases, economic underdevelopment hooks up with border situations that may jointly result in peripheral status, thus territorial co-operation shall contribute to the convergence of these regions, to ensure the strengthening of European cohesion.

Governance, Territorial Cooperation and EU Policies - territorial synopsis

- Level of integration**
- old members
 - new members
- Intensity of territorial cooperation**
- Relatively high intensity of Interreg cooperation
 - Relatively low intensity of Interreg cooperation
- High impact of policies**
- High territorial impact of transport policies on economic growth
 - High territorial impact of CAP policy on environmental quality



Regional level: NUTS 0
 Source: EUROREG, University of Warsaw, 2011
 own calculation of TIPTAP
 Origin of data: ESPON TIPTAP, TERCO
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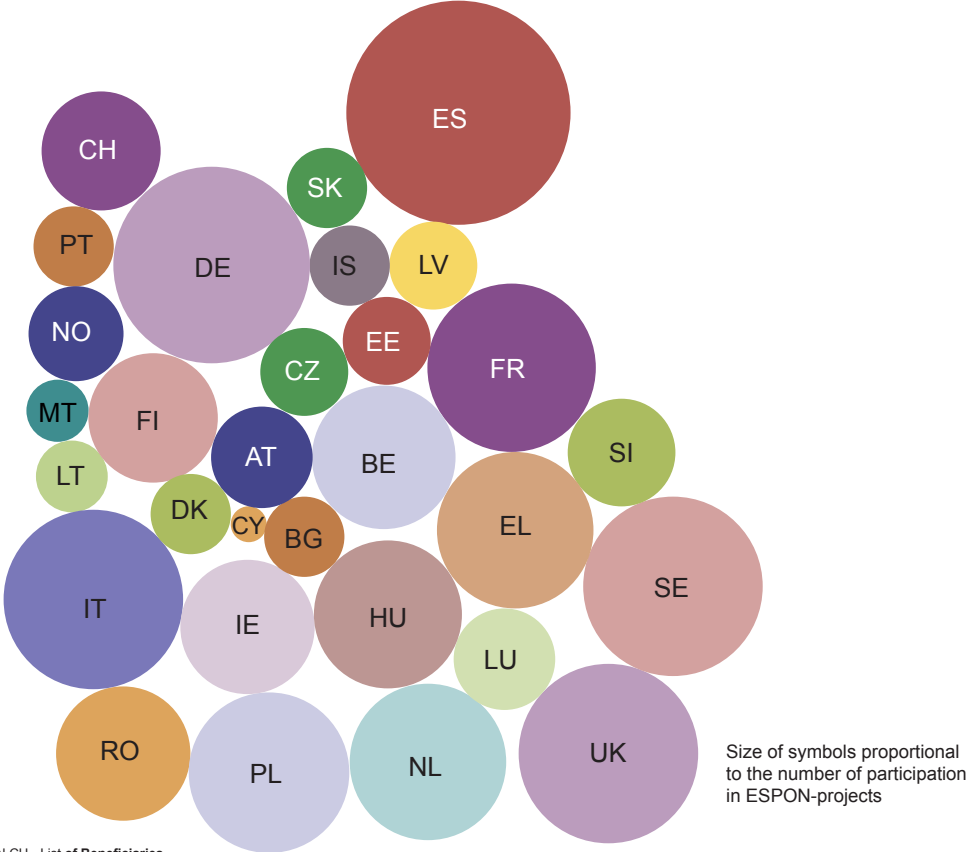
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392 projectpartner

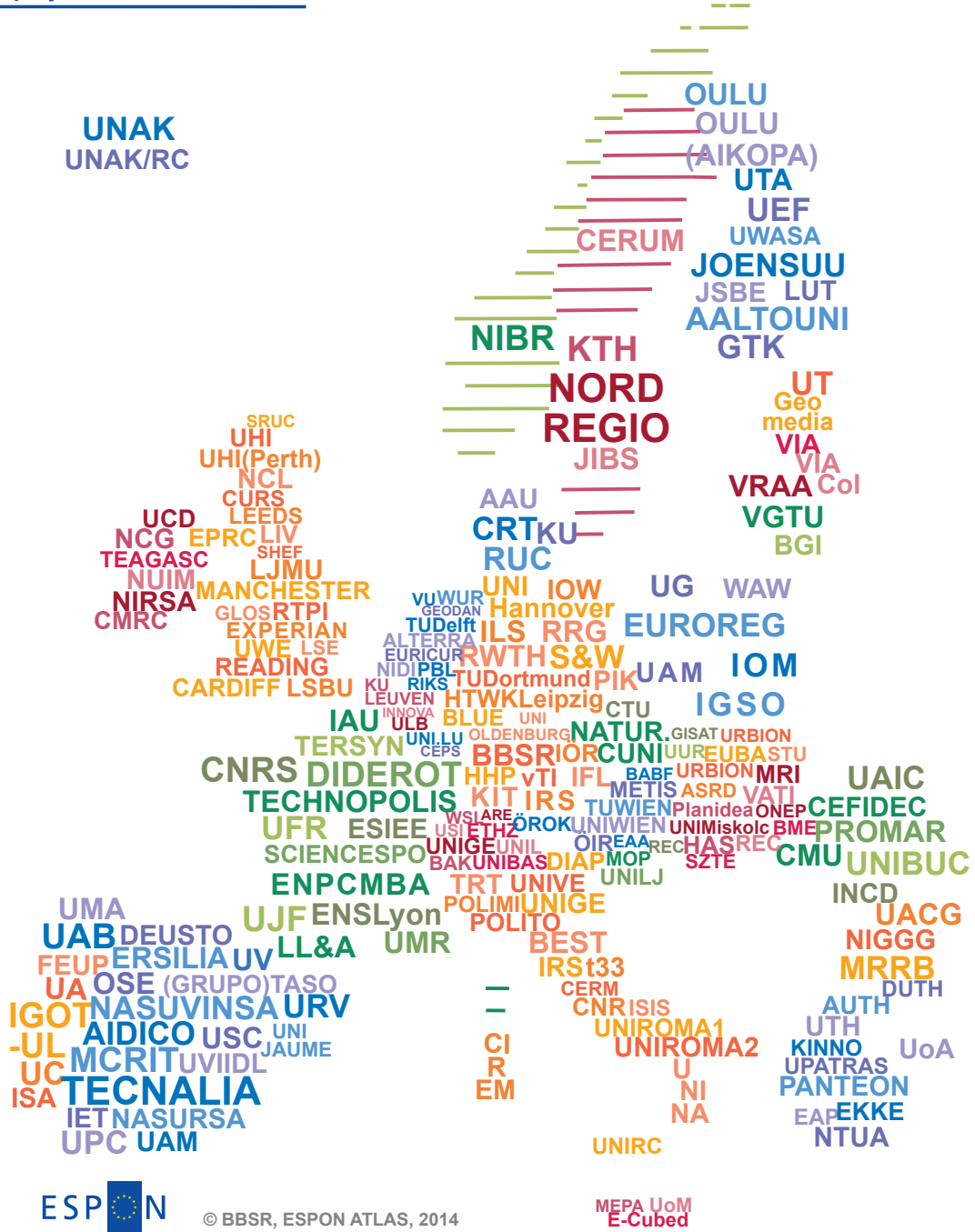
66 projects

Participation in ESPON-projects



Source ESPON CU - List of Beneficiaries

UNAK
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