



EUROPEAN SPATIAL PLANNING
OBSERVATION NETWORK

Focus on the Grande Région – first results of ESPON

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EUROPEAN SPATIAL PLANNING
OBSERVATION NETWORK

About ESPON projects

ESPON projects:

- Follow an integrated approach
- Possess a clear territorial dimension
- Stretching from scientific methods and data bases via strategic projects to institutional and instrumental questions
- Fields of research:
 - Thematic studies
 - Policy impact studies
 - Cross-theme studies
 - Scientific briefing and networking

Focus on the Grande Région

Projects presented today:

- Project 1.1.1: Polycentrism
- Project 1.1.2: Urban-rural relations
- Project 1.1.4: Demographic Trends and Migrations
- Project 1.2.1: Transport Trends
- Project 1.2.2: Trends in telecommunication
- Project 1.3.1: Natural Hazards
- Project 1.3.2: Natural Heritage
- Project 2.1.2: Impact of research & development

In the following: The situation in Europe with special attention to the Grande Région

1.1.1: Typology of Functional Urban Areas (FUA's)

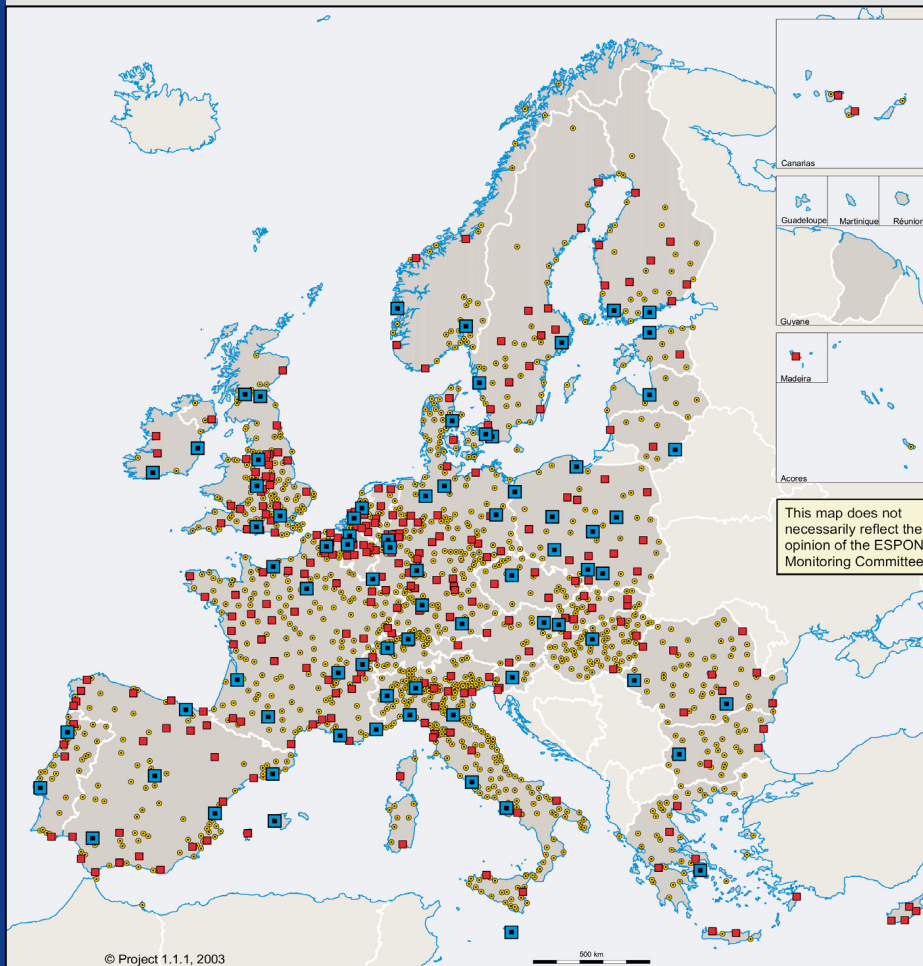
Polycentrism:

- A goal opposed to urban sprawl as well as to monocentricity
- A bridging concept between too much concentration and the total absence of concentration (spatial, as well as economical)
- Draws the picture of networking cities across Europe

Functional Urban Areas (FUA's):

- They are the points of concentration concerning economical, spatial and population development
- The higher a city is ranked as FUA, the more important it is for its surrounding

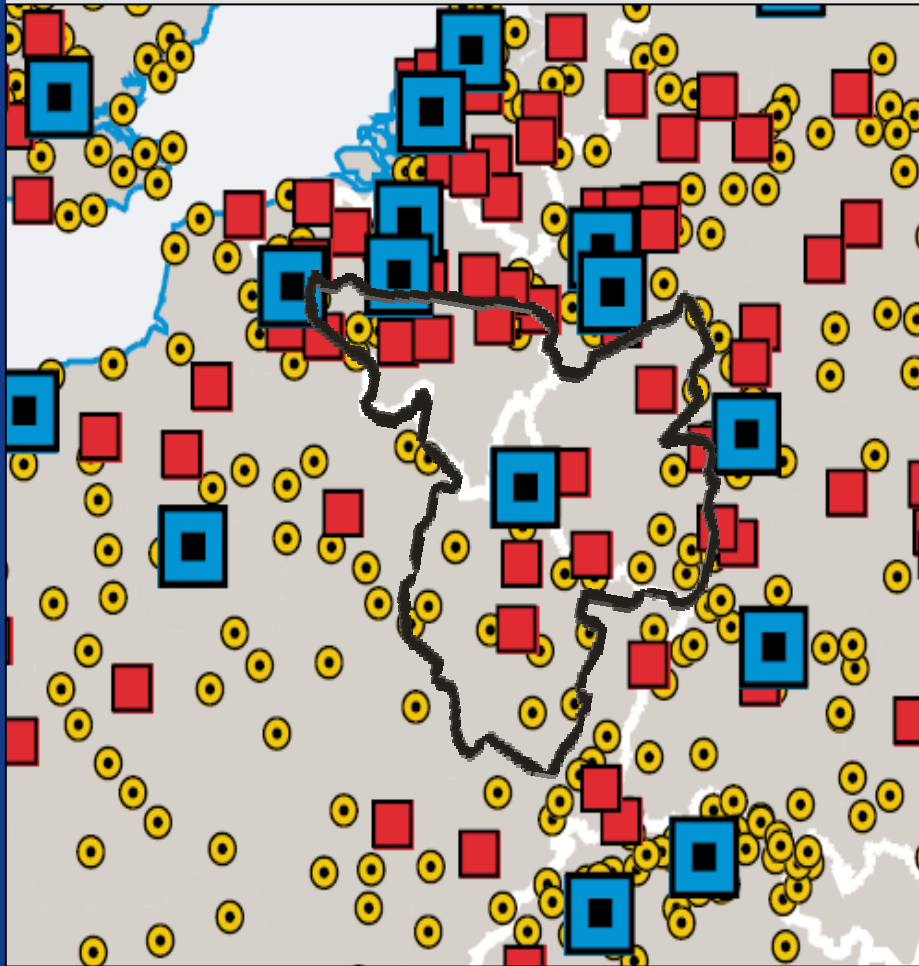
1.1.1: Typology of Functional Urban Areas (FUA's)



- Concentration of FUA's within the core of Europe
- especially in the Belgian, Dutch, Luxembourgian and western German territory
- Towards the periphery, the density of functional urban areas is more and more declining

- Metropolitan European Growth Areas (MEGAs)
- Transnational / national FUAs
- Regional / local FUAs

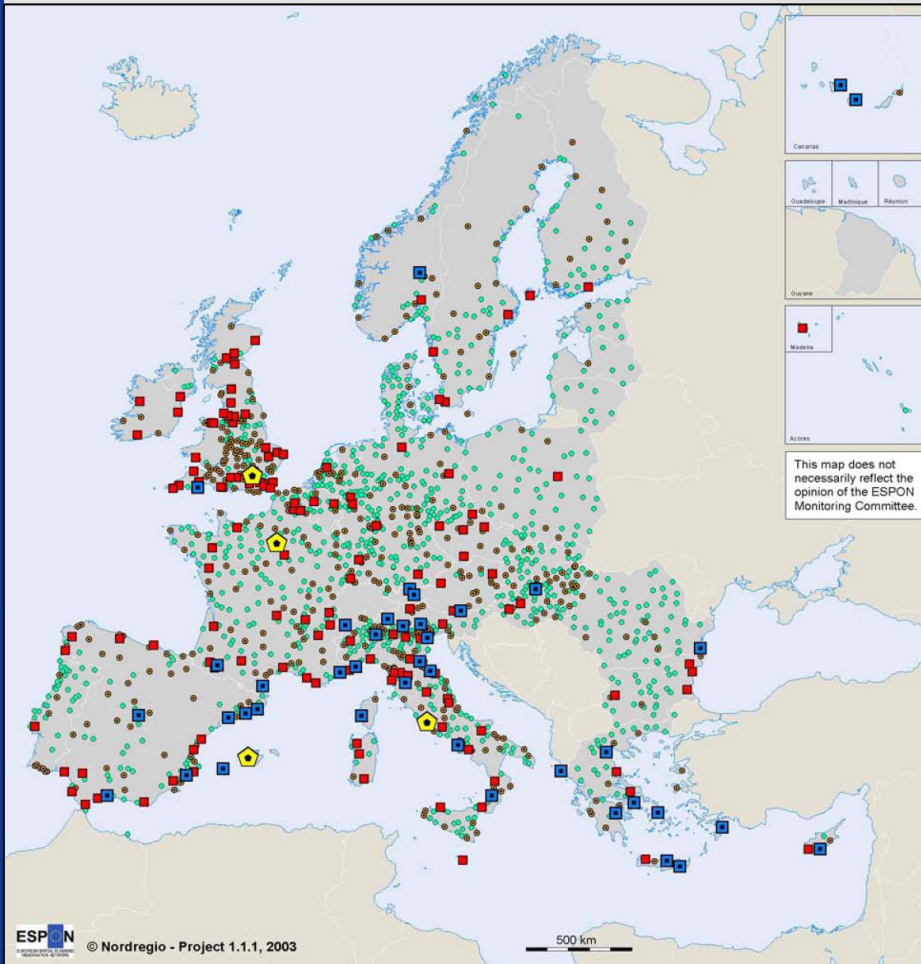
1.1.1: Typology of Functional Urban Areas – the Grande Région



- The city of Luxembourg is the only MEGA
- Further trans-national FUA's can be found in Trier, Saarbrücken, Metz and Nancy
- Governance is a key issue when promoting collective action across administrative borders

- Metropolitan European Growth Areas (MEGAs)
- Transnational / national FUAs
- Regional / local FUAs

1.1.1: Functional Urban Area's and Tourism



- One indicator for ranking a city in terms of FUA's is 'tourism'
- On the European scale the highest ranked cities are located in coastal or mountainous regions
- Only bigger cities in itself possess an over regional tourist attractiveness



1.1.1: Functional Urban Area's and Tourism – the Grande Région



- The Grande Région is more or less 'surrounded' by important FUA's concerning tourism
- Cities are only of regional or local significance in terms of tourism
- The intra-regional potentials could possibly become better marketed

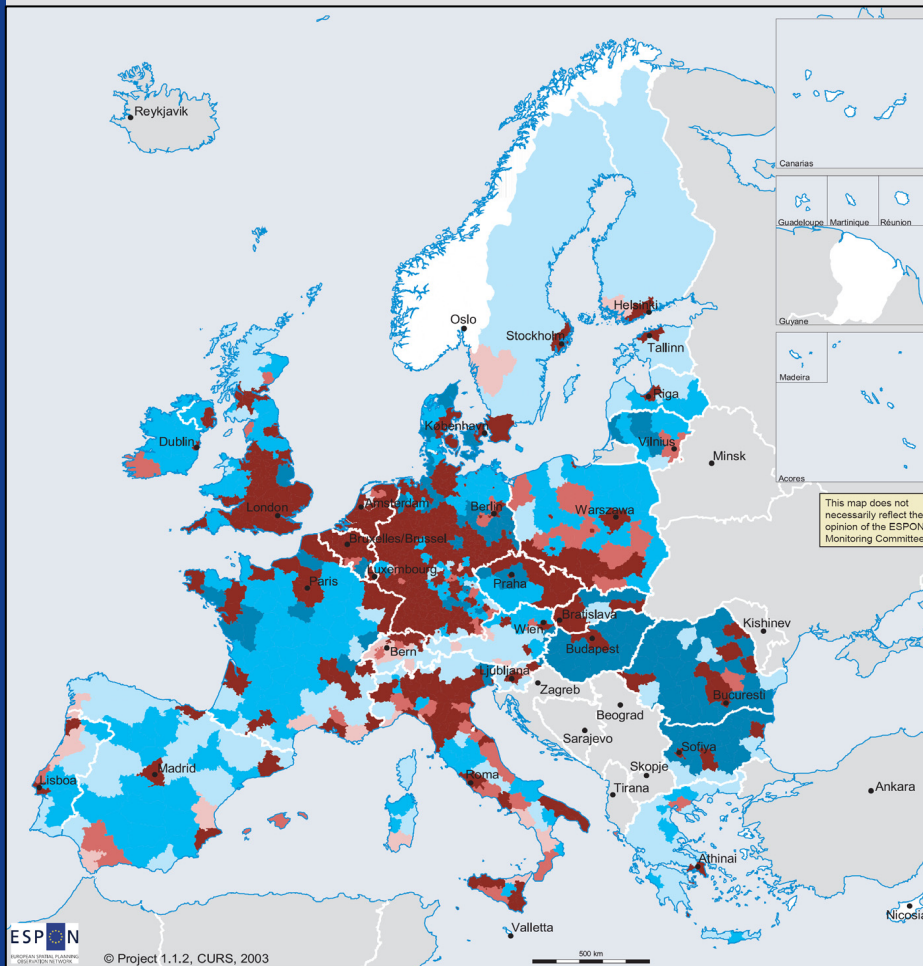


1.1.2: Urban-rural typology

Urban-rural typology:

- Compiled by researching the various aspects of urban-rural relations
- Two main indicators:
 - The degree of urban influence, defined by population density and functional asset
 - The degree of human intervention, defined by the different ways of land use
- Overall results:
 - Urban areas influence rural regions far beyond their administrative boundaries, at the same time peripheral regions become more and more dependant from urbanised areas

1.1.2: Urban-rural typology

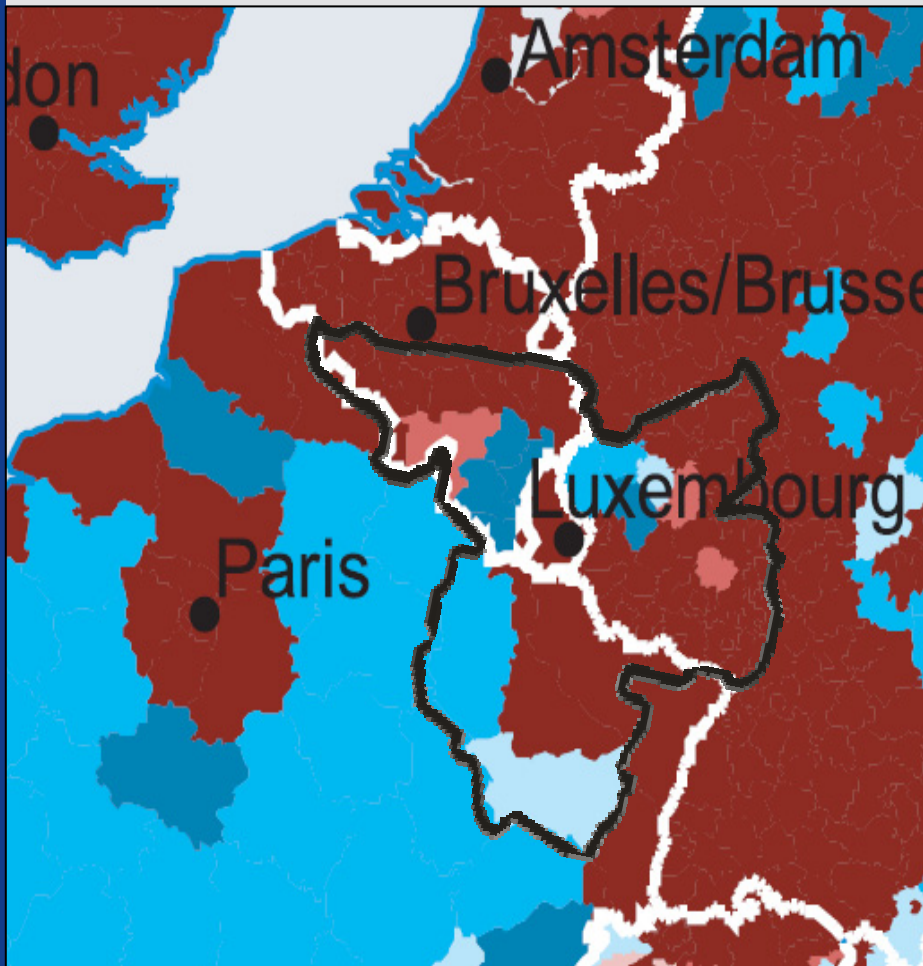


- A corridor of high human intensity stretches along from Northern England through the BeNeLux countries to Northern Italy
- The structure in rural areas is more divers, they are mostly characterised by low and medium human interventions

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








	High urban influence, high human intervention		Low urban influence, high human intervention
	High urban influence, medium human intervention		Low urban influence, medium human intervention
	High urban influence, low human intervention		Low urban influence, low human intervention
			no data

1.1.2: Urban-rural typology – the Grande Région

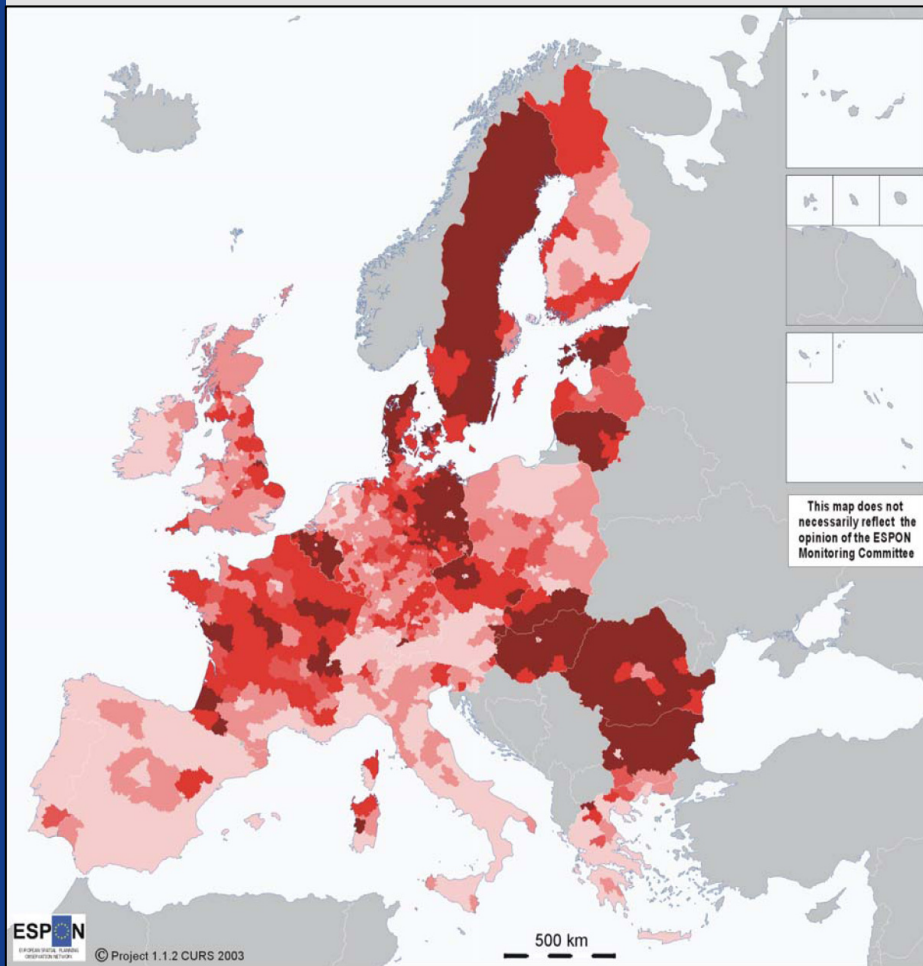


- A sharp decline within the Grande Région
- The result is a high amount of traffic and functional monotony
- The challenge will be, to promote a structural and functional diversification of space, through interregional coordination and cooperation

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

	Low urban influence, high human intervention
	High urban influence, high human intervention
	Low urban influence, medium human intervention
	High urban influence, medium human intervention
	Low urban influence, low human intervention
	High urban influence, low human intervention
	no data

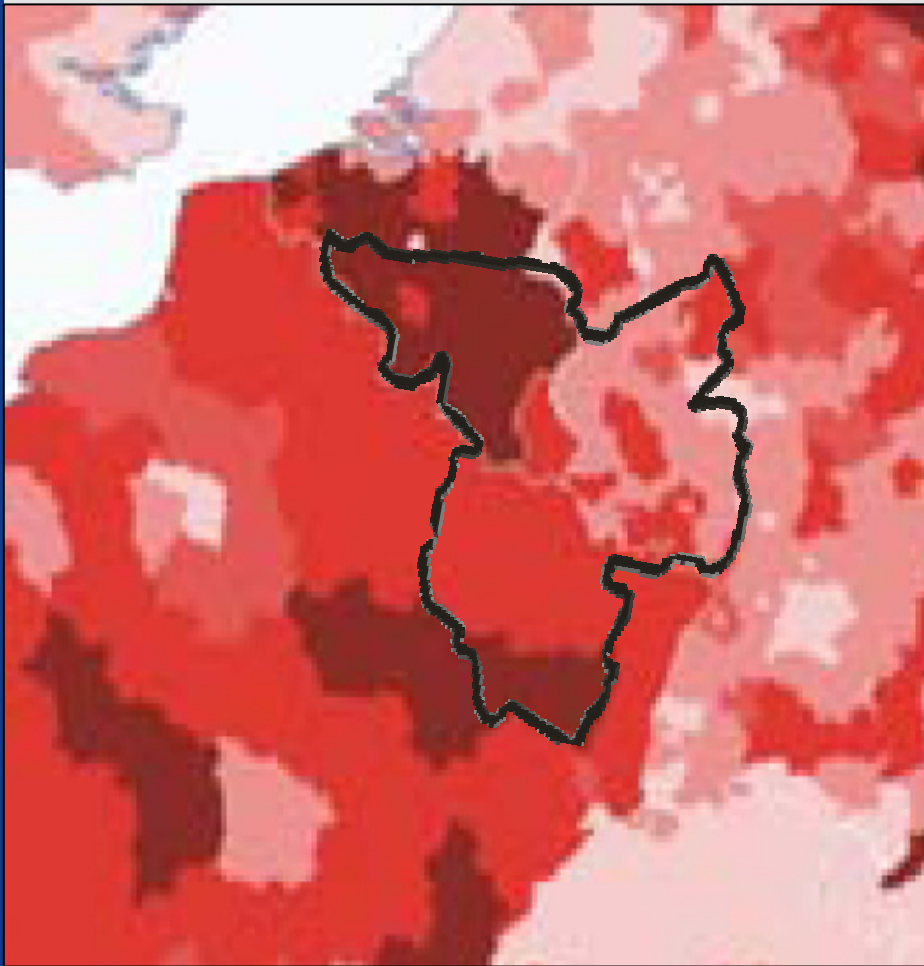
1.1.2: Artificial Surfaces per 1.000 inhabitants



- Deviations, closely connected to national territories, exist in parts of Europe
- Human intervention is higher than population density would indicate
- In this case a high share of artificial surfaces indicates urban sprawl

Artificial surfaces (km ²) in NUTS3 regions	
0,48 - 1,33	0,33 - 0,35
0,36 - 0,47	0,25 - 0,32
	0 - 0,24

1.1.2: Artificial Surfaces per 1.000 inhabitants – the Grande Région



- Especially Wallonia, Luxembourg and the French part of the GR show a high value of artificial surfaces per capita
- To minimise land use common planning strategies and cross-border cooperation seem to be useful

Artificial surfaces (km ²) in NUTS3 regions	
0,48 - 1,33	0,33 - 0,35
0,36 - 0,47	0,25 - 0,32
	0 - 0,24

1.1.4: Evolution of the population (1990 and 2000)

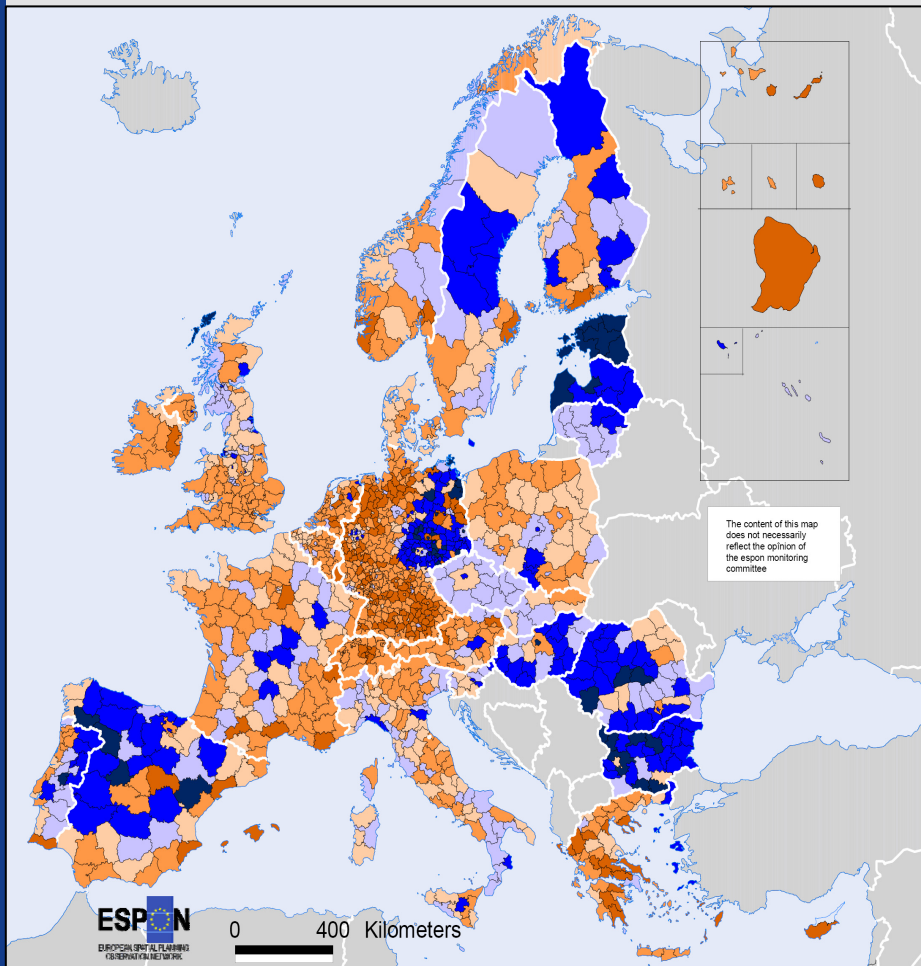
Main objectives of project 1.1.4:

- To describe and analyse the variety of demographic situations in different parts of Europe
- To identify areas of stagnation and depopulation as well as growing areas and to explain the different factors

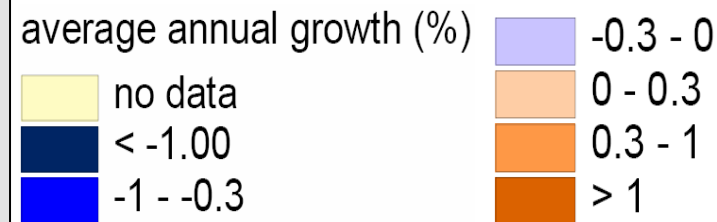
Background knowledge:

- Three main factors influence demographic trends: fertility rates, age structure and migration
- the total fertility rate dropped in every country and is now below the reproduction rate of 2.1 children per woman

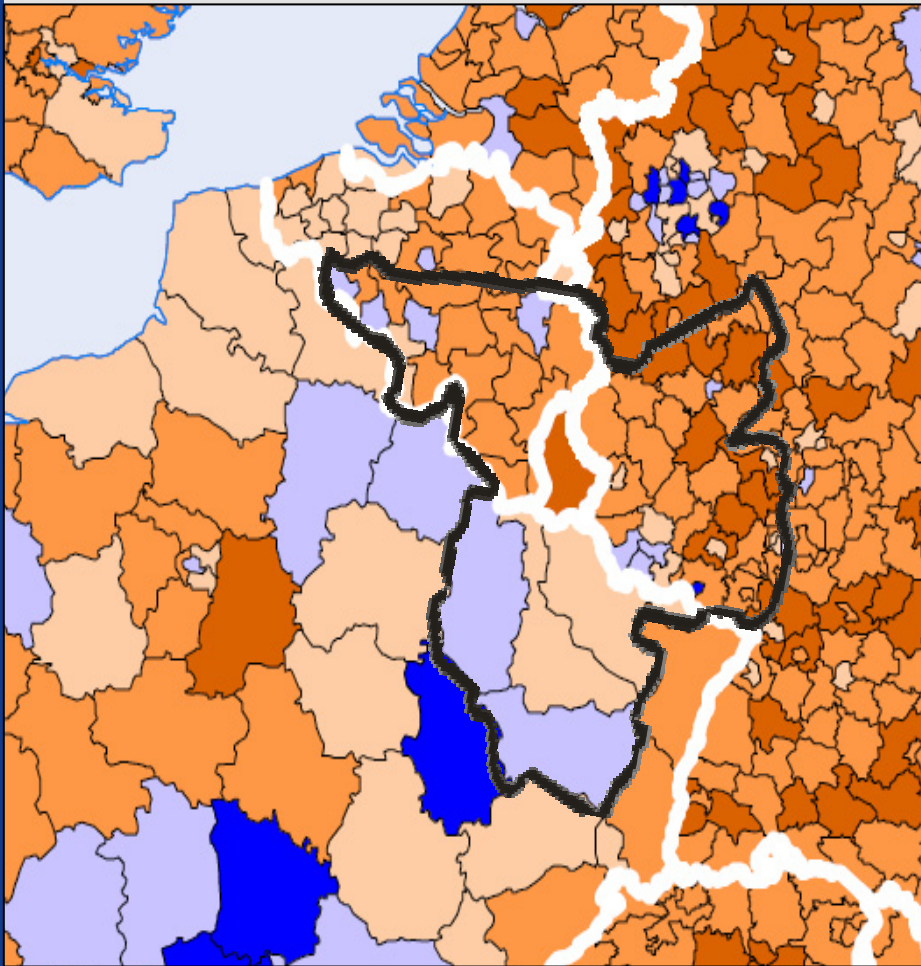
1.1.4: Evolution of the population (1990 and 2000)



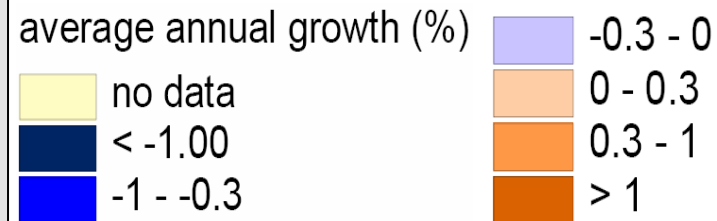
- Lowest annual growth rates are shown in the peripheral regions
- More central regions possess higher rates between 0,3 and over 1 percent
- This results from migration flows from remote and rural regions to economically more successful centres



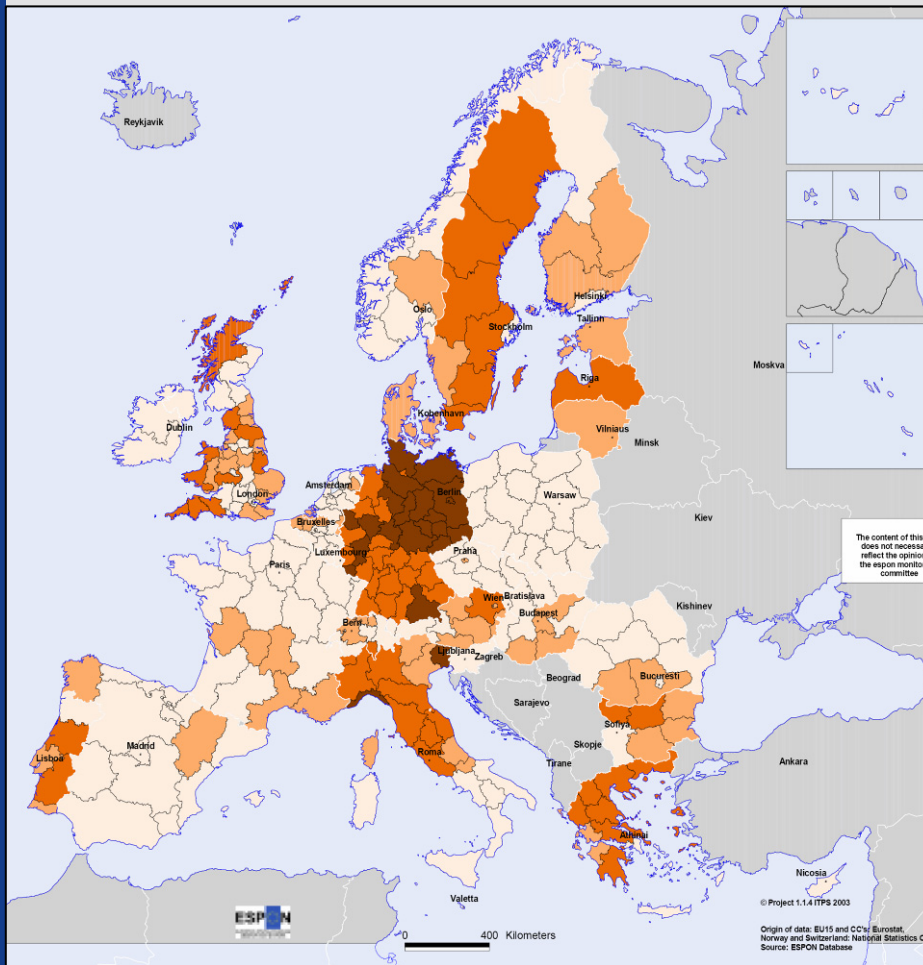
1.1.4: Evolution of the population (1990 and 2000) – the Grande Région



- Luxembourg is identified as an growing area that profits from its economic strength
- From France, Belgium and Germany there is a strong overspill of commuters
- In contrast the southern parts of the Saarland or Lorraine are shrinking

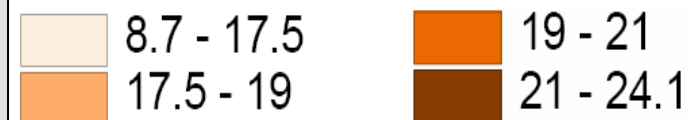


1.1.4: Ageing Labour Force

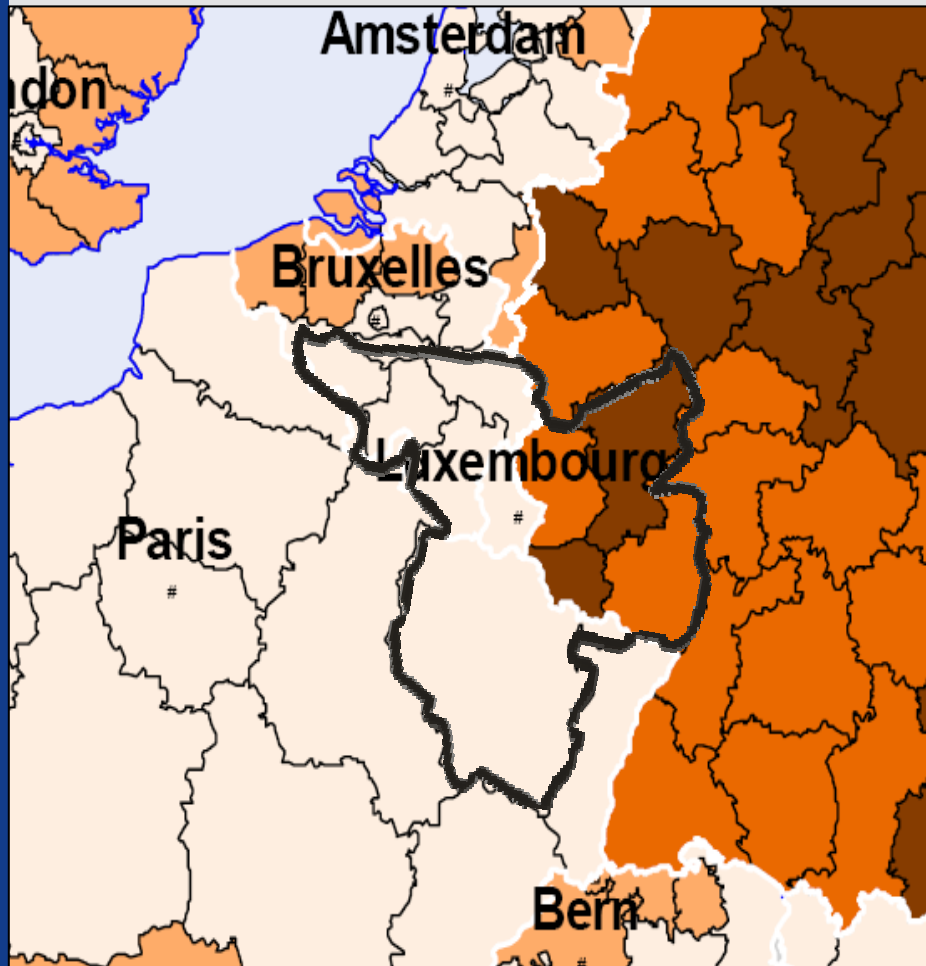


- The early trend of reduced fertility in Germany is very visible in the age structure of the present labour force
- France, with its very early reduction in fertility, has not an ageing labour force by this measure, nor do the BeNeLux countries

Share of population 55-64 years
in the population 20-64

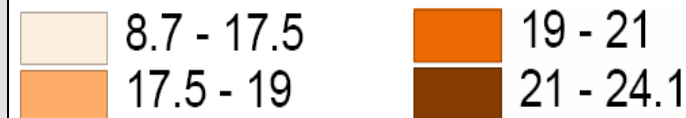


1.1.4: Ageing Labour Force – the Grande Région



- The early trend of reduced fertility creates a potential for migration from the new EU countries in the German parts
- Due to a slightly higher fertility rate and higher in-migration this problem is not that serious in France or the BeNeLux countries

Share of population 55-64 years
in the population 20-64



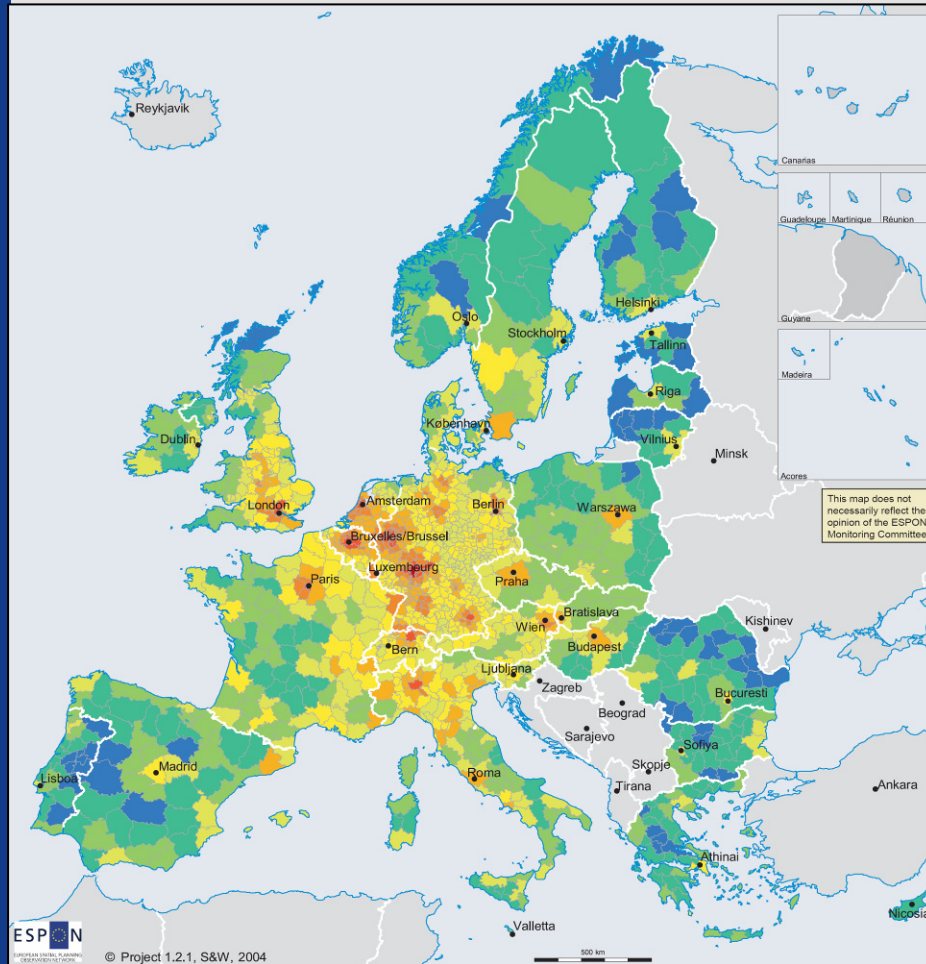
1.2.1: Potential accessibility, multimodal

Objective of ESPON project 1.2.1:

- To give an idea of the European space through transport networks
- To describe the territorial aspects of the transport system
- The key findings are a result of two functions:
 - The 'activity function', representing the activities or opportunities
 - The 'impedance function', representing the effort, time, distance or cost needed to reach them

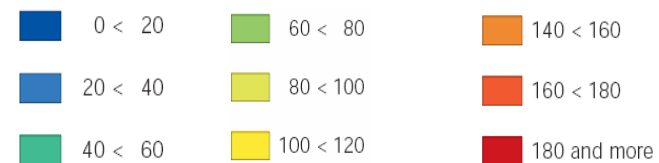
→ The greater the number of attractive destinations in a certain area is and the more accessible it is, the greater is the accessibility.

1.2.1: Potential accessibility, multimodal

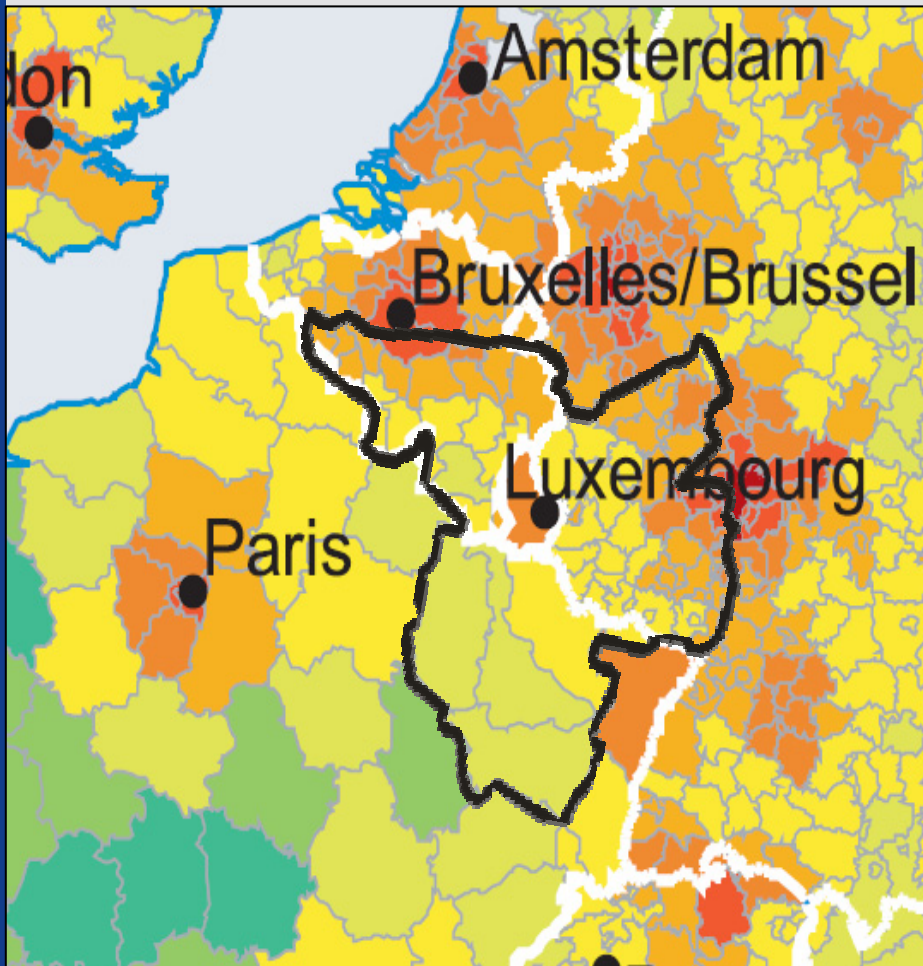


- Regions with a high level of multimodal accessibility stretch from southern England via Paris, the Benelux regions and Germany to Northern Italy
- Some peripheral agglomerations are also ranked as 'good' or 'medium', mainly due their international airports (Madrid)

Accessibility index (EU25+2 = 100)

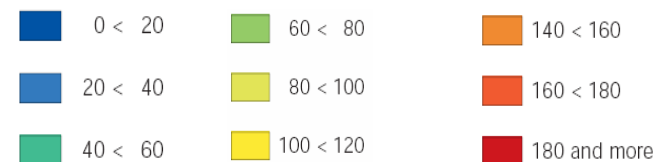


1.2.1: Potential accessibility, multimodal – the Grande Région

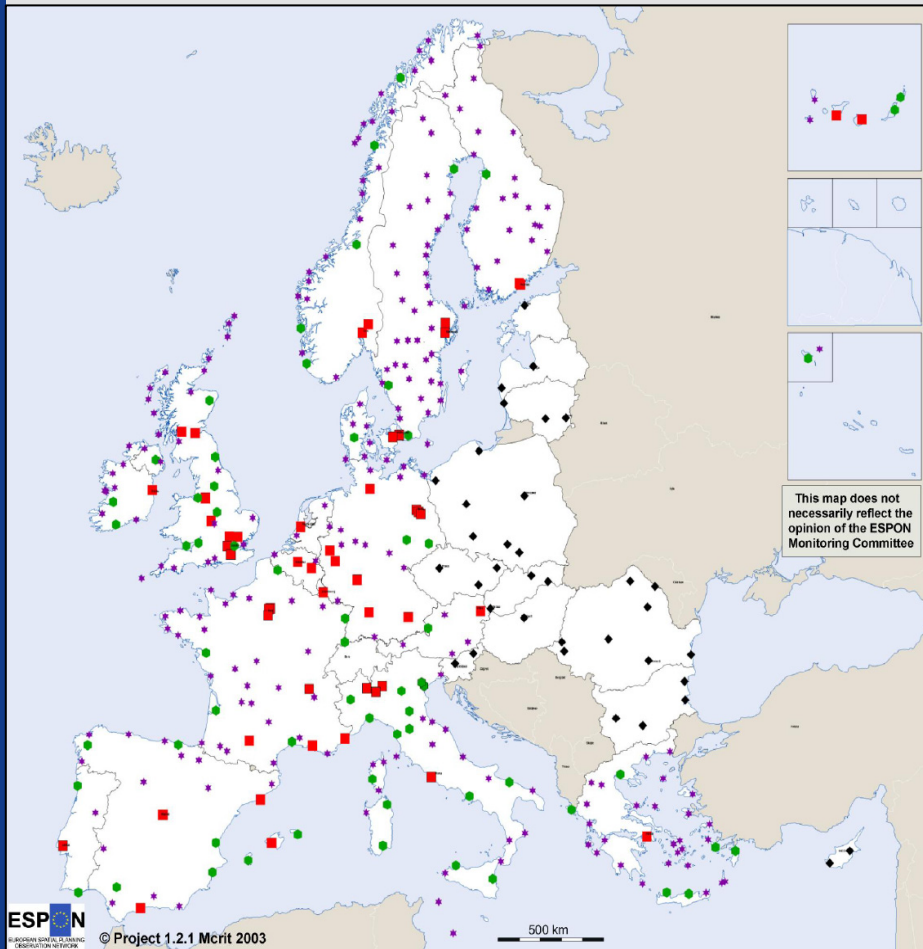


- Strong areas are concentrated around agglomerations or near important economic centres
- The weakness of the southern regions can be explained by lower air connectivity rates
- A coordinated intraregional network across the territory is only weakly developed

Accessibility index (EU25+2 = 100)



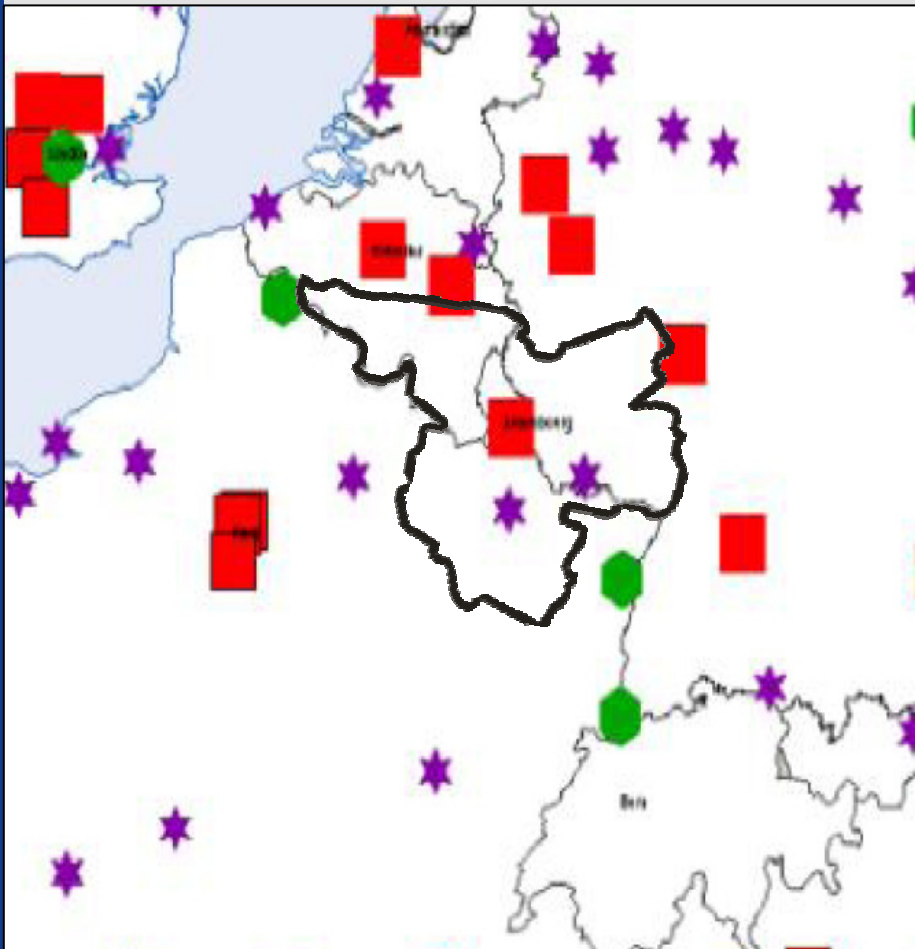
1.2.1: Airports



- The pentagon area contains the highest amount of international airports
- The accession countries do not obtain a complete hierarchy of airports up to now
- The Scandinavian countries maintain a large network of regional airports

- | | |
|---|-------------------------------------|
| ■ Part of an international airport system | ● Community connecting points |
| ■ International connecting points | ★ Regional and accessibility points |
| ● Part of Community connecting points | ◆ Other airports |

1.2.1: Airports



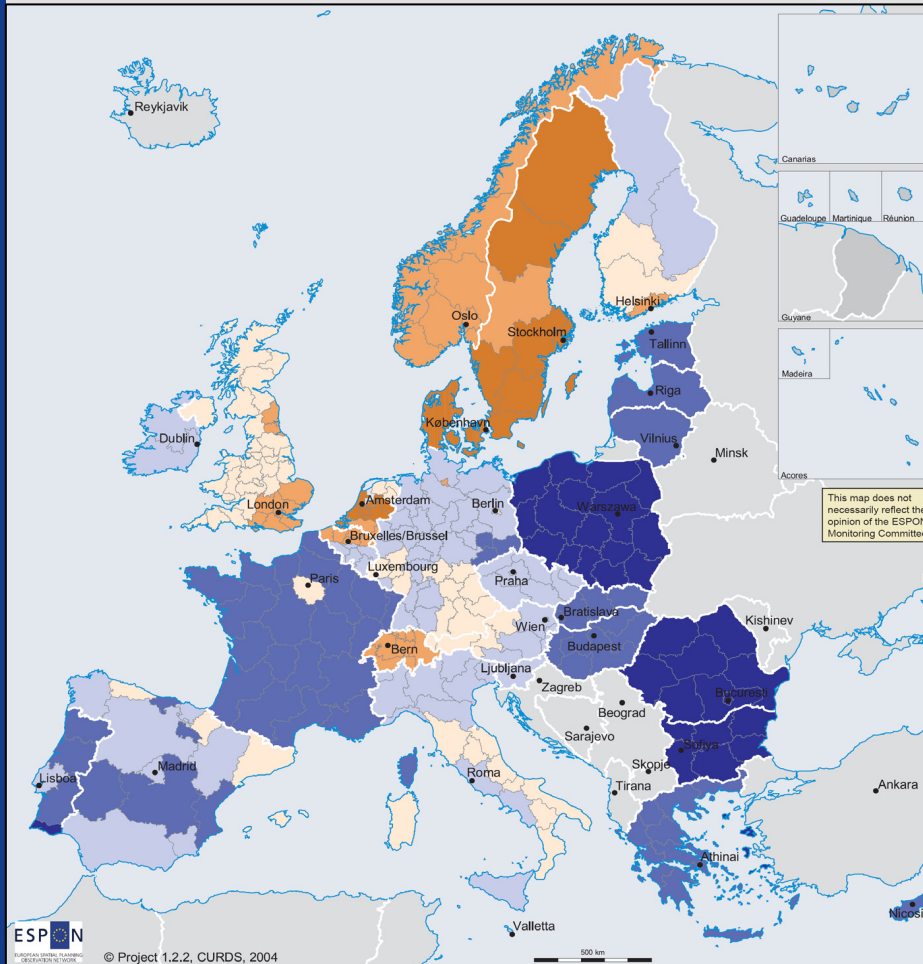
- The city of Luxembourg maintains the most important airport
- The two remaining airports of the Grande Région are only of regional significance
- The economic performance of Luxembourg is thus underlined

1.2.2: Household communications uptake

Objective of ESPON project 1.2.2:

- To uncover the trends of development and territorial disparities within the European Union concerning telecommunication
- Different developments resulting in national differences are easily possible, because of the complexity and high dynamic in this sector
- By analysing socio-economic data and linked to geographic categories a number of typologies, like for example 'household telecommunications uptake' were developed
- 'Household telecommunications uptake' means access to communication by a fixed or mobile connection or (Broadband) Internet via PC.

1.2.2: Household communications uptake



- Scandinavian countries and Switzerland are the strongest nations concerning household telecommunications uptake
- The rest of the European core region is ranked either as moderate or as low
- The peripheral countries are running behind in terms of ICT

Level of telecommunications uptake	
very high	moderate
high	low
moderately high	very low
	no data

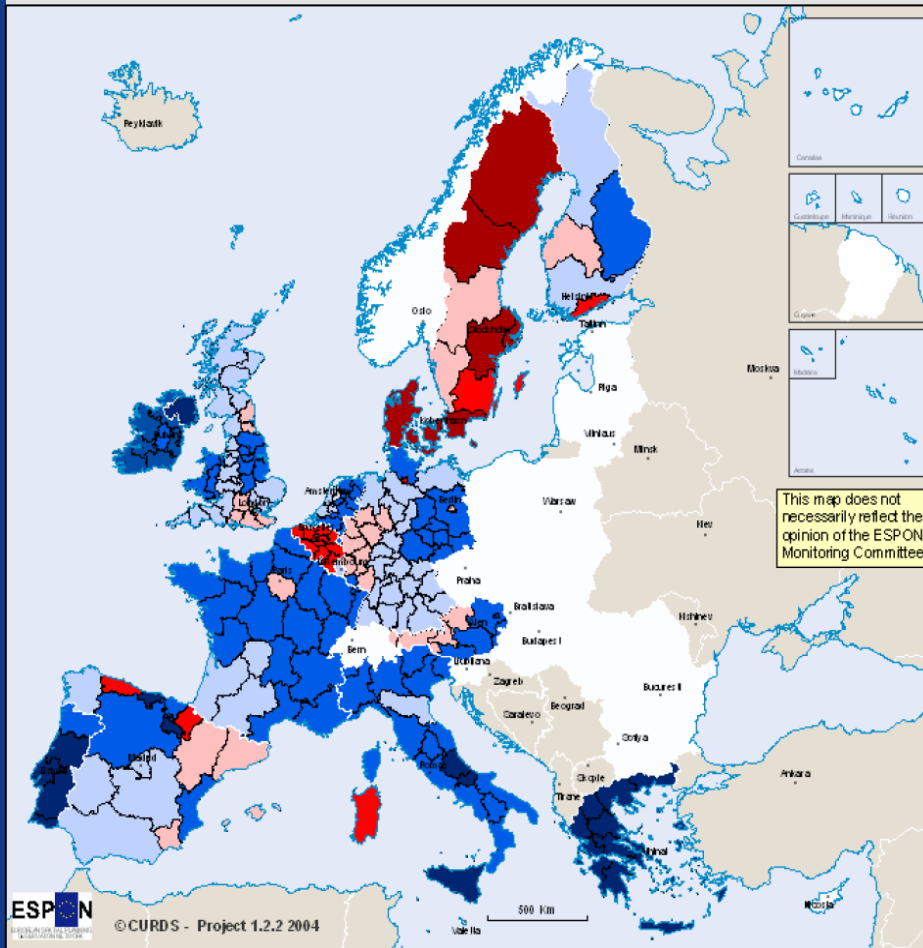
1.2.2: Household communications uptake – the Grande Région



- The north-western part is ranked as moderate, Rhineland-Palatinate and Luxembourg as moderate high, Lorraine as low
- The differences can be explained by the different regional economic as well as by population density and the connected age structure

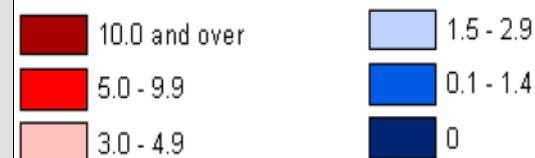


1.2.2: Percentage of Households with broadband DSL, 2002

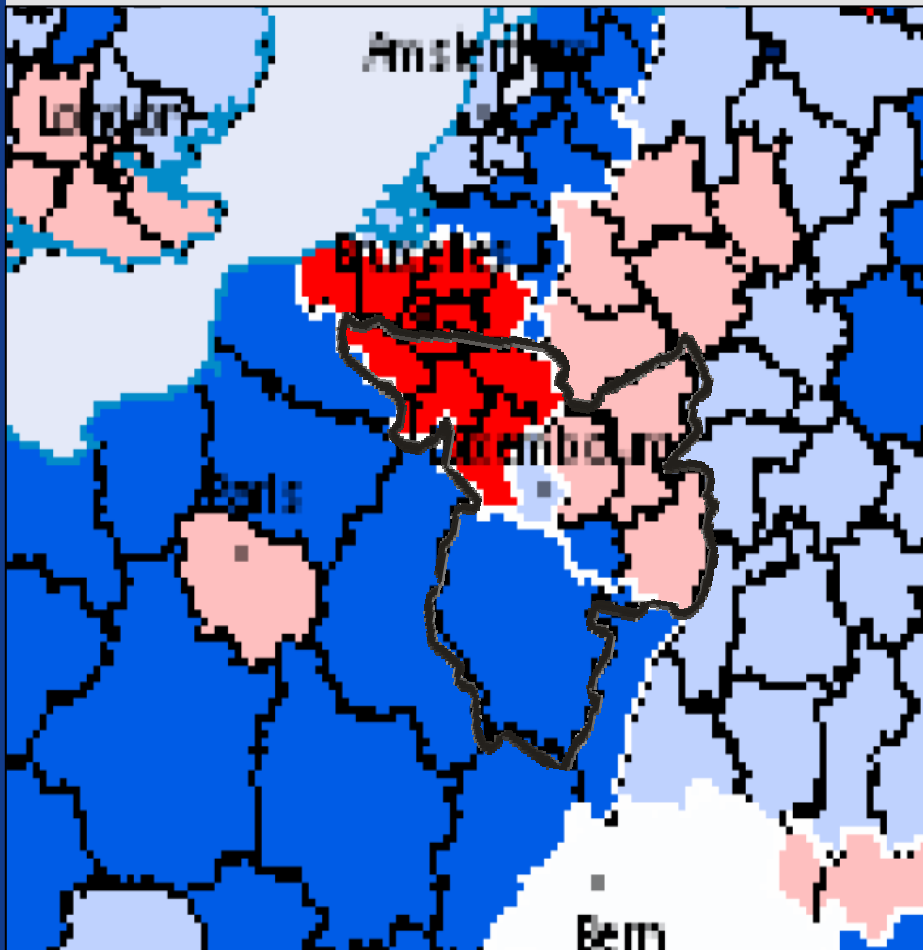


- Scandinavian countries are again the strongest nations concerning the coverage with broadband internet access
- For this case a centrum-peripheral decline can not be stated
- No data available for the accession countries

% of households with broadband DSL, 2002

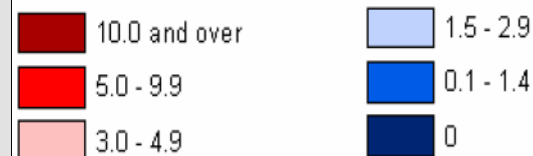


1.2.2: Percentage of Households with broadband DSL, 2002



- The Wallonian parts are ranked highest within the GR
- Luxembourg, France and the Saarland show the lowest percentage of households with broadband access
- Due to the fast development in this sector, data may already be incorrect today

% of households with broadband DSL, 2002

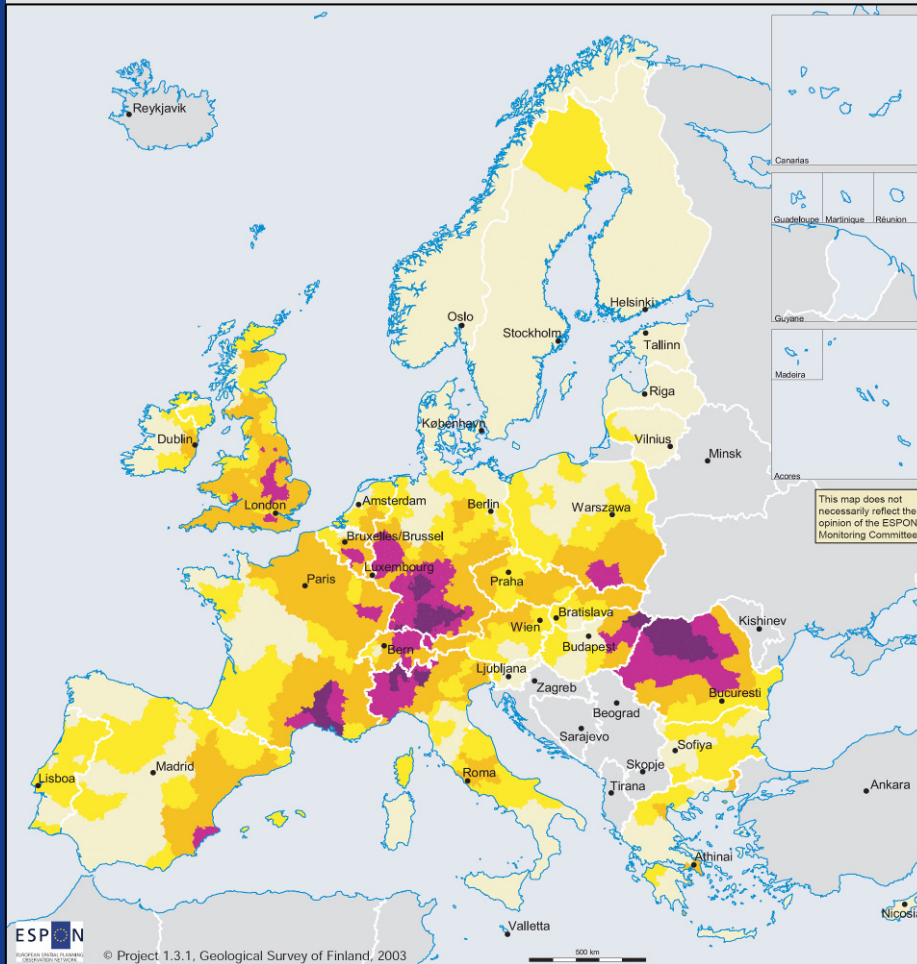


1.3.1: Natural Hazards „Flood Recurrence“

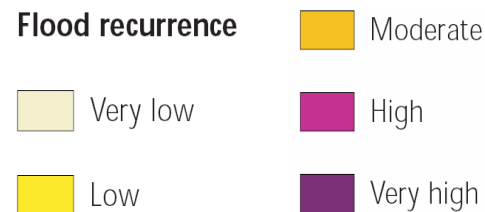
Objects of ESPON project 1.3.1:

- To analyse natural and technical hazards, their occurrence and magnitude as well as their potential impact on the EU territory
- To obtain information, that is comparable over the entire EU 27+2 area
- Natural hazards mean earth quakes, flooding, droughts and forest fires
- Technical hazards contain e.g. maritime oil spills and hazardous waste deposits
- For the interpretation of the results it is important to note that the risk has to be brought in relation to the potential damage level that differs from region to region

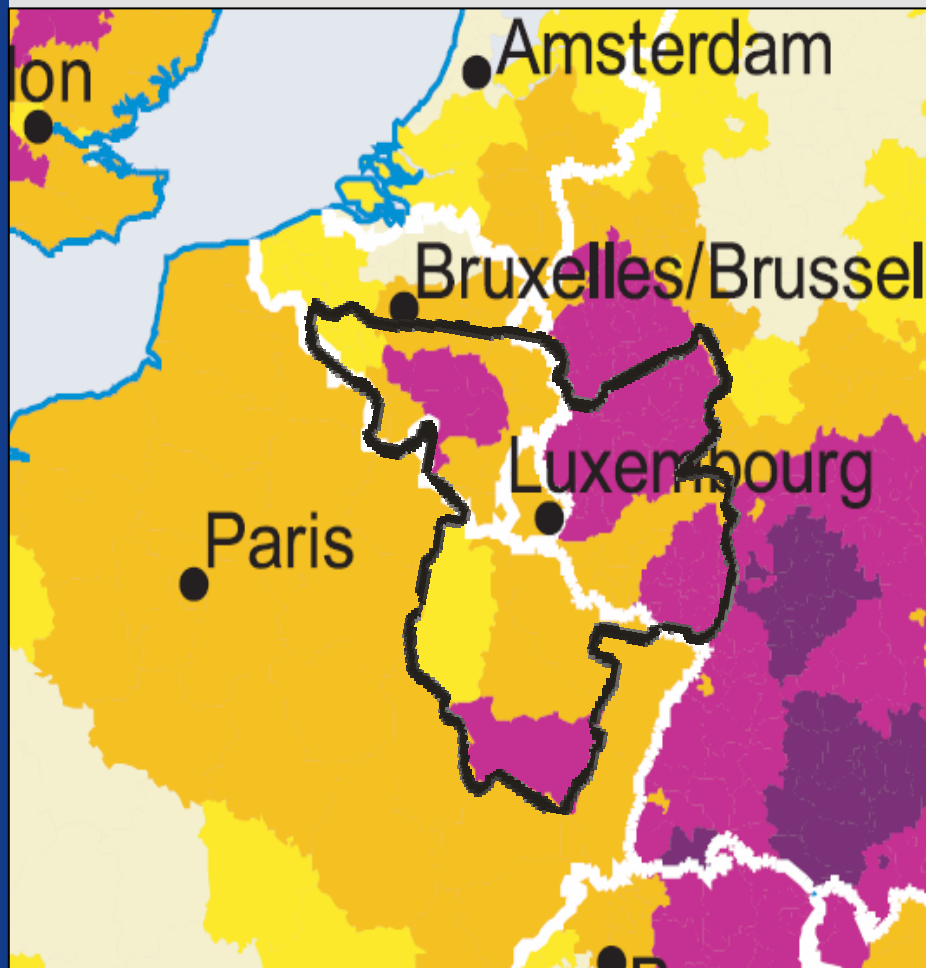
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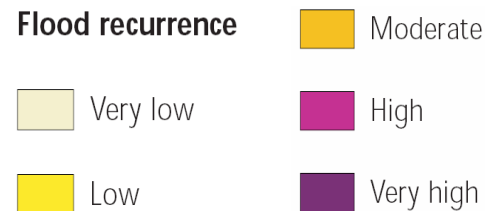
- Flood recurrence is mostly ranked as 'low' or 'moderate'
- The reduced vulnerability of those areas can be explained by minor population densities and fewer natural disasters
- The higher ranked regions suffer from the concentration of given infrastructure



1.3.1: Natural Hazards „Flood Recurrence“ – the Grande Région



- The differences within the GR can mostly be explained by differences in population density, rather than in different risks of flood recurrence
- To minimise the risk cross-border cooperation could help in reducing the peaks of water drain

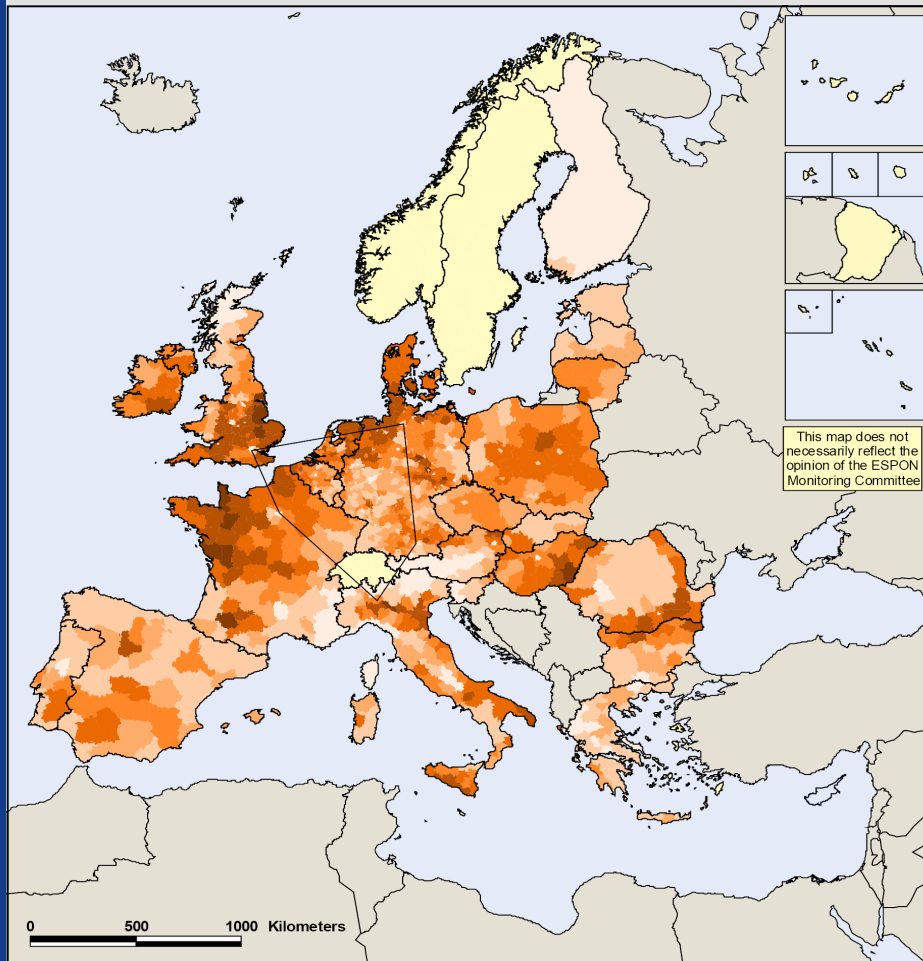


1.3.2: Percentage of agricultural area

Objects of ESPON project 1.3.2:

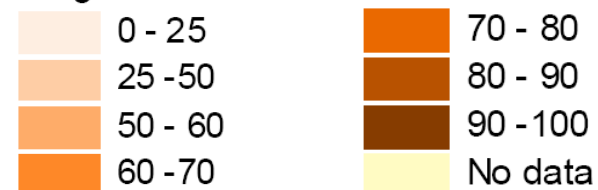
- To measure the influence of the management of natural heritage on spatial development
- To seek for a diagnosis of the principal territorial trends of natural heritage at the EU scale
- To empower spatial planning systems in European countries and protecting their natural heritage
- Natural heritage hereby means everything from ordinary countryside over “green space” in the cities up to areas with great natural value, ecological networks and biodiversity

1.3.2: Percentage of agricultural area

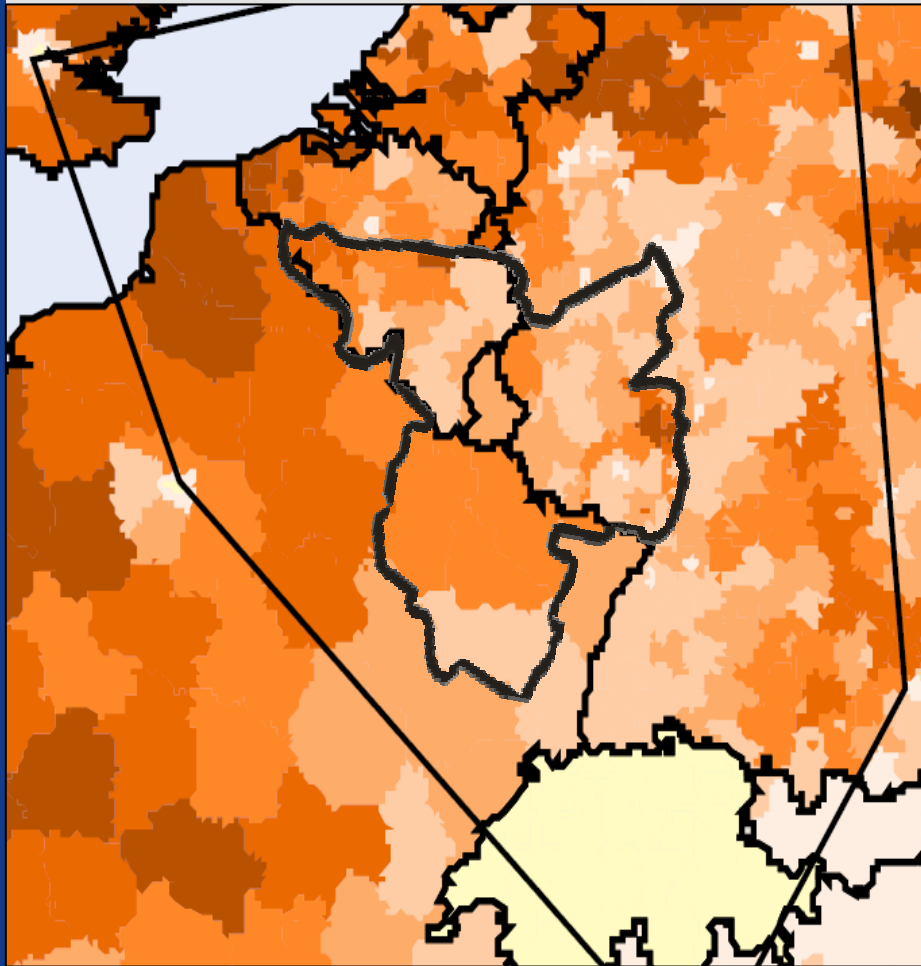


- The centrum-peripheral decline don't exists for agricultural use
- A strip with a high percentage of agricultural area reaches from western France and south England to northern Germany
- The irregular spreading can be explained the different intensities of agricultural activity

% agricultural area

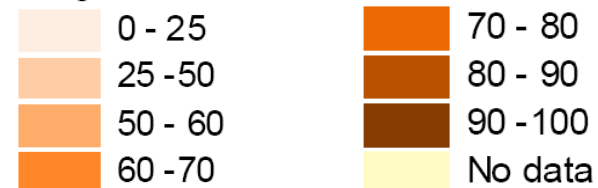


1.3.2: Percentage of agricultural area – the Grande Région

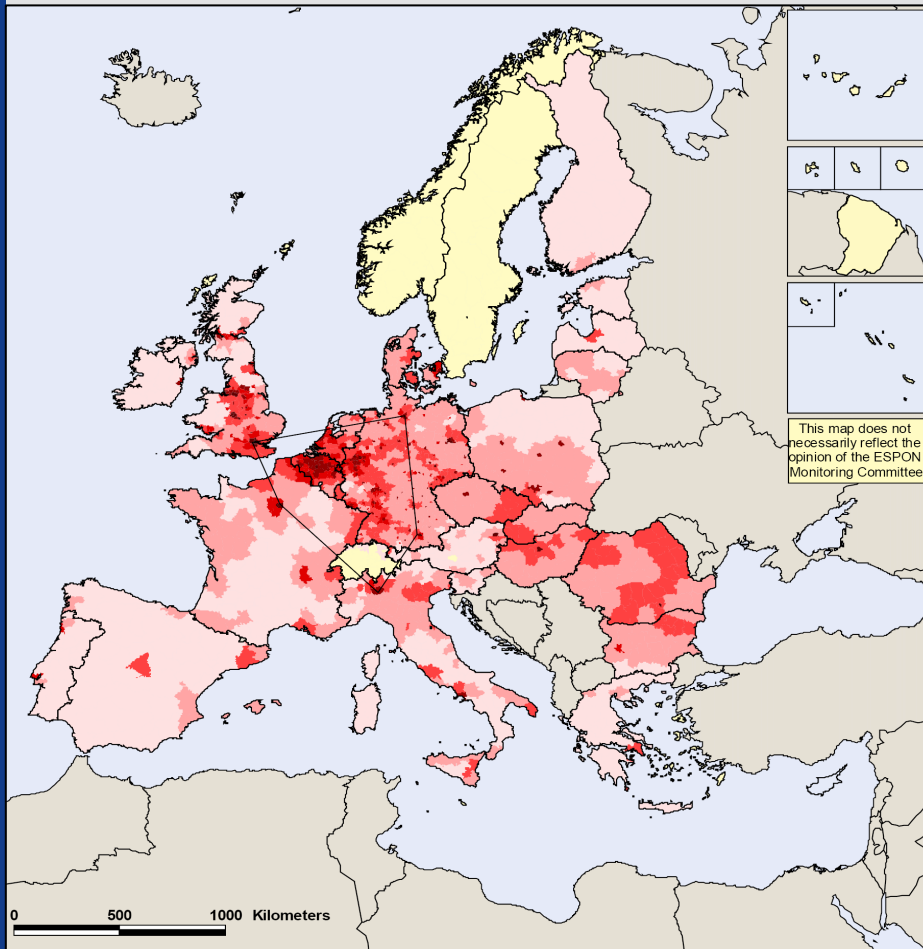


- The German and Belgian parts obtain a percentage clearly above their national average
- The French part corresponds to other parts in northern France
- The intra-national north-south decline of Luxembourg is obscured by the particularity of only having one NUTS level

% agricultural area



1.3.2: Percentage of built-up area

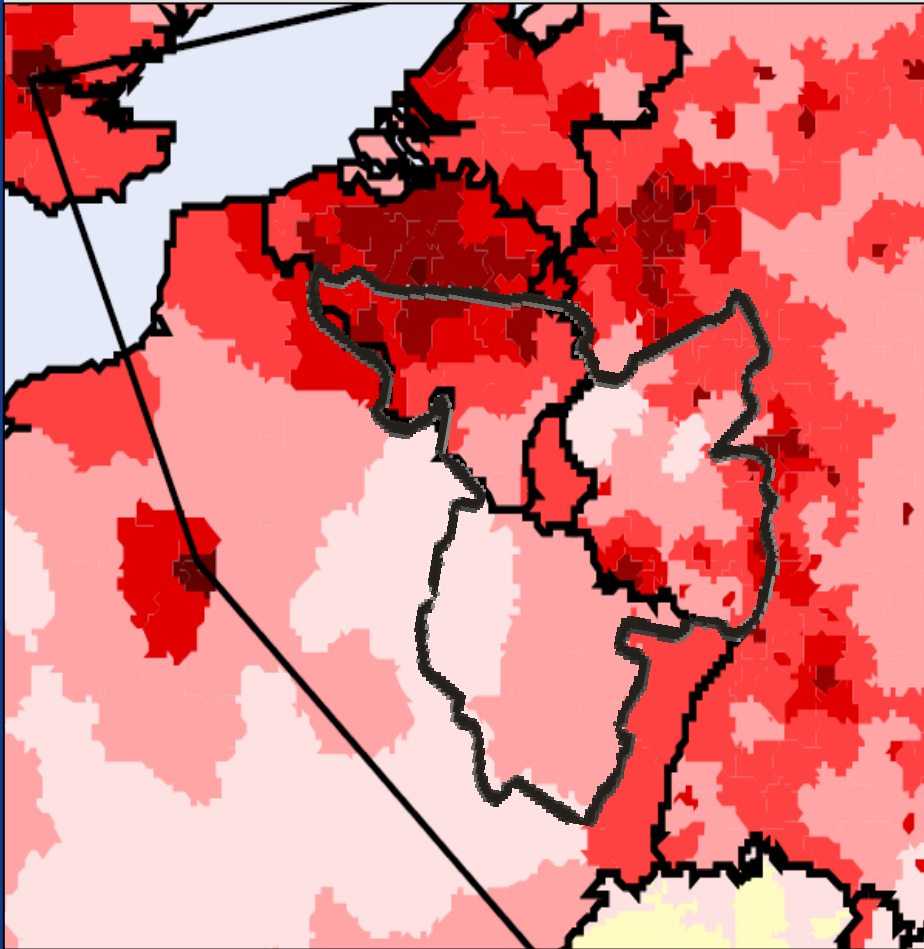


- The map shows the reversal of the agriculture map
- The pentagon area is the most built-up region
- The percentage declines with the degree of polycentrism
- Therefore the typical centrum-peripheral decline exists also in this field of research

Percentage of built-up area



1.3.2: Percentage of built-up area – the Grande Région



- The French part corresponds to other parts in northern France
- The higher amount of built-up area in the old-industrialised south of Luxembourg is compensated by higher amount of natural area in the north (only having one NUTS level)

Percentage of built-up area

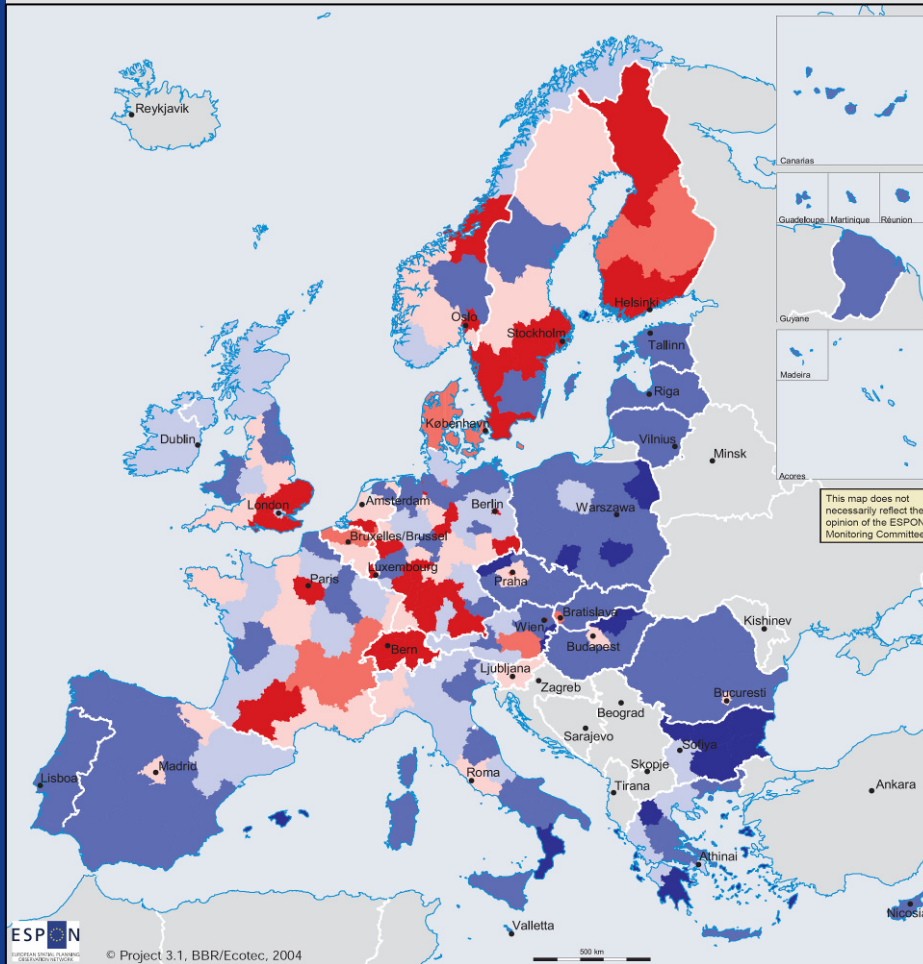


2.1.2: The importance of Research & Development

Objects of ESPON project 2.1.2:

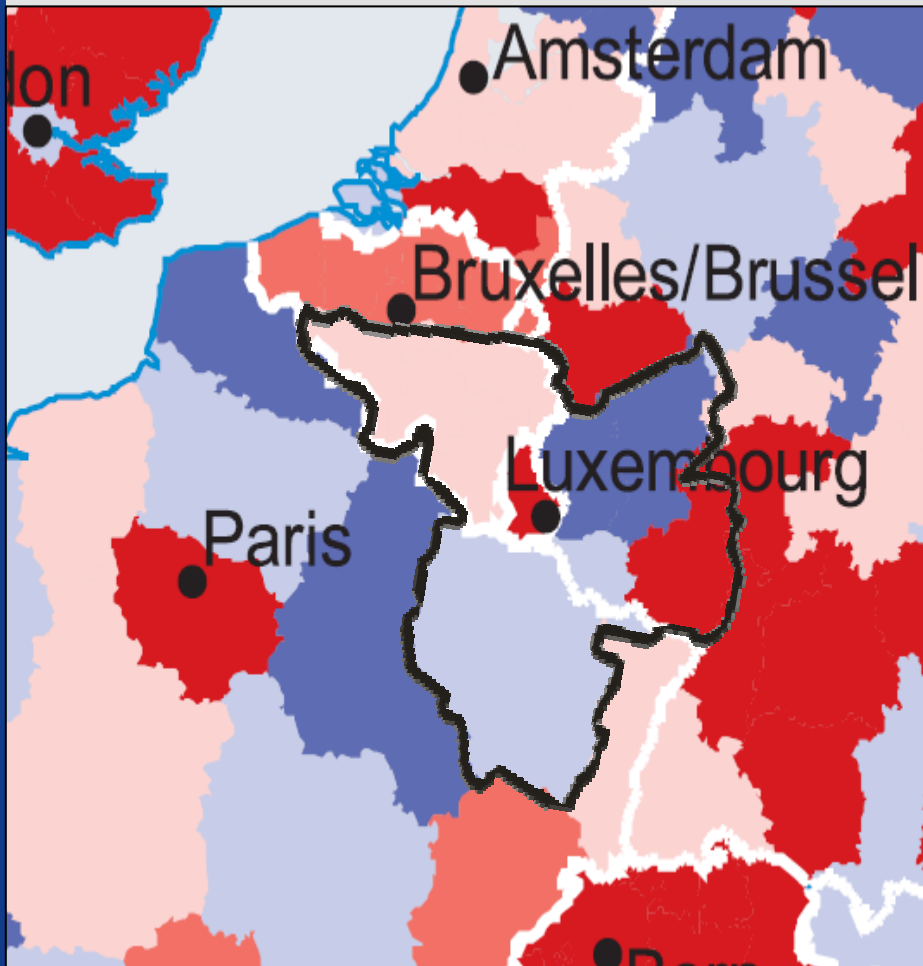
- To develop a 'typology' of regions, in terms of their capacity to undertake Research and Development
- To assess the spatial distribution of R&D policy interventions
- To assess the impacts these interventions have on regional development
- Hereby Research & Development contains both, R&D expenditure and personal
 - 'R&D expenditure' = the share of R&D expenditure of GDP
 - 'R&D personnel' = the number of researchers in the Business Enterprise Sector and the total research personnel calculated as a share of total employment in a region

2.1.2: The importance of Research & Development



- With exception of the Nordic countries, the periphery falls behind in terms of R&D
- Luxembourg and Switzerland are the only countries, in which all NUTS2-regions have a R&D profile above the average of the EU-29

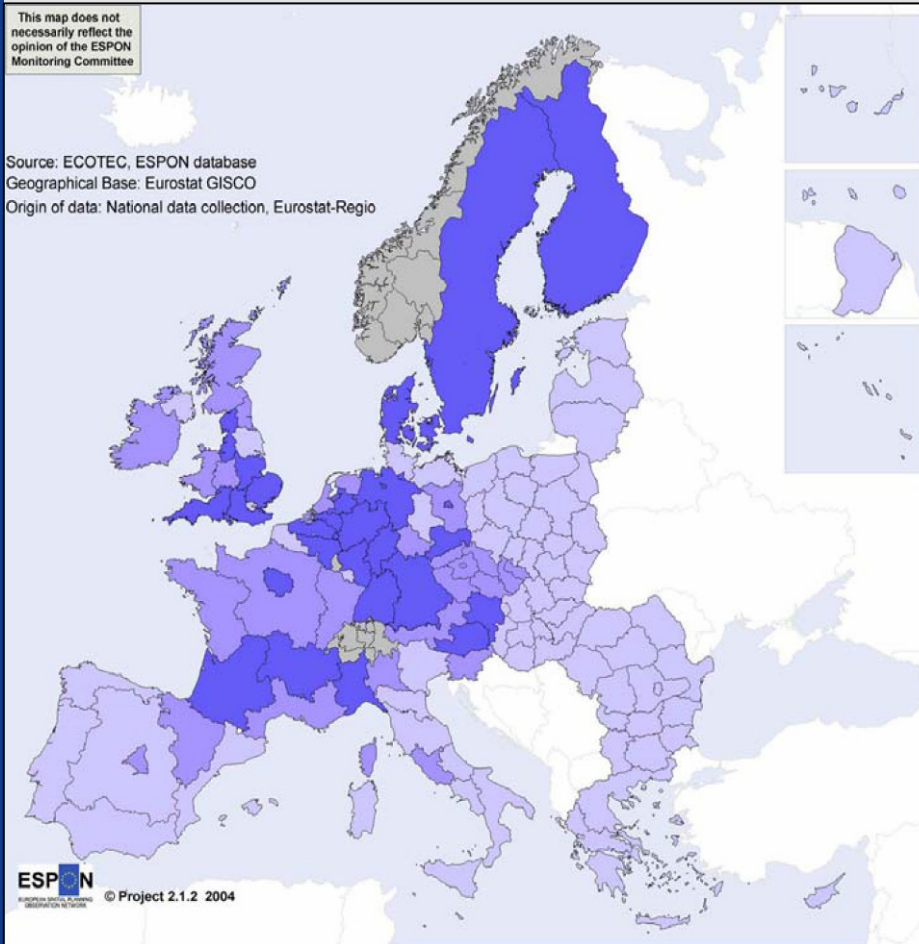
2.1.2: The importance of Research & Development – the Grande Région



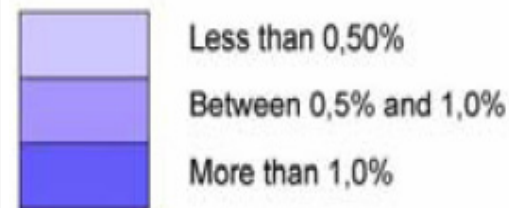
- Luxembourg and eastern Rhineland-Palatinate occupies the highest rank
- Wallonia, due to its two universities, is ranked as slightly above average
- The status of the Grand Duchy can be explained by the high amount of remittance work



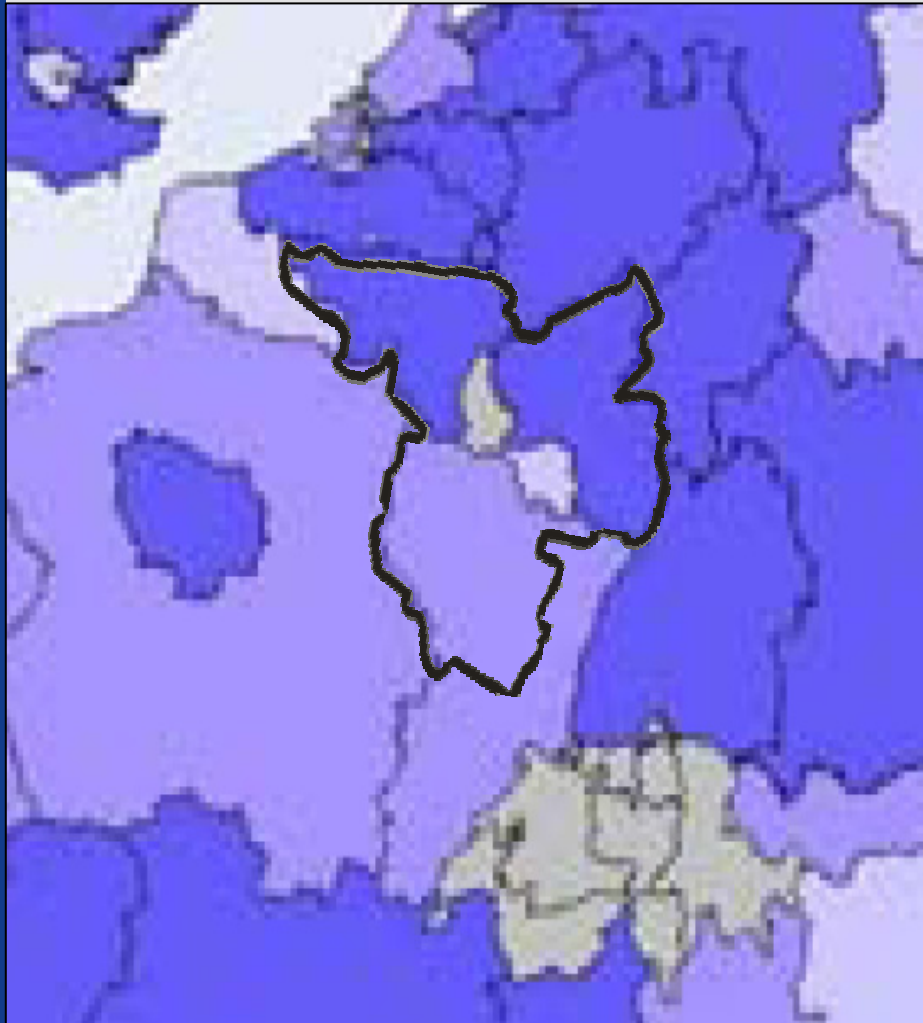
2.1.2: Business R&D intensity in the EU-27



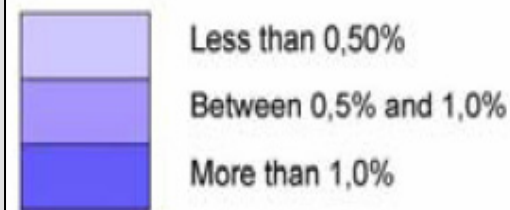
- Enterprises in the pentagon area are leading in research and development
- Business research is not yet established very well in the accession countries
- The different degree of polycentrism can also be watched (France - Germany)



2.1.2: Business R&D intensity in the EU-27 – the Grande Région



- The business sector in Luxembourg is not very active concerning R&D
- Wallonia, due to its two universities, is ranked above average
- The status of the Grand Duchy can again be explained by the high amount of remittance work





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Thank you for your attention!

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