ESPON
Factsheet
Extended version

Molise, Italy

This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

© UAIC TERREVI Project, 2012

Regional level: NUTS 2
Source: GISCO, 2010
Origin of data: EUROSTAT, 2012
© EuroGeographics Association for administrative boundaries

Legend

⊙ Important Cities (Urban Audit 2004)

■ Capital

— Main road network

Boundaries

Molise Region

NUTS2 Regions

ESPON Project TerrEvi
January 2013

Contents

List of Maps

Introduction

ESPON supports policy development in relation to the aims of territorial cohesion and harmonious development of the European territory. It provides comparable information, evidence, analysis, and scenarios on territorial dynamics, which reveal territorial capitals and development potentials of regions and larger territories. Considering the programme area in its European context adds an important new perspective that can help shaping the programming and the places of implementing projects.

The ESPON TerrEvi project focuses on producing evidence for Structural Funds programmes with the aim to support the development of the programmes to be carried out in the 2014-2020 period. One milestone of this work consisted in presenting selected ESPON research pieces in easy-to-understand factsheets for all territorial cooperation programme areas. The aim is to provide the reader with preliminary insight on types of territorial evidence ESPON holds at hand with regard to the possible investment priorities of future programmes.

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

In addition to the programme factsheets there will be 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 SWOTs. These case studies will be carried out in the first quarter of 2013.

Thus ten extended factsheets have been produced to build the basis for the work of the case studies. This extended factsheet[1] comprises the structure of the regular factsheet for the programme including widespread additional information. Furthermore useful context indicators for the case study programme have been added.

---

[1] This extended factsheet does not necessarily reflect the opinion of the ESPON Monitoring Committee.

Context information

Population change

Definition
Population change is defined as the difference in population size on 1 January of two consecutive years[2].

Map 1 Population change
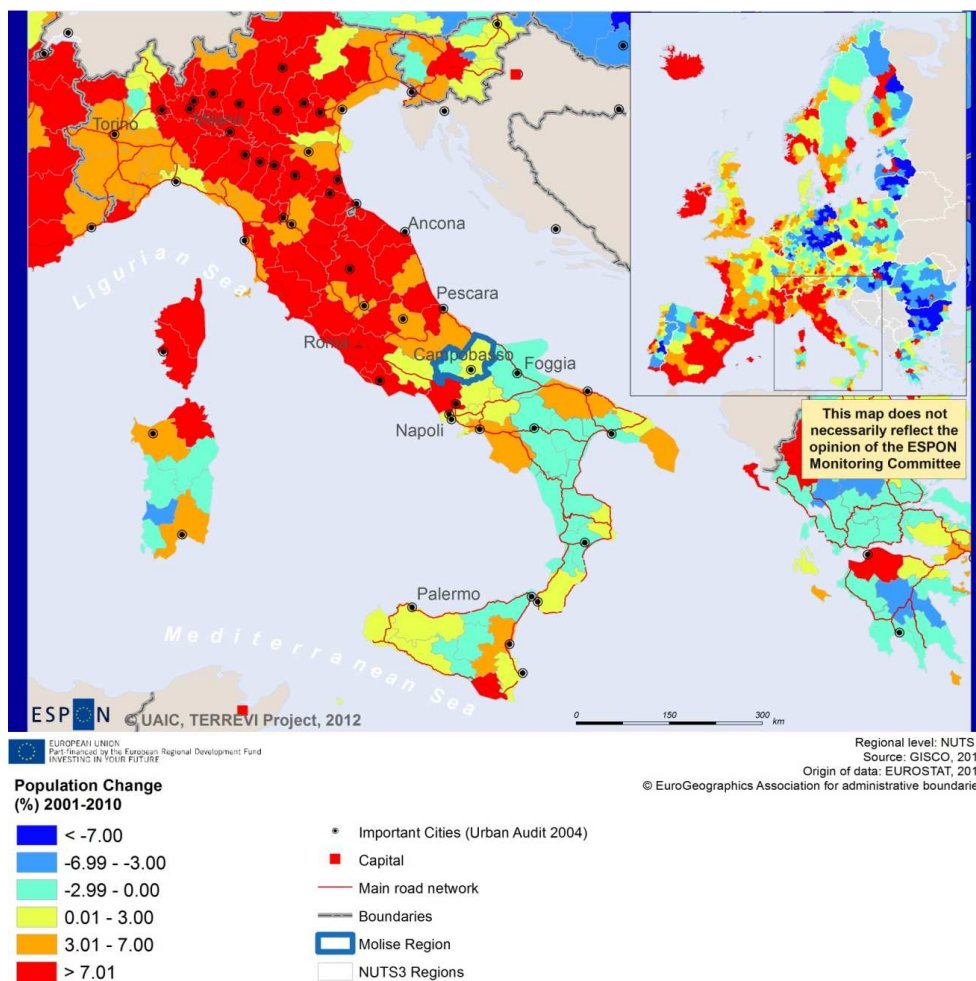
Molise region falls in the demographic picture characteristic for Southern Italy (Mezzogiorno), where selective migration of population caused a steady deterioration of the indicators of fertility, birth traditionally higher than in other regions of Italy having failed to offset migration.

Key facts
Between 2001 and 2010, the Region of 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.

_____

[2] See http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Population_change

Share of old people

<u>Definition</u>
The indicator measures the ratio between people aged 65 years and over and the total population. The impact of demographic ageing within the European Union (EU) is likely to be of major significance in the coming decades. Consistently low birth rates and higher life expectancy will transform the shape of the EU-27's age pyramid.

Map 2 Share of old people

<u>Key facts</u>
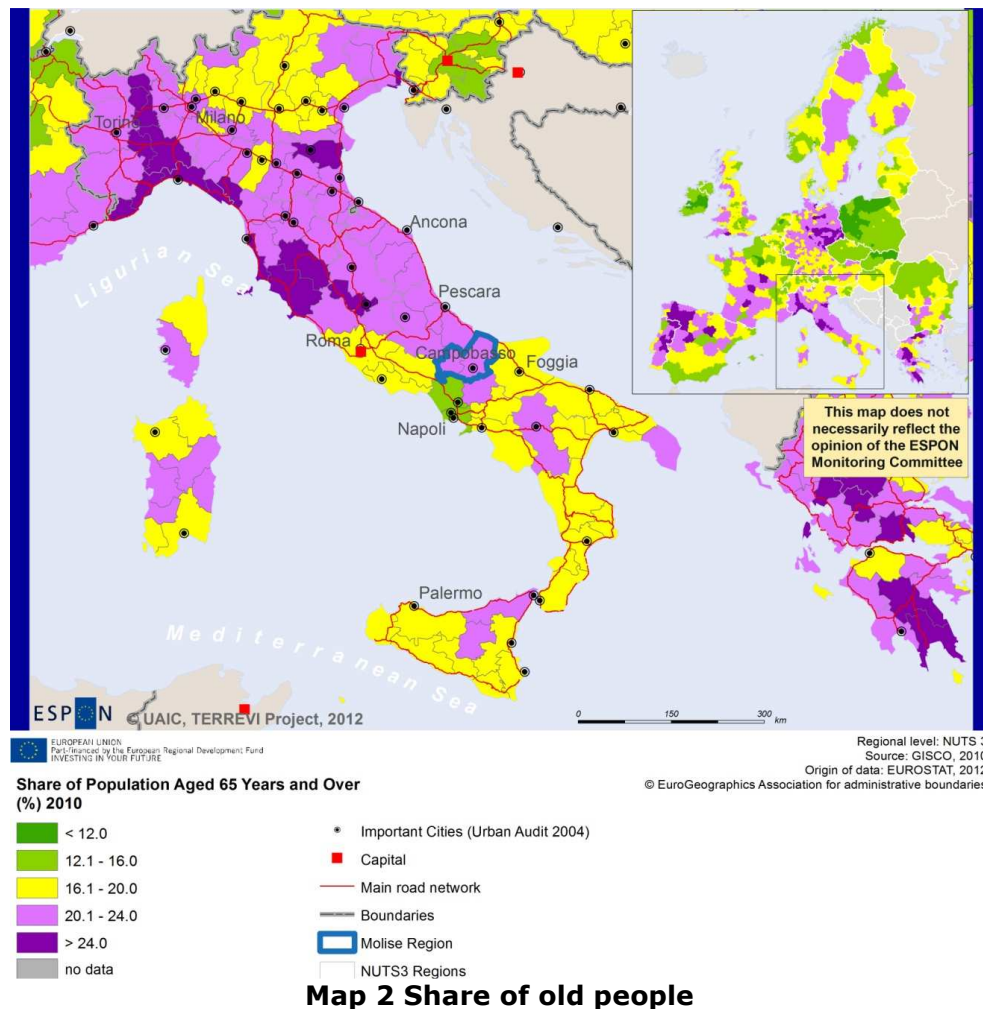In line with a majority of Italian regions but above the majority of European regions, both provinces of Molise have a share of population aged over 65 years comprised between 20.1 and 24.0%.

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.

GDP in PPS per capita

Definition
GDP (PPS) per capita is measured by the ratio between the level of gross domestic product, expressed in purchasing power standards, and total population. Obtained by converting GDP to a fictive currency using special conversion factors, GDP in PPS per capita can be used to make comparisons across countries by eliminating both the differences in currency expression and the differences in the prices levels between the countries. At EU level, the spatial distribution of GDP respects the principle of spatial autocorrelation, few deviations from the rule being generated either by the presence of competitive urban centers either by the border effect.
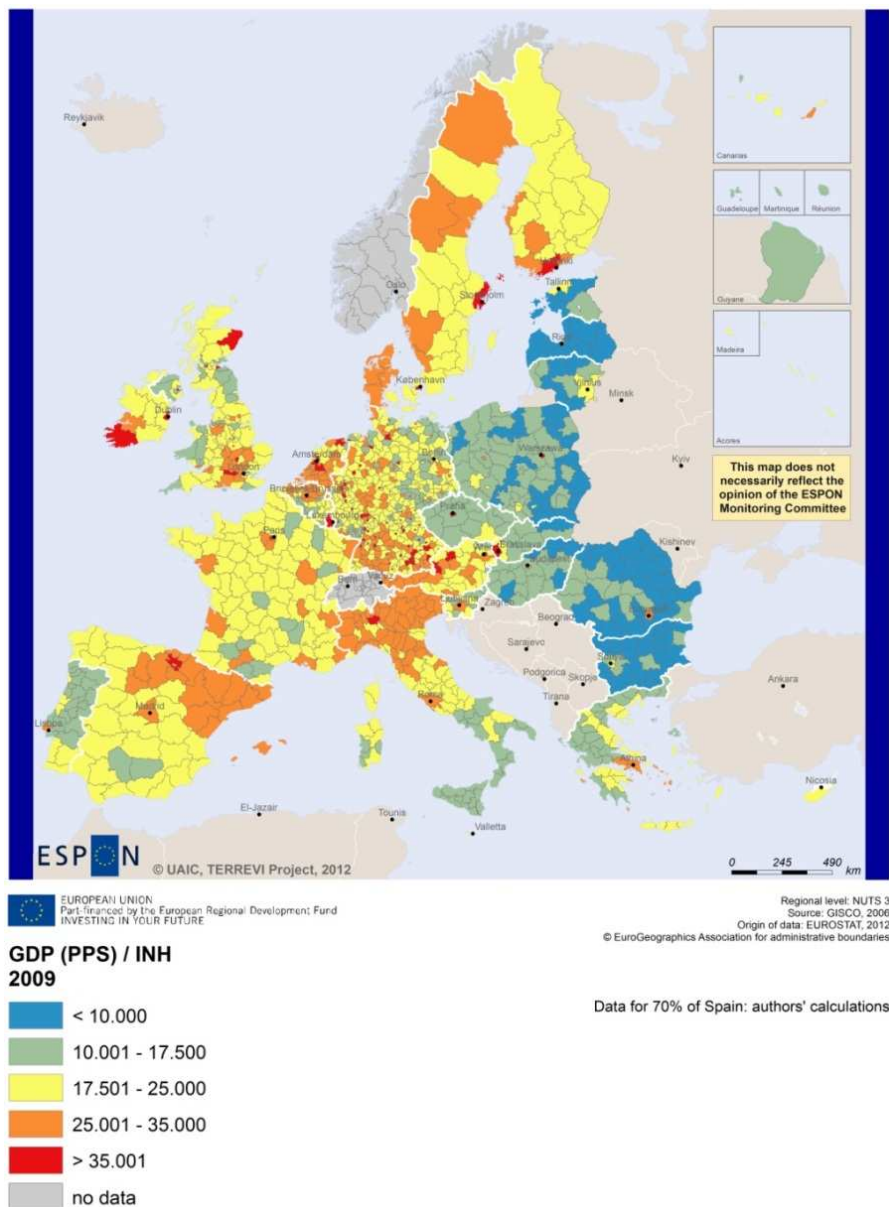
Map 3 GDP (PPS) per capita

Key facts
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.

Gender gap in unemployment

<u>Definition</u>
According to Eurostat, the unemployment rate is the ratio between the unemployed people, - i.e. people aged 15 to 64 that are without work during the reference week, have actively sought employment and are still available to start work within the next two weeks – and the labour force (including both unemployed and employed people). Gender gap is calculated as the difference between male and female unemployment rates. A positive gap indicates a higher unemployment rate for men than women.

Gender Gap in Unemployment (%) 2011

🟥	< -4.50
🟧	-4.49 - -1.50
🟨	-1.49 - 0.00
🟩	0.00 - 1.50
🟩	1.51 - 4.50
🟩	> 4.51
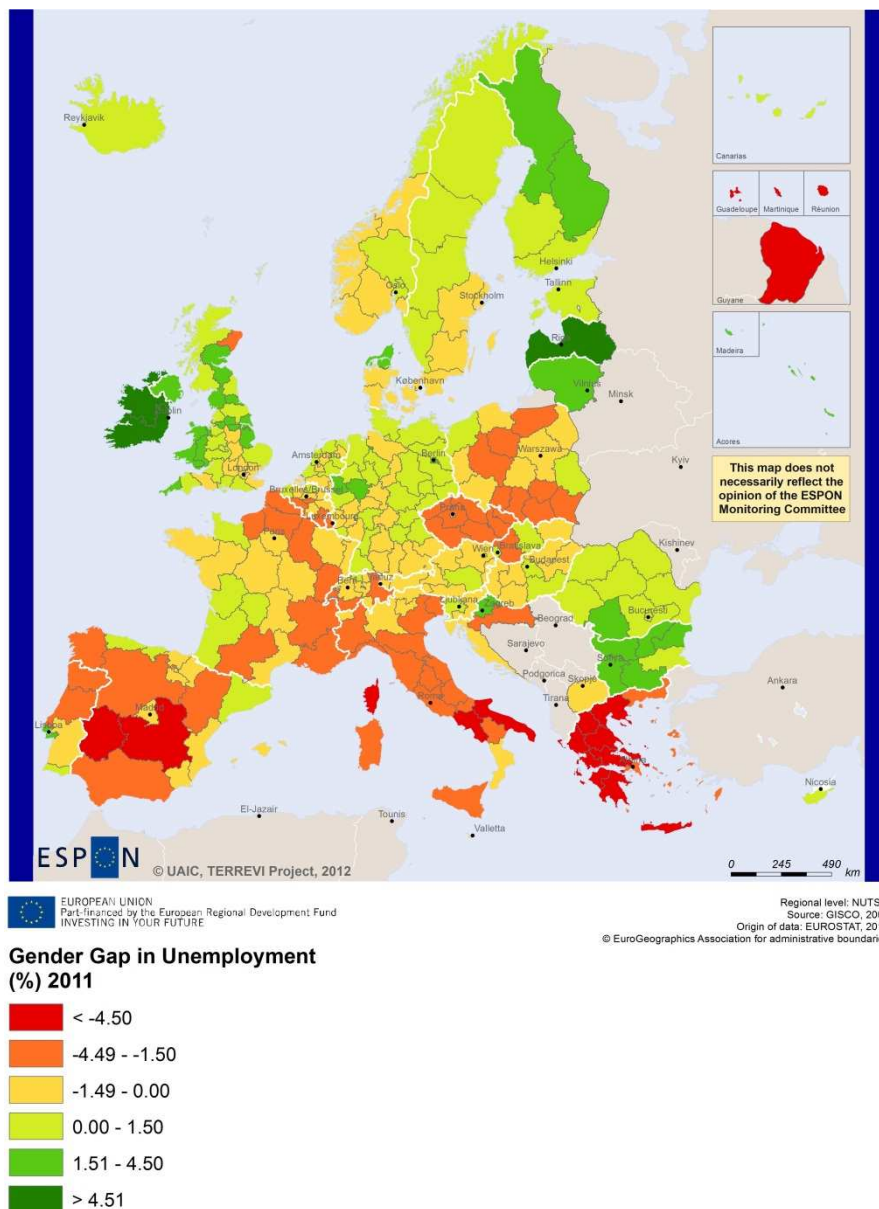
Map 4 Gender gap in unemployment

<u>Key facts</u>
Gender gap in unemployment gives hints of disparities existing between men and women. Yet, their are big discrepancies as far as Molise is concerned. The regional value is amongst the lowest in Europe. However, it is in the Italian average.

1. Smart, Sustainable and Inclusive growth

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 associated with urban systems, accessibility 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 provides insight on both the main structures and larger territorial trends. 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.

The following traffic lights for each indicator represent how the programme territory performs compared with the wider European medians. In the traffic light, green indicates that the TNC area performs better for that indicator, yellow in a similar way, and red worse. 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.

1.1.   Smart growth

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. This section provides further details on the definition and the key facts of the indicators used for measuring smart growth as total intramural R&D expenditure, employment in knowledge-intensive sectors and territorial pattern of innovation.

	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	🔴

The value in front of each traffic-light represents the median value of the country and of the EU-27+4 space.
Thresholds for detecting disparities using the variation coefficient: low < 15%, medium 15 - 30%, high > 30%
Regional level of analysis: NUTS 2
Origin of data: EUROSTAT 2012

Molise has a worse or similar performance to Italy and EU27+4 for all the Smart Growth Indicators, except for employment in knowledge-intensive services compared to Italy.

Total Intramural R&D expenditure

OECD defines intramural expenditures as all 'expenditures for research and development (R&D) performed within a statistical unit or sector of the economy during a specific period, whatever the source of funds. Expenditures made outside the statistical unit or sector but in support of intramural R&D (e.g. purchase of supplies for R&D) are included. Both current and capital expenditures are included'[3].

Total Intramural R&D Expenditure (GERD)
Percentage of GDP (2009)

- < 0.50
- 0.51 - 1.00
- 1.01 - 2.00
- 2.01 - 3.00
- > 3.01
- no data
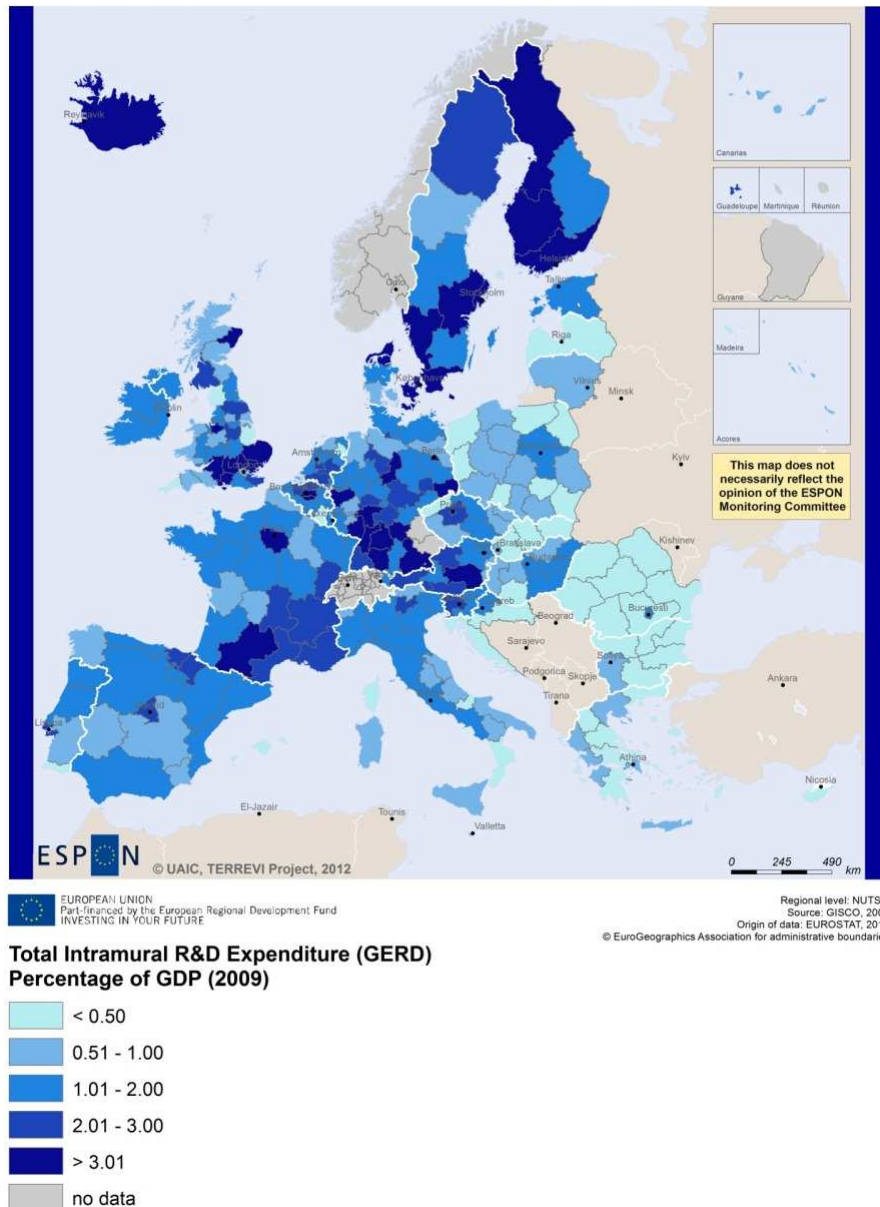
Map 5 Share of R&D expenditure on GDP

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 %.

Key facts
Total intramural R&D expenditures in Molise are by far the amongst the lowest in both Italy and Europe. The average value, lower than 0.5% of the GDP, is comparable to values mainly observed in Romania and Bulgaria.

---

[3] OECD Frascati Manual, Sixth edition, 2002, paras. 358-359, page 108

Employment in knowledge-intensive sectors

Definition

OECD defines the employment in knowledge-oriented sectors as the 'employment in high-technology manufacturing sectors and knowledge-intensive services'. In particular the employment in knowledge-intensive services corresponds to the following ISIC divisions: 61 Water transport, 62 Air transport, 64 Post and telecommunications, 65 Financial intermediation, except insurance and pension funding, 66 Insurance and pension funding, except compulsory social security, 67 Activities auxiliary to financial intermediation, 70 Real estate activities, 71 Renting of machinery and equipment without operator and of personal and household goods, 72 Computer and related activities, 73 Research and development, 74 Other business activities, 80 Education, 85 Health and social work and 92 Recreational, cultural and sporting activities.

Employment in Knowledge-Intensive Services as Percentage of Total Employment (2010)

- < 18.0
- 18.1 - 26.0
- 26.1 - 34.0
- 34.1 - 42.0
- 42.1 - 50.0
- > 50.1
- no data
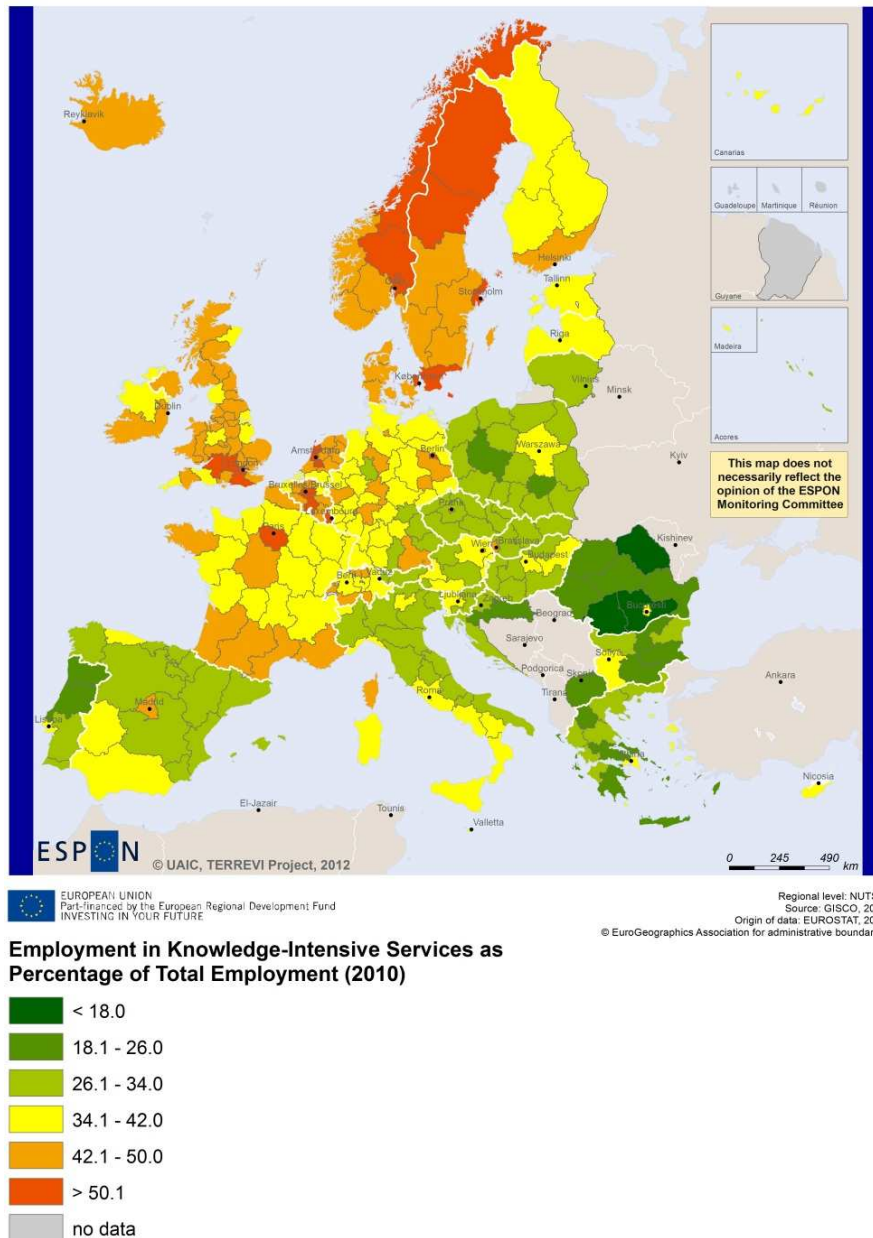
Map 6 Employment in knowledge intensive services

Key facts

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 specialization (agriculture, industry) and the lack of major urban and research centres.

12

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.

Territorial patterns of innovation

<u>Definition</u>
The ESPON-KIT project provides a synthesis on different territorial patterns of innovation, defined by a combination of territorial specificities (context conditions) underpinning various modes of performing the phases of the innovation process. Each type of territorial pattern is detailed in the key facts section.
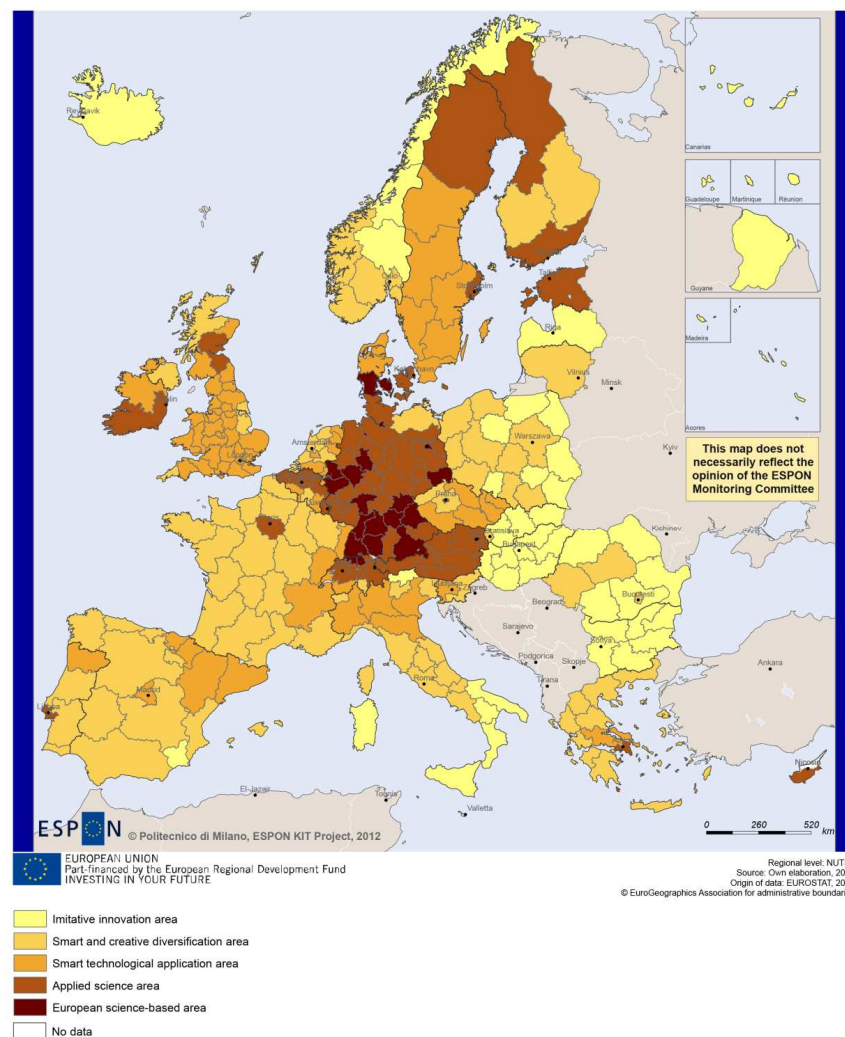
Map 7 Territorial patterns of innovation

<u>Key facts</u>
The regional typology developed by the KIT project (Map 8) identifies several patterns of innovation. The region is qualified as 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 the regions, mostly situated in an extended central part, are qualified the same way. In Europe, this pattern is common in Mediterranean Member States i.e. France, Portugal, Spain and Greece.

Box 1 Main features of the KIT clusters

European science-based areas:
- strong enablers (highly educated population, high level of R&D expenditure and high share of inventors) support the endogenous capacity to: create new knowledge; efficiently translate it into new products and processes as well as into managerial and/or organizational changes; have a high accessibility and receptivity;
- a strong specialization in GPTs;
- an innovative attitude above the EU average (i.e. product, process,…);
- a knowledge of greater generality and originality than the EU average;
- lower levels of creativity potential, attractiveness and entrepreneurship than the EU average.

Applied science areas:
- quite concentration of EU total patents, scientific human capital, R&D expenditures and GPTs patents;
- quite high level of creativity and capabilities potential, attractiveness and entrepreneurship;
- strong knowledge and innovation intensity, but lower than the previous cluster.

A smart technological application area:
- medium regional enablers for knowledge and innovation creation: high accessibility and collective learning; high entrepreneurship (higher than EU average);
- good preconditions for knowledge and innovation acquisition: high creativity and attractiveness, high receptivity (above EU average);
- very good capabilities and innovation potentials.

A smart and creative diversification area:
- high capabilities and innovation rely upon tacit knowledge and human capital;
- high knowledge and innovation variables under the EU average;
- strong enablers (creativity and attractiveness and above EU average) that help to absorb and to adopt innovations developed elsewhere.

ESPON KIT project identifies three types of variables:
- the pre-conditions of knowledge economy, intended as the enablers of the innovation process;
- the pre-conditions for knowledge acquisition;
- the knowledge and innovation flows.

The indicators for the pre-conditions for knowledge, innovation and accessibility are:

- R&D investments (GDP share)
- Patent share
- Specialisation / generalisation / originality of patents in GPTs and in advanced domains
- Share of managers out of the total employees in SMEs
- Firm innovative capacity
- Share of inventors and researchers
- Share of population at tertiary education level
- Transport accessibility (Km of roads and railways)

The indicators used to measure the pre-conditions for knowledge acquisition are:
- Per capita funding from the Research Framework Programme as a proxy of 'receptivity'

- Openness to innovation measured by Eurobarometer as a proxy of 'creativeness'

- Difference from the EU average salary as a measure of attractiveness

In order to measure the knowledge and innovation flows, various indicators are taken into account as share of GPTs patents, level of human capital in other regions etc.

E-commerce

Definition
The recent ESPON-SIESTA project provides another relevant indicator for the EU2020 Strategy which measures the expansion of the digital economy and the information society. This indicator is defined as a percentage of individuals, aged 16 to 74, who ordered goods or services over the Internet for private use in 2010.

% of individuals aged 16 to 74, 2010.

- < 15%
- 15% - 30%
- 30% - 45%
- 45% - 60%
- 60% - 75%
- > 75%
- No data

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

Data for BH11, BG12, BG13, BG21, BG22, BG23 and FI2 are not available for 2010.
This regions are shown for 2007.
TR data corresponds to 2011.
UKE1 data are not available for 2010 and are shown for 2009.

Map 8 Individuals who ordered goods or services over the internet

Key facts
This picture confirms a similar result to the indicator reporting the use of internet. Molise performs under the EU27+4 average and has a low value, similar to some Central and Southern Italian regions.

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.

	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	🔴

The value in front of each traffic-light represents the median value of the country and of the EU-27+4 space.
Thresholds for detecting disparities using the variation coefficient: low < 15%, medium 15 - 30%, high > 30%
Regional level of analysis: NUTS 2 (Wind energy potential), NUTS 3 (Ozone concentration, Potential vulnerability to climate change)
Origin of data: ESPON ReRisk, ESPON INTERCO & ESPON Climate Projects

This section provides further details on the definition and the key facts of the indicators used for measuring sustainable growth as wind energy potential, ozone concentration, combined adaptive capacity to climate change, potential vulnerability to climate change.

Wind energy potential

The indicator identifies the on-shore wind power potential and is measured by in m/s per km2, taking into account for the size of the regions and the presence of Natura 2000 areas.
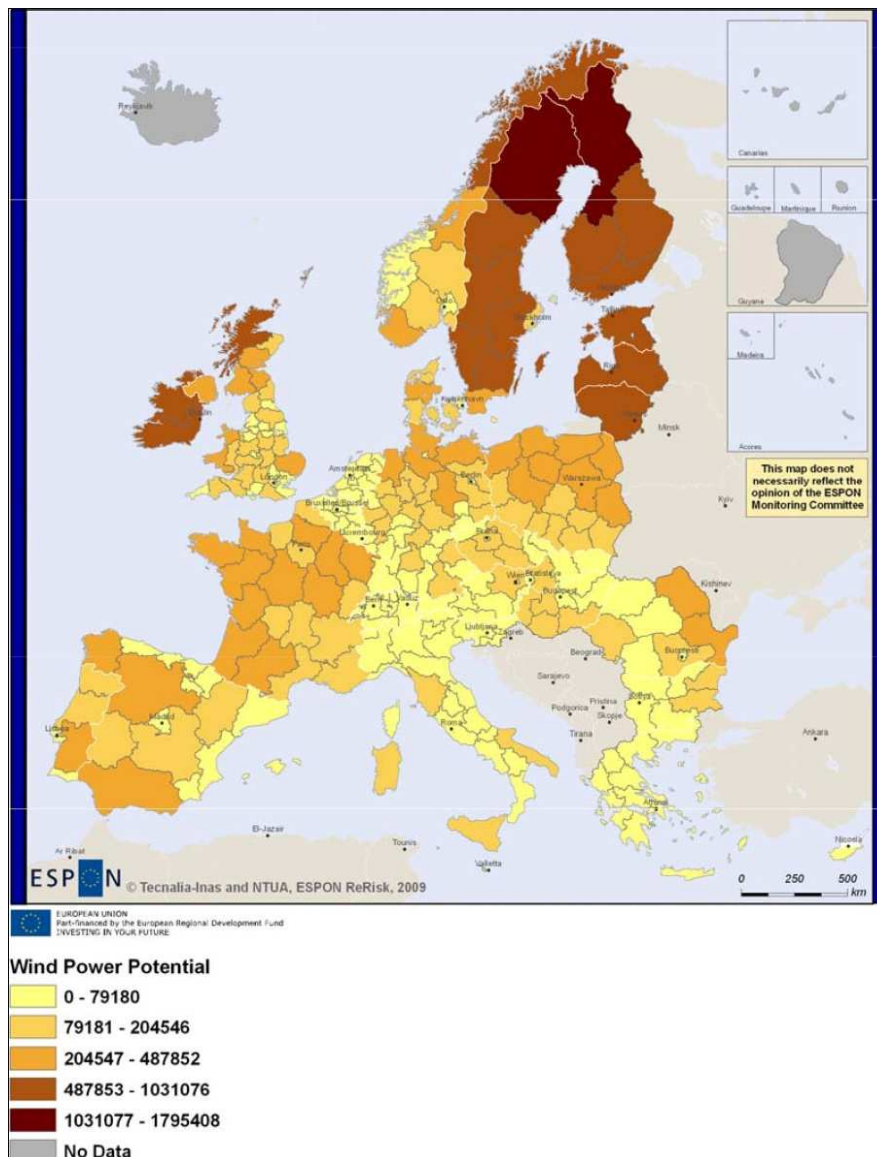
Map 9 Wind power potential (m/s/km^2)

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

Solar energy potential

Definition
The indicator identifies the potential for electricity production from photovoltaic panels among regions. The data refers to the yearly total yield of estimated solar electricity generation within the built environment.
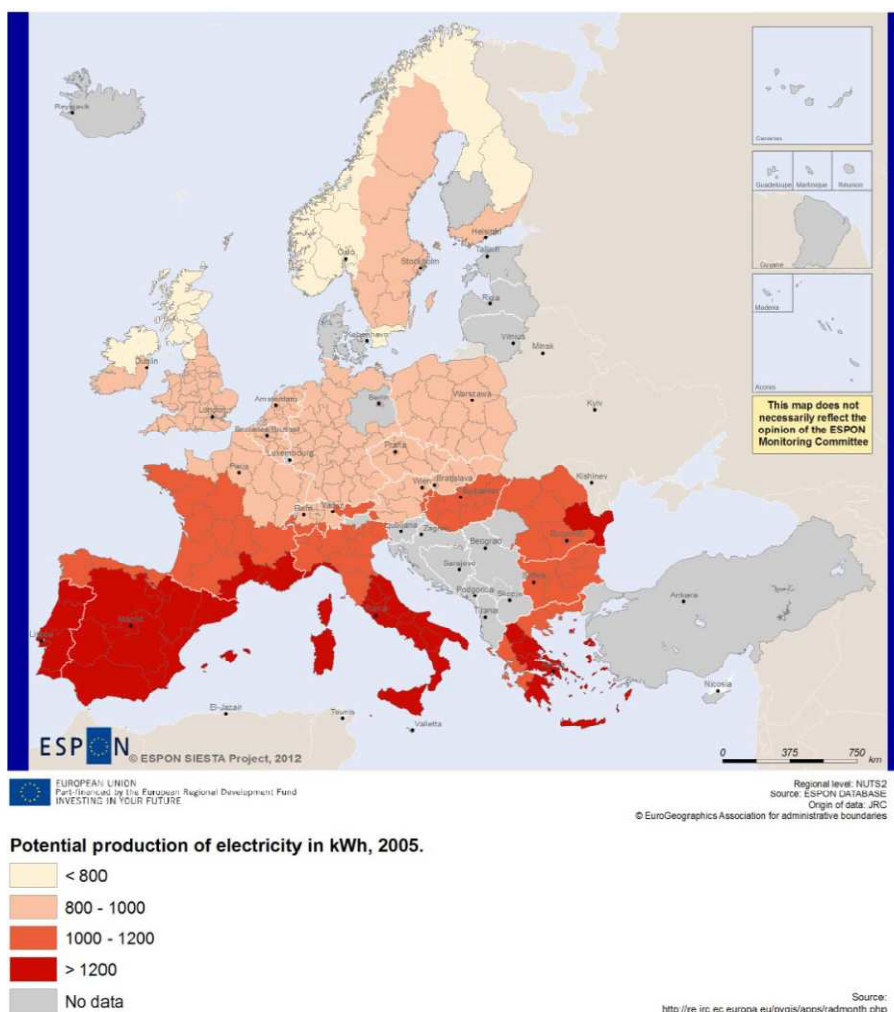
Map 10 Solar energy potential

Key facts
As a Southern region of Europe, Molise is among the regions with the highest potentials. However, it should be pointed out that the above pattern is not only dependant on climate, but also on the degree of urban development, as only the built up areas have been accounted for given that the installation of plants can ensure substantial amounts of savings in urban areas rather than in remote and rural areas.

Ozone concentration

Definition

The indicator measures the number of days with ground level concentration over the European limit (i.e. 120yg/m3).

Air pollution: Ozone concentration (2008)

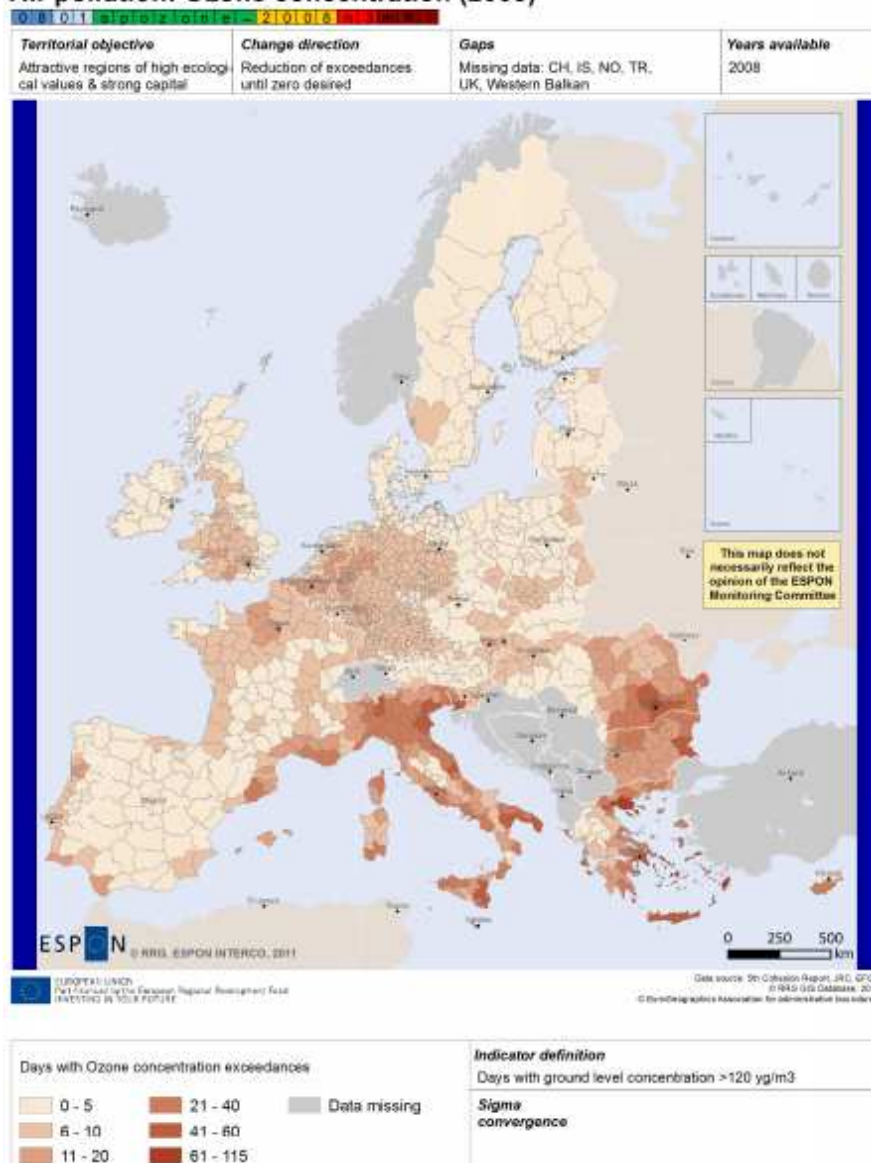| Territorial objective	Change direction	Gaps	Years available
Attractive regions of high ecological values & strong capital	Reduction of exceedances until zero desired	Missing data: CH, IS, NO, TR, UK, Western Balkan	2008

Days with Ozone concentration exceedances

0 - 5	21 - 40	Data missing
6 - 10	41 - 60	
11 - 20	61 - 115	

Indicator definition

Days with ground level concentration >120 yg/m3

Sigma convergence

**Map 11 Ozone concentration exceedances**

Key facts

The region generally enjoys a quite low number of days with concentration exceedances, in particular in comparison to other Italian regions. Figures are 11 to 20 days for the Province of Campobasso and 6 to 10 for the Province of Isernia. These results are in line with the rest of Europe.

Combined adaptive capacity to climate change

Definition
Adaptive capacity to climate change indicates the ability or potential of a system to respond successfully to climate change and climate variability, and includes adjustments in behaviour, resources and technologies. The combined adaptive capacity, according to the ESPON CLIMATE project, takes into account the economic, socio-cultural, institutional and technological ability of a region to adapt to the impacts of a changing regional climate.

Climate change has a territorialised impact. Indeed, regions are not equally impacted by climate change. But also, not all regions have the same adaptive capacity. All in all, this makes territories more or less vulnerable to new climatic stimuli.
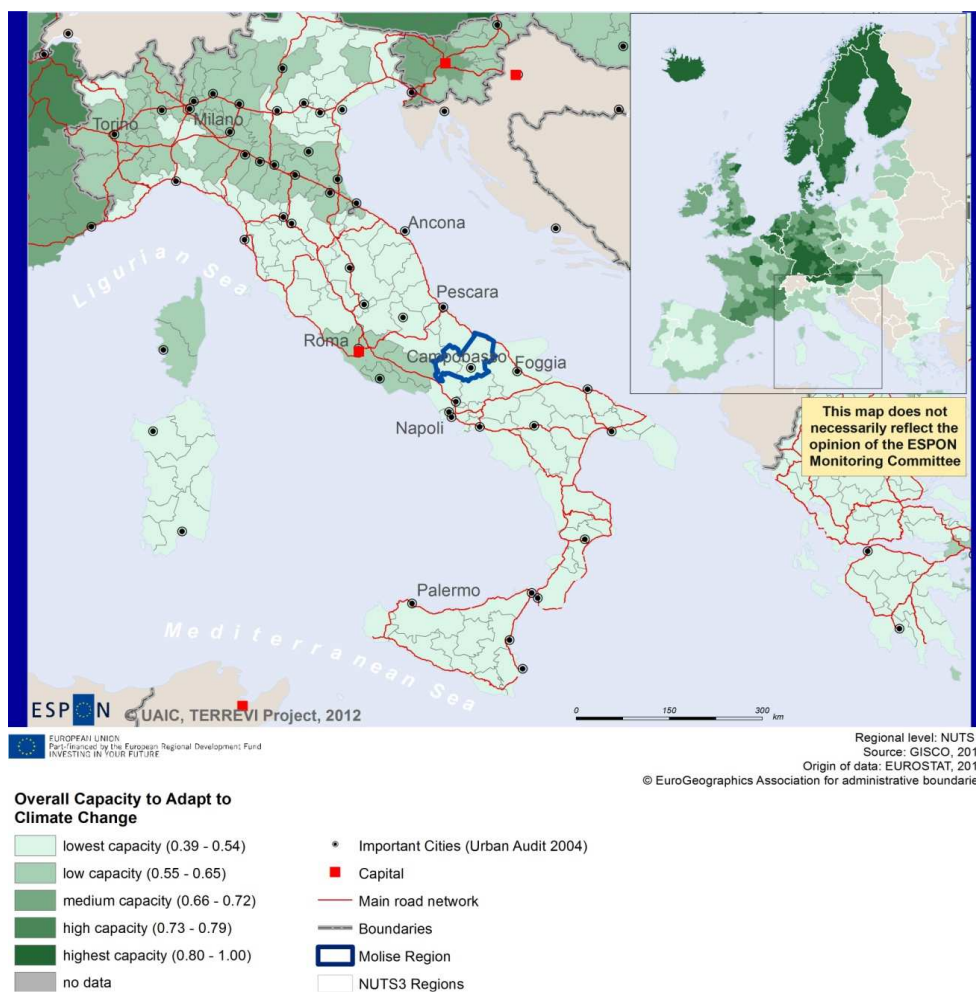
**Map 12 Combined adaptive capacity to climate change**

Key facts
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.

Potential vulnerability to climate change

<u>Definition</u>
The potential vulnerability to climate change was assessed taking into account the adaptive capacity as well as climate change impacts, such impacts being the combination of different sensitivity dimensions' and exposure to climate change.
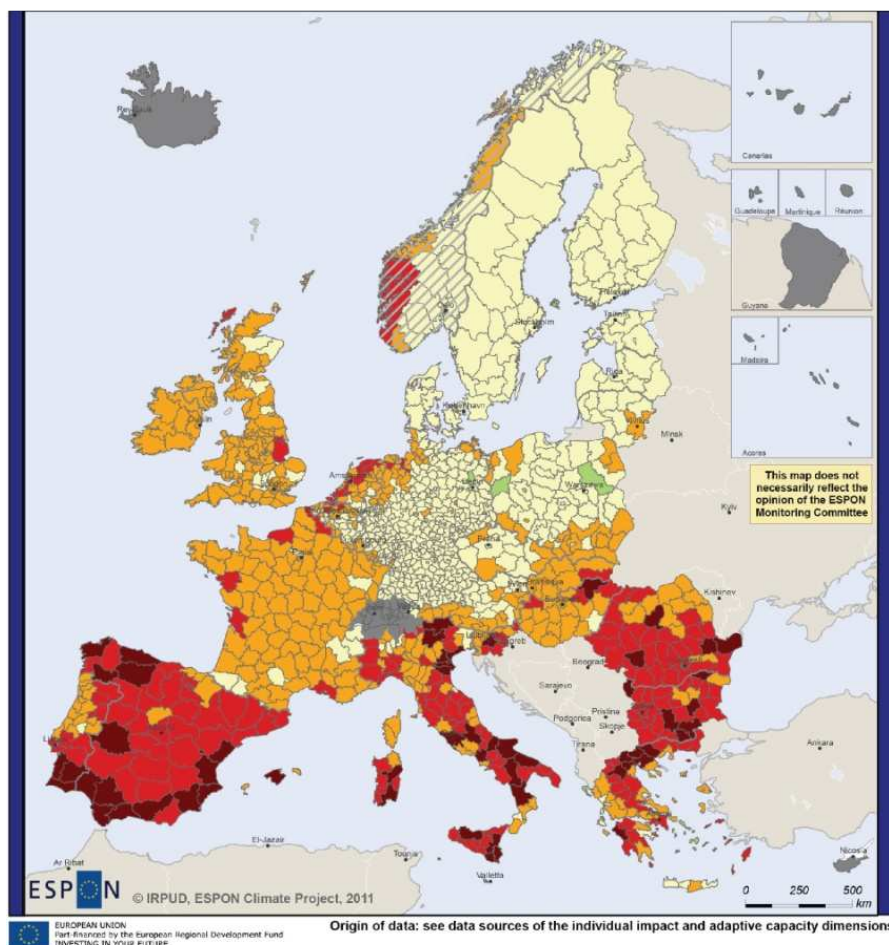
Potential vulnerability to climate change

- highest negative impact (0.5 - 1.0)
- medium negative impact (0.3 - <0.5)
- low negative impact (0.1 - <0.3)
- no/marginal impact (>-0.1 - <0.1)
- low positive impact (-0.1 - -0.25)
- no data*
- reduced data*

Vulnerability calculated as the combination of regional potential impacts of climate change and regional capacity to adapt to climate change.

The potential impacts were calculated as a combination of regional exposure to climate change (difference between 1961-1990 and 2071-2100 climate projections of eight climatic variables of the CCLM model for the IPCC SRES A1B scenario as well as resulting inundation depth changes for a 100 year return flood event based on river flooding projections of the LISFLOOD model and coastal storm surge height projections of the DIVA model adjusted with a 1 m sea level rise) and most recent data on the weighted dimensions of physical, economic, social, environmental and cultural sensitivity to climate change. Adaptive capacity was calculated as a weighted combination of most recent data on economic, infrastructural, technological and institutional capacity as well as knowledge and awareness of climate change.

* For details on reduced or no data availability see Annex 9.

Map 13 Potential vulnerability to climate change

<u>Key facts</u>
As most southern European regions, Molise foreseen potential vulnerability is medium to high. The province of Campobasso in particular will have to face highest negative impacts.

1.3. Inclusive Growth

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.

	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

The value in front of each traffic-light represents the median value of the country and of the EU-27+4 space.
Thresholds for detecting disparities using the variation coefficient: low < 15%, medium 15 - 30%, high > 30%
Regional level of analysis: NUTS 2
Origin of data: EUROSTAT 2012

This section provides further details on the definition and the key facts of the indicators used for measuring inclusive growth as change in labour force, employment rate, long-term unemployment rate, persons with upper secondary/tertiary education attainment, participation of adults (aged 25 to 64) in education and training, population at-risk-of poverty rate.

Change in labour force after different scenarios

Definition
In the ESPON DEMIFER project, Labour force participation is defined as the proportion of a specific population (such as women and older workers) considered to be either working or actively searching for a job.

A prospective vision has been developed based on four scenarios defined by ESPON DEMIFER project for the period 2005-2050:

- *Challenged Market Europe*, based on growth limited by environmental constraints and increasing individualism;
- *Expanding Market Europe*, based on growth enabled by technical and social innovation and growing individualism;
- *Limited Social Europe*, focusing on growth limited by environmental constraints and growing collectivism;
- *Growing Social Europe*, shaped by growth enabled by technical and social innovation and increasing collectivism.

Challenged Market Europe

Expanding Market Europe

Growing Social Europe

Limited Social Europe

This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

ESPON © PBL, DEMIFER, 2010
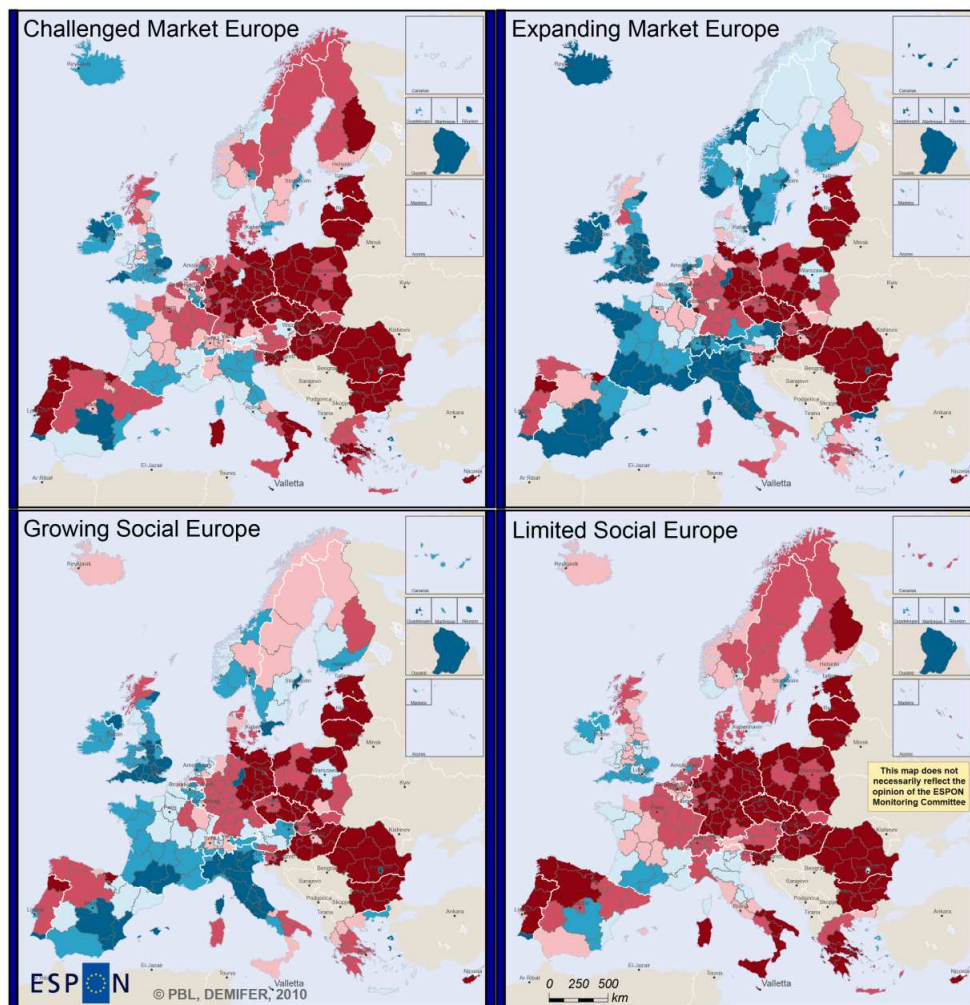
EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

Regional level: NUTS 2
Source: ESPON 2013 Database, 2010
Origin of data: Eurostat, NSIs, Estimations, 2010
© EuroGeographics Association for administrative boundaries

Change in number of persons in labour force, 2005-2050
(in % after different scenarios)

- -77.0 – -30.0
- -30.0 – -10.0
- -10.0 – 0.0
- 0.0 – 10.0
- 10.0 – 30.0
- 30.0 – 186.0
- No data

Map 14 Change in labour force

Key facts

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%.

Regardless of the scenario, Molise is foreseen to have its labour force decrease between 2005 and 2050.

Employment rate

Definition
The employment rate is calculated as the ratio (%) between the employed persons and the working age population (15-64 years)[4]. It is considered as a key social indicator for analytical purposes when studying developments within labour markets.

Map 15 Employment rate
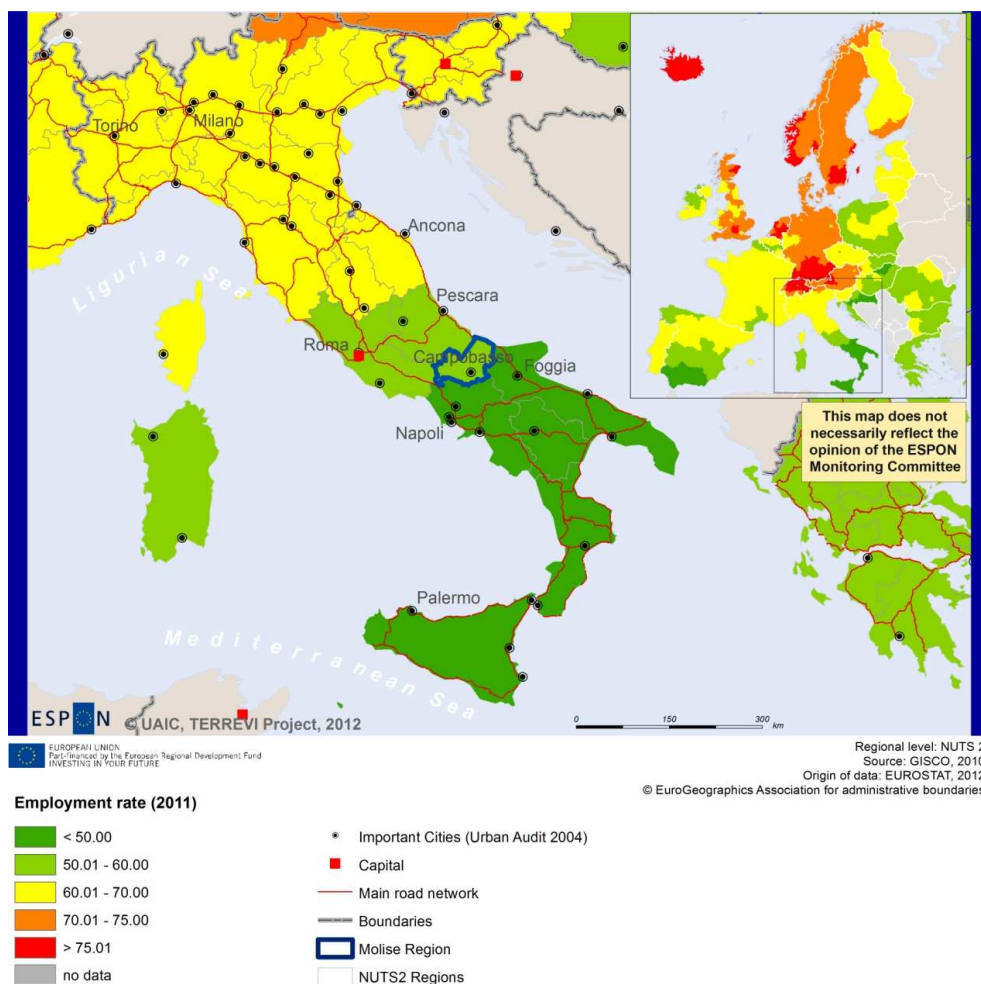
Key facts
Employment rate in the Italian region of Molise is comprised between 50.0 and 60.0%. This is in the average for Italy but rather low compared to other European regions.

---

[4] The European Union Labour Force Survey, Methods and Definitions, 1998 edition, Eurostat, p.13.

Long-term unemployment rate

Long-term unemployment refers to people that are out of work and have been actively seeking employment for at least a year. It is measured by the ratio (%) between:
- the number of people who were out of work during the reference week and have been actively seeking unemployment for at least a year;
- and the labour force (including both unemployed and employed people).

Long-Term Unemployment (12 Months and More) (%) 2011

	< 1.0
	1.1 - 4.0
	4.1 - 7.0
	7.1 - 10.0
	> 10.1

Map 16 Long-term unemployment rate

Key facts
Long-term employment rate in the Italian region of Molise is comprised between 4.1 and 7.0%. This is in the average for Italy but rather high compared to other European regions.
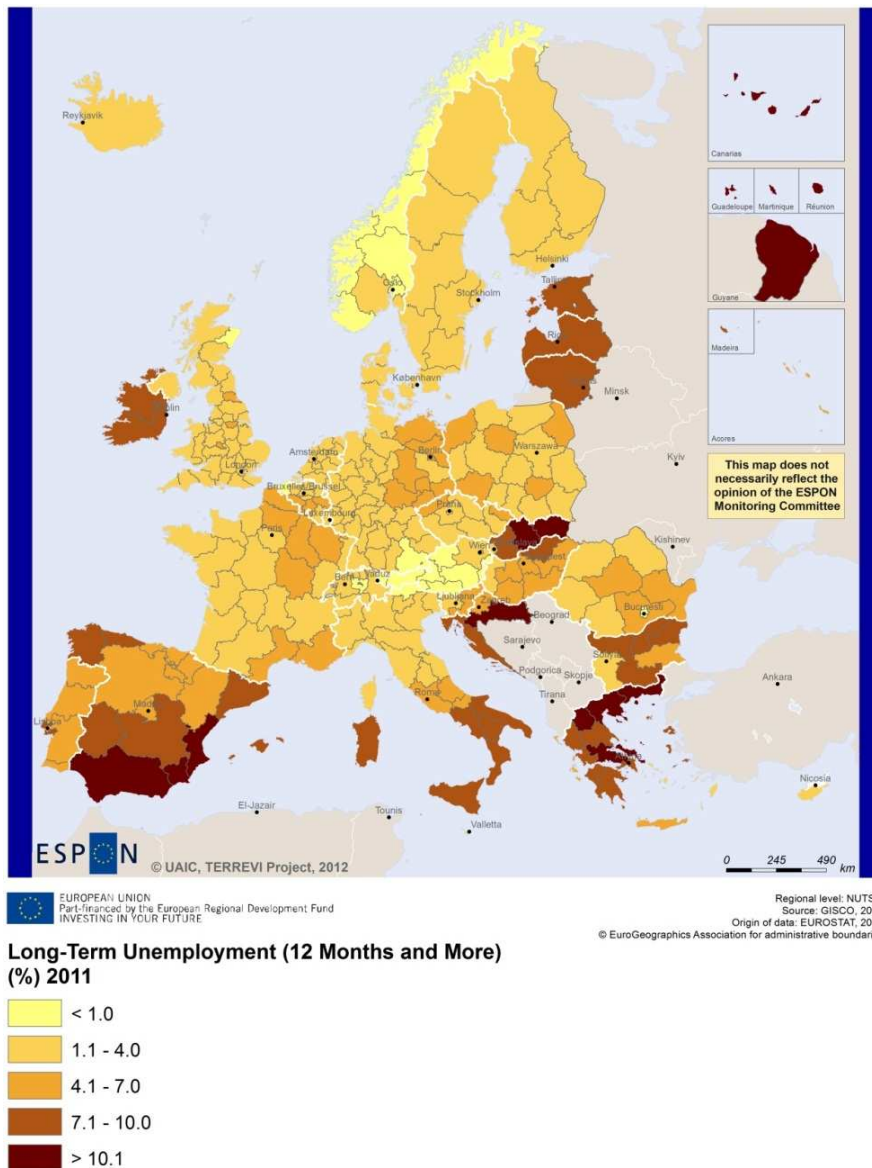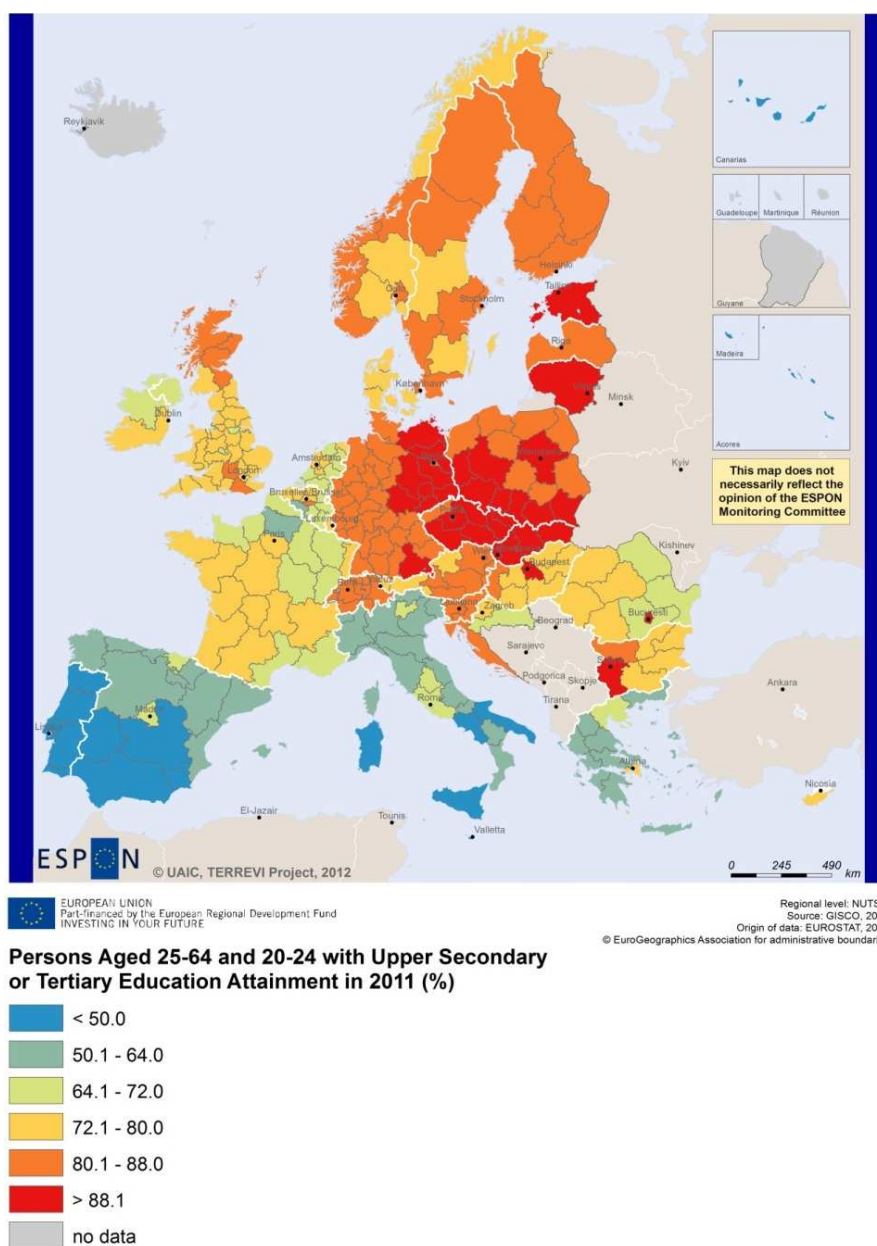
Persons with upper secondary/tertiary education attainment

Education policies have become a milestone with the adoption of the Lisbon Strategy, focusing on growth and job. The EU2020 strategy identifies a series of benchmarks to be achieved by 2020: the share of early leavers from education and training should be less than 10%; the share of 30-34 year olds with tertiary educational attainment should be at least 40% an average of at least 15 % of adults (age group 25-64) should participate in lifelong Learning. Although each EU country is responsible for its own education policy, the EU's role is to identify common elements designed to support national actions and help address common challenges such as: ageing societies, skills deficits among the workforce, and global competition.

Definition
The indicator shows the percentage of the adult population (25-64 years old) that has completed upper secondary and university or similar (tertiary level) education level. The importance of this indicator stems from the fact that it has been shown that employment rates vary considerably according to educational attainment levels.

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

▇	< 50.0
▇	50.1 - 64.0
▇	64.1 - 72.0
▇	72.1 - 80.0
▇	80.1 - 88.0
▇	> 88.1
▇	no data

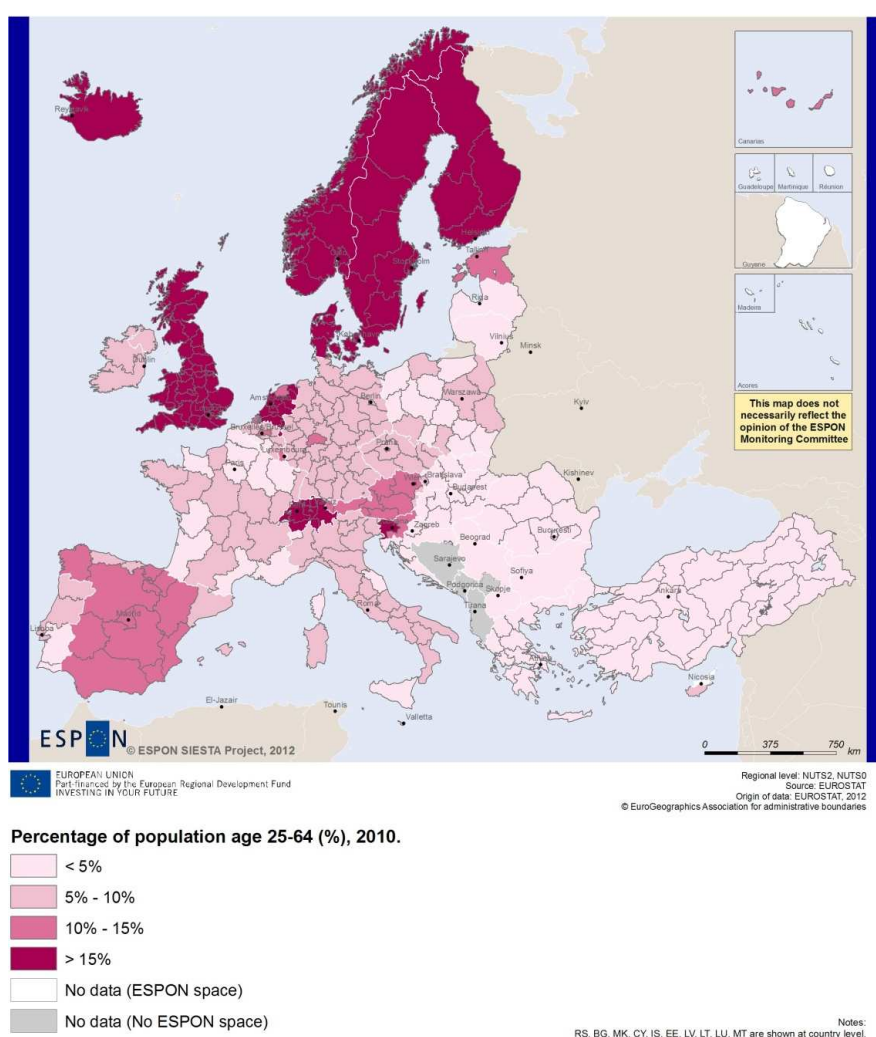**Map 17 Persons with upper secondary or tertiary education**

In Molise 52,8% of persons aged 25-64 and 20-24 graduated upper secondary or tertiary education. Although this region has a positive trend, the percentage is below the EU 27 average.

Participation of adults (aged 25 to 64) in education and training

The strategic framework for European cooperation in education and training adopted in May 2009 sets a number of benchmarks to be achieved by 2020, including one for lifelong learning, namely that an average of at least 15 % of adults aged 25 to 64 years old should participate in lifelong learning.

Definition
The numerator of the LFS-Life-long learning indicator denotes the percentage of persons aged 25 to 64 (excluding the ones who did not answer the question 'participation to education and training') who received education or training in the four weeks preceding the survey. Both the numerators and the denominators come from the European Union Labour Force Survey (LFS).

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

- < 5%
- 5% - 10%
- 10% - 15%
- > 15%
- No data (ESPON space)
- No data (No ESPON space)

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

Map 18 Participation of adults in education and training
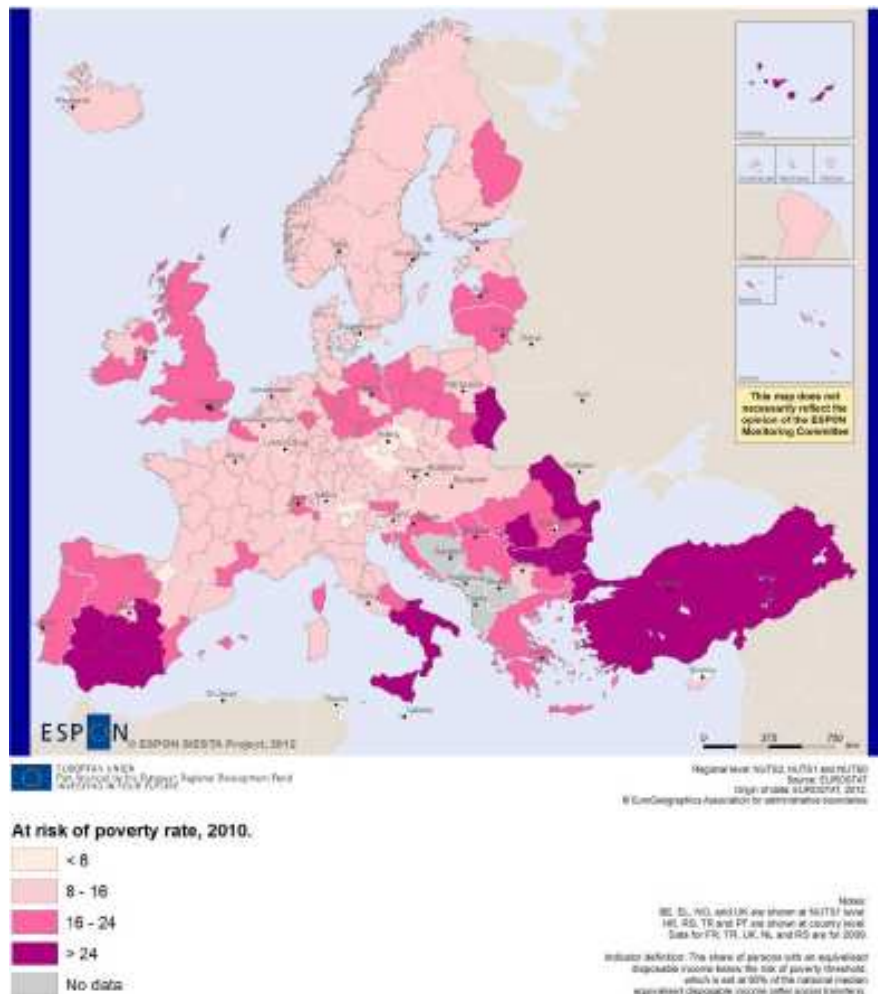
Key facts
In 2011, the proportion of persons aged 25 to 64 in the EU-27 receiving some form of education or training in the four weeks preceding the labour force survey was 8.9. With a percentage of adults attending education and training between 5 and 10%, the region of Molise is really close to the national average (5.7%) but still far from the European target of 15%.

At-risk-of poverty rate

The Europe 2020 objective is to lift 20 million people out of being at risk of poverty and exclusion. The indicator chosen covers the number of people who are at risk of poverty and/or severely materially deprived and/or living in households with very low work intensity.

Definition
At risk of poverty is defined as having equivalent disposable income (i.e. adjusted for household size and composition) of less than 60% of the national median household income. It is a great tool to show regional disparities within countries. However it has several weaknesses if used in EU-wide comparisons. For example, housing costs are not included, yet access to affordable and decent housing is one of the main determinants of people's well-being.

Map 19 Population at risk of poverty or social exclusion

Key Facts

In Molise, 24% of the population is at risk of poverty. This is largely above both the European and the Italian level.

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 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.
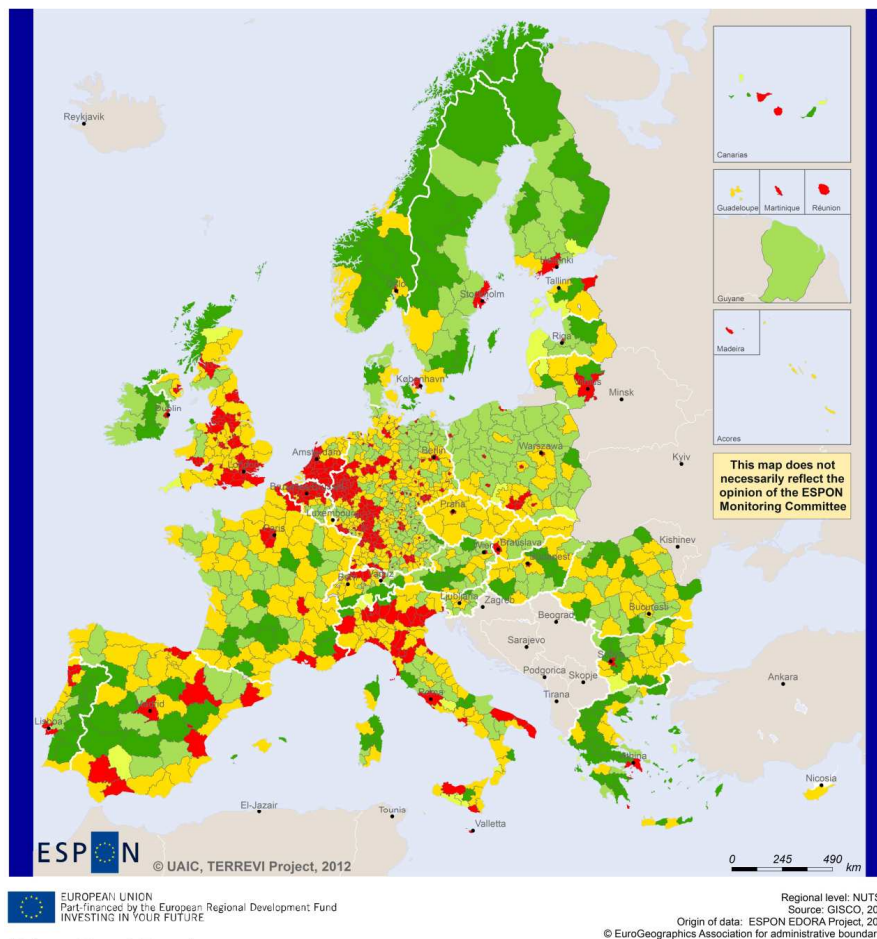
Urban-rural typology

<u>Definition</u>

The methodology to define urban and rural typology is fully described in Dijkstra and Poelman (2008). All local units in each NUTS-3 region is classified as urban or rural, using a criteria of population density of 150 inhabitants per square kilometre. In particular:

- Predominantly Urban (PU) regions have population living than 15% in rural local units;
- Intermediate (I) regions have rural population between 15% and 50%;
- Predominantly Rural (PR) regions have more than 50% of their population in rural local units.

Each of these three categories are further divided into:

- Accessible, if more than half of its residents can drive to the centre of a city, of at least 50 000 inhabitants, within 45 minutes;
- Remote, if less than half its population can reach a city within 45 minutes.

Urban-Rural Typology

- ■ Predominantly Urban
- ■ Intermediate Accessible
- ■ Intermediate Remote
- ■ Predominantly Rural Accessible
- ■ Predominantly Rural Remote

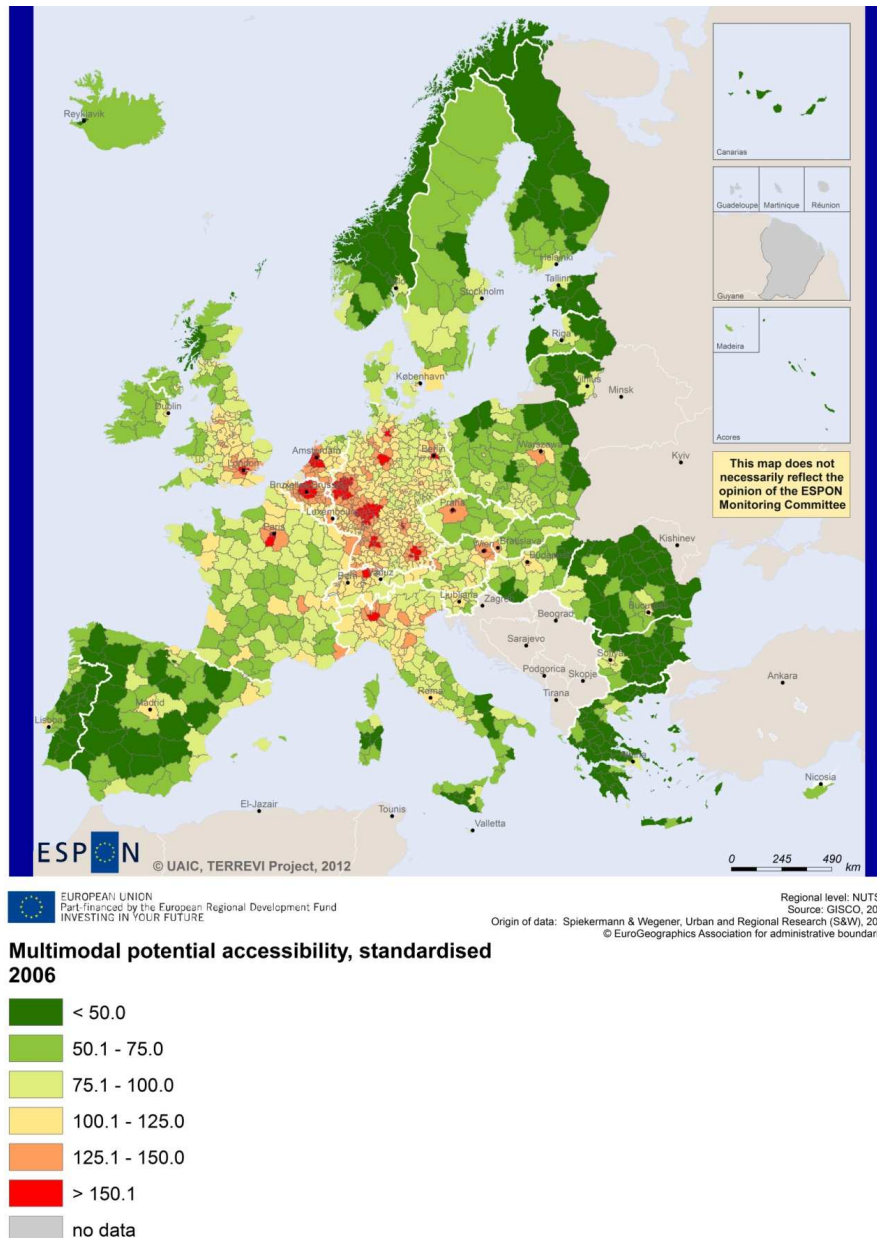## Map 20 Urban-rural typology of NUTS-3 regions including remoteness

Key facts

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.

Multimodal accessibility

Definition

Potential multimodal accessibility synthesises indicators specific for each travel mode (road, rail and air) and captures a spatial architecture articulated according to the core - periphery model. Through the specific manner of trading travel costs (strongly dependent on the physical distances on the ground and on the limits of travel speed), road and rail networks are the main responsible for concentrating high values of potential accessibility in the central part of the European Union. On the other hand, in the peripheral areas of EU space, multimodal accessibility declined as it is essentially based on air accessibility, the only travel mode able to provide fast connections for such regions.

Multimodal potential accessibility, standardised 2006

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

Map 21 Multimodal potential accessibility

Key facts

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.

Recommended ESPON reading

ESPON has published a wide range of reports providing valuable territorial evidence (see the following table).

ESPON study	Topic	Content
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). The method is applied for the Northwest-Europe cooperation area.
SGPTD	Growth poles	It provides evidence on European secondary cities, their performance and functional roles in different parts of Europe, and the potential policy intervention affecting their performance (see from figure 2 to 2.12). The report includes a case study on Leeds, in the UK (annex of the Scientific Report).
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. The report includes a case study on the island of Bornholm, in Denmark (see Annex 4/2).
GEOSPECS	Specific types of territories	It provides evidence on the strength, weaknesses and development opportunities of specific types of territories and regions (e.g. border areas, highly or sparsely populated areas). The project focuses on the Belgian coast as a case study.
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. It includes a case study of the Island of Samsø (DK).
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. The project analyses the region of "Scotland-Sweden-Norway" as a case study (see 2.3.5 in the Scientific Report).
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). The case studies include ICT in Cambridge (volume 2 of the annex of the scientific report), and TV and digital media in Cardiff (volume 3 of the annex of the scientific report).
RISE	Integrated strategies	It shows how monitoring and evaluation indicators and methodologies can be used to enhance the development of Regional Integrated Strategies. The case studies include Randstad, in the Netherlands, and Zealand, in Denmark.
TPM	Territorial performance	The project analysis how territorial impacts of macro challenges translate at the regional level and how to best deal with these challenges. The project provides a regional case study on the Flanders, in Belgium (see the Annex "Vlaanderen").
EUROISLANDS	Islands	It gives evidence on the divergence of island's situation and on existing policy measures for the islands. The project includes a study on Samsø.

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** 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

Scientific references

Adger, W.N., Arnell, N.W. & Tompkins, E.L. (2005), "Successful adaptation to climate change across scales", Global Environmental Change Part A, vol. 15, no. 2, pp. 77-86.

Atmos Counsulting 2009. "Windscan. Recent Research Findings".

Barnett, J. & O'Neill, S. (2010), "Maladaptation", Global Environmental Change, vol. 20, no. 2, pp211-213.

Brooks, N., Adger, W.N. & Kelly, M.P. (2005), "The determinants of vulnerability and adaptive capacity at the national level and the implications for adaptation", Global Environmental Change Part A, vol. 15, no. 2, pp. 151-163.

Eckerberg, L. (2010), Expert, Info and Energy Efficiency: Energy Agency for Southeast Sweden. Telephone Interview

EEA European Environment Agency (2009), "Europe's onshore and offshore wind energy potential. An assessment of environmental and economic constraints". EEA Technical Report No 6/2009

Füssel, H.-M. (2007), "Adaptation planning for climate change: concepts, assessment approaches, and key lessons", vol. 2, no. 2, pp. 265-275.

Füssel, H-M.,;Klein, R.J.T: Assessing Vulnerability and Adaptation to Climate Change: An Evolution of Conceptual Thinking (2002), A Climate Risk Management Approach to Disaster Reduction and Adaptation to Climate Change. (Proceedings of the UNDP Expert Group Meeting on Integrating Disaster Reduction and Adaptation to Climate Change, pp. 45-59.

Gagnon-Lebrun, F. & Agarwala, S. (2006), Progress on adaptation to climate change in developed countries. An analysis of broad trends, OECD, Paris.

Gagnon-Lebrun, F. & Agarwala, S. (2007), "Implementing adaptation in developed countries: an analysis of progress and trends", Climate Policy, vol. 7, pp. 392-408.

Gupta, J., Termeer, C., Klostermann, J., Meijerink, S., van der Brink, M., Jong, P., Nooteboom S. & Bergsma, E. (2010), "The adaptive capacity wheel: A method to assess the inherencharacteristics of institutions to enable the adaptive capacity of society", EnvironmentalScience & Policy, vol. 13, pp. 459-471.

Gupta, S., Tirpak, D. A., Burger, N., Gupta, J., Höhne, N., Boncheva, A.I., Kanoan, G.M., Kolstad, C., Kruger, J.A., Michaelowa, A., Murase, S., Pershing, J., Saijo, T. & Sari, A. (2007), Policies, Instruments and Co-operative Arrangements. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

Hansen, Povl A. (2002), "Energiprojekt Samsø – et regionalt udviklingsprojekt". Scientific report, Roskilde University, Denmark.

Hansen, Povl A.; Rasmussen, Rasmus O. (2007), "Samsø – i et alternativt geografisk perspektiv". NORS research report, Roskilde University.

Hermansen, S. (2009) Director, Samsø Energy Academy, Personal Communication: Face-to-face interview [2009-07-02].

Hermansen, Søren - Director, Samsø Energy Academy, 2 June 2009, face-to- face

IPCC [Intergovernmental Panel on Climate Change] (2007): Climate Change 2007 - Impacts, Adaptation and Vulnerability. Contribution of working group II to the Forth Assessment report of the Intergovernmental Panel on Climate Change.

IPCC (2007a), Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment. Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge.

IPCC 2001a. Climate Change 2001. The Scientific Basis. Intergovernmental Panel on Climate Change.

IPCC 2001b, Climate Change 2001b: Impacts, Adaptation and Vulnerability, Cambridge University Press, Cambridge.

IPCC 2007a. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment. Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge.

IPCC 2007b. Climate Change 2007 - Impacts, Adaptation and Vulnerability. Contribution of working group II to the Forth Assessment report of the Intergovernmental Panel on Climate Change.

IPCC 2001. Climate Change 2001. Third assessment report, Working Group III: Mitigation. Intergovernmental Panel on Climate Change. Available at http://www.grida.no/publications/other/ipcc%5Ftar/?src=/climate/ipcc_tar/wg3/index.htm

IPCC 2007a, Assessment of Adaptation Practices, Options, Constraints and Capacity, Cambridge University Press, Cambridge.

IPCC 2007b, Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment. Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge.

IPCC 2007c, Contribution of Working Group II to the Fourth Assessment Report of the\\\ Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge.

IPCC, 2008. Technical paper on climate change and water. Accessible at www.ipcc.ch/meetings/session28/doc13.pdf.

Keskitalo, E.C.H. (ed) 2010, The Development of Adaptation Policy and Practice in Europe: Multi-level Governance of Climate Change, Springer Verlag, Berlin.

Keskitalo, E.C.H. (ed) 2010, The Development of Adaptation Policy and Practice in Europe: Multi-level Governance of Climate Change, Springer Verlag, Dordrecth.

Kont, A., Jaagus, J., Aunap, R. 2003. Climate Change Scenarios and the effect of sea level rise or Estonia. Global and Planetary Change 36 (2003) 1-15

Leary, N.A. 1999, "A framework for benefit-cost analysis of adaptation to climate change and climate variability", Mitigation and Adaptation Strategies for Global Change, vol. 4, no. 34, pp. 307-318.

Marshall, N.A. 2010, "Understanding social resilience to climate variability in primary enterprises and industries", Global Environmental Change, vol. 20, no. 1, pp. 36-43.

Massey, E. & Bergsma, E. 2008, Assessing adaptation in 29 European countries, IVM Institute of Environmental Studies, Vrije Universiteit, Amsterdam.

Meyer, Niels L. (2004), "Renewable Energy Policy in Denmark. Energy for Sustainable Development", Volume VIII No.1, March 2004, pp.25-35.

Meyer, Niels L. (2007), "Learning from Wind Energy Policy in the EU: Lessons from Denmark, Sweden and Spain". European Environment, 17, pp.347-362.

O'Brien, K., Eriksen, S., Sygna, L. & Næss, L.O. 2006, "Questioning Complacency: Climate Change Impacts, Vulnerability, and Adaptation in Norway", AMBIO: A Journal of the Human Environment, vol. 35, no. 2, pp. 50-56.

Pelling, M. & High, C. 2005, "Understanding adaptation: what can social capital offer assessments of adaptive capacity?", Global Environmental Change, vol. 15, no. 4, pp. 308-319.

Pettersson, Maria (2006), "Legal Preconditions for Wind Power Implementation in Sweden and Denmark", Luleå University of Technology, Department of Business Administration and Social Sciences, 2006:12.

Pryor, S.C., Barthelmie, R.J. 2009. Climate change impacts on wind energy: A review. Renewable and Sustainable Energy Reviews (2009)

Ribeiro, M., Losenno, C., Dworak, T., Massey, E., Swart, R., Benzie, M. & Laaser, C. 2009, Design of guidelines for the elaboration of Regional Climate Change Adaptation Strategies, Ecologic Institute, Vienna.

Schröter, D., et alii (2004), ATEAM Final report. Section 5 and 6 and Annex 1 to 6. Detailed report, related to overall project duration.

Smit, B. & Wandel, J. 2006, "Adaptation, adaptive capacity and vulnerability", Global Environmental Change, vol. 16, no. 3, pp. 282-292.

Smit, B.; Pilifosova, O. (2001): Adaptation to climate change in the context of sustainable development and equity. In: IPCC 2001: Climate Change 2001 - Impacts, Adaptation, and Vulnerability- Contribution of the Working Group II to the Third Assessment report ofthe Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge: 877-912.

Smith, J.B., Vogel, J.M. & Cromwell III, J.E. 2009, "An architecture for government action on adaptation to climate change. An editorial comment", vol. 95, no. 1-2, pp. 53-61.

Stratford, P. 2007. Assessing the Financial Viability of Offshore Wind Farms, Contribution to th e EWEC 2007 Conference

Swart, R., Biesbroek, G.R., Binnerup, S., Carter, T., Cowan, C., Henrichs, T., Loquen, S., Mela, H., Morecroft, M., Reese, M. & Rey, D. 2009, Europe Adapts to Climate Change. Comparing National Adaptation Strategies, Vammalan Kirjapaino Oy, Sastamala.

Twomlow, S., Mugabe, F.T., Mwale, M., Delve, R., Nanja, D., Carberry, P. & Howden, M. 2008, "Building adaptive capacity to cope with increasing vulnerability due to climatic change in Africa – A new approach", Physics and Chemistry of the Earth, Parts A/B/C, vol. 33, no. 8-13, pp. 780-787.

Westerhoff, L., Keskitalo, E.C.H. & Juhola, S. In press, "Capacities across scales: enabling local to national adaptation policy in four European countries", Climate Policy.

Williamson, T., Hesseln, H. & Johnston, M. "Adaptive capacity deficits and adaptive capacity of economic systems in climate change vulnerability assessment", Forest Policy and Economics, vol. In Press, Corrected Proof.

Yohe, G. & Tol, R.S.J. 2002, "Indicators for social and economic coping capacity—moving toward a working definition of adaptive capacity", Global Environmental Change, vol. 12, no. 1, pp. 25-40.

www.espon.eu