

4^{ème} journée des laboratoires de SIG romands

27 juin 2012 | HEIG-VD, Yverdon

Indicateurs de la cohésion territoriale européenne : les défis de la représentation d'une notion floue

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Project background

INTERCO, a 2-year project funded by ESPON (2010-2012)

European Observation Network for Territorial Development and Cohesion
(formerly European Spatial Planning Observation Network)

<http://www.espon.eu/>

Partners

- University of Geneva, SWITZERLAND (Lead)
- National Technical University of Athens, GREECE
- Nordregio - Nordic Centre for Spatial Development, Stockholm, SWEDEN

Experts

- Spatial Foresight, Heisdorf, LUXEMBOURG
- RRG Spatial Planning and Geoinformation, Oldenburg i.H., GERMANY

Final Report delivered in February 2012

Latest presentation of results :

ESPON Open Seminar, Aalborg, Denmark, 14 June 2012

Project background

- Aim of the project
 - To develop indicators and indices that can be used to measure territorial cohesion, complex territorial development, structural issues, territorial challenges and opportunities as well as territorial effects at different geographical levels and types of regions
- Main challenges
 - To find a shared understanding of territorial cohesion (TC) and of means to achieve it
 - To define what to measure and how

EU Regional Policy

€347billion for the period 2007-2013

35.7% of the total EU budget

Transport 75.5 bn

Research, development, innovation 65.7 bn

Environmental protection and risk prevention 49.7 bn

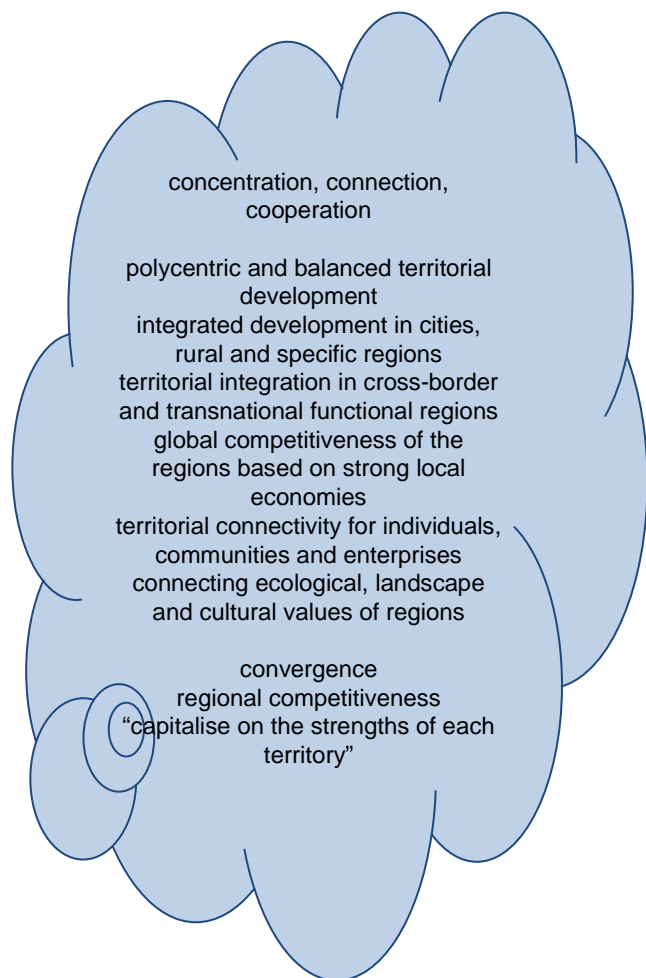
Territorial Agenda 2020 priorities (2011)

1. Promote polycentric and balanced territorial development
2. Encouraging integrated development in cities, rural and specific regions
3. Territorial integration in cross-border and transnational functional regions
4. Ensuring global competitiveness of the regions based on strong local economies
5. Improving territorial connectivity for individuals, communities and enterprises
6. Managing and connecting ecological, landscape and cultural values of regions

<http://www.eu2011.hu/files/bveu/documents/TA2020.pdf>

From policy objectives to indicators

Policy objectives



Themes

Strong local economies ensuring global competitiveness
Innovative territories
Fair access to services, market and jobs
Inclusion and quality of life
Attractive regions of high ecological values and strong territorial capital
Integrated polycentric territorial development

Indicators

GDP per capita in PPS
Unemployment rate
Old age dependency ratio
Labour productivity in industry and services
Labour productivity per person employed
Population aged 25-64 with tertiary education
Intramural expenditures on R&D
Employment rate 20-64
Access to compulsory school
Access to hospitals
Accessibility of grocery services
Access to university
Accessibility potential by road
Accessibility potential by rail
Accessibility potential by air
Disposable household income
Life expectancy at birth
Proportion of early school leavers
Gender imbalances
Difference in female-male unemployment rates
Ageing index
Potential vulnerability to climate change
Air pollution: PM ₁₀
Air pollution: Ozone concentrations
Soil sealing per capita
Mortality, hazards and risks
Biodiversity
Renewable energy potential
Population potential within 50 km
Net migration rate
Cooperation intensity
Cooperation degree
Polycentricity index

Green Paper on Territorial cohesion (2008)

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0616:FIN:EN:PDF>

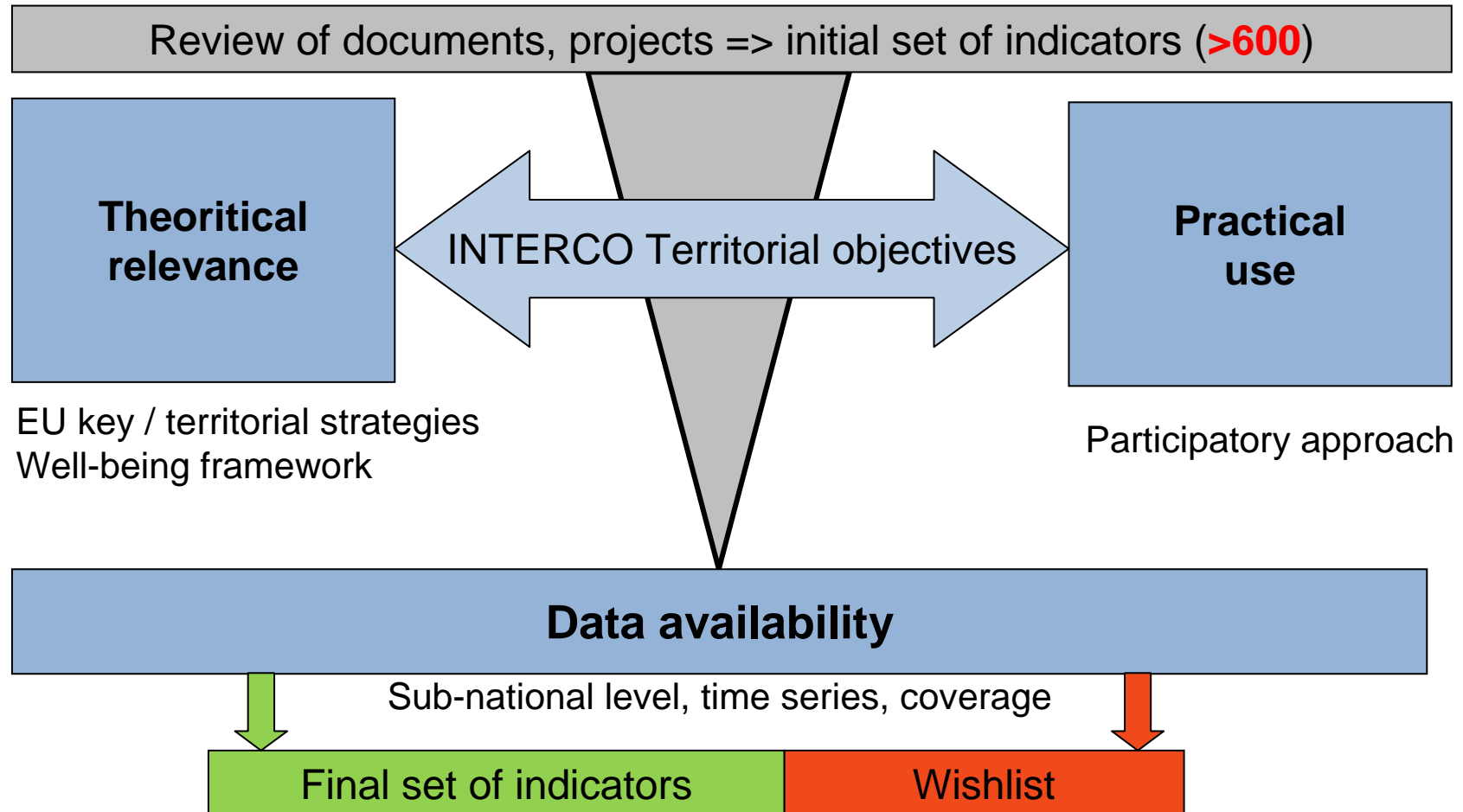
- concentration
- connection
- cooperation

- other buzz words
 - convergence, regional competitiveness,
“capitalise on the strengths of each territory”

So many themes to be covered

1. Strong local economies ensuring global competitiveness
2. Innovative territories
3. Fair access to services, market and jobs
4. Inclusion and quality of life
5. Attractive regions of high ecological values and strong territorial capital
6. Integrated polycentric territorial development (including cooperation and governance)





Indicators selection process



INTERCO criteria for indicators selection

- Cover TC dimensions (TA 2020, EU 2020, ...)
 - Cover sustainable development and well-being dimensions
 - Measure policy outputs/impacts rather than inputs
- Measure political targets (normative)
 - Relevant to Europe 2020 and TA 2020 priorities
 - Indicate a clear desirable direction of change
- Available for time series
- Available at sub-national levels
 - NUTS 3, degree of urbanisation
- Cover the entire ESPON space
- Simple indicator (no composite)

Final sets of indicators (1/6)

Strong local economies ensuring global competitiveness				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
GDP per capita in PPS	NUTS 3	1997-2008	high	
Unemployment rate	NUTS 3	1999-2009	high	
Old age dependency ratio	NUTS 3	2000-2010	medium	
Labour productivity in industry and services	NUTS 2	2007	n.a.	n.a.
Labour productivity per person employed	NUTS 0	1995-2010	medium	

Disparities = StDev / Avg



0-0.2 small disparities

0.2-0.4 medium disparities




0.4-0.6 high disparities

>0.6 very high disparities







Final sets of indicators (2/6)

Innovative territories				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
Population aged 25-64 with tertiary education	NUTS 2	2008-2010	medium	
Intramural expenditures on R&D	NUTS 2	2007	high	n.a.
Employment rate 20-64	NUTS 2	1999-2009	small	

Final sets of indicators (3/6)

Fair access to services, market and jobs				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
Access to compulsory school	NUTS 0, degree of urbanisation	2008	very high	n.a.
Access to hospitals	NUTS 0, degree of urbanisation	2008	very high	n.a.
Accessibility of grocery services	NUTS 0, degree of urbanisation	2007	very high	n.a.
Access to university	(SILC data)	2007		n.a.
Accessibility potential by road	NUTS 3	2001, 2006	very high	
Accessibility potential by rail	NUTS 3	2001, 2006	very high	
Accessibility potential by air	NUTS 3	2001, 2006	high	

Final sets of indicators (4/6)

Inclusion and quality of life				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
Disposable household income	NUTS 2	1996-2007	medium	
Life expectancy at birth	NUTS 2	2000-2008	small	
Proportion of early school leavers	NUTS 1	2000-2010	high	
Gender imbalances	NUTS 3	2000-2009	small	
Difference in female-male unemployment rates	NUTS 2	1999-2010	very high	
Ageing index	NUTS 3	2000-2010	small	

Final sets of indicators (5/6)

Attractive regions of high ecological values and strong territorial capital				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
Potential vulnerability to climate change	NUTS 3	2011	n.a.	n.a.
Air pollution: PM ₁₀	NUTS 3	2009	small	n.a.
Air pollution: Ozone concentrations	NUTS 3	2008	medium	n.a.
Soil sealing per capita	NUTS 3	2006	very high	n.a.
Mortality, hazards and risks	n.a.	n.a.		
Biodiversity	n.a.	n.a.		
Renewable energy potential	n.a.	n.a.		

Final sets of indicators (6/6)

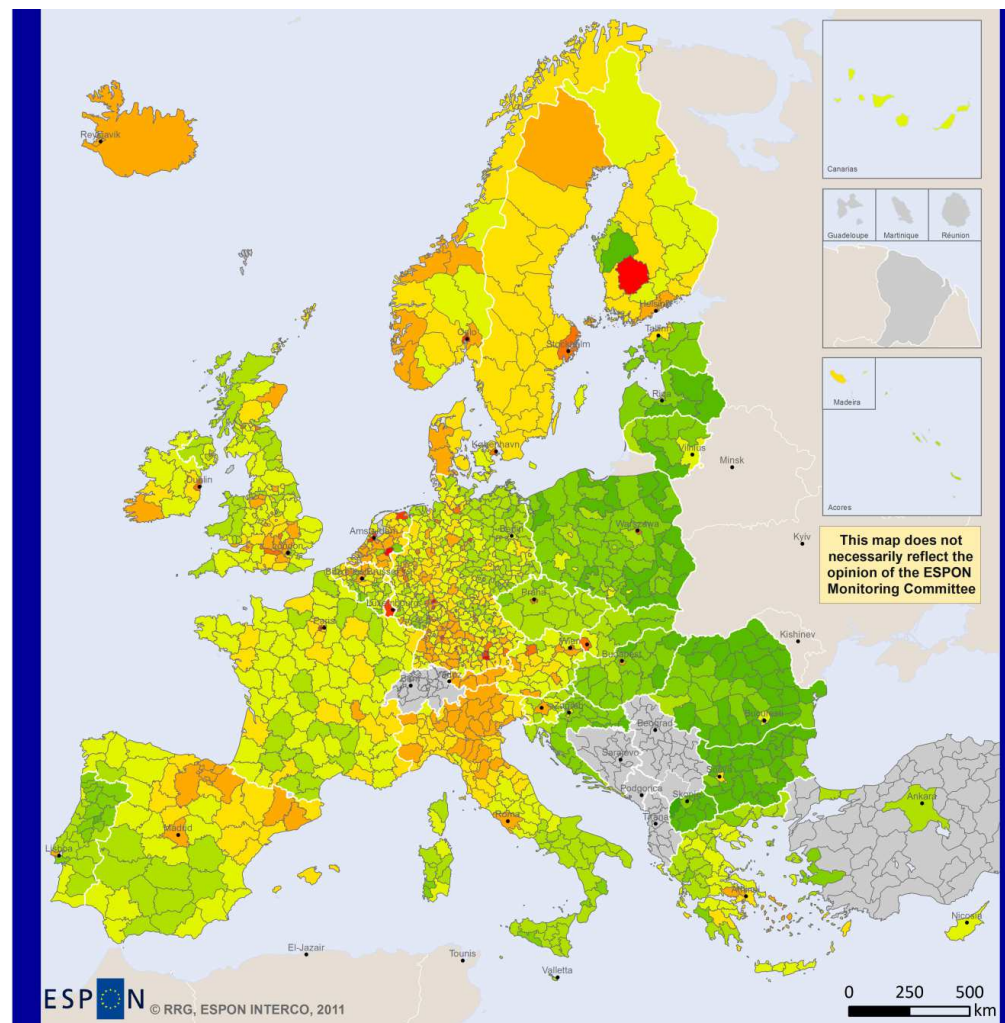
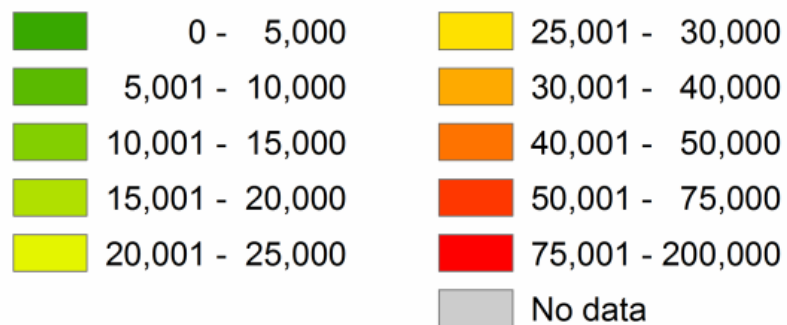
Integrated polycentric territorial development				
Indicator	Spatial resolution	Years available	Disparities	Change in disparities
Population potential within 50 km	NUTS 3	2008	very high	n.a.
Net migration rate	NUTS 3	2007	medium	n.a.
Cooperation intensity	NUTS 2	2008	high	n.a.
Cooperation degree	NUTS 2	2008	medium	n.a.
Polycentricity index	n.a.	n.a.		

GDP per capita in PPS 2008 (NUTS-3)



increase desired,
lagging regions should
catch up faster

Euros in Purchasing Power Standards











Disposable household income 2007

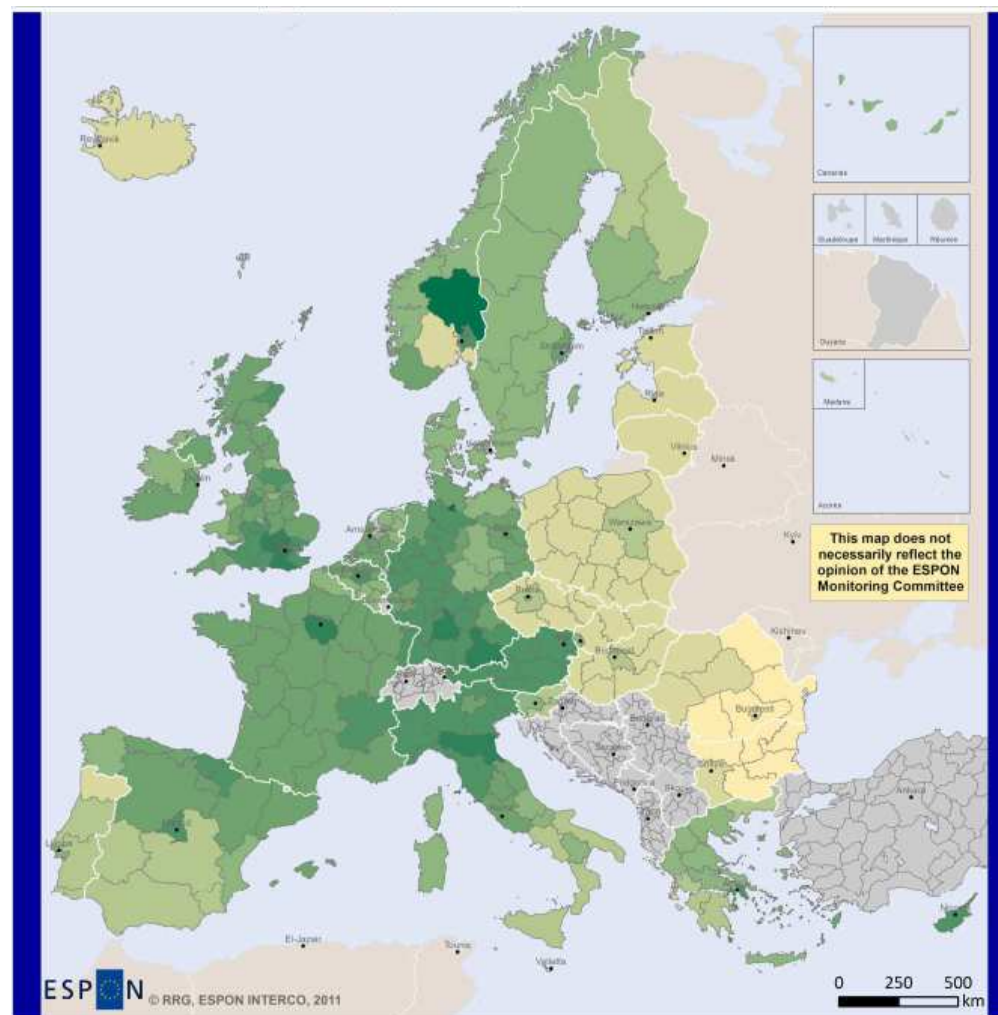
by NUTS-2 region only !



increase desired,
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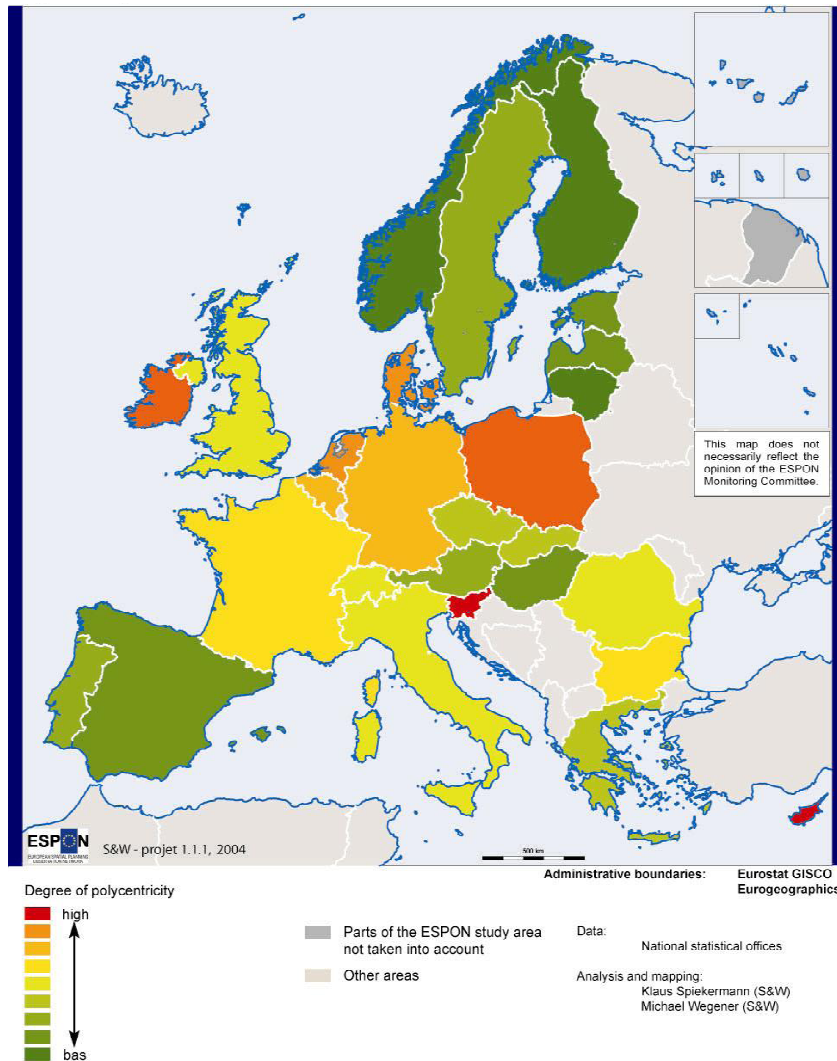
in EUR

	0 - 5,000		15,001 - 17,500
	5,001 - 10,000		17,501 - 20,000
	10,001 - 12,500		20,001 - 22,500
	12,501 - 15,000		22,501 - 35,000



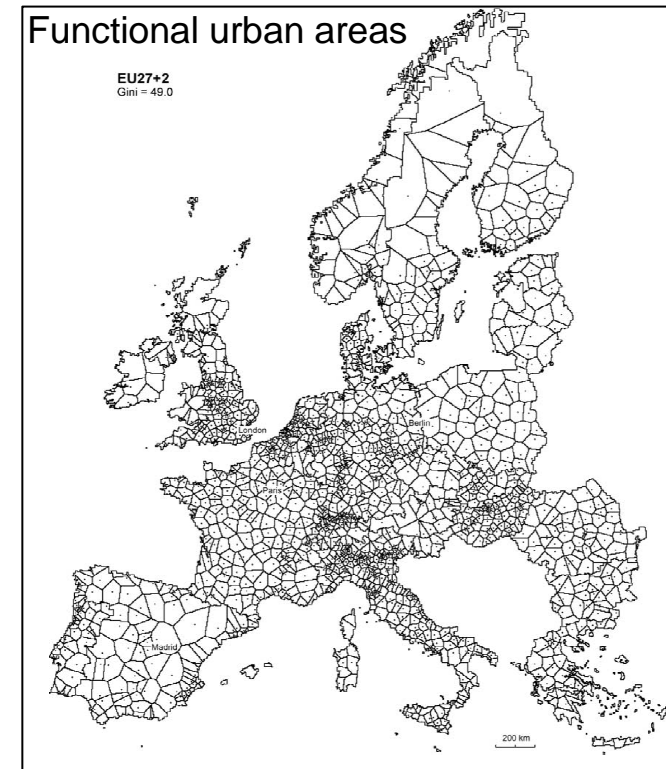
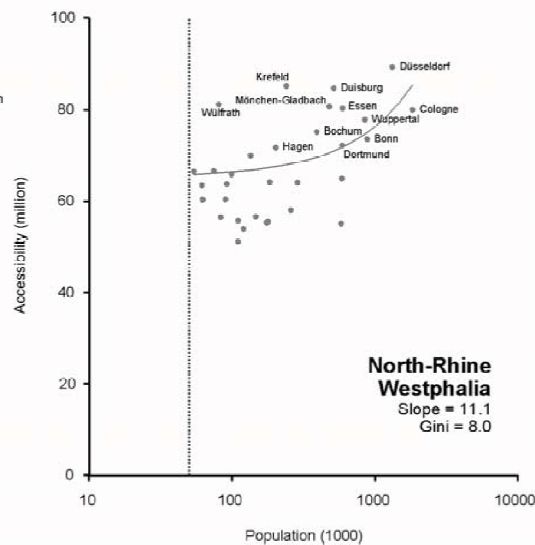
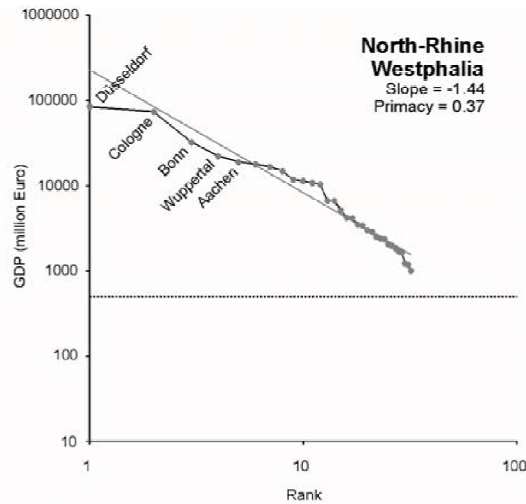
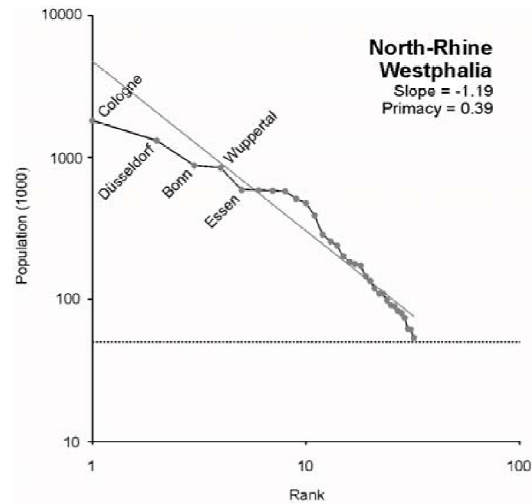
Polycentricity index

by NUTS-0 (countries)



Source : ESPON project 1.1.1.

Polycentricity index



Source : ESPON project 1.1.1.

Unemployment rate (2009)

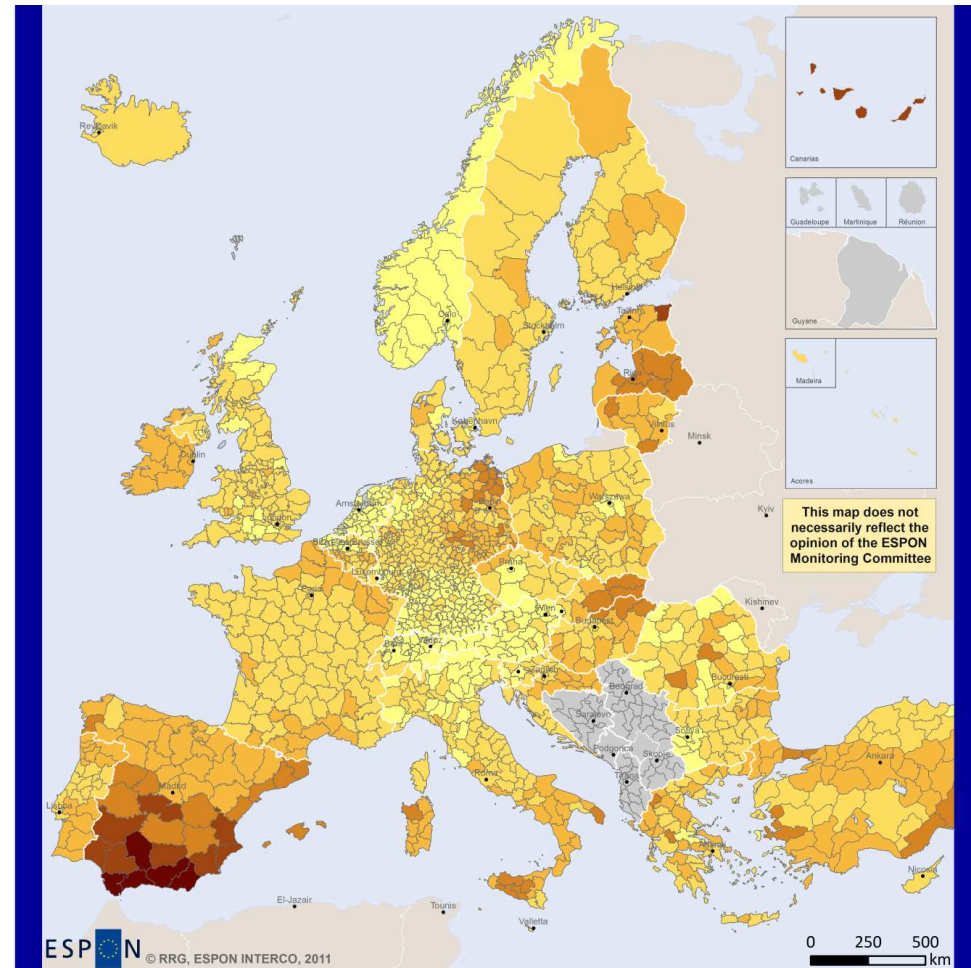
Policy relevance:

This indicator measures the quality and performance of regional labour markets. It constitutes a contextual indicator important to assess regional flexibility as well as sustainability of local economic activities.

Desired direction of change:

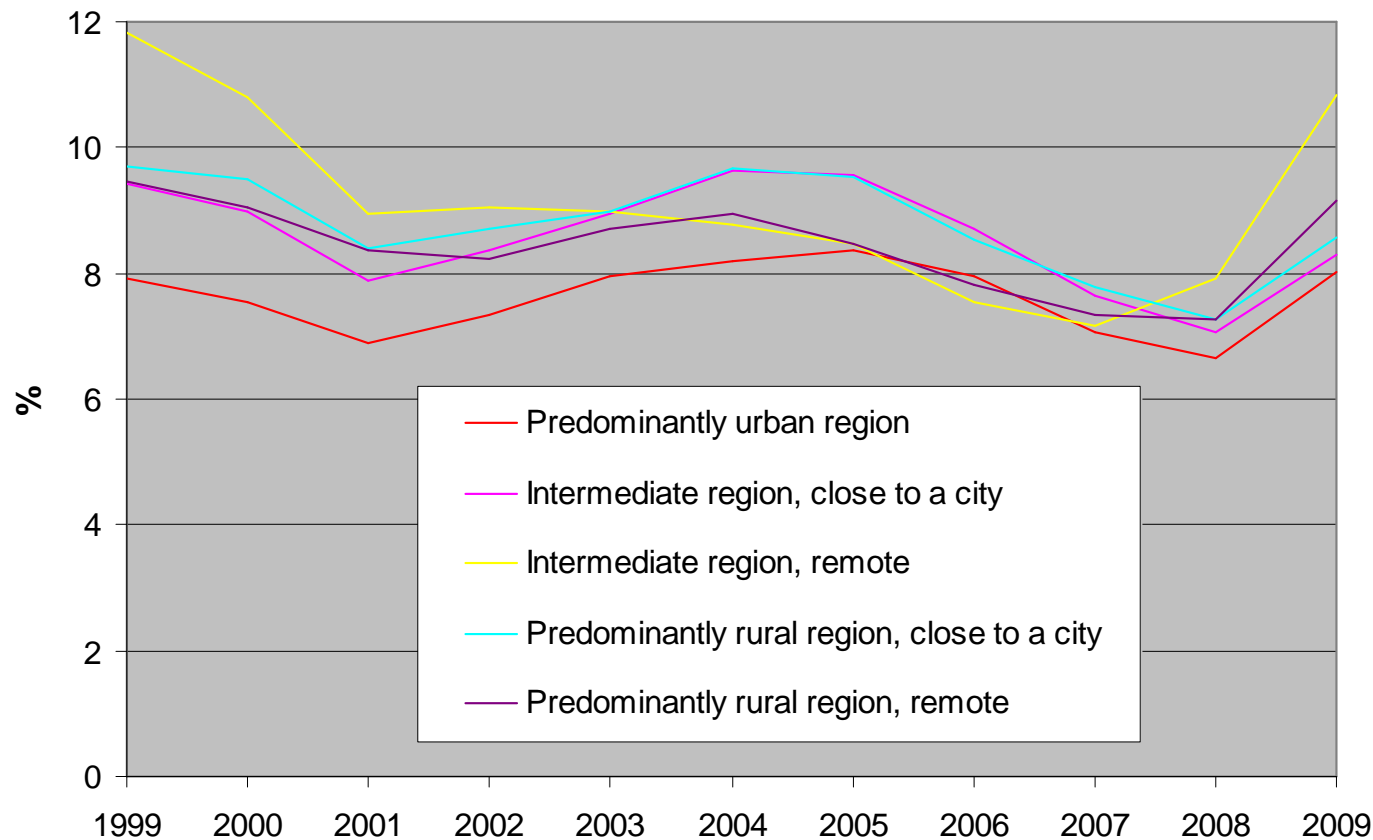
Generally a decrease of unemployment rates over total population is desired; particular attention needs to be paid to decrease unemployment in old industrialised areas and in rural areas or areas with specific geographical handicaps (such as islands, mountain regions or border regions).

in %



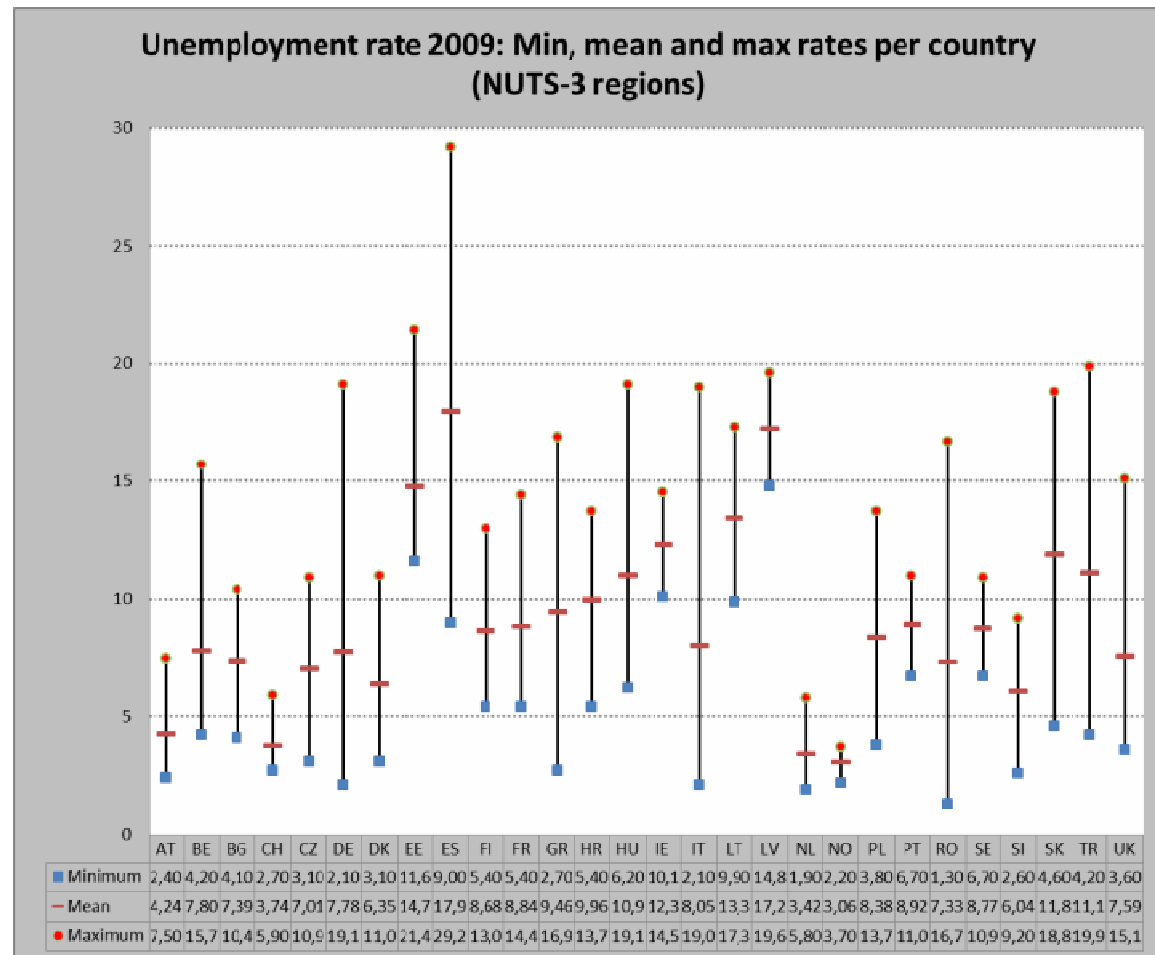
Evolution of unemployment rate

by type of urban/rural region

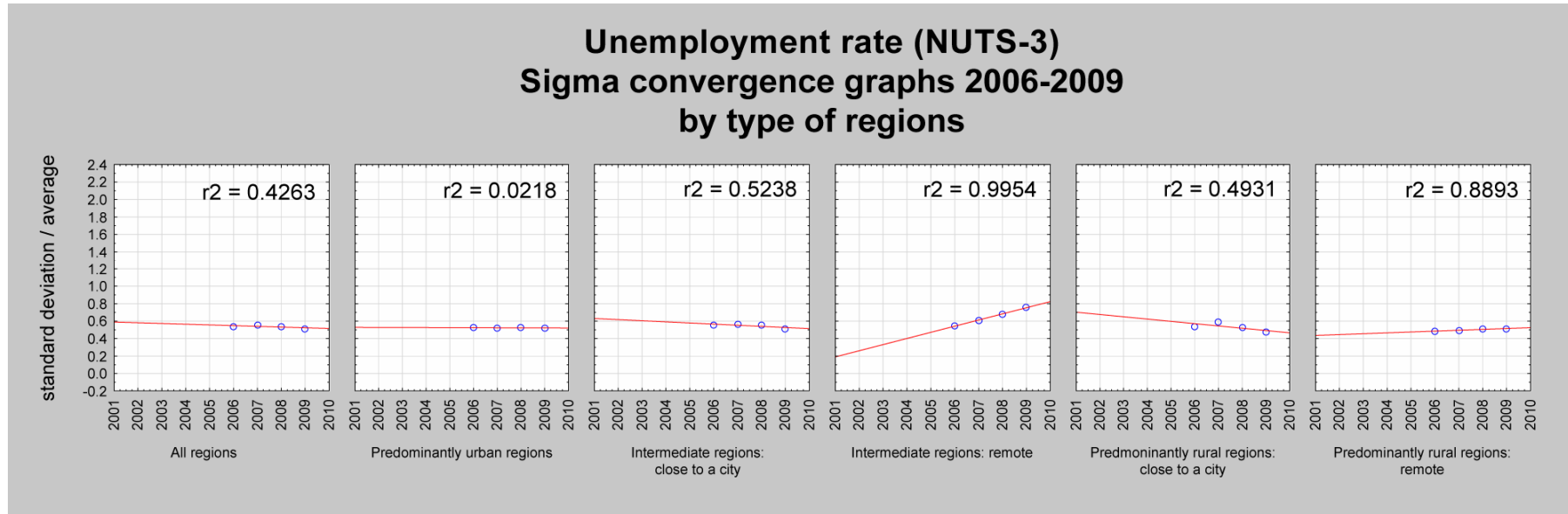


Disparities between territories

Big disparities
between and
within countries



Evolution of disparities



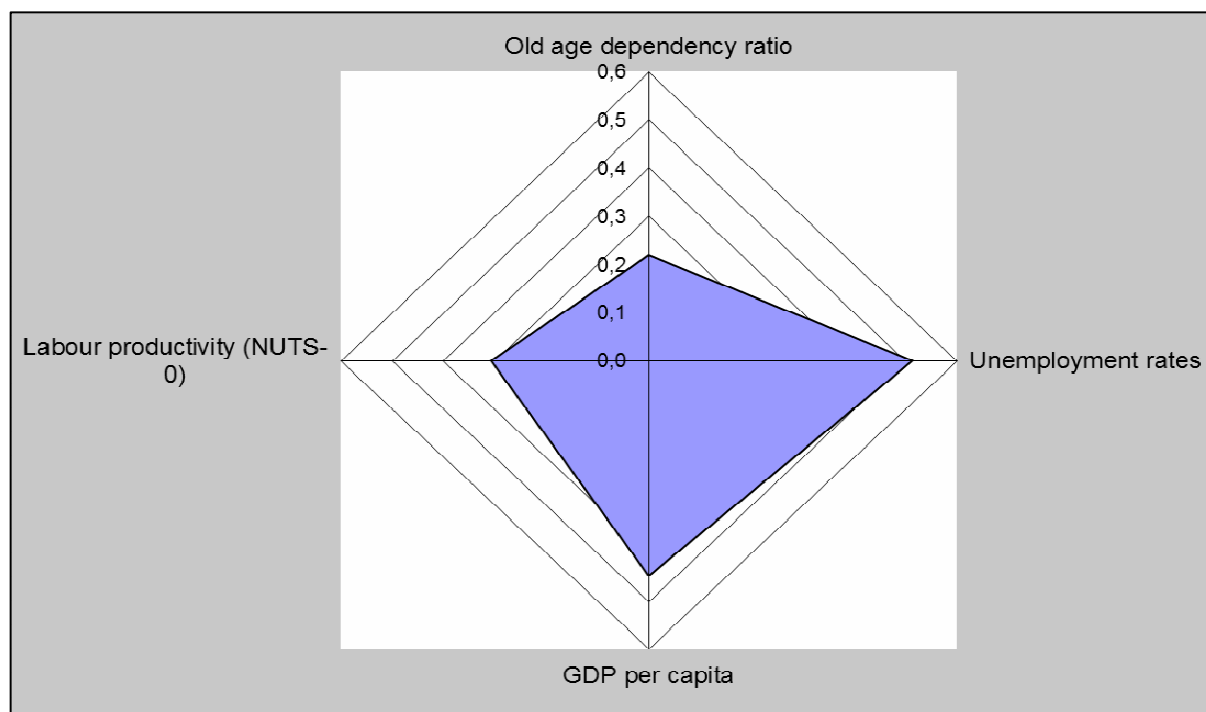
Globally : a slight decrease in disparities

In intermediate remote regions : a high increase in disparities

In rural remote regions : a slight increase in disparities

Disparities, a synthetic view

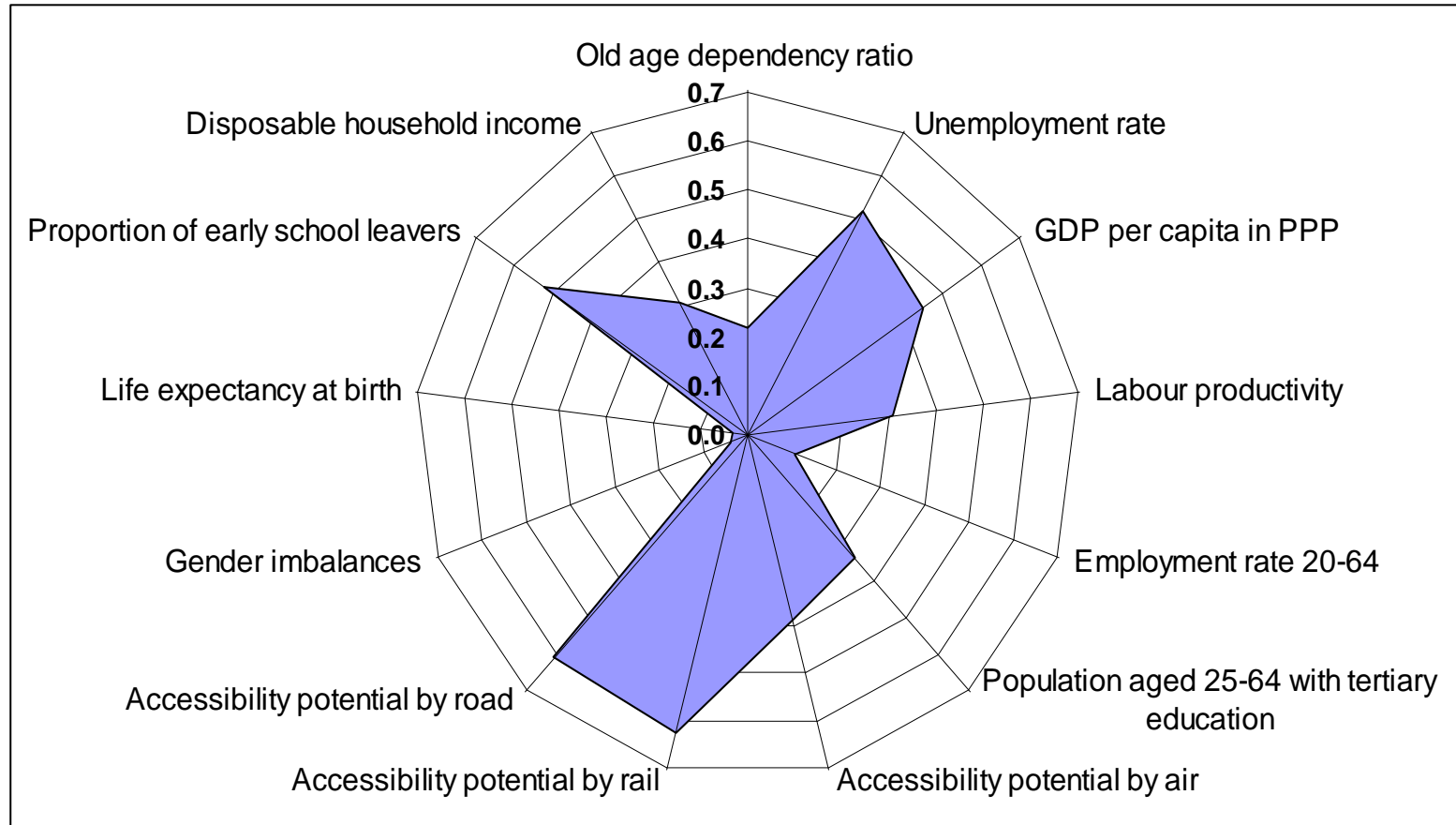
Level of disparities (for the most recent year)
for 4 indicators under territorial objective "strong local economies ensuring global competitiveness"



the smaller the blue area, the smaller the disparities

Important note : this is just an example of possible representation if comparable data are available
Here, years of reference and spatial resolutions vary between indicators => not to be used for analysis

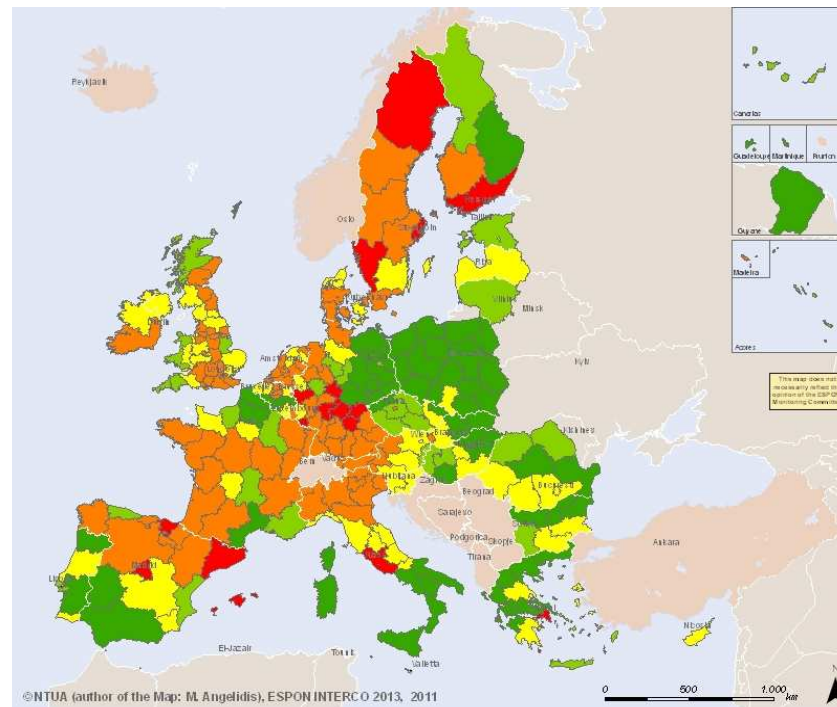
Disparities, a synthetic view



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Crossing indicators : GDP as a context indicator

The higher the GDP,
the lower the
unemployment rate :
true ?



- Much lower unemployment class than expected from GDP class
- Lower unemployment class than expected from GDP class
- Unemployment class same as the expected from GDP class
- Higher unemployment class than expected from GDP class
- Much higher unemployment class than expected from GDP class

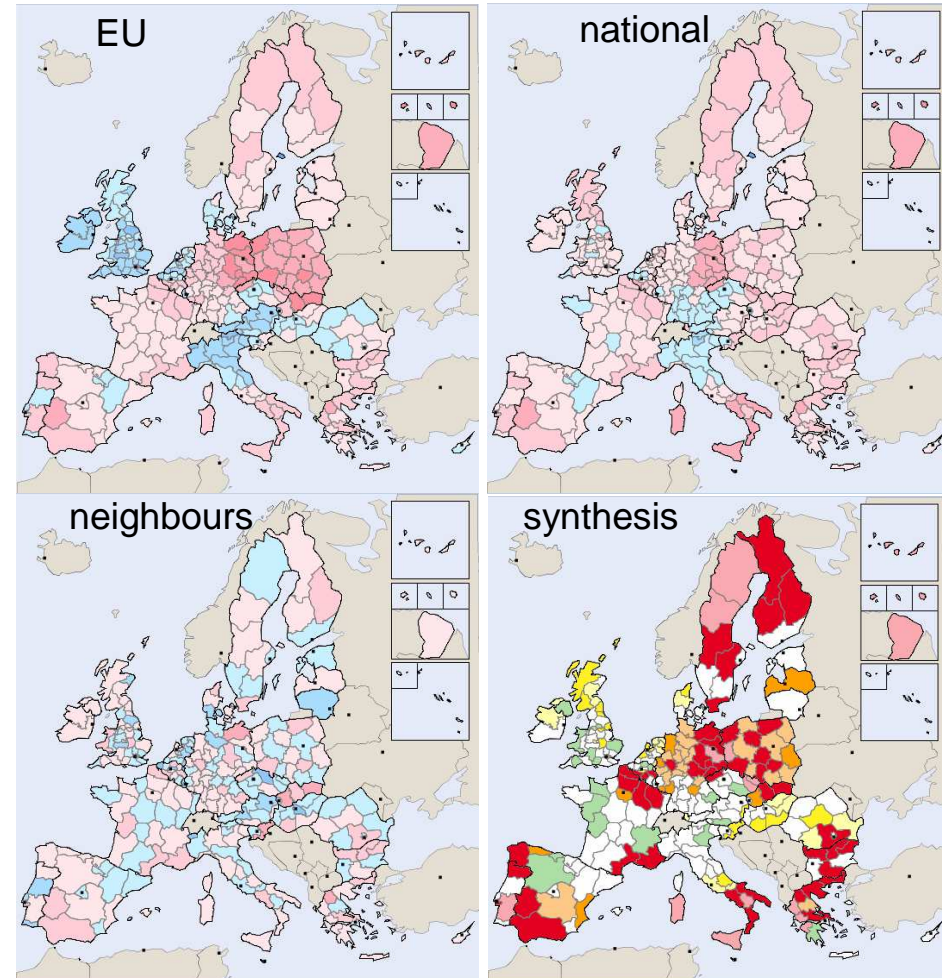
Analysis of territorial differences

Hypertatlas

Synthetic analysis of differences (to European, national and neighbourhood values)

The example of unemployment (NUTS2, 2005)

	Général Ecart > 100%	Territorial Ecart > 100%	Spatial Ecart > 100%
Red	•	•	•
Light Red	•	•	
Orange	•		•
Light Orange	•		
Yellow		•	•
Light Yellow		•	
Green			•
White			



http://www.espon.eu/main/Menu_ScientificTools/ESPONHyperAtlas/

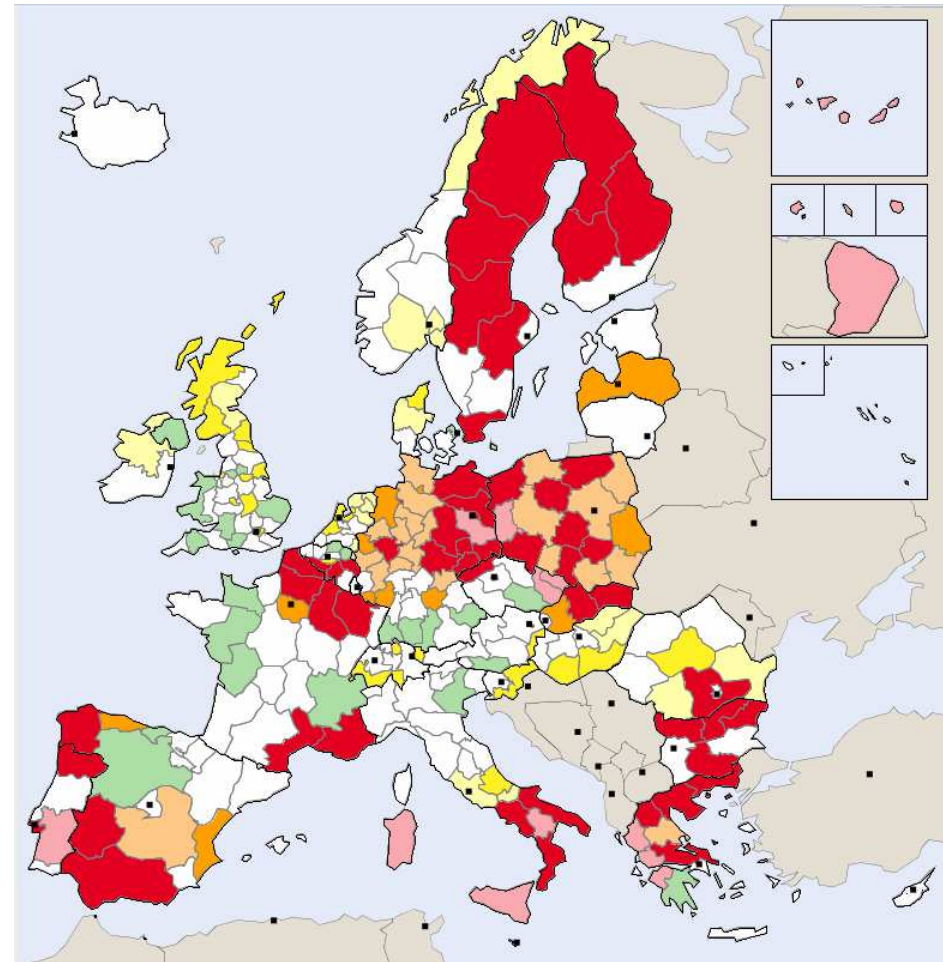
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Red	•	•	•
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Yellow		•	•
Light Yellow		•	
Green			•
White			

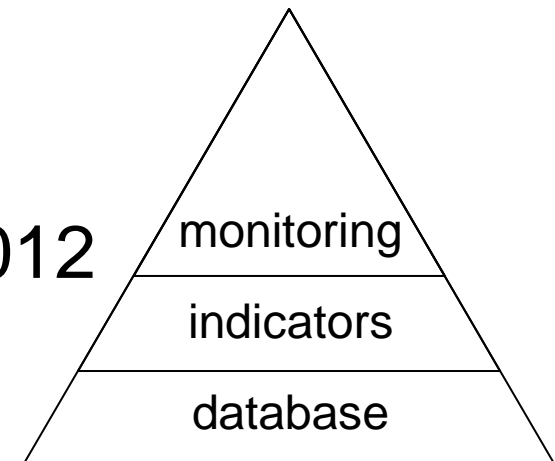


Experiences of the project

- Many possible TC indicators
 - simple indicators for a complex notion ?
 - nothing like a “HDI” for territorial cohesion
- Lack of data (despite huge number of indicators)
 - problem of temporal and spatial coverage / resolution
- Moving targets
 - recent policy developments, e.g. Common Strategic Framework
 - emerging challenges, e.g. economic governance

Experiences of the project

- How to measure differences / disparities
 - Standard deviation ?
 - Gini, Theil, Moran's I ?
 - other index ?
- Needs to innovate on indicators visualisation
- Towards a monitoring system
 - a new project call launched in 2012
(see <http://www.espon.eu/>)



Merci pour votre attention !

Site ESPON : <http://www.espon.eu/>

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