

# Indicators of Territorial Cohesion (INTERCO)

## Assessing Indicators for Territorial Cohesion *Facets and Indicators*



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## Territorial Cohesion in the future EU Cohesion Policy

Draft ERDF Regulation Art. 7-11:

- Sustainable urban development
- Urban development platform
- Innovative actions in the field of sustainable urban development
- Areas with natural or demographic handicaps
- Outermost regions

- **Territorial cohesion:**

- Focus on **sustainable urban development** (at least 5% of the ERDF) & **innovative actions for sustainable urban development** (max. 0.2% of annual funding)
- Creation of an **Urban development platform**
- **Outermost and northern sparsely populated regions** (additional allocation)



## The INTERCO AIM

**There are many ways to understand Territorial Cohesion !**

**ESPON INTERCO indicators must serve them all !**

**We have identified 5 main facets:**

- **Smart** growth in a competitive and polycentric Europe
- **Inclusive**, balanced development and fair access to services
- **Local** development conditions and geographical specificities
- **Environmental** dimension and sustainable development
- **Governance**, coordination of policies and territorial impacts

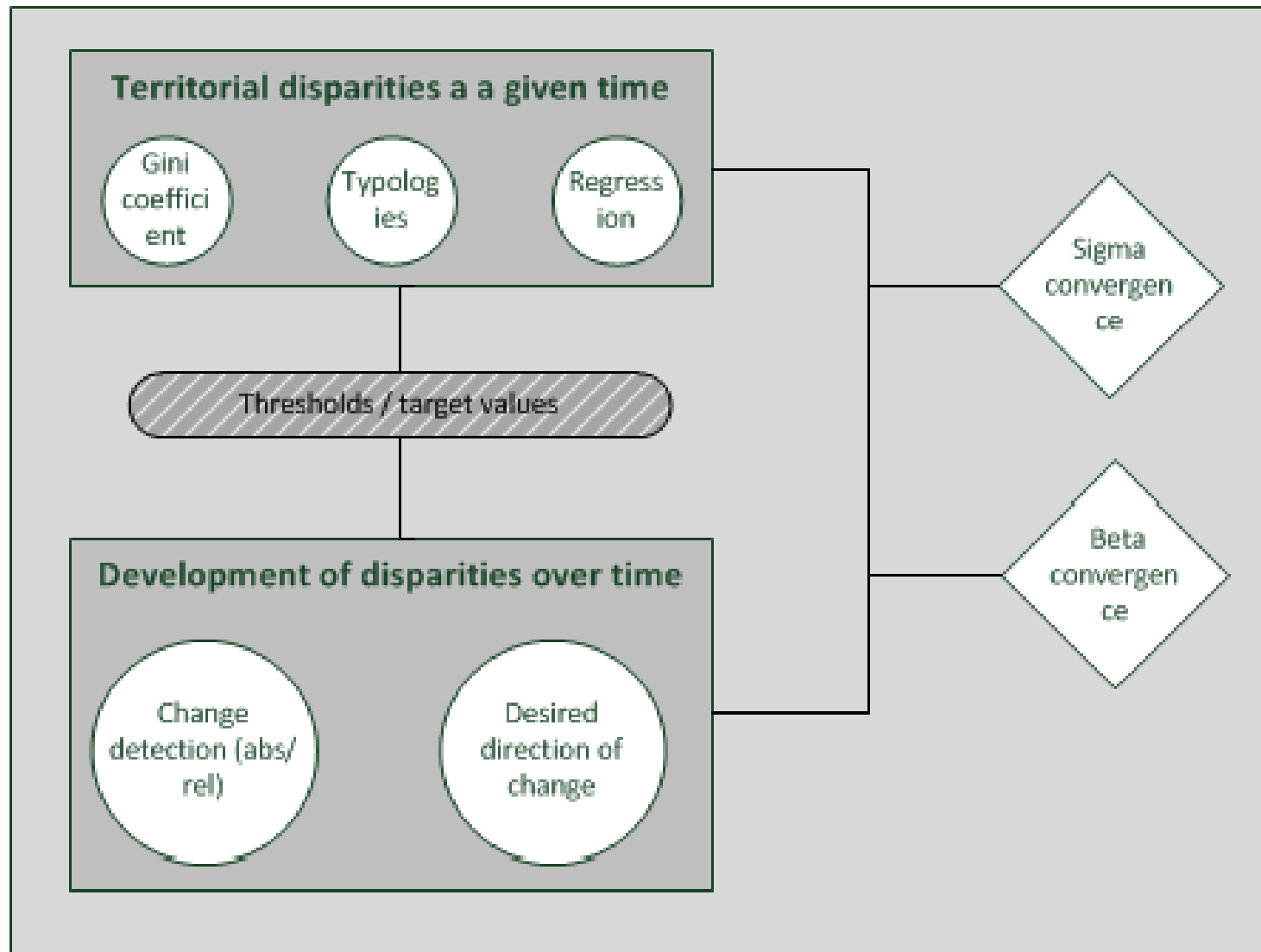
They are *not* mutually exclusive.

# Defining the target

## One list of indicators which offers something for everybody

Indicators ...	Smart...	Inclusive...	Local...	Sustainable...	Governance...
XYZ1 ...	✓	✓	✓		
XYZ2 ...		✓	✓		
XYZ3 ...	✓			✓	✓
...					
...					
XYZ10 ...		✓			✓

# Analytical framework



## **Facet A**

**Smart growth in a competitive  
and polycentric Europe**

## Smart, polycentric ...

### **Aim:**

- contribute to growth and boost European competitiveness

### **Focus:**









- demographic and economic mass
- connectivity
- Innovation and creative class
- large urban agglomerations as 'motors' / agglomeration effects

### **Rationale:**

- economies of agglomeration
- new economic geography
- growth pole theory



# Indicator overview

Indicator		Level	Reasoning
GDP per capita		NUTS-3	Overall economic output of all economic activities
Population aged 25-64 with tertiary education		NUTS-2	Highly-qualified labour force potential as basis for future R&D activities
Employment rate 20-64		NUTS-2	Participation of active population in economic activities and in producing net value added
Polycentricity index		NUTS-0, NUTS-1	Degree of policentricity
Accessibility to grocery stores / schools		NUTS-0, d.o.u., raster	Fair access to basic public services
Expenditures on R&D		NUTS-2	Measuring the future orientation of the economy by maintaining competitiveness through innovations
Population potential within 50 km		Raster, NUTS-3	Proxy for demand for provision of services and as potential for any kind of activities.
Labour productivity in industry and services		NUTS-2	Measure for the competitiveness of a region in global markets
Accessibility to passenger flights		NUTS-3	Connectivity of a region to global business networks

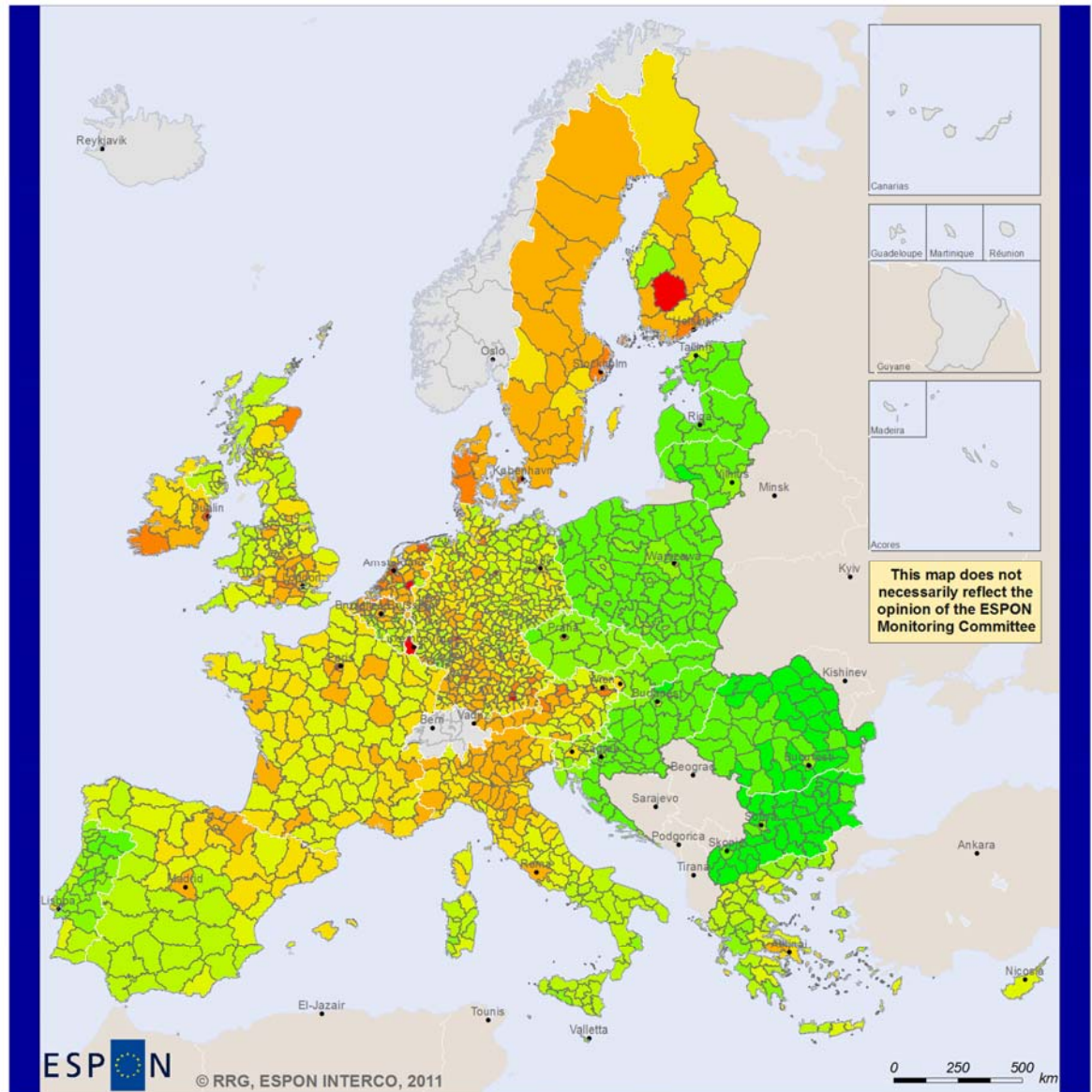
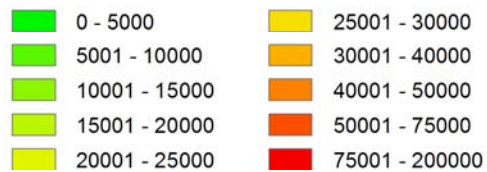


# GDP per Capita (I)



Spatial disparities at a given time

GDP per capita 2008 (in EUR)  
NUTS-3 regions

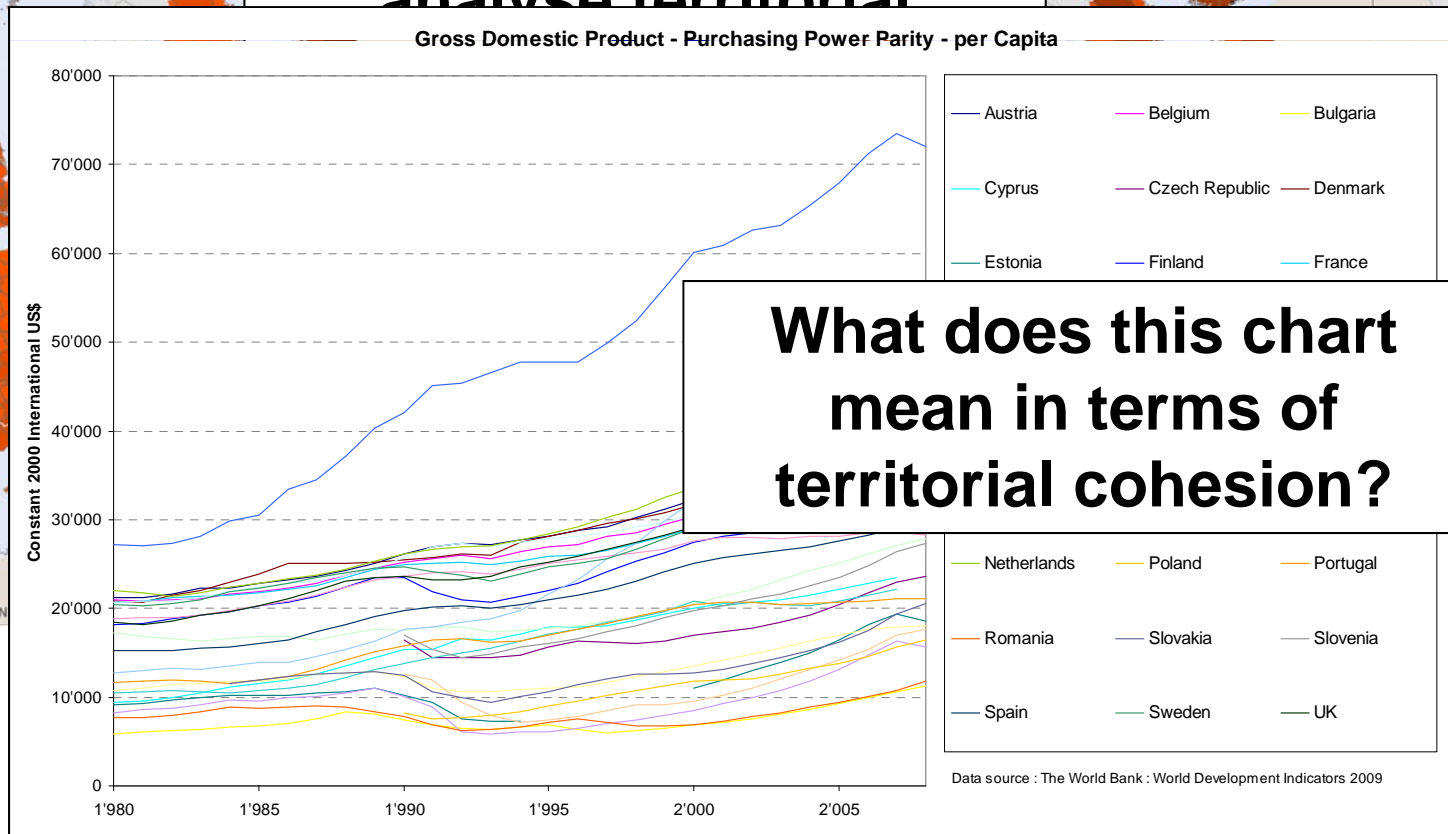


# GDP per Capita (II)



How to look at changes: relative (left) or absolute (right)?

**Difference maps are no appropriate means to analyse territorial**

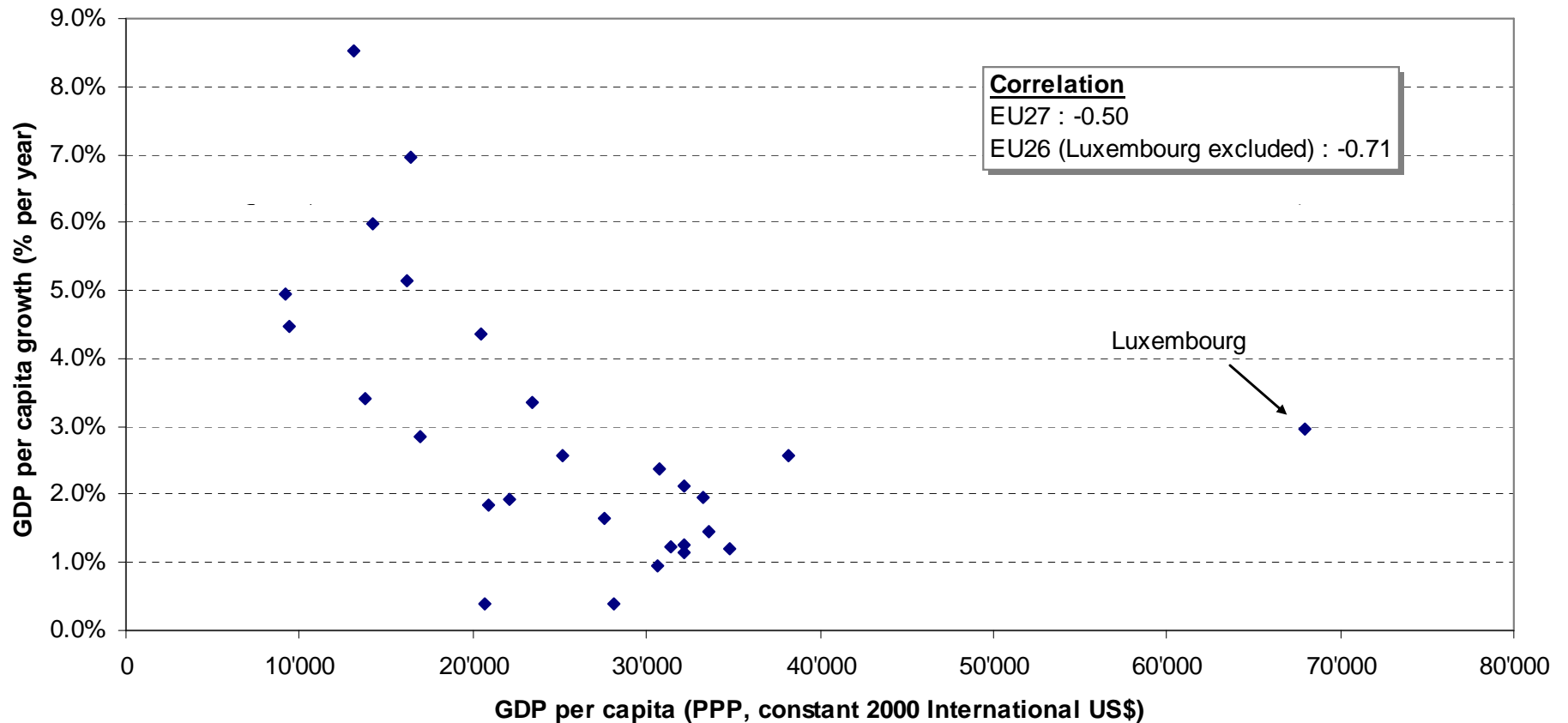


**What does this chart mean in terms of territorial cohesion?**

# GDP per Capita (III)



Beta convergence: Poor regions grow faster than developed ones



Beta convergence: Correlations between states and trends (badly performing regions need to catch up faster than good performing regions)

# Employment rate



Compact indicator  
factsheets

Metadata

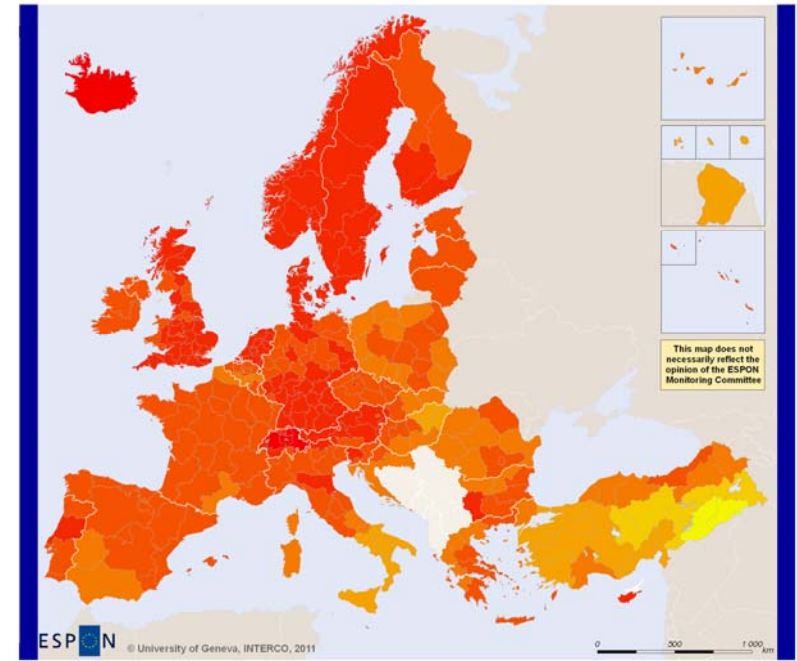
Main part: Map area

Combined  
State & trend  
analysis

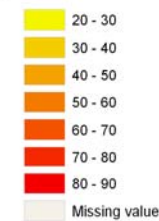
Legend

## Employment rate (2008) at NUTS2 level

<b>Data sources</b> Eurostat, 2008	<b>Spatial coverage</b> Text	<b>Gaps</b> Text	<b>General availability</b> Text
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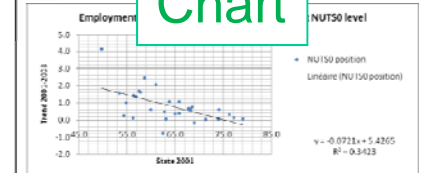
## Employment rate at NUTS 2 level (in percent of age group 15-64) in 2008






















## Indicator definition

Text

## Graph



# Desired direction of change

Indicator	Desired direction of change		
GDP per capita			Increase desired, lagging regions catch up faster
Population aged 25-64 with tertiary education			Increase desired, lagging regions catch up faster
Polycentricity index			Should increase according to TA2020
Employment rate 20-64			Increase desired, lagging regions catch up faster
Accessibility to grocery stores / schools		 	The higher the better, but minimum level needs to be maintained
Expenditures on R&D			Generally increase desired, at least stable rate
Population potential within 50 km		 	Securing a minimum population potential to maintain services even in peripheral areas
Labour productivity in industry and services			Increase desired, lagging regions catch up faster
Accessibility to passenger flights			Securing a minimum level of global accessibility

## **Facet B**

**Inclusive, balanced development  
and fair access to services**

## Inclusive, balanced ...

### **Aim:**

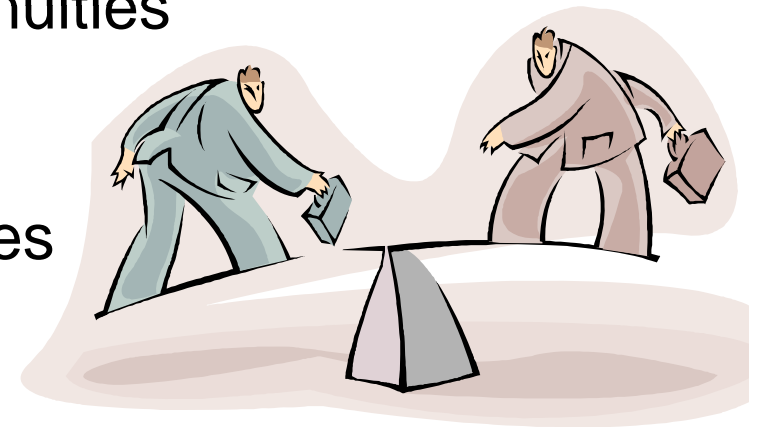
- contribute to inclusive growth, fair access to infrastructure and services (and possibly redistribution of wealth)

### **Focus:**

- territorial diversity and spatial discontinuities
- specific comparative advantages
- access to services and infrastructure
- 'equal' or fair development opportunities

### **Rationale:**

- endogenous development potentials
- negative effects of extreme economic imbalances



# Indicator overview

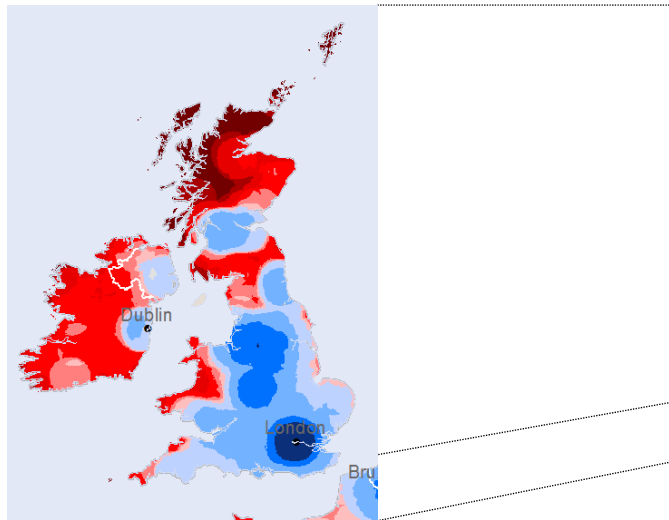
Indicator	Level	Reasoning
Unemployment rate (total, by sex)	NUTS-3, NUTS-2	Quality of regional labour markets, assessing female participation
Life expectancy at birth	NUTS-2	Proxy for overall health / quality of health-care system
Disposable household income	NUTS-2	Welfare state of a region
Personal state of health	NUTS-0, d.o.u.	Degree of well-being with respect to health
People at risk of poverty and social exclusion	NUTS-0, d.o.u.	Welfare measure of a region
Population living in workless households	NUTS-0, d.o.u.	Welfare measure of a region
Net migration rate	NUTS-3	Proxy for attractiveness of a region
Population potential within 50 km	Raster, NUTS-3, NUTS-2	Proxy for demand for provision of services and as potential for any kind of activities.
Old-age dependency ratio	NUTS-3	Measuring balance in age-structure of society (avoiding overaging)
Population density	NUTS-3	Population potential, settlement density
Early school leavers	NUTS-1	Measure for education level / quality



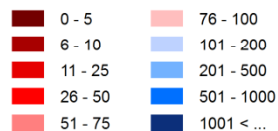
# Population potential within 50 km



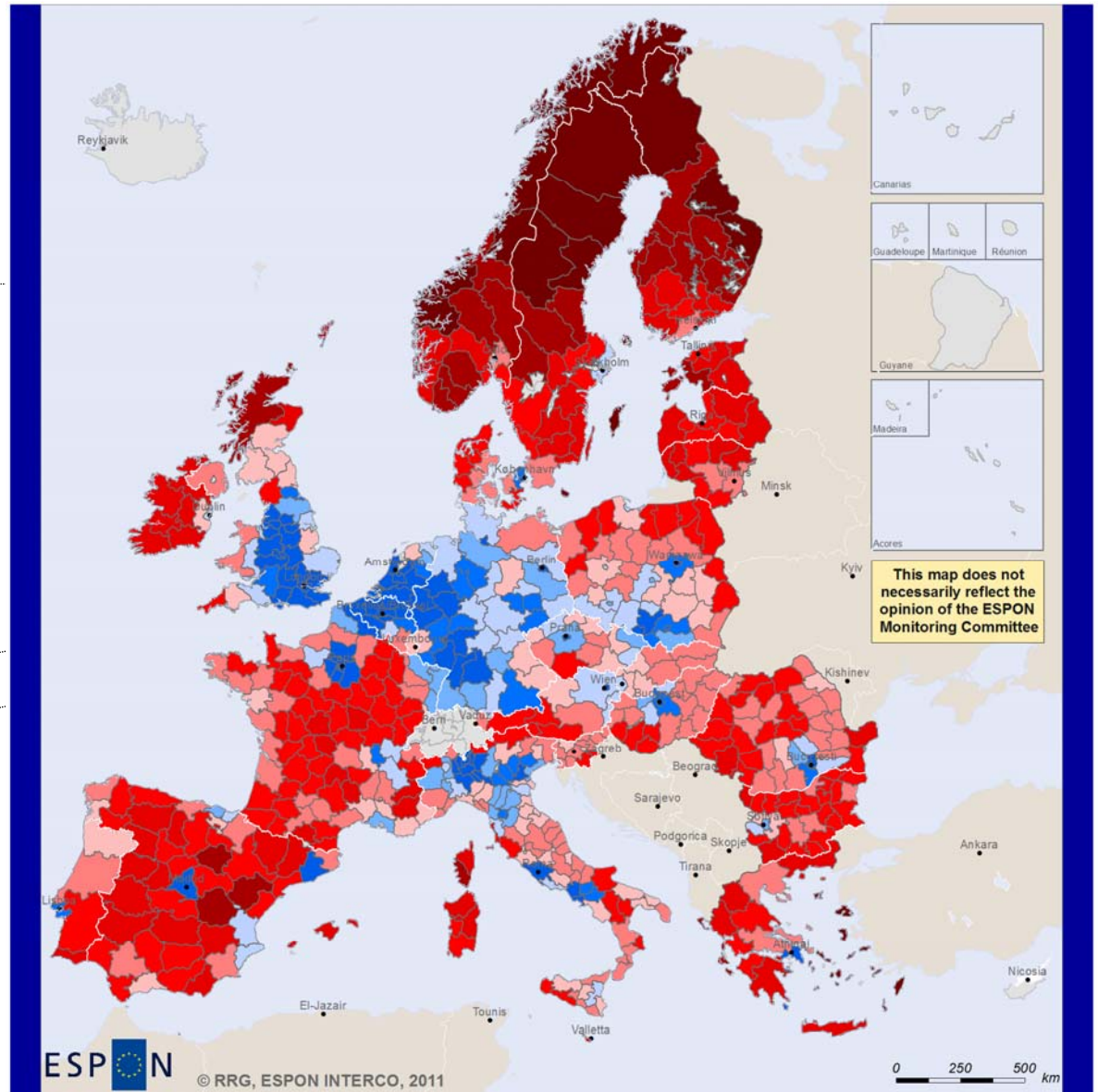
Work on most disaggregated spatial level: Raster, LAU2, NUTS-3



Population potential (50 km radius) (average = 100 = 690,276)  
2.5 x 2.5 km raster grid



Notes:  
Data missing for CH, TR and Western Balkan



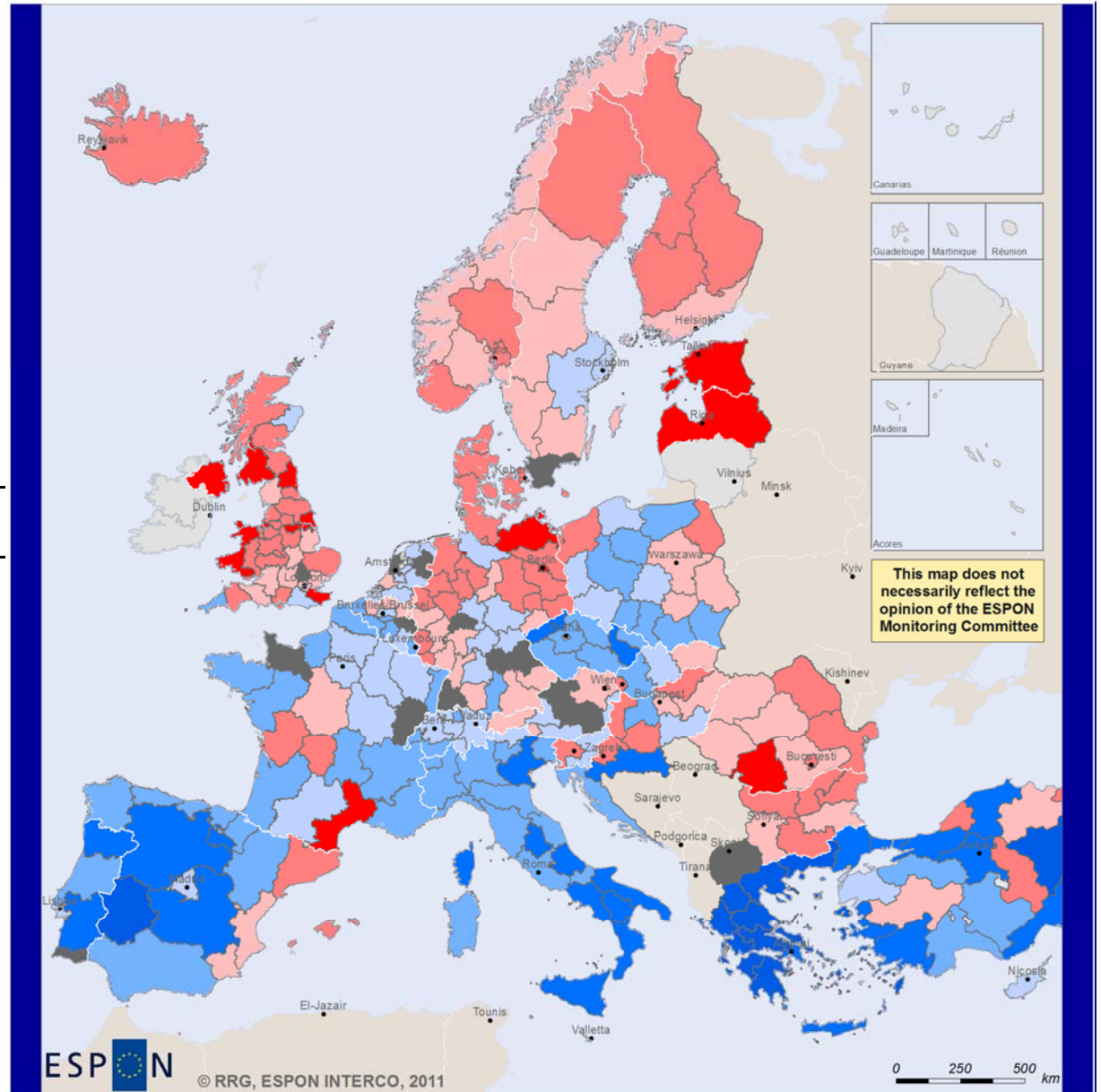
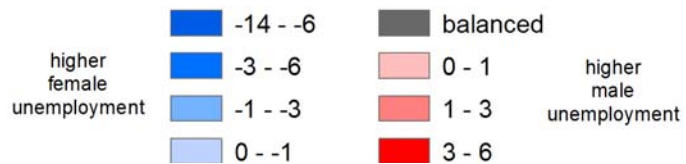
# Unemployment rate (total, male, female)

Total  
Male  
Female  
Difference male-female























decrease desired

Difference unemployment rates, 2010  
Male - female rates



# Desired direction of change

Indicator	Desired direction of change	
Unemployment rate (total, and by sex)		Decrease desired towards zero
Life expectancy at birth	 	Expectancy should at least remain stable, no decrease
Disposable household income		Increase desired, lagging region catch up faster
Personal state of health		Increase desired until everybody's perception is very good
People at risk of poverty and social exclusion	 	Reduction of risk to zero desired
Population living in workless households	 	Reduction desired
Net migration rate	  	Should be positive, at least stable
Population potential within 50 km	  	Securing a minimum population potential to maintain services even in peripheral areas
Old-age dependency ratio	 	Avoid overaging, maintaining a balanced population structure
Population density	 	Moderate increases, sparsely populated areas catch up faster
Early school leavers		Decrease desired towards zero

# Discussions ...

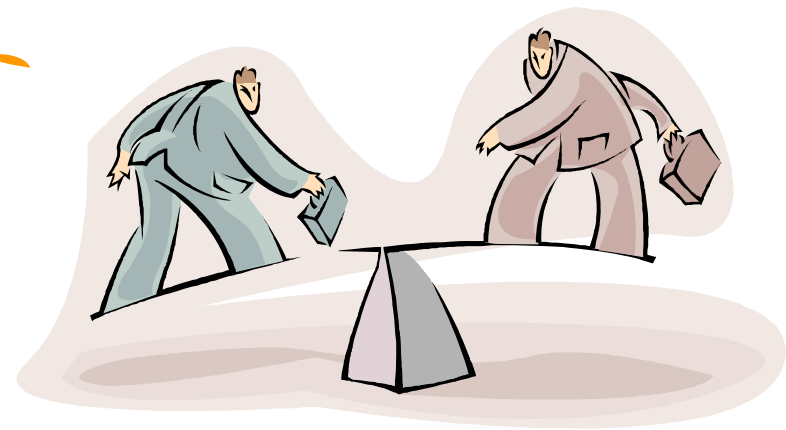
## Group discussions:

### Part 1:

- Do you understand the presented indicators ?  
What questions do you need to ask ?

### Part 2:

- Which indicators are meaningful to you, which are not ?
- Which ones will be most relevant and useful for your work ?



## **Facet C**

**Local development conditions  
and geographical specificities**

## Local, geographical ...

### **Aim:**

- focus on local development conditions, access to the nearest economic centres (place-based policy making)

### **Focus:**









- territorial diversity & fragilities of small and 'peripheral' places
- specific local development conditions & local social cohesion
- intangible development factors
- local accessibility & integration in wider functional context

### **Rationale:**

- access to services
- 'uniqueness' of the assembly of business activity
- various 'local cluster' measures



# Indicator overview

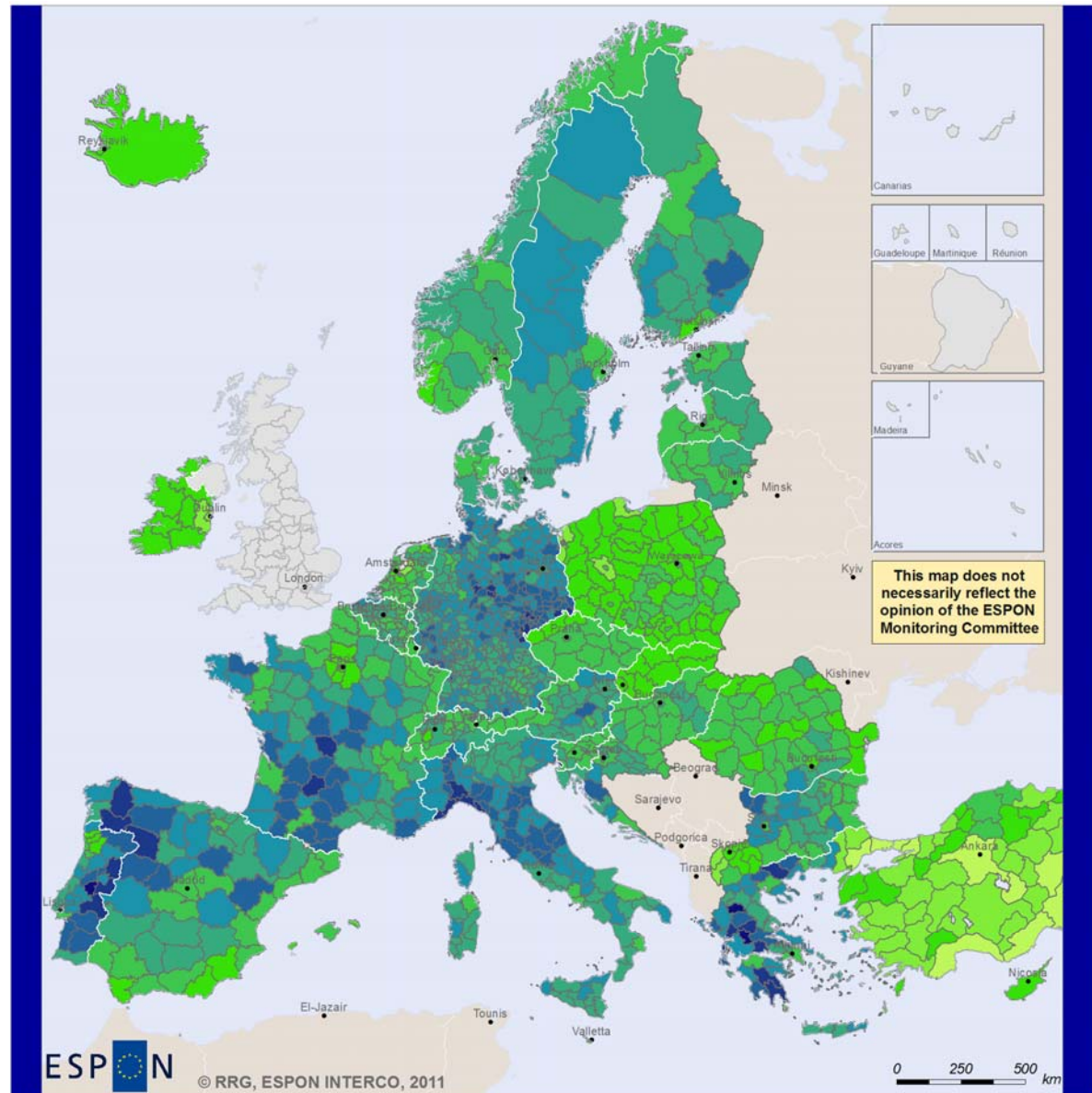
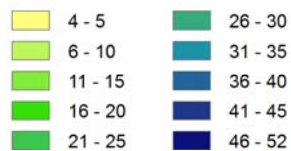
Indicator		Level	Reasoning
GDP per capita		NUTS-3	Overall economic output of all activities
Population aged 25-65 with tertiary education		NUTS-2	Highly-qualified labour force potential for future R&D activities
Accessibility to grocery stores / schools		NUTS-0, d.o.u.	Fair access to public services
Number of new firms		NUTS-0	Measure for economic vitality, whether political and economic conditions favour new start-ups and entrepreneurship
Population potential within 50 km		Raster, NUTS-3, NUTS-2	Proxy for demand for provision of services and as potential for any kind of activities.
Old-age dependency ratio		NUTS-3	Measuring balance in age-structure of society (avoiding overaging)
Population density		NUTS-3	Population potential, settlement density
Net migration rate		NUTS-3	Positive net migration as proxy for attractiveness of a region

# Old-age dependency ratio (I)



Analysis of spatial disparities in a given year ...

Old-age dependency ratio 2009 (pop 64+ / pop 15-64)  
NUTS-3 regions





# Old-age dependency ratio (II)

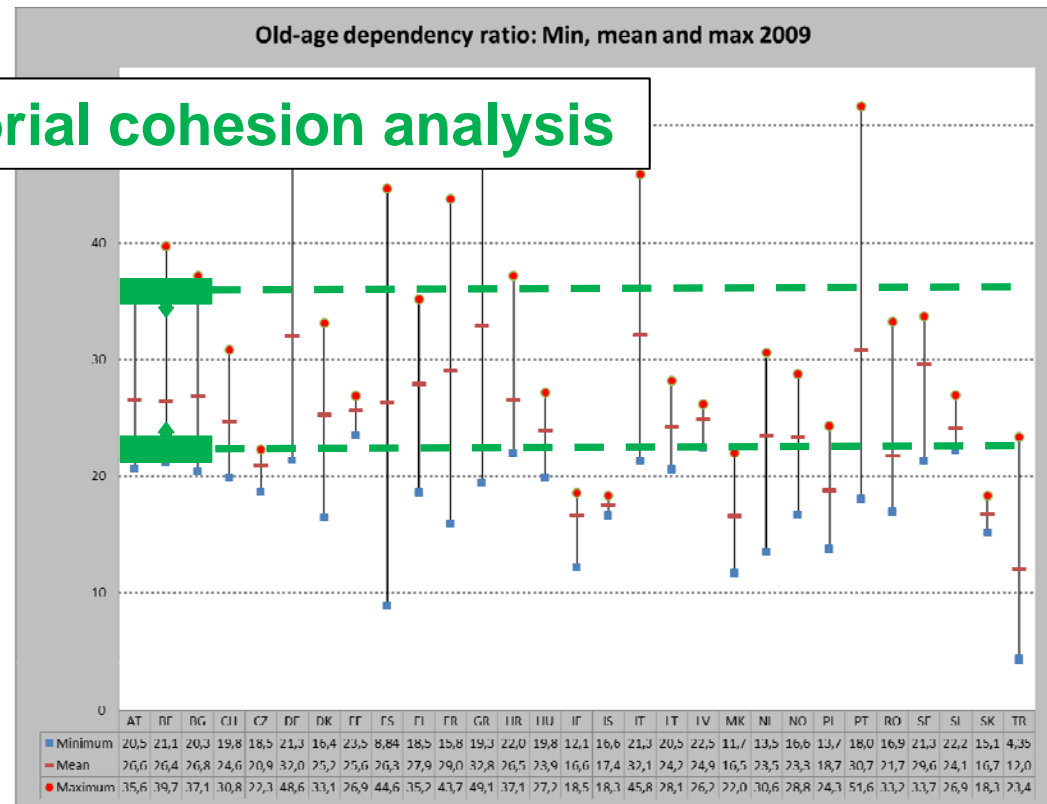


... needs to be supported by statistical analyses: State analysis

## Territorial cohesion analysis

1. Reduction of disparities within a country

2. Alignment between countries



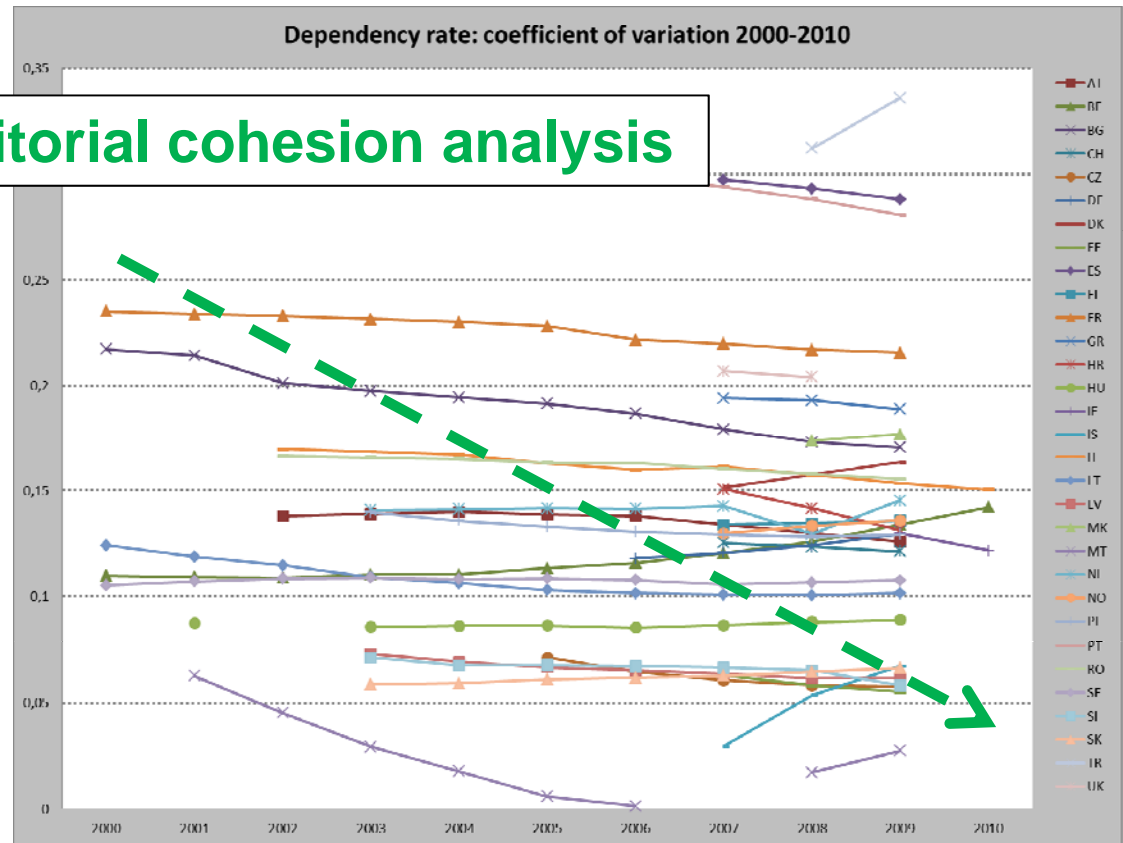
# Old-age dependency ratio (III)



... needs to be supported by statistical analyses:  
Trend analysis

*Reduction of coefficients of variations for all Countries and ESPON Space as a whole*

## Territorial cohesion analysis

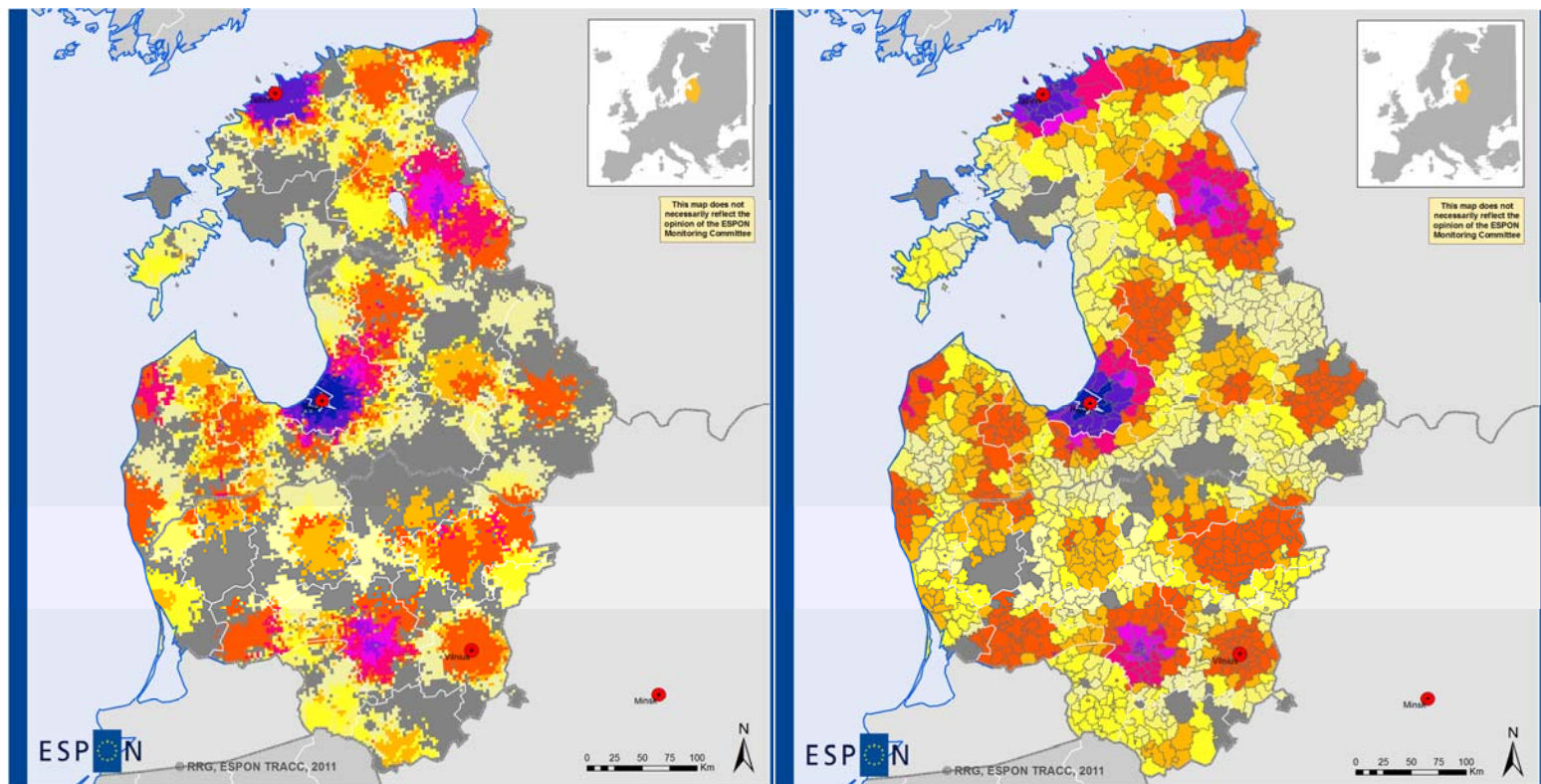


# Access to Basic Public Services






















Access to services is crucial in particular in rural and peripheral areas.

ESPON TRACC calculates actual travel times by different modes to such facilities from each raster cell, then aggregated to municipalities (here: example for Baltic States).



# Desired direction of change

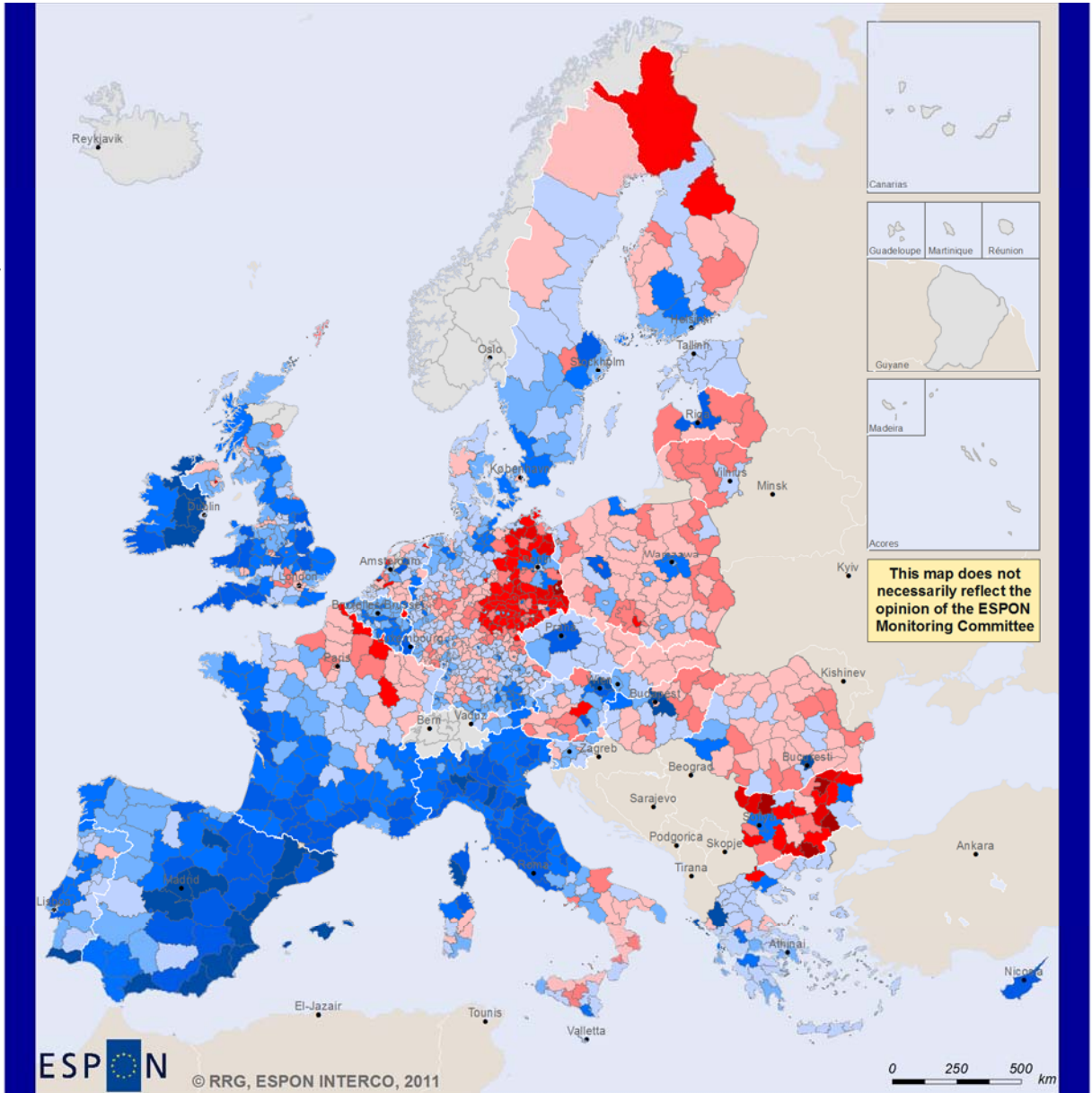
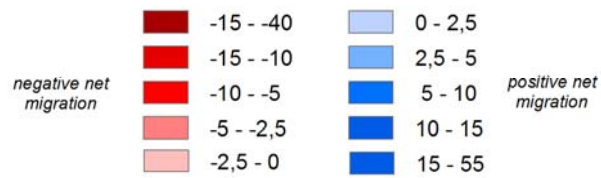
Indicator	Desired direction of change		
GDP per capita			Increase desired, lagging regions catching up faster
Population aged 25-65 with tertiary education			Increase desired, lagging regions catching up faster
Accessibility to grovery stores / schools		 	The higher the better access; but minimum level needs to be maintained
Number of new firms			The higher the better, ratio should be stable over time
Population potential within 50 km		 	Securing a minimum population potential to maintain services even in peripheral areas
Old-age dependency ratio			Avoid overaging, mantaning a balanced population structure
Population density			Moderate increases, sparsely populated areas catch up faster
Net migration rate		 	Should be positive, at least stable

# Net migration rate

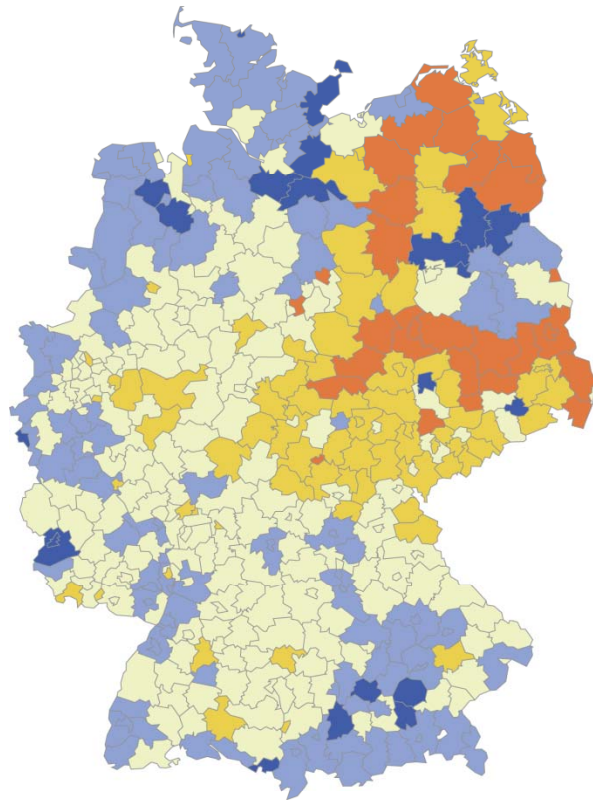
Desired direction of Change:

*Sometimes direction is difficult to determine, e.g. should net migration be forever positive, or not? Which rates are still acceptable?*

**Net migration rate, 2001-2007  
(per thousand inhabitants, annual average)**

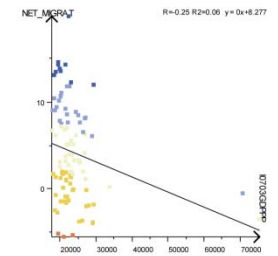
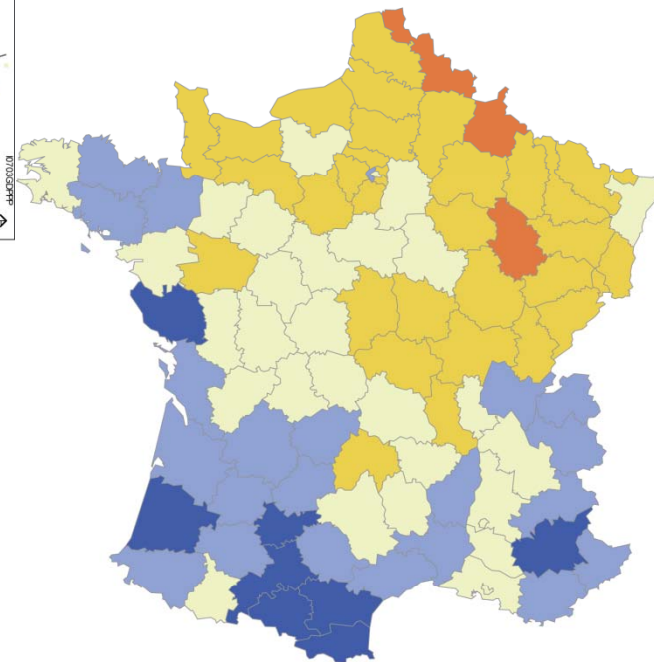
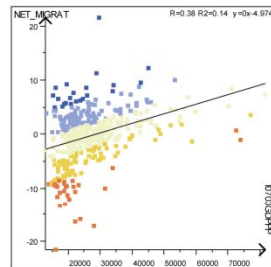


# Correlation between GDP and net migration



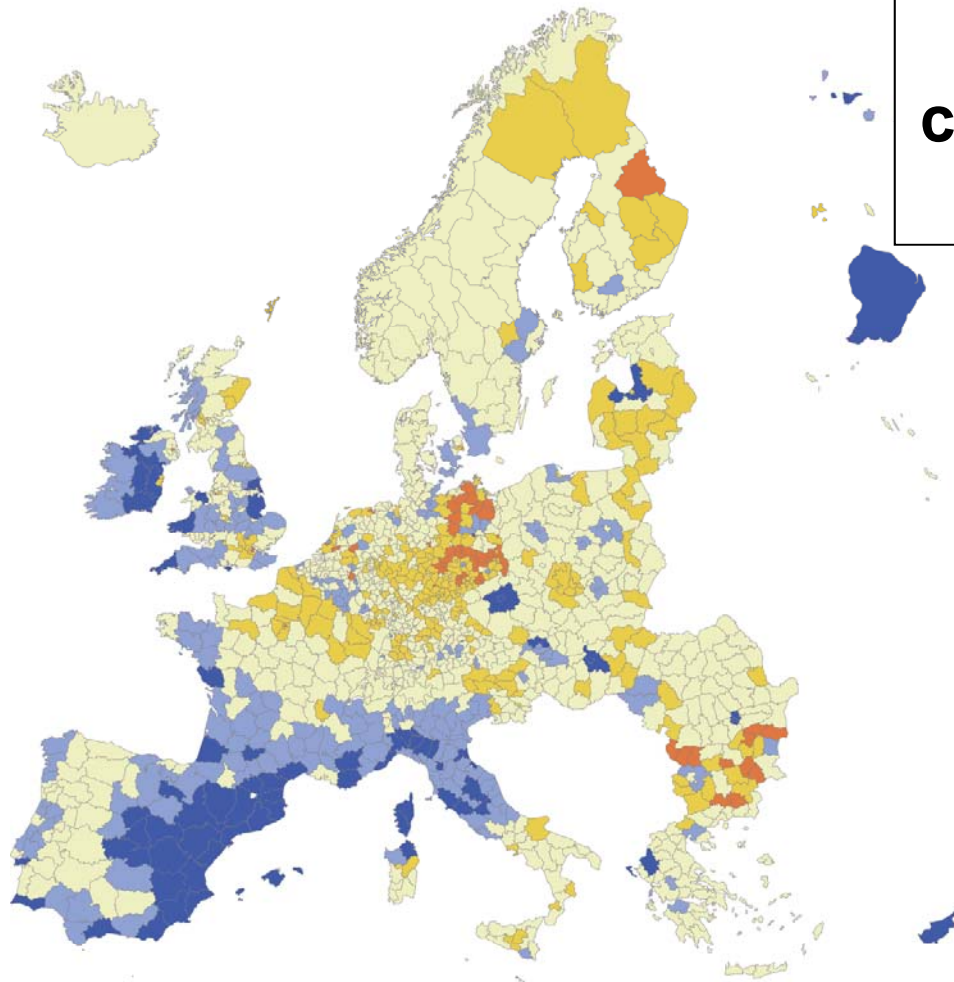
Fait avec Phicarto \* 17/10/2011 14:47:25 \* <http://phicarto.free.fr>

**Various motivations of migrations  
→ Various meanings of net-migration figures**

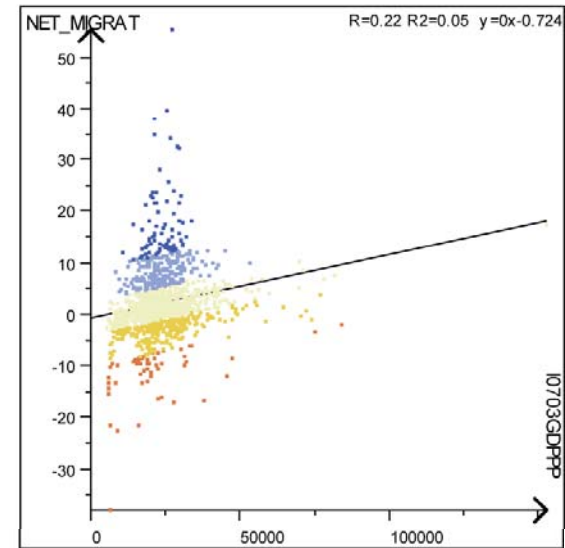


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# Correlation tertiary education and employment rates (I)

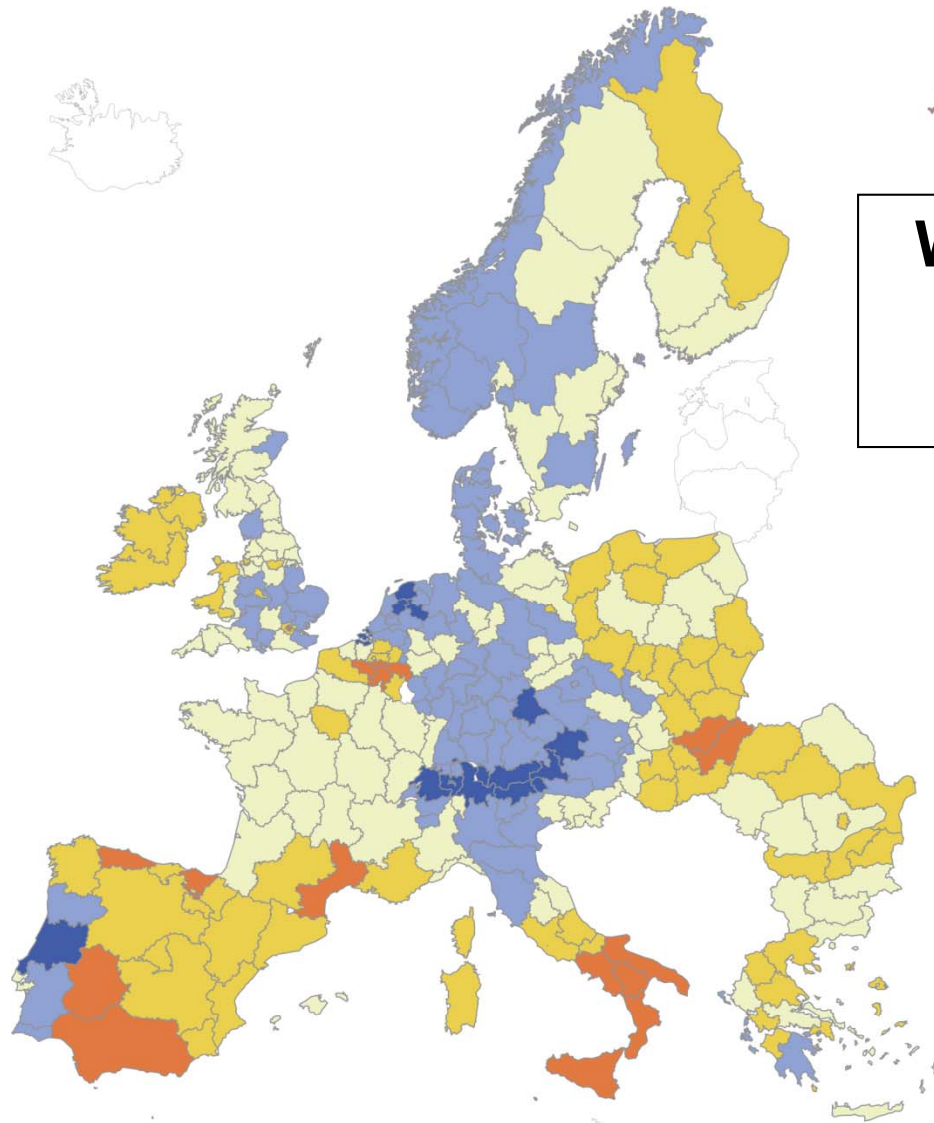


**Is the European comparative perspective meaningful?**

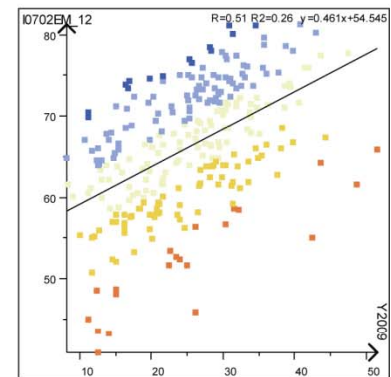


Fait avec Philcarto \* 12/10/2011 14:08:10 \* <http://philcarto.free.fr>

# Correlation tertiary education and employment rates (II)



**What is the instrument  
and what is the  
objective?**





## **Facet D**

**Environmental dimension  
and sustainable development**

# Environment, sustainable ...

## **Aim:**

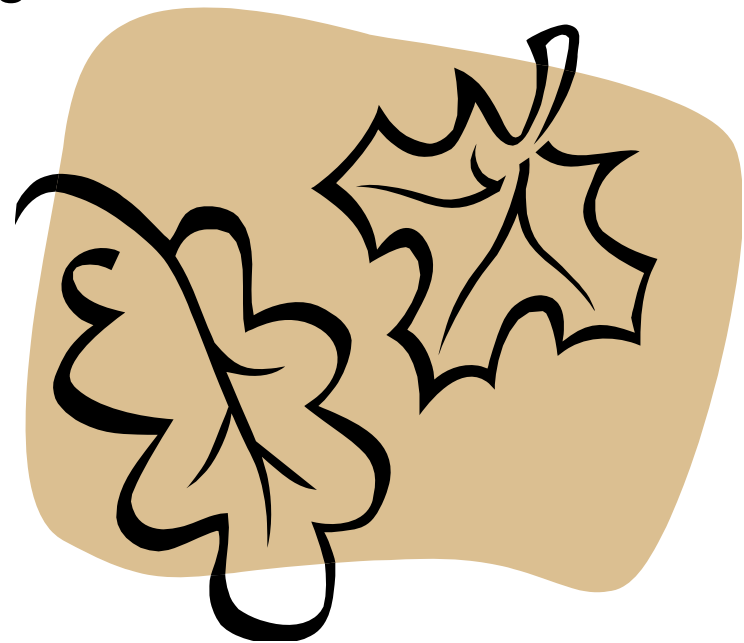
- environmental dimension of territorial cohesion
- Sustainable development

## **Focus:**








- environmental assets & natural heritage
- ecological footprint & energy issues
- quality of life
- long terms perspective

## **Rationale:**

- sustainable development
- green growth
- climate change



# Indicator overview

Indicator		Level	Reasoning
Mortality / economic risk from multiple hazards		Seamless GIS	Risk assessment and vulnerability for environmental hazards
Air pollution (PM10 / ozone)		NUTS-0	Reducing emissions in response to global climate change
Natural and environmental assets / challenges		Raster	Preserving the natural environment
Soil sealing per capita		NUTS-3	De-coupling of economic/demographic development and land take
Water resources, access to clean water		NUTS-2	Access to an essential resource
Renewable energy resources or production		NUTS-0	Clean energy, potential for local development
Energy intensity		NUTS-0	Striving for more efficient, environmental-friendly economic activities (de-coupling of energy consumption and output)
Greenhouse gas emissions in CO2 equivalents		NUTS-0	Response to global climate change
Urban waste water treatment capacity		NUTS-2	Capacities for cleaning used waters

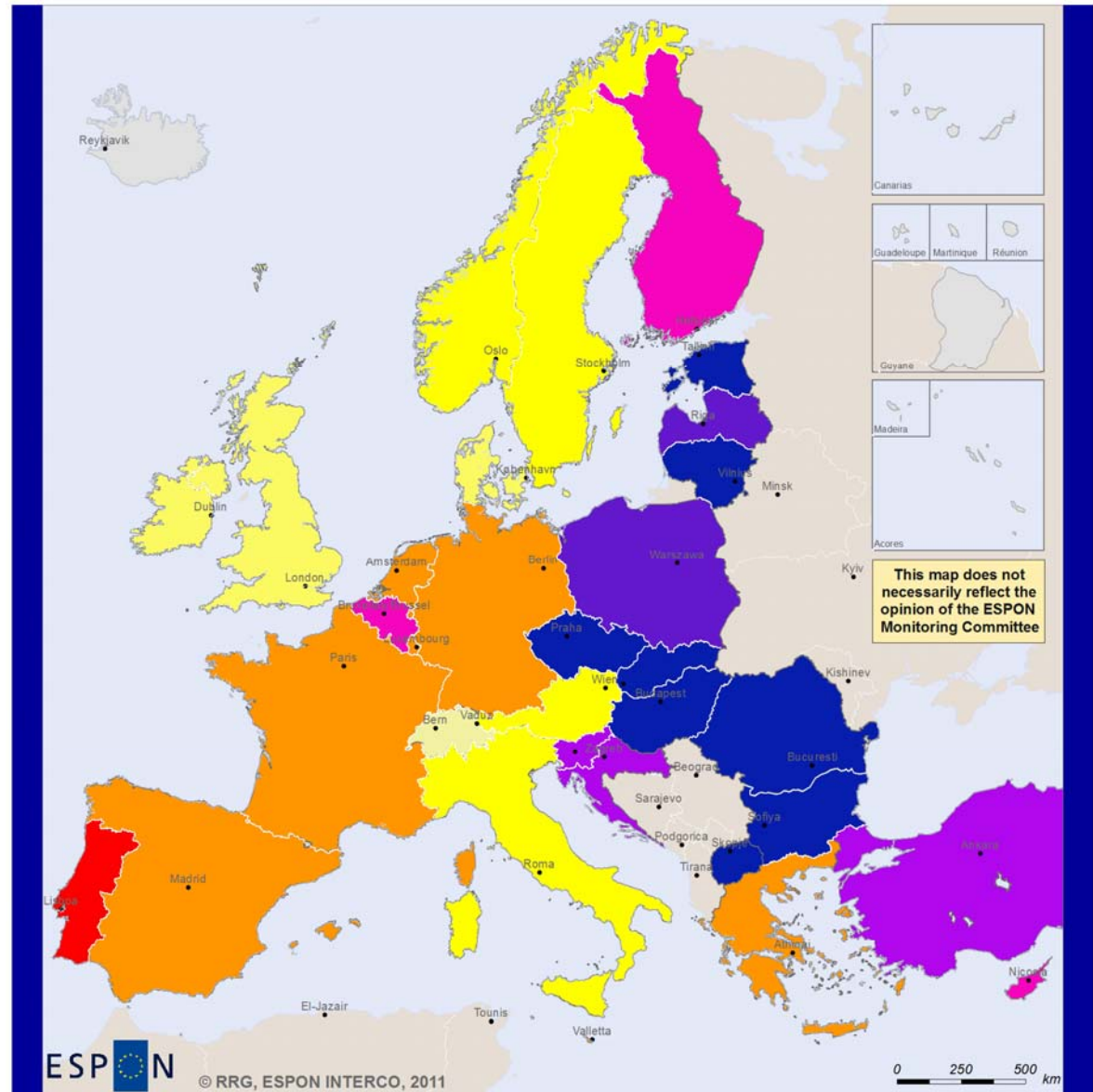
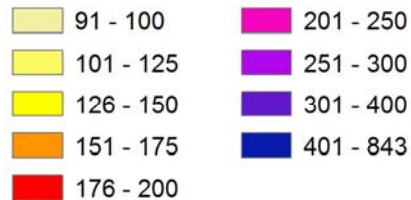
# Energy intensity of the economy



Need for small-scale data

*NUTS-0 is not sufficient to analyse territorial cohesion*

Energy intensity of the economy, 2009

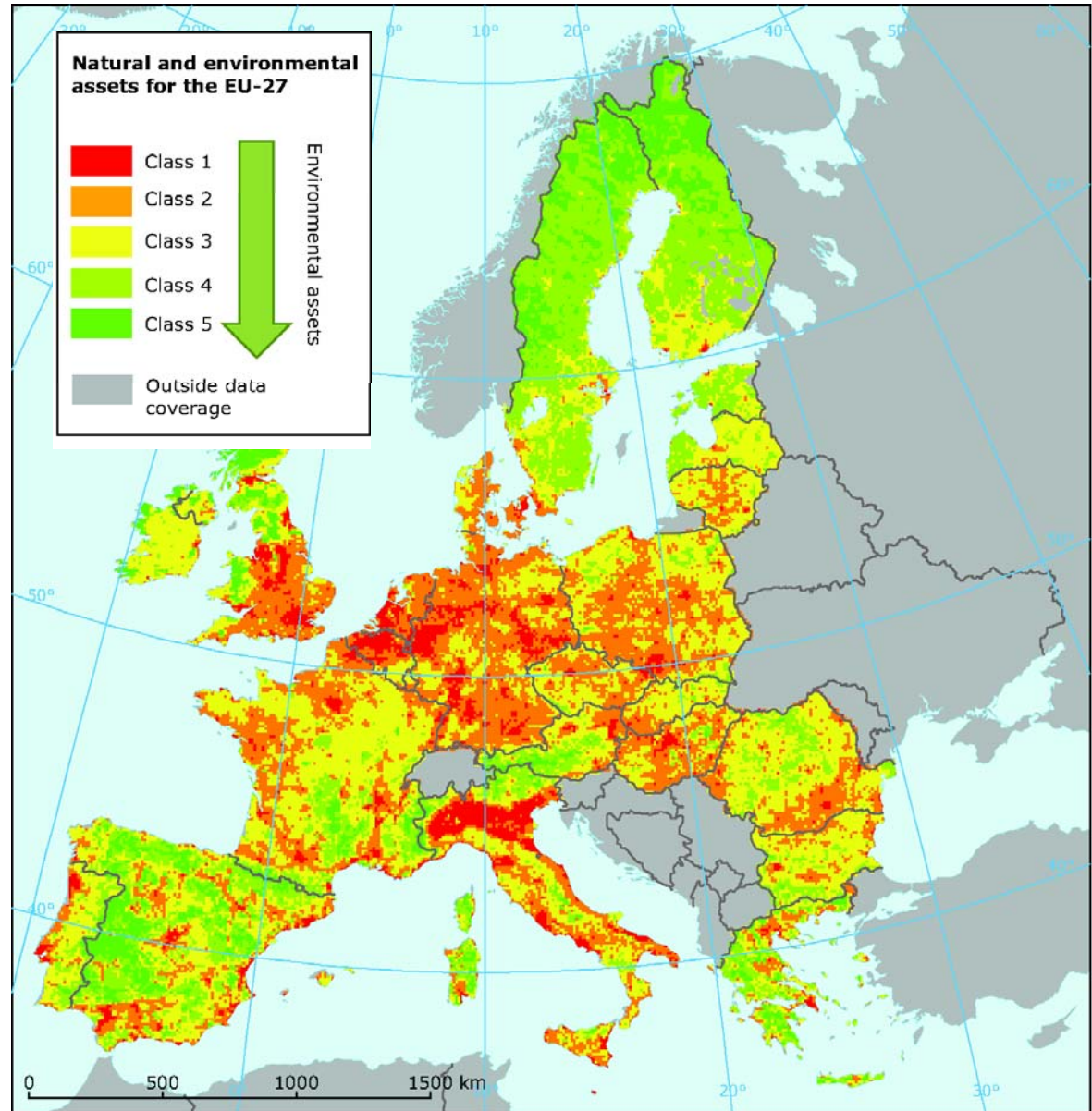


# Natural and Environmental Assets / Challenges




















Composite indicator at raster level (EEA):

Aggregations of raster data to any desired LAU / NUTS level always possible.



# Desired direction of change

Indicator	Desired direction of change	
Mortality / economic risk from multiple hazards		 Decrease risks/vulnerability desired
Air pollution (PM10 / ozone)		 Pollutions to decrease towards zero
Natural and environmental assets / challenges		 The higher the assets, the better for the environment
Soil sealing per capita		 Decrease desired to minimum level (de-coupling)
Water resources, access To clean water		 Increase desired
Renewable energy resources or production		 Increase desired
Energy intensity		 Decrease desired to minimum level (de-coupling)
Greenhouse gas emissions in CO2 equivalents		 Emissions decrease until zero
Urban waste water treatment capacity		 Capacities should correspond to demand, increases where necessary

## **Facet E**

**Governance, coordination of policies  
and territorial impacts**

# Governance ...

## **Aim:**

- Dialogue with other sectors in order to strengthen the territorial dimension in various policy fields – better synergies

## **Focus:**

- costs of non-coordination
- integration / coordination of policies
- territorial impact assessment
- Decision power and territorial knowledge




## **Rationale:**

- network governance
- polity and politics



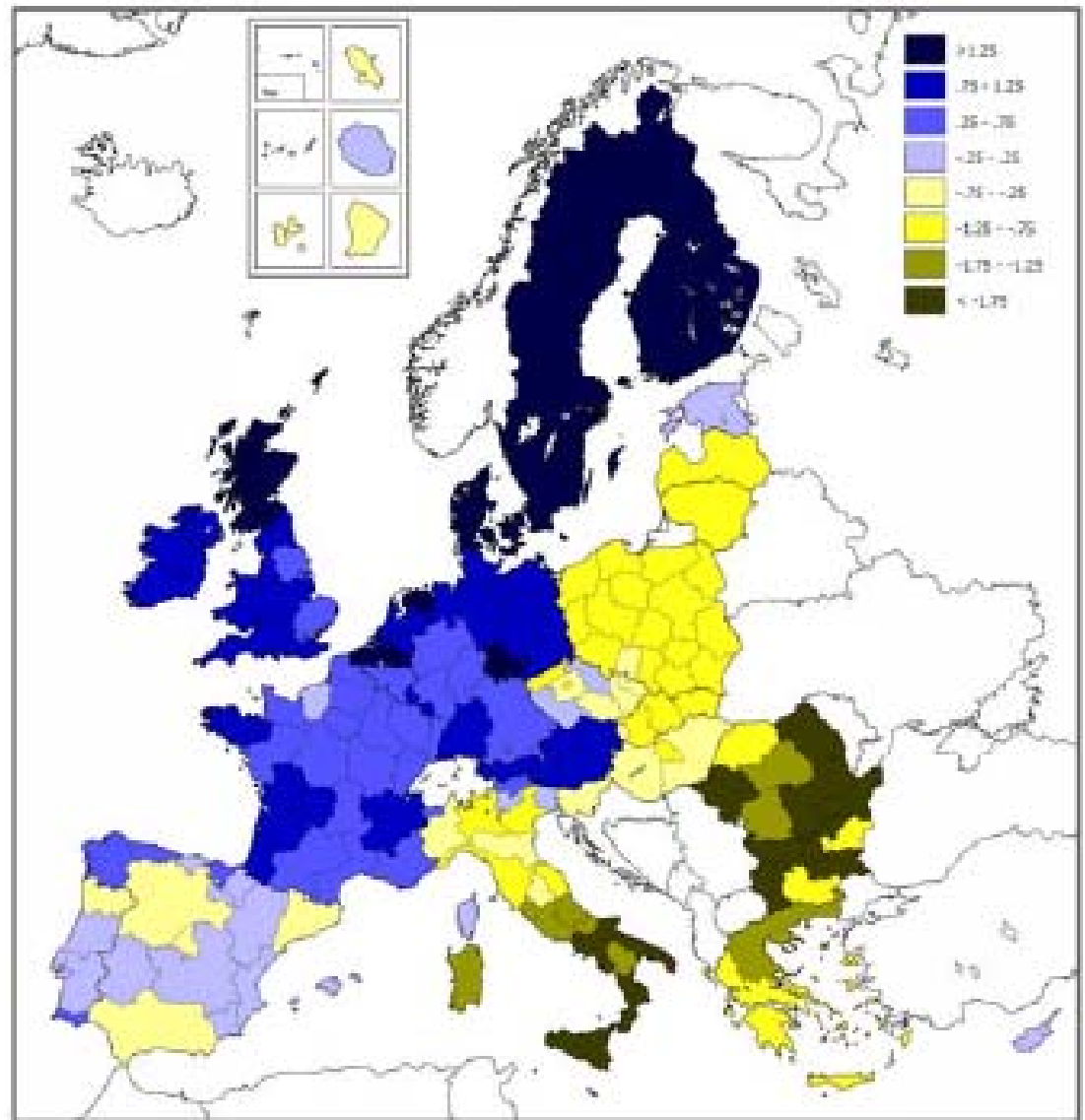


## Indicator overview








Indicator	Level	Reasoning
Regional governance indicator (QuG) 	NUTS-2	Overall performance of governments and public participation
Trust in legal system 	NUTS-0, d.o.u.	Performance of governments, trust in present systems
Cooperation agreements (number, budgets) 	NUTS-2	Measures the level of cooperation
Public debt	NUTS-0	Sustainability of financial sector, reducing vulnerability to economic crises, reducing risks for future generations

# Regional Government Indicator (QuG)

Combined EU  
QuG Index  
(University of Gothenburg)



## Desired direction of change

Indicator	Desired direction of change	
Regional governance indicator (QuG)		 Indicator to increase, the higher the better
Trust in legal system		 Increase desired
Cooperation agreements (number, budgets)		 Cooperations to increase to foster regional development
Public debt		 Decrease desired to minimum level

# Discussions ...

## Group discussions:

### Part 1:

- Do you understand the presented indicators ?  
What questions do you need to ask ?

### Part 2:

- Which indicators are meaningful to you, which are not ?
- Which ones will be most relevant and useful for your work ?



## Short statements from the groups



## Panel discussion:

### Reactions regarding usefulness Advice on next steps for INTERCO and for ESPON

Lewis Dijkstra (DG Regio)  
Sverker Lindblad (SE)  
Attila Sütö (HU)  
Silvia Jost (CH)  
Peter Mehlbye (ESPON)  
Hy Dao (INTERCO)

