

ESPON ATLAS
June 2013

Territorial Dimensions of the Europe 2020 Strategy

ESPON 2013 Programme
Coordination Unit
4, rue Erasme
L-1468 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 42 59 91 4700
Fax: +352 42 59 91 4701
Email: info@espon.eu
www.espon.eu

The present publication was based on the Final report from the ESPON SIESTA Project and further processed by the ESPON Coordination Unit, supported by the M4D Project (ESPON Database Phase II), as well as Spatial Foresight.

This publication is part-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland. The ESPON Programme is managed by the Ministry of Sustainable Development and Infrastructure, Department for Spatial Planning and Development, Grand Duchy of Luxembourg.

ISBN: 978-2-919777-36-5

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

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

Printed in Luxembourg, June 2013
Printed on paper produced environmentally friendly
Layout and graphic design by Imprimerie Centrale, Luxembourg

In the same series of ESPON publications:
ESPON Atlas: "Mapping the Structure of the European Territory", October 2006

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

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

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

The Europe 2020 Strategy was launched in 2010 by the European Commission and represents the European Union's growth strategy until 2020. Its aim is also to support the European Union in recovering from the current economic and financial crisis through smart, sustainable and inclusive growth.

The Europe 2020 Strategy shall be implemented at different political levels, from local to European, to become effective. Sector policies at different levels and regional development policies play an important role here.

At EU level, future EU Cohesion Policy will also make a substantial contribution through an investment policy guided by a common strategic framework.

In the regions of Europe a differentiated implementation seems adequate, since the diversity of regional development potentials, challenges, imbalances and disparities are substantial across the EU. It is not possible for all European regions to contribute to the Europe 2020 Strategy in the same way and to the same extent. Tailor made contributions by individual regions and cities seem to be the best answer.

This ESPON Atlas presents the territorial dimension of the Europe 2020 Strategy.

The intention is to provide new territorial evidence from a European perspective in support of differentiated regional contributions to the Europe 2020 Strategy. The Atlas translates the strategy into a collection of texts and maps that illustrates the diversity within Europe.

In understanding the territorial dimension of Europe 2020, the Atlas illustrates major trends, potentials and challenges facing European regions and cities (for a selected number of indicators).

It shows the regional diversity at different territorial scales and it presents observations related to types of regions, where relevant. Thereby, the Atlas points at main territorial patterns and trends and gives examples on regional development potentials related to the Europe 2020 policy aims.

By showing the regional distribution at European scale, the Atlas provides evidence for regions in comparing and benchmarking themselves on key indicators and towards the targets related to the Europe 2020 Strategy.

The Atlas first introduces the Europe 2020 Strategy. It then turns to present territorial dimensions of the three growth priorities defined in the Europe 2020 Strategy. Finally, it concludes with an overall territorial analysis of the Strategy.

The Atlas is based on the results of the ESPON SIESTA project (Spatial Indicators for a 'Europe 2020 Strategy' Territorial Analysis). This project was commissioned by ESPON in order to analyse the territorial dimensions of and the regional differentiation referring to Europe 2020. More detailed results and methodological explanations of the SIESTA project are available in the corresponding project reports available at www.espon.eu.

ESPON ATLAS

Territorial Dimension of the Europe 2020 Strategy

Colophon		page 2
Foreword		page 3
1	The Europe 2020 Strategy	page 7
2	Smart Growth	page 9
2.1	Research, Development and Innovation across European Territories	page 9
2.2	The Territorial Dimension of Education	page 16
2.2.1	Regional Patterns of Basic Educational Attainment	page 16
2.2.2	Territorial Challenges concerning Tertiary Education	page 21
2.3	Persisting Territorial Divide of the Digital Society	page 25
3	Sustainable Growth	page 30
3.1	Regional Disparities in Growth and Competitiveness	page 31
3.2	Territorial Differences in Energy and Climate Change	page 36
3.2.1	Territorial Heterogeneity of Renewable Energy and Decreasing Energy Consumption	page 36
3.2.2	European Challenges and Territorial Opportunities for the Transition towards a Low-Carbon Economy	page 44
4	Inclusive Growth	page 47
4.1	Territorial Patterns of Employment and Lifelong Learning	page 47
4.1.1	The Territorial Dimension of Employment and Unemployment	page 47
4.1.2	Territorial Differences in Lifelong Learning and Educational Attainment	page 54
4.2	Territorial Variations in Poverty and Social Exclusion	page 57
5	Conclusions: Territorial potentials and challenges, and the EU 2020 Strategy	page 64

Maps and figures

Map 2.1:	Overall R&D expenditure as percentage of GDP, 2009	page 10
Map 2.2:	Distance to the Europe 2020 national targets on R&D expenditure as percentage of GDP, 2009	page 11
Map 2.3:	R&D expenditure as percentage of GDP, 2003-2009	page 12
Map 2.4:	Human resources in science and technology (HRST) as share of active population, 2010	page 13
Map 2.5:	Private expenditure on R&D as percentage of GDP, 2007 to 2009	page 15
Map 2.6:	Early school leavers in regions from education and training as percentage of population aged 18 to 24 (drop-out rate), 2010	page 17
Map 2.7:	Distance to the Europe 2020 national targets of regional drop-out rate, 2010	page 18
Map 2.8:	Change in regional drop-out rate, 2000-2010	page 19
Map 2.9:	Drop-out rate in Larger Urban Zones (LUZ), 2004 to 2008	page 20
Map 2.10:	Population aged 30-34 with tertiary education, 2010	page 22
Map 2.11:	Distance to the Europe 2020 national targets of population aged 30-34 with tertiary education, 2010	page 23
Map 2.12:	Evolution of high qualified population (30-34 years), 2000-2010	page 24
Map 2.13:	People working in the ICT sector as percentage of total employment, 2011	page 26
Map 2.14:	Broadband penetration rate as percentage of total households, 2006 to 2009	page 27
Map 2.15:	Individuals aged 16-74 ordering goods or services over the internet for private use, 2010	page 28
Map 2.16:	Individuals who have never used a computer, 2011	page 29
Map 3.1:	GDP per capita (PPS) in relation to the EU average (EU=100), 2010	page 32
Map 3.2:	Change in GDP per capita (PPS) in relation to the EU average (EU=100), 2000-2010	page 33
Map 3.3:	Change in national GDP per capita (PPS), 2007-2011	page 34
Map 3.4:	Labour productivity (in relation to the EU27 average), 2010	page 35
Map 3.5:	National share of renewable energy in gross final energy consumption, 2010	page 37
Map 3.6:	Distance to the Europe 2020 national targets on share of renewable energy in gross final energy consumption, 2010	page 38
Map 3.7:	Regional potential for electricity production from wind power stations, 2005	page 39
Map 3.8:	Regional potential for electricity production from photovoltaic panels in kWh, 2005	page 40
Map 3.9:	National energy intensity: gross inland consumption of energy in relation to GDP, 2010	page 41
Map 3.10:	Distance to the Europe 2020 national targets of national energy intensity, 2010	page 42
Map 3.11:	Change in energy intensity of the national economy, 2000-2010	page 43
Map 3.12:	National GHG emissions in 2010 compared to 1990	page 45
Map 3.13:	Change of national GHG emissions as distance to the 2020 national targets, 2005-2009	page 46

Map 4.1:	Employment rate as percentage of active population aged 20-64, 2010	page 48
Map 4.2:	Distance to the Europe 2020 national target on employment rate (percentage of active population aged 20-64), 2010	page 49
Map 4.3:	Trends in employment rate (percentage of active population aged 20- 64), 2000-2010	page 50
Map 4.4:	Gender balance of employed people, 2010	page 51
Map 4.5:	Unemployment rate (percentage of active population aged 15-74), 2010	page 52
Map 4.6:	Youth unemployment rate (as percentage of active labour force aged 15-24), 2009	page 53
Map 4.7:	Participation of adults (aged 25-64) in education and training, 2010	page 55
Map 4.8:	Population (aged 25-64) with low educational attainment (level 1 or 2 ISCED), 2010	page 56
Map 4.9:	Distance to the Europe 2020 target of population at-risk-of-poverty or social exclusion, 2010	page 58
Map 4.10:	People at-risk-of-poverty after social transfers, 2010	page 59
Map 4.11:	Evolution of people at-risk-of-poverty after social transfers, 2005-2010	page 60
Map 4.12:	Material deprivation rate as percentage of total population, 2010	page 61
Map 4.13:	People living in households with very low work intensity, 2010	page 62
Map 4.14:	Long-term unemployment (as percentage of unemployed population), 2010	page 63
Map 5.1:	Regional Europe 2020 Strategy aggregate index, 2009 to 2010	page 66
Figure 2.1:	Shanghai index of the locations of the 100 top universities of the world, 2011	page 21
Figure 2.2:	Shanghai index of the 500 top universities of the world per quintiles and countries or groups of countries, 2011	page 21
Figure 3.1:	Regional disparities (NUTS3) of GDP per capita (PPS) by country, 2010	page 31
Figure 3.2:	Coefficient of variation of GDP per capita in EU27 (NUTS2), 2000-2009	page 33
Figure 3.3:	Planned European electricity production according to national renewable energy action plans	page 36
Figure 4.1:	Unemployed people per EU-country in March 2013 (not seasonally adjusted) in thousands of persons	page 52
Table 2.1:	Variation of GERD as % of GDP, 2001-2008	page 09
Table 2.2:	Variation of Private Expenditure on R&D as % of GDP, 2001-2008	page 14
Table 3.1:	GHG emissions, 2010	page 44
Table 4.2:	Definition of at-risk-of-poverty or social exclusion rate.	page 57

1 - The Europe 2020 Strategy

The Europe 2020 Strategy was launched by the European Commission in March 2010 and was adopted by the European Council in June 2010.

Europe 2020 has largely been shaped by the context of the economic crisis. It is stated that the context of the “economic and financial crisis” has motivated its elaboration for achieving “a sustainable future”. This is “about more jobs and better lives”, acknowledging that the EU “has the capability to deliver smart, sustainable and inclusive growth, to find the path to create more jobs and to offer a sense of direction to our societies”.

The Europe 2020 Strategy builds on the Lisbon Agenda, which mainly focused on economic and smart growth (competitiveness and knowledge-based economy) and integrated social policy objectives (mainly on employment). The Europe 2020 is based on a broader set of priorities and objectives. The inclusive growth priority goes beyond employment objectives and aims at reducing poverty more generally. In addition to the Lisbon Agenda it includes the main elements of the Sustainable Development Strategy (former Gothenburg Agenda) by defining a sustainable growth priority.

For each growth priority headline, policy targets and supporting flagship initiatives have been defined. EU Cohesion Policy, like all EU policies and instruments, shall contribute to implementing the flagship initiatives and achieving the headline targets.

The [priorities](#) of smart, sustainable and inclusive growth represent the basic pillars of Europe 2020. They tackle different growth features:

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

In order to facilitate progress towards achieving the priorities of Europe 2020, seven [flagship initiatives](#) have been initiated:

- Innovation Union
- Digital Agenda for Europe
- Youth on the Move
- Resource Efficient Europe
- An Industrial Policy for the Globalisation Era
- An Agenda for New Skills and Jobs
- European Platform against Poverty

Basically, the flagship initiatives are strategic programmes encouraged by the European Commission itself.

1 - The Europe 2020 Strategy

Beyond priorities and flagship initiatives, several headline targets have been agreed for the whole EU. They represent measurable indicators, which shall give an appropriate indication on the achievements towards the Europe 2020 priorities. These targets are mapped in this Atlas at the most detailed scale possible.

The policy headline targets are:

- 75% of the 20-64 year-old population to be employed
- 3% of the EU's Gross Domestic Product to be invested in R&D
- Three targets known as "20/20/20": a 20% reduction (and even 30% if possible) in greenhouse gas emissions in relation to 1990 levels, 20% of energy from renewable sources and a 20% increase in energy efficiency
- Reducing early school leavers to below 10%
- At least 40% of 30-34 year-old population completing third level education
- At least 20 million fewer people in or at-risk-of-poverty and social exclusion

For translating European objectives into national policies, each Member State has set its own national headline targets by adapting the general orientations of the EU.

Even though neither EU nor national targets refer explicit to the territorial dimension, in late 2011 the European Commission underlined that it is not expected that all regions can or should reach the national 2020 targets. The European Commission fully recognise the diversity of European regions and that for some issues it is neither realistic nor desirable that all regions reach the same target.

Furthermore, it is considered important that each Member State takes into account its different needs, different starting points and specificities for promoting smart, sustainable and inclusive growth.

2 - Smart Growth

The smart growth priority is the first of the Europe 2020 Strategy priorities. Smart growth deals with developing an economy based on knowledge and innovation. It stresses the importance of investing in education, R&D, innovation and the digital society. These fields shall contribute to growth of the EU economy by increasing productivity and employment.

The expression *smart* has become quite popular over the last few years and has been applied for many contexts, e.g. *smart cities*, *smart mobility* or *smart regions*. These applications stress the evident urban and regional dimension of *smart growth*.

This section of the Atlas is divided into three inter-related subsections directly related with the Europe 2020. The first deals with research and the promotion of innovation and knowledge transfer, aiming at effectively transforming innovative ideas into new products and services. The second subsection focuses on the quality of education, referring to educational outcomes and education institutions at different learning levels. The last subsection deals with the digital agenda, which aims at getting the most out of information and communication technologies. These three subsections are related to the three flagship initiatives included under the smart growth priority: 'Innovation Union', 'Youth on the Move' (mainly focusing on institutions of higher education) and 'Digital Agenda for Europe'.

2.1 Research, Development and Innovation across European Territories

Europe 2020 underlines the essential role of research and development (R&D) in boosting job creation and economic growth. R&D activity is commonly measured by the share of GDP expended on R&D or GERD (overall expenditure on R&D). It generally includes public and private expenditures on R&D, with the latter often being more significant than the former. However, the public sector plays a crucial role, by supporting fundamental research. And in regions without considerable private R&D investments, it may even account for the majority of overall R&D expenditures.

The corresponding headline target of Europe 2020 aims at raising GERD to 3% of GDP by 2020. In recent years, the corresponding share of the EU has been below that of other developed countries in the world, such as Japan, South Korea and US but ahead of China and Russia (Table 2.1). At the same time, some countries like the BRICS (Brazil, Russia, India, China and South Africa) have been rapidly improving their performances, while the EU has been progressing modestly.

Table 2.1 Variation of GERD as % of GDP, 2001-2008

	R&D expenditure as % of GDP (2008)	Change in R&D expenditure as % of GDP (2001-2008)
Japan	3.45	0.33
South Korea	3.36	0.89
United States	2.79	0.08
EU27	1.92	0.05
China (except Hong Kong)	1.47	0.52
Russia	1.24	0.06

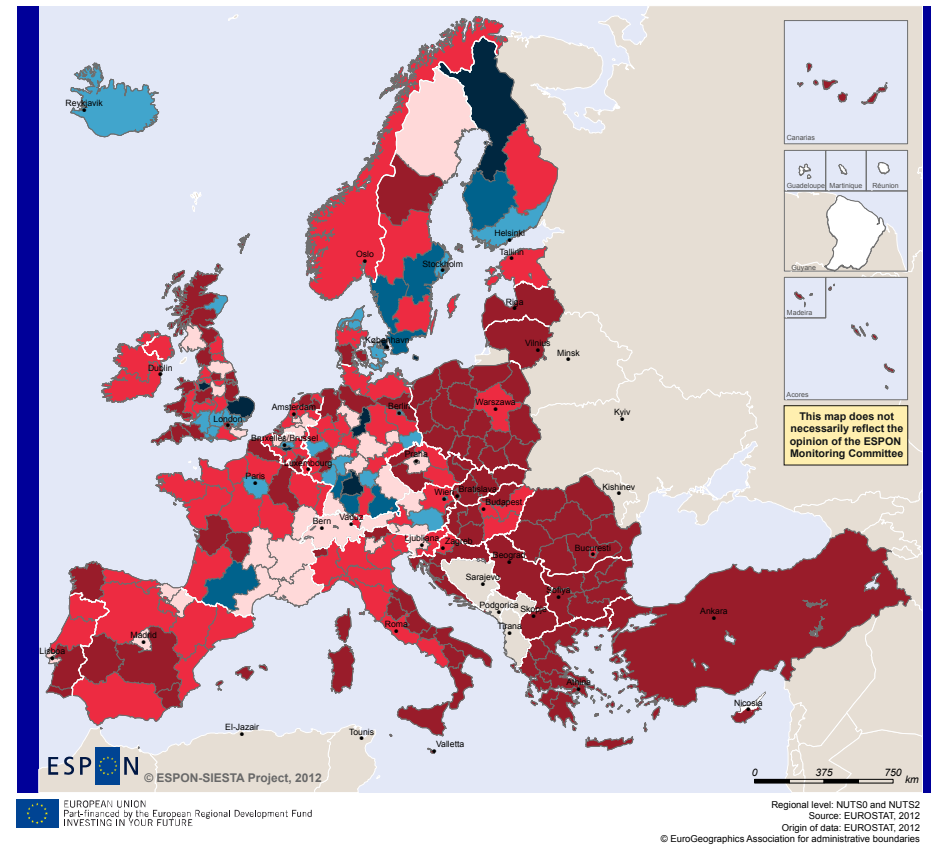
Source: Eurostat

The regional distribution of GERD across Europe is shown in Map 2.1 to Map 2.3, starting with the distance between current regional figures and the Europe 2020 headline target, and national targets accordingly, before depicting the regional change of R&D expenditure. Finally, Map 2.4 presents the regional working force in science and technology activities and Map 2.5 focuses on private R&D expenditure and innovation.

Few European regions reach the overall EU target on R&D expenditure

- Few regions have reached the EU target.** Only 37 European regions met the 3% target in 2009. Regions with higher R&D expenditure as share of GDP are mostly concentrated along few corridors, for instance Styria (Austria) to England and Denmark to Finland.
- Urban areas are strong in R&D, but the largest metropolitan areas and capital cities are not necessarily the strongest.** Example of regions with high R&D expenditure shares, beyond first tier metropolitan cities are e.g. Midi-Pyrénées (France), Oulu (Finland) and Styria (Austria). R&D intensity of the former is a result of a concentration of aerospace and aviation industries. Such effects of specific industrial concentrations may be observed also in other regions such as Wolfsburg in Germany, Toulouse in France or Oulu in Finland.
- Top- and bottom-ranked places may be neighbours.** Some regions with very high R&D investment shares are located next to regions of the lowest investment shares. In the UK for example, Shropshire and Staffordshire directly border Cheshire, a region with a very high rate of R&D investments. This may be a result of effective clustering putting the neighbouring regions at a disadvantage.
- Most Eastern and Southern regions are lagging behind.** Most regions lagging behind are located in Eastern Europe and in Southern parts of Italy, Portugal and Spain. But there are regions in other parts of Europe with low levels of R&D expenditure such as Galicia and the Scottish Highlands. Regions with R&D expenditure lower than 0.2% of GDP are located in Bulgaria, Poland and Romania, and neighbouring EU countries such as Turkey.
- Need for smart specialisation strategies.** It is unlikely that all European regions may reach the 3% target and it appears that smart specialisation strategies are needed to make better use of existing potentials.

Map 2.1 Overall R&D expenditure as percentage of GDP, 2009



R&D in Regional GDP (%) 2009.

EU 2020 Target = 3%

Below EU 2020 Target

- 0% - 1%
- 1% - 2%
- 2% - 3%

No data

Above EU 2020 Target

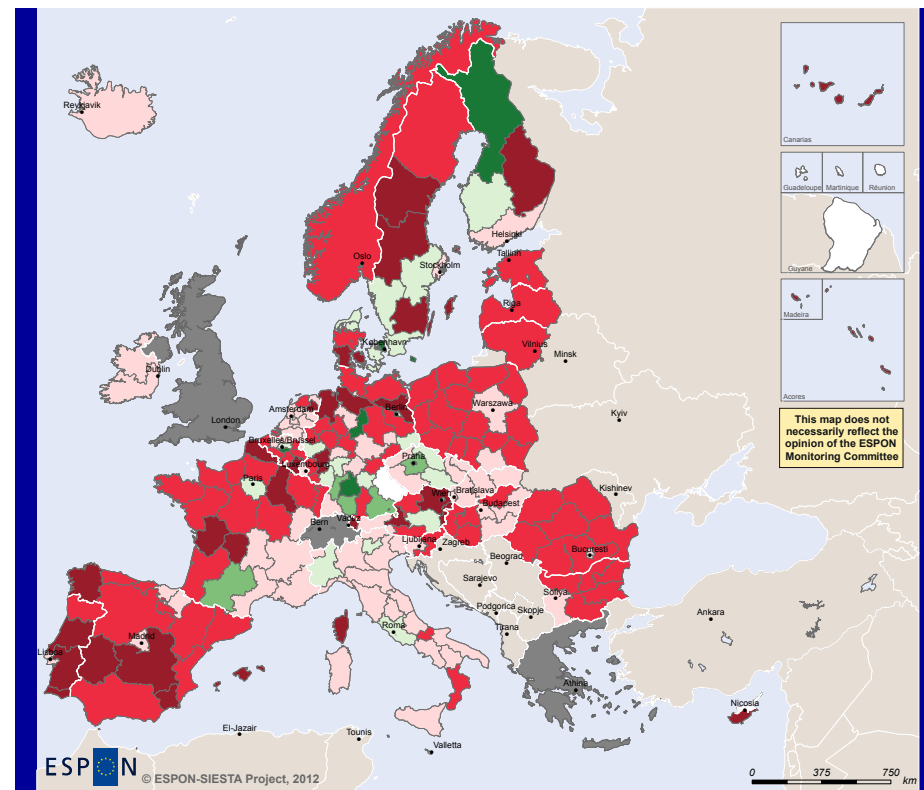
- 3% - 4%
- 4% - 5%
- > 5%

Notes:
 Research and experimental development (R&D) comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications.
 Data for RS were provided by the Statistical Office of the Republic of Serbia.
 Data for TR, CH and NO are all available for country level.
 Data for MK are shown for 2007 at country level.
 EL for 2005 and RS for 2010.

Targets on R&D investments unlikely to be met

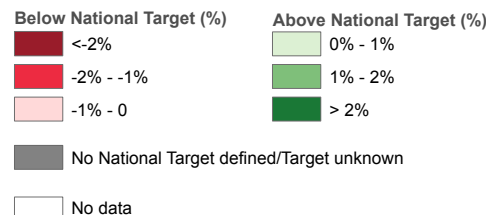
- National targets do not add up to European target.** According to overall estimations of the EU Commission the sum of current national targets is unlikely to be sufficient for achieving the EU target.
- Many national targets below EU target.** Some countries like Germany, Denmark and Norway have set a national target identical to the EU. Others have been ambitious by defining a target above 3% (Austria, Sweden, Finland and Iceland). They are clearly the leaders in this respect by aiming to perform beyond the required. However, many countries have set targets below the EU headline. The UK and Greece have not (yet) established national targets for R&D expenditure.
- Most regions highly distant to national targets.** Although many countries have targets below the Europe 2020 R&D target, most regions are far from achieving the national target. In several countries with R&D expenditures close to the national target, regional disparities are considerable (e.g. Denmark, Finland and Germany).
- Need for place-based strategies to boost R&D investments.** Regional policies focusing on increasing R&D investments should take account of the large diversity of European regions and the need for adopting place-based approaches. Regional *smart specialisation strategies* may provide means of contributing to the EU ambitions on smart growth in terms of R&D expenditure. For many regions, the 3% headline target may indicate more the necessary direction of development rather than a fixed target.

Map 2.2 Distance to the Europe 2020 national targets on R&D expenditure as percentage of GDP, 2009



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

Distance in percentage of GDP invested in R&D in relation to National Targets (%)

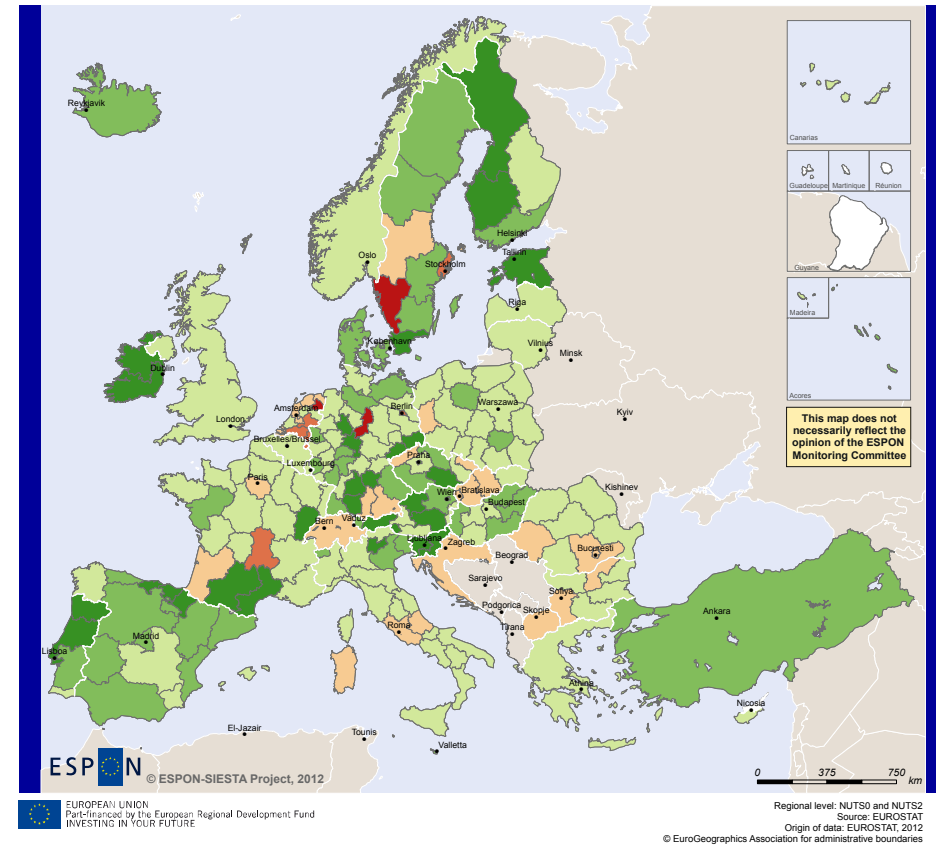


Notes:
 Research and experimental development (R&D) comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications.

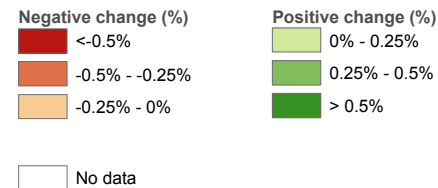
R&D expenditure increases slowly

- Slow increase of R&D expenditure.** The level of R&D expenditure for the entire EU has increased during the past decade. The pace at which this change is occurring is however comparatively low as compared to other countries and regions of the world (Table 2.1). The territorial pattern of this low increase is heterogeneous, but most regions have achieved little progress. Although innovation is not always mirrored in R&D expenditures, this development indicates that achieving a smart economy is a challenging task.
- Many regions with stable R&D expenditure shares.** 17% of the European regions have not made any progress or have even faced a reduction of the share of GDP spent on R&D. These regions are spread across the EU territory without any clear territorial pattern. Among them are a few regions with particularly high levels of R&D expenditure, for instance Braunschweig, Upper Bavaria and West Sweden.
- Examples of regions with increasing R&D expenditure shares of GDP.** Some regions which were especially well ranked in 2009 (Map 2.1) have increased their R&D expenditure level considerably in previous years. Among these regions are Pohjois-Suomi and Länsi-Suomi in Finland and Midi-Pyrénées in France. This is related to the fact that returns from R&D are likely to occur in regions with an already critical mass of R&D efforts. In Pohjois-Suomi this positive trend results mainly from collaboration activities of the University of Oulu with the private sector. Other examples are the Irish regions, which have considerably increased their R&D expenditures. In Cork and Limerick biotechnology/NBIC investments have considerably contributed to this development by drawing on the regional universities and institutes of technology and attracting foreign investments.

Map 2.3 R&D expenditure as percentage of GDP, 2003-2009



Percentage points difference (%), from 2003 to 2009.

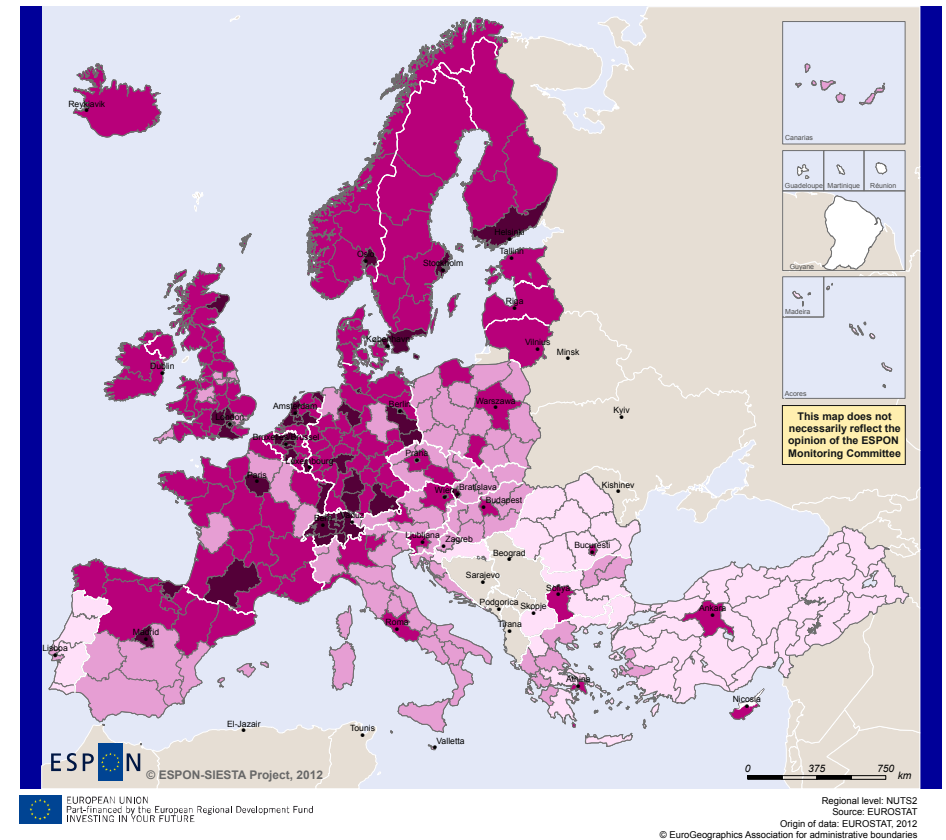


Notes:
 Research and experimental development (R&D) comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications.
 Change in CH is 2004 - 2008
 Change in AT is 2004 - 2009.
 Change in MK is 2003 - 2007.
 NO, IS, DK, BE, UK, TR, MK and EL are shown at country level.

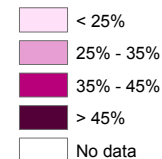
Mismatch between human resources and R&D expenditures

- Concentration in urban areas in North-West Europe.** There is a concentration of employment in science and technology in North-West Europe and in the Nordic countries (Map 2.4), which is correlated with the R&D expenditure pattern (Map 2.1). At the same time, human resources in science and technology (HRST) concentrate in urban areas in large cities such as London and also in second tier cities like Zürich and Utrecht. In general, most capital cities have comparatively high shares of HRST.
- In the South and East low human capital in R&D.** In most Eastern European, South-Eastern, and Mediterranean regions low levels of human resources in R&D coincide with low levels of GERD. In countries such as Bulgaria, Greece, Portugal, Romania or Turkey only the capital regions show higher shares of human resources in science and technology, though these levels are still lower than in the North-Western capital regions.
- High levels of R&D human resources and low levels of R&D expenditures.** Some European regions employ quite a high percentage of HRST, although the proportion of GDP spent in R&D is relatively low. Examples are Northern Spain, parts of Eastern France and the Baltic States.
- Further concentration in urban areas to meet Europe 2020 targets.** Encouraging and supporting concentrations of HRST in strategic places in Europe may support agglomeration economies in line with the smart growth priority of the Europe 2020 Strategy. Such an approach may create spill-over effects to neighbouring regions by nurturing cooperation and synergies between institutions of higher education and the private sector.

Map 2.4 Human resources in science and technology (HRST) as share of active population, 2010



HRST in relation to active population (%), 2010.



Notes:
CH for 2009.

Private sector R&D expenditure

Innovation is related to R&D. Although the precise link between innovation and R&D has been debated, there is consensus that R&D in many cases is a pre-condition for innovation. Innovation refers to new or highly improved products and processes, which may be achieved with or without R&D. Innovation without prior regional R&D activities may occur by exploiting regionally existing knowledge, or by using knowledge from outside the region.

As recognised in the 'Innovation Union' flagship initiative, innovation is difficult to measure at national or regional level. This flagship initiative suggests measuring innovation by means of R&D indicators, including private expenditures in R&D (BERD) (Map 2.5), since they may give at least some corresponding indication.

The 'Innovation Union' flagship initiative emphasises the need for closing the innovation divide between the most innovative and other European regions. It asks for a better tailoring of innovation policies to the relative strengths of individual regions.

Similar to the overall expenditure on R&D (Table 2.1), private R&D expenditure has increased less in Europe than in other countries and regions in the world (Table 2.2).

Table 2.2 Variation of Private Expenditure on R&D as % of GDP, 2001-2008

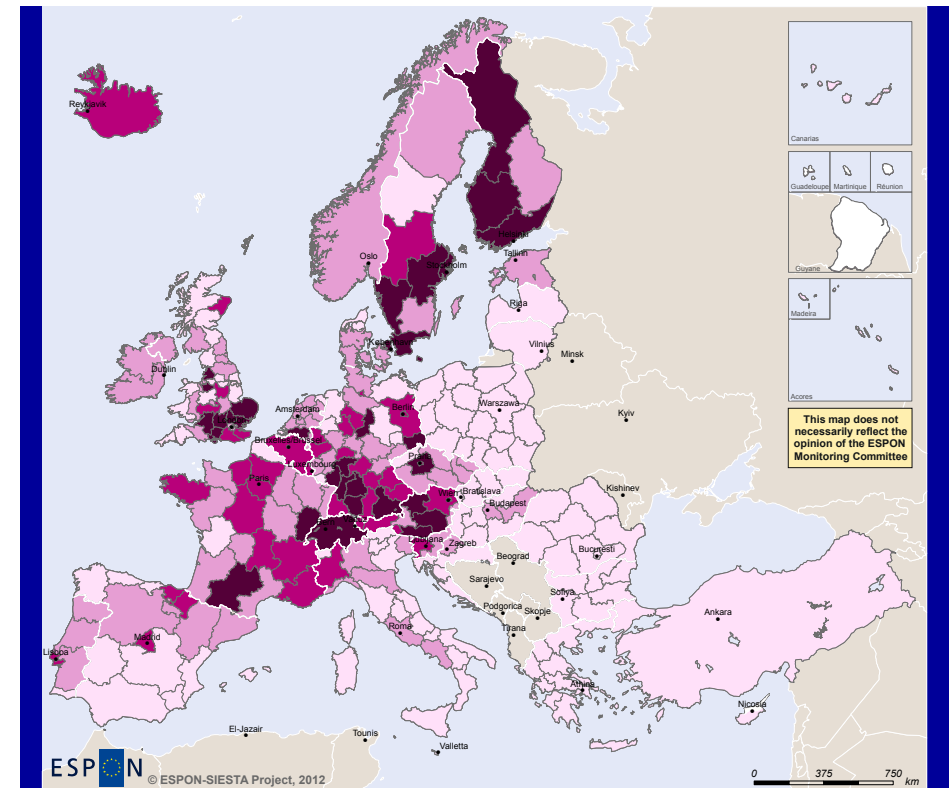
	Private expenditure in R&D as % of GDP (2008)	Change in private expenditure in R&D as % of GDP (2001-2008)
Japan	2.70	0.40
South Korea	2.53	0.65
United States	2.02	0.06
EU27	1.21	0.00
China (except Hong Kong)	1.08	0.51
Russia	0.65	-0.18

Source: Eurostat

2 - Smart Growth

- **Need to increase private R&D expenditures.** The EU as a whole needs to rapidly increase the proportion of private expenditure on R&D (BERD).
- **Private R&D expenditure mainly in Centre-North.** The “corridors” with particular high private expenditure on R&D as share of GDP are similar to those of overall R&D expenditure. They are located between Copenhagen (DK) and Pohjois-Suomi (FI), Midi-Pyrénées (FR) and Bavaria (DE) and most parts along the corridor from Austria to Southeast England.
- **Top regions in private R&D expenditure related to specialised industries and tertiary institutions.** Some of the most specialised regions in Germany, such as Stuttgart and Braunschweig, which are dominated by the automobile industry, show high levels of private investments in R&D. In South-East England the proximity to tertiary institutions such as the University of Cambridge indicates the importance of universities for creating spin-off effects and thereby enhancing BERD.
- **Regions with low private R&D expenditure concentrated in East and South.** Most regions in Eastern and Southern Europe, in particular in Greece, Turkey, Southern Italy and the South and North-West of Spain have low private R&D expenditures.
- **Relation between overall and private expenditure on R&D.** The territorial pattern of overall (combining both private and public) R&D expenditure (Map 2.1) is strongly related to private R&D expenditure (Map 2.5). This indicates that for the most innovative regions, private R&D activities are a key driver. However, there are also regions where R&D expenditure of the public sector and institutions of higher education account for most expenditure on R&D. This is e.g. the case in some national capitals (Berlin, Wien or Madrid) and some regions in Germany, Sweden, the Netherlands and Southern France.

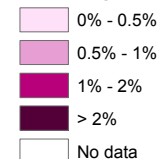
Map 2.5 Private expenditure on R&D as percentage of GDP, 2007 to 2009



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

Regional level: NUTS0 and NUTS2
Sources: EUROSTAT
Origin of data: EUROSTAT, 2012
© EuroGeographics Association for administrative boundaries

Percentage of regional GDP (%), combined data*.



Notes:
*EL for 2007; BG for 2008.
Data for NO, BE, TR and CH are all available for country level.

2.2 The Territorial Dimension of Education

The Europe 2020 Strategy states that “A quarter of all pupils have poor reading competences, one in seven young people leave education and training too early. Around 50% reach medium qualifications level but this often fails to match labour market needs. Less than one person in three aged 25-34 has a university degree compared to 40% in the US and over 50% in Japan.” In conclusion, the EU education system as a whole is faced with major challenges that have to be managed.

In fact, education receives particular attention in the Europe 2020 Strategy. It states that the transition towards a more knowledge-intensive economy will only be possible by increasing the level of education. It has been recognised that human capital is critical for growth.

In this section of the Atlas, education is considered from different perspectives, ranging from lower secondary to tertiary levels.

2.2.1 Regional patterns of Basic Educational Attainment

The European headline target set for basic educational attainment aims at reducing the share of early school leavers (measured as percentage of the population aged 18 to 24 without a degree of higher secondary education and without being in training) to less than 10%. This basic level of education is required, so that all citizens become able to participate fully in society and economy. It shall furthermore prevent poverty and improve employability.

Compulsory education varies from country to country and there is no harmonised concept of compulsory education. In most European countries it however, refers to lower secondary education.

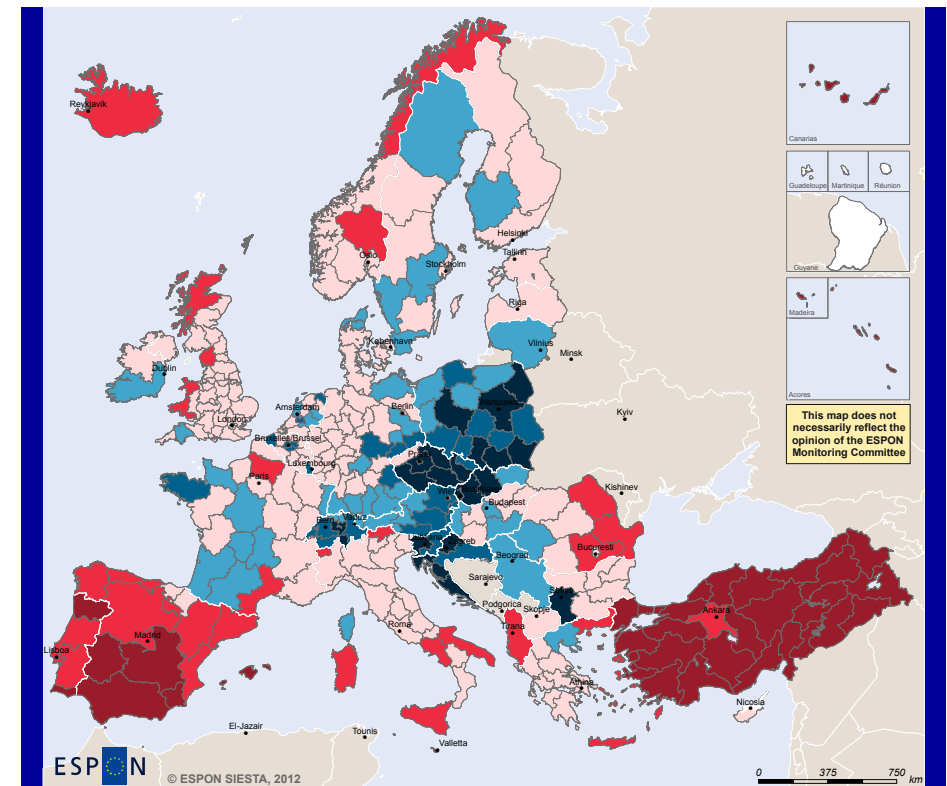
It is worthwhile mentioning that improving basic educational attainment was already targeted in the Lisbon Strategy in 2000. The fact that it is still an objective a decade later indicates that this is a challenging target for Europe.

The regional dimension of basic educational achievement in Europe is illustrated by three aspects: early school leavers ([Map 2.6](#)), regional distance to national targets ([Map 2.7](#)) and change in early school leaving 2000-2010 ([Map 2.8](#)). A fourth aspect is added by picturing education in urban areas based on Urban Audit data ([Map 2.9](#)).

Early school leavers, a persisting challenge for many European regions

- Low levels of early school leavers in the East.** In general, Eastern European countries, in particular regions located between Croatia and Poland show good performances on this indicator. Education policy approaches in these countries may be used for improving the situation in other countries.
- Portugal, Spain and Turkey face particular challenges.** Regions in Portugal, Spain and Turkey experience major challenges regarding early school leaving as all regions in these countries are above the EU target. These regions will face difficulties to realise the shift towards a smart economy. Taking into account that this is a structural indicator, which changes very slowly, policy actions seem to be required in many regions, particularly in those with especially high early school drop-out rates.
- Also some peripheral Northern regions at risk.** Some Northern Periphery regions, from Wales and Scotland to Iceland and Northern Norway have also high levels of early school leavers. In order to overcome the specific challenge, these countries have taken first approaches for better combining educational, social and employment services.
- E-learning and unemployment as opportunity for development.** E-learning may contribute to improving the situation of some European regions, particularly of rural and outermost regions. These regions experiencing high unemployment levels and high drop-out rates at the same time. Especially in Southern Europe, an improvement of employability of youth could be obtained through compulsory education.

Map 2.6 Early school leavers in regions from education and training as percentage of population aged 18 to 24 (drop-out rate), 2010



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

Regional level: NUTS2 and NUTS0
Source: EUROSTAT, MS NRP's, DG REGIO, Seventh Report
on Economic, Social and Territorial Cohesion
Origin of data: EUROSTAT, 2011
© EuroGeographics Association for administrative boundaries

Percentage of population aged 18-24 (%) 2010.
EU 2020 Target = 10%

Below EU 2020 Target	Above EU 2020 Target
< 5%	10% - 20%
5% - 7.5%	20% - 30%
7.5% - 10%	> 30%
No data	

Notes:
Early leavers from education and training refers to persons aged 18 to 24 fulfilling the following two conditions: first, the highest level of education training attained is ISCED 0, 1, 2 or 3c short; second respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation to education and training".

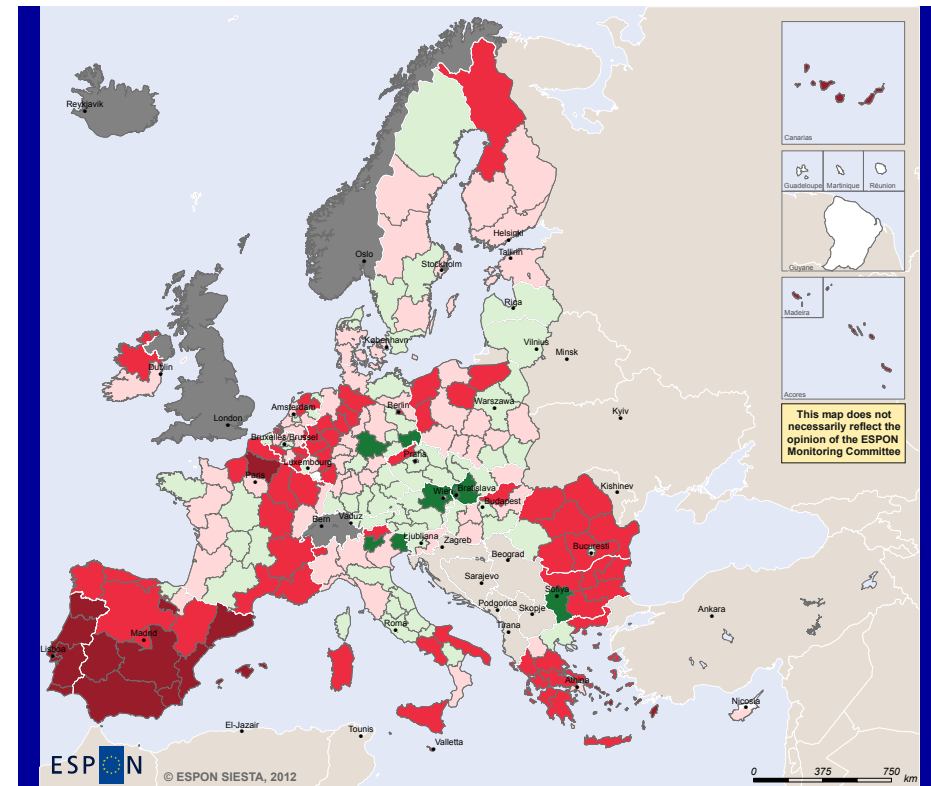
Data for RS, AL, and MK are shown at country level.
*Data for AL are for 2009

Targets on early school leavers still distant

Different national ambitions. The Europe 2020 Strategy aims at reducing the share of early school leavers to below 10% by 2020. Some national targets are however distinctively higher than the EU target (Malta - 29%; Italy - 15%; Spain - 15%; Latvia - 13.4%), while others are identical with the European target (Cyprus, Hungary or Portugal). Most of European countries are however more ambitious than the EU headline target, even targeting rates below 5.5% (Czech Republic, Poland or Slovenia). In this regard, the map (Map 2.7) reflects the different national ambitions, which vary considerably across Europe.

- Strong efforts in South East and South West regions needed to meet European targets.** Some regions, especially in the Iberian Peninsula and in South-East Europe, need to take particular efforts for improving the qualification of their human capital.
- Large regional differences in some countries with ambitious targets.** The large distances to the national targets of some regions in Eastern France, Northern Germany or Northern Finland are the result of ambitious national targets and/or considerable regional disparities within the country. These regions, however, are not scoring (highly) above European average. Poland has set a national target of 4.5%. Although scoring very well at EU level (Map 2.6), the national target encourages Polish regions to perform even better (Map 2.7). This approach can be seen as an inspiration for other countries and regions in Europe to strengthen their level of ambition.

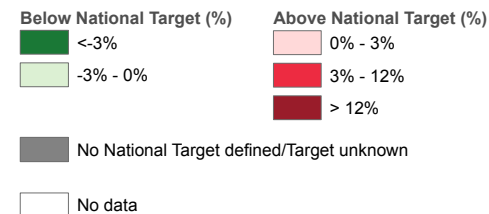
Map 2.7 Distance to the Europe 2020 national targets of regional drop-out rate, 2010



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

Regional level: NUTS2 and NUTS0
Source: EUROSTAT, MS NFRs, DG REGIO, Seventh Report on Economic, Social and Territorial Cohesion
Origin of data: EUROSTAT, 2011
© EuroGeographics Association for administrative boundaries

Distance in percentage of early leavers in relation to National Targets (%)

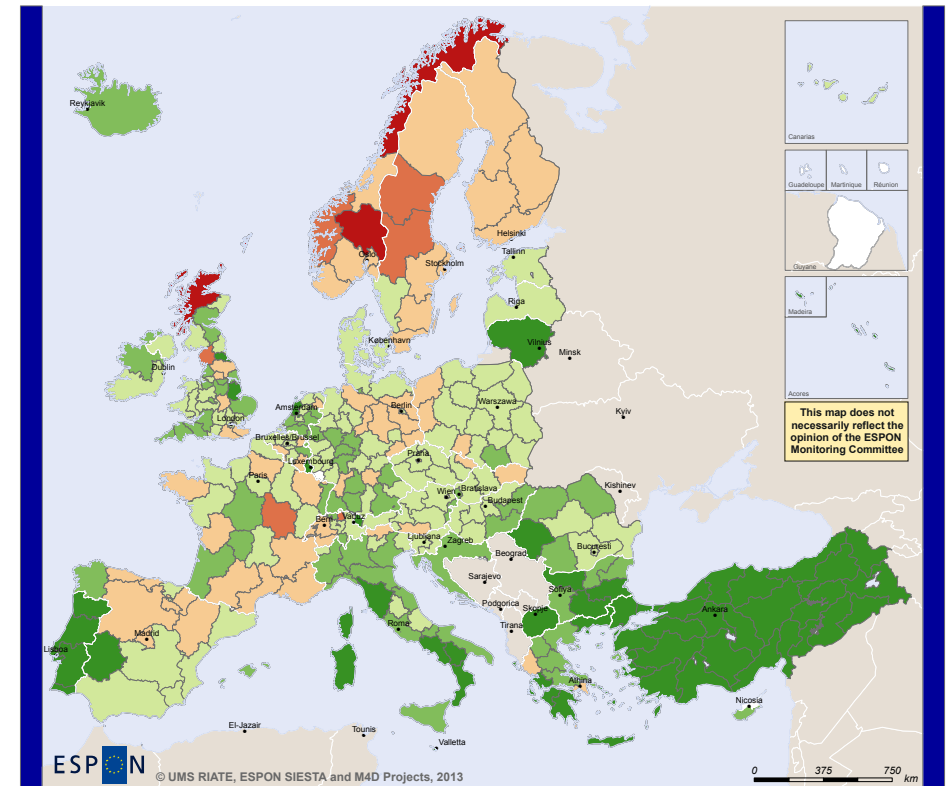


Notes:
Early leavers from education and training refers to persons aged 18 to 24 fulfilling the following two conditions: first, the highest level of education training attained is ISCED 0, 1, 2 or 3c short, second respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation to education and training".

Positive trend of school drop-out rates

- Slowly declining shares of early school leavers.** The situation in the EU is generally improving. The share of early school leavers declined from 17.6% in 2000 to 14.1% in 2010. However this positive trend, Europe as a whole will still face some challenges in reaching the target of 10% set by the Europe 2020 Strategy.
- Improvements in Southern peripheral regions with high levels of early school leavers.** Although the geographic pattern is mixed and diverse, some regions with high early school leaving rates have nevertheless experienced a positive change during the last decade. Examples are Portugal, Turkey, Romania, Bulgaria, Greece and Italy. This trend needs to be strengthened for meeting the set target in some peripheral Southern European regions.
- Negative evolution in some economically successful regions.** In Norway, Sweden, and Finland, as well as in some regions of the UK, France, Spain, Poland and Germany, the distance to the EU target has been increasing. This may pose additional challenges for meeting the national targets and asks for regional and/or national strategies to overcome this trend.
- Strong position and positive evolution in Eastern Europe.** Most Eastern European regions are well positioned with regard to early school leavers in the European context in 2010 (Map 2.6), and they have either improved their drop-out rates over the past decade or have experienced hardly any change in this context (Map 2.8). This may strengthen these regions and may raise new development potentials for them.

Map 2.8 Change in regional drop-out rate, 2000-2010



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

© UMS RIATE, ESPON SIESTA and M4D Projects, 2013

Regional level: NUTS2
Source: SIESTA, 2012
Origin of data: EUROSTAT, 2013
© EuroGeographics Association for administrative boundaries

Percentage points difference (annual change, %), from 2000 to 2010.

Improving situation

- 3,10 - -0,8
- 0,8 - -0,4
- 0,4 - 0

No data

Deteriorating situation

- 0 - 0,4
- 0,4 - 0,8
- 0,8 - 1,26

Notes:

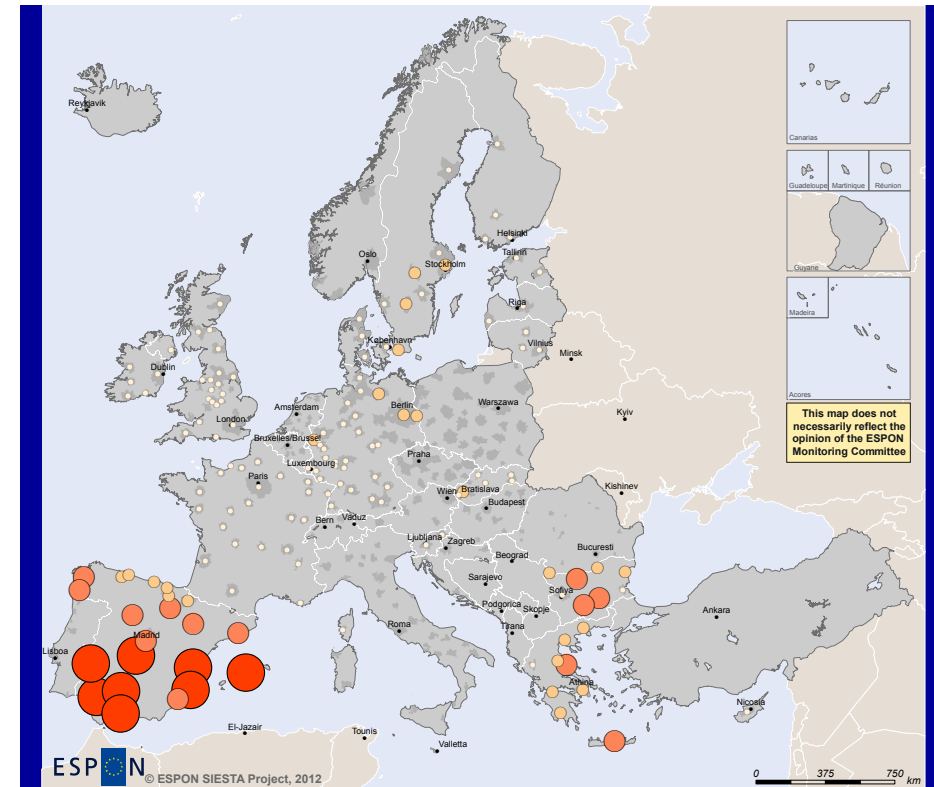
EU27 average: -0,35%
Early leavers from education and training refers to persons aged 18 to 24 fulfilling the following two conditions: first, the highest level of education training attained is ISCED 0, 1, 2 or 3c short, second respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists of the total population of the same age group, excluding no answers to the questions "highest level of education or training attained" and "participation to education and training".

Data for CH, DE30 and SI are shown for 2001 - 2010.
Data for HR are shown for 2002 - 2010 at country level.
Data for BG are shown for 2003 - 2010.
DK is shown at country level.
DEB is shown at NUTS1 level.
DE4 is shown for 2006-2007 at NUTS1 level.
TR and MK are shown for 2006-2011 at NUTS1 level.

Few hotspots of early school leavers in urban areas

- Urban areas better off.** Comparing the drop-out rates of larger urban zones (LUZ) for the years 2004 to 2008 with the rates of the corresponding regions, urban areas perform better than the region in which they are located (Map 2.6). Examples are Slovenian and Irish cities. All of them have lower drop-out rates than the region in which they are located. This situation calls for special attention from regional policymakers in rural areas.
- Best performers in Finland and Ireland.** The best performing cities (covered by the Urban Audit) are in Finland and Ireland (Map 2.9). The five Finnish cities have drop-out rates below 0.5% and the drop-out rates of the five Irish cities vary between 0.6%-1%.
- Spanish cities worse off than their regions.** In contrast to the general European pattern, in Spain some cities have higher drop-out rates than their regions. This holds for València and Alicante, scoring 37.3% and 36.9% respectively, while the Valencian Region scores 29.2%. Immigration might be an explanatory factor in these cases: with not only lower educational profiles, but also low-skilled job opportunities offered by the pre-crisis economy in these cities (especially construction and tourism) and luring students from schools.
- Strong rural-urban differences in Ireland.** Ireland is an example of the urban-rural divide with some regions showing early school leaving rates ten times higher than their respective cities. These top performing cities are also important European centres for nano, bio, information technology and cognitive sciences (NBIC). They are important locations for offering employment in high-tech and knowledge-intensive economic sectors. This suggests that there is a link between attitudes and behaviour towards higher secondary education and perceived future employment prospects. In short, smart growth has to be promoted also in rural areas for improving attitudes towards higher educational attainment.

Map 2.9 Drop-out rate in Larger Urban Zones (LUZ), 2004 to 2008

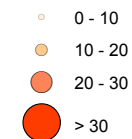


ESPON
© ESPON SIESTA Project, 2012

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

Regional level: LUZ
Source: Urban Audit
Origin of data: EUROSTAT, Urban Audit, 2012
© EuroGeographics Association for administrative boundaries

Early school leavers as share of people in education age (%), combined years*



Notes:
*UK, SE, RO, LV, LT, FI, ES, DE, BG 2008.
FR 2006.
SK, LU, IE, GR, DK, CY 2004.

Urban Audit defines Larger Urban Zone (Label "LUZ") as an approximation of the functional urban zone centred around the town/ city.

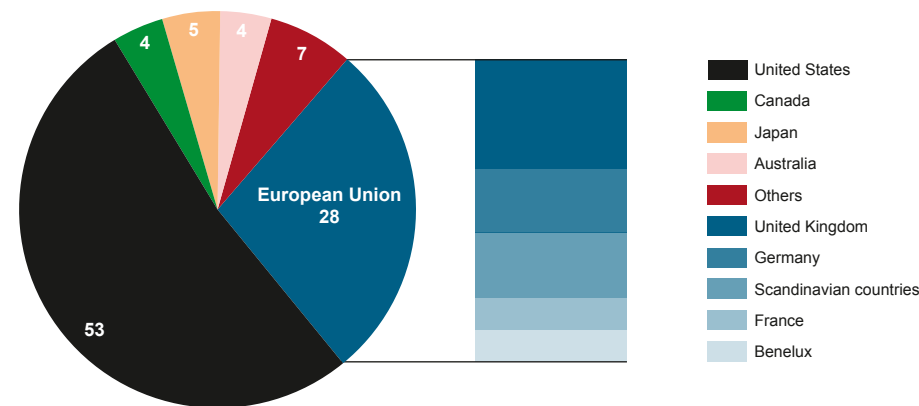
2.2.2 Territorial challenges concerning Tertiary Education

The Europe 2020 documentation indicates a link between high levels of higher education attainment and labour productivity. There is a positive correlation at regional level between a high share of population with tertiary education and high scores of human resources dedicated to science and technology, the ICT sector, broadband penetration and advanced services development.

Europe 2020 stresses the under-performance of the EU universities as an issue particularly constraining smart growth. The Shanghai index is an indicator which shows the challenging situation of the EU tertiary education institutions. EU universities score generally lower than US universities, and some European countries, such as France, score worse than Canada or Australia (Figures 2.1 and 2.2). The EU position appears somewhat better when the lower quintiles of the top 500 universities are compared. Although university performance is very important for regional development, it does not guarantee *per se* that the talented graduated youths remain in the region where they have been educated.

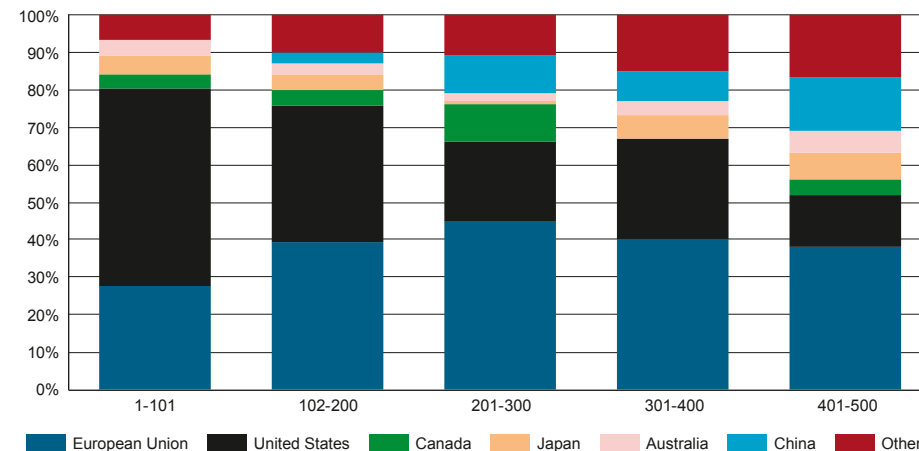
The Europe 2020 Strategy expresses concern about the low percentage of people having completed tertiary education. In the US this rate is above 40% and in Japan it is above 50. Based on the fact that it has been estimated that by 2020 35% of all jobs will require high-levels of qualification, the EU has set the 40% headline target for the population aged 30-34 years. In 2010, the corresponding average rate for the EU was 33.6%. This indicates that the overall target is rather ambitious. However, this average needs to be understood in the light of a complex territorial picture with an unbalanced regional distribution of population with a tertiary education (Maps 2.10, 2.11 and 2.12).

Figure 2.1 Shanghai index of the locations of the 100 top universities of the world, 2011



Note: Scandinavian countries = Sweden, Denmark and Finland
Source: ARWU and ESPON SIESTA

Figure 2.2 Shanghai index of the 500 top universities of the world per quintiles and countries or groups of countries, 2011

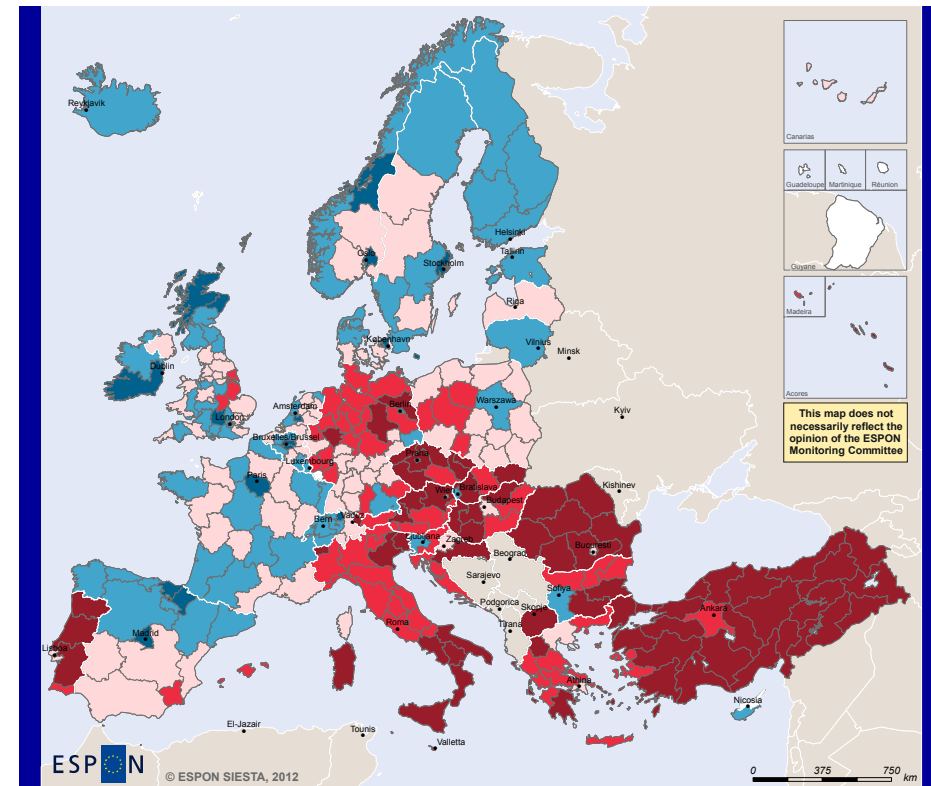


Source: ARWU and ESPON SIESTA

High territorial diversity of young population with tertiary education

- About ¼ of all regions reached this headline target already.** In 2010, the share of population aged 30 to 34 with tertiary education has been above 40% in 86 NUTS2 regions (out of 311). Most of these regions are located in Western Europe, but in a scattered pattern (Map 2.10).
- London outstanding in the European context.** Inner London scores the highest with 66%. The outstanding position of London can be explained by the large number of graduates from the numerous universities of the city in combination with the general attractiveness of this capital for highly talented graduates.
- Low performance in economically successful countries in Central Europe.** Well performing economies such as Germany or Austria, score surprisingly low. In most of their regions the share of the 30 to 34 year old population with tertiary education is far below the EU target, partially only reaching about 20%. In the case of Germany and Austria this is linked to their education systems emphasising apprenticeships.
- Crucial relations between universities, regional businesses and administrations.** University graduates tend to stay in the region where they have studied if there are professional opportunities. This is mainly the case in capital regions (Copenhagen, Oslo, Stockholm, Brussels, Paris, Madrid, etc.). These cities attract additional qualified youths from elsewhere. But also other regions may score well, if the link between regional universities and the private sector provides adequate job opportunities which are crucial for regional development and growth. Examples are the Basque Country, Navarra, Utrecht and Scotland.
- Low performance in South-East and Portugal.** The rates of tertiary educational attainment are generally low in South-Eastern Europe and Portugal. Universities can provide different functions enhancing regional development. Establishing successful partnerships between universities and regional businesses and authorities is particularly important for these regions.

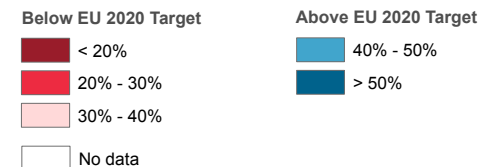
Map 2.10 Population aged 30-34 with tertiary education, 2010



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

Regional level: NUTS2
Source: Seventh Report on Economic, Social and Territorial Cohesion
Origin of data: EUROSTAT, 2011
© EuroGeographics Association for administrative boundaries

Percentage of total population aged 30-34 (%) 2010.
EU 2020 Target = 40%

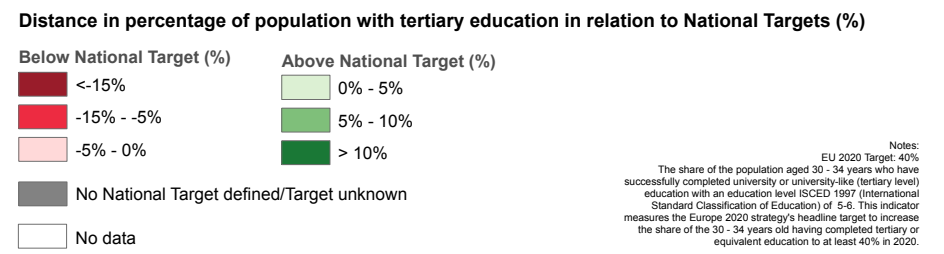
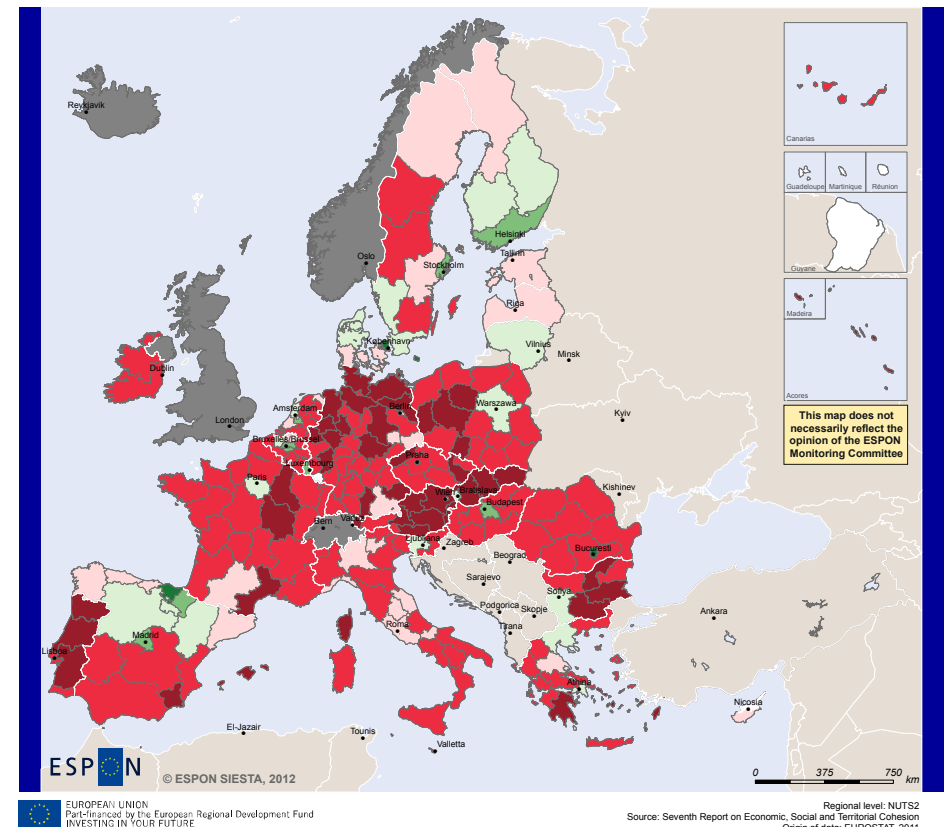


Notes:
The share of the population aged 30 - 34 years who have successfully completed university or university-like (tertiary level) education with an education level ISCED 1997 (International Standard Classification of Education) of 5-6. This indicator measures the Europe 2020 strategy's headline target to increase the share of the 30 - 34 years old having completed tertiary or equivalent education to at least 40% in 2020.

Major challenges in meeting the targets for tertiary education by 2020

- Efforts needed almost everywhere.** National targets for the share of the 30 to 34 year old population with tertiary education vary from 26.7% in Romania to 60% in Ireland. Typically, countries already reaching the EU target have set higher national targets, while countries with much lower current rates have set targets below the 40% threshold. Nevertheless, almost all European regions have to undertake substantial efforts to cope with the national targets.
- EU headline target unlikely to be achieved.** According to the Commission, the current national commitments expressed in the National Reform Programmes are not sufficient for achieving the overall EU target. Summing up national targets would only result in 37.5% by 2020.
- Regional development paths difficult to break through.** The ability of territories to reach European or national targets depends on highly varying historical, legal and institutional contexts. For instance, existence and levels of scholarships and fees for accessing higher education vary strongly between countries and regions, thereby affecting the propensity to study.
- Regional differences particularly apparent in decentralised countries.** Beyond the national targets, the regional scale matters especially in countries with highly decentralised powers for tertiary education. The Basque Country is a clear example in this respect, being 16% above the Spanish target. As for other targets with decentralised powers, this constrains the scope of action at national level for reaching the national target and may emphasize the need for multilevel governance processes.
- Definition issues in Germany and Austria.** The mapped territorial picture (Map 2.11) is partially inconsistent, since national target definitions are not always consistent with the EU target. In some countries, such as Germany and Austria, post-secondary and non-tertiary levels of education have been included in the target definition.

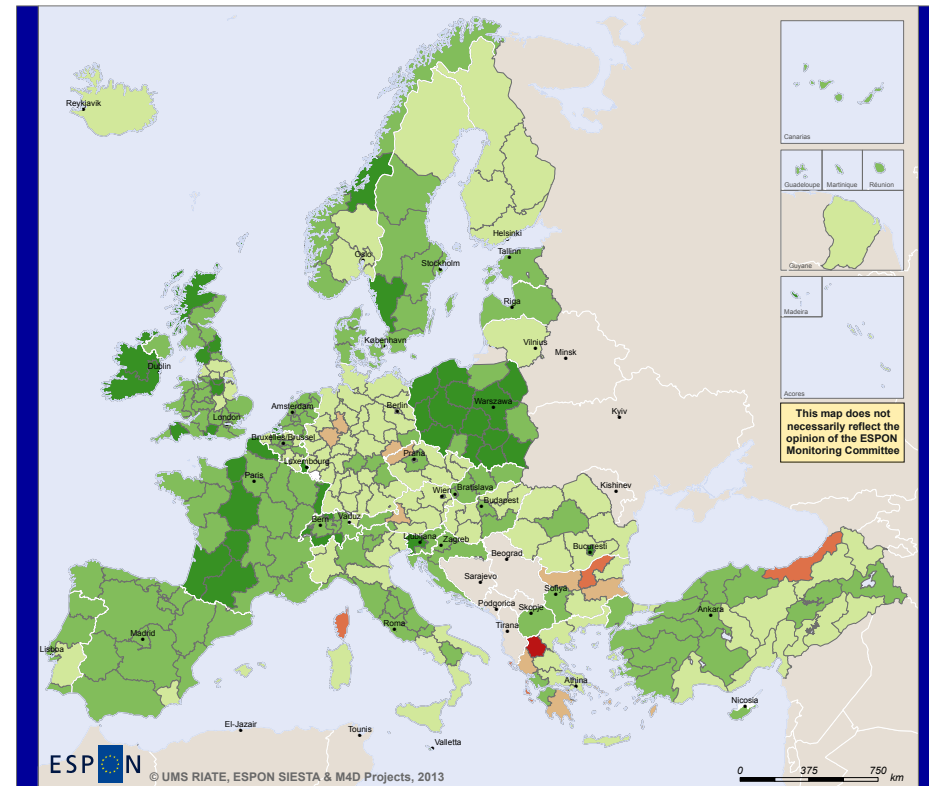
Map 2.11 Distance to the Europe 2020 national targets of population aged 30-34 with tertiary education, 2010



Positive trend in young population with tertiary education

- Overall increasing share of young people with tertiary education.** In the EU, tertiary education attainment by people aged 30-34 years has increased during the last decade: from 22.4% in 2000 to 33.5% in 2010. Despite the fact not all national targets seem to be coherent with the EU target but if a similar increase occurs during the next decade, it may be possible to achieve the EU target by 2020.
- Highest increases in Poland and Ireland and other regions in a few other countries.** In some regions in Ireland, Poland, France, the UK etc., the trend has been positive or very positive. A particularly positive case is Poland, where the rate has increased by more than 20% in four regions. The Mazowieckie, in which Warsaw is located, has registered an increase of 30% between 2000 and 2010. This outstanding example results from the high attractiveness of Warsaw pulling talents from other Polish regions.
- Few regions with decreasing shares.** Five of the regions decreasing the share of tertiary educated population are located in Greece (Map 2.12). Especially in Dytiki Makedonia a decrease of young highly qualified people has been registered, which may be mainly related to out-migration flows. Both, the regions with decreasing shares and regions without signs of progress are in a challenging position that compromises the ability to meet the smart growth objective of the Europe 2020 Strategy and should have special attention from policymakers.

Map 2.12 Evolution of high qualified population (30-34 years), 2000-2010



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

Regional level: NUTS2
Source: EUROSTAT, SIESTA Project
Origin of data: EUROSTAT, & INSEE, 2013
© EuroGeographics Association for administrative boundaries

Percentage points difference (annual change, %), from 2000 to 2010.

Negative change (%)

-0,64 - -0,5
-0,5 - -0,25
-0,25 - 0

No data

Positive change (%)

0 - 0,9
0,9 - 1,8
1,8 - 3,03

Notes:
EU27 average: 1,11%
DK and HR are shown at country level.
DEB, DE4 and TR are shown at NUTS1 level.
Data for CH, DE30 and SI are shown for the period 2001 - 2010.
Data for DEB is shown for the period 2002-2011.
Data for DE4 is shown for the period 2004-2011.
Data for DEE is shown for the period 2007-2011.
Data for FR9 is shown for the period 2006-2009.

2.3 Persisting Territorial Divide of the Digital Society

The digital agenda refers to the promotion of information and communication technologies (ICT) in general. It focuses in particular on the internet, aiming at developing high-speed and high-quality connections (broadband). These aspects are assessed as weaknesses of the EU in comparison to other countries or regions in the world with a stronger ICT sector.

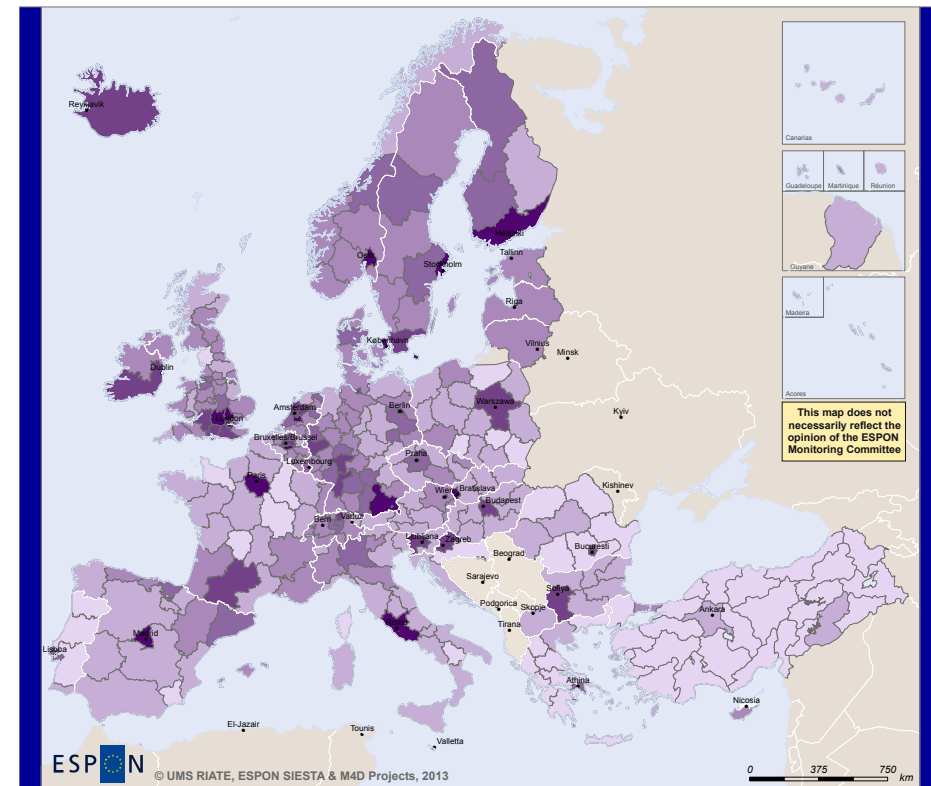
The digital society is perceived as being crucial for European competitiveness and thus needs to be strengthened. The territorial dimension of the digital society is specifically discussed in the European 2020 Strategy when referring to rural and remote regions and some EU countries which are lagging behind in terms of coverage, speed or utilisation of digital networks. The territorial divide regarding the digital society has been previously identified by ESPON evidence. The following territorial observations show how these regional differences are still in force.

These observations refer to different aspects of the digital agenda and digital society. Since the goals of the digital agenda are not translated into national targets there is no comparison between territorial structures and targets. The different aspects covered are people working in the ICT sector ([Map 2.13](#)), the broadband penetration rate ([Map 2.14](#)), the use of e-commerce ([Map 2.15](#)) and the computer use ([Map 2.16](#)).

ICT employment concentrates in urban areas

- Urban-rural differences in ICT employment.** The distribution of ICT employment is highly uneven. Especially capital cities and their surrounding regions show high shares (Map 2.13). ICT specialists are mainly concentrated in innovative regions with economies of agglomeration. Other regions, mostly rural, and particularly in Eastern and Southern Europe are lagging behind. In general, the urban-rural divide is evident and constitutes a territorial challenge.
- Initiatives promoting ICT in rural areas.** For the promotion of ICT technologies in rural, remote and peripheral areas initiatives have been developed in different countries. Interesting examples are Ireland (the so-called Ireland's Information Society Commission), Finland (Learning Upper Karelia) or Scotland (the Highlands and Islands Enterprise created by the Scottish Office). These cases followed the clear strategic objective of creating employment in the ICT sector.
- Low shares in Portugal, Greece, Romania and Turkey.** Extra efforts are needed in few Southern and South-Eastern European countries to promote ICT technologies. Advancing ICT in these regions may contribute to overcome their physical distance to the more centrally located regions and may help to develop new employment niches.

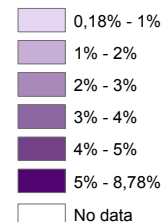
Map 2.13 People working in the ICT sector as percentage of total employment, 2011



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

Regional level: NUTS2
Source: ESPON Database, ESPON M4D, UMS RIATE
Origin of data: EUROSTAT, NSIs of Liechtenstein and Macedonia, 2013
© EuroGeographics Association for administrative boundaries

Share of employed persons in the information and communication sector, 2011

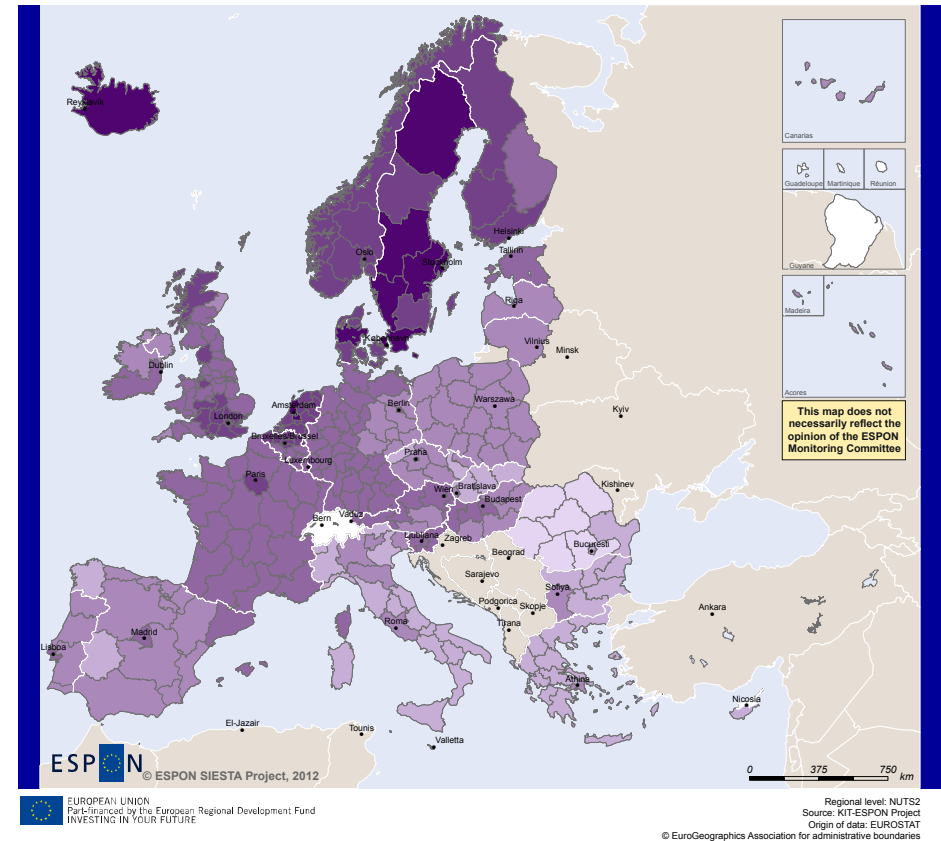


Notes:
ICT sector is assimilated to NACE Rev. 2 code J. Information and communication services.
EU27 average = 2,87%

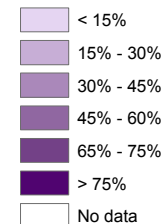
North-South divide in broadband penetration

- Nordic Countries lead in broadband penetration.** Territorial differences are considerable in Europe. In some Swedish regions and Iceland broadband penetration is the highest with more than ¾ of the households having broadband access. It is the lowest in Romanian regions, where less than 15% of households have such access. This spatial pattern results in a gap between the Nordic and North-Western Countries and the rest of Europe. This gap implicitly shows that national frameworks are critical for ensuring and stimulating penetration and access to broadband (Map 2.14).
- South-East scores particularly low.** In Bulgaria, Romania and Greece less than half the households have broadband internet access. This heavily restricts internet use in these countries.
- Regional disparities mainly in countries with low broadband penetration.** In most countries with high levels of broadband penetration, both rural and urban areas are well covered by broadband infrastructure. In countries with generally lower broadband penetration, disparities between regions are often larger (for instance, in Spain or Italy). This may be related to market-dependencies and requires a place-based policy approach.
- More efforts needed to reach EU headline target.** The digital agenda aims at covering the entire EU with broadband by 2013 and with high-speed broadband (above 30 Mbps) by 2020. These targets are far from being easily achieved (Map 2.14) but may provide overall development opportunities. More efforts need to be made to ensure the dispersion and take-up of broadband at increasing access speed, through both fixed and wireless technologies. In addition, investments in open and competitive internet networks need to be facilitated, since they are the backbones of the digital society and knowledge based economy.

Map 2.14 Broadband penetration rate as percentage of total households, 2006 to 2009



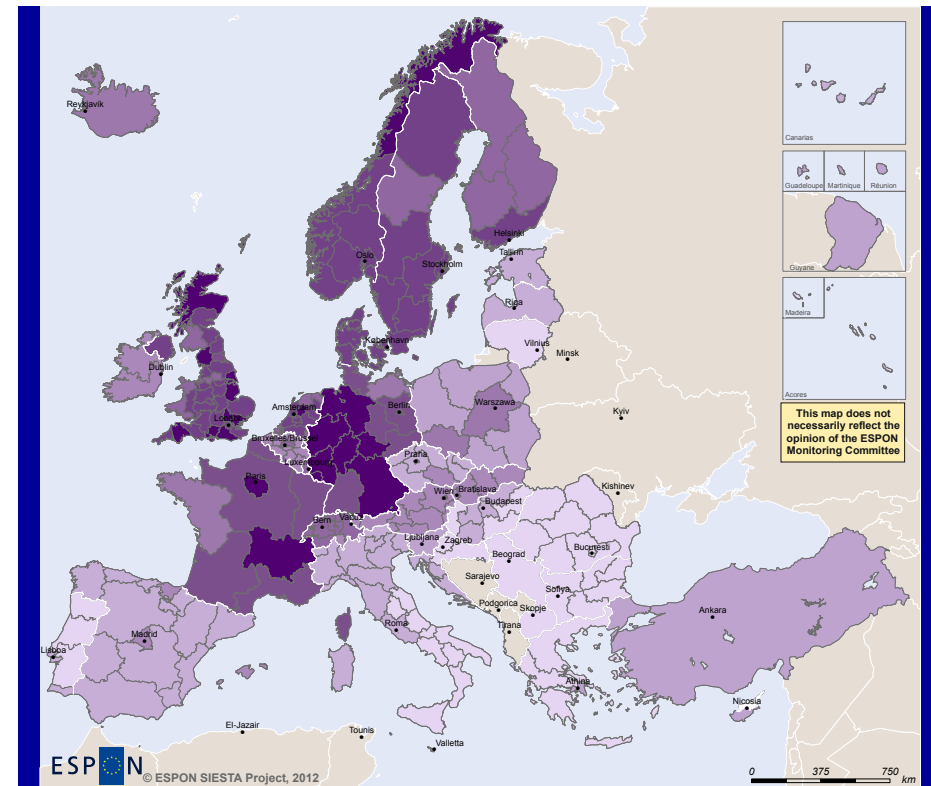
% of households, 2006 - 2009.



Northern and Central Europe are e-commerce hotspots

- Mainly national differences with regard to online shopping.** Regional differences in e-commerce mainly between countries, and to a lesser degree within countries. Thus, the national context is dominant, both in terms of legislation (for instance regarding intellectual property, security or privacy rules) and distinctive patterns of behaviour (for example in terms of peoples' confidence in electronic communication security).
- Low figures for Mediterranean and South-East.** The share of population using e-commerce is low in the regions of the Mediterranean countries (Greece, Spain, Portugal, Italy, etc.) and in Eastern Europe, especially in the South-East. Countries like Bulgaria, Romania, Serbia or F.Y.R.O.M. score particularly low (Map 2.15). In these cases hardly any internal regional disparities can be observed.
- UK leading e-commerce market.** The UK and Germany are the leading e-commerce markets in terms of the amount of money spent per capita via the internet. Legislative and consumer behaviour seem to be particularly beneficial for using e-commerce in the UK.
- E-commerce provides potential for regional development.** Potentially, e-commerce may contribute to a reorganisation of people's daily movements and commuting. It helps to virtually minimise the physical distances between job, recreation, consumption and living. This may be beneficial for polycentric territorial development. However, e-commerce might lead to some type of shops becoming rarer in the city.

Map 2.15 Individuals aged 16-74 ordering goods or services over the internet for private use, 2010



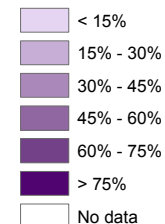
ESPON
© ESPON SIESTA Project, 2012

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

Regional level: NUTS2, NUTS1 and NUTS0
Sources: Eurostat

Origin of data: EUROSTAT, 2012
© EuroGeographics Association for administrative boundaries

% of individuals aged 16 to 74, 2010.



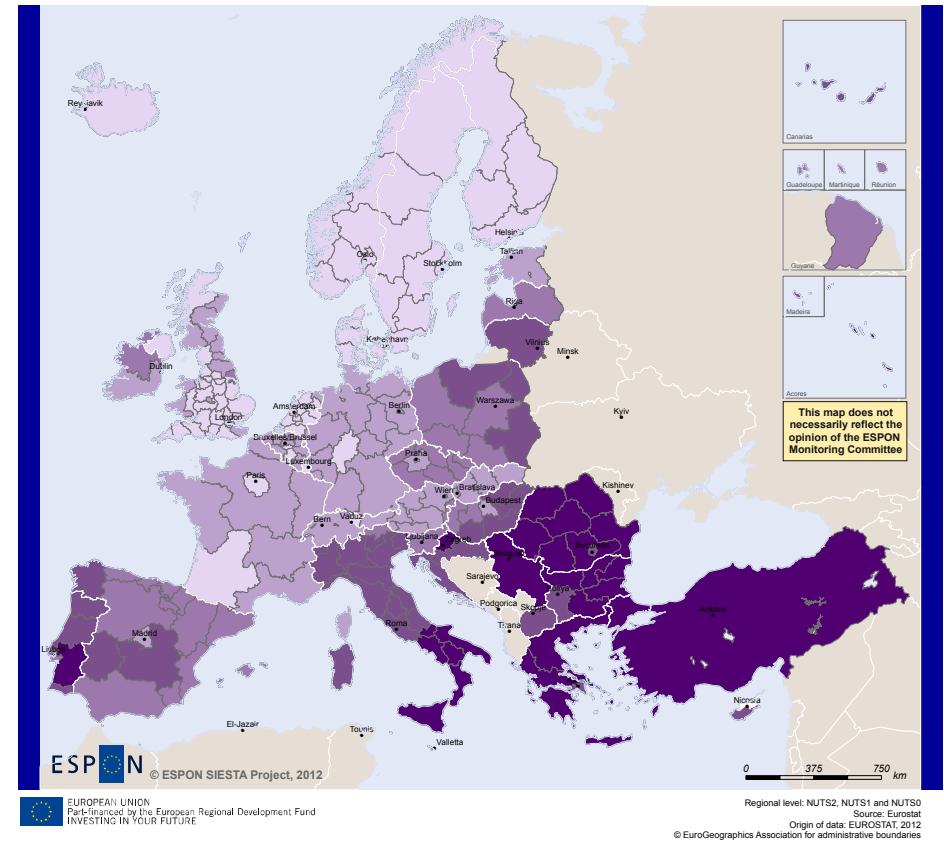
Notes:
DE, FR, EL, RS and PL are shown at NUTS1 level.
TR is shown at country level and data for this country were provided by Turkstat.
Data for CH was provided by Swiss Statistics web site:
<http://www.bfs.admin.ch/bfs/portal/en/index.html>

Data for BH11, BG12, BG13, BG21, BG22, BG23 and FI2 are not available for 2010. This regions are shown for 2007. TR data corresponds to 2011. UAE1 data are not available for 2010 and are shown for 2009.

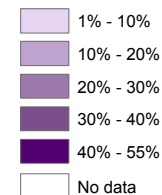
In some regions half of the population never used a computer

- Nordic population uses computers the most.** Computer use is widely spread in Northern Europe, especially in the Nordic Countries. In some Swedish and Norwegian regions less than 5% of the individuals aging 16 to 74 never have used a computer.
- South-Eastern Europe has the highest computer illiteracy.** The use of computers is not widespread in South-Eastern countries, Southern Italy and Alentejo in Portugal. In most of these regions more than half the population have never used a computer. Achieving the policy targets of the digital society will be particularly challenging in these regions, since computer literacy is a precondition for many other related targets. Furthermore economic development is hampered and social exclusion is likely to remain without widespread computer usage.
- More than just computers.** Digital literacy does however not only depend on computer literacy, though computers will remain pivotal in the digital society. Digital literacy also refers to many other uses of ICT such as PDAs (personal digital assistants), cell and smart phones or other specially designed devices.
- Stimulate internet use.** It may be doubted whether improved high-speed broadband connections will *per se* boost internet use (Map 2.16). It will be necessary to encourage the use and involvement of individuals by making more public services available in the internet (i.e. e-government, e-learning), all over Europe.

Map 2.16 Individuals who have never used a computer, 2011



% individuals who have never used a computer in relation to total population, 2011.



3 - Sustainable Growth

The Europe 2020 Strategy clearly states that growth is crucial to economic recovery and to increase Europe's competitiveness. Europe 2020 also points out that economic growth in the EU needs to be sustainable. This refers both to a sustainable path of growth in terms of a more competitive economy and a resource efficient and greener economy.

This section of the Atlas presents evidence on the territorial dimension of green growth as a development opportunity to overcome the crisis through the development of a low-carbon and resource-efficient economy. This approach is strategic for promoting Europe's competitiveness targets and for contributing to international climate commitments (for instance, in terms of greenhouse gas emissions). It is furthermore crucial for reducing the EU's dependency on energy and commodities imports.

This section on the sustainable growth priority follows a two-fold approach. It firstly refers to traditional economic indicators of growth and, secondly, considers the green economy. The latter includes aspects related to climate change and cleaner and more efficient energy production and consumption. This division follows the logic of the two flagship initiatives supporting the sustainable growth priority: 'An industrial policy for the globalisation era' (economic growth) and 'Resource-efficient Europe' (green economy).

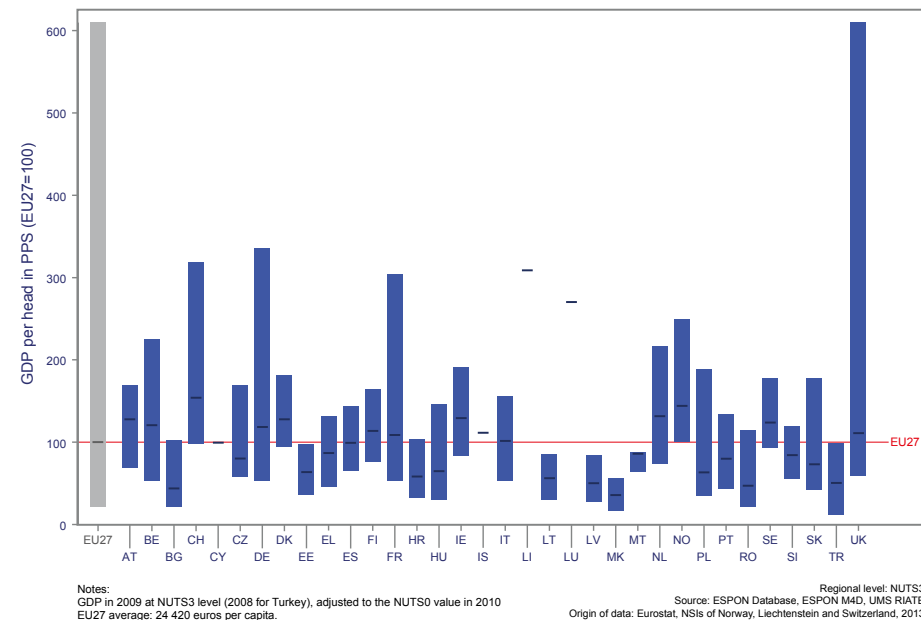
3.1 Regional Disparities in Growth and Competitiveness

Growth is the basic objective of the Europe 2020 Strategy. Recovering from the crisis is only possible by turning to growth. In this respect, this Atlas looks into the current performance of European regional economies (Map 3.1) and the rate of change during the last decade (Map 3.2). Focusing on the rate of change between 2007 and 2011 allows assessing the economic effects of the crisis (Map 3.3). These analyses have been based on the regional gross domestic product per inhabitant (GDP per capita) computed in purchasing power standards. This approach allows for comparisons of regions differing in demographic size and eliminates differences in purchasing power due to different price levels. Regional values have been furthermore related to the EU average in order to indicate the relative position of regions in the European context.

GDP per capita is an indicator with a long tradition. It is fundamental for EU cohesion policies that the Europe 2020 Strategy acknowledges the need for economic growth in all European regions, but obviously the economic situation and development of the European regions varies strongly.

GDP per capita varies both between countries and between regions of the same country. In 2010, disparities between regions of one country were particularly high in the United Kingdom, Germany and France, but also in some smaller countries such as Switzerland and Belgium (Figure 3.1, Map 3.1).

Figure 3.1 Regional disparities (NUTS3) of GDP per capita (PPS) by country, 2010



Source: Eurostat and ESPON SIESTA

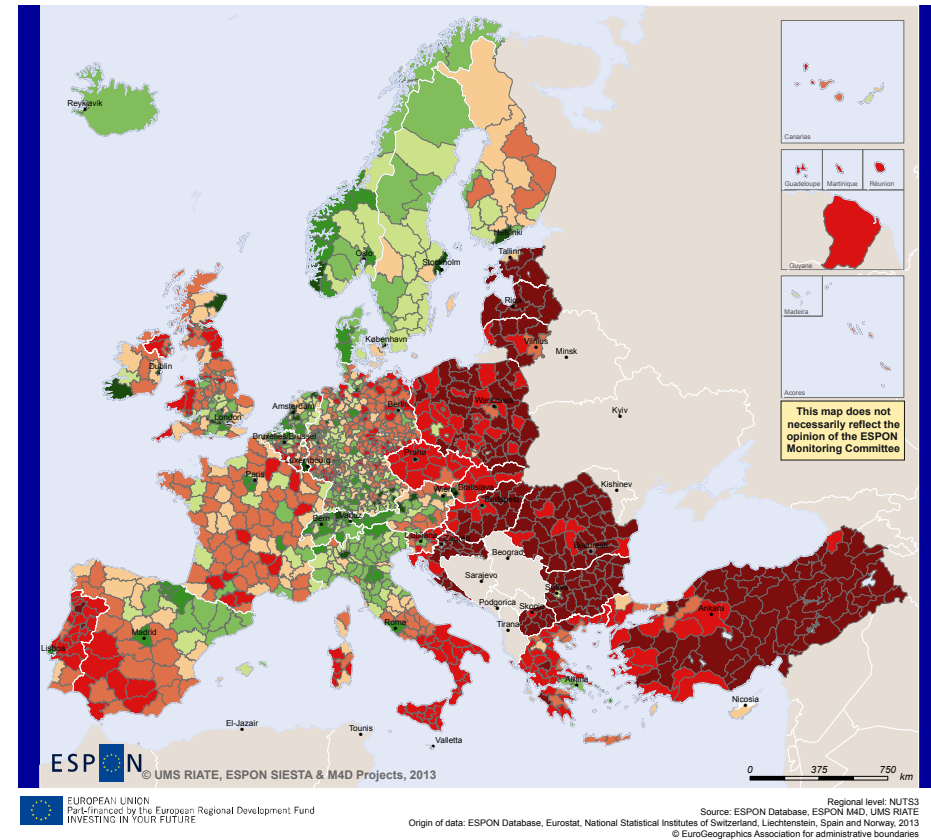
A complementing indicator crucial for competitiveness is labour productivity (Map 3.4). According to the Europe 2020 Strategy, regions with a relatively high labour productivity are likely to be stronger in economic terms and the first to emerge from the crisis.

3 - Sustainable Growth

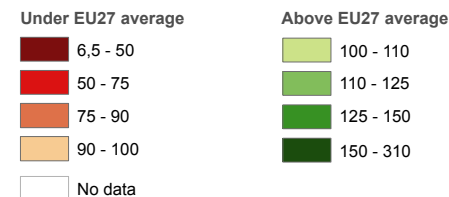
Not only East-West differences in terms of GDP

- East-West differences revisited.** The East-West divide is still visible, though less pronounced than 10 years ago. Economically most challenged are most regions in Eastern European countries such as Bulgaria, Romania or F.Y.R.O.M. A closer look however reveals that some Western European regions are also well below EU average GDP per capita. Examples may be found in e.g. Portugal, Spain and Italy (Map 3.1). In some of these regions the economic situation seems to be more challenging than in some Eastern European regions.
- The so-called “Blue banana” still visible.** Many richer regions in terms of GDP per capita are still concentrated in a curved area reaching from England via the Rhine Valley to Northern Italy. This concentration has been the inspiration for the metaphor of the “blue banana” in the late 1980s, when this area was already considered to constitute the core territory for the European economy.
- Capital cities and large metropolitan areas better off.** In capital cities as well as other large cities and metropolitan areas GDP, per capita is higher than elsewhere. Especially in Eastern European countries like Romania, Bulgaria or the Czech Republic this pattern clearly highlights some urban areas from their respective rural counterparts. The same is also observed in many Western European countries (Sweden, the UK, Finland, France, Portugal, etc.).
- Importance of advanced services.** Regions above average GDP per capita are often specialised in scientific, technological, ICT and financial activities. This shows that advanced business services as well as high-tech industries are beneficial for regional economic wealth.

Map 3.1 GDP per capita (PPS) in relation to the EU average (EU=100), 2010



PPS per inhabitant in % of EU average (EU=100) at current market prices, 2010



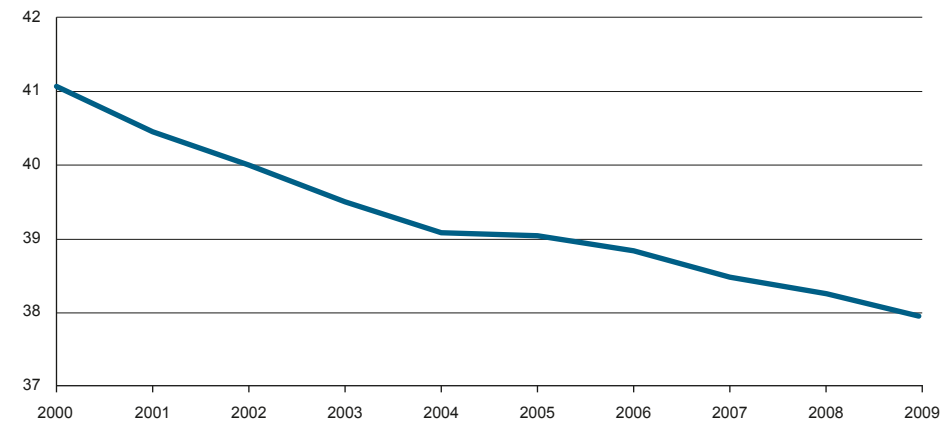
Notes:
GDP in PPS in 2009 at NUTS3 level, adjusted to the NUTS0 value in 2010 (data from Eurostat)
For Turkey, GDP in PPS in 2008 at NUTS3 level adjusted to the NUTS0 value in 2010 (data from Eurostat).
EU27 average in 2010 = 24 505 euros per capita.

3 - Sustainable Growth

Reducing GDP disparities from 2000 to 2010

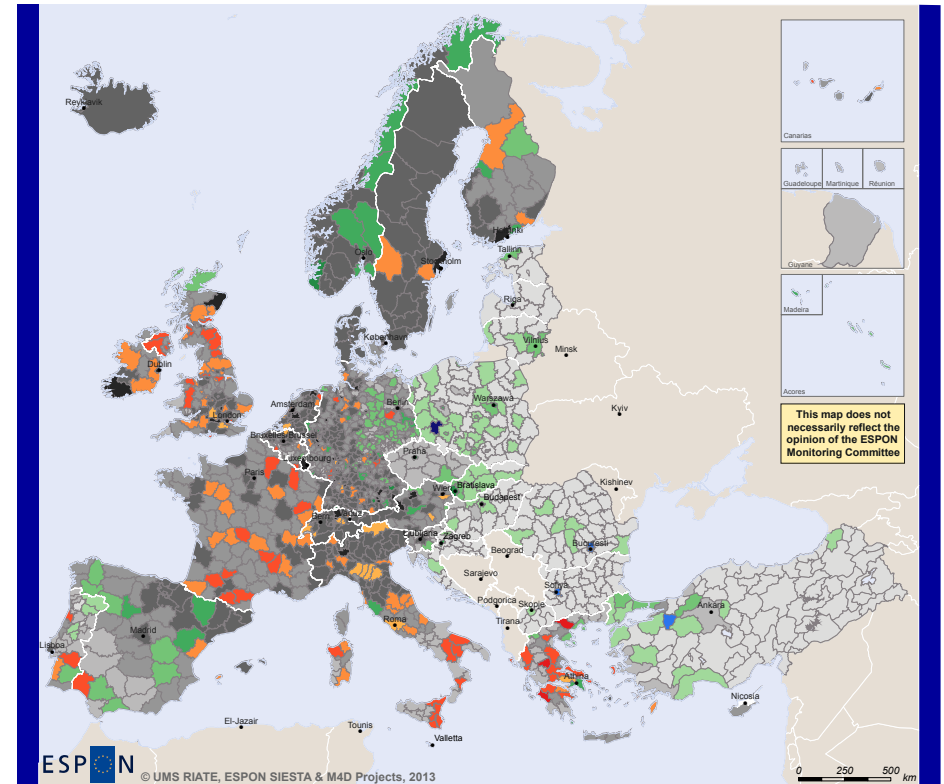
- Stable regional pattern.** The relative position of most regions has not changed much between 2000 and 2010. This situation is challenging for the regions lagging behind. Especially many regions in Eastern Europe have remained at GDP per capita levels less than half of the EU average (Map 3.2).
- Improvements in the East.** Some Eastern regions have improved their economic situation during the last decade. These regions are mainly located in former East Germany, Poland and Slovakia. At least prior to the current crisis, however, also some Western European regions improved their relative position in Europe. Examples can be found e.g. in Portugal, Spain, Norway and Scotland.
- Decline in some Western regions.** Some regions in the UK, France, Italy, Ireland and Greece have experienced considerable decline in relation to the EU average. This relative loss is mostly caused by low to very low growth in absolute terms rather than absolute GDP per capita decline. This relative decline together with above average GDP per capita growth in some Eastern European regions has reduced overall GDP per capita disparities of across the EU (Figure 3.2).

Figure 3.2: Coefficient of variation of GDP per capita in EU27 (NUTS2), 2000-2009



Source: Eurostat & ESPON SIESTA

Map 3.2 Change in GDP per capita (PPS) in relation to the EU average (EU=100), 2000-2010



ESPON
 © UMS RIATE, ESPON SIESTA & M4D Projects, 2013
 Regional level: NUTS3
 Source: ESPON Database, ESPON M4D, UMS RIATE
 Origin of data: ESPON Database, Eurostat, National Statistical Institutes of Switzerland, Liechtenstein, Spain and Norway, 2013
 © EuroGeographics Association for administrative boundaries

Change of GDP per capita, 2000 - 2010.

		2010				
		<50	50-75	75-100	100-150	>150
2000	<50					
	50-75					
	75-100					
	100-150					
		>150				

Red classes: Deteriorating situation
 Grey classes: Stable situation
 Green classes: Improving situation
 Blue classes: Large improvement of the situation

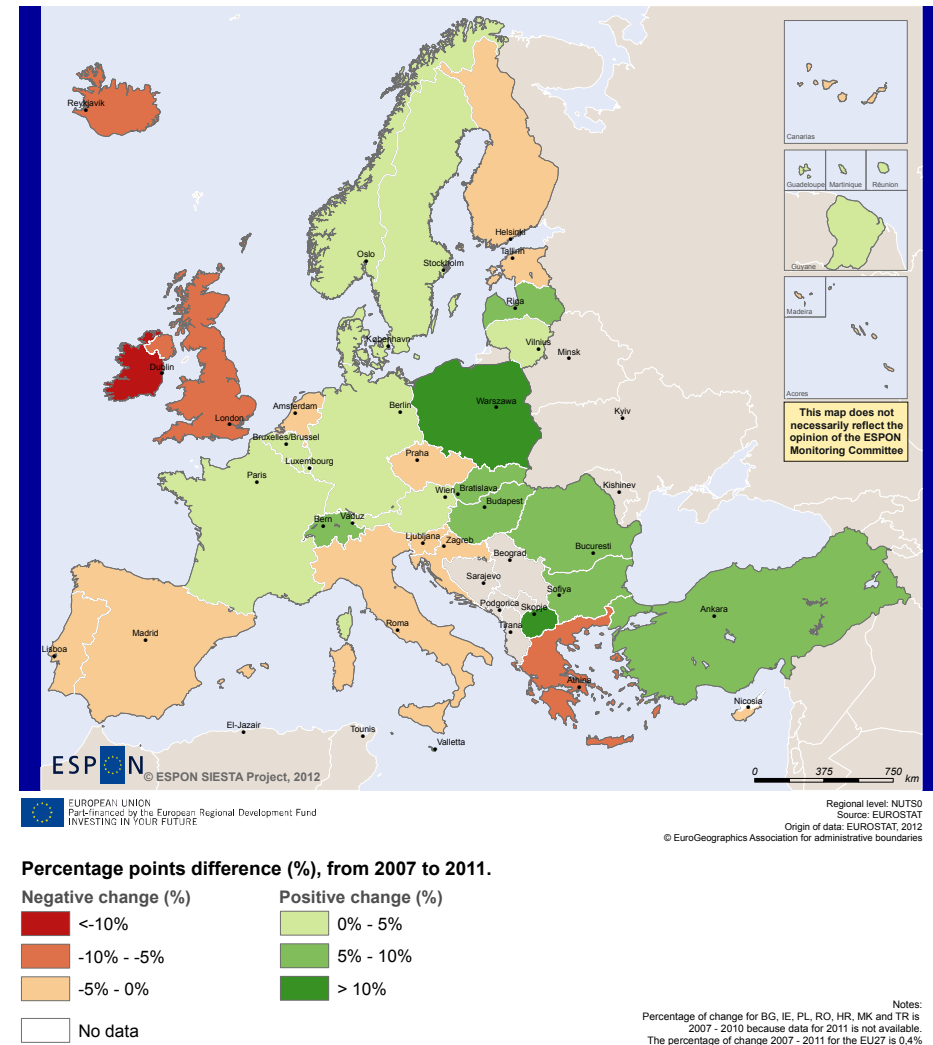
□ No data

Notes:
 GDP in PPS in 2009 at NUTS3 level, adjusted to the NUTS0 value in 2010 (data from Eurostat).
 For Turkey GDP in PPS in 2008 at NUTS3 level, adjusted to the NUTS0 value in 2010 (data from Eurostat).
 EU27 average in 2000 = 19 060 euros per capita.
 EU27 average in 2010 = 24 505 euros per capita.

Highly diverse effects of the crisis

- Increasing disparities between countries.** Regional GDP per capita data is not yet fully available for the years of the current economic crisis. National level data however indicates how European countries have been affected in general (Map 3.3). Some countries have been hit by the crisis relatively little. They are already recovering and may be back on a growth path. Other countries have been hit much more severely and are continuously experiencing economic challenges.
- Highest GDP increases in the East.** The best performing countries are located in Eastern Europe, including non-EU countries such as F.Y.R.O.M. and Turkey. Central and Northern European countries, embracing old EU members (Germany or Austria) as well as Switzerland or Norway have also experienced GDP per capita growth, though at a lower level than many Eastern European countries. Thus, especially some of the countries with below EU average GDP per capita figures managed to further improve their relative position. This may constitute an opportunity for these countries in terms of economic recovery and territorial cohesion.
- Impact of the crisis in the West.** The impact of the crisis is most evident in the British Isles, Iceland and in the Southern European countries. In Eastern Europe GDP per capita has decreased in some countries, namely Estonia, the Czech Republic, Croatia and Slovenia. These countries are highly dependent on the real estate and construction sectors (like Spain and Portugal) which have been hit particularly strongly by the crisis. These sectors should be considered with extreme caution in recovery strategies. Countries with a noticeable contraction of GDP per capita for the period 2007-2011 are also suffering from high unemployment. This is particularly evident in Spain, Ireland and Estonia, resulting in major socio-economic challenges.

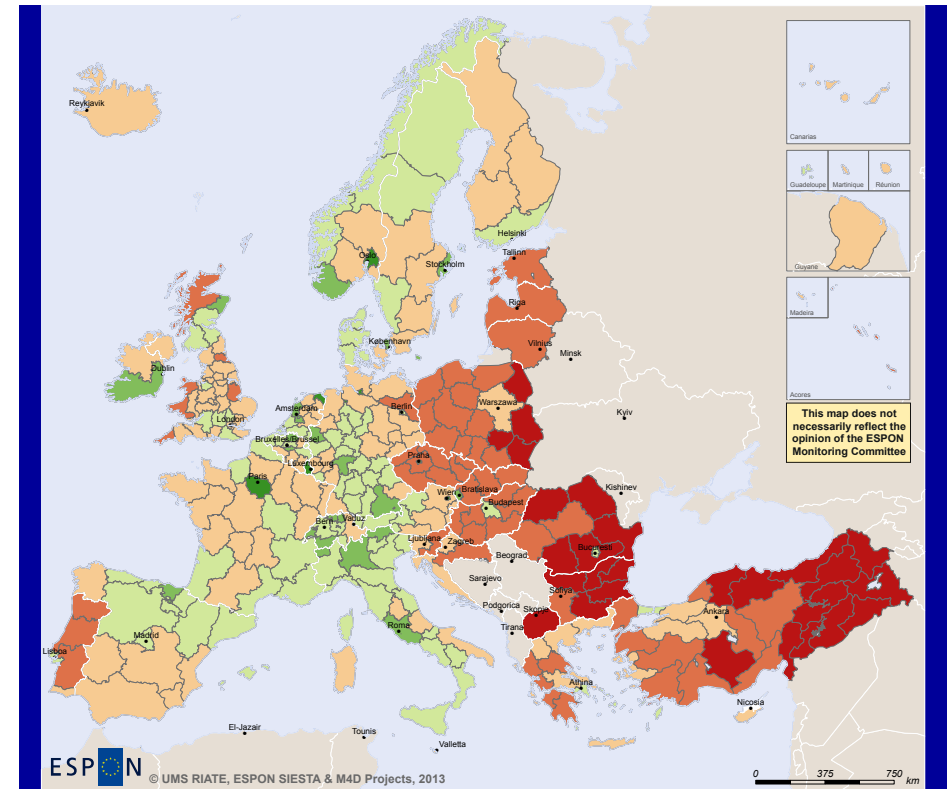
Map 3.3 Change in national GDP per capita (PPS), 2007-2011



Diverse patterns of regional labour productivity

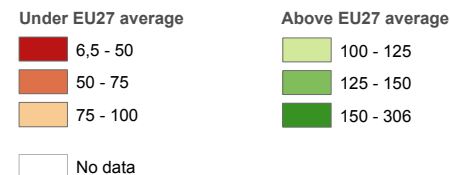
- East-West differences in labour productivity.** The territorial pattern of regional labour productivity (Map 3.4) is very similar to the GDP per capita pattern (Map 3.1). Since labour productivity relates labour input to GDP output, labour productivity is also linked to GDP per capita figures. Thus, the similarity of both patterns indicates that different GDP per capita levels in Eastern and Western Europe are in general a result of different levels of labour productivity. In particular regions in Bulgaria, Romania, Turkey and some Eastern Polish regions show low labour productivity levels.
- Urban areas with higher productivity.** Both in Eastern and Western Europe labour productivity tends to be higher in metropolitan and urban areas than in rural areas. This may be related to different economic structure of these regions. Especially advanced business services, which have a high labour productivity, tend to concentrate in cities.
- Territorial features and labour productivity.** Some rural regions in Western Europe (e.g. in France, Spain, Italy and the UK) with below EU average GDP per capita (Map 3.1) have above EU average labour productivity. This situation may be related to the inactive (including pensioners) and unemployed population. In regions with a high share of pensioners and/or a high unemployment rate, the GDP is produced by a smaller share of the population than in other regions.
- Need to increase labour productivity.** Labour productivity is usually increased by technological progress, knowledge intensive sectors and an improved matching of skills. Advancing competitiveness is thus quite dependent on the smart growth priority referring to the need for innovation and education.

Map 3.4 Labour productivity (in relation to the EU27 average), 2010



ESPON
 EUROPEAN UNION
 Participating by the European Regional Development Fund
 INVESTING IN YOUR FUTURE
 Regional level: NUTS2
 Source: ESPON Database, ESPON I4M2, UMS RIATE
 Origin of data: Eurostat, NSIs of Norway, Liechtenstein and Switzerland, 2013
 © EuroGeographics Association for administrative boundaries

Regional labour productivity, EU27=100, 2010



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

3.2 Territorial Differences in Energy and Climate Change

Sustainable growth in the Europe 2020 Strategy primarily envisages Europe's leadership in the world in terms of competitiveness through the delivery of new resource efficient processes and technologies. The Europe 2020 Strategy suggests that it shall be focused on green technologies allowing for combating climate change. This shall be achieved by using low-carbon technologies, enhanced development of renewable energy production and use, as well as by increasing energy efficiency. This approach shall furthermore prevent environmental degradation and an unsustainable use of resources.

Increasing resource efficiency may also allow for financial savings for companies, governments and the population. Moreover, the Europe 2020 Strategy mentions more strategic objectives such as the need to reduce Europe's energy dependency. This approach may finally contribute to job creation. While all these elements are crucial for combating climate change, they inhibit also economic objectives.

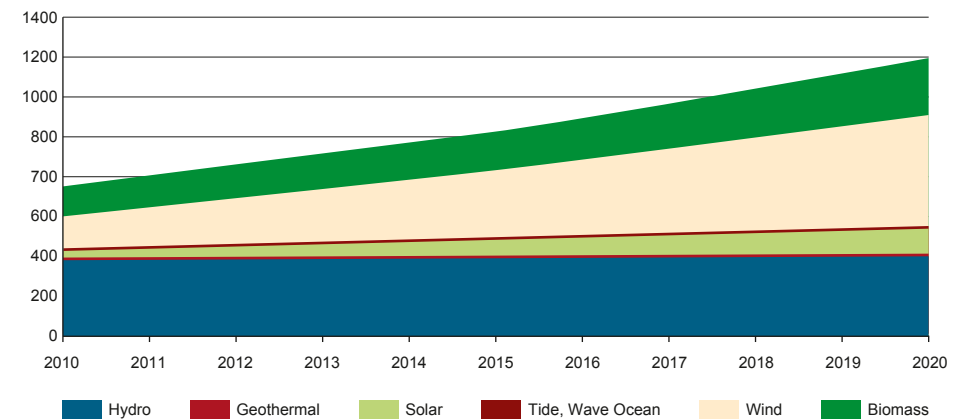
Based on this rationale, the Europe 2020 Strategy has defined three headline targets for the sustainable growth priority. The first two are related to energy (section 3.2.1) and the third refers to reducing greenhouse gas emissions, dealt with in section 3.2.2.

3.2.1 Territorial Heterogeneity of Renewable Energy and Decreasing Energy Consumption

The two energy related targets focus on renewable energy resources and energy efficiency. The Europe 2020 Strategy aims to increase the share of renewable energy in gross final energy consumption to 20% in 2020. At the same time, energy efficiency shall be increased by 20%.

The regional situation regarding these two headline targets is presented in seven maps. Map 3.5 shows the share of renewable energy in gross final energy consumption, while Map 3.6 links this information to the distance of national targets. The following two maps show the regional potential for renewable energy production: wind energy (Map 3.7) and solar power (Map 3.8). These represent important sources for renewable energy (Figure 3.3). The increased promotion of renewable energy technologies may provide a viable economic opportunity for the regions with the appropriate natural assets. The last two maps refer to energy intensity. They compare national levels of energy consumption per GDP (Map 3.9) and their distance to national targets (Map 3.10).

Figure 3.3: Planned European electricity production according to national renewable energy action plans



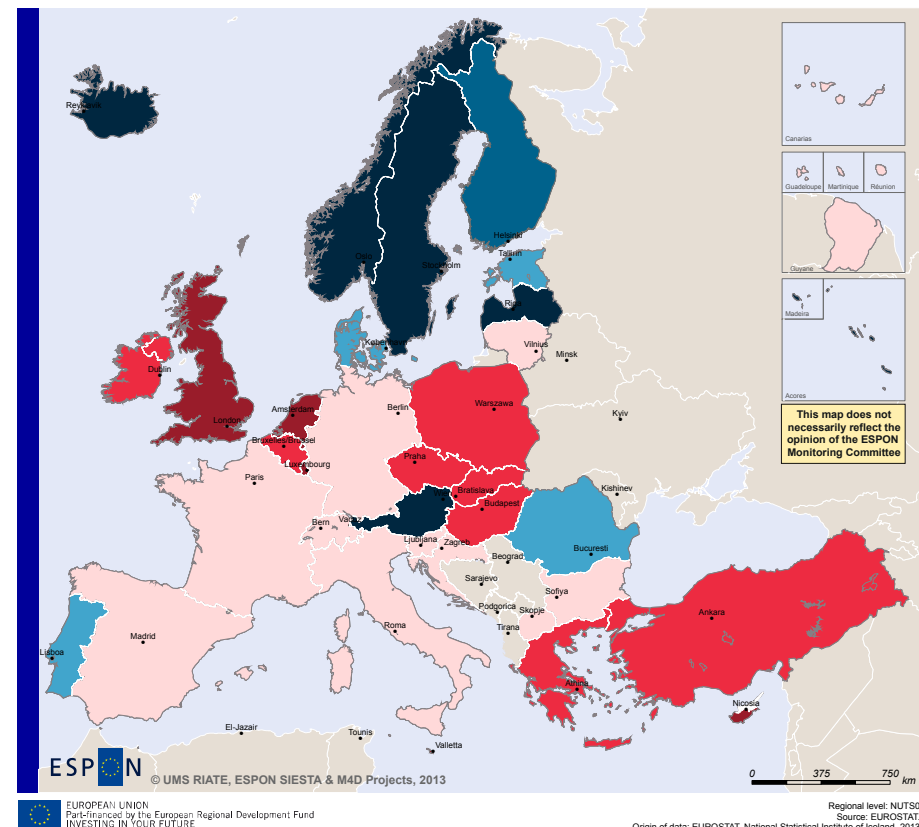
Source: JCR, 2011

3 - Sustainable Growth

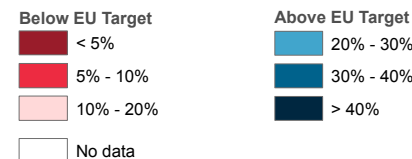
Only a few countries reaching the 20% renewable energy target

- Baltic Sea Region as a hot spot in renewable energy.** The share of renewable energy in gross final energy consumption varies between the EU Member States from 0.4% in Malta to 47% in Sweden. The Nordic Countries and the Baltic States, with the exception of Lithuania, have achieved high shares of renewable energy consumption already. Beyond this area Austria, Portugal and Romania are the only other countries which are above the Europe 2020 target on renewable energy (Map 3.5), already.
- Islands challenged by energy headline target.** Island states (Malta and Cyprus) seem to be particularly challenged by the renewable energy target. But also other countries such as the Benelux countries (Luxembourg, the Netherlands, Belgium) and the UK have hardly achieved higher shares of renewable energy consumption. The reasons may differ from country to country: energy intensity, industrial structure, natural potentials for renewable energy production and policy responses may all account for these low shares of renewable energy consumption.
- Natural opportunities in the North and mountain areas.** Geographical endowments are heterogeneous, but their use for energy production also depends on the respective national policies. Sweden, for instance, has an ambitious policy framework and benefits from the high potentials for hydro-energy and biomass energy generation. Natural endowments in the northernmost countries and in mountainous regions may provide endogenous development opportunities for renewable energy production.
- Policy responses.** Since the 1990s, policies on renewable energy development have been implemented across Europe by very heterogeneous initiatives. The EU Directive on Electricity Production from Renewable Energy Sources (2001) has been a milestone in this field. Pioneering schemes for promoting renewable energy have been implemented in Denmark, Germany, Spain and the Netherlands.

Map 3.5 National share of renewable energy in gross final energy consumption, 2010



Percentage of gross final energy consumption (%), 2010. EU 2020 Target = 20%



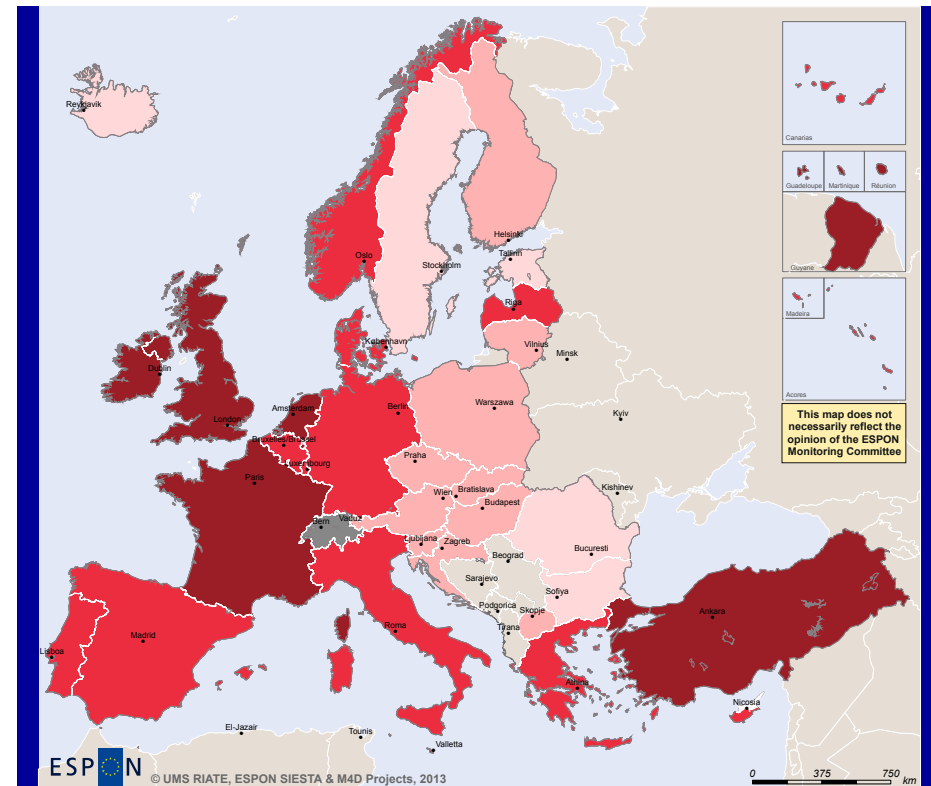
Notes:
 This indicator is calculated on the basis of energy statistics covered by the Energy Statistics Regulation. It may be considered an estimate of the indicator described in Directive 2009/28/EC, as the statistical system for some renewable energy technologies is not yet fully developed to meet the requirements of this Directive. However, the contribution of these technologies is rather marginal for the time being. More information about the renewable energy shares calculation methodology and Eurostat's annual energy statistics can be found in the Renewable Energy Directive 2009/28/EC, the Energy Statistics Regulation 1099/2008 and in DG ENERGY transparency platform http://ec.europa.eu/energy/renewables/index_en.htm.

3 - Sustainable Growth

Reaching national targets of renewable energy

- 20% renewable energy consumption realistic target.** The 2012 Progress Report on the Europe 2020 Strategy has stated that the 20% renewable energy target may be met by the year 2020.
- UK, Ireland and France most ambitious.** The UK has the most ambitious target for the share of renewable energy consumption (plus 12% between 2009 and 2020). Due to the low current share of renewable energy, this target is however below the EU headline target. In terms of ambition the UK is followed by Ireland and France, who aim at increases by 11%, and Denmark aiming at an increase of 10% (Map 3.6). France and Denmark's ambitions also go beyond the EU headline target. Such national ambitions may enhance action at regional and national level in these countries.
- Countries with high shares tend to be less ambitious.** In contrast, countries which have committed less are typically those whose share of renewable energy has already been above the EU 20% target in 2009. This may indicate increasing difficulties of further enhancing renewable energy production beyond certain limits. Few countries with a share of renewable energy consumption significantly below the EU headline target in 2009, however, also have set less ambitious aims. Examples are Slovakia, the Czech Republic, Bulgaria and Hungary.

Map 3.6 Distance to the Europe 2020 national targets on share of renewable energy in gross final energy consumption, 2010



EUROPEAN UNION
Participated by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS0
Source: EUROSTAT
Origin of data: EUROSTAT, National Statistical Institute of Iceland, 2013
© EuroGeographics Association for administrative boundaries

Distance in % to National 2020 Targets

Below National Target (%)

< 3%

3% - 6%

6% - 9%

> 9%

No National Target defined/Target unknown

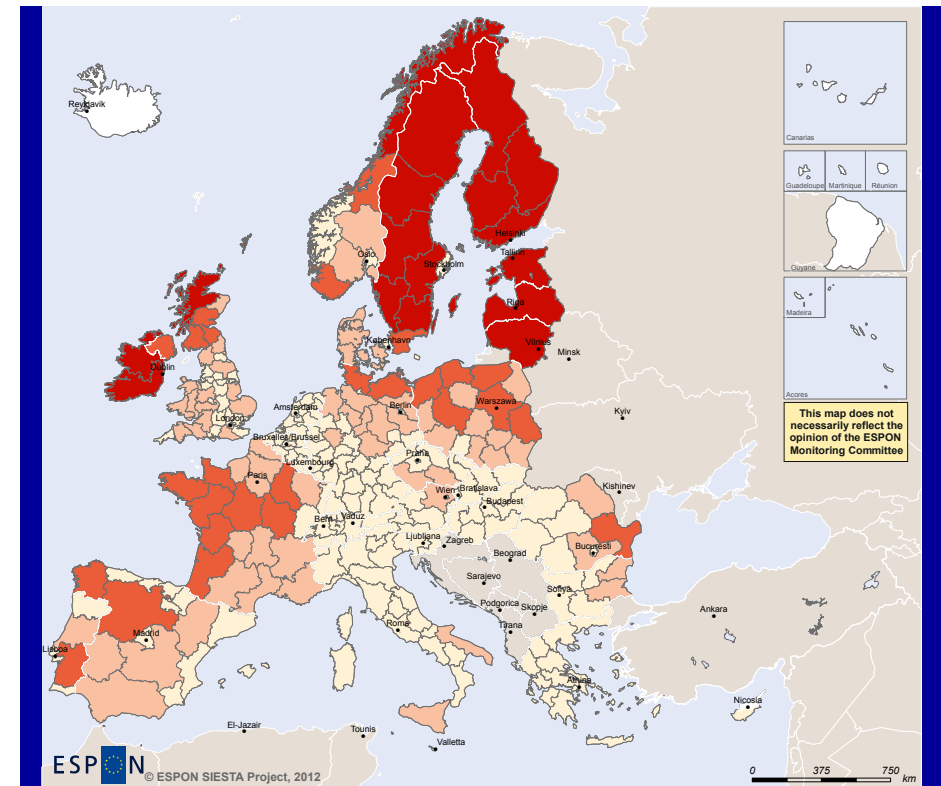
Notes:

This indicator is calculated on the basis of energy statistics covered by the Energy Statistics Regulation. It may be considered an estimate of the indicator described in Directive 2009/28/EC, as the statistical system for some renewable energy technologies is not yet fully developed to meet the requirements of this Directive. However, the contribution of these technologies is rather marginal for the time being. More information about the renewable energy shares calculation methodology and Eurostat's annual energy statistics can be found in the Renewable Energy Directive 2009/28/EC, the Energy Statistics Regulation 1099/2008 and in DG ENERGY transparency platform http://ec.europa.eu/energy/renewables/index_en.htm.

Future potentials in wind energy

- Highest wind energy potential in Northern Europe.** Regions along the Atlantic coast of Europe and the Baltic Sea, show the greatest potential for wind energy (Map 3.7). However, the potentials may not necessarily be exploited, as competing interests with regard environmental or landscape protection may have to be considered. At the same time, this territorial pattern of wind energy potentials does not cover off-shore wind energy potentials. These are increasingly used in the Baltic and North Sea.
- Employment in wind energy industry.** The development of the wind energy industry is widely acknowledged as a development opportunity creating jobs. In the EU, jobs in this green-economy sector actually grew by around 30% between the years 2007 and 2010.
- Need for policy action.** Investments in R&D related to wind energy technology are essential to further strengthen the sector. Denmark e.g. is a benchmark of wind energy industry development since the 1970s, with an active role played by the government and the consolidation of a robust cluster of companies with specialised technologies.

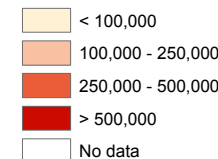
Map 3.7 Regional potential for electricity production from wind power stations, 2005



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

Regional level: NUTS2
 Source: ESPON DATABASE
 Origin of data: ReRisk ESPON PROJECT
 © EuroGeographics Association for administrative boundaries

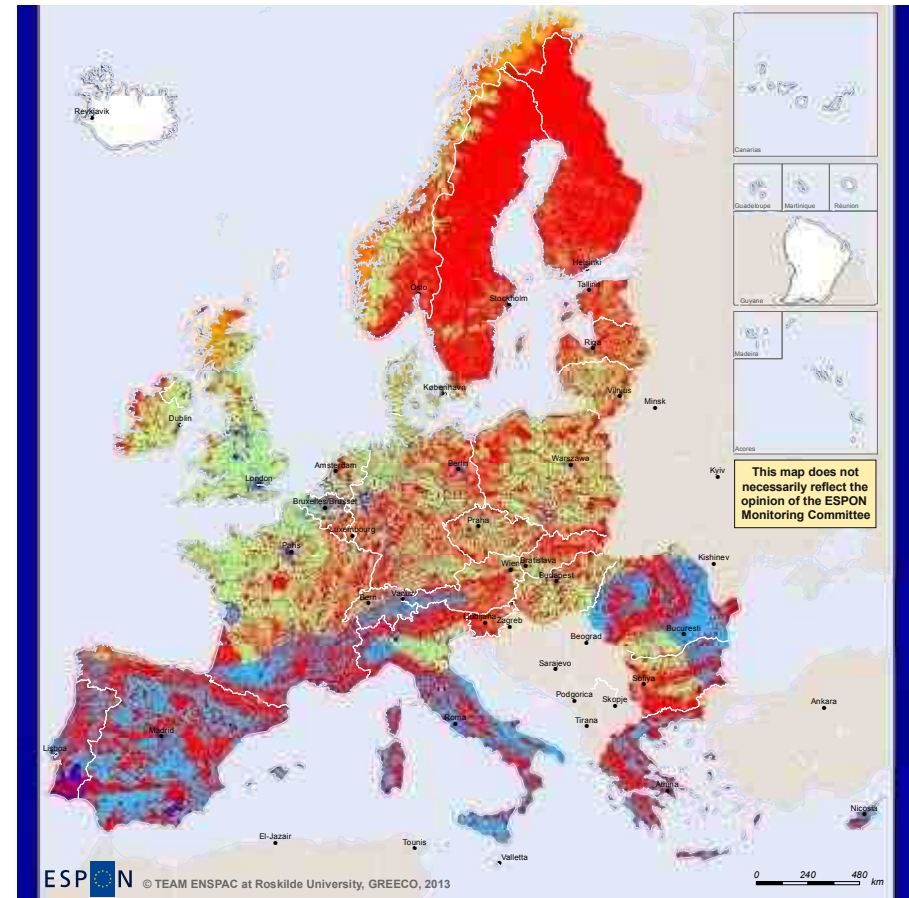
Meters/ second (m/s), 2005.



Solar energy potentials in Southern Europe

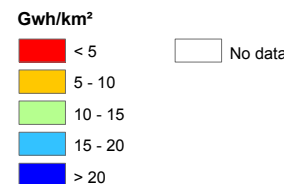
- Low environmental impacts from solar energy.** Among renewable sources of energy, solar energy is supposed to have less environmental impacts than other alternatives. However, the associated landscape effects are progressively considered to challenge the sustainable development of solar energy. At the same time, environmental impacts of the production of solar panels may be considered.
- Solar energy as a development opportunity in Southern Europe.** Southern European regions have the highest potential for photovoltaic energy production within Europe (Map 3.8). These potentials range from the Atlantic regions in Portugal and the Mediterranean Basin to some regions in the Balkans and the Black Sea.
- Territorial potentials on solar energy need to be better exploited.** Natural potentials for solar energy production and economic benefits from solar energy production may occur in different territories. This has several reasons. Natural potentials as such may only be exploited if corresponding investments are made. However, incentives for these investments strongly depend on national and regional policy frameworks and the availability of respective public and private financial means. Especially the latter may be hampered in the countries hit most by the crisis. Thus, financial incentives in countries which have a less favourable natural solar energy potential may actually increase solar energy production relatively strongly as compared to the most suitable regions.

Map 3.8 Regional potential for electricity production from photovoltaic panels in kWh, 2005



EUROPEAN UNION
 Participated by the European Regional Development Fund
 INVESTING IN YOUR FUTURE

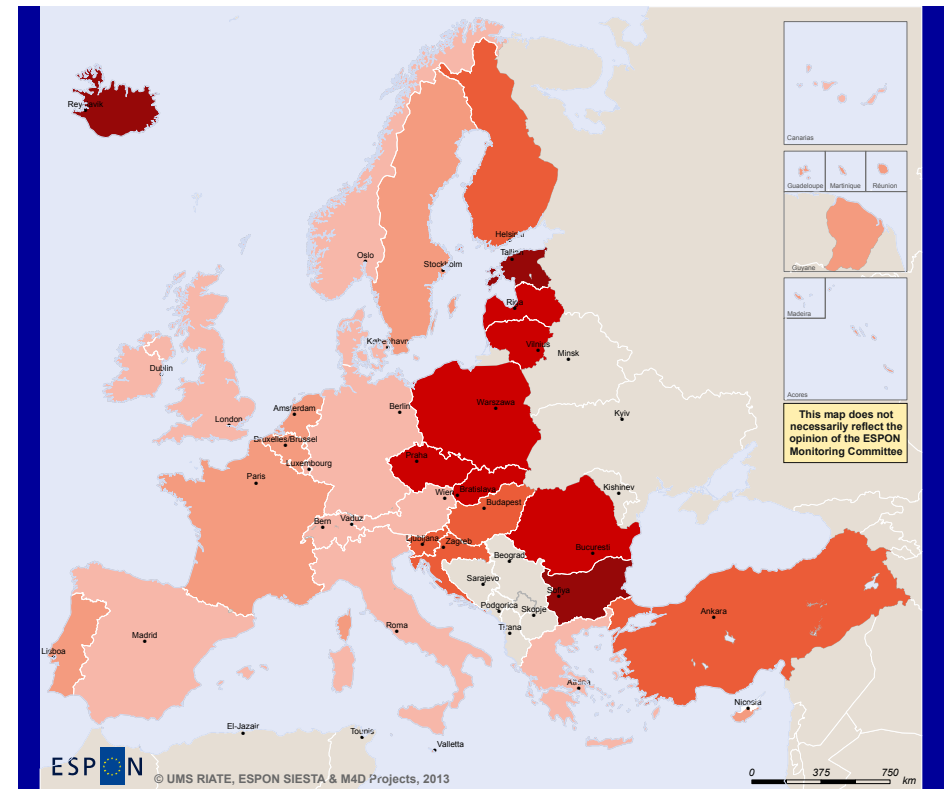
Regional level: NUTS 02
 Source: ESPON, GREECO Project, Roskilde University.
 Origin of data: Nov. 2012
 © EuroGeographics Association for administrative boundaries



Energy intensity of national economies

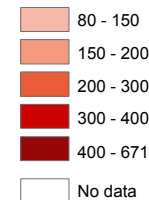
- Low energy intensity in the West.** There is a clear divide between Eastern and Western European countries with regard to energy intensity (Map 3.9). In the Eastern European countries much more energy is used per €1,000 GDP than in Western Europe. Values vary however widely between countries. The level of energy intensity depends on their level of industrialisation, the composition of industrial sectors and the attention policy pays to energy efficiency. The latter is especially important for increasing energy efficiency in the public sector and private households. The countries with lowest energy intensities in Europe are Ireland, Denmark, Switzerland, the UK, Italy and Austria. They are followed by Germany, Norway and Spain. Ireland used 93 kg of oil equivalent per €1,000 GDP in 2010. In Switzerland it even accounted for only 80 kg oil equivalents.
- High energy intensity in the East.** The most energy is used per €1,000 GDP in Bulgaria, Estonia and Iceland. These countries are followed by Romania, the Czech Republic, Slovakia, Latvia, Lithuania and Poland. In Bulgaria, energy intensity is however by far the highest accounting for 671 kg oil equivalents per €1,000 GDP. This is seven times higher than the Irish energy intensity.
- No correlation to greenhouse gas emissions.** There is no direct correlation between greenhouse gas emissions and energy efficiency. In some countries high levels of emissions coincide with low energy intensity (Germany or the UK), while in other countries high levels of green gas emissions occur together with high energy intensity. The latter is typical for the Eastern European countries. Moreover, no correlation between energy efficiency and renewable energy consumption may be observed.

Map 3.9 National energy intensity: gross inland consumption of energy in relation to GDP, 2010



ESPON
 © UMS RIATE, ESPON SIESTA & M4D Projects, 2013
 Regional level: NUTS0
 Source: ESPON IM4D, UMS RIATE
 Origin of data: EUROSTAT, OECD, 2013
 © EuroGeographics Association for administrative boundaries

Kilogram of oil equivalent per 1000 Euros, 2010.

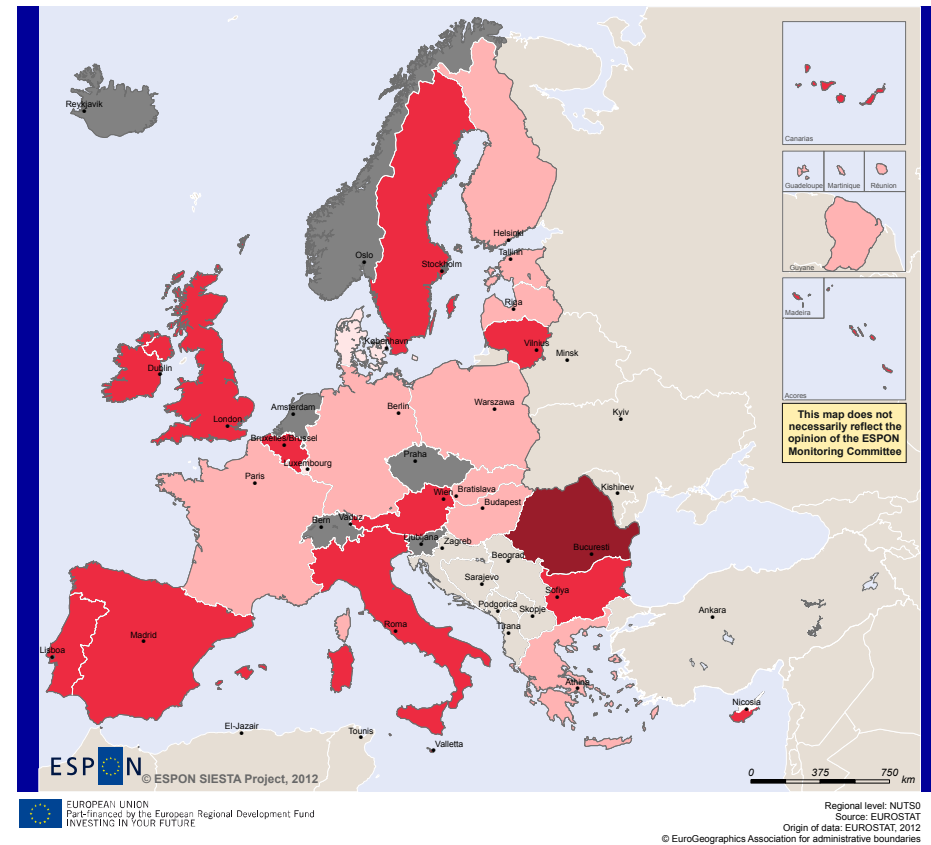


Notes:
 EU27=152.08
 This indicator is the ratio between the gross inland consumption of energy and the gross domestic product (GDP) for a given calendar year. It measures the energy consumption of an economy and its overall energy efficiency. The gross inland consumption of energy is calculated as the sum of the gross inland consumption of five energy types: coal, electricity, oil, natural gas and renewable energy sources. The GDP figures are taken at chain linked volumes with reference year 2000. Since gross inland consumption is measured in kgoe (kilogram of oil equivalent) and GDP in 1000 EUR, this ratio is measured in kgoe per 1 000 EUR. The EU 2020 target is to improve the energy efficiency in 20%, i.e. a reduction of energy consumption in 368 Mtoe (million tonnes of oil equivalent).

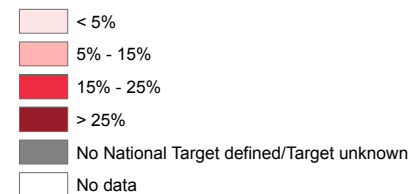
Challenging EU target on energy intensity

- EU 20% targets a challenge.** The Europe 2020 Strategy aims at increasing energy efficiency by 20% until the year 2020. This European target has been translated into different national targets by the Member States. The European Commission complains about a limited commitment of the Member States to this target. Some Member States have not provided a national target at all and others have formulated rather unambitious targets, sometimes aiming at reductions of less than 10%.
- Five countries across Europe closest to targets.** Given the different ambitions, in 2010 five countries with below average energy intensity targets showed a relatively low distance to their national targets: Luxembourg, Denmark, Slovakia, Greece and Finland.
- Five countries challenged in reaching national targets.** Romania, Malta, Portugal, Sweden and Austria register the highest distances to their national targets. Their national targets aim for reducing energy intensity more strongly than in EU average. These countries start from quite different levels of energy intensity. Romania may be especially challenged, given the currently high energy intensity, which calls for policy action.
- Need for policy action.** The EU energy efficiency plan and the directive on energy efficiency emphasise the need for actions embracing investment in several sectors: energy infrastructure, energy transmission networks, renewable energies and energy efficiency of buildings. In particular, the directive requires Member States to establish national energy efficiency obligation schemes and to adopt national heating and cooling plans.

Map 3.10 Distance to the Europe 2020 national targets of national energy intensity, 2010



% of Mtoe to be reduced from 2010 to 2020.



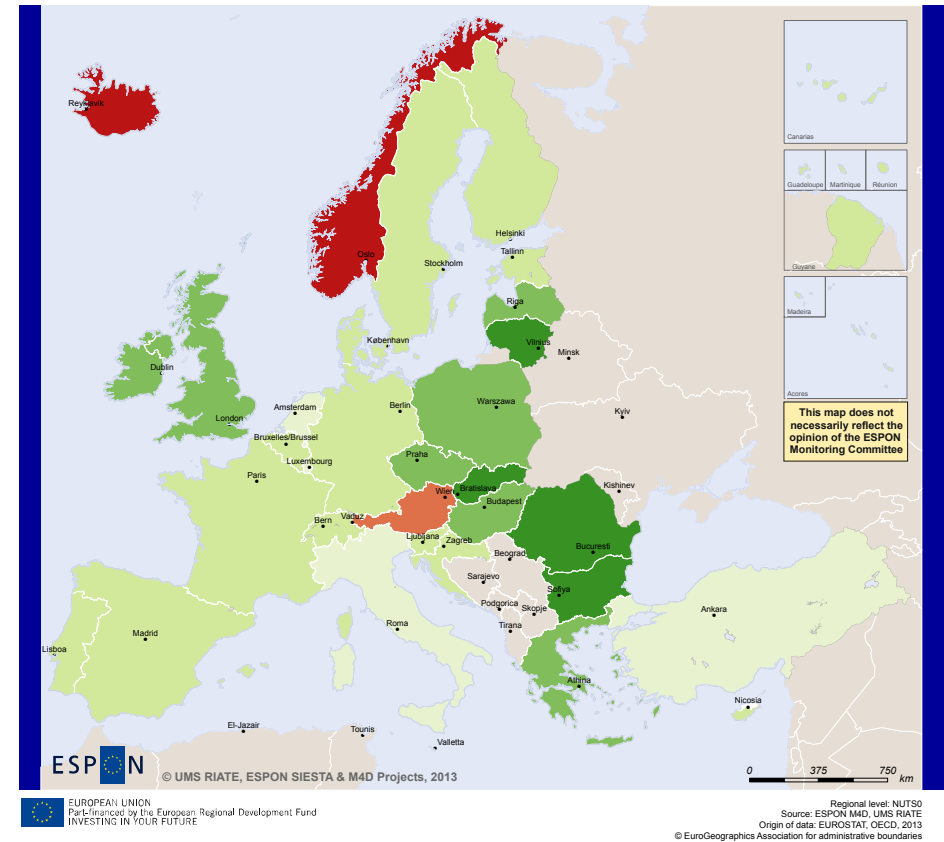
Notes:
 EU 2020 target is to improve energy efficiency in a 20% which means a reduction of 368 Mtoe in the Gross inland energy consumption.
 Gross inland consumption is calculated as follows: primary production + recovered products + total imports + variations of stocks - total exports - bunkers.
 It corresponds to the addition of final consumption, distribution losses, transformation losses and statistical differences.
 The UK national target of 18% reduction is relative to a baseline projection from 2007.

3 - Sustainable Growth

Improvement in energy intensity

- An effective way towards low energy intensity?** Europe is progressing in relation to energy intensity, but additional efforts and concrete policy actions will be necessary (Map 3.11). From 2000 to 2010 energy intensity improved by less than 20%. Thus, it is difficult to estimate the progress for 2010-2020, especially given the low national targets set by some Member States.
- Largest progress in the East.** During the last decade the average rate of change has been larger in Eastern European countries than in Western Europe. The improvements have been the largest in Slovakia (-38.4) and Lithuania (-37.4). These countries, however, started from relatively high overall energy intensity. This positive trend may have resulted from innovation and restructuring processes in the respective national economies, including the closure of heavy manufacturing industries and processes of economic transition.
- Link to smart growth.** Examples of some Eastern European countries may illustrate access points for reducing energy intensity stemming from technological progress. Technological improvements, resulting from R&D and innovation, may provide opportunities for reducing energy intensity in Europe. This does not only apply for manufacturing but for other sectors as well, including transport, the public sector and private households. This represents a strong link between the sustainable and smart growth priorities of the Europe 2020 Strategy and should be considered when, for instance, smart specialisation strategies are developed.

Map 3.11 Change in energy intensity of the national economy, 2000-2010



Change from 2000 to 2010 (2000=100).

Improving situation

- 63 - 70
- 70 - 85
- 85 - 95
- 95 - 100
- No data

Deteriorating situation

- 100 - 105
- 105 - 137

Notes:
Energy intensity of the economy is defined as the Gross inland consumption of energy divided by GDP (Kg of oil equivalent per 1000 euros).

3.2.2 European Challenges and Territorial Opportunities for the Transition towards a Low-Carbon Economy

The target of reducing 20% of greenhouse gas (GHG) emissions by 2020 (compared to 1990) or even a 30% reduction if possible, is one of the three headline targets included in the sustainable growth priority. This target is in line with the overall rationale of the Europe 2020 Strategy which endorses that economic growth should rely on a low-carbon economy. In this context, the GHG reduction target does not only inhibit environmental and climate objectives, but has also a socio-economic dimension. Increasing economic potential arises for new technologies (i.e. carbon capture and sequestration possibilities) to generate growth and employment in Europe and its regions.

Climate change, including global warming, is an important challenge for Europe. Against this background, reducing GHG emissions is a critical objective. In Europe carbon emissions vary substantially between countries (Table 3.1).

The following two maps show the territorial dimension of GHG emissions across Europe. The first map presents absolute GHG emissions in Europe compared to the 1990 level (Map 3.12). The second map shows the change (2005-2009) in GHG emissions represented as distance to national targets (Map 3.13).

Table 3.1 GHG emissions, 2010

	GHG emissions (1,000 t in CO2 equivalent)	GHG emissions per capita (t in CO2 equivalent)
Luxembourg	12.515	24.05
Estonia	20.517	15.31
Iceland	4.542	14.30
Finland	74.556	13.93
Ireland	61.314	13.72
Czech Republic	139.158	13.24
Cyprus	10.838	13.23
Netherlands	210.053	12.67
Belgium	132.459	12.22
Germany	936.544	11.45
Norway	53.896	11.09
Denmark	61.065	11.03
Poland	400.865	10.50
Greece	118.287	10.46
Austria	84.594	10.10
Slovenia	19.522	9.54
UK	590.247	9.52
EU27	4.720.878	9.42
Slovakia	45.982	8.48
Italy	501.318	8.31
Bulgaria	61.427	8.12
France	522.373	8.08
Spain	355.898	7.74
Malta	3.035	7.32
Sweden	66.232	7.09
Switzerland	54.247	6.97
Hungary	67.679	6.76
Portugal	70.599	6.64
Liechtenstein	233	6.49
Lithuania	20.81	6.25
Romania	121.355	5.65
Latvia	12.077	5.37

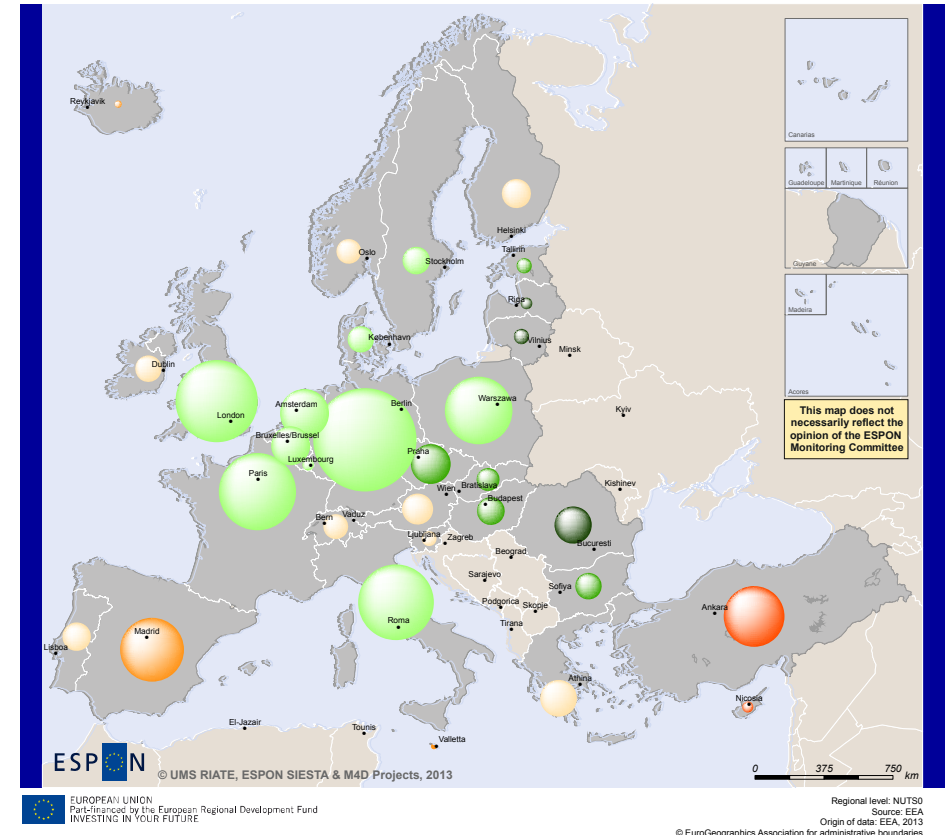
Source: EUROSTAT & ESPON CU, 2012

3 - Sustainable Growth

Reduction of greenhouse gas emission

- Large percentage decreases in the East.** Between 1990 and 2010 GHG gas emissions have decreased by more than 50% in Latvia, Lithuania and Romania (Map 3.12). Significant reductions have been achieved also in Estonia, the Czech Republic, Slovakia, Hungary and Bulgaria. The positive trend in these countries mainly results from a decline in emissions from heavy manufacturing industries. This is either due to the closure of factories or their modernisation and restructuring.
- Large absolute decrease in the UK and Germany.** Germany and the UK are the largest GHG emitters in absolute terms in Europe (Table 3.1). They have substantially decreased their GHG emissions during the last decade. In relation to the UK this evolution may be related to switching from coal to natural gas.
- Increased emissions in some countries across Europe.** Significant relative increases of GHG emission have been recorded for Cyprus, Malta and Iceland as well as in Turkey and Spain. For the latter two countries this implies also a considerable absolute increase as of these countries' size. Although carbon emissions of these countries are below the allowed quota, the climate change policies may limit increases as much as possible in order to meet global goals.
- Regional level considerations needed.** The implementation of policy guidelines on GHG reduction should take into account local and regional levels complementing the state level. Changes at the local and regional levels, for instance focusing on housing and local infrastructure, may be important for achieving the overarching objectives.

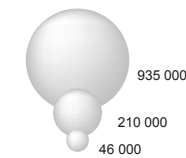
Map 3.12 National GHG emissions in 2010 compared to 1990



Index 1990 = 100

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

Greenhouse gas emissions, 2010
in thousands tons of CO₂ equivalent



Notes:

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

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

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

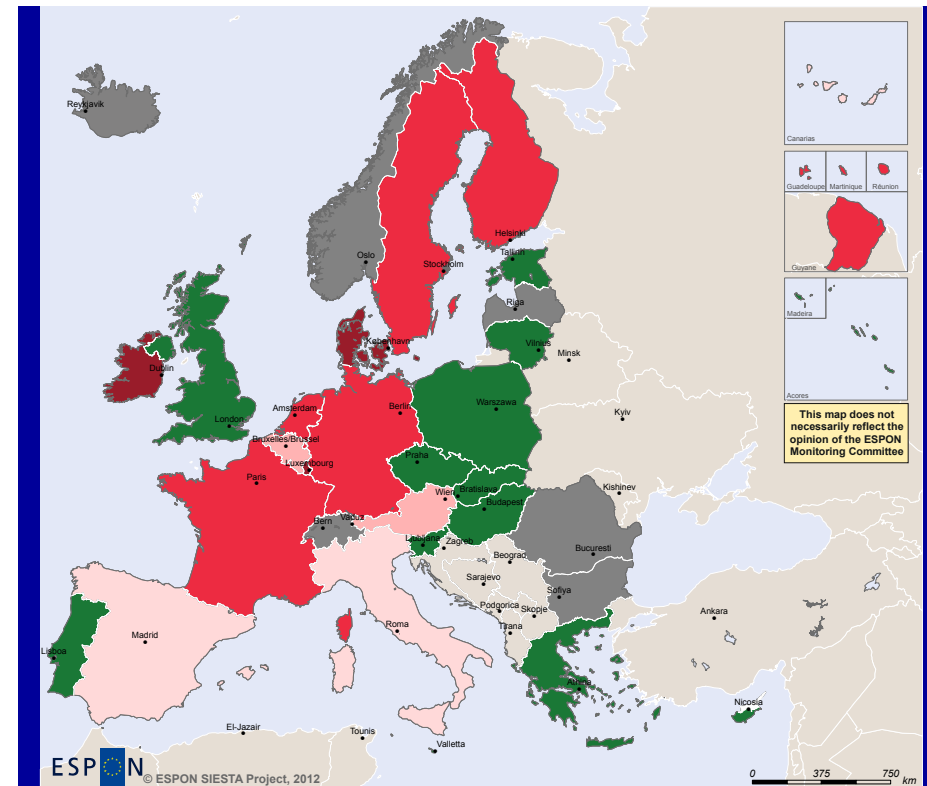
- Reduction of 21% in emissions from sectors covered by the EU ETS (emissions trading scheme) compared to 2005 by 2020;
- Reduction of 10% in emissions for sectors outside the EU ETS.

To achieve this 10% overall target each Member State has agreed country-specific greenhouse gas emissions limits for 2020 compared to 2005 (Council Decision 2009/406/EC).

Opportunities for European regions to meet greenhouse gas reduction targets

- 30% target within reach.** The emission reduction target of 20% seems feasible to meet and, indeed, even the 30% GHG reduction may be possible to achieve until 2020. However, latest trends are mainly due to the overall decreasing economic activity related to the crisis.
- 11 European countries meet targets already.** The UK, Portugal, Greece and most Eastern European countries (Poland, the Czech Republic, Slovakia, Slovenia, Hungary and the Baltic countries) have already reached the respective national targets. Two different situations should be distinguished however. Some countries are required to reduce GHG emissions until the year 2020 and have already reached their targeted reduction. This holds particularly for the UK, Greece and Cyprus. Other countries may increase their emissions. In some of these countries increases have been below the allowed level (Malta, Poland) and some of them even decreased their GHG emissions (Hungary, Slovakia, etc.). Countries with targets above the GHG level of 1990 shall at least shall continue the positive trend and avoid considerable emission increases.
- Three Member States highly challenged in meeting GHG targets.** Ireland, Luxembourg and Denmark are in a challenging situation, as their current GHG emission level is quite distant to the national target. In addition, these countries are among the countries with the highest rates of GHG emissions per capita (Table 3.1). In Luxembourg this situation is mainly related to road freight transport as fuel prices are cheaper than in the surrounding countries and not to the production of greenhouse gas emissions within the country. In other words the fuel sold and accounted for in Luxembourg to a large degree does not actually translate into greenhouse gases in Luxembourg.

Map 3.13 Change of national GHG emissions as distance to the 2020 national targets, 2005-2009



EUROPEAN UNION
 Invested by the European Regional Development Fund
 INVESTING IN YOUR FUTURE

Regional level: NUTS0
 Source: Seventh Report on Economic, Social and Territorial Cohesion.
 Origin of data: EEA, 2011
 © EuroGeographics Association for administrative boundaries

Distance in percentage of GHG emissions in relation to National Targets (%)

Below National Target (%)

- < 2.5
- 2.5 - 5
- 5 - 10
- > 10
- No data

- Over National Target
- No National Target defined/Target unknown

Notes:
 This indicator shows the distance to reduction targets in the total man-made emissions of greenhouse gases by sectors included in the so-called 'Effort Sharing Decision' that includes the following sectors: transport, buildings, agriculture and waste. These gas emissions are outside the EU Emissions Trade Scheme.
 The EU as a whole is committed to achieving at least a 20% reduction of its greenhouse gas emissions by 2020 compared to 1990. This objective implies a 21% reduction in emissions from sectors covered by the EU emission trading scheme (ETS) compared to 2005 by 2020; and a reduction of 10% in emissions for sectors outside the EU ETS. To achieve this 10% overall target each Member State has agreed country-specific greenhouse gas emission reduction or limits for 2020 compared to 2005 from sectors included in the 'Effort Sharing Decision': transport, buildings, agriculture and waste. The distance to these targets on the reduction of sectors included in the Effort Sharing Decision is the indicator showed in this map.
 Data Source: The share of GHG emissions outside ETS was based on data on the total emissions and missions within ETS from the European Environmental Agency. Calculations have been developed by the European Commission and are included in the Seventh report on economic, social and territorial cohesion.

4 - Inclusive Growth

The third priority of the Europe 2020 Strategy aims at reducing poverty and social exclusion. This objective shall be achieved by increasing employment rates, improving the quality of jobs, the development of new skills and labour market reform. Some population groups which are particularly endangered of poverty and social exclusion (women, young people, migrants, older workers) are in the special focus of the priority. This approach shall contribute to social cohesion.

The emphasis on these social issues is mainly based on an economic rationale: Europe needs to make full use of its labour potential to face the challenges of an ageing population and to boost its global competitiveness. Taking into consideration the increased life expectancy, lifelong learning is essential in order to develop new skills throughout a person's lifetime.

The number of poor people is expected to increase due to the economic crisis, not least because of rising unemployment. Structural unemployment is recognised as a major challenge which needs to be reduced to avoid higher levels of poverty. With relation to inclusive growth, the Europe 2020 Strategy explicitly acknowledges the territorial dimension as it states that economic growth must deliver territorial cohesion, beyond social cohesion.

The section on inclusive growth is divided into two subsections: the first is dedicated to employment and lifelong learning; the second is focused on poverty and social exclusion. This approach is consistent with the thematic organisation of Europe 2020 as it follows the logic of the two flagship initiatives under this priority: 'An Agenda for New Skills and Jobs', and 'European Platform against Poverty'.

4.1 Territorial Patterns of Employment and Lifelong Learning

4.1.1 The Territorial Dimension of Employment and Unemployment

Employment is intended to raise GDP and income, to reduce poverty and social exclusion and to address the cost of ageing by adding financial resources to the pension system. The corresponding headline target for employment aims at an employment rate of 75% for the population aged 20-64 year-old by the year 2020. Though this target is ambitious, it is at the same time critical for the sustainability of Europe's social model, welfare, growth and public finances. In 2012 the EU registered an employment rate of 68.5%. Achieving the employment target is additionally challenged by the current economic situation, since unemployment has been increasing in several countries in recent years. This has contributed to decreasing rather than increasing employment rates in the EU since 2008.

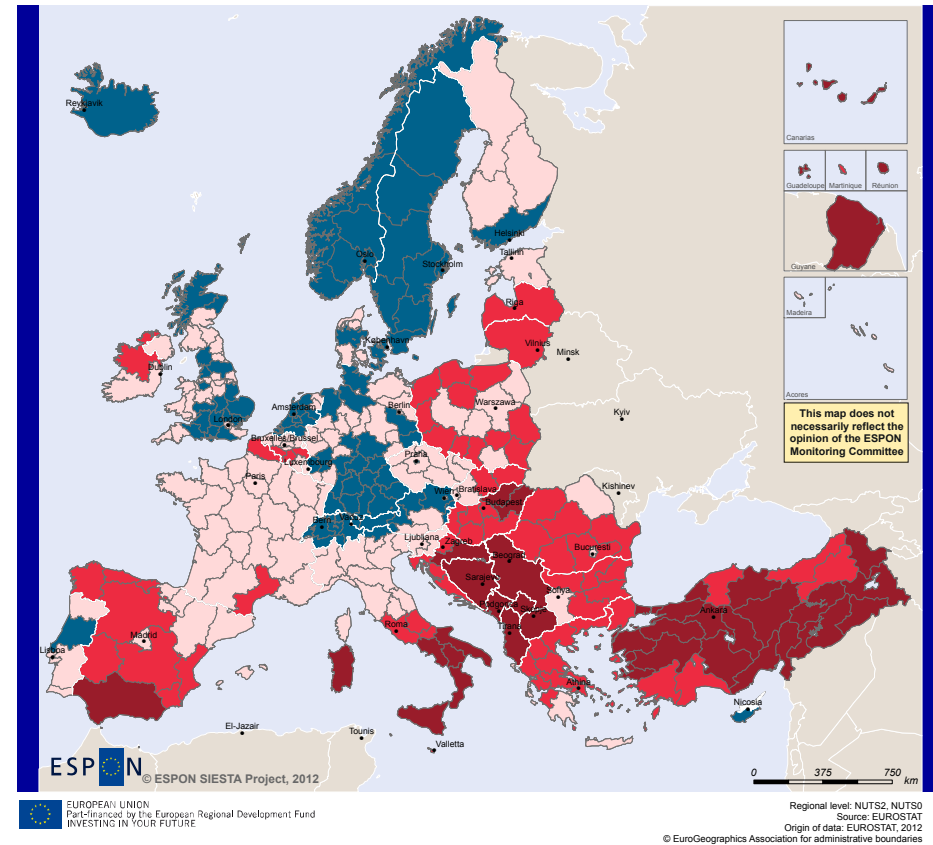
In several countries an unqualified or low qualified workforce is a major challenge for transforming towards a more competitive, sustainable and innovative economy in line with the objectives of Europe 2020. There is a moderate correlation between employment (aged 20 to 64) and human resources in science and technology, as well as between employment and broadband penetration. These correlations indicate that smart and inclusive growth may endorse each other.

The following maps focus on different perspectives of employment and unemployment. The section starts by showing the territorial dimension of the employment rate in 2010 ([Map 4.1](#)) which is followed by the corresponding regional distances to the national targets ([Map 4.2](#)) and the change during the past decade ([Map 4.3](#)). Low employment rates may result from different sources and labour market structures. Since unemployment is one important source for low employment rates, its territorial pattern is mapped as well ([Map 4.5](#)). The inclusive growth priority furthermore inhibits a focus on specific groups of the population, some of them are separately mapped: women employment in terms of gender balances ([Map 4.4](#)) and youth unemployment ([Map 4.6](#)).

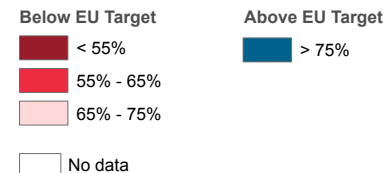
Regional employment rates driven by the national context

- Target mainly reached in Central and Northern European regions.** In 2010, the EU headline target of an employment rate of 75% for the population aged 20-64 years- has been achieved by many regions in the Nordic Countries, the UK, the Netherlands, Germany and in the Alpine Arc.
- Territorial challenges in Southern and Eastern Europe.** Most of the remaining European regions, with the exceptions of Cyprus and the Centro Region in Portugal, have not achieved the target yet. The lowest employment rates are below 50%, in few regions accounting for only about 40%, and have been observed for Turkey, Serbia, Kosovo and Southern Italy. The situation in these regions is particularly challenging and makes it very difficult for these regions to reach the EU target by 2020. Taking into consideration the current economic situation of these regions, any upward trend by more than a few percentage points will present a considerable progress for these regions.
- Major internal disparities in Spain and Italy.** In most countries there are no significant disparities between the regions. Exceptions are Italy and Spain. They have a large North-South decline. Employment rates in the Northern regions of these countries are close to EU average and the Southern regions are lagging behind.
- National policies important for regions.** There is no clear correlation between the employment rate and urban-rural settlement structures. For instance, in the Nordic countries rural areas are doing well, while some urban areas in Eastern Europe are faced with major challenges. These findings indicate that regional employment may be mainly depending on economic conditions and national policies.
- Employment supports social cohesion.** In regions with a low employment rate the share of young people not in work, education or training and long-term unemployment rates are relatively high. This shows that employment is important for supporting social cohesion by creating income.

Map 4.1 Employment rate as percentage of active population aged 20-64, 2010



Percentage of active population (%), 2010.
EU 2020 Target = 75%

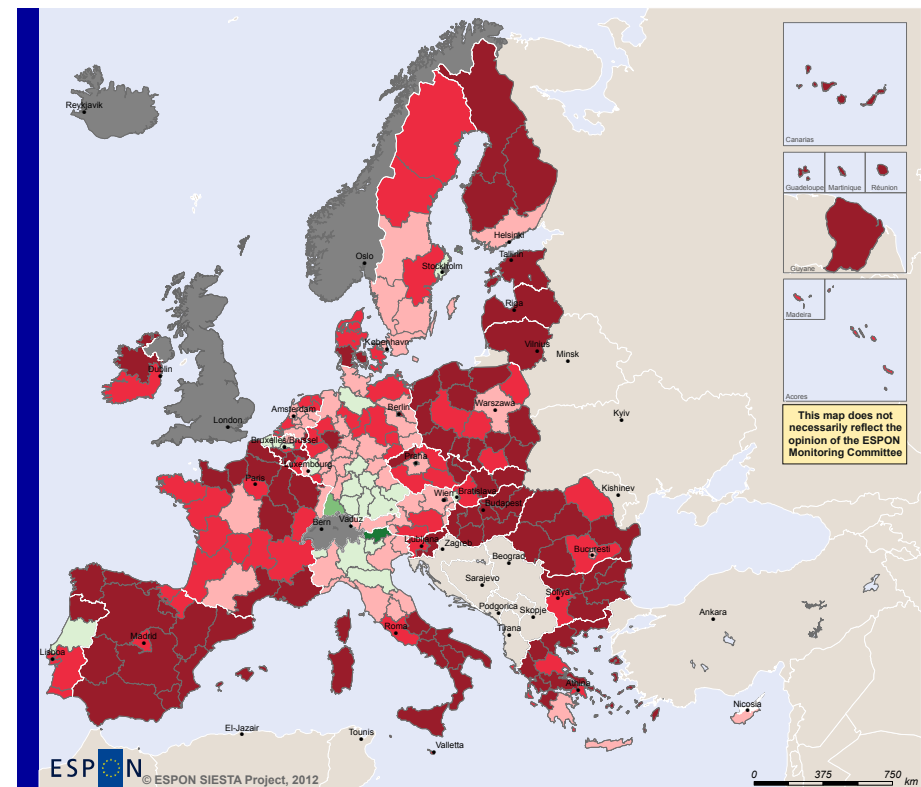


Notes:
The employment rate is defined as the number of persons aged 20 to 64 in employment divided by the total population of the same age group.
The EU27 target is to reach a 75%
EU27= 68.5%
XK and AL for 2009.

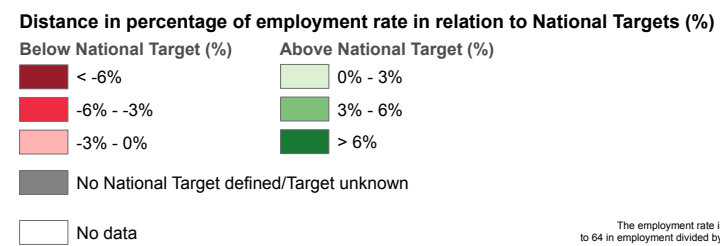
National employment still distant from targets

- Different national targets.** National targets on employment are very diverse in Europe. They are ranging from 62.9% in Malta to 80% in Denmark, Sweden and the Netherlands. The setting of these targets has been strongly influenced by the individual countries' starting point.
- National targets do not add up to EU target.** Achieving all national targets will not be sufficient for realising the EU target of 75%, it would be missed by about one percentage point. Moreover, taking into account that in most countries the crisis has brought additional economic challenges with decreasing employment rates in recent years, it seems to be even more difficult to achieve the EU target. In many countries also realising the national targets has become an increasing challenge.
- Actions needed in the most challenged regions.** Three French outermost regions, three regions in Southern Italy, two regions in Hungary and the Spanish regions in Africa (Melilla and Ceuta) have been most distant to their national targets in 2010. They were below their respective national targets by 20% to 25%. This is a particularly challenging situation, which may have to be tackled by specific regional strategies in these Member States.
- National references do not consider internal differences.** A comparison of regional employment rates with national targets allows for a more differentiated picture which reveals further internal disparities, e.g. in Germany, Portugal and Belgium (Map 4.2). This makes the need to for specific regional strategies even more evident, since national approaches do not necessarily address these internal disparities.
- Policy responses.** One of the most ambitious countries with a high employment rate is the Netherlands, which has set an employment target of 80% for 2016. New policies have been announced. They include for instance an action plan for reducing unemployment of old age workers and a new tax on pensions for early retirement.

Map 4.2 Distance to the Europe 2020 national target on employment rate (percentage of active population aged 20-64), 2010



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

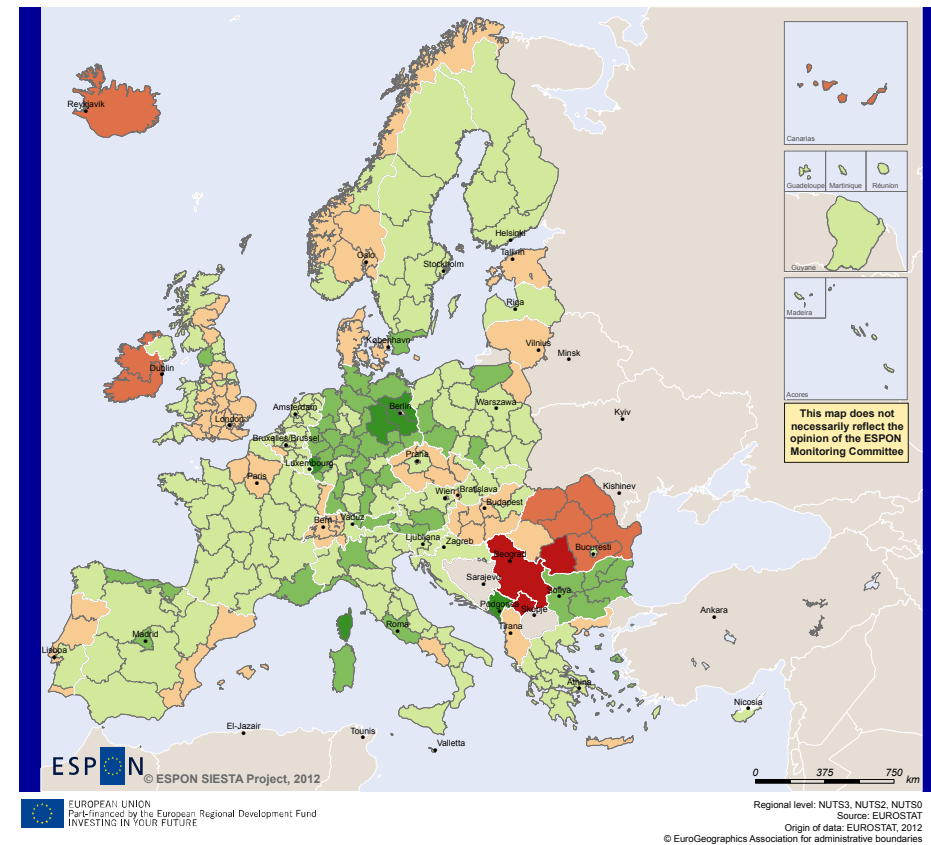


Notes:
 The employment rate is defined as the number of persons aged 20 to 64 in employment divided by the total population of the same age group.

Increasing employment rates

- Understanding the indicator.** The change of the regional employment rate is a structural and short-term indicator at the same time. The coverage of a decade makes the interpretation with regard to this map particularly complex (Map 4.3). For instance, the high rates of employment increases experienced in East Germany may be related to economic structural changes experienced during the whole decade. In many cases, however, this indicator has been also strongly influenced by decreasing employment rates in the later years of the decade, i.e. since 2008. In these cases, potentially opposite developments are not fully visible when depicting the employment change of the whole decade. Thus, any interpretation of the map should take into account that different regions have been faced with different types of dynamics between 2000 and 2010.
- Overall increase of employment rates.** Most German regions have significantly increased their employment rates. Employment growth has been particularly high in some East German regions, although unemployment is still high in most of these regions (Map 4.5). Other examples of considerable growth in the employment rate are Bulgaria and Montenegro. The highest increase of all European regions has been observed in Corsica with a growth of 26.6 percentage points in the employment rate, which has recently reached about EU average. This may be a positive example for the currently most challenged regions.
- Some areas with high decreases.** In particular, Serbia, Kosovo and Romania have experienced a strongly decreasing employment rate during the last 10 years. For instance, in the Romanian region of Southwest Oltenia the registered employment rate decreased by 12% during this period. This trend may be related to emigration flows. This example shows how demographic development and migration may affect the change of the employment rate.

Map 4.3 Trends in employment rate
(percentage of active population aged 20-64), 2000-2010



Percentage points difference (%), from 2000 to 2010.

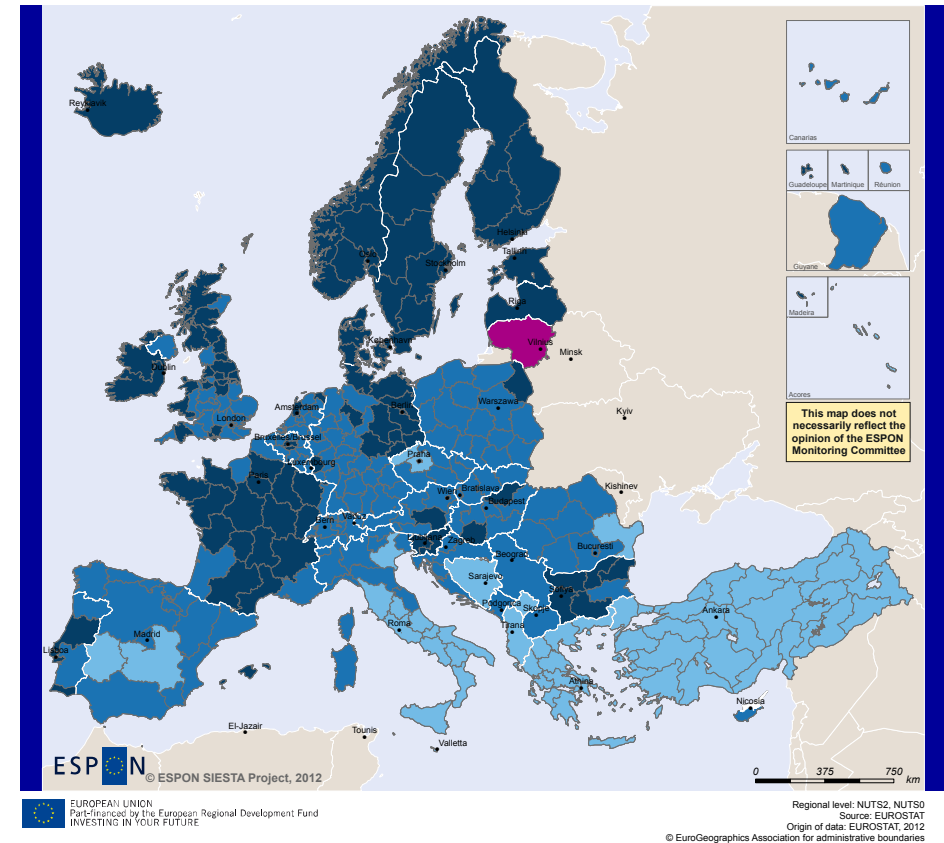
Negative change (%)	Positive change (%)
■ <-10%	■ 0% - 5%
■ -10% - -5%	■ 5% - 10%
■ -5% - 0%	■ > 10%
■ No data	

Notes:
 The employment rate is defined as the number of persons aged 20 to 64 in employment divided by the total population of the same age group.
 Data for BG correspond to 2003 - 2010 change.
 Data for DE41 and FE42 correspond to 2002 - 2010 change.
 Data for DEB1, DEB2 and DEB3 correspond to 1999 - 2010 change.
 Data for HR are shown at country level and correspond to 2002 - 2010 change.
 Data for XK correspond to 2001 - 2009 change.
 Data for ME correspond to 2001 - 2010 change.
 Data for AL correspond to 2000 - 2009 change.
 DK data are shown at country level.

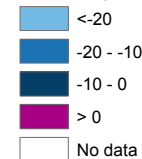
Gender imbalances in employment rates

- Gender inequalities in employment.** In 2010, the EU27 employment rate of women was 13% below the corresponding rate of men, which reveals a significant gender imbalance. Despite increasing women employment rates during the past decade in most European countries, women are still in a challenged situation. In many regions this is due to low education, specific career paths, working arrangements, religion or social issues.
- Only in Lithuania female employment higher than male employment.** Lithuania is the only European country where the rate of women employment is higher than the rate of the men. Latvia and Estonia have only a slight gender inequality in favour of men. However, in all these countries overall employment is far below the 75% headline target (Map 4.1) and most of their regions suffer from high unemployment (Map 4.5). Other examples for a small gender gap are the Nordic Countries, most French regions, Slovenia, Bulgaria, the East Germany *Länder* plus and some other individual regions across Europe. This territorial distribution of gender specific employment rates indicates a strong influence of national frameworks and traditions.
- Major gender imbalances between European regions.** Many regions in the Eastern Mediterranean, including most of Italy register the highest gender imbalances (Map 4.4). The imbalance is the highest in Mardin (TR) with a difference of nearly 60 percentage points and female employment of mere 10.6%. These cases are specifically challenging and require a policy approach focusing on gender disparities and increasing social cohesion.
- Policy responses.** Given the extent of employment related to gender imbalances in many European regions, it may be argued for clear strategies assisting families and childcare facilities together with enhancing equal salaries for men and women. In the Nordic Countries or France corresponding policies have shown good results.

Map 4.4 Gender balance of employed people, 2010



Percentage points difference between men and women of active population aged 20-64, 2010.



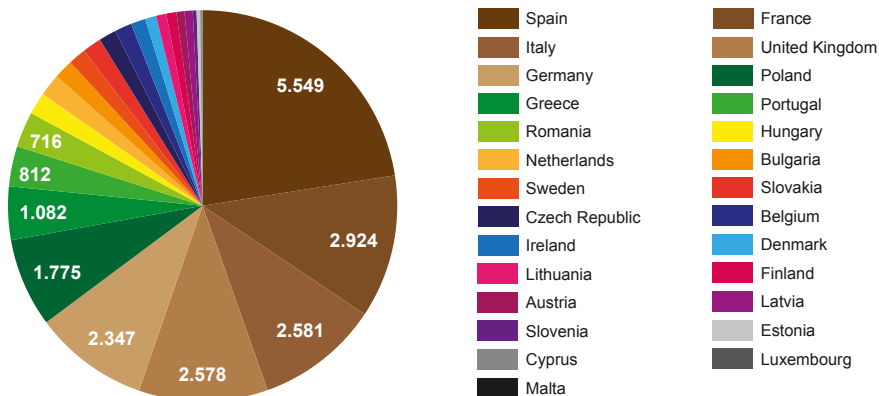
Notes:
The indicator shows the balance between male and female employment rate. It was obtained by subtracting the percentage of male employment from the female employment percentage, both expressed in terms of total population aged 20-64.

4 - Inclusive Growth

Clusters of unemployment

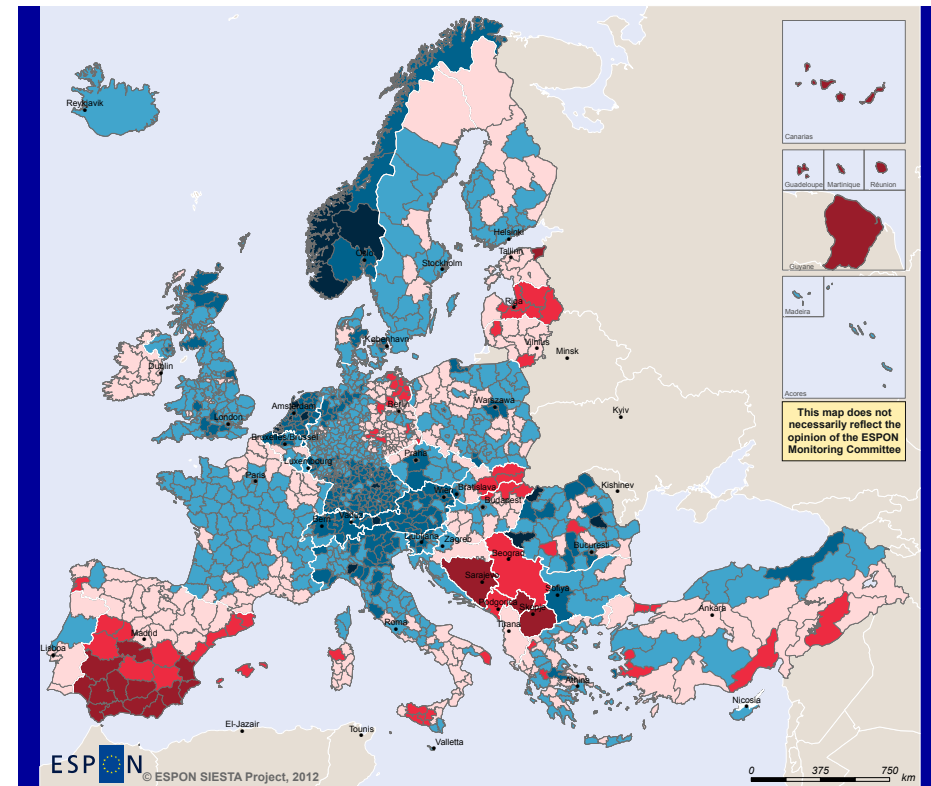
- Unemployment particularly affects 3 groups of regions.** High unemployment rates can be found in a few scattered regions, in eastern Germany and in 3 regional clusters across Europe (Map 4.5). Despite this common feature of high unemployment rates, these are linked to different developments:
 - In **the Balkans**, with the overall highest unemployment rate in Kosovo (45.4%), unemployment is linked to the transition from a centralised to a market oriented economy which may be combined with effects going back to the war in this area.
 - In **Southern and Eastern Spain**, including the Canary Islands, it reflects the impact of the crisis on some sectors (construction and basic services) in combination with previous structural unemployment. It currently accounts for the largest number of unemployed in the EU (Figure 4.1).
 - In **the Baltic States** unemployment seems to be dropping recently.
- Unemployment has economic and social effects.** The importance of fighting unemployment with respect to Europe 2020 is indicated by the correlations of unemployment with poverty, long-term unemployment and low economic growth.

Figure 4.1 Unemployed people per EU-country in March 2013 (not seasonally adjusted) in thousands of persons



Source: Eurostat & ESPON SIESTA

Map 4.5 Unemployment rate (percentage of active population aged 15-74), 2010

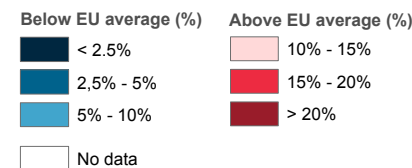


EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

ESPON
© ESPON SIESTA Project, 2012

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

% of active population, 2009 (EU average = 9.6%).

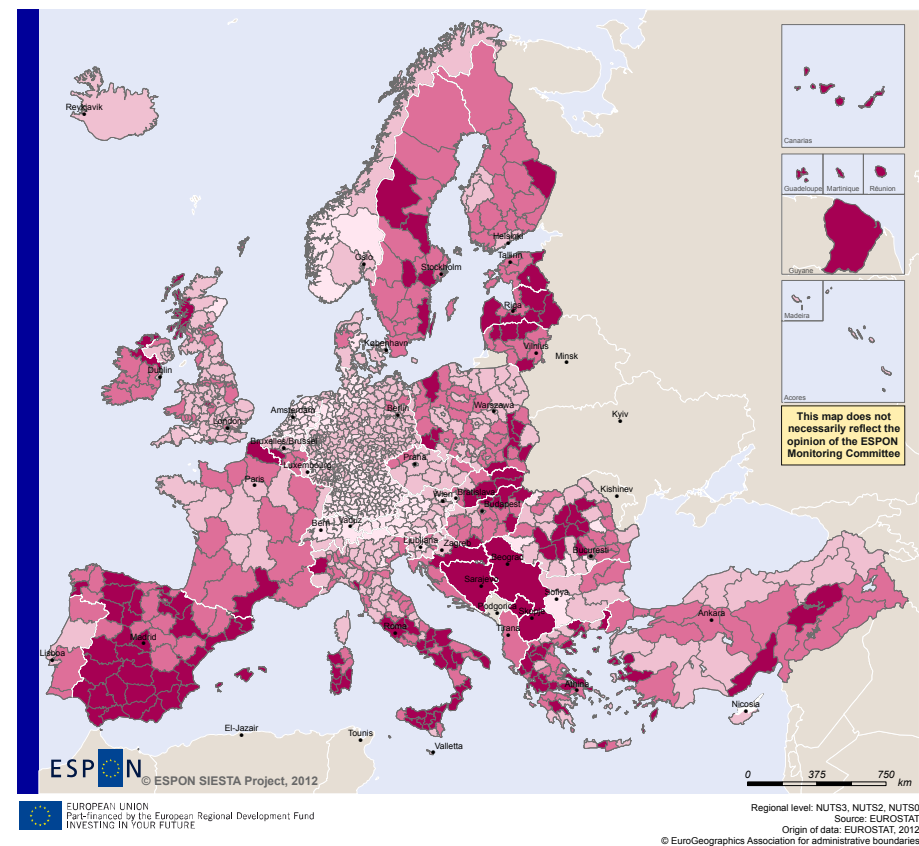


Notes:
PT, NO, CH, BG, BE and TR are shown at NUTS2 level.
RS, XK, ME, MK, BA and AL are shown at country level.
EU 27 average = 9.6%
Red regions are over EU27 average.

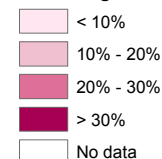
Youth unemployment across Europe

- Low youth unemployment in Alpine area, Germany, Netherlands and Norway.** Youth unemployment is low in many West German, Austrian, Swiss, Norwegian and Dutch regions as well as in the capital regions of the Czech Republic, Slovenia and Slovakia and few other regions across Eastern Europe. These regions have developed dynamic labour markets with mostly low unemployment rates, which allow young academics a relatively easy entrance on the labour market.
- Differences in the territorial pattern of youth unemployment in Europe.** Many regions around the Baltic Sea, Southern Europe and the Balkan countries have high youth unemployment rates. Within the EU, the most challenging situation can be found in some Spanish regions, especially in the South and South-East, and in Greece. High unemployment rates in the Northern regions may have been caused by universal state support. In the Southern European regions these rates may be more related to strong family relations combined with the absence of state mechanisms which truly support the youth.
- Policy responses.** The European Commission is particularly concerned about youth unemployment. For this reason it has launched the Communication 'Youth on the Move', which responds to the challenges of young people aiming to succeed in the knowledge economy. Even in strongly growing economies, young people generally bear a higher risk to be unemployed than adults. Some countries have developed successful actions which support young people when entering the labour market. Such examples may be found in Germany, Norway and France. These actions include for instance the cooperation with employers in vocational training, personal coaching, career counselling and specific up-to-date information on vacancies, jobseekers and required qualifications.

Map 4.6 Youth unemployment rate (as percentage of active labour force aged 15-24), 2009



Percentage of total active population aged 15-24 (%), 2009.



Notes:
 NO, BG, FR, HR, TR and PT are shown at NUTS2 level.
 AL, BA, RS, XK and MK are shown at country level.
 Youth unemployment rate is the percentage of the unemployed in the age group 15 to 24 compared to the total labour force (both employed and unemployed) in that age group.

4.1.2 Territorial Differences in Lifelong Learning and Educational Attainment

In a globalised economy lifelong learning and skills development is essential to sustain a competitive, innovative, green and smart workforce adapted to the constant challenges. It is also particularly important at times with high unemployment in several European regions and when especially low-skilled old workers need to reinvent themselves in order to find a job.

At regional level a positive correlation between lifelong learning participation and the employment rate can be observed. Lifelong learning covers learning in various contexts, whether formal, non-formal or informal, and at all levels of education and age. It thus includes early childhood education, schools of higher education, vocational education and training (VET) as well as adult learning. The term 'lifelong learning' is however more often used only in reference to adults aging at least 25 years. The flagship initiative 'An Agenda for New Skills and Jobs' basically aims to develop and improve the European workforce by applying the concept of "flexicurity". This concept combines flexible contractual arrangements, active labour market policies, modern social security systems and, substantially, lifelong learning.

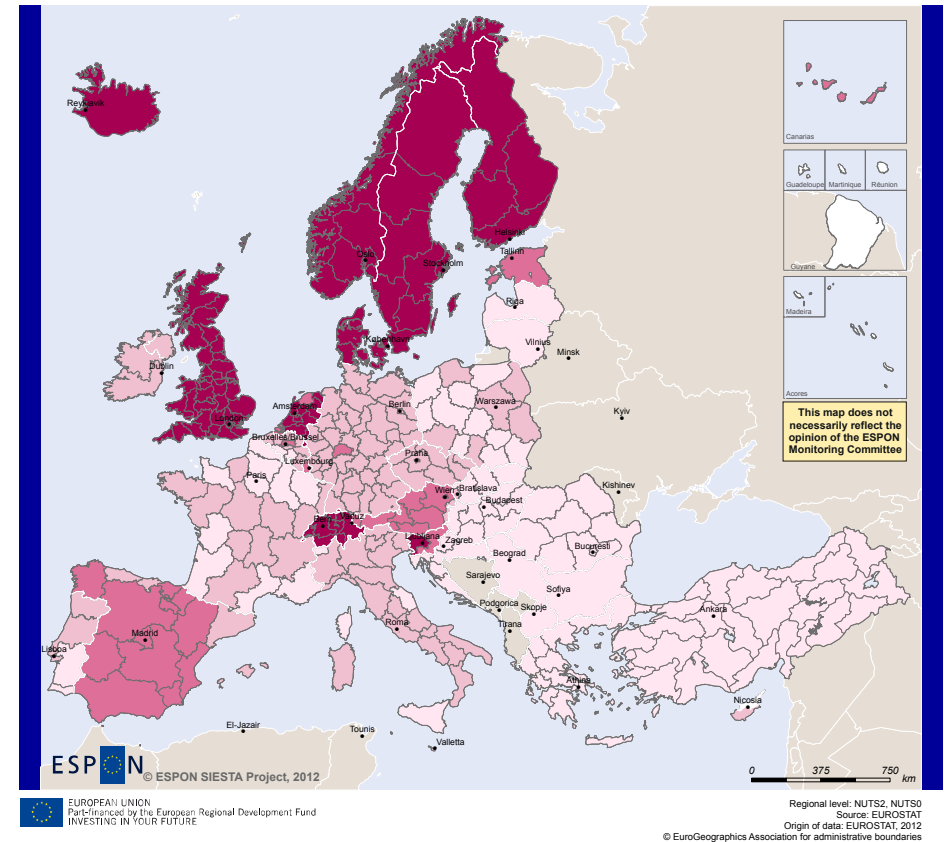
The importance of the latter was already highlighted in the Lisbon Strategy, which aimed at a participation rate in lifelong learning activities of 12.5% of the population aging 25-64 years. By 2010 the corresponding figure was 9.1%, thus, the target had been missed by several percentage points. Already in 2009, the 'Strategic Framework for European Cooperation in Education and Training' (ET2020) updated this target by aiming at 15% of adults participating in lifelong learning by 2020.

The territorial dimension of lifelong learning is presented as the participation of adults in education and training ([Map 4.7](#)) and low educational attainment ([Map 4.8](#)). The latter refers to the main reasons to develop lifelong learning. Low educational attainment is regarded as an obstacle to both personal and professional development and it represents also a disadvantage for a society's efforts to reducing disparities between individuals or groups. Lifelong learning is expected to impact especially those regions which have a particularly high share of population with low educational attainment and thus, low-skilled labour force.

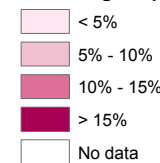
National patterns of lifelong learning

- National context matters.** The participation rate of adults (aged 25 to 64) in education and training activities mainly reflects differences between countries. The national context seems to be essential for understanding the disparities in Europe. This may be related for instance to different educational frameworks and socio-cultural specifics.
- Northern Europe best in lifelong learning participation.** The Nordic Countries, the UK, Switzerland and the Netherlands have lifelong learning participation rates above the European target of 15%. In these countries, adults access and participate in professional training and education fairly easily.
- Western Europe shows high participation in lifelong learning.** A second group of countries covers most remaining regions of Western Europe. They have medium participation rates. Within this group most Spanish and Austrian regions and Slovenia have higher participation rates in lifelong learning than most other Western European regions. These rates may have been caused by several training programmes with partnerships with the private sector (associations of companies, unions, etc.) and universities which have been developed in Western Europe in recent years.
- Eastern Europe is improving.** Eastern European regions face major challenges, since their lifelong learning participation rate was still below 5% in 2010. This situation may be related to the lack of corresponding funding in the past. With increasing accumulation of European Social Fund (ESF) activities, participation rates may further increase in Eastern Europe too. The examples of Spain and Slovenia indicate the opportunities provided by the ESF in this respect.

Map 4.7 Participation of adults (aged 25-64) in education and training, 2010



Percentage of population age 25-64 (%), 2010.

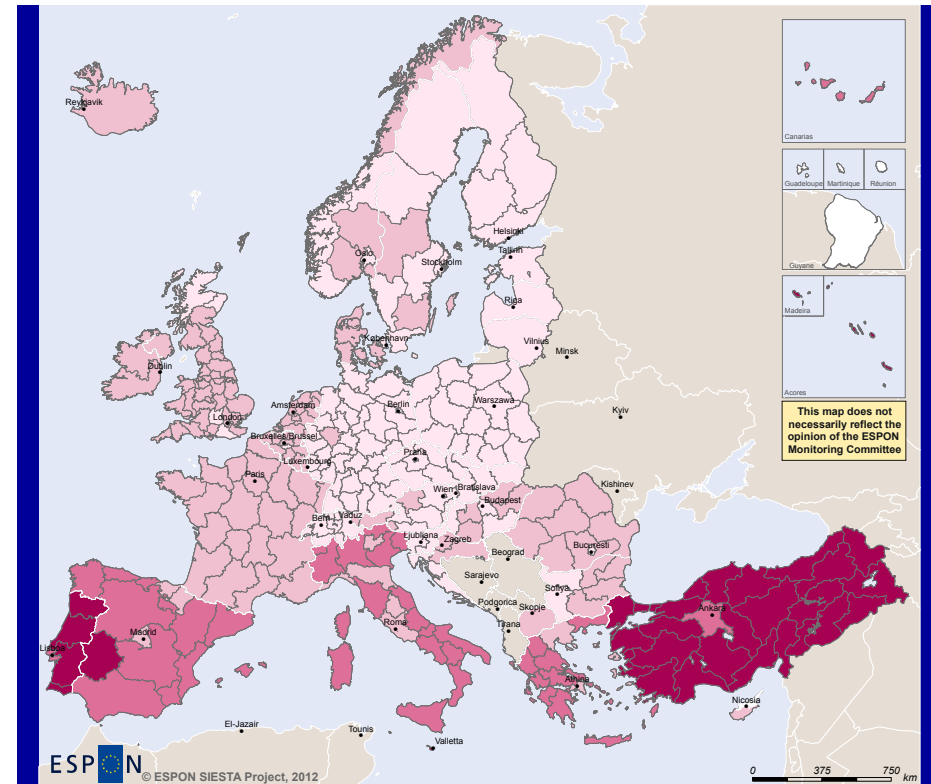


Notes: RS, BG, MK, CY, IS, EE, LV, LT, LU, MT are shown at country level.

Territorial patterns of low educational attainment

- National context matters.** With regard to low educational attainment, national patterns prevail over regional differences. The rates are the lowest in Central Europe and the Baltic Sea Region, where less than 20% of the population have low educational attainment. The share of low educated people is considerably higher in the Southern European countries. In 2010, the highest rates have been observed in Turkey, Portugal, Extremadura (Spain) and the outermost Portuguese and Spanish regions.
- Economic structure a main reason.** Apart from different education policies especially dissimilarities in the economic structure may account for these differences between countries. The regions with a high share of persons with low educational attainment generally provide most of their employment opportunities in agriculture, tourism and construction. Other more knowledge intensive sectors, for which higher educational attainment is necessary, are not widespread in these regions. This suggests a link between educational attainment levels and the offered jobs.
- Domestic disparities in Spain.** Ratios tend differ little between regions of one country, which is an indication for the importance of the national policies. However, especially in Spain territorial differences in education levels are considerable.
- Relation between educational attainment and lifelong learning.** In general, regions with a high proportion of people with low educational attainment (Map 4.8) have low participation rates of adults in education and training (Map 4.7). This constitutes a major territorial challenge. Particular efforts are needed in the regions facing this double education gap. Such regions are mainly located in Turkey, Greece and Portugal.

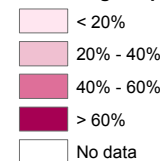
Map 4.8 Population (aged 25-64) with low educational attainment (level 1 or 2 ISCED), 2010



EUROPEAN UNION
Funded by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2, NUTS0
Sources: EUROSTAT
Origin of data: EUROSTAT, 2012
© EuroGeographics Association for administrative boundaries

Percentage of people aged 25-64 (%), 2010.



Notes:
This indicator is the ratio of people aged 25-64 with lower secondary education attainment. IS, EE, LV, LT, MK, CY and MT are shown at country level.

4.2 Territorial Variations in Poverty and Social Exclusion

The Europe 2020 Strategy considers the fight against poverty to be as important as supporting economic growth, employment or a smart economy. Combating poverty is a major dimension of the inclusive growth priority. This policy objective is especially important in the context of the current crisis, where the people most vulnerable in economic terms are most affected.

The causes of poverty are multi-faceted. Usually poverty is related to low income or even no income. But also people with very low income, the ‘working-poor’, who rely on temporary and low-paid jobs, may face poverty or social exclusion. Thus, high employment rates do not necessarily imply low poverty levels. In addition, there are specific population groups which do not belong to the active population and may be at risk of poverty. This includes especially children, elderly people, women, young adults and migrants from outside the EU as well as people with disabilities and homeless people.

The flagship initiative ‘European Platform against Poverty and Social Exclusion’ has defined areas of action. However, the most effective actions against poverty and social exclusion are of particular importance for national or even regional governments. Among these responsibilities are actions regarding social care, housing, health assistance, family policies and education.

Poverty may not only be caused by different circumstances but is also difficult to define. The EU has adopted a statistical definition which has been used to set the corresponding headline target. According to this definition, people are at risk of poverty or social exclusion if they fulfil at least in one of the following three conditions: at-risk-of-poverty, severe material deprivation, or living in households with very low work intensity. Each indicator has its specific definition (Table 4.2). The aggregated EUROSTAT data is based on micro data of the EU Statistics on Income and Living Conditions (EU-SILC).

Table 4.2 Definition of at-risk-of-poverty or social exclusion rate.

At-risk-of-poverty or social exclusion rate expresses the % of population at least in one of the following three conditions		
<p>At-risk-of-poverty: having an income below the 60% threshold of the national median equivalised disposable income after social transfers</p>	<p>Severe material deprivation: experiencing at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone</p>	<p>People living in households with very low working intensity: people aged 0-59 living in households where adults work less than 20% of their total work potential during the past year</p>

Source: EU-SILC

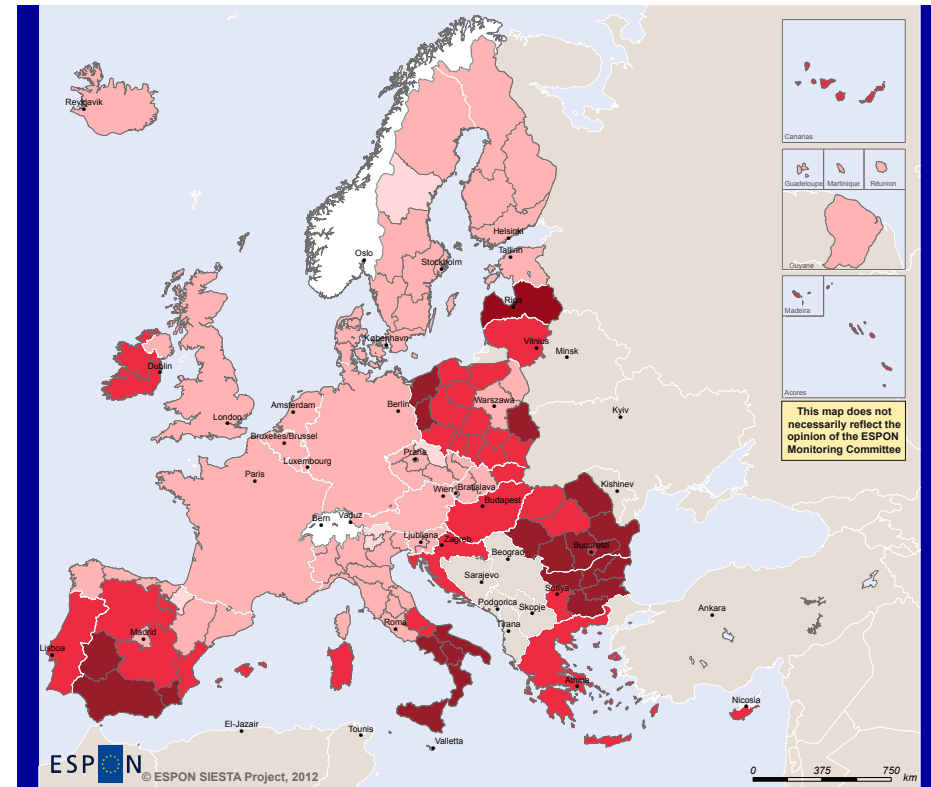
The Europe 2020 Strategy envisages reducing the number of people at risk of poverty and social exclusion at least by 20 million by the year 2020. In 2010, more than 115 million people were officially considered to be poor in the EU. This corresponds to 23.5% of total EU-population. Reducing this figure by at least 20 million people equals a decrease of 16.9% with respect to 2010. Given this, relation poverty is first presented as distance of the regions to the EU headline target, assuming that all countries aim at reducing the at-risk-of-poverty or social exclusion rate according to the EU average target for 2020 (Map 4.9).

In addition, this subsection shows the territorial dimension of the individual social indicators which build the composite indicator of people at risk of poverty or social exclusion (Table 4.2). The at-risk-of-poverty rate is depicted regarding the situation in 2010 (Map 4.10) and its trend between 2005 and 2010 (Map 4.11). The rate of severe material deprivation (Map 4.12) and the share of people living in households with very low work intensity (Map 4.13) are only presented for the situation in 2010. Finally, the territorial pattern of long-term unemployment, referring to people unemployed for at least 12 months, is also analyzed (Map 4.14), as there is a common understanding that high long-term unemployment contributes to creating poverty.

Risk of poverty highest in Eastern and Southern Europe

- Setting the target.** The calculation of the distance to the European target of the population at-risk-of-poverty or social exclusion (Map 4.9) is based on the policy ambition of reducing in 20 million people in or at-risk-of-poverty and social exclusion. Depending on the regions' departing points the necessary efforts to reduce poverty differ (considering that all regions should make the same contribution: app. 17%). Obviously, regions and countries with a high level of poverty face bigger challenges to reach the European target than regions with relatively low poverty. Latest data, however, indicates increasing rather than decreasing poverty rates for Europe since 2010.
- The most challenged regions mainly located in Eastern and Southern Europe.** The risk of poverty or social exclusion rate is the highest in many regions in Bulgaria, Romania and Italy as well as in some Spanish and Polish regions and in Latvia. Indeed, in most Bulgarian and two Romanian regions more than 50% of the regional population has been at-risk-of-poverty or socially excluded in 2010. These regions should be specially targeted in relation to the inclusive growth agenda of the Europe 2020 Strategy.
- Internal disparities most present in Spain, Italy and Poland.** There are considerable disparities between the Italian and Spanish regions respectively. The Northern regions of these countries have to make a rather small effort, while the Southern regions are faced with high levels of poverty or social exclusion that require particular attention. In Poland disparities also may challenge territorial and social cohesion, though with different territorial patterns.
- Limited commitment from Member States.** Although poverty and social exclusion are territorially challenging, Member States have so far paid limited attention to this target. Many countries have not set a target. Some countries have defined a target which it is not comparable with the overall EU headline target as they are based on different indicators. The remaining countries have set a target below EU aspiration.

Map 4.9 Distance to the Europe 2020 target of population at-risk-of-poverty or social exclusion, 2010



EUROPEAN UNION
Funded by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS2, NUTS0
Source: Seventh progress report on economic, social and territorial cohesion.
Origin of data: Seventh progress report on economic, social and territorial cohesion.
© EuroGeographics Association for administrative boundaries

Distance in percentage of population at risk of poverty or social exclusion in relation to EU 2020 Target (%).

Above EU 2020 Target (%)

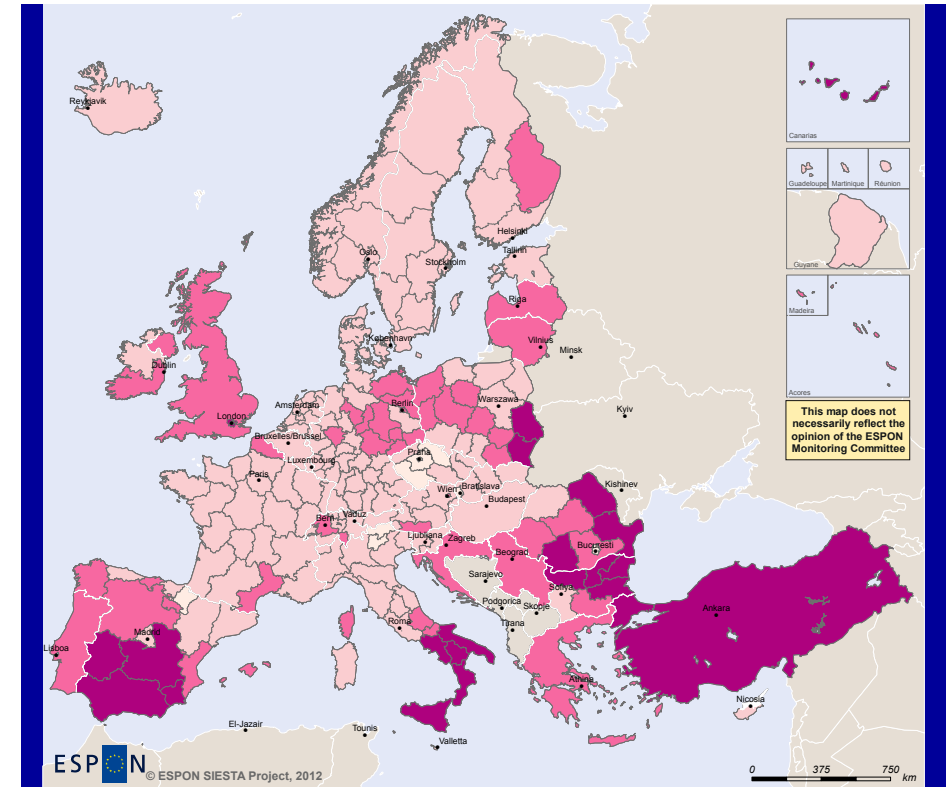
- < 2%
- 2% - 4%
- 4% - 6%
- > 6%
- No data

Notes:
The Europe 2020 Target is to reduce the people at risk of poverty or social exclusion by at least 20 million people.

Challenging hotspots of at-risk-of-poverty after social transfers

- National reference blurs international comparison.** At-risk-of-poverty after social transfers is a state-based indicator of poverty showing social inequalities between regions in relation to the national income level (Table 4.2). This means that regional at-risk-of-poverty rates refer to different income values in each country. While not providing a European comparison of income levels of people at-risk-of-poverty, the map shows differences in territorial income disparities across countries (Map 4.10).
- Domestic differences in Eastern and Southern countries.** In general, regional variations within the economically most successful countries in Europe tend to be low. In these countries poverty is distributed rather equally across regions. In contrast, in some Eastern and Southern countries internal disparities are more pronounced. Corresponding examples are Italy, Spain, Bulgaria, Romania and Poland (Map 4.10). This suggests that poverty has an important territorial dimension in these countries which may affect especially the more peripheral regions.
- Fighting poverty needs a place-based approach.** This observation provides substantial evidence for cohesion policies. It shows that poverty needs to be territorially targeted in several countries and may be specially challenging for some peripheral countries. In other countries, however, the distribution of poverty depends more on other influences rather than on territorial issues. This seems to hold mainly in many Central European and Nordic countries.

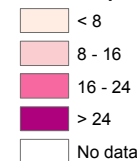
Map 4.10 People at-risk-of-poverty after social transfers, 2010



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

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

At risk of poverty rate, 2010.

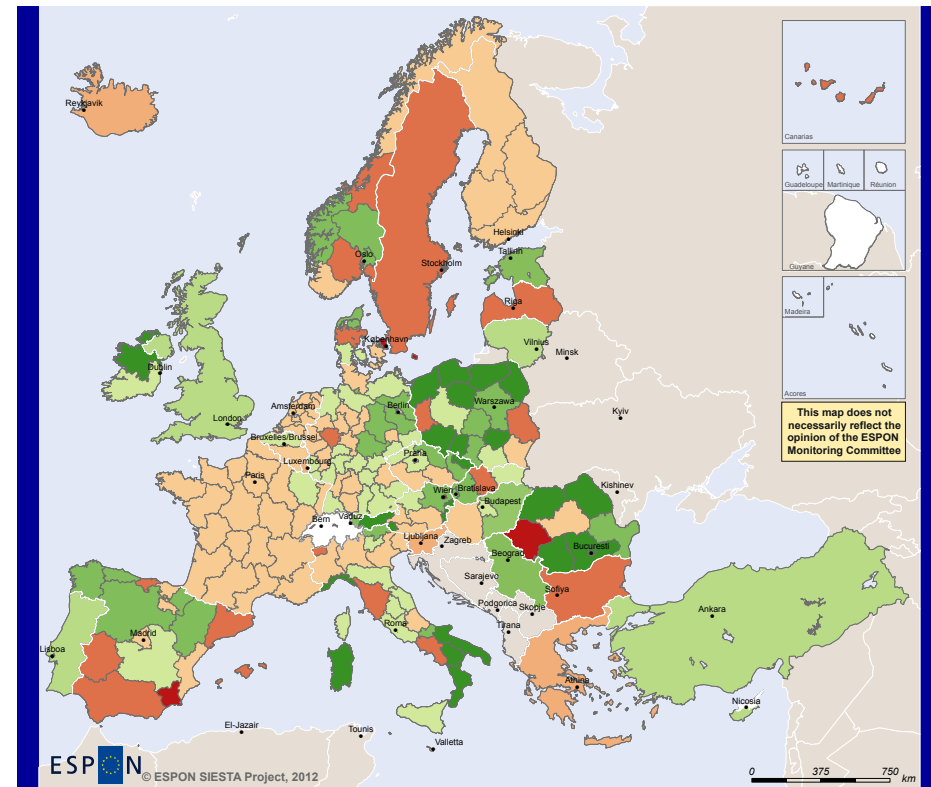


Notes:
BE, EL, NO, and UK are shown at NUTS1 level.
HR, RS, TR and PT are shown at country level.
FR, TR, UK, NL and RS for 2009.
Indicator definition: The share of persons with an equivalised disposable income below the risk of poverty threshold, which is set at 60% of the national median equivalised disposable income (after social transfers).

Different development patterns of poverty

- Considerable internal disparities in most countries.** In most countries the regions have developed rather differently with respect to the population at-risk-of-poverty between 2005 and 2010. Exceptions are France, the Netherlands and Finland. In many countries even increasing and decreasing poverty may be observed in neighbouring regions. This indicates the importance of the regional level when analysing poverty trends and fighting poverty. In Romania, for instance, poverty has decreased in almost all regions, but in Transylvania and Banat the level of poverty has been increasing during the period under consideration. For Spain, an even more dispersed development may be observed with an increasing share of people at-risk-of-poverty in some of the most developed regions (Catalonia, the Basque Country or Madrid) and in the South including the Canary Islands, while other Spanish regions have reduced their poverty rates. Similarly diverse internal trends have occurred in Denmark, Poland, Germany, Italy and Norway (Map 4.11).
- Improvements in the East.** Eastern European regions, in general, have experienced decreasing shares of people classified as at-risk-of-poverty. This is for instance particularly visible for the Baltic regions in Poland. In some Western European regions the at-risk-of-poverty rate has also decreased. Examples are Portugal, Ireland, the UK and several regions in Spain, Italy and Germany.
- Growing risk of poverty in several countries across Europe.** Sweden, Bulgaria, Iceland, Greece, France and Finland are examples of countries where the at-risk-of-poverty rate increased between 2005 and 2010, implying a negative trend. Even if this trend mostly accounts for few percentage points, it may mirror either growing income disparities within countries or may be due to sinking income in some economic sectors. These developments run counter to the objectives of the Europe 2020 Strategy.

Map 4.11 Evolution of people at-risk-of-poverty after social transfers, 2005-2010



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

Regional level: NUTS2, NUTS1 and NUTS0
Source: EUROSTAT EU-SILC
Origin of data: EUROSTAT, 2012.
© EuroGeographics Association for administrative boundaries

Percentage points difference (%), from 2005 to 2010.

Positive change (%)

- < -4%
- 4% - -2%
- 2% - 0%

No data

Negative change (%)

- 0% - 2%
- 2% - 4%
- > 4%

Notes:
BE and EL are shown at NUTS1 level.
BG, TR, SE and UK are shown at country level.
Data for FR, NL and RS show the change 2005 - 2009.
Data for DK and RO show the change 2006 - 2009.
Data for GR and PT show the change 2007 - 2010.

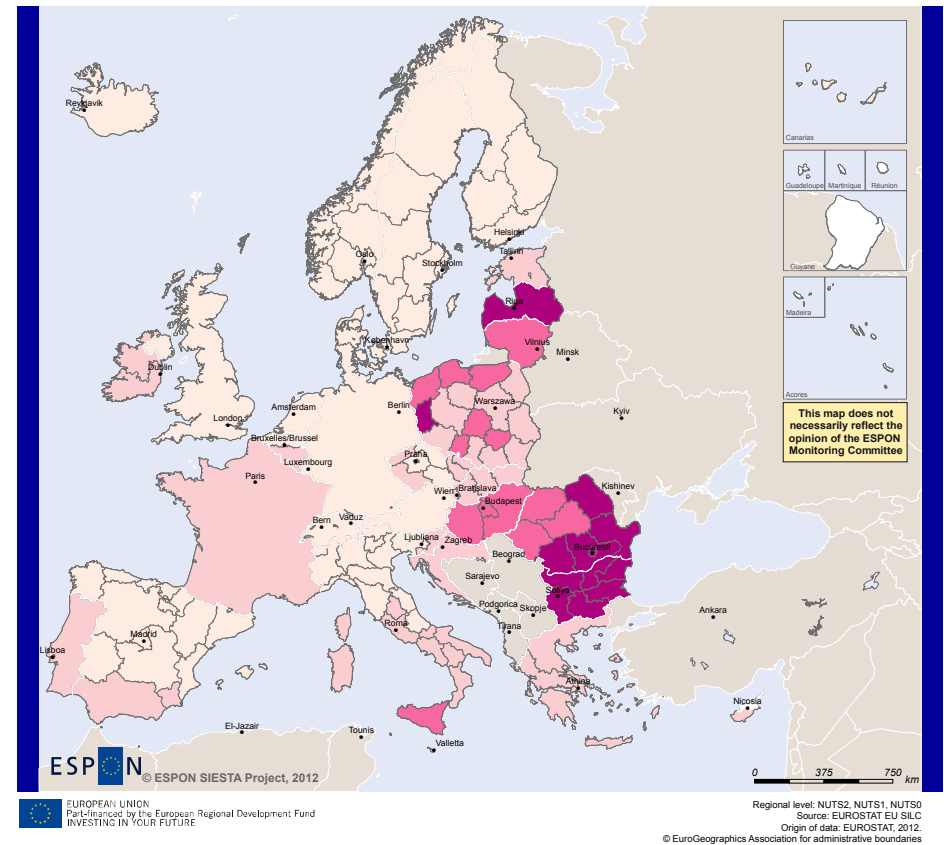
Regions in green colours show a reduction in their poverty rates between 2005 and 2010.
Regions in brown colours have suffered an increase in their poverty rates between 2005 and 2010.

4 - Inclusive Growth

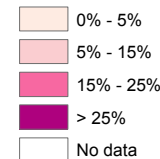
Material deprivation mainly in Eastern European regions

- Considerable material deprivation in Eastern Europe.** Eastern European regions tend to have higher levels of material deprivation (Table 4.2) than Western European regions. In many Romanian and Bulgarian regions more than 30% of the population is affected by severe material deprivation. Severen tsentralen in Bulgaria is the most challenged region with 44.2% of the population suffering from material deprivation.
- Western Europe better off.** Large parts of Western Europe and some regions in the Czech Republic perform much better with rates of material deprivation below 5% (Map 4.12). In 2010, Luxembourg had the lowest corresponding rate in Europe, as only 0.5% of its population suffered from material deprivation. Within Western Europe, Sicily is the most challenged region as it registered a corresponding rate of 16.2% in 2010.
- Being at-risk-of-poverty does not imply material deprivation.** It is worth noting that regions with high rates of poverty or social exclusion (Map 4.9) are not necessarily similarly affected by material deprivation. This is the case in Southern Spain or Southern Italy, where a high share of the population has below 60% of national median income (Map 4.10) but does not necessarily suffer from material deprivation. In these countries an income below the at-risk-of-poverty level obviously may still allow to maintain a certain standard of living. In countries and regions, where a high rate of poverty or social exclusion occurs together with a high rate of material deprivation but a lower at-risk-of-poverty rate, even income above the 60% national median may not be sufficient for maintaining a certain standard of living.
- Policy responses.** Poverty may be most visible when it has severe material implications. Consequently, strong actions are especially needed in countries and regions, where even a disposable income after social transfers above the at-risk-of-poverty level may lead to severe material deprivation. Without such actions the objectives of the inclusive growth priority may be a major challenge.

Map 4.12 Material deprivation rate as percentage of total population, 2010



Percentage of total population (%), 2010.



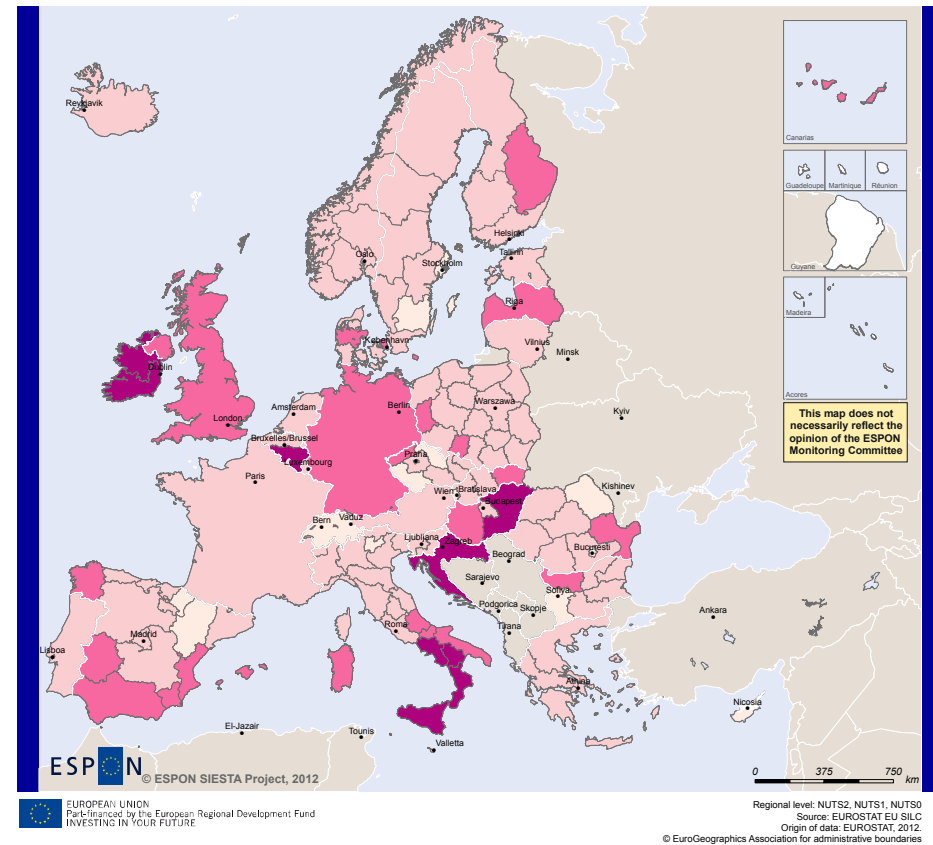
Notes:
 BE, EL and HU are shown at NUTS1 level.
 FR, DE, UK, AT, EL and PT are shown at country level.

Definition: Material deprivation refers to a state of economic strain and durables strain, defined as the enforced inability (rather than the choice not to do so) to pay unexpected expenses, afford a one-week annual holiday away from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, colour television or telephone.

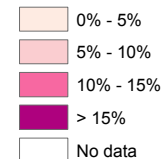
Households with low work intensity

- Low work intensity a source of poverty.** Apparently the pattern of population living in households with very low work intensity (Map 4.13) is strongly related to the unemployment rate (Map 4.5).
- Different relations between unemployment and low work intensity.** Some regions with high rates of unemployment do not show major challenges in terms of low work intensity (Map 4.13), for instance Southern and Eastern Spain. This may indicate that even if unemployment is generally high, in most households at least one person has been working in 2010. Nevertheless, increasing level of unemployment in Spain may result in increasing numbers of households with low work intensity. There are, however, also regions which do not register a particularly high level of unemployment but which have a high rate of people living in households with very low work intensity. Examples for this coincidence are Wallonie or Ireland (Map 4.13). This might be because of high numbers of unemployed one-person households, and/or the concentration of unemployment in particular social classes.
- Few regions with extreme concentrations of low work intensity households.** Areas with high concentrations of people living in households with very low work intensity should be especially targeted by policy actions, since these concentrations may challenge inclusive growth. In 2010, on country level the share of people living in households with very low work intensity was particularly high in Ireland (22.9%). In 2010, at regional level high corresponding shares could be observed for instance for Ceuta (27.4%), Bruxelles-capitale (23.1%) and Wallonie (17.8%).

Map 4.13 People living in households with very low work intensity, 2010



Percentage of population aged 0-59 (%), 2010.



Notes:
 BE, EL and HU are shown at NUTS1 level.
 AT, DE, FE, NL, PT and UK are shown at country level.

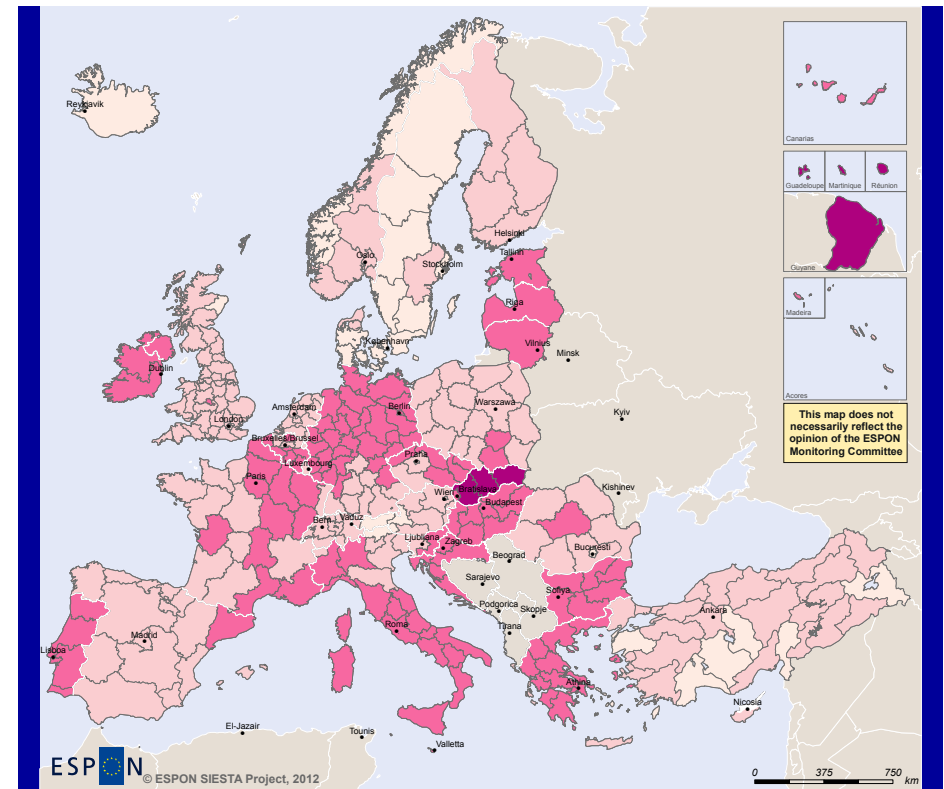
The indicator people living in households with low work intensity is defined as the number of persons living in a household having a work intensity below a threshold set at 0.20.

Definition: The work intensity of a household is the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period.

Long-term unemployment

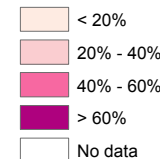
- Unemployment and long-term unemployment partially inter-related.** Long-term unemployment correlates slightly moderately with unemployment. However, a region with high unemployment does not necessarily have high long-term unemployment. For instance, all Slovak regions, except Bratislava (Map 4.14), have particularly high levels of long-term unemployment (almost 70%), while the regions with the highest unemployment rates are mainly located in Southern Spain and the Balkans (Map 4.5). The situation in Slovakia, however, seems to be very specific and requires targeted policies.
- Low levels of long-term unemployment in Denmark, Sweden and Iceland.** In contrast, Nordic regions tend to have low long-term unemployment levels. Even in regions with unemployment above the EU average. For instance in Upper Norrland in Sweden or Vestjylland in Denmark the share of long-term unemployment is similarly low as in other regions of these countries. This indicates a certain degree of labour market mobility.
- Specific countries and regions with high shares of long-term unemployment.** In Slovakia, Hungary, Ireland, the Baltic States, Greece, Bulgaria, Portugal, most regions in Germany and Italy and many French and Belgium regions the share of unemployed people who have been unemployed for more than 12 months were relatively high in 2010. In some of these regions overall unemployment rates are however low, as the example of many North-Western German regions illustrates.
- Policy responses.** Long-term unemployment needs to be particularly targeted as it becomes a structural problem for the affected people and regions, which may challenge regional economic growth and lead to a loss of human capital.

Map 4.14 Long-term unemployment (as percentage of unemployed population), 2010



ESPON
 EUROPEAN UNION
 Part-financed by the European Regional Development Fund
 INVESTING IN YOUR FUTURE
 Regional level: NUTS2
 Source: EUROSTAT
 Origin of data: EUROSTAT, 2012.
 © EuroGeographics Association for administrative boundaries

Percentage of unemployed population, 2010.



Notes:
 EU27 = 40,10%
 Definition: The share of long-term unemployment is the share of unemployed persons for 12 months or more among the total number of unemployed persons, expressed as a percentage.

5 - Conclusions: Territorial potentials and challenges, and the EU 2020 Strategy

This ESPON Atlas illustrates the regional and, when possible, urban dimension of the Europe 2020 Strategy. It shows that achieving a smart, sustainable and inclusive growth through the Europe 2020 Strategy has a clear territorial dimension.

To reach the targets set is a challenge for Europe. The contribution by its regions and cities requires territorially differentiated implementation strategies. Indeed, the objectives of Europe 2020 will require that national, regional and local authorities are aware and make use of the specific development potentials and overcome major challenges, a mix that all regions and urban areas in the Europe possess.

As concerns the year 2020, it seems that some headline targets are difficult to achieve in many if not the majority of regions or Member States without a strong policy commitment and coordinated action at different geographical levels.

On the one hand, this is partially because the national targets do not guarantee that the overall targets of Europe 2020 are attained. On the other hand, the current gap between the actual development and the Europe 2020 targets in a large number of regions means that meeting the headline targets by 2020 becomes a major challenge for the EU as a whole. Many regions do however already or will be able to meet targets. Moreover, it has to be remembered that, not all the regions can or should reach (all) the targets set.

Regarding a territorial dimension, the Atlas has demonstrated, based on evidence, how smart, sustainable and inclusive dimensions of growth are territorially diverse across European regions, both in terms of potentials and challenges. Regional specificities are noticeable and, for several indicators, even rather profound.

It is therefore essential that policy-makers take into account the specificities of their place, their region or city in the implementation of policies contributing to the Europe 2020 Strategy. Not only by looking at the general scoring or ranking of individual regions related to the issues embraced by Europe 2020, but also by understanding the combination of all of these and possible mutual support.

As shown in the aggregated [Map 5.1](#), there is a main division between the Centre-North and the rest of Europe in relation to the Europe 2020 indicators. Furthermore, cluster analysis of the mapped indicators shows that in addition to the European Centre-North most regions in Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovenia, Slovakia, Cyprus and Malta are on a promising move towards Europe 2020. While most regions of Portugal, Spain, Southern Italy, Romania, Bulgaria and Greece are rather challenged in terms of contributing or meeting the Europe 2020 objectives.

The aggregate index developed to assess the overall fulfilment of the Europe 2020 Strategy, measures the distance of regions from eight headline targets. A region scores 100 if it has reached all eight targets, while a region farthest away from all eight targets scores 0. The targets are those officially set at European level as the targets nationally set are highly inconsistent. This aggregate index is represented for 2009-2010, taking into account that there are three headlines which are only available at the member state level (the “20/20/20”) and a fourth one with different scales depending on the country (people at-risk-of-poverty or social exclusion).

The first point to retain is that the composite index for Europe 2020 needs to be correctly approached and understood as it mainly provides information on the groups of regions that perform best or worse related to the headline targets.

In other words, although the regions scoring higher are typically accomplishing or almost accomplishing the eight targets, all the regions in intermediate positions are in very different and varying situations implying different reasons for their position in the ranking. Implicitly they must be developed through diverse policy mixes and should be the object of different recommendations to progress and deliver accordingly. In fact, two regions scoring the same may account for very different realities.

Used carefully, the composite Europe 2020 index can reflect the general fulfilment at the regional scale rather than scoring each one of its constitutive indicators. This is much better done by looking at the individual maps as presented across the Atlas.

Overall, the composite index shows the uneven geography of the Europe 2020 Strategy as a whole. This conclusion is reinforced by the complex territorial dimension of each one of the constitutive issues under the sustainable, smart and inclusive pillars.

In this sense, the Atlas provides important insights for policy development as it sets out the regional and urban starting points for implementing Europe 2020 Strategy, and, importantly, it clearly demonstrates that pan-European territorial evidence in support of the Europe 2020 is pertinent.

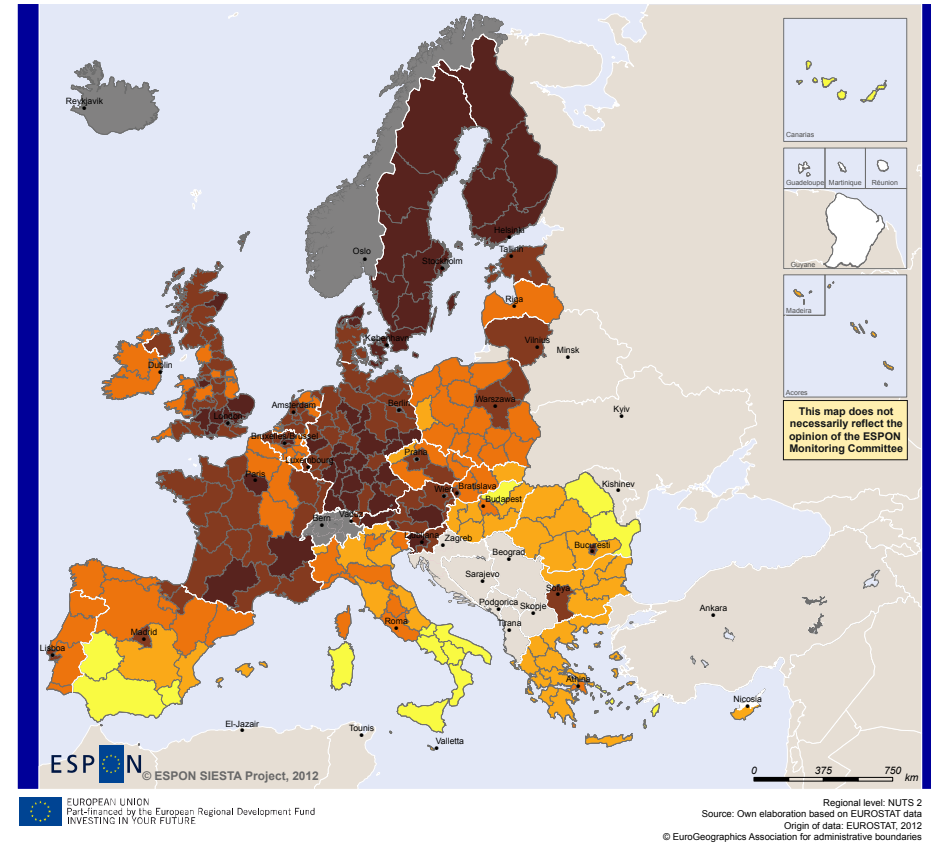
The open challenge for harvesting synergies to the benefit of the Europe 2020 Strategy remains however, which underlines the importance of ensuring that different policies and EU Cohesion Policy in particular, take on board the territorial dimension, build on the diversity of regional potentials and challenges present, and use the evidence presented in the Atlas in the spirit of the Europe 2020 Strategy.

Aggregated Europe 2020 Map

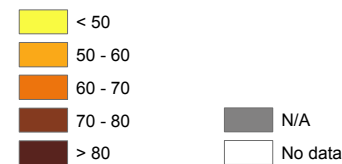
Centre-North leads. Map 5.1 shows that top positions in the achievement of the regional 'Europe 2020 aggregate index for 2009-2010' concentrate in the Nordic countries, plus Southern Germany, several French regions and South England (basically, North of London, but also Hampshire). In Sweden five regions register an index above 90%. This pattern broadly coincides with two of the three corridors repeatedly identified in relation to R&D and innovation performance: Midi-Pyrénées to Southern Germany and Denmark to Finland. Some capital regions (Île-de-France, Greater London, Berlin, Brussels, Copenhagen, Ljubljana) score particularly high as well and are included in the group of regions above 80%. The third corridor which is usually found (between Austria and London) is less clear herein, because there are regions scoring relatively poor in relation to their neighbouring geographical units (i.e. Wallonie in Belgium and Picardie or Nord-Pas-de-Calais in France).

Challenged South and South-East. Bottom positions are taken by Eastern Romania, Észak-Magyarország (Hungary), Southern Italy and Southern Spain, plus Spanish outermost regions. Some of these regions lagging behind score less than 40%. In Spain and Romania, there are profound differences between regions, with high figures (Madrid, the Basque Country and Navarra in Spain, Bucuresti-Ilfov in Romania) in countries dominated by low figures.

Map 5.1: Regional Europe 2020 Strategy aggregate index, 2009 to 2010



EU 2020 Strategy Index, combined years.





www.espon.eu

Interested in ESPON?

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN: 978-2-919777-36-5

ESPON shall support Cohesion Policy development with European-wide comparable information, evidence, analyses and scenarios on framework conditions for the development of regions, cities and larger territories. In doing so, it shall facilitate the mobilisation of territorial capital and development opportunities, contributing to improving European

competitiveness, to the widening and deepening of European territorial cooperation and to a sustainable and balanced development. The Managing Authority responsible for the ESPON 2013 Programme is the Ministry of Sustainable Development and Infrastructures of Luxembourg.