

Atlas on the Territorial Agenda of the European Union

A contribution by the German Presidency
of the European Union

To be presented on the occasion of the
Informal Ministerial Meeting on
Urban Development and territorial Cohesion
to be held in Leipzig in May 2007



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Foreword

With the Territorial Agenda of the European Union the member states agree on territorial priorities as the basis for future common activities and to face new challenges in the European Union. The mentioned political priorities shall support the sustainable economic growth and job creation as well as a social and ecological development and, therefore, further implement both, the Lisbon and the Gothenburg Strategies.

The territorial cohesion of the European Union is necessary as an essential prerequisite for implementing the European Social Model. In this context, it is an essential task to develop preconditions in all regions that offer equal opportunities for its citizens and development perspectives for entrepreneurs.

The present atlas is a contribution by the German EU Presidency heading to accompany and to illustrate the new territorial priorities for the development of the European Union against the territorial structure.

In the light of the set of political priorities existing information of different sources outline territorial pictures on structures and developments of metropolitan regions and urban and their relationship to rural areas, transport and communication networks, natural and technological risks and natural and cultural resources. Scenarios, developed within ESPON, describe potential structures of a futures Europe and showing territorial alternatives

Spatial observation has made substantial progress since the presentation of the European Spatial Planning Perspective in 1999. The ESPON Programme 2006 made a significant contribution to overcome the information deficits identified at that time. ESPON results have been of fundamental part for the elaboration of this atlas. But still suitable targeted information in the context of the priorities of the Territorial Agenda is often not available.

Sustainable development of regions and cities in the EU can only be achieved through an intensive dialogue between all stakeholders, which depends on evidence. The continuation of the research in close cooperation with the European Commission and the member states is a fundamental element.

The atlas as one of only few documents includes information for all 27 EU Member States and for Norway and Switzerland. It concentrates on a few selected aspects to illustrate the Territorial Agenda and its implementation to initiate further discussions on the analysis of territorial structures and trends in respect of the Agenda. By this it is thought to support and accompany the follow up process and the implementation activities of the Territorial Agenda in the future.

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I Introduction

The Territorial Agenda of the European Union outlines the main political priorities to face the future territorial challenges for the continent and to point out existing potentials to meet the spatial demands.

The atlas presented is the document designed to illustrate the Territorial Agenda of the European Union and the Leipzig Charta.

The structure of the atlas is geared to the five political priorities formulated in the Territorial Agenda. Thus, main territorial differences existing in terms of economic and social opportunities as well as the quality of the environment on the European territory and in urban area are presented.

First and foremost, the atlas is a document elaborated in the context of the German EU Presidency 2007. It also supports the evidence-based background document "The Territorial State and Perspectives of the European Union": The atlas is also designed to address a broader readership interested in European spatial questions in a comprehensible form.

The atlas is composed of three main chapters. Chapter II explains basic structures and trends of the European territory in a variety of relevant themes. The following Chapter III illustrates the priorities and main themes of the Territorial Agenda in their European territorial dimensions

giving an overview on urban and regional networks, rural-urban partnership and accessibility related to transport as well to digital exchange. Information on technological and natural hazards, ecological resources and cultural assets round off the spectrum of spatial information. The main last Chapter IV gives an outlook on possible future developments and structures in Europe. It summarises and illustrates spatial development trends in cartographic form based on results of the ESPON Programme 2006 scenarios taking cohesion and competitiveness aspects, potential economic trends, the importance of the urban system and the future of rural areas into account. The results of "Max-Planck-Institut für Metereologie"

in Hamburg within the Intergovernmental Panel on Climate Change (IPPC) published in the Fourth Assessment Report (AR4) illustrate the effects of the climate change on the European territory.

Basic information sources especially for maps are the BBR spatial monitoring system, the results of the ESPON Programme 2006 research network and Urban Audit data related to cities. Detailed information on data sources can be found in Chapter V "References and Sources". Furthermore, an important foundation for the atlas was provided by the document "Territorial State and Perspectives of the European Union".

II Basic structures

The European Union currently has 27 member states with about 500 million citizens who, in 2005, have produced a total gross domestic product (GDP) of about 11 trillion euros, which is about 23 % of the world's GDP.

The degree of integration on the European continent is quite different but obvious, the territorial divisions of the past have been overcome within the last decade. Nowadays, it is possible to describe Europe as a continent being on the same track in different speeds.

Altogether 46 European nations are members of the Council of Europe including all 27 member states of the

European Union. Two countries are currently applying for membership to the Council. The three candidate countries of the European Union are already members of the Council of Europe.

The Schengen Agreement, which allows for the abolition of systematic border controls between the participating countries, is presently implemented by 13 EU member states and two Council of Europe countries.

The monetary union with the euro countries currently consists of 13 EU member states. Slovenia was the first of the 2004 accession countries which joined the euro zone in January 2007.

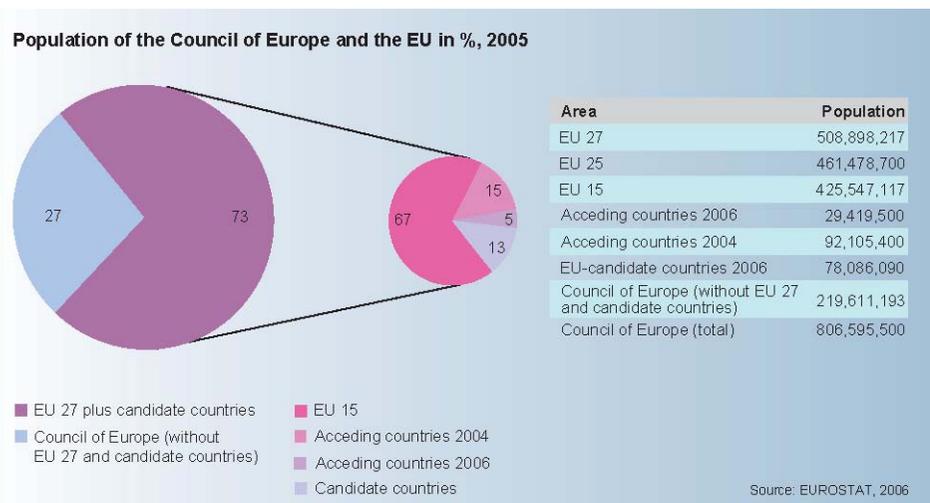
The European Free Trade Association (EFTA) consists of four countries which have strong economic relations to the EU.

Population development in Europe shows a heterogeneous territorial distribution of growth and decline. Many of the European national and regional birth rates have for some time been below the reproduction level. Due to changing age structures and partly to strong outmigration, population numbers have started to decrease. These trends of population decline, ageing and demographic change will accelerate in the future and will also affect regions which have been stable so far in terms of demography. Regional and urban population growth and decline can be found side by side and in all parts of Europe. Population growth or shrinking is not a matter of size. Some of the major European cities and capitals have shown considerable growth rates (in the period 1990-2005), for example many cities at the northern or southern periphery (including almost all cities of Turkey). Most of these countries show trends of urbanisation and rural-urban

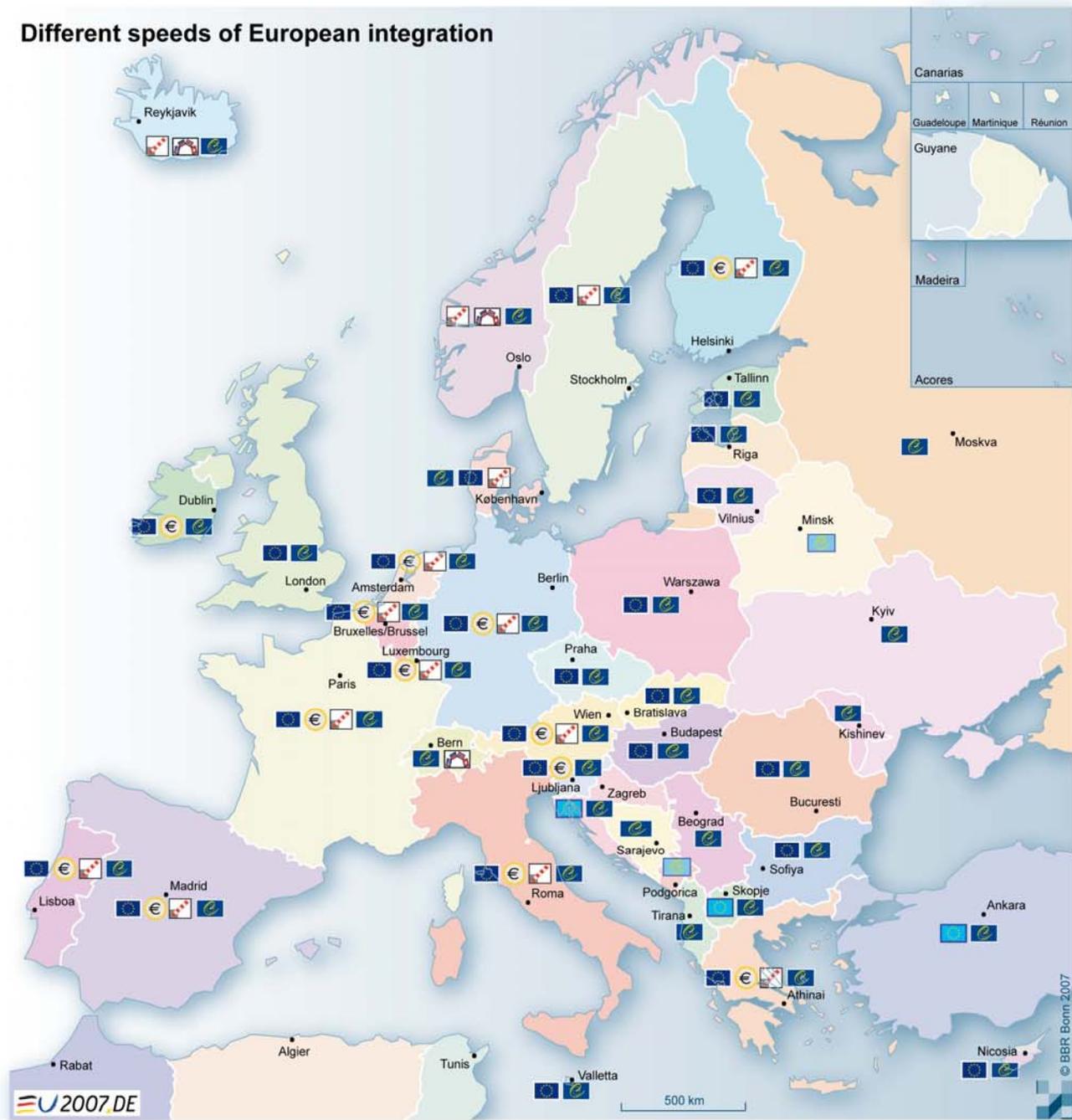
migration. The opposite is true for many (smaller and larger) cities in old industrialised regions. Growing cities can also be found in many tourist areas, mainly at the coasts.

The average yearly growth rate of the gross domestic product (GDP) per capita as the average value of all goods and services produced by each inhabitant indicates the catching up process of the eastern countries. However, the more western areas, especially those forming the central areas of the "Pentagon", still have the highest share of GDP and were above the EU average in 2003. Many metropolitan regions show a per capita GDP of more than 125%.

The different regional potentials are reflected in the statistical criteria of the EU Structural Funds. In particular, regions with less than 75% of the EU GDP per capita highly benefit as "convergence regions" from the Structural Funds support. These are mainly the new EU member states which joined in 2004 and 2007 but also the eastern German Länder and the southern Mediterranean regions.



Different speeds of European integration



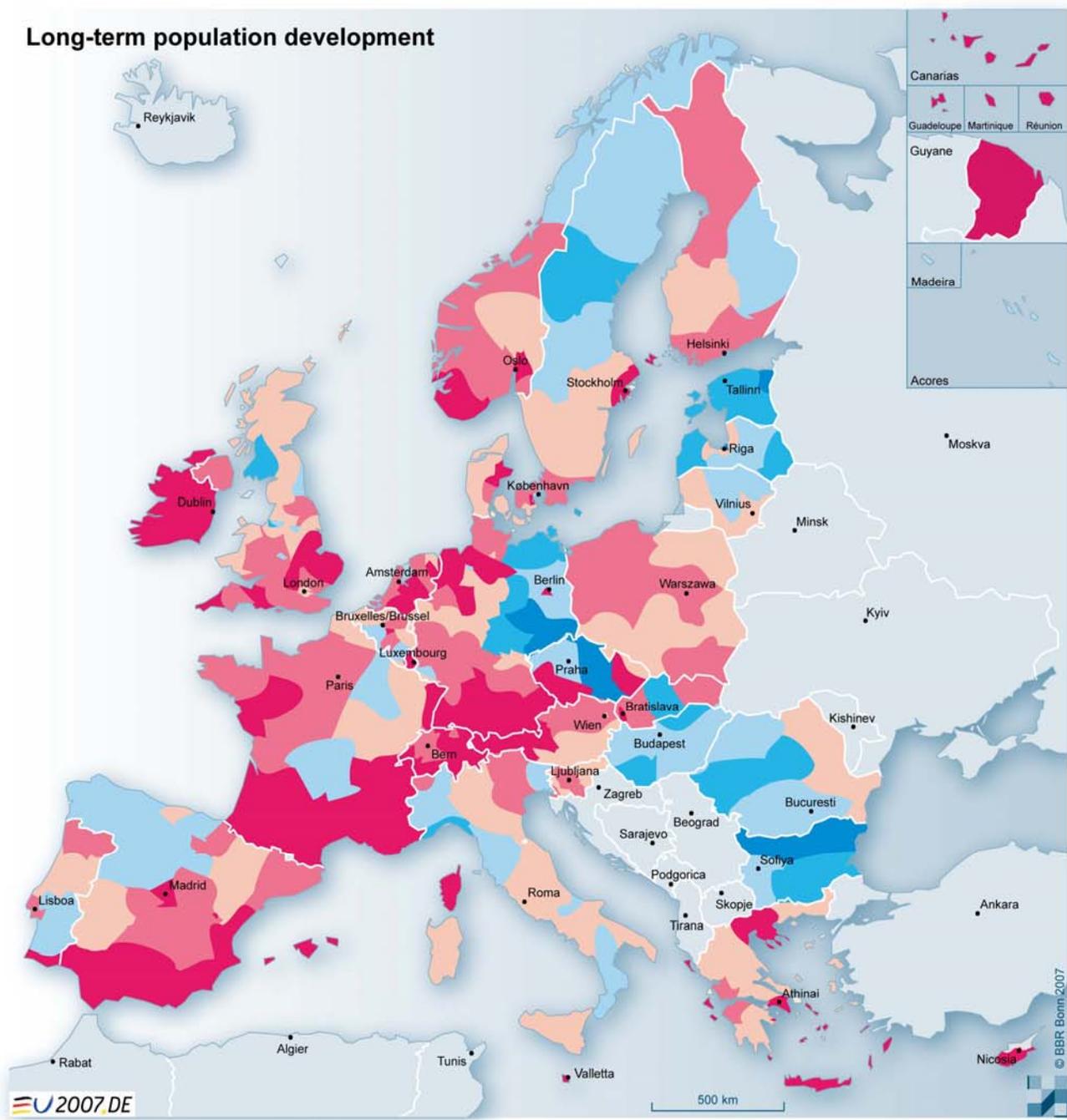
European Integration

-  Member States of the European Union
-  Candidate Countries of the European Union
-  Euro countries
-  Schengen countries
-  Member States of the Council of Europe
(including Andorra, Liechtenstein, Monaco, San Marino not indicated by symbol and Armenia, Azerbaijan and Georgia outside the map extent)
-  Candidate Countries of the Council of Europe
-  Countries of the European Free Trade Association
(including Liechtenstein not indicated by symbol)

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Source: BBR Spatial Monitoring of Europe
Reference date: January 2007

Long-term population development



Annual average change of population 1981* to 2004** in %

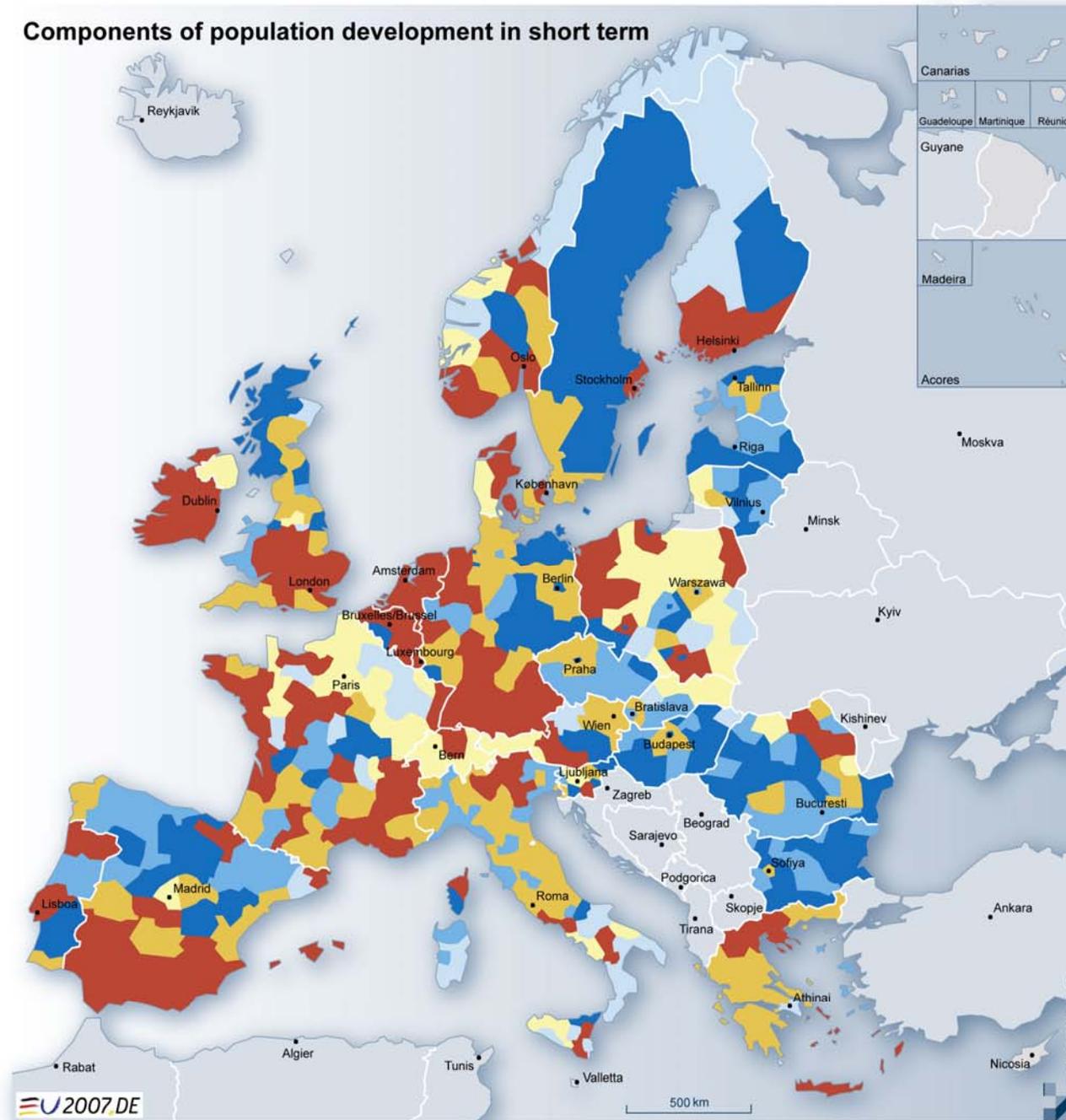
- less than -0.6
- -0.6 to below -0.3
- -0.3 to below 0
- 0 to below 0.3
- 0.3 to below 0.6
- 0.6 and more
- no data

*CH: 1980; DED+DEE: 1980; EE+IE: calculated on basis of 1988; FI18+FI19+LT+LV+RO+SI: calculated on basis of 1990; FR outermost areas: 1982; MT: calculated on basis of 1989; PL: calculated on basis of 1995; UKL: calculated on basis of 1993; UKM: calculated on basis of 1985
 **UK: 2003; UKM: 2000

Regional base: NUTS 2/3
 NUTS 2: AT, BE, BG, CH, CY, CZ, DE, ES, FI, FR, GR, HU, IE, IT, NL, NO, PL, PT, RO, SE, SK, UK
 NUTS 3: DK, EE, LT, LU, LV, MT, SI

Source: BBR Spatial Monitoring of Europe
 Origin of data: Eurostat, National Statistical Offices

Components of population development in short term



Population development by components 1996-1999

Population increase with

- positive migratory balance and positive natural balance
- positive migratory balance and negative natural balance
- negative migratory balance and positive natural balance

Population decrease with

- negative migratory balance and positive natural balance
- positive migratory balance and negative natural balance
- negative migratory balance and negative natural balance

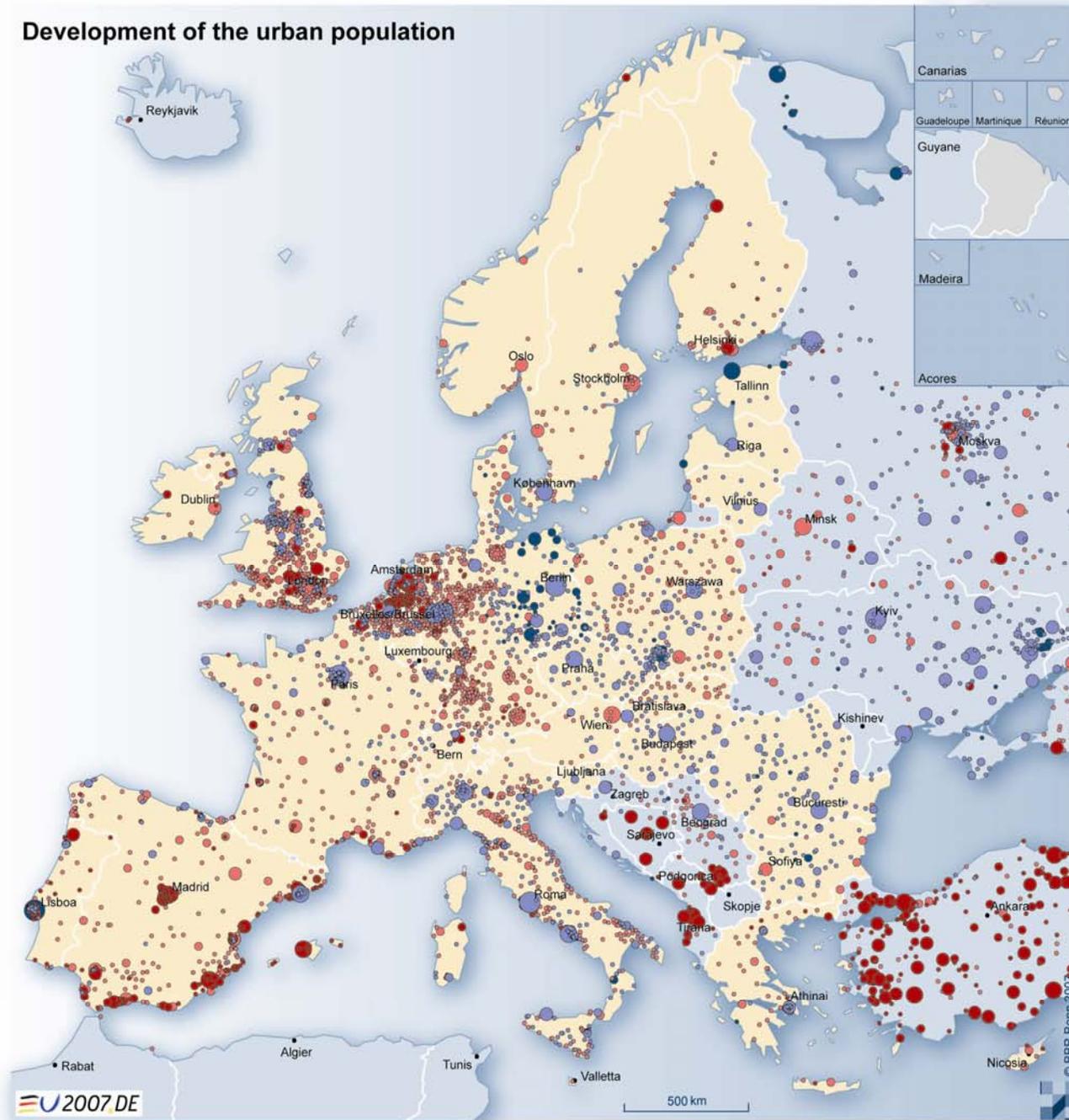
■ No data

Regional base: NUTS 2/3

NUTS 2: AT, BE, BG, CH, CY, CZ, DE, ES, FI, FR, GR, HU, IE, IT, NL, NO, PL, PT, RO, SE, SK, UK
 NUTS 3: DK, EE, LT, LU, LV, MT, SI

Source: ESPON Project 1.1.4

Development of the urban population



Average yearly change of number of inhabitants 1990** to 2005

- up to - 1.5
- - 1.5 - 0
- 0 - 1.5
- 1.5 and more

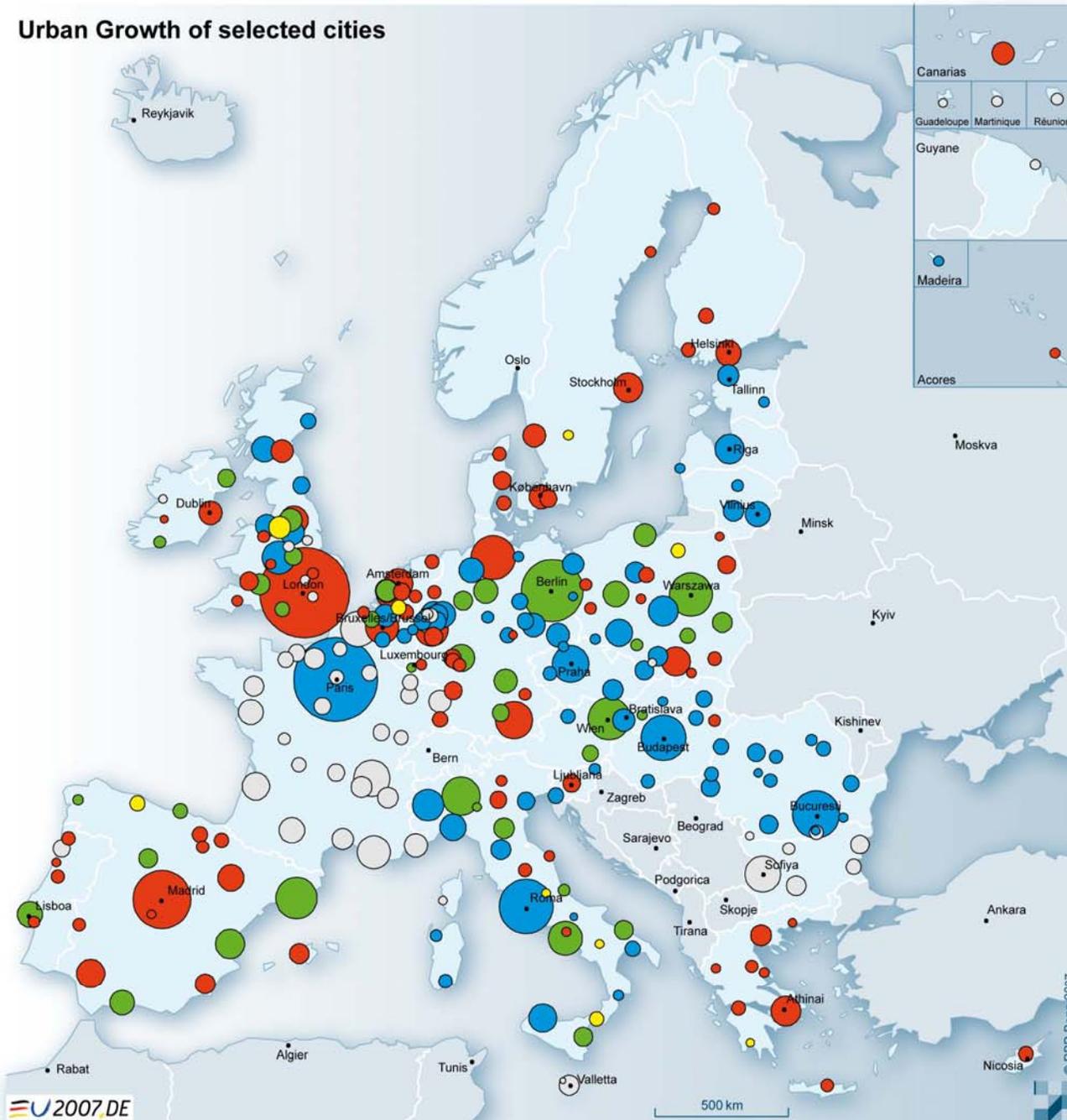
Size of city by number of inhabitants 2005*

- up to 50,000
- 50,000 - 100,000
- 100,000 - 250,000
- 250,000 - 500,000
- 500,000 and more

* City proper within administrative boundaries
 ** DE:1987-2005; AL, FR,LT,UA: 1989-2005;
 AT,BA,CZ,ES,GR,IT,PT,SI,SK:1991-2005;
 BG,RO:1992-2005

Source: BBR Spatial Monitoring of Europe
 Origin of data: Geohive, World Gazetteer, UN,
 National statistical offices

Urban Growth of selected cities

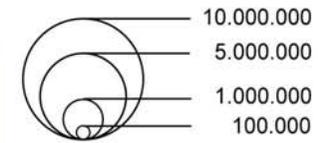


Urban growth* in Urban Audit cities

Annual average change of population 1996-2001

- LUZ grows and core city grows
- LUZ grows while core city loses
- LUZ loses while core city grows
- LUZ loses and core city loses
- No data

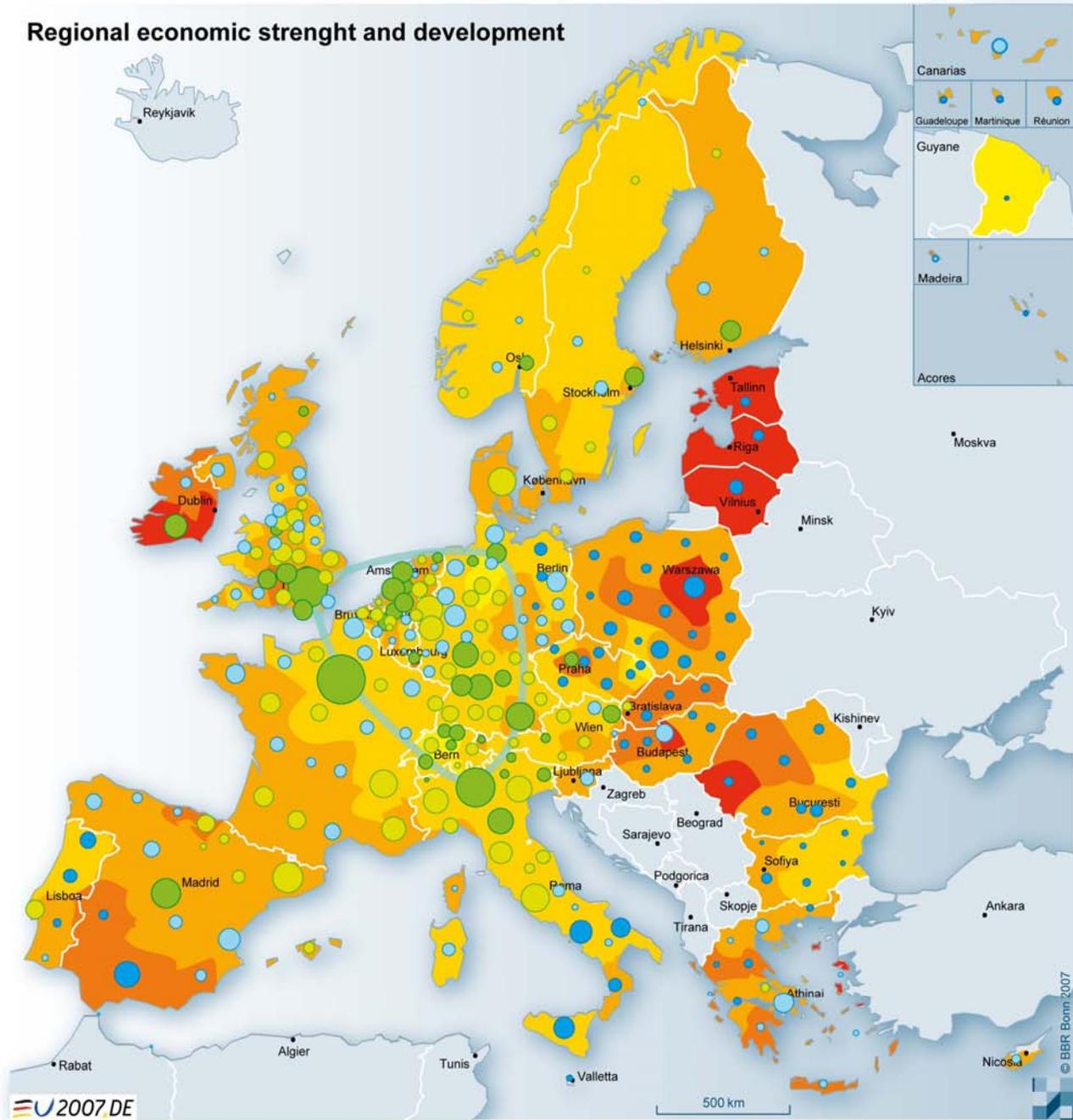
Population size in the core city



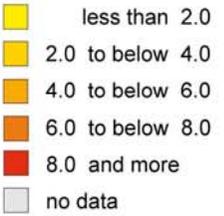
*Comparison of population change between core city and Larger Urban Zone (LUZ)

Geometric basis: GFK MACON
Source: Eurostat: Urban Audit Database

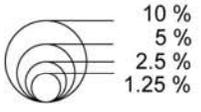
Regional economic strenght and development



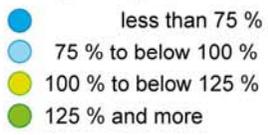
Average yearly growth rate of GDP per capita in PPS from 1995 - 2003 in % *



Regional share (NUTS 2) of total GDP of ESPON space 2003



GDP per capita in % of EU average 2003

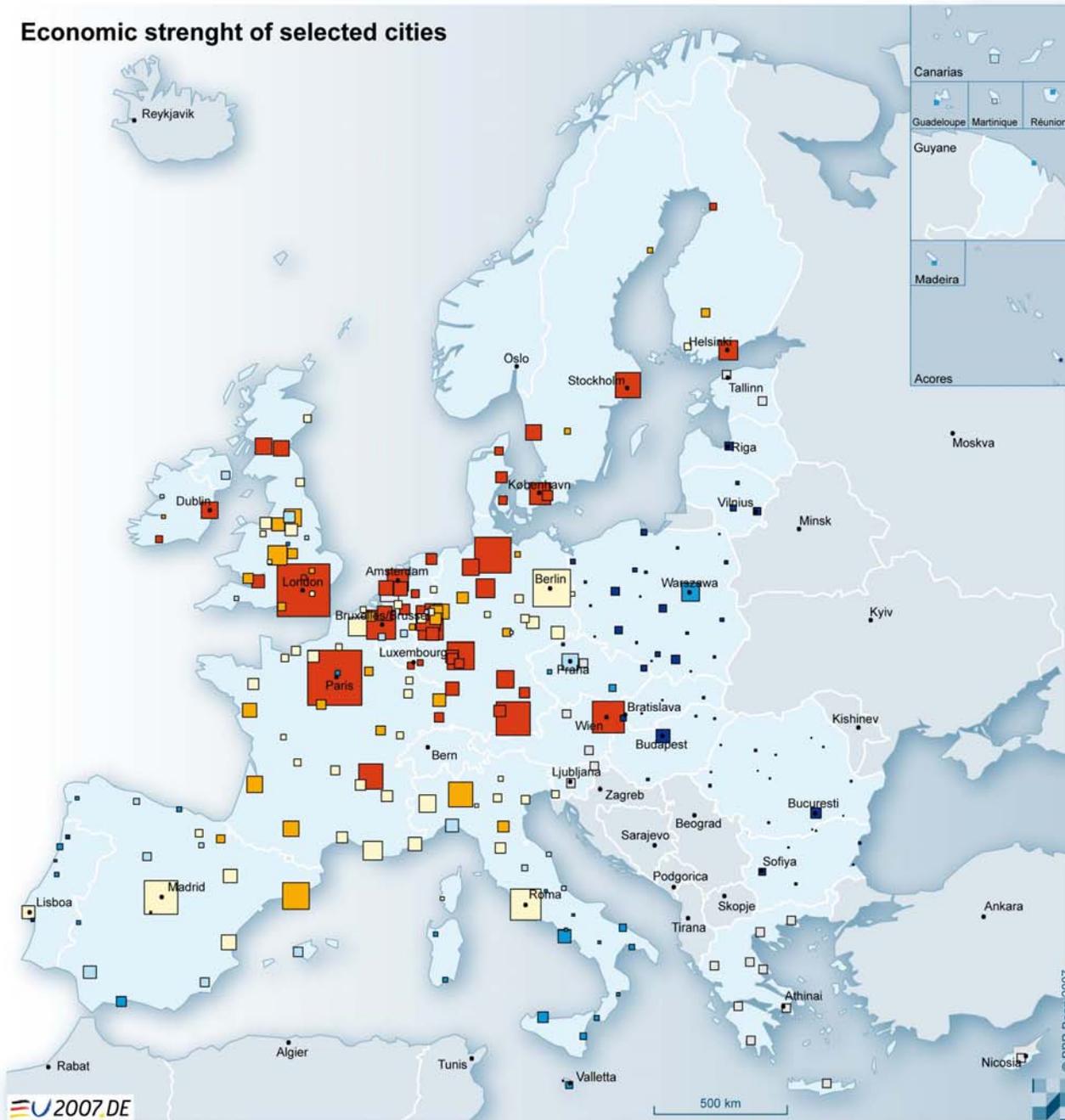


The European "Pentagon"

*RO+MT: 1998-2003; ES63+ES64: 2000-2003

Regional base: NUTS 2
 Source: BBR Spatial Monitoring of Europe
 Origin of data: Eurostat, National Statistical Offices

Economic strenght of selected cities

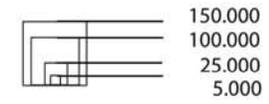


GDP per capita in Urban Audit cities 2001

Gross domestic product per inhabitant in % of EU27 average = 100

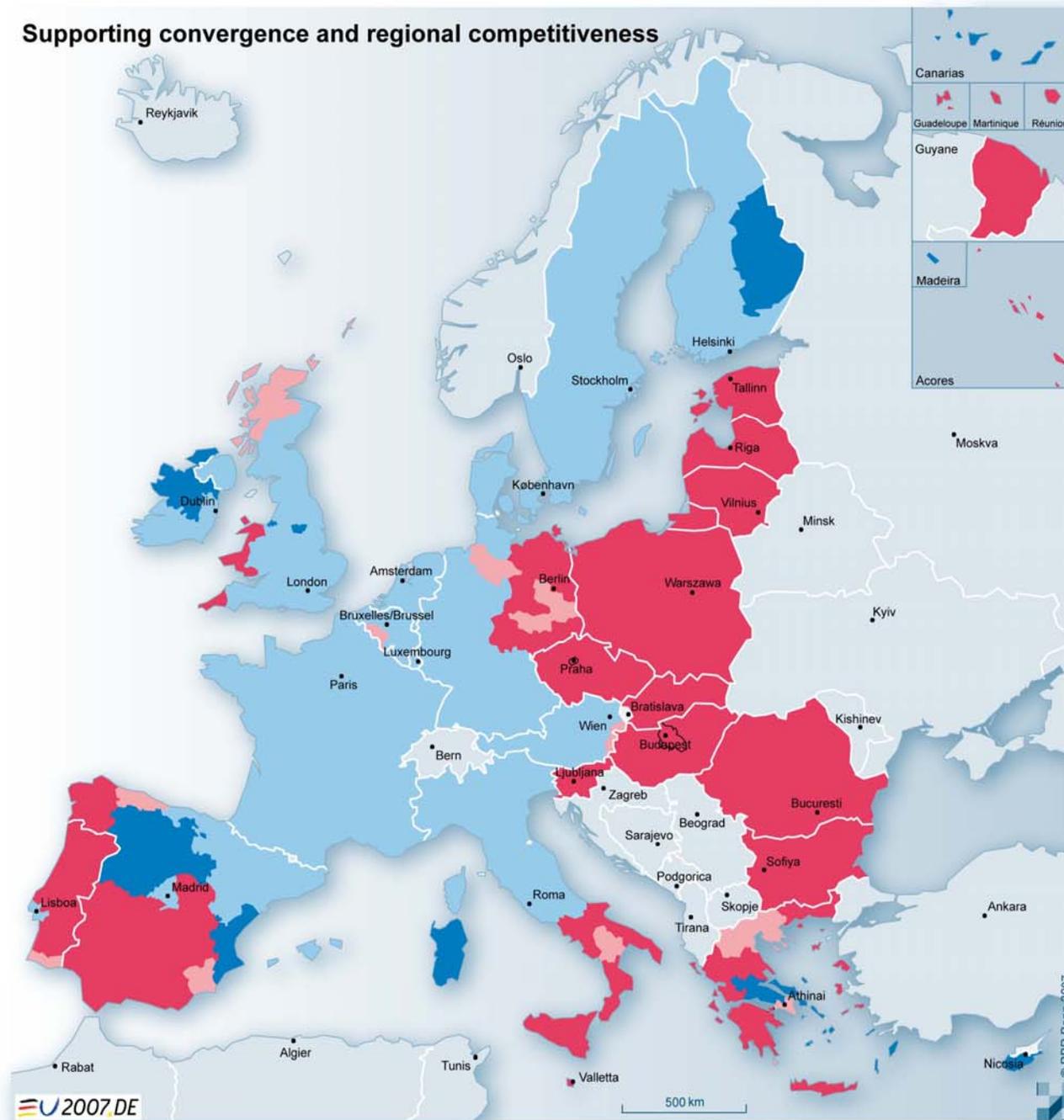
- less than 50
- 50 to below 75
- 75 to below 100
- 100 to below 125
- 125 to below 150
- 150 and more
- No data

GDP in Mio Euro in Urban Audit cities 2001



Source: Eurostat: Urban Audit Database

Supporting convergence and regional competitiveness



**Structural funds 2007 - 2013:
Convergence and regional competitiveness objectives ***

- Convergence regions
- Phasing-out regions
- Phasing-in regions
- Competitiveness and employment regions

* position as of October 2006

Source: BBR Spatial Monitoring of Europe
Origin of data: EU Commission, DG Regio

III Priorities of territorial development

III.1 Strengthening innovative cooperative urban development of metropolitan regions, urban areas and regional centres

The way of Europe towards an innovative, competitive and sustainable networking of regions, urban centres and a strong rural balance is defined by the use of endogenous potentials and the support of networks and cooperation.

The importance is based on the identification and development of common regional development strategies, which use bottom-up approaches at lower regional scales to create transnational regions of innovation between business, science and administration outlining areas of responsibility in the global process of competition.

The central part of the European terri-

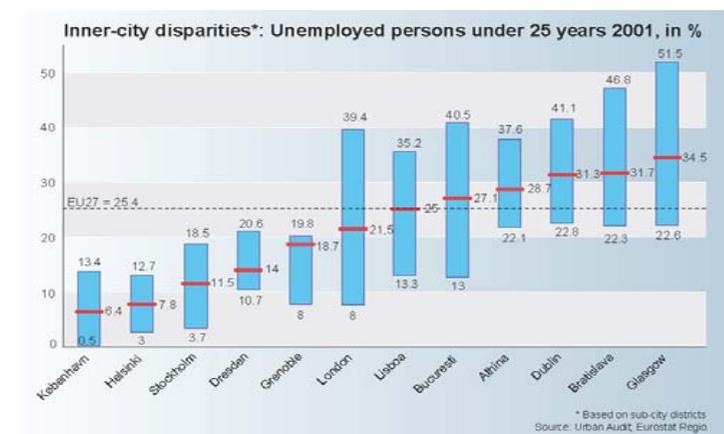
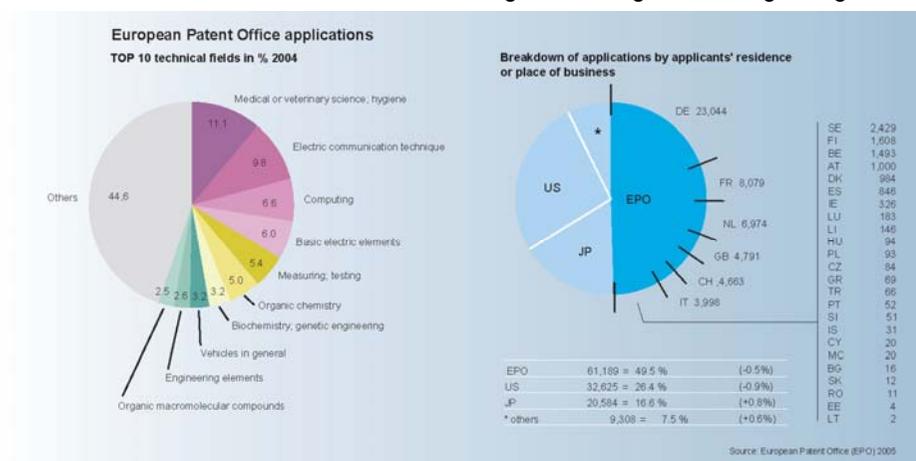
tory shows the highest activity concerning regional integration and networking. The metropolitan regions (e.g. Functional Urban Areas (FUAs) and Metropolitan European Growth Areas (MEGAs) elaborated within the ESPON 2006 programme) form the best interconnected part of the territory.

The view on the interrelations outside the "Pentagon" and the relations between the central areas and the territory outside envisages the existence of more active and attractive zones in a broader territorial setting. The structure changes from a monocentric to a polycentric continent of global integration zones, global integration hinge regions and

potential global integration zones including their regional motors. These are the points of departure of territorial cohesion, a more balanced development and a good Lisbon performance. The cities and regions of the existing European networks can be seen as integral parts in this regional delineation with regard to the overall expansion but also to internal regional integration networks.

The growing importance of regions outside the central area is reflected by the regional importance in the light of the Lisbon Strategy. The best performing regions are not only concentrated in central, but western and northern parts of Europe.

The European centres for financial and business services are also the centres of patent applications and the seats of the most important European enterprises. In this respect, Europe proves to be polycentric. City regions as potential regional focuses and motors of development can be not only identified in the core area of the continent. A sufficient level of education and the reduction of existing inner city disparities, e.g. due to unemployment especially of the youth, are some of the preconditions to tune potential motors within their respective regional surroundings.



Regional integration and networks of cities



European global integration zones

- Metropolitan European Growth Areas (MEGAs) with five or six functions on global, European and transnational / national level *
- European global integration zone and possible extension **
- Global integration hinge region
- Potential European global integration zone and possible extension

The network of European metropolitan regions and areas (METREX)

- Cities and regions of the METREX network
- Representative Integrated Network Activity (RINA) according PolyMetrexPlus - different colours indicate the different RINAs ***
- Potential extension and modification of the ESPON global integration zones by PolyMetrexPlus RINAs and METREX cities and regions

EUROCITIES network

- Full member and associate members of EUROCITIES
- Potential extension and modification of the ESPON global integration zones enclosing EUROCITIES full and associate members

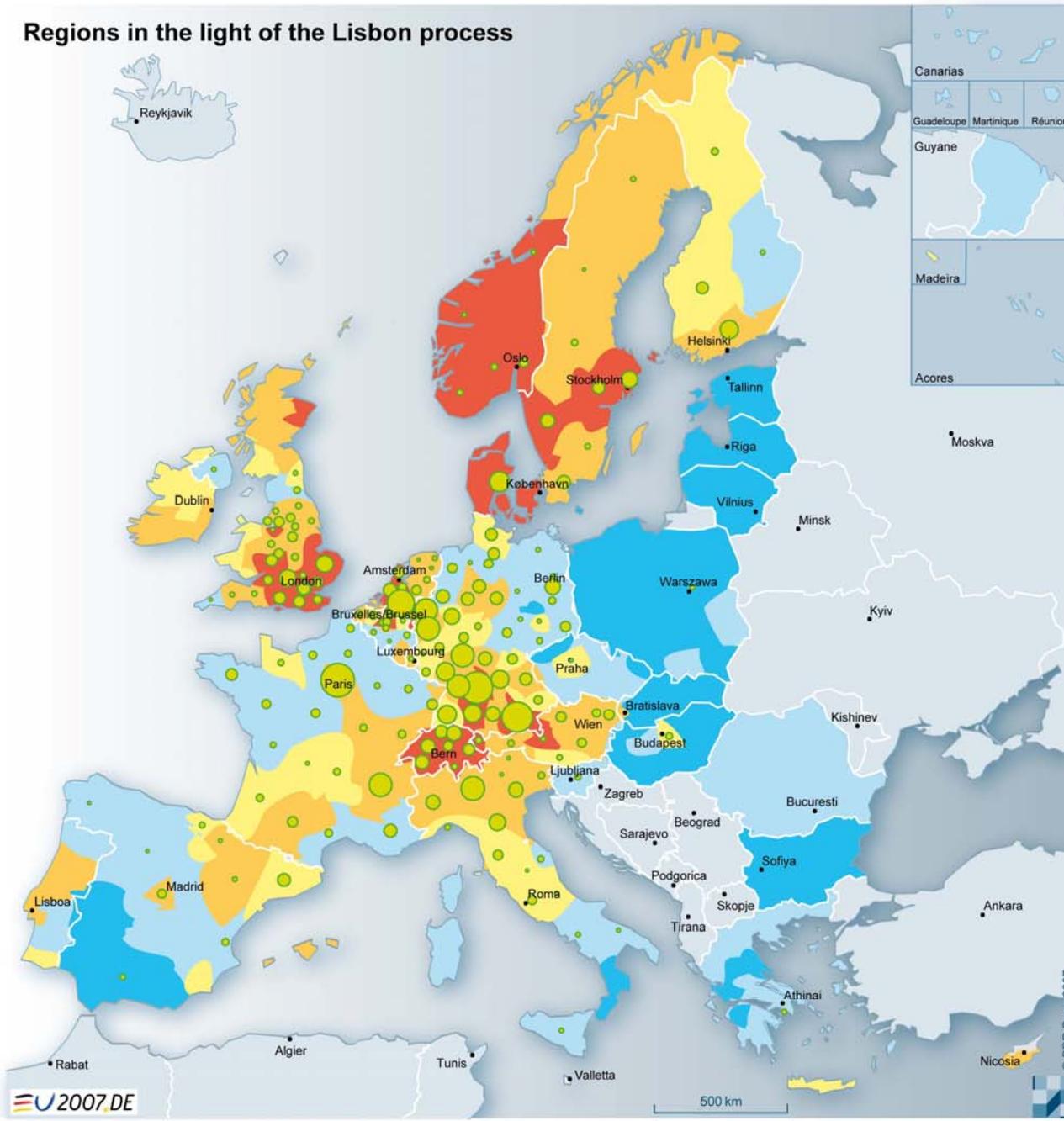
* Decision making, administration, industry, tourism, transport, university

** The European global integrations zones consists of a group of ESPON MEGAs with at least one with all six functions covering. They are defined by internal cohesion defined by transport and the connectivity between the enclosed MEGAs by a travel time of 1 hour by air

*** The PolyMetrexPlus study identified 18 RINAs. Please refer to the list in the Annex

Source: Espo project 2.4.2 and BBR Spatial Monitoring of Europe

Regions in the light of the Lisbon process



Economic Lisbon indicators

Number of indicators in the upper quartile minus number of indicators in the lower quartile

- > 3 Primarily high performance
- 1 - 3
- 0 Medium performance
- -1 - -3
- < -3 Primarily low performance
- no data

Patent applications

Share of total patent applications 2002, (only regions with at least 0.05 % of total patents)

- 5 %
- 2.5 %

with use of the following indicators:

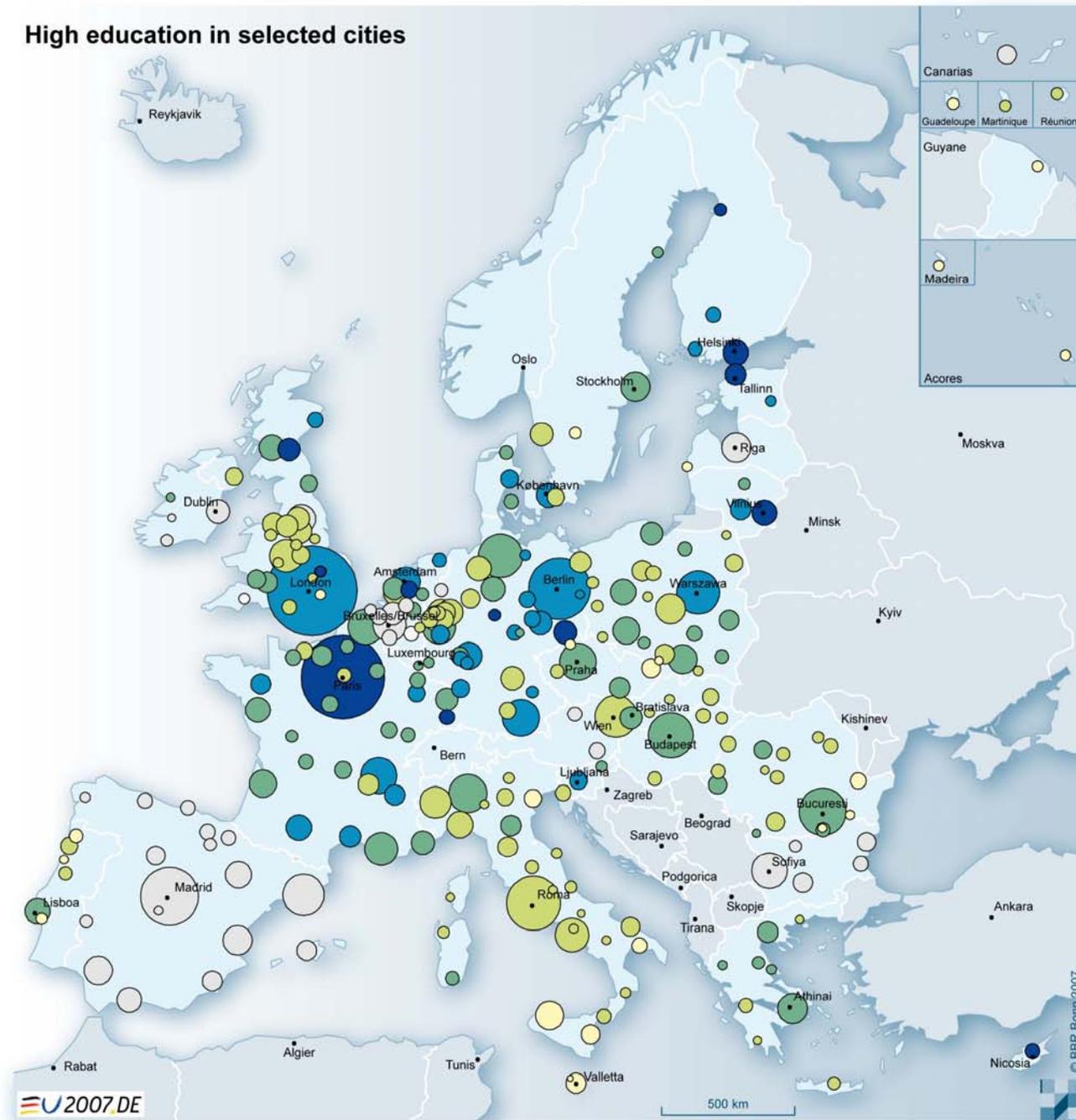
1. Gross Domestic Product in purchasing power standards per inhabitant in 2000.
2. Labour productivity: Gross domestic product as purchasing power parities person employed in 2000 *
3. Employment rate: employed persons aged 15-64 as a share of total population of the same age group in 2000 *
4. Employment rate of older workers: employed persons aged 55-64 as a share of total population of the same age group in 2000 *
5. GERD: gross domestic expenditure on research and development as a share of GDP in 2000 **
6. Dispersion of regional unemployment rates: coefficient of variation of NUTS 3 level unemployment rates within each NUTS 2 region 2003 ***
7. Long-term unemployment rate: persons unemployed for more than 12 months as a share of the total labour force in 2000 ****

* NUTS1 for FR Département d'Outre Mer and DE Brandenburg
 ** NUTS1 for FR Département d'Outre Mer and DE Brandenburg;
 IT Bolzano-Bozen, Trento disaggregated from old NUTS2 regions;
 UK disaggregated from NUTS1; BE, CH, IE, NO, SE on the national level;
 no data for Ceuta & Melilla
 *** GR and PT: regional variations on NUTS0 level
 **** NUTS1 for FR Département d'Outre Mer and DE Brandenburg;
 CH & NO on the national level; no data for Ceuta & Melilla
 ***** the regions indicated in the map cover approximately 98% of all patents

Regional base: NUTS 2
 Source: BBR Spatial Monitoring of Europe
 Origin of data: ESPON Project 3.3, Eurostat

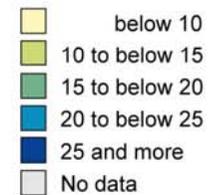
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High education in selected cities

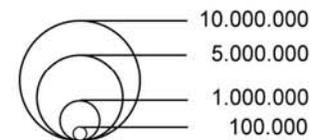


Persons with high education in Urban Audit cities 2001*

Proportion of the resident population qualified at levels 5-6 ISCED**



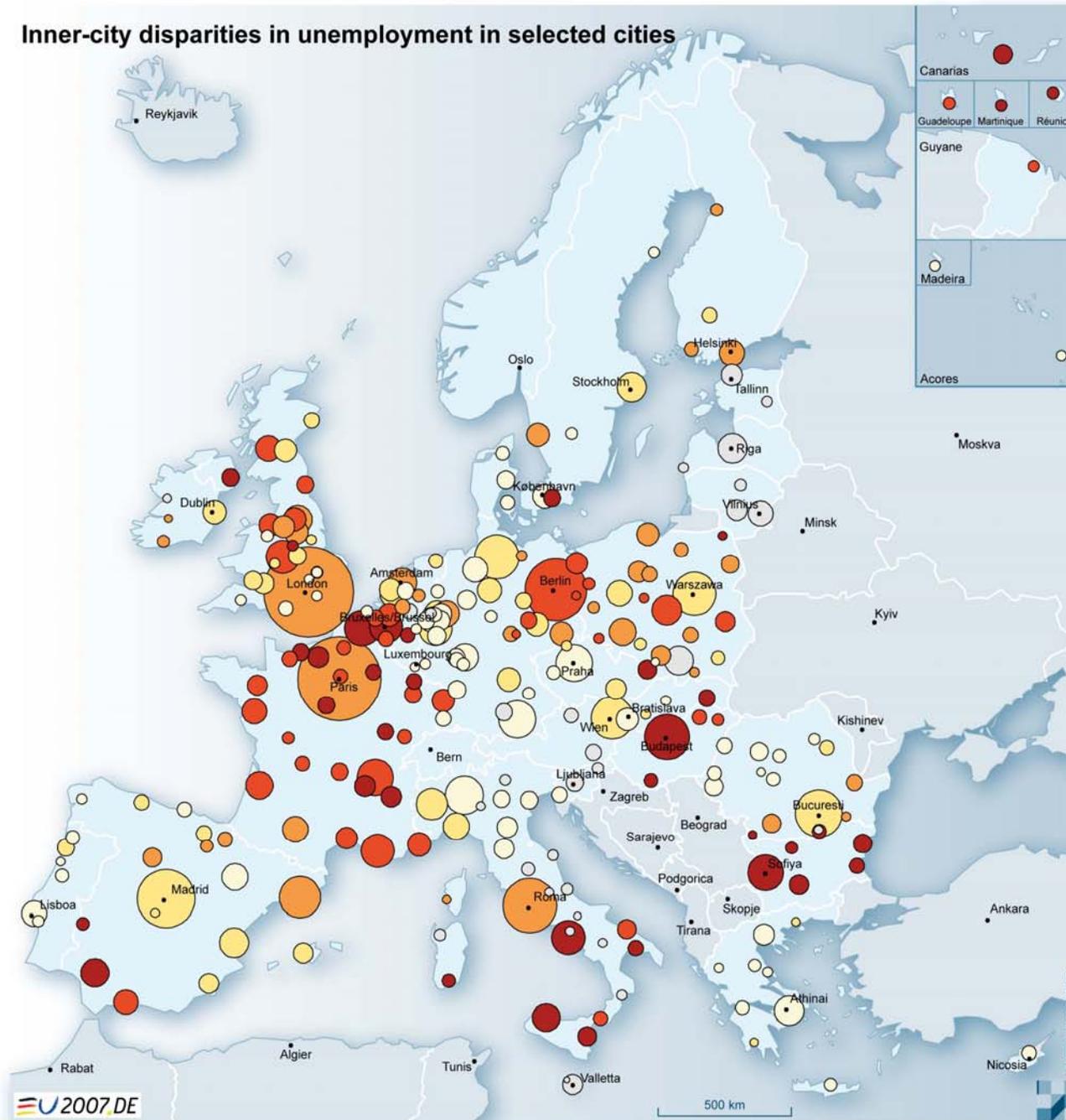
Population size in the core city



*Slovakia: 1996
 **International Standard Classification of Education

Source: Eurostat: Urban Audit Database

Inner-city disparities in unemployment in selected cities

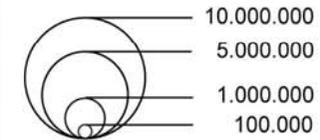


Inner-city neighbourhood unemployment disparities in Urban Audit cities 2001

Standard deviation of neighbourhood unemployment rates

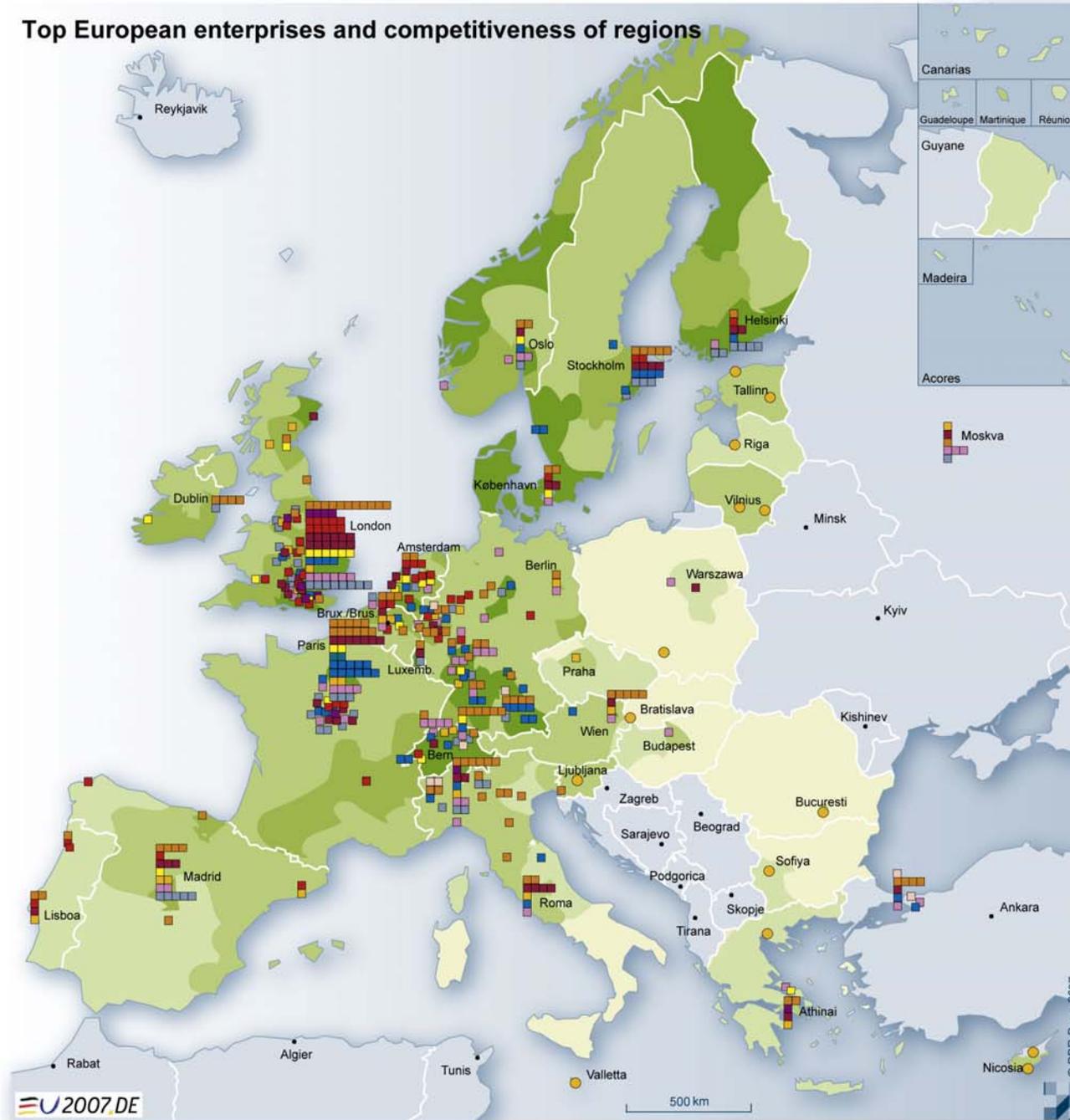
- Very small neighbourhood differences
- Small neighbourhood differences
- Average neighbourhood differences
- Large neighbourhood differences
- Very large neighbourhood differences
- No data

Population size in the core city



Source: Eurostat: Urban Audit Database

Top European enterprises and competitiveness of regions



Regions according to degree of Lisbon performance related to the regional average *

- Below-average
- Moderately below-average
- Average
- Moderately above-average
- Above-average
- No data

Economic sector of the Handelsblatt European top 500 enterprises 2004

(each square represents one enterprise)

- Conglomerate
- Banks, insurances, real estate
- Hotel, restaurants, tourism
- Retail, business-oriented services, medical supply
- Transport, telecommunication
- Food, tobacco
- Textiles, clothing
- Engineering, vehicle construction, electrical and precision engineering, computer,
- Energy and water supply
- Oil, gas, chemistry, pharmaceuticals
- Mining, construction, steel, paper, raw materials

Cities with diverse seats of top 500 enterprises are grouped in lines by number of enterprises and in rows by sectors of activities without any spacing. The location of cities and enterprises in the related surrounding areas may differ from the correct topographic positions due to reasons of cartographic representation.

● Functional Urban Areas with decision making functions of European, transnational or national importance without top 500 enterprises seat.

*Degree of regionalised Lisbon performance as an aggregate of 5 indicators:
 - Productivity (GDP per person employed 2002) +
 - Employment rate (employed population / population aged 15-64 2003) +
 - Expenditure on R&D (expenditure on R&D / total GDP 2001) +
 - R&D Business Enterprise Sector (BES R&D personnel per 1.000 active person 2001) +
 - High educated population (highly educated population / total educated pop. 2002) +

Regional base: NUTS 2

Source: BBR Spatial Monitoring of Europe
 ESPON Projects 1.1.1; 2.4.2 for Lisbon performance
 Origin of data: Handelsblatt 2004

III 2 New forms of partnership and territorial governance between rural and urban areas

Europe is a highly urbanised continent. Around 34% of the population or 173 million people live in cities and urban regions of more than 100,000 inhabitants. More than half of them or 125.5 million people live in cities with more than 250,000 inhabitants. 27 city regions consist of more than a million inhabitants each, covering a population of approximately 65 million or 13% of the total number of people.

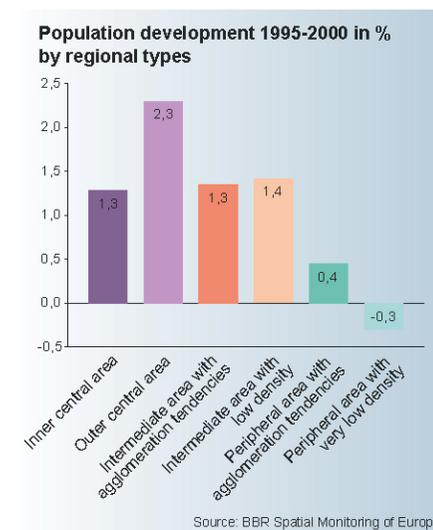
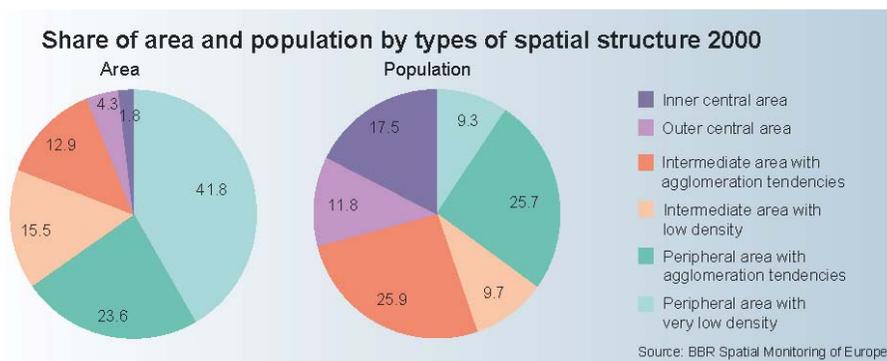
Urban and rural functions interfere with each other and grow together. Traditional definitions of the “urban” and the “rural” area as well as trade-off relations change and get blurred. At the same time, the quandary

concerning challenges and potentials in economic, social and ecological sustainable development becomes clear. Mutual efforts, partnerships and responsibilities of regions are a good solution to achieve more cohesion and economic growth.

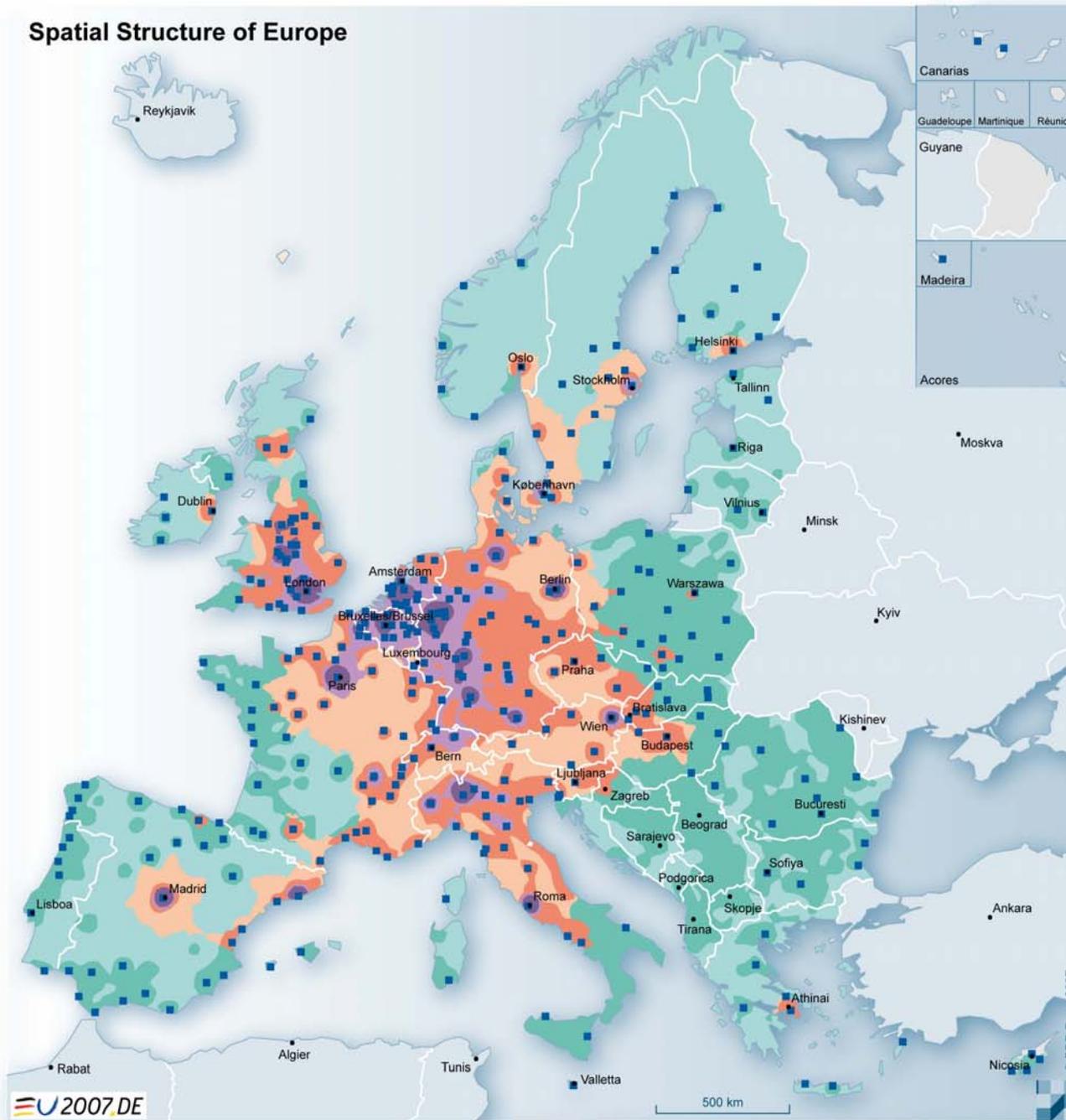
The spatial and settlement structure is among other things the result of developing areas with a transport infrastructure which determines the accessibility of the population and the economy. On a European scale it shows a strong centre-periphery picture with radial patterns. The centrally classified territory covers nearly the same area as those areas

of high urban influence and high urban intervention. The core main area stretches from the south of England over the BENELUX countries to Paris, south-west and north-west Germany. Further spots of high population density and high accessibility can be found around Madrid, the northern Mediterranean coast, Milano, Vienna and Rome. In these European core areas 31 of the total 76 MEGAs identified in the ESPON 2006 Programme are located, 19 of them are to be found in the central and 12 in single core areas. Leaving these areas, the two pictures of the basic structure and of rural-urban Europe are not any longer congruent and especially the

distribution of urban areas with more human footprints gets blurred and scattered. Rural does not always mean to be located in the periphery like regions around Madrid or Vienna. However, regions like the south-east of Ireland, parts of Poland, Romania or the south of Italy, which are classified as intermediate or peripheral regarding the spatial structure, show high urban influence and many human footprints. Interestingly, the share of agricultural land use in all six types, apart from the most rural ones, is nearly constant for the urban-rural typology.



Spatial Structure of Europe



European spatial structure based on population density and accessibility to all MEGAs

- Inner central area
- Outer central area
- Intermediate area with agglomeration tendencies
- Intermediate area with low density
- Peripheral area with agglomeration tendencies
- Peripheral area with very low density
- No data

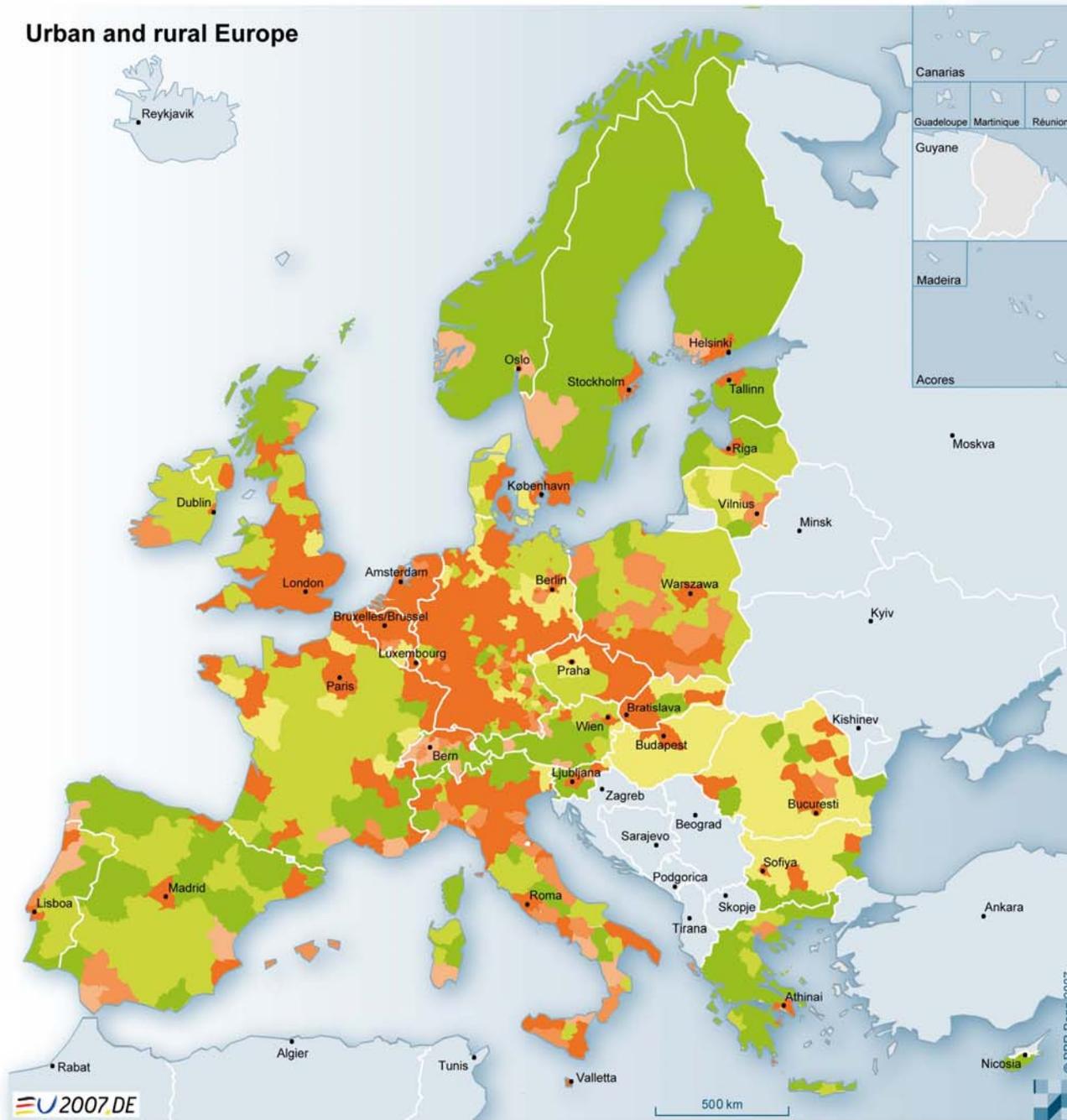
Note:
The typology of spatial structures based on population density and accessibility within a radius of 50 km.

■ MEGAs und transnational/national FUAs

Note:
The typology of FUAs has been elaborated according to their functional importance of population, transport, tourism, industry, knowledge, decision-making and administration. Three levels have been identified: Metropolitan European Growth Areas (MEGAs), transnational/national Functional Urban Areas (FUAs) and regional/local FUAs.

Source: Accessibility model of the BBR,
BBR Spatial Monitoring of Europe
FUAs: ESPON Project 1.1.1

Urban and rural Europe



Urban-rural typology, based on population density, ranking of Functional Urban Areas and land cover*

- High urban influence, high human footprint
- High urban influence, medium human footprint
- High urban influence, medium human footprint
- Low urban influence, high human footprint
- Low urban influence, medium human footprint
- Low urban influence, low human footprint
- no data

*For an explanation on the urban-rural-typology see annex.

Regional base: NUTS 3
 Source: Espon Projects 1.1.1; 1.1.2; 3.3

III 3 Strengthening and extending Trans-European Networks

Sufficient transport networks and the possibility to exchange people, goods and information in a fast, efficient, environmentally friendly and sustainable way play an important role in the future of the European territory

The European Pentagon, enlarged by some corridors stretching to northern England, central Italy, Catalonia, Gothenburg and Oslo, shows a high accessibility while the more peripheral regions are characterised by low levels of accessibility with indicator values often below 60% of the EU average. However, good accessibility is often accompanied by heavy traffic burdens and overloads. Challenges are therefore diverse between regions.

In order to relieve overburdened transport corridors, a better use should be made of other transport modes, for instance of short sea ship-

ping, and multimodal transport systems should be further extended. Approaches do already exist in the form of nodes and gateways. These have to be further extended and developed, like e.g. the basic infrastructure of the dense network of ports.

Digital data transfer and communication play an increasing role in economy, science, innovation as well as in the daily life of the population. They belong to the most important infrastructure of today's life but also show extreme centres and peripheries of distribution. Public Internet Exchange Points represent more than 50% of European Internet Exchange Points (IXPs). They are the key entrances and nodes of the technical infrastructure, which also connects private telecommunication providers. The structure of the public IXP network, their participants and network intensity

by Internet Service Providers (ISPs) clearly concentrates on a core which consists of London, Amsterdam, Paris and Frankfurt. These locations have more than two or more IXPs, more than 100 participants, and the intensity of networking is high. These four locations (and Zürich as a fifth, smaller one) can be seen as the main nodes of the European part of the internet. All these locations are also significant banking, stock exchange and trade centres.

There are more IXPs which play an important role as national or regional nodes, with Stockholm being the most

important one for Scandinavia, Madrid the one for the Iberian Peninsula, Wien for its eastern neighbouring countries and Milano for Italy.

A European wide network exists. What seems to be favourable for the further development of the European information society is the support of networking activities as well as the promotion of further public peering points in the periphery and the Member States which joined the EU after 2004. This is needed to ensure an inexpensive use, independence from upstream providers and a stable and safe data exchange.

Top 10 of European airports by passengers 2005

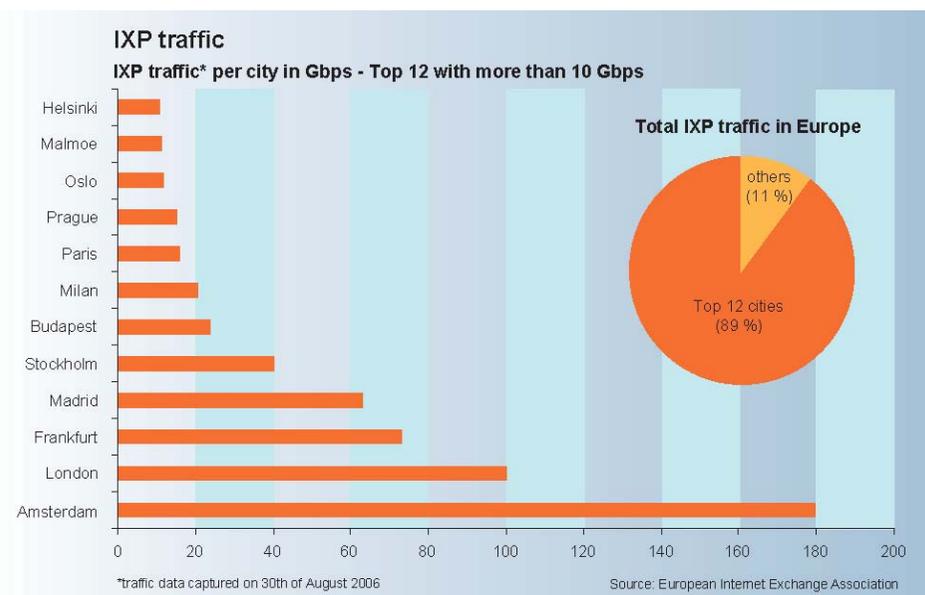
Rank	Airport	Passengers in 1,000
1	London Heathrow	68,142
2	Paris Charles de Gaulle	53,381
3	Frankfurt/Main	52,566
4	Amsterdam Schiphol	44,213
5	Madrid Barajas	41,815
6	London Gatwick	32,859
7	Roma Fiumicino	28,804
8	München	28,723
9	Barcelona	27,041
10	Paris Orly	24,850

Source: Eurostat

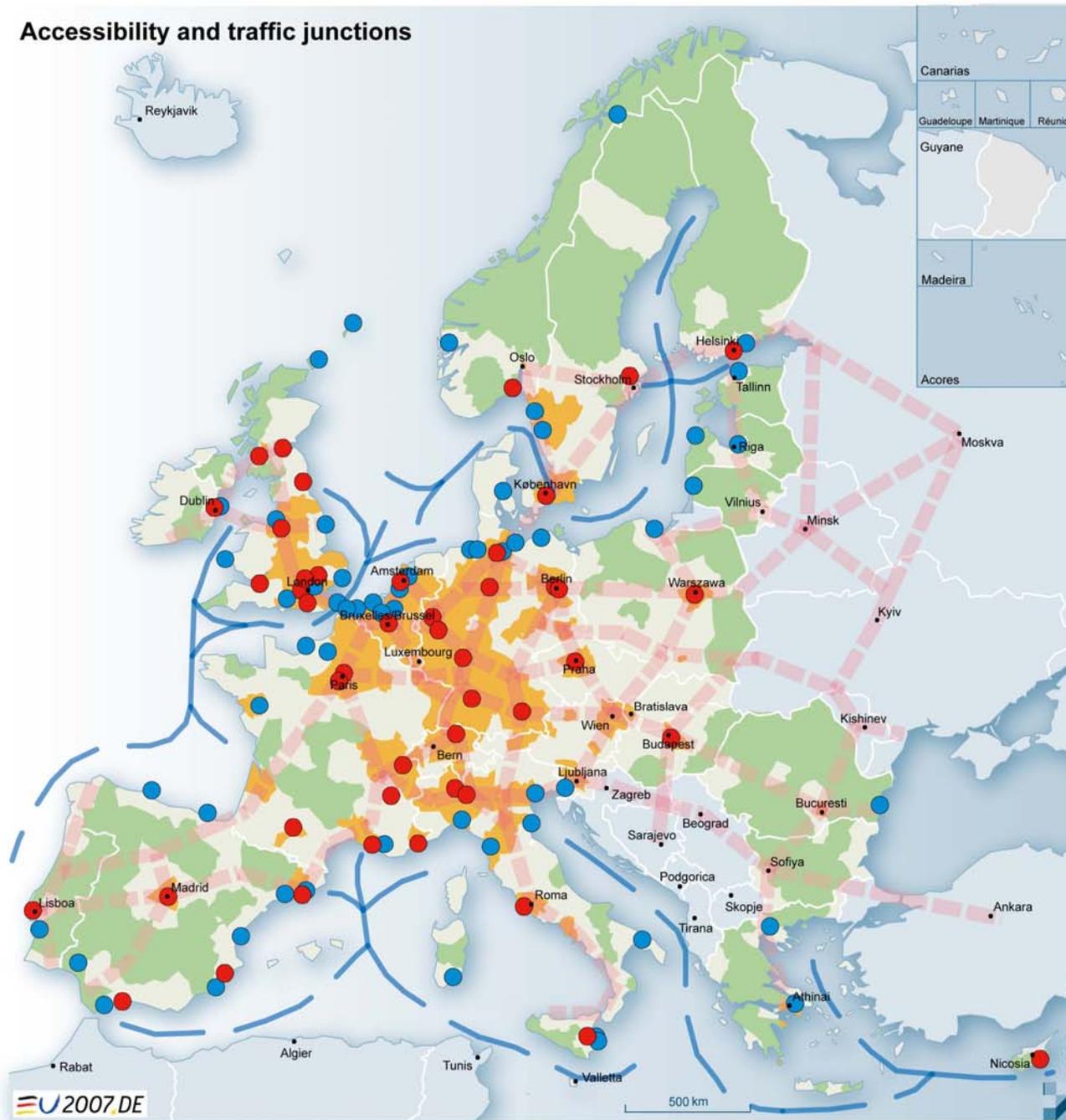
Top 10 of European ports 2004

Rank	Port	Millions of tons
1	Rotterdam	330.9
2	Antwerp	135.5
3	Hamburg	99.5
4	Marseille	90.8
5	Bergen	75.6
6	Le Havre	71.9
7	Grimsby / Immingham	57.6
8	London	53.3
9	Algeciras	52.6
10	Amsterdam	49.9

Source: Eurostat



Accessibility and traffic junctions



Potential multimodal accessibility* 2001

- Low accessibility with less than 60 % of the regional average of the 29 ESPON countries
- High accessibility with more than 100% of the regional average of the 29 ESPON countries

Trans-European Networks

- Trans-European transport corridors
- Trans-European seaways

Important entrance point to the multimodal transport network

- International and national airports with more than 5 millions passengers in 2005

Main connections to the highways of the sea

- Commercial ports with more than 1.5 millions tonnes of goods in 2004

Potential accessibility describes the opportunities (population) to be reached in Europe, weighted by the time it takes to reach them. Multimodal accessibility expresses the combined effect of alternative transport modes, i.e. an aggregated picture of road, rail and air accessibility for a certain location

Regional base: NUTS 3

Source: ESPON Projekt 1.2.1, BBR Spatial Monitoring of Europe ; Eurostat Regio

Internet Exchange Points and the main European networks



Number of networks as participants of IXP

- 0 - 50
- 51 - 100
- 101 - 200
- 201 - 478
- known location of IXP but no data about participating networks

Number of IXP per city

- 1
- 2 - 4
- 5 and more

Number of IXP connections* by the main European networks (traffic > 5 Gbps)

- 1 - 4**
- 5 - 10
- 11 - 15
- 16 - 20
- 21 - 74

* A connection of two IXP exists when a network is participant of both IXP. Only networks with more than 5 Gbps are considered.

** Only displayed if the IXP location is not connected through another category.

Source: BBR Spatial Monitoring of Europe
 Origin of data: PeeringDB; European Internet Exchange Association; EP.Net LLC

III 4 Promoting trans-European risk management

An increased number of hazard events and damages has raised the awareness for the consequences but also for the prevention of technological and natural hazards.

The topic is no longer only discussed on the local and regional level. The number of great natural catastrophes, especially storms, floods and temperature extremes (heat wave, drought or wildfire), is worldwide increasing.

Territory, economy, ecology and social life of the European Union are affected, too. A look on the calculations on climate change reveals the degree and the complexity of perils.

Only a few European regions show a very low level of natural hazard potentials. This is the case for parts of north-eastern Europe and for some scattered areas in Spain and France.

For the Mediterranean south of Europe forest fires play a predominant role. The Atlantic coast from the Spanish coast over the North Sea to the south-eastern Baltic Sea is affected by winter storms. The risk of avalanches appears in the majority of

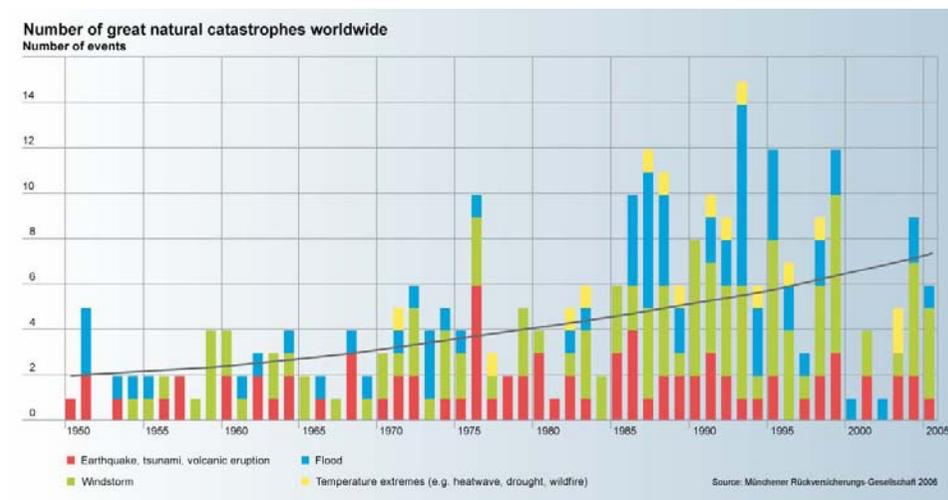
mountainous areas like the Carpathian Mountains, the Alps, the Pyrenees and the Scandinavian mountains. Especially regions of important winter tourism are endangered.

Above all in the central area of the territory, going from the west of England to the east of Romania, the settlement areas endangered by floods are scattered into bigger and smaller areas. Some spots are located on the Mediterranean coast. In general, urban areas seem to be more at risk than rural areas due to the influence of the vulnerability component on the overall risk. This is also true for technological hazards as most technological facilities as well as the transport infrastructure are situated in central urban regions.

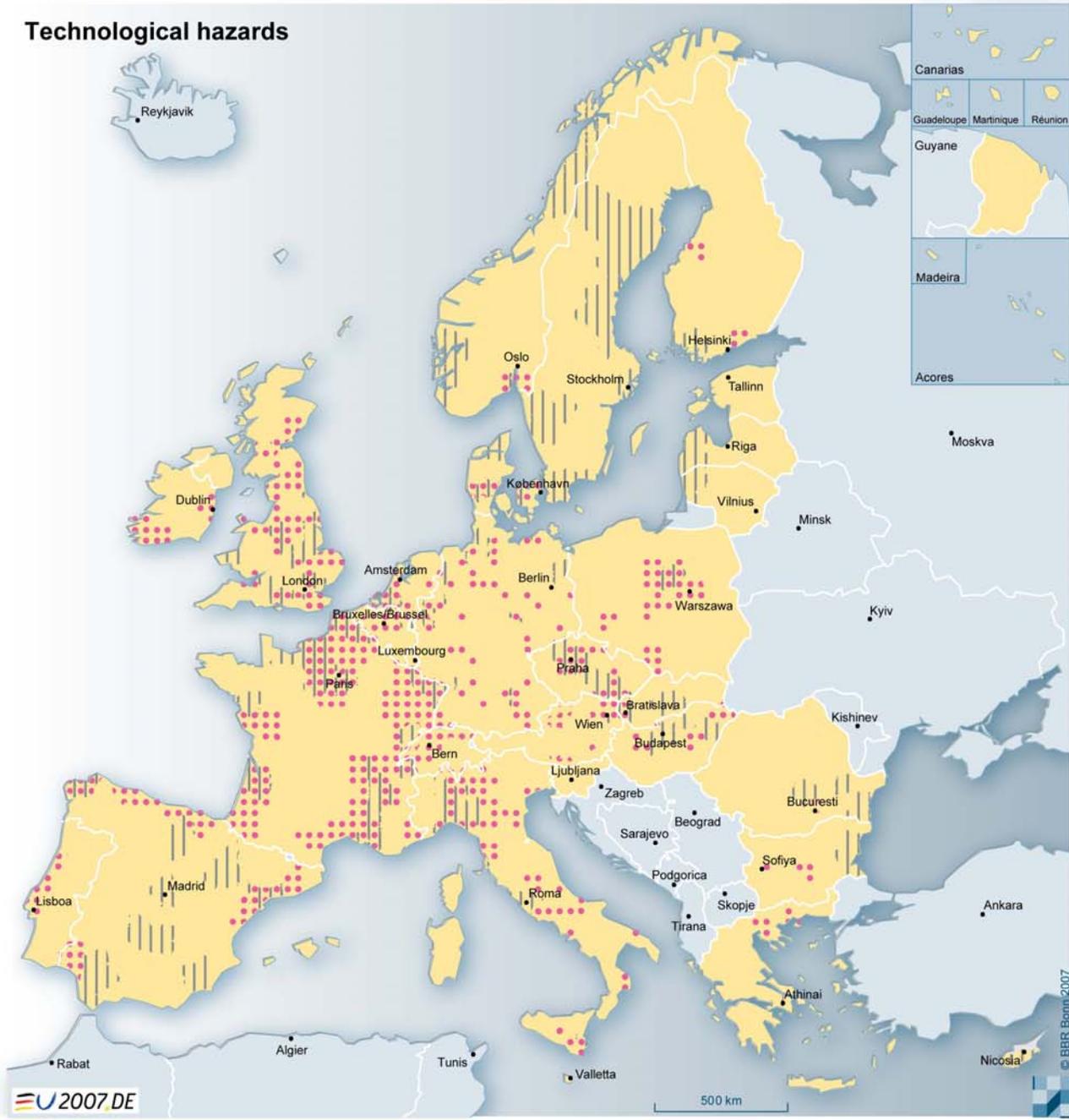
Technological hazards are rather widespread on the European territory. The reason for this is mainly the distribution or location of hazardous industries and especially of oil-processing or chemical plants as mentioned above. Only a few areas are less endangered by technological hazards, notably most of Greece,

Slovenia and Estonia. Most of the territory has a medium value of aggregated hazards and a fragmented picture is given. Two main corridors can be identified. One of these corridors starts in Spain, crosses the BENELUX states going to the south of Scandinavia. Another starts in the south of Scotland, crosses England and BENELUX and continues to the south of France. A minor corridor is the one stretching from Prague over Vienna and Bratislava to Budapest. Smaller single corridors are to be found in the north-west of Italy, around Rome, in the west of Romania and Bulgaria, around Warszawa, around the Baltic Sea and a in a fringe

stretching from central Sweden to the coast of central Norway.



Technological hazards

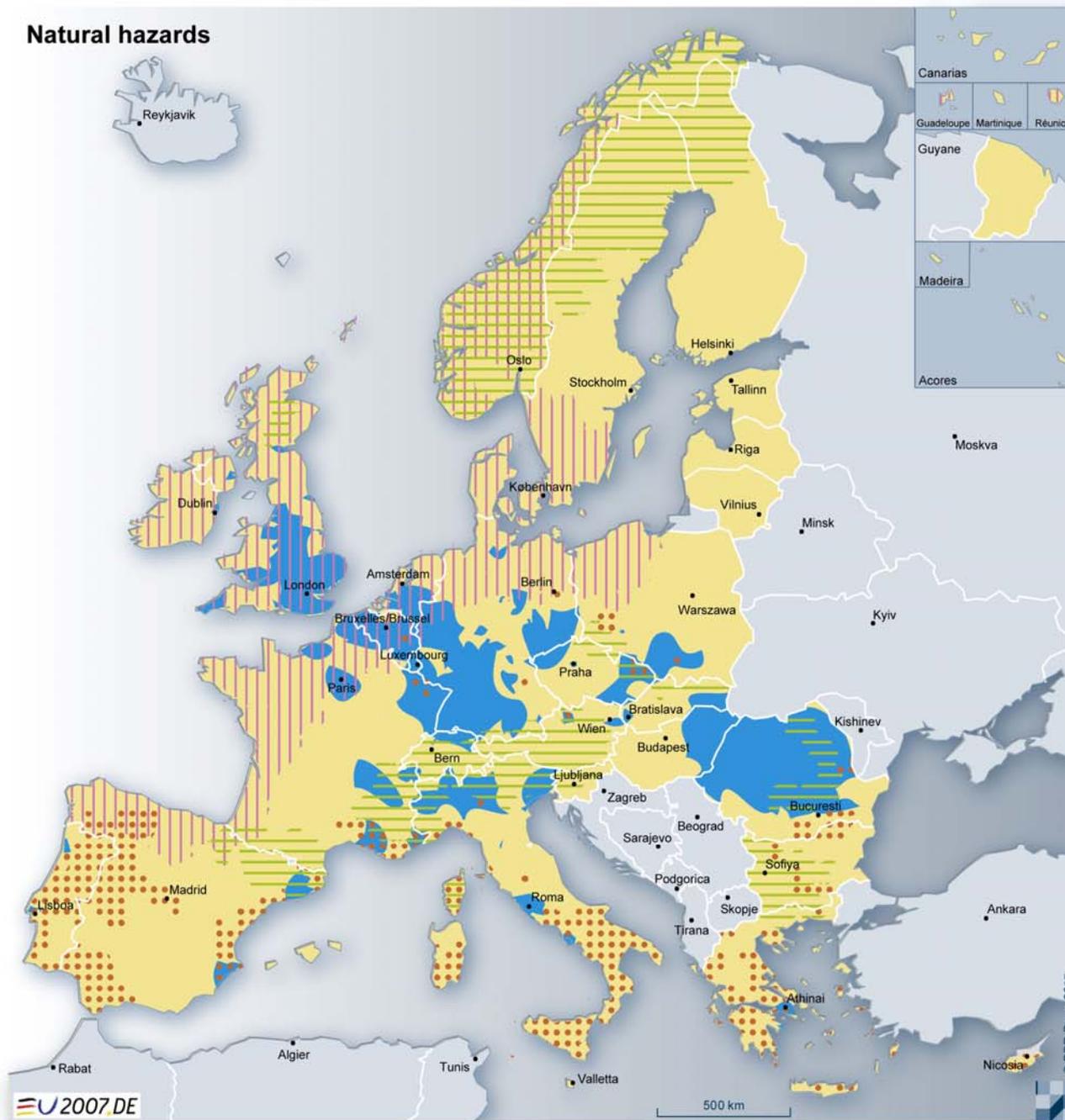


High importance on selected technological hazards

- ||| high oil hazard potential
- high chemical plants hazard potential
- no data

Regional base: NUTS 3
 Source: ESPON Project 1.3.1

Natural hazards



High importance of selected natural hazards

- High probability of winter storms
- High or very high forest fire potential
- Risk of avalanches
- Flood endangered settlement areas, considering flood potential and share of artificial area
- no data

Regional base: NUTS 3
 Source: EPSON Projects 1.3.1; 4.3.1

III 5 Strengthening ecological structures and cultural resources as new development strategy

The European culture and nature are unique assets for the existence and development of the European territory and identity.

The culture promotes European integration and is a key tool to integrate the components of European societies in all their diversity. It is an important element to make European citizens accessible to the idea of European integration.

In the economic respect, the cultural and creative sector is growing with a contribution of 2.6% to the EU GDP and with a turnover of more than 654 billion euros in 2003. The same applies to employment with 5.8 million Europeans being employed in this sector in the same year and a growth

The productivity of the European cultural & creative sector*

Value added / employment costs (arithmetical averages of the median values of countries)

	1999	2000	2001	2002	2003
Design	1.70	1.77	1.70	1.99	1.92
Architecture	1.37	1.32	1.32	1.37	1.43
Visual arts	1.96	1.94	1.99	1.94	2.04
Performances	1.66	1.98	1.41	1.46	1.72
Film and Video	1.75	1.77	1.68	1.76	2.02
Radio and TV	1.54	1.46	1.35	1.49	1.65
Advertising	1.50	1.59	1.46	1.47	1.50
Press and publishing	1.45	1.41	1.37	1.36	1.35
Heritage	1.24	1.22	1.80	1.78	1.21
Video Games	1.32	1.35	1.37	1.32	1.66
Music	1.97	1.74	1.62	1.77	1.43
Tourism	1.50	1.52	1.44	1.42	1.44

Source: European Commission, 2006; AMADEUS

*Productivity is here the ratio between value-added and employment costs. This indicator shows how much value is created for every Euro spent on employment costs (wages, salaries and social costs).

by 0.85% in 2002-2004 in the cultural sector alone.

The distribution of theatres and opera houses for the latter shows a clear concentration on a Central European strip going from England over north-west Europe, Paris and Germany to a less dense distribution of locations in the east, south, north and west. For theatres, the highest density of locations is still to be found in the above-described area. The distribution is more balanced but shows larger distances especially on the Iberian peninsula or in the north of Scandinavia. Higher concentrations of opera houses and/or theatres are to be found in capital cities, metropolitan and economically strong areas with a certain amount of the population. The lower share of opera houses is primarily explained by the fact that they are more cost-intensive. Furthermore, they need a critical mass of audience. The existence of smaller locations often has historical reasons.

Like culture, nature is an essential asset for the European identity and development. Nature by its perception

is boundless. Thus, a European co-operation concerning future use, sustainable treatment and protection is of high importance.

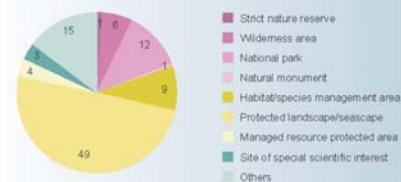
On the international level, protected areas, which are created based on national laws and international conventions and programmes and which are partly interconnected, are a major tool for conserving species and ecosystems. They offer a set of goods and services essential for the sustainable use of natural resources. The application of these tools considerably differs from country to country de-

pending on national needs and priorities and on differences in legislative, institutional and financial support.

Europe shows a picture of countries with an extensive system of designated sites in a central strip going from the UK to the Alpine region and along the eastern boundaries of the territory. Apart from some exceptions, the north and the south of Europe show heterogeneous and altogether lower shares of protected areas. The most southern part of Europe in general has a lower amount of designated sites.

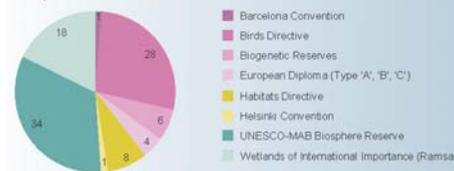
European¹ protected areas concerning national designations, international conventions and programmes

Nationally designated protected areas by IUCN² 2004
Share of protected areas in %



International conventions and programmes 2004

Share of protected areas in %



¹Data refer to EU-25 countries
²International Union for Conservation of Nature and Natural Resources
Source: UNEP-WCMC World Database on Protected Areas, BBR, own calculations

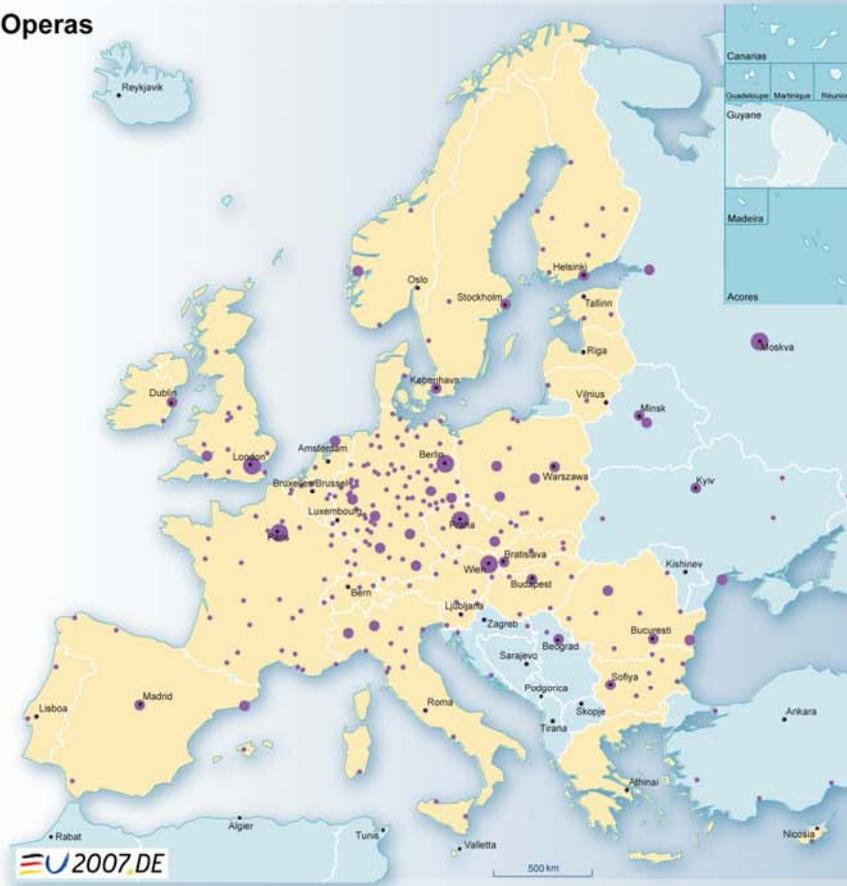
Protected Areas for biodiversity of the EU 25
Habitats Directive, 2005 as a percentage of total area

Austria	10.6	Latvia	11.0
Belgium	10.0	Lithuania	10.0
Cyprus	11.0	Luxembourg*	14.8
Czech Republic	9.2	Malta	12.5
Denmark	7.4	Netherlands	9.5
Estonia	15.9	Poland	4.2
Finland	12.7	Portugal	17.4
France	6.9	Slovakia	11.8
Germany	9.8	Slovenia	31.4
Greece	16.4	Spain	22.6
Hungary	15.0	Sweden	13.6
Ireland	10.2	United Kingdom	6.5
Italy	13.9		

Source: EUROSTAT, 2006
* data for Luxembourg for 2003

Cultural infrastructure in Europe

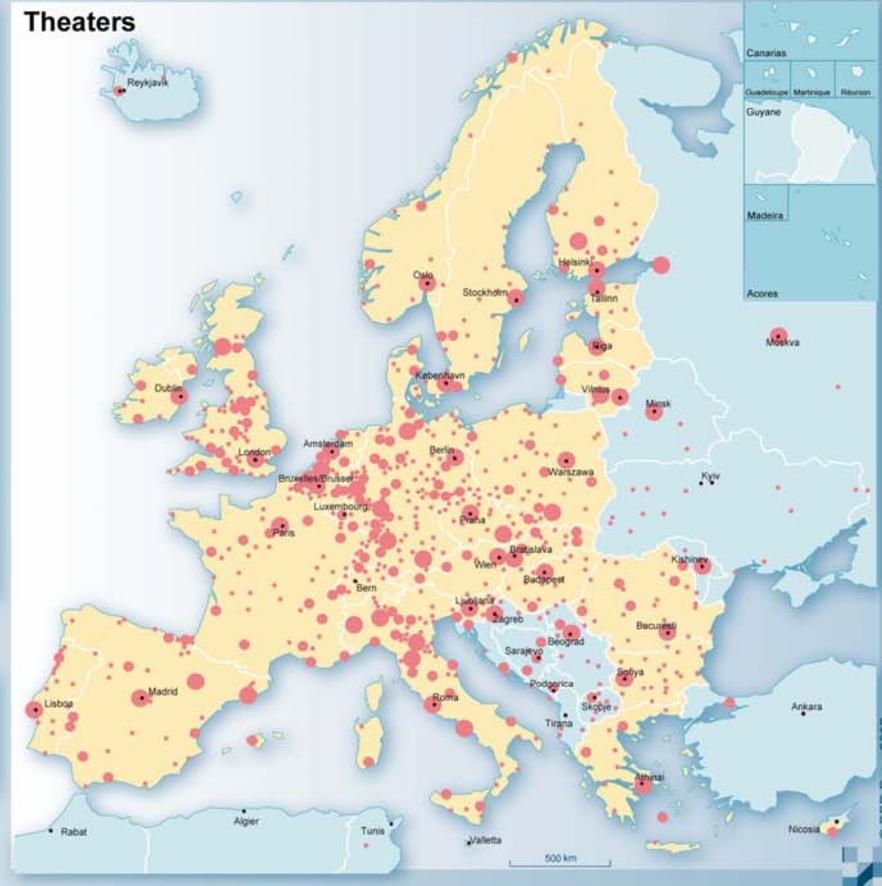
Operas



Number of operas

- 1
- 2 - 5
- more than 5

Theaters

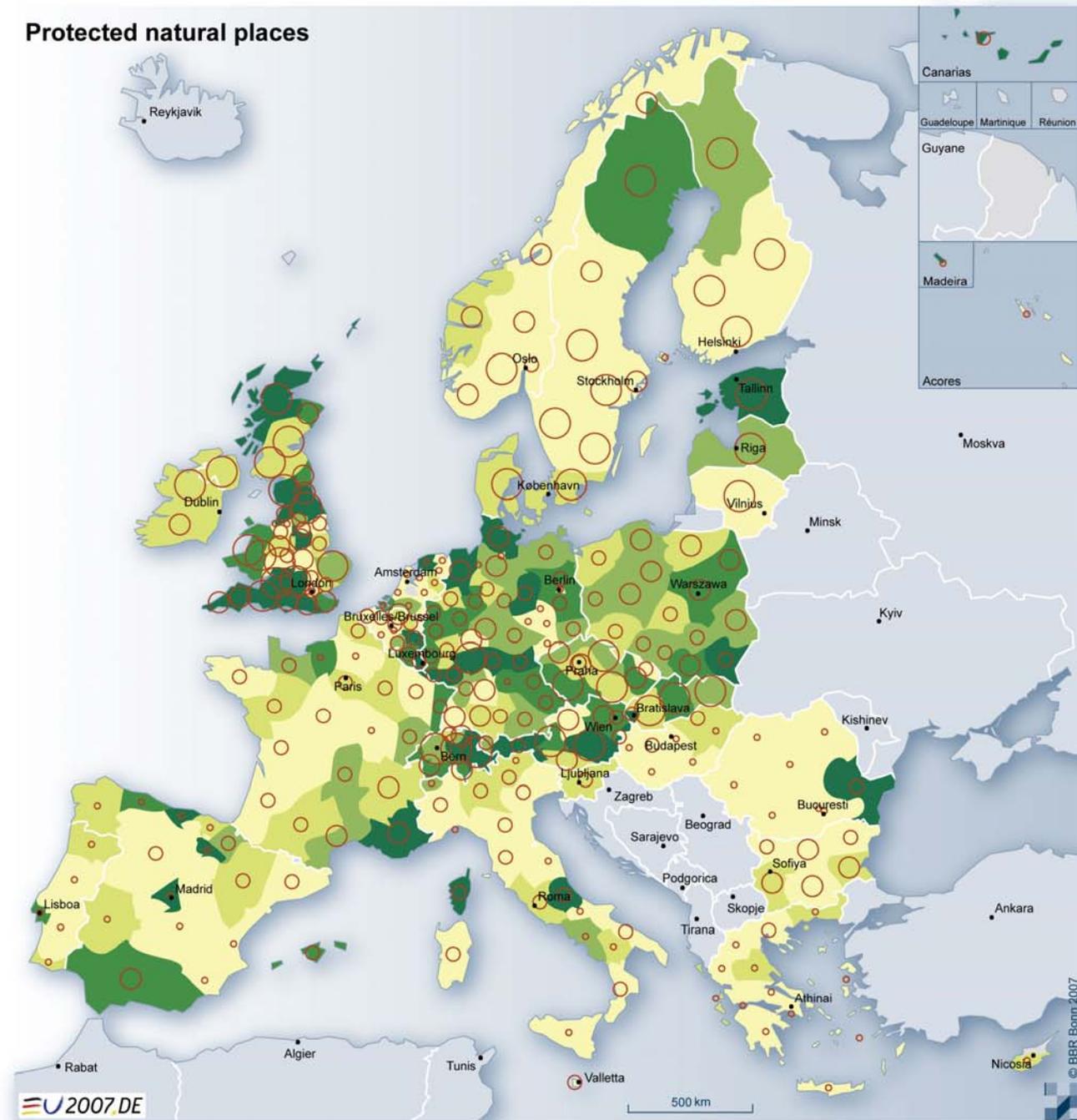


Number of theaters

- 1
- 2 - 5
- more than 5

Regional base: NUTS 2
 Source: Alain Charles Arts
 "Performing Arts Yearbook for Europe 2006"

Protected natural places



Share of protected areas* in % of total 2004

- up to 10
- 11 to 20
- 21 to 30
- 31 to 40
- 41 and more
- No data

Number of sites

- up to 25
- 26 to 100
- 101 to 250
- 251 and more

*protected areas according to:
 - National Designations according to the definitions of the International Union for Conservation of Nature and Natural Resources (IUCN):
 Strict Nature Reserve, Wilderness Area, National Park, Natural Monument, Habitat/Species Management Area, Protected Landscape/Seascape, Managed Resource Protected Area
 - International conventions and programmes:
 Barcelona Convention, Birds Directive, Biogenetic Reserve, European Diploma Type A, B, C, Helsinki Convention, UNESCO-MAB Biosphere Reserves, Wetlands of international importance (Ramsar), World Heritage Convention

Regional base: NUTS 2
 Source: UNEP-WCMC World Database on Protected Areas;
 BBR, own calculations

IV The Europe of tomorrow

An accelerating globalization, geographical concentration and urban sprawl, the ongoing ageing of the population or considerable strains in transport affect the European territory in the global sense and will change the territorial picture. Advanced climatic changes will furthermore fundamentally change the economic and living conditions.

The results of the ESPON Programme 2006 scenarios on territorial development trends reflect a different territorial future. Three territorial scenarios outline the potential of Europe 2030 and show alternatives with regard to a more competitive or cohesion-oriented future of the continent.

The trend scenario mainly refers to the impacts of the continuity of policies in a context in which new challenges emerge and add to already existing ones. The competitiveness scenario assumes more fundamental changes in the political system towards innovation, new technologies and accessibility. Finally, the cohesion scenario focuses on economic, social and territorial cohesion and not only on global competitiveness. In case of

incompatibility between cohesion and competitiveness, priority will be given to cohesion.

In the economic development, the trend scenario outlines the ongoing process of catching up with the eastern part of the Union. As in the western areas, the metropolitan regions have largely benefited from the globalisation process and from the related restructuring of the economy. The cohesion-oriented picture with a lower GDP growth for the EU as a whole underlines this process with stronger growth rates in the new member countries than in western Europe. However, the epicentre of growth has moved towards South-Eastern Europe. In the competitiveness scenario, the most developed regions in the Pentagon but also a number of competitive regions outside the Pentagon belong to this privileged category. The divide between Western Europe and Central and Eastern Europe has increased as growth has tended to concentrate in the central Pentagon and only in a few surrounding metropolitan areas. The risk of declining activities will severely affect most areas in Central and Eastern

Europe. While the regional outline almost matches the baseline and the cohesion scenario, it will be larger in the competitiveness scenario and the intensity of risk will also be higher.

The baseline scenario goes beyond the "Pentagon", the central area of activities in Europe, along major corridors with significant metropolitan areas. In the cohesion scenario, this central area will obviously be even less concentrated and more spread and territorially balanced. The role of the urban system especially in the eastern and southern part of the territory increases. With more competitiveness-oriented policies the attraction and polarisation potential of metropolitan areas is particular strong and concentrated in the traditional Pentagon. Only a few metropolitan areas outside generate significant attraction and polarisation effects. The area of concentration of flows and activities is much more limited and only covers parts of the "Pentagon," although it stretches along a few major corridors.

The trend towards a marginalisation of various rural areas generally continues. The ageing of the population and

even depopulation have reached a critical level. In the competitiveness scenario, the risk of rural marginalisation is much more intense and the number of areas with a severe ageing of the population is higher. In the cohesion scenario, this number of areas is comparable to that of the baseline scenario but their size is reduced and the intensity lower.

Climate change is expected to have a tremendous influence on the European territory. It will influence the natural and thus the economic basis of regions. Increasing temperatures in winter will especially affect mountainous regions and the northern areas and in summertime considerably determine the southern part of Europe. More precipitation in winter characterises the northern part of the continent whereas the summer will be dryer on almost the whole continent apart from the very north. Decreases in precipitation by more than 50% compared with Southern Europe might endanger the base of living of a large part of the European population.

Potential paths of economic development

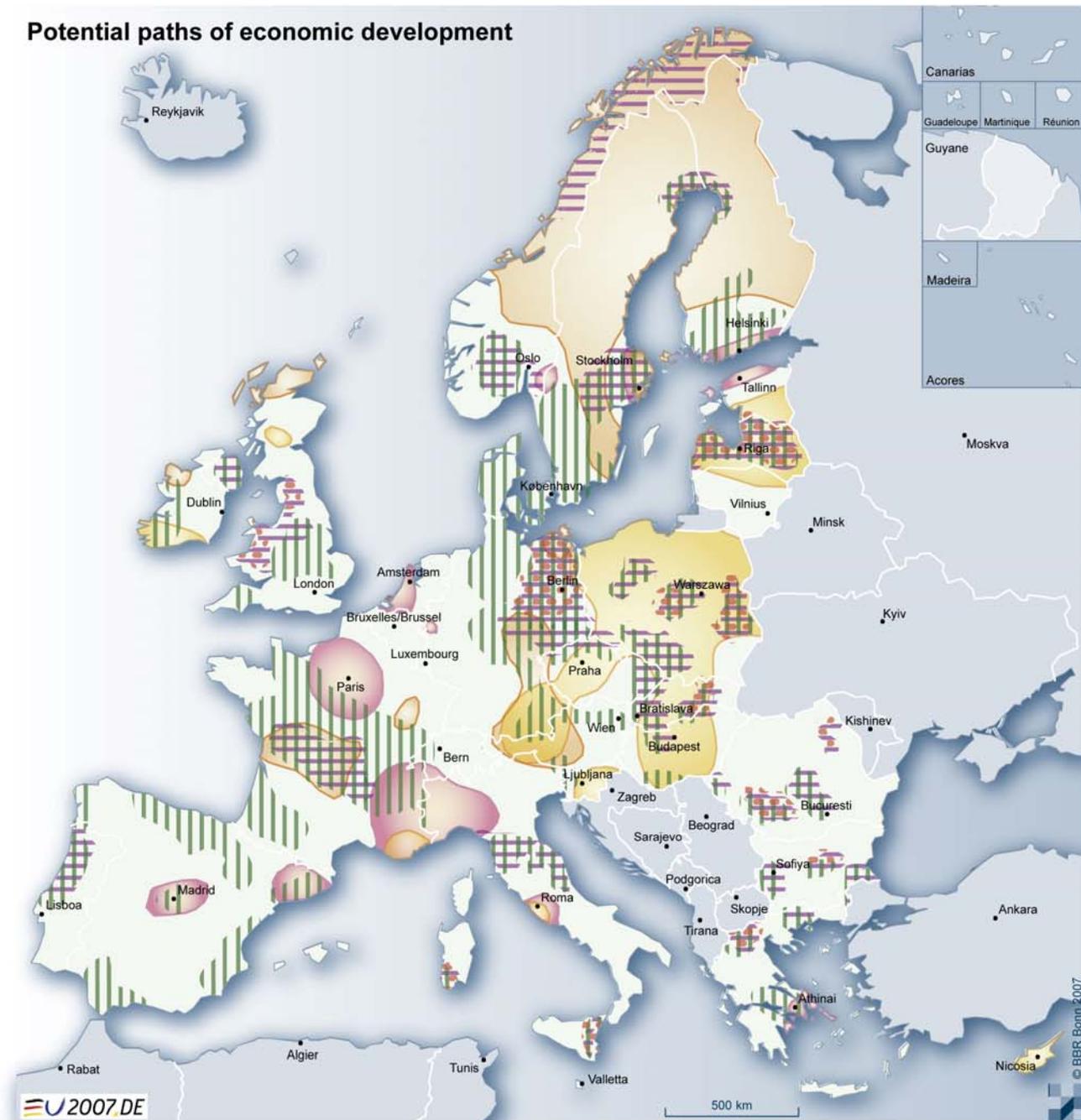
Potential strong points in future economic development in relation to different types of scenarios (baseline, cohesion-oriented and competitiveness-oriented) *

Change in relative position compared to the EU average 2002-2015 in GDP per capita by more than 1 percent (baseline and difference to cohesion and to the competitiveness scenario)

-  Baseline scenario
-  Cohesion-oriented scenario
-  Competitiveness-oriented scenario

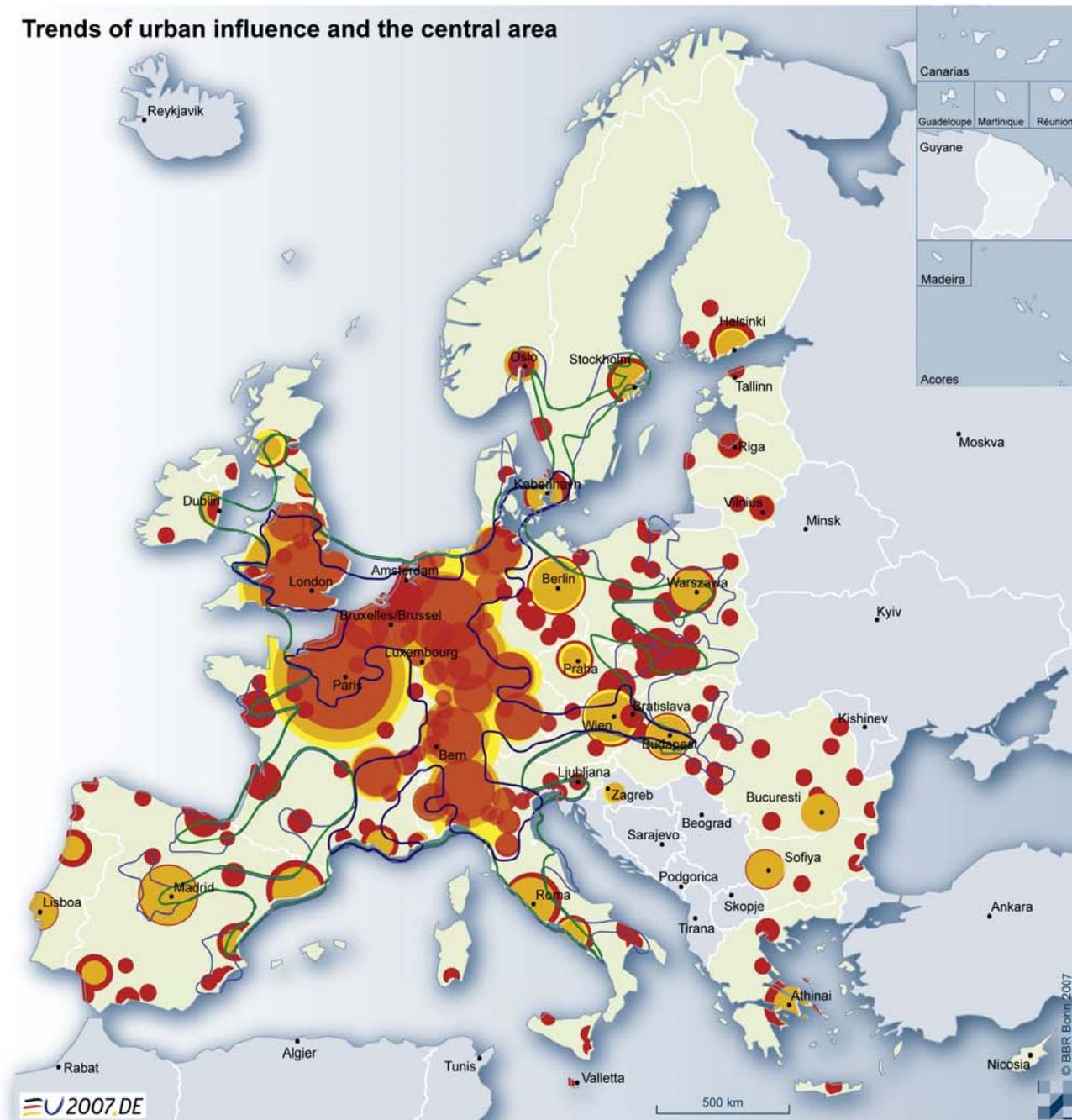
Regions with high and very high risk of declining (industrial) activity

-  Baseline scenario
-  Cohesion-oriented scenario
-  Competitiveness-oriented scenario



Source: BBR Spatial Monitoring of Europe
Origin of data: ESPON Project 3.2

Trends of urban influence and the central area



Potential attraction and polarisation potential of metropolitan areas in relation to different types of scenarios (baseline, cohesion-oriented and competitiveness-oriented) *

- Baseline scenario
- Cohesion-oriented scenario
- Competitiveness-oriented scenario

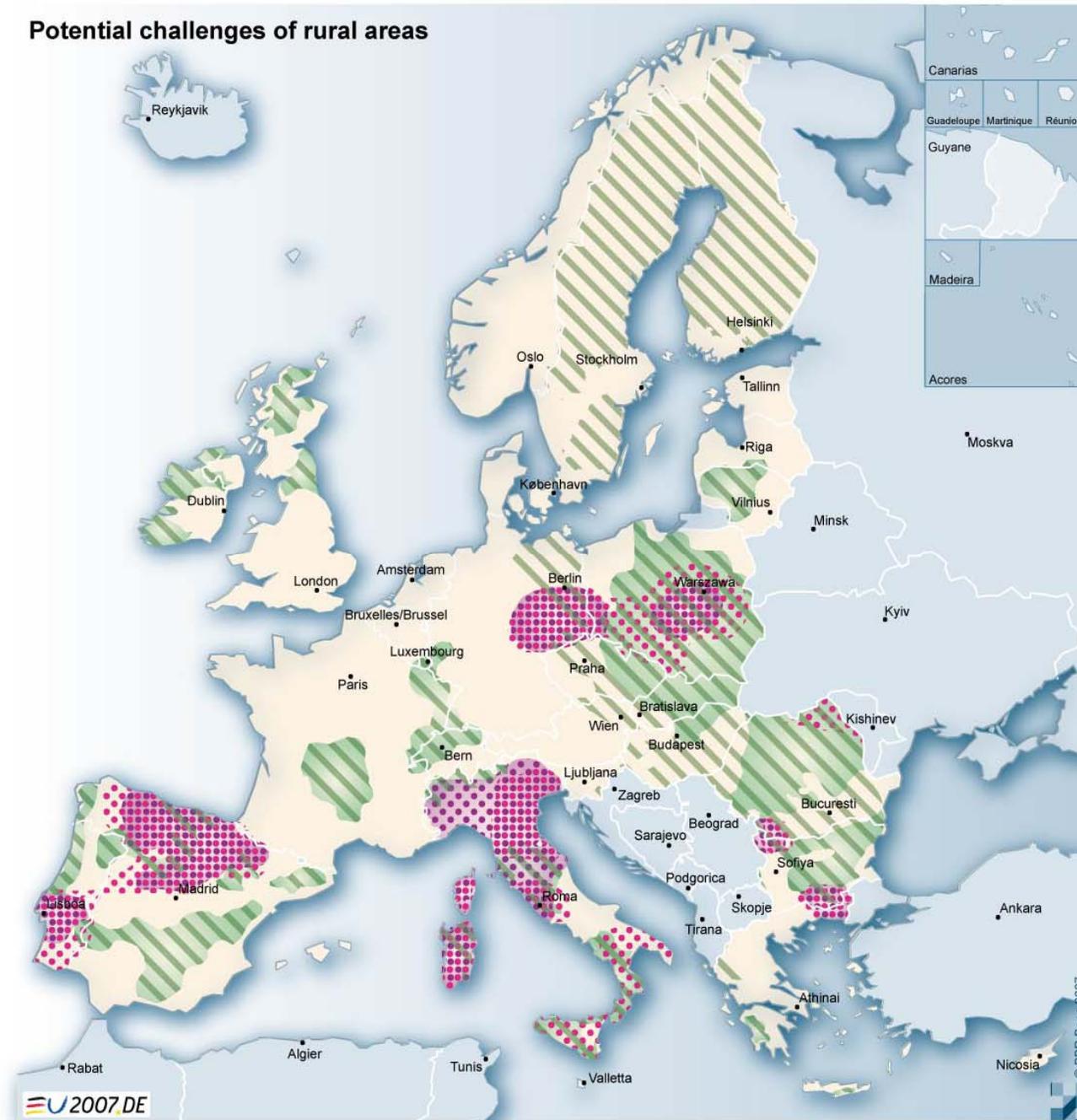
Areas of concentration and flows in relation to different types of scenarios (baseline, cohesion-oriented and competitiveness-oriented) *

- Baseline scenario
- Cohesion-oriented scenario
- Competitiveness-oriented scenario

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Source: ESPON Project 3.2

Potential challenges of rural areas



Areas with tendency of severe aging in relation to different types of scenarios (baseline and competitiveness-oriented) *

- Baseline scenario
- Cohesion-oriented scenario
- Competitiveness-oriented scenario

Areas with very high and high risk of marginalisation in relation to different types of scenarios (baseline, cohesion-oriented and competitiveness-oriented) *

- Baseline scenario
- Competitiveness-oriented scenario

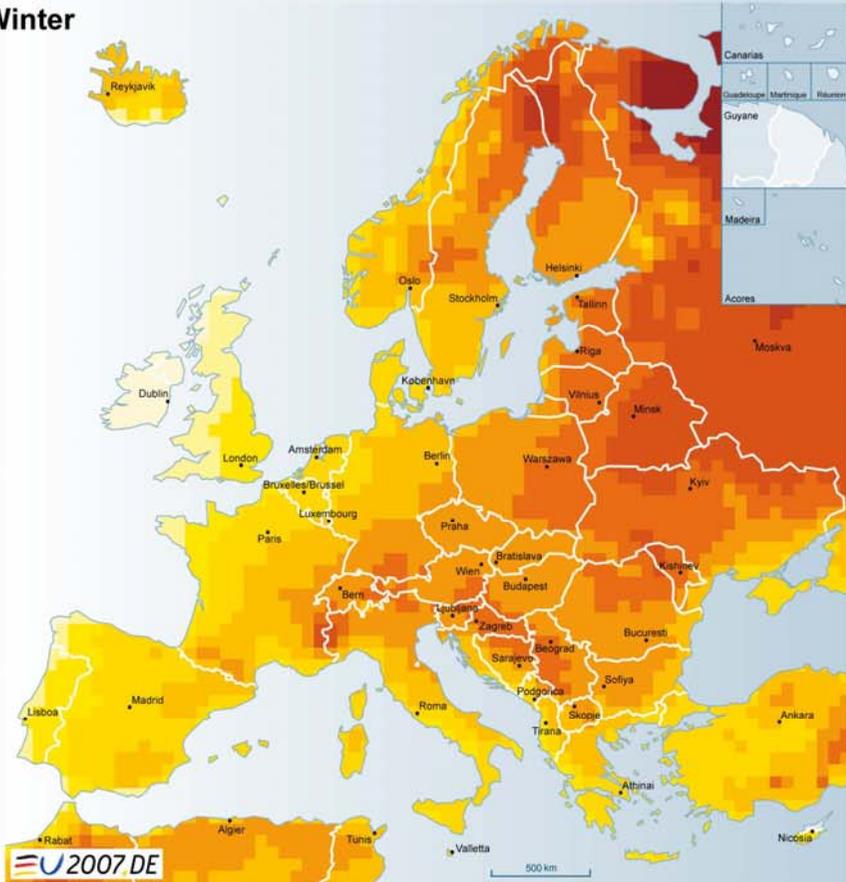


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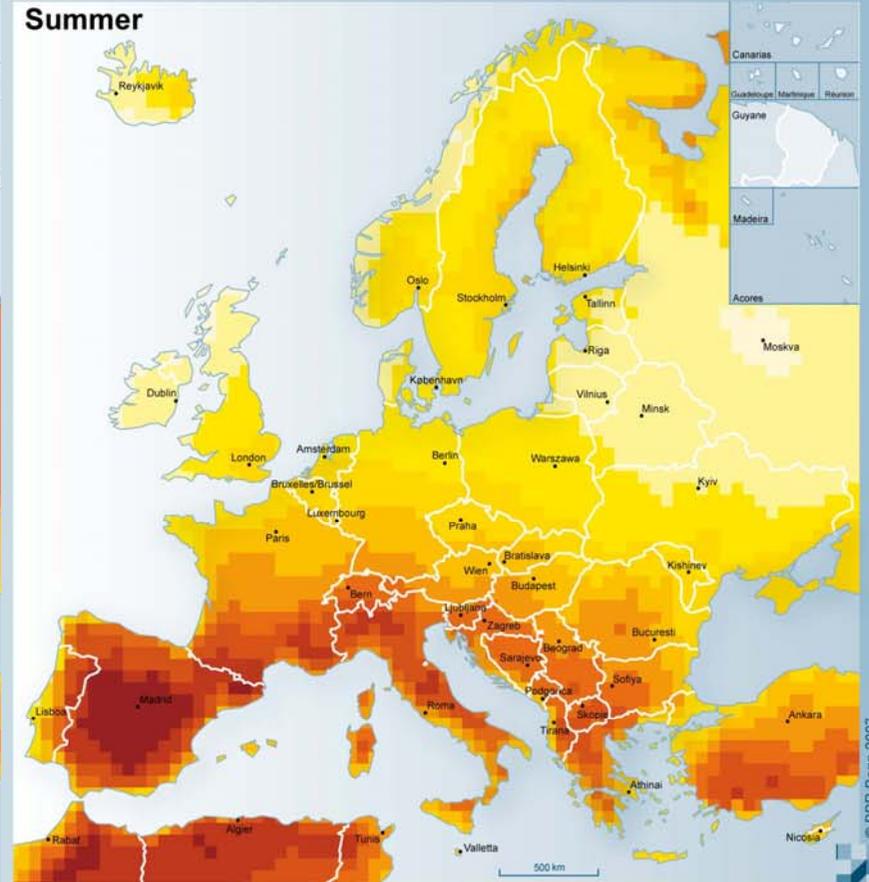
Source: ESPON Project 3.2, UMS RIATE

Climate change - Development of temperature until the end of the 21. century

Winter

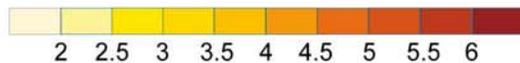


Summer



Source: Max-Planck-Institut für Meteorologie Hamburg

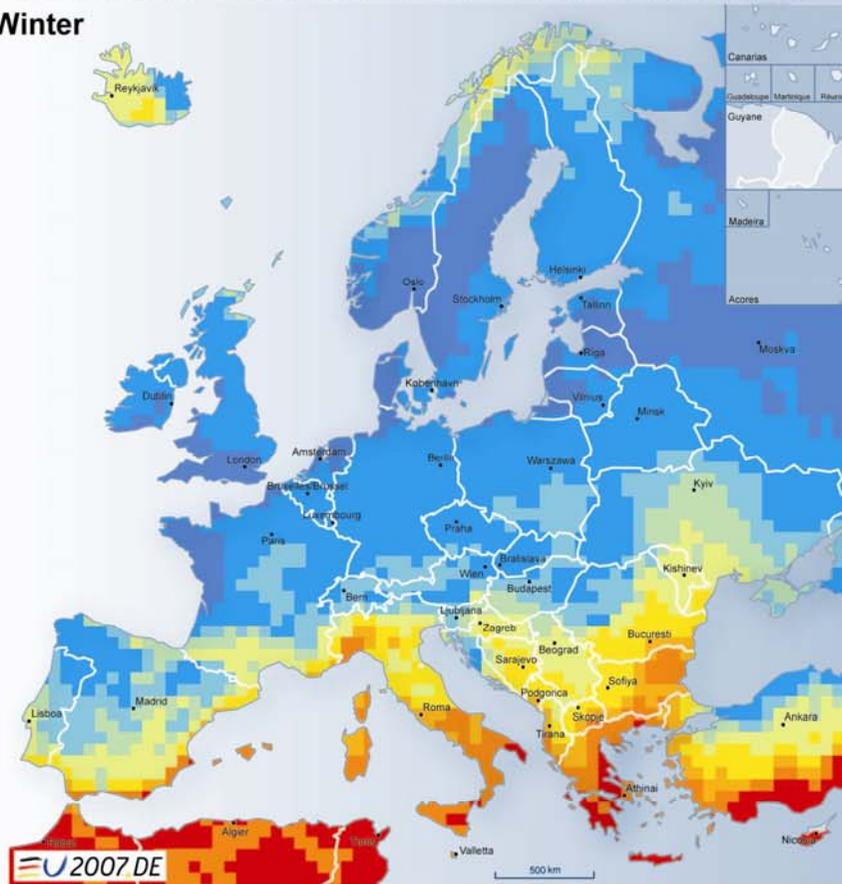
Change of temperatur near surface (2m) in the scanrio A1B for winter and summer. Indicated is the difference of the 30 years averages 2071-2100 minus 1961-1990



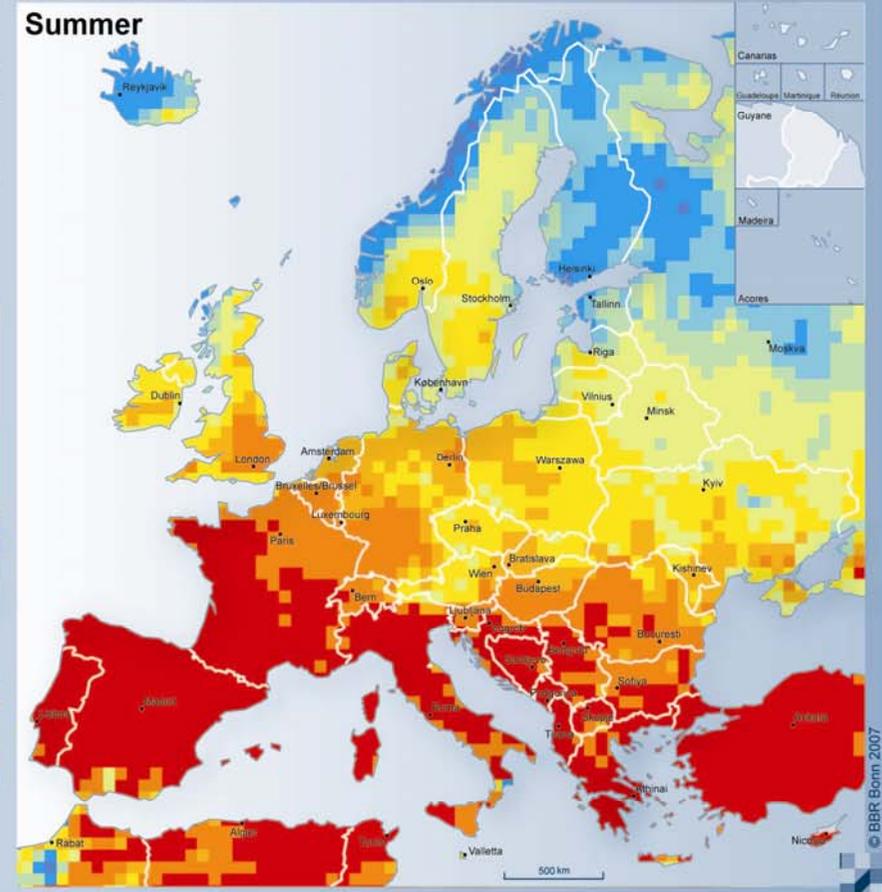
The elaborated scenarios within the IPCC proecess for the time priod of 2001 to 2100 base on different assumptions concerning the demographic, social, economic and technological change. The selected scenarios A2, A1B and B1 of the 4 progress report of the IPCC base on the following assumptions. Die A1 scenario family decibes a furure world with a rapid economic growth, with a world population growing until the middle of the 21st century and decrease after this and with a quick intriduction of new and efficient technologies. The three A1 groups differs in their respect technological main focus: intensive use of fossil fuels (A1F1), non-fossil energy sources (A1T) and a balance across all enegy sources (A1B)

Climate change - Development of precipitation until the end of the 21. century

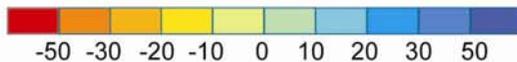
Winter



Summer



Change of precipitation in the scenario A1B for winter and summer. Indicated are the relative changes (%) of the yearly averages 2071-2100 in relation to 1961-1990



Source: Max-Planck-Institut für Meteorologie Hamburg

The elaborated scenarios within the IPCC process for the time period of 2001 to 2100 base on different assumptions concerning the demographic, social, economic and technological change. The selected scenarios A2, A1B and B1 of the 4 progress report of the IPCC base on the following assumptions. Die A1 scenario family describes a future world with a rapid economic growth, with a world population growing until the middle of the 21st century and decrease after this and with a quick introduction of new and efficient technologies. The three A1 groups differs in their respect technological main focus: intensive use of fossil fuels (A1F1), non-fossil energy sources (A1T) and a balance across all energy sources (A1B)

V References and sources

Basic structures

Figures:

Population of the Council of Europe and the EU: Eurostat

Maps:

Different speeds of European integration

Council of Europe, Federal Foreign Office, European Central Bank; European Free Trade Association

Long term population development

BBR Spatial Monitoring of Europe; calculation on the basis of data provided by Eurostat Regio database, Swiss Statistics, Norway Statistics

Components of population development in short term

ESPON Programme 2006, project 1.1.4 Final report map 12 page 15, also: ESPON Briefing 1, November 2004, page 7

1 PT>0 PM>0 PN>0 - In-migration and young population/"high" TFR. High sustainability both in short and long term. The most favourable case.

2 PT>0 PM>0 PN<0 - Out-migration and young population/"high" TFR. Short term – sustainability. Long term – eroding sustainability because of lopsided age structure (out-migration).

3 PT>0 PM<0 PN>0 - In-migration of people with low TFR. Natural population decrease because of lopsided age structure and/or low TFR. Dependent on in-migration. No sustainability in

long term – weak reproduction potential.

4 PT<0 PM<0 PN>0 - In-migration and old population/"low" TFR. In-migration of elderly people and/or singles, low reproduction potential. Dependent on in-migration. Low sustainability both in short and long run.

5 PT<0 PM>0 PN<0 - Out-migration but still young population/"high" TFR. Traditionally high fertility regions. Falling TFR -> low sustainability.

6 PT<0 PM<0 PN<0 - Out-migration and old population/"low" TFR, depopulation. No sus-

tainability both in short and long term. The worst case.

PT=Total population development

PM=Net migration

PN=Natural population development

Development of urban population

BBR Spatial Monitoring of Europe; calculation on basis of data provided by Geohive, World Gazetteer, United Nations, national statistical offices

Urban growth of selected cities

Eurostat Urban Audit

Economic strength and development

BBR Spatial Monitoring of Europe; calculation on the basis of data provided by Eurostat Regio database, Swiss Statistics, Norway Statistics

Economic strength of the cities

Eurostat Urban Audit

Supporting convergence and regional competitiveness

European Commission – Regional Policy In-foreig, o,

III Priorities of territorial development

III 1 Innovative networking of metropolises, city regions and regional centres

Figures:

European Patent Office applications: European Patent Office (EPO): Facts and figures 2005; Inner-city disparities: unemployed persons under 25 years: Urban Audit, Eurostat Regio

Maps:

Regional integration zones and city networks

European global integration zones: ESPON Programme 2006, project 2.4.2 Final Report map 3-22, page 127; METREX Network: METREX – PolyMetrexPlus 2nd Interim Report; METREX; EURCITIES network: EUROCITIES

The EuroMetrexPlus project within METREX identifies the following Representative Interregional Networking Activities (RINAs) with the listed cities included:

Aegean plus: Athinai, Bucuresti, Burgas, Sofya, Timisoara, Varna; **Alps South:** Bologna, Genova, La Spezia, Livorno, Ljubljana, Milano, Torino, Trieste, Venezia, Verona; **Baltic East:** Helsinki, Kolka, Riga, Tallinn, Turku, Vilnius; **Baltic West::** Aarhus, Bergen, Göteborg, Helsingborg, Kobenhavn, Malmo, Oslo, Stockholm; **Berlin:** Berlin, Szczecin; **Biscay area:** Bilbao, Bordeaux, Nantes/St. Nazaire, Toulouse; **Danubian area:** Bratislava, Budapest, Praha, Wien; **GIZ Core area:** Amsterdam, Antwerp, Bruxelles, Dusseldorf, Felixstowe, Köln, Le Havre, Lille, London, Luxembourg, Paris, Rotterdam, Southampton, Zbrugge; **GIZ Niedersachsen:** Bremen, Hamburg, Hannover; **GIZ Rhine/Alps North:** Basel, Bern, Frankfurt, Graz, Innsbruck, München, Nürnberg, Salzburg, Stuttgart, Zurich; **Iberia Atlantic:** Faro, Lisboa, Porto; **Iberia central:** Madrid; **Iberia Mediterranean:** Alicante, Barcelona, Ibiza, Palma, Valencia; **Iberia South:** Algeciras, Malagam, Sevilla; **Mediterranean Central:** Napoli, Roma, Taranto, Valletta; **Northern Isles:** Belfast, Birmingham, Cork, Dublin, Edinburgh, Glasgow, Limerick, Manchester; **Poland:** Gdansk, Katowice, Krakow, Lodz, Poznan, Warszawa, Wroclaw; **Rhône Alps:** Geneve, Lyon, Marseille, Nice

Regions in the light of the Lisbon process

Economic Lisbon indicators: ESPON Programme 2006, project 3.3, ESPON Briefing 2, March 2006, page 9; Patent applications: Eurostat Regio database

High education in selected cities

Eurostat Urban Audit

Inner-city disparities in unemployment

Eurostat Urban Audit

Competitiveness

Lisbon performance: ESPON Programme 2006, project 2.4.2 Final Report map 3-3, page 72, also ESPON Synthesis report 2, spring 2005, page 23; Enterprises: BBR Spatial Monitoring of Europe aggregations of field of activities on basis of Handelsblatt TOP 500 enterprises 2004

III 2 New forms of rural-urban partnership and cooperation

Figures

Share of area and population by types of spatial structure: BBR Spatial Monitoring of Europe; Population development by regional types: BBR Spatial Monitoring of Europe

Maps:

Spatial structure of Europe

Spatial structure: BBR Spatial Monitoring of Europe. The types of spatial structure base on overlay of population density and the accessibility of the centres in a 50 km radius. The centres have been defined using the 76 ESPON Metropolitan European Growth Areas (MEGAs). The density of population base on the LAU 2 population according the data of the national statistical office of the countries considered. The accessibility was measured as average travel time by car to all MEGAs; FUAs: Functional Urban areas according ESPON programme 2006 project 1.1.1.

Urban and rural Europe

ESPON Programme 2006, project 1.1.2 Final report map 1 page 29, also: ESPON Briefing 1, November 2004, page 11; CH and NO classification on basis of calculation of project 3.3, CY on basis of data of the national statistical office, see: ESPON Synthesis Report III, autumn 2006, page 49

Criteria for urban influence:

Population density above the average of 107 inhabitants/km² in EU27+2 and/or at least a

European level of functional urban area (based on the typology of ESPON project 1.1.1; the degree of human footprints is estimated through the average shares of land covers (EU23+3); high human footprints: share of artificial surfaces above average (3,48%),

medium human footprints: at least the share of agricultural surfaces above average (50,36%), low human footprint: only share of residual land use above average (46,16%)

III 3 Strengthening and extension of trans-European networks

Figures.

Top 10 of European airports by passengers: Eurostat Regio database; Top 10 of European ports: Eurostat Regio database; IXP traffic: European Internet Exchange Association, 2006 Report on European IXPs, Amsterdam

Maps:

Accessibility and traffic junctions

Multimodal accessibility: ESPON Programme 2006, project 1.2.1 Final report map 47 page 285, also: ESPON Briefing 1, November 2004, page 13; Trans European networks: Geschäftsstelle der Ministerkonferenz für Raumordnung im Bundesministerium für Verkehr, Bau und Stadtentwicklung (BMVBS): Leitbilder und Handlungsstrategien für die Raumentwicklung in Deutschland 2006, page 11; Airports and ports: calculation on the basis of data provided by Eurostat Regio database

Internet exchange points and main European networks

IXP: European Internet Exchange Association ; IXP connections: PeeringDB

III 4 Promoting Trans-European Risk Management

Figure:

Number of great natural catastrophes worldwide: Münchener Rückversicherungs-Gesellschaft, 2006. TOPICSgeo. Annual Review. Natural catastrophes 2003. München

Maps:

Technological hazards

ESPON Programme 2006, project 1.3.1 Final report map 13 page 58 and map 16 page 64,

Natural hazards

Winter storms, forest fires and avalanches: ESPON Programme 2006, project 1.3.1 Final report map 11 page 51, map 8 page 39 and map 1 page 22; Flood endangered settlement area ESPON Programme 2006 project 4.1.3 Draft final report map 20 page 53, calculation on basis of project 1.3.1 and Corine Land cover

III 5 Responsible use of ecological resources and cultural assets

Figures:

The productivity of the European cultural & creative sector: European Commission, The economy of culture in Europe - Study on the Economy of Culture in Europe, 2006

European protected areas concerning national designations, international conventions and programmes: International Union for Conservation of Nature and Natural Resources, UNEP-WCMC World Database on Protected Areas; Habitats Directive 2005: Eurostat

Maps:

Cultural infrastructure

Operas and theaters: Alain Charles Arts: Performing Arts Yearbook for Europe 2006

Protected areas

World Database on Protected Areas (WDPA) by UNEP-WCMC in partnership with the IUCN World Commission on Protected Areas (WCPA) and the World Database on Protected Areas Consortium

IV The Europe of tomorrow

Potential paths of economic development, trends of urban influence and the central area and potential challenges of rural areas

ESPON Programme 2006, project 3.2 Draft final report figure 2 page 28, figure 3 page 31 and figure 4 page 34. A comprehensive over-

view on the main hypothesis for the three prospective scenarios is given in table 1 of the Draft final report of the project on page 24

Climate change - development of temperature until the end of the century of precipitation until the end of the century

Max-Planck-Institut für Meteorologie