3 – Diverse Europe: cohesion challenges

Policy relevant key findings:

- Demographic change and especially migration trends will foster territorial imbalances and polarisations between the richer and poorer areas. More prosperous cities and regions need to anticipate further in-migration.
- Energy dependency of some regional industries will pose substantial challenges with regard to the effects of carbon leakage, i.e. the possibility that companies decide to relocate their production facilities if production costs rise as a result of carbon taxes. Rising energy prices will particularly impact on peripheral regions and those regions and cities with extensive commuting patterns, energy intensive industries and housing stock.
- Links to the nearest central nodes are often very important in remote and sparsely populated regions. For these regions local accessibility is more important than European accessibility.
- Challenged regions can develop into economically vital development areas. To a large degree the success of such convergences is related to governance structures capable of delivering results.
- Scenarios of labour force development until 2050 show that a lot of regions will be hit by a shrinking labour force. Overall the future labour force figures in Europe show a clear East-West divide.

All parts of the ESPON space are increasingly linked into global networks and have to position their comparative advantages and disadvantages in a global perspective. These globalisation trends seem to reinforce territorial divisions and imbalances. European policies underline the need to develop all parts of Europe and not just some islands of wealth. Inclusive growth, balanced development and territorial cohesion have some major principles in common:

Firstly, to strengthen the competitiveness of Europe, the development potential of all regions needs to be utilised. It is not sufficient to rely on the strength of cities and regions that are successful already. Realising development potentials elsewhere makes Europe more competitive and resilient.

Secondly, important imbalances or transfer payments corrode a sense of solidarity and challenge the unity of Europe. Partly they may be seen as hampering the further development of the strong areas, and partly they discourage the less successful areas.

Consequently, development strategies for Europe need to be inclusive. Cohesion and competitiveness measures can and shall support each other.

What is perceived as a challenged territory is very much a question of perspective and the geographical scale of analysis. Article 174 of the Treaty on the Functioning of the EU provides some indications on different categories of territories that need particular attention. However, ESPON results show that other types of territories are also facing difficult situations, and that some areas with specific geographical features (such as islands, mountainous regions or sparsely populated areas) belong to the most prosperous areas in Europe, such as urban centres in the Alps or peripheral areas in the Nordic countries.

Treaty on the Functioning of the EU Art. 174:

"In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion. In particular, the Union shall aim at reducing disparities between the levels of development of the various regions and the backwardness of the least favoured regions. Among the regions concerned, particular attention shall be paid to rural areas, areas affected by industrial transition, and regions which suffer from severe and permanent natural or demographic handicaps such as the northernmost regions with very low population density and island, cross-border and mountain regions."

3.1 Territorial differences in wealth

Territorial imbalances can be observed at many different geographical levels. Usually they relate to economic wealth and performance, but increasingly also to demographic patterns or to factors such as innovation, creativity and integration in global networks.

At the global and neighbourhood level, a distinct dividing line can be observed between the ESPON space and the neighbouring countries. However, there are also dividing lines within the ESPON space of 31 countries. Prior to the economic crisis there was increasing economic cohesion at European level, but disparities within countries were growing, for example with increasing differences between wealthy urban areas and their immediate surroundings.

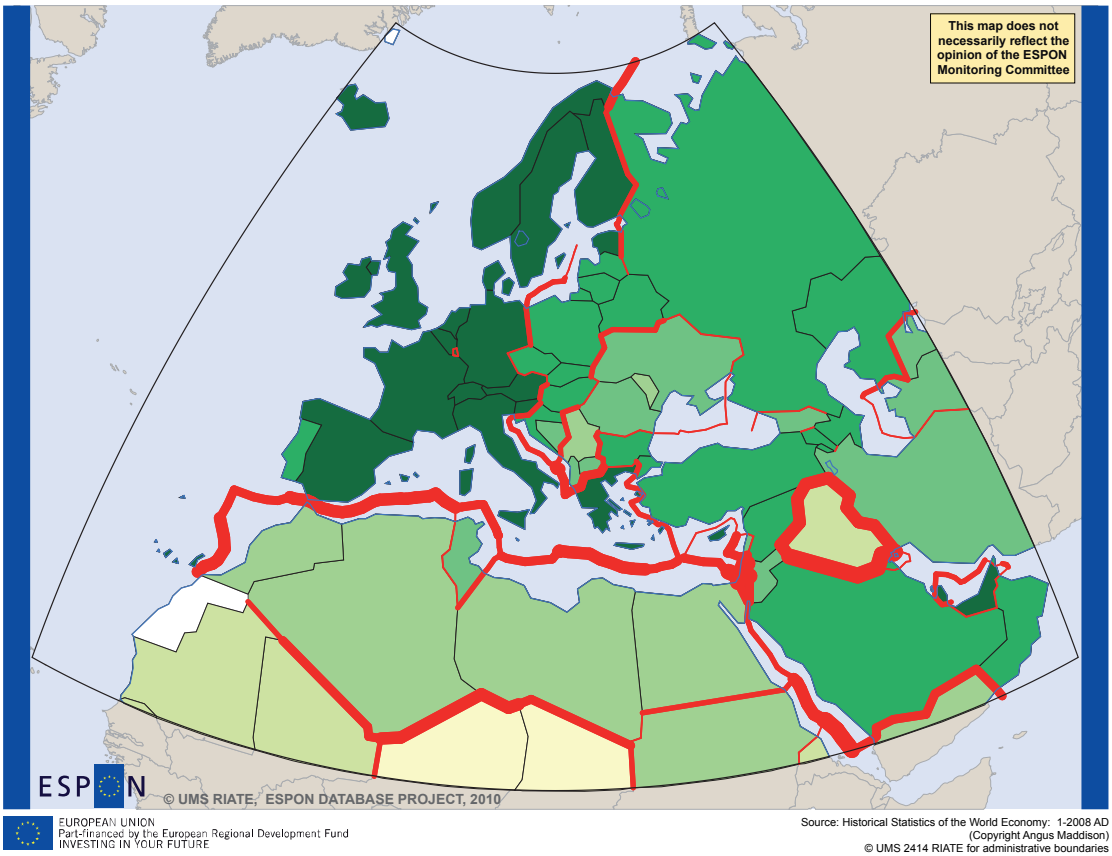
European level divisions in wealth
At a European level, currently two major economic divides or discontinuities can be noted.

Looking at national level data, there is a difference between east and west. In broad terms the discontinuity line runs from the Finnish-Russian border in the north to the maritime border between Italy and Albania in the south. In general, those countries that joined the EU during the latest EU accession rounds have lower levels of wealth than older EU member states, though they tend also to have higher levels of wealth than neighbouring non-EU countries.

When considering regional data a more nuanced picture emerges which illustrates that there are considerable differences in wealth among a country's regions.

There is also discontinuity in wealth between north and south underlining the differences between EU and non-EU members and also that proximity to Europe plays a role. The strongest dividing line goes between EU and non-EU member states in the Mediterranean. However, another major discontinuity is located in the Sahara, between Northern Africa and the Sub-Sahara countries. This double line of discontinuities demonstrates the significance of territorial relationships. This territorial pattern structures the flow of international migration (from south to north) or of investments and aid (from north to south), with the intermediate area of Northern Africa strategically positioned as an interfacing territory. It also highlights the challenges that Malta faces as a small island state that is geographically Africa's stepping stone into the EU.

Map 12. Discontinuities of GDP per capita, 2008

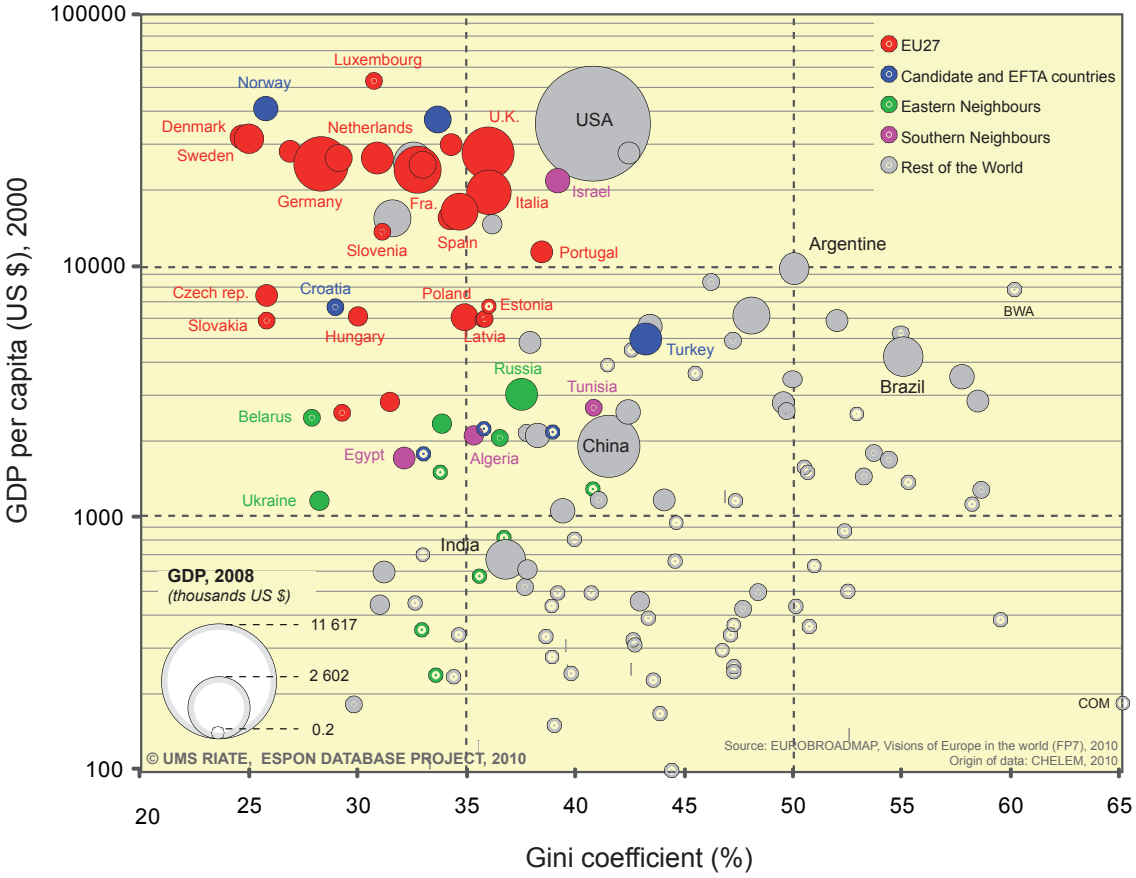


The map shows the differences in GDP per capita in PPS at national level. Based on that, the main cross-border discontinuities have been identified by the red lines: the thicker the line the greater the gap between the countries. The sharpest divides are between Europe (including Turkey) and North Africa, and between Finland and Russia. However there is also an economic division within Europe between west and east, a gap that also separates off Greece and Cyprus. It is also notable that the discontinuity between the Neighbourhood countries of North Africa and those to the south of them across the Sahara is as great again as the Europe / North Africa disparity.

Given the different actual wealth levels, some of the neighbouring countries will achieve higher GDP growth rates than the EU, because any increments are to a lower base figure. Together with the considerably higher growth figures in other parts of the world, this implies that the EU's share of the world GDP will continue to decline. This is a continuation of the developments over the past 50 years, and shows that in terms of growth rates and its relative economic standing in the world then Europe as a whole is challenged.

These divisions in economic wealth are paralleled by divisions in demographic profiles. Whereas the demographic perspectives largely follow the wealth divisions between east and west, they show a reverse picture for the north-south dimension. The southern neighbours are expected to experience a population increase between 2000 and 2030 which goes well beyond the increases expected within the ESPON space. Further south in Africa, beyond Europe's immediate neighbours, there is another group of countries whose annual population increases are expected to be even higher.

Economic performances and social inequalities, 2000



A high level of GDP per capita does not necessarily imply high social welfare as the latter depends also on the level of economic inequalities between inhabitants. To measure the dispersion of wealth in a country, the Gini coefficient is used. This is a measure of the inequality of a distribution, a value of 0 expressing total equality and a value of 1 maximal inequality. The graph illustrates the relation between wealth (expressed in GDP) and social disparities (expressed by the Gini coefficient). It shows that the wealthiest countries are generally characterised by the lowest levels of social disparities. At the same time it highlights the European social model: the countries of the ESPON space are generally characterised by lower levels of inequalities than other countries of the World.

Going into further detail three different groups can be identified:

- EU15, Switzerland, Norway and Slovenia are all characterised by high level of GDP (above 10,000 EUR per inhabitant) and moderate levels of inequality as compared to e.g. the USA or Singapore. Nevertheless, there are noticeable variations of social disparities, with low Gini coefficients in the Nordic Countries and much higher ones in the UK, Ireland, Spain, Italy, Greece and Portugal.
- EU10 (the countries that joined the EU in 2004) and some candidate countries like Turkey and Croatia are characterised by medium levels of GDP (6,000 – 9,000 EUR per inhabitant). However, they have considerably lower levels of inequalities than other countries with comparable levels of wealth. Within this group Hungary, the Czech Republic, Slovakia, and Croatia have rather limited disparities whereas Poland, the Baltic States and Turkey have higher levels of social inequalities.
- Romania, Bulgaria and the EU neighbouring countries have lower levels of GDP (less than 3,000 EUR per inhabitant). However, as in the cases above, they have moderate levels of disparities as compared to countries with comparable levels of wealth elsewhere on the globe.

Dispersing core-periphery patterns in Europe

The idea of a polycentric Europe, using the metaphor of "a bunch of grapes", was developed as a counter-model to increasing core-periphery divides. Polycentric development is a means to balanced territorial development and in many regards also to the aim of territorial cohesion.

The core-periphery differences in Europe are still evident on many indicators. However, from the 1990s the European core was extending along a number of development corridors. One such corridor stretches in the UK through the West Midlands towards Manchester. Another reaches into Central and Eastern Europe, and a third heads into Southern Italy.

The expansion or dispersal is most notable in the urban agglomerations. Connections into global networks vary, and some cities are hubs and gateways linking Europe to other parts of the world, e.g. Madrid to Latin-America. Larger functional urban areas as well as small and medium sized towns outside the European core are gaining ground as important nodes for European development. Many of them are important economic engines for their areas and some even outperform urban areas within the core. Among the strong urban nodes outside the European core area are Madrid, Barcelona, Dublin, Stockholm, Helsinki, Oslo, Warsaw and Budapest.

Europe's "powerhouse" in the core expands, but not all areas within this central part of Europe show the positive characteristics normally attributed to the European core. While the growth of urban centres makes Europe more polycentric, that same growth may widen disparities between these main centres and the rest of their national urban systems. Thus, as the European core is taking a new shape, also the shape of the periphery changes. Even places that are quite central within the core can be, in effect "inner peripheries". Examples here include places in Northern France and Wallonia in Belgium.

Basically, Europe's territorial imbalances are the results of historical patterns of investment that have created their own momentum and will persist in the long term. However, the dispersing core, strong international hubs all over Europe, liveable smaller and medium-sized towns which are international centres of excellence in specialised functions, along with the diverse and attractive rural areas of Europe, show that it is feasible to achieve a more balanced spread of growth and opportunities. However, market trends towards increased territorial concentration must also be recognised. Providing a supportive environment to encourages private investment and business growth that furthers territorial balance and cohesion is a key economic development task.

Many of the main territorial discontinuities exist at geographical levels below the European level. Often they are related to particular types of development challenges, which will require supporting action from national, regional and sometimes local level to reduce the gaps.

3.2 Demographic challenges

Over the last decade new awareness has grown of the significance of demographic change and discontinuities, as demographic and economic developments have a mutual relationship. Today's demographic trends are complex but central to making progress towards territorial cohesion.

The regional dimension of demographic change
Population growth in Europe has slowed down and many regions already face a demographic decline. In only a few years the overall European population figures are expected to peak and thereafter Europe will experience an overall population decline. On some projections this could be up to 40 million by 2050.

The fall in population goes along with a substantial ageing of European society. People not only live longer; birth rates have fallen substantially over the past decades. So the median age of society increases. This has substantial consequences for the health care and pension systems. However, the growing number of elderly people also offers potentials for the development of the European society.

The changing age structure has direct implications for labour supply. Fertility and migration flows lead to differences in the growth and aging of the labour force, while in turn differences in economic developments affect fertility and migration.

It goes without saying that there are substantial differences in demographic profiles between countries and regions. Considerable challenges are expected for three types of regions:

- The "Challenge of Ageing" regions experience positive population development driven by a positive net migration rate. Therefore they have increasing population numbers, but, the proportion of the older age groups is significantly higher than in others parts of the ESPON space. Education attainment levels are relatively low, but so are unemployment rates (although the gender gap in economic activity is the widest in Europe). A high share of elderly people and low education levels could impair the functioning of regional labour markets and constrain development of the regional economy.

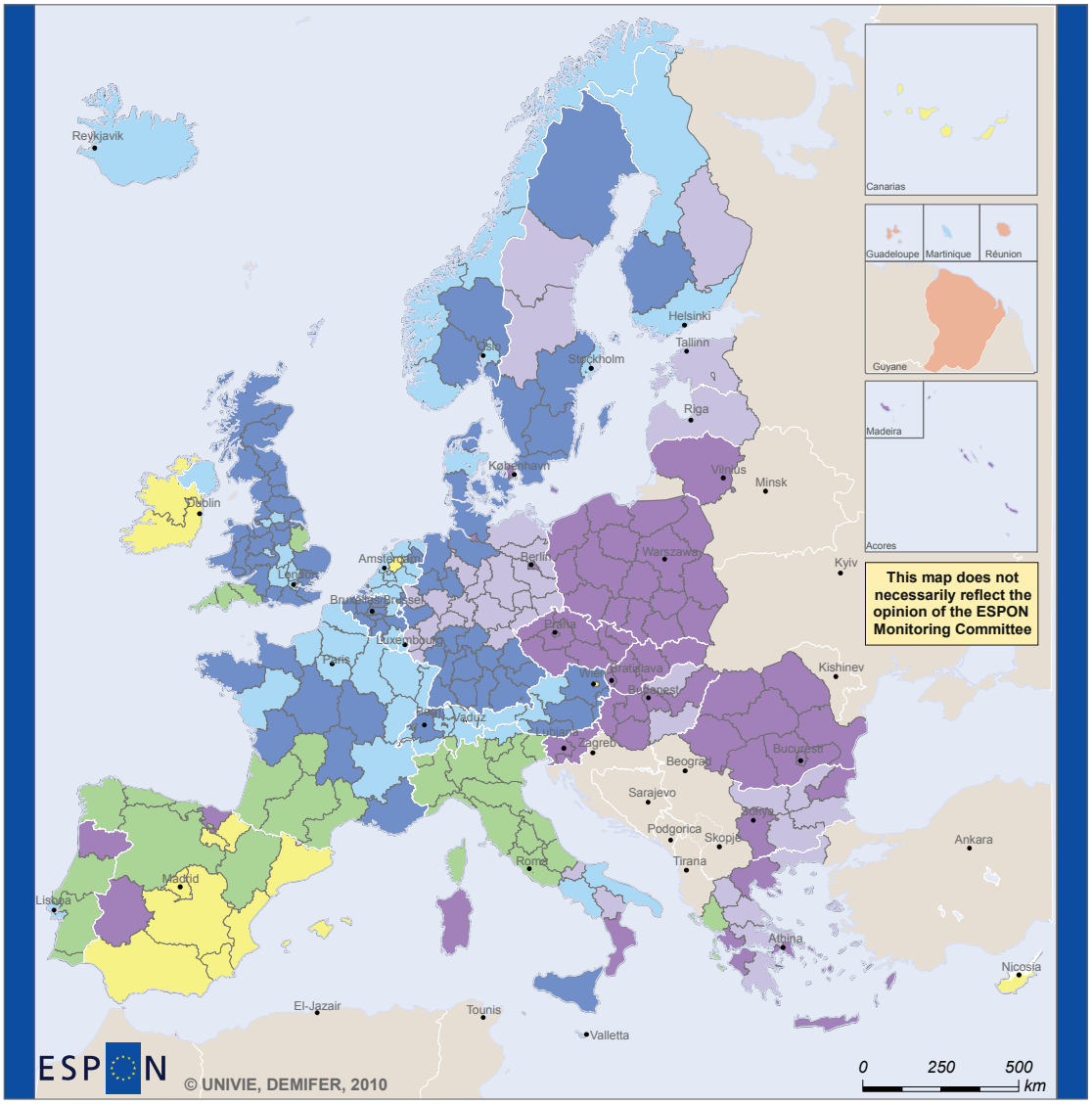
- The "Challenge of Labour Force" regions are characterised by a rather high share of young people, but there is a mismatch between their numbers and aspirations and the employment opportunities in the region. Thus, despite a large potential work force, this type of region is losing population, both through a negative natural population balance and through migration. A low total fertility rate exacerbates the out-migration and population decline.

- The "Challenge of Decline" regions have a negative population development, due both to low total fertility rates and negative net migration. These are some of the shrinking regions of Europe. The proportion of older workers (above 55 years) is significantly higher than in the rest of the ESPON space and the share of younger adults (20-39 years) is below average, thus leading to a potential problem in maintaining sufficient workforce to sustain social welfare systems.

The last two types of regions are distinctive to the EU-12 and the eastern part of Europe, as well as shrinking regions in peripheral areas of northern and southern Europe and in Germany. In general their GDP per capita is below average. The share of migrants as well as labour force participation is also below average. In most of these regions (especially the Challenge of Ageing) the proportion of highly educated people is lower than the ESPON space average.

European level analysis obscures the intra-regional variations and dynamics. On top of the European level trends, there are also local demographic development trends which often may imply growing intra-regional disparities in demographic patterns. Even in regions facing demographic difficulties attractive urban centres and commuter areas may experience positive developments. In contrast within less attractive areas the situation in some parts is even more problematic than it appears on a European map.

Map 13. Typology of the demographic status, 2005



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Regional level: NUTS 2 except UKI, NUTS1
Source: ESPON 2013 Database, 2010
Origin of data: Eurostat, NSI, 2008-2009
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Type	Classification	Cases	Population		Age group 20-39 (%)			Age group 65+ (%)			Natural population increase (per 1000)			Net migration (per 1000)		
			Thousands	%	avg	min	max	avg	min	max	avg	min	max	avg	min	max
1	Euro Standard	79	127 915	25,41	25,68	22,57	28,72	17,46	15,33	20,30	0,01	-2,67	2,47	3,43	-2,11	9,36
2	Challenge of Labour Force	61	116 768	23,20	30,43	28,33	33,84	14,51	10,60	18,96	-0,78	-4,76	2,89	0,08	-7,35	9,19
3	Family Potential	55	104 557	20,77	28,15	24,80	36,32	14,57	11,13	16,96	3,72	1,06	9,00	2,12	-3,51	9,59
4	Challenge of ageing	33	63 838	12,68	26,87	21,52	31,19	20,83	18,51	26,51	-1,74	-6,19	1,43	9,42	4,14	16,99
5	Challenge of decline	38	50 167	9,97	26,32	21,47	30,04	19,49	15,89	22,55	-3,39	-10,35	-0,59	-1,20	-11,25	3,70
6	Young potential	15	38 543	7,66	32,26	29,36	35,86	14,45	8,70	19,03	3,61	-0,15	9,78	17,10	9,96	26,30
7	Overseas	5	1 555	0,31	30,40	27,02	32,55	9,04	3,71	11,81	13,56	8,40	25,28	-1,78	-8,18	9,07
EU27+4	ESPON Space	286	503 342	100	27,82	21,47	36,32	16,63	3,71	26,51	0,33	-10,35	25,28	3,16	-11,25	26,30

In 2005 | Average 2001-2005

The map distinguishes seven types of regions which are affected differently by demographic and migratory flows. The work is based on four indicators (share of people aged 20-39, share of people aged 65+, natural population increase and net migration). The seven types are:

- Euro standard is close to the overall average of the ESPON space. A stagnating natural population balance, but a positive net migration rate is prevalent.
- Challenge of labour force features a high share of population in young working ages and a slight population decline, driven by a negative natural population development.
- Family potentials has a slightly younger than average age structure and high natural population increase, as well as a positive migration rate.
- Challenge of ageing is characterised by older population and natural population decreases. Nevertheless, the overall population size is still increasing due to a strong net migration surplus.
- Challenge of decline is shaped by a negative natural population balance, as well as a negative migratory balance. In consequence, this leads to depopulation accompanied by demographic aging.
- Young potentials feature a young age structure, a positive natural population increase, as well as a strong migratory balance.
- Overseas is typified by high proportions of young people and by far the lowest share of the elderly. Thus strong natural population increase is more than counterbalancing the negative migratory balance.

International European migration

Free movement of people is one of the cornerstones of European integration. The analysis of migration flows between the countries of the ESPON space in 2006/07 reveals the main migration routes. Almost 2 million people a year moved from one ESPON country to another.

The main axis of migration flows is between Germany and Poland. Between these two countries the highest level of gross-migration has been registered. This is followed at some considerable distance by the migration flows between Romania-Spain and Romania-Italy. Furthermore, there are considerable migration flows between the UK and Spain and the UK and Poland.

There are also remarkable differences in the diversity of migration. Of all the bilateral flows, the im- and emigration between Poland and Germany and between the Czech Republic and Germany are over 50% of all intra-ESPON migration flows for both Poland and the Czech Republic. In contrast, in the Netherlands, Latvia, France, the UK and especially in Sweden the intra-ESPON im- and emigration pattern is more geographically spread and no singular main flows can be identified.

In addition to the intra-European migration illustrated, there is also a considerable immigration to the ESPON space from other parts of the world. At the national level 51% of all international migration flows occurred between two ESPON countries, and 49% of the flows were to/from non-ESPON countries. There are some remarkable differences between the countries. For example in the Czech Republic and Spain over 60% of all immigrants and emigrants came from outside ESPON countries. In contrast only a minor share, namely less than 10%, of immigrants and emigrants to/from Luxembourg are non-ESPON ones.

The age structure and demographic perspectives of the EU neighbouring countries may imply increasing immigration pressure in the EU. Population forecasts up to 2030 project significant demographic differences, with declining population figures for the ESPON space and high rates of population increase in the South-Mediterranean regions (Maghreb and Turkey), and with even higher rates south of the Sahara and in the Persian Gulf. Egypt, Turkey and Iran are all expected to have considerably more inhabitants than Germany by 2030. Whereas the population numbers in Germany are expected to be more or less stable, Egypt is expected to grow by 50 million people, Turkey by 27 million and the Iran by 26 million – just to give a few examples. Assuming persistent differences in wealth between the ESPON space and its neighbouring countries, there will be a growing immigration potential next door.

Internal migration

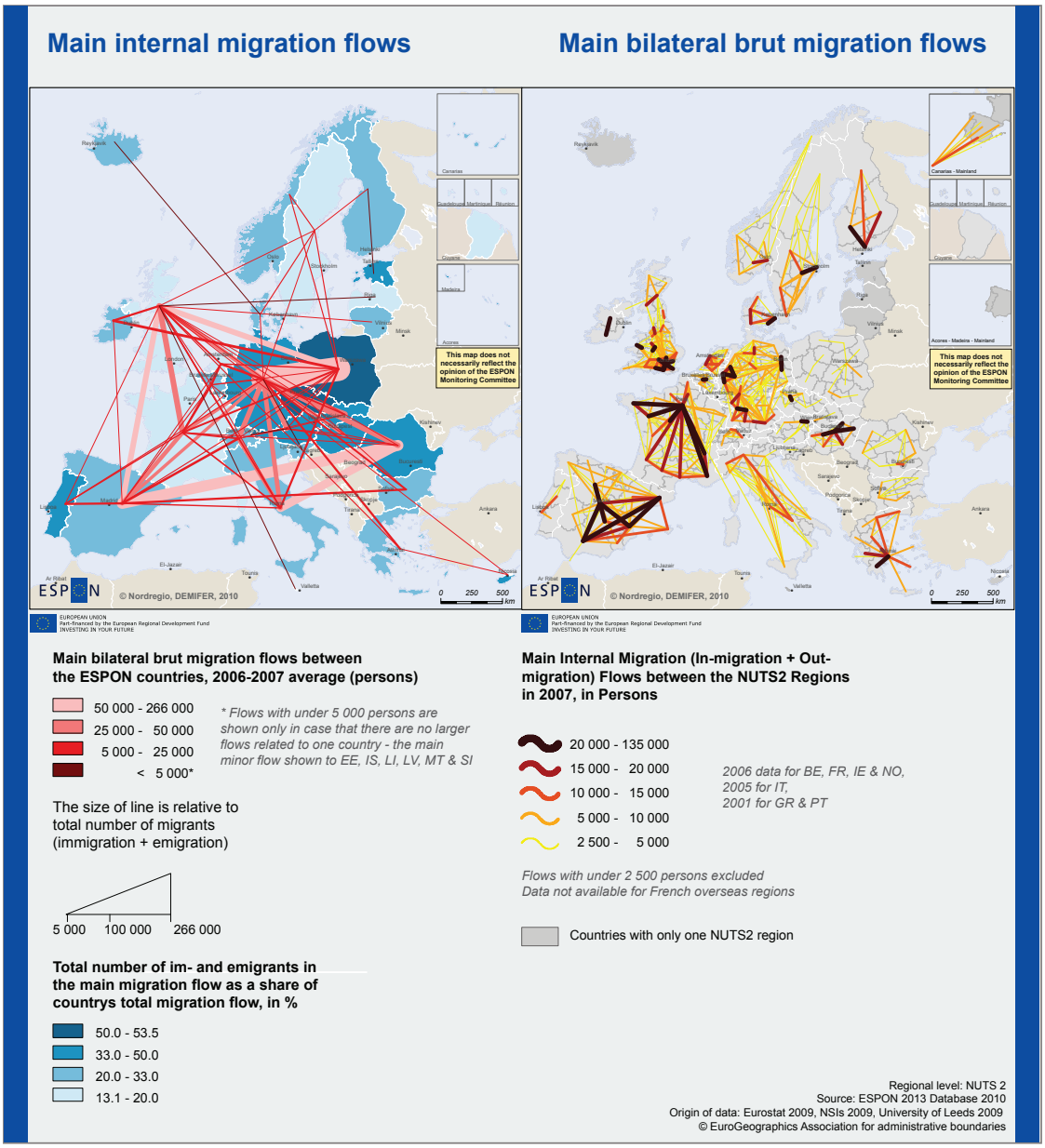
In the ESPON space 6.5 million people moved from one NUTS2 region to another within the same country in 2006. Looking at migration flows within countries, once again the dominance of the capital cities and larger metropolitan areas is visible. This is, for example, particularly evident in the case of Paris, London, Madrid, Barcelona, Budapest and Helsinki.

Furthermore, differences between countries can be observed:

- Some countries have only very limited domestic migration flows, e.g. Poland which on the other hand is prominent in intra-European migration. The reasons for this are manifold. Partly this can be explained due to slow urbanization which blocked the movement of people from rural to urban regions, so international migration substituted for internal migration.
- Some countries have large internal migration flows mainly between neighbouring regions. Examples for this are the Czech Republic and Austria. Also in Germany and the UK the migration flows over short distances dominate. These migration flows are mainly the effects of urbanisation and sub-urbanisation processes, i.e. migration between the urban centre and its wider hinterland.
- In some countries the main domestic migration flows are all directed to one city, e.g. Paris in France, Athens in Greece, Budapest in Hungary, or Helsinki in Finland. These migration patterns very clearly testify to the strong dominance of the capital cities in the countries and the monocentric urban systems becoming even more dominated by the capital city.
- Other countries show rather polycentric webs of domestic migration flows with several cities being main receiving nodes. Examples for this are Spain, Italy and Germany. These migration patterns reinforce the polycentric urban systems in the countries.

At regional level, the differences go along lines of wealth and accessibility: affluent regions, including large agglomerations in Central and Eastern Europe, gain from migration whereas more peripheral and poor regions lose. At the same time, the domestic migration trends seem to reinforce the national urban systems and thus strengthen monocentric developments in countries dominated by the capital city, but support trends to more polycentric developments in countries which have several strong urban nodes. In the long run, these reinforcements of national urban systems also influence the structure the European urban system.

Map 14. Migration flows, 2006-2007



Net migratory trends at the national and regional level in the ESPON space give the picture of regions either gaining or losing population. This image can however be nuanced both in terms of the actual flows that occur and geographical patterns. In general the net migratory trends are showing just a minor part of the much larger constant circulation of people and networks between all countries and regions.

In the map on main bilateral gross migration flows all the 79 intra-ESPON flows with over 5 000 persons are shown. In addition six minor flows are shown in order to present the highest flow also to/from small countries where none of the flows were over 5000 persons. In absolute numbers the largest bilateral migration flows occurred between Germany and Poland (223 000 persons) and between Spain and Romania (102 000 persons). Also flows between Italy and Romania (76 000), Spain and the UK (52 000) and Poland and the UK (52 000) were notable.

When looking at the main flows with over 2 500 persons, like in the map on main internal migration flows 658 main internal gross migration (in- and outmigration) flows between the NUTS2 regions can be identified. In 38 of those regions the total number of migrants were over 20 000 persons. Major European cities, London, Paris and Madrid, dominate these flows, but high concentrations can also be found in many other capital regions and especially to/from Budapest. Outside the capital regions high mobility can be identified in the Ruhr region and to/from Barcelona. In absolute numbers the highest migration flows can be identified between Inner - and Outer London (135 000) and between Madrid and Castilla La Mancha (57 000).

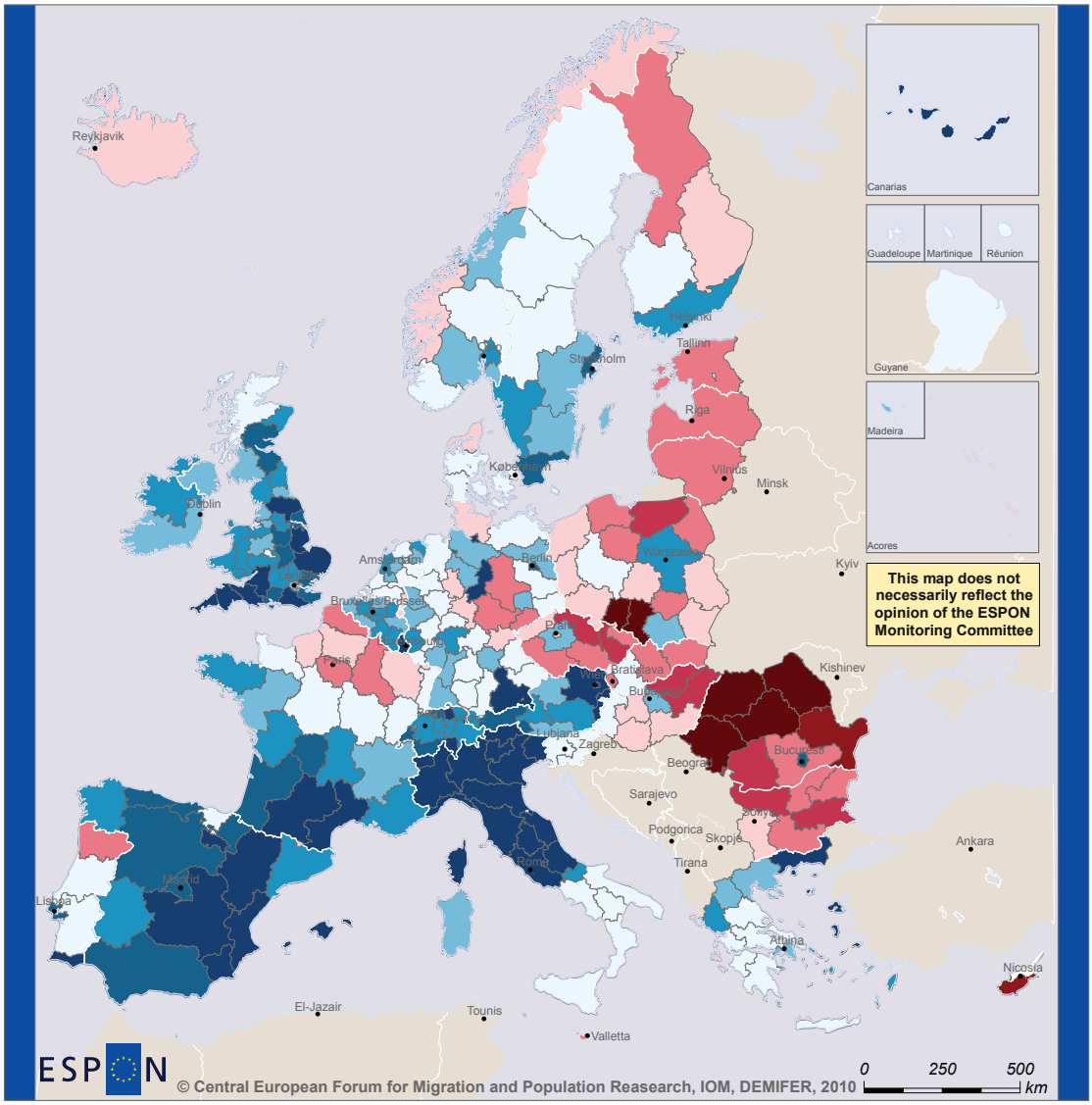
Expected territorial migration effects

In many European regions demographic growth or decline is strongly influenced by migration flows. Taking into account the different migration flows and their impact on population developments, the overall change of population because of migration has been calculated at regional level for the year 2050.

A vast majority of the regions gain population because of migration. In 24% of the regions, 2050 population would be higher by 30% or more compared to a no-migration scenario. In the EU15 almost all regions, except those in north-eastern France, north-eastern Finland and in Sachsen-Anhalt and Thuringia profit from migration. The most profound gains would take place in Italy north of Naples, some south-eastern regions of Spain and southern France (all forming a broad Mediterranean crescent), and the east and west England. They will be fed from three sources, extra-European migration, international intra-European migration and internal migration. The European regions which would pay for these gains are located in the east, especially in Romania and Poland. Internal migration also plays a role and would fuel for example the increase of Bucharest, Mazowsze and the hinterland of Prague.

Reading the map one needs to remember that it only reflects the gains and losses caused by migration. For the total picture on population development the natural population development also needs to be considered. In contrast to the migration picture, these tend to be negative in large parts of the ESPON space.

Map 15. Impact of migration on population in 2050



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Regional level: NUTS 2
Source: ESPON 2013 Database, 2010
Origin of data: Eurostat, NSIs, estimations, 2010
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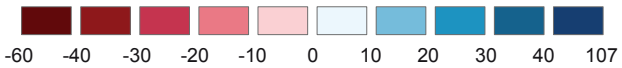
Impact of migration on population in 2050*
Difference in population in %



*Impact of migration on population in 2050. Calculated as the difference in population in the Status Quo and No Migration scenarios in % of the population in the No Migration scenario

To assess the impact of migration on the population and labour force in the period 2005-2050, three reference scenarios have been calculated.

1. Status Quo: what would happen if the demographic regimes of year 2005 continued unchanged until 2050?
2. No Migration: population of the regions changes due to births and deaths only.
3. No-extra Europe migration: population changes naturally and due to internal and international intra-ESPON space migration.

Under the Status Quo scenario the population of Europe would decline by 40 million over the 45 years and migration would have a significant impact on demographic and labour force development as well as on the age structure of regions. Without changes in demographic and migratory flows, one third of the regions will face considerable population decline (more than 20 per cent by 2050).

The map shows the impact of migration calculated as the difference in population in the Status Quo and the No Migration scenarios. The figures are in percent of the population in the No Migration scenario.

3.3 Energy challenges

Energy shapes many different aspects of territorial development, and many territorial indicators can be directly or indirectly linked to energy issues. Future access to energy supplies is a growing concern, with Europe's economy and society in general remaining highly dependent on energy, while at the same time fossil energy resources are becoming scarcer and more expensive. In addition, energy has an important environmental dimension, a theme explored in Chapter 4. The possibilities to secure future energy supplies and also the importance of energy prices for economic development vary across the ESPON space.

As a whole, Europe has become less dependent on imported energy over the past two decades. This is however significantly influenced by the contribution of Norway, which produces 9 times more energy than it consumes. In contrast the smaller European countries have severe levels of energy dependence (for example, Luxembourg, Cyprus and Malta produce less than 2% of their energy needs through their own domestic resources). A further five European countries (Belgium, Spain, Ireland, Italy and Portugal) have resources sufficient only to produce barely 25% of their energy needs.

Sensitivity to changes in energy prices depends on how efficiently energy is used. EU15 uses 50% more energy per capita than EU12, but in relation to GDP producing one Euro of income in EU15 takes only 30% of the energy needed to do so in EU12. Accordingly, EU12 countries are, in general, more liable to suffer negative impacts from a rise in energy prices. This is mainly because of the high energy intensity of their industrial processes and the low energy conservation levels of their building stock. Germany, Austria, Ireland and Greece seem to be well placed regarding possible energy price shocks, though the reasons for this may be substantially different: basically, favourable climate and light industries in Greece, and energy efficient use in the others.

In case of high and volatile energy prices, a pattern already experienced, access to energy would become a critical aspect of regional development, with important consequences for economic structures and physical mobility. All regions, but especially those with high energy dependency, would need to find ways to manage a transition towards resilience.

Territorial differences exist both in energy supply conditions and in energy consumption. For end-users, energy prices vary from country to country and more significantly from region to region. Territorial differences in energy consumption are related to both the energy intensity of national economies and to the welfare level of countries. More developed countries generally have lower energy intensity per unit of GDP produced, but higher energy consumption per capita. Higher energy prices manifested through increasing transport costs have most severe impacts on the accessibility of more remote and peripheral regions. Road and air transport modes are most affected.

In addition to the direct consequences, the risk for relocations of industries because of differences in energy prices has been studied. Particular attention has been given to the idea of "carbon leakage". This refers to the possibility that companies decide to transfer their production facilities to countries outside the ESPON space if production costs rise as a result of carbon taxes. Regional employment in sectors at risk for carbon leakage provides a first indication of where the possible future picture.

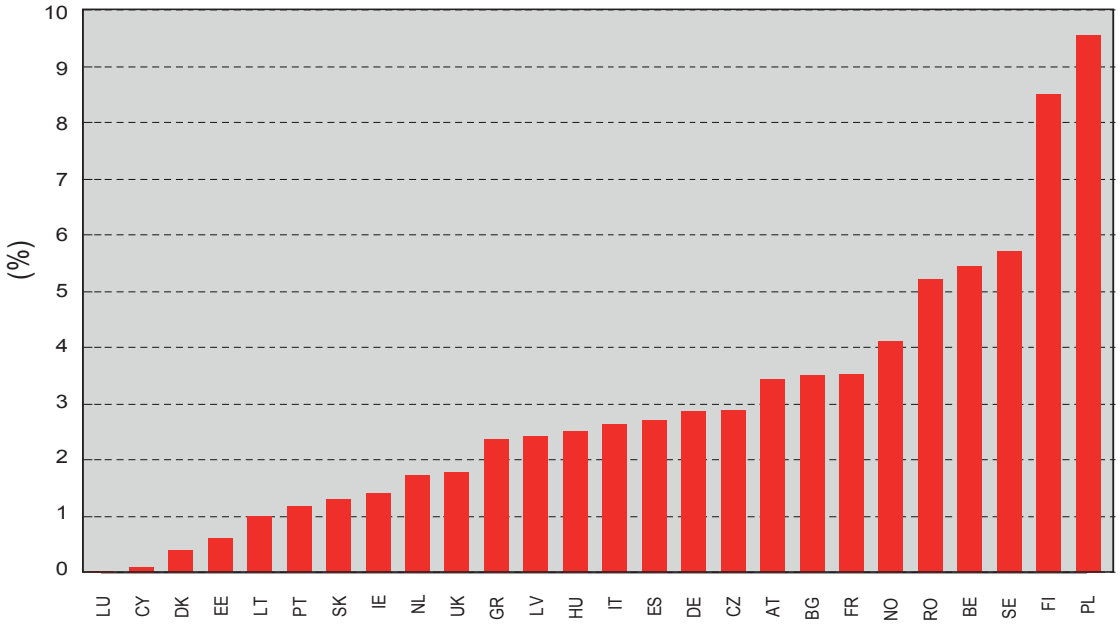
Carbon leakage seems to be a major concern for the Belgian provinces of Brabant Wallon and Antwerpen. This is because of the high employment figures in manufacture of other organic basic chemicals and manufacture of fertilizers and nitrogen compound, since these spend more than the EU average on energy purchases. The British regions of East Yorkshire and Northern Lincolnshire also might be exposed to the risk of carbon leakage by companies manufacturing other inorganic basic chemicals, which do not perform well with regard to the subsector's average energy expenditure.

Antwerpen, East Yorkshire and Northern Lincolnshire are among the regions, which might face the greatest challenges in terms of competitiveness in a situation of rising energy prices. They have most challenging industrial structure, due to their high levels of energy spending.

In addition to energy-intensive regions, such as regions with industries with high energy purchases, there are other types of regions which could be concerned in particular with the social impact of expensive energy. Energy poverty is a threat in regions with high unemployment rates and/or low disposable income. Furthermore, regions dependent on long-distance freight transport (including islands and remote areas), regions relying on high levels of commuting, as well as tourism-dependent regions could all face economic turbulence should energy prices again rise steeply.

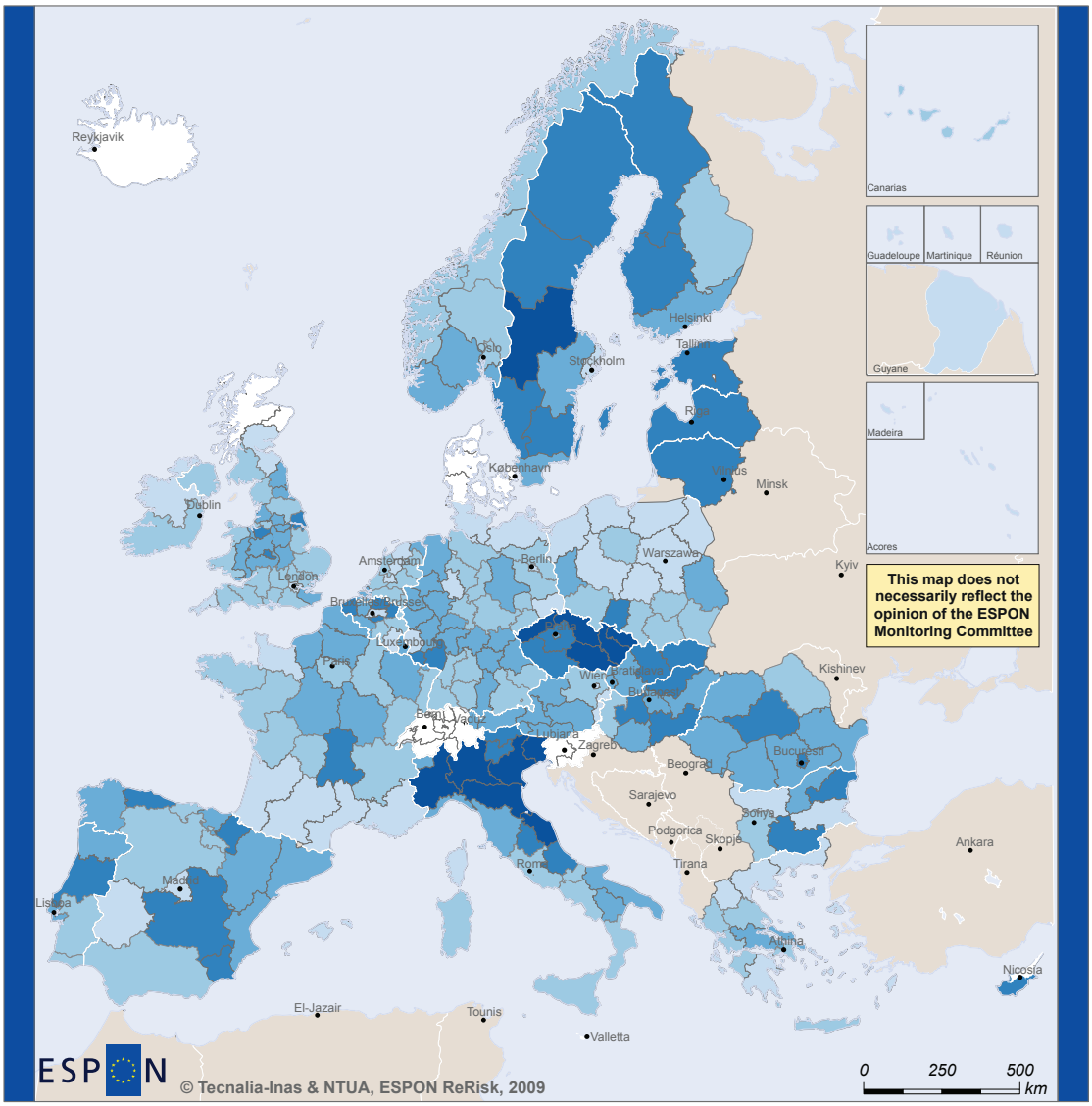
However, changes in relative energy prices can also open development opportunities for regions able to capitalise on their potential for renewable energy production and/or to nurture innovative energy related industries.

Employment in sectors at risk of carbon leakage as percentage of industrial employment, 2005



Source: ESPON 2013 Database, 2010
Origin of data: Directive 2003/87/EC, Eurostat Regional Statistics, 2005

Map 16. Proportion of employment in industries with high energy purchases, 2005



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Regional level: NUTS 2
Source: ESPON 2013 Database, 2010
Origin of data: Eurostat, 2010
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Share of employees in industries with high energy purchases in 2005 (%)

0.41 2.31 4.07 6.22 9.72 14,23

No data

Due to the reliability and quality of the datasets behind this map, the Lead Partner of the ReRisk Project decided not to include data collected from other sources than Eurostat

The map shows the share of a region's total labour force which is employed in industries demanding a lot of energy. Thus it gives a picture of regional dependence on industries with high energy spending. The regions with the most unfavourable position in terms of economic vulnerability (> 10% of employment in industries with high energy spending) are located in the Czech Republic and in Italy. In the latter case, the highly vulnerable regions combined represent more than 50% of industrial employment. However, the Italian industries do not perform badly in the EU comparison with regard to energy spending, despite of the relatively high energy prices in the country.

3.4 Geographical challenges

Some development challenges can derive from geographical location, including e.g. rural areas, and regions which suffer from severe and permanent natural handicaps such as the northernmost regions with very low population density, island, cross-border or mountain regions.

ESPON's research reveals some common features although the detailed situations vary greatly. Most importantly, the perceived challenge depends on the geographical level of analysis. Islands, mountainous and peripheral regions are all characterised by relative smallness and remoteness, but also by internal diversities. When research is focused on the local scale it quickly encounters wide territorial and socio-economic diversity within the regions. Similarly, the potential for development that these regions have is also diverse, both within a category like "island regions" and then within an island itself.

Low accessibility and small markets

Smallness and remoteness combined create an economic disadvantage compared to other regions; firms in remote regions that have a small number of inhabitants cannot draw on economies of scale for labour and consumers in the way that competitors in a big city can. Low accessibility is strongly linked to small internal markets. Although there is a considerable diversity of settlement patterns in remote regions with sparse populations they all are characterised by territorial unbalances and low connectivity to larger cities.

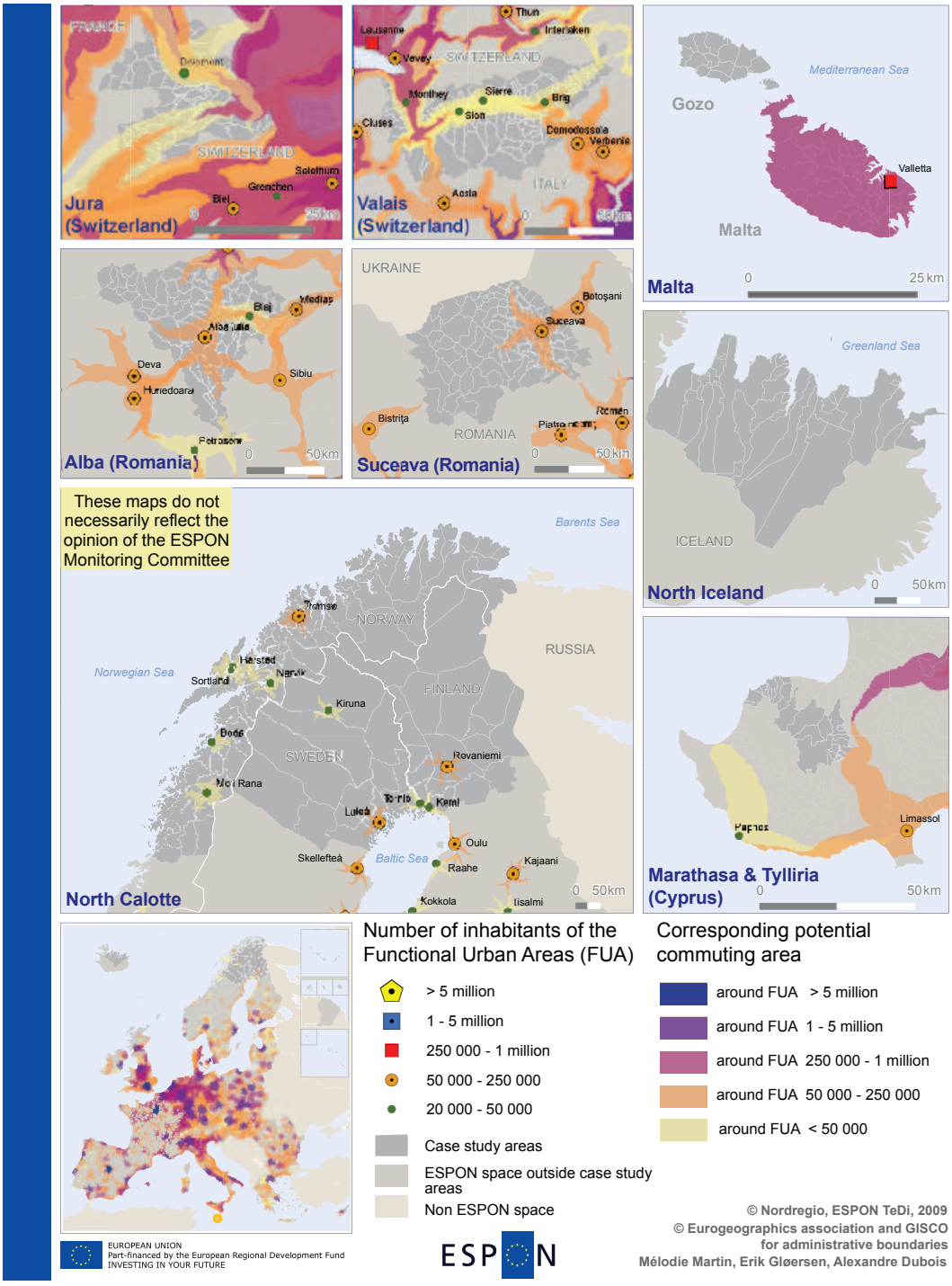
ESPON case studies found that in the Nordic Countries, low accessibility to large markets and poor possibility for regional enlargement were explicitly identified as disadvantages for specific territories. In Switzerland, the fact that the mountainous and rural communities are often small isolated communities was highlighted. In the case of Gozo (Malta), there is a double territorial constraint – it is an island off an island. This geography both limits the possibility of movements of resources and imposes additional transaction costs on the local economy. In Cyprus also, the island geography translates into relatively high operational costs. In peripheral Romania, the poor state of basic infrastructure (notably roads, water supply, and health care) and the high costs of operations of services are barriers to development.

Importance of rural-urban linkages

Overall, the challenge for these areas is not accessibility as such, but the identification and tackling of obstacles to balanced and harmonious territorial development in terms of infrastructure. This is closely related to the connectivity to the nearest urban centres and hubs. Better urban-rural connections and easier commuting over wider distances are seen as strategic measures to create wider, more robust labour market areas and to facilitate access to services.

These issues of internal coherence are however quite different depending on the scale of the case study areas. In the North Calotte, the lack of air connections between the Finnish, Norwegian and Swedish parts as well as the potential for developing east-west connections from Russia to the Norwegian Sea. In most of the other case study regions, the focus was on insufficient connections between urban and rural areas. At the other end of the scale, in Marathasa and Tylliria, the local connections that could boost the economy extend out beyond the study area itself.

Map 17. Access to urban nodes - Case Study on areas with geographical challenges



The maps look at regional settlement structures based on access to urban centres. They show areas within 45 minutes travel time to the centres of the functional urban area with more than 20,000 inhabitants (defined in previous ESPON studies).

The canton of Jura in Switzerland is a medium altitude mountain area, with relatively good connections to the neighbouring metropolitan region of Basel, to Berne and to Belfort in France. However, within the Jura, Delémont is the only urban centre. It has just over 20,000 inhabitants, but the canton has access to numerous external centres of major difference. The main challenge is therefore the positioning of this predominately rural region that is in close proximity to urban poles.

The canton of Valais in Switzerland is central in a European context. It is inside the Pentagon, but because of the topography it is separated both from the neighbouring Italian cities to the south and from the dynamic Swiss Mittelland plateau to the North. The Valais has a series of small urban centres which are the centres of regional development, with all the industrial and tourist assets associated with high altitude mountain regions.

Malta offers an example of an insular nation state, which with its small size and high population densities faces particular development challenges. Despite being situated only 25 minutes by boat from Malta, Gozo has distinctly lower levels of economic performance. The difference between Malta and Gozo is quite obvious. All of Malta is within daily commuting distance from Valetta, whereas Gozo remains outside and suffers from a "double insularity".

The county of Alba in Romania lies in the extensive human settlements at high altitudes (above 1000 m). Household incomes are sustained by multi-activity combining agriculture, the production of handicrafts and tourism. It also offers examples of conflicts in environmentally sensitive mountain areas, e.g. between mining, tourism and conservation.

The county of Suceava in Romania is an example of a traditional agricultural region. It is also a border region, as part of the historic region of Bucovina which extends into the Ukrainian oblast of Chernivtsi. The lack of infrastructure and the absence of basic public and private services raises the question of the relevance of a focus on geographic specificities in territorial policies in areas with major structural challenges.

North Iceland is also peripheral and has low population density, but within an insular national context. As part of a country particularly hard hit by the global financial crisis, it also offers some evidence on the role a remote area specialised in primary activities (fisheries) has had to adopt.

The North Calotte, grouping the northernmost regions of Finland (Lappi), Norway (Nordland, Troms and Finnmark) and Sweden (Norrbotten), is an example of an extremely sparsely populated region with abundant natural resources, high living standards and satisfactory to high economic performance levels from a European point of view. However, only a minor proportion of the area is within commuting distance of an urban centre.

Marathasa and Tylliria are sparsely populated and poorly connected areas of northwest Cyprus, whose relative isolation has been accentuated by the Turkish occupation. Part of their specificity derives from being beyond commuting distance from Nicosia, Limassol and Paphos. As sub-regional entities with no separate administrative status, these areas illustrate the need to look below the level of statistical regions to identify geographic specificities.

Access to services

In all the countries investigated by this targeted ESPON analysis, the specific territorial characteristics seems to have substantial impact on the capacity of the nation-states to deliver the same level of access to services in all parts of the national territory. This has an impact on both private persons and businesses.

In the Swiss cases, the high costs related to the provision of services (health care and education) are particularly emphasized. In addition, the business structure (SMEs) and remoteness from higher education centres (universities, polytechnics) engenders a chronic lack of public and private R&D and innovation capacity. Difficult access to essential services is also an issue in Gozo. However, there are situations where private investors spot an opportunity and successfully provide services to a widely dispersed population. The most notable example is the Haparanda-Tornio shopping centre on the Swedish/Finnish border in North Calotte. Situated in a town with a labour market area of only 34 000 inhabitants, the IKEA shop of this shopping area alone attracted over 2 million visitors during its first year of operation in 2005 from all over the North Calotte. This implies that many visitors were prepared to travel up to 7 or 8 hours one-way to reach such a shopping centre.

Limited potentials for economic diversification
In all cases studied, the regional economies of the "specific territories" imply limited potential for diversification of the economic base.

In the Swiss cases there is little alternative to the tourism industry in mountainous areas. Similarly, the dependence on agricultural activities in Gozo and the fragility of this sector poses a problem. In Cyprus as well, the low incomes generated by agriculture, along with a lack of employment opportunities outside the agriculture sector, make the rural territories more vulnerable. Climatic constraints (drought in the south and cold in the north) also affect the capacity to sustainably develop activities based on the exploitation of the land. In Romanian mountainous areas (belonging to the category rural areas), agricultural activities, essentially consisting of small subsistence or semi-subsistence farming, are an important source of employment, though diversification of economic activities remains difficult.

Demographic/labour-markets challenges
In the case studies, depopulation and concentration of the population within the specific territories was considered a source of insecurity, not just for the present but also for their future development. In Cyprus and the Nordic Countries, the trend is out-migration to cities. In Romania, the combined effects of aging and depopulation are especially felt in rural and mountainous areas.

Are all rural areas challenged areas?
In Europe, there are some wealthy rural regions and some urban regions with poverty, high unemployment and land poisoned by past industrial activity. Thus rurality by itself is not necessarily a problem of development. Too often thinking and policy about rural Europe has been shaped by stereotypes, which seems to overstate the significance of agriculture in a rural region's economy, or understate the accessibility to major urban centres that many rural regions now enjoy. Therefore, different types of rural regions need to be distinguished.

- Rural regions in which the primary sector plays a major role in the local economy are mainly concentrated in an arc stretching around the eastern and southern rims of the ESPON space.

- Some other rural areas have an economy where tourism is more important than agriculture. In such places the countryside is less about production and more about consumption, where people come to access natural areas. These Consumption Countryside regions typically have diversified small scale infrastructure. They are most prominent in Northern Europe and also Germany, Austria, Slovakia and Italy.

- The rest of the ESPON space is characterised by a patchwork of rural areas: (a) diversified regions with a focus on secondary sector services (again contrary to the stereotype, there are rural regions with quite a lot of manufacturing, not all of it about processing local farm produce) and (b) and diversified regions with an economic focus on private sector services, in other words with an employment structure not very different than that found in urban regions. This latter group is especially strong in France and not surprisingly it is most common in the most accessible rural areas which an urban economy can most easily penetrate.

Rural regions characterised as consumption countryside regions and diversified regions with a focus on private sector services usually achieve a good level of economic performance and are likely to continue to do well in the immediate future. This new typology enhances the ability to distinguish between non-urban regions in terms of their economic performance. This represents a distinct step forward from relying on outdated assumptions about the nature of rurality, and shows how evidence and analysis could support reshaping development policy.

Although these generalised statements can be challenged by local variations within rural areas, they show why the diversity of rural areas makes it essential to look beyond the old stereotypes that emphasise rural disadvantage. Thus it is necessary to look beyond just agriculture and other primary sectors activities like forestry, and to focus instead on potentials inherent in an integrated rural development approach. Latent territorial capital in different types of rural regions can be a basis for bottom-up growth that contributes to regional, national and European recovery.

Traditionally the assets for rural development are discussed along the lines of (a) soft and hard assets ranging from infrastructure to human capital and environmental amenities, (b) private and public goods differentiating the ownership structure from the assets (e.g. hotels from landscapes). However, what is actually needed is the smart combination of these assets e.g. with regard to innovative milieus, business networks and place marketing.

Rural development support requires an evidence-informed mix of a wide range of policies from different sectors, not just agriculture, and different levels of decision making. Overall, to successfully support the development of rural areas these policies need to acknowledge the importance of a number of key factors:

- Policy mixes that differentiate between different types of rural areas.
- Rural-global links which are of increasing importance.
- Consideration of the local development context and environments.
- Links and good accessibility to the nearest urban centres
- Recognition of the trajectory of economic restructuring in rural areas.

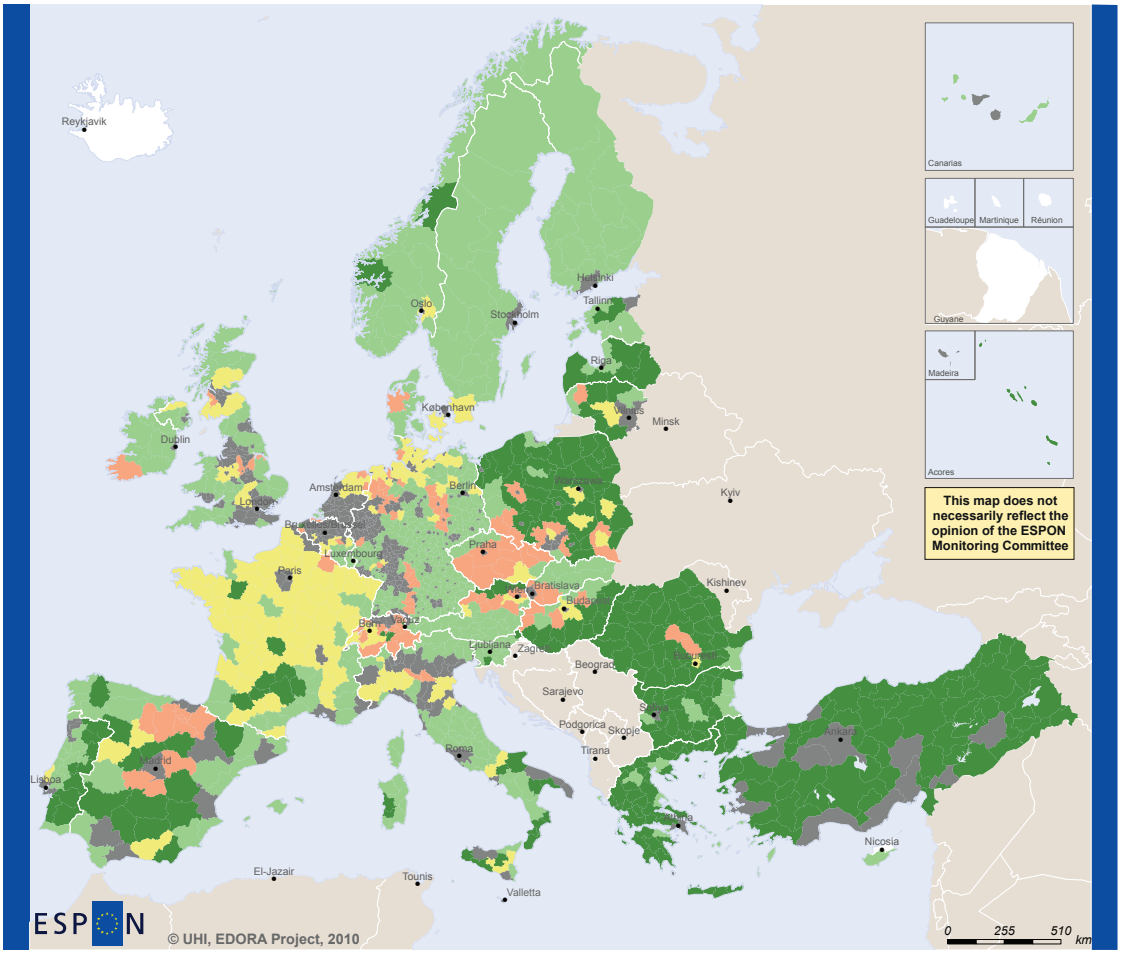
Moreover, the local drive for change seeing new potentials for economic development and job creation should be encouraged. In particular, the diversification of their economic base would be a lever for these specific territories. Here the expansion of global markets and climate changes should also be considered as offering new development opportunities.

The development of the structural types reflects the importance of countryside public goods and the concept of the consumption countryside. The maps shows the regions' rural characteristics, however, many of the regions have urban economies which are not necessarily reflected in the rural characteristics presented.

Agrarian regions are those in which all three indicators of the relative importance of agriculture (% employment in primary sector, % of GVA from primary sector, and Agricultural Work Unit as share of total employment) exceed the EU27 non-urban region mean. These are regions where agriculture is still significant economically. They tend to be losing people and economic vitality, though there are exceptions to this generalisation.

Consumption countryside regions are defined by eight indicators, in three groups relating to tourism capacity and intensity, access to natural areas, and small scale and diversified agriculture. They tend to be high performers that have potentials to grow both demographically and economically.

Map 18. Structural types of rural areas, 2006



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Source: EDORA Database, 2010
Origin of data: Eurostat Regio Database and other sources, various years (centred on 2008)
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Structural types
(intermediate and predominantly rural NUTS 3 regions)

- Predominantly urban regions
- Agrarian
- Consumption countryside
- Diversified (strong secondary sector)
- Diversified (strong private services sector)
- No data

Note: A simplified classification procedure was necessary in Switzerland and Turkey due to missing data. However it is anticipated that acquisition of a wider range of indicator would not materially change the outcome.

Crucially, the remaining regions are not only diversified but also need to be separated on the basis of the ratio of the GVA derived from secondary activities to that from market services. Those in which secondary activities are dominant are found in the Czech Republic, Hungary, Slovenia, around Madrid and in the north of Spain, in parts of Germany and the English Midlands. Diversified (market services) regions are conspicuous in northern and central France, but are also scattered across northern Germany, northern Italy, parts of the UK, and close to national capitals in the east of the ESPON space.

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3.5 Challenged areas turning into success stories

Challenges are meant to be mastered. Challenged areas are not bound to endless development struggles, once their particular development objectives and comparative advantages and disadvantages have been identified. There are many cases where challenged areas developed into success stories. Common ingredients of such success stories are well managed governance processes and flagship projects which were able to break the downwards trend and act as leverage for other initiatives.

Barcelona and Valencia are among those frequently discussed prior to the economic and financial crises. These Spanish examples benefitted from the positive economic development Spain experienced until the crisis. The question is to what degree their success was shaped by this national economic development, and in particular by the boom in the Spanish construction sector that proved short-lived? The degree to which their progress can be maintained through the economic crisis remains to be seen.

However, when comparing the experience of Valencia with other convergence regions (e.g. East Macedonia-Trace in Greece, Podlaskie in Poland and Campania in Italy) it seems that the huge investments in Valencia's construction sector had considerable effects on the rest of the economy. One determining investment (which entailed many others) may have been the major infrastructure project to relocate the Turia river, which had flooded Valencia in the 1950s. After the relocation, the former riverbed was transformed into a huge park for the citizens, who decided against using the land for a city highway and instead opted for a green lung within the city. The 20-year-long park project has not only been important in regard to the financial investments but also improved the attractiveness of the city and quality of life for people. Nevertheless, the economic boost from this capital investment project was bolstered by the exploitation of other regional resources at the same time. Furthermore, Valencia invested in training for public sector officials, and this contributed to the success.

Targeted analyses performed by ESPON reveal several factors or preconditions which are important for the development of convergence regions. These are in order, accessibility, innovation and knowledge economy, economic structure and policies, quality of regional administration, quality of life, social aspects and political stability.

One could assume that it would only need one enabling spark, like the investment in the construction sector, coupled with good monetary and non-monetary incentives to escape a negative circle and enter into a positive helix of economic success. However, to find the "right spark" is not always easy.

3.6 Future perspectives – labour force scenarios

Future oriented policies not only need evidence about current territorial structures and developments. Future scenarios are increasingly used as a tool for territorial policy development. This is perhaps because scenarios can encompass discontinuities with past trends, and so help us to anticipate "shocks" and build resilient cities and regions.

Demography and migration prospects are normally a basic element in scenario processes. Natural population development is one important factor where a long term prognoses can be done with reliable and accurate quantitative results. However, migration is much more difficult to predict with confidence.

Among possible demographic scenarios including migration for the period up until 2050 at European level are:

- Growing social Europe shaped 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.
- Expanding market Europe based on growth enabled by technical and social innovation and growing individualism, with a high increase in inter-state migration and also high levels of extra-European migration and an increasing labour market participation.
- Limited social Europe focusing on 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 based on growth limited by environmental constraints and increasing individualism, with a low increase of inter-state migration, moderate extra-European immigration and decreasing labour force participation.

As noted earlier, under the status quo the population of the ESPON space looks set to decline by 40 million between 2005 and 2050. However, in all these four scenarios the total ESPON population remains steady or increases. The regional effects are still dramatic and all scenarios project increasing imbalances and concentration with a shift of the population from the poorest to the richest areas.

The Expanding Market scenario projects population increases for a wide range of regions. It sees most regions in Scandinavia, the UK, France, north and central Italy and south and east Spain in the top growth classes. Most of the eastern regions are projected to lose population but in the capital city regions of Warsaw, Prague, Budapest and Bucharest this loss is small. Also in the regions of western Germany, parts of northern France and western Spain the population decline is small. In the Growing Social scenario the effects are more even with fewer regions declining or growing heavily. In the Challenged Market scenario most regions show losses in population, while in the Limited Social scenario the variations shrink so that there are fewer regions losing dramatically.

Looking at the regional variation of population aging, the most hot spots of growth in working ages occur in the Expanding Market scenario, particularly in southern England, Ireland, north and central Italy, and south central Spain, and with lesser growth in France, Austria, other regions in Spain and the southern areas of the Nordic Countries. Regions in central and eastern Europe are projected to see declining numbers of people in working age. These declines expand in extent as one move from the Expending Market to the Growing Social scenario, to the Challenged Market to the Limited Social scenario. Indeed, they are most pronounced in the status quo scenario.

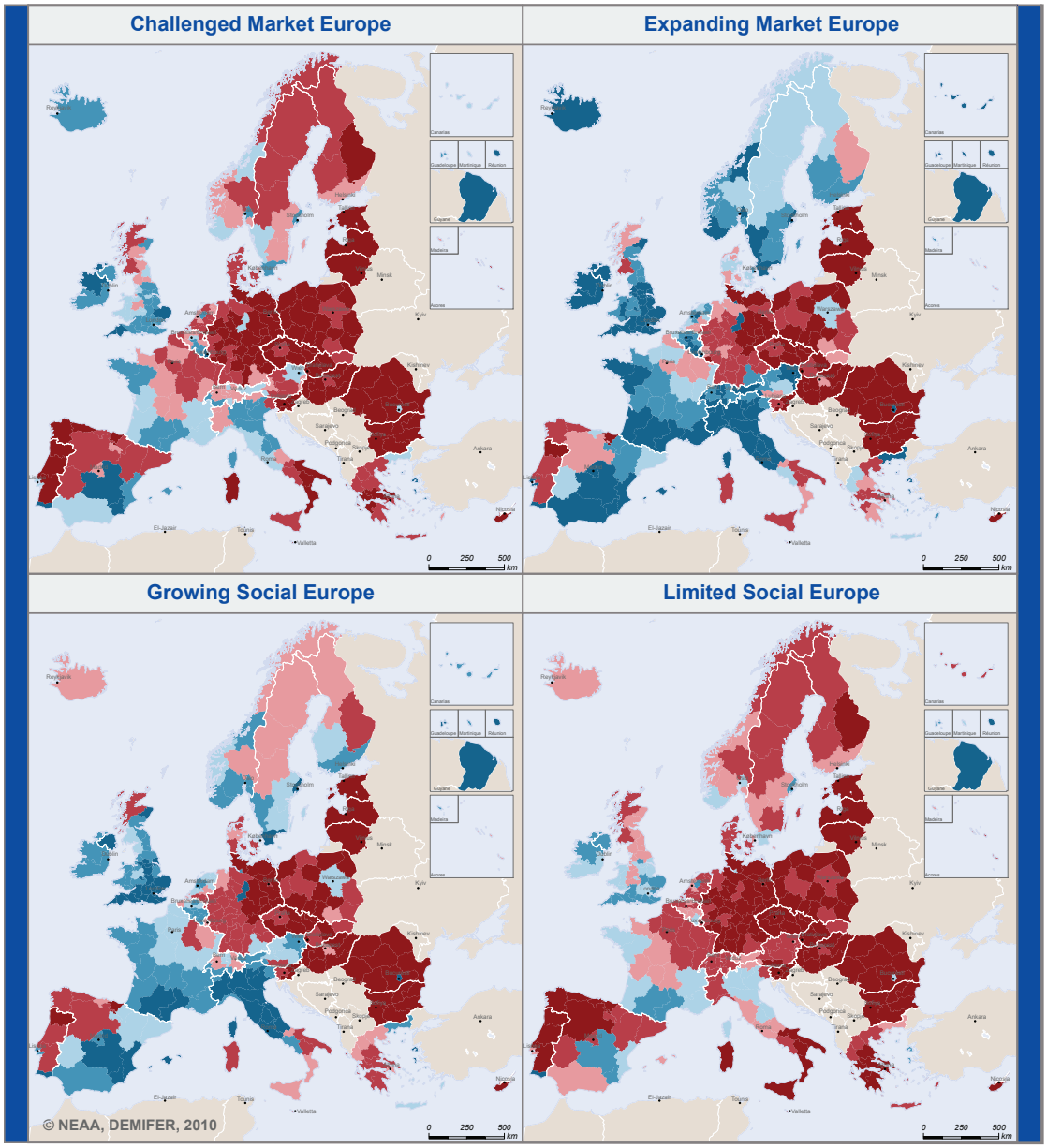
The situation with regard to the change of labour force figures is particularly striking. By 2050, a lot of regions will be having to cope with a shrinking labour force. Depending on the scenario the decline of the labour force will be less or more serious. There are some territorial patterns in common for the labour force development in all scenarios. Overall, Portugal and some neighbouring Spanish regions, southern Italy, Greece, East Germany and most regions in the countries which joined the EU during the last two accession rounds will face serious declines in the labour force. On the other hand Ireland, large parts of the UK, some regions in France, northern Italy and Spain will see a growing labour force. As for the other regions, the development differs depending on the scenario chosen, and in reality the picture will depend on how well or otherwise territories recover from the recession.

The overall picture indicates that the ESPON space faces a territorially diversified but nevertheless serious decline in labour force with all its challenges for the European social model and economy.

Between 2000 and 2007, the share of the population in working age (20-64 years) has decreased in some parts of the ESPON space and increased in most others. The areas that had the highest decreases are located in Bulgaria and East Germany, whereas the areas with the strongest increase in the share of working population are mainly in Spain, Ireland, Iceland, some regions in western France, and single regions in Portugal, Poland, Switzerland, the Benelux countries, Czech Republic, Slovakia, Scotland and Norway.

Whereas the present developments provide a rather positive picture for most parts of Europe, the expected future developments are less optimistic. In the Expanding Market scenario a minority of the regions will be facing a declining labour force. The labour force is expected to shrink by more than 10% between 2005 and 2050 in only 35% of the ESPON regions.

Map 19. Change in labour force 2005-2050



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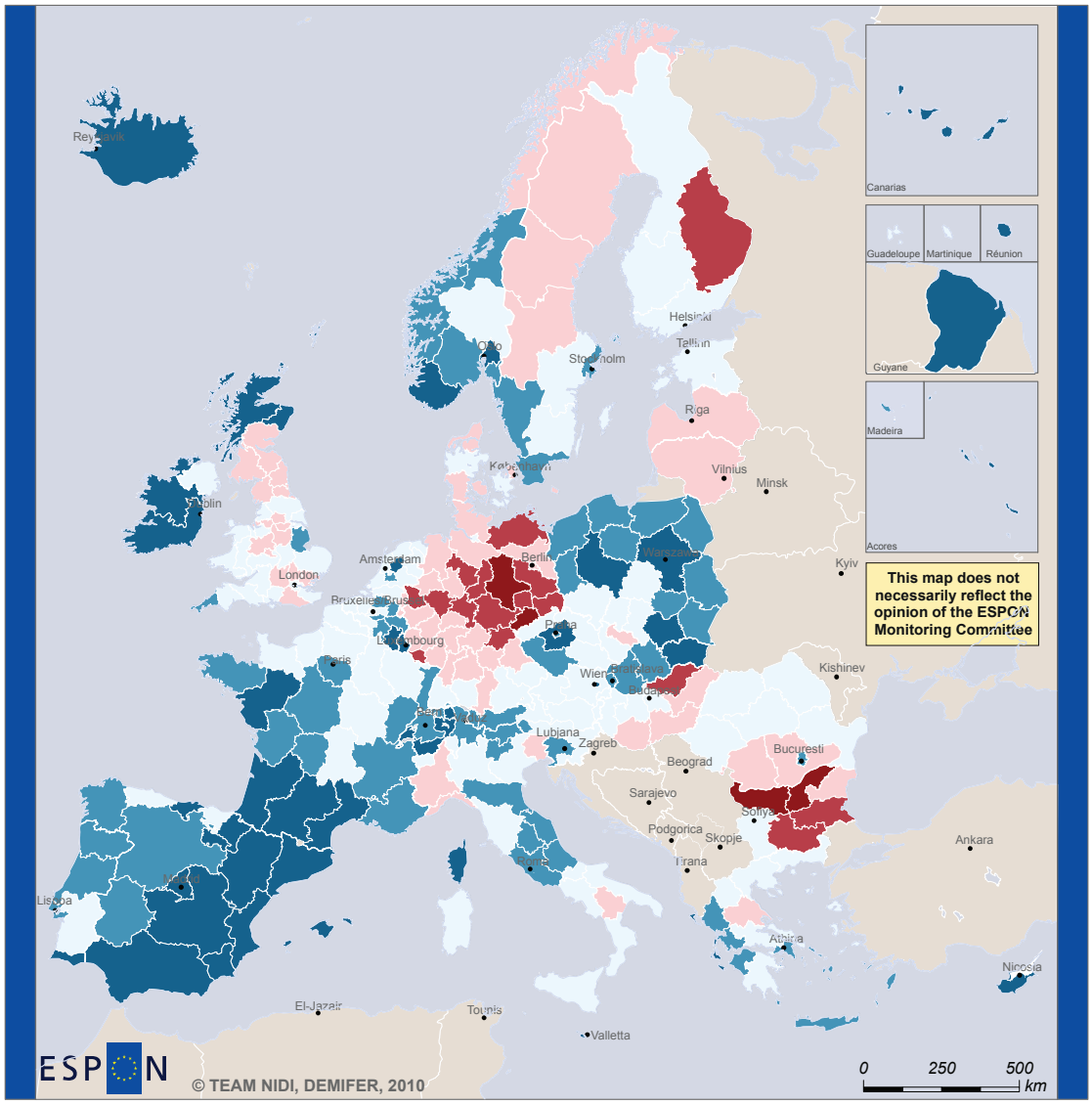
Change in number of Persons in Labour Force in 2005-2050, in % after Different DEMIFER Scenarios

-77 -30 -10 0 10 30 186 No data

Map 20. Change in Working Age Population, 2000-2007



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Regional level: NUTS 2
Source: ESPON Database 2010
Origin of data: Eurostat, NSIs 2010
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Annual Average Change in Population Aged 20-64 (%)

-1.6 -1.0 -0.5 0 0.5 1.0 4.0

No data

In the Growing Social scenario this percentage is somewhat higher at 40%. In the Challenged Market scenario the regions with a shrinking labour force amount to more than 55% of the ESPON regions.

The Limited Social scenario sketches the most dramatic future with a large majority of the regions experiencing a setback. About 70% of the regions will see a labour force decline by more than 10%. In this scenario most regions located in the eastern part of the ESPON space and a lot of regions in the southern part will suffer a decline of the labour force of more than 30%. Also many German and Austrian regions will face such losses.

In the Expanding Market scenario many regions located in the western and northern part of the ESPON space will have a substantially growing labour force. The contrast with the eastern part is sharp, where a majority of the regions will still have a shrinking labour force. In the Growing Social scenario, the contrast between regions with a severe decline of the labour force and those with a steep growth is much smaller. This is due to the convergence assumption of this scenario, leading to more regional cohesion than under the Expanding Market scenario.

Further reading:

Further information on the issues addressed in this chapter can be found in the reports of the ESPON projects about territorial diversity (TEDI), demography (DEMIFER), cross-border regions (METROBORDER), energy (RE-RISK), agglomeration economies (CAEE), convergence regions (SURE), islands (EUROISLANDS), and rural areas (EDORA).