

Räumliche Unterschiede und Potentiale in Europa: Präsentation der wesentlichen ESPON 2006 Ergebnisse

Bananen und Trauben für Erbsenzähler und Feinschmecker

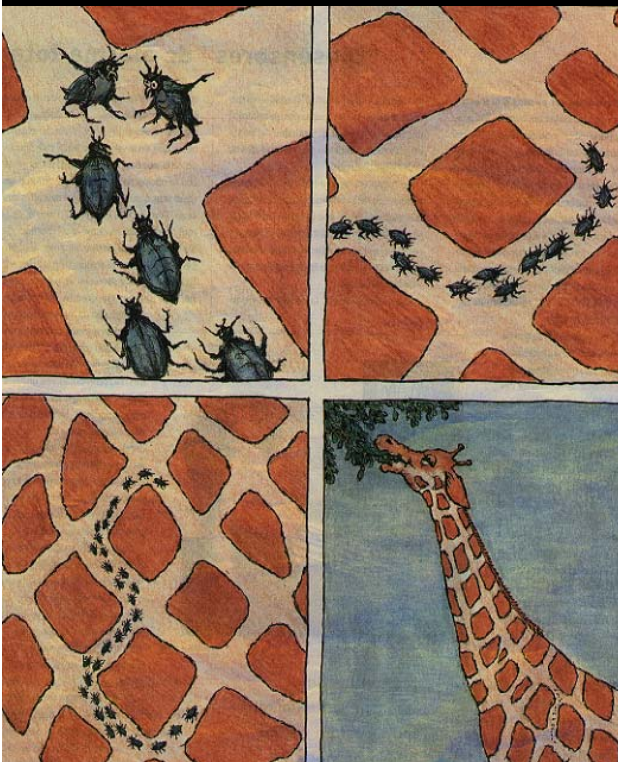
Dr. Kai Böhme



10 November 2008, Wien

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Ergebnisse auf unterschiedlichen räumlichen Ebenen



- Comparative advantages
- Entwicklungen in anderen Räumen
- Entwicklungen auf anderen Ebenen
- Widersprüche zwischen den Ebenen
- Unterschiedliche Traditionen und Kulturen
- Interdisziplinär

Was hat ESPON gemacht?

Status Quo – Zukunftsszenarien – Auswirkungen von Politiken

Masse + Verteilung von Massen (BIP, Bevölkerung etc.)

Links + Verbindungen zwischen Räumen (Transport etc.)

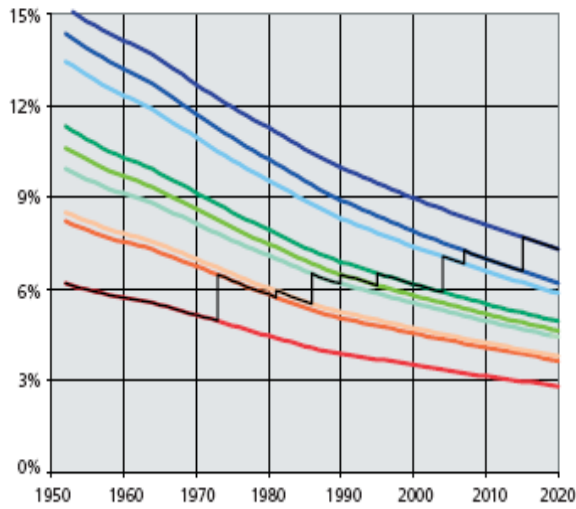
Profile + Spezialisierung der Räume

TC = Territoriale Kohäsion

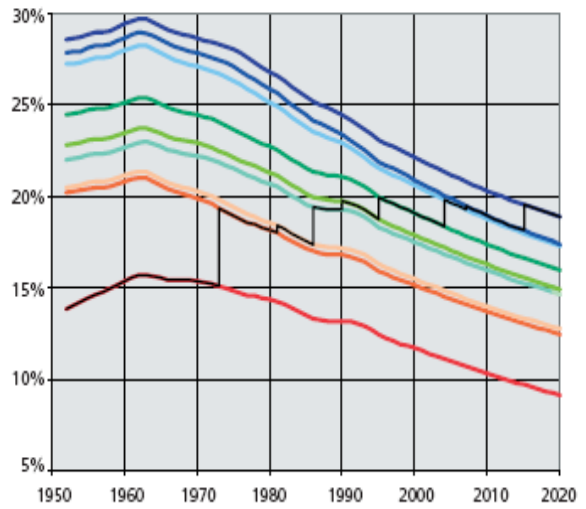
BIP & Bevölkerung

Die globale Größe der EU

Share of world population



Share of world GDP in PPS



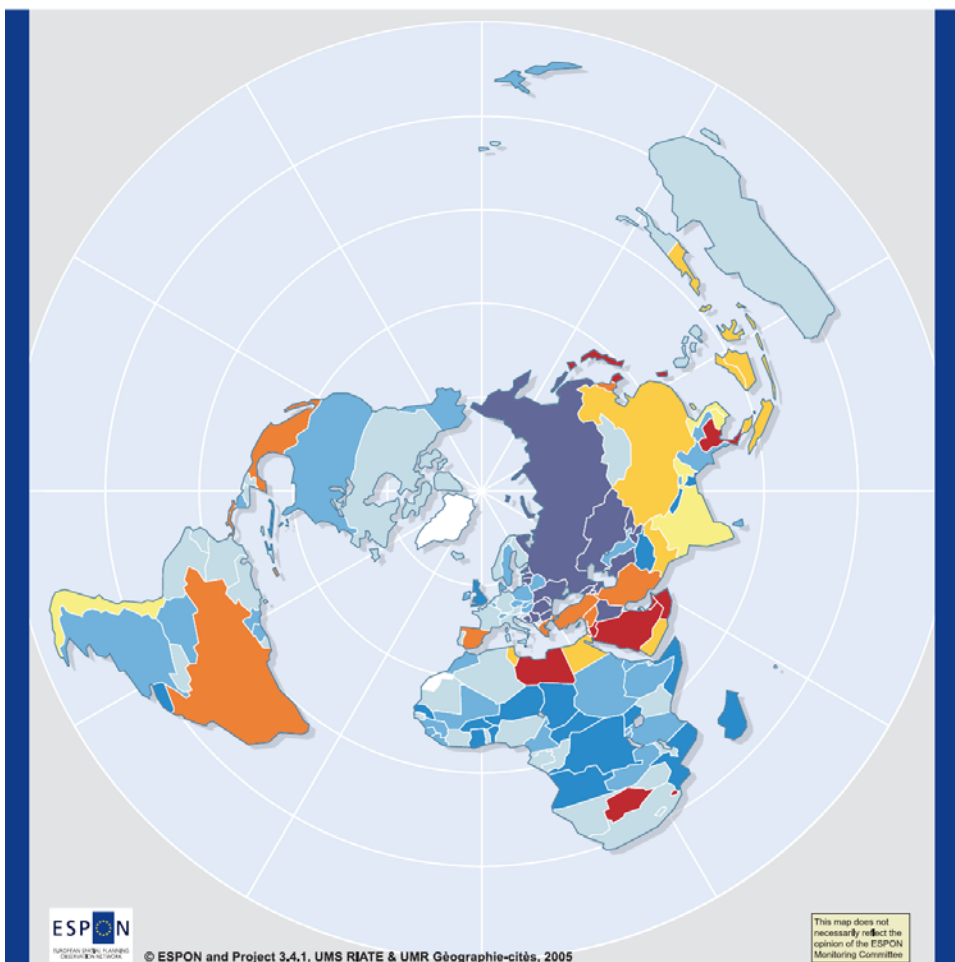
EUROPEAN SPATIAL PLANNING ORGANISATION NETWORK

© ESPON and Project 3.4.1, UMR Géographie Cité, 2006

— EU 6 — EU 9 — EU 10 — EU 12 — EU 12+ — EU 15 — EU 25 — EU 27 — EU 28 — EU



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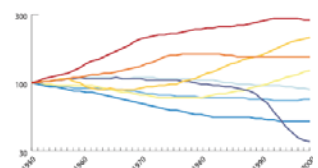


Evolution of the share of world GDP, 1952-1998

Typology of evolution of world share of GDP ppp (1952-1998)

- Type A.1 | A. Growth followed by stability
- Type A.2 | A. Growth followed by stability
- Type B.1 | B. Stability followed by growth
- Type B.2 | B. Stability followed by growth
- Type C.1 | C. Regular decline
- Type C.2 | C. Regular decline
- Type C.3 | C. Regular decline
- Type D.1 | D. Stability and brutal decline
- No data available

Index 100 = world trend



Origin of data: Angus Maddison website (2005) - <http://www.ggdc.net/maddison>

Cyprus: Data for government controlled areas only.

Source: ESPON database



EUROPEAN SPATIAL PLANNING ORGANISATION NETWORK

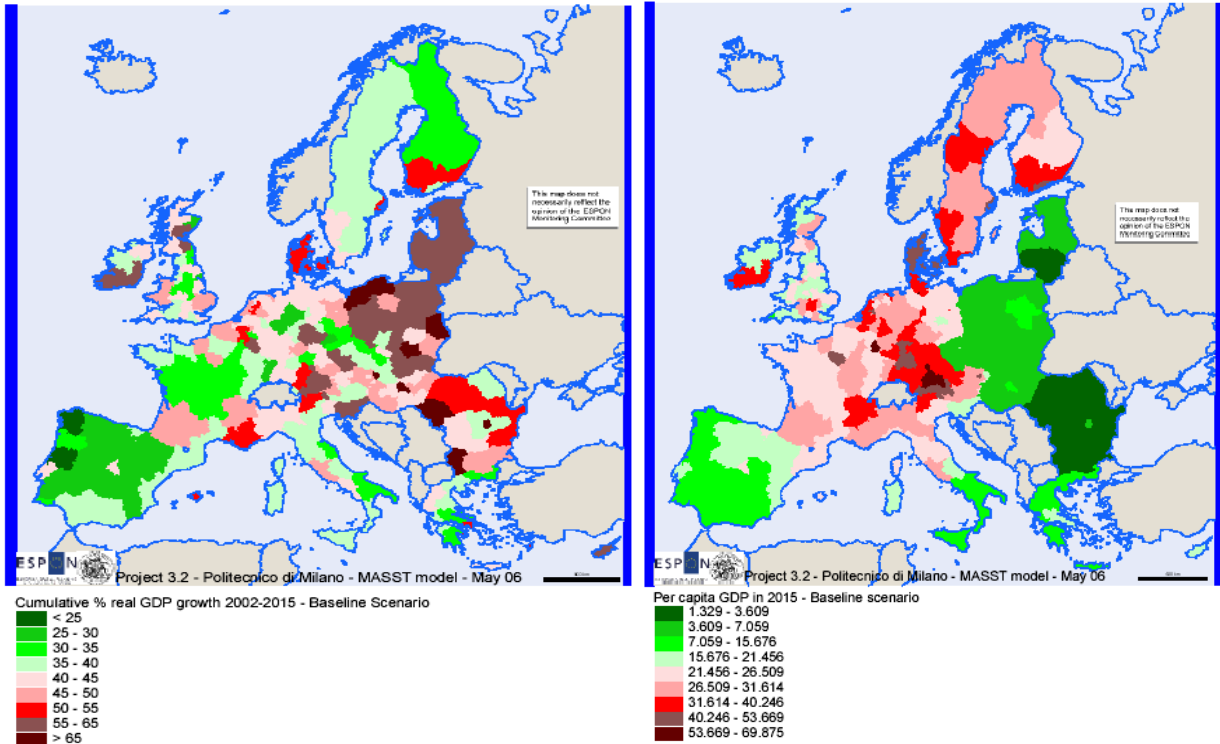
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This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

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Szenarien für 2015 Wirtschaftliche Aufholprozesse und Disparitäten



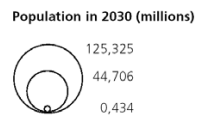
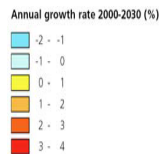
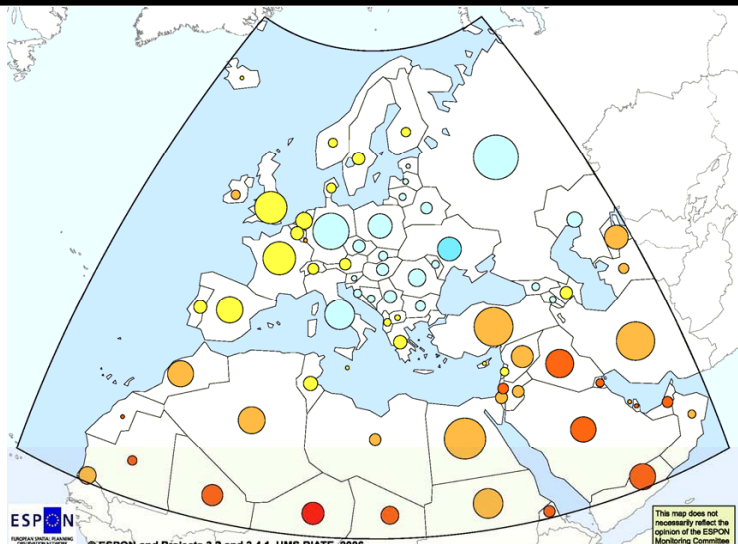
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Bevölkerung in Europa und Nachbarstaaten in 2030

Unterschiede zw. Europa und südlichen Nachbarn

Wachstum hauptsächlich außerhalb der EU

Ost-West Unterschiede in der EU mit schwachen Wachstum im Westen (ca. 1%) und langsamen Niedergang im Osten (ca. -1%)



Origin of data: United Nation Population Prospect 2005 (medium hypothesis)
Cyprus: Data for government controlled areas only
Source: ESPON database

Top 10 of most populated states in 2000

Rank	State	Millions of inhabitants
1	Russian Federation	147
2	Germany	82
3	Turkey	68
4	Egypt	67
5	Iran	66
6	France	59
7	United Kingdom	59
8	Italy	58
9	Ukraine	49
10	Spain	41

Top 10 of most populated states in 2030

Rank	State	Millions of inhabitants
1	Russian Federation	125
2	Egypt	107
3	Turkey	94
4	Iran	92
5	Germany	82
6	United Kingdom	65
7	France	64
8	Italy	55
9	Sudan	55
10	Iraq	49

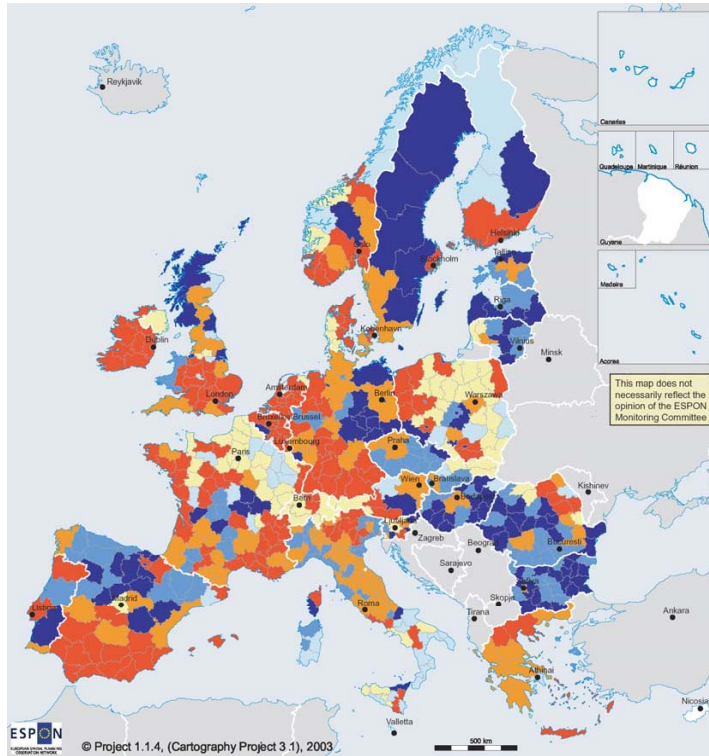
(EU Member States in blue)

(EU Member States in blue)



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Bevölkerungsentwicklung 1996-1999



Population development by components

Population increase with

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

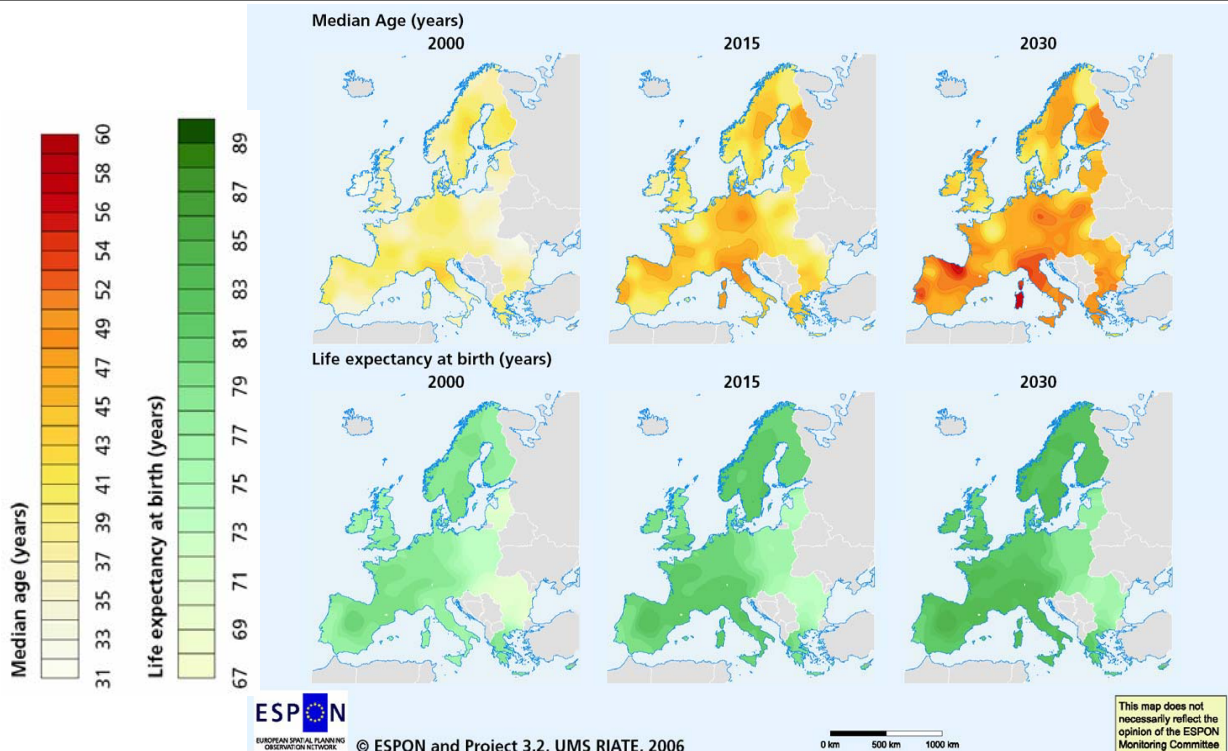
Population decrease with

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

NB: Cyprus and Malta are not covered by this map as there is no comparable migration data available for the period 1996-99.



Demographische Szenarien 2015 & 2030 median age & life expectancy at birth



This map does not necessarily reflect the opinion of the ESPON Monitoring Committee



Relevante und unmögliche Migrationszahlen

Relevante Zahlen:

Zur Beibehaltung der Bevölkerungsmenge (B1):

- 74 Millionen Immigranten (2000 - 2050) in EU15 bzw. **101** Millionen in ESPON29

Zur Beibehaltung der aktiven Bevölkerungszahlen (B2)

- 93 Millionen Immigranten in EU15, 20,5 Millionen in EU10 bzw. **124** Millionen in ESPON29

Unmögliche Zahlen:

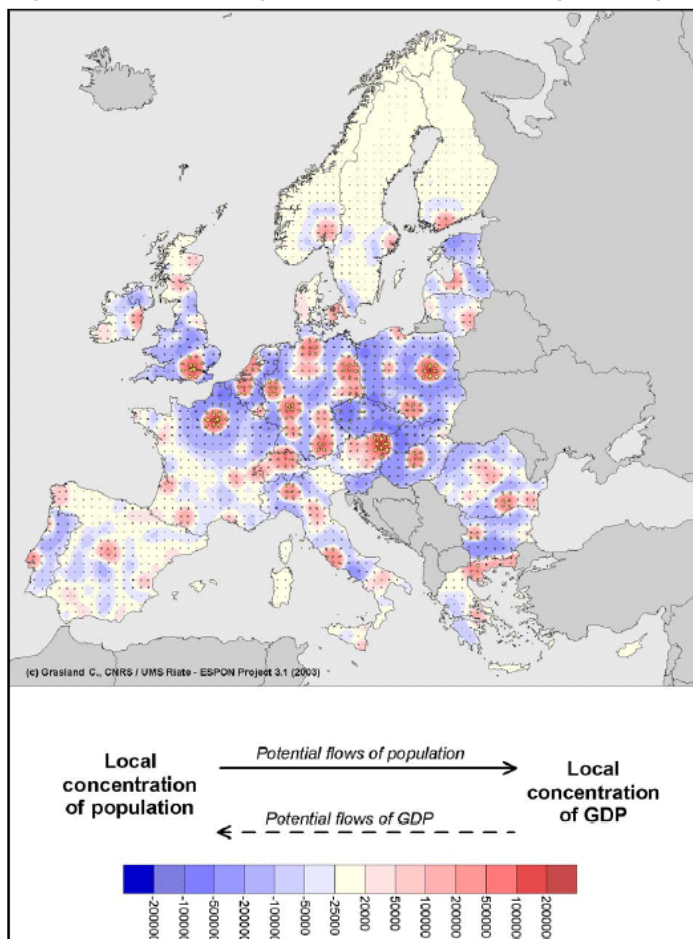
Zur Beibehaltung des Verhältnisses von arbeitender Bevölkerung zu Rentnern etc. (B3):

- 405 Millionen Immigranten (2000 – 2050) in EU15 bzw. **542** Millionen in ESPON29

Mit aktuelle Immigrationszahlen (B0):

- 41 Millionen Immigranten (2000 – 2050) in EU15 bzw. **42** Millionen in ESPON29

Map 29 Potential economic polarisation at local scale in 1999 (50-200 km)



Kohäsion & Disparitäten

Balance zwischen BIP und Bevölkerung

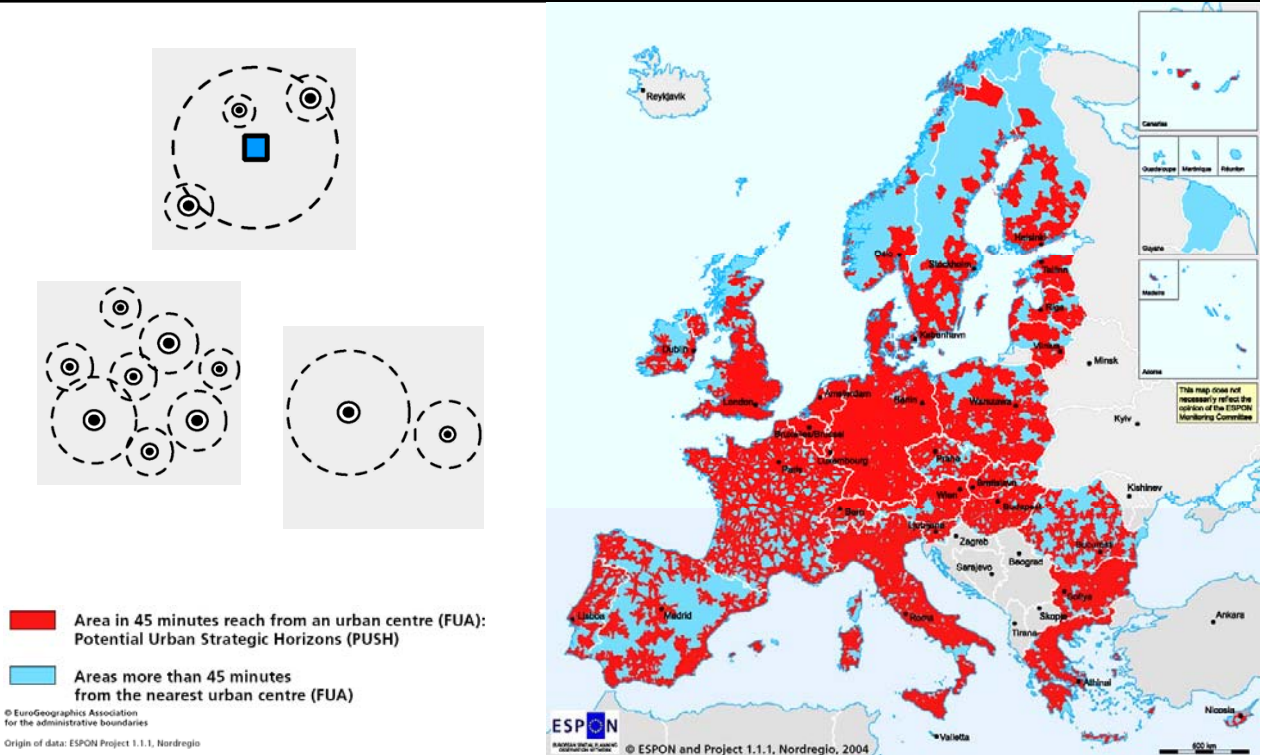
Die ungleiche Verteilung der Bevölkerung (blau) und des Wohlstandes (rot) zeigt ein eher polyzentrisches Bild.

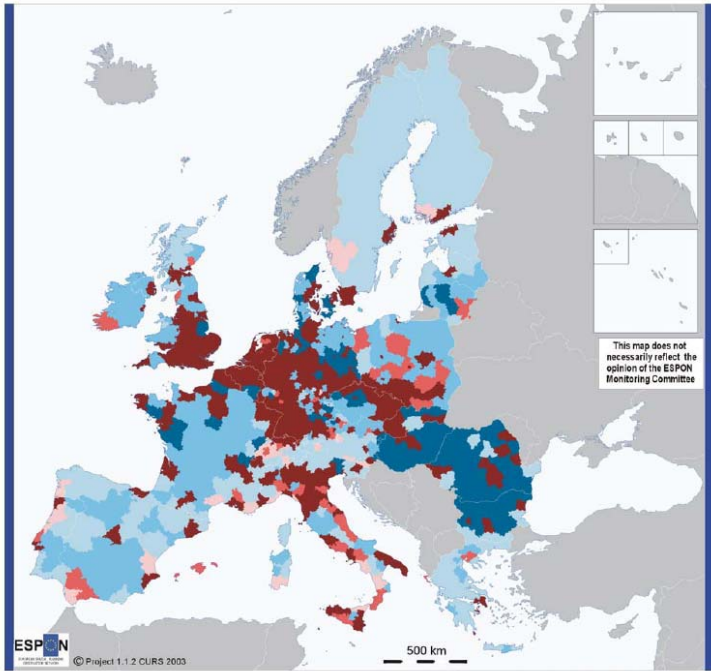
Nur in wenigen Räumen (weiß) scheinen Bevölkerung und BIP sich die Balance zu halten.

Die neoklassische Regionalökonomie ginge davon aus, dass die Mobilität von Bevölkerung und Kapital die Balance herstellt.

Stadt & Land

Metropolräume und ihr Hinterland Räume in 45 Min-Erreichbarkeit





Urban-rural typology, based on population density, FUA ranking and land cover

- High urban influence, high human intervention
- High urban influence, medium human intervention
- High urban influence, low human intervention
- Low urban influence, high human intervention
- Low urban influence, medium human intervention
- Low urban influence, low human intervention

Ranking of Functional Urban Areas (FUAs):
 Origin of data: EUROSTAT, National Statistical Offices, National experts
 Source: Nordregio, ESPON Data Base

Population density:
 Origin of data: EU15 and GC's: Eurostat, Norway and Switzerland: National Statistical Offices
 Time reference: 1999

Land cover types:
 Origin of data: EEA, Corine Land Cover 90
 Source: ESPON Data Base

The criteria for urban influence:

- Population density above the average (107 inhabitants/km² in EU25+4)
- And/or at least a European level functional urban area (based on typology made by ESPON Action 1.1.1)

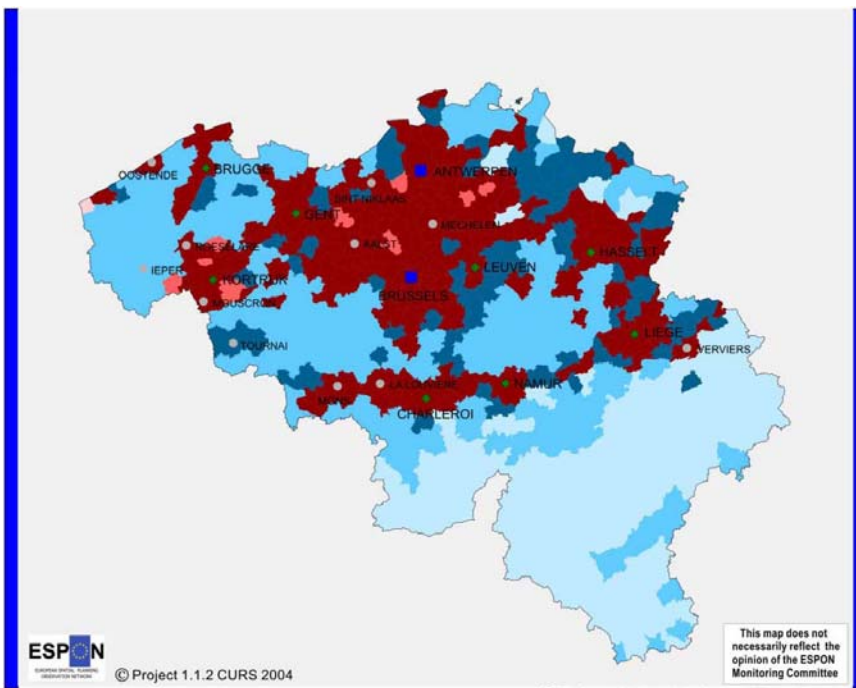
Degree of human intervention is estimated through the average shares of land covers (in EU23+3, no data on Cyprus, Malta and Norway):

- High human intervention: at least the share of artificial surfaces above average (3,48%)
- Medium human intervention: at least the share of agricultural land above average (50,36%)
- Low human intervention: only the share of residual land use above average (46,16%)

Stadt oder Land?

Bevölkerungsdichte
 Bodennutzung
 Europäische FUA

NUTS 3 oder 5 (LAU)?
 Europäische oder nationale Messlatten?



Urban-rural typology in Belgium at NUTS5-level based on national averages (239 NUTS 5 regions)

- High urban influence, high human intervention (9)
- High urban influence, medium human intervention (1)
- High urban influence, low human intervention (77)
- Low urban influence, high human intervention (179)
- Low urban influence, medium human intervention (84)
- Low urban influence, low human intervention

Land cover:
 Origin of data: Corine Land Cover 90

Population:
 Origin of data: National Statistical Office
 Time reference: 2000
 Source: CURS

Ranking of Functional Urban Areas (FUAs):
 Origin of data: EUROSTAT, National Statistical Offices, National experts
 Source: Nordregio, ESPON Data Base

Typology of Functional urban areas (from ESPON Action 1.1.1)

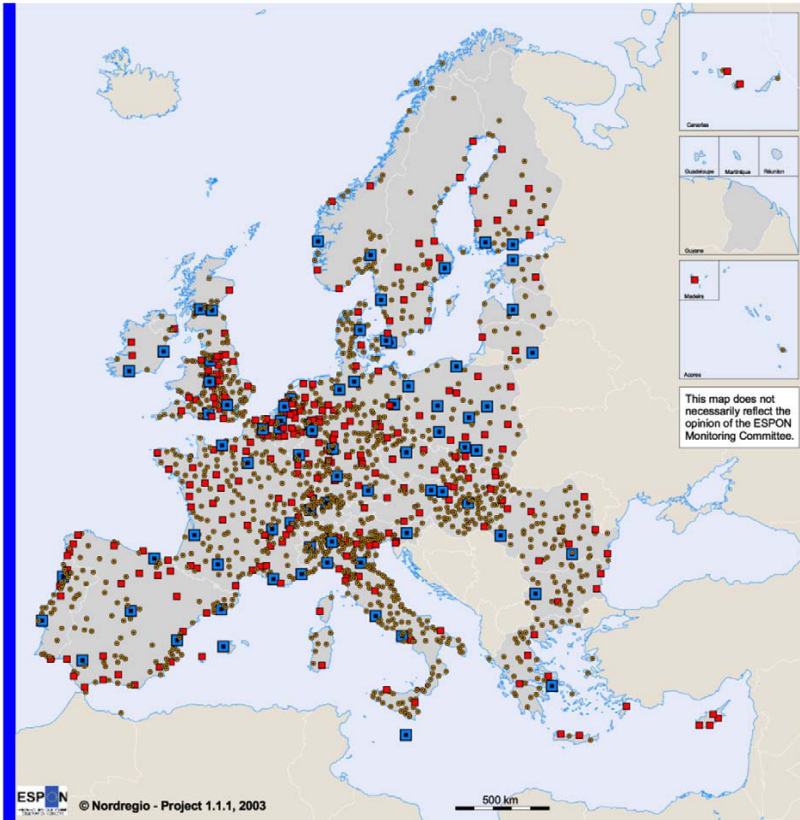
- European/Global
- National/Transnational
- Local/Regional

Stadt oder Land?

Gleiche Methode
ABER
 NUTS 5
 &
 Nationale Messlatte



Typology of Functional Urban Areas (FUAs)



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

Geographical Base: Eurostat GISCO
 Origin of data: EUROSTAT, National Statistical Offices
 National experts

Source: Nordregio

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Polyzentralität

Funktionale Stadtregionen

1.595 FUAs in Europa

76 MEGAs in Europa

...

Kriterien

Bevölkerung

Wirtschaftszentren

Industrie

Wissen

Transport

Tourismus

Öffentliche Verwaltungszentren



Funktionale MEGAs

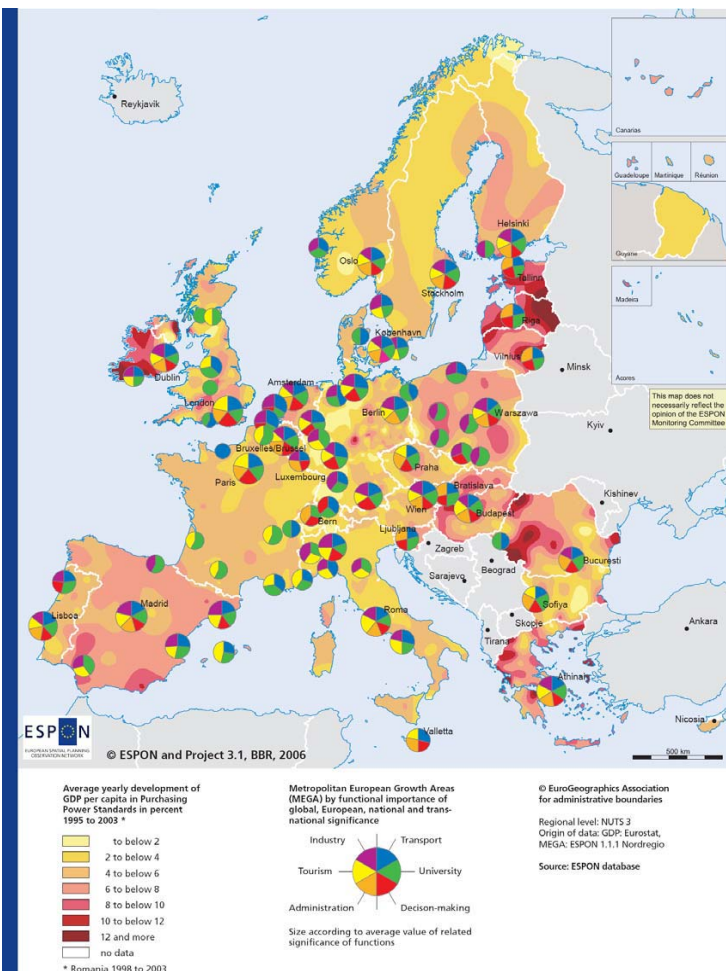
Nur 14 MEGAs international in allen sechs Punkten

...

Lässt man die Öffentlichverwaltung weg sind 20 MEGAs international in allen fünf Punkten

...

Was haben Hamburg, Düsseldorf, Frankfurt, München, Barcelona, Mailand und 14 europäische Hauptstädte gemeinsam?



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

- to below 2
- 2 to below 4
- 4 to below 6
- 6 to below 8
- 8 to below 10
- 10 to below 12
- 12 and more
- no data

* Romania 1998 to 2003

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

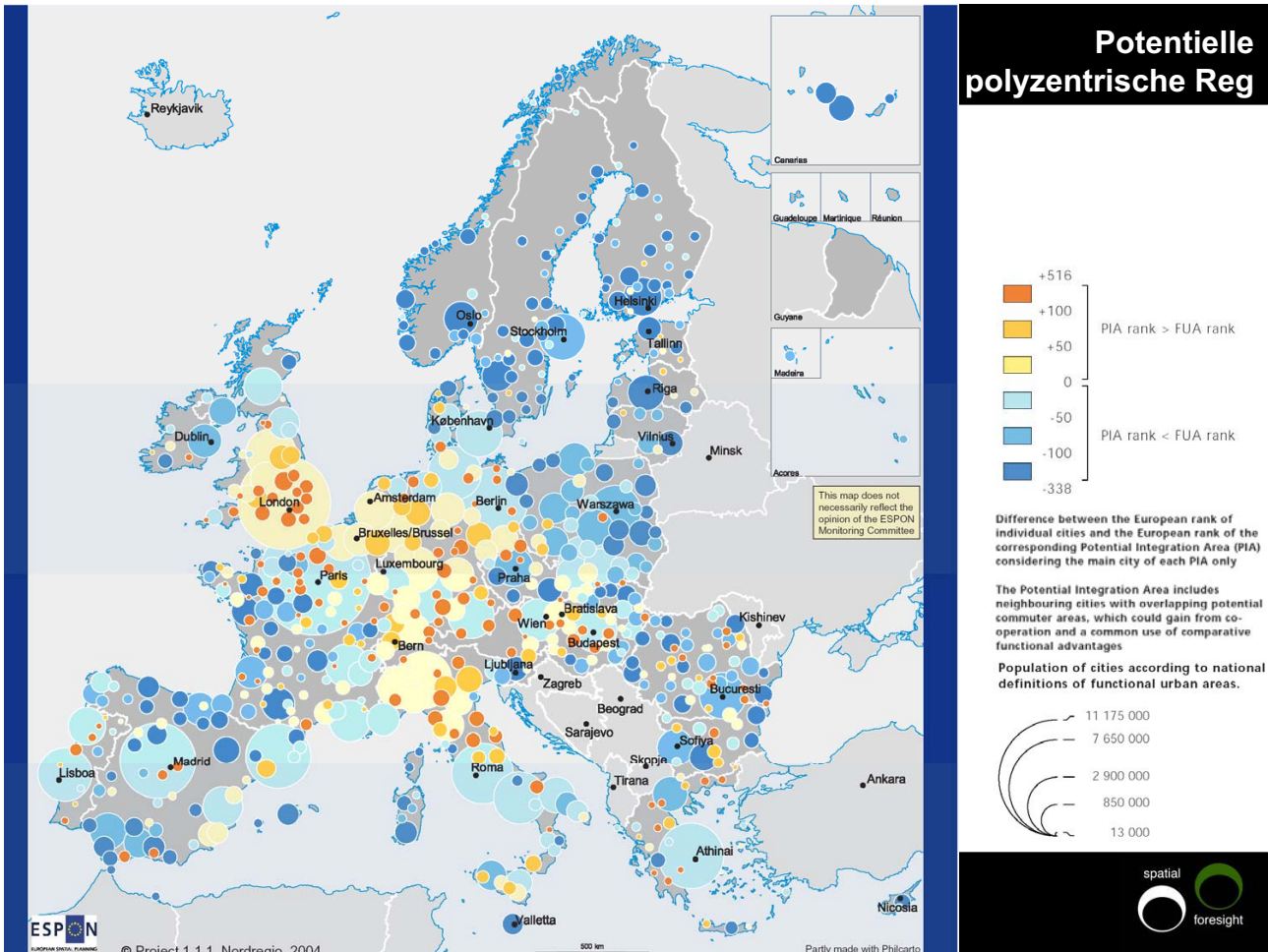
- Industry
- Transport
- University
- Decision-making
- Administration
- Tourism

Size according to average value of related significance of functions

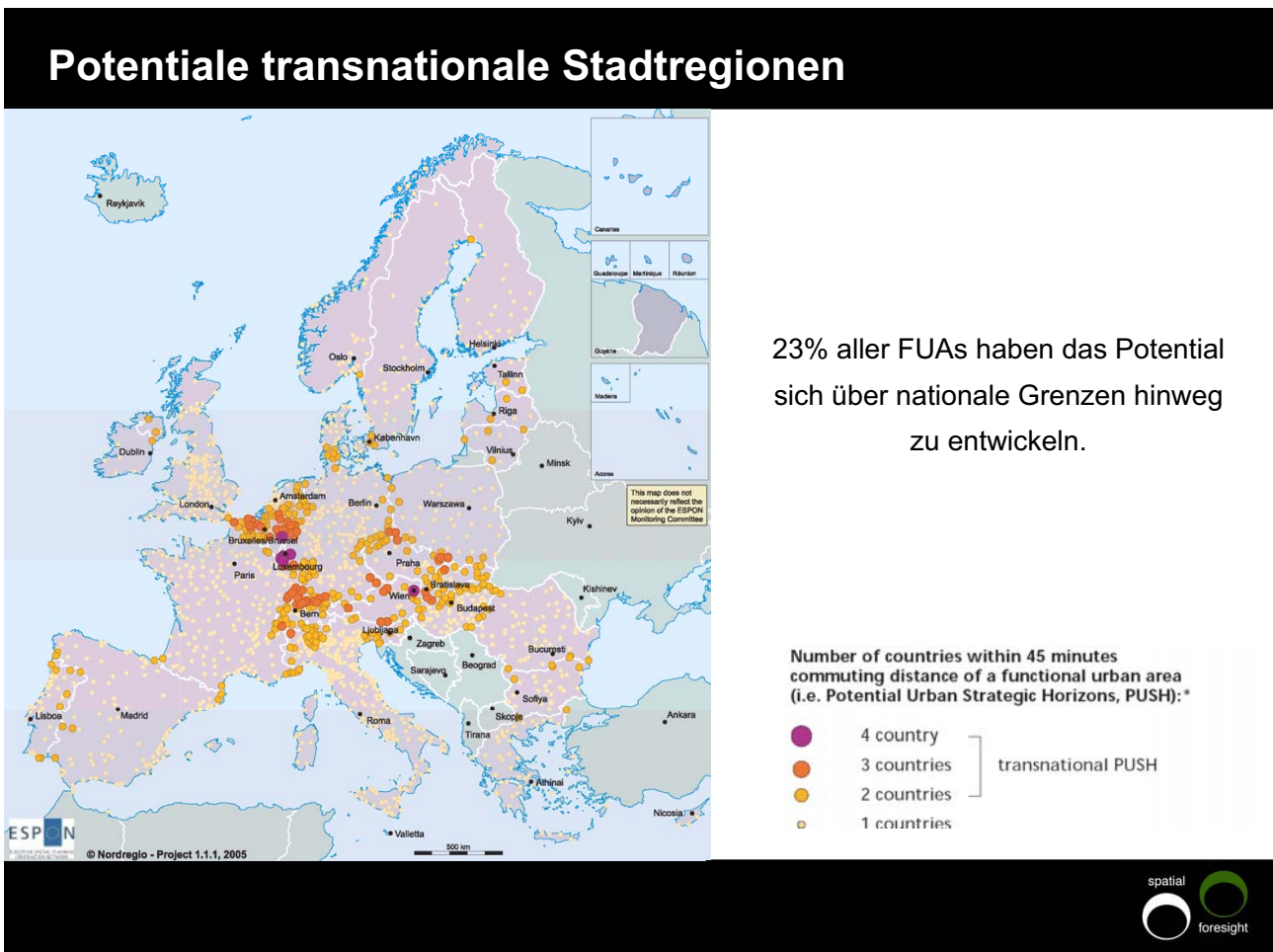
© EuroGeographics Association for administrative boundaries
 Regional level: NUTS 3
 Origin of data: GDP: Eurostat, MEGA: ESPON 1.1.1 Nordregio
 Source: ESPON database



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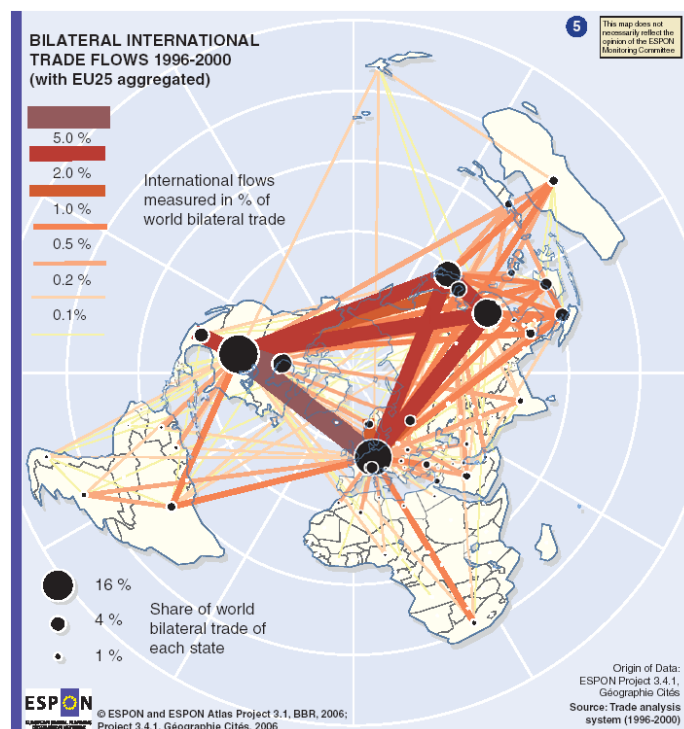
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Transport & Kommunikation

Bilaterale internationale Handelsströme



Globale Flughäfen 2002

Global gateways - Type A

- A1** Predominately oriented to Northern and Southern Middle East, Sub-Saharan Africa, Southern and Eastern Asia and Western Pacific
- A2** Predominately oriented to Caucasus and Dniepr and Maghreb
- A3** Predominately oriented to Balkan and Turkey and Maghreb
- A4** Predominately oriented to Latin America

Central nodes - Type C

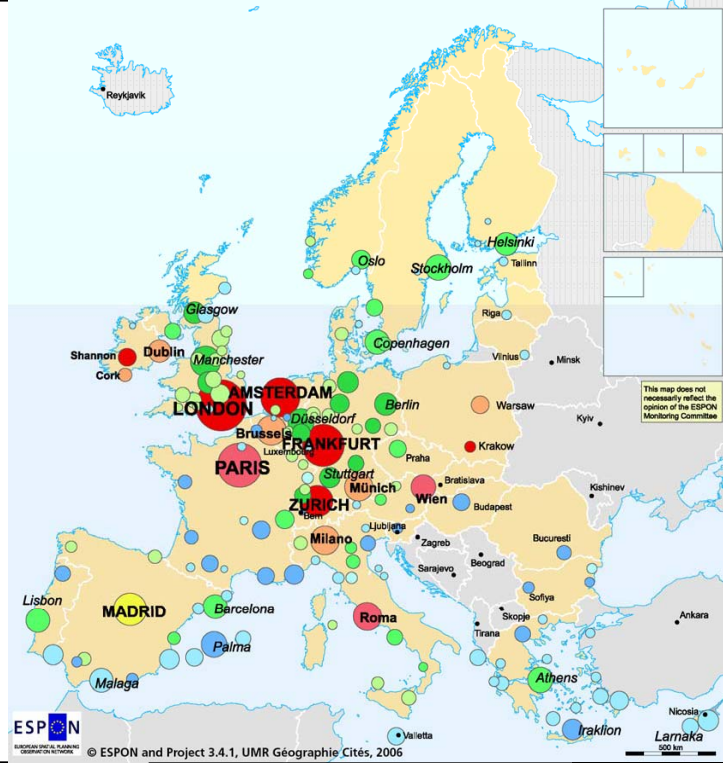
- C1** Predominately oriented to Northern and West Central Europe and Maghreb
- C2** Predominately oriented to Northern and West Central Europe
- C3** Predominately oriented to West Central Europe

Central nodes - Type B

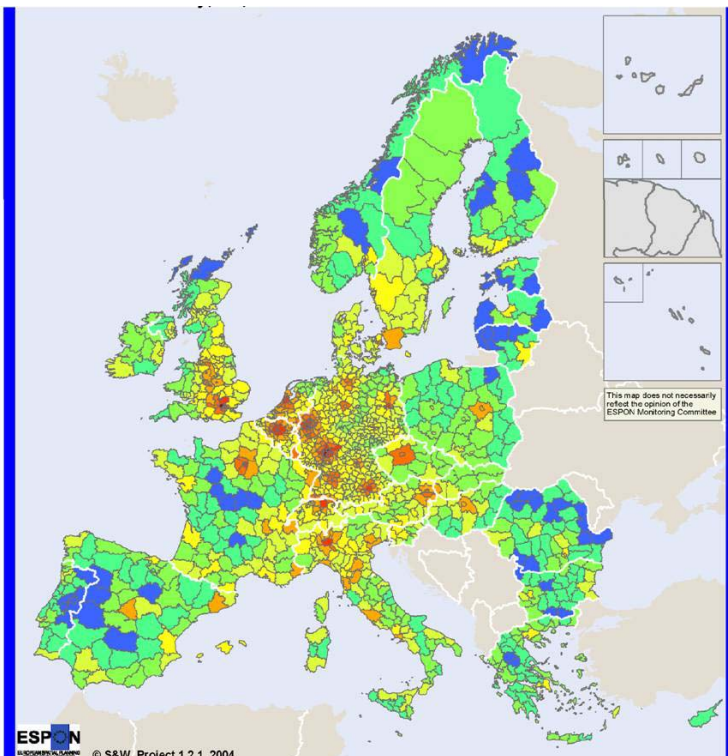
- B1** Predominately oriented to Southern Europe, Balkans and Turkey, Maghreb and Northern Middle East
- B2** Predominately oriented to Northern, Southern and East Central Europe and Russia
- B3** Predominately oriented to Southern Europe

© EuroGeographics Association for the administrative boundaries
Origin of data: IATA database

Global interactions (in billions of passengers.km 2000)



ESPON
EUROPEAN SPATIAL RESEARCH INFRASTRUCTURE
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Potentielle Erreichbarkeit Luft, 2001

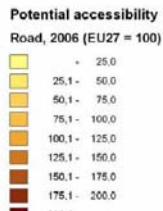
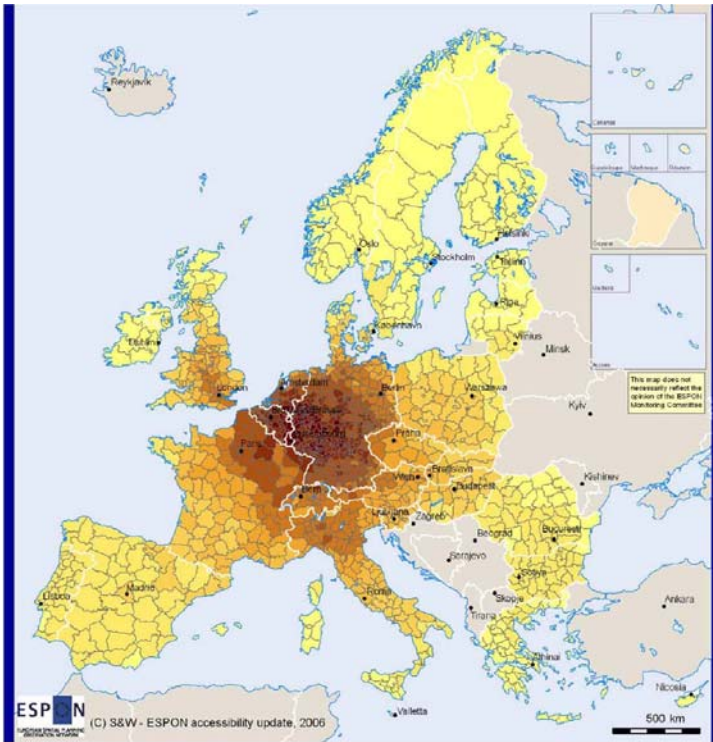
Accessibility (ESPON Space = 100)



© EuroGeographics Association for the administrative boundaries
Origin of data: Spiexermann & Wegener (S&W)



Potentielle Erreichbarkeit Strasse, 2006

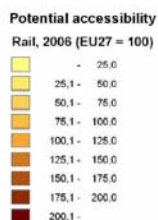
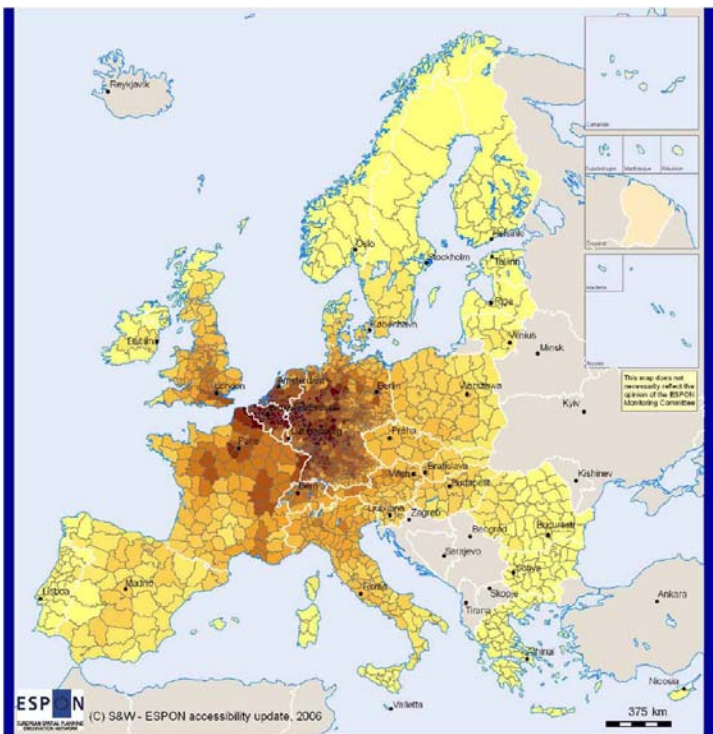


(C) EuroGeographics Association
for the administratives boundaries
Data sources:
RRG GIS Database
S&W Accessibility Model

25



Potentielle Erreichbarkeit Schiene, 2006



(C) EuroGeographics Association
for the administratives boundaries
Data sources:
RRG GIS Database
S&W Accessibility Model

26

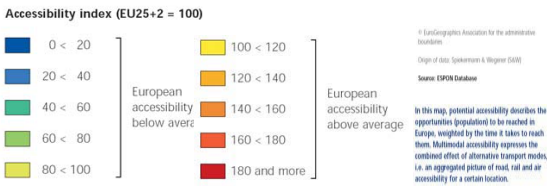
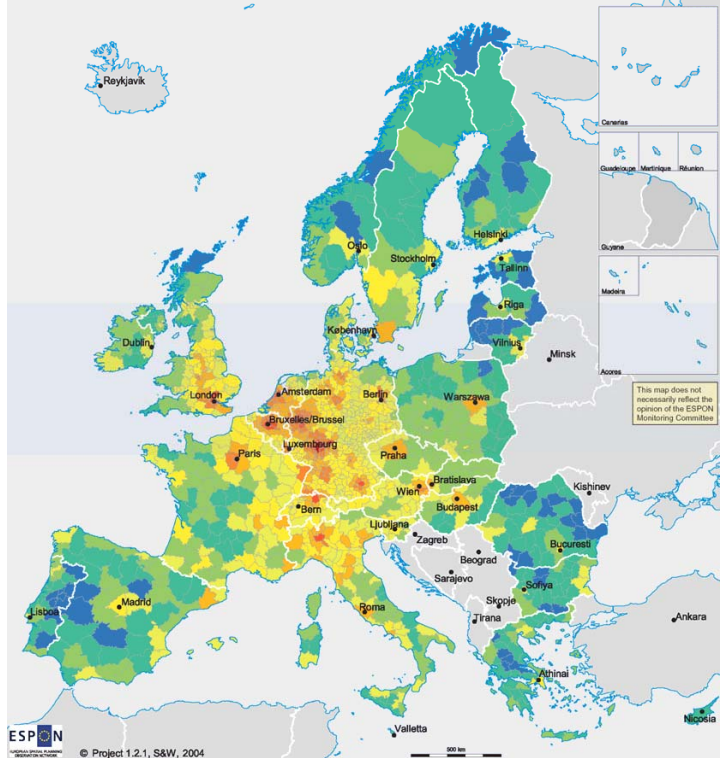


Multimodale Erreichbarkeit, 2001

Erreichbarkeit von Bevölkerung in Zeit.

Zentrum-Peripherie-Bild von Weg und Schiene wird durch den Luftverkehr etwas balanciert.

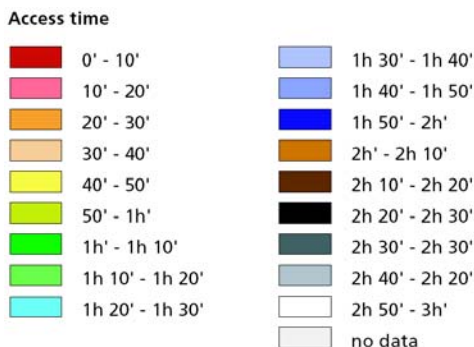
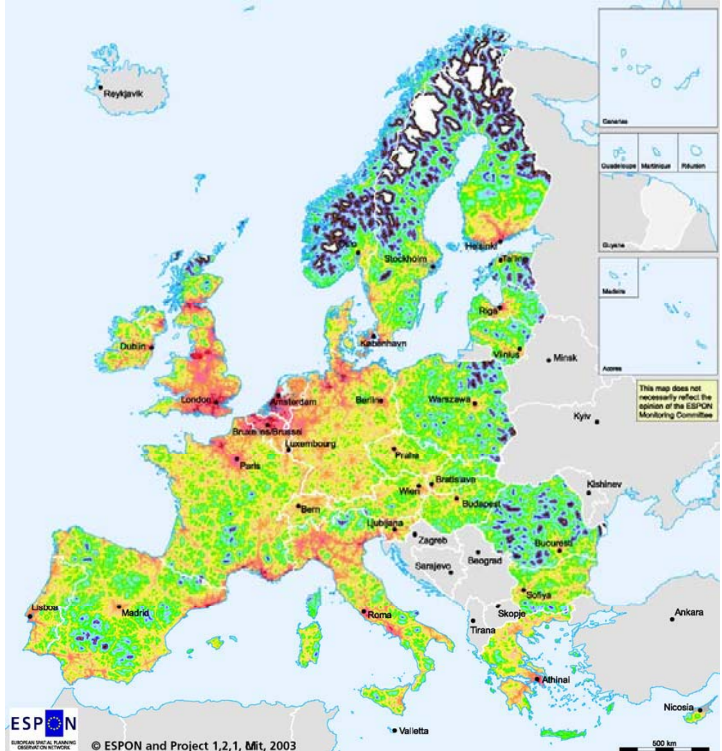
Europäische und nationale Zentrum-Peripherie-Bilder.



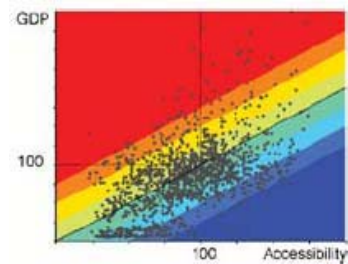
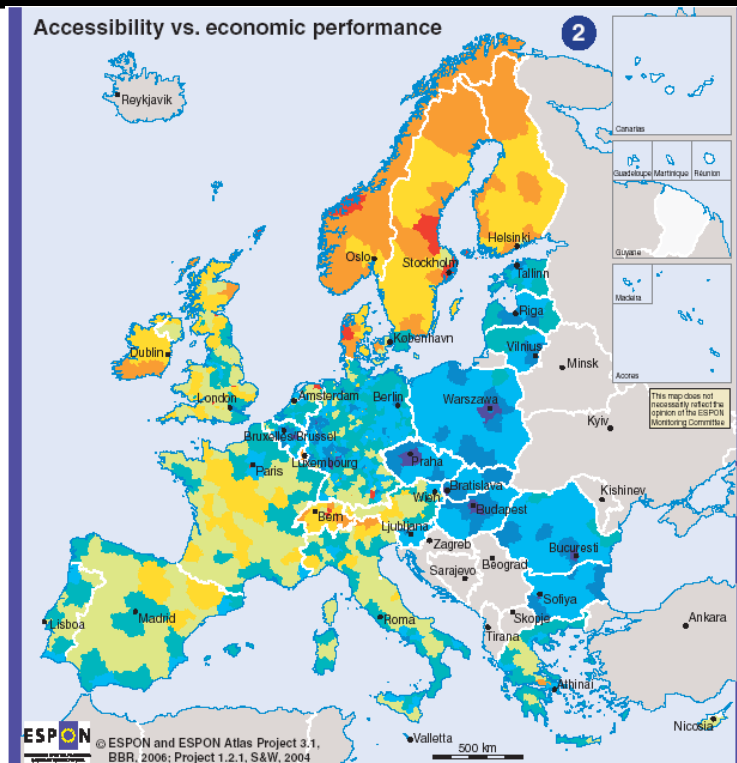
Erreichbarkeit von Transport Terminals

Autobahnauffahrten, Bahnhöfe, Häfen, und Flughäfen.

Erreichbarkeit im Alltag?



Erreichbarkeit und Wirtschaftsentwicklung

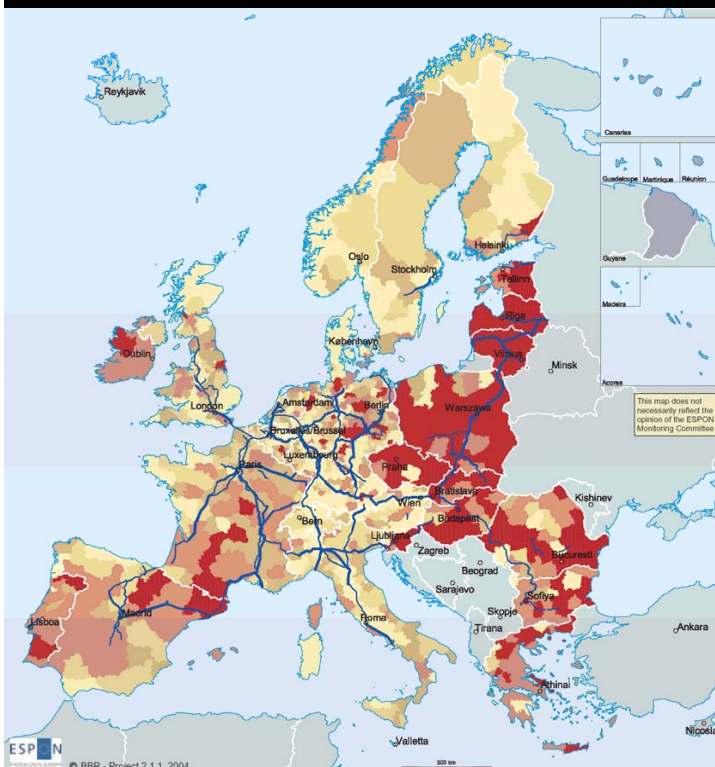


- Strong underperformance
- Clear underperformance
- Underperformance
- Little underperformance
- Little overperformance
- Overperformance
- Clear overperformance
- Strong overperformance
- no data



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Szenario – Veränderung der Transportströme 2000-2020



TEN-STAC base year 2000 vs. European+ scenario 2020

Regional change of vehicle unit kilometres travelled

- up to 25 %
- 25 % up to below 33 %
- 33 % up to below 43 %
- ESPON space average
- 43 % up to below 70 %
- 70 % and more

Markedly Increasing Railway Transport Flows

- 2.5 up to 5.0 million passengers or 10.0 up to 20.0 million tonnes
- 5.0 up to 7.0 million passengers or 20.0 up to 30.0 million tonnes
- more than 7.0 million passengers or more than 30.0 million tonnes (per year, difference 2000-2020)

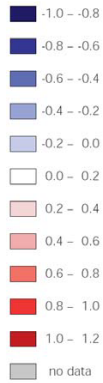
© EuroGeographics Association for administrative boundaries.
Origin of data: IEA Transport research and modeling, TEN-STAC scenarios. Traffic forecast and origin/destination on the Trans-European Transport Network.
1 symbol and equals 1 cm or 0.5 km or 0.5 inch.
Source: ESPON Database



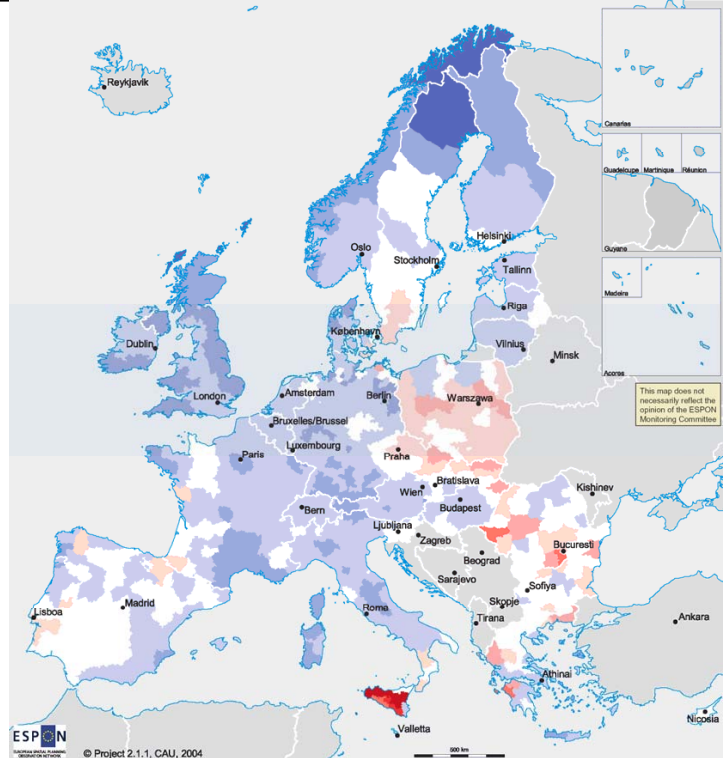
30

BIP-Veränderung 2001-2021 bei Umsetzung von TEN/TINA und höheren Transportkosten

Change of equivalent variation in % of GDP



© EuroGeographics Association for the administrative boundaries
 Origin of data: CGEurope model results
 Regional level: NUTS 3
 Source: ESPON Database



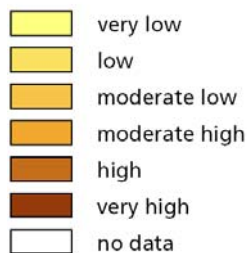
ESPON
 © Project 2.1.1, CAU, 2004



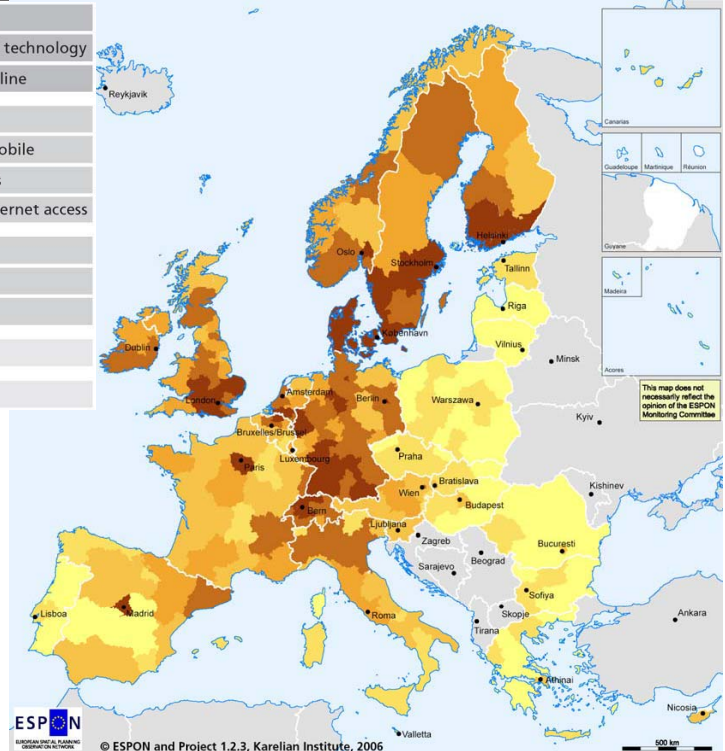
Information society readiness, growth and impact, 2003

IS Readiness 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
IS Growth Availability and use of ICT technologies	Households	Households with a PC
		Households with at least one mobile
		Households with internet access
	Businesses	Households with broadband internet access
		Access to fibre backbones
IS Impact Economic implications of IS	Businesses	Firms with internet access
		Firms with websites
	Impact on labour market	Hightech employment
	Innovative activity	ICT patents

Information society index, 2003



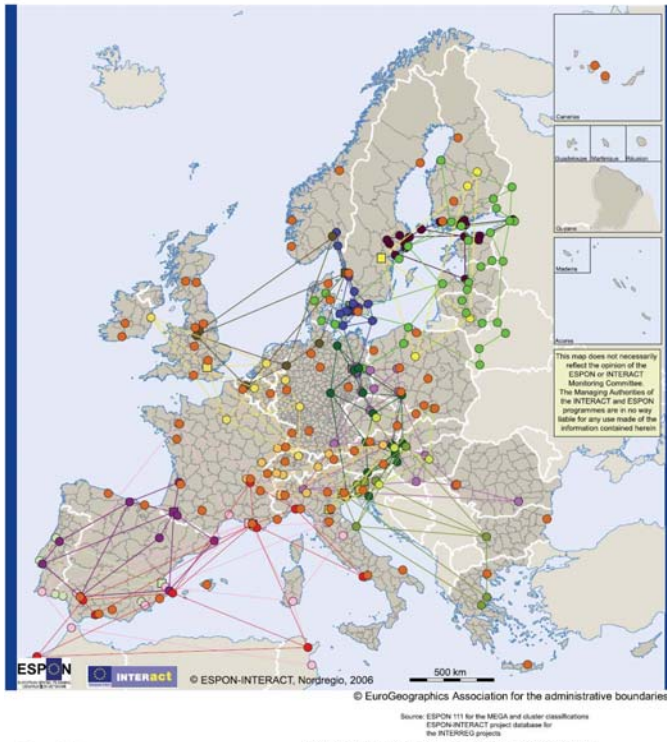
Source: ESPON database
 © EuroGeographics Association for administrative boundaries
 Regional level: NUTS 2
 Origin of data: ESPON Project 1.2.3, Karelian Institute



ESPON
 © ESPON and Project 1.2.3, Karelian Institute, 2006



Figure 13: Second tier cities and main INTERREG III B projects dealing with polycentric development



Type of cluster:

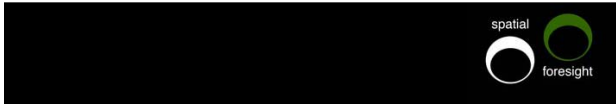
● Second tier nodal regions

Projects in measures linked to polycentric development:

Squares refer to the lead partners and circles to other partners involved in the project.

- | | | |
|-------------------|---------|--------------|
| AlpCity | CZM | Polynet |
| AMAT | COINCO | RePus |
| ATI | Defris | SICI |
| Baltic Palette II | MECIBS | VISP |
| CIUMED | PolyDev | Vital Cities |

INTERREG III B



Spezialisierung

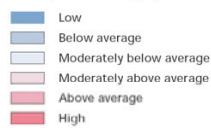


Forschung und Entwicklung: Business Enterprise Sector

Die stärksten Metropolregionen haben oft auch starke FuE-Profile.

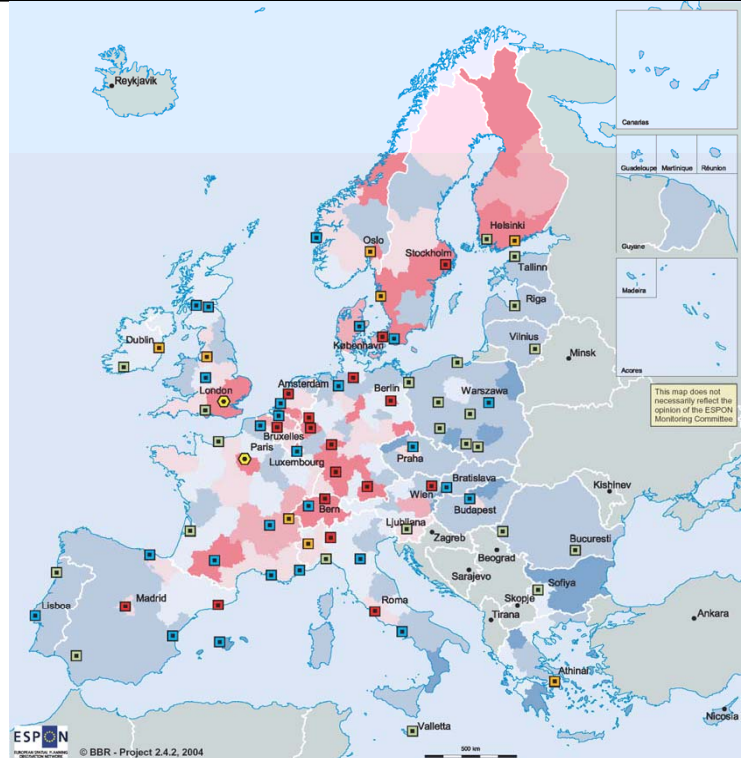
Hohe FuE-Ausgaben oft in den Hauptstadtregionen.

Degree of importance of research and development as an aggregate of 2 indicators: *

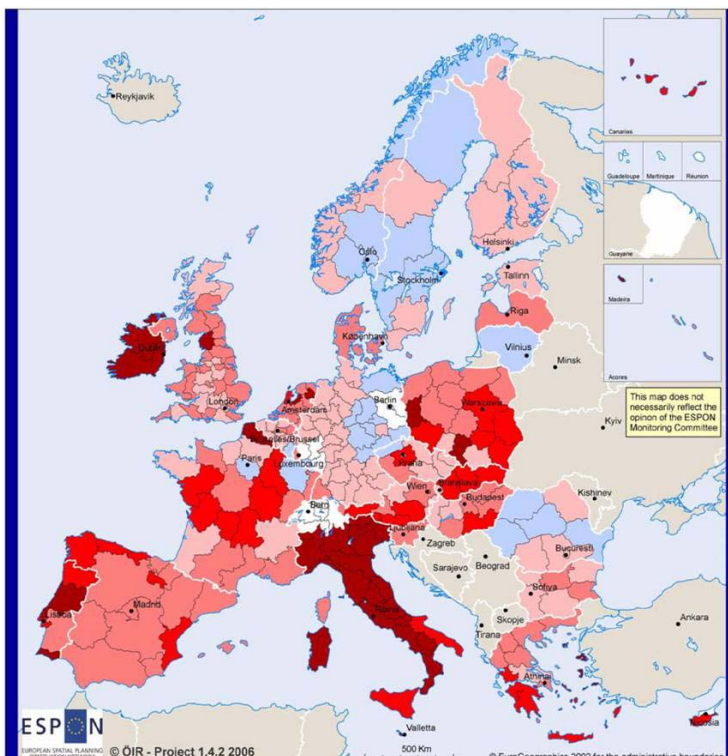


* Additive combination of standard indicators: expenditure of R&D, and in BES as percent of total personnel

Metropolitan Growth Areas



ESPON
© BBR - Project 2.4.2, 2004



Tertiary education change 2000-2004 in percent



Regional level: NUTS 2

Data not available: France (partly), Germany (partly), Switzerland

Employed persons with tertiary education - change 2000-2004 in %

Source: Eurostat

Ausbildung

Arbeitnehmer mit
Universitätsausbildung
Veränderung 2000-2004 in %



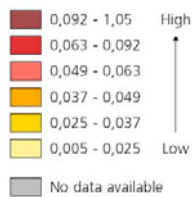
Kulturelle Arbeit, 2005 (as share of local active population)

Beschäftigte in kulturellen und kreativen Berufen (in %)

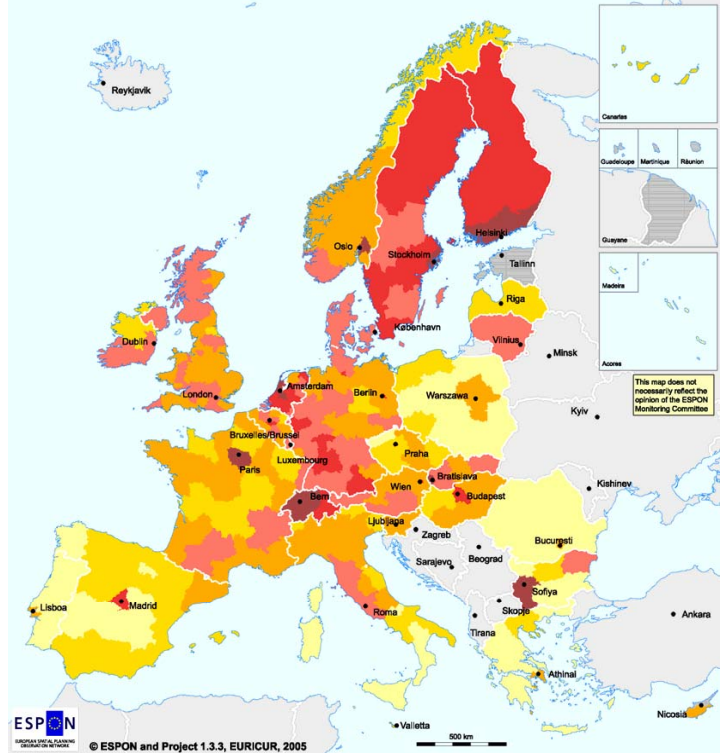
Finnland, Schweden, Niederlande und Schweiz toppen.

Regionale Variationen folgen der Urbanstruktur.

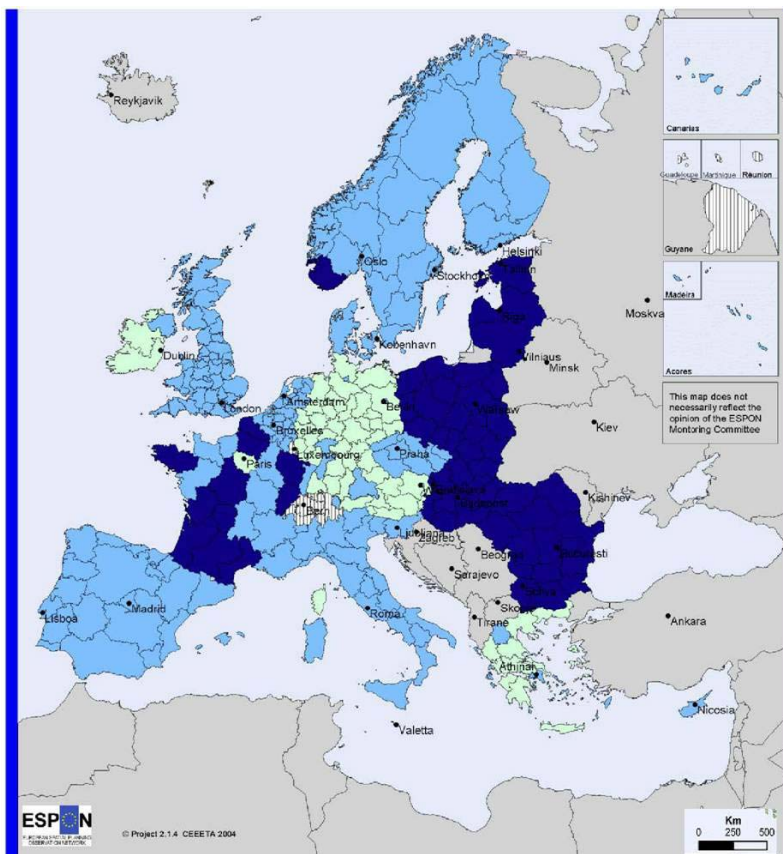
Number of cultural jobs (ISCO 88) as share of the local active population in % - classification based on distribution sestiles



© EuroGeographics Association for administrative boundaries
Regional level: NUTS 2
Origin of data: Eurostat
Cyprus: Data for government controlled areas only
Source: ESPON database



ESPON
© ESPON and Project 1.3.3, EURICUR, 2005



Sensitivity to variations on energy prices
Low
Medium
High
No Data

© EuroGeographics Association for the administrative boundaries
Source: Eurostat, National Statistics

Energie Preisempfindlichkeit

High self-sufficiency / Low price sensitivity

UK, Denmark, Norway

Low self-sufficiency / High price sensitivity

Latvia, Lithuania, Hungary, Slovenia, Bulgaria, Slovakia, Cyprus, most of France and parts of Italy.

High self-sufficiency / High price sensitivity

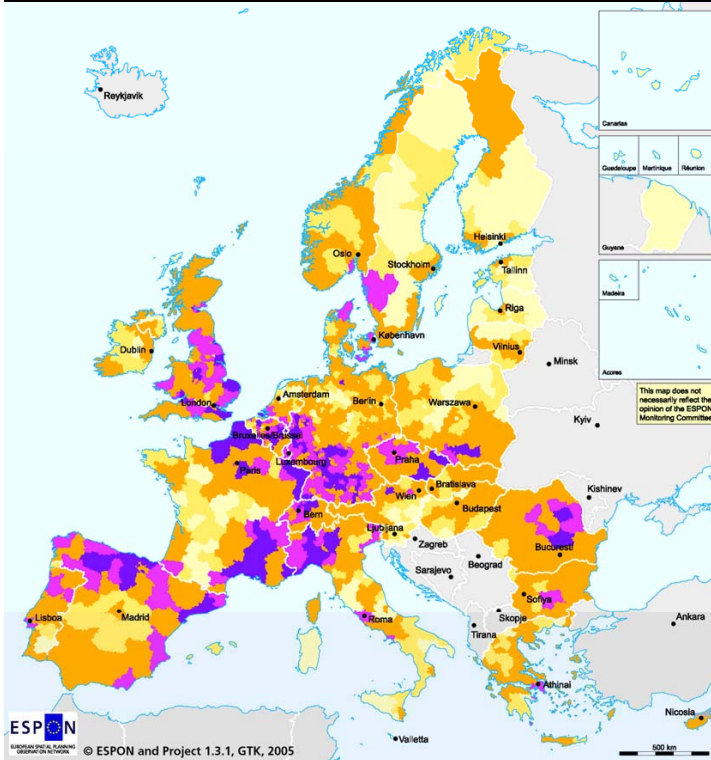
Estonia, Poland, Czech Republic, Romania,

Low self-sufficiency / Low price sensitivity

All regions of Portugal, Spain, Ireland, Sweden, Finland, Germany, Austria, Belgium, most of Italy, parts of France, all Greece



Natürliche und Technische Katastrophen



Naturkatastrophen

- Lawinen
- Dürren
- Erdbeben
- Extremtemperaturen
- Überschwemmungen
- Waldbrände
- Erdbeben
- Sturmfluten
- Tsunamis
- Vulkanausbrüche
- Winter- und Tropenstürme

Technische Katastrophen

- Flugverkehrsunglücke
- Atomkraftwerke
- Ölindustrie

2 x 3 macht 4 Widdewiddewitt und Drei macht Neune

Das Pentagon dehnt sich aus.

Es gibt starke Metropolen außerhalb des Pentagons.

Erreichbare Metropolen haben die besten Lissabonwerte.

Die Geographie von FuE und Kulturbeschäftigten ist urban.

Funktionelle Spezialisierung von Städten ist wichtig.

Räumliche Zusammenarbeit von Städten und Hinterland ist wichtig.

Wirtschaftliche Lissabonindikatoren

7 der 14 offiziellen Lissabonindikatoren sind auf regionalen Niveau erhältlich.

Der Norden und die blaue Banane liegen vorne.

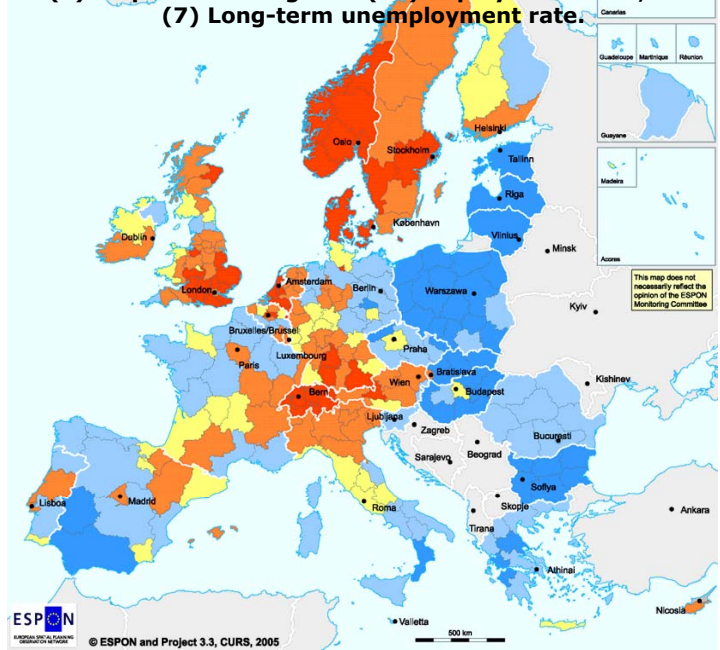
In einigen Ländern stehen die Metropolräume hervor.

Performance

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



- (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, and
- (7) Long-term unemployment rate.

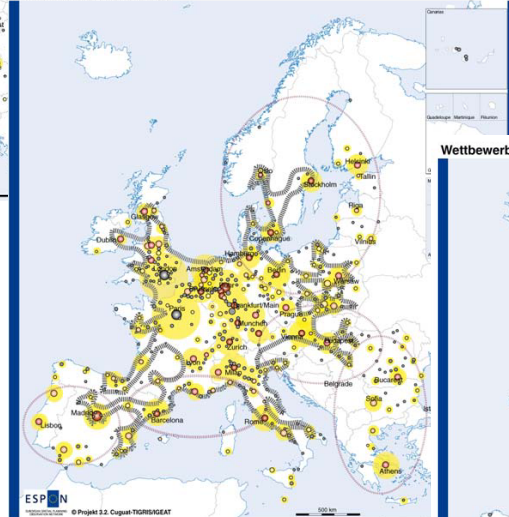


Trendszenario



Szenarien 2030

Kohäsion-orientiertes Szenario



Wettbewerb-orientiertes Szenario



ESPON Werkzeugkasten

Wo gibt es welche Daten?

→ ESPON Data Navigator

Vergleichbare regionale
Daten für 29 Länder

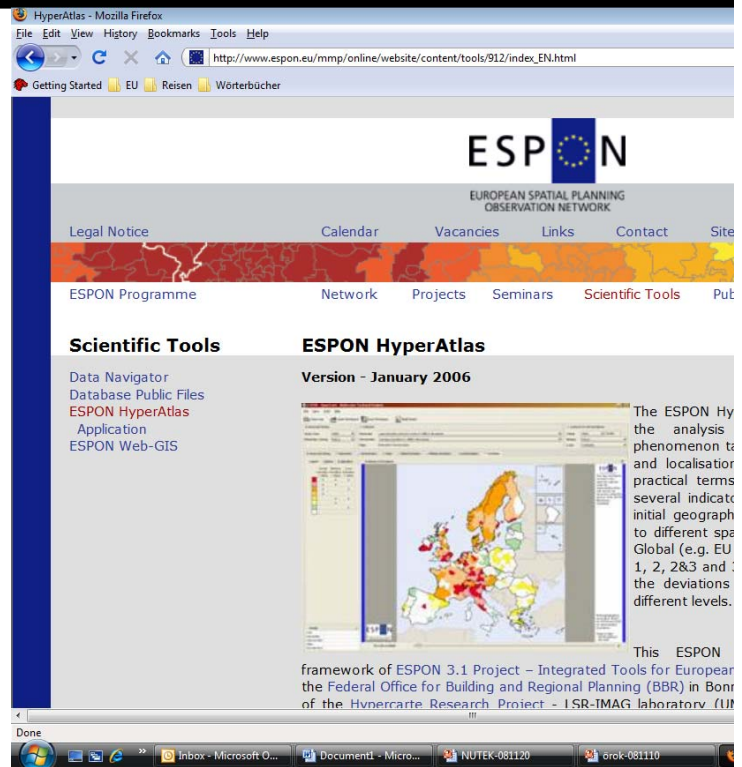
→ ESPON Database

Do it yourself Europa Karten

→ ESPON HyperAtlas

→ ESPON Web-GIS

www.espon.eu



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Vielen Dank für Ihre Aufmerksamkeit!

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