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Demographic and migratory flows affecting European regions and cities

DEMIFER

Inception report

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1   Introduction

The inception report of the DEMIFER project (<u>DE</u>mographic and <u>MI</u>gratory <u>F</u>lows affecting <u>E</u>uropean <u>R</u>egions and cities) includes a detailed overview of the research to be applied. The report describes the methodology and includes a review of the main literature and data sources. This report also discusses the main concepts underlying the scenarios. Furthermore, it includes an overview of more detailed deliveries and outputs envisaged by the project as well as an indication of likely barriers that the project implementation might face. Compared with the original proposal, less attention will be paid to the general background of the project. For this we refer to the proposal, which is in full part of the contract.

DEMIFER is a project supported by the ESPON 2013 Programme. The project will be carried out by a team of researchers from the Netherlands Interdisciplinary Demographic Institute (NIDI, Netherlands), the University of Vienna (UNIVIE, Austria), the International Organization for Migration/Central European Forum for Migration and Population Research (IOM/CEFMR, Poland), the University of Leeds/School of Geography (SoG, United Kingdom), the Netherlands Environmental Assessment Agency (NEEA, Netherlands), the Nordic Centre for Spatial Development (Nordregio, Sweden), and the National Research Council (CNR, Italy).

More specifically the inception report includes the following points:

- summary of the objectives and conceptual framework of the project (section 2);
- description of how existing ESPON results will be used (section 3);
- review of literature (section 4);
- detailed overview of the research methodology and activities, including a discussion of scenarios (sections 5 and 6);
- assessment of the data situation in ESPON countries (including EU candidate countries) and conclusions on the geographical coverage of the research (section 7);
- dissemination of the results of DEMIFER (section 8);
- reflection on the questions raised by the Evaluation Committee and Sounding Board (section 9);
- identification of barriers for implementation of the project (section 10);
- detailed overview of envisaged output (section 11);
- planning of activities (section 12).

2   Summary of objectives and conceptual plan

2.1   Point of departure and key objective

Two main developments form the point of departure for DEMIFER:

1.   The main demographic development in Europe in the next decades is the ageing of the population. One major consequence is that the working age population will decline which may have a downward effect on economic growth;
2.   Europe will face several important challenges from environmental changes.

These demographic and environmental effects will be different for different regions and may affect migration flows across regions in different ways.

The key objective of DEMIFER is to assess the effects of demographic trends and migration flows on European regions and cities and to examine the implications for regional competitiveness and European social cohesion, taking into account possible effects of climate change.

In line with the ESPON program, the project will adopt a multilevel regional system approach. This means that three levels of analysis will be distinguished:

1.   the macro scale or European level;
2.   the meso scale or trans-national/national level;
3.   the micro scale or regional/local level.

The project will examine the effects of demographic developments and migration flows for various types of regions where the typology of regions is based on demographic, social, economic and environmental characteristics.

In order to assess the effects of future demographic and migration developments on the structure of the population and the labour force in European regions alternative scenarios will be developed. These scenarios will be based on analyses of the causes and consequences of migration and will show impacts on future internal migration, international migration, natural population development and labour force participation. Two reference scenarios will be developed to calculate what would happen if demographic parameters would not change: one scenario with, and one without taking into account migration. In addition a number of regional scenarios will be compiled to examine the effect of alternative demographic developments and migration patterns. Finally, various policy options are analysed by examining how they could affect the outcomes of the scenarios.

2.2   Key policy and research questions

DEMIFER will produce information and evidence for addressing the following key *policy* questions[1].

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[1] Specification ESPON Applied Research Project 2013/1/3, Demographic and migratory flows affecting European regions and cities (2008-2010), January 2008, p.5/6.

1. How will the demographic development, i.e. natural development of population as well as migration, affect different types of regions and cities?
2. How and to which degree will future effects of climate change influence migration flows?
3. What is the need for increasing the labour force in order to avoid negative impact on the economic performance and on the social cohesion of these regions and cities?
4. Which skills are needed in different types of regions and cities in order to meet the demands of the economic base and to make better use of development opportunities?
5. To what extent could such skills be provided by internal migration in Europe?
6. What should be the profile of skills of migration to Europe to maximise the contribution of regions and cities to European competitiveness?
7. Which factors could have a positive effect on natural population development in Europe?

In summary, two types of research can be distinguished. First, the effects of demographic and migratory flows on the size and structure of the population and particularly on the labour force need to be assessed. Second, the possible effects of policies on changes in demographic parameters need to be examined. In order to address the key policy questions the following *research* questions will have to be addressed[2].

1. What are current demographic developments and migration flows like? How distinct are they? What are the regions of destination? Are there flows that are more pronounced than others, and if so, why?
2. Why do some regions attract highly skilled people whereas others do not?
3. What are the causes of migration (e.g. economic development, development on labour market)? What are the impacts on different types of European regions and cities (e.g. regarding regional competitiveness, provision of public services) and which effects will migration have on European cohesion?
4. What are the relations between migration flows to the ESPON countries and other major territorial challenges like accelerating globalisation and particularly climate change?
5. What are the financial consequences for the regions of origin of migrants (e.g. size of remittances of migrants)?
6. Who is migrating? What are the qualifications of migrants coming to Europe? Do they meet the need of the labour market as such? How does their profile fit different types of regions and cities of Europe?
7. How and to which degree does the development of different individual factors (economic, social, environmental) impact on demographic and migration flows?

The key policy and research questions cover a wide range of demographic and migration issues. Although in principle all these issues will be taken into account, the scope of the DEMIFER project does not allow us to answer all questions on the basis of detailed quantitative analyses. The quantitative analyses of DEMIFER will focus on assessing the effects of changes in demographic parameters and migration developments on the size and age structure of the population and labour force in European regions by means of calculating alternative scenarios. In developing the scenarios, assumptions will be specified on different future developments in drivers of demographic and migration variables. For example, one scenario may assume that economic growth may continue in the long run, whereas another scenario may assume that there will be limits to economic growth due to climate change and depletion of natural resources. Even though ageing and environmental change are global

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[2] See note 1.

developments, they may affect European regions in different ways and this may vary across scenarios. One scenario for instance may assume that economic differences across European regions will increase, whereas another scenario may assume converging trends. These alternative future developments will lead to different demographic developments and migration patterns across regions. On the basis of an analysis of the consequences of these alternative developments for changes in the size and structure of the population and the labour force in different types of regions, the scope for policy options will be examined. In examining policy options, the European and national level as well as the regional level will be included.

2.3   Conceptual framework of DEMIFER

DEMIFER includes work packages on project coordination (WP1), research activities (WP2) and dissemination (WP3). The work package on research activities contains seven activities that are closely linked to each other. Two activities focus on addressing the *research* questions discussed above. The first activity *Demography and migration* analyses the relationship between demography and migration. The second activity *Typology of regions and cities* focuses on the relationship between demographic and migratory developments on the one hand and socio-economic developments on the other. Three activities deal with the *policy* questions specified above. The activity *Multi level scenario model and reference scenarios* analyses the future effects of demographic developments, migration and labour force participation on changes in the age structure of the population and on the size of the labour force. The activity *Regional scenarios* examines the effects of alternative future developments in demographic parameters, migration, and labour force participation as well as the possible effects of climate change. The activity *Policy implications* investigates how policy options may affect these future developments. In order to achieve consistency in collection and storage of data and the presentation of the results the activity *Data, indicators and maps* ensures that one common approach is followed. Finally the activity *Case studies* will provide detailed analyses for a limited number of specific regions.

Chart 1 gives an overview of the separate activities and the linkages between the activities.

Chart 1: Work Packages and Research Activities

WORK PACKAGE 1: PROJECT COORDINATION

WORK PACKAGE 2: RESEARCH ACTIVITIES

Research oriented activities

DEMOGRAPHY AND MIGRATION

TYPOLOGY OF REGIONS AND CITIES

DATA INDICATORS AND MAPS

MULTI LEVEL SCENARIO MODEL & REFERENCE SCENARIOS

CASE STUDIES

Policy oriented activities

POLICY IMPLICATIONS

REGIONAL SCENARIOS

WORK PACKAGE 3: DISSEMINATION
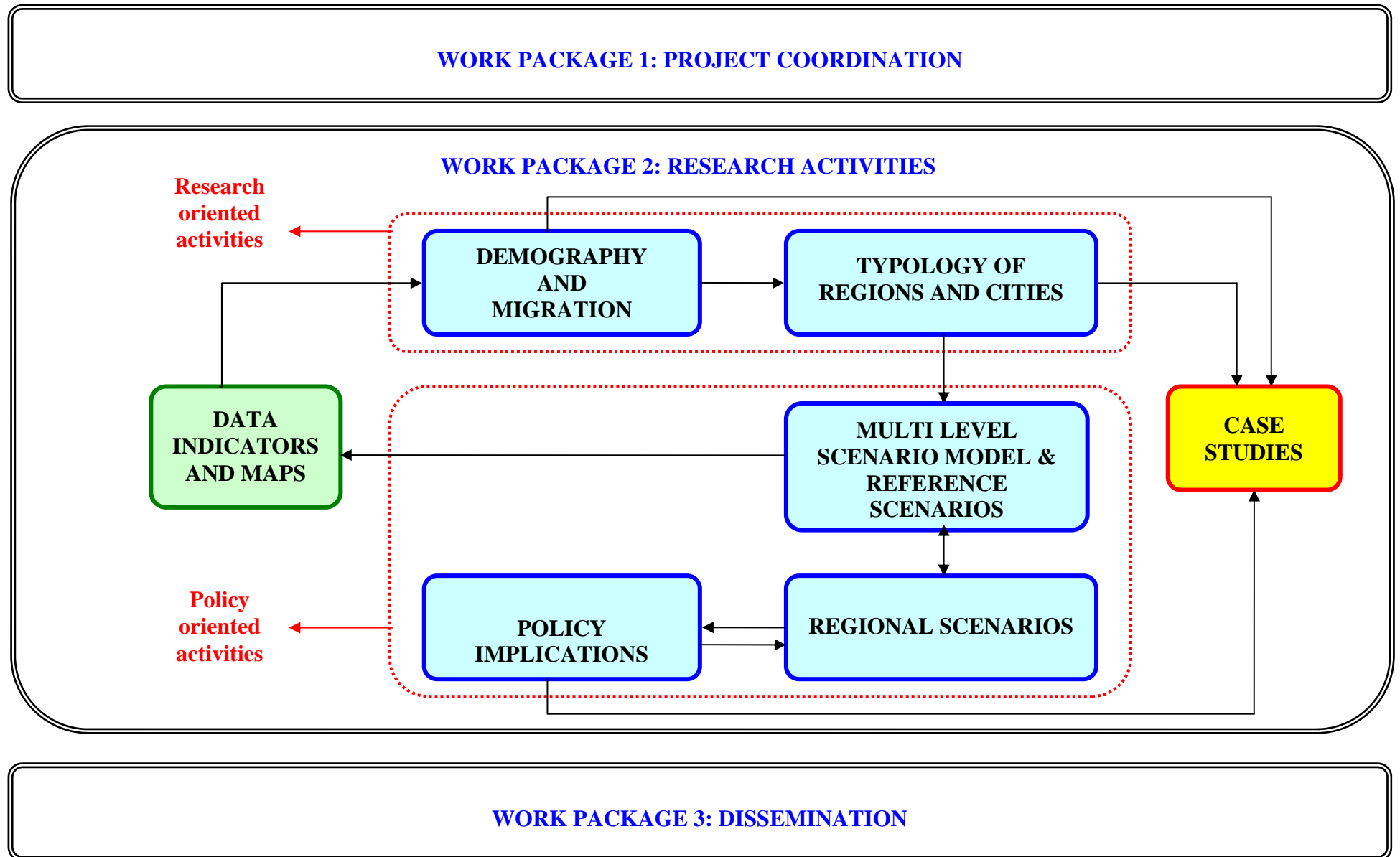
3   The use of existing ESPON results

In addressing the research questions specified in section 2, DEMIFER will make use of results from previous ESPON 2006 projects.

3.1   ESPON project 1.1.4 Spatial effects of demographic trends and migration

This project assessed the effect of low fertility and migration flows on population growth. It concluded that migration has become the main source of changes in population size in many regions. Whereas young persons migrate to large urban areas, persons in the upper middle age move to areas with pleasant surroundings. Depopulation is caused by a combination of low fertility and high out-migration. Many depopulation areas are in the peripheral parts of the EU. The future need of immigrants from outside Europe will be higher in the new Member States than in the old. However, immigration from outside the EU cannot provide a solution to the decline in population size. Therefore the study suggested that national family policies coordinated at the EU level should be aimed to stimulate a rise in fertility. The reasoning was that a stimulation of natural growth is a condition for stimulating competitiveness. Moreover this would be needed for safeguarding cohesion by avoiding concentration and social exclusion. As to migration the study recommended to limit urban sprawl because of its environmental costs. At the national level east-west migration would need to be limited as out-migration of skilled workers may have negative consequences for regional development. For stimulating competitiveness it was advised that the skilled work force should be spread evenly over the EU since as many regions as possible should be competitive. As to immigration from outside the EU selection of skilled immigrants was recommended. In order to stimulate cohesion, immigration policies should promote immigration to peripheral regions by making those regions more attractive. In addition increasing labour productivity will significantly lower the need for non-European labour immigration.

The project identified areas for further research:

1. identification of regions and countries of origin and destination for international migrants;
2. research on effects of ageing, labour shortage and depopulation should be undertaken at regional levels, as regions are heterogeneous and therefore tools needed to handle these problems may be quite different for different regions.

3.2   ESPON project 3.2 Spatial scenarios in relation to the ESDP and EU Cohesion Policy

This project produced several scenarios for the territorial development of Europe with a time horizon of 2030. Nine thematic fields were included. One baseline scenario showed the probable development assuming no major policy or other changes. Two policy scenarios explore the effects of cohesion and competitiveness policies respectively. As cohesion and competitiveness are policy choices which are contradictory in some aspects, one 'proactive' scenario was developed aimed at examining the 'ideal combination' of cohesion and competitiveness.

The study concluded that four driving forces are particularly important for Europe's regions: the ageing of the population, climate change, limitations in availability of energy, and globalisation. Ageing combined with depopulation will cause certain regions to lose much of their productive base and make provision of services difficult. Climate change will cause droughts and floods and reduce snowfall in the mountains. Limitations in oil and gas availability will cause fundamental changes in energy consumption, particularly in the field of transport. Globalisation will lead to further concentration of activities in metropolitan areas. Policy makers should aim at adapting to these developments rather than trying to stop them. This requires investments in non-territorial policies, e.g. improvements in education, research, innovation, and technology.

One important result of the project was the creation of a scenario base, i.e. the collection of information concerning trends and driving forces including basic projections of trends into the future.

The scenarios of DEMIFER will tie in with the results of ESPON project 3.2 ("Spatial scenarios in relation to the ESDP and EU Cohesion Policy"). As part of the ESPON 2006 programme, detailed work was carried out to develop spatial scenarios for Europe (ESPON 2007a, 2007b). Three scenarios were developed: a business as usual (trend based) scenario, a competitiveness scenario (based on letting market forces power growth in Europe's "pentagon" core (a space bounded by apexes at London, Paris, Milan, Munich and Hamburg) and a cohesion scenario that distributed growth to peripheral regions and limited the environmental consequences of growth. These scenarios were developed by a team of experts using knowledge and judgement about likely future demographic, social, economic and environmental trends in Europe's regions coupled with use of Eurostat demographic forecasts, their own regional economic growth model and a model of transport development and emissions. We propose to build on this work in several ways. First, we will connect the scenarios to demographic developments more explicitly by specifying alternate futures for fertility, mortality, intra-Europe and extra-Europe migrations at regional scale. Second, we build into the labour force addition of the demographic model different futures for labour force participation based on pensionable age, education and child care/disability support policies. Third, we will assess the impact of potential climate change on intra-European development and on migration of climate change refugees from outside Europe.

3.3   ESPON project 3.4.1 Europe in the world

This project examined the relations of the EU with the rest of the world and examined the effects of globalisation on European regions. The study emphasized the importance of regional heterogeneity. A typology of regions was developed in order to identify competitive and vulnerable regions and cities. Four types of regions were distinguished:

1.   highly internationalized metropolitan areas;
2.   central regions of Europe without large international metropolises;
3.   peripheral and intermediary regions with a high share of services;
4.   peripheral and intermediary regions with a high share of low-level technological industries.

3.4 How will DEMIFER build on previous ESPON projects?

DEMIFER will add the following to the results of these projects.
1. Data

   DEMIFER will provide an update of demographic and migration data. In addition to adding the most recent data to the ESPON database, more detailed data on migration will be added. To the extent that detailed migration data are missing, we will produce estimates as far as possible.

2. Typology

   ESPON Project 1.1.4 developed a typology of regions based on population change, natural population change and net migration. Six types were distinguished by combining positive or negative population growth, positive or negative natural growth, and positive or negative net migration. ESPON Project 3.4.1 developed a typology based on socio-economic characteristics. DEMIFER will review and improve the existing demographic typology, by connecting demographic and migration indicators to socio-economic indicators.

3. Scenarios

   DEMIFER will build on the scenarios produced in ESPON Project 3.2. Thus a scenario with strong market forces leading to high economic growth will be compared with a scenario with a more equal regional distribution of growth and a scenario taking into account environmental consequences of growth. Demographic scenarios will be developed by specifying alternative futures for fertility, mortality, international migration and internal migration which are connected to these economic and environmental scenarios. In addition, different futures for labour force participation will be specified for these scenarios.

4. Policy options

   DEMIFER will assess in what way policies may affect the future level of natural population growth (i.e. population growth that can be attributed to fertility and mortality), internal migration, and international migration in each of the scenarios. Expert opinions can identify possible policy options and assess the effectiveness of policies.

5. Case studies

   In general DEMIFER will produce results for NUTS[3] 2 regions. However, the analyses will be hampered as detailed data are not available for all countries and regions. Therefore, case studies will provide in depth analyses for specific regions for which detailed data are available. In addition case studies are useful for analysing different types of regions. The case studies bring together the analyses, typology, scenarios and policy implications and illustrate what it all means for a number of individual countries and regions. As far as possible we aim for a well-balanced geographical coverage of the case studies.

Where possible the project will seek alignment or cooperation with the ESPON projects 2013/1/1 'Cities and urban agglomerations', 2013/1/2 'Development opportunities in different types of rural areas', 2013/1/4 'Climate change and territorial effects on regions and local economies and 2013/3/1 'ESPON Database and data development'.

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[3] NUTS: European Nomenclature of Territorial Units for Statistics

4 A review of the literature

This section presents a concise overview of the literature on demographic developments and migration in Europe, and on the relationship between economy, demography, and migration. Moreover it addresses issues on the definition and measurement of migration.

4.1 National and regional demographic developments and migration in Europe

4.1.1 National demographic and migration developments

In a majority of European countries immigration and emigration have a bigger impact on population size and structure than the balance of births and deaths. Since the beginning of the 1990s the inflow of asylum seekers, labour migrants and family members has been the most important demographic event in Western Europe. Of the approximately 475 million people residing in the EU, around 23 million hold a citizenship of a country different to their country of residence. Approximately one third of these originate from another EU state, and two thirds are from outside the EU, i.e. third-country nationals. At 40.5 million, the number of those born abroad is much higher than the number of those holding a foreign citizenship. This is mostly the effect of naturalisation; 5.2 per cent of the total population of the EU are foreign citizens, while 8.8 per cent were not born in the country where they reside (see Münz, Straubhaar, Vadean & Vadean 2007). This percentage is highest in the smallest states, i.e. Luxembourg and Liechtenstein, and clearly above average in Austria, Ireland, Sweden, Germany, and Spain. Figures from Cyprus and the Baltic States have to be handled with care. Thus, the Baltic States count those who came as internal migrants in the Soviet period as international migrants.

Table 1: Foreign citizens and foreign born in the EU-27 and in Germany, France and the UK, 2005

	EU-27	Germany	France	United Kingdom
Resident population (in 1,000)	475,067	82,501	58,521	58,614
Resident foreign citizens (in 1,000)	22,875	6,739	3,263	2,857
In %	5.2	8.9	5.6	2.9
Resident foreign born (in 1,000)	40,560	10,144	6,471	5,408
In %	8.8	12.3	10.7	9.1

Source: EUROSTAT

The most important target country in the EU – in terms of absolute volume of immigration – is the Federal Republic of Germany with approximately 10.1 million foreign born residents and 6.7 million foreign residents. After the USA and Russia it is the third most popular country for immigration worldwide. The first people who immigrated to the then Western Zones and later FRG after the Second World War were ethnic Germans from former German territories in Eastern Europe. These were followed by the guestworkers, initially from Italy, Spain, and Greece and later also from Turkey, Yugoslavia, and other European and non-European countries. Today, Germany is the most important country of destination for immigrants from Eastern and South-eastern Europe.

Germany does not use place of birth but citizenship to categorise and count its immigrant population. The figures are usually based on the registrations in the Central Aliens Register. However, those who naturalised or returned are not automatically deleted from the Register

(Ausländerzentralregister, AZR), meaning that the statistics based on this data source always overestimate the real number of immigrants. This was clearly seen in 2004 when the number of registered foreigners dropped from 7.3 to 6.7 million after corrections had been carried out on the data collected in the AZR. Conversely, German resettlers (Aussiedler) are not registered in the AZR at all because they are not considered foreigners by law. The AZR collects data from different sources on all foreigners who have been residing legally in Germany for a minimum of three months without differentiating between short-term and long-term migrants. A census, which both provides information on the resident foreign born population and could be used to correct the data gathered in the AZR, was last carried out in 1987. The only additional source of data on the resident foreign population and the naturalised foreign-born population is therefore the microcensus, which is only a sample survey. Hence, the state of statistical information on the immigrant population residing in Germany is anything but satisfactory.

France is the second most important country of destination for immigrants in Europe. Around 3.3 million people currently residing in France are foreign citizens, while 6.5 million residents were born abroad. This means that almost half of those born abroad hold French citizenship, which can, on the one hand, be explained by the fact that a large number of the immigrants originate from French colonies. On the other hand, it has always been much easier for immigrants to receive citizenship in France than in Germany. While the immigrants residing in West Germany almost exclusively originate from Eastern and South-Eastern Europe, the immigrants residing in France have come from the entire Mediterranean, including Portugal, Spain, Morocco, Algeria, Tunisia, and Italy. Only a marginal number of labour migrants in France originate from Yugoslavia and Turkey.

Unlike in Germany, the census constitutes the main data source for analysis of immigration to France. The last traditional and complete census was carried out in 1999. In 2004, France implemented a redesigned annual census, which, however, only samples 14 per cent of the population. The sample is changed every year, so that after a five-year cycle 70 per cent of the population have been interviewed. The census not only contains information on both the country of birth and the citizenship of the resident population, but also gathers information on a vast amount of other features, such as language, education and occupation. However, while the French stock statistics are impressive, their flow statistics are rather poor. Since these usually draw on residence permit data administered by the Ministry of the Interior, they only include EU-citizens and third-country nationals. France does not gather any data on the immigration of French citizens. Nor does it gather any information on emigration, either of French or of foreign citizens. As mentioned above, this lack of interest in emigration can be traced back to the long tradition of immigration in the country. Nevertheless, France needs figures on emigration and has to estimate these in order to calculate the migration balance and extrapolate figures on the population size.

The third most popular country for immigrants is the United Kingdom, with roughly 2.9 million foreign citizens and 5.4 million foreign born residents. Of the 2.9 million resident foreign citizens, roughly 60 per cent come from African or Asian countries (esp. India, Pakistan, and Bangladesh). Immigration from Europe is, by comparison, low; the United Kingdom never actively recruited guestworkers from Yugoslavia or Turkey. Almost three-quarters of all European immigrants originate from Ireland, Britain's socio-economic and demographic reservoir.

UK's system of measuring migration differs vastly from those in Germany and France. The UK estimates international migration each year using three sources: the International Passenger Survey (IPS), Refugee and Asylum Seeker Registrations and the Labour Force Survey (LFS). The LFS is used to estimate migration between the UK and the Irish Republic and to estimate the distribution of national estimates to regions. International migrants are defined as persons with an intention to stay for 12 months or more in their destination country. The estimates of annual flows classify immigrants and emigrants by citizenship, country of last/next residence and country of birth. The decennial census includes detailed information on immigration, based on a question about usual residence 12 months before the census. The census provides a detailed picture at regional and local scales of recent immigration and of the stocks of immigrant and subsequent generations through a self-assessed question on ethnicity. However, the census provides information only one year in ten and only for immigration, not emigration. The UK flow statistics are considerably poorer than in Germany, where the population register is a reliable source for statistics on geographic mobility. Since the UK does not have a population register, the UK flow statistics draw on the International Passenger Survey (IPS). The IPS is based on interviews with 0.2 per cent of all the people entering and leaving the UK. These interviews include a question on the duration of the intended stay (or absence) that serves to identify short-term and long-term immigrants and emigrants as defined by the UN recommendations. Even if the number of interviewed people is comparatively large, the results have to be regarded as rough estimates of the actual immigration and emigration because of the sampling error, which is of relevance for differentiated breakdowns. Asylum seekers are counted in separate statistics.

The prime country of destination for immigrants in the Nordic area is Sweden. Today, Sweden continues to attract almost half of all immigrants to the Nordic countries (Eðvarðsson et al., 2007). In general, the typical immigrant to a Nordic country is a native Nordic citizen who is returning home, or is a Nordic citizen moving to another Nordic country. Immigrants from neighbouring countries to Norden (e.g. Germany, Poland, the U.K. and Russia) are placed in the third largest group of immigrants (Rauhut, 2007a; Rauhut et al., 2008).

Table 2: Gross immigration by country of birth to the Nordic countries 2005 and the share of labour migrants

	Denmark Country	%	Finland Country	%	Iceland [b] Country	%	Norway Country	%	Sweden Country	%
1	Germany	7,2	Europe non EU/EES	4,8	Poland	19,8	Poland	8,1	Poland	5,4
2	USA	6,9	Sweden	4,5	China	5,2	Sweden	6,7	Denmark	5,4
3	The U K	6,6	Russia	2,4	Germany	3,8	Germany	4,3	Iraq	4,7
4	Sweden	6,6	Estonia	2,4	Portugal	2,8	Denmark	3,8	Finland	4,3
5	Norway	5,7	Germany	1,1	Lithuania	2,6	Iraq	3,5	Norway	3,7
Returning natives	22 469[b]	42,8	n.a.	n.a.	7 773	39,8	8 793	21,9	11 066	17,0
Share of labour immigrants [a]		4,6 [c]		5-10		n.a.		26,6 [c]		8,0

    a.   Nordic citizens are excluded since no work permit is needed
    b.   Data refers to country of citizenship
    c.   In Norway immigrants only need three months of intended stay in the country to become registered as immigrants and in Denmark immigrant need 6 months of intended stay; in the other Nordic countries immigrants are registered as immigrants after 12 months of intended stay.

Source: Rauhut et al. (2008)

4.1.2 Regional demographic and migration developments

In the north-eastern and eastern regions of the European Union population size has been decreasing in recent years (Eurostat Regional Yearbook, 2008). In the north eastern part, several regions of Sweden and Finland as well as the Baltic states experience population

decline. In the eastern part, many regions in Germany, Poland, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria are affected by population decline. If we look at natural population growth (i.e. the difference between the number of births and the number of deaths), since the start of this century in many regions of the EU more persons have died than have been born. The resulting negative 'natural population change' is widespread. The main cause is the low fertility rate.

In some regions a negative 'natural change' has been compensated for by a positive net migration. This is clearly visible in western Germany, eastern Austria, the north of Italy, the south of Sweden and regions in Spain, Greece and the United Kingdom. The opposite is rarer: in only a few regions (namely in the north of Poland) has a positive natural change been offset by negative net migration.

Four cross-border regions have negative net migration: northern regions of Sweden and Finland, regions in eastern countries (eastern Germany, Poland, Lithuania, Latvia, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria), regions in the north of France and regions in the south of Italy.

In Ireland, the Netherlands, Belgium, Luxembourg, many regions of France and some regions of Spain, a natural increase has been accompanied by positive net migration. In contrast, in eastern Germany, Lithuania and Latvia, some regions of Poland, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria, both components of population change were negative.

As to the age structure, many regions in Ireland, France, the United Kingdom, the Netherlands, Sweden and Finland have an above average proportion of children (i.e. population aged below 15 years), whereas regions in Italy, Greece, Spain, Germany, the Czech Republic, Latvia, Romania and Bulgaria have a relatively low share of children in their population. These differences are strongly related to difference in the level of fertility.

The regional pattern of the proportion of people aged 65 years or over is less clear cut. Less than 6% of the EU population lives in areas where the old age dependency ratio is over one third (i.e. for every person aged 65 years or over, there are fewer than three persons of working age). According to Eurostat population scenarios, in two decades over 75% of the EU population will live in such regions. These scenarios project sharp regional differences. In 13 regions, the old age dependency will rise to a level of around 50 % or more. Nine of these regions are in eastern Germany.

About one third of the EU population lives in large cities. In Spain and the United Kingdom the proportion of persons living in large cities is higher. In analysing long-term trends in population density, Martí-Henneberg (2005) concludes that differences have increased. The area stretching from the southeast of England to the north of Italy has experienced stronger population growth than the rest of Europe. In contrast extensive areas of Europe have experienced population decline. During the last decades, in many southern European states (Portugal, Spain and Italy) persons moved from the interiors to areas offering better employment opportunities. This phenomenon resulted in migratory flows towards the main southern European capitals, and similar trends were observed within the areas of greatest attraction: France, northern Italy, Germany and England. These tendencies reflect a significant concentration of economic activity and employment. This productive space has given rise to consolidated urban areas which, in turn, have been responsible for population growth at the regional level.

4.2   Definitions and measurement of migration

A main problem with the measurement of migration is the lack of international comparability. There are several reasons for that. Firstly, different data sources are used to collect statistical information. Second, the registration of migration events and recorded characteristics depend on national migration policies and as a consequence the definition of international migrants and migration may differ. For example, the duration of living in a country or abroad required for registration as migrant may differ by countries. EU citizens are often not included in migration statistics in Europe, since it is nowadays easy for EU citizens to live in another EU country without asking for a residence permit (or without registration of his residence). Accordingly the reliability of migration statistics concerning EU citizens is certainly lower than for non-EU citizens. Finally, it is not easy to estimate illegal migration and it is not possible to include the measurement of illegal migration in administrative data collection as this aims usually measuring only legal immigration (Nowok and Kupiszewska, 2005; Nowok et al., 2006 and Thierry et al., 2006).

Data sources used to produce statistics on international migration flows in the EU countries are very diverse:
- Population registration systems including centralised population registers and local population registers;
- Statistical forms filled for all changes of residence;
- Other administrative registers or databases related to foreigners, like aliens registers, residence permits registers or registers of asylum seekers;
- Sample surveys like special migration surveys or household surveys;
- Other sources including censuses.

A centralised and computerised, comprehensive and complete population registration system seems to be the best source of reliable statistics. However, the same statistics may be usually derived from population registers run locally or based on forms (administrative or statistical) filled in when registering changes of residence. If there is no administrative data source covering the whole population or available data on some population categories are considered unreliable, other registers are used that contain only subsets of the population, e.g. register of foreigners or register of residence permits. Some countries rely on statistical surveys carried out during border controls or among households inside the country. Some information on international migration flows could be derived also from population censuses, but this source has a number of well known limitations. For instance, it is carried out at long intervals, and is not able to capture all migration events that occurred between subsequent enumerations. Moreover only international immigrants may be easily identified while international emigrants are no more part of the enumerated population.

4.3   The relationship between economy, demography and migration

Two of the areas that remain the subject of much debate are depopulation and immigration. Historical occurrences of population decline with a possible depopulation potential have probably, most typically, been a small area phenomenon in Europe and have been a rare phenomenon in the Nordic countries (ESPON 2005). To what extent the demographic processes we are experiencing today will actually lead to depopulation is unclear (Foss & Juvkam 2005). Immigration can mitigate the bottle-necks in the labour market, but immigration can neither change the population structure, nor solve the deficits looming in the

public purse (Coppel et al. 2001). Immigration can only offer a short-term solution, while the problems ahead remain structural and as such require long-term solutions (ESPON 2005, Eðvarðsson et al. 2007, Rauhut et al. 2008). Prominent scholars in the field argue that the relative success of immigration in the USA is unique (Borjas 2001).

Ageing does not have a negative impact on economic growth and welfare per se. Institutional adjustment is possible since ageing is a slow process. At the national level populations may continue to grow, while regional population imbalances might be accentuated, as is for instance the case in the Nordic countries. To large extent ageing and the troublesome issue of welfare service provision is a regional challenge. Furthermore, labour market institutions in particular will be placed under great stress and adjustments to a new population structure will be needed (Rauhut & Kahila 2008).

What implications ageing will have on economic performance are unclear (Foss & Juvkam 2005). The demographic changes to come will generate significant challenges for our societies – at all levels and in most aspects of our lives (from infrastructure and housing issues to labour supply and pension schemes). Notwithstanding this however much that passes for research into the effects of demographic change is often highly partial and generally short-sighted often culminating in "alarmist" conclusions and providing a clarion call for significant policy changes based, ultimately, on rather thin scientific justification. There is then a need for a more historical as well as a more holistic perspective to be taken.

Historically, situations of long-term labour shortage have led to labour being replaced through technological, institutional and organisational changes. This has meant that productivity improvements have resulted in increased growth. The creation of an economic surplus through economic growth is a condition of welfare (Dillard, 1967; Rider, 1995; Cameron, 1997 and Landes, 1998). Technological, institutional and organisational changes, however, require a dynamic economic structure (Rosenberg & Birdzell, 1994). The mass-emigration from Europe to the USA during the 19th century was more beneficial to the economic progress of the sender countries than to the country of destination (O'Rourke & Williamson, 2000).

There is no general consensus in respect of the economic benefits of migration. Different theories, based on different assumptions, reach different conclusions on the impact of international migration on economic growth, unemployment, labour force participation, wages, taxes, and transfers. According to neoclassical macroeconomics immigration will promote economic growth (Simon, 1999, Friedberg & Hunt, 1995; Borjas 1995). Immigrants will constitute substitutive labour. Given than the number of jobs is constant, wages will be lowered and the native workforce will have difficulty competing with cheap immigrant labour (Fassmann & Münz, 1995). If the number of jobs is constant, adding more workers to the labour market pool will lead to a competition for jobs. The equilibrium on the market will be changed, resulting in lower wages (Fassmann & Münz, 1995; Zimmermann 1995 and OECD 2002). Low-income earners are the ones who will be hit most severely (Johnson, 1980). The capital owners in the country of destination will gain from immigration (Layard et al., 1994) as well as the well educated (Johnson, 1980). If the immigrant is young, well educated, has no dependents and finds a job immediately on arrival, the country of destination will gain from immigration: the tax contributions of this immigrant will exceed the transfers from the public purse (Layard et al., 1994). This kind of immigration ought to be encouraged. If the transfers to immigrants exceed their tax contributions, filters are needed in the immigration policy

process to ensure that only the most profitable immigrants are allowed to immigrate (Borjas, 1995).

According to neoclassical macroeconomics a completely different scenario in respect of the economic benefits of immigration is also possible: immigration can slow structural change in the economy. Economically stagnating sectors can survive by employing cheaper immigrants, preserving and maintaining the existing economic structure (Maillat, 1974; Lundh & Ohlsson, 1994, 1999). Access to immigrant labour may also lead to labour intensive investment, keeping productivity down (Wadensjö, 1981; Ekberg, 1983; Elliott, 1991).

According to dual labour market theory we are accustomed to thinking of industrialization and economic growth as a process that in some basic way involves increasingly sophisticated technologies and a progressively more highly educated and well-trained labour force. At the same time unskilled and cheap labour is needed to do hard work under bad working conditions and for low salaries, the kind of work the native labour pool does not want to do. According to this theory, immigrant labour constitutes a complementary workforce. If labour at the lower segment of the labour market is missing, economic growth will slow. Substituting labour with capital is one solution, but since it is not possible to substitute labour with capital in labour intensive sectors hiring immigrants is another solution. Immigrant labour can then maintain economic growth on a short-term basis; on a long-term basis changes in society are however needed. Since immigrants work in the low-paid sectors their tax contributions will be lower than the tax contributions of natives. A physically hard and monotonous job will affect an individual's health, resulting in a need for public transfers. Since immigrants usually end up in hard and monotonous jobs, their need for public transfers will be bigger than for natives (Piore, 1979; Schoorl, 1995).

According to the new economics of migration continuing immigration will lead to lower economic growth, since the amount of low productive work increases and that the immigrants send home remittances to the family (Stark & Yitzhaki, 1982). Immigrants will take jobs in sectors with many other immigrants, which usually mean sectors in which natives do not want to work (Stark, 1991). If the salary in the country of destination is much higher than that in the country of origin, low-quality migrants are the ones who are most willing to migrate (Stark & Katz, 1989). Since these immigrants are usually poorly educated and low skilled workers they will "experience a higher unemployment rate and have fewer hours of work per year" (Stark, 1991, p. 393). Employers have asymmetric information of the productivity of the immigrant workers, and, together with the fact that immigrants in general do low qualified jobs, this is the reason why the immigrants receive lower salaries until the employers have improved their knowledge of their workers. As a result of having a low salary, or working in the informal sector, the tax contribution of the immigrants will be lower than the natives'. If the immigrants work in the informal sector they are not entitled to any public transfers. If they work in the formal sector they have low salaries, and they will receive less in public transfers than natives (Stark, 1991).

4.4   Regional migration dynamics

In 1996-98 the Council of Europe commissioned a report on the processes characterizing internal migration within ten member states (see Rees and Kupiszewski 1999). A further eight case studies were produced in 1998-2000 as part of an UK ESRC supported research project. The case study papers are listed in the references. These case studies looked at the processes of population change and internal migration within countries in a selected year in the 1980s and in the 1990s. The impact of changes in political regime on the dynamics of the settlement systems of countries in transition were assessed. The key feature of these studies was the small spatial scale at which migration processes were analysed (e.g. communes or municipalities in most countries), the extent to which we were able to look at flows between spatial zones and the degree of age disaggregation of the analysis. Although the studies focussed on internal migration, they usually reported on total population change and its natural increase and net migration components, if the data were available. The studies did not look at the subnational patterns of international migration systematically, though in some countries analyses were possible.

The ESPON 2006 programme produced a set of studies (ESPON 2006, 2007a, 2007b) which summarized the patterns of population change by component for the period 2000-2003, with some analysis of the population ageing revealed in Eurostat regional population projections at NUTS2 scale. The ESPON programme of studies covered 29 countries (the EU25 plus then candidate countries Romania and Bulgaria with EEA members Norway and Switzerland).

Here we attempt to summarise the main findings of this work. In chapter 5 'Research methodologies' we draw out guidance for using these findings to structure both an empirical investigation of regional demographic dynamics using updated information and the development of regional scenarios. The summary is broad brush and constitutes a set of hypotheses about demographic developments taking place in this decade (2000-2009) and likely to take place over the next 30-40 years.

Migration processes can be studied in three dimensions:
(1)   by spatial scale of the flow
(2)   by characteristics of the migrants
(3)   by attributes of the sending and receiving regions.

Consider a single region (NUTS2 or NUTS3) within the ESPON space. It gains and loses migrants from/to other regions within its national territory; it gains and loses migrants from/to other ESPON countries; it gains and loses migrants from/to countries outside the ESPON space. The forces governing flows at each of these scales is different. Within a country there are no legal restrictions on movement for most of the population (prisoners are exceptions), so that migration is determined by social, economic and geographical factors only. For migration between countries in the ESPON space, there are some legal restrictions on movements but these are fairly minor as there is freedom to migrate within the European Union under the Treaty of Rome. There are some programmes that encourage migration (e.g. the Erasmus and Socrates programmes for first and second degree students) and some programmes that discourage migration (e.g. non-national EU citizens are sometimes not fully eligible for national studentships or social benefits). There have been transitional arrangements for migrants from new EU members (2004-2008), which have diverted migrants from the new member states of central and eastern Europe towards the United Kingdom, for example.

Between EU states and countries outside Europe the restrictions are more stringent. A visa must be obtained before entry through application in the home country. For some kind of migrants, such as elite workers in business or education, such visas are obtained fairly easily but for other workers such as unskilled labourers they are very hard to obtain. Refugees or asylum seekers will be migrants from outside the European Union. Most have been from outside Europe though in the 1990s the flows from the Western Balkans were significant. The determinants of migration thus vary quite profoundly depending on migration stream.

The potential for regions to attract or generate migrants is dependent on their economic health, their environmental quality and spatial accessibility. Previous work in the Council of Europe/ESRC and ESPON studies suggests we can analyse the potential using two dimensions: the degree of urbanity/rurality and the health of the economy.

4.4.1 Influence of the urban system
Settlements are organised into an urban hierarchy, which is depicted across Europe in ESPON (2006) and studied in detail in several ESPON 2006 projects. Rees and Kupiszewski (1999) found profound variation across Europe in the degree to which population was urbanizing, in transition or counter-urbanizing in the 1980s and 1990s. Urbanization means that cities are growing faster than rural areas (or declining at a slower rate). Counter-urbanization means that rural areas are growing more than urban areas (or declining less slowly). Figure 1 classifies the countries covered in the Council of Europe/ESRC studies according to the relationship between total net migration (sometimes total sometimes intra-country migration) and the territorial units of the country classified into density bands. Six countries are classified as having net migration flows from low to high density areas (interpreted as continuing urbanization), eight show flows from low and high density bands to middle density areas (interpreted as signifying a mixed pattern in which urbanization is turning into counter-urbanization) while two (the data for Estonia are unreliable) show net flows from high to low density areas (interpreted as evidence for counter-urbanization). However, if we examine flow patterns for life course stages these generalisations break down. Figure 2 shows the net migration rates for French départéments between the 1982 and 1990 censuses. Each age group shows distinctive patterns: for example, there are heavy net inflows to Paris and Île de Seine by persons in the 25-29, 30-44 and 75+ age groups contrasting with high net outflows from these regions at ages 45-59 and 60-64.

The ESPON2006 projects focus on the overall components of change and total net migration while the Council of Europe/ESRC studies focus on internal migration within each country. Our earlier classification of migration flows suggests that there may be very different processes operating at each scale. We know, for example, that in much of Europe immigration from outside the European Union is focussed on large metropolises, particularly the Global nodes, European engines and Strong MEGAs (Metropolitan European Growth Areas) of the ESPON2006 studies. These cities gain population heavily from the world outside Europe. Figure 3 shows how concentrated on London are Black Africans in the UK, a group with a history of recent migration to the country. In many Potential MEGAs in central and eastern Europe the pattern is one of losses through emigration to western and northern Europe with gains of replacement labour from countries outside the EU further east (e.g. Ukraine, Belorussia, Russia).

Figure 1: The relationship between internal migration and population density in selected European countries, 1990s
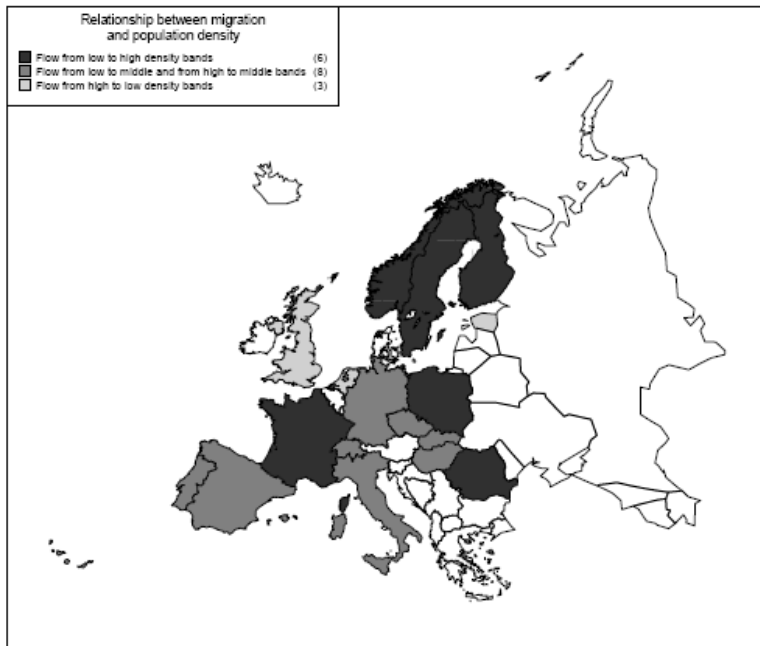
(Source: Rees 2000)

Figure 2: Net migration rates by departments and age groups, France 1982-1990
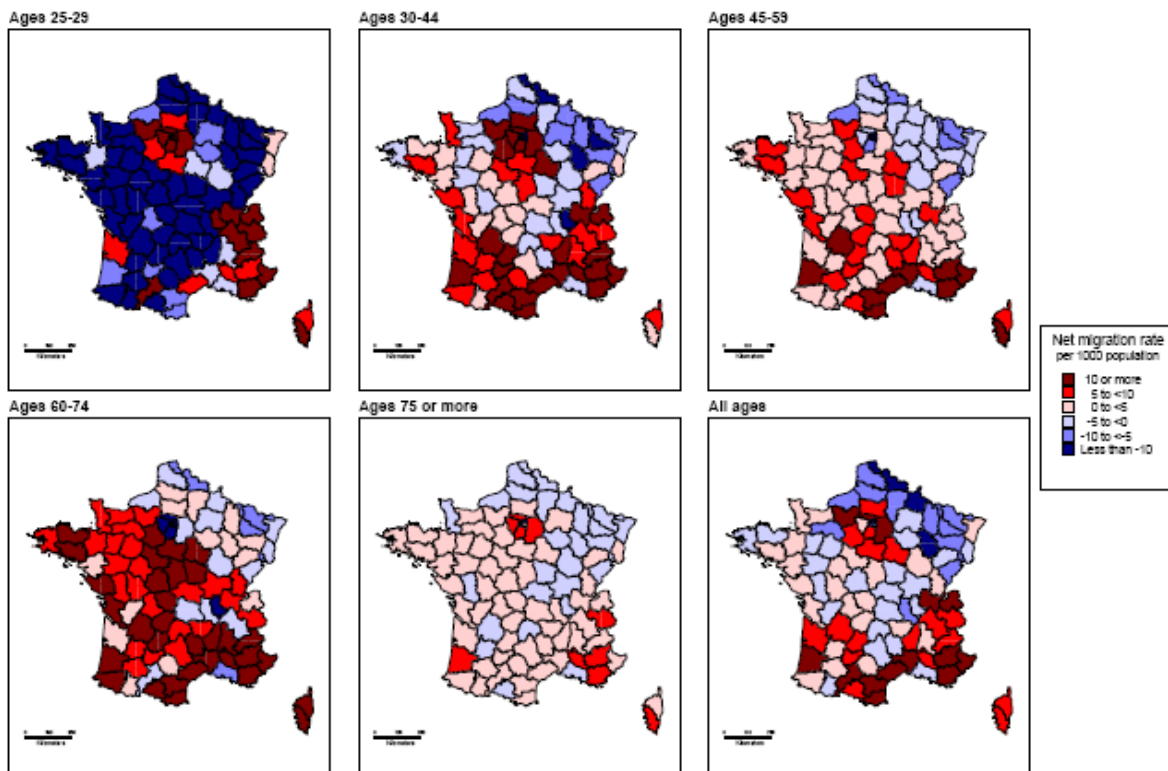
(Source: Kupiszewski, Baccaïni, Durham, Rees, 2000)

Figure 3: The concentration of the Black African population of England, location quotients computed from ethnic populations recorded in the Census 2001
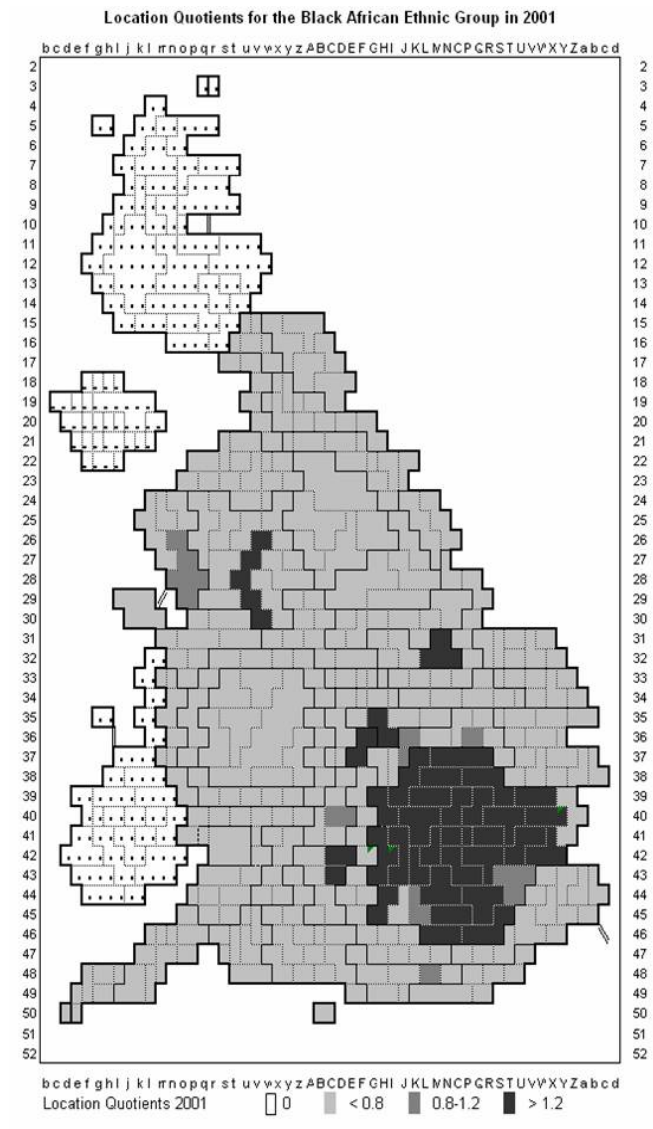
Source: Rees and Butt 2004

One statistical caution in interpreting the maps of immigration that is repeated in country after country across Europe is that rural regions with high immigration are mostly just transit camps for refugees, asylum seekers, Aussiedler and the like: these groups stay until they have acquired resident status and then move to cities where jobs are available through their ethnic communities.

There are, however, exceptions to the metropolitan focus of international migration. International migrants from within the European Union have a much more even spread of destinations across cities and regions than extra-European immigrants (Bauere et al. 2007). Migrants from central and eastern Europe countries that joined the EU in May 2005 are found throughout the UK and particularly in rural areas. It is thus vital that our analysis of migration processes across Europe look at the spatial structure of flows at each or any of the three spatial levels identified in Table 3.

Table 3: Migration flows in the European system organized by spatial scale

Code	Description of flow	Source
	The six basic flows	
F1	In-migration from other regions within the same country	National population register/census
F2	Out-migration to other regions within the same country	National population register/census
F3	Immigration from other countries within the ESPON space	National population register/census
F4	Emigration to other countries within the ESPON space	National population register/survey
F5	Immigration from countries outside the ESPON space	National population register/census
F6	Emigration to countries outside the ESPON space	National population register/survey
	The net migration variables	
N1	Net migration from/to other regions within the same country	= F1-F2
N2	Net migration from/to other countries within the ESPON space	= F3-F4
N3	Net migration from/to countries outside the ESPON space	= F5-F6
N4	Total net migration to/from the region	= (F1-F2)+(F3-F4)+(F5-F6)
N5	Total net-migration to/from the country	= (F3-F4)+(F5-F6) summed for all regions within country
N6	Total net-migration to/from the ESPON space	= (F5-F6) summed for all countries within ESPON space

Compared to many of their continental counterparts the Nordic countries were, on the whole, late to urbanise. Save for Denmark and parts of southern Sweden the urban structure of the Nordic countries is, by and large, the direct result of the industrialisation processes of the 19th and early 20th century. In the 1950s and 1960s rapidly increasing urbanisation began to alter the balance between town and country, city and rural. The main focus of growth was to a large extent concentrated in urban areas, growth that naturally also included new employment opportunities (Neubauer et al., 2007). Nordic sparsely populated regions are characterised by contrasted settlement patterns in Finland, Norway and Sweden. While Norwegian and Swedish settlements are concentrated along valleys and rivers and in a small number of towns and cities, Finnish settlements are considerably more thinly spread, especially in East Finland. Norway is by far the country with the largest proportion of uninhabited area (Gløersen et al., 2006). The patterns of loose urbanisation in a sparsely populated regional context only concern the northern and eastern parts of the Nordic countries. Most of Denmark and the southernmost parts of Sweden are characterised by continental modes of dense urban networks, with intense inter-urban commuting and generalised urban sprawl (Damsgaard et al., 2008).

4.4.2 Influence of the health of the economy

Economic factors have dominated models built to explain inter-regional migration (see Fotheringham et al. 2002 for a detailed study). Results of European studies are nothing like as clear cut as North American analyses. Yes, migration does respond to differences between regions in employment opportunities and unemployment, but the superior welfare benefits provided in European states to the unemployed mean that the opportunities/risk calculus is weighed towards staying put compared with North America. However, the direction of movement within countries is very clear: from areas of higher unemployment to areas of lower unemployment. Table 4 shows the clear gradient in both population change and net internal migration in the UK in a decade of high unemployment (Rees et al., 1996).

Table 4: Ward population change 1981-91 and net internal migration 1990-91 by 1991 unemployment rate band, Great Britain

Unemployment rate (%) 1991 Census	Population change 1981-91, %	Net internal migration rate, 1990-91 (per 1000 population)
<4	+7.2	+6.4
4 to < 6	+4.5	+4.0
6 to <8	+2.3	+2.0
8 to <10	-0.2	-0.5
10 to <12	-2.1	-1.4
12 to <14	-4.3	-2.8
14 to <16	-4.6	-4.3
16 to <18	-7.0	-4.7
18 to <20	-7.0	-7.4
20+	-12.7	-12.6

Source: Rees et al. (1996).

People move away from areas of high unemployment and towards areas of low unemployment, though not with sufficient speed to bring about significant reductions in the relative differences between areas. This process, documented for the UK in the 1981-2001 period, unfolded in every European country examined in the Council of Europe/ESRC studies, as Figure 1 illustrates. The strength of the migration from high unemployment to low unemployment varied between countries, partly because unemployment was not a good indicator of economic activity in the 1980s in the transition countries. The relationship was strong in France, Germany, Sweden and the UK, moderate in Denmark, Norway and Poland and weak elsewhere.

4.5 Settlement patterns of different groups of migrants: an example of the Netherlands

In the sixties and seventies the Netherlands received many labour migrants coming from Mediterranean countries (e.g. Portugal, Spain, Morocco and Turkey). Economic downturn, such as the oil crises of the seventies, brought an end to the inflow of this type of migrant. However, migrants from this region continued to come to the Netherlands in the eighties and nineties, due to the arrival of the wives and children of the mainly male labour migrants (reunification of the family). After the turn of the century, a new type of migrant became important: grown-up children of the immigrants seeking a partner for marriage in the former country of origin of the parents. Looking at the region where they settled, a clear preference for the economic hearth of the Netherlands (the so called 'Randstad') is apparent. Especially

the larger cities as Amsterdam, The Hague and Rotterdam were and are popular. This pattern can be explained by the fact that in the sixties the industries located in the 'Randstad', were in need of (cheap) labour migrants. Later in time the industrial sector gradually shrunk and was replaced by the service sector. However, the existing concentration of migrants groups in this region attracted new migrants as the pioneers provided help and guidance to new migrants in finding houses and jobs. This network-function is today still of importance (De Jong et al., 2005).

Three important migration flows are caused by historic bounds with other countries. The independency of former colonies such as Indonesia (after the 2nd World War) and Surinam (1975) led to the arrivals of many migrants. Again the three large cities of the Netherlands (Amsterdam, Rotterdam and The Hague) received many immigrants from these countries. Historic bounds also apply to migrants coming from the Netherlands Antilles and Aruba. These islands are still part of the Kingdom of the Netherlands and for this reason the inhabitants have free access to the Netherlands. Again the three large cities are favourite choices of settlement.

Especially in the nineties turbulence in the world caused a steep increase in the number of asylum seekers. They came from countries such as the former Yugoslavia, several African countries and countries from the Middle East (such as Iraq and Iran). So, largely these immigrants have a non-western origin. The reaction of the government was to try to curtail this immigration flow and especially the new law of 2004 with respect to foreigners led to a decrease of asylum seekers. After their arrival in the Netherlands, they were usually send to 'asylum seeker centres' mainly located in the peripheral municipalities of the Netherlands. After receiving a permit to stay permanent in the Netherlands, they showed a strong inclination to move to the central part of the Netherlands, the 'Randstad'.

Another large group of immigrants consists of 'western' immigrants and they come to the Netherlands for reasons of labour and study. A significant part of the labour migrants comes from the United States and Japan (especially the 'managers'), but the greater part comes from other countries of the European Union. In the last couple of years the number of immigrants from the new countries of the European Union (such as Poland, Hungary and Rumania) has shown a impressive increase. Again, the economic heart of the Netherland, the 'Randstad' and especially the large cities located inside this region, attract most labour migrants and students (as many universities are located in the larger cities). Recently, this tendency is even increased as the government is trying to promote the 'Randstad' as economic and cultural centre of the Netherlands, in the hope to attract multinationals and international organisations. Several decades ago policies were oriented at stimulating peripheral regions, but nowadays this policy has been abandoned. It is striking that the pattern of arrival of western migrants (but also non-western migrants) shows a strong parallel with the business cycle. Especially around the turn of the century, when economic growth figures were high, this went together with high numbers of immigrants. Five years later an economic depression led to a collapse of immigration figures and a steep increase of the emigration figures (to a level that was hardly seen before). For a number of years the Netherlands had an emigration surplus instead of an immigration surplus, which was the case for almost the whole of the second half of the twentieth century.

Another part of the western migrants stem from marrying a partner living over the country border. Especially in municipalities near the country border (with Belgium and Germany), many couples have a partner coming from the neighbouring country. In this way

municipalities in the provinces Limburg, Noord-Brabant, Zeeland en Gelderland have received many immigrants from the neighbouring countries.

In the Netherlands about 1.5 million people move yearly to another house, that is about 10% of the Dutch population (Ekamper and Van Huis, 2004; Feijten and Visser, 2005). A large part consists of people aged between 15 and 30 years; this is linked to processes of the life cycle as leaving the parental house, going to live together and separation of (consensual) unions. Another part of the moves are explained by housing reasons: moving to a better house and better housing conditions. The tendency to move is linked with the business cycle: when economic growth is low the number of moves (per 1000 of the population) is much lower than in years of high economic growth. About 60% of the moves consists of people who find another house in the same municipality they are living now. The persons who move to other municipalities can be split up in two groups: long distance migrants who move for reasons as finding another job and going to study somewhere, and short distance migrants who move primarily for housing reasons (possibly linked to changes in the life cycle). In the Netherlands the long distance flows are oriented at the economic hearth of the Netherlands: the 'Randstad' with its large cities Amsterdam, Rotterdam, The Hague and Utrecht (all having a university). Large university cities outside the Randstad such as Groningen, Tilburg, Nijmegen, Enschede, Eindhoven and Maastricht also attract many students.

In the last decades most large cities lost many inhabitants due to internal migration. Especially couples went to smaller, rural cities and places, where they could find owner occupied, single-family houses. This was especially the case for Amsterdam where inhabitants went to near municipalities such as Almere (in the new province Flevoland), Haarlemmermeer and Amstelveen. In these region many houses were built, due to the policy of the government to accommodate here the population growth (the suburbanisation policy, also called the 'VINEX-policy' in the Netherlands). However, in the last years the focus of the spatial planning policy discussion has shifted to the large urban regions of the Netherland. Especially cities as Amsterdam and Utrecht try to accommodate population growth within the borders of the municipality by building large new housing estates. In this way they hope to prevent the departure of highly educated young couples, with much earning capacity. This may prevent problems such as the concentration of poverty and deterioration of the housing stock in certain districts (where many foreigners are living). This trend may be placed under the heading of 're-urbanisation', and is also seen in other countries such as Germany.

5   Research methodologies

5.1   Multilevel regional system approach

DEMIFER will adopt a multilevel regional system approach in which three levels of analysis will be distinguished:

1.   the macro scale or European level;
2.   the meso scale or trans-national/national level;
3.   the micro scale or regional/local level.

For practical reasons to do with data availability and the implementation of regional policies, the NUTS nomenclature is used as geographical division and visualisation. Based primarily on the administrative divisions currently in force in the Member States, this will serve as a reference for collection of regional statistics, and for the analyses of the regions. At the same time as establishing a correlation between regions in terms of size, the NUTS also provides several analytic levels. Due to limited data availability DEMIFER will concentrate on NUTS 2 level.

In the conceptual model, we conceive a city or region as a set of interlinked sectors/dimensions based underpinned by the three pillars of sustainability: society, economy and environment. Those sectors shaded in grey in Figure 4 are ones that for the purposes of this project are affected by a set of external factors, in turn influenced by some policy variables and for which we will develop explicit scenarios. The unshaded sectors interact with the shaded sectors of the system and we will design models to generate suitable indicators for these sectors. They will not be independently driven, however.

An example serves to illustrate the thinking behind this sector diagram. The demographic structure of the population is driven by the component intensities of mortality, fertility, internal (intra-European) and international (extra-European) migration. A variety of policies could affect the future trajectories of these drivers. Fertility might be raised a little through family friendly policies and subsidies to assisted conception services. Mortality might be influenced by public health policies on lifestyle (smoking, drinking, diet, exercise). However, these influences would not be huge and might take a long time to impact the sector components. We do not envisage any policies directly impacting internal migration within the EU, given the freedom of labour migration under the Treaty of Rome, though internal migration will be influenced by origin socio-economic conditions and trends, destination socio-economic conditions and trends and interaction costs. External migration, however, is subject to a measure of control (although all borders are leaky). Migration policies are changing to attempt a match between labour demand and labour skills, at both the top and bottom ends of the labour market (top international bankers in London, Spargel pickers in Bayern).

Figure 4: The interrelationships between the components of an interacting multilevel regional system

▽ Sectors of principal interest for DEMIFER project
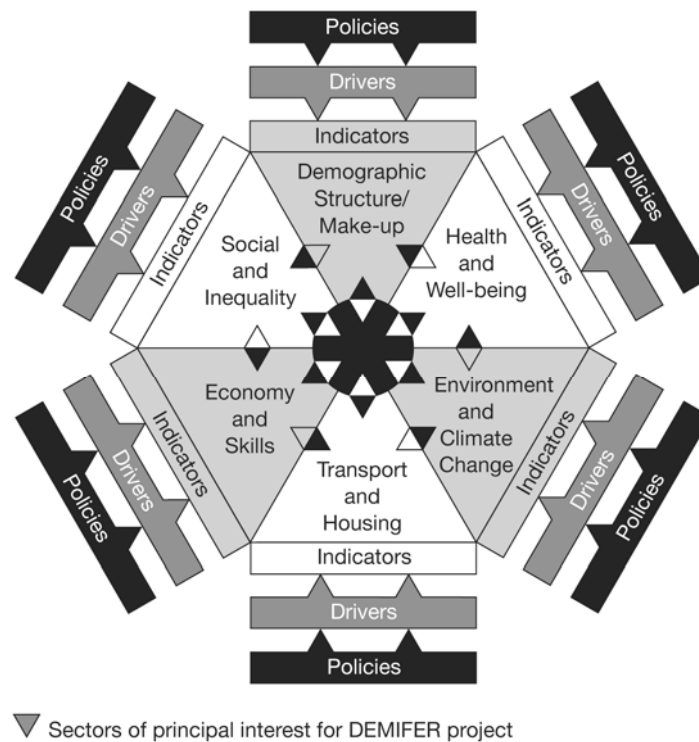
What might we expect the drivers to be and what variation between regions might there be, based on previous analysis (Council of Europe/ESRC projects, ESPON projects)? It is difficult to answer this question without adopting classifications of migration flows by life course stage and of regional potential for attracting or repelling migrants. We pose the hypothesis that such a double classification will distinguish regions in terms of the key potential drivers of migration and will have an important role in defining future scenarios.

Shakespeare (1599-1600) described the life course as a sequence of seven stages (Figure 5). In Table 5 we identify the boundaries of these ages that have significance for migration behaviour. The drivers of migration at these life course stages are different. Champion et al. (2002) develop for the UK a suite of models that show that there are both universal drivers such as population/employment size and distance and specific drivers such as employment or unemployment, environmental factors or location of facilities (universities, services, health care). Preferred destinations change through the life course (see Rees et al., 1996 for a UK analysis). The spatial structure of migration flows varies according to life course stage. In particular, in some countries the entry into higher education and exit from higher education stages have patterns very different from those of the other life course stages. As different life course groups have quite different migration intensities and patterns linked to the migration-triggering events they experience, we will look at migration developments in relation to the settlement system through the life course framework.

Figure 5: The Seven Ages of Man

All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances:
And one man in his time plays many parts,
His acts being seven ages. At first the infant,
Mewling and puking in the nurse's arms;
When the whining school-boy, with his satchell
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad,
Made to his mistress' eyebrow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice,
In fair round belly with good capon lin'd,
With eyes severe and beard of formal cut,
Full of wise saw and modern instances;
And so he plays his part. The sixth age shifts
Into the lean and slippered pantaloon
With spectacles on nose and pounch on side;
His youthful hose, well sav'd, a world too wide
For his shrunk shank; and his manly voice,
Turning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion;
Sans teeth, sans eyes, sans taste, sans everything.
(Jacques in *As You Like It, Act II*, Scene VII, lines 133-166)

(Source: Shakespeare 1599-1600)

Table 5: Life course stages, matching age bands and migration drivers

Life course stage	Age bands	Migration drivers
Childhood ages	0-16	As Family ages
Entry into higher education/work	17-21	Location of universities, jobs
Exit from higher education/entry to work	22-29	Location of best jobs
Family ages	30-44	Labour market, better housing
Older labour force ages	45-59	Labour market but rates are low
Labour force/retirement transition	60-74	Better environments
Retirement ages	75+	Offspring, availability of care

5.2   Construction of typologies

Based on demographic, migration and socio-economic variables the existing typology of NUTS 2 units (see ESPON Atlas 2006) will be improved and maybe newly constructed. The method used for constructing a typology will be hierarchical cluster analyses to gain an overview about the similarity structure of the regional units and to extract a starting configuration of cluster centres which will be improved by a non-hierarchical cluster procedure (see e.g. Vickers et al., 2005). The combination of a hierarchical and a non-hierarchical cluster procedure delivers the most reliable outcomes. A critical analysis of the data before looking for multicollinearity and detecting the dimensionality of the variables (by applying a factor analysis) will be applied.

The input of the cluster analyses are main and important demographic variables. Special attention will be paid to the age and sex composition of the population, to the size of foreign population and the size of migration flows. Further important variables are the natural population development (births and deaths), fertility rates, life expectancy and population density. The selection of the variables which will be included into the cluster analyses definitely will be part of an iterative process driven by a critical evaluation of the results.

The output of the hierarchical and the non hierarchical cluster procedure is at first hand a homogeneous (and not a functional) clustering of the NUTS 2 units. The adjacent structure of the regions plays no role. For reasons of clarification it can be necessary to include the geographical distances and proximities and to change the cluster membership. If – for example - a "sun belt cluster" or an "Alpine cluster" will be extracted by the cluster analyses and some regional units belonging to that cluster which are located outside the European sun belt or the Alpine area, it has to be discussed if they should change cluster membership.

The final cluster solution will be used as a starting point for analysing the most recent Labour Force Survey (LFS). The sample structure of the LFS does not allow to differentiate the data on the NUTS 2 level and the variables cannot be used as input variables for the cluster analysis. However, the LFS will be a useful and innovative source to describe the cluster solution more accurate and the linkage of cluster solution with the LFS will allow us to describe the cluster by new variables. How attractive are the large cities for skilled migrants or which migrants – differentiated by demographic and socioeconomic variables - move to peripherial regions? The combination of the typology with the LFS will offer new insights in the principal research question of DEMIFER: How do demographic and migratory flows affect European regions and cities.

5.3   Multinational-multiregional projection model MULTIPOLES

Multinational population projections and forecasts may be conducted in a variety of ways (for discussion see Kupiszewski and Kupiszewska 2008). However, most of multiregional projections and forecasts do not look at the regional dimension of population processes and therefore have a limited attraction for decision makers, spatial planners and geographers, who are more interested in population processes in smaller spatial units. They are not suitable for the ESPON regional perspective.

The first to create a model capable of simultaneous handling of internal and international migration for supranational populations was Philip Rees with colleagues (Rees, Stillwell,

Convey 1992), who constructed a population projection model called ECPOP, for the then European Community member states. The model was a female-dominant multiregional multilevel model with migration being handled on three levels:

- Level 1 - interregional, intrastate migration;
- Level 2 - international migration between the countries;
- Level 3 - international migration from the Rest of the world.

The age dimension of migration data has been reconstructed using the Rogers-Castro model for age dependent intensity of migration.

The ECPOP model allows to setting scenarios for all classes of migration as well as for mortality and fertility. Initially, it was used for population projections in EU regions on the NUTS1 level. At this stage the model generated national and sub national projections separately and their results were inconsistent. In its refined version (Rees 1996a) a bottom-up approach was implemented, removing the inconsistency problem. In many ways, Rees' model was a major improvement in population projection practice. From the methodological point of view, it represented an implementation of the state of the art in population projections theory, as developed by Rees' and Rogers' schools. It allowed for a coherent and unified treatment of supranational but regionally disaggregated populations, developing Rogers' concepts applied earlier for multiregional models.

Rees' model gave Kupiszewska and Kupiszewski (2005) the idea for the development of the MULTIPOLES model. MULTIPOLES is a cohort-component female-dominated hierarchical multiregional supranational model of population dynamics. It may be used for forecasts, projections and simulations. The population is disaggregated into sexes and eighteen five-year age groups, i.e. nineteen projection cohorts, with the youngest cohort being the infant cohort (children born during the projection interval) and the cohort 85+ being the oldest one. Geographically, the population is disaggregated into countries and regions. The model is based on movement type population accounts. The rates appearing in the accounts are defined as the number of events (deaths, migration or births) in a projection period divided by the population at risk, assumed to be equal to the mid-year population or calculated as an arithmetic average of the population of the projection cohort at the beginning and at the end of the projection period. Migration is handled on three levels, as in the ECPOP model:

1. interregional intranational migration within each country;
2. interregional international migration within the system;
3. net migration from the Rest of the world to each modelled country.

On top of population modelling comes labour force modelling, based on the aplication of the externally assumed sex and age dependent labour force participation rates to the modelled population.

The MULTIPOLES model (Kupiszewska and Kupiszewski, 2005 and 2008) will be adapted to the needs of the DEMIFER project. This model is particularly suitable for the application in the project, because it is designed to consider migration at three levels and it considers not only demographic aspects of population dynamics but also allows for modelling labour force resources.

The MULTIPOLES model will be adjusted to the needs of DEMIFER including (among others):
1. changes in the way the scenarios for various components of population change are defined and incorporated into the model;
2. modification of the scenario input routines;
3. separation of the calculation of mortality, fertility and migration rates from the main "computational engine" of the model;
4. adaptation of model output to the needs of DEMIFER; the adaptation will concern both the format of the output and the introduction of new variables (indicators).

5.4 Reference scenarios

As point of reference for the regional scenarios, policy options, and case studies, two population dynamics simulations will be prepared. These will be a status-quo projection (no changes in the age-specific mortality, fertility and migration rates, no changes in net migration from the Rest of the world, and constant age-specific labour force participation rates) and a simulation with no migration (as in status quo, but all migration-related indicators set to zero). It is proposed that the modelling horizon is 50 years, staring in 2007 (2007-2057). This implies that for status-quo and no migration simulations data from 2007 will be used throughout the entire simulation period.

The reference scenarios are not aimed to describe the most likely future, but to show what would be the effects of continuation of demographic trends in the very long run. The impact of migration will be assessed by comparing the status-quo scenario with the no-migration scenario. Moreover, the results generated will be used to assess various regional and policy scenarios.

5.5 General framework for regional scenarios

What lessons can we extract from the brief review of migration developments in Europe over the recent past? How can we use this knowledge to guide our analysis of current processes and how can we use this knowledge in designing regional scenarios?

It is vital to gather knowledge of the migration flows at three spatial scales: within countries, between member states of the EU and exchanges between the EU regions and extra-European states. The drivers of the migration process are different at each of these scales.

We must also try to separate migrants by stage in life course. At each stage different factors drive migration and this leads to different spatial outcomes. There is some interaction between the life course stages and the three spatial scales identified. For example, within countries people participate in migration at all life stages. Between countries migration is concentrated in the labour force ages, particularly in the younger working ages. Inter-country migration tends not to involve as many families so the participation of children is low. Inter-country, intra-European migration is probably younger in distribution than extra-European migration because the barriers are lower and resources needed less.

We must arrive at a classification of regions that connects to the drivers of migration. That classification should recognize where a region is placed within the system of urban and rural

settlements, which provide livelihoods and opportunities differentially through the life course. The accessibility of regions to the dynamic heart of the European space (the Pentagon) will be important. So, too will a region's position with respect to external borders and its position in international networks.

The classification must also recognize which regions are more successful and which regions are less successful in economic development, which drives the creation of opportunities for migrants. Indicators of income, GDP and labour market conditions will be important.

So we should describe the situation of the present decade and design the scenarios for future decades within a four dimension framework: spatial scale of migration flow, stage in the life course, position of regions within the urban/rural system and degree of economic dynamism of the region.

For the scenarios we give some starter suggestions which will need discussion and testing out during the course of the project. A first onset for the general framework for the scenarios is given in Figure 6.

Figure 6: General framework for the DEMIFER scenarios
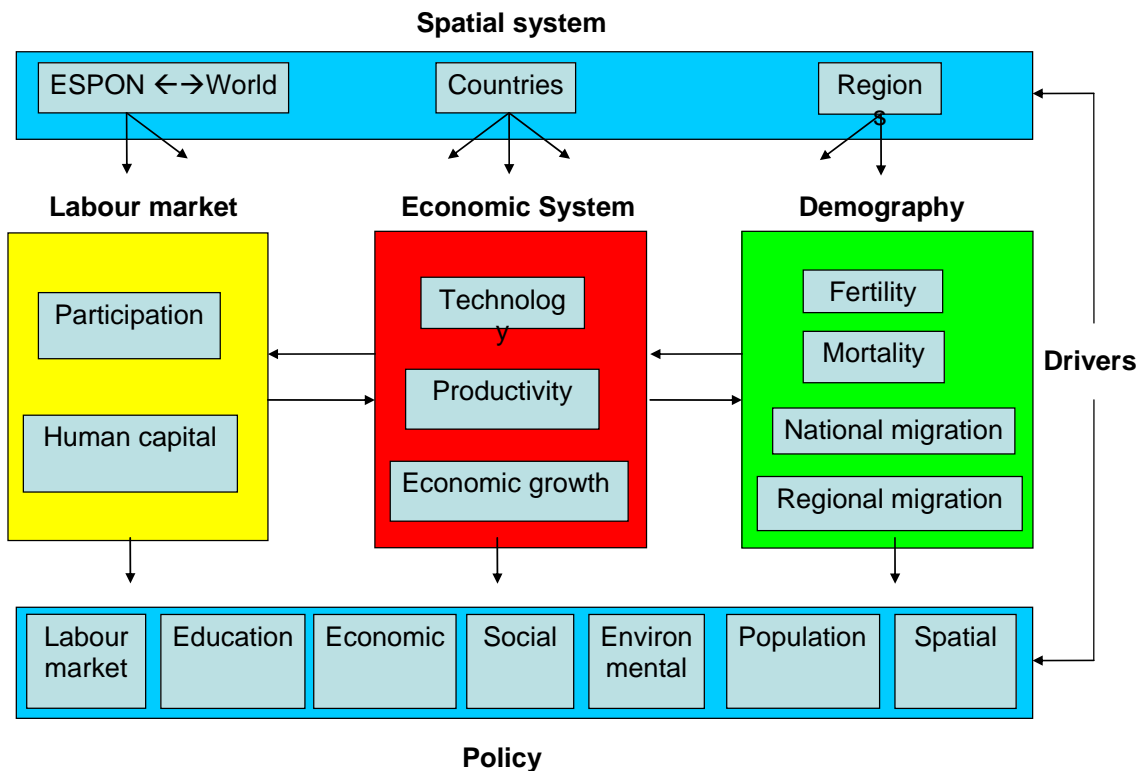
In general the scenarios can be developed along two dimensions:
1.   Long-term growth versus limits to growth
2.   Competitiveness versus social cohesion

Combining these two dimensions leads to four scenario options which can be characterized follows:

Long-term growth and competitiveness: free markets everywhere; large demand on resources, but no depletion; materialistic, consumption driven; individualism; weak social structures; government policies facilitate / enhance free market processes; technological innovations is the solution to environmental degradation; ensures structural growth; no environmental policies may hamper economic growth; segmentations between countries, regions, population groups is important, but differences are mitigated due to high economic growth: everyone profits; societal divisions are clear: rich versus poor, center versus periphery, educated versus non-educated and upper class versus underclass.

Long-term growth and social cohesion: sufficient resources for economic growth; social and economic equity, social cohesion; non-material values, post-modernism, solidarity; strong social structures, communities, sense of public responsibility; strong role of governments; moderate but positive sustainable economic growth; consequences of climate change limited due to strong government intervention; small differences between countries, regions, population groups, cultural, economic, social and spatial convergence.

Limits to growth and competitiveness: free markets everywhere; fast environmental degradation, depletion of resources; fast climate change; materialistic, consumption driven; individualism, egoism; government policies seek solutions through the free market; limits to growth imply low economic growth; no environmental policies may hamper economic growth; weak social structures lead to survival of the fittest, and very poor conditions for the less fit; very large segmentations between countries, regions, population groups: rich versus poor, centre versus periphery, educated versus non-educated and upper class versus underclass.

Limits to growth and social cohesion: fast environmental degradation, depletion of resources; fast climate change, severe consequences; social and economic equity, social cohesion; non-material values, post-modernism, solidarity; strong social structures, communities, sense of public responsibility; strong role of governments in redistributive economic and social policies, as well in environmental policies: economic growth is secondary to sustainability; very low or negative economic growth due to exhaustion of resources and emphasis on equity; large differences between countries, regions, and population groups are mitigated due to economic social spatial policies.

The four scenario options are summarized in Figure 7. All scenarios will stress the three levels of analysis: the macro scale or ESPON space, the meso scale or country level and the micro scale or regional/local level. Different levels of uniformity versus diversity will apply to the different scenarios. For the regional scenarios we use a framework which is based around the types of cities and regions that emerge from the regional typology activity.

Figure 7: Four scenario options
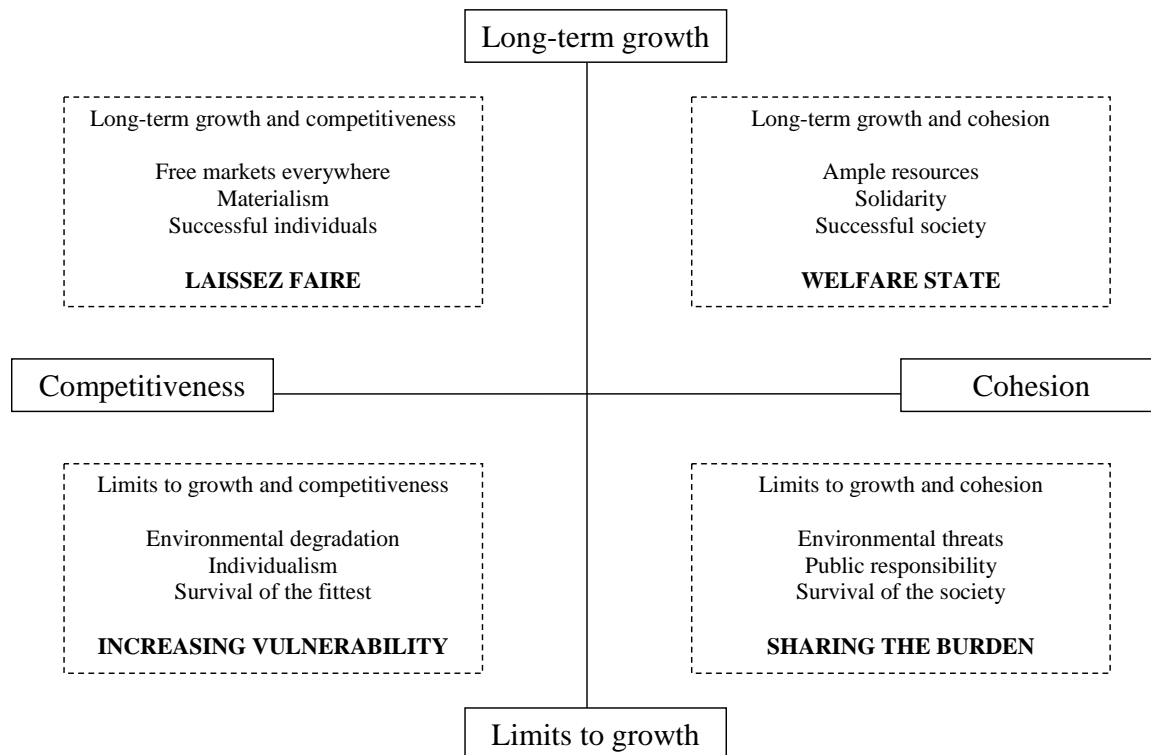
The scenarios require quantitative input of age-specific parameters. This quantitative input will be partly based on qualitative reasoning, as not all relevant information can be included in the model. Assumptions on the future level of migration are based on assumptions on the future development in underlying factors and causes. In the design of scenarios demographic aspects will be combined with economic, social and environmental aspects. To make these assumptions operational we will develop spatial interaction models for within country migration, for within Europe migration and for extra-European migration. Several statements on regional developments would need to be converted into trajectories of the demographic, economic and environmental variables. These often speculative discussions indicate that we would need to do lots of review work, use much imagination and try to guess the probability of the events described. This kind of scenario framework would need to link to and grow with the multi-level model development.

Comparisons of the results of the scenarios with the reference scenarios show the effects of different demographic and migration developments on regional competitiveness and social cohesion.

5.6   Policy options

In 2006 the European Commission published the Communication "The Demographic future of Europe – from challenge to opportunity". One observation of this Communication is that population trends vary significantly not only from country to country but also from region to region. The two major causes of ageing are the increase in life expectancy and the low level

of fertility. Even though life expectancy has increased considerably, there are still big differences in average life expectancy across European countries and regions. And even though in most European regions the level of fertility is well below the replacement level of 2.1 children per woman, there are still considerable differences across regions. The number of migrants varies strongly across regions as well. Whereas, non-nationals are about 5% of total population of EU countries, in some regions the percentage is much higher. For example in cities in Germany and France the share of non-nationals equals about 20%. In addition internal migration caused by urbanisation and rural depopulation affects regions in different ways. Due to outflow of young and working-age population rural depopulation may cause problems for providing basic services. On the other hand urban areas may face problems in providing housing and social services.

The consequence of these regional variations in population change is that uniform policy responses are impossible (Hübner, 2007). The European Commission emphasizes that regional and local policy makers play an essential role in implementing policies and in providing services. Therefore the European cohesion policy aims to involve all relevant partners in designing and implementing policies. A mix of policies will be needed, e.g. investment in human capital to increase the flexibility and adaptability of the work force; lifelong learning for employees of all ages; co-operation between growing regions, especially Metropolitan regions, and suburban regions in decline; encouraging young people to stay in a region by improving the environment and social support systems; universities and higher education institutions can revitalise a region by attracting young people and if they are integrated into the local business community, and facilitate the transition to the job market, they help to retain those young people in the area and stem the brain drain; new technologies can help to ensure that even in the remote regions our citizens have access to services and do not have to relocate to benefit from a good education or health care (Hübner, 2007).

In the communication on demography (2006) the European Commission identified five European policy options (Špidla, 2007). First, the level of fertility may stimulated if possibilities to combine working life with family life will be improved. Access to housing is also a crucial element. The local and regional authorities have a major role to play when it comes to housing, crèches and schools. Second, there is need to increase the rate of employment amongst women, young people and older people. At the regional and local levels there should be more investment in strategies to achieve better access to training, particularly for older workers. Third, the European Union should become more productive and more competitive by investment in training and in research and development. The future generations of older people will be a far more active segment of the population and far more significant as consumers. There will be an increasing demand of health care. Therefore it is important to invest in training the people who will work in that sector in order to improve the quality of services and to raise the profile of this type of work. Fourth, Europe will need to receive and integrate migrants. Shortages in the labour market will lead to a demand of immigrants. Therefore it is important to create opportunities for legal, regular immigration accompanied by effective integration. Fifth, public finance should be sustainable in order to guarantee social security and equity between the generations. These policy options form the framework for European cohesion policy in the coming years.

Looking at the different scenarios of DEMIFER, the question arises how the policies at the European level may affect the outcomes. Several categories of policies can be distinguished (see also Figure 6):

1. Labour market: policies regarding retirement age, child care, labour force participation, liberalisation, integration, etc.;
2. Education: policies regarding human capital, lifelong learning, access to training;
3. Economic: technological innovations, productivity, taxation, subsidies;
4. Social: social cohesion, social security;
5. Environment: policies among which environmental protection, rules, and regulations;
6. Population and migration: for instance pro-natalistic policies, international migration regulations, regional distribution of migrants, integration;
7. Spatial: co-operation between regions, revitalisation of regions, access to housing.

What will be the impact of different policy measures on the future level of natural population growth (i.e. population growth that can be attributed to fertility and mortality), internal migration, and international migration? Will it be possible to bring into action specific policy measures to nullify unfavourable outcomes of the regional scenarios?

Besides literature study and expert discussion, a Delphi method will be used to get supplementary information on this topic. Expert opinions can identify possible policy options. Insights can be deepened by the results of the Delphi method. An electronic survey will be sent to a selected group of experts and policy makers. Again, it is necessary to differentiate between policy makers at different regional levels. The answers will be processed and sent back to this group. In this way they have the opportunity to react to the opinions of the others. The MULTIPOLES model can be used to assess the effectiveness of the different policies.

5.7 Preparation of case studies

The case studies are based on the analysis of published research and empirical quantitative research regarding interregional and international migration data. Data analysed in the case studies will come from published data of population registers and/or population censuses.

The various case studies will be prepared along similar lines to ensure comparability. The focus will be on the description of socio-demographic structure, demographic and interregional and international migratory processes and their consequences for competitiveness and cohesion. The sustainability of the demographic system and the migration process at the sub-regional level will be considered in all case studies. In the case studies where migration is playing an important role, the origins and/or destinations of internal migration and of migration flows to/from EU/ESPON countries and to/from other countries will emphasize the interdependence of the regions in the EU/ESPON space.

The case studies will take into consideration the following thematic areas:
1. high interregional and/or international immigration and the role of foreign population in natural growth and formation of human capital;
2. high emigration and the role of emigrated population in natural decline, loss of human capital and the flow of remittances;
3. population ageing and the ensuing changes in the labour market and in consumption patterns, and the need of care;
4. selective migration flows caused by areas attracting specific age groups (regions and cities with universities, destination areas of retirement migration like sunbelt regions, the Alpine area);
5. the quantitative and qualitative changes in the labour force (human capital);

Furthermore, the case studies will take into consideration a variety of regional categories:

1. metropolitan areas are major engines of economic growth and show discernable age selective migration patterns, attracting the young and more skilled migrants from the national territory, the EU/ESPON space and globally;
2. the old industrialised areas with heavy industries, textile and clothing industries, 'fordist' regions, 'Marshallian' districts, still in the process of restructuring, are one of the problem categories of European regional development; how do demographic and migratory processes link to the economic problems?
3. areas with dynamic economic growth based on the knowledge economy are attracting considerable migration flows;
4. peripheral rural areas with processes of selective out-migration, leading to population ageing and depopulation, might risk marginalisation;
5. regarding environmental challenges and future climate change, low laying areas, mountainous areas and areas of Southern Europe with perennial water shortage are of interest.

The selection of the NUTS 3 regions that will serve as case studies will be based on the results of the DEMIFER activities 1 'Demography and migration' and 2 'Typology of regions and cities'. From each type defined in the typology at least one region or city will be selected to serve as case study. As far as possible we aim for a well-balanced geographical coverage.

6 Research activities

Work Package 2 of DEMIFER includes the following seven activities:

A1: Demography and migration;
A2: Typology of regions and cities;
A3: Multilevel scenario model and reference scenarios;
A4: Regional scenarios;
A5: Policy implications;
A6: Data, indicators and maps and
A7: Case studies.

Each activity contains several tasks. In total these seven activities of DEMIFER distinguish 22 tasks which are described in detail in the proposal. In this section of the inception report we focus on the aim of each activity, together with the timing and the envisaged output.

Activity 1: Demography and migration

The aim of activity 1 is to draw a clear picture about the demographic situation in the regions of Europe on NUTS2 level and to assess the contribution of migration to the demographic development of the regions. The focus is on regional population dynamics and internal EU/ESPON, intra-EU/ESPON and extra-EU/ESPON migration flows. Which European regions are experiencing population growth or decline, and what is the impact of the different components of change (natural growth, internal and international migration)? Special attention will be paid to the age composition of the population and to different types of migration.

Participants: NIDI (coordinator), IOM/CEFMR, SoG, CNR.
Timing: September 2008 – June 2009.
Output: Report on effects of demographic and migratory flows on European regions (deliverable D1).

Activity 2: Typology of regions and cities

The aim of this activity is to develop a typology of regions and cities based on demographic variables and to link the resulting typology to economic and ecological variables. The results will allow drawing conclusions about the causes of migration distinguished by the economic and territorial development and to the consequences of migration for regions of origin and regions of destination.

Participants: UNIVIE (coordinator), NIDI, SoG, Nordregio, CNR.
Timing: September 2008 – August 2009.
Output: Report on causes and impacts of migration on European regions (deliverable D2)
             Typologies of regions (deliverable D3).

Activity 3: Multi level scenario model and reference scenarios

The aim of this activity is to develop a model that tracks internal EU/ESPON, intra-EU/ESPON and extra-EU/ESPON migration and regional population dynamics in the ESPON countries. It will enable scenarios to be run based on assumptions about changes of demographic and labour-force related variables, related to socio-economic and environmental developments. The input to this activity comes from Activity 1 (Demography and migration). The numerical model will be used in Activities 4 (Regional scenarios) and 5 (Policy implications) to quantify various alternative scenarios. The modelling results may also be used in Activity 7 (Case studies).

The focus of Activity 3 will be the development of the model and preparation of the reference scenarios. The model will be able to generate various scenarios for population and labour force by sex and 5-year age groups for ESPON countries and regions. In addition it will generate a variety of indicators as needed for analytical purposes in other activities.

Participants: IOM/CEFMR (coordinator), NIDI, UNIVIE, SoG.
Timing: March 2009 – February 2010.
Output: Report on the multilevel scenario model (deliverable D4);
  Report on reference scenarios including a discussion of regional population and labour force simulations, as well as the detailed numerical results (deliverable D5).

Activity 4: Regional scenarios

DEMIFER will develop scenarios that build on scenarios[4] developed as part of the ESPON 2006 programme. We will connect the scenarios to demographic developments more explicitly by specifying alternate futures for fertility, mortality, intra-Europe and extra-Europe migrations at regional scale along the dimensions long-term growth versus limited growth and competitiveness versus social cohesion. We build into the labour force addition of the demographic model different futures for labour force participation based on pensionable age, education and child care/disability support policies. Furthermore, we will assess the impact of potential climate change on intra-European development and on migration of climate change refugees from outside Europe.

This activity tries to find answers to questions such as 'what is the need for increasing the labour force?', and 'what are the effects of climate change and globalisation?' In this activity we analyse the future demographic and economic development of the types of regions and cities we addressed in the activities on 'Demography and migration' and 'Typology of regions and cities'. What is the demographic future – for example - of the metropolitan regions in Europe, the rural areas in the north or the sun belt in the south? This activity will combine qualitative reasoning about possible futures with the quantitative evidence about the position

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[4] Three scenarios were developed (ESPON 2007a, 2007b): a *business as usual* (trend based) scenario, a *competitiveness* scenario (based on letting market forces power growth in Europe's "pentagon" core, a space bounded by apexes at London, Paris, Milan, Munich and Hamburg) and a *cohesion* scenario that distributed growth to peripheral regions and limited the environmental consequences of growth. These scenarios were developed by a team of experts using knowledge and judgement about likely future demographic, social, economic and environmental trends in Europe's regions coupled with use of Eurostat demographic forecasts, their own regional economic growth model and a model of transport development and emissions.

of regions in the spectrum of economic, social and demographic. One of the main outcomes of this activity will be the regional demand for in-migrants, in a number of different regional scenarios.

Participants: SoG (coordinator), NIDI, IOM/CEFMR, NEAA.
Timing: April 2009 – April 2010.
Output: Report on scenarios and a database of scenario drivers (deliverable D6);
                Report assessing the effects of demographic developments on regional competitiveness and cohesion (deliverable D7);
                Report on the climate change and resource depletion scenarios and a database of scenario drivers (deliverable D8).

Activity 5: Policy implications

Looking at the regional scenarios, the question arises how policies may affect the outcomes. Based on differences in demographic and socio-economic developments across regions, in this activity a range of policy options will be explored that differentiate between the European level, the level of the specific EU/ESPON countries and the level of regions or cities. Especially at the lowest level the absence of coordination between policy measures may counteract social cohesion. If regions with high economic growth attract migrants from other regions, the latter regions may lose jobs and population. This may lead to competition among regions. Policy actions at different regional scales may or may not benefit restructuring and coordination of actions. Policy actions have a tendency to be oriented on the realms they can influence, such as measures with respect to the level and location of house-construction and the attraction of firms and organisations. This may have consequences with respect to the sustainability of society, economy and environment. The result of the complex intermingle of questions on population growth or shrink, ageing, economic prosperity does for a large part depend on the resources of the regions it selves, the location in the centre, middle-zone and periphery of a country and the level of integration between regions. Policy actions have to take this into account.

A key issue is to address the question of a shortage of labourers, i.e. what kind of new labour force is needed: from internal migration, other countries within the EU/ESPON countries, or other countries. One important policy question is to what extent the growth in the labour force is stimulated by migration from other European regions or by migration from outside the EU. Whereas stimulating migration from outside Europe may cause integration problems, stimulating internal migration may solve problems for some regions at the cost of other regions.

Participants: NEEA (coordinator), NIDI, UNIVIE, Nordregio.
Timing: November 2008 – April 2010.
Output: Report on policy implications (deliverable D9).

Activity 6: Data, indicators and maps

Even though all activities produce output, this separate activity is needed to ensure one common approach to the collection and storage of data and in order to create well functioning and up-to-date database where all the data, indicators and GIS files can be gathered. The basis of this database will be an electronic database from where the data can easily be presented,

delivered to other activities and transferred into the ESPON database. The database will contain all comprehensive data and indicators collected and estimated, as well as all results of the scenarios and typologies. A special focus will be put on time series, data harmonization and metadata in order to create a more useable database also for other ESPON projects and other scientific use. All data and indicators will be stored in a format compatible with map-making.

Participants: Nordregio (coordinator), NIDI, UNIVIE, IOM/CEFMR.
Timing: September 2008 – April 2010.
Output: Database (deliverable D10);
Atlas of maps (deliverable D11).

Activity 7: Case studies

Since detailed data especially regarding internal and international migration are not available for all regions, case studies will provide in depth analyses for specific regions for which detailed data are available. In addition case studies are useful for analysing different types of regions. The case studies bring together the activities 'Demography and migration', 'Typology of regions and cities' and 'Policy implications' and illustrate what it all implies for a number of selected areas.

The activity 'Case studies' has a twofold aim: it contributes to the first two research activities focusing on the aspects of internal and international migration, and translates the output of the policy oriented activities into specific regional settings. The case studies bring together the various activities, connecting the implementation of the analyses, the development of the typology, the scenario building and the formulation of the policy implications and illustrate the results and impacts at a regional and sub-regional level.

The first aim of the case studies activity is the description and understanding of the effects of demographic change and migration in specific regional settings. The case studies permit the testing of specific hypotheses and they serve to highlight specific arguments. They allow to analyse the relationship between socio-demographic structure (age structure, migratory background), demographic processes (natural change and migration), labour force changes, socio-economic structure, human capital, and competitiveness and cohesion. The focus of the case studies remain the analysis of migration data at the regional. The case studies will show the interdependence of regions regarding interregional migration, migration between the countries in the EU/ESPON area and international migration to/from other countries.

The second aim of the case studies activity is translating the results of the scenarios into a specific regional setting, based on the previously conducted in-depth analysis and the downscaling of the scenarios. This will offer the possibility to read the results of the DEMIFER project through regional and sub-regional dimensions.

Participants: CNR (coordinator), UNIVIE, IOM/CEFMR, SoG, NEAA, Nordregio.
Timing: June 2009 – April 2010.
Output: Report on case studies (deliverable D12).

7   Data review

The main goal of the project is to provide comparable regionalised information at NUTS 2 level for European regions and cities covering the entire ESPON space of the present 27 EU Member States including Iceland, Liechtenstein, Norway and Switzerland. Depending on the respective data situation in the EU candidate countries, the Western Balkans and Turkey, these countries will be included in the analysis as well. Of special concern are recent changes in the NUTS classification and the resulting adaptations from NUTS2003 to NUTS2006. One major challenge of DEMIFER is the limited and often not very robust data regarding migration.

The main data sources to use in DEMIFER are the ESPON database and Eurostat data. Also data from National Statistical Institutes and some other additional data sources will be used in order to fill the gaps and see the global flows.

7.1   Changes in the regional structure of the ESPON space

In order to analyse trends and changes over time it is important to include time series in the analyses. There are, however, two main technical challenges in the data availability on ESPON space: compared to the previous ESPON2006 programme, the current ESPON space includes two additional countries, Iceland and Liechtenstein, and there have been changes in the NUTS classification.

During the first ESPON period the 2003 version of NUTS classification was in force. At January 1st, 2008 the new division, so called NUTS2006 entered into force. This change in the regional structure of European space has some challenges to data availability. The changes in the NUTS division are the results of two different kind of actions, firstly the changes in the regional structure of the Member States and secondly the changes in the NUTS system itself (in order to make the regions between the countries more comparable). Therefore some update of the ESPON2006 database is needed.

In Table 6 the main changes and challenges are listed; Annex 1 includes a systematic overview of the most recent changes in NUTS classification.

Table 6:   Changes in NUTS classification

Change in the regional structure	Affected region (-s)
From EU25+4 to EU27+4	Two new countries & average value of EU and ESPON space
New NUTS1 regions - Change in the coding system on NUTS2/3 levels	Romania and Sweden
No comparison over time possible on NUTS2/NUTS3 level	Denmark (can be estimated if LAU2 data available on NSI)
Comparison over time possible on NUTS3 level (new NUTS2 needs to summarize)	Bulgaria, Croatia, Slovenia
Some changes on regional structure - data maybe not available for all the regions	Germany, the UK
Changes on NUTS3 level - may affect to the data quality on NUTS2 level even the NUTS2 division is the same	Belgium, Finland, Italy, the Netherlands, Poland* and Spain

Including Iceland and Liechtenstein in the ESPON space means that the ESPON average values are not comparable over the two programme periods. Also the status change of

Bulgaria and Romania from EU Candidate Countries to Member States have some influence if the comparisons are based on EU average.

A new NUTS 1 level has been introduced in Romania and Sweden. Even though the regions are geographically the same ones on NUTS 2 and NUTS 3 level, the codes have been changed.

At January 1st, 2007 there was a major change in the regional structure of Denmark. Due to this change new NUTS 2 and NUTS 3 regions were introduced. No comparison between the NUTS2003 and NUTS2006 classification is possible. Statistics Denmark anyhow publishes rather good data on municipal (LAU2) level – and a lot even free of charge, therefore it is possible to calculate estimations based on that data.

When Bulgaria became an EU Member State, a new regional division was introduced in NUTS 2 and NUTS 1 levels. These levels are not comparable over time. The NUTS 3 level, however, remained the same, although the codes were changed. Therefore the "new" NUTS 2 values can be calculated (summarized) from the NUTS 3 level if the data are available.

Slovenia was divided into two NUTS 2 regions. The NUTS 3 regions remained the same, so again the "new" NUTS 2 values can be calculated (summarized) from the NUTS 3 level if the data are available.

Both in Germany and the United Kingdom there have been some changes in the NUTS division and therefore the data are maybe not available for all regions. In Germany the Sachsen-Anhalt NUTS 1 region has been re-divided. The previous NUTS 2 regions of Dessau, Halle and Magdeburg have been merged. New NUTS 2 and NUTS 3 values are possible to calculate by summarizing some old regions together. In the United Kingdom the regional boundary between "North Eastern Scotland" and "Highlands and Islands" NUTS 2 regions was changed. There's a breakout on time series because the change occurred between two neighbouring NUTS 3 regions.

In some countries there have been changes on NUTS3 level. These changes may affect the data quality on NUTS 2 level even the NUTS 2 division has remained the same. Therefore these regions need an extra attention (see Annex 1). In Belgium one NUTS 3 region is divided into two. In Finland and the Netherlands there has been a change in regional structure between two neighbouring NUTS 3 regions. In German Sachsen-Anhalt the regional division has also changed in the NUTS 3 level. Iceland has been divided in two NUTS 3 regions. Italian Sardinia has been re-divided on NUTS 3 level. New regions are not comparable to old regions. In Poland the NUTS 3 regions have been reorganised and re-divided. This means that some of the NUTS 3 regions have got a new code (code key) and some of the regions have changed geographically (no comparability over time). In Poland the main national region level is NUTS 2 therefore the changes on NUTS 3 should not affect on NUTS 2 level data. Spanish islands, Illes Balears and Canarias have been re-divided on NUTS 3 level. New regions are not comparable to old regions.

7.2   ESPON Database

When ever it is possible, the ESPON database is the starting point for the analysis. Table 7 gives for all countries in the ESPON space (without Iceland and Liechtenstein) an overview of the availability of basic indicators which are 1) needed for the project and 2) existing in the ESPON database. Some update is needed in order to create time series.

Table 7:   Basic indicators and availability in ESPON database

Indicator	ESPON database - Availability		
	Time	Level	Data source
Population			
Total, female, male population (all ages)	1995-2003	NUTS3	Eurostat; NO and CH: NSIs
Total, female, male population by main age category (0-14, 15-64, 65+, 75+)	2003	NUTS2	Eurostat; NO and CH: NSIs
Population density	2002	NUTS3	Eurostat; NO and CH: NSIs
Employment			
Active population	2001	NUTS2	Eurostat; NO and CH: NSIs
Employed persons/female, male	2001	NUTS2	Eurostat; NO and CH: NSIs
Employed by main sector (agr., ind., serv.)	2001	NUTS2	Eurostat; NO and CH: NSIs
Unemployment rate, female/male	1999-2004	NUTS3	Eurostat, CH (2003 SLFS)
Wealth and Production			
GDP in PPP per capita	1998-2002	NUTS3	ESPON project 3.2, BBR
GDP per capita	2002	NUTS3	ESPON project 3.2, BBR
GDP in € per capita	1998-2002	NUTS3	ESPON project 3.2, BBR

Source: ESPON

Apart from the basic indicators, the ESPON database includes a remarkable number of project indicators. The main indicators of interest for DEMIFER are
1. Population related indicators produced in ESPON 1.1.4. (migration, dependency, population change, age categories, projections, etc.)
2. Settlement Structure Typology (ESPON 3.1.)
3. Deviation - Gross Domestic Product by Population (ESPON 3.1.)

Furthermore, the data used for several maps in the ESPON atlas will be used as input for the project.

In the current ESPON database most data appear to be processed data. Apparently, the underlying raw data are not included in the database. Therefore, by means of this database the processing of other indicators on the basis of the specific raw data is not possible. In our view this situation is not desirable. We prefer that the database will contain raw data as well that can be processed either within the database by means of a query or outside the database by means of another application. We suggest adding to the ESPON database the raw data we will use in DEMIFER. Note that the inclusion of raw data explicitly does not mean that these data are not checked and tested on plausibility.

7.3   Data update using Eurostat data

In general, most of the data available in the ESPON database is missing for recent years. However, in a lot of cases Eurostat data can be used to update the ESPON database. Table 8 gives a summary of update possibilities using Eurostat data; further details can be found in Annex 2.

Table 8: Update of ESPON database using Eurostat data

Indicator	Update possibility (EUROSTAT)		
	Time	**Level**	**Gaps**
Population			
Total, female, male population (all ages)	2004-2007	NUTS2	2007 data missing from BE, DK, FR, AT, UK No regional data from DK, SI, UK (2005-2007), MK, TR (2004-2006)
Total, female, male population by main age category (5 years group)	2004-2007	NUTS2	2007 data missing from BE, DK, FR, AT, UK No regional data from DK, SI, MK TR only 2007 data Some regional data missing from UK
Annual average population	-2006	NUTS3	2006 data missing from BE, AT No regional data from DK, SI, MK, TR Some regional data missing from DE, FR, PL, UK
Population density	2003-2006	NUTS3	Some regional data not available from BE, CZ, DE; no regional data from DK
Employment			
Active population, female/male	1999-2007	NUTS3	Some regional data missing: BE, DE, IE, ES, IT, FI, SE, UK, NO Major regional data gaps on NUTS3 level, data available on NUTS2: PL No regional data:DK, SI, HR, MK, TR, IS, LI, CH Gender data available only on NUTS2: FR
Employed persons/female, male	2002-2007	NUTS2	Some regional data missing: BE, DE, IE, ES, IT, FI, SE, UK, NO No regional data:DK, SI, HR, MK, TR, IS, LI, CH
Employed by main sector (agr., ind., serv.)	2002-2007	NUTS2	No regional data: DK, SI, HR, MK, TR, LI, CH Some regional data missing: DE, ES, FR, UK
Unemployment rate, female/male	2005-2007	NUTS3	Some regional data missing: BE, GR, ES, IT, AT, FI, SE, UK, NO Regional data not available: DK, SI, HR, MK, TR, IS, LI, CH Major gaps in regional data (NUTS2 more or less ok): DE, PL, PT 2007 data missing: IE Gender data available only on NUTS2: FR (partly IT)
Wealth and Production			
GDP in PPP per capita	2003-2005	NUTS3	Some regional data missing: DE, ES, IT, NL, UK Regional data not available: MK, NO, IS, CH, DK Major gaps in regional data (NUTS2 more or less ok): PL 2002 - 2005 data missing: TR
GDP per capita	2003-2005	NUTS3	Some regional data missing: DE, ES, IT, NL, UK Regional data not available: MK, NO, IS, CH, DK Major gaps in regional data (NUTS2 more or less ok): PL 2002 - 2005 data missing: TR
GDP in € per capita	2003-2005	NUTS3	Some regional data missing: DE, ES, IT, NL, UK Regional data not available: MK, NO, IS, CH, DK Major gaps in regional data (NUTS2 more or less ok): PL 2002 - 2005 data missing: TR

While assessing the data situation based on Eurostat data for ESPON countries (including EU Candidate Countries) it is apparent that we are meeting some data related challenges even with the basic raw data on regional level. We are trying to fill the gaps in the database using various sources, mainly National Statistical Institutes. Because the data situation varies quite a lot between the countries, we are concentrating to fill the gaps for the countries of the ESPON space. Regional data from Turkey and Macedonia are more or less missing and even if we manage to find the figures for these countries from national sources, the data harmonization would be beyond the scope of the project.

7.4 DEMIFER data requirements

One of the main challenges in DEMIFER is the lack of migration data in general and in the migration flow data in particular. In the ESPON 1.1.4 project 'Spatial effects on demographic trends and migration', the migration data at regional level were estimated as the difference between the total population change and the natural population change. In many cases migration data were available only at NUTS 2 level or even only at national level.

This lack of migration data for the countries and regions has seriously hampered the project. In ESPON 1.1.4. both the country or region of destination of an emigrant as well as the country or region of origin of an immigrant were unknown. As a consequence it was not possible to distinguish an intra-European labour immigrant from an extra-European refugee immigrant. Unfortunately, the migration data situation has not improved much since the last ESPON period. The availability, reliability and comparability of migration data is generally very limited for the NUTS 2 regions. For most of these regions only the net migration figure is 'known', i.e. calculated as the difference between total population growth and natural population growth. A further breakdown by internal and international migration is often not available.

One solution to the data problem is use data from the National Statistics Institutes and to carry out case studies. For countries like Denmark, Iceland and Sweden regional migration data are downloadable for free. These data contain information of immigrants on e.g. age, sex, marital status, country of birth and country of citizenship; emigration data at a regional level contains information of country of destination and sex. Countries like Spain and Portugal only have emigration statistics at a national level and France has no emigration statistics at all. A negative aspect about using case studies is that the cases studied will partly be selected by data availability. However, if we use case studies based on the migration typology to be made data availability will be important for the types of regions and not for individual countries.

Another aspect we need to consider is how to deal with the different rules for registering immigrants and emigrants in different countries. Some countries register the international migrant after the intention to stay, others by actual stay. In some countries a person must stay, or intend to stay in or out of the country for at least three, six or twelve months to be registered as an immigrant or emigrant.

In the following parts of this section we discuss the data requirements for DEMIFER as regards demographic and migration data. We have to note, however, that working with data is an ongoing process during the project. This inception report gives some idea on what we need and will use, but will not be binding; during the course of the project it may become clear that we might need and use other data as well. To identify typologies and drivers there are several regional socio-economic variables available that can be used. A selection will be made of variables available, for instance from the ESPON data, the Eurostat database (see Annex 2), or LFS data.

7.4.1 Demographic and migration data
In Table 9 an overview is given of the raw demographic data that are needed within DEMIFER.

Table 9:   Raw demographic and migration data to be used in DEMIFER

	Years	Availability	Source
Area in km2	1990-2008	+	Eurostat
Population by sex	1990-2008	+	Eurostat
Population by sex and age	2000-2008	+/0	Eurostat
Births by age of mother	1990-2007	+/0	Eurostat
Deaths by sex and age	1990-2007	+/0	Eurostat
Net migration	1990-2007	+	Eurostat*
Internal out-migrants and in-migrants by sex and age	2000-2007	--	NSI/Eurostat?
OD matrix internal migration	2000-2007	--	NSI
External out-migrants and in-migrants by sex and age	2000-2007	--	NSI/Eurostat?
OD matrix international migration	2000-2007	--	NSI
Type of international migration by sex and age	2000-2007	--	NSI/OECD/World Bank
Population by citizenship/country of birth/education	Around 2001	0	Eurostat

Availability: + available for most of the countries/regions; 0 available for almost half the countries/regions; - available for less than half the countries/regions; -- available for only a small number of countries/regions
Age means 5 year age groups
Around 2001 refers to the latest census round
* Difference between total population growth and natural population growth

Examples of demographic data to be processed, within the database by means of a query or outside the database by means of another application (e.g. Excel), are presented in Table 10. Obviously, the raw data allow for various other indicators to be processed.

Table 10:   Examples of data to be processed inside or outside the ESPON database

	Years	Raw data
Population density	1990-2008	Population and area
Dependency rates etc.	2000-2008	Population by sex and age
Median/average age by sex	2000-2008	Population by sex and age
Crude birth rate	1990-2007	Births and population
Crude death rate	1990-2007	Deaths and population
Net migration rate	1990-2007	Net migration and population
Natural population growth per 1000 population	1990-2007	Births, deaths and population
Total population growth per 1000 population	1990-2007	Births, deaths, net migration and population
Total fertility rate	2000-2007	Births and population by sex and age
Life expectancy by sex	2000-2007	Deaths and population by sex and age

7.4.2 Data requirements for preparing scenarios
The following data are needed for running the two reference scenarios using the MULTIPOLES model:

- data on population stocks and deaths by age (eighteen five-year age groups; the last half-open age group is 85+), sex and region;
- births by sex of the child born, and region and age of the mother (from 15-19 years to 45-49 years; births from mothers younger than 15 and older than 49 years are counted in the adjacent age groups);
- a full migration matrix (by region of origin, region of destination, age and sex) for internal migration;

- a matrix of international migration between the modelled countries (by country of origin and country of destination);
- net migration for exchanges between each of the countries within the system and the Rest of the world;
- some information about the age and sex structure of international migrants.

The labour force module requires additionally age and sex specific labour force participation rates for each country.

Data on mortality and fertility are usually available and of good quality. The registration of such events is quite exact and carefully enforced by various administrative arrangements as well as social security regulations. We will not have problems obtaining these data and the amount of estimations needed should be reasonable. Data on both internal and international migration are more difficult to obtain (see also table 6). Ideally, origin-destination-age-sex data should be sought after for interregional and international intra-system migration, and net international migration by age, sex and country for international migration to/from outside the system.

The model requires full sets of data on internal migration as an input, i.e the ODAS matrix. These are difficult to obtain, therefore it may be necessary to estimate the full matrix of flows. The reconstruction can be based on the concept of 'migration cube' - a three dimensional array of migration flow data. The dimensions of the cube are origin, destination, and age. The cells of this cube are estimated for each gender separately, using the data for the faces of this cube: the matrices representing migration by origin and destination, by origin and age, and by destination and age. Willekens, Por and Raquillet (1981) elaborated algorithms allowing for the estimation of the entire cube from the marginal values. The process of the reconstruction of the data should not have introduced any significant errors.

Statistics of international migration are the main source of uncertainty. There is ample literature describing the problems with European data on international migration and the efforts to solve them (Kelly, 1987;, Poulain, Debuisson Eggericks, 1991; Poulain 1993; Nowok and Kupiszewska, 2005; Kupiszewska and Nowok, 2008; Herm, 2006). Recent European regulation concerning data on international migration should bring a significant improvement in future, but not in the life of the DEMIFER project. A possible solution for the DEMIFER project might be to use the estimates of migration flows obtained in the on-going MIMOSA project (see NIDI et al., 2006). Some reconstruction procedures for estimating the age dimension has been also built into the MULTIPOLES model.

Currently, the MULTIPOLES model requires the following data on international migration between the modeled countries:

- OD matrix of flows;
- share of males for each OD pair;
- typical distributions of migration rates by age;
- age distribution or type of age distribution for each ODS.

Based on this information it is possible to estimate the full ODAS matrix of migration rates.

For migration to the modelled countries from outside the system of the modelled countries the following data are needed for running the MULTIPOLES model:

- net external migration to each country from the Rest of the world;
- proportion of males in net external migration to each country from the Rest of the world;
- typical distributions of the number of external migrants by age;
- type of age distribution of net external migrants for each country and sex.

Based on the above estimates net external migration from the Rest of the world by age and sex will be calculated for each country. The total net external migration from the Rest of the world to each modelled country will be calculated as a difference between total net migration and the net intrasystem migration.

Age and sex specific labour force participation rates will be taken from LABORSTA, a data base run by the International Organization for Migration. The rates are harmonised, and the coverage of European states is quite good. No major problems with data collection are expected.

The final dataset will be fully documented: the sources, availability, comparability, missing data, statistical models, estimation procedures and other possible peculiarities.

8 Dissemination of the results of DEMIFER

The objective of a separate work package on dissemination is to support the use and dissemination of the results achieved in the DEMIFER project. Dissemination activities of the project should be interrelated and coordinated with respective activities by the ESPON Programme (see The ESPON 2013 Operational Programme, Priority 4 on the capitalisation of the results from the project activities).

Target groups
DEMIFER will mainly address the two prime target groups mentioned in the ESPON 2013 Programme:
(1)   The European level involving policy makers in European Institutions and programmes, representatives of Member States dealing with territorial development and relevant sector policies, Examples of reaching these prioritised groups may be participation in the ESPON seminars and other ESPON events.
(2)   Transnational, regional and local policy makers and practitioners involved in the development of territories. Examples of reaching these prioritised groups may be activities in cooperation with the ECP-networks.

The scientific community is not a prime target group but the scientific community related to territorial research will empower the capitalisation of results and be a target by itself in awareness raising activities. This is in line with the ESPON 2013 Operational Programme, where on page 52, under the headline "Expected impacts", a greater visibility of ESPON results in the scientific community is asked for.

Publication and media
The most important publications will be the ones named in the ESPON 2013 Operational Programme.

European professional and scientific organisations such as AESOP, RSA, ERSA and EUGEO will be considered for paper presentations. The major aim of these presentations is not disseminating the results but to benefit from discussions regarding the analysed topics with the scientific community. Communication during the research process will give us essential feedback, enabling us to refine our work to gain greater relevance for our end users. As side result (not an aim in itself), these presentations will be submitted for publication in scientific journals.

The DEMIFER project will not have a home page other than the one ESPON provides. A web-based data and information site (DEMIFER sharepoint site) will be made for internal project use only, where all relevant drafts, working papers, notes and references, statistical data, shared data analysis etc. can be uploaded and downloaded. This intra-net also includes instructions, contact information and calendar with e.g. dates, deadlines, and events. Only project members have access to this intra-net.

Activities
Table 11 shows the communication and dissemination activities to be integrated into the research project. For each, we have indicated which target group or groups are to be reached, what sort of task is intended and how this relates to the entire research project.

Table 11: Dissemination and communication activities

WHEN	WHAT	TARGET(S)	FUNCTION IN RESEARCH PROJECT
2008	DEMIFER sharepoint site established	Project members and steering group	Facilitate constant exchange of information and permit immediate reaction to one another's work
2009	Interim report published	All target groups	Receive input from ESPON and to present results
	One-day working seminars in 1 to 2 venues	End users, policy makers, target group (2)	Event in cooperation with the ECP-networks
	Paper presentation at scientific conference by an organisation mentioned in the ESPON 2013 Operational Programme	General public, academic community	Receive input and ensure that the material from the working seminars reaches a greater audience
Half-yearly	Presentation at ESPON events	All target groups, Research community	Enable synergies among projects
2010/2011	One-day working seminars in 1 to 2 venues	End users, policy makers, target group (2)	Event in cooperation with the ECP-networks
	Paper presentation at scientific conference by an organisation mentioned in the ESPON 2013 Operational Programme	General public, academic community	Receive input and ensure that the material from the working seminars reaches a greater audience
	Publish results in the final report	All target groups	Make all research results available to interested parties
	Policy briefs	All target groups	Ensure that the work done in DEMIFER reaches a wide general audience
During/Post-project	Scientific publications	Academic community	Present technical estimations and relate the results to theoretical debates in the academic community. Ensure that the work done in DEMIFER adds to basic knowledge in the field

Policy briefs

The results and conclusions of the scientific research within the project will be formulated in relation to policy orientations present at European level. References to future policy options will take into account European Cohesion Policy orientations, in particular expressed in the Community Strategic Guidelines on Cohesion 2007-2013 and the Fourth Report on Cohesion (European Commission, 2007). In a number of policy briefs we will discuss several policy options taking into account the impact the likely demographic and migratory flows could have on the competitiveness and socio-economic situation of European regions and cities as well as on the realisation of economic, social and territorial cohesion in Europe.

9 Reflection on questions of Evaluation Committee and Sounding Board

Following the results of the evaluation of the DEMIFER proposal, the ESPON Coordination Unit asked for adjustment of the proposal in accordance with a number of content related issues (see Annex III of the Contract). In this section of the inception report we shortly reflect on the questions raised by the Evaluation Committee and Sounding Board.

The Evaluation Committee made 5 comments on the content of the proposal:
1. Relation between economic development and demography
2. Relation between territorial capital and demography
3. Seasonal and illegal migration
4. Geographical coverage of the case studies
5. Data and indicators on demography and migration

In addition the Sounding Board made comments.

This section discusses both the comments by the Evaluation Committee and the comments by the Sounding Board.

9.1 The relationship between economic development and demography

The Evaluation Committee asks for an in depth analysis of the impact of economic development on demography and on possible policy implications of that relationship.

Section 4.3 provides a discussion on the relationship between economy and demography. In DEMIFER this relationship will be the basis for the development of scenarios that are discussed in section 5. One dimension in the development of scenarios will be the level of economic growth: will economic growth continue in the long run or will economic growth decline due to depletion of resources. Another dimension in the development of scenarios will be differences across types of regions. Will they increase or will there be convergence? This will result in four scenarios and for each of these scenarios the relationship between economic development and the demographic and migration development will be analysed. In addition for each of these scenarios policy options will be analysed.

9.2 The relationship between territorial capital and demography

The Evaluation Committee asks for an analysis of the relationship between demographic profiles and development opportunities in different types of regions

The direction of migration flows is strongly related with characteristics of regions. As a result the size and structure of populations differ between types of regions. One important concept characterizing types of regions is 'territorial capital'. This concept includes both natural features of regions and infrastructure. But in addition to material capital it includes social, political and cultural capital as well (Zonneveld and Waterhout, 2005). One aim of European cohesion policy is to exploit as much as possible the territorial capital of geographical areas (European Commission, 2008). Economic activities are heavily concentrated in a few

European areas. This leads to over-exploitation of resources in some areas and under-exploitation in many other regions. For example, mountainous regions, islands and sparsely populated regions tend to have lagging industry and high unemployment. The aim of territorial cohesion policy is a balanced exploitation of resources. Metro regions can benefit from industry and innovation, rural areas may develop strong leisure sectors.

There is a two-way relationship between territorial capital and migration. On the one hand territorial capital affects the direction of migration flows, both international and internal migration. On the other hand the direction of migration flows affect territorial capital. If many people move from one region to another, the former region will have increasing difficulty to achieve sufficient critical mass to maintain services.

The relationship between territorial capital and demography will be taken into account in DEMIFER by means of developing a typology of regions and calculating scenarios for the different types of regions. In the scenarios we will show how demographic developments and migration patterns differ for different types of regions taking into account different economic developments.

9.3   Seasonal and illegal migration

The Evaluation Committee asks to include considerations on seasonal and illegal migration and to assess the data situation.

9.3.1 Seasonal migration
The focus of DEMIFER will be on long term developments as the aim is to analyse the consequences of ageing and climate change, which typically are long-term developments. Therefore DEMIFER will focus on long-term migration rather than seasonal migration. Nevertheless seasonal migration should not be ignored as it may have an impact on long-term migration. First, seasonal migration may have a downward effect on long-term migration. One characteristic of seasonal migration is that consumption of a migrant and particularly of his family members occurs mainly in the home country. Seasonal migrants earn money in the host country and spend it in the home country. As Stark and Fan (2006) note this may confer a higher net benefit than permanent migration. One well-known example is the large-scale seasonal migration from Poland to Germany for a maximum period of three months a year. Secondly, the occurrence of seasonal migration may lead to an increase in long-term migration, if administrative constraints of international migration are eliminated. This may result in an increase immigration of family members, which will lead to more long-term migration.

Data on seasonal migration may be obtained from data on work permits rather than from migration statistics. Usually seasonal migrants are not included in population statistics as in many countries only migrants staying for at least six months are registered. Thus if a transition from seasonal to permanent migration occurs this will be measured as an increase in migration. As the scenarios will be based on data on registered migration, such a transition would imply a higher level of migration in regions with a high prevalence of seasonal migration.

9.3.2 Illegal migration

A central issue in the debate on migration policies is the link between legal and illegal migration (Commission of the European Communities, 2004c; Jandl and Kraler, 2006). Legal migration denotes that part of population movements which takes place in conformity with national and international rules and regulations, while 'illegal migration' denotes that part which is unauthorized, and hence, not documented in official records (Jandl and Kraler, 2006).

Will more flexible immigration policies lead to a decrease in illegal immigration – or, conversely, will more strict policies increase illegal migration? There is no simple answer to this question. For instance, increasing legal immigration opportunities for some groups of migrants may result in a decrease in illegal migration of these groups, but may not necessarily lead to a decrease in illegal migration of all groups of migrants. Furthermore, it may even lead to rising illegal migration levels if illegal migrants rely on networks of formerly migrated legal immigrants (Boswell and Straubhaar, 2004). More or less the same applies to the possible effects of regularizations. At first this may decrease the number of illegal foreigners. Repeated regularizations, however, may attract more illegal migrants given the prospect of later obtaining a legal status relatively easily. In the last decades regularizations have been especially important for southern European countries (Italy, Spain, Portugal, Greece and France). An important question here is whether we can use regularization programs to estimate the size and composition of previously illegal migrants. This too, is not straightforward as many foreigners who are later regularized may have entered a country legally, for instance on a tourist visa or as a seasonal worker with a temporary work permit (Epstein et al., 1999).

The scenarios of DEMIFER will focus on registered migration. This does not imply that illegal migration does not play a role, as it may affect the size of legal migration. If there is a substitution between illegal and legal migration, relaxing restrictions for immigration because of ageing, may lead to a reduction of illegal migration. As a result the size of legal migration may increase more strongly than the size of total (i.e. legal plus illegal) migration.

9.4   Geographical coverage of the case studies

The Evaluation Committee asks for a reasonable geographical coverage of the case studies and to consider different types of demographic situations.

Section 5.7 of this report discusses the case studies. One criterion in the selection of the case studies will be the demographic and migration development. Another criterion will be the typology of regions. Taking these criteria into account, we will aim for a balanced geographical coverage.

9.5   Data and indicators on demography and migration

The Evaluation Committee asks for a detailed overview of the data situation on demography and migration. Section 7 of this report includes a detailed overview of data availability and data requirements of the scenario model that will be used in DEMIFER.

9.6   Comments from the Sounding Board

The Sounding Board includes two members: Nadine Cattan and Mats Johansson. During the kick-off meeting of DEMIFER, on 18 September 2008, in Esch-sur-Alzette both gave comments on the proposal. First we will discuss the comments made by Nadine Cattan, followed by the comments by Mats Johansson.

Comments by Nadine Cattan
- *Why not use regression analysis for typology?*
  Multivariate analyses will be used in DEMIFER wherever necessary and to the extent that data are available.
- *Be careful with using unemployment as indicator. The proposal claims that migrants move from regions with high unemployment to regions with labour shortage. However, migrants move to big cities where unemployment may be high, but where there are enough jobs.*
  True. This will be taken into account in developing scenarios for different types of regions.
- *It is too simple to state that young migrants move to big cities and seniors to rural areas.*
  True. The scenarios will include assumptions on the age patterns of migration flows. Whereas the propensity to migrate tends to be higher for particular age groups (e.g. young adults) than for other age categories, this does not include that the migration of the latter is zero.
- *Are there enough data to make an OD-matrix at regional level?*
  For those countries for which no sufficient data are available, the OD-matrix at regional level will be estimated on the basis of a model of internal migration.
- *If there are not flow data, it may be useful to use stock data.*
  Population stock data may be used to estimate net migration flows.
- *One key research question concerns financial consequences of migration (remittances). How will that be analysed?*
  The quantitative analyses of the project focus on quantitative analyses of the impact of migration on the size and age structure of population and labour force. The analysis of effects on remittances will be mainly based on a review of the literature.
- *How will the effects of globalization and climate change be included?*
  Be developing two scenarios in which it is assumed that economic growth may decline due to climate change and depletion of resources.

Comments by Mats Johansson
- *There will be considerable data problems concerning migration from outside the European Union. There are only few data on flows, and on skill level.*
  Indeed, lack of sufficient data will be one main problem in developing scenarios for all regions. For that reason case studies aim to do in depth analyses for those regions for which more detailed data are available.
- *It is important to make a distinction between changes in the short run (business cycle) and in the long run (structural transformation).*
  Since one of the main aims of DEMIFER is to analyse the impact of demographic and migration developments on the ageing of the population and the labour force, which are long-term trends, the focus of DEMIFER will be on the long run.
- *The relationship between migration and natural development should be taken into account. If women in reproductive ages leave a region, this will reduce the number of*

births. If immigrants have a higher fertility this may raise the TFR. However, the second generation may have lower fertility.

True. In scenarios in which high immigration is assumed, the level of the TFR may be assumed to be higher than in other scenarios.

- *If we import skilled labour, there will be a brain drain in other countries. For example, east-west migration may lead to brain drain in the east.*

  This may be the case in a scenario in which there is no convergence among European regions. In addition we will analyse a scenario in which cohesion policies are assumed to achieve a more equal development across regions.

- *Push and pull factors affecting migration may differ across groups of migrants: use multivariate regression analysis.*

  In different scenarios we will make alternative scenarios on the size of different types of migrants. For example, in one scenario we will assume an increase in labour migrants, whereas in another scenario we will assume that there will be high migration due to climate change.

- *Labour shortage may lead to an increase in labour productivity rather than immigration.*

  In analysing the consequences of the scenarios different assumptions on the growth of labour productivity will be taken into account.

- *Increase in female labour force participation may be an answer to labour shortage as well. Moreover, this may be combined with higher fertility.*

  The scenarios will include assumptions on the future level of labour force participation rates. In some scenarios labour force participation rates will be assumed to increase due to increases in participation of women and of people aged around 60.

- *The focus is on the labour force. The increase in the number of elderly people who need care is ignored.*

  The increase in the demand of care due to ageing will lead to an increase in labour demand. This will be included in the development of the scenarios.

- *Distinction between policy implications and policy recommendations. Researchers may indicate policy implications, but their role is not to give recommendations.*

  We will discuss the consequences of various policy options, we will not give recommendations.

- *Take into account scale: policy implications may differ between micro, meso and macro level.*

  Policy options on all three levels will be analysed.

- *Do not write report too academic, do not include formulas. They may be included in annexes and in separate articles for journals.*

  The interim report and the final report will not be technical. Technical discussions will be included in annexes and/or articles that we will prepare for international journals.

10   Identification of possible barriers

Data availability will be the main obstacle in DEMIFER. Ideally we would have detailed data on migration at regional level including information on characteristics of migrants, such as skill level and type of migrant (e.g. labour migrant, migrating family member, student, asylum seeker). For most regions such detailed information will not be available. For many countries there are very limited data on migration on regional level. Some countries lack reliable data on international migration, even at the national level. In some countries on regional level there is information on net migration only rather than on in- and outflows. In addition, even if there are data on gross migration flows, information on countries of origin and destination may be lacking.

In DEMIFER we will apply several strategies to tackle these problems. First, we will make estimates of age-specific migration numbers and on origin-destination associations that are needed as input for the scenario model (see section 7.4). These estimates are based on observed patterns for different types of regions in countries for which we have sufficient data. Secondly, case studies of regions for which we have detailed data will allow in-depth analyses. Thirdly, in developing scenarios qualitative analyses, based on a review of literature, will be translated into quantitative assumptions on demographic and migration parameters, on the basis of reasoning on the ranking of the level of the parameters across scenarios. For example, it may be argued that skilled labour migration from outside Europe will be higher in a scenario with high economic growth than in a scenario with reduced growth, whereas it may be argued that the spatial distribution of immigrants will be more balanced in a scenario with strong social cohesion than in a laissez faire scenario.

Another barrier might be the scope of the project. The policy and research questions in the specification by ESPON (see section 2.1) include a wide range of topics. Aiming to answer all these questions on the basis of quantitative analyses would make the project much too ambitious. Therefore DEMIFER will focus the quantitative analyses on assessing the effects of alternative scenarios on future demographic and migration developments on the size and age structure of the population and labour force. Other questions may be dealt with in a qualitative way. For example, for answering questions like "What is the need for increasing the labour force in order to avoid negative impact on the economic performance?" and "Which skills are needed in different types of regions and cities in order to meet the demands of the economic base?" economic models would need to be developed that are far beyond the scope of this project. However, in developing scenarios for different types of regions these questions can be taken into account in a qualitative way.

11   Envisaged output

Apart from this inception report, DEMIFER will produce the following output:
- an interim report (deadline 30 April 2009);
- a draft final report (deadline 30 April 2010);
- a final report (deadline 30 September 2010);
- a number of deliverables (output of the different activities of Work Package 2):
    - D1   Report on effects of demographic and migratory flows on European regions
    - D2   Report on causes and impacts of migration on European regions
    - D3   Typology of regions
    - D4   Report on the multilevel scenario model
    - D5   Report on reference scenarios including a discussion of regional population and labour force simulations, as well as the detailed numerical results
    - D6   Report on scenarios and a database of scenario drivers
    - D7   Report assessing the effects of demographic developments on regional competitiveness and cohesion
    - D8   Report on the climate change and resource depletion scenarios and a database of scenario drivers
    - D9   Report on policy implications
    - D10   Database
    - D11   Atlas of maps
    - D12   Report on case studies
- raw data and indicators to be included in the ESPON database;
- one or more typologies of regions;
- outcomes of scenarios;
- an atlas of maps;
- policy briefs.

A full description of the content of the interim report and (draft) final report is included in Annex III of the contract. Each research activity within Work Package 2 has its own deliverables. All deliverables and other types of output (data, indicators, typologies and maps) form the building blocks for the final report. The policy briefs will be short notes highlighting one by one the different issues discussed in the final report.

12   Planning of activities

Figure 2 contains the time-work flowplan of DEMIFER, containing all activities and output of the project from the start until closure. A more detailed planning of the activities for the period until 30 April 2009, is given below:

Coordination:
1. Preparing first progress report
2. Preparing project meeting to discuss state of affairs and interim report

Activity 1: Demography and migration
1. Assessment of results from previous studies in the field of demography and migration.
2. Inventory and collection of available demographic data.
3. Development of estimation procedures and identification of proxies.
4. Assessment of the effect of demographic and migratory flows on the size and age structure of the population.
5. A start will be made with the identification of characteristics of migration flows.

Activity 2: Typology of regions and cities
1. Inventory of previous typologies.
2. Inventory and collection of available socio-economic and territorial information.
3. Construction of one or more new typologies.
4. A start will be made with the assessment of the economic and ecological impact of population growth and migration.

Activity 3: Multi level scenario model and reference scenarios
1. Draft technical description of the multilevel scenario model MULTIPOLES.

Activity 4: Regional scenarios
1. First preparations for designing the regional scenarios.

Activity 5: Policy implications
1. First preparations for the policy options to be taken into account.

Activity 6: Data, indicators and maps
1. Data: All data collected will be stored into one database, will be harmonized and distributed for all activities.
2. Indicators and typologies: Data will be combined to produce indicators connecting demographic and migration developments with socio-economic characteristics of regions. The indicators will build on the typology to be developed in activity 2.
3. Maps: Indicators will be presented in maps
4. All data, indicators and maps will be prepared to be included in the ESPON database.

Activity 7: Case studies
-   To start in June 2009

Dissemination:
1. Establishing DEMIFER sharepoint.
2. Present inception report during ESPON Seminar in Artigues-près-Bordeaux
3. Preparations for working seminars in cooperation with ECP-networks

Time-work flow plan DEMIFER

		2008				2009												2010												2011				
Calendar month		9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Project month (no.)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
WP1	**Coordination**	K	pm	ir		P		pm	irn			P			pm			P		pm	dF			P		F	pm			P		E			EA
WP2	**Research Activities**																																		
A1	Demography and migration										D1																								
T1	results previous studies																																		
T2	demographic data																																		
T3	estimation and proxies																																		
T4	effects on population structure																																		
T5	characteristics of migration flows																																		
A2	Typologies of regions and cities										D2		D3																						
T6	previous typologies																																		
T7	socio-economic and territorial data																																		
T8	construction of typologies																																		
T9	economical and ecological effects																																		
A3	Scenario model and reference scenarios																		D4/5																
T10	multilevel scenario model																																		
T11	preparation of reference scenarios																																		
A4	Regional scenarios																			D6	D7/8														
T12	regional scenarios																																		
T13	competetive and cohesion																																		
T14	climate change and resource use																																		
A5	Policy implications																				D9														
T15	policy options																																		
T16	policy scenarios																																		
T17	internal versus international migration																																		
A6	Data, indicator and maps																			D10	D11														
T18	data																																		
T19	indicators and typologies																																		
T20	Maps and figures																																		
A7	Case studies																				D12														
T21	preparation and coordination case studies																																		
T22	implementation case studies																																		
WP3	**Dissemination**				Em						Em				M		Em			M				Em				M		Em			pb		

ir	Inception report (11 November 2008)	K	Kick-off meeting (18 Sept 2008 with Commission)
irn	Interim report (30 April 2009)	pm	Project meetings
P	start of new reporting period (1 Jan/1 July of each year)	Em	ESPON meeting
dF	Draft Final report (30 April 2010)	M	Meeting in cooperation with ECPs
F	Final report (30 September 2010)		
E	Closure of activities (31 March 2011)	D1-D12	Deliverables of project (output research activities)
EA	Closure of administrative duties (30 June 2011)	pb	Policy briefs

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Annex 1: Changes in NUTS classification (2006 versus 2003)

From NUTS2003 to NUTS2007

Country	Level	What have happened?	What to do (on NUTS2 level)?
EU		From EU25 to EU27	Pay attention to overall average value
ESPON		From EU25+4 to EU27+4	Pay attention to Iceland and Liechtenstein & average value
Belgium	NUTS3	BE333 divided to BE335 and BE336	Pay attention to BE33
Bulgaria		New codes for NUTS3, new regional division for NUTS2 and NUTS1	None of the NUTS2/NUTS1 regions can be compared over time
Croatia	NUTS2/NUTS3	New NUTS2 division -> all NUTS3 codes changed	NUTS2 regions not comparable over time - can be recalculated after NUTS3
Denmark	NUTS2/NUTS3	New regional division	Comparison NUTS2003 - NUTS2007 not possible over time on NUTS2/NUTS3 level
Finland	NUTS3	New codes FI191-> FI196 and FI192 -> FI197 dueto border change	Pay attention to FI19
Germany	NUTS2/NUTS3	Sachsen-Anhalt NUTS1 region redivided	NUTS2 - DEE1, DEE2 and DEE3 merged to DEE0 (from 3 NUTS2 regions to one -> can be summarized)
		dee36 (ohrekreis) and dee33 (Bördekreis) merged into dee07 Börde	
		Dee34, DEE38 and Dee3A merged into Dee09 (Harz)	
		Dee26 and Dee23 merged into DEE0a	
		dee22 and de 27 merged into dee08 (Burgerland)	
		Dee24 and Dee25 merged into DEE0b	
		Dee13, dee32 and dee39 merged into DEE0c (Salzland)	
		Dee12, dee14 and dee15 merged into DEE05	
Iceland	NUTS3	Divided between capital region and rest of the Iceland on NUTS3 level	
Italy	NUTS3	Sardinia rededvided on NUTS3 level- not comparable to old regions	Pay attention to ITG2
			ITG21 -> ITG25 and ITG29
			ITG22 -> ITG26 and ITG2a; partly also to ITG28 and ITG27
			ITG23 -> ITG28 and some parts to ITG26
			ITG24 -> ITG2b and ITG2c and some parts to ITG27
the Netherlands	NUTS3	Change in border between NL222 and NL223 -> new codes NL225 and NL226	Pay attention to NL22
Poland	NUTS3	NUTS3 regions reorganised & redivided	Pay attention in generel on NUTS2 level
Romania	All	New codes for NUTS3 and NUTS2, new regional division for NUTS1	Pay attention to new codes on NUTS2 level
Slovenia	NUTS2	Divided to 2 NUTS2 regions - NUTS3 regions same ones, but new codes	NUTS2 regions not comparable over time - can be recalculated after NUTS3
Spain	NUTS3	Change on NUTS3 level; ES530 Illes Balears divided to ES531 eivissa y formentera, ES532 Mallorca and ES533 Menorca	Pay attention to ES53
		Changes on NUTS3 level; ES701 divided to ES708, ES704 and ES705; ES702 divided to ES703, ES706, ES707 and ES709	Pay attention to ES70
Sweden	NUTS1	New NUTS1 division, New codes on NUTS2 and NUTS3	Pay attention to new codes on NUTS2 level
the United Kingdo	NUTS2/NUTS3	Scotland - Change in border and new codes on NUTS2 (UKM1 -> UKM5 and UKM4 -> UKM6) and NUTS3; border between aberdeen city and inverness & Moray changed	Changed regions ca not be compared over time

Annex 2: Data update Eurostat

Population
NUTS level 2 (version 2003), NUTS level 3 (version 2003)

Population total 2003:

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Population density 2002:

Data available for **2003-2006** for all regions, except: **Belgium** - year 2006 for all regions (NUTS2 and 3 level), years 2003 - 2006 for 2 regions be335 Arr. Verviers - communes francophones, be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Czech Republic** - years 2003 - 2006 for 2 regions cz063 Vysocina and cz064 Jihomoravský; **Denmark** - years 2003-2006 for 9 regions dk011 Byen København, dk012 Københavns omegn, dk013 Nordsjælland, dk021 Østsjælland, dk022 Vest- og Sydsjælland, dk032 Sydjylland, dk041 Vestjylland, dk042 Østjylland dk050 Nordjylland, years 2003-2004 for 5 regions dk01 Hovedstaden, dk02 Sjælland, dk03 Syddanmark, dk04 Midtjylland, dk05 Nordjylland; **Germany** - years 2003-2006 for 6 regions dee01 Dessau-Roßlau, Kreisfreie Stadt, dee05 Anhalt-Bitterfeld, dee06 Jerichower Land, dee09 Harz, dee0c Salzland, dee0e Wittenberg, and year 2006 for 8 regions dee02 Halle (Saale), Kreisfreie Stadt, dee03 Magdeburg, Kreisfreie Stadt, dee04 Altmarkkreis Salzwedel, dee07 Börde, dee08 Burgenland (D), dee0a Mansfeld-Südharz, dee0b Saalekreis, dee0d Stendal; **Spain** - year 2006 for all regions (NUTS2 and 3 level), years 2003-2006 for 10 regions (es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote, es709 Tenerife); **France** - year 2006 for all regions; **Italy** - years 2003-2006 for 8 regions (itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias); **Luxembourg** - year 2006 (lu000 Luxembourg (Grand-Duché)); **Malta** - year 2006 for 4 regions (mt0 Malta, mt00 Malta, mt001 Malta, mt002 Gozo and Comino / Ghawdex u Kemmuna); **Netherlands** - years 2003-2005 for 2 regions (nl225 Achterhoek, nl226 Arnhem/Nijmegen); **Austria** - year 2006 for all regions; **Poland** - year 2006 for all regions, and years 2003-2006 for 44 regions; **United Kingdom** - years 2005-2006 for for all regions, and years 2003-2006 for 4 regions (ukm5 North Eastern Scotland, ukm50 Aberdeen City and Aberdeenshire, ukm6 Highlands and Islands, ukm62 Inverness & Nairn and Moray, Badenoch & Strathspey), and years 2004-2006 for 29 regions; **Iceland** - years 2003-2006 for 2 regions (is001 Höfudborgarsvædi, is002 Landsbyggd), and year 2006 for is0 Iceland;

Share of female population 2003:

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of male population 2003:

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of population < 14 years 2003:

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national

and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of population > 65 years 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of high aged population (> 75 years) 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of female population < 14 years 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of female population > 65 years 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of female high aged population (> 75 years) 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of male population < 14 years 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of male population > 65 years 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and

Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Share of male high aged population (> 75 years) 2003

data available for **2004-2007**, for all regions except: no data for year 2007 for whole **Belgium, Denmark, France, Austria, UK**; data missing on regional level for **Denmark** (all 5 regions) for years 2004-2007; 2 regions in **Slovenia** (si01 Vzhodna Slovenija, si02 Zahodna Slovenija) for years 2004-2005; **UK** both national and regional data for years 2005-2007 and 2 regions (ukm5 North Eastern Scotland, ukm6 Highlands and Islands) for period 2004-2007; regional data for **Macedonia** for period 2004-2007; **Turkey** both national and regional data for years 2004-2006; **Cocos (Keeling) Islands** for years 2004-2006;

Average Population 2003

Data available for time frame 2004-2006, NUTS level 2, year 2006 data missing for Belgium, France, Austria, Slovenia, years 2004-2006 missing data for Denmark, United Kingdom, Macedonia and Turkey

Average male Population, share in %, 2003

Data available for time frame 2004-2006, NUTS level 2, year 2006 data missing for Belgium, France, Austria, Slovenia, years 2004-2006 missing data for Denmark, United Kingdom, Macedonia and Turkey

Average female Population, share in %, 2003

Data available for time frame 2004-2006, NUTS level 2, year 2006 data missing for Belgium, France, Austria, Slovenia, years 2004-2006 missing data for Denmark, United Kingdom, Macedonia and Turkey

Population density 2002

Data available for period 2003-2006 at NUTS level 3, some countries have gaps in the information: **Belgium** - year 2006 for all regions, years 2003-2006 for be335 Arr. Verviers - communes francophones, be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Czech Republic -** years 2003-2006 missing for cz063 Vysocina and cz064 Jihomoravský; **Denmark -** years 2003-2006 missing for all NUTS level 3, hovewer data available for NUTS level 2 regions; **Germany -** years 2003-2006 missing for dee01 Dessau-Roßlau, Kreisfreie Stadt, dee05 Anhalt-Bitterfeld, dee06 Jerichower Land, dee09 Harz, dee0c Salzland, dee0e Wittenberg; **Spain** - year 2006 missing for all regions in the country, years 2003-2006 missing for es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote, es709 Tenerife; **France -** information missing for all regions in year 2006; **Italy -** information missing for years 2003-2006 for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **lu000 Luxembourg (Grand-Duché) -** year 2006; **Malta -** year 2006 for all regions in Malta; **Netherlands -** years 2003-2005 for nl225 Achterhoek and nl226 Arnhem/Nijmegen; **Austria -** year 2006 missing for all regions in the country; **Poland -** year 2006 data missing for all regions in the country, years 2003-2006 data missing for 43 NUTS level 3 regions; **United Kingdom** - years 2005-2006 data missing for all regions, year 2004 for all regions in ukm2 Eastern Scotland, ukm3 South Western Scotland, ukm5 North Eastern Scotland, ukm6 Highlands and Islands and ukn0 Northern Ireland; **Iceland -** year 2006 for all regions, year 2003-2006 for is001 Höfudborgarsvædi and is002 Landsbyggd;

Development average population 1995-2003 in %

Data available for time frame from 1995 up till 2006 at NUTS level 3, data well covered except the following cases: **Belgium** - year 2006 for all regions; **Denmark** - all regions for given time slot; **Germany** - years 1999 and 2000 for de41 Brandenburg - Nordost and de42 Brandenburg - Südwest; **Ireland -** years 1995 and 1996 for ie01 Border, Midlands and Western and ie02 Southern and Eastern; **France -** national/country's level and fr9 French overseas departments (FR) for years 1995-1998, but all other regions are covered, and year 2006 for all regions and national level; **Austria -** year 2006 missing data for all regions; **Poland -** for all regions missing data in 1995-1998 years; **Slovenia -** missing data for years 1995-2005 for all regions (2 regions Vzhodna Slovenija and Zahodna Slovenija); **Slovakia -** missing year 1995 for all regions; **United Kingdom -** years 2004-2006 missing data for all regions and 2000 and 2001 year is missing for national level; **Macedonia and Turkey -** data not presented in the given time frame (1995-2006);

Employment

Employment and Labour Market
NUTS level 2 (version 1999)

Active population total 2001
Data available for 2002-2007 for country level, Break in series for: Germany, Spain, Sweden year 2005; Austria, Italy year 2004; Romania year 2002, **for NUTS levels 1 and 2 data not available**

Share of active population < 25 years 2001
Data available for 2002-2007 for country level, Break in series for: Germany, Spain, Sweden year 2005; Austria, Italy year 2004; Romania year 2002; Also data available for 2002-2007 years for NUTS levels 1 and 2, but with breaks for: **Denmark** (5 regions); 2 regions in **Slovenia;** all regions in **Croatia, Macedonia and Turkey;** all regions for **Liechtenstein and Switzerland;** the following countries has such breaks: **Bulgaria - year 2002 all regions;** Germany - years 2002 - 2003 2 regions de41 Brandenburg - Nordost and de42 Brandenburg - Südwest; years 2002-2005 for region dee0 Sachsen-Anhalt; **United Kingdom** - years 2002-2006 for 2 regions ukm5 North Eastern Scotland and ukm6 Highlands and Islands; **Croatia -** years 2002-2006 for all regions; **Iceland** - year 2007 for all regions and regional data for 2006;

Persons employed Total 2001
Data available for 2002-2007 for country level only, Break in series for: Germany, Spain, Sweden year 2005; Austria, Italy year 2004; Romania year 2002; Total employment (as well as by sex and age) for period 2002-2007 at **NUTS levels 1 and 2 not available**;

Share of persons employed male 2001
Data available for 2002-2007 for country level only, Break in series for: Germany, Spain, Sweden year 2005; Austria, Italy year 2004; Romania year 2002; Total employment (as well as by sex and age) for period 2002-2007 at **NUTS levels 1 and 2 not available**;

Share of persons employed female 2001
Data available for 2002-2007 for country level only, Break in series for: Germany, Spain, Sweden year 2005; Austria, Italy year 2004; Romania year 2002; Total employment (as well as by sex and age) for period 2002-2007 at **NUTS levels 1 and 2 not available**;

Share of persons employed in Agriculture in % of total 2001
Data available for period 2002-2007 at NUTS levels 1 and 2, but breaks in series for: **Bulgaria** - year 2002 for all regions; **Denmark** - years 2002-2007 for all regions; **Germany** - year 2002-2003 for 2 regions de41 Brandenburg - Nordost and de42 Brandenburg - Südwest; year 2002-2006 for dee0 Sachsen-Anhalt; **Spain** - year 2002 and 2006 for es63 Ciudad Autónoma de Ceuta (ES); year 2006-2007 for es64 Ciudad Autónoma de Melilla (ES); **France** - years 2002-2007 for all fr9 French overseas departments (FR); **Slovenia -** years 2002-2007 for 2 regions; **UK** - years 2002-2006 for 2 regions ukm5 North Eastern Scotland and ukm6 Highlands and Islands; **Croatia -** years 2002-2006 for all regions; **Macedonia -** years 2002-2007 for all regions and country; **Turkey and Liechtenstein** - years 2002-2007 for all regions; **Switzerland** - years 2002-2007 for all regions;

Share of persons employed in Industry in % of total 2001
Data available for period 2002-2007 at NUTS levels 1 and 2, but breaks in series for: **Bulgaria** - year 2002 for all regions; **Denmark** - years 2002-2007 for all regions; **Germany** - year 2002-2003 for 2 regions de41 Brandenburg - Nordost and de42 Brandenburg - Südwest; year 2002-2006 for dee0 Sachsen-Anhalt; **Spain** - year 2002 and 2006 for es63 Ciudad Autónoma de Ceuta (ES); year 2006-2007 for es64 Ciudad Autónoma de Melilla (ES); **France** - years 2002-2007 for all fr9 French overseas departments (FR); **Slovenia -** years 2002-2007 for 2 regions; **UK** - years 2002-2006 for 2 regions ukm5 North Eastern Scotland and ukm6 Highlands and Islands; **Croatia -** years 2002-2006 for all regions; **Macedonia -** years 2002-2007 for all regions and country; **Turkey and Liechtenstein** - years 2002-2007 for all regions; **Switzerland** - years 2002-2007 for all regions;

Share of persons employed in Services in % of total 2001
Data available for period 2002-2007 at NUTS levels 1 and 2, but breaks in series for: **Bulgaria** - year 2002 for all regions; **Denmark** - years 2002-2007 for all regions; **Germany** - year 2002-2003 for 2 regions de41 Brandenburg - Nordost and de42 Brandenburg - Südwest; year 2002-2006 for dee0 Sachsen-Anhalt; **Spain** -

year 2002 and 2006 for es63 Ciudad Autónoma de Ceuta (ES); year 2006-2007 for es64 Ciudad Autónoma de Melilla (ES); **France** - years 2002-2007 for all fr9 French overseas departments (FR); **Slovenia -** years 2002-2007 for 2 regions; **UK** - years 2002-2006 for 2 regions ukm5 North Eastern Scotland and ukm6 Highlands and Islands; **Croatia -** years 2002-2006 for all regions; **Macedonia -** years 2002-2007 for all regions and country; **Turkey and Liechtenstein** - years 2002-2007 for all regions; **Switzerland** - years 2002-2007 for all regions;

Employed persons

Total Employment at NUTS levels 1 and 2 for years 2003-2007 data not available,

Employed persons, national

Data available for period 2003-2007 for total employment (main characteristics and rates) - Annual averages, national level (resident population concept - LFS)

Share of employed persons, national, < 25 years, in % of total

Data available for period 2003-2007 for national employment, national level, **Turkey** - missing years 2003-2005; **Iceland** - year 2007 is missing.

Share of employed persons, national, > 65 years, in % of total

Data available for period 2003-2007 for national employment, national level, **Luxembourg:** years 2004-2007 missing**; Malta** - years 2003-2007 missing; **Turkey** - missing years 2003-2005; **Iceland** - year 2007 is missing.

Unemployment
Employment and Labour Market
NUTS level 2 (version 2003), NUTS level 3 (version 1999)

Unemployment rate total 2004, (Unemployment rate total 2001)

Data available for period 2005-2007 for Unemployment rates at **NUTS levels 1, 2 and 3** , hovewer some breaks in series and unreliable or uncertain data is presented, such as: **Belgium** - year 2007 missing 43 regions, years 2005-2007 for 13 regions (be233, be234, be235, be236, be24, be241, be242, be25, be251, be252, be253, be254, be255, be256, be257, be258, be3, be31, be310, be32, be321, be322, be323, be324, be325, be326, be327, be33, be331, be332, be334, be335, be336, be34, be341, be342, be343, be344, be345); **Bulgaria** - year 2005-2007 data for bg322 Gabrovo; year 2005 for bg413 Blagoevgrad and year 2006-2006 for bg425 Kardzhali; **Denmark -** years 2005-2007 for all regions; **Germany -** years 2005-2007 for 122 regions; **Ireland** - year 2007 for 8 regions; **Greece** - years 2005-2007 data missing for 10 regions; **Spain -** years 2005-2006 for 10 regions; **France -** years 2005-2007 for fr814 Lozère; **Italy -** years 2005-2007 for 10 regions; **Malta -** years 2005-2007 for mt002 Gozo and Comino / Ghawdex u Kemmuna; **Austria -** years 2005-2007 for 9 regions; Poland - years 2005-2007 for 44 regions; **Portugal -** years 2005-2007 for 7 regions; **Romania -** years 2005-2007 for 2 regions (ro226 Vrancea, and ro314 Giurgiu); **Slovenia -** years 2005-2007 for all regions**; Finland -** years 2005-2007 for 4 regions**; UK -** years 2005-2007 data missing for 40 regions; **Croatia, Macedonia, Turkey, Iceland, Liechtenstein and Switzerland -** data missing for years 2005-2007 for all regions**; Norway** - data missing for 9 regions for years 2005-2007;

Unemployment rate female 2004, (Unemployment rate female, 2001)

Data available for period 2005-2007 for Unemployment rates at **NUTS levels 1, 2 and 3** , hovewer some breaks in series and unreliable or uncertain data is presented, such as: **Belgium** - year 2007 missing 43 regions, years 2005-2007 for 13 regions (be233, be234, be235, be236, be24, be241, be242, be25, be251, be252, be253, be254, be255, be256, be257, be258, be3, be31, be310, be32, be321, be322, be323, be324, be325, be326, be327, be33, be331, be332, be334, be335, be336, be34, be341, be342, be343, be344, be345); **Bulgaria** - year 2005-2007 data missing for 8 regions; year 2005 for bg413 Blagoevgrad and year 2006-2006 for bg425 Kardzhali; **Denmark -** years 2005-2007 for all regions; **Germany -** years 2005-2007 for 168 regions on NUTS level 3, mostly data available for NUTS level 2; **Ireland** - year 2007 for 8 regions; **Greece** - years 2005-2007 data missing for 10 regions; **Spain -** years 2005-2007 for 20 regions; **France -** years 2005-2007 for 96 regions on NUTS level 3, but it possible to find data for NUTS level 2; **Italy -** years 2005-2007 for 8 regions on NUTS level 2; **Lithuania -** years 2005-2007 for 4 regions; **Malta -** years 2005-2007 for mt002 Gozo and Comino / Ghawdex u Kemmuna; **Netherlands -** for years 2005-2007 data missing for nl122 Zuidwest-Friesland and nl341 Zeeuwsch-Vlaanderen;

Austria - years 2005-2007 for 26 regions; Poland - years 2005-2007 for 44 regions; **Portugal -** years 2005-2007 for 16 regions; **Romania -** years 2005-2007 for 10 regions; **Slovenia -** years 2005-2007 for all regions**; Finland - **years 2005-2007 for 4 regions**; UK -** years 2005-2007 data missing for 72 regions; **Croatia, Macedonia, Turkey, Iceland, Liechtenstein and Switzerland -** data missing for years 2005-2007 for all regions**; Norway** - data missing for 9 regions for years 2005-2007;

Unemployment rate male 2004, (Unemployment rate male, 2001)

Data available for period 2005-2007 for Unemployment rates at **NUTS levels 1, 2 and 3** , hovewer some breaks in series and unreliable or uncertain data is presented, such as: **Belgium** - year 2007 missing 43 regions, years 2005-2007 for 13 regions (be233, be234, be235, be236, be24, be241, be242, be25, be251, be252, be253, be254, be255, be256, be257, be258, be3, be31, be310, be32, be321, be322, be323, be324, be325, be326, be327, be33, be331, be332, be334, be335, be336, be34, be341, be342, be343, be344, be345); **Bulgaria** - year 2005-2007 data missing for 8 regions; year 2005 for bg413 Blagoevgrad and year 2006-2006 for bg425 Kardzhali; **Denmark -** years 2005-2007 for all regions; **Germany -** years 2005-2007 for 168 regions on NUTS level 3, mostly data available for NUTS level 2; **Ireland** - year 2007 for 8 regions; **Greece** - years 2005-2007 data missing for 10 regions; **Spain -** years 2005-2007 for 20 regions; **France -** years 2005-2007 for 96 regions on NUTS level 3, but it possible to find data for NUTS level 2; **Italy -** years 2005-2007 for 8 regions on NUTS level 2; **Lithuania -** years 2005-2007 for 4 regions; **Malta -** years 2005-2007 for mt002 Gozo and Comino / Ghawdex u Kemmuna; **Netherlands -** for years 2005-2007 data missing for nl122 Zuidwest-Friesland and nl341 Zeeuwsch-Vlaanderen; **Austria -** years 2005-2007 for 26 regions; Poland - years 2005-2007 for 44 regions; **Portugal -** years 2005-2007 for 16 regions; **Romania -** years 2005-2007 for 10 regions; **Slovenia -** years 2005-2007 for all regions**; Finland - **years 2005-2007 for 4 regions**; UK -** years 2005-2007 data missing for 72 regions; **Croatia, Macedonia, Turkey, Iceland, Liechtenstein and Switzerland -** data missing for years 2005-2007 for all regions**; Norway** - data missing for 9 regions for years 2005-2007;

Unemployment rate , age < 25 years, 2004, Unemployment rate under 25 years, 2001

Data available for period 2005-2007 for Unemployment rates at **NUTS levels 1, 2 and 3** , hovever some breaks in series and unreliable or uncertain data is presented, such as: **Belgium** - year 2007 missing 43 regions, years 2005-2007 for 13 regions (be233, be234, be235, be236, be24, be241, be242, be25, be251, be252, be253, be254, be255, be256, be257, be258, be3, be31, be310, be32, be321, be322, be323, be324, be325, be326, be327, be33, be331, be332, be334, be335, be336, be34, be341, be342, be343, be344, be345); **Bulgaria** - year 2005-2007 data missing for 8 regions; year 2005 for bg413 Blagoevgrad and year 2006-2006 for bg425 Kardzhali; **Denmark -** years 2005-2007 for all regions; **Germany -** years 2005-2007 for 168 regions on NUTS level 3, mostly data available for NUTS level 2; **Ireland** - year 2007 for 8 regions; **Greece** - years 2005-2007 data missing for 10 regions; **Spain -** years 2005-2007 for 20 regions; **France -** years 2005-2007 for 96 regions on NUTS level 3, but it possible to find data for NUTS level 2; **Italy -** years 2005-2007 for 8 regions on NUTS level 2; **Lithuania -** years 2005-2007 for 4 regions; **Malta -** years 2005-2007 for mt002 Gozo and Comino / Ghawdex u Kemmuna; **Netherlands -** for years 2005-2007 data missing for nl122 Zuidwest-Friesland and nl341 Zeeuwsch-Vlaanderen; **Austria -** years 2005-2007 for 26 regions; Poland - years 2005-2007 for 44 regions; **Portugal -** years 2005-2007 for 16 regions; **Romania -** years 2005-2007 for 10 regions; **Slovenia -** years 2005-2007 for all regions**; Finland - **years 2005-2007 for 4 regions**; UK -** years 2005-2007 data missing for 72 regions; **Croatia, Macedonia, Turkey, Iceland, Liechtenstein and Switzerland -** data missing for years 2005-2007 for all regions**; Norway** - data missing for 9 regions for years 2005-2007;

Development of unemployment rate 1999-2004 in percentage points

Data for Unemployment rates available for 1999-2004 at NUTS levels 1, 2 and 3 (in %), but some Unreliable or uncertain data and breaks in series presented, among which: **Belgium -** be233 Arr. Eeklo, be235 Arr. Oudenaarde, be252 Arr. Diksmuide, be253 Arr. Ieper, be256 Arr. Roeselare, be257 Arr. Tielt, be258 Arr. Veurne, be335 Arr. Verviers, be336 Bezirk Verviers, be341 Arr. Arlon, be342 Arr. Bastogne, be343 Arr. Marche-en-Famenne, be344 Arr. Neufchâteau, be345 Arr. Virton; **Bulgaria** - no data for whole country and all regions for years 1999-2002; **Czech Republic -** missing 2 regions cz063 Vysocina and cz064 Jihomoravský for years 1999-2002; **Denmark -** all regions are missing, but country level is presented; **Germany** - mostly data could be found for NUTS level 2 but NUTS level 3 practically majority of regions are missing; **Greece -** there are missing data for time slot 1999-2004 for gr131 Grevena, gr212 Thesprotia, gr223 Kefallinia, gr224 Lefkadam, gr243 Evrytania, gr254 Lakonia, gr412 Samos, gr413 Chios; **Spain -** has missing data for period 1999-2004 for the regions es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote, es709 Tenerife; **France** - fr9 French overseas departments (FR) is missing data for 1999-2000; **Italy -** information missing for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio

Campidano, itg2c Carbonia-Iglesias; **Cyprus and Malta -** missing data for 1999 and mt002 Gozo and Comino / Ghawdex u Kemmuna in Malta missing all series for 1999-2004; **Austria -** missing data for period 1999-2004 for at111 Mittelburgenland, at125 Weinviertel, at222 Liezen, at226 Westliche Obersteiermark, at321 Lungau, at331 Außerfern, at333 Osttirol and at341 Bludenz-Bregenzer Wald; **Poland** - mostly available data for NUTS level 2 regions, but NUTS level 3 regions are missing for period 1999-2004; **Portugal** - missing data for years 1999-2004 for pt163 Pinhal Litoral, pt164 Pinhal Interior Norte, pt166 Pinhal Interior Sul, pt167 Serra da Estrela, pt168 Beira Interior Norte, pt169 Beira Interior Sul, pt16a Cova da Beira, pt16c Médio Tejo, pt181 Alentejo Litoral, pt182 Alto Alentejo, pt2 Região Autónoma dos Açores (PT) and pt3 Região Autónoma da Madeira (PT); **Slovenia** - has only data for national level, all other regions are missing; **Finland -** years 1999-2004 missing for fi196 Satakunta, fi197 Pirkanmaa, fi2 Åland, fi20 Åland, fi200 Åland; **Sweden -** years 1999 - 2004 missing for se121 Uppsala län, se125 Västmanlands län, and se214 Gotlands län; **United Kingdom** - years 1999-2004 missing for ukc13 Darlington, ukd12 East Cumbria, ukd41 Blackburn with Darwen, ukd42 Blackpool, uke12 East Riding of Yorkshire, uke21 York, ukg11 Herefordshire, ukg21 The Wrekin, ukg32 Solihull, ukh11 Peterborough, ukh31 Southend-on-Sea, ukh32 Thurrock, ukj12 Milton Keynes, ukj31 Portsmouth, ukj32 Southampton, ukk14 Swindon, ukk42 Torbay, ukl11 Isle of Anglesey, ukl12 Gwynedd, ukl13 Conwy and Denbighshire, ukl24 Powys, ukm23 East Lothian and Midlothian, ukm24 Scottish Borders, ukm28 West Lothian, ukm32 Dumfries and Galloway, ukm37 South Ayrshire, all regions in ukm5 North Eastern Scotland, ukm6 Highlands and Islands**; Liechtenstein, Switzerland, Croatia, Macedonia, Turkey** - data for national, regional and municipal level are missing; **Norway** - data for 1999-2004 missing for 13 regions amongst 28;

Development of unemployment rate 1998-2001

data for year 1998 not available, starting from 1999 and further could be traced the development trend, see above

Development of unemployment rate, female, 1999-2004 in percentage points

Data for Unemployment rates available for 1999-2004 at NUTS levels 1, 2 and 3 (in %), but some Unreliable or uncertain data and breaks in series presented, among which: **Belgium -** be233 Arr. Eeklo, be235 Arr. Oudenaarde, be252 Arr. Diksmuide, be253 Arr. Ieper, be256 Arr. Roeselare, be257 Arr. Tielt, be258 Arr. Veurne, be335 Arr. Verviers, be336 Bezirk Verviers, be341 Arr. Arlon, be342 Arr. Bastogne, be343 Arr. Marche-en-Famenne, be344 Arr. Neufchâteau, be345 Arr. Virton; **Bulgaria** - no data for whole country and all regions for years 1999-2002; **Czech Republic -** missing 2 regions cz063 Vysocina and cz064 Jihomoravský for years 1999-2002; **Denmark -** all regions are missing, but country level is presented; **Germany** - mostly data could be found for NUTS level 2 but NUTS level 3 practically majority of regions are missing; **Greece -** there are missing data for time slot 1999-2004 for gr131 Grevena, gr212 Thesprotia, gr223 Kefallinia, gr224 Lefkadam, gr243 Evrytania, gr254 Lakonia, gr412 Samos, gr413 Chios; **Spain -** has missing data for period 1999-2004 for the regions es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote, es709 Tenerife; **France** - fr9 French overseas departments (FR) is missing data for 1999-2000, also majority data for NUTS level 3 are missing; **Italy -** information missing for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **Cyprus and Malta -** missing data for 1999 and mt002 Gozo and Comino / Ghawdex u Kemmuna in Malta missing all series for 1999-2004; **Austria -** missing data for period 1999-2004 for at111 Mittelburgenland, at125 Weinviertel, at222 Liezen, at226 Westliche Obersteiermark, at321 Lungau, at331 Außerfern, at333 Osttirol and at341 Bludenz-Bregenzer Wald, at112 Nordburgenland, at113 Südburgenland, at121 Mostviertel-Eisenwurzen, at123 Sankt Pölten, at212 Oberkärnten, at213 Unterkärnten, at223 Östliche Obersteiermark, at313 Mühlviertel, at314 Steyr-Kirchdorf, at315 Traunviertel, at322 Pinzgau-Pongau; **The Netherlands** – data missing for years 1999-2004 for nl122 Zuidwest-Friesland, nl133 Zuidwest-Drenthe and nl341 Zeeuwsch-Vlaanderen**; Poland** - mostly available data for NUTS level 2 regions, but NUTS level 3 regions are missing for period 1999-2004; **Portugal** - missing data for years 1999-2004 for pt163 Pinhal Litoral, pt164 Pinhal Interior Norte, pt166 Pinhal Interior Sul, pt167 Serra da Estrela, pt168 Beira Interior Norte, pt169 Beira Interior Sul, pt16a Cova da Beira, pt16c Médio Tejo, pt181 Alentejo Litoral, pt182 Alto Alentejo, pt2 Região Autónoma dos Açores (PT) and pt3 Região Autónoma da Madeira (PT); **Slovenia** - has only data for national level, all other regions are missing; **Finland -** years 1999-2004 missing for fi196 Satakunta, fi197 Pirkanmaa, fi2 Åland, fi20 Åland, fi200 Åland; **Sweden -** years 1999 - 2004 missing for se121 Uppsala län, se125 Västmanlands län, and se214 Gotlands län; **United Kingdom** - years 1999-2004 missing for ukc13 Darlington, ukd12 East Cumbria, ukd41 Blackburn with Darwen, ukd42 Blackpool, uke12 East Riding of Yorkshire, uke21 York, ukg11 Herefordshire, ukg21 The Wrekin, ukg32 Solihull, ukh11 Peterborough, ukh31 Southend-on-Sea, ukh32 Thurrock, ukj12 Milton Keynes, ukj31 Portsmouth, ukj32 Southampton, ukk14 Swindon, ukk42 Torbay, ukl11 Isle of Anglesey, ukl12 Gwynedd, ukl13 Conwy and Denbighshire, ukl24 Powys, ukm23 East Lothian and Midlothian, ukm24 Scottish Borders, ukm28 West Lothian, ukm32 Dumfries and Galloway, ukf11 Derby, ukf13 South and West Derbyshire, ukf16 South

Nottinghamshire ukg23 Stoke-on-Trent, ukg22 Shropshire CC, ukh21 Luton, ukj34 Isle of Wight, ukm37 South Ayrshire, all regions in ukm5 North Eastern Scotland, ukm6 Highlands and Islands**; Liechtenstein, Switzerland, Croatia, Macedonia, Turkey** - data for national, regional and municipal level are missing; **Norway** - data for 1999-2004 missing for 13 regions amongst 28;

Development of unemployment rate, female, 1998-2001

Data for year 1998 not available, starting from 1999 and further could be traced the development trend, see above

Development of unemployment rate, male, 1999-2004 in percentage points

Data for Unemployment rates available for 1999-2004 at NUTS levels 1, 2 and 3 (in %), but some Unreliable or uncertain data and breaks in series presented, among which: **Belgium -** be233 Arr. Eeklo, be235 Arr. Oudenaarde, be252 Arr. Diksmuide, be253 Arr. Ieper, be256 Arr. Roeselare, be257 Arr. Tielt, be258 Arr. Veurne, be335 Arr. Verviers, be336 Bezirk Verviers, be341 Arr. Arlon, be342 Arr. Bastogne, be343 Arr. Marche-en-Famenne, be344 Arr. Neufchâteau, be345 Arr. Virton; **Bulgaria** - no data for whole country and all regions for years 1999-2002; **Czech Republic -** missing 2 regions cz063 Vysocina and cz064 Jihomoravský for years 1999-2002; **Denmark -** all regions are missing, but country level is presented; **Germany** - mostly data could be found for NUTS level 2 but NUTS level 3 practically majority of regions are missing; **Greece -** there are missing data for time slot 1999-2004 for gr131 Grevena, gr212 Thesprotia, gr223 Kefallinia, gr224 Lefkadam, gr243 Evrytania, gr254 Lakonia, gr412 Samos, gr413 Chios; **Spain -** has missing data for period 1999-2004 for the regions es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote, es709 Tenerife; **France** - fr9 French overseas departments (FR) is missing data for 1999-2000, also majority data for NUTS level 3 are missing; **Italy -** information missing for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **Cyprus and Malta -** missing data for 1999 and mt002 Gozo and Comino / Ghawdex u Kemmuna in Malta missing all series for 1999-2004; **Austria -** missing data for period 1999-2004 for at111 Mittelburgenland, at125 Weinviertel, at222 Liezen, at226 Westliche Obersteiermark, at321 Lungau, at331 Außerfern, at333 Osttirol and at341 Bludenz-Bregenzer Wald, at112 Nordburgenland, at113 Südburgenland, at121 Mostviertel-Eisenwurzen, at123 Sankt Pölten, at212 Oberkärnten, at213 Unterkärnten, at223 Östliche Obersteiermark, at313 Mühlviertel, at314 Steyr-Kirchdorf, at315 Traunviertel, at322 Pinzgau-Pongau; **The Netherlands –** data missing for years 1999-2004 for nl122 Zuidwest-Friesland, nl133 Zuidwest-Drenthe and nl341 Zeeuwsch-Vlaanderen**; Poland** - mostly available data for NUTS level 2 regions, but NUTS level 3 regions are missing for period 1999-2004; **Portugal** - missing data for years 1999-2004 for pt163 Pinhal Litoral, pt164 Pinhal Interior Norte, pt166 Pinhal Interior Sul, pt167 Serra da Estrela, pt168 Beira Interior Norte, pt169 Beira Interior Sul, pt16a Cova da Beira, pt16c Médio Tejo, pt181 Alentejo Litoral, pt182 Alto Alentejo, pt2 Região Autónoma dos Açores (PT) and pt3 Região Autónoma da Madeira (PT); **Slovenia** - has only data for national level, all other regions are missing**; Finland -** years 1999-2004 missing for fi196 Satakunta, fi197 Pirkanmaa, fi2 Åland, fi20 Åland, fi200 Åland; **Sweden -** years 1999 - 2004 missing for se121 Uppsala län, se125 Västmanlands län, and se214 Gotlands län; **United Kingdom** - years 1999-2004 missing for ukc13 Darlington, ukd12 East Cumbria, ukd41 Blackburn with Darwen, ukd42 Blackpool, uke12 East Riding of Yorkshire, uke21 York, ukg11 Herefordshire, ukg21 The Wrekin, ukg32 Solihull, ukh11 Peterborough, ukh31 Southend-on-Sea, ukh32 Thurrock, ukj12 Milton Keynes, ukj31 Portsmouth, ukj32 Southampton, ukk14 Swindon, ukk42 Torbay, ukl11 Isle of Anglesey, ukl12 Gwynedd, ukl13 Conwy and Denbighshire, ukl24 Powys, ukm23 East Lothian and Midlothian, ukm24 Scottish Borders, ukm28 West Lothian, ukm32 Dumfries and Galloway, ukf11 Derby, ukf13 South and West Derbyshire, ukf16 South Nottinghamshire ukg23 Stoke-on-Trent, ukg22 Shropshire CC, ukh21 Luton, ukj34 Isle of Wight, ukm37 South Ayrshire, all regions in ukm5 North Eastern Scotland, ukm6 Highlands and Islands**; Liechtenstein, Switzerland, Croatia, Macedonia, Turkey** - data for national, regional and municipal level are missing; **Norway** - data for 1999-2004 missing for 13 regions amongst 28;

Development of unemployment rate, male, 1998-2001

Data for year 1998 not available, starting from 1999 and further could be traced the development trend, see above

Development of unemployment rate, <25 years, 1998-2001

Data for year 1998 not available, starting from 1999 and further could be traced the development trend, see above

Wealth and Production
Wealth and Production
NUTS level 2 (version 2003)

GDP in Purchasing Power Parities per inhabitant 2002

Recent data on GDP at current market prices at NUTS level 2 covering years 2003-2005, it presented in *Purchasing Power Parities per inhabitant*, following breaks in the series presented: **Denmark -** no data for years 2003-2004 for regional level, but for national level only; **United Kingdom -** years 2003-2005 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands**; Macedonia and Turkey -** years 2003-2005 missing all regions**; Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 2003-2005;

GDP in Euro per inhabitant 2002

Recent data on GDP at current market prices at NUTS level 2 covering years 2003-2005, it presented in *Euro per inhabitant*, following breaks in the series presented: **Denmark -** no data for years 2003-2004 for regional level, but for national level only; **United Kingdom -** years 2003-2005 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands**; Macedonia and Turkey -** years 2003-2005 missing all regions**; Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 2003-2005;

Development of GDP in Purchasing Power Parities per inhabitant 1998-2002

Data on historical development of GDP at current market prices at NUTS level 2 available for period of time from 1995 till 2002, it presented *in Purchasing Power Parities per inhabitant*, following breaks in the series presented: **Bulgaria -** no data for all regions for 1995 year; **Denmark -** no data for years 2003-2004 for regional level, but for national level only; **Malta -** years 1995-1997 not available for all regions; **Romania -** missing data for years 1995-1997; also **United Kingdom -** years 2003-2005 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands**; Macedonia -** years 1995-1997 missing all regions**; Croatia -** missing data for years 1995-1999**; Turkey -** missing year 2002 for all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 1995-2002;

Development of GDP in Euro per inhabitant 1998-2002

Data on historical development of GDP at current market prices at NUTS level 2 available for period of time from 1995 till 2002, it presented *in Euro per inhabitant*, following breaks in the series presented: **Bulgaria -** no data for all regions for 1995 year; **Denmark -** no data for years 2003-2004 for regional level, but for national level only; **Romania -** missing data for years 1995-1997; also **United Kingdom -** years 2003-2005 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands**; Macedonia -** years 1995-1997 missing all regions**; Croatia -** missing data for years 1995-1999**; Turkey -** missing year 2002 for all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 1995-2002;

NUTS level 3 (version 1999)

GDP in Purchasing Power Parities per inhabitant 2002

Recent data on GDP at current market prices at NUTS level 3 covering years 2003-2005, it presented *in Purchasing Power Parities per inhabitant*, following breaks in the series presented: **Belgium -** years 2003-2005 missing data for 2 regions be335 Arr. Verviers - communes francophones and be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Czech Republic -** years 2003-2005 for cz063 Vysocina and cz064 Jihomoravský; **Denmark -** no data for years 2003-2005 for majority regions except for dk01 Hovedstaden, dk014 Bornholm, dk031 Fyn and for national level only; **Germany -** years 2003-2005 data missing for dee0 Sachsen-Anhalt at NUTS level 3 (dee01-dee0e); **Spain** - years 2003-2005 for es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote and es709 Tenerife; **Italy -** years 2003-2005 for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias**; Netherlands** - years 2003-2005 for nl225 Achterhoek and nl226 Arnhem/Nijmegen; **Poland -** years 2003-2005 for 45 NUTS level 3 regions; **Sweden -** years 2003-2005 for se121 Uppsala län and se125 Västmanlands län; **United Kingdom -** years 2003-2005 missing data for

ukm5 North Eastern Scotland and ukm6 Highlands and Islands and all their sub-regions; **Macedonia and Turkey -** years 2003-2005 missing all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 2003-2005;

GDP in Euro per inhabitant 2002

Recent data on GDP at current market prices at NUTS level 3 covering years 2003-2005, it presented *in Euro per inhabitant*, following breaks in the series presented: **Belgium -** years 2003-2005 missing data for 2 regions be335 Arr. Verviers - communes francophones and be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Czech Republic -** years 2003-2005 for cz063 Vysocina and cz064 Jihomoravský; **Denmark -** no data for years 2003-2005 for majority regions except for dk01 Hovedstaden, dk014 Bornholm, dk031 Fyn and for national level only; **Germany -** years 2003-2005 data missing for dee0 Sachsen-Anhalt at NUTS level 3 (dee01-dee0e); **Spain** - years 2003-2005 for es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote and es709 Tenerife; **Italy -** years 2003-2005 for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **Netherlands** - years 2003-2005 for nl225 Achterhoek and nl226 Arnhem/Nijmegen; **Poland -** years 2003-2005 for 45 NUTS level 3 regions; **Sweden -** years 2003-2005 for se121 Uppsala län and se125 Västmanlands län; **United Kingdom -** years 2003-2005 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands and all their sub-regions; **Macedonia and Turkey -** years 2003-2005 missing all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 2003-2005;

Development of GDP in Purchasing Power Parities per inhabitant 1998-2002

Data on historical development of GDP at current market prices at NUTS level 2 available for period of time from 1995 till 2002, it presented *in Purchasing Power Parities per inhabitant*, following breaks in the series presented: **Belgium** - years 1995-2002 missing data for 2 regions be335 Arr. Verviers - communes francophones and be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Bulgaria -** no data for all regions for 1995 year; Czech Republic - years 1995-2002 for cz063 Vysocina and cz064 Jihomoravský; **Denmark -** no data for years 1995-2002 for regional level, but for national level only; Germany - years 1995-2002 data missing for dee0 Sachsen-Anhalt at NUTS level 3 (dee01-dee0e) and years 1995-1998 for deg0n Eisenach, Kreisfreie Stadt and deg0p Wartburgkreis; **Estonia -** year 1995 no data for all regions; Spain - years 1995-2002 for es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote and es709 Tenerife; Italy - years 1995-2002 for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **Latvia** - year 1995 missing for all regions; **Malta -** years 1995-1997 not available for all regions; Netherlands - years 1995-2002 for nl225 Achterhoek and nl226 Arnhem/Nijmegen; Poland - years 1995-2002 for 45 NUTS level 3 regions; **Romania -** missing data for years 1995-1997; Sweden - years 1995-2002 for se121 Uppsala län and se125 Västmanlands län; United Kingdom - years 1995-2002 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands and all their sub-regions; **Macedonia -** years 1995-1997 missing all regions; **Croatia -** missing data for years 1995-1999; **Turkey -** missing year 2002 for all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 1995-2002;

Development of GDP in Euro per inhabitant 1998-2002

Data on historical development of GDP at current market prices at NUTS level 2 available for period of time from 1995 till 2002, it presented *in Euro per inhabitant*, following breaks in the series presented: **Belgium** - years 1995-2002 missing data for 2 regions be335 Arr. Verviers - communes francophones and be336 Bezirk Verviers - Deutschsprachige Gemeinschaft; **Bulgaria -** no data for all regions for 1995 year; Czech Republic - years 1995-2002 for cz063 Vysocina and cz064 Jihomoravský; **Denmark -** no data for years 1995-2002 for regional level, but for national level only; Germany - years 1995-2002 data missing for dee0 Sachsen-Anhalt at NUTS level 3 (dee01-dee0e) and years 1995-1998 for deg0n Eisenach, Kreisfreie Stadt and deg0p Wartburgkreis; **Estonia -** year 1995 no data for all regions; Spain - years 1995-2002 for es531 Eivissa y Formentera, es532 Mallorca, es533 Menorca, es703 El Hierro, es704 Fuerteventura, es705 Gran Canaria, es706 La Gomera, es707 La Palma, es708 Lanzarote and es709 Tenerife; Italy - years 1995-2002 for itg25 Sassari, itg26 Nuoro, itg27 Cagliari, itg28 Oristano, itg29 Olbia-Tempio, itg2a Ogliastra, itg2b Medio Campidano, itg2c Carbonia-Iglesias; **Latvia** - year 1995 missing for all regions; **Malta -** years 1995-1997 not available for all regions; Netherlands - years 1995-2002 for nl225 Achterhoek and nl226 Arnhem/Nijmegen; Poland - years 1995-2002 for 45 NUTS level 3 regions; **Romania -** missing data for years 1995-1997; Sweden - years 1995-2002 for se121 Uppsala län and se125 Västmanlands län; United Kingdom - years 1995-2002 missing data for ukm5 North Eastern Scotland and ukm6 Highlands and Islands and all their sub-regions;

Macedonia - years 1995-1997 missing all regions**; Croatia -** missing data for years 1995-1999**; Turkey -** missing year 2002 for all regions; **Iceland, Liechtenstein, Norway and Switzerland -** data not available for the given time frame 1995-2002;