ESPON
Evidence Report
Atlantic Area

ESPON Project TerrEvi

August 2013

Executive Summary

The ESPON TerrEvi project aims at providing evidence for Structural Funds programmes to support the development of the programmes planned for the period of 2014-2020. The present territorial evidence report is one of ten case studies. This factsheet has been complemented by the results of the discussions at a workshop in March 2013. The present report assesses the situation of the Atlantic Area in view of developing a future programme and achieving the three objectives of the Europe 2020 Strategy, namely smart, sustainable and inclusive growth.

Generally, the workshop participants expressed the need for ESPON material to help them developing investment priorities for the Operational Programme. ESPON results can be used for the following moments within the programme cycle:

- Needs analysis,
- Thematic concentration,
- Programme monitoring,
- Project selection, and
- Stakeholder dialogue.

Three important aspects have been considered crucial when discussing the indicators: First of all, some data seem to be dated, due to the fact that either the projects were conducted a few years ago, or there are no updated datasets. Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. A third factor regards the complexity of indicators. Composite indicators that combine several dimensions and sub-indicators can be difficult to understand in policy processes.

Context information

The Atlantic Area encompasses different regions (in different EU Member States) in terms of economic and demographic development. While population decline is concentrated in eastern Portugal and northwest Spain, coastal regions of the Iberian Peninsula as well as most French, UK-based and Irish regions were affected by population growth. Economically dynamic and, at the same time, competitive areas are primarily those of the main urban areas. Yet, rather peripheral regions also have economies of high productivity, for example in south-western Ireland or northern Spain. Regions with lower GDP figures can be found in central and northern Portugal and peripheral parts of the UK.

A detailed look at various ESPON results reveals the situation of the Atlantic Area in a European context, as well as regional similarities and disparities within the programme area.

Generally, the data only provides a snapshot at a given point of time and there is no possibility to observe any developments or trends, so they only have a limited relevance for the programming. Other indicators were included in the report according to the indications emerged during the workshops in order to give evidence on issues specific to the Atlantic Area.

Moreover, the timing of the TERREVI project overlaps with the programming process, thus limiting the possibilities for the programme to benefit from the project results.

Europe 2020: Smart growth – Main findings

- Expenditures on research and development are considered a driver of economic growth. Investing 3% of GDP for R&D is therefore one of the headline targets of Europe 2020. Private business expenditures are essential to meet the target. The programme area mainly shows average values for both overall R&D expenditure as well as R&D expenditure in the private sector. Emphasising the relevance of R&D investments and trying to attract and increase private R&D expenditure can help policy making to better realise the potentials available in the area.
- Knowledge-intensive services comprise a broad set of very different activities. The shares within the Atlantic Area vary between 18 and 50%, and show a north-south divide. Regional disparities that occur for the Atlantic Area must be seen in combination with local specialisations, regional innovation systems or other indicators like R&D investments.

- When it comes to human resources in science and technology, the figures for Portugal are rather low as compared to the rest of the Atlantic Area and also in a European perspective. The share of people working in science and technology is comparable to the figures for Romania or Bulgaria. On the other hand, most French, Spanish, British and Irish regions of the Atlantic Area show high shares of human resources in science and technology, i.e. >35%. Supporting efforts to catch-up by regions with considerably lower values can help to make better use of future investments.
- Territorial patterns of innovation show a general division of labour regarding the field of innovation for the Atlantic Area. The UK and Ireland are dominated by science-based and applied science areas. French regions and those of the Iberian Peninsula are mainly areas of technological application and smart and creative diversification. In other words, northern regions tend to focus on producing science-related knowledge, southern areas focus on product-related innovation and creative processes. Policy actions may benefit from a twofold approach: While smart specialisation strategies aim at endogenous regional development, synergies between regions with different innovation profiles can be strengthened to better exploit complementarities.
- Referring to the implementation of the Digital Agenda of the EU, information on use of e-commerce or ICT employment show a north-south divide but also point to regional disparities between urban centres (Bilbao and Lisbon) and large scale regions that also contain rural areas. A catch-up process that promotes the usage of ICT in regions with lowest shares could be initiated. As all regions except Portuguese regions show high values, policy actions should try to make use of the full potential in all regions.
- Even though most regions of the Atlantic Area show low travel costs to access ports, some regions show similar costs as land-locked hinterland regions elsewhere in Europe. The indicator indicates that even in coastal areas

accessibility of ports can be a challenge, for example northwest France or northwest Scotland.
- Furthermore, extra-ESPON and neighbourhood trade is rather low for several regions in the Atlantic Area, such as southern Portugal or northwest France although they are exposed to the Atlantic Ocean, i.e. to global flows of trade. Regions with higher shares (> 6%) are mainly located in Ireland and the UK. Additional measures that make better use of locational advantages of the Atlantic Area (seaports e.g.) can contribute to a better exploitation of this potential.

The discussion with the programme illustrated that the ESPON results on smart growth can be of interest for the needs analysis and thematic concentration of the future programme. In particular the indicators on R&D expenditures, knowledge-intensive services and territorial patterns of innovation may be useful for identifying promising projects and for stakeholder dialogues. Indicators on smart growth are difficult to use for monitoring changes within the programming period.

Europe 2020: Sustainable growth – Main findings

- Regarding wind power, the Atlantic Area shows only medium potentials despite its coastal position. Greatest potentials are located in Sweden, Finland and the Baltic States. Within the Atlantic Area, Scotland and Ireland show higher potentials than other regions. At the same time, the whole Atlantic Area holds good opportunities for developing wave power. Only the North Sea and single areas of the Mediterranean Sea hold similar potentials. This offers good opportunities for policy actions and investments promoting the development of these good potentials in the Atlantic Area.
- All regions of the Atlantic Area face climate change impacts. In the programme area, only regions in France, the UK and Ireland have good capacities to adapt to climate change while Spain and most areas of Portugal are more vulnerable to climate change as technology; knowledge and awareness are important dimensions of adaptive capacity. The divide that regions with lower capacities face higher impacts also appears in the Mediterranean Arc. Therefore, targeting

adaptation to climate change, in line with the most important dimensions of adaptive capacity, is important for future policies.

The discussion with the programme illustrated that the ESPON results on sustainable growth can be of interest for the needs analysis and thematic concentration. In particular the indicators on wind power potential, adaptive capacity to climate change, potential impacts and vulnerability to climate change may be useful for identifying promising projects and for stakeholder dialogues. However, most indicators on sustainable growth are not easy to use for monitoring changes within the programming period.

Europe 2020: Inclusive growth – main findings

- No region in the programme area shows an employment rate above 75%, in other words no region has reached the Europe 2020 target yet. Furthermore, Ireland and north-western as well as southern Spain have high long-term unemployment rates, and the situation probably has been worsened by the current economic crises.
- In the Atlantic Area there are large disparities in terms of ageing of population. The general trend of population decline in Spain and Portugal and population growth in (most parts of) France, the UK and Ireland cannot be reversed in any available ESPON scenario. At the same time Southern regions of the programme area show much higher shares of old people (>65 years) than many French, British or Irish regions. This twofold challenge will even increase in the future as it seems to be hard to reverse the trend and because drivers of this pattern are manifold and regard e.g. migration, traditions, culture and structures in society. Both policy actions and especially related investments are needed, which consider that demographic change is a twofold challenge: population decline / growth, and ageing of population.
- The Atlantic Area shows rather low shares of people with high education. On the other hand, the Scottish highlands are notably outstanding, as it is the only region of the programme area with a share of people with high education above 80%. When zooming in on young academics (aged 30-

34 years), it becomes apparent that all Spanish and Irish but also many French and British regions have already met the Europe 2020 target, i.e. 40% of regional population aged 30-34 with tertiary education attainment. Especially Portuguese regions verge to fall behind. Future policy actions can build on the strengths of high shares of people with high education, while not excluding the need for overcoming existing disparities.

- An important factor of avoiding high rates of risk of poverty or social exclusion is a decreasing share of early school leavers. Mainly in Spain and Portugal more than 20% of population aged 18-24 years is without any degree but also Welsh and Scottish regions indicate similar shares. This indicator is highly dominated by the national level so that transnational measures will only have impacts if stakeholders from the national level take part and the educational and training systems as well as the labour markets are reformed and restructured.

The discussion with the programme illustrated that the ESPON results on inclusive growth can be of interest for the needs analysis and thematic concentration of the future programme. In particular the indicators on employment, long-term unemployment as well as indicators on population at risk of poverty and people with high education may be useful for identifying promising projects and for stakeholder dialogues. Indicators on inclusive growth are difficult to use for monitoring changes within the programming period.

ESPON indicators used by TerrEvi. The below-mentioned table indicates possible links between the 32 indicators of the ESPON maps on smart, sustainable and inclusive growth presented in this factsheet and the investment priorities for the next funding period 2014-2020. Linking future investment priorities and the indicators used by TERREVI shows that ESPON produces evidence that can be used and support a territorially differentiated development and management of territorial cooperation programmes. In other words, ESPON results can support work linked to achieving territorial cohesion and the implementation of the Europe 2020 strategy.

2014-2020 Thematic Objectives	Share of R&D infrastructure	Private sector R&D expenditures	Employment in Knowledge-Intensive services	Human resources in science and technology	Territorial patterns of innovation	Private use of e-commerce	ICT employment	Tourist arrivals	Travel cost to nearest maritime port	Openness to extra-ESPON and neighbourhood trade	Quality of natural landscape	Wind power potential	Wave power potential	Maritime flows	Combined adaptive capacity to climate change	Potential impact of climate change	Potential vulnerability to climate change	Employment rate	Long-term unemployment rate	Change in population in 2005-2050	Share of old people	Regional sex ratio structure	People at risk of poverty	People with high education	Young academics	Regional early school leavers	Adults in education and training
Strengthening research, technological development and innovation	X	X		X	X		X						X											X	X		X
Enhancing access to and use and quality of ICT			X	X		X	X																				
Enhancing the competitiveness of SMEs	X	X			X					X																	
Supporting the shift towards a low-carbon economy in all sectors												X	X														
Promoting climate change adaptation, risk prevention and management															X	X	X										
Protecting the environment and promoting resource efficiency											X	X	X	X	X	X	X										
Promoting sustainable transport and removing bottlenecks in key network infrastructures									X					X													
Promoting employment and supporting labour mobility			X	X			X											X	X			X		X	X		X
Promoting social inclusion and combating poverty																					X	X	X	X	X	X	X
Investing in education, skills and lifelong learning by developing education and training infrastructure																								X	X	X	X
Enhancing institutional capacity						X																					

Introduction

ESPON supports policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory. It provides comparable information, evidence, analysis, and scenarios on territorial dynamics, which reveal territorial capitals and development potentials of regions and larger territories. Considering the programme area in its European context adds an important new perspective that can help shaping the programming and the places of implementing projects. The ESPON TerrEvi project focuses on producing evidence for Structural Funds programmes with the aim to support the development of the programmes to be carried out in the 2014-2020 period.

In order to support evidence based planning cartographic visualizations serve as an important medium of communication besides the usage of am common language, diagrams, plans or pictures in this document. Maps can attract attention to specific facts and circumstances with spatial impact since information is communicated and procedures are facilitated. In the ESPON Programme the majority of maps contain thematic representation of regional disparities based on indicators, comprised indicators or typologies. They display the actual state of affairs and therefore serve as a basis for comparison, contextualisation and joint action. In this sense, maps reinforce discussing the reality and performing policy action graphically and in a normative way.

One milestone of this work consisted in presenting selected ESPON research pieces in easy-to-understand factsheets for all territorial cooperation programme areas. The aim is to provide the reader with preliminary insight on types of territorial evidence ESPON holds at hand with regard to the possible investment priorities of future programmes.

([Link to the factsheets on the ESPON website](#))

The second milestone concerns ten specific programme case studies illustrating how ESPON material can be used to support the development of future programmes e.g. by giving a comparative European dimension to the envisaged programme work. The aim is to provide the reader with insight on different types of territorial evidence ESPON holds at hand with regard to the possible investment priorities of future programmes, and to stimulate a debate on how this evidence can be used by future programmes.

Criteria like the coverage of all regional categories (less developed, transition, more developed regions), the variance of available budgets, the mix between old and new, small and large, central and peripheral Member States or the expression of willingness to cooperate with TerrEvi built the basis for a shortlist of 20 regions for the final selection of case studies by ESPON in an early stage of the project.

The TerrEvi team started to contact these preliminary selected programmes introducing the project and evaluating the possibility being one of the ten pilot cases. As a matter of fact and due to different reasons the final list of pilot cases consists of four regional programmes, one CBC programme and five TNC programmes:

- Molise (regional)
- Umbria (regional)
- Thessalia (regional)
- Norte (regional)
- Slovakia – Austria (CBC)
- North West Europe (TNC)
- North Sea (TNC)
- Alpine Space (TNC)
- Atlantic Area (TNC)
- South East Europe (TNC)

The list of pilot cases has been set up in coordination with the ESPON programme and has been approved by the ESPON Coordination Unit.[1]

The present report is one of ten evidence reports which have been produced to build the basis for the work of the case studies. A draft version of the document served as basis for a workshop with the programme in the first quarter of 2013. The workshop highlighted

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[1] The detailed selection procedure is part of the Interim Report of the TerrEvi project from December 2012.

the potential use of ESPON material for territorial cooperation programmes.

Following the workshop, this document has been amended taking into account the discussions as well as considerations concerning the usefulness of single indicators in various steps of the programme work.

The Atlantic Area programme is free to use the material for their development and implementation of the programme for 2014-2020.

Methodology

For this Evidence Report the TerrEvi project team conducted a workshop with the relevant stakeholders in charge for programming. In the following the workshop methodology is explained enabling readers of this paper to understand how the information has been collected.

Furthermore a User's Guide for the traffic lights in the Europe 2020 chapter of the Evidence Report is part of this methodology section.

Workshops

The work on the Evidence Reports was organised in three main steps.

Step 1 – Preparation Phase

After the preliminary contacts made in summer 2012, the team contacted the Programme Authority, (by email) illustrating:

- the ESPON TerrEvi project and the organisation of the team;
- the reason why the area has been appointed to be a pilot case for ESPON 'Territorial Evidence Reports';
- the main steps of the case study activity.

Once the contacts have been established and the framework of the case study fixed, the project team prepares the set for the case study. More specifically the project team:

- sent the Factsheet to the authorities;
- presented a more detailed timetable and some draft contents for the workshop;
- discussed the process of the case study with the participants;
- started the organisation of the workshop.

Step 2 - Draft Evidence Report, workshop and final Evidence Report

Following the preliminary phase, the Draft Evidence Report was delivered to the programme authority. It entailed several indicators and highlighted territorial trends with a European perspective. All

thematic objectives were covered and there has been a table to match our selected indicators with the thematic objectives. The Draft Evidence Report has been sent to the workshop participants for diffusion.

The participants consisted in general of persons in charge for the programming (MA, JTS, external experts). The TerrEvi team addressed in the workshop five relevant programming stages:

- Needs Analysis
- Thematic Concentration
- Result Indicators
- Project Selection
- Stakeholder consultation

Following these stages as a basis the workshop had the structure below:

- Introduction (presenting the set of indicators)
- Relevance of indicators
  - The participants discussed together with the TerrEvi team how relevant/important the presented indicators are at which programming stage. This procedure was done three times, for the indicators in Smart, Sustainable and Inclusive growth separately.
- Discussion about issues of particular interest for the programme.
- Conclusion of the workshop covering the issues:
  - Where does your programme have use of ESPON? (to strengthen the territorial dimension / make your life easier)
  - What could ESPON do to be useful in future? (incl. relevance and availability of information)
  - Territorial dimension & structures (programme area in Europe, diversity within the programme area).

The results were collected by the TerrEvi team and fed into the draft Evidence Report (Results and feedback from the workshop).

Step 3 – Feedback

Every programme received a draft version of the final Evidence Report comprising the workshop results in order to verify if the contents of the ESPON Evidence Report have been used comparing with the expectations collected in the workshop.

Traffic lights for the programme area indicators: User's Guide

The traffic lights at the beginning of the chapter "Europe 2020" were created in order to graphically represent the situation of each analysed CBC[2] Area compared to the ones of EU-27+4 space, to the rest of CBC programme areas, and finally to each country participating to the CBC Area.

The median value, calculated depending on the values registered for every NUTS 2/NUTS 3 region composing the programme area was used as the central value indicator. The median of the programme area was compared successively to the ones computed for EU-27+4 territories, for the rest of the CBC areas and, ultimately, with those for the countries involved in the CBC Area.

Interval thresholds were obtained by calculating the arithmetic mean between the median and the values of the first (Q1) and third (Q3) quartiles. These calculations defined the lower (L1) and upper limits (L2) of each interval.

Therefore, we have three distinctive situations:

1. When the median value of the co-operation area is below L1, there will be a red traffic light indicating problems inside the CBC Programme Area (or green traffic light if there is a noticeable progress: i.e. long-term unemployment).

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[2] This User's Guide was developed for the CBC area factsheets. The methodology also for TNC or regional programmes compared to the relevant national level(s) remains the same.

2. When the median value of the co-operation area is between the lower and the upper thresholds, there will be a yellow traffic light marking a similar situation of the CBC Area to the rest of the spatial structures.

3. When the median value of the co-operation area is over L2, a green traffic light will be displayed (or red traffic light when there is a negative trend: i.e. potential vulnerability to climate change).

Hypothetical example: a CBC compared to Country A

Q1   L1 M_C L2   Q3 M_{cbc} value of the indicator

$L1 = (Q1 + M_C)/2$
$L2 = (Q3 + M_C)/2$

○   NUTS3/NUTS2 Regions of the country A
Q1   - Lower quartile for the country A (splits lowest 25% of NUTS regions)
M_C - Median value for the country A (cuts the data set in half)
Q3   - Upper quartile for the country A (splits highest 25% of NUTS regions)
M_{cbc} - Median value of the CBC regions
The median value of the CBC is compared to L1 and L2 resulting in a specific colour of the traffic light (green in this case).
This example works for the indicators for which high values mean positive situations. Otherwise, red replaces green.

Choosing median as central value requires a special attention in analysing the traffic lights when the number of NUTS 2/NUTS 3 regions is below 7. Using percentiles implies also that the final result is highly dependent on the type of statistical distribution. This should be considered as well when establishing the relative situation of a CBC Area compared to a specific country.

Context information

The main focus of this report is on a discussion how the Atlantic Area stands with relation to the three objectives of Europe 2020 (smart, sustainable and inclusive growth) and the investment priorities of future Structural Funds. This discussion may help the programme to see comparative advantage of the programme area which possible could be further strengthened with help of the next Atlantic Area programme. Alternatively, one might also be able to detect comparative disadvantage (as compared to the rest of Europe) which the future programme might help to reduce.

However, before entering this debate, the focus will be on two important context indicators. These are population change and GDP.

Demographic change and economic performance are important aspects which also will be discussed in relation to a series of other indicators throughout the report. Consequently, the first two maps are mainly meant to set the scene and provide a general understanding of the situation.

Population change

Population change is the difference in the size of a population in a given time period. The change has two components: natural population change, i.e. number of live births minus number of deaths, and net migration, i.e. number of immigrants minus number of emigrants. The map covers the period 2001 to 2010.

It is striking that areas of population growth and those of significant population decrease are often close to each other. At European level, population is particularly growing in a Mediterranean arc ranging from central Italy over southern France to eastern and southern Spain, and in an Atlantic Arc ranging from western France to Ireland and Iceland. In addition, population grows in some regions of Nordic countries and in all capital regions. Significant population decrease can be found in north-western Spain, several Portuguese regions, eastern and central Germany, the Baltic states, some peripheral regions of Finland and south-eastern Europe – except their capital regions.

Within the Atlantic Area there are disparities between more dynamic Anglo-Saxon, Celtic and French regions and less dynamic regions on the Iberian Peninsula. Another disparity concerns coastal regions on the one and continental regions on the other hand. In general, population growth focuses on areas close to the sea. Population decrease is concentrated in Portugal and north-western Spain. Yet even there, population is growing in coastal regions. Among all coastal regions of the Atlantic area, only Alentejo Litoral, Baixo Mondego, Lugo and Asturias are affected by population decrease.

The map shows population change until 2010. One has to take into consideration that the economic crisis, especially in Portugal, Spain and Ireland, has influenced and changed migration patterns since then.

This map was developed in the ESPON DEMIFER project and re-produced for the ESPON TerrEvi project.
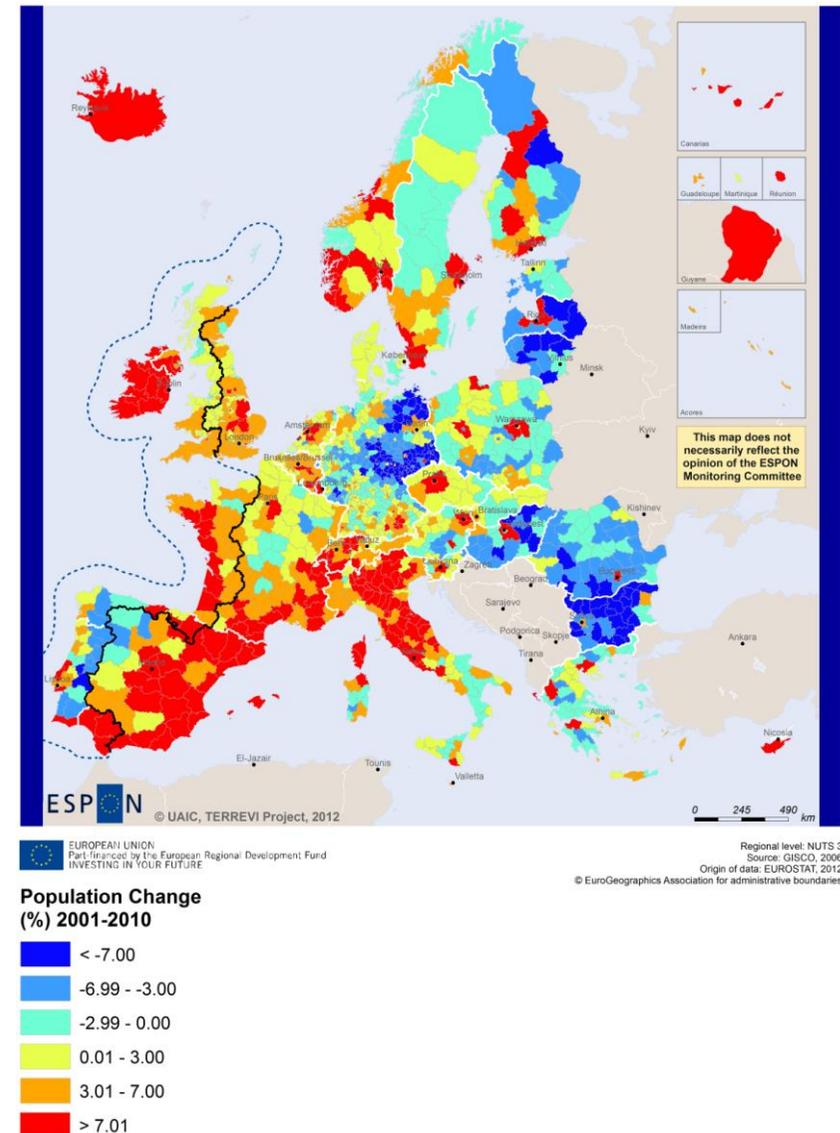
Map 1 Population change, 2001-2010

GDP in PPS per capita

GDP (Purchasing Power Standard) per capita is an important indicator for the level of economic competitiveness. At EU level, the territorial distribution of GDP respects the principle of spatial autocorrelation, few deviations from the rule being generated either by the presence of competitive urban centres or by the border effect. The map regards 2009.

The most significant difference in GDP per capita appears between former EU15 states and the Member States which became part of the EU 2004 and 2007. But there are also regions with comparably low GDP in EU15, for example in Greece, Southern Italy, Portugal or the UK. Additionally, the map shows that in many states wealthy regions are far from their capital regions (Munich, Salzburg, Álava, Milano) and that even areas of the European periphery are among economic strong regions (northern and central Sweden, Aberdeen, south-western Ireland for example).

The Atlantic Area encompasses very different NUTS3 regions in terms of economic development, belonging to countries with different socio-economic profiles and with their own history of European integration. Nevertheless, mainly Western European disparities also apply to the Atlantic Area. Dynamic and, at the same time, competitive areas are primarily those of the main urban areas: Lisbon, Bilbao, Bordeaux and Nantes, Cardiff, Bristol, Liverpool and Manchester, Glasgow, Belfast and Dublin. Some rather peripheral regions seem to have economies of high productivity, such as south-western Ireland or provinces in northern Spain (Álava, Vizcaya, Guipuzcoa and Navarre), all with over 25,000 PPS / inhabitant. The regions with lower GDP figures can be found in central and northern Portugal and peripheral parts of the UK, i.e. Cornwall, Wales and Northern Ireland.
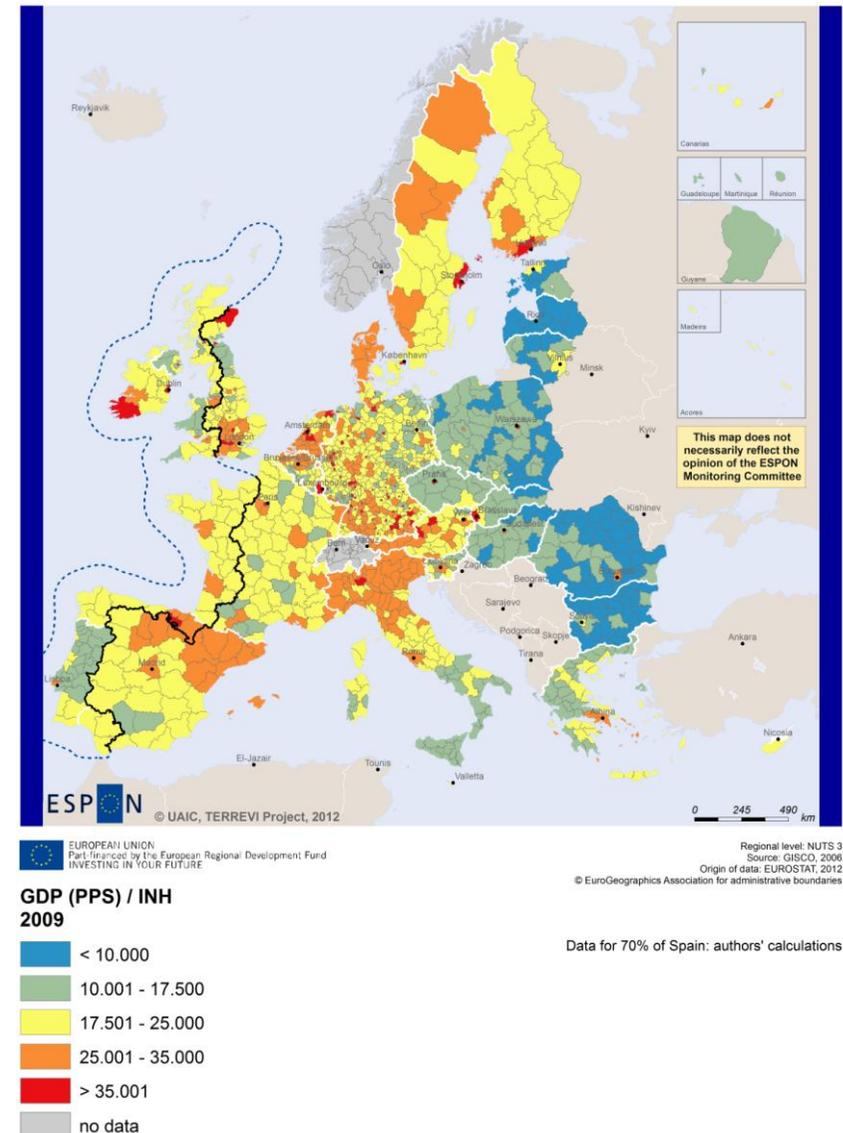
Map 2 GDP (PPS), 2009

1 Europe 2020

Europe, with its member states and their regions, is more exposed to global shocks and international competition than at any time before. As the world becomes more interdependent this trend will continue and shape policy thinking across sectors, borders and geographical scales. At the same time, Europe is characterised by a large territorial diversity meaning that global developments can imply rather different development possibilities and challenges for different European regions and cities.

The differences are partly defined by major geographical structures such as urban systems, access and connectivity, the geographical specificity or population density. At the same time, the differences are also spelled out in the larger development trends that affect an area and the way and degree to which it is affected.

The data, indicators and territorial evidence provided by ESPON provide insight on both the main structures and larger territorial trends. The fine art is to identify what can actually be influenced by policy-making and, in particular, by place-based policy and territorial cooperation related to your programme area.

This chapter provides a selection of ESPON data related to Europe 2020 objectives of smart, sustainable and inclusive growth, giving also hints as regards the main thematic objectives envisaged in the draft regulations for the next period of EU Cohesion Policy. The Europe 2020 Strategy aims to enhance smart, sustainable and inclusive growth. This strategy has clear territorial dimensions. However, achieving these goals is challenging in the crisis-driven times. Furthermore, the economic disparities are growing as economic trends and the crisis have various impacts on different parts of Europe.

In the following the traffic lights for selected indicators represent how your programme territory compares to wider European medians where green = your programme area performs better for that indicator, yellow = similar, and red = worse.

The traffic lights were created in order to graphically represent the situation of the programme area compared to the one of the EU-27+4 space. The median value, calculated depending on the values registered for every NUTS 2/NUTS 3 region composing the programme area was used as the central value indicator. The median of the programme area was compared to the one computed for EU-27+4 territory.

EU 27+4 in traffic lights means the EU Member States as well as Iceland, Liechtenstein, Norway and Switzerland – the ESPON space.

Smart growth refers to developing an economy based on knowledge and innovation. In the framework of the Europe 2020 Strategy it means improving the EU's performance in education, research/innovation and digital society.

Sustainable growth refers to promoting a more resource efficient, greener and more competitive economy. Within the Europe 2020 Strategy it means e.g. building a more competitive low-carbon economy that makes efficient, sustainable use of resources, protecting the environment, reducing emissions and preventing biodiversity loss, capitalising on Europe's leadership in developing new green technologies and production methods, and introducing efficient smart electricity grids. In the framework of the Europe 2020 Strategy it means focus on competitiveness, resource efficiency, climate change and biodiversity.

Inclusive growth refers to fostering a high-employment economy delivering social and territorial cohesion. Within the Europe 2020 Strategy it means raising Europe's employment rate, helping people of all ages anticipate and manage change through investment in skills & training, modernising labour markets and welfare systems, and ensuring the benefits of growth reach all parts of the EU. In short the key factors are employment and avoiding risk of poverty and social exclusion.

Smart growth. The indicators used for smart growth show three yellow traffic lights for the Atlantic Area TNC, meaning that the area's values of R&D expenditure, employment in knowledge-intensive services and the rate of individuals using the internet on a regular basis are similar to the median value of the EU27+4.

Sustainable growth. The Atlantic Area's values for the sustainable growth indicators 'wind energy potential' and 'ozone concentration' are better than for the EU27+4. In contrast, the traffic light system

shows that the Atlantic Area is more vulnerable to climate change than the EU27+4.

Inclusive growth. With regards to inclusive growth, the Atlantic Area has a higher at-risk-of-poverty rate than the EU27+4. With regards to the rate of persons aged 25-64 and 20-24 with upper secondary or tertiary education attainment, the level of the programme area is similar to the EU27+4.Also, long-term-unemployment rate in the programme area is similar to the EU27+4 level; however, there are high disparities within the area.

In the following sections more detailed indicators related to smart, sustainable and inclusive growth will be discussed. The related maps will help to get a more nuanced picture on how the Atlantic Area stands as compared to the rest of Europe and also show the territorial diversity of the Atlantic Area.

	Total Intramural R&D Expenditure (GERD). Percentage of the GDP (2009)				Employment in knowledge-intensive services as percentage of total employment (2010)				Percentage of individuals regularly using internet (2011)			
	disparities in the TNC Area	median value of the TNC Area	median value of EU-27+4		disparities in the TNC Area	median value of the TNC Area	median value of EU-27+4		disparities in the TNC Area	median value of the TNC Area	median value of EU-27+4	
SMART GROWTH	high	1.3	1.2	🟡	medium	41.1	39.0	🟡	medium	71.0	71.0	🟡
	Wind energy potential				**Ozone concentration**				**Potential vulnerability to climate change**			
SUSTAINABLE GROWTH	high	133178	73939	🟢	high	5.6	8.6	🟢	high	0.2	0.1	🔴
	Long-term unemployment rate (12 months and more) - 2011				**At-risk-of-poverty rate - 2011**				**Persons aged 25-64 and 20-24 with upper secondary or tertiary education attainment (%) - 2011**			
INCLUSIVE GROWTH	high	3.5	3.0	🟡	medium	19.0	15.7	🔴	medium	72.3	76.4	🟡

Regional level of analysis: NUTS 2 (except for Potential vulnerability to climate change - NUTS 3)
Thresholds for detecting disparities using the variation coefficient: low ≤ 15%, medium 15 - 30%, high ≥ 30%
Origin of data: EUROSTAT 2012, ESPON ReRisk, ESPON INTERCO & ESPON Climate Projects

1.1 Smart Growth

Smart growth is a key component of the Europe 2020 Strategy. During the past years it has evolved into an objective for many European sector policies as well as for a wide range of national policies all over Europe. Structural Funds Programmes are expected to make a sizable contribution to smart growth.

Broadly smart growth means improving Europe's economic performance by focusing on research and innovation, the digital society and the competitiveness of SMEs and a range of different sectors. The focus is on creating new and better products and service – not at least by diffusing information and communication technologies – that generate economic growth and jobs. So, it is tightly linked to performance in the education field and the concept of green growth, i.e. the aim to shift the pattern of economic growth towards an environmentally-friendly one.

The contribution which any city or region can make to these aims depends on a wide range of territorially varying preconditions. This territorial diversity is an important asset to achieving smart growth. At the same time, work towards smart growth will have territorial impacts, which lay the ground for changing development opportunities in different types of territories. This section discusses some of territorial variations that shape the pre-conditions to contribute to smart growth, and their effects.

Smart growth is tightly linked to the economic performance of private enterprises in a globalised world. Some years ago, globalisation was seen as the end of geography. Today it is clear that there are simultaneous processes of regionalisation and globalisation. Distance and agglomeration economies have become even more central through increasing financial, trade, human and knowledge flows. This results in two decisive functional scales for globalisation: city and macro-region.

In addition to the indicators and maps displayed in the following, there are also other ESPON maps which can be of interest. There is e.g. a map on broadband penetration, which has not been taken into this report as it is based on data from 2006 to 2009.

Total intramural R&D expenditure – percentage of GDP

According to EUROSTAT, the total gross domestic expenditure on research and development comprises: business enterprise expenditure on R&D, higher education expenditure on R&D, government expenditure on R&D and private non-profit sector expenditure on R&D. The indicator measures the key R&D investments that support future competitiveness and result in higher GDP. R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. Investing 3% of GDP is therefore one of the headline targets in the new Europe 2020 strategy for developing an economy based on knowledge and innovation.

The shares of R&D expenditure on GDP seem to generally differ within Europe. A higher share affects the Nordic countries (especially Finland) and the 'pentagon' area (London-Hamburg-Munich-Milano-Paris). No Southern or (South-)Eastern (EU12) European region spends more than 3% of GDP for R&D. Especially Bulgaria and Romania are shaped by R&D expenditure rates below 0.50%. Still, sub-national differences predominantly occur, depending on local and regional specializations, governance, public or private participation to R&D etc. In southern France and southern UK for example, the share in neighbouring regions varies from 0.51 to more than 3%.

In a European perspective, the Atlantic Area is largely characterised by average or below average levels of R&D expenditure (seen as percentage of GDP). In detail, the Atlantic Area is dominated by regions which hold a share of 1% to 2%. Single regions in southern Portugal, north-western Spain, France and the western UK (western Wales, Cornwall, Devon) verge on falling behind (< 1%) while the share of R&D expenditure encompasses more than 3% of regional GDP only in certain areas of southern UK (Cheshire, Gloucestershire, Wiltshire and North Somerset, Dorset and Somerset).

This map was developed in the ESPON KIT project and re-produced for the ESPON TerrEvi project.
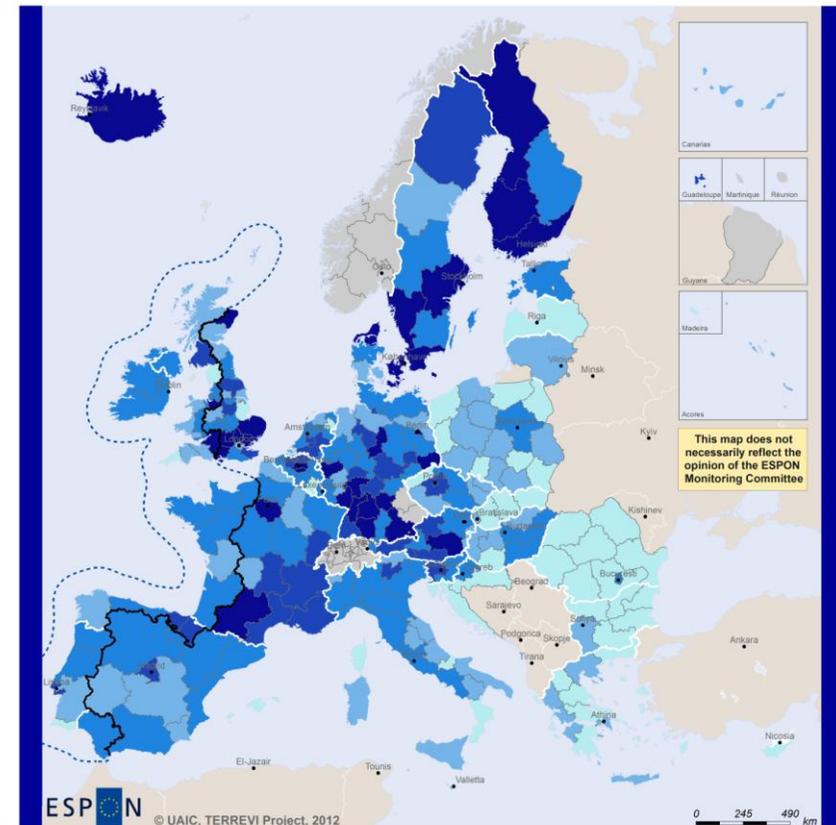
Total Intramural R&D Expenditure (GERD) Percentage of GDP (2009)

- < 0.50
- 0.51 - 1.00
- 1.01 - 2.00
- 2.01 - 3.00
- > 3.01
- no data
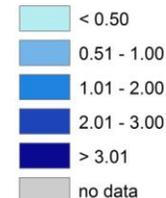
Map 3 Share of R&D expenditure of GDP, 2009

Private sector R&D expenditures

Private sector investment is considered central to enhancing economic productivity and growth. Therefore, flagship actions focus on creating favourable conditions for private sector investments like measures on access to finance, risk-sharing, the provision of venture capital, cross-border matching of innovative firms with investors, a review of regulatory frameworks and the development of a European knowledge market for patents and licensing.

Three corridors with comparatively high shares stand out: From southern France to southern Germany, from Copenhagen to Finland and from south-east England to Austria. In addition, an east-west divide occurs. Except Prague and Ljubljana no region of the new member states indicates shares of > 1%. As for total R&D expenditure, sub-national disparities become apparent especially between urban centres and their rural surrounding, for example in Aberdeen, Berlin or Madrid.

Just a few regions like north-west Spain or western parts of the UK indicate shares below 0.5%. Most regions have shares of 0.6-1%, some like Lisbon, Bilbao or Britanny 1-2%. Single regions in the UK like Liverpool or in southern England even show shares of > 2%. The overall pattern is quite similar to the pattern for total R&D expenditures. This even facilitates the risk for regions with lower and lowest shares that already verge on falling behind as public R&D investments do not seem to be capable of balancing maladjustments of business expenditures on R&D.

This map was produced for the ESPON SIESTA project.
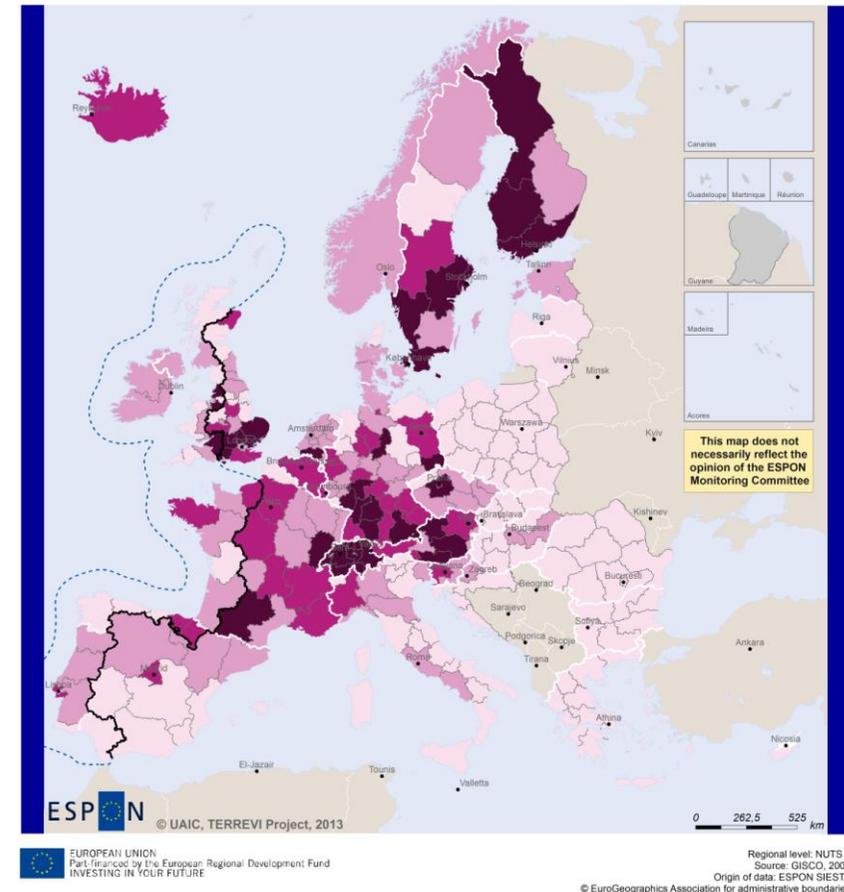
Business expenditure in R&D as percentage of regional GDP combined data 2007 - 2009

- 0,0 - 0,5
- 0,6 - 1,0
- 1,1 - 2,0
- 2,1 - 5,5
- no data

Notes:
Data for EL are shown for 2007 and BG is shown for 2008.
Data for NO, BE and CH are all available for country level.

Map 4 Business expenditure on R&D as percentage of regional GDP, combined years from 2007 to 2009

Employment in Knowledge-Intensive Services

Knowledge-intensive services comprise a broad set of very different activities. Innovation processes, structures, and performance differ notably among these services. They include according to EUROSTAT:

(1) knowledge-intensive high-tech services: Post and Tele-communications; Computer and related activities; R&D;

(2) knowledge-intensive market services (excluding financial intermediation and high-tech services): Water transport; Air transport; Real estate activities; Renting of machinery and equipment without operator, and of personal and household goods;

(3) knowledge-intensive financial services: Financial intermediation, except insurance and pension funding; Insurance and pension funding, except compulsory social security; Activities auxiliary to financial intermediation;

(4) other KIS: Education; Health and social work; Recreational, cultural and sporting activities.

The share of employment in Knowledge-Intensive Services varies across Europe. Northern regions (Ireland, the UK, France, as well as the Nordic countries and Germany) are better endowed for this type of human capital, while Southern and Eastern Europe (which includes Spain (except Madrid region) and Portugal) have shares below the EU average. Capital regions do in general have a higher share of KIS than the surrounding regions. Still, infra-national differences occur, as a result of local combinations of factors.

Regarding the Atlantic Area, the capital regions Dublin (Southern Ireland) and Lisbon follow the pattern of the rest of Europe by having the highest national share of knowledge intensive services, while the regions of Bretagne and Aquitaine in France, and Gloucestershire, Wiltshire and Bristol/Bath in the United Kingdom, have higher mean values for this indicator, compared to other national regions (excluding the capital regions). The impact of these regional differences must be interpreted in combination with local specialisations, R&D investments, presence of major research centres or specific regional innovation systems for example.

This map was developed in the ESPON KIT project and re-produced for the ESPON TerrEvi project.
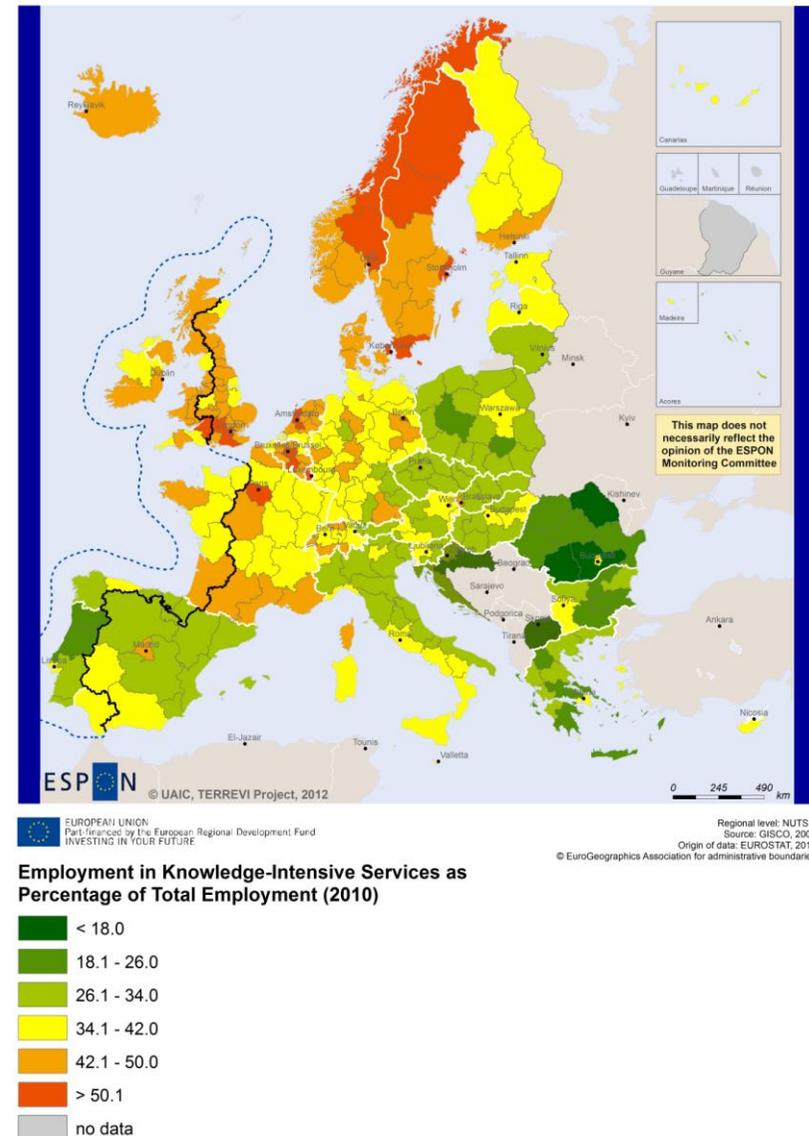
Map 5 Employment in Knowledge-Intensive Services, 2010

Human resources in science and technology

According to EUROSTAT, human resources in science and technology (HRST) are defined as persons fulfilling at least one of the following two conditions:

(1) human resources in terms of education: individuals who have successfully completed a university level education;

(2) human resources in terms of occupation: individuals who are employed in a science and technology occupation as 'Professionals' or 'Technicians and associate professionals'.

The group that fulfils both of these criteria is called the HRST core.

There is a concentration of scientists and technologists in Northwest Europe as well as in the Nordic and in the Baltic countries. Most capital cities employ > 35% of human resources in science and technology. On the other side, large parts of Eastern and Southern Europe (except northern Spain and most capital regions), indicate shares < 35%. Most regions in Romania, Bulgaria, and Portugal even show shares < 25%.

Most regions of the Atlantic Area show shares between 35 and 45%, the area around Bilbao > 45%. Yet Portugal stands out of this homogenous pattern. Here even less than 25% of economically active population are employed in science and technology. Only Lisbon as capital region of Portugal has a share of 25-35%. Therefore, a clear divide between Portugal and the rest of the programme area becomes apparent.
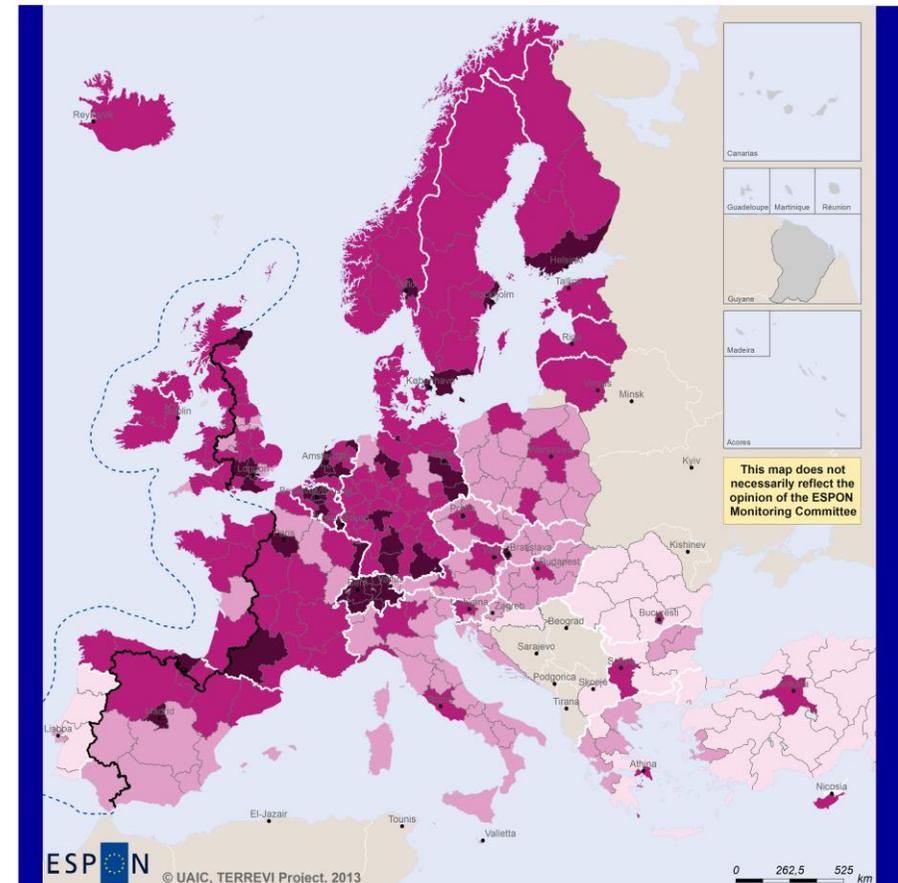
This map was produced for the ESPON SIESTA project.

Human resources in science and technology as percentage of active population, 2010

- 11,4 - 25,0
- 25,1 - 35,0
- 35,1 - 45,0
- 45,1 - 66,9
- no data

Map 6 Human resources in science and technology as percentage of regional active population, 2010

Territorial Patterns of Innovation

Territorial patterns of innovation are made of a combination of territorial specificities (context conditions) that are behind different modes of performing the different phases of the innovation process[3]. Main conditions concern science-based knowledge, R&D endowment, human capital, receptivity to interpret and use external knowledge and creativity. 'European science-based areas' are most knowledge and innovation intensive but seem to be less attractive and creative. While 'Applied science areas' have the chance to specialise themselves in the production of applied knowledge, 'Smart technological application areas' focus on product innovation. Innovation capacity in 'Smart and creative diversification areas' is fed by external knowledge which is embedded in technical and organisational capabilities. 'Imitative innovation areas' can build on local preconditions like creativity and especially attractiveness in order to embrace new adoption, imitation and innovation strategies.

'European science-based areas' are located in Germany, Austria and southern Denmark. 'Applied science areas' compass this core but are also located in some parts of the European periphery. While 'smart technological application areas' are predominantly located in northern Europe but also compass applied science areas, 'smart and creative diversification areas' are distributed all across Europe. Regions from southeast and eastern Europe as well as from Norway and Iceland are formed as 'imitative innovation areas'.

The Atlantic Area can be divided into two sub-areas. Regions of the mainland are mainly areas of smart and creative diversification with a high degree of local competences and creativity. The UK and Ireland are dominated by technological application areas with a high product innovation rate but a limited degree of local applied science. Only Lisbon and Southern and Eastern Ireland are applied sciences areas that produce strong applied knowledge. So a North-South divide occurs, even though Lisbon is of supra-regional importance as it is the only area of applied sciences on the Iberian Peninsula.

This map was produced for the ESPON KIT project.

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[3] For the list and the methodology for the identification of territorial patterns of innovation, see chapter 2 in Vol. 1 of the Scientific Report of the ESPON KIT project.
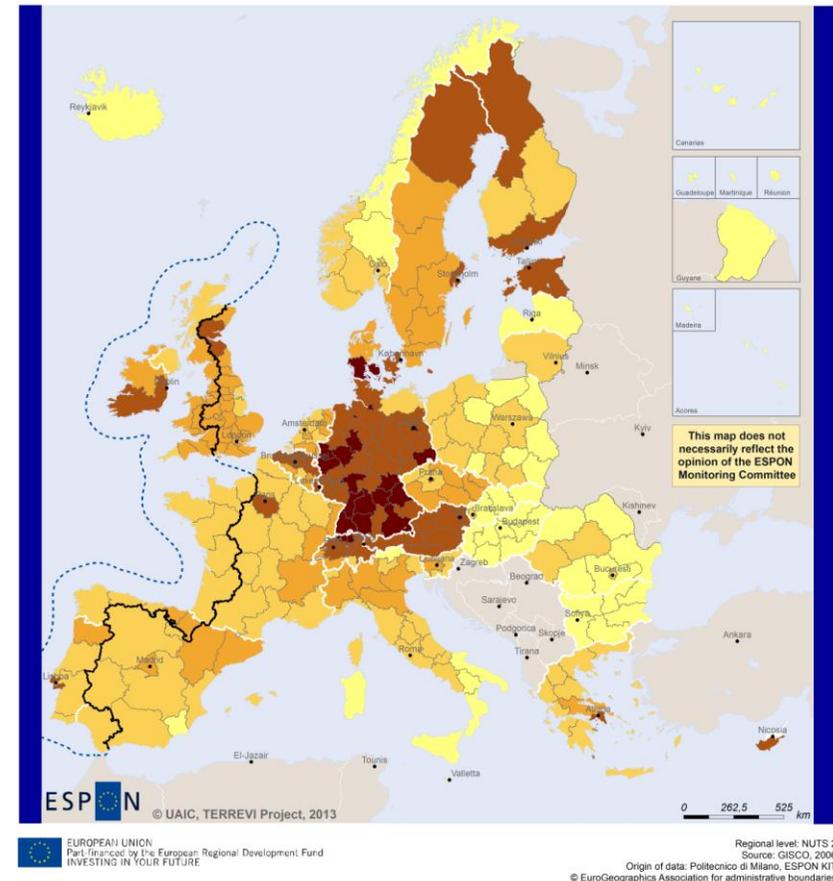
Territorial Patterns of Innovation

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

**Map 7 Territorial Patterns of Innovation, 2011**

Private use of e-commerce

E-commerce is closely related to the uneven access of households and enterprises to internet facilities. This links e-commerce with the so-called digital divide. The map shows the share of individuals (aged 16 to 74 years) who ordered goods or services over the internet for private use. In doing so, the map also shows whether the internet is being used for commercial purposes, i.e. how it is effectively penetrating in businesses across Europe. The map shows information for 2010.

As the maps shows, the use of e-commerce differs mainly between countries and only to a limited degree between regions within a country, with north western European regions being more advanced. In the UK, Norway, Sweden, Germany or other countries where the internet is widely accepted and used, only limited regional variations can be observed. At the same time, e-commerce exploitation is low across the regions of the Mediterranean countries, Portugal and large parts of Eastern Europe. In these countries, even in capital cities and large metropolitan regions, e-commerce is not widely utilised.

In a European perspective, large parts of the Atlantic Area are characterised by comparably low levels of e-commerce usage. A detailed look reveals that, just like Europe, the main divide in the Atlantic Area is between North (UK, Ireland, France) and South (Spain, Portugal). For the northern countries a divide between East and West is to be stated. In comparison to other regions of their respective countries, several Atlantic regions (Poitou-Charentes, Pays de la Loire, Bretagne, West Wales, South Western Scotland) show lower shares of private use of e-commerce.

This map was produced for the ESPON SIESTA project.
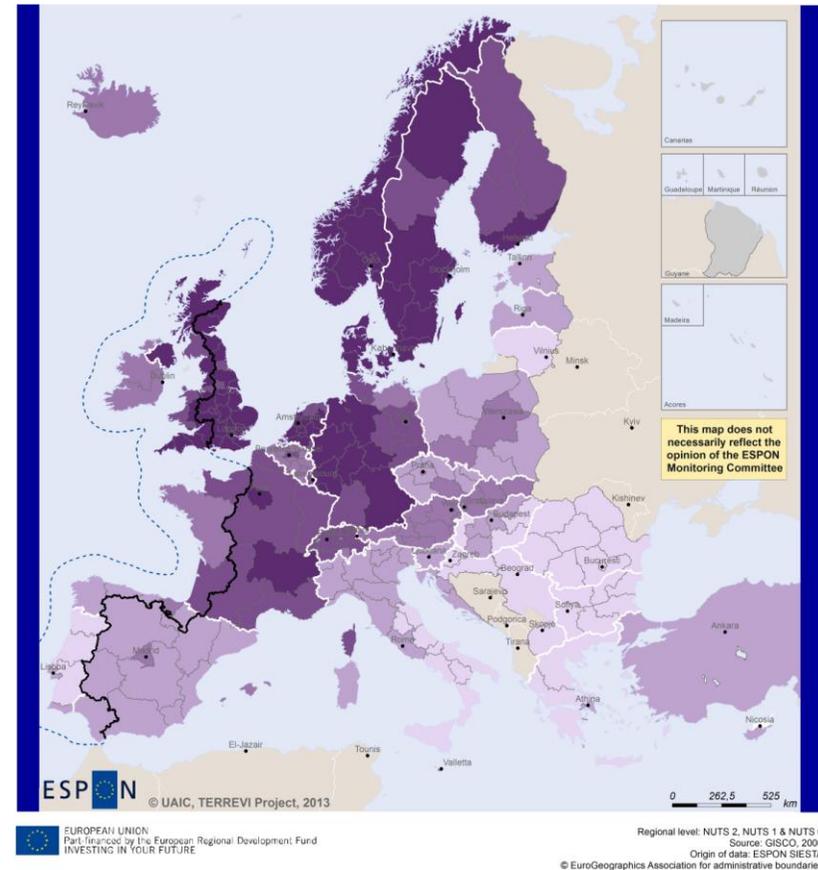
E-commerce or individuals (aged 16 to 74) who ordered goods or services over the Internet for private use as a percentage, 2010

▢	2,0 - 15,0
▢	15,1 - 30,0
▢	30,1 - 45,0
▢	45,1 - 60,0
▢	60,1 - 81,0
▢	no data
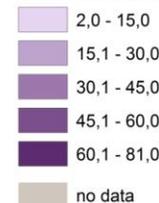
Notes (according to ESPON SIESTA):
DE, FR, EL, RS and PL are shown at NUTS1 level.
TR is shown at country level and data for this country were provided by Turkstat.
Data for CH was provided by Swiss Statistics web site.
Data for BH11, BG12, BG13, BG21, BG22, BG23. and FI2 are not available for 2010.
the regions are shown for 2010.
TR data corresponds to 2011.
UKE1 data are not available for 2010 and are shown for 2009.

Map 8 Private use of e-commerce, 2010

ICT employment

The Information and Communication Technologies (ICT) sector accounts for a substantial part of European GDP, employment and R&D expenditures. It is a highly R&D intensive sector. As general purpose technologies, ICT goods and services are important drivers of productivity growth and economic performance across all sectors.

The distribution of ICT employment is highly uneven across Europe. In general, capital regions stand out as those regions showing highest values, i.e. > 5%. On the other hand, rural areas and mainly those in Eastern and Southern Europe tend to lag behind. Therefore, a general rural-urban divide is evident. Regions with shares of < 1% are concentrated in Portugal, Turkey, Greece and Romania. These regions verge of falling behind and constitute an important territorial challenge which requires initiatives promoting ICT technologies and focussing on peripheral areas.

The Atlantic Area is also affected by a rural-urban divide. In peripheral areas like the Normandy, southwest and northwest England (Cumbria) less than 1% of employed persons works in the ICT sector. Urban areas like Bilbao, Lisbon or the hinterland of London show higher shares up to 5%. Furthermore, Portugal seems to be affected by a national dimension, as no Portuguese region – except Lisbon and Alentejo – indicates a value of > 1%.

This map was produced for the ESPON SIESTA & M4D projects.

Share of employed persons in the information and communication sector, 2012

- < 1,00
- 1,01 - 2,00
- 2,01 - 3,00
- 3,01 - 4,00
- 4,01 - 5,00
- > 5,00
- No data
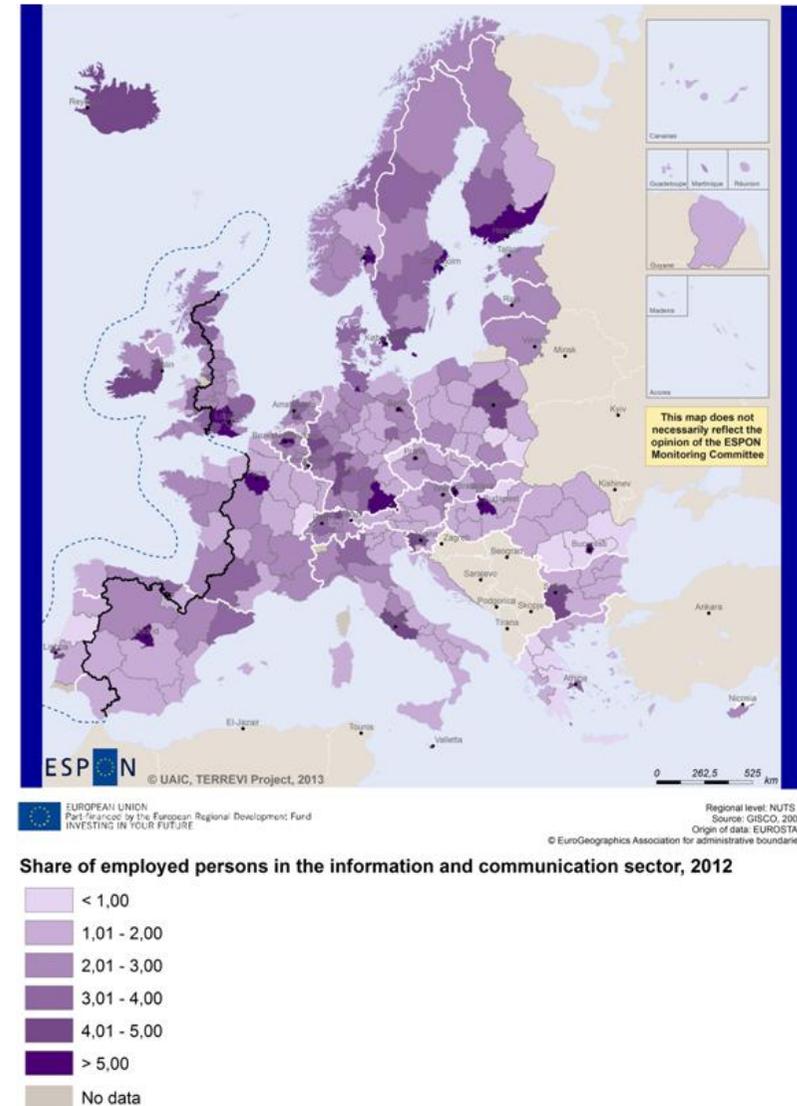
Map 9 People working in the ICT sector as percentage of total regional employment, 2012

Tourist arrivals 2008-2011

The total number of tourist arrivals includes both national and foreign travellers. All kinds of accommodation are taken into account and the number of tourist arrivals is calculated as an average value over 2008-2011 period. However, there are enormous differences in national systems of accounting and reporting tourist arrivals. Additionally, the map's categories encompass wide ranges, for example from approx. 500,000 to 1,75 m or from 4 m to more than 7,5 m.

Within Europe certain destinations stand out. On the one hand several regions in Southern Europe like the southern and eastern coast of Spain, the Balearic Islands, the Canaries, southern France, Italy or the Adriatic coast of Croatia as typical tourism destinations for beach holidays are to be pointed out. On the other hand, destinations of city tourism like Berlin, Amsterdam, Paris, Rome, or Madrid become apparent. Surprisingly, Portuguese and Greek regions and islands seem to have rather low values which might be due to the different national, regional and local systems of accounting and reporting tourists to statistical offices.

For the Atlantic Area, only Andalusia shows highest values. Several regions in northwest Spain, France and southern Ireland indicate numbers within the medium category, i.e. between 4 and 7,7 m tourist arrivals. Less than 4 m tourists arrive in every region of the UK and Portugal as well as in most northern regions of France and Spain. Neither a rural-urban nor a coastal-inland or a north-south divide becomes apparent.
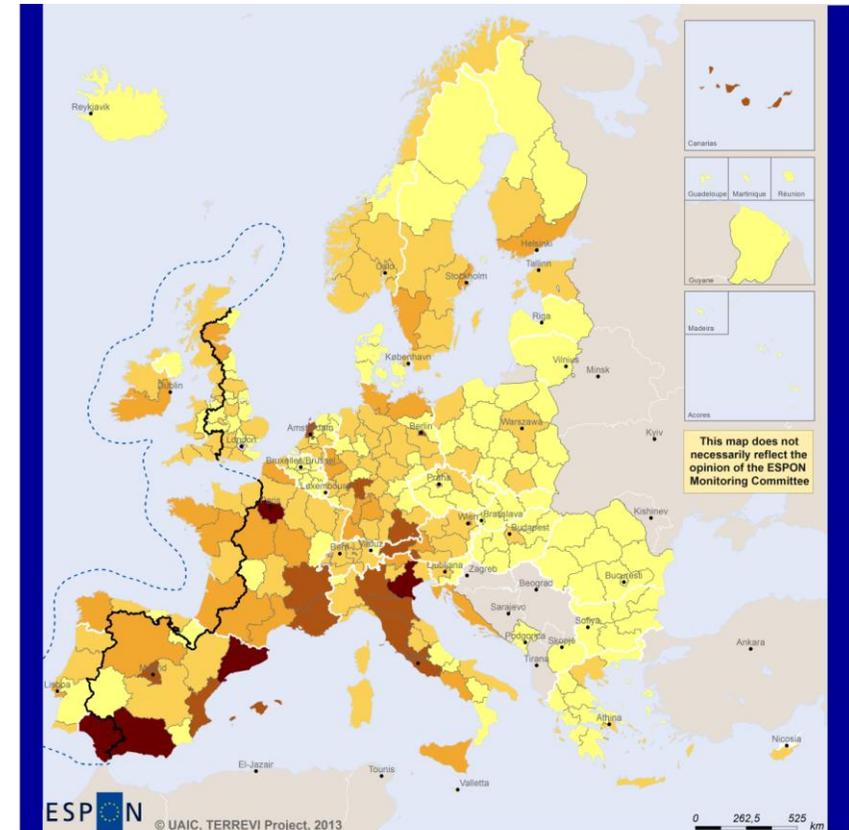
This map was produced for the ESPON ATTREG project.

Annual average number of tourists arrivals over 2008 - 2011

▨	< 1750000
▨	1750001 - 3950000
▨	3950001 - 7700000
▨	7700001 - 14000000
▨	> 14000001
▨	No data
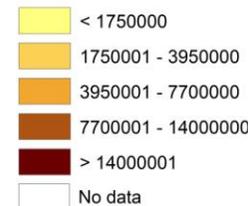
Notes:
Data for NO is shown for 2012.
Data for ME, UKI1 and FR9 are shown for 2011.
Data for ITH and ITI are shown as annual average avoer 2010-2011.
Data for CH, IE, FI, DE41, DE42 are shown as
annual average over 2006-2009 (according to ESPON ATTREG).

**Map 10 Tourist arrivals, 2008-2011**

Travel cost to nearest maritime port

The accessibility to closest ports provides an integrated measure of the level of accessibility of regions with respect to maritime freight terminals, as an important element in the economy to allow exports of local commodities and imports. In this respect, the indicator is computed with reference to ports with a throughput of at least 4 million tonnes yearly, i.e. those ports which actually play a role as gates towards other regions.

Not surprisingly, coastal zones are generally more accessible. Especially locked-in countries in Central Europe like the Czech Republic, Slovakia or Hungary cannot provide good access to ports. Nevertheless, geographical position is not enough and even coastal zones may have a poor accessibility if infrastructures (ports) are not adequate (i.e. only minor ports are located nearby or connections are expensive). Regions having poor accessibility despite a coastal position are the Balkan states and peripheral and island regions like Iceland, Cyprus or Greek islands.

Even though all regions of the Atlantic Area are close to the sea, travel costs for some regions are as high as for regions in the European hinterland. Nevertheless, most regions of the Atlantic Area provide good access to maritime ports, i.e. costs to access are cheaper than 225 €. Hence, there are inter-regional disparities concerning the accessibility of ports. In particular northern Portugal, Brittany (Bretagne) and the Scottish highlands and islands run the risk of falling behind as regards this important accessibility indicator because it affects regional competitiveness of people and goods. Therefore, coastal regions of the Atlantic Area providing good access hold local advantages and increase their competitiveness.

This map was produced for the ESPON TRACC project.

Travel Cost (euros) to access nearest maritime port with traffic of more than 4Mton in 2010 according to ESPON TRACC

- < 40,0
- 40,1 - 80,0
- 80,1 - 125,0
- 125,1 - 170,0
- 170,1 - 225,0
- 225,1 - 285,0
- 285,1 - 380,0
- 380,1 - 580,0
- 580,1 - 950,0
- > 950,1
- No data
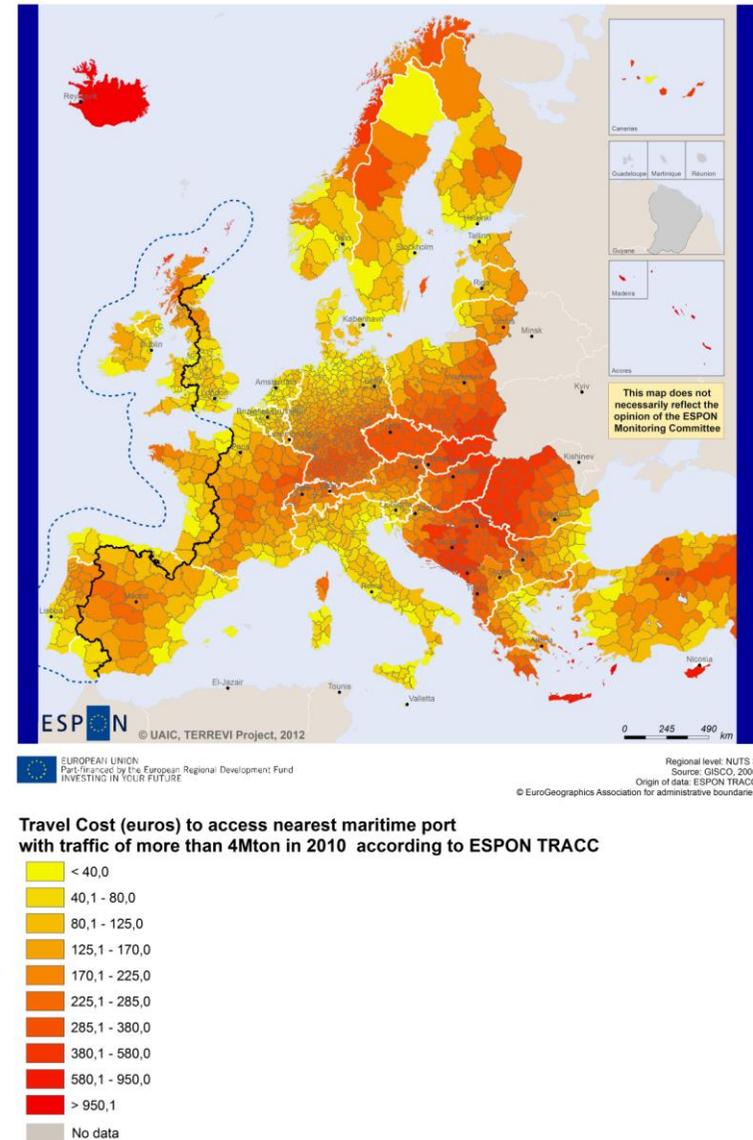
**Map 11 Travel cost to access nearest maritime port, 2010**

Openness to extra-ESPON and neighbourhood trade

Extra-EU / extra-ESPON and neighbourhood exports exclude all exports within the ESPON space as well as its immediate neighbourhood (Western Balkans, Near East, former-USSR and Northern Africa). Therefore only trade with Asian countries, with Northern and Latin America, with the Antipodes and Oceania, and with central and southern Africa are taken into consideration. Of course, participation in global trade is only one way to take part in the global economy and other types of data are required in order to give a more complete picture of the regional participation in the global economy. However, many European regions are relatively closed to the global economy and many of these regions have indeed very limited relations to the rest of the world.

Global trends affect regional economies across Europe in a much more differentiated way because of the huge variety in the participation in global trade. The most important result is the evidence of a huge diversity in the openness to extra-EU trade. The figures vary from values close to 0% (0.1% in Corsica) to 30% in northwest Europe (31% in Flanders). No general pattern is to be detected. However, especially central Spain, southern Italy, Greece and Cyprus stand out as regions where extra-EU and neighbourhood exports are of almost no importance.

Within the Atlantic Area, extra-EU trade is very important for Ireland and Haute-Normandie while there is almost no (i.e. < 2%) extra-EU trade in Basse-Normandie and the Algarve. For most regions of the programme area extra-EU trade is of low or medium importance, i.e. between 2 and 9%, while it is generally more important in the UK than in western France, Spain or Portugal.

This map was produced for the ESPON TIGER project.

Openness rate 2007-2009
Extra EU Exports / GDP
(excluding EU neighbourhood to avoid EU border effect)

- 0,0 - 2,0
- 2,1 - 3,0
- 3,1 - 6,0
- 6,1 - 8,8
- 8,9 - 15,0
- 15,1 - 31,0
- no data
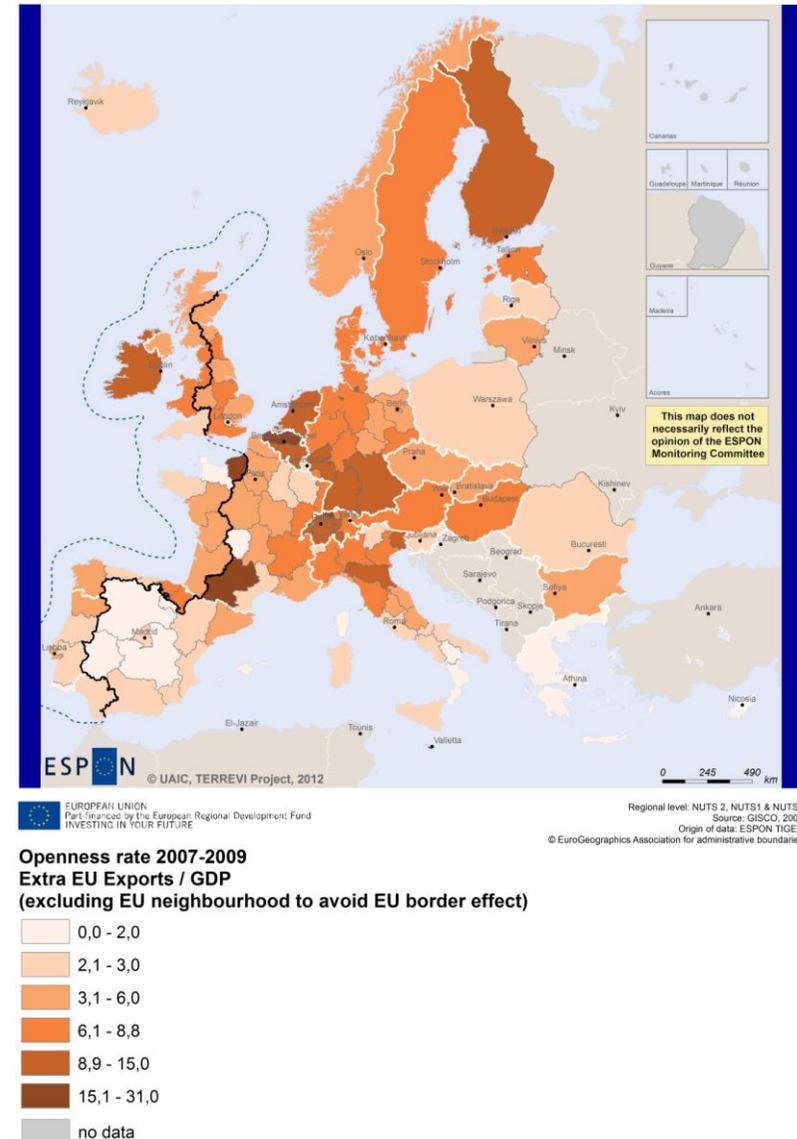
Map 12 Openness to extra-ESPON and neighbourhood trade of European regions, average 2007-2009

Results and feedback from the workshop

In general, indicators provided by ESPON projects and presented within the Evidence Report are considered useful for the Atlantic Area. However, some aspects may limit the usefulness. They might provide opportunities to further improve the presented indicators.

First of all, some indicators seem to be dated, due to the fact that either the projects were conducted a few years ago, or the data sets are rather old. The main reason is that it takes some time to collect and harmonise data sets at European level.

Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. To use data on territorial patterns of innovation for example, NUTS2 regions might give a description of the European pattern. Yet, it would be desirable if it were more specific and detailed – both regarding content and regarding the territorial scale.

A third factor regards the complexity of indicators. Composite indicators that combine several and very different dimensions and sub-indicators can be difficult to understand in policy processes.

Programming steps

Focussing on details concerning the five programming steps, there viewed indicators are relevant both for the needs analysis and the thematic concentration. On the other hand, the indicators provided by ESPON projects are difficult to use for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. The situation is more differentiated when it comes to the programming steps 'project selection' and 'stakeholder dialogue'. Indicators on R&D expenditures, knowledge-intensive services, territorial patterns of innovation are considered suitable for identifying promising projects, and are additionally adequate to be included into dialogues with other stakeholders of the Atlantic Area.

Further suggestions

Intramural R&D expenditure	- split by different economic sectors - show educational expenditures as separate / additional indicator
Knowledge-intensive services	- split by different economic sectors - show single fields of KIS
Territorial patterns of innovation	- level of NUTS3 more useful than NUTS2 - Territorial patterns could be calculated / identified for single sectors - Territorial patterns could be calculated for sectors that are of special relevance for a region / some regions
Private use of e-commerce	- could be combined with other issues: eServices, availability and use of internet devices - distinguish between households, enterprises, suppliers and authorities etc.
Travel cost to nearest port	- operational costs at ports should be added - short-sea shipping as additional indicator on maritime transport

1.2 Sustainable Growth

Sustainable growth refers to promoting a more resource efficient, greener and more competitive economy. Within the Europe 2020 Strategy it means e.g. building a more competitive low-carbon economy that makes efficient, sustainable use of resources, protecting the environment, reducing emissions and preventing biodiversity loss, capitalising on Europe's leadership in developing new green technologies and production methods, and introducing efficient smart electricity grids. In the framework of the Europe 2020 Strategy it means focus on competitiveness, resource efficiency, climate change and biodiversity.

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

The Europe 2020 strategy sees sustainable growth not purely as environmental protection. Rather the aim is to look for ways that growth can be both in harmony with the environment, but also less vulnerable in the future to the kind of economic crises that have so damaged economies since 2007/2008. We need to understand, and act upon, the ecological and environmental drivers of competitiveness and cohesion.

While focussing on global challenges such as climate change, sustainable growth ultimately depends on place-based actions. The territorial perspective is again to refine understanding of what kind of interventions in what places can steer regions and Europe as a whole onto the path to a green economy and sustainable growth. In this respect also potentials for blue growth deriving from a maritime resources are of interest.

Quality of natural landscape

The quality of natural landscape does not only concern environmental issues but affects many thematic fields. As a green and healthy environment is an important part of the regional quality of life, it can influence people's mobility when choosing a new primary centre of interest and living. On the other hand, attractive and sound landscapes also enhance positive image of regions as tourism destination and therefore affect travel patterns.

Regarding the quality of the natural landscape, the share of classified NATURA 2000 sites emphasises the potential attractiveness of many rural and peripheral regions, although important urban regions like Madrid, Marseille and Rome, and intensely developed tourist region like the Canary Islands and the southern French coast, also score very well.

Within the Atlantic Area, no region shows a share of > 60%. Regions showing highest shares, i.e. 40-60%, are Algarve, Aquitaine and Cantabria. Most regions on the Iberian Peninsula show values between 20 and 40%. In most regions of the programme area less than 20% of the area are NATURA 2000 sites, especially in France, the UK (except Scottish Highlands and Islands, and Northern Ireland) and Ireland. Therefore, a north-south divide becomes apparent. Regions in Spain, Portugal and southern France show higher values, while Ireland, the UK and northwest France indicate lower values.

This map was produced for the ESPON ATTREG project.
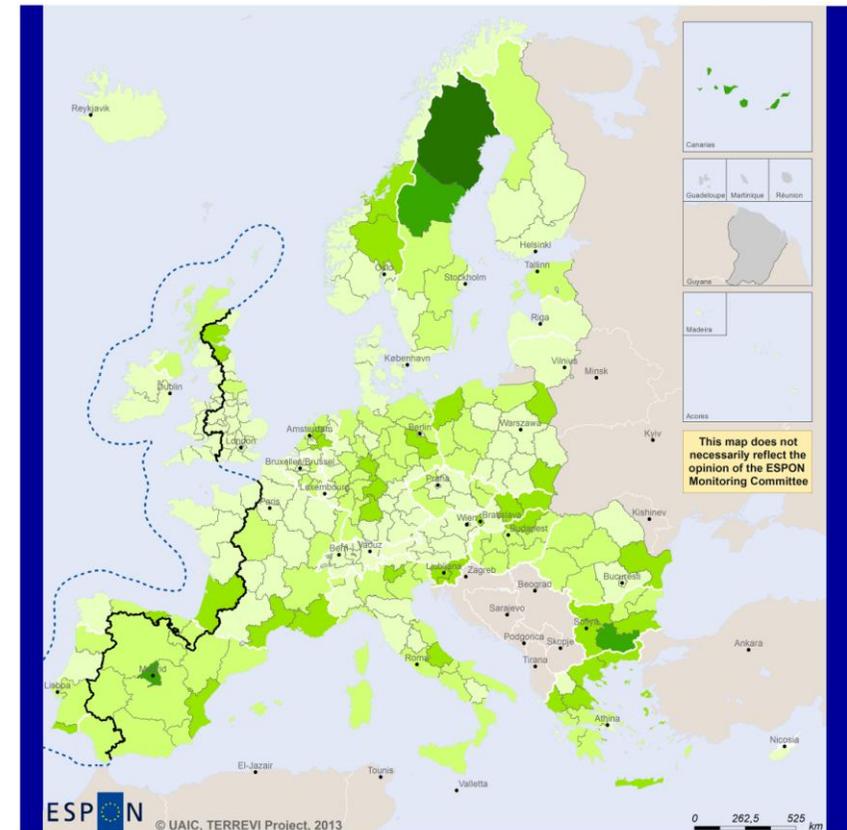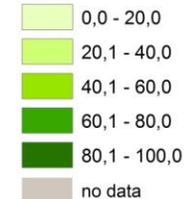
**Map 13 Quality of natural landscape based on NATURA 2000 sites**

Wind power potential

The use of wind energy potential could be one of the cornerstones in building a competitive low-carbon economy in the EU. Yet, wind power potential does not only highlight the regions with high wind speeds but with the greatest wind power potential, i.e. it takes the size of large areas into account. The map takes into account some, mainly environmental, restrictions which limit the possibility to put up wind farms. Following EEA's recommendations, NATURA 2000 areas are excluded in order to calculate constrained potentials. Although it is not illegal to site wind warms in these areas, they provide a proxy for the restrictions implied by biodiversity protection. Hence, the map indicates how much energy might be feasible in practical terms.

The greatest potentials for wind power are located in Sweden, Finland and the Baltic states but also in northern Norway, Scotland and Ireland. Beside the Baltic Sea (incl. Barents Sea), the regions located at the Atlantic Ocean hold greatest potentials for using wind power. In contrast, Mediterranean regions and those close to the North Sea, like the Netherlands or Belgium, have comparatively low values despite their coastal geographic position.

Most regions of the Atlantic Area have medium wind power potential. That means that the area holds more potential than Southeast Europe on the one hand, but less potential than the states of the Baltic Sea on the other hand. Within the programme area, northern regions (Ireland and north-western Scotland) have much higher wind power potentials than regions in northern Spain or southern Portugal. However, considering certain disparities, many regions show medium potential so that the programme area is the second main transnational area for wind power. This provides some opportunities for the programme area to tap the full wind power potential because wind power could be of relevance and of interest for most regions and could therefore be strengthened on supra-regional and transnational level.

This map was produced for the ESPON ReRisk project.
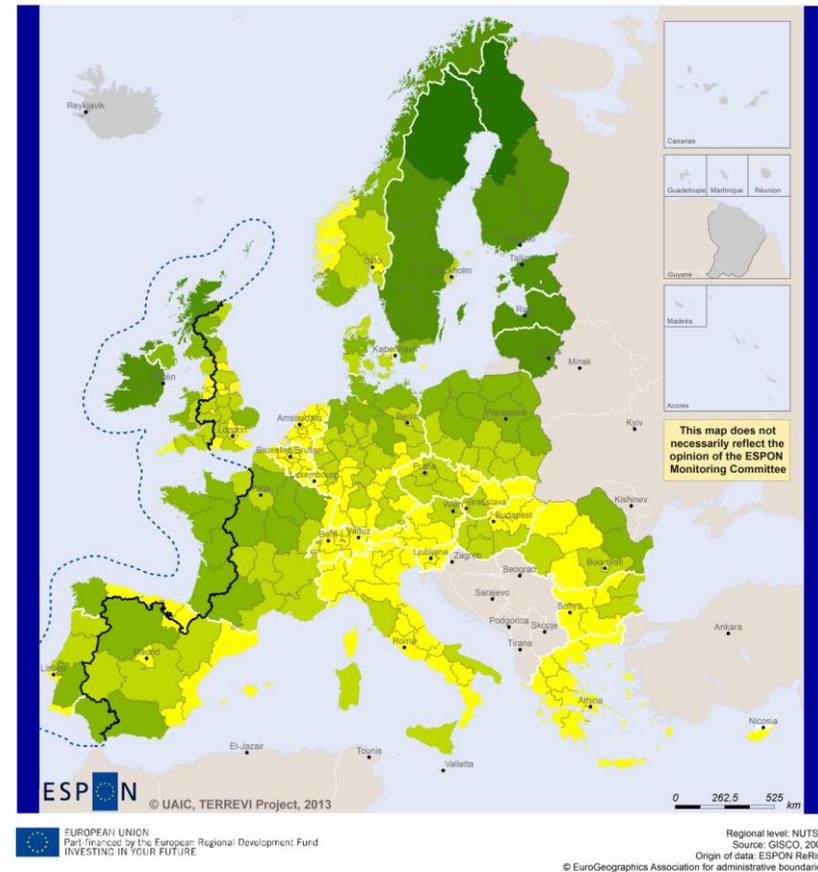
Wind Power Potentials
(Measured in km/s and considering the area of NUTS2 regions in km²)

	2,9 - 79180,4
	79180,5 - 204545,6
	204545,7 - 487852,0
	487852,1 - 1031076,0
	1031076,1 - 1795408,0
	no data
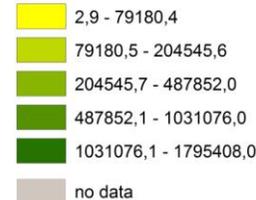
**Map 14 Wind power potential (m/s/km2)**

Wave power potential

A considerable amount of research effort is currently going into assessing the energy potential of Europe's seas. For example, the FP7 ORECCA project has mapped the likely energy potential of wave power. Wave power energy as offshore renewable, i.e. blue energy, is important for the European strategy on 'Blue Growth'. This strategy is still at an early stage of development and therefore provides opportunities for future marine and sustainable maritime growth. It claims to be suitable for minimizing land-use requirements and reducing greenhouse gas emissions. However, the development of marine renewables depends on many factors. Wave energy is much more difficult to capture, and technological development remains at an experimental stage. The take-up of tidal energy is also more challenging, especially as the physical opportunities for development are much more limited and are frequently in sensitive coastal or estuarine locations. Research efforts are, nonetheless, ongoing; for example, the *Pelamis* wave energy convertor has been trialed in Scottish and Portuguese waters.

Western coastal areas fully exposed to the Atlantic have the greatest capacity to develop wave power, followed by open areas in the North and single areas in the Mediterranean Sea. However, enclosed sea areas like the most parts of the Mediterranean, the Baltic or the Black Sea have relatively little potential in this regard.

As mentioned above, the programme area comprises all coastal areas, (except Faroe Islands, Norway and Iceland) with the greatest capacity to develop wave power. Therefore, almost the whole Atlantic Area (except the western UK next to Ireland) provides opportunities to promote this increasing field of renewable 'blue' energy. In a European perspective, only the Norwegian coast and the North Sea provide these extensive opportunities. Nevertheless, all environmental and seascape-related aspects have to be taken into consideration since coastal areas, as environmentally sensitive areas, and land- and seascapes need special protection because of their land-/seascape and wildlife value.

Information on solar power can be found in the ESPON ReRisk report. For further information on tidal power, see ESPON ESaTDOR report. This map was produced for the ESaTDOR project.
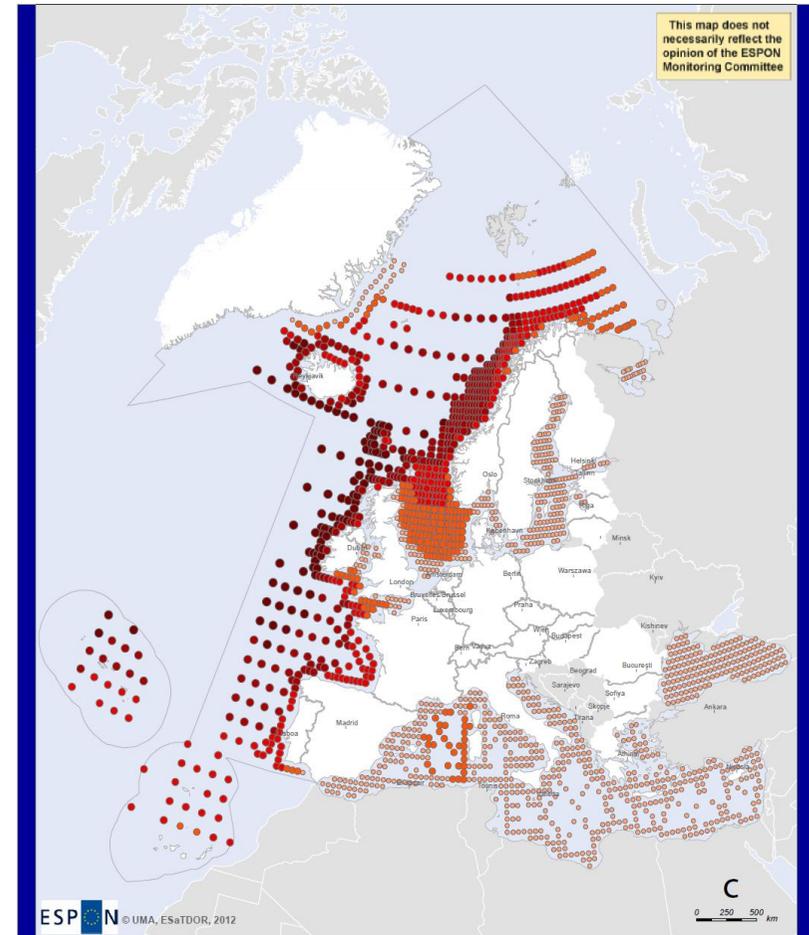
Wave power potential (KW/m)

- 0.5 to 11.0
- 11.1 to 24.3
- 24.4 to 39.0
- 39.1 to 55.9
- 56.0 to 81.6

**Map 15 Wave power potential (kW/m)**

Maritime flows

Maritime flows represent influences generated by land-sea interactions of people, goods and information moving through the seas, i.e. container traffics, cruise passengers, liquid bulk (oil and gas) and submarine telecommunication cables. As a composite indicator it aggregates the following flows:

- Flows of goods: Economic influence of container ports, based on port proximity and container volume (weighting 50%),
- Flows of people: Economic influence of cruise ports, based on port proximity and cruise passenger volume (weighting 30%),
- Flows of energy: Marine exposure due to port influence, based on port proximity and volume of energy (weighting 10%),
- Flows of information: Undersea cable influence, based on proximity to cable and length per grid square (weighting 10%).

Two areas of high maritime activity are detected. First high activity area of flows is concentrated between Le Havre, in France, and Bremen, in Germany. In this coast the main ports of freight transport of the northern range are concentrated (Rotterdam, Hamburg, Antwerp, Bremerhaven, Felixstowe and Southampton). A second high activity area of flows is identified in the Mediterranean, where container activity is slightly smaller but where the main ports of cruises are concentrated, such as in Barcelona and Palma de Mallorca, Napoli, Livorno and Civitavecchia, Piraeus and Malta.

No hotspot of maritime flows is located in the Atlantic Area. These hotspots are situated in regions highly affected by container shipping and cruise activity which does not apply to the Atlantic Area.[4] However, there are several regions affected by medium maritime influences like the capital regions (Lisbon and Dublin) or bottlenecks like the Strait of Gibraltar and the English Channel. Furthermore, submarine cables bundling the traffic of digital information between Europe and North America become apparent.

This map was produced for the ESPON ESaTDOR project.
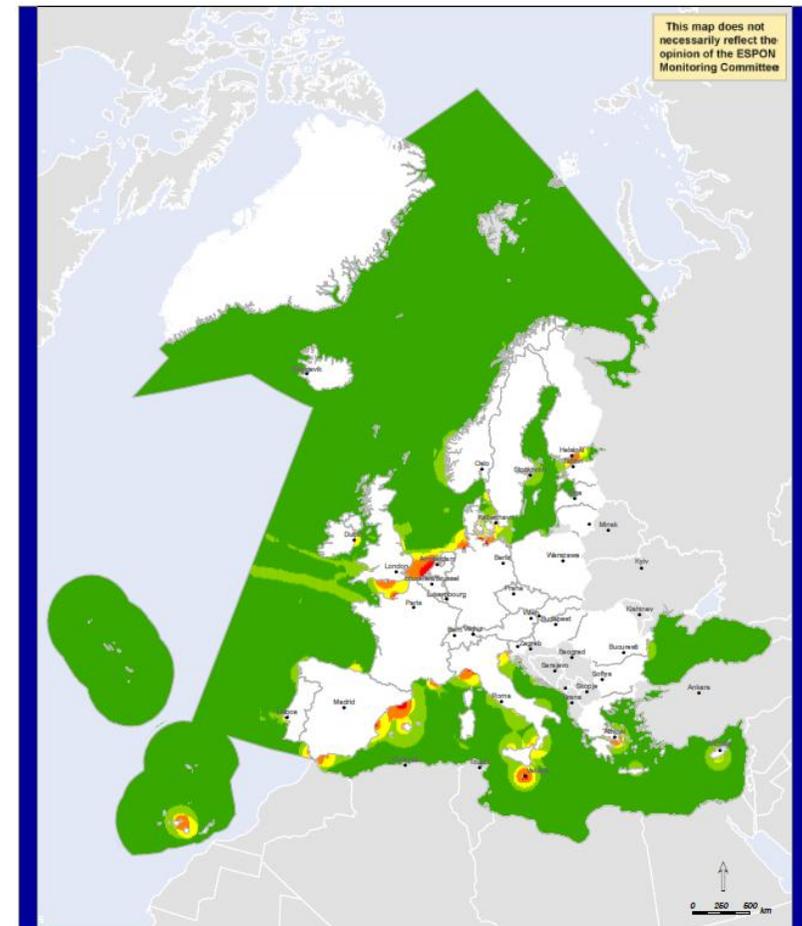
Map 16 Maritime flows, 2008

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[4] The composition for Portuguese regions is affected by the fact that no data on cruise passengers for Portugal were reported to Eurostat.

Combined adaptive capacity to climate change

Adaptive capacity to climate change takes into account the economic, socio-cultural, institutional and technological ability of a region to adapt to the impacts of a changing regional climate. This could mean both preventing and/or moderating potential damages, and taking advantage of new opportunities opened up by climate change. A total of 15 indicators were developed and then aggregated to reflect on the five adaptation dimensions. The overall adaptive capacity was calculated by combining these dimensions.

Indicator	Dimension	Weighting
Educational commitment		
Computer skills	Knowledge and awareness	23%
Attitudes towards climate change		
Resources for technology		
Capacity to undertake research	Technology	23%
Patents		
Transport		
Water infrastructure	Infrastructure	16%
Health		
Government effectiveness		
NAS	Institutions	17%
Democracy		
Income per capita		
Age dependency	Economic resources	21%
Unemployment		

Firstly, a difference in adaptive capacity can be distinguished across Europe. Overall, Nordic countries have the highest capacity. A second group with regional disparities encompasses Germany, France, the UK, Austria and the Benelux countries. In Eastern European and Southern European countries with low and lowest capacity, capital city and urban regions generally hold higher capacity than other regions within the country.

As for Europe, adaptive capacity differs between the regions of the programme area. No region is among those holding highest capacity. While all regions in Ireland hold medium capacity, regions in the UK and France are affected by regional disparities, ranging from low to high capacity. In Portugal and Spain, coastal areas seem to have higher capacities than inland regions.

This map was developed in the ESPON Climate project and re-produced for the ESPON TerrEvi project.
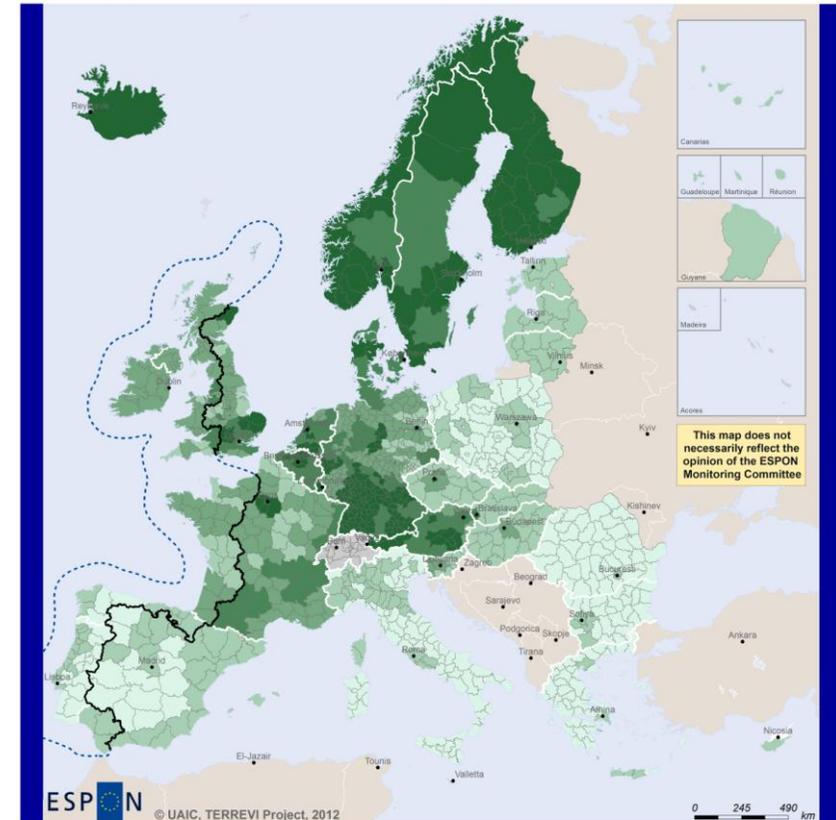
Overall Capacity to Adapt to Climate Change

- lowest capacity (0.39 - 0.54)
- low capacity (0.55 - 0.65)
- medium capacity (0.66 - 0.72)
- high capacity (0.73 - 0.79)
- highest capacity (0.80 - 1.00)
- no data

Map 17 Combined adaptive capacity to climate change

Potential impact of climate change

The map of potential impact combines 10 indicators of 'exposure' to climate change with 5 dimensions of 'sensitivity' to climate change.
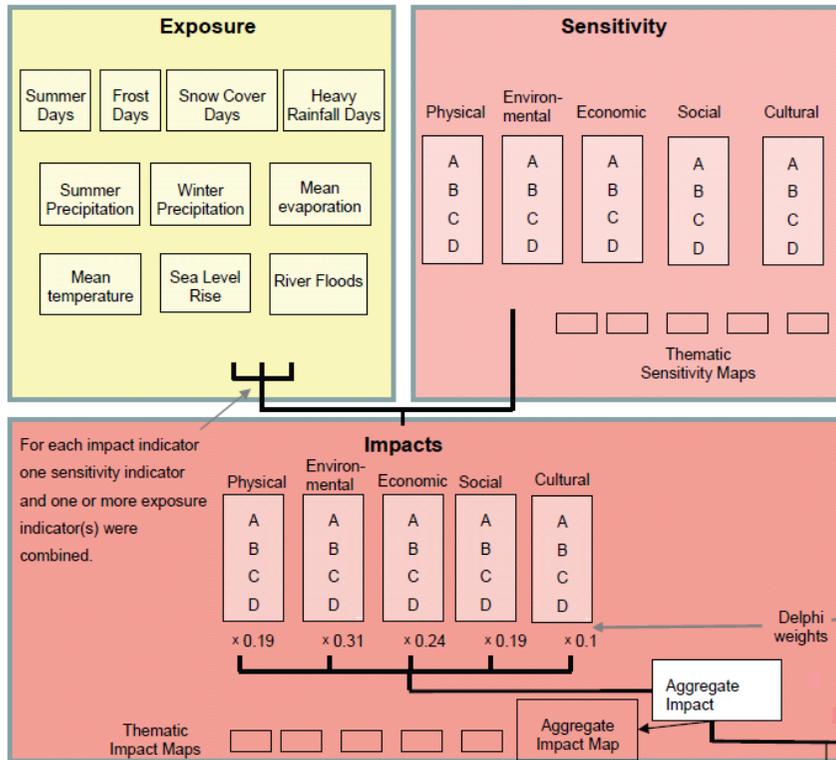

Taking into account certain exceptions like the Netherlands or Ireland, especially southern EU regions will face highest impacts, i.e. those regions which only show low and lowest adaptive capacities.

As the Atlantic Area is a coastal area, most regions of the programme area will face at least medium impacts. Only some regions in Portugal, northwest France or the UK will be affected by low negative impacts, while regions in northwest Spain or southern Portugal and Spain will even face highest negative impacts.

This map was produced for the ESPON Climate project. See the Final Report for maps on 'exposure' and 'sensitivity' indicators.

Aggregate impact of climate change

- low positive impact (-0,3 - -0,1)
- no / marginal impact (-0,1 - 0,1)
- low negative impact (0,1 - 0,3)
- medium negative impact (0,3 - 0,5)
- highest negative impact (0,5 - 1,0)
- no data

**Map 18 Aggregate potential impact of climate change**
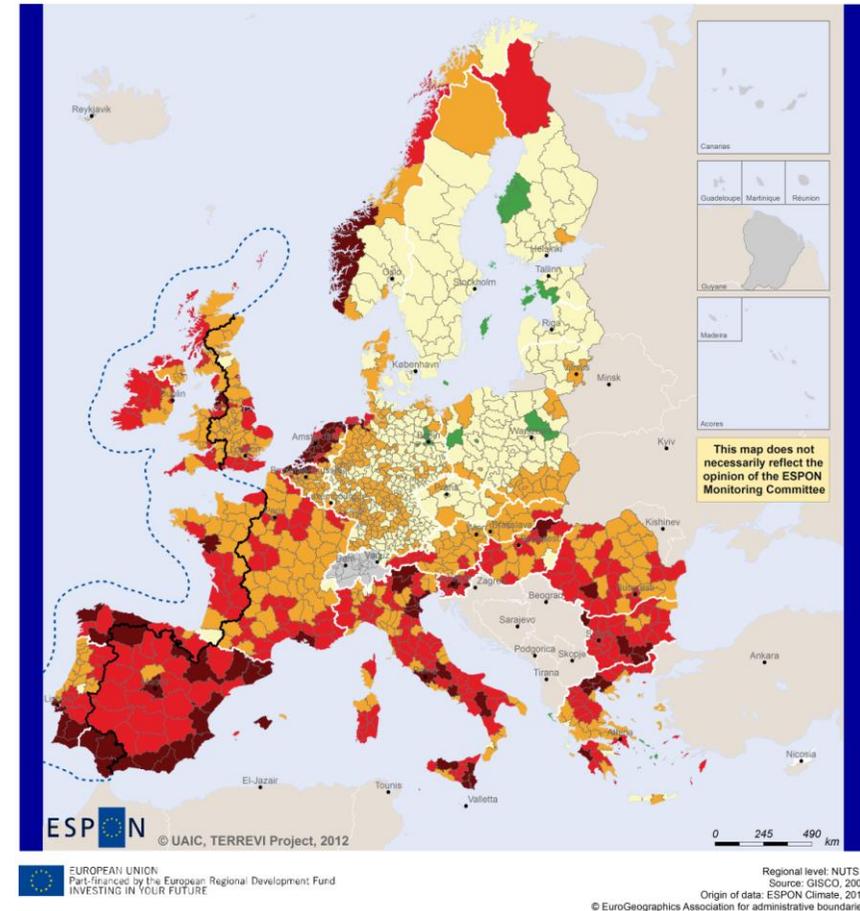
Potential vulnerability to climate change

In order to determine the overall vulnerability of regions to climate change, the impacts and the adaptive capacity to climate change were combined for each region. The underlying rationale is that a region with a high climate change impact may only be moderately vulnerable if it is well adapted to the anticipated climatic changes. On the other hand, high impacts would result in high vulnerability to climate change if a region also has a low adaptive capacity[5].

The south-north gradient which was already visible on the adaptive capacity and the potential impact map is now much more obvious. This is due to the considerable adaptive capacity of Scandinavia and Western European countries. Furthermore, those countries which only have less adaptive capacity, have to expect a medium to high increase in impacts. In consequence, a medium to high increase of vulnerability may be expected in the Mediterranean countries and in South-East Europe. This scenario runs counter to territorial cohesion because climate change would trigger a deepening of the existing socio-economic imbalances between the core of Europe and its southern and south-eastern periphery.

As for Europe, the south-north gradient also dominates the Atlantic Area. In addition, it has to be stated that almost all regions of the programme area are affected by, at least, low negative impact. In general, the northern programme area is dominated by low increase of vulnerability, i.e. in France, the UK and Ireland. Single regions in western France and most regions in northern Spain and Portugal have to expect medium and high impacts. On the other hand, coastal areas in northern and central Portugal will only be affected by low negative impacts.
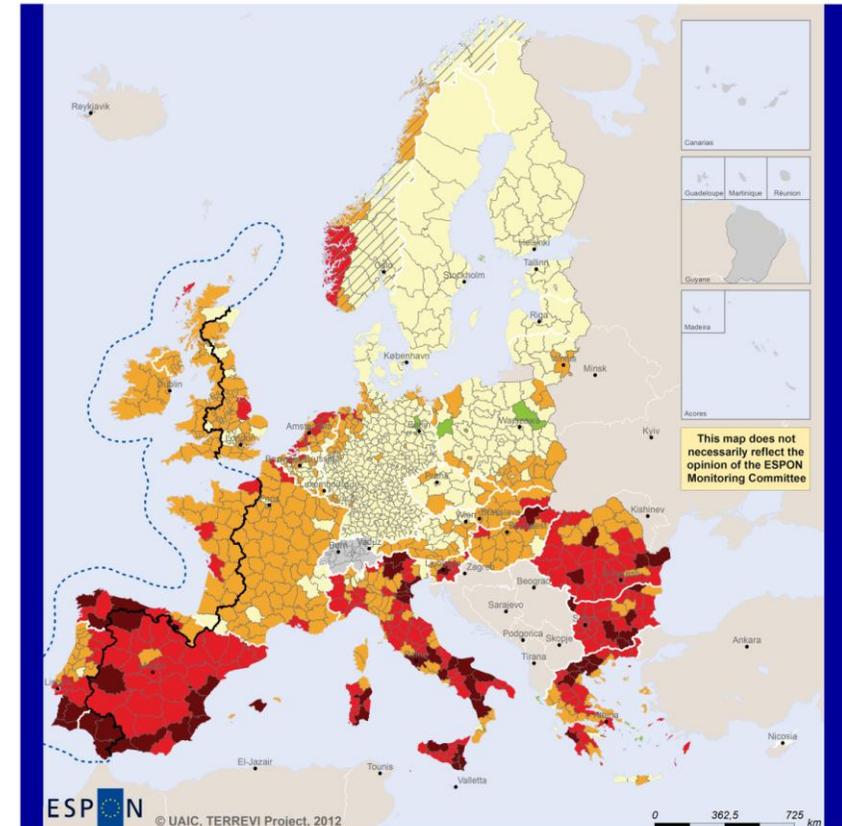
This map was produced for the ESPON Climate project.

Potential vulnerability to climate change

- low positive impact (-0,25 - -0,1)
- no / marginal impact (-0,1 - 0,1)
- low negative impact (0,1 - 0,3)
- medium negative impact (0,3 - 0,5)
- highest negative impact (0,5 - 1,0)
- reduced data
- no data

Map 19 Potential vulnerability to climate change

Results and feedback from the workshop

In general, indicators provided by ESPON projects and presented within the Evidence Report are considered useful for the Atlantic Area. However, some aspects may limit the usefulness. They might provide opportunities to further improve the presented indicators.

First of all, some indicators seem to be dated, due to the fact that either the projects were conducted a few years ago, or the data sets are rather old. The main reason is that it takes some time to collect and harmonise data sets at European level.

Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. To use data on wind power potentials, NUTS2 might give a description of the European pattern. Yet, it would be desirable if it were more specific and detailed regarding the territorial scale because potentials could differ considerably between coastal and inland areas.

A third factor regards the complexity of indicators. Composite indicators that combine several and very different dimensions and sub-indicators can be difficult to understand in policy processes. Potential vulnerability to climate change, for example, combines adaptive capacity with impacts of climate change. On the other hand, these sub-indicators are also complex composite indicators.

Programming steps

Focussing on details concerning the five programming steps, the reviewed indicators are relevant both for the needs analysis and the thematic concentration. On the other hand, the indicators provided by ESPON projects are difficult to use for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. The situation is more differentiated when it comes to the programming steps 'project selection' and 'stakeholder dialogue'. Indicators on wind power potential, wave power potential, adaptive capacity, potential impacts, and vulnerability to climate change are considered suitable for identifying promising projects, and are additionally adequate to be included into dialogues with other stakeholders of the Atlantic Area.

Further suggestions

Wind power potential	- Integration of off-shore wind potential - Including outermost territories - Capacity to use the potential: access to smart grids etc. - Comparing current use and potential might be useful
Wave power potential	- Integrate other sea-energy potentials like tidal power - Density of wave power station might be interesting
Combined adaptive capacity to climate change	- Maps on single indicators and dimensions necessary to understand this composite indicator (available in the Climate Report)
Potential vulnerability to climate change	- Maps on single indicators and dimensions necessary to understand this composite indicator (available in the Climate Report)

1.3 Inclusive Growth

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

Following the World Bank, inclusive growth analytics is about policies that should be implemented in the short run, but for sustainable inclusive growth in the future. In this perspective territorial evidence can be used to analyse at a regional or city level the sources, and constraints to sustained, high growth, and not only on one group – the poor. The territorial evidence allows looking for ways to raise the pace of growth by utilising more fully parts of the labour force trapped in low-productivity activities or completely excluded from the growth process.

The main policy instruments for inclusive growth are seen in the field of productive employment. In other words, inclusive growth means raising Europe's employment rate by creating more and better jobs, especially for women, young people and older workers, by helping people of all ages anticipate and manage change through investment in skills & training, and by modernising labour markets and welfare systems ensuring the benefits of growth reach all parts of the EU.

Growth is highly dependent on levels of income, poverty, and asset inequality, but also geography, demography, governance, politics, social considerations, and the set of existing policies. These differ not only between countries, but also over time within the same country.

In territorial terms, this raises important question as to the mobility of labour force and regional difference of the labour force, as well as regional differences in related to poverty and education levels and the infrastructure and mechanisms to overcome challenges and help individuals to escape poverty and benefit from livelong learning increasing their prospects on the labour market.

Employment rate 2011

According to EUROSTAT, employment rate represents persons in employment as a percentage of the population of working age (15-64 years). Employment statistics are frequently reported as employment rates to discount the changing size of countries' populations over time and to facilitate comparisons between countries of different sizes. These rates are typically published for the working age population, which is generally considered to be those aged between 15 and 64 years, although the age range of 16 to 64 is used in Spain, Sweden (only until 2001) and the United Kingdom, as well as in Iceland; this age group (15 to 64 years) is also a standard used by other international statistical organisations. One has to consider that employment rates can even increase despite a total decline of people in employment.

Employment rates are above 70% in all Nordic countries (except Finland), Germany, the Netherlands, Austria, Switzerland and most parts of the UK. However, no explicit gradient (neither north-south / east-west nor core-periphery) exists, as e.g. the Baltic States, France, northern Italy, northern Spain, Portugal, the Czech Republic and some parts of Poland and Finland show employment rates above 60%. Nevertheless, most regions with rates below 60% are situated in peripheral regions in Southern, Eastern and Southeast Europe.

The European pattern seems to be primarily dominated by the national level. No explicit gradient can be detected both for Europe and for the Atlantic Area. For the programme area, no region shows a rate above 75%. Regions with the highest employment rates (up to 75%) are situated in the UK. Only Andalusia in southern Spain holds a rate below 50%. Meanwhile, northwest Spain and Border, Midland and Western Ireland hold 50-60%. Nevertheless, most regions of the programme area have medium rates, i.e. between 60 and 70%.
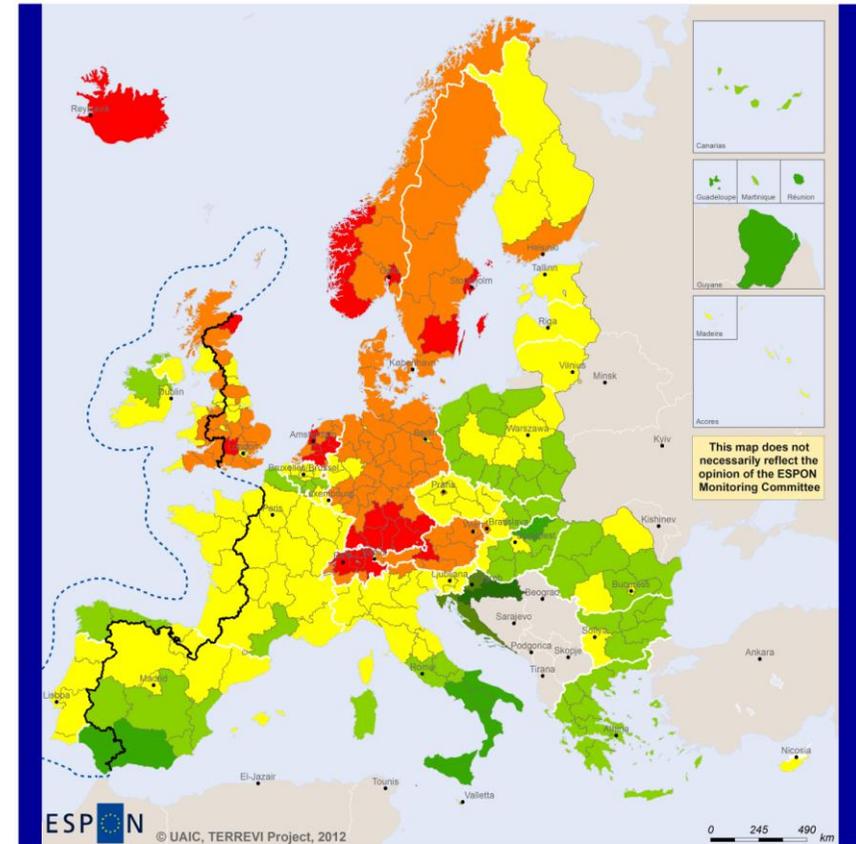
Employment Rate (2011)

|	
🟩	< 50
🟢	50.1 - 60
🟨	60.1 - 70
🟧	70.1 - 75
🟥	> 75.1
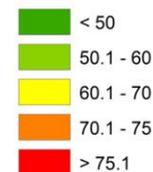
Map 20 Employment Rate, 2011

Long-term unemployment rate 2011

Long-term unemployment rate refers to the number of people who are out of work and have been actively seeking employment for at least a year. An unemployed person is defined as being aged 15 to 74 (or aged 16 to 74 in Spain, the United Kingdom, Iceland and Norway) who was without work during the reference week, was currently available for work and was either actively seeking work in the last four weeks or had already found a job to start within the next three months. According to EUROSTAT, the unemployment period is defined as the duration of a job search, or as the length of time since the last job was held (if shorter than the time spent on a job search).

There are specific countries in Europe that have all their regions with high long-term unemployment rates like Ireland, the Baltic States, Slovakia (except Bratislava), Croatia (except Zagreb) and Greece. Other states from Southern and South-eastern Europe like Italy, Spain or Romania have large areas with high unemployment rates, i.e. more than 7%. Most parts of Europe have medium rates (1-4%) although some regions with structural problems from Central Europe like East Germany, southern Belgium or Northern France, or from the periphery like Romania, Portugal and Spain stand out (4-7%). On the other side, mainly regions from Austria and Southern Germany, and Norway as a non-EU country are outstanding with very low long-term unemployment rates (<1%).

The Atlantic Area also indicates the European pattern, i.e. peripheral regions generally hold higher rates on the one side, and rates are primarily influenced by the national level on the other side. All Irish, Spanish and Portuguese regions have a minimum long-term unemployment rate of 4%. Ireland, Lisbon, Galicia and Asturias have rates of more than 7%; Andalusia has even more than 10%. The rest of Portugal and Spain is affected by rates of more than 4%. All French and UK-based regions of the programme area have rates below 4%. So mainly the peripheral areas (Spain, Portugal, and Ireland) seem to have structural problems in their regional labour markets while peripheral parts of the UK (Scotland and northern England) may benefit from their economic linkages with other parts of the UK.
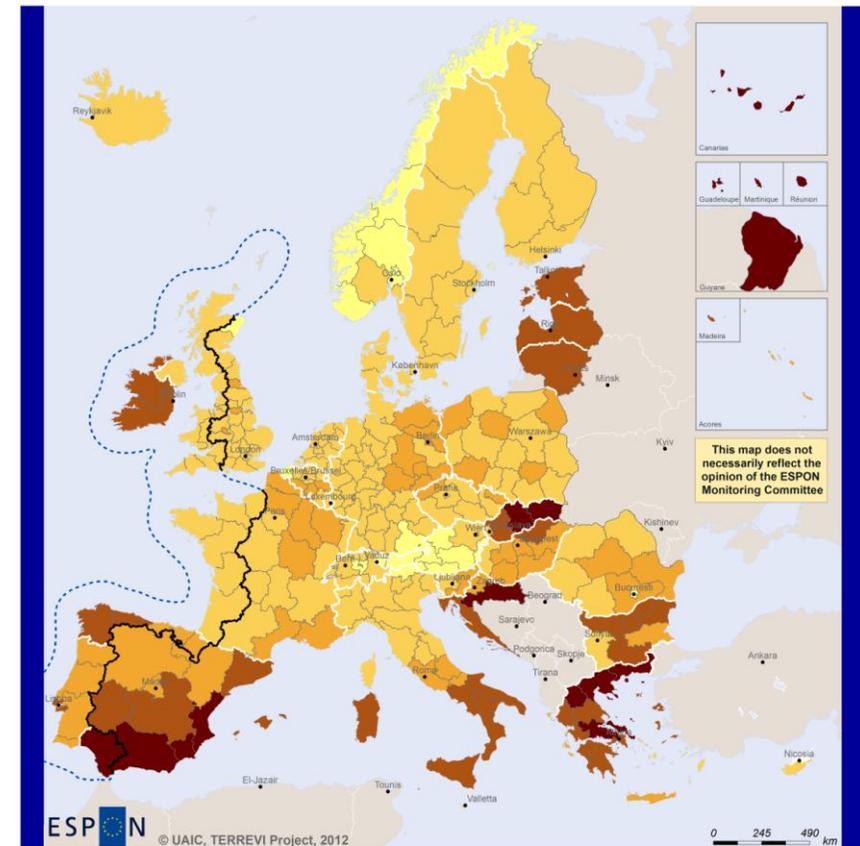
Long-Term Unemployment (12 Months and More) (%) 2011

	< 1.0
	1.1 - 4.0
	4.1 - 7.0
	7.1 - 10.0
	> 10.1
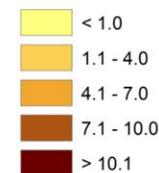
Map 21 Long-term unemployment rate, 2011

Change in population in 2005-2050

Population change is the difference in the size of a population in a given time period. The change has two components: natural population change, i.e. number of live births minus number of deaths, and net migration, i.e. number of immigrants minus number of emigrants. The maps cover the period 2005 to 2050 and show the percentage change in the projected population of each region for all four scenarios.

The "Growing Social Europe" and "Expanding Market Europe" scenarios indicate rather similar patterns for 2050. Areas affected by population growth are concentrated in an Atlantic arc from Ireland to southern France, a Mediterranean arc from southern Portugal to Italy and southern Scandinavia. Regions affected by a shrinking population are mainly located in Eastern Europe, Germany and especially in south-eastern Europe. Additionally, most regions in Portugal will face a decrease in population.

In the "Limited Social Europe" and "Challenged Market Europe" scenarios the general trend is not reversed but just the extent of population change by 2050. Even wider parts of Poland, Hungary, and Eastern Germany are affected by a population decrease of more than 50%. In these scenarios, population in western Spain is also decreasing to a higher extent than in the aforementioned scenarios. Areas of population increase remain those close to the Atlantic and the Mediterranean Sea.

None of the scenarios reverses the trend for the Atlantic Area but only the extent of population change. Regions in the UK, in Ireland and in France are mainly affected by population growth, Spain and Portugal will face a shrinking population.

This map was produced for the ESPON DEMIFER project.
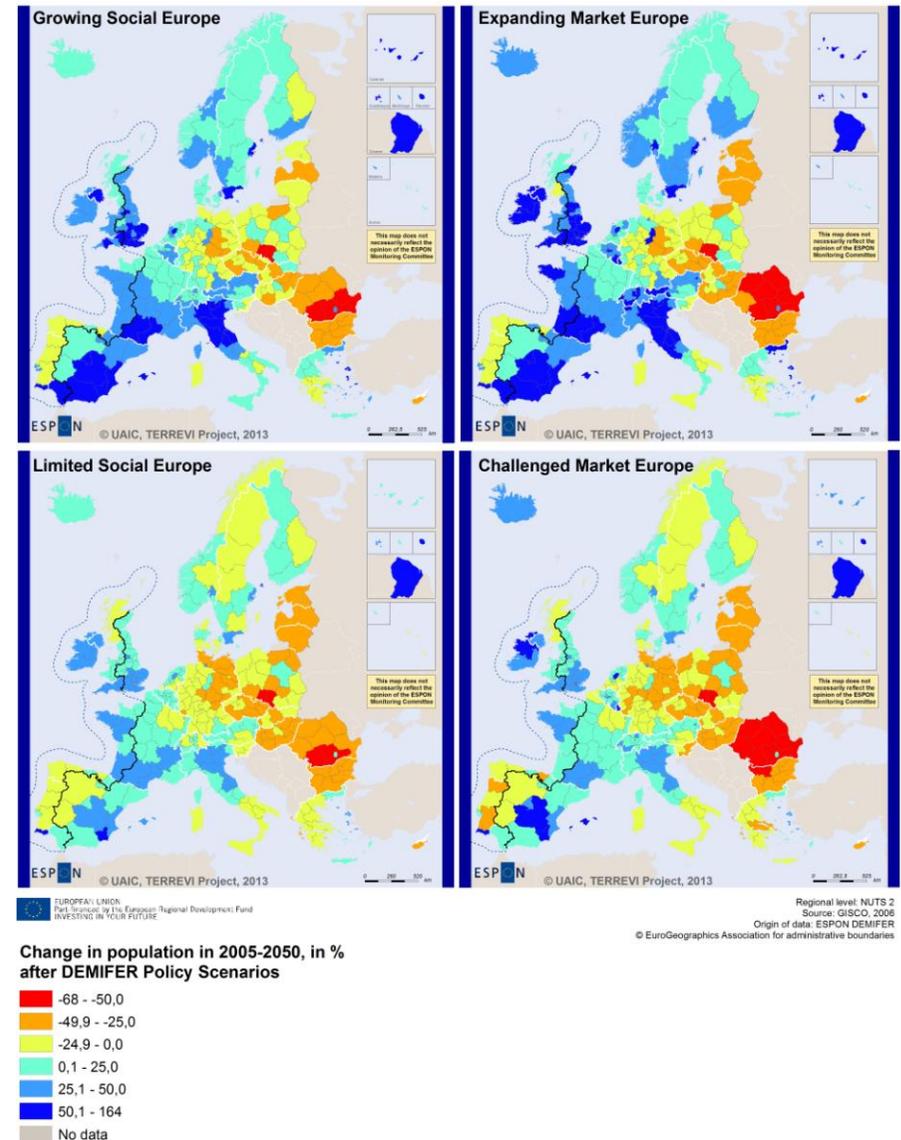
Map 22 Change in population in 2005-2050

Share of old people

The ageing population within the European Union is a trend, which is likely to increase in importance in the coming decade. Consistently low birth rates and higher life expectancy will transform the demographic pyramid; the proportion of people of working age in the EU is shrinking while the relative number of retired is expanding. This will increase the burden of social expenditures, and potentially lead to a reduction in social services. The map outlines the territorial impact of this trend, showing the share of population above 65 years.

The map shows a territorial pattern with considerable differences between countries in Europe. In Poland, Czech Republic, Slovakia, Romania, Ireland and Luxembourg most regions have a relatively young population. On the other hand Greece, Germany, northern Italy, northwest Spain, Portugal and southwest France show a dominance of regions with a high share (> 20%) of old people. Furthermore, a rural-urban divide can be detected; Capital regions generally have a younger population, while especially peripheral regions are impacted by high shares of old people.

As for Europe, the Atlantic Area is affected by large disparities which even occur in neighbouring areas. The majority of regions show a medium or high share of old population. This will be a challenge in the coming years; both in regard to coping with the consequences (e.g. extra social expenses and decreasing tax-income), but also demanding action in order to reverse this trend. The few exceptions from this overall trend are seen for all regions in Ireland, some regions in the northwest France, as well as in northern Portugal and Andalusia. Drivers of this emerging pattern can be manifold; migration, traditions and culture or structures in the society.
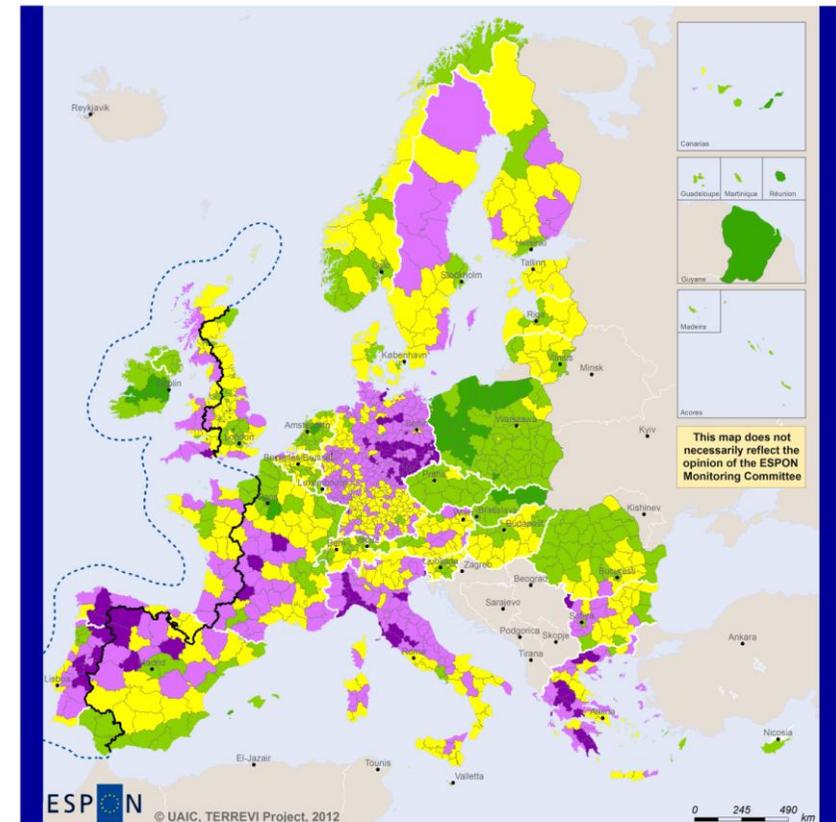
Map 23 Share of old people, 2010

42

Regional sex ratio structure

The map shows sex ratio structures. The typology is derived from the balance between male and female population (20 to 34 years).

	Women per 100 men in the age group		
	20-24	25-29	30-34
Cluster 1 Strong lack of women	78.4	82.4	86.1
Cluster 2 Moderate lack of women	92.2	90.2	91.6
Cluster 3 Sex ration turnaround	89.5	93.7	101.0
Cluster 4 Balanced sex ratio	96.4	96.5	96.4
Cluster 5 Feminising regions	94.2	101.3	104.5
Cluster 6 Surplus of women	107.8	103.7	99.9
MEAN EEA 31	96.5	97.4	97.5

Sex ratio imbalances are not only an issue for gender politics, but also for territorial development. Dynamics in population's mobility and in particular for the younger age groups are an important aspect of economic development. Considerable imbalances in the sex ratio are to some extent connected to several malfunctions in the local and regional economy. In general, a 'male-oriented' economic structure is an important explanation for a lack of women. However, regional sex ratios are also dependent on the national context.

There are some pan-European trends in the regional pattern of sex ratio imbalances, but there are even more differences and national peculiarities. It appears that the European core area (UK, FR, BE, NL, LU, CH, Western DE) is mainly characterised by female surplus, in particular in the age group 30-34, whereas the rest of Europe is more characterised by balanced sex ratios and regions with a male surplus. A few countries, e.g. Turkey, stand out with a mix of regions facing a male or female surplus. Regions with a surplus of males in early adulthood tend to be peripheral rural areas, while females outnumber men in the urban centres and their hinterland.

The Atlantic Area mainly shows a balanced sex ratio, with a few regions having either a surplus of males or females. This is in particular true for regions in Spain, Portugal and Ireland, while UK-based and French regions show a mixed pattern. The United Kingdom has most regions with a sex ratio turnaround, while France has a small dominance of regions with a surplus of females.

This map was produced for the ESPON SEMIGRA project.
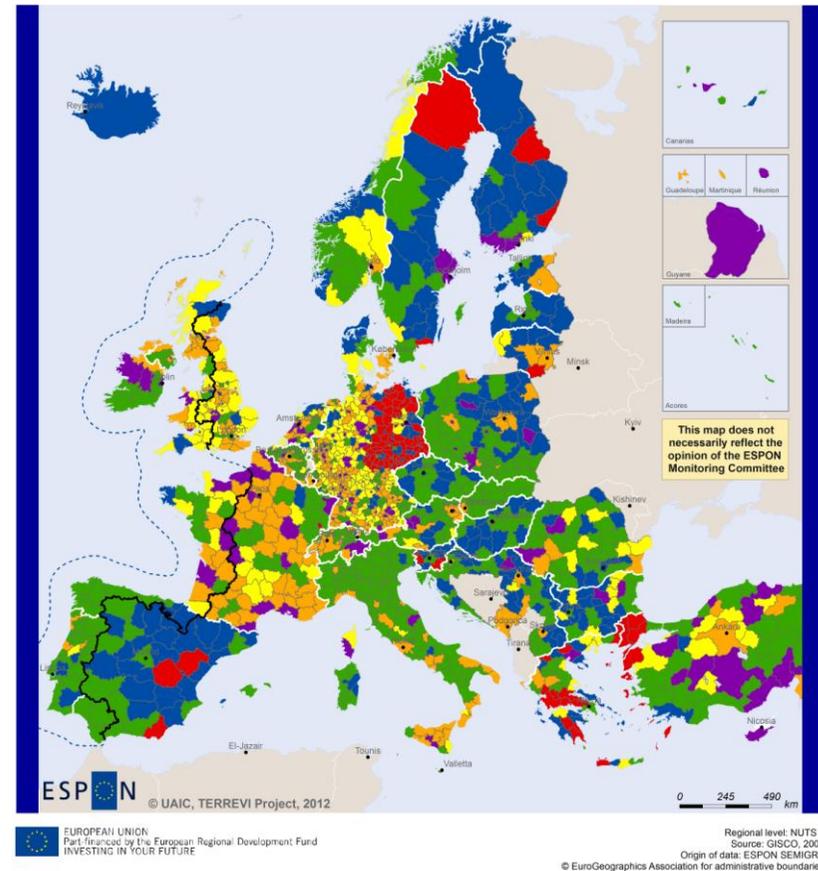
Regional Sex Ratio Structure (ESPON SEMIGRA Typology)

- Cluster 1: Strong "lack" of women in all age groups
- Cluster 2: Moderate "lack" of women in all age groups
- Cluster 3: "Surplus" of men in the age group 20-24, "surplus" of women in the age group 30-34
- Cluster 4: Balanced sex ratio in all age groups
- Cluster 5: Balanced sex ratio in the age group 20-24, "surplus" of women in the age group 30-34
- Cluster 6: "Surplus" of women in all age groups
- No data

**Map 24 Regional sex ratio structure, 2011**

People at risk of poverty

One specific aim of the inclusive growth policy is to reduce poverty and social exclusion. To monitor this policy, an indicator showing the share of population at risk of poverty is used. The indicator covers the number of people who are at risk of poverty. The main component is an income below 60% of the median average national income (after social transfers).

Taking into account certain exceptions like the UK or Eastern Germany, many most developed countries (towards the North and the West) have rather low shares of population at risk of poverty. It also seems to be distributed more homogenously. In contrast, in the Eastern and Southern countries internal heterogeneity is more pronounced, i.e. Italy, Spain, Bulgaria, Romania and Poland. This suggests that poverty is a very territorial issue in these countries, especially the more peripheral ones.

Zooming in on the Atlantic Area, it can be seen that all French regions as well as some Portuguese and Spanish regions and western Ireland show shares of 8-16%. All other regions of the programme area have a share of more than 16%; Andalusia even shows a share of more than 24%. As the map indicates, many regions face the same challenge of reducing poverty. The reasons for poverty can differ, so while regions at the same time can corporate and learn from each other in reducing poverty, one ought not forget that poverty need to be fought with many different means. One has to consider that poverty rates are presented for 2011. Rates for 2012 / 2013, especially in Southern Europe, may deviate exceedingly due to crisis' impacts.

This map was produced for the ESPON SIESTA project.
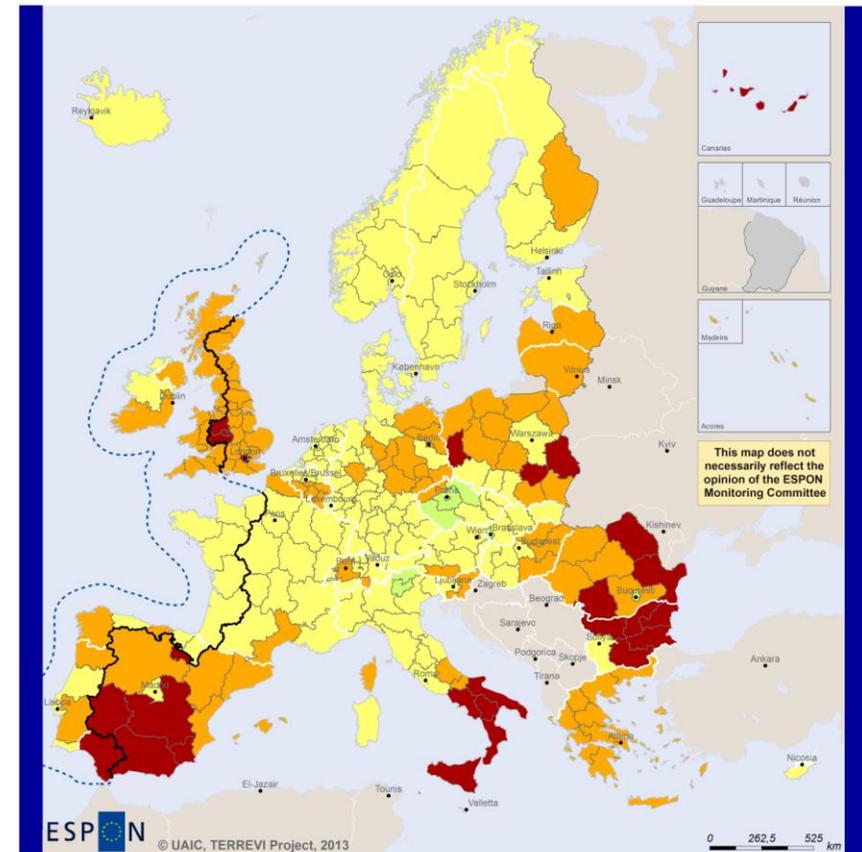
At-Risk-of-Poverty Rate (2011)

- 3,4 - 8,0
- 8,1 - 16,0
- 16,1 - 24,0
- 24,1 - 38,3
- no data
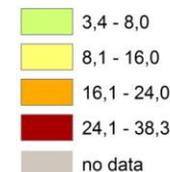
Data for PT are shown for 2005
Data for FR and UK are shown for 2009
Data for CH, BE, DK, DE, EE, IE, IT, LU, SK, FI13, FI18, FI1A are shown for 2010

**Map 25 Population at Risk of Poverty, 2011**

People with high education

The map shows the percentage of the adult population that has completed upper secondary or tertiary education. Upper secondary education (ISCED 3) generally begins at the end of compulsory education. The entrance age is typically 15 or 16 years. Entrance qualifications are usually needed. The typical duration of upper secondary education varies from two to five years. It may either be 'terminal' (preparing for entry into working life) or 'preparatory' (i.e. preparing for tertiary education) but usually corresponds to the final stage of secondary education. Tertiary education (ISCED 5 and 6) usually requires the successful completion of upper secondary education. According to both the OECD and EUROSTAT, tertiary education includes both programmes with a theoretical and an occupational orientation but also studies that lead to an advanced research qualification.

Portugal, Spain, Italy and Greece all lack behind the rest of Europe in this regard. Most regions in these countries do only have a share below 64% of the population having obtained at least an Upper Secondary degree. Best performing regions are found in North-Eastern Europe with most regions having a share higher than 72%. Regions in France, Ireland, the Benelux countries and Romania range between shares of 64% and 80%. The map indicates a pattern showing high dependency on the country, to which a region belongs. This indicates that the social structure and the structure of the national educational system have a great influence on the level of education of the population.

Especially in comparison to Central and Northern Europe, most regions of the Atlantic Area show rather low shares. Additionally, the influence of the national level is obvious. At the same time, a North-South gradient becomes apparent. All Portuguese regions have less than 50% of the population with at least an Upper Secondary degree, while the value for Spanish regions is between 50 and 64%. In most French, British and Irish regions at least 72% of the population attained such a degree. The Scottish highlands and islands are notably outstanding, as it is the only region in the Atlantic Area with a share above 80%.

This map was developed in the ESPON SIESTA project and re-produced for the ESPON TerrEvi project.

Persons Aged 25-64 and 20-24 with Upper Secondary or Tertiary Education Attainment in 2011 (%)

- < 50.0
- 50.1 - 64.0
- 64.1 - 72.0
- 72.1 - 80.0
- 80.1 - 88.0
- > 88.1
- no data
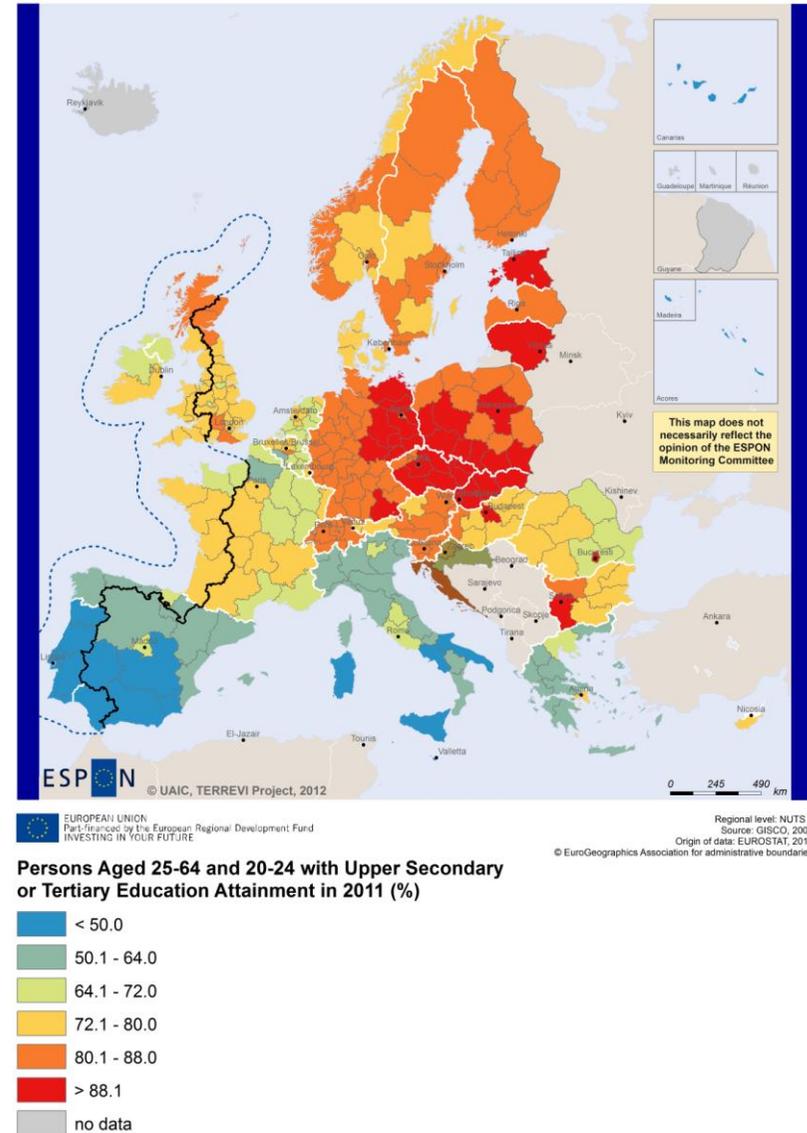
**Map 26 Persons aged 25-64 and 20-24 with Upper Secondary or Tertiary Education Attainment, 2011**

Young academics

A share of 40% of regional population aged 30 to 34 years with tertiary education attainment is one main headline target for inclusive growth within the Europe 2020 strategy. Tertiary education (ISCED 5 and 6) usually requires the successful completion of upper secondary education. It includes both programmes with a theoretical and an occupational orientation but also studies that lead to an advanced research qualification. It can be seen that approximately ¼ of all regions already reached this target which also means that most regions have not matched the target yet.

Highest shares are to be stated for northern Spain, France, the UK and Nordic countries. Surprisingly, northern German and Austrian regions score very low. On the other hand, capital regions of Eastern Europe like Warsaw, Bratislava, Budapest, Ljubljana or Sofia stand out as regions where population with tertiary education attainment agglomerates. Besides Germany and Austria, mainly Eastern and Southern European countries (except Spain, Poland and the Baltic states) show values of less than 30% - some even less than 20% - of total population aged 30-34 with tertiary education.

For the Atlantic Area, all Spanish and Irish regions but also several regions in France and the UK have already met the target. Only some peripheral regions of the UK and France show values below 40% but still above 30%. In contrast, no Portuguese region except Lisbon shows a value of > 30%. These regions therefore verge to fall behind within the Atlantic Area.

This map was produced for the ESPON SIESTA project.

Map 27 Regional population aged 30 to 34 with tertiary education, 2012

Adults in education and training

For improving and maintaining the skills of the labour force, adult education is an important instrument. Life-long learning is the reality and a pressing demand of today's labour market. Furthermore, it can be an important tool to improve the general level of education in the population and thereby potentially reduce the risk of poverty. The map shows the percentage of the working age population (age 25-64) attending adult education or training.

The Nordic countries, many regions in the United Kingdom and the Netherlands have more than 15% of the working age population participating in adult education. Looking at the rest of Europe, in most Spanish, Austrian, Slovenian and Portuguese regions still 10-15% of the working age population are in adult education. For the group of countries with a share below 10%, a further West-East divide becomes apparent. Eastern European countries (except Estonia) generally have the lowest share of population in adult education, while German, French, Italian and Irish regions show a better performance. It is interesting to see once again that the country to a great extent is a determinant factor for the performance of a region (see map 26). Explanations of this pattern can be as simple as a lack of opportunities to attend adult education, which can be linked to traditions and infrastructure of adult education or training opportunities in the individual countries (lack of supply, support from employer or financial means to do so).

The regions of France and Ireland have shares of less than 10%, on French region even less than 5%. Many British regions have at least shares of more than 15%, followed by Spanish and Portuguese regions which have shares between 10-15% (except Principado de Asturias and Cantabria). Especially Spanish, Portuguese and British regions may provide opportunities for knowledge transfer within the programme area.

This map was produced for the ESPON SIESTA project.
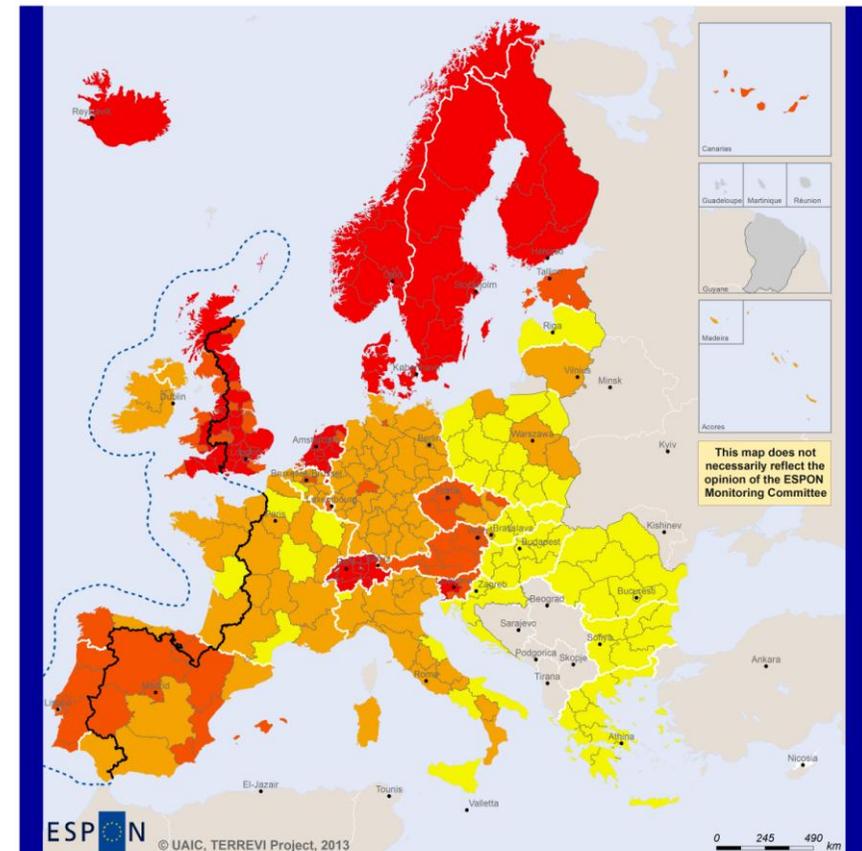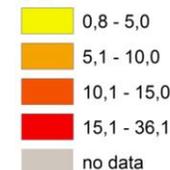
**Map 28 Share of adults in education and training, 2011**

Regional early school leavers

Another headline target of the Europe 2020 strategy concerns regional early school leavers. By 2020 the share of young people (aged 18-24) without any degree is supposed to be < 10%. Therefore, the map indicates which regions have already met the target and for which regions this challenge will remain a persisting one for the next ten years.

In general, Eastern European countries perform better than many Western European countries. All regions of the corridor ranging from Switzerland and Croatia over Southern Germany, Austria and Slovenia up to Poland have already met the target. Additionally, several Scandinavian and western French regions as well as single regions in the Benelux countries and Germany stand out in Western Europe. On the other hand, the worrying situation in Spain and Portugal indicates that the regional performance of educational systems is highly influenced by the national level. Furthermore, some peripheral regions like Wales, Scotland, Iceland or Norway also have high shares of early school leavers.

Within the Atlantic Area, only French regions have already met the target. While most regions of England are relatively close to the target value of 10%, the problem seems to be more relevant in Welsh regions (20-30%) and especially in Spain and Portugal where no region (except Pais Vaseo and Comunidad Foral de Navarra) is even close to meet the target.

This map was produced for the ESPON SIESTA project.
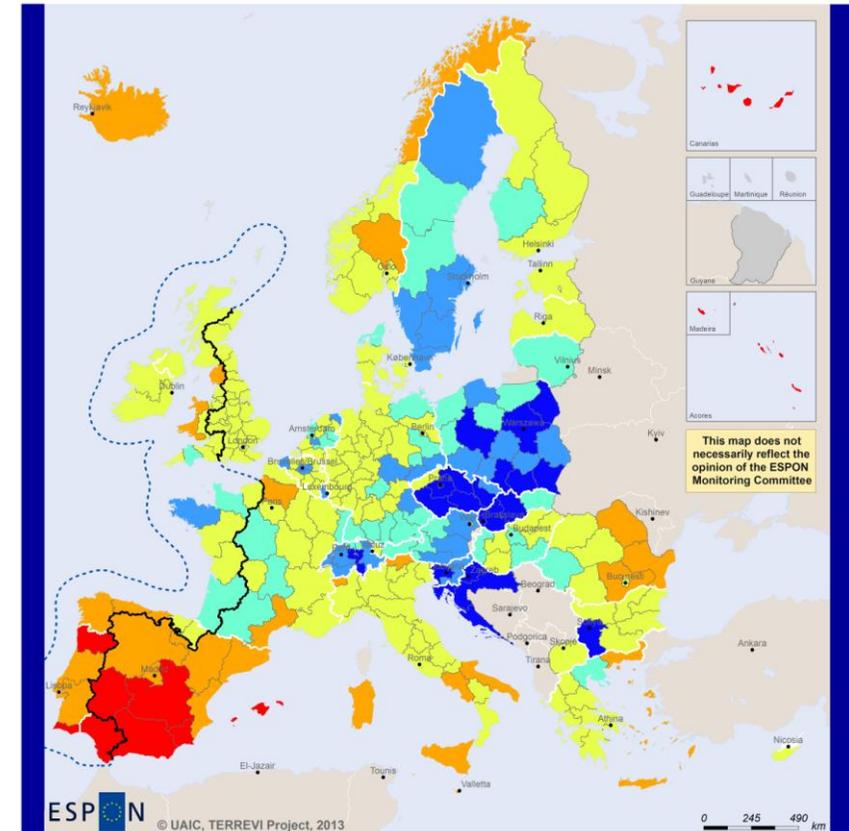
Map 29 Regional early school leavers from education and training as percentage of population aged 18 to 24 (drop-out rate), 2010

Results and feedback from the workshop

In general, indicators provided by ESPON projects and presented within the Evidence Report are considered useful for the Atlantic Area. However, some aspects may limit the usefulness. They might provide opportunities to further improve the presented indicators.

First of all, some indicators seem to be dated, due to the fact that either the projects were conducted a few years ago, or the data sets are rather old. The main reason is that it takes some time to collect and harmonise data sets at European level.

Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. To use data on risk of poverty, NUTS0 (UK, PT) might give a description of the European pattern. Yet, it would be desirable if it were more specific and detailed regarding the territorial scale because the rate might considerably differ between different regions.

A third factor regards the complexity of indicators. Composite indicators that combine several and very different dimensions and sub-indicators can be difficult to understand in policy processes.

Programming steps

Focussing on details concerning the five programming steps, the reviewed indicators are relevant both for the needs analysis and the thematic concentration. On the other hand, the indicators provided by ESPON projects are difficult to use for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. The situation is more differentiated when it comes to the programming steps 'project selection' and 'stakeholder dialogue'. Indicators on employment, long-term unemployment, population at risk of poverty and people with high education and young academics are considered suitable for identifying promising projects, and are additionally adequate to be included into dialogues with other stakeholders of the Atlantic Area.

Further suggestions

Employment rate	- Split by gender - Split by age groups - Split by economic sectors - Split by educational level
Long-term unemployment rate	- Interesting to know how families are affected by unemployment
Share of old people	- Combining with activity rates of different age groups would be useful
People with high education	- Show only young people with upper secondary / tertiary education attainment
Population at risk of poverty	- Distinguish between "before" and "after" social transfers

2 Territorial factors of interest for the programme area

Territorial cooperation programmes can make a difference for the future development of cross-border and transnational territories in Europe. Some of the factors can be analysed by European wide data sets and using some studies having specific maps, figures and tables concerning the areas of the cooperation region.

Besides a wide range of standard indicators frequently used in the context of European regional policies, ESPON has established various indicators which focus more on the territorial dimension. These indicators provide among others information on the development preconditions of an area. Two standard indicators in this field are rural-urban settings and accessibility.

The Atlantic Area programme area comprises a number of the metropolitan areas such as e.g. Dublin, Edinburgh, Liverpool, Manchester, Bilbao, Porto or Lisbon. Furthermore, some of the main global agglomerations in Europe are located in rather close proximity outside the programme area, i.e. London, Paris or Madrid. The map confirms the presence of both metropolitan areas and a number of smaller growth poles in the programme area. However, it illustrates also territorial differences within the programme area.

Urban areas are a minor part of the programme area, which is in a European perspective rather dominated by intermediate and rural areas and areas in close proximity to a city. Furthermore, there are a number of remote regions. To the remote areas belong some regions on Ireland, large parts of Scotland, the Faroe Islands and the regions along the Portuguese-Spanish border.

Whereas the programme area comprises a number of larger international ports, multimodal accessibility measured by rail, road and air remains in many parts of the programme area around or even below European average values. Indeed, above average accessibility values are mainly to be found for the metropolitan areas. Large parts of the programme area and in particular remote regions have considerably less favourable accessibility values. Also the possibilities for one-day business trips within the European urban network are limited to the urban centres and even there possibilities are often limited.

With regard to geographic specificities, the programme areas is clearly characterised by coastal areas and islands, but it comprises also a large share of mountain areas in particular in the UK, Spain and Portugal and some sparsely populated areas.

In particular the coastal character comes with advantages and challenges. Although it does not come with a specific economic structure, it appears that a significant proportion of areas have high residential attractiveness. In the areas where natural zones dominate – Scotland, most of the Irish coast, northern England, Wales, Aquitaine and a large part of the Spanish coastline – global urban pressure remains moderate. Furthermore, many coastal areas are also characterised by relatively high levels of biodiversity and protected areas. Furthermore, coastal ecosystems provide not only food but habitats for diverse economic-valuable and other species.

Last but not least, it has to be noted that coastal areas and islands are often particularly vulnerable to climate change.

Urban-rural typology

This typology draws together various story lines. The first step is to classify all local units as urban or rural, using a criteria of population density of 150 inhabitants per square kilometre. Predominantly Urban regions are those in which less than 15% live in rural local units. Intermediate regions are defined as those in which between 15% and 50% live in rural local units. Predominantly Rural regions have more than 50% of their population living in rural local units. Intermediate and Rural regions are further divided into accessible and remote groups. A region is in the accessible group if more than half of its residents can drive to a city of at least 50,000 inhabitants within 45 minutes. Conversely, if less than half its population can reach a city within 45 minutes, it is considered remote.

At first glance, it is striking that most rural remote regions are situatedin the European periphery, i.e. in Spain, Portugal, Greece, Ireland, Scandinavia and Finland. In contrast, a pattern of predominantly urban areas streches from the UK to the Netherlands, Belgium, Germany to northern Italy. One can discern that even urban and rural remote areas can be neighbouring regions. This is a sign of Europe as a patchwork of densely and sparsely populated regions which additionally show different levels of accessibility.

Just like Europe, the Atlantic Area is characterised by variations. On the one hand there are no major differences between the southern and northern parts. Both Portugal and Ireland, for example, are dominated by predominantly rural areas but also have single urban centres (Dublin, Porto, Lisbon) as urban areas. While the UK is characterised by several urban centres (Swansea, Cardiff, Bristol, Liverpool, Manchester) which also influence the accessibility of other UK-based intermediate regions, there is just one predominantly urban area in France and Spain, i.e. Bilbao (North of País Vasco). The rest of this part of the programme area is dominated by a mix of predominantly rural accessible and intermediate accessible areas, i.e. that in these areas more than 15% of regional population still lives in rural local units.

This map was produced for the ESPON EDORA project and re-produced for the ESPON TerrEvi project.

Urban-Rural Typology (Dijkstra-Poelman Types)

- Predominantly Urban
- Intermediate Accessible
- Intermediate Remote
- Predominantly Rural Accessible
- Predominantly Rural Remote
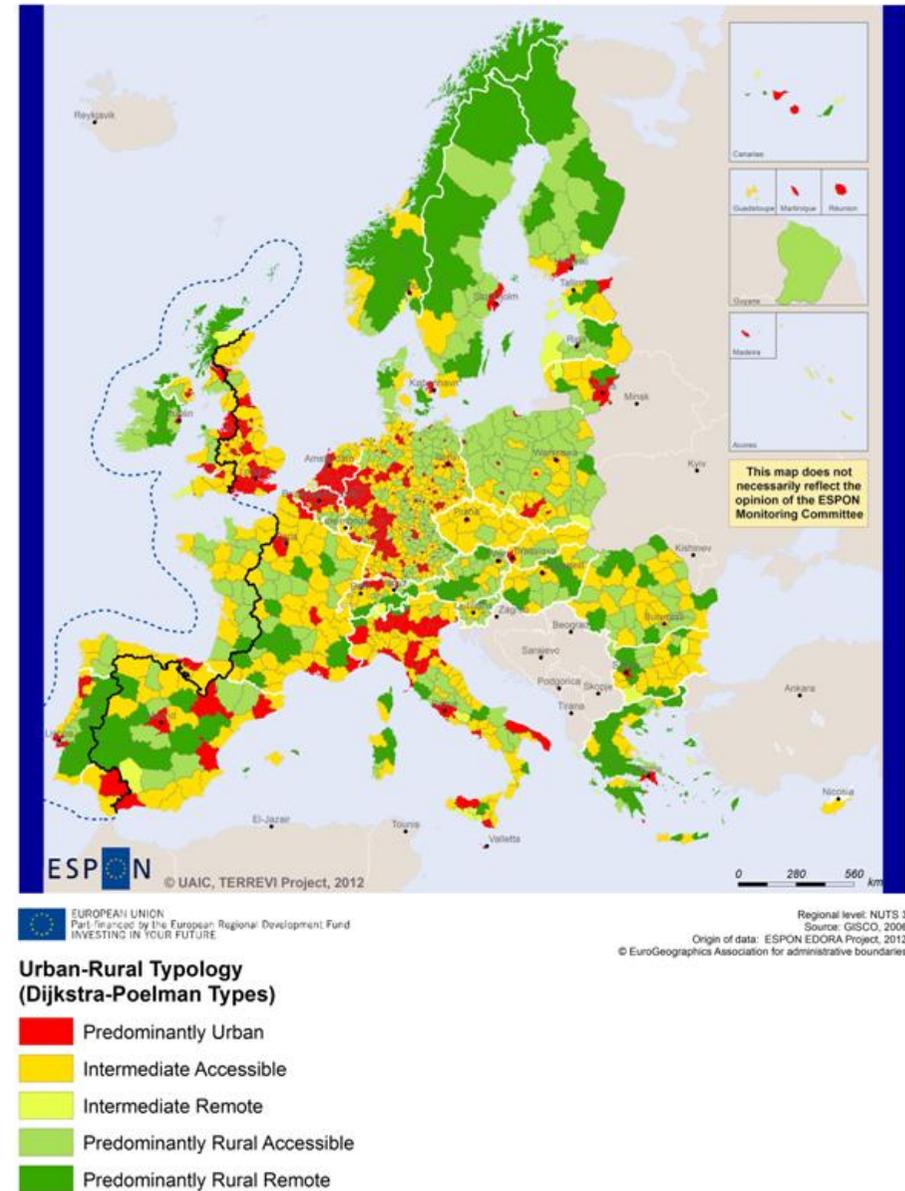
Map 30 Urban-rural typology of NUTS3 regions

Multimodal accessibilty

With the purpose of providing an overview of the degree of accessibility of European regions, multimodal potential accessibility synthesizes indicators specific for each travel mode (road, rail and air). Travel costs mainly depend on the physical distances and on the limits of travel speed. While dense road and rail networks are responsible for high potential accessibility in Central Europe, multimodal accessibility for peripheral areas primarily bases upon air accessibility.

Taking also into account an obvious core-periphery pattern, analysing multimodal accessibility moreover creates a more balanced version of this traditional European pattern. The basic core-periphery picture is constituted by road and rail transport but somehow balanced by the impact of air transport. This is especially significant for capital regions of the European periphery whose accessibility is clearly above the accessibility of the surrounding regions. However, capital regions in peripheral countries do not reach the degree of accessibility of urban regions in the European pentagon (London, Paris, Milano, Munich, Hamburg). These urban regions benefit both from high air and from high rail and road accessibility.

The Atlantic Area shows a similar pattern as other European areas outside the European core area. It generally incorporates areas with potential multimodal accessibility lower than the European average. The only regions that manage to stand out are those of the major urban centres (Lisbon, Bilbao, Bordeaux, Nantes, Rennes, Cardiff, Bristol, Liverpool, Manchester, Glasgow, Belfast, Dublin), having good international air connections and/or good connections in long-distance rail networks. In addition, the north-south gap is another specific feature. Most of the regions of the west coast of the Iberian Peninsula are in the lower class (with less than 50% of the European average), while the northern areas are both better integrated in transnational transport systems and closer situated to densely populated areas of Western Europe.

This map was developed in the ESPON TRACC project and re-produced for the ESPON TerrEvi project.

Multimodal potential accessibility, standardised 2006

- < 50.0
- 50.1 - 75.0
- 75.1 - 100.0
- 100.1 - 125.0
- 125.1 - 150.0
- > 150.1
- no data

**Map 31 Multimodal potential accessibility, 2006**
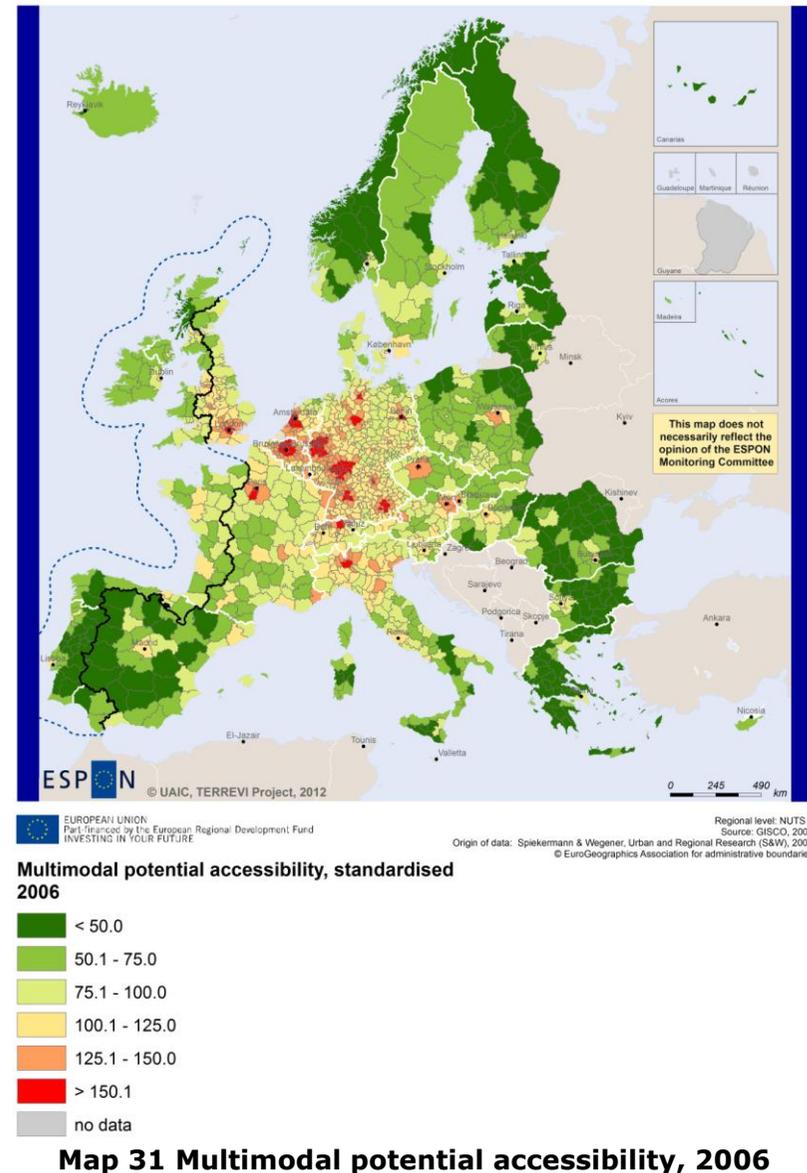
Territorial Impact Assessment

This directive sets minimum percentages for renewables in fuels. As member states can determine how to meet the target, territorial impacts depend on the measures taken by them: Either they focus on domestic production (branch a) or on import (branch b). While import means increasing transport and processing, domestic production mainly influences land-use as it adds up a choice for farmers to switch to bio fuels. Both branches imply different effects, presented in the figure below. As an indicator for branch a, harbours (both sea and inland ports) and their accessibility were selected, for branch b it was assumed that farmers more likely decide to switch to grow bio fuel crops if the region is of low agricultural profitability.

Most regions of the Atlantic Area are affected by this directive because it is both a coastal area (harbours) and also has areas of low agricultural profitability. That other regions are not directly affected by this directive, does not mean that local circumstances cannot be favourable for bio fuel crop production in these regions.

This map is mainly to be understood as an example of territorial impact assessments which ESPON carried out for various policies. Similar approaches can also be used to assess other policies.

This map was produced for the ESPON ARTS project.
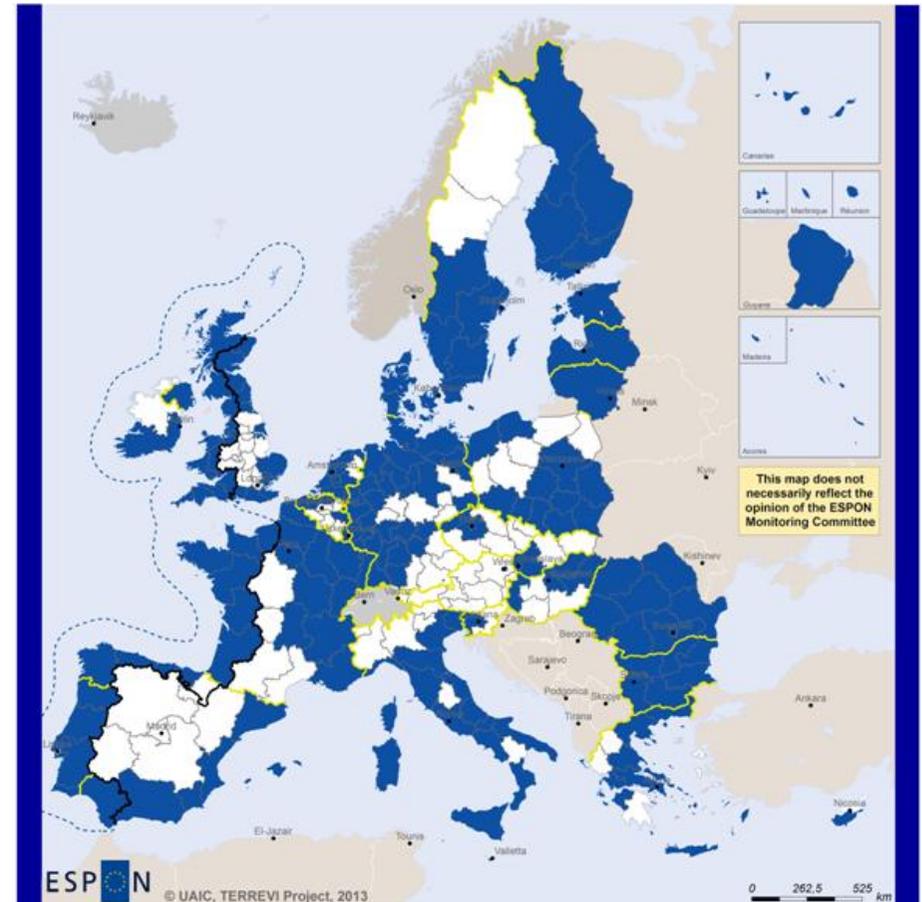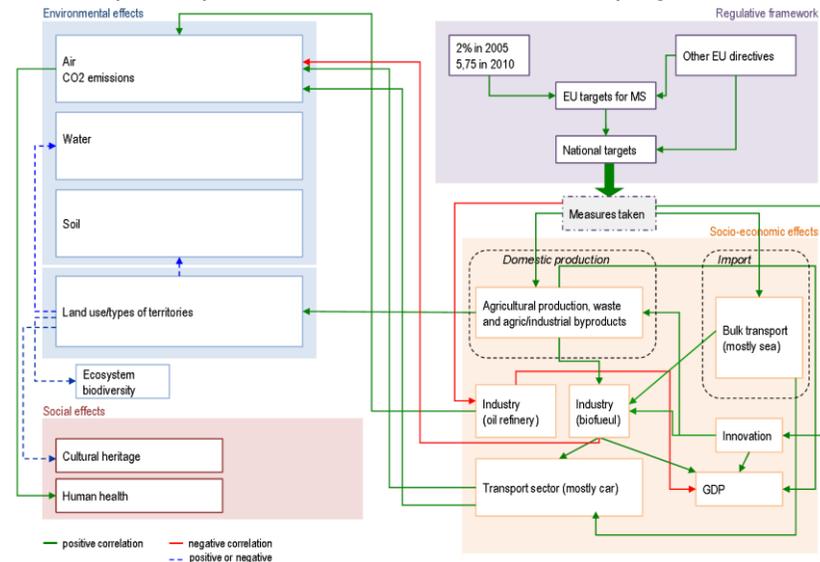
Regions affected by Directive on promotion of use of biofuels

Not affected

Affected

No data

Types of regions affected:
rural, unprofitable farming, natural areas, forest, harbour regions.

**Map 32 Regions affected by Directive on promotion of use of biofuels**

Cold- and hotspots of maritime activities

The synthesis of three composite indicators (environmental pressures, flows 2008, economic significance 2009) is the basis for this typology map showing cold spots and hotspots of maritime activities on land and at sea. The indicator "Environmental Pressures" attempts to capture natural changes and human impacts such as nutrient and organic inputs and pollution, and incidents of invasive species introduced through shipping. "Flows" tries to capture the movement of goods (incl. container traffic, liquid energy products), data and people across maritime regions. "Economic significance" attempts to show the economic importance of coastal areas through mapping employment clusters in different maritime sectors, such as shipbuilding, tourism, transport and fisheries.

With the exception of island regions (Iceland, Azores, Canaries, Balearic, Crete, Cyprus, Malta) maritime employment is only of high or very high importance in the UK, northern Italy, Estonia, Latvia, western Norway and some single regions like the Algarve or País Vasco. In contrast, maritime sectors are not of economic significance for many other coastal areas like western France, Portugal (except Algarve and Lisbon), southern Italy, Greece or Ireland. Environmental pressure is intense in many coastal areas of Europe, especially around the Azores, in western parts of the Mediterranean, the English Channel, the North Sea, the Kattegat, the Gulf of Finland, and at major ports as these are focal points for invasive species. No European coastal region is affected by low or even very low sea influences. All areas are either influenced by invasive species or by pollution associated with farming and industrial activity.

As for Europe, the Atlantic Area comprises both cold- and hotspots and is therefore affected by regional disparities. Maritime employment is of economic significance for the UK (except the Scottish Highlands and Islands) and the Algarve, Lisbon and País Vasco. Neither is it of importance for the French coast nor for the Irish coast of the programme area. In general, seaward influences are of medium intensity. They are of high or very high intensity around ports (Lisbon, Porto, Bilbao), at the sea gates (Straight of Gibraltar, English Channel) and at the British (except the Scottish Highlands and Islands) and some parts of the Irish coast.

This map was produced for the ESPON ESaTDOR project.
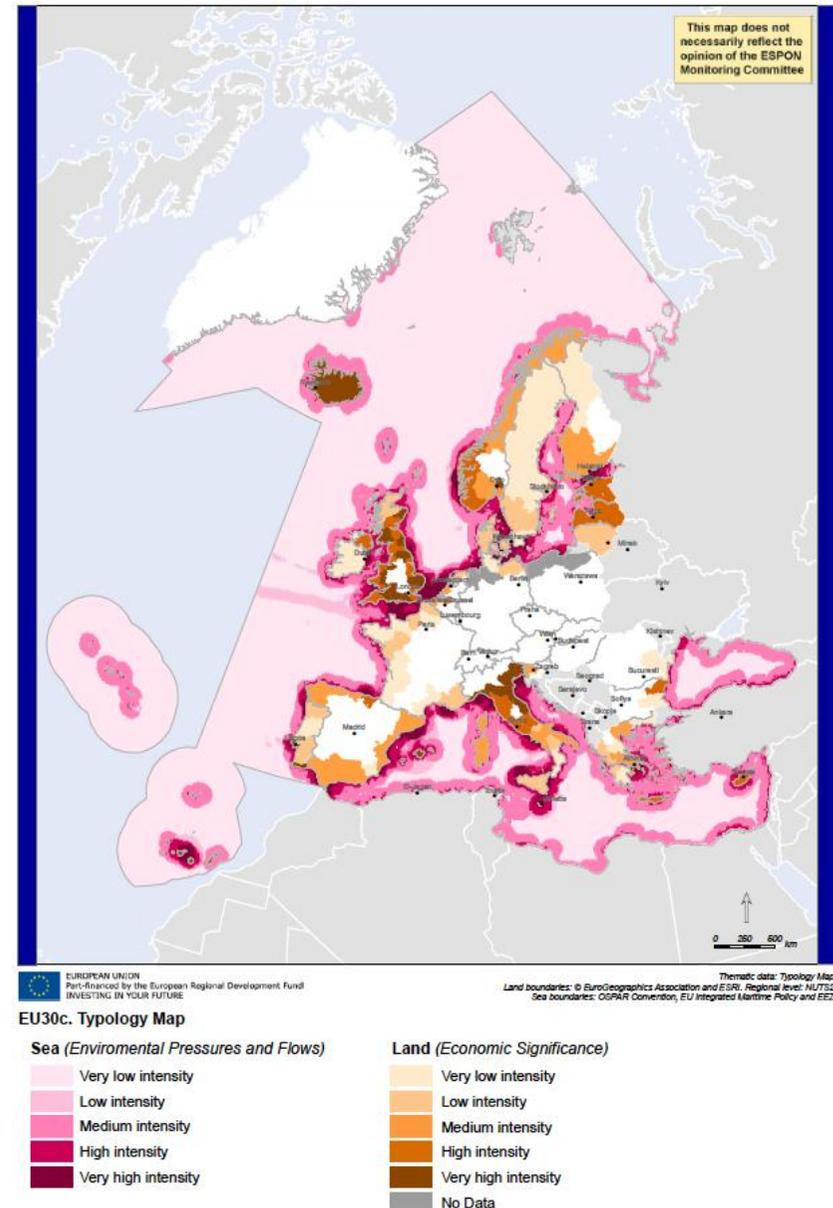
**Map 33 Typology of cold- and hotspots of maritime activities**

European maritime patterns

The "typology map" (see map above) shows regional hot- and cold spots that are affected or that are not affected by maritime land-sea interaction. This synthesis of three indicators was used to identify which maritime regions should be classified as the Core, Regional Hub, Transition, Rural and Wilderness areas.

The map highlights the significance of the Channel and southern North Sea as the Core maritime region of Europe. This is where overall land sea interactions are currently at their greatest. The map reflects the concentration of population and economic activity, the presence of mega ports and the bundling of communication and trade routes between Europe and the rest of the world through this strategically important area. The map also shows a number of regional hubs that relate to significant spatial concentrations of strong land-sea interactions. Some of these hubs have a transnational character and relate to more than one European sea. So for example the British hub spans both the Atlantic and the North Sea, while the hub related to Norway, Sweden, Germany and Denmark spans the North and the Baltic Sea. The eastern Mediterranean is the largest transition area but all European seas have areas where land sea interactions are still locally significant, mainly because of smaller ports and tourist destinations. Much of the remaining maritime areas are classified as rural, reflecting the increasingly low levels of human use at these islands and rather peripheral regions. Nevertheless, only the Norwegian Sea and eastern Iceland can still be characterized as Wilderness.

The Atlantic Area encompasses different types of European maritime regions and is influenced by all kind of these regions. It is characterised by two main, i.e. the UK and Portugal, and a minor regional hub, i.e. the area of País Vasco in northern Spain. Areas between these regional hubs are transition areas where maritime interactions are of local significance while western Ireland is even a rural area with low influences. Northern French and southern British regions of the programme area may still be influenced by the European Core. In contrast, northern Scottish Highlands and Islands are already close to the northern Wilderness of the Norwegian Sea.

This map was produced for the ESPON ESaTDOR project.
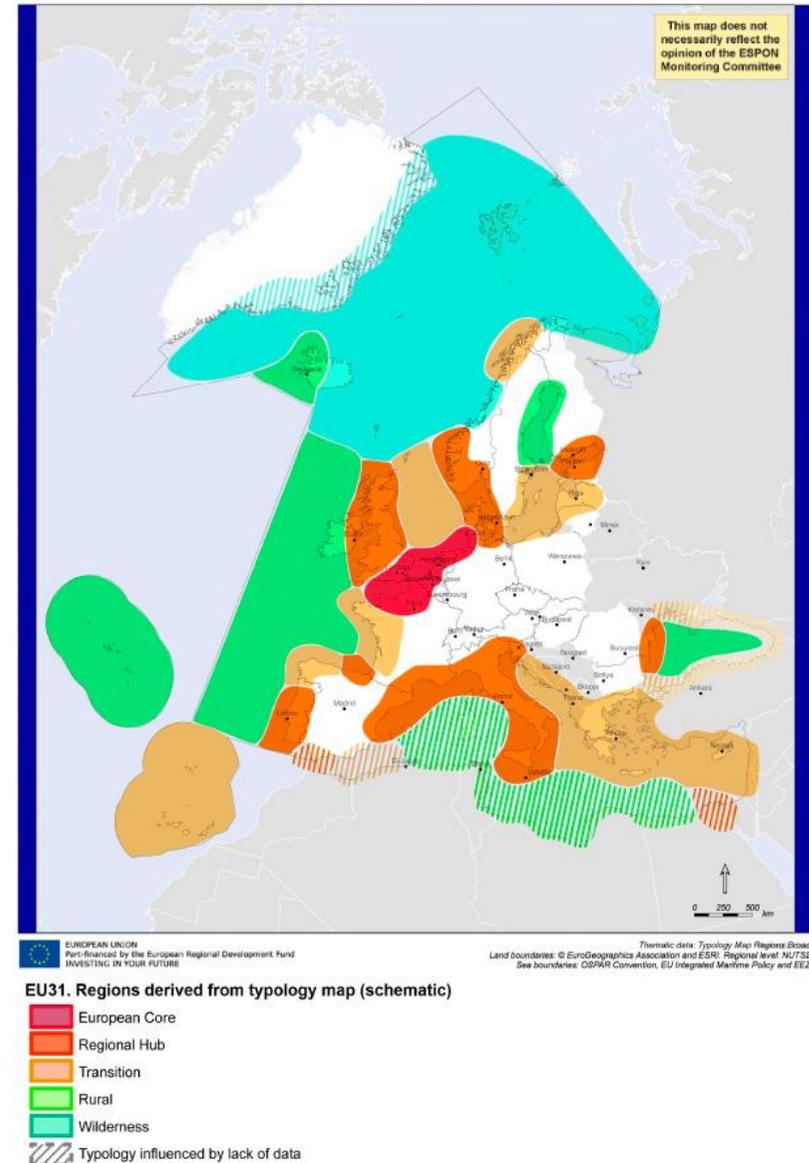
Map 34 European maritime patterns

3 Recommended ESPON reading

ESPON provides an essential underpinning for translating into practice the calls for integrated and place-based approaches to economic development, when analysing a programme area or deciding about future programme priorities. ESPON has published a wide range of exciting reports providing valuable territorial evidence for future territorial cooperation initiatives.

The table below shows examples of relevant projects for the Cooperation Region. However, you have to study other ESPON reports as well in order to capitalise fully on the European information available for the transnational programming.

ESPON study	Topic	Content
CAEE	Agglomeration economies	It aims at a better understanding of the economic costs and benefits of large urban agglomerations (see e.g. figure 1). The case studies include Dublin and Manchester (Annexes 2 & 3).
TRANSMEC	European cooperation	It develops general tools to support territorial cooperation programmes in capitalisation and considerations on future strategic project development (see map 27 and from map 36 to 39 on potential accessibility indicators). The method is applied for the Northwest-Europe cooperation area. It covers also two projects of Interreg IVB Atlantic Area, i.e. SHAREBIOTECH and ATLANTOX.
ARTS	Territorial Impact Assessment	It develops a quantitative tool to quickly gauge the potential impact of EU legislation, policies and directives on regions. This 'quick check' should be as simple, comprehensible and user-friendly as possible.
SGPTD	Growth poles	It provides evidence on European secondary cities, their performance and functional roles in different parts of Europe, and the potential policy intervention affecting their performance (see from figure 2 to 2.12). The case studies include among others Cork (annex of the Scientific Report).
ATTREG	Attractiveness	It provides a better understanding of the contribution of European regions' and cities' attractiveness to economic performance. The case studies comprise among others Cornwall and the Isles of Scilly, in the United Kingdom (Annex 4/3) and the Algarve, in Portugal (Annex 4/1).
GEOSPECS	Specific types of territories	It provides evidence on the strength, weaknesses and development opportunities of specific types of territories and regions (e.g. border areas, highly or sparsely populated areas). The case studies include Highland Council area in Scotland (Annex 24) and the Irish Sea (Annex 31).
EATIA	Territorial impact assessment	It tests the practical use of existing methods and tools for Territorial Impact Assessment. A particular focus is on Portugal (Annex 3) and the UK (Annex 1).
ESATDOR	Seas & territorial development	It provides evidence on the exploitation of sea and coastal areas for economic purposes which are increasingly important but also face growing concerns on environmental issues.
ReRisk	Energy	It focuses on opportunities to support competitive and clean energy supplies for regions in Europe and to generate and strengthen sustainable energy sources. The case studies include Navarra, in particular in the case of Wind Energy.
PURR	Rural regions	It creates and tests new ways to explore the territorial potentials of some rural areas and small and medium-sized towns in peripheral parts of Europe around the North Sea, the Irish Sea and the Baltic Sea. The project analyses the Cambrian Mountains, in Wales, as a case study region.
TPM	Territorial performance	It establishes knowledge on how territorial impacts of these macro challenges translate at the regional level and how to deal with these challenges. Two regional highlights concern Navarra and the Greater Dublin Area.
KIT	Innovation	It describes patterns and potentials of regions in terms of knowledge and innovation economy and explores development opportunities (see from map 3.1.1 to 4.4.1). It provides some case studies on Cambridge, Oxford, Cardiff and West Wales (see Draft Final Scientific Report, Vol. 2, 3).

Furthermore, some of overall ESPON products of particular interest for territorial cooperation are:
- **ESPON Synthesis report** "new evidence on smart, sustainable and inclusive territories" provides an easy to read overview on ESPON results available.
- **ESPON Territorial Observations** is a publication series, which on a few pages presents policy relevant findings deriving from latest ESPON research.
- **ESPON 2013 Database Portal** provides regional information provided by ESPON projects and EUROSTAT.
- **ESPON HyperAltas** allows comparing and analysing a region's relative position at European, national and local scale for a wide range of criteria.
- **ESPON MapFinder** provides access to the most relevant ESPON maps resulting from ESPON projects and reports.
- **ESPON Typologies** provides nine regional typologies for additional analysis of regional data to be considered in the European context.

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

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