

# ESPON Evidence Report Molise



ESPON Project TerrEvi

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This report presents a more detailed overview of the analytical approach to be applied by the project. This "Scientific Platform and Tools" Project is conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

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

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This basic report exists only in an electronic version.

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The ESPON TerrEvi Project is carried out by Metis (lead partner), t33, Faculty of Geography and Geology Iasi (FGGI) and Spatial Foresight.

For comments with regard to this report please contact Alessandro Valenza or Andrea Gramillano

[a.valenza@t33.it](mailto:a.valenza@t33.it)

[a.gramillano@t33.it](mailto:a.gramillano@t33.it)

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## Executive Summary

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

Generally, the workshop participants expressed the need for ESPON material to help them justify their choice of Operational Programme thematic objectives. Two important aspects have been considered crucial, the detailed explanation and understanding of indicators and their regular update. Furthermore, regarding the territorial coverage, participants argued that it would be efficient for programmes to have access to less aggregated data, possibly provided at the level of NUTS3 regions and main urban hotspots.

### Context information

Molise is one of the twenty Italian NUTS2 regions. Its neighbours are the regions of Apulia, Campania, Lazio and Abruzzo. It has a short coastline to the northeast, on the Adriatic Sea. A detailed look at various ESPON results reveals the situation of the Molise in a European context, as well as regional similarities and disparities within the programme area.

According to ESPON DEMIFER study, Molise faces many future demographic challenges as: a negative natural population balance accompanied by demographic ageing; a forecast of reduction of foreign migration in the period 2007-2051 and a risk of brain-drain of highly educated young adults. The GDP values of the two NUTS 3 regions composing Molise, i.e. the provinces of Campobasso and Isernia, correspond to values identified in the rest of Central Italy. Most regions in Old European Member State, outside capital and main cities, show similar figures.

Generally, the data only provides a snapshot at a given point of time and there is no possibility to observe any developments or trends, so

they only have a limited relevance for programming activities. Additional indicators were included in the report following indications emerged during the workshops in order to give evidence on issues specific to Molise.

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

### Europe 2020: Smart growth – main findings

- Expenditures on research and development are considered a driver of economic growth. Investing 3% of GDP for R&D is therefore one of the headline targets of Europe 2020. Molise has one of the lowest Italian rates for both total intramural and business expenditure on R&D. Indeed, private R&D expenditures in 2007-2009 were evaluated at less than 0.5% of regional GDP. In the global European picture, Molise can be qualified as a low performing region. Indeed, it is far below the Italian target of 1.53% of GDP invested in R&D.
- The share of employment in knowledge-intensive services in Molise is similar to a majority of Italian regions. However, a more detailed analysis of services is needed to allow for a more nuanced picture on local specialisations within the region. As compared to other Western European countries, Italy has average shares of people working in science and technology. Molise has similar shares as a majority of Italian regions excluding Lazio, Liguria and Lombardy. Again, the general pattern is similar to central European countries e.g. Austria, Hungary. Shares similar to Molise can be found in central European regions excluding capital city regions.
- As regards territorial patterns of innovation Molise is – like all regions of central Italy - a smart and creative diversification application area. According to the ESPON KIT project, this pattern is characterised by a low degree of local diversified applied knowledge, internal innovation capacity, high degree of local competences, high degree of creativity and entrepreneurship, external knowledge embedded in technical and organisational capabilities.

- As concerns the implementation of the Digital Agenda of the EU, only a few people make use of e-commerce in Molise and generally in Italy, as compared to the rest of Europe.

The discussion with the programme illustrated that the ESPON results on smart growth can be of interest for the needs analysis of the future programme. In particular the indicators on R&D expenditures, knowledge-intensive services and private use of e-commerce may be useful for identifying promising projects, in particular if disaggregated at lower levels (NUTS3, NUTS4). Proposed indicators on smart growth could be very useful for monitoring changes if continuously updated and available. Indicators on Digital Agenda (e.g. 'Private use of e-commerce') have a twofold perspective of use. From one side they are considered very helpful to detect the needs and the potential for the innovation and research activities. From another side, this type of indicator is crucial for identifying needs and consequently projects / actions in terms of territorial e-cohesion in remote areas.

#### **Europe 2020: Sustainable growth – main findings**

- The use of renewable energy potential could be one of the cornerstones in building a competitive low-carbon economy in the EU. Molise has one of the lowest wind power potential, but amongst the highest solar power potential. This pattern is similar to other coastal regions in Spain and Greece.
- In general, Molise faces high to medium negative impacts of climate change and is also particularly vulnerable due to lower adaptive capacities. It is mainly due to the fact that technology, knowledge and awareness are considered as important dimensions of adaptive capacity. From a European perspective, Portugal or Poland have similar levels of adaptive capacity.
- In terms of greenhouse gas, the region has amongst the lowest emission level in Europe, as most rural and sparsely populated area do.

The discussion with the programme illustrated that the ESPON results on sustainable growth can be of interest for the needs analysis and thematic concentration. On the other hand, proposed indicators provided by ESPON projects are difficult to use for

'programme monitoring', 'project selection' and 'stakeholder dialogue' and should be matched with local databases (Basin Authorities and earthquake and risks management) and disaggregate at lower levels. The indicator 'Territorial impact' of EU directive or other similar seem to be very interesting as an impact indicator, if measured and monitored again in some years.

#### **Europe 2020: Inclusive growth – main findings**

- The European pattern seems to be primarily dominated by the national level. No Italian region shows an employment rate above 75%, in other words no region has reached the Europe 2020 target yet. Furthermore, southern Italian regions indicates lower employment rate (<50%) which means that Molise is surrounded by regions with comparable or lower employment rates. Only northern Italian regions have above 60% employment rate. The long-term unemployment pattern is exactly the same i.e. southern Italian regions have the highest shares (>7%) and northern region the lowest (<4%), Molise being in between. A similar pattern of employment and long-term unemployment rates can be detected in Hungary and Spain.
- While the general trend of population decline in Molise cannot be reversed in any available ESPON scenario, Molise is highly affected by ageing. In both provinces the share of old people is >20%. This twofold challenge – population decline and ageing – will become more important in the future because drivers of this trend are manifold and regard migration, traditions, culture and structures in society, for example. Regions in southern France or eastern Germany will face a similar challenge.
- Concerning poverty, Molise has a high share of population at risk of poverty above both the European (12%) and the Italian average (16%). Major efforts are needed to meet the European target.
- One tool against poverty is education. Molise shows, like most Italian regions, rather low shares of people with high education. When zooming in on young academics (aged 30-34 years), it becomes apparent that Molise is still far from reaching the Europe 2020 target, i.e. 40% of regional

population aged 30-34 with tertiary education attainment. Furthermore, the share of population aged 18-24 years without any degree is <20%. Portugal and Greek regions show similar patterns, i.e. low shares of people with high education but limited shares of early school leavers.

The discussion with the programme illustrated that the ESPON results on inclusive growth can be of interest for the needs analysis and for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. When it comes to the programming steps 'project selection' and 'stakeholder dialogue' proposed indicators seem to be difficult to use. Matching indicators as 'Change of labour force' with migration and economic growth patterns is considered very useful to launch tailored made and effective policy for the regional recovery. As well, the integration of ESPON evidence with local and ISTAT database will be crucial for the identification of needs and promising projects for social issues.

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

<b>2014-2020 Thematic Objectives</b>	<b>ESPON indicators used by TerrEvi</b>																										
	Share of R&D infrastructure	Private sector R&D expenditures	R&D distance to national target	Employment in Knowledge-Intensive services	Human resources in science and technology	Territorial patterns of innovation	Private use of e-commerce	ICT employment	Wind power potential	Solar power potential	Combined adaptive capacity to climate change	Potential impact of climate change	Potential vulnerability to climate change	GHG emissions	Employment rate	Long-term unemployment rate	Youth unemployment	Change in population in 2005-2050	Change in labour force in 2005-2050	Share of old people	People at risk of poverty	People with high education	Young academics	Adults in education and training	Regional early school leavers	Multimodal potential accessibility	Impact of Directive on promotion of use of biofuels
Strengthening research, technological development and innovation	X	X	X		X	X		X		X											X	X	X				
Enhancing access to and use and quality of ICT				X	X		X	X																			
Enhancing the competitiveness of SMEs	X	X				X																					
Supporting the shift towards a low-carbon economy in all sectors									X	X				X													
Promoting climate change adaptation, risk prevention and management											X	X	X														
Protecting the environment and promoting resource efficiency									X	X	X	X	X														X
Promoting sustainable transport and removing bottlenecks in key network infrastructures																										X	
Promoting employment and supporting labour mobility				X	X		X								X	X	X		X		X	X	X	X			
Promoting social inclusion and combating poverty																	X	X	X	X	X	X	X	X	X		
Investing in education, skills and lifelong learning by developing education and training infrastructure																					X	X	X	X			
Enhancing institutional capacity							X																				

## Introduction

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

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

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

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

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

objectives of future programmes, and to stimulate a debate on how this evidence can be used by future programmes.

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

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

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

The list of pilot cases has been set up in coordination with the ESPON programme and has been approved by the ESPON Coordination Unit.<sup>1</sup>

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

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<sup>1</sup> The detailed selection procedure is part of the Interim Report of the TerrEvi project from December 2012.

the potential use of ESPON material for territorial cooperation programmes.

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

Molise region is free to use the material for their development and implementation of the programme for 2014-2020.

## **Methodology**

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

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

### **Workshops**

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

#### **Step 1 – Preparation Phase**

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

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

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

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

#### **Step 2 - Draft Evidence report, workshop and final Evidence report**

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

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

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

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

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

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

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

### **Step 3 – Feedback**

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

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

The traffic lights at the beginning of the chapter 'Europe 2020' were created in order to graphically represent the situation of each analysed Programme<sup>2</sup> Area compared to the ones of EU27+4 space, to the rest of programme areas, and finally to the country of the area.

The median value, calculated depending on the values registered for every NUTS 2/NUTS 3 region composing the programme area was used as the central value indicator. The median of the programme area was compared successively to the ones computed for EU27+4 territories, for the rest of the Programme areas and, ultimately, with those for the country involved in the Programme Area.

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

Therefore, we have three distinctive situations:

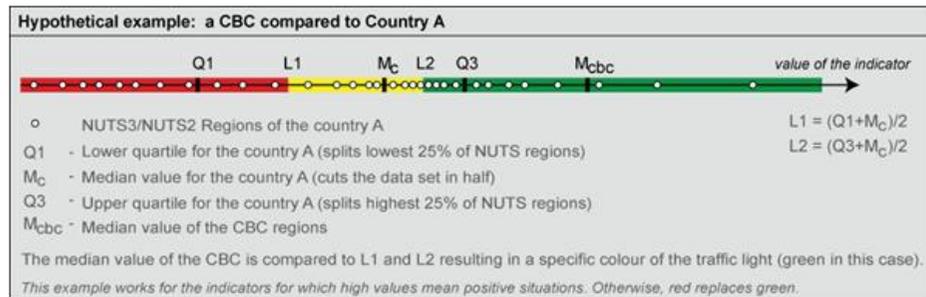
1. When the median value of the Programme is below L1, there will be a red traffic light indicating problems inside the Programme Area (or green traffic light if there is a noticeable progress: i.e. long-term unemployment).

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

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

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



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

## Context information

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

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

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

## Population change

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

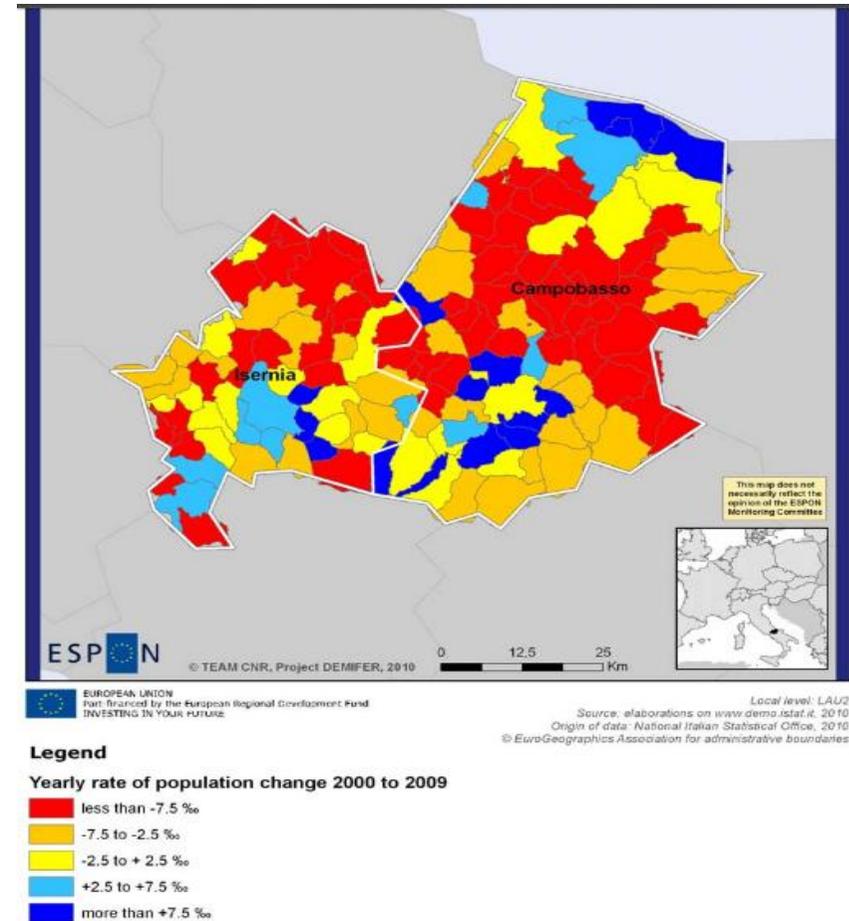
Between 2001 and 2010, at a European level, population is particularly growing in a Mediterranean arc ranging from central Italy over southern France to eastern and southern Spain, and in an Atlantic Arc ranging from western France to Ireland and Iceland. In addition, population grows in some regions of Nordic countries and in all capital regions. Significant population decrease can be found in north-western Spain, several Portuguese regions, eastern and central Germany, the Baltic states, some peripheral regions of Finland and south-eastern Europe – except their capital regions. Molise did not have very dynamic population change. Figures are positive and comprised between 0 and 3.0% for the province of Campobasso and negative, varying between 0 and -3.0% in the province of Isernia.

According to ESPON Demifer study, Molise is characterized by:

- (1) A negative natural population balance which will lead to depopulation accompanied by demographic ageing.
- (2) A very limited and decreasing but positive average net migration rate of 0.83 ‰. According to Istat, Population Forecasts, 2007-2051, foreign migration, which is the main source of regional demographic growth in the recent years, will fade away in the next years.
- (3) A risk of brain-drain of highly educated young adults. This results from the elaboration of recent ISTAT data and was already evident from the 2001 Census on.

The map shows population change in the period 2001-2009. One has to take into consideration that the economic crisis might have influenced and changed migration patterns since then.

This map was produced for the ESPON DEMIFER project.



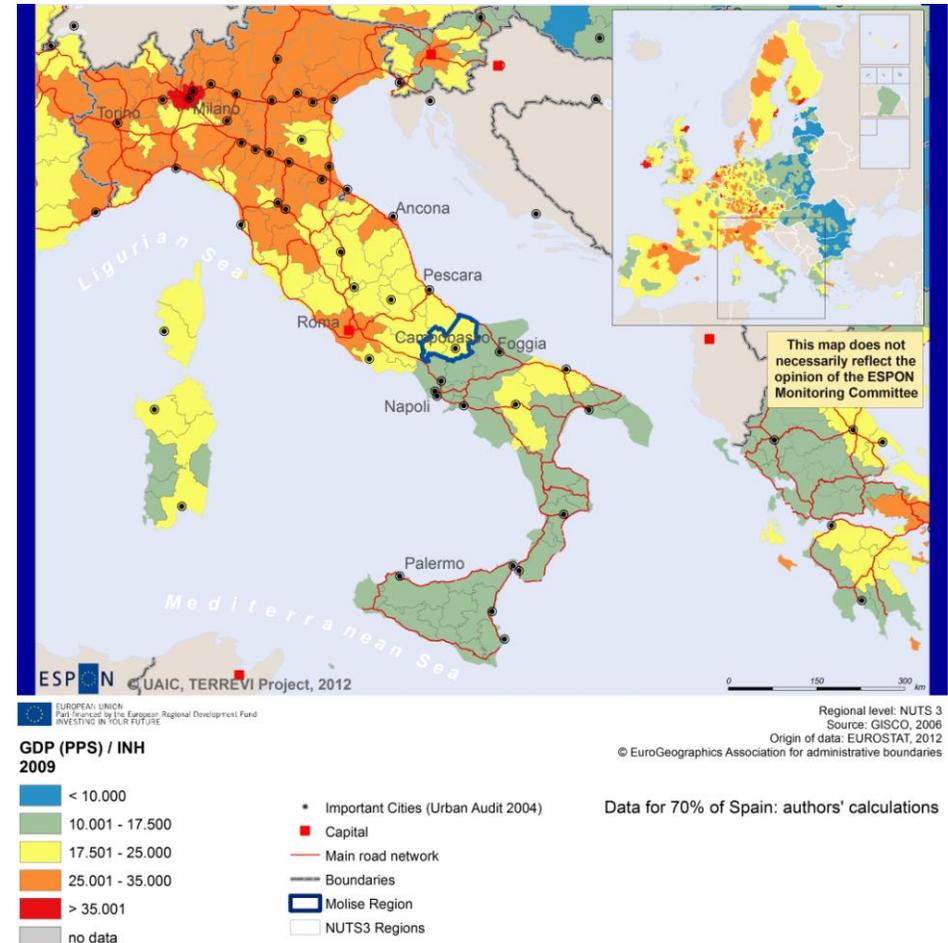
**Map 1 Population change, 2001-2009**

## GDP in PPS per capita

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

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

The GDP values of the two NUTS 3 regions composing Molise, i.e. the provinces of Campobasso and Isernia, correspond to values identified in the rest of Central Italy. Most regions in Old European Member State, outside capital and main cities, show similar figures.



**Map 2 GDP (PPS), 2009**

# 1 Europe 2020

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

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

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

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

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

The traffic lights were created in order to graphically represent the situation of the programme area compared to the one of the EU-27+4 space. The median value, calculated depending on the values

registered for every NUTS 2/NUTS 3 region composing the programme area was used as the central value indicator. The median of the programme area was compared to the one computed for EU-27+4 territory.

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

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

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

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

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

## 1.1 Smart Growth

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

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

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

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

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

With regards to smart growth, some indicators have been analysed through traffic lights. According to this analysis, many indicators used show red traffic lights for Molise. The region has lower values compared to both Italy and the EU27+4 area. Only with regards to employment in knowledge-intensive services, the ROP area has similar values compared to the Italy.

	value of the region	Italy	EU-27+4
Total Intramural R&D Expenditure (GERD). Percentage of the GDP (2009)	0.50	0.99	1.22
Employment in knowledge-intensive services as percentage of total employment (2010)	33	33	39
Percentage of individuals regularly using internet (2011)	48	53	71

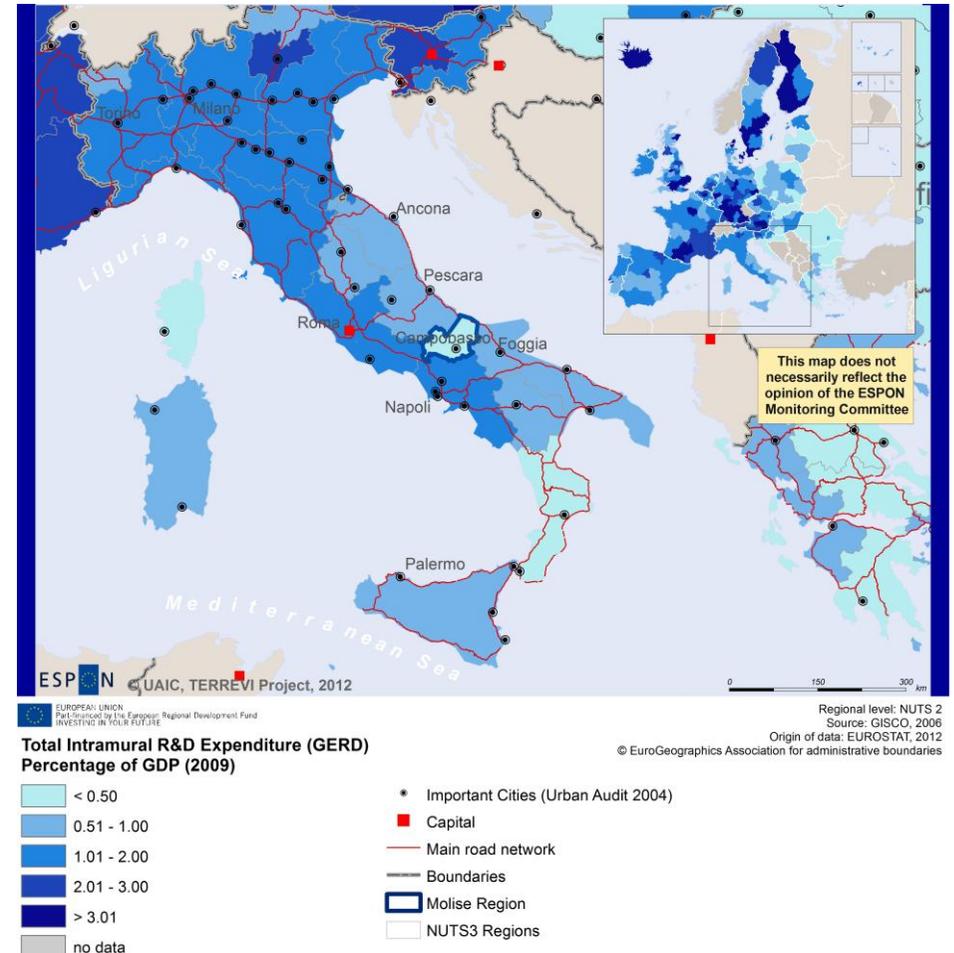
## Total intramural R&D expenditure

The total gross domestic expenditure on research and development comprises: business enterprise expenditure on R&D, higher education expenditure on R&D, government expenditure on R&D and private non-profit sector expenditure on R&D. The indicator measures the key R&D investments that support future competitiveness and result in higher GDP R&D expenditure represents one of the major drivers of economic growth in a knowledge-based economy. Investing 3% of GDP is therefore one of the headline targets in the new Europe 2020 strategy for developing an economy based on knowledge and innovation (EUROSTAT 2010).

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

Molise is one of the NUTS-2 Italian regions with the lowest shares of R&D expenditure on GDP (0.5%) compared with the national average (1.08%) and with most of the Southern - Eastern regions as well. At EU level, the position of Molise for this indicator is even lower: the EU average is 1.56 %. Molise has a performance similar to the one observed in Romania and Bulgaria.

This map was proposed in the ESPON KIT project and reproduced for the ESPON TerrEvi project.



**Map 3 Share of R&D expenditure of GDP, 2009**

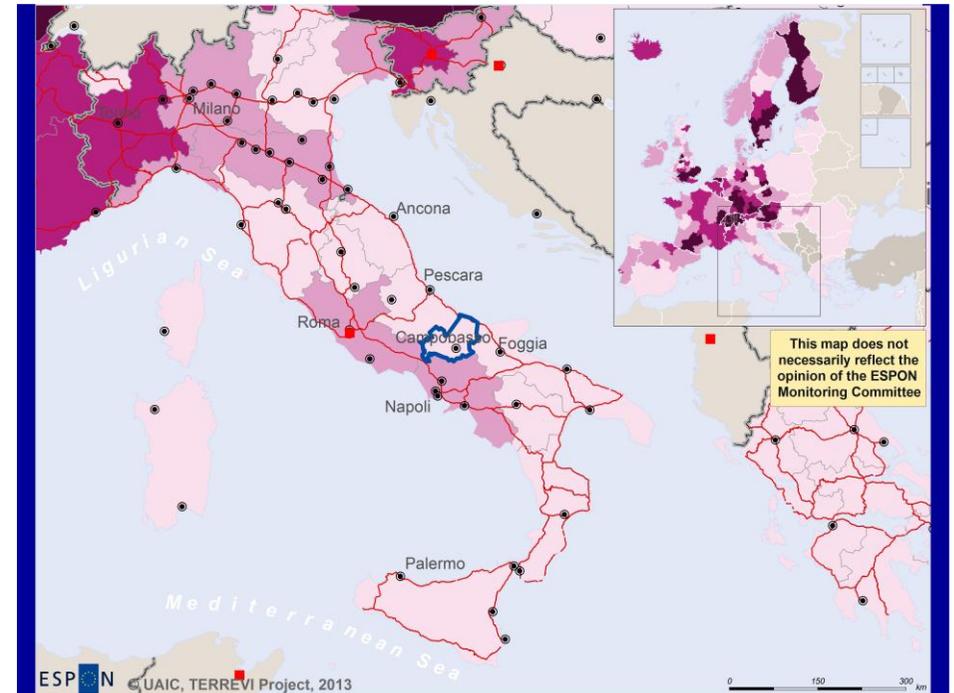
## Private sector R&D expenditures

Within the overall EU2020 Strategy, the contribution of the private sector to R&D expenditures is important. Private sector investment is considered central to enhancing economic productivity and growth. Therefore, flagship actions focus on creating favourable conditions for private sector investments like measures on access to finance, risk-sharing, the provision of venture capital, cross-border matching of innovative firms with investors, a review of regulatory frameworks and the development of a European knowledge market for patents and licensing.

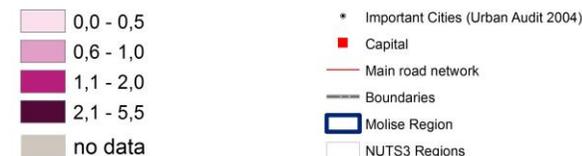
Three corridors with comparatively high shares stand out: From southern France to southern Germany, from Copenhagen to Finland and from south-east England to Austria. In addition, an east-west divide occurs. Except Prague and Ljubljana no region of the new member states indicates shares of > 1%. As for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

Molise has a performance below the European average and one of the lowest values across Europe (0.1%). The overall pattern is quite similar to the pattern for total R&D expenditures. This even facilitates the risk for regions with lower and lowest shares that already verge on falling behind as public R&D investments do not seem to be capable of balancing maladjustments of business expenditures on R&D.

This map was proposed in the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



**Business expenditure in R&D as percentage of regional GDP combined data 2007 - 2009**



Regional level: NUTS 2  
 Source: GISCO, 2006  
 Origin of data: ESPON SIESTA  
 © EuroGeographics Association for administrative boundaries

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

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

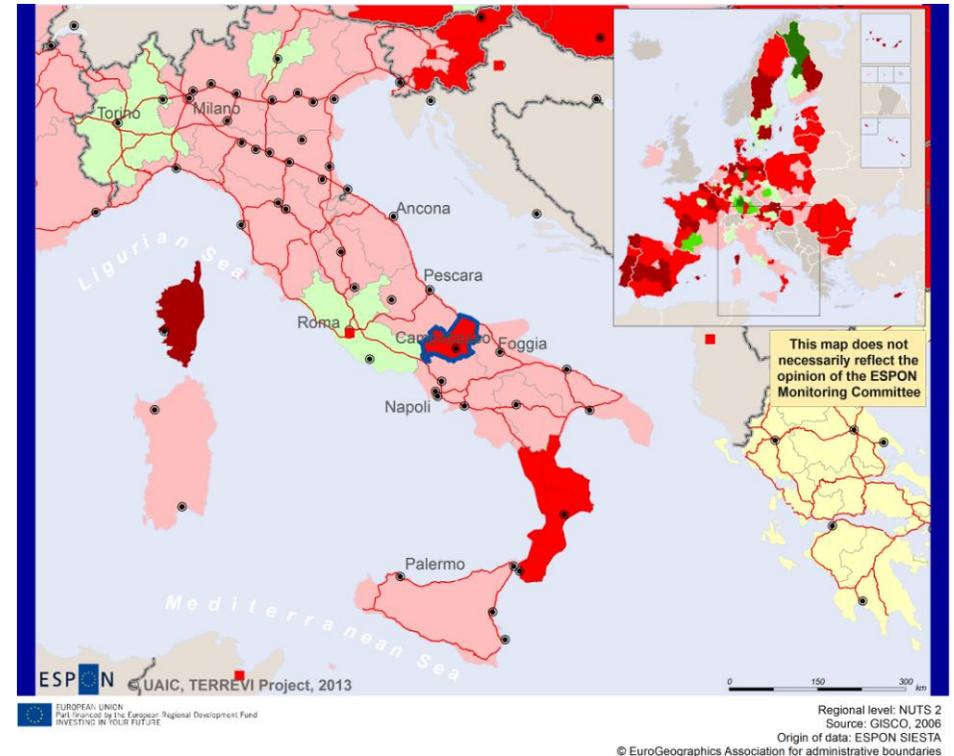
## R&D distance to the 2020 national targets

The indicator measures the distance in percentage of GDP invested in R&D in relation to National Target (%).

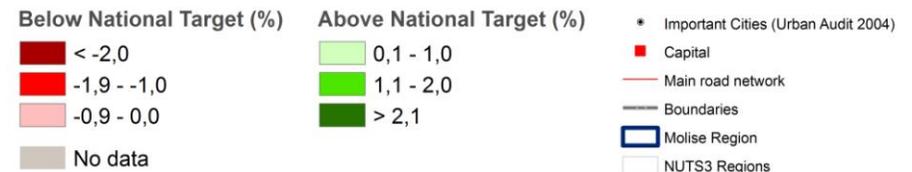
Although an overall target of 3% of GDP has been set for the European territorial area as a whole, national targets vary significantly from a low of 0.5% in Cyprus to a high of 4% for Sweden and Finland, countries that are already investing heavily in R&D activities. In a European perspective, only a few regions have met their national target (green regions on the map). Best performing regions compared with national target are Brabant Wallon in Belgium, Braunschweig, Stuttgart, Oberbayern and Dresden in Germany, Hovedstaden in Denmark, Pohjois-Suomi in Finland, Střední Čechy and Praha in Czech Republic and Midi-Pyrénées in France.

Against the national target of 1.53 (%), Molise performs far below.

This map was originally prepared for the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



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



**Map 5 R&D distance to national target**

## Employment in Knowledge-Intensive Services

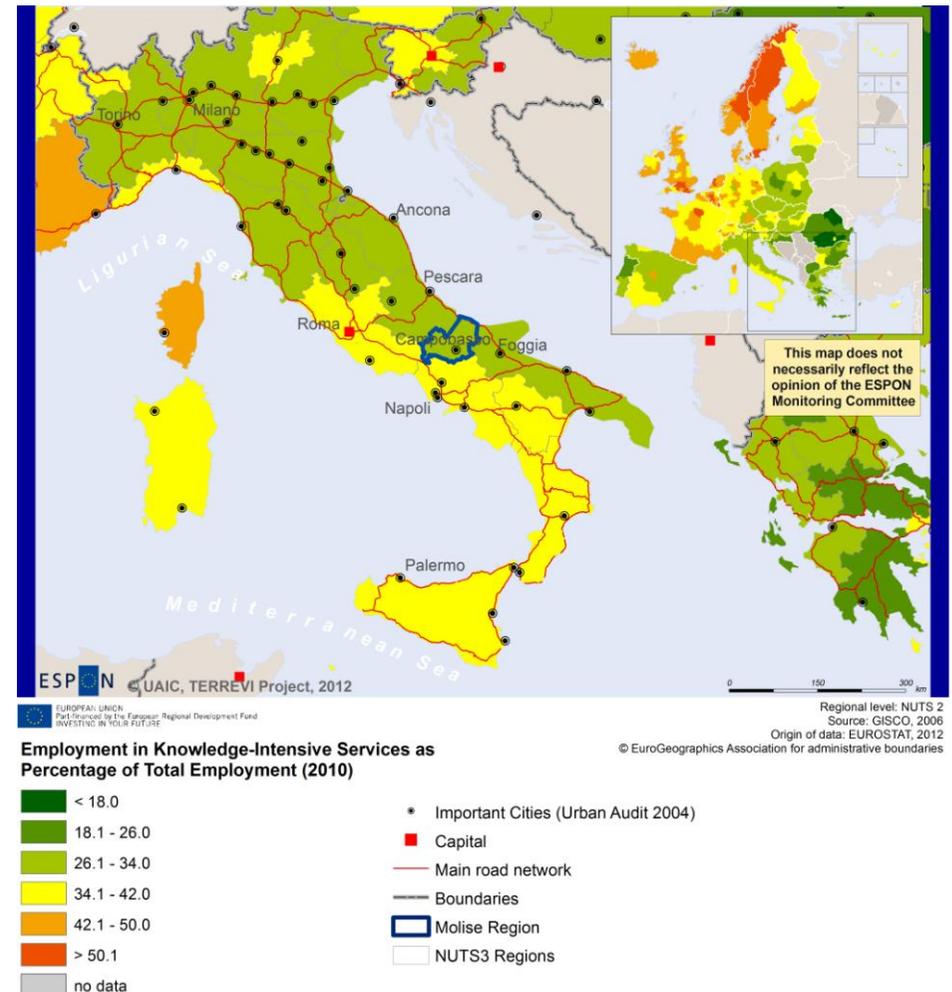
Knowledge-intensive services comprise a broad set of very different activities. Innovation processes, structures, and performance differ notably among these services. According to Eurostat, they include:

- (1) knowledge-intensive high-tech services: post and telecommunications; computer and related activities; R&D;
- (2) knowledge-intensive market services (excluding financial intermediation and high-tech services): water transport; air transport; real estate activities; renting of machinery and equipment without operator, and of personal and household goods;
- (3) knowledge-intensive financial services: financial intermediation, except insurance and pension funding; insurance and pension funding, except compulsory social security; activities auxiliary to financial intermediation;
- (4) Other KIS: education; health and social work; recreational, cultural and sporting activities.

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

The whole eastern coast of Italy as well as Central-Northern regions, including Molise, have lower shares of employment knowledge than the EU median (38.99 %) and the EU average values (38.59%). The low values in Molise are mainly linked to local specialisation (agriculture, industry) and the lack of major urban and research centres. In Molise, employment in knowledge-intensive services represents between 26,1% and 34% of the total employment. The region performs according to the majority of the Italian region but slightly underperforming compared to most regions of North-Western Europe.

This map was originally prepared for the ESPON KIT project and reproduced for the ESPON TerrEvi project.



**Map 6 Employment in Knowledge-Intensive Services, 2010**

## Human resources in science and technology

Human resources in science and technology (HRST) are defined as persons fulfilling at least one of the following two conditions:

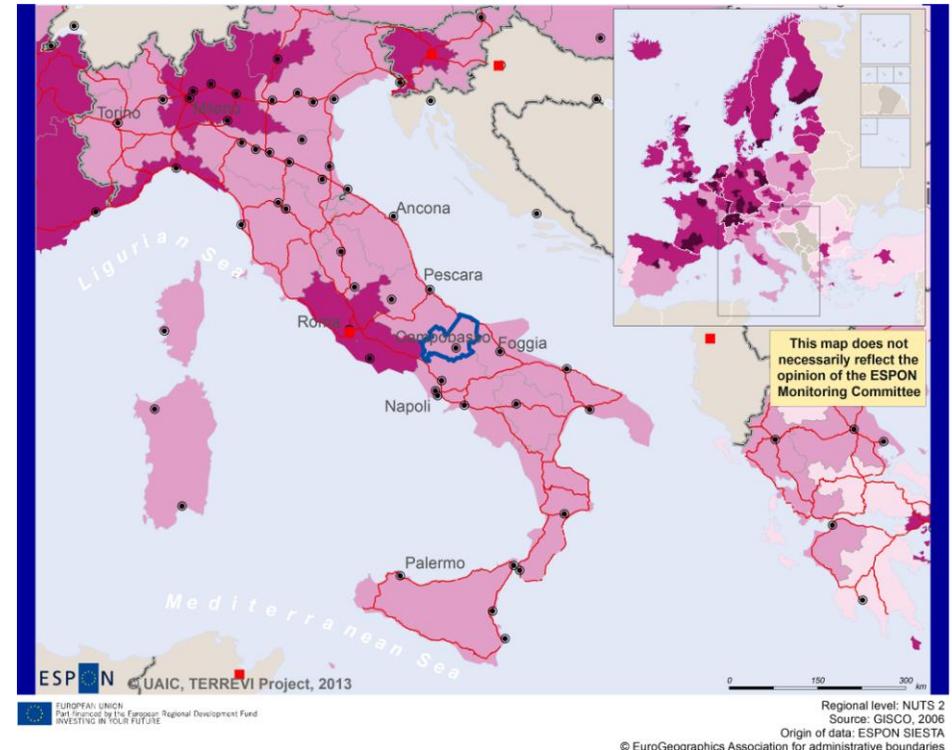
- (1) human resources in terms of education: individuals who have successfully completed a university level education;
- (2) human resources in terms of occupation: individuals who are employed in a science and technology occupation as 'Professionals' or 'Technicians and associate professionals'.

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

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

Molise has a similar performance to the Italian average between 25 and 35%.

This map was proposed in the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



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



**Map 7 Human resources in science and technology as percentage of regional active population, 2010**

## Territorial Patterns of Innovation

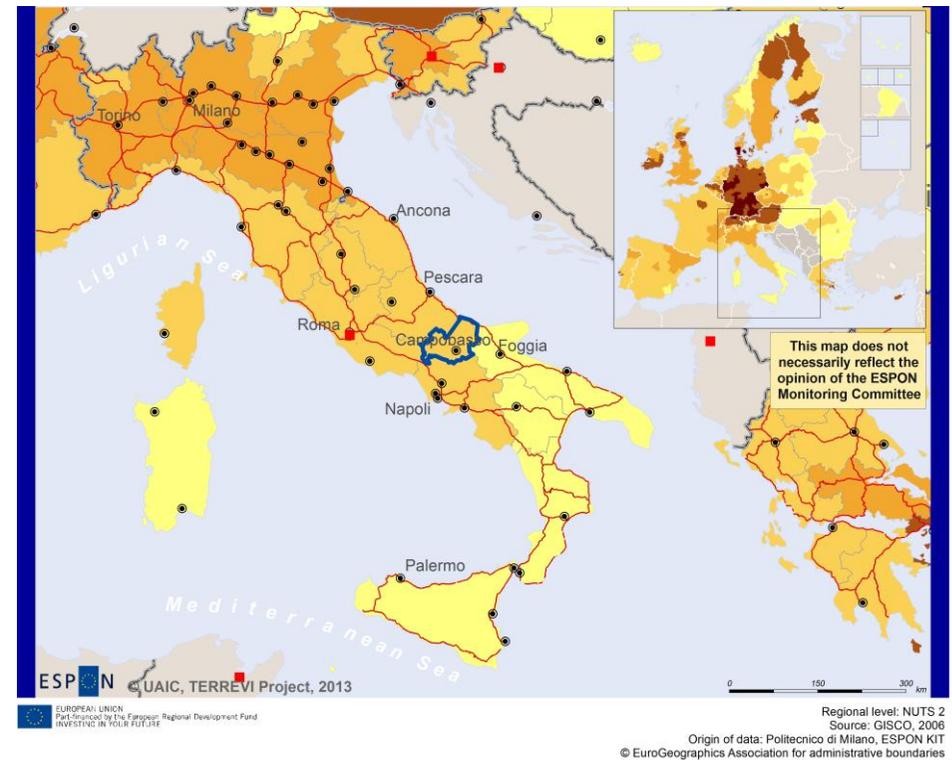
Territorial patterns of innovation are made of a combination of territorial specificities (context conditions) that are behind different modes of performing the different phases of the innovation process.<sup>3</sup> Main conditions concern science-based knowledge, R&D endowment, human capital, receptivity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

The regional typology developed by the KIT project identifies several patterns of innovation. Molise region is qualified a "smart and creative diversification area".

According to the study, this pattern is *characterised by a low degree of local diversified applied knowledge, internal innovation capacity, high degree of local competences, high degree of creativity and entrepreneurship, external knowledge embedded in technical and organizational capabilities.*

A large majority of Central Italian regions are qualified the same way. In Europe, this pattern is common in Mediterranean Member States i.e. France, Portugal, Spain and Greece.

This map was originally prepared for the ESPON KIT project and reproduced for the ESPON TerrEvi project.



### Territorial Patterns of Innovation



**Map 8 Territorial Patterns of Innovation, 2011**

<sup>3</sup> For the list and the methodology for the identification of territorial patterns of innovation, see chapter 2 in Vol. 1 of the Scientific Report of the ESPON KIT project.

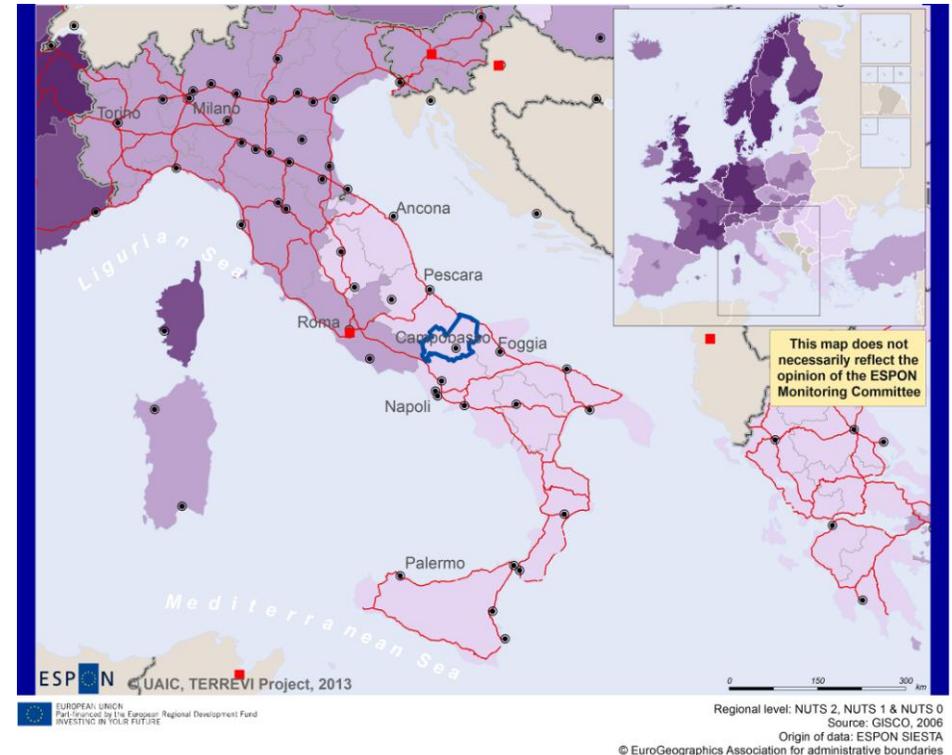
## Private use of e-commerce

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

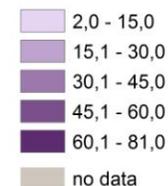
As the maps shows, the use of e-commerce differs mainly between countries and only to a limited degree between regions within a country. Overall, there is quite a clear divide between East and West and between North and South, with the North-West of Europe being more advanced. In the UK, Norway, Sweden,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

The map confirms a similar result to the indicator reporting the use of internet. Molise performs under the European average and has a amongst the lowest value (<15%). This value is similar to most central and southern Italian regions, as well as Portugal, Greece, Bulgaria and Romania.

This map was prepared for the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



**E-commerce or individuals (aged 16 to 74) who ordered goods or services over the Internet for private use as a percentage, 2010**



Notes (according to ESPON SIESTA):  
 DE, FR, EL, RS and PL are shown at NUTS1 level.  
 TR is shown at country level and data for this country were provided by Turkstat.  
 Data for CH was provided by Swiss Statistics web site.  
 Data for BH11, BG12, BG13, BG21, BG22, BG23, and FI2 are not available for 2010, the regions are shown for 2010.  
 TR data corresponds to 2011.  
 UAE1 data are not available for 2010 and are shown for 2009.

**Map 9 Private use of e-commerce, 2010**

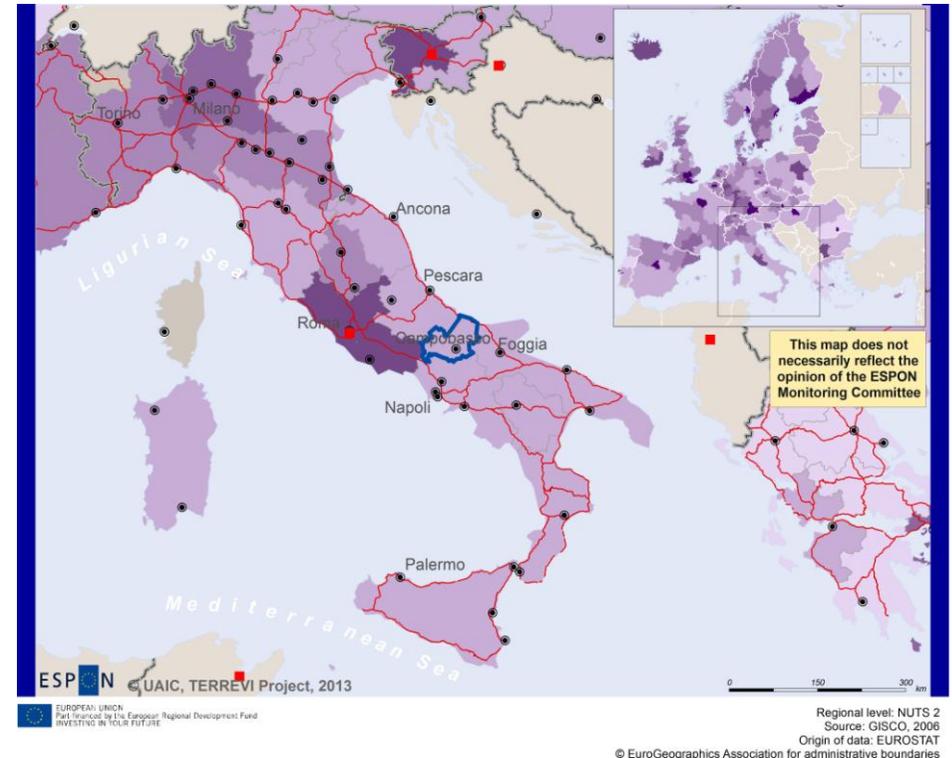
## ICT employment

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

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

Molise region has one of the smallest share (1-2%) across Europe, in line with Italian average.

This map was originally prepared for the ESPON SIESTA & M4D projects and reproduced for the ESPON TerrEvi project.



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



**Map 10 People working in the ICT sector as percentage of total regional employment 2011**

## Results and feedback from the workshop

In general, indicators provided by ESPON projects and presented within the evidence package are considered useful for Molise Region. However, some aspects may limit the usefulness. They might provide opportunities to further improve the presented indicators.

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

Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. To use data on territorial patterns of innovation for example, NUTS2 regions might give a description of the European pattern. Yet, it would be desirable if it were more specific and detailed – both regarding content and regarding the territorial scale. Again, an indicator on Intramural R&D expenditures would have been more useful displayed at a lower level and taking into account the presence of innovation/research hotspots.

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

### Programming steps

Focussing on details concerning the five programming steps, the reviewed indicators are deemed relevant both for the needs analysis and for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. When it comes to the programming steps project selection and stakeholder dialogue indicators are considered difficult to use, further details are required.

## Further suggestions

Intramural R&D expenditure	<ul style="list-style-type: none"> <li>- decompose into private and public share</li> <li>- specify time trends</li> <li>- add an innovation output indicator (e.g. patents)</li> <li>- specify the value of the indicator against the National Target</li> </ul>
Knowledge-intensive services	<ul style="list-style-type: none"> <li>- split by different economic sectors</li> <li>- present at LAU2 level</li> <li>- interpret the indicator coupled with the Territorial patterns of innovation (KIT)</li> <li>- couple with the endowments of human resources</li> </ul>
Territorial patterns of innovation	<ul style="list-style-type: none"> <li>- complete the clusterisation with lower level data (NUTS3/NUTS4) and local authorities contributions</li> </ul>
Private use of e-commerce	<ul style="list-style-type: none"> <li>- could be combined with other issue concerning ICT (economic weight)</li> <li>- interpret as an e-cohesion indicator for remote areas</li> <li>- add an indicator measuring the intensity of use of broadband infrastructures</li> </ul>

## 1.2 Sustainable Growth

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

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

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

While focussing on global challenges such as climate change, sustainable growth ultimately depends on place-based actions. The territorial perspective is again to refine understanding of what kind of interventions in what places can steer regions and Europe as a whole onto the path to a green economy and sustainable growth.

With regards to sustainable growth, some indicators have been analysed through traffic lights. According to this analysis, Molise's values for the sustainable growth indicators 'wind energy potential' and 'potential vulnerability to climate change' are lower than both Italy and the EU27+4 area. In contrast, the traffic light system shows that the region is less concerned by ozone concentration than both Italy and the EU27+4 area.

	median value of the region	Italy	EU-27+4
Wind energy potential	10454	25597	73939
Ozone concentration	10.1	24.9	8.6
Potential vulnerability to climate change	0.51	0.33	0.11

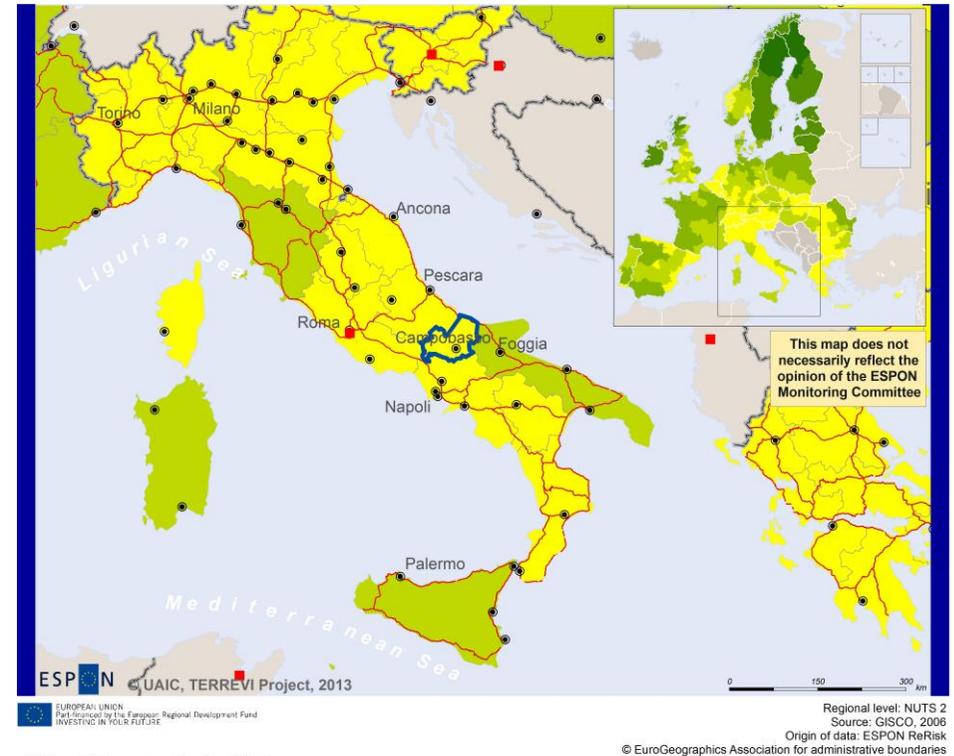
## Wind power potential

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

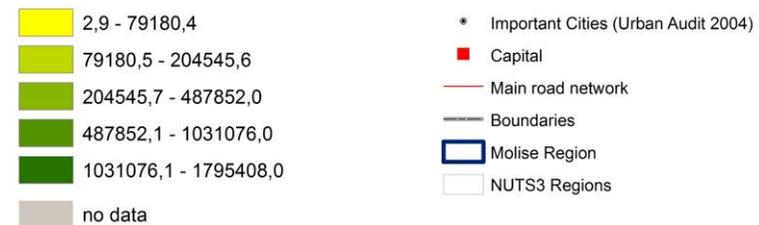
The greatest potentials for wind power are located in Sweden, Finland and the Baltic states but also in northern Norway, Scotland and Ireland. Beside the Baltic Sea (incl. Barents Sea), the regions located at the Atlantic Ocean hold greatest potentials for using wind power. In contrast, Mediterranean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

The indicator shows a very low wind power potential for the region.

This map was originally prepared for the ESPON ReRisk project and reproduced for the ESPON TerrEvi project.



**Wind Power Potentials**  
(Measured in km/s and considering the area of NUTS2 regions in km )



**Map 11 Wind power potentials**

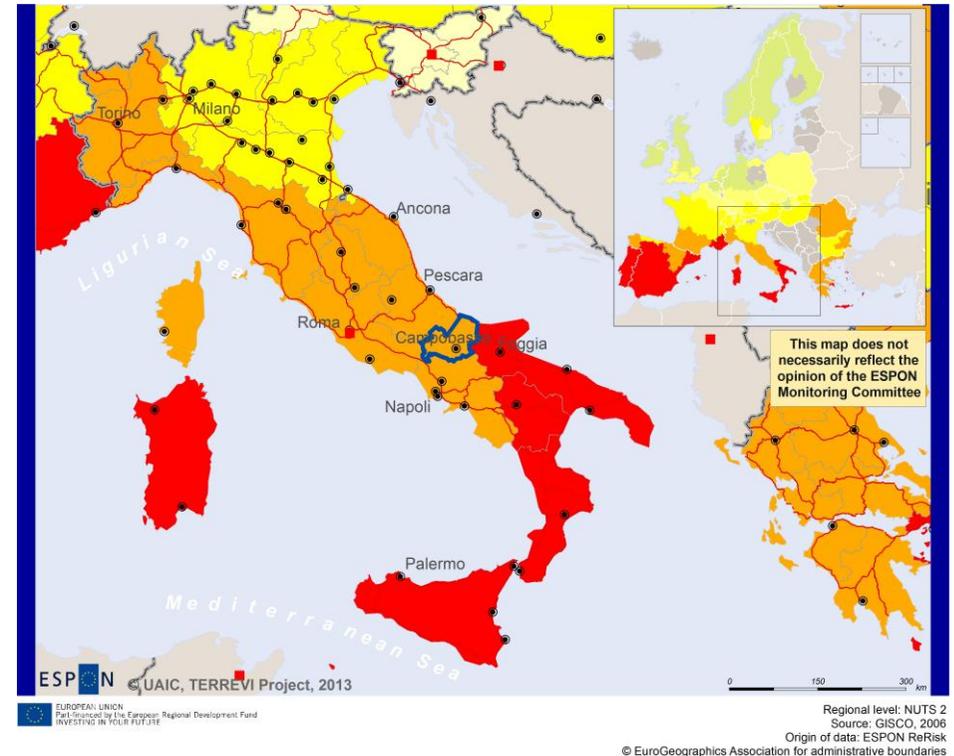
## Solar power potential

The data refers to the yearly total of estimated solar electricity generation (for horizontal, vertical, optimally-inclined planes) in kilowatt hour (kWh) within the built environment. These types of installations will be the first to become competitive at end-use level with electricity obtained from the central grid, with estimates from the International Energy Agency pointing to 2020 as break-even point in the regions with the highest potential.

Looking at the map of Europe a large proportion of regions show a high potential for creating renewable energy solar power. The map of solar energy potential shows the regional potential for electricity production from solar panels. The regions with greatest potential are located in the south and east of Europe. The core area of Europe is in general terms showing less potential, while the main potential for solar power lies at the periphery of the European territory.

In a European perspective, Molise has one of the highest potential from photovoltaic panels. It should be pointed out that the above pattern is not only dependant on climate, but also on the degree of urban development

This map was originally prepared for the ESPON ReRisk project and reproduced for the ESPON TerrEvi project.



### Solar Power Potentials

(output of 1 kW/h system at optimum mounting angle)



**Map 12 Solar power potential**

## Combined adaptive capacity to climate change

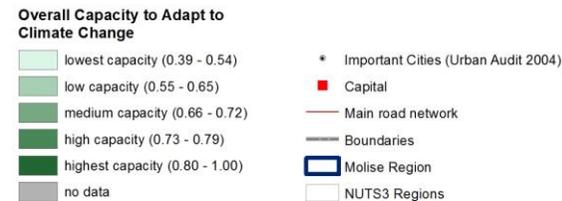
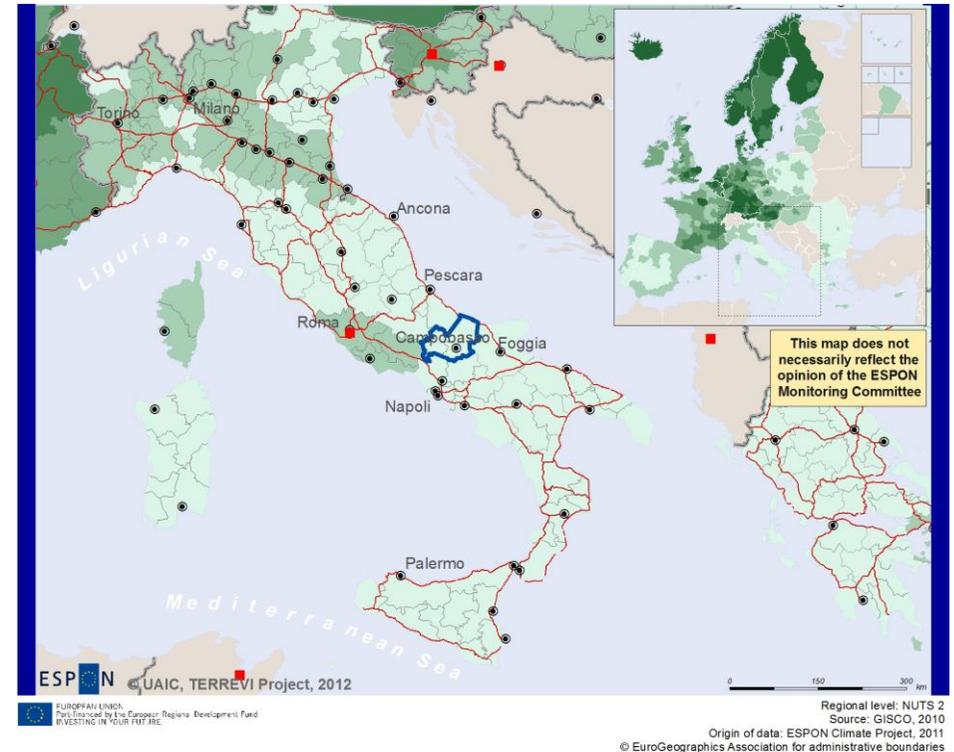
Adaptive capacity to climate change takes into account the economic, socio-cultural, institutional and technological ability of a region to adapt to the impacts of a changing regional climate. This could mean both preventing and/or moderating potential damages, and taking advantage of new opportunities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

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

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

The region, as most southern Italian and south eastern European regions, has the lowest adaptive capacity. This means that in the long run Molise foreseen capacity to be able to adjust to the new climate stimuli are very limited.

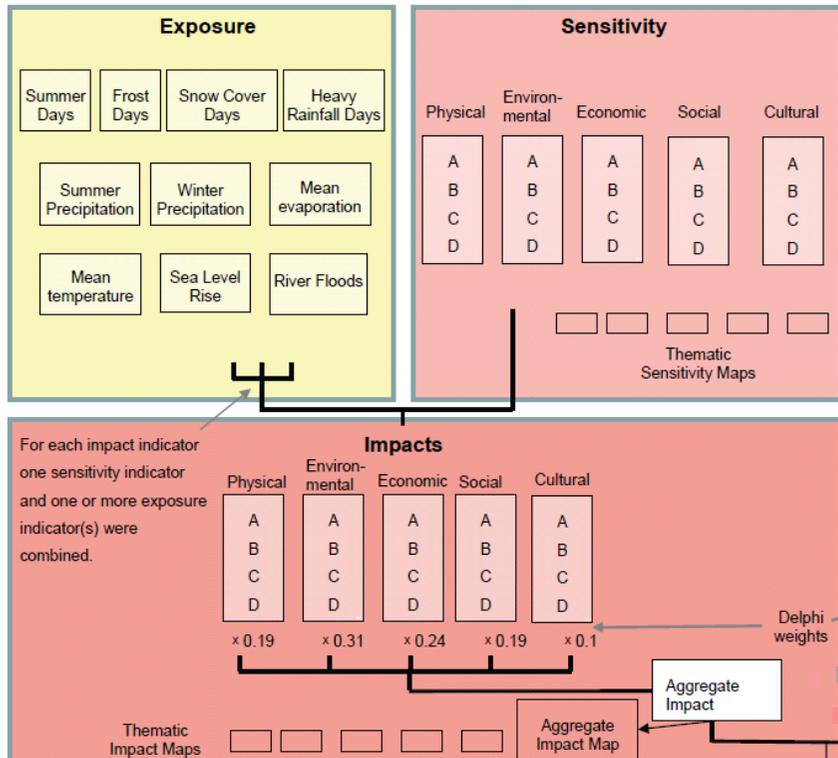
This map was originally prepared for the ESPON CLIMATE project and reproduced for the ESPON TerrEvi project.



**Map 13 Combined adaptive capacity to climate change**

## Potential impact of climate change

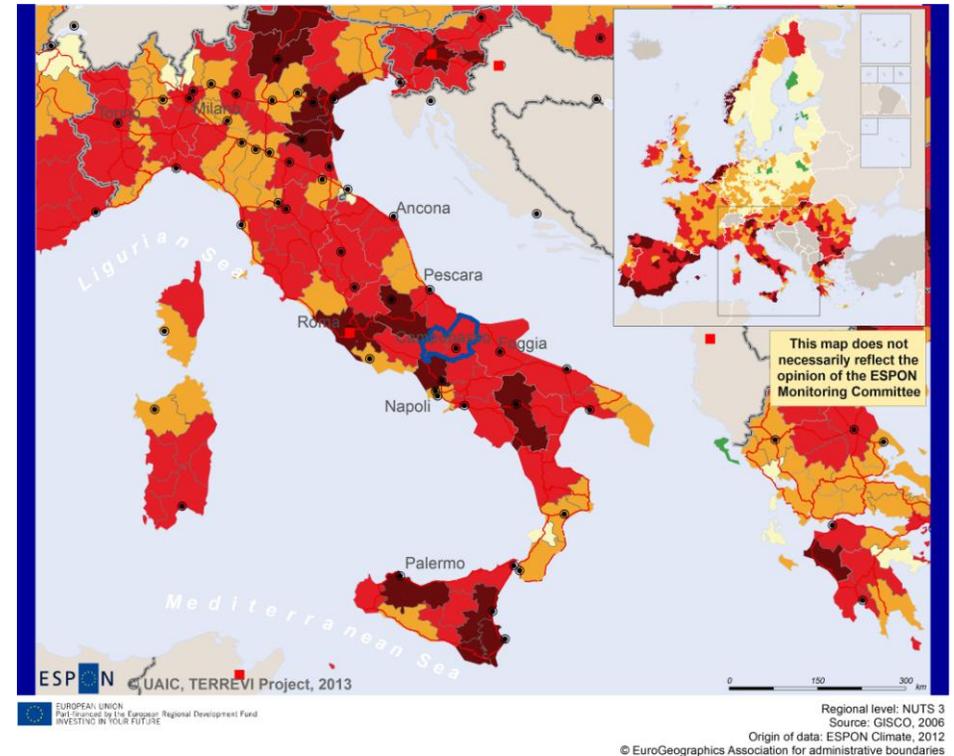
The map of potential impact combines 10 indicators of 'exposure' to climate change with 5 dimensions of 'sensitivity' to climate change.



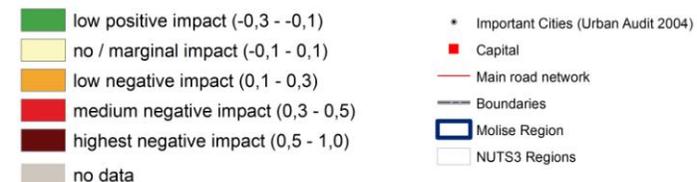
Taking into account certain exceptions like the Netherlands or Ireland, especially Southern regions will face highest impacts, i.e. those regions which only show low and lowest adaptive capacities.

Italy is clearly negatively impacted and Molise shows medium negative impact (light red on the map).

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



### Aggregate impact of climate change



**Map 14 Aggregate potential impact of climate change**

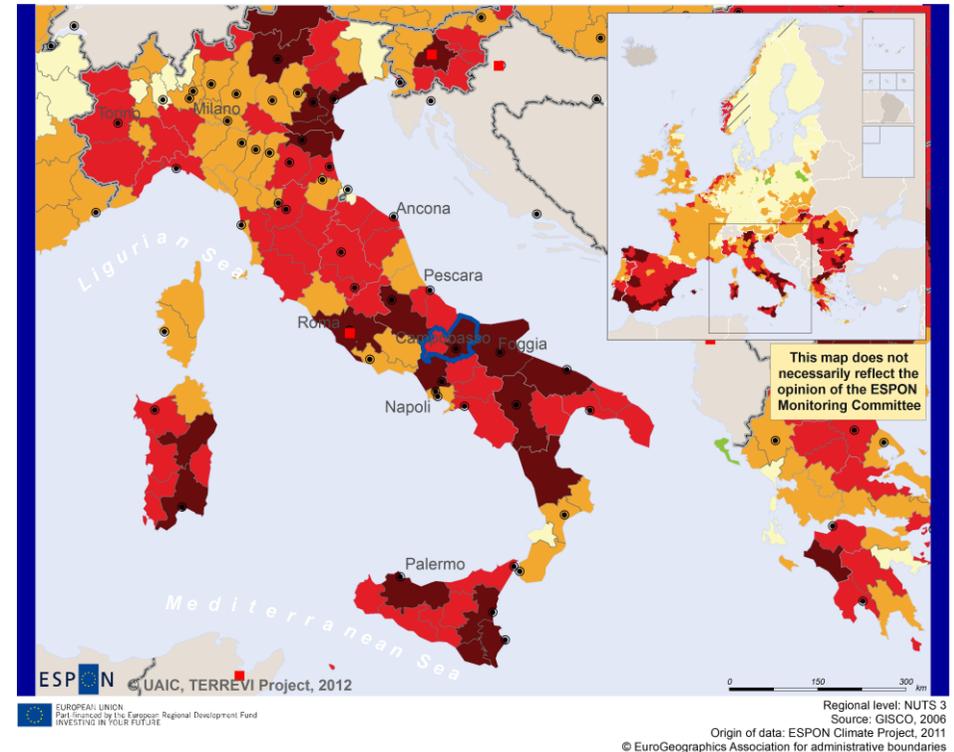
## Potential vulnerability to climate change

In order to determine the overall vulnerability of regions to climate change, the impacts and the adaptive capacity to climate change were combined for each region. The underlying rationale is that a region with a high climate change impact may only be moderately vulnerable if it is well adapted to the anticipated climatic changes. On the other hand, high impacts would result in high vulnerability to climate change if a region also has a low adaptive capacity<sup>4</sup>.

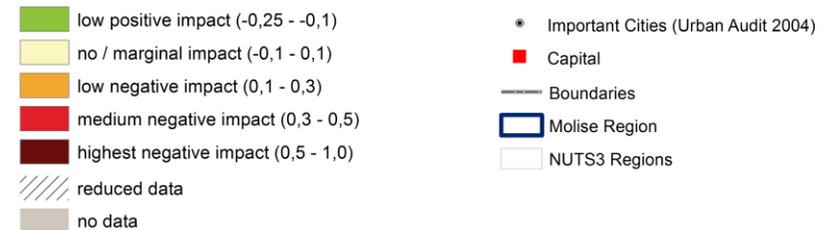
The south-north gradient which was already visible on the adaptive capacity and the potential impact map is now much more obvious. This is due to the considerable adaptive capacity of Scandinavia and Western European countries. Furthermore, those countries which only have less adaptive capacity, have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

Molise region shows a higher vulnerability than both the European and the Italian average. The Province of Campobasso has the highest vulnerability, while the Province of Isernia has a medium negative one.

This map was originally prepared for the ESPON Climate project and reproduced for the ESPON TerrEvi project.



### Potential vulnerability to climate change



**Map 15 Potential vulnerability to climate change**

<sup>4</sup> [http://www.espon.eu/main/Menu\\_Publications/Menu\\_MapsOfTheMonth/map1201.html](http://www.espon.eu/main/Menu_Publications/Menu_MapsOfTheMonth/map1201.html)

## Air pollution

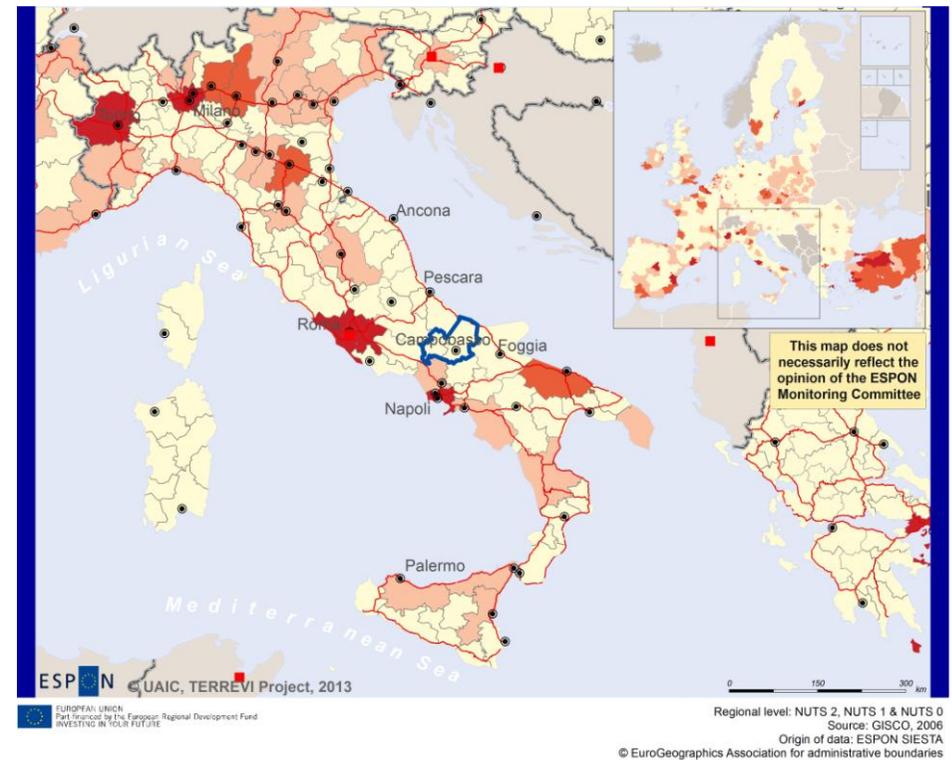
This indicator shows GHG emissions expressed in CO2 equivalents. It is assumed that regional GHG emissions follow the regional distribution of final energy consumption which is further exemplified using population and GVA data at regional level. Datasets only indicate where consumers buy their fuel without acknowledging where this fuel is emitted. Therefore, one of the most important caveats concerns the cross-border effects related to GHG emissions in the transport sector.

GHG emissions play an important role in the context of climate change. Sustainable growth includes the promotion of low-carbon, resource-efficient and competitive economy. In this context, the reduction of CO2 emissions by 20 per cent as compared to the 1990 levels is on the headline targets of the Europe 2020 strategy.

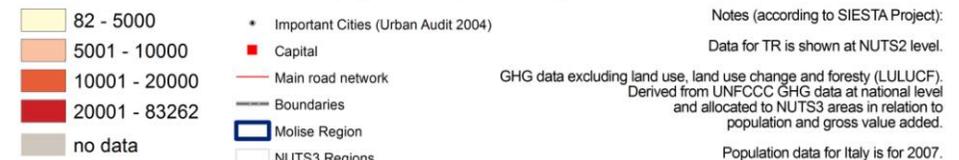
Metropolitan areas in Europe are the main responsible for GHG emissions. Consequently, these areas play a crucial role for achieving the sustainable growth and GHG emissions goals set in the Europe 2020 strategy. Rural and less densely populated areas tend to have lower levels of GHG emissions. However, in some rural areas in Turkey, for instance, levels of GHG emissions are similar to those observed in urban areas. The urban-rural difference is largely explained by the fact that one of the variables used in the model is population.

Concerning Molise region, the clear division between urban and rural, low-density and depopulated areas is fully applying. Both the provinces of Campobasso and Isernia have the lowest values in Europe.

This map was originally prepared for the SIESTA project and reproduced for the ESPON TerrEvi project.



### Estimated GHG emissions (Gg CO2 equivalent), 2008



### Map 16 GHG emissions, 2008

## Results and feedback from the workshop

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

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

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

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

### Programming steps

Focussing on details concerning the five programming steps, the reviewed indicators are relevant both for the needs analysis and the thematic concentration. On the other hand, proposed indicators provided by ESPON projects are difficult to use for programme monitoring, project selection and stakeholder dialogue.

## Further suggestions

Solar power potential	<ul style="list-style-type: none"> <li>- be compared at different scale</li> <li>- be matched with Basin Authorities database</li> </ul>
Ozone concentration exceedances	<ul style="list-style-type: none"> <li>- compare with health expenditures</li> <li>- interpret together with metropolitan pattern</li> </ul>
Multimodal potential accessibility	<ul style="list-style-type: none"> <li>- disaggregate</li> </ul>
Combined adaptive capacity to climate change	<ul style="list-style-type: none"> <li>- maps on single indicators and dimensions necessary to understand this composite indicator (available in the Climate Report)</li> </ul>
Potential vulnerability to climate change	<ul style="list-style-type: none"> <li>- maps on single indicators and dimensions necessary to understand this composite indicator (available in the Climate Report)</li> <li>- add indicator on territorial security and earthquake and hydrological risk</li> </ul>
Territorial impact	<ul style="list-style-type: none"> <li>- re-measure in some years in order to use as an impact indicator</li> </ul>

### 1.3 Inclusive Growth

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

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

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

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

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

With regards to inclusive growth, some indicators have been analysed through traffic lights. According to this analysis, Molise has a higher long-term-unemployment and at-risk-of-poverty rates, and lower persons aged 25-64 and 20-24 with upper secondary or

tertiary education attainment rates than both Italy and the EU27+4 area.

	value of the region	Italy	EU-27+4
Long-term unemployment rate (12 months and more) - 2011	5.4	3.0	3.0
At-risk-of-poverty rate - 2011	24	12	16
Persons aged 25-64 and 20-24 with upper secondary or tertiary education attainment (%) - 2011	53	58	76

## Employment rate 2011

Employment rate represents persons in employment as a percentage of the population of working age (15-64 years) (Eurostat 1998). Employment statistics are frequently reported as employment rates to discount the changing size of countries' populations over time and to facilitate comparisons between countries of different sizes. These rates are typically published for the working age population, which is generally considered to be those aged between 15 and 64 years, although the age range of 16 to 64 is used in Spain, Sweden (only until 2001) and the United Kingdom, as well as in Iceland; this age group (15 to 64 years) is also a standard used by other international statistical organisations. One has to consider that employment rates can even increase despite a total decline of people in employment.

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

The European pattern seems to be primarily dominated by the national level. Employment rate in the Italian region of Molise is comprised between 50.0 and 60.0%. This is in the average for Italy but rather low compared to other European regions.

This map was produced for the ESPON TerrEvi project.



**Map 17 Employment Rate, 2011**

## Long-term unemployment rate 2011

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

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

Long-term employment rate in the Italian region of Molise (5.4%) is one of the highest both when compared to other national and European regions.

This map was produced for the ESPON TerrEvi project.



**Map 18 Long-term unemployment rate, 2011**

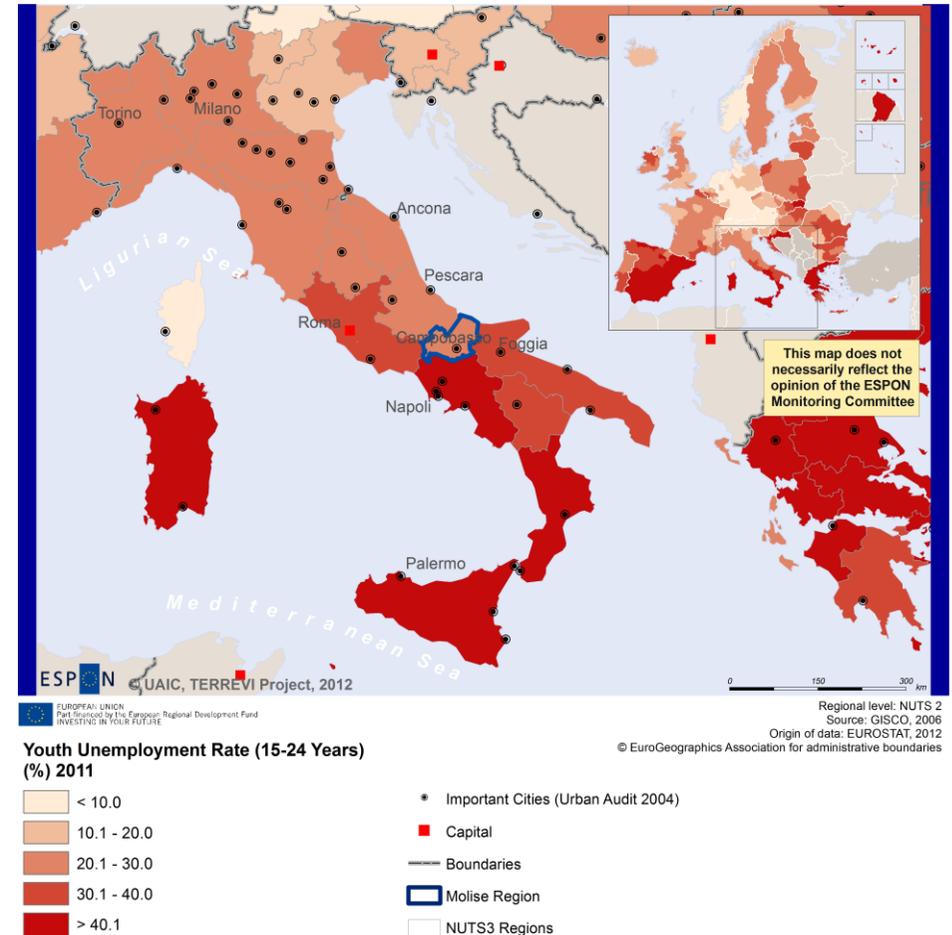
## Youth unemployment rate 2011

Youth unemployment rate refers to the number of unemployed youth as percentage of total labour force aged 15 to 24 (people who are out of work and have been actively seeking employment for at least a year). The unemployment period is defined as the duration of a job search, or as the length of time since the last job was held (if shorter than the time spent on a job search). Youth unemployment rate refers to the number of unemployed youth as percentage of total labour force aged 15 to 24 (people who are out of work and have been actively seeking employment for at least a year). The unemployment period is defined as the duration of a job search, or as the length of time since the last job was held (if shorter than the time spent on a job search). A large share of people between these ages are outside the labour market (since many youths are studying full time and thus are not available for work) which explains why youth unemployment rates are generally higher than overall unemployment rates, or those of other age groups.

Cross-national differences in youth unemployment are considerable. Europe's core areas have low youth unemployment rates (<10%) in particular in Norway, Denmark, the Netherlands, and Germany. A majority of surrounding regions have medium shares (10-30%) i.e. the UK, large parts of France, Belgium, Hungary and Czech Republic, Switzerland, Northern Italy, Slovenia, Baltic States (except Lithuania) Sweden and Finland. In 2011, youth unemployment rates were especially high in Spain, Greece, Slovakia, Lithuania, and Portugal (>30%). In some countries this is also linked to high proportions of NEETs (Neither in Education, Employment nor Training).

Molise has a high share of unemployed youth (about 30%). According to ISTAT data, youth unemployment affects both provinces equally: 23.9% in the Province of Isernia and 30.4% in the Province of Campobasso. On a European perspective, a majority of western, eastern and northern European regions show 20-30% shares of unemployed youth.

This map was produced for the ESPON TerrEvi project.



**Map 19 Youth unemployment rate, 2011**

## Change in population in 2005-2050

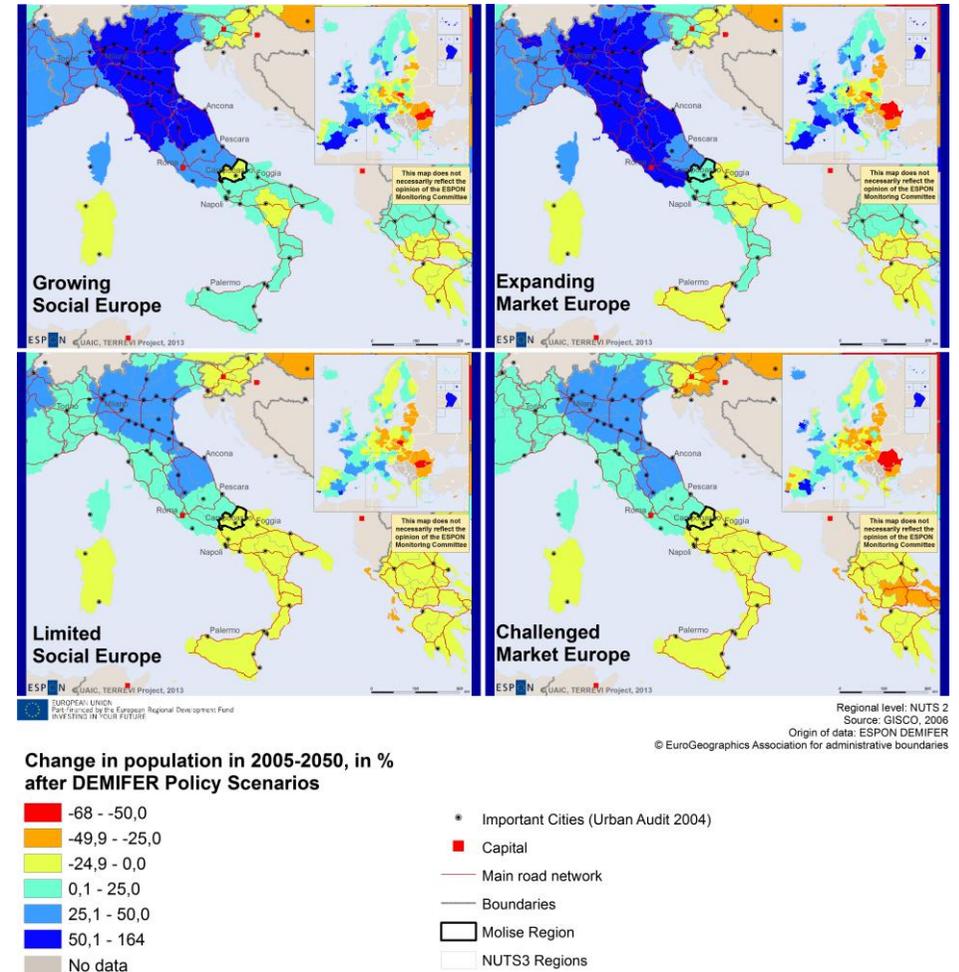
Population change is the difference in the size of a population in a given time period. The change has two components: natural population change, i.e. number of live births minus number of deaths, and net migration, i.e. number of immigrants minus number of emigrants. The maps cover the period 2005 to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

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

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

None of the scenarios reverses the trend for Molise region but only the extent of population change. The region performs regardless of the scenario: Molise is foreseen to have its labour force decrease between 2005 and 2050. According to the scenario "Challenged Market Europe", the region will suffer a diminution of population number from 10 to 30% between 2005 and 2050. If the "Expanding Market Europe" scenario is applied, the region will know, in the same period, a diminution of this indicator only from 0 to 10%. The same values are observed if "Growing Social Europe" scenario is applied. For the "Limited Social Europe" scenario, the region will record a decrease of active population from 30 to 77%.

This map was originally prepared for the ESPON DEMIFER project and reproduced for the ESPON TerrEvi project.



**Map 20 Change in population in 2005-2050**

## Change in labour force in 2005-2050

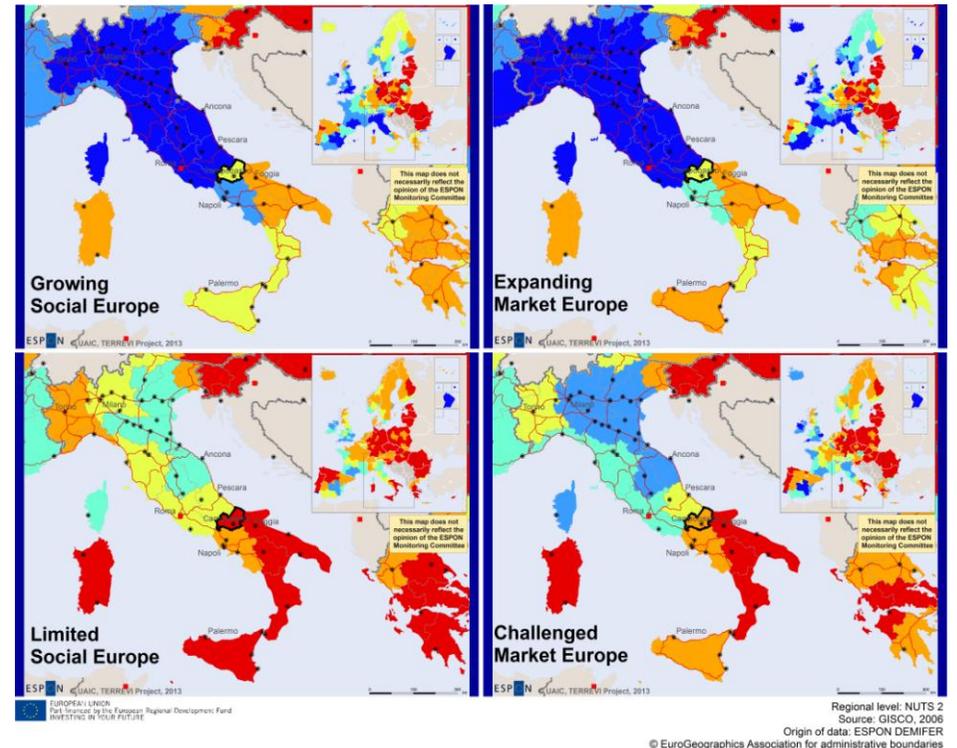
The indicator is defined as the difference in the size of the labour force in a given time period. Labour force is influenced basically by economic variables and demographic trends. Prospects and regional patterns of labour force evolution are defined according to four policy scenarios displayed in the map.

The "Growing Social Europe" scenario is defined by growth enabled by technical and social innovation and increasing collectivism, with a moderate increase in inter-state migration and moderate levels of extra-European immigration and an increasing labour force participation rate. "Expanded Market Europe" is shaped by a growth enabled based on technical and social innovation and growing individualism, with a high increase in inter-state migration and also high levels of extra-European migration and increasing labour market participation. According to this scenario, working population increases for a wide range of regions. However, within countries differences in growth figures are clearly visible.

The "Limited Social Europe" is defined by a growth limited by environmental constraints and growing collectivism, with a moderate decrease of inter-state migration, low extra-European integration and decreasing labour force participation. "Challenged Market Europe" has a growth path limited by environmental constraints and increasing individualism, with a low increase of inter-state migration, moderate extra-European immigration and decreasing labour force participation. In these two scenarios, labour force shrinks considerably in large part of Europe, while in others labour force growth is limited.

None of the scenarios reverses the negative trend for Molise region but only the extent of labour force change. The region perform regardless of the scenario: Molise is foreseen to have its labour force decrease between 2005 and 2050. According to the scenarios "Challenged Market Europe", the region will suffer a diminution of labour force from 10 to 30% between 2005 and 2050. If the either the "Expanding Market Europe" scenario or "Growing Social Europe" is applied, the region will know, in the same period, a diminution of this indicator only from 0 to 10%. If the scenario will be "Limited Social Europe" the region will record a decrease of labour force from 30 to 77%.

This map was originally prepared for the ESPON DEMIFER project and reproduced for the ESPON TerrEvi project.



Change in number of persons in labour force in 2005-2050, in % after Different DEMIFER Policy Scenarios



Map 21 Change in labour force in 2005-2050

## Share of old people

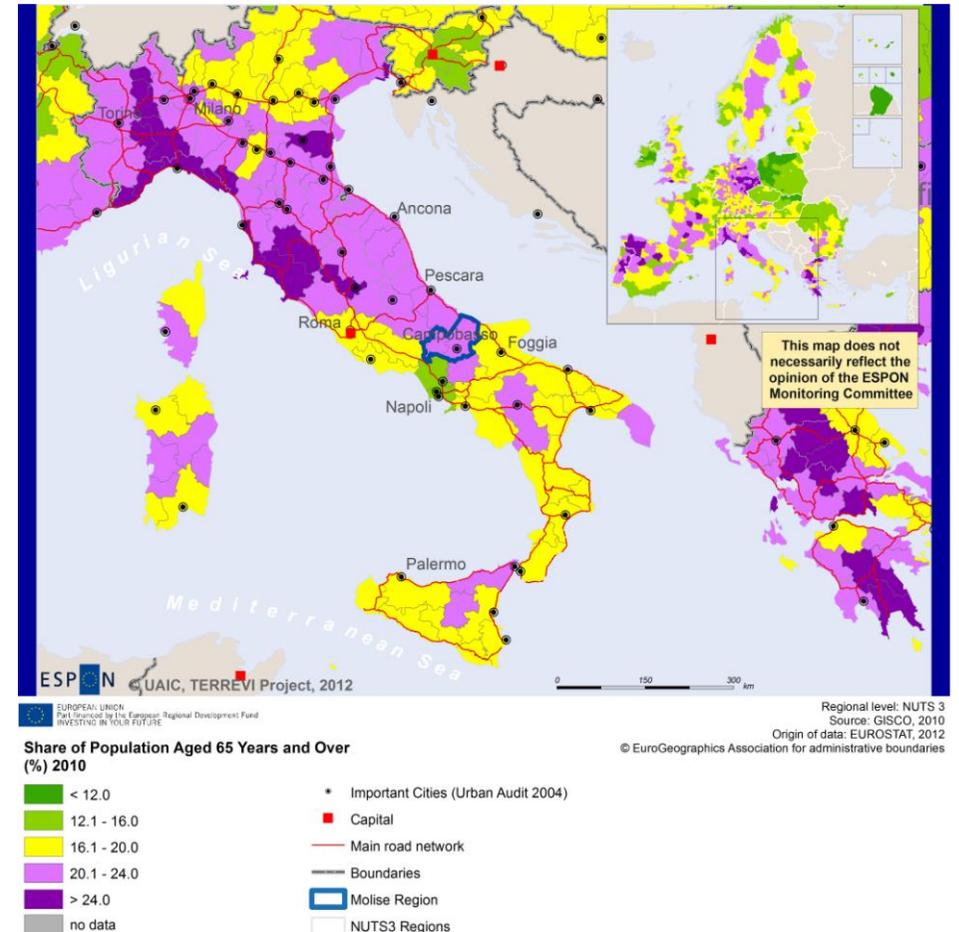
The ageing population within the European Union is a trend, which is likely to increase in importance in the coming decade. Consistently low birth rates and higher life expectancy will transform the demographic pyramid; the proportion of people of working age in the EU is shrinking while the relative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

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

In line with a majority of Italian regions but above the majority of European regions, both provinces of Molise have a share of population aged over 65 years comprised between 20.1 and 24.0%. Although located in an area characterized by early and intense manifestation of selective migration, Molise region managed to maintain a demographic picture less aging compared with other central-southern regions of Italy, due to less pronounced damage of fertility indices.

The increased share of elderly population in both provinces of the region is influenced by progress made in recent decades in terms of life expectancy at birth, coupled with the entry into older cohorts of more numerous generations born after the Second World War emphasized aging process.

This map was produced for the ESPON TerrEvi project.



**Map 22 Share of old people, 2010**

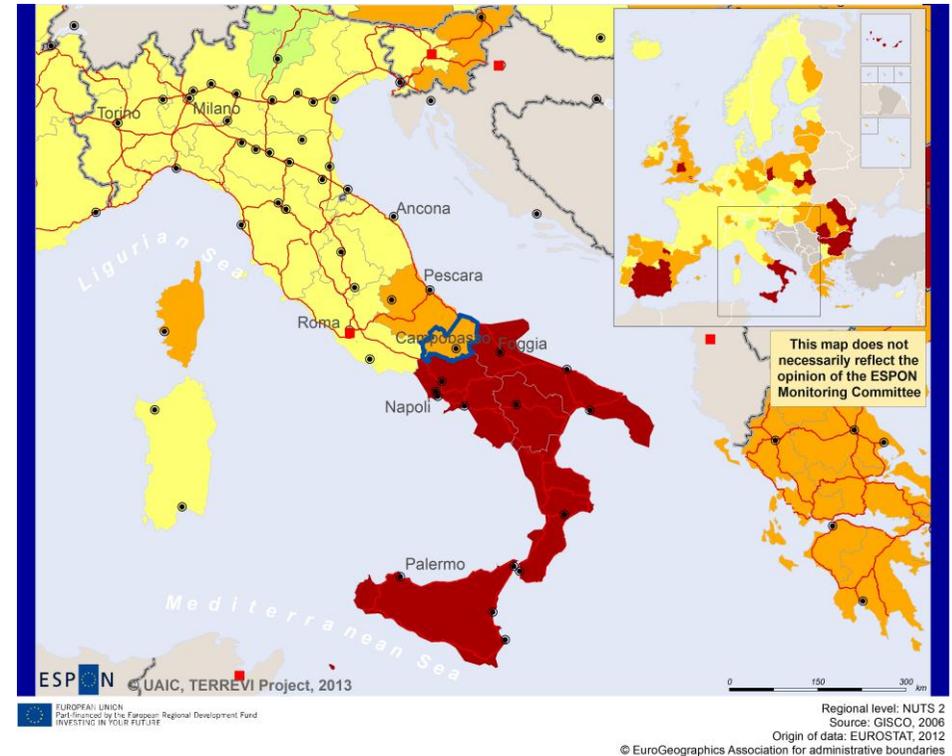
## People at risk of poverty

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

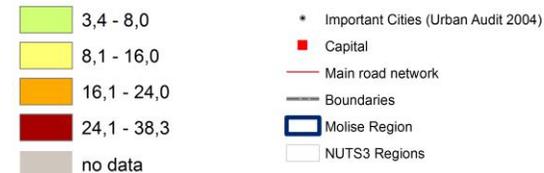
In general, there are hardly any considerable variations within the most developed countries (towards the North and the West). In these countries poverty is distributed rather equally across regions. In contrast, in the Eastern and Southern countries internal heterogeneity is more pronounced, i.e. Italy, Spain, Bulgaria, Romania and Poland. This suggests that poverty is a very territorial issue in these countries, especially the more peripheral ones.

In Molise, the share of population at risk of poverty was 23.6% in 2010. This figure is clearly above both the European and the Italian average (18%). Another useful indicator is the share of people at risk of poverty or social exclusion, which also take into account severe material deprivation and low work intensity. For Molise, the indicator was 31.8% in 2010, clearly above both the EU 27+4 average and Italian average (24.5%).

This map was originally prepared for the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



### At-Risk-of-Poverty Rate (2011)



Data for PT are shown for 2005  
Data for FR and UK are shown for 2009  
Data for CH, BE, DK, DE, EE, IE, IT, LU,  
SK, FI13, FI18, FI1A are shown for 2010.

**Map 23 Population at Risk of Poverty, 2010**

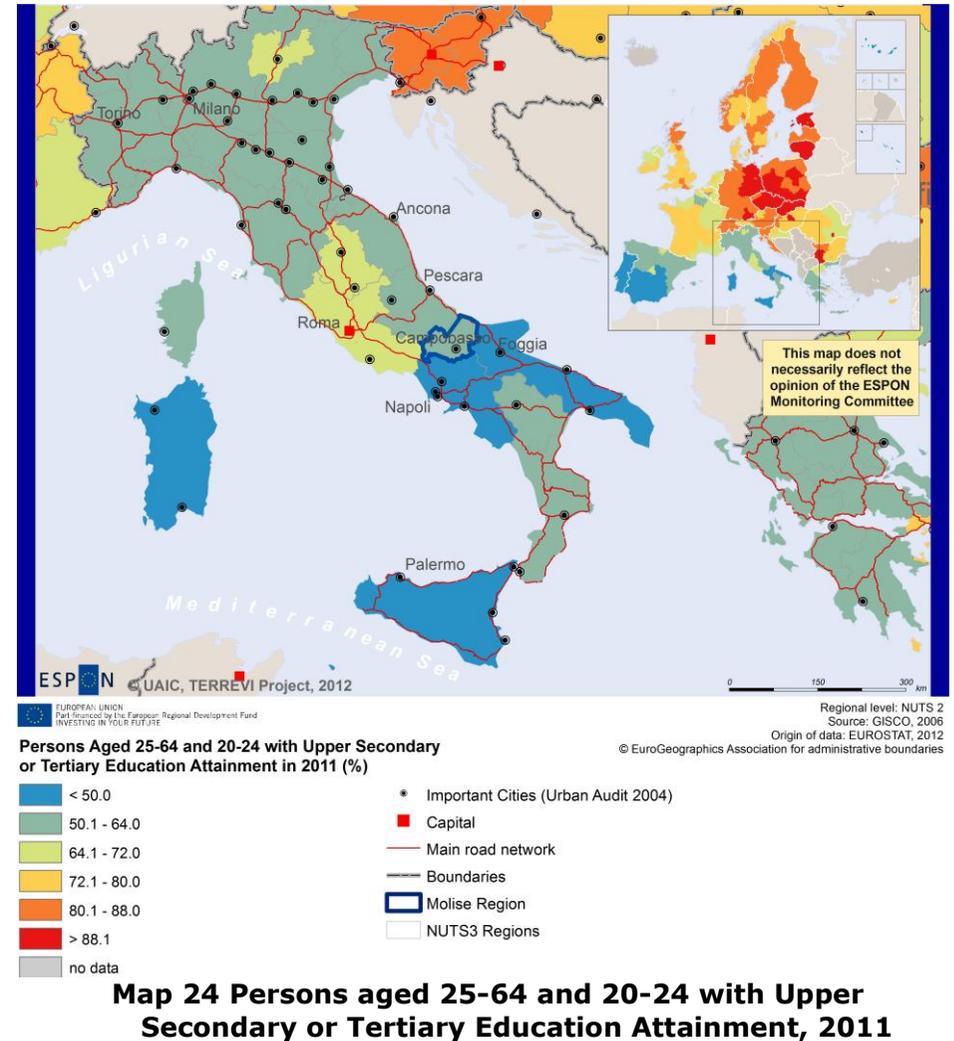
## People with high education

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

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

In the case of Molise, the indicator is 53%, which is below the European and the Italian average. Focussing only on the group of 25-64 years with Tertiary Education, Molise has a better performance than Italy (15.1% against 14.9%)

This map was produced for the ESPON TerrEvi project.



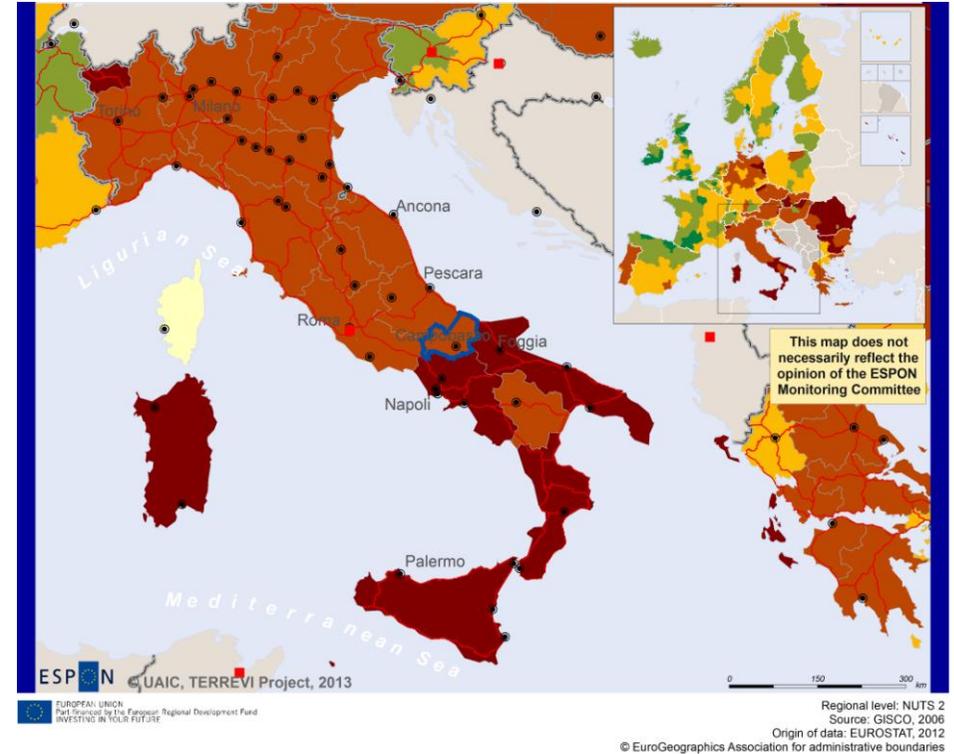
## Young academics

A share of 40% of regional population aged 30 to 34 years with tertiary education attainment is one main headline target for inclusive growth within the Europe 2020 strategy. It can be seen that about 1/4 of all regions already reached this target.

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

Molise shows a value between 20% and 30% and therefore verges to fall relatively far behind the EU2020 Target.

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



### Persons aged 30-34 with tertiary education attainment (%) 2012 EU 2020 Target = 40%

#### Below EU2020 Target

- < 20,0
- 20,1 - 30,0
- 30,1 - 40,0

#### Above EU2020 Target

- 40,1 - 50,0
- > 50,1
- no data

- \* Important Cities (Urban Audit 2004)
- Capital
- Main road network
- Boundaries
- Molise Region
- NUTS3 Regions

Data for Valle d'Aosta (2008), Ciudad Autónoma de Ceuta (2010)  
Brandenburg – Nordost, Brandenburg – Südwest, Chemnitz,  
Leipzig, Itä-Suomi, Etelä-Suomi, Pohjois-Suomi, Provincia Autonoma  
Bolzano/Bozen, Provincia Autonoma Trento, Veneto, Friuli-Venezia  
Giulia, Emilia-Romagna, Toscana, Umbria, Marche, Lazio,  
Cheshire, Merseyside (2011)

### Map 25 Regional population aged 30 to 34 with tertiary education, 2010

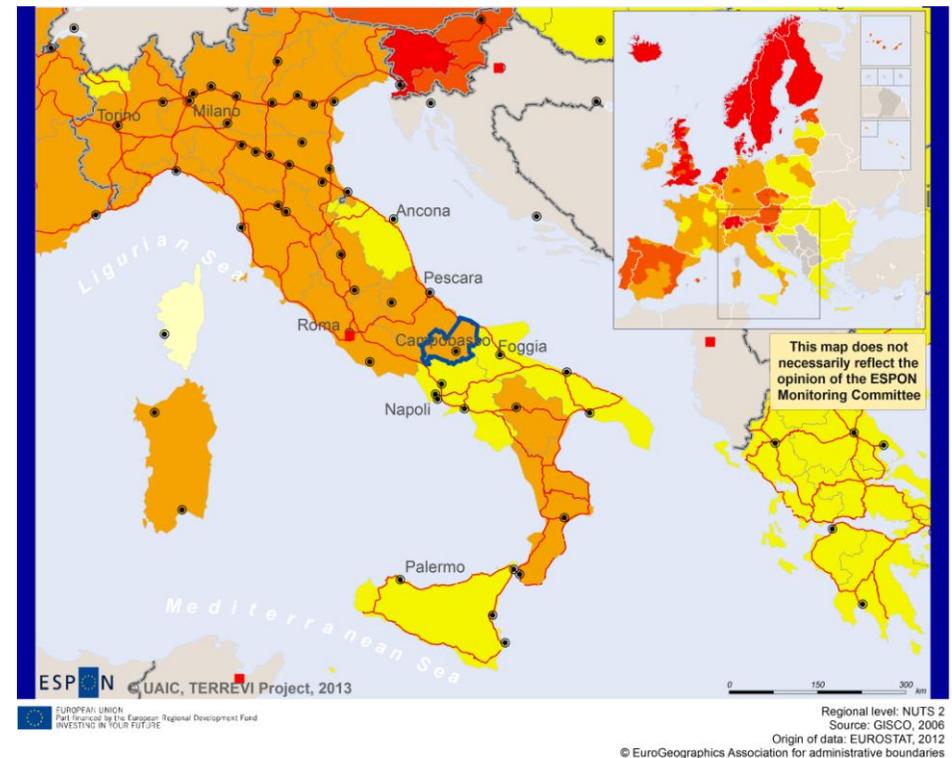
## Adults in education and training

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

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

In 2011, the proportion of persons aged 25 to 64 in the EU-27 area receiving some form of education or training in the four weeks preceding the labour force survey was 8.9. With a percentage of adults attending education and training between 5 and 10%, the region of Molise is really close to the national average (5.7%) but still far from the European target of 15%.

This map was prepared for the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



**Participation of adults aged 25-64 in education and training (%) 2011**



**Map 26 Share of adults in education and training, 2011**

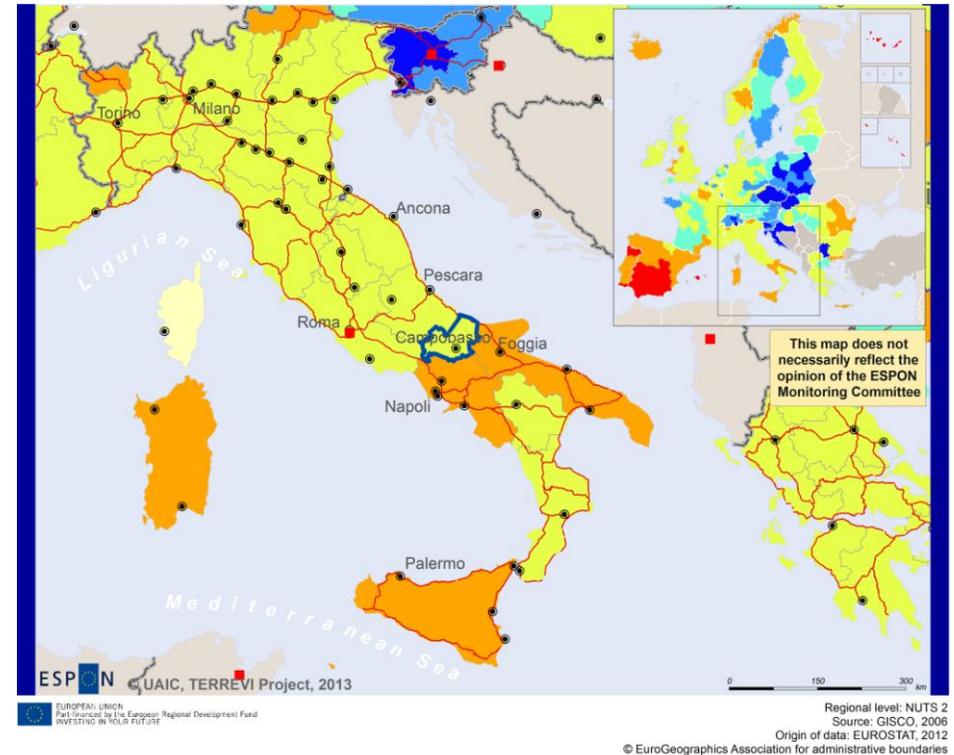
## Regional early school leavers

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

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

Molise was in 2010 slightly above the target value (10%-20%).

This map was originally prepared for the ESPON SIESTA project and reproduced for the ESPON TerrEvi project.



**Early leavers from education and training as percentage of population aged 18-24 (2010)**  
**EU 2020 Target = 10%**



**Map 27 Regional early school leavers from education and training as percentage of population aged 18 to 24 (drop-out rate), 2010**

## Results and feedback from the workshop

In general, indicators provided by ESPON projects and presented within the evidence package are considered useful for The Molise Region. However, some aspects may limit the usefulness. They might provide opportunities to further improve the presented indicators.

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

Another factor that may hamper an indicator's usefulness, concerns the territorial level at which it is calculated and presented. It would be desirable if it were more specific and detailed regarding the territorial scale because the rate might considerably differ between different regions.

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

## Programming steps

Focussing on details concerning the five programming steps, the reviewed indicators are deemed relevant both for the needs analysis and for programme monitoring, and to observe and monitor changes within the programming period or even within single projects. When it comes to the programming steps project selection and stakeholder dialogue proposed indicators seem to be difficult to use.

## Further suggestions

Employment rate	- split by sectoral level
Long-term unemployment rate	- useful for social policy
Change of labour force (2005-2050)	- interpret together with migration and growth patterns
People with high education	- split by age groups - split by type of education
Participation of adults in education and training	- match with ISTAT figures - complete with an indicator on graduated people's employment
Population at risk of poverty	- match with ISTAT figures

## **2 Territorial factors of interest for the programme area**

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

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

Molise Regional Operational Programme area stands far away from Europe's main metropolitan areas. The main Italian global agglomerations are located far away outside the programme area. Second tier cities e.g. Naples, Bari, Foggia are also distant.

Urban areas are a minor part of the programme area, which is in a European perspective clearly dominated by rural remote areas.

The programme area's multimodal accessibility measured by rail, road and air remains largely below European average values. Possibilities for one-day business trips within the European urban network are therefore very limited.

With regard to geographic specificities, the programme areas is clearly characterised by mountainousness, coastal and remote areas.

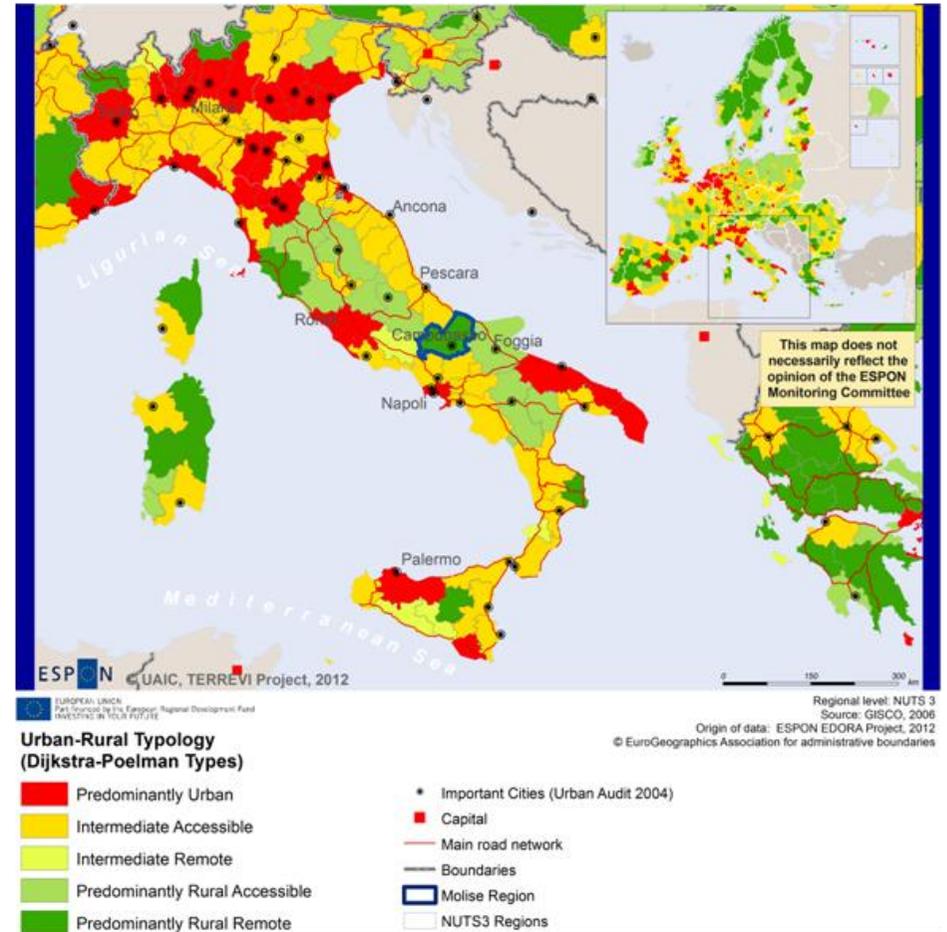
## Urban-rural typology

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

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

Molise is one of the few predominantly rural remote Italian region, meaning that more than 50% of the population lives in rural local units and cannot reach a city within 45 min.

This map was originally produced for the ESPON TerrEvi project.



**Map 28 Urban-rural typology of NUTS3 regions**

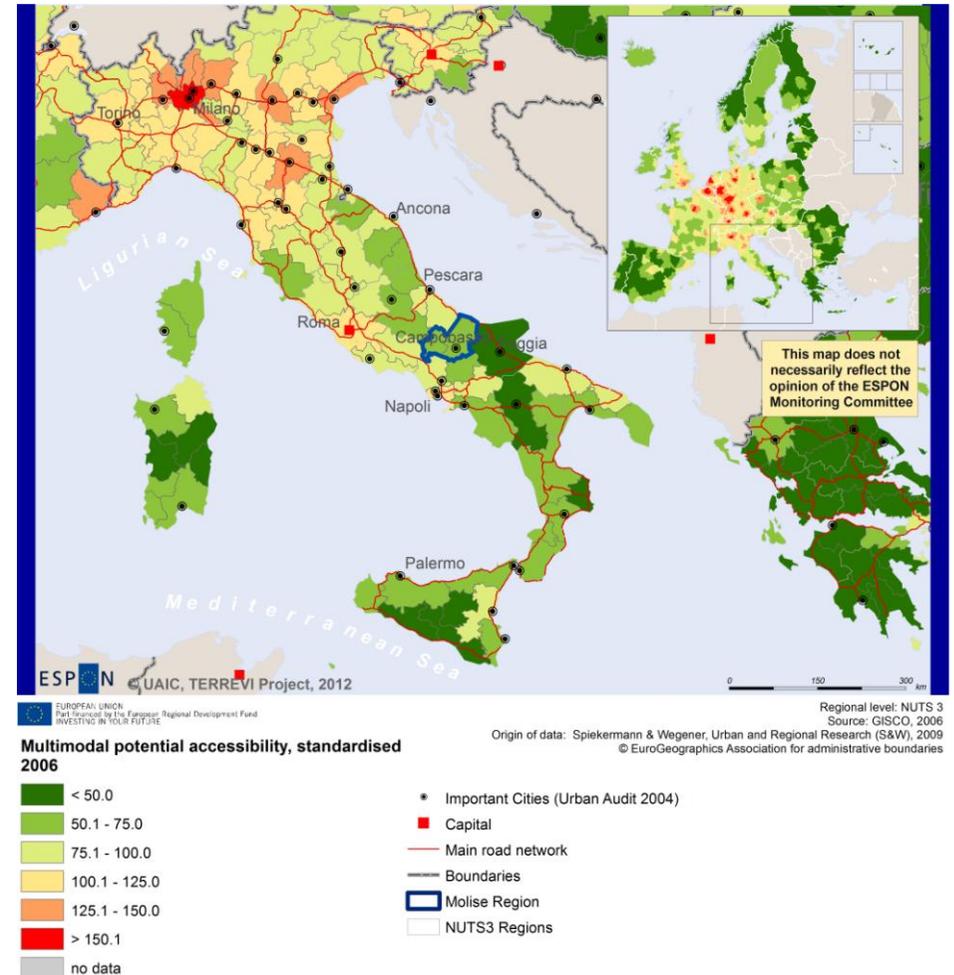
## Multimodal accessibility

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

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

Located in the central-southern part of the Italian peninsula, Molise is a typical interstitial space, outside the major communication axes that define the quadrangle formed by the urban centres Rome and Naples (on the west façade) and Bari and Pescara (on the eastern one). This is compounded by the peripheral position in the European context, so that the region (comprising Campobasso and Isernia provinces) has a potential multimodal accessibility ranging between 50 and 75% of the European average.

This map was originally prepared for the ESPON TRACC project and re-produced for the ESPON TerrEvi project.



**Map 29 Multimodal potential accessibility, 2006**

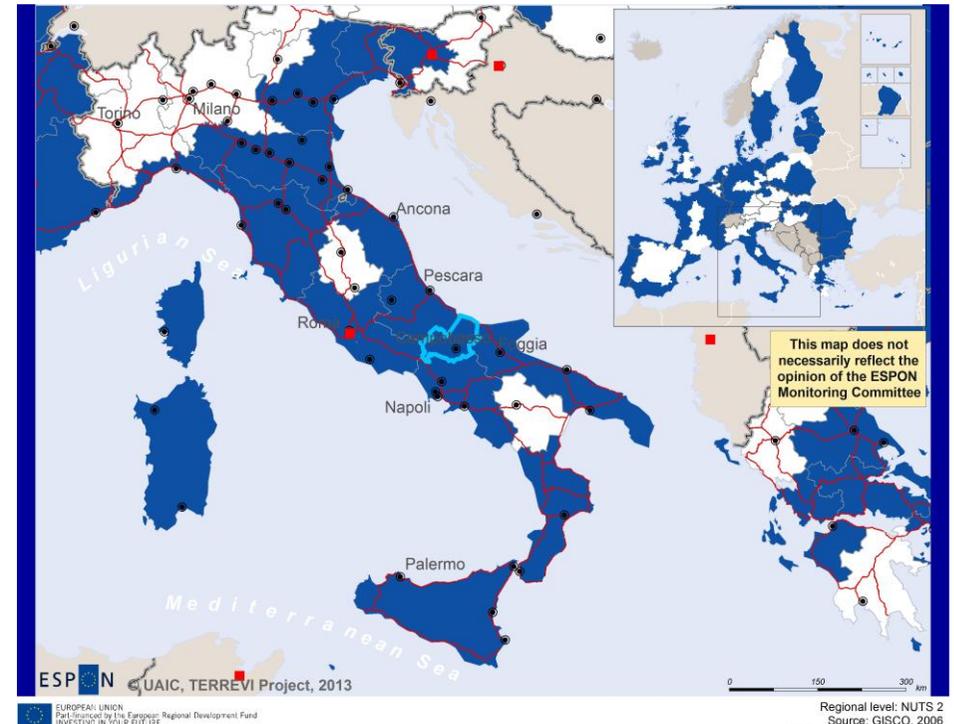
## Territorial Impact Assessment

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

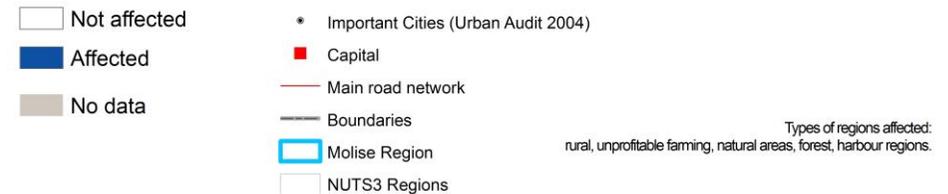
Molise is directly affected by this directive. The territorial impact is generally limited but positive on the supply side on energy use and greenhouse gas emissions in the transport sector.

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

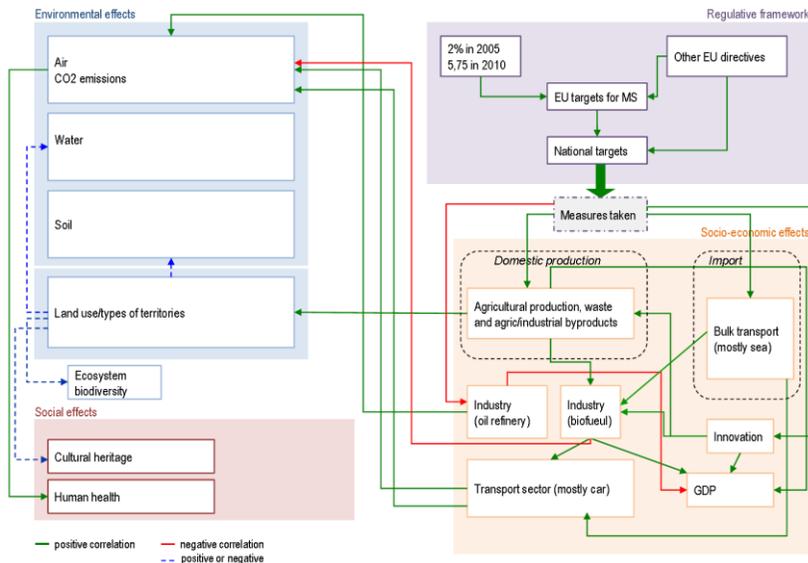
This map was prepared for the ESPON ARTS project and reproduced for the ESPON TerrEvi project.



### Regions affected by Directive on promotion of use of biofuels



### Map 30 Regions affected by Directive on promotion of use of biofuels



### 3 Recommended ESPON reading

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

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

ESPON study	Topic	Content
DEMIFER	Demography	It provides evidence on the regional effects of migration on Europe's demographic future. Molise-ITF2 (Campobasso) is one case study.
TRANSMEC	European cooperation	It develops a method providing guidance on how ESPON results can add value to support territorial cooperation programmes (see map 27 and from map 36 to 39 on potential accessibility indicators).
SGPTD	Growth poles	It provides evidence on European secondary cities, their performance and functional roles in different parts of Europe, and the potential policy intervention affecting their performance (see from figure 2 to 2.12).
ATTREG	Attractiveness	It provides a better understanding of the contribution of European regions' and cities' attractiveness to economic performance and it identifies the key ingredients of attractiveness in different types of territories.
GEOSPECS	Specific types of territories	It provides evidence on the strength, weaknesses and development opportunities of specific types of territories and regions (e.g. border areas, highly or sparsely populated areas).
ReRisk	Energy	It focuses on opportunities to support competitive and clean energy supplies for regions in Europe and to generate and strengthen sustainable energy sources.
TERCO	Territorial cooperation	It provides an assessment of the adequacy of existing territorial cooperation areas for meeting current challenges of territorial development and a proposal of potentially meaningful new cooperation areas throughout Europe.
KIT	Innovation	It takes into account the current state, patterns and potentials of regions with respect to the knowledge and innovation economy and identifies new development opportunities through innovation for Europe and its territories (see from map 3.1.1 to 4.4.1).
RISE	Integrated strategies	It shows how monitoring and evaluation indicators and methodologies can be used to enhance the development of Regional Integrated Strategies.

Furthermore, some of overall ESPON products of particular interest for territorial cooperation are:

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

All ESPON reports and tools are freely available at

[www.espon.eu](http://www.espon.eu)

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