



# European Territorial Futures

## Regions, comparable evidence and spatial scenarios

European territorial structures, trends  
and policy impacts

by Dr. Kai Böhme

## Territory matters

- **Regional diversity** as asset
- **Territorial potentials** increasing in importance
- **Territorial imbalances** challenge cohesion
- **Lisbon/Göteborg objectives** need all regions/cities
- **Territorial cooperation** may help
- **Targeted policy mixes** and strategic objectives
  - **Cohesion and competitiveness**
  - **Attractiveness for investments**
  - **Liveability for the citizens**
- **Evidence** for territorial policy making

## Territorial cohesion trends

- **Core is spreading** geographically
  - Pentagon is a reality
  - Extending along several corridors
- **Strong urban nodes outside** the core
  - Metropolitan urban agglomerations
  - Small and medium sized cities
- **Trends challenge territorial cohesion**
  - Market forces supporting geographical concentration
  - Imbalances in access and connectivity
  - Disparities between neighbouring areas increasing in parts of Europe

# Main economic structures of the European territory

- **Urban regions** close to and outside the core
- **High GDP growth** in areas with relatively lower GDP level

## Functional Urban Areas (FUAs)

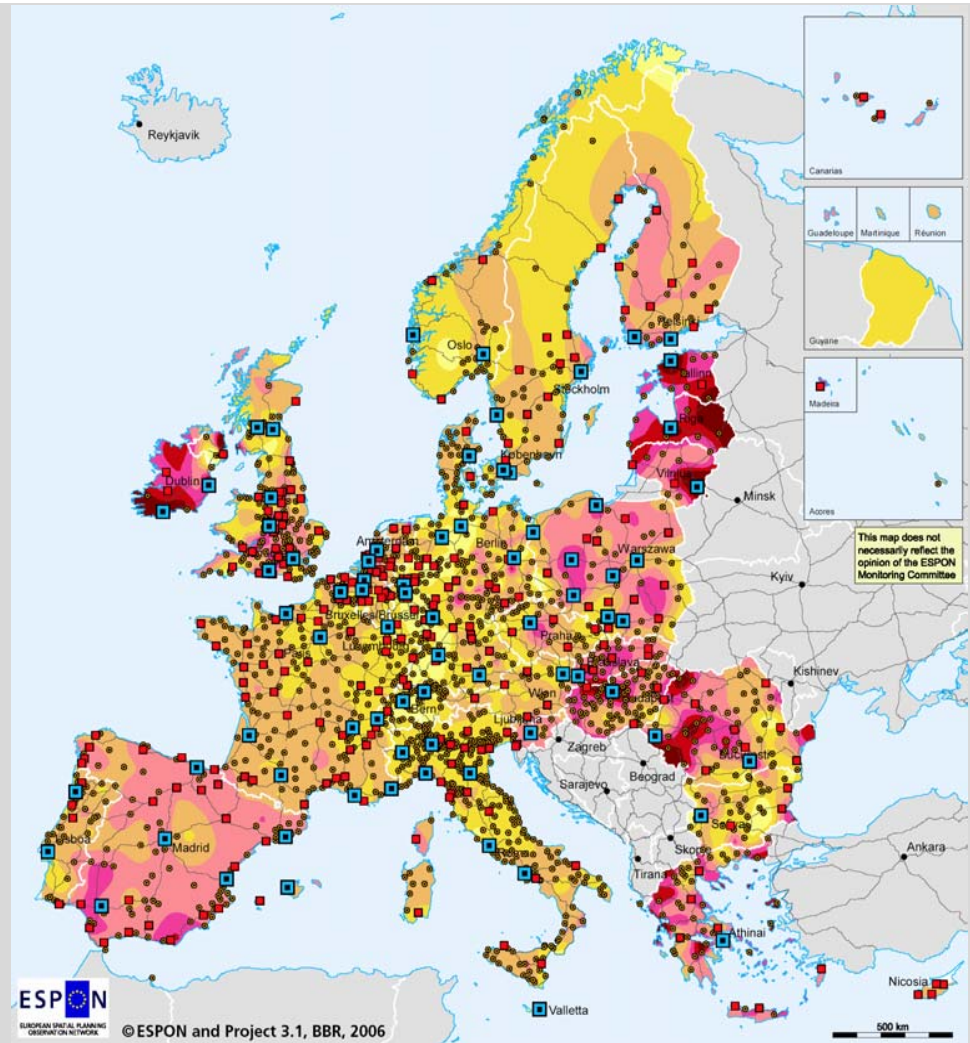
- Metropolitan European Growth Areas (MEGAs)
- Transnational / national FUAs
- Regional / local FUAs
- Highways of European level

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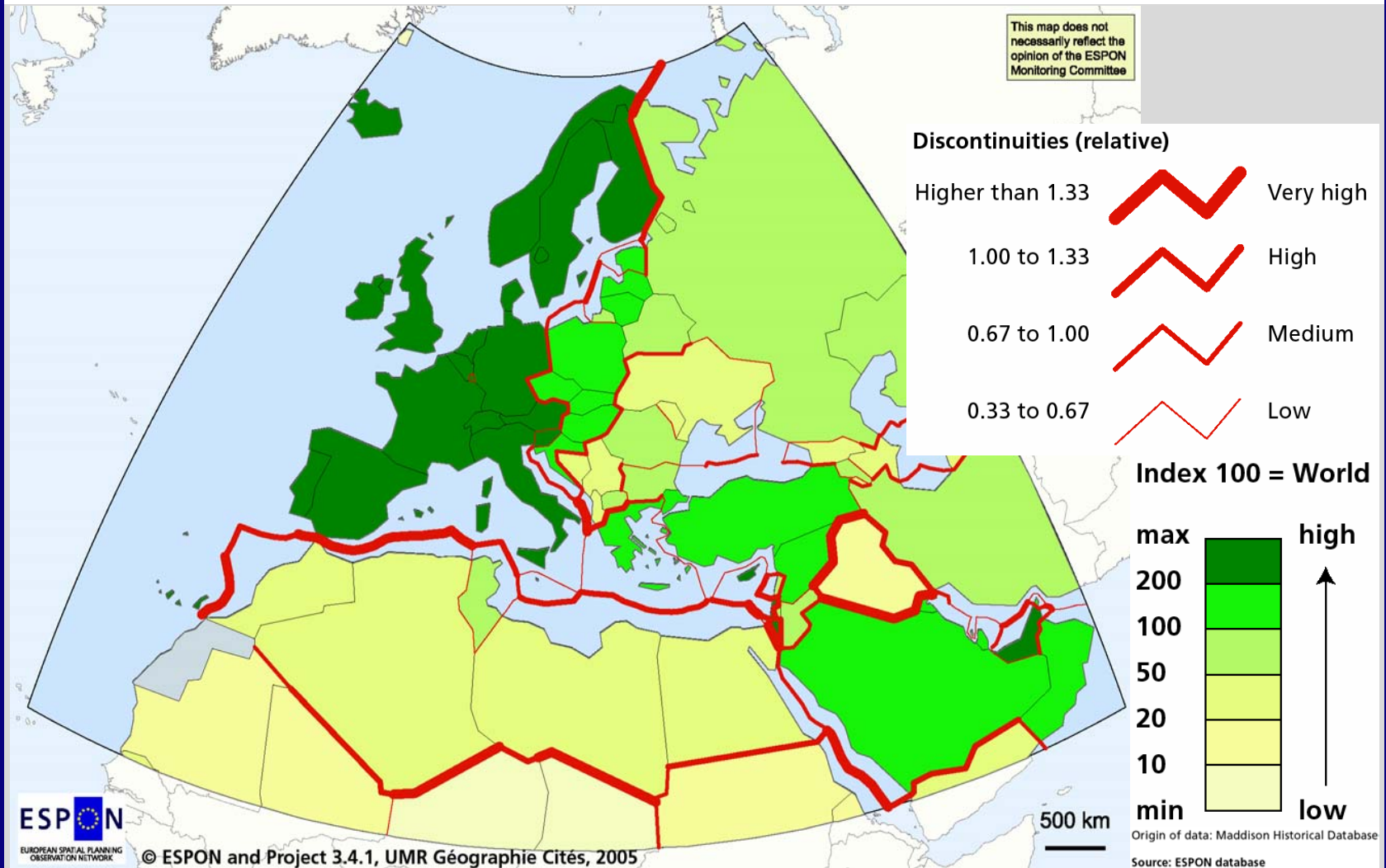
Regional level: NUTS 3  
Origin of data: GDP: Eurostat,  
MEGA: ESPON 1.1.1 Nordregio

Source: ESPON database

The functional urban areas are an important territorial structure in Europe. An ongoing ESPON Project is doing further work on their classification. New results will be available by the end of 2006.



# Differences in GDP per capita in Europe and its neighbourhood, 2002



## Increasing competitiveness

- **Lisbon strategy** for growth and jobs
  - Regions potentials differ
  - Knowledge based economy not best option for all
- **Accessible urban areas** have the best Lisbon performance
  - The core and the north in the most favorable position
  - Less urbanised and less accessible areas can do well
- **Innovation potential** has a distinct territorial pattern
  - R&D and creative jobs weaker in peripheral parts (east, west and south)
  - Metropolitan areas highest on R&D spending








# Economic Lisbon indicators

7 out of 14 Lisbon indicators:

- (1) GDP/capita,
- (2) GDP/employed person,
- (3) Employment rate,
- (4) Employment rate of older workers,
- (5) Gross domestic expenditure on R&D
- (6) Dispersion of regional (un)employment rates
- (7) Long-term unemployment rate.

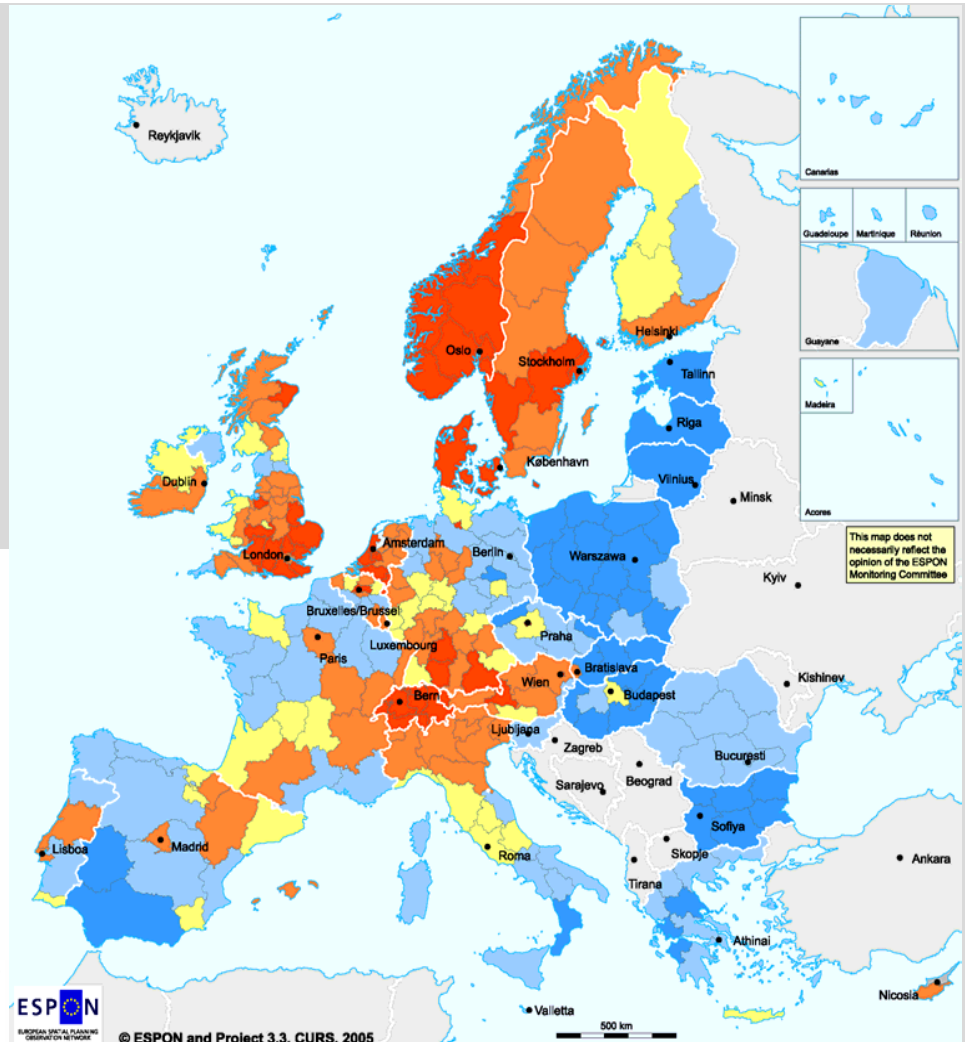
## Performance

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

	> 3	Primarily high performance
	1 - 3	
	0	Medium performance
	-3 - -1	
	< -3	Primarily low performance

 No data available

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Regional level: NUTS 2  
Origin of data: Eurostat, national statistical offices  
Cyprus: Data for government controlled areas only  
Source: ESPON database

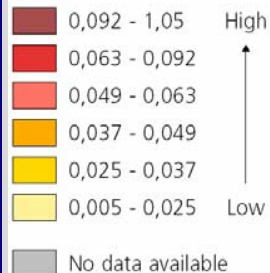


# Cultural employment 2005

(as share of local active population)

- Mainly national patterns
- Finland, Sweden, Netherlands, Switzerland in the top
- Regional variations mainly related to the urban structure

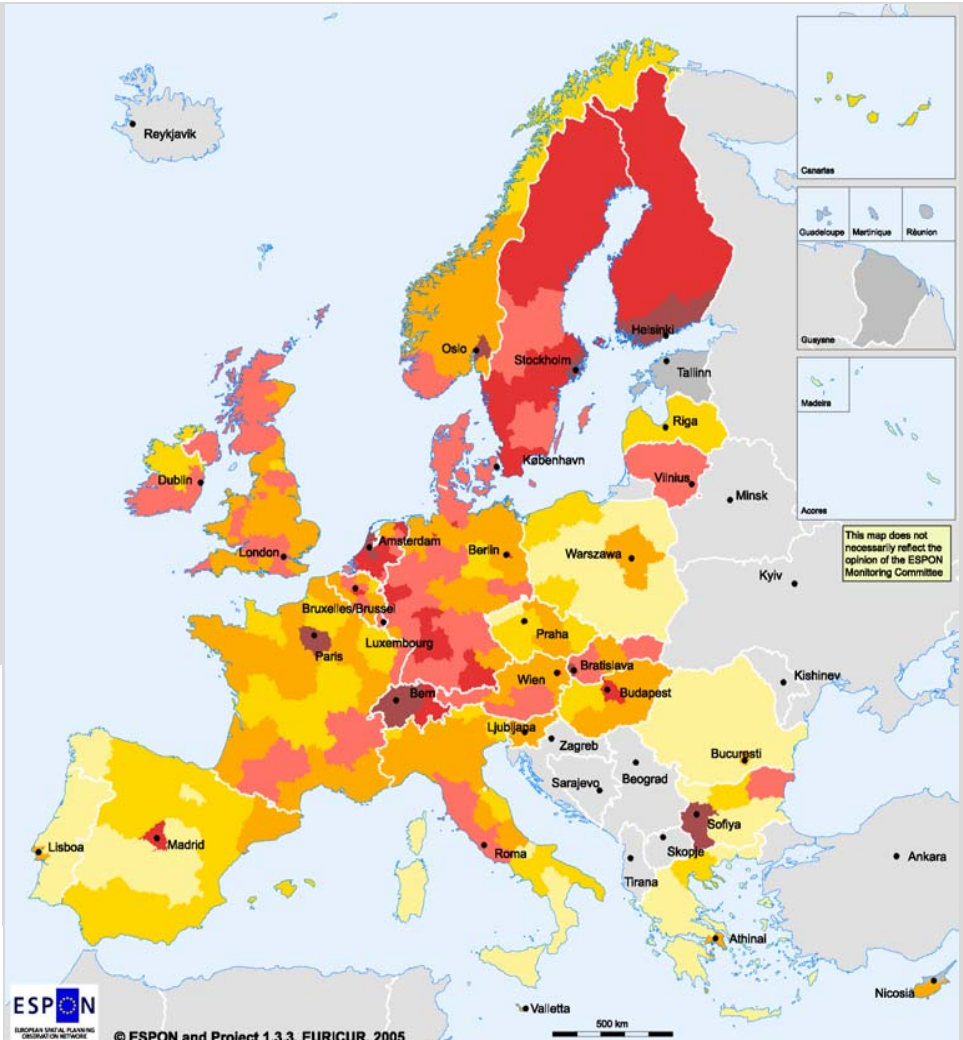
Number of cultural jobs (ISCO 88) as share of the local active population in % - classification based on distribution sestiles



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Regional level: NUTS 2  
Origin of data: Eurostat

Cyprus: Data for government controlled areas only.

Source: ESPON database



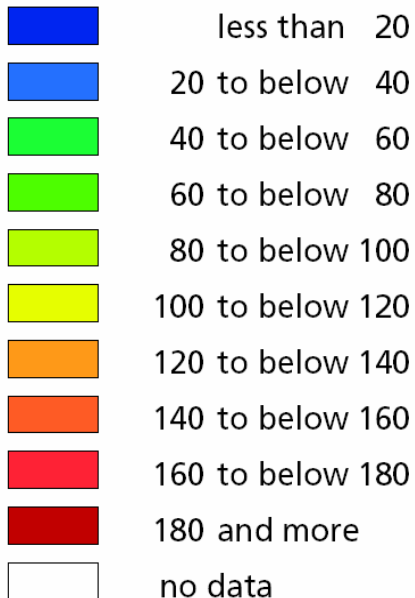


## Accessibility and connectivity

- Multimodal accessibility shows **core-periphery pattern** (even stronger for road and rail)
- Best accessibility in the **core and larger urban agglomerations** with international airport
- Accessibility by **road improves outside core**
- Increasing energy prices will **challenge accessibility in rural and remote areas**
- **ICT connectivity divides Europe** north-south, east-west and urban-rural
- Information society roll-out favours areas with high **population density**

# Potential accessibility multimodal, 2001

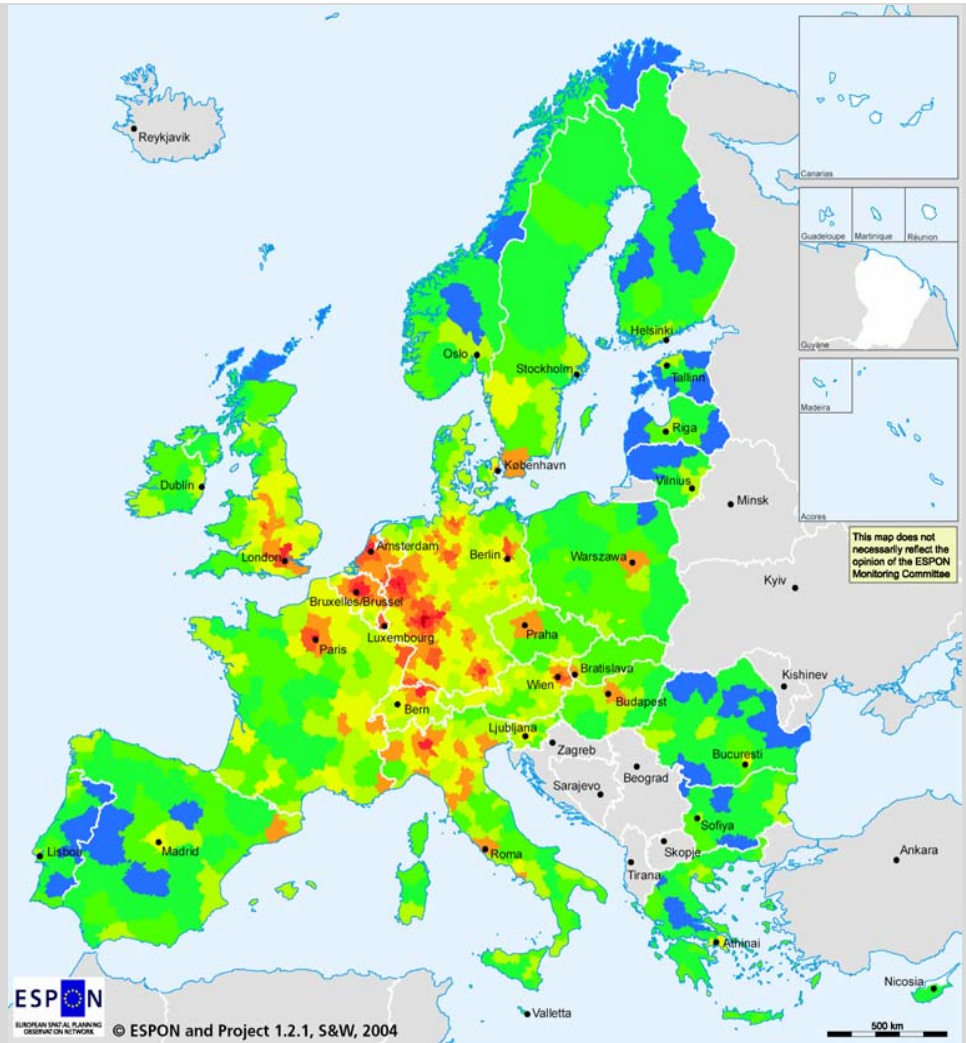
## Accessibility index (EU25+2 = 100)



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Regional level: NUTS 3  
Origin of data:  
Spiekermann & Wegener (S&W)

Source: ESPON database

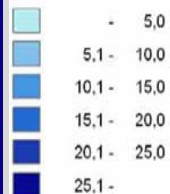


# Absolute change of potential accessibility by road between 2001 and 2006

- Areas close to the core gain most in potential accessibility by road
- Corridors leading to/from the core

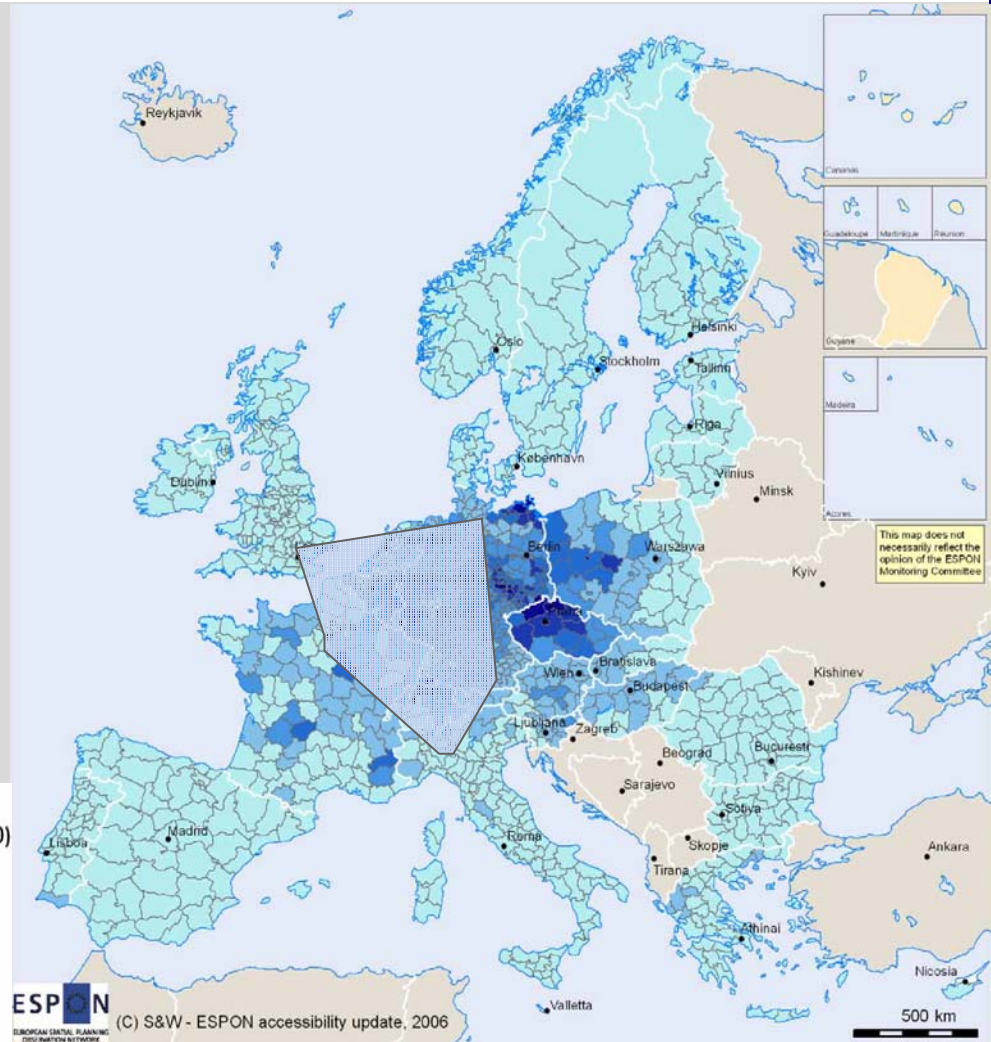
## Potential accessibility

Road, absolute change 2001-2006 (EU27 absolute average in 2006 = 100)



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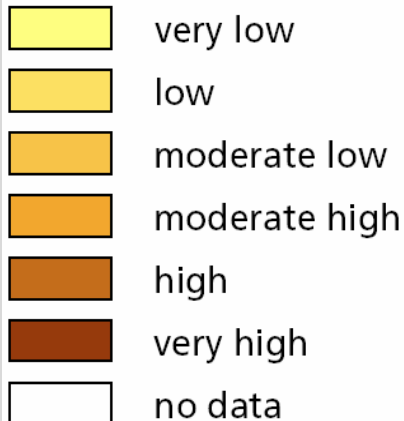
Data sources:  
RRG GIS Database  
S&W Accessibility Model



# Information society readiness, growth and impact

<b>IS Readiness</b> Resources and skills for ICT use	Wealth	Households disposable income
	Skills/Education	Human resources in science and technology
	Adoption of basic technologies	Households with a fixed phone line
<b>IS Growth</b> Availability and use of ICT technologies	Households	Households with a PC
		Households with at least one mobile
		Households with internet access
		Households with broadband internet access
	Businesses	Access to fibre backbones
<b>IS Impact</b> Economic implications of IS	Impact on labour market	Firms with internet access
		Firms with websites
	Innovative activity	ICT patents

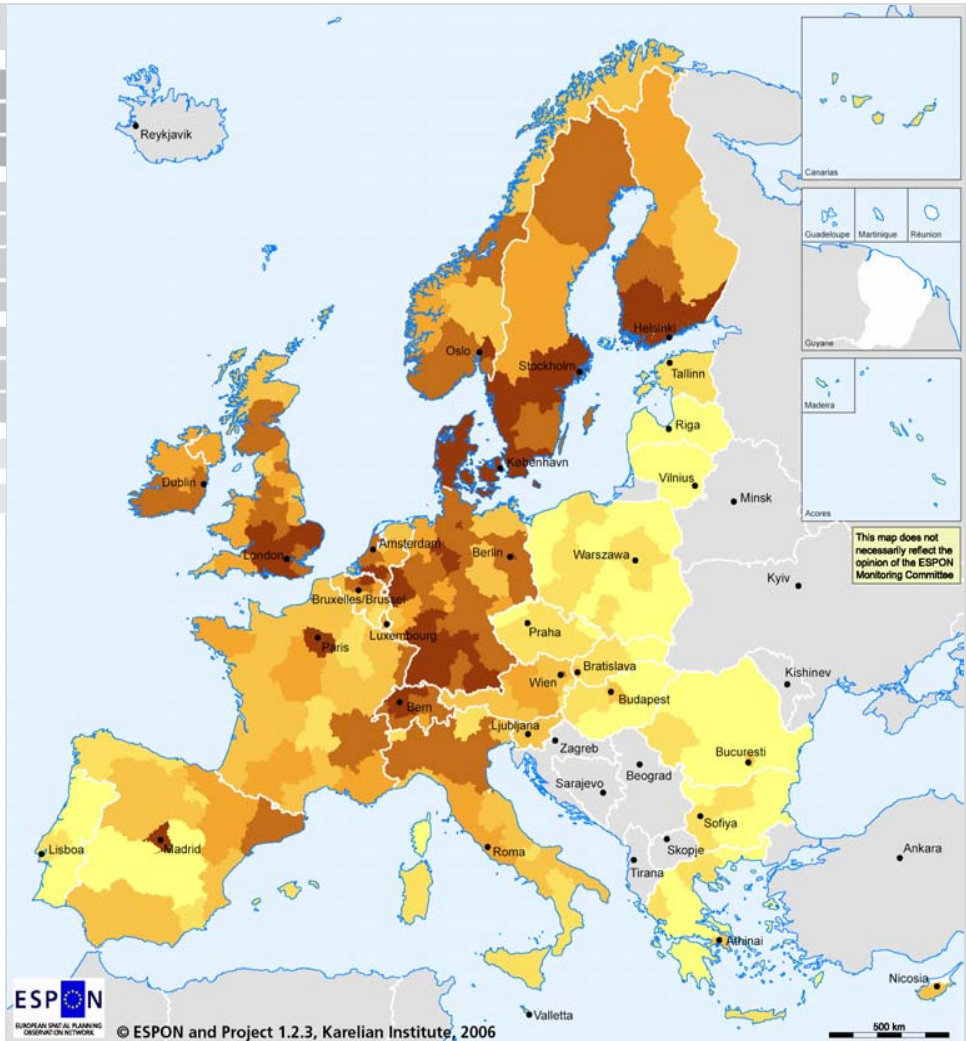
## Information society index, 2003



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Regional level: NUTS 2  
Origin of data: ESPON Project 1.2.3,  
Karelian Institute

Source: ESPON database





## Hazard risks

- Hazards in general do not to undermine competitiveness
- Hazards can create a long-lasting negative impact
- Climate change might influence
  - cohesion
  - competitiveness
  - attractiveness
  - liveability
  - sustainable development



# Aggregated natural and technological hazards

## Natural hazards:

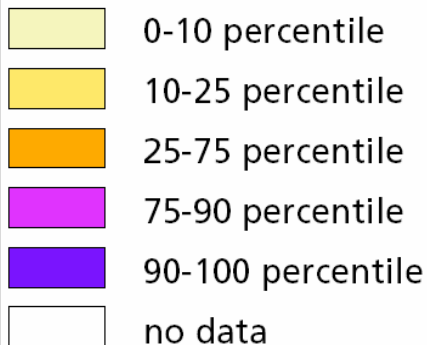
- Avalanches
- Drought potential
- Earthquakes
- Extreme temperatures
- Floods
- Forest fires
- Landslides
- Storm surges
- Tsunamis
- Volcanic eruptions
- Winther and tropical storms

## Technological hazards:

- Air traffic hazards
- Major accident hazard
- Nuclear power plants
- Oil processing, storage and transportation

This map shows the aggregated hazard typology based on 15 hazard indicators. Every indicator gives the value from 1 to 5 depending on the magnitude of the hazard in the NUTS 3 area. For the class "no data" value is 0. These values are then weighted on base of expert opinion (Delphi method questionnaire). At the end the sum of 15 weighted indicators are classified on base of percentile rank. For instance, NUTS 3 areas that belong in 90-100 percentile have their score greater than or equal to 90% of the total of all the summed hazard values.

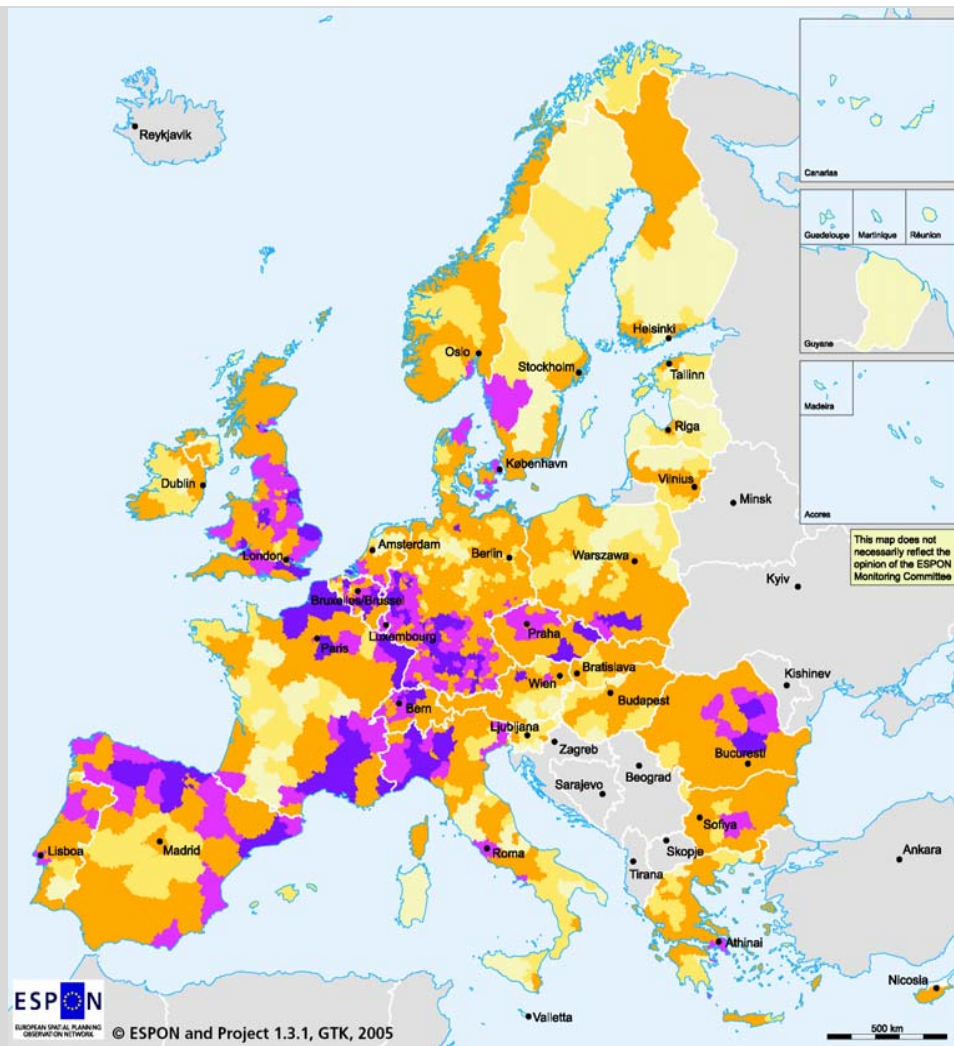
## Hazard classification



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Regional level: NUTS 3  
Origin of data: ESPON Project 1.3.1, GTK

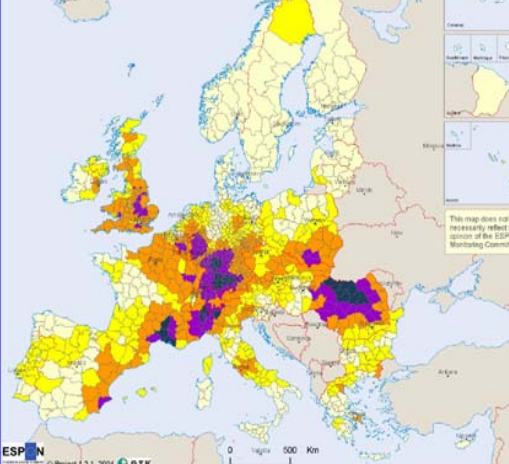
Source: ESPON database



# Natural Hazards

- **Southern Europe:** forest fires and drought hazards
- **Western and Northern Europe:** winter storms, storm surges and floods
- **Climate:** affects frequency, intensity and coverage

## Flood recurrence



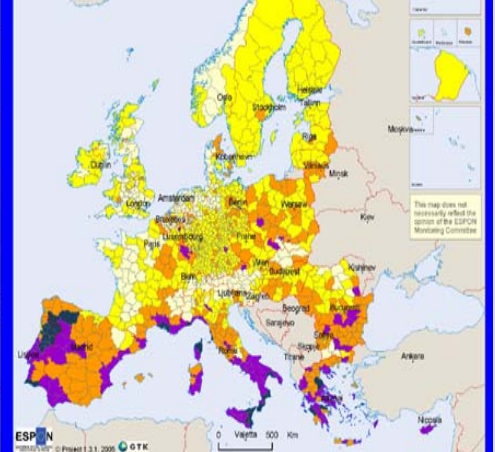
## Winter & tropical storms



## Precipitation deficit



## Forest fires



The classification of the forest fire hazard is based on a combination of the numbers of observed fires per 1000 sq. km 1997-2003 (ESA) and the biogeographic regions map of Europe (EEA).

The number of observed fire per 1000 sq. km 1997-2003:

- 1 = No forest fires
- 2 = <1 observed fire
- 3 = 1-5 fires
- 4 = 5-10 fires
- 5 = >10 fires

Biogeographic regions:

- 1 = Alpine and Arctic
- 2 = Atlantic
- 3 = Boreal
- 4 = Continental, Black sea, Pannonic and Steppic
- 5 = Mediterranean

Origin of the data: < EuroGeographics Association for the administrative boundaries

Forest fires years 1997-2003: ESA

Biogeographic regions: EEA

Source: ESPON Data Base

### Forest fire hazard



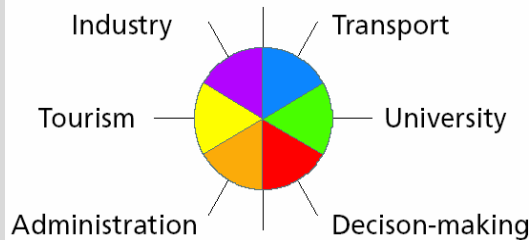
## Urban and rural areas

- Urban areas are significant development nodes
- Potential for more polycentricity at European scale
- Small and medium sized cities matter
- Functional specialisation more important than size
  
- Rural areas not synonymous with agriculture
  - Rural areas in proximity to major urban centres
  - Rural areas with small and medium-sized urban development poles
  - Remote rural areas facing decline
- Depopulation a challenge for many remote/rural areas
- Intangible factors and ability to capitalise on potentials



# Major urban and economic development

Metropolitan European Growth Areas (MEGA) by functional importance of global, European, national and trans-national significance



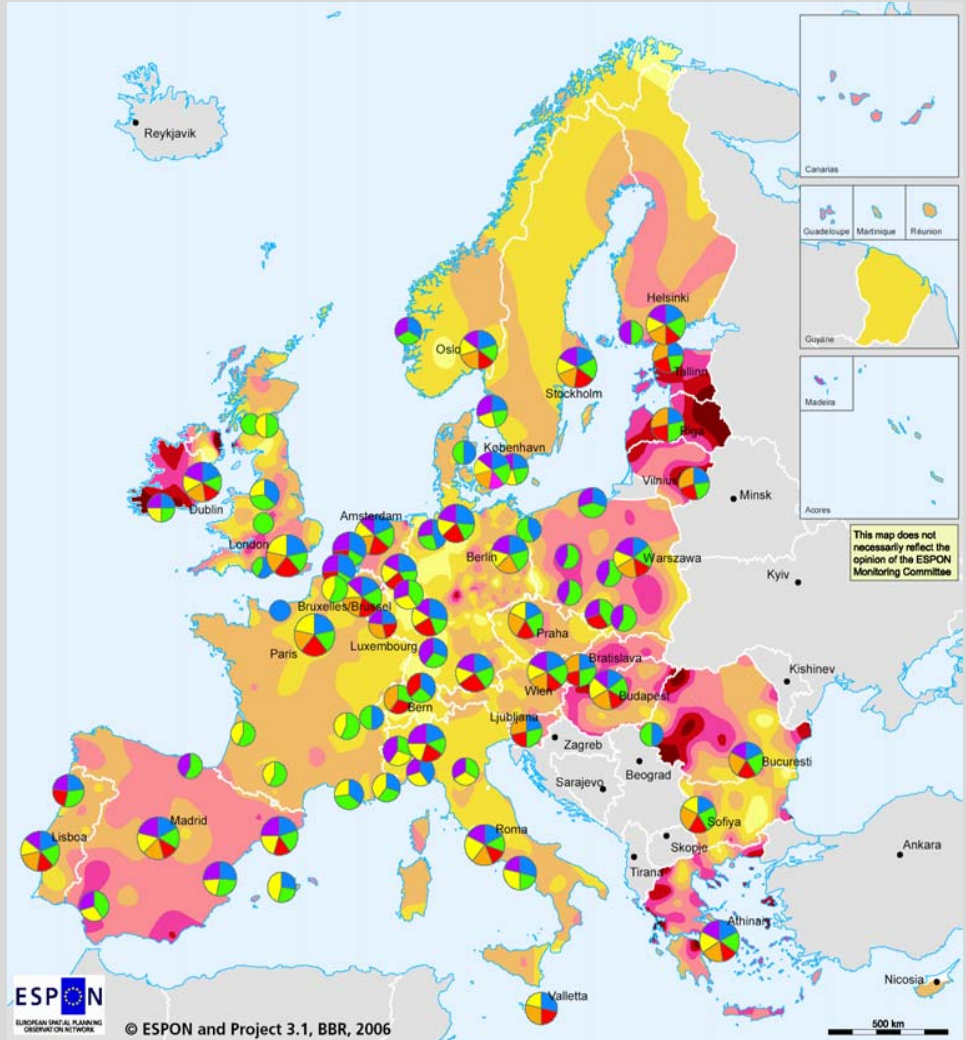
Size according to average value of related significance of functions

Average yearly development of GDP per capita in Purchasing Power Standards in percent 1995 to 2003 \*



\* Romania 1998 to 2003

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Regional level: NUTS 3  
Origin of data: GDP: Eurostat,  
MEGA: ESPON 1.1.1 Nordregio  
Source: ESPON database



# Polycentricity & INTERREG IIIB projects

## Geography of INTERREG IIIB projects linked to polycentricity

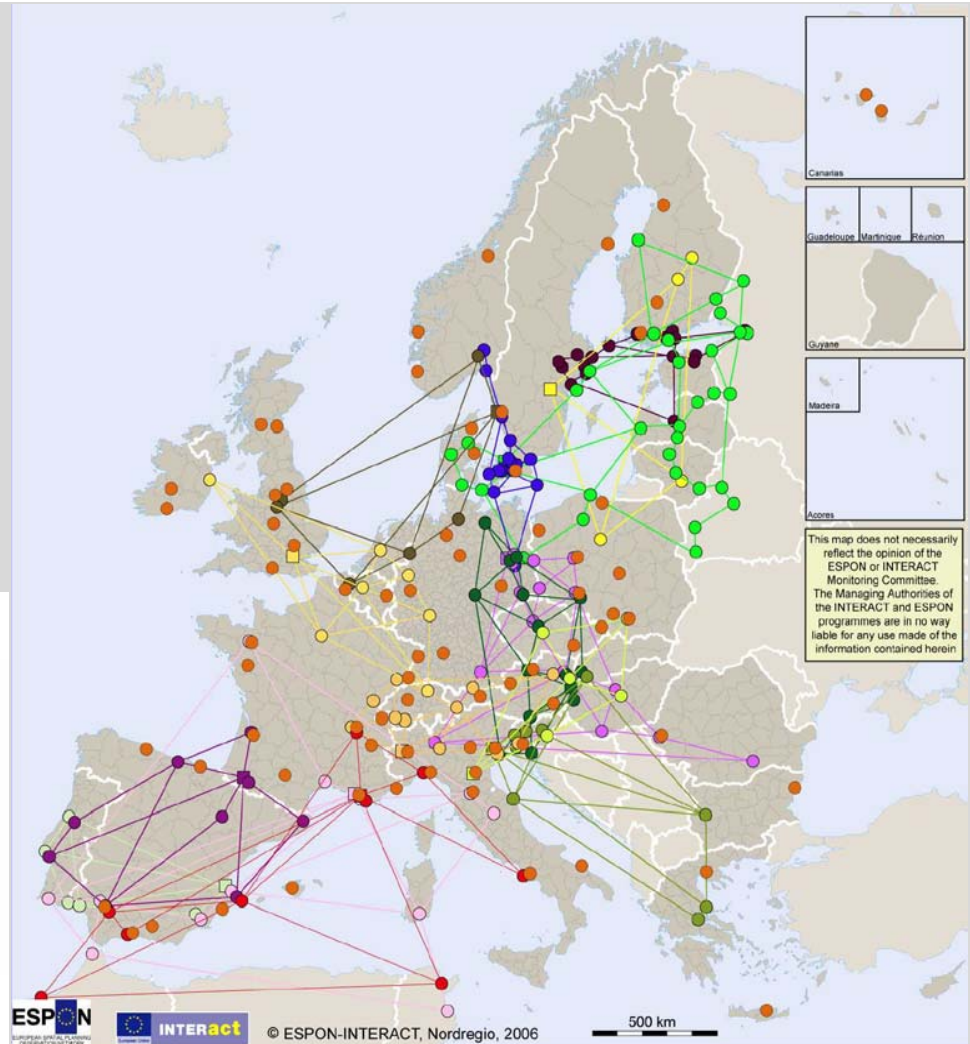
### Second tier nodal regions

Projects in measures linked to polycentric development:  
Squares refer to the lead partners and circles to other partners involved in the project.

- |                   |         |              |
|-------------------|---------|--------------|
| AlpCity           | C2M     | Polynet      |
| AMAT              | COINCO  | RePus        |
| ATI               | Defris  | SIC!         |
| Baltic Palette II | MECIBS  | VISP         |
| CIUMED            | PolyDev | Vital Cities |

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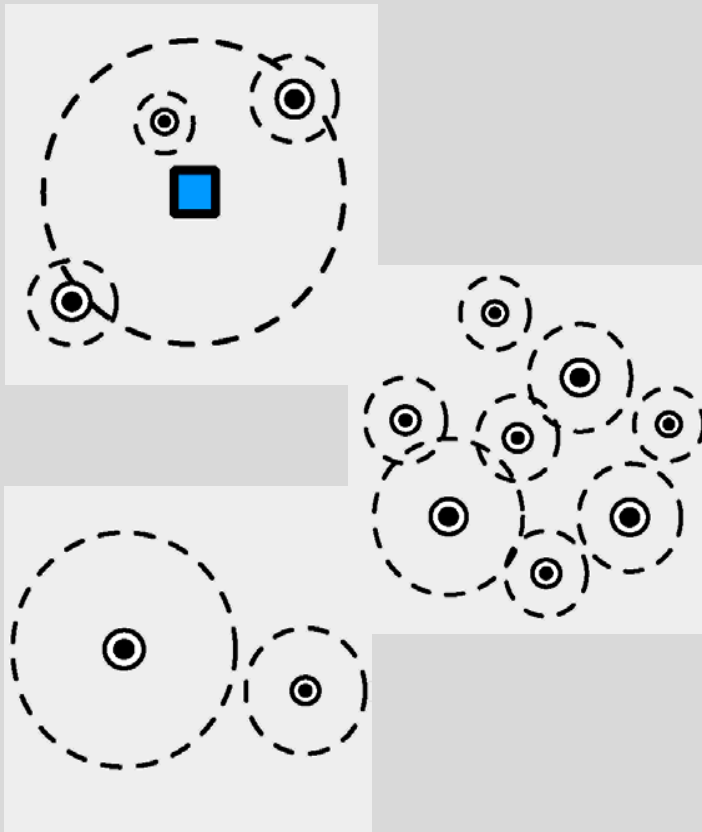
Source: ESPON 111 for the MEGA and cluster classifications  
ESPON-INTERACT project database for  
the INTERREG projects





# Metropolitan areas and their surroundings

Areas in 45 minutes reach of urban centres

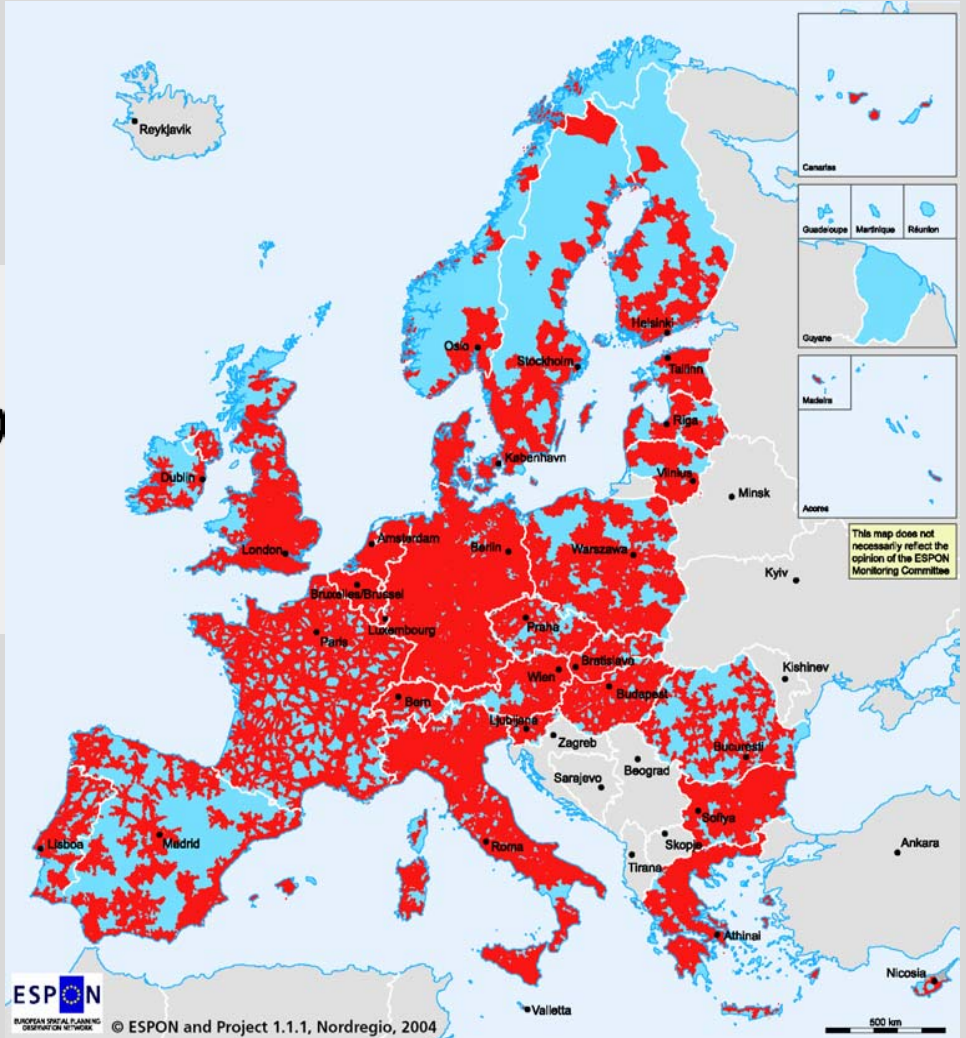


**Red** Area in 45 minutes reach from an urban centre (FUA):  
Potential Urban Strategic Horizons (PUSH)

**Light Blue** Areas more than 45 minutes  
from the nearest urban centre (FUA)

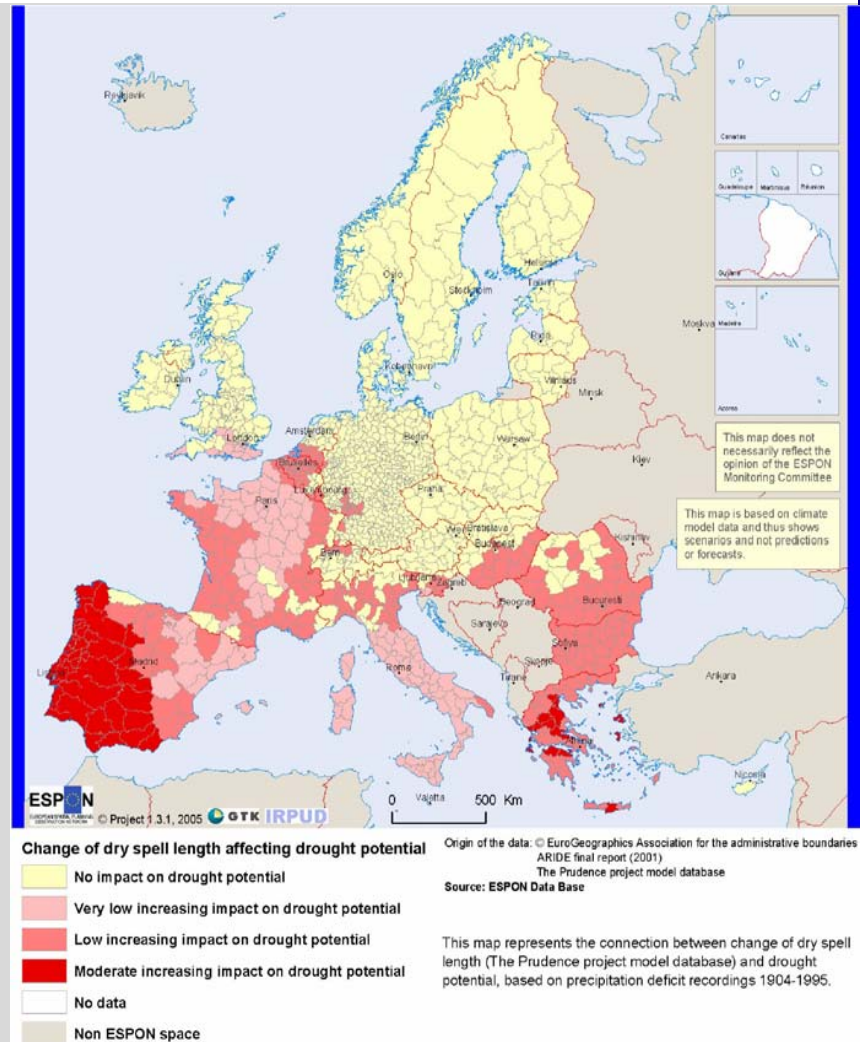
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Origin of data: ESPON Project 1.1.1, Nordregio



## Mega trends with territorial impact

- **Demography:**  
Aging and migration
- **Geography:**  
Further EU enlargements
- **Economy:**  
Globalisation & technological development
- **Energy:**  
Increasing energy prices
- **Transport:**  
Saturation of euro-corridors
- **Climate change:**  
New hazard patterns



## More information

Thank you for your attention

Please visit

[www.espon.eu](http://www.espon.eu)

Access to indicators in the ESPON database,  
mapping tools, ESPON synthesis documents  
and research results are available for free