INTERCO
Indicators of territorial cohesion

Scientific Platform and Tools Project 2013/3/2

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Annexes to the Scientific report

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Croatia: CROSTAT, Republic of Croatia – Central Bureau of Statistics: http://www.dzs.hr/

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Annex 1. The classification scheme

Table 1: Final classification of categories and sub-categories			
Cat. nr	**Category name**	**Sub-cat. nr**	**Sub-category name**
1	AGRICULTURE AND FISHERIES	1,01	Land Use
		1,02	Farms Structure
		1,03	Employment
		1,04	Livestock
		1,05	Production
2	DEMOGRAPHY	2,01	Population Structure (age, sex, natural change)
		2,02	Migration
		2,03	Total population
		2,04	Urban - rural population
3	TRANSPORT, ACCESSIBILITY, COMMUNICATION	3,01	Transport Infrastructurre
		3,02	Passengers and Good Transport
		3,03	Accessibility
		3,04	Impacts of Transport Policies
		3,05	Information & Communication Technologies
4	ENERGY	4,01	Energy
5	LAND USE	5,01	Land Use
6	SOCIAL AND CULTURAL AFFAIRS, QUALITY OF LIFE	6,01	Households and dwellings
		6,02	Education
		6,03	Health
		6,04	Poverty
		6,05	Other social
		6,06	Culture
		6,07	Quality of life
7	ECONOMY, LABOUR FORCE	7,01	Labour force
		7,02	Employment, Unemployment
		7,03	Income and Consumption
		7,04	Investments, Finances and Expenditures
		7,05	Industry, Services
		7,06	Tourism
		7,07	Innovation
		7,08	Business, all sectors
8	ENVIRONMENT QUALITY, NATURAL ASSETS, HAZARDS	8,01	Environment quality
		8,02	Natural assets
		8,03	Climate change
		8,04	Risks, Hazards
9	GOVERNANCE	9,01	Governance
10	TERRITORIAL STRUCTURE	10,01	Urban structure
		10,02	Regional/ Territorial structure
99	NON - CROSS-THEMATIC DATA	99,01	Integrative indices and typologies
		99,02	Geographical objects

Indicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
1. Synthetic/ composite (headline) indicators	2.01	DEMOGR	Population Structure (age, sex,	Demography index ["Regions 2020", EC 2008]		e					X	
	4.01	ENERGY	Energy	Energy index ["Regions 2020", EC 2008]		e					X	
	6.02	SOCIAL A	Education	Participation in life long learning		w						
	6.04	SOCIAL A	Poverty	Share of population living in households at risk of poverty severely materially deprived or with low work intensity		w	X			X		X
	99.01	NON - CR	Integrative indices and typologi	Globalisation index ["Regions 2020", EC 2008]		w					X	
	99.01	NON - CR	Integrative indices and typologi	Human Development Index		w						
	99.01	NON - CR	Integrative indices and typologi	Change in Lisbon Index, 2000–2008		w	X					
	99.01	NON - CR	Integrative indices and typologi	Regional competitiveness index (5th CR)		w	X					
2. Headline	2.01	DEMOGR	Population Structure (age, sex,	Ageing index (persons 65+ / persons 0-14)	x	e						
	2.01	DEMOGR	Population Structure (age, sex,	Dependency rate	x	e					X	
	2.01	DEMOGR	Population Structure (age, sex,	Life expectancy at birth	x	w				headline		
	2.01	DEMOGR	Population Structure (age, sex,	Life expectancy		w					X	
	2.03	DEMOGR	Total population	Population potential within 5 km	x	e						
	2.03	DEMOGR	Total population	Population average annual growth		e						
	4.01	ENERGY	Energy	Share of renewable energy in final energy consumption and increase needed to meet the 20% target	(x)	e	X			headline		headline
	6.02	SOCIAL A	Education	High education population	x	w						
	6.02	SOCIAL A	Education	Share high educated population in percent	x	w						
	6.02	SOCIAL A	Education	Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target (5th CR)	x	w	X					headline
	6.02	SOCIAL A	Education	Share of tertiary educated people in %	x	w						
	6.03	SOCIAL A	Health	Healthy life expectancy (ESPON 3.2)		w						
	6.03	SOCIAL A	Health	Self-perceived personal state of health in EU Member States (5th CR)		w	X					
	6.04	SOCIAL A	Poverty	At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)		w	X			headline		headline
	6.04	SOCIAL A	Poverty	Share of population living in workless or low work intensity households (5th CR)		w	X					
	6.05	SOCIAL A	Other social	Work-life balance in EU Member States (5th CR)		w	X					

Annex 2. Inventory of indicators (presented at the ESPON MC meeting in Budapest, 23 June 2011)

Indicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	6.07	SOCIAL A	Quality of life	Happiness Index		w	X	X				
	6.07	SOCIAL A	Quality of life	Share of population reporting crime, violence or vandalism by degree of urbanisation (5th CR) - 1st priority indicator		w	X					
	7.02	ECONOM	Employment, Unemployment	Difference between female and male employment rates, 20–64	x	w	X					
	7.02	ECONOM	Employment, Unemployment	Employment rate change (growth)	x	w		X				
	7.02	ECONOM	Employment, Unemployment	Unemployment rate per age: classes of 5 years	x	w	X					
	7.02	ECONOM	Employment, Unemployment	Development of unemployment rate (male, female, young, total, 99-04)	x	w						
	7.03	ECONOM	Income and Consumption	GDP per inhabitant (capita) in pps or euros, per year	x	w		headline				
	7.03	ECONOM	Income and Consumption	GDP change per inhabitant (capita) in pps or euros	x	w				X		
	7.03	ECONOM	Income and Consumption	Median disposable annual household income	x	w						
	7.04	ECONOM	Investments, Finances and Exp	Public sector debt relative to GDP		e	X					
	8.01	ENVIRON	Environment quality	NATURA 2000 area (Share of Natura 2000 area in %) (5th C.R.)		w	X					
	8.02	ENVIRON	Natural assets	Consumption of water per capita		e						
	99.01	NON - CR	Integrative indices and typologie	Intensity of multiple risks (number of challenges) for European Regions ("Regions 2020")	x	w					X	
	9.01	GOVERN	Governance	Electoral participation	x	w						
	9.01	GOVERN	Governance	WGI Index on voice and accountability		w						

Annex 2. Inventory of indicators (presented at the ESPON MC meeting in Budapest, 23 June 2011)

Indicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
3. Core	10.01	TERRITO	Urban structure	MEGA / Metropolitan European Growth Areas		e						
	2.03	DEMOGR	Total population	Population density		e						
	2.04	DEMOGR	Urban - rural population	Urban - rural population in Europe based on national classification		e						
	3.03	TRANSP(	Accessibility	Potential accessibility to GDP by road		e						
	3.03	TRANSP(	Accessibility	Potential accessibility to population by road	x	e						
	3.03	TRANSP(	Accessibility	Time to the nearest motorway access		e						
	3.03	TRANSP(	Accessibility	Travel time to railway stations	x	e						
	4.01	ENERGY	Energy	Energy intensity of the economy		e	X	X		X		headline
	4.01	ENERGY	Energy	Renewable energy consumption		e						
	6.02	SOCIAL A	Education	Early school leavers and distance to Europe 2020 target - 5th CR	x	w	X	X		X		headline
	6.03	SOCIAL A	Health	Health expenditure per capita		i						
	6.03	SOCIAL A	Health	Expenditure on health as part of GDP (national level)		i						
	6.04	SOCIAL A	Poverty	Number of homeless people as a proportion of total resident population		w						
	6.04	SOCIAL A	Poverty	Population suffering from severe material deprivation (% of total population) (5th CR)		w	X			X		X
	6.07	SOCIAL A	Quality of life	Happiness and GDP per head (5th CR)		w	X					
	6.07	SOCIAL A	Quality of life	Homicide rate (5th CR)		w	X					
	7.01	ECONOM	Labour force	Labour productivity, gross domestic product as PPP per person employed		e	X	headline		X		
	7.02	ECONOM	Employment, Unemployment	Employment rate change %, 20–64 years, in certain time period and distance to Europe 2020 target		w	X	X				headline
	7.07	ECONOM	Innovation	% of households having broadband access		e	X	X				X
	7.07	ECONOM	Innovation	Human Resources in Science and Technology (core) (5th CR)		e	X					
	7.07	ECONOM	Innovation	GERD (Gross domestic expenditure on research and development)		i		X		X		headline
	8.01	ENVIRON	Environment quality	Residence density		e						
	8.01	ENVIRON	Environment quality	Urban waste water treatment capacity (5th C.R.)		e		X		X		
	8.02	ENVIRON	Natural assets	Share of areas with high ecological value		w						

3

Indicator level	Themati c sub- cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	8.02	ENVIRON	Natural assets	Dwellings connected to potable water system		w						
	8.02	ENVIRON	Natural assets	% of green space per inhabitant		w						
	8.03	ENVIRON	Climate change	Greenhouse gas emission		e	X	X		headline		headline
	9.01	GOVERN	Governance	Trust in the legal system (Share of persons having complete trust/ no trust at all in the legal system of a counrty)		w						

Inidicator level	Thematic sub-cat. nr	Thematic category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
4. Analytical	10.01	TERRITO	Urban structure	Gini coefficient / Concentration Index (Standard measurement for		...						
	2.03	DEMOGR	Total population	Total population change (5th CR)		e	X					
	3.01	TRANSPO	Transport Infrastructurre	Density of motorways, trunk roads, railways		o						
	3.01	TRANSPO	Transport Infrastructurre	Secondary transport networks		o						
	3.02	TRANSPO	Passengers and Good Transpor	Frequency and average speed of cross-border transportation lines		e						
	3.03	TRANSPO	Accessibility	Congestion cost		e=>w						
	3.03	TRANSPO	Accessibility	Congestion index on the main road network(5th CR) - 1st priority		e	X					
	3.03	TRANSPO	Accessibility	Logistics efficiency		e						
	3.03	TRANSPO	Accessibility	Multimodal/road/rail potential accessibility		e						
	3.03	TRANSPO	Accessibility	Potential accessibility to GDP by air		e						
	3.03	TRANSPO	Accessibility	Potential accessibility to population (mutlimodal)	x	e						
	3.03	TRANSPO	Accessibility	Potential accessibility to population by air	x	e						
	4.01	ENERGY	Energy	Energy impacts (on agric, landscapes, etc)		w=>w						
	4.01	ENERGY	Energy	Renewable energies and their environmental cost		e=>w						
	4.01	ENERGY	Energy	Production of renewable energy per country ?		e						
	4.01	ENERGY	Energy	Solar energy resources per NUTS 3 regions hours (5th CR)		w	X					
	4.01	ENERGY	Energy	Wind energy potential: on shore full load hours (5th CR)		w	X					
	5.01	LAND US	Land Use	Land cover / land use in selected cities (5th C.R.)		w	X					
	6.02	SOCIAL A	Education	Population with a tertiary education per age group (5th CR)		w	X					
	6.03	SOCIAL A	Health	Number of beds and number of employees in health services		o						
	6.03	SOCIAL A	Health	Share of population reporting difficulty of access to primary healthcare by		e	X					
	6.04	SOCIAL A	Poverty	Human Poverty Index (5th CR)		w	X					
	6.04	SOCIAL A	~~Poverty~~	~~UN Human Poverty Index 2 (5th CR)~~		~~w~~	~~X~~					
	6.04	SOCIAL A	Poverty	Share of population at risk of poverty by degree of urbanisation (5th CR)		w	X					
	6.04	SOCIAL A	Poverty	Population at risk of poverty after social transfers (5th CR)		w	X	X		X		X
	6.04	SOCIAL A	Poverty	Share of population unable to face unexpected financial expenses by		w	X					
	6.07	SOCIAL A	Quality of life	Share of population disagreeing with statement:'Generally speaking, most		w	X					
	7.01	ECONOM	Labour force	Labour Force Replacement population of ages 10-19 / population of ages		e						
	7.02	ECONOM	Employment, Unemployment	Difference in employment rates between people born inside the EU and		w	X					
	7.02	ECONOM	Employment, Unemployment	Estimated employment creation induced by Cohesion Policy expenditure		i=>w	X					
	7.03	ECONOM	~~Income and Consumption~~	~~Relative GDP~~		~~...~~						
	7.04	ECONOM	Investments, Finances and Expe	7th Framework Programme, average funding per head (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Cohesion Policy expenditure on the environment by Policy area (5th CR)		i	X					
	7.08	ECONOM	Business, all sectors	Cluster focus		...						
	8.01	ENVIRON	Environment quality	% dwellings connected to sewage treatment system		w						
	8.01	ENVIRON	~~Environment quality~~	~~PM10 concentrations~~	~~x~~	~~w~~						
	8.02	ENVIRON	Natural assets	% of fragmented natural areas		w						
	8.02	ENVIRON	Natural assets	Species diversity	x	w						
	8.02	ENVIRON	Natural assets	Fragmentation index		metric						
	8.03	ENVIRON	Climate change	Climate change index ("Regions 2020", EC 2008)		...					X	
	8.03	ENVIRON	Climate change	Greenhouse gas emissions change		...						
	8.03	ENVIRON	Climate change	Greenhouse gas emissions (Percentage change in emissions of 6 main		...						
	8.03	ENVIRON	Climate change	NO2 concentrations		...						
	8.03	ENVIRON	Climate change	Ozone concentrations	x	w						
	8.03	ENVIRON	Climate change	Ozone concentration exceedances in NUTS 3 regions (5th C. R.) -		...	X					
	8.03	ENVIRON	Climate change	Soil sealing per inhabitant, 2006 (5th CR) - 1st priority	x	...	X					
	8.03	ENVIRON	Climate change	Projected change of temperature and precipitation between 1961–1990		...	X					

Annex 2. Inventory of indicators (presented at the ESPON MC meeting in Budapest, 23 June 2011)

Inidicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenb urg strategy	Sustainbl e Develop ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
	8.03	ENVIRON	Climate change	Projected change in Tourism Climate Index (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Vulnerability of NUTS2 regions to climate change (5th C.R.)	(x)	...	X					
	8.04	ENVIRON	Risks, hazards	Island Vulnerability index		...						
	9.01	GOVERN	Governance	Share of persons working in an organisation or association (other than a		w						
	9.01	GOVERN	Governance	WGI Index on control of corruption		e						
	9.01	GOVERN	Governance	WGI Index on government effectiveness		e						
	9.01	GOVERN	Governance	WGI Index on political stability and absence of violence		e						
	9.01	GOVERN	Governance	WGI Index on regulatory quality		e						
	9.01	GOVERN	Governance	WGI Index on rule of law		e						
	~~99.01~~	NON - CR	Integrative indices and typologie	~~Globalisation vulnerability index~~		~~w~~					X	
	99.01	NON - CR	Integrative indices and typologie	Potential increase in GDP per head from raising employment rate, 20–64,		...	X					
	99.01	NON - CR	Integrative indices and typologie	Potential increase in GDP per head from raising the share of tertiary-		...	X					
	99.01	NON - CR	Integrative indices and typologie	Public expenditure on social protection as a share of GDP and per head of		i	X					

Inidicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection						
					Policy evaluation framework	Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenb urg strategy	Sustainbl e Develop ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
5. Other				1.5 Regional potential: Human potential - Overlapping with		...					
	10.01	TERRITO	Urban structure	Flows and kind of flows within functional areas		...					
	10.01	TERRITO	Urban structure	FUA / Functional Urban Areas		...					
	10.01	TERRITO	Urban structure	FUA primacy rate		...					
	10.01	TERRITO	Urban structure	MEGA population change		...					
	10.01	TERRITO	Urban structure	PIA / Potential Integration Areas population change		...					
	10.01	TERRITO	Urban structure	PUSH areas population change		...					
	10.01	TERRITO	Urban structure	Settlement area in PUSH		...					
	10.01	TERRITO	Urban structure	See also indicators in ESPON 1.1.1		...					
	10.01	TERRITO	Urban structure	Rank of PIAs		...					
	10.01	TERRITO	Urban structure	PUSH areas population		...					
	10.01	TERRITO	Urban structure	Settlement units within the PUSH		...					
	10.01	TERRITO	Urban structure	Employment by professional status in cities		...					
	10.01	TERRITO	Urban structure	Primacy rate -Share of the largest urban area within an		...					
	10.01	TERRITO	Urban structure	Human intervention		...					
	10.01	TERRITO	Urban structure	Urban sprawl		...					
	10.01	TERRITO	Urban structure	Size and spacing of cities or of FUA		...					
	10.01	TERRITO	Urban structure	Degree of urbanisation		...	X				
	10.01	TERRITO	Urban structure	Population age structure by urban-rural typology		...	X				
	10.01	TERRITO	Urban structure	Population change, natural change and migration by urban-rural typology,		...	X				
	10.01	TERRITO	Urban structure	Share of population by urban-rural typology, 2007		...	X				
	10.01	TERRITO	Urban structure	Urban-rural typology of NUTS3 regions (proportion of each category to all		...	X				
	10.01	TERRITO	Urban structure	GDP per head (PPS) in 2007 and change 2000–2007 by urban-rural		...	X				
	10.01	TERRITO	Urban structure	Share of FUA-Population in NUTS 2, NUTS3		...					
	10.01	TERRITO	Urban structure	Share of population in cities below 50.000 inhabitants		...					
	10.02	TERRITO	Regional/ Territorial structure	Population commuting to other regions / working in the same region		...					
	10.02	TERRITO	Regional/ Territorial structure	Region´s share of EU 27+2 GDP in PPS, Change in percent		...					
	10.02	TERRITO	Regional/ Territorial structure	Polycentric index for European regions	x	...					
	10.02	TERRITO	Regional/ Territorial structure	Geographical specificities ("Specific regions"): Several indicators included		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified economy indicators divided by # of		...					
	10.02	TERRITO	Regional/ Territorial structure	Classified economy		...					
	10.02	TERRITO	Regional/ Territorial structure	Region´s share of EU 27+2 population, Change in percent		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified labour market indicators divided by # of		...					
	10.02	TERRITO	Regional/ Territorial structure	Classified demography		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified demography indicators divided by # of		...					
	10.02	TERRITO	Regional/ Territorial structure	Classified labour market		...					
	10.02	TERRITO	Regional/ Territorial structure	Employment and commuting among NUTS level 2 regions		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified accessibility indicators divided by # of		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified environment indicators divided by # of		...					
	10.02	TERRITO	Regional/ Territorial structure	Additive combination of classified hazard indicators divided by # of		...					
	1.01	AGRICUL	Land Use	Agriculture - bio-fuels (areas occupied)		...					
	1.01	AGRICUL	Land Use	Utilised agricultural areas		...					
	1.02	AGRICUL	Farms Structure	% (change of) holders who are full time		...					
	1.02	AGRICUL	Farms Structure	Total number of Holders		...					
	1.02	AGRICUL	Farms Structure	55yrs < change in holders < 35yrs		...					
	1.02	AGRICUL	Farms Structure	Age of farm holders		...					
	1.02	AGRICUL	Farms Structure	Number of farm holdings		...					

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Inidicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenb urg strategy	Sustainble Develop ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
	1.02	AGRICUL	Farms Structure	Number of Holders in Fishing and agriculture		...						
	1.02	AGRICUL	Farms Structure	Number of Holders in Forestry and logging		...						
	1.02	AGRICUL	Farms Structure	% (change in number) of holdings > x ESU (European Size Unit)		...						
	1.02	AGRICUL	Farms Structure	% of holdings with an OGA (Other Gainful Activity)		...						
	1.03	AGRICUL	Employment	Annual work unit (AWU) per European Size Unit(ESU)[Standard Gross		...						
	1.03	AGRICUL	Employment	Persons working in agriculture		...						
	1.03	AGRICUL	Employment	Persons working in fishing		...						
	1.03	AGRICUL	Employment	Persons working in forestry		...						
	1.04	AGRICUL	Livestock	Livestock		...						
	1.05	AGRICUL	Production	Fishing		...						
	1.05	AGRICUL	Production	Aquaculture		...						
	1.05	AGRICUL	Production	Agriculture - peri-urban agriculture (incl. changes)		...						
	1.05	AGRICUL	Production	Added value in Agriculture, Forestry and		...						
	1.05	AGRICUL	Production	Agriculture turnover		...						
	1.05	AGRICUL	Production	Agriculture - type		...						
	1.05	AGRICUL	Production	Output-Input ratio in agriculture		...						
	2.01	DEMOGR	Population Structure (age, sex, r	Population pyramid		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Ageing of population		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Crude birth rate / Crude death rate		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Index of demographic sustainability (ESPON 3.2)		...						
	2.01	DEMOGR	Population Structure (age, sex, r	Population between 15 and 64 years		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Population with 65 and more years		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Resident population (total, gender proportion)		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Share of children		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Aged People vs. Youth		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Share of population in the ages over 65 in percent		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Male life expectancy at birth (5th CR)		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Natural population growth (5th CR)		e	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Standardised death rate from cancer for population under 65 (5th CR)		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Standardised death rate from heart disease for population under 65 (5th		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Standardised death rate from suicide for population under 65 (5th CR)		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Ageing "Labour Force"		...						
	2.01	DEMOGR	Population Structure (age, sex, r	Female life expectancy at birth (5th CR)		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Index of sustainable demographic development (ISDD)		...						
	2.01	DEMOGR	Population Structure (age, sex, r	Infant mortality rate (5th CR)		w	X					
	2.01	DEMOGR	Population Structure (age, sex, r	Changes in Natural Growth Potential		...						
	2.01	DEMOGR	Population Structure (age, sex, r	Population by sex and age		e						
	2.01	DEMOGR	Population Structure (age, sex, r	Total fertility rate		e						
	2.02	DEMOGR	Migration	In migration, Out migration, Emigration , Immigration		...						
	2.02	DEMOGR	Migration	Migration by country of origin and destination		...						
	2.02	DEMOGR	Migration	Internal mobility by region		...						
	2.02	DEMOGR	Migration	Migratory balance by regions		...						
	2.02	DEMOGR	Migration	- in migration (related to educ. level)		...						
	2.02	DEMOGR	Migration	Nationals, EU nationals, Non-EU nationals that have moved into the city		...						
	2.02	DEMOGR	Migration	Residents' citizenship		...						
	2.02	DEMOGR	Migration	Nationals as a proportion of the total population		...						
	2.02	DEMOGR	Migration	Internal / External / Total / Absolute migratory balance		...						

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	2.02	DEMOGR	Migration	Net migration rate	x	...						
	2.02	DEMOGR	Migration	Emigration & immigration per country, in migration & out migration per		...						
	2.02	DEMOGR	Migration	Net migration into NUTS3 regions (5th CR)		...	X					
	2.02	DEMOGR	Migration	Population aged 15–64 born outside the EU (5th CR)		...	X					
	2.02	DEMOGR	Migration	Share of working age residents who moved from a different Euregion (5th		...	X					
	2.03	DEMOGR	Total population	Components of population development		...						
	2.03	DEMOGR	Total population	Variation of the population 2000-2050		...						
	2.03	DEMOGR	Total population	PSR in 2050		...						
	2.03	DEMOGR	Total population	Population projections		...						
	~~2.03~~	~~DEMOGR~~	~~Total population~~	~~Population size per region~~		...						
	2.03	DEMOGR	Total population	Population change		...						
	2.03	DEMOGR	Total population	Population number per region [Avg size]		...						
	2.04	DEMOGR	Urban - rural population	Relative rurality based on national classifications		...						
	2.04	DEMOGR	Urban - rural population	% of the total country population living in top-largest city (and or cities)		...						
	2.04	DEMOGR	Urban - rural population	Rural population per NUTS		...						
	2.04	DEMOGR	Urban - rural population	Urban population per NUTS		...						
	3.01	TRANSPO	Transport Infrastructurre	Traffic separation in different infrastructure levels		...						
	3.01	TRANSPO	Transport Infrastructurre	Productivity of inland infrastructure		...						
	3.01	TRANSPO	Transport Infrastructurre	Productivy of airports		...						
	3.01	TRANSPO	Transport Infrastructurre	Number and quality of connections to hubs and urban centres		...						
	3.01	TRANSPO	Transport Infrastructurre	Airports and harbours of global governance		...						
	3.01	TRANSPO	Transport Infrastructurre	Urban transportations / public transportations		...						
	3.01	TRANSPO	Transport Infrastructurre	Highest speed on railway sections according to timetables (5th CR)		...	X					
	3.01	TRANSPO	Transport Infrastructurre	Motorways in relation to potential population (5th CR)		...	X					
	3.01	TRANSPO	Transport Infrastructurre	Real GDP change due to TEN-T investments (5th CR)		...	X	X				
	3.01	TRANSPO	Transport Infrastructurre	Roads (km) and railways		...						
	3.02	TRANSPO	Passengers and Good Transpor	Number of passengers travelling by air		...						
	3.02	TRANSPO	Passengers and Good Transpor	Spending on transport fuel for freight as % of GDP		...						
	3.02	TRANSPO	Passengers and Good Transpor	Road freight crossing the region borders		...						
	3.02	TRANSPO	Passengers and Good Transpor	External passengers (outside the region) at more than 3h		...						
	3.02	TRANSPO	Passengers and Good Transpor	Volume of freight transport relative to GDP		...						
	3.02	TRANSPO	Passengers and Good Transpor	Passenger flights of less than 500km (5th CR)		...	X					
	3.02	TRANSPO	Passengers and Good Transpor	Passenger trains on the TEN-T railway network (5th CR)		...	X					
	3.02	TRANSPO	Passengers and Good Transpor	Road fatalities (5th CR)		...	X					
	3.02	TRANSPO	Passengers and Good Transpor	Share of freight by mode of transport in EU Member States (5th CR)		...	X					
	3.02	TRANSPO	Passengers and Good Transpor	Share of passengers by mode of transport in EU Member States (5th CR)		...	X					
	3.03	TRANSPO	Accessibility	Accessibility		...						
	3.03	TRANSPO	Accessibility	Connectivity to commercial airports		...						
	3.03	TRANSPO	Accessibility	Car driving time to the nearest (x) facility		...						
	3.03	TRANSPO	Accessibility	Access to high-speed train services		...						
	3.03	TRANSPO	Accessibility	Daily market accessible by car in terms of GDP		...						
	3.03	TRANSPO	Accessibility	Accessibility (incl. Maritime transport) - new technologies		...						
	3.03	TRANSPO	Accessibility	Accessibility (incl. Maritime transport) - reliability		...						
	3.03	TRANSPO	Accessibility	Accessibility (incl. Maritime transport) - costs of accessibility		e						
	3.03	TRANSPO	Accessibility	Accessibility (incl. Maritime transport) - interlinkage between international		...						
	3.03	TRANSPO	Accessibility	Accessibility (incl. Maritime transport) - modal split in the regional transport		...						
	3.03	TRANSPO	Accessibility	Car travel time to commercial airports		...						

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					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	3.03	TRANSP	Accessibility	Car travel time to universities/polytechniques/hospitals		...						
	3.03	TRANSP	Accessibility	Classified accessibility		...						
	3.03	TRANSP	Accessibility	Stock of vehicles by category at regional level		...						
	3.03	TRANSP	Accessibility	Water access		...						
	3.03	TRANSP	Accessibility	Local accessibility		...						
	3.03	TRANSP	Accessibility	Access to green space		...						
	3.03	TRANSP	Accessibility	Accessibility to passenger flights 2008 (5th CR)		...	X					
	3.03	TRANSP	Accessibility	Estimated increase in rail accessibility: current situation relative to low-		...	X					
	3.03	TRANSP	Accessibility	Estimated increase in road accessibility: current situation relative to low-		...	X					
	3.03	TRANSP	Accessibility	Potential increase in rail accessibility: high-speed scenario relative to		...	X					
	3.03	TRANSP	Accessibility	Potential increase in road accessibility depending on high-speed scenario		...	X					
	3.03	TRANSP	Accessibility	Accessibility time to market		...						
	3.03	TRANSP	Accessibility	Accessibility to the nearest/ most frequently used hospital		...						
	3.03	TRANSP	Accessibility	Average travel time to three higher hierarchical cities		...						
	3.03	TRANSP	Accessibility	Peripherality indicator by car with respect to population		...						
	3.03	TRANSP	Accessibility	Potential accessibilityn - for weigting incentives to areas		...						
	3.03	TRANSP	Accessibility	Proportion of regional population within 1 hour car travel time to next		...						
	3.03	TRANSP	Accessibility	Regional road connectivity		...						
	3.04	TRANSP	Impacts of Transport Policies	Age of car park		...						
	3.05	TRANSP	Information & Communication Te	Share of business internet users		...						
	3.05	TRANSP	Information & Communication Te	Proportion of firms with own website		...						
	3.05	TRANSP	Information & Communication Te	E-accessibility / ease of use ICTs (NUTS 0)		...						
	3.05	TRANSP	Information & Communication Te	Broadband coverage in persons, firms, companies websites		...						
	3.05	TRANSP	Information & Communication Te	Companies with internet access		...						
	3.05	TRANSP	Information & Communication Te	Human ressources in science and technology		...						
	3.05	TRANSP	Information & Communication Te	Share of private internet users		...						
	4.01	ENERGY	Energy	Electricity / Gas Prices		...		X				
	4.01	ENERGY	Energy	Energy Inland consumption		...						
	4.01	ENERGY	Energy	Private energy use		...						
	4.01	ENERGY	Energy	Final Energy Demand		...						
	4.01	ENERGY	Energy	Energy Net Imports		...						
	4.01	ENERGY	Energy	Energy Production		...						
	4.01	ENERGY	Energy	Electricity Generation		...						
	4.01	ENERGY	Energy	% employment in industries with high energy purchases		...						
	4.01	ENERGY	Energy	Energy source		...						
	4.01	ENERGY	Energy	- share of total energy produced/consumed		...						
	4.01	ENERGY	Energy	% of GVA in industries with high energy purchases		...						
	4.01	ENERGY	Energy	Local potential in renewable energies		w						
	4.01	ENERGY	Energy	Total energy consumption		...						
	~~4.01~~	~~ENERGY~~	~~Energy~~	~~Energy intensity of the economy~~		...						
	4.01	ENERGY	Energy	Photovoltaic potential		...						
	4.01	ENERGY	Energy	Renewable electricity production at country level, worldwide		e						
	4.01	ENERGY	Energy	Share of renewable generation in respect to total electricity generation at		e						
	4.01	ENERGY	Energy	Solar energy resources in NUTS3 regions (5th C.R.)		...	X					
	4.01	ENERGY	Energy	Source of investments in energy (share of european, national, local)		...						
	4.01	ENERGY	Energy	Wind Power Energy Potential 2005		...						
	5.01	LAND US	Land Use	Agriculture - use of good agric soils for urban development		...						

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	5.01	LAND US	Land Use	Total area of the regions (land use total) in km2		...						
	5.01	LAND US	Land use	Corine LC Natural surface		...						
	5.01	LAND US	Land Use	Land consumption by type of activity		...						
	5.01	LAND US	Land Use	Land consumption by transport infrastructure		...						
	5.01	LAND US	Land use	Percentage of artificial area - Corine		...						
	5.01	LAND US	Land Use	(Total agricultural area entered into agri-environment schemes under		...						
	5.01	LAND US	Land use	Corine LC Artificial surface		...						
	5.01	LAND US	Land Use	Agricultural intensity		...						
	~~5.01~~	~~LAND US~~	~~Land use~~	~~Artificial surfaces / territories~~		...						
	5.01	LAND US	Land Use	Loss of land from agriculture to artificial surfaces		...						
	5.01	LAND US	Land use	Land use changes		...						
	5.01	LAND US	Land Use	% of the area in green space/ sports/commercial activities/transports		...						
	5.01	LAND US	Land use	CORINE land use		...						
	5.01	LAND US	Land Use	Proportion morphological city area outside administrative limits		...						
	6.01	SOCIAL A	Households and dwellings	Lone - person		...						
	6.01	SOCIAL A	Households and dwellings	Lone - parent		...						
	6.01	SOCIAL A	Households and dwellings	% households living in social housing		...						
	6.01	SOCIAL A	Households and dwellings	Households living in owned housing, in social housing, in private rented		...						
	6.01	SOCIAL A	Households and dwellings	Number of dwellings		...						
	6.01	SOCIAL A	Households and dwellings	Proportion of dwellings lacking basic amenities		...						
	6.01	SOCIAL A	Households and dwellings	Proportion of households reliant upon social security		...						
	6.01	SOCIAL A	Households and dwellings	Cost of housing (in relation to purchase power)		w						
	6.01	SOCIAL A	Households and dwellings	The share of households receiving less than half of the national average		...						
	6.01	SOCIAL A	Households and dwellings	Average occupancy per occupied dwelling		...						
	6.01	SOCIAL A	Households and dwellings	Empty conventional dwellings		...						
	6.01	SOCIAL A	Households and dwellings	Average price of dwelling		...						
	6.01	SOCIAL A	Households and dwellings	Average area of living accommodation (m2 per person)		...						
	6.01	SOCIAL A	Households and dwellings	Households with children aged to under 18		...						
	6.02	SOCIAL A	Education	Number of person by educational attainment		...						
	6.02	SOCIAL A	Education	Languages spoken (native / at high level / etc)		...						
	6.02	SOCIAL A	Education	Number of students by different level of education		...						
	6.02	SOCIAL A	Education	Levels of education attained by population (NUTS 0)		...						
	6.02	SOCIAL A	Education	Highest education attainment		...						
	6.02	SOCIAL A	Education	% of women by level, worldwide of education at country level, worldwide		...						
	6.02	SOCIAL A	Education	Low achievers in mathematics, reading and science (5th CR)		...	X					
	6.02	SOCIAL A	Education	Participation of adults aged 25–64 in education and training (5th CR)		...	X					
	6.02	SOCIAL A	Education	Population aged 25–64 with low education (5th CR)		...	X					
	6.02	SOCIAL A	Education	Proportion of population with only basic education by country and regional		...	X					
	6.02	SOCIAL A	Education	Accessibility to High Secondary School		...						
	6.02	SOCIAL A	Education	Accessibility to Technological Education		...						
	6.02	SOCIAL A	Education	Accessibility to training structures		...						
	6.02	SOCIAL A	Education	Early school leavers		...						X
	6.02	SOCIAL A	Education	Education expenditure as % of GDP		i						
	6.02	SOCIAL A	Education	Public expenditure on education as a share of GDP and per head of		i	X					
	6.02	SOCIAL A	Education	Enrollment ratios in secondary and tertiary education at country level,		...						
	6.02	SOCIAL A	Education	Gender balance of population aged 25–34 with tertiary education (5th CR)		...	X					
	6.02	SOCIAL A	Education	Gender balance of population aged 55–64 with tertiary education (5th CR)		...	X					

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	6.02	SOCIAL A	Education	Youth education attainment level		...		X	X			
	6.03	SOCIAL A	Health	Public health expenditure (% of GNP or GDP)		i						
	6.04	SOCIAL A	Poverty	At risk of poverty rates in five less developed Member States		...	X					
	6.04	SOCIAL A	Poverty	Changes in material deprivation and net household income in five less		...	X					
	6.04	SOCIAL A	Poverty	Share of population materially deprived and severaly deprived by degree		...	X					
	6.05	SOCIAL A	Other social	Proportion of individuals reliant on social security		...						
	6.05	SOCIAL A	Other social	Share of children 0-2 years old in childcare		...						
	6.05	SOCIAL A	Other social	Share of population reporting difficulty of access to banking services by		e	X					
	6.05	SOCIAL A	Other social	Share of population reporting difficulty of access to compulsory schools by		e	X					
	6.06	SOCIAL A	Culture	Density of monuments		...						
	6.06	SOCIAL A	Culture	Infrastructures for Cultural Activities (Number of places for cultural events		...						
	6.06	SOCIAL A	Culture	Number of monuments per NUTS 2, 3 areas		...						
	6.06	SOCIAL A	Culture	Number of cultural sites (including monuments)		...						
	6.06	SOCIAL A	Culture	UNESCO World Heritage Sites per region		...						
	6.06	SOCIAL A	Culture	Multicultural society (% Ethnic minorities and other nationalities in		...						
	6.06	SOCIAL A	Culture	Access to cultural services		...						
	6.06	SOCIAL A	Culture	Share of UNESCO cultural landscapes and conjuncts		...						
	6.07	SOCIAL A	Quality of life	Services of general interest - location of services		...						
	6.07	SOCIAL A	Quality of life	Services of general interest - accessibility in time		...						
	6.07	SOCIAL A	Quality of life	Services of general interest - quality provided		...						
	6.07	SOCIAL A	Quality of life	Services of general interest - minimum level needed		...						
	6.07	SOCIAL A	Quality of life	Services of general interest - in functional areas, for each of the services		...						
	6.07	SOCIAL A	Quality of life	Quality of life indicators (HDI, trust in the future, etc)		...						
	6.07	SOCIAL A	Quality of life	Inhabitants satisfaction (// GDP, neg. Agglomaration effects)		...						
	6.07	SOCIAL A	Quality of life	Happiness and life satisfaction indices in 5 less developed Member States		...	X					
	6.07	SOCIAL A	Quality of life	Level of security		w						
	6.07	SOCIAL A	Quality of life	Number of murders and violent deaths for 1.000 residents		w						
	6.07	SOCIAL A	Quality of life	Level of satisfaction of residents with aspects of quality of life in selected		...	X					
		ECONOMY, LABOUR FORCE		Theil index		...						
	7.01	ECONOM	Labour force	Female activity rate		...						
	7.01	ECONOM	Labour force	Male activity rate		...						
	7.01	ECONOM	Labour force	Creative workforce		...						
	7.01	ECONOM	Labour force	Total active population		...						
	7.01	ECONOM	Labour force	Economic activity rate per year and change		...						
	7.01	ECONOM	Labour force	Labour costs		e						
	7.01	ECONOM	Labour force	Total labour force at country level, worldwide		...						
	7.01	ECONOM	Labour force	Productivity - GDP per person employed		e						
	~~7.01~~	~~ECONOM~~	~~Labour force~~	~~Labour productivity, gross domestic product as PPP per person employed~~		e						
	7.01	ECONOM	Labour force	Productivity growth through employment shifts between sectors (5th CR)		e=>e	X					
	7.01	ECONOM	Labour force	Labour productivity in industry and services		e	X					
	7.01	ECONOM	Labour force	Labour productivity in industry and services (GDP per head) [annual %		e	X					
	7.01	ECONOM	Labour force	Sources of growth in labour productivity		e	X					
	7.02	ECONOM	Employment, Unemployment	Persons employed per km²		...						
	7.02	ECONOM	Employment, Unemployment	% of employed by gender and age		...						
	7.02	ECONOM	Employment, Unemployment	% of employed in primary, secondary and tertiary sector		...						
	7.02	ECONOM	Employment, Unemployment	% of employed in public and private sector		...						
	7.02	ECONOM	Employment, Unemployment	Employment in the NACE groups of activities		...						

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Inidicator level	Thematic sub-cat. nr	Thematic category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	7.02	ECONOM	Employment, Unemployment	Self - employment rate (residents)		...						
	7.02	ECONOM	Employment, Unemployment	Cross-border commuters		...						
	~~7.02~~	~~ECONOM~~	~~Employment, Unemployment~~	~~Long term unemployment rate~~		...						
	7.02	ECONOM	Employment, Unemployment	Old active unemployment rate		...						
	7.02	ECONOM	Employment, Unemployment	Total number of unemployed by sector		...						
	7.02	ECONOM	Employment, Unemployment	Employment - number of people and type of work		...						
	7.02	ECONOM	Employment, Unemployment	Coefficient of variation of unemployment rate		...						
	7.02	ECONOM	Employment, Unemployment	Dispersion of regional unemployment rates		...						
	7.02	ECONOM	Employment, Unemployment	Employment commuting among NUTS3 regions		...						
	7.02	ECONOM	Employment, Unemployment	Persons employed in Agriculture 2001 in percent of total		...						
	7.02	ECONOM	Employment, Unemployment	Persons employed in Services 2001 in percent of total		...						
	7.02	ECONOM	Employment, Unemployment	Percentage of employment in high and medium tech manufacturing		...						
	7.02	ECONOM	Employment, Unemployment	Percentage of employment in knowledge intensive high technology		...						
	7.02	ECONOM	Employment, Unemployment	Employment in innovation / RDI / high tech activities		...						
	7.02	ECONOM	Employment, Unemployment	Part-time employment by gender		...						
	7.02	ECONOM	Employment, Unemployment	Employment density		...						
	7.02	ECONOM	Employment, Unemployment	Employment (levels -000s)		...						
	7.02	ECONOM	Employment, Unemployment	Unemployment rate, over/under 25 years		...						
	7.02	ECONOM	Employment, Unemployment	Employment rate		...						
	7.02	ECONOM	Employment, Unemployment	Employment rate of older workers		...						
	7.02	ECONOM	Employment, Unemployment	Employment by sector of operation (2 digits)		...						
	7.02	ECONOM	Employment, Unemployment	Employment in ICT/science and technology		...						
	7.02	ECONOM	Employment, Unemployment	Employment by sector at local level		...						
	7.02	ECONOM	Employment, Unemployment	Change in unemployment rate		...	X					
	7.02	ECONOM	Employment, Unemployment	Employment in high-technology sectors		...	X					
	7.02	ECONOM	Employment, Unemployment	Long-term unemployment rate (5th C.R.)		...	X					
	7.02	ECONOM	Employment, Unemployment	Unemployment rate [% of labour force]		...	X					
	7.02	ECONOM	Employment, Unemployment	Unemployment rates by country and regional extremes (5th CR)		...	X					
	7.02	ECONOM	Employment, Unemployment	Young people aged 15–24 not in work,education or training (5th CR)		...	X					
	7.02	ECONOM	Employment, Unemployment	Youth unemployment rate		...	X					
	7.02	ECONOM	Employment, Unemployment	Employment and productivity by sector		e, w	X					
	7.02	ECONOM	Employment, Unemployment	Employment per economic activity		...						
	7.02	ECONOM	Employment, Unemployment	Total number of employees by sector		...						
	7.02	ECONOM	Employment, Unemployment	Employment communting from / to FUAs		...						
	7.02	ECONOM	Employment, Unemployment	Employment in the transport sector as % of total employment		e						
	7.02	ECONOM	Employment, Unemployment	Employment rate per year		...						
	7.02	ECONOM	Employment, Unemployment	Employment ratio of female to male rates at country level, worldwide		...						
	7.02	ECONOM	Employment, Unemployment	Unemployment rate by level, worldwide of education at country level,		...						
	7.03	ECONOM	Income and Consumption	GDP per employee		...						
	7.03	ECONOM	Income and Consumption	GDP per economic activity		...						
	7.03	ECONOM	Income and Consumption	Total household income		...						
	7.03	ECONOM	Income and Consumption	Level of income		...						
	7.03	ECONOM	Income and Consumption	Coefficient of variation of GDP per capita		...						
	7.03	ECONOM	Income and Consumption	GDP smoothing at 40-50 km		...						
	7.03	ECONOM	Income and Consumption	Dispersion of GDP per head, EU-15 NUTS 2 regions (5th CR)		...	X					
	7.03	ECONOM	Income and Consumption	Growth rate of GDP in PPS per capita		...						
	7.03	ECONOM	Income and Consumption	Regional GDP per inhabitant		...						

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					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenb urg strategy	Sustainbl e Develop ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
	7.03	ECONOM	Income and Consumption	Income distribution in quintiles		...						
	7.03	ECONOM	Income and Consumption	Wages and salary		...						
	7.03	ECONOM	Income and Consumption	Intra-regional income dispersion		...						
	7.03	ECONOM	Income and Consumption	Share of total trade in GDP at country level, worldwide		...						
	7.03	ECONOM	Income and Consumption	Total trade in merchandise and services (imports and exports) at country		...						
	7.03	ECONOM	Income and Consumption	GNI per capita based on purchasing power parity (PPP) at country level,		...						
	7.03	ECONOM	Income and Consumption	Growth of GDP per head in real terms		...	X					
	7.03	ECONOM	Income and Consumption	NAFTA:GDP per head (USDPPS)		...	X					
	7.03	ECONOM	Income and Consumption	Net adjusted disposable income of private households (PPCS)		...	X					
	7.03	ECONOM	Income and Consumption	Russia, India, China and Brazil: Regional GDP per head		...	X					
	7.03	ECONOM	Income and Consumption	Western Balkans:GDP per head (PPS)		...	X					
	7.03	ECONOM	Income and Consumption	Regional Index of Sustainable Economic Well-being and gross value-		...	X					
	7.03	ECONOM	Income and Consumption	Sources of economic growth		...	X					
	7.03	ECONOM	Income and Consumption	GDP per region		...						
	7.03	ECONOM	Income and Consumption	GDP per economic sector		...						
	7.03	ECONOM	Income and Consumption	~~Gross Domestic Product (per region)~~		w						
	7.03	ECONOM	Income and Consumption	Gross capital formation (% of GDP) at country level, worldwide		...						
	7.03	ECONOM	Income and Consumption	GNP per inhabitant		...						
	7.03	ECONOM	Income and Consumption	Regional GVA (billions of euros, 2000 base year)		...						
	7.04	ECONOM	Investments, Finances and Expe	Location of China's investments		...						
	7.04	ECONOM	Investments, Finances and Expe	Money flows on various levels		...						
	7.04	ECONOM	Investments, Finances and Expe	Taxation		...						
	7.04	ECONOM	Investments, Finances and Expe	Access to venture-capital		...						
	7.04	ECONOM	Investments, Finances and Expe	Green investments		...						
	7.04	ECONOM	Investments, Finances and Expe	Annual enterprise and innovation spending		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Balance of net FDI inflows and outflows		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Change in expenditure and revenue of sub-national levels of government		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Change in public investment compared to change in total public		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Estimated public investment per head (PPS)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Net effect of taxes and public transfers		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Net personal remittances		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Public expenditure by administrative level in the EU		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Public expenditure by broad COFOG categories in the EU		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Public expenditure by policy area		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Public expenditure on environmental protection as share of GDP and per		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Public expenditure on transport, communications and energy as a share of		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Sub-national public expenditure as a share of GDP in 2009 and change		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Sub-national public investment as a share of total public investment		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Total public expenditure as a share of GDP		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Total public expenditure per head in PPS		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Total public investment per head in PPS		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Fiscal stimulus by area relative to GDP		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Public investment as a share of GDP in Cohesion and non-Cohesion		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Public investment per head in PPS by type of region		...	X					
	7.04	ECONOM	Investments, Finances and Expe	6th Framework Programme,average funding per head (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	A comparison of the growth rates of Objective 1 and other regions (5th		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Aid intensity of ERDF,Cfand ISPA by urban-rural typology ofregions in the		...	X					

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					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	7.04	ECONOM	Investments, Finances and Expe	CAP Pillar 1 – EAGF expenditure per UAA (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	CAP Pillar 2– EAFRD expenditure per head (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Cohesion Policy expenditure relative to GDP (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Cohesion Policy spending by main theme (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Cumulative net effect of Cohesion Policy on GDP—longterm gains in		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Distribution of Funds by Objective (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Estimated impact of Cohesion Policy expenditure on GDP (5th CR)		i=>w	X					
	7.04	ECONOM	Investments, Finances and Expe	Estimated impact of investment grants per employee (5th CR)		i=>?	X					
	7.04	ECONOM	Investments, Finances and Expe	Estimated Impact of R&D grants per employee (5th CR)		i=>?	X					
	7.04	ECONOM	Investments, Finances and Expe	Impact of Cohesion Policy in each country: cumulative effect on GDP (5th		io=>w	X					
	7.04	ECONOM	Investments, Finances and Expe	Impact of Cohesion Policy in each country: cumulative effect on		io=>w	X					
	7.04	ECONOM	Investments, Finances and Expe	Less-Favoured Areas (PROPORTION TO ALL OF AREAS) (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Planned Cohesion Policy expenditure on transport (5th CR)		i	X					
	7.04	ECONOM	Investments, Finances and Expe	Planned investments of Cohesion Policy in environment (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Planned investments of Cohesion Policy in RTD,innovation,enterprise		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Planned investments of Cohesion Policy in transport infrastructure (5th		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Sectoral breakdown of EIB support to Cohesion Policy (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Share of ERDF and Cohesion Fund in total public investment (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Share of main beneficiary Member States in total exports of net donor		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Total EIB support to Cohesion Policy 1 (amount signed) (5th CR)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Foreign Direct Investments in reporting economies (inward and outward)		...						
	7.04	ECONOM	Investments, Finances and Expe	Planned investments of Cohesion Policy in human capital, 2007–2013 (5th		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Private investment per head (PPS)		...	X					
	7.04	ECONOM	Investments, Finances and Expe	Productivity growth within sectors		e	X					
	7.05	ECONOM	Industry, Services	Specialisation of region's economy		...						
	7.05	ECONOM	Industry, Services	Trade between EU15 and EU12		...	X					
	7.05	ECONOM	Industry, Services	Trade in goods relative to GDP EU-27		...	X					
	7.05	ECONOM	Industry, Services	Trade in services relative to GDP EU-27		...	X					
	7.05	ECONOM	Industry, Services	Exports and imports to other EU Member States		...	X					
	7.05	ECONOM	Industry, Services	Share of administration, education, health and social services in the		...						
	7.05	ECONOM	Industry, Services	Share of financial and business services in the regional added value		...						
	7.05	ECONOM	Industry, Services	Share of technological manufacturing industries in the regional added		...						
	7.06	ECONOM	Tourism	Turnover in tourism sector		...						
	7.06	ECONOM	Tourism	No. of tourist bed places		...						
	7.06	ECONOM	Tourism	No. of nights spent		...						
	7.06	ECONOM	Tourism ????	No. of hospital days		...						
	7.06	ECONOM	Tourism	Number of non-resident visits to a region [Tourism?]		...						
	7.06	ECONOM	Tourism	Number of non-resident visits to a region		...						
	7.07	ECONOM	Innovation	Patent applications to the EPO by priority year at the regional level, total		...						
	7.07	ECONOM	Innovation	Number of start-ups		...						
	7.07	ECONOM	Innovation	Regional innovation performance index, from European Regional		...						
	7.07	ECONOM	Innovation	Co-patenting (OCDE)		...						
	7.07	ECONOM	Innovation	Telecommunication uptake		...						
	7.07	ECONOM	Innovation	R&D BES personnel (in fte) per 1000 active person 2002 rsp. last year		...						
	7.07	ECONOM	Innovation	R&D BES, Total personnel (in fte) per 1000 active person		...						
	7.07	ECONOM	Innovation	R&D BES personnel		...						
	7.07	ECONOM	Innovation	Innovation and eco-innovation pilot and market replication projects		...						

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					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	7.07	ECONOM	Innovation	Investment in ICT (especially for SME)		...						
	7.07	ECONOM	Innovation	Economic specialisation (in advanced service activities, R&D, high		...						
	7.07	ECONOM	Innovation	Effect of support for research		...	X					
	7.07	ECONOM	Innovation	Households with broadband connection (5th CR)		...	X					
	7.07	ECONOM	Innovation	Households with broadband internert by degree of urbanisation (5th CR)		...	X					
	7.07	ECONOM	Innovation	Increase in household broadband connections (5th CR)		...	X					
	7.07	ECONOM	Innovation	Patent applications to the European Patent Office (EPO)		...	X	X				
	7.07	ECONOM	Innovation	Regional Innovation Performance Index (5th CR)		...	X					
	7.07	ECONOM	Innovation	Regional innovation potential (5th CR)		...	X					
	7.07	ECONOM	Innovation	Total expenditure on R&D (5th CR)		i	X					
	7.07	ECONOM	Innovation	Availability and use of e-Governement services (5th CR)		e	X					
	7.07	ECONOM	Innovation	Employment in technology and knowledge intensive sectors by gender		...		X				
	7.07	ECONOM	Innovation	% of households having access to the internet at home		...		X				
	7.07	ECONOM	Innovation	Human resources in science and technology		...						
	7.07	ECONOM	Innovation	Research & Development Expenditures		i						
	7.07	ECONOM	Innovation	Expenditures, R&D, all institutional sectors, in %		i						
	7.07	ECONOM	Innovation	Expenditures in RDI as total of GDP		i						
	7.08	ECONOM	Business, all sectors	Market sizes		...						
	7.08	ECONOM	Business, all sectors	Location of business		...						
	7.08	ECONOM	Business, all sectors	International headquarters		...						
	7.08	ECONOM	Business, all sectors	Cluster size		...						
	7.08	ECONOM	Business, all sectors	Cluster specialization		...						
	7.08	ECONOM	Business, all sectors	Number of firms by sector of operation (2 digits)		...						
	7.08	ECONOM	Business, all sectors	Number of Small and Medium size Enterprises		...						
	7.08	ECONOM	Business, all sectors	Number of Creation and transfer of enterprises		...						
	7.08	ECONOM	Business, all sectors	Economic diversification of rural areas		...						
	7.08	ECONOM	Business, all sectors	Local economic activities (fishing, tourism, etc)		...						
	7.08	ECONOM	Business, all sectors	Number of companies created		...						
		ENVIRONMENT QUALITY, NATURAL AS		Application of environmentas norms/standards		...						
		ENVIRONMENT QUALITY, NATURAL AS		Food-miles		...						
	8.01	ENVIRON	Environment quality	Emissions of Acidifying Substances Acidifying Potential		...						
	8.01	ENVIRON	Environment quality	Fragmentation by urbanisation, infrastructure and agriculture		...						
	8.01	ENVIRON	Environment quality	Wastes management (private, public, transboundary, etc)		...						
	8.01	ENVIRON	Environment quality	Noise disturbance - noise level		...						
	8.01	ENVIRON	Environment quality	Noise disturbance - exposure to excessive noise (nb of people exposed)		...						
	8.01	ENVIRON	Environment quality	Nutrients in coastal water		...						
	8.01	ENVIRON	Environment quality	Coastal erosion		...						
	8.01	ENVIRON	Environment quality	Coastal zone with Natura 2000		...						
	8.01	ENVIRON	Environment quality	Municipal waste production		e						
	8.01	ENVIRON	Environment quality	Municipal waste treatment		...						
	8.01	ENVIRON	Environment quality	% of residents exposed to various source of noises		...						
	8.01	ENVIRON	Environment quality	Landslides		...						
	8.01	ENVIRON	Environment quality	Environmental services		...						
	8.01	ENVIRON	Environment quality	Main sources of investment in water, waste water and solid waste		...	X					
	8.01	ENVIRON	Environment quality	Environmental quality		...						
	8.01	ENVIRON	Environment quality	- green infrastructure		...						
	8.01	ENVIRON	Environment quality	Coverage of protected areas		...						

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					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
	8.02	ENVIRON	Natural assets	Share of different types of forest		...						
	8.02	ENVIRON	Natural assets	Landscape - area of housing		...						
	8.02	ENVIRON	Natural assets	Landscape - visual attractiveness		...						
	8.02	ENVIRON	Natural assets	Landscape - cultural heritage (agric landscapes)		...						
	8.02	ENVIRON	Natural assets	Transboundary water management		...						
	8.02	ENVIRON	Natural assets	Change of bio mass		...						
	8.02	ENVIRON	Natural assets	Basins		...						
	8.02	ENVIRON	Natural assets	Share of Agricultural Land under Organic Farming		...						
	8.02	ENVIRON	Natural assets	Share of sensitive ecoregions		...						
	8.02	ENVIRON	Natural assets	Statuts of marine fish stocks		...						
	8.02	ENVIRON	Natural assets	Drinking water quality		...						
	8.02	ENVIRON	Natural assets	Classified naturalness		...						
	8.02	ENVIRON	Natural assets	Proximity to natural areas (combined indicator)		...						
	8.02	ENVIRON	Natural assets	Renewable freshwater resources per capita at country level, worldwide		w						
	8.02	ENVIRON	Natural assets	Water Exploitation Index		...						
	8.03	ENVIRON	Climate change	Attitudes / public info on climate change		...						
	8.03	ENVIRON	Climate change	Change of the average annual number (amount) of days with heavyn		...						
	8.03	ENVIRON	Climate change	Settlement prone to heavy rainfall / sea level rise		...						
	8.03	ENVIRON	Climate change	Exposure to climate change of the agriculture, fisheries and tourism sector		...						
	8.03	ENVIRON	Climate change	% of population in coastal areas prone to sea level rise / heavy rainfall		...						
	8.03	ENVIRON	Climate change	Sea surface temperature per year		...						
	8.03	ENVIRON	Climate change	Extreme temperature		...						
	8.03	ENVIRON	Climate change	Number of days of rain per year		...						
	8.03	ENVIRON	Climate change	Chemical plants		...						
	8.03	ENVIRON	Climate change	Avalance data		...						
	8.03	ENVIRON	Climate change	Mean max, min annual temperature		...						
	8.03	ENVIRON	Climate change	Number of frost days per year		...						
	8.03	ENVIRON	Climate change	Average precipitation per year in kg/sqm		...						
	8.03	ENVIRON	Climate change	Vehicle emissions		...						
	8.03	ENVIRON	Climate change	Changes in sea level rise		...						
	8.03	ENVIRON	Climate change	Change of the average precipitation		...						
	8.03	ENVIRON	Climate change	Ozone concentration exceedances in cities (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	CO2 Emissions, intensity, per capita		...						
	8.03	ENVIRON	Climate change	CO2 emissions per usable land		...						
	8.03	ENVIRON	Climate change	Concentration of particulate matter (PM10) at surface level (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Change in greenhouse gas emissions in the EU (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Total greenhouse gas emissions, EU-12 (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Total greenhouse gas emissions, EU-15 (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Projected change in annual number of days with snow cover between		...	X					
	8.03	ENVIRON	Climate change	Soil sealed area (5th C.R.)		...	X					
	8.03	ENVIRON	Climate change	Projected change in number of tropical nights (5th C. R.)		...	X					
	8.04	ENVIRON	Risks, hazards	Number of all volcanoes in NUTS2 area		...						
	8.04	ENVIRON	Risks, hazards	Soil Erosion		...						
	8.04	ENVIRON	Risks, hazards	Exposure of ecosystems to acidification, eutrophication and ozone		...						
	8.04	ENVIRON	Risks, hazards	Sum of all weighted hazard values classicied in 5 categories		...						
	8.04	ENVIRON	Risks, hazards	Sum of the vulnerability indicators		...						
	8.04	ENVIRON	Risks, hazards	Prevention of natural risks		...						

Inidicator level	Themati c sub-cat. nr	Themati c category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenb urg strategy	Sustainbl e Develop ment Stragey	Regions 2020 (EC, 2008)	Europe 2020
	8.04	ENVIRON	Risks, hazards	Frequency of hazards/disasters		...						
	8.04	ENVIRON	Risks, hazards	Protection against floods & unusual risks		...						
	8.04	ENVIRON	Risks, Hazards	Dry spell		...						
	8.04	ENVIRON	Risks, Hazards	Droughts		...						
	8.04	ENVIRON	Risks, Hazards	Earthquakes		...						
	8.04	ENVIRON	Risks, Hazards	Floods		...						
	8.04	ENVIRON	Risks, Hazards	Floods in urban areas		...						
	8.04	ENVIRON	Risks, hazards	Oil hazards		...						
	8.04	ENVIRON	Risks, hazards	UNESCO world heritage areas prone to heavy rainfall / sea level		...						
	8.04	ENVIRON	Risks, hazards	Forest fires		...						
	8.04	ENVIRON	Risks, hazards	Storms,tsunami		...						
	8.04	ENVIRON	Risks, hazards	Biogeographic regions		...						
	8.04	ENVIRON	Risks, hazards	Evolution of natural surfaces		...						
	8.04	ENVIRON	Risks, hazards	Oil Hazards - average of 3 standardized hazard indicators (harbours,		...						
	8.04	ENVIRON	Risks, hazards	Change of dry spell combination with drought		...						
	8.04	ENVIRON	Risks, hazards	Classified natural hazards		...						
	8.04	ENVIRON	Risks, hazards	Classified technological hazards		...						
	8.04	ENVIRON	Risks, hazards	Artificialisation of coast		...						
	8.04	ENVIRON	Risks, hazards	Areas at risk of soil erosion (ton/ha/year)*(5% of areas with farms <10ha /		...						
	8.04	ENVIRON	Risks, hazards	Flood endangered settlement and artifical areas		...						
	8.04	ENVIRON	Risks, Hazards	Risk from sea level rising		...						
	9.01	GOVERN	Governance	Number of project co-operations		...						
	9.01	GOVERN	Governance	Effectiveness of public administration (4th C.R)		...						
	9.01	GOVERN	Governance	Existence of a national adaptation strategy		...						
	9.01	GOVERN	Governance	Corruption		...						
	9.01	GOVERN	Governance	Good use of money		...						
	9.01	GOVERN	Governance	International cooperation and its added value (esp. for border areas)		...						
	9.01	GOVERN	Governance	Relative rurality		...						
	9.01	GOVERN	Governance	Number of local units		...						
	9.01	GOVERN	Governance	Way in which roles and responsabilities are distributed among the different		...						
	9.01	GOVERN	Governance	Way in which roles and responsabilities are distributed among local		...						
	9.01	GOVERN	Governance	Describes the related processes of negotiation and consensus building		...						
	9.01	GOVERN	Governance	Public attitudes towards the political-administrative system		...						
	9.01	GOVERN	Governance	Shift from government to governance		...						
	9.01	GOVERN	Governance	Decentralisation		...						
	9.01	GOVERN	Governance	Voice and accountability		...						
	9.01	GOVERN	Governance	Political stability and absence of violence		...						
	9.01	GOVERN	Governance	Government effectiveness		...						
	9.01	GOVERN	Governance	Regulatory quality		...						
	9.01	GOVERN	Governance	Rule of law		...						
	9.01	GOVERN	Governance	Control of corruption		...						
	9.01	GOVERN	Governance	Public Private Partnership		...						
	9.01	GOVERN	Governance	Twinning		...						
	9.01	GOVERN	Governance	Inter municipal cooperation		...						
	9.01	GOVERN	Governance	Trans-national and interregional cooperation		...						
	9.01	GOVERN	Governance	Cooperation between cities of small/medium size at internal and external		...						
	9.01	GOVERN	Governance	Capacity to conclude agreements (interregional, transnational, cross-		...						

Inidicator level	Thematic sub-cat. nr	Thematic category name	Thematic sub-category name	Indicator name	Criteria for selection							
					Policy evaluation framework		Policy documents					
					Top	input, output, effect, impact on well-being	5th Cohesion report	Lisbon strategy	Gothenburg strategy	Sustainble Development Stragey	Regions 2020 (EC, 2008)	Europe 2020
	9.01	GOVERN	Governance	Government effectiveness index		...						
	99.01	NON - CR	Integrative indices and typologie	Share of Internet users to100 inhabs regression		...						
	99.01	NON - CR	Integrative indices and typologie	Attractiveness (to be detailed) - citizen's perspective on other regions		...						
	99.01	NON - CR	Integrative indices and typologie	Comparative price levels of final consumption by private households		...		X				
	99.01	NON - CR	Integrative indices and typologie	Urban-rural typology including remoteness		...	X					
	99.01	NON - CR	Integrative indices and typologie	Urban-rural typology including remoteness (NAFTA)		...	X					
	99.01	NON - CR	Integrative indices and typologie	Business investment: gross fixed capital formation by private sector as a		...		X				
	99.01	NON - CR	Integrative indices and typologie	Human Capital Intensity (HCI)		e						
	99.01	NON - CR	Integrative indices and typologie	Intensity of multiple risks (challenges) for European Regions		w					X	
	99.01	NON - CR	Integrative indices and typologie	Classified Lisbon performance		...						
	99.02	NON - CR	Geographical objects	Generation of PIAs- x iteration		...						
	99.02	NON - CR	Geographical objects	Area assigned to the PUSH using the % criterion		...						
	99.02	NON - CR	Geographical objects	Extent of 45 min isochrones		...						
	99.02	NON - CR	Geographical objects	Settlement structure assignment		...						
	99.02	NON - CR	Geographical objects	Urban influence		...						
	99.02	NON - CR	Geographical objects	Distance to settlement areas		...						

Annex 3. Top indicators - data availability

Territorial objectives	Indicators	NUTS level	Years available
Strong local economies ensuring global competitiveness	Labour productivity in industry and services	NUTS 2	2007
	Labour productivity	NUTS 0	1995-2010
	GDP per capita in PPP	NUTS 3	1997-2008
	Overall unemployment rate	NUTS 3	1999-2009
	Old age dependency ratio	NUTS 3	2000-2010
Innovative territories	Population aged 25-64 with tertiary education	NUTS 2	2008-2010
	Intramural expenditures on R&D	NUTS 2	2007
	Employment rate 20-64	NUTS 2	1999-2009
Fair access to services, market and jobs	Access to compulsory school	NUTS 0, degree of urbanisation	2008
	Access to hospitals	NUTS 0, degree of urbanisation	2008
	Accessibility potential by road	NUTS 3	2001, 2006
	Accessibility potential by rail	NUTS 3	2001, 2006
	Accessibility potential by air	NUTS 3	2001, 2006
Inclusion and quality of life	Disposable household income	NUTS 2	1996-2007
	Life expectancy at birth	NUTS 2	2000-2008
	Proportion of early school leavers	NUTS 1	2000-2010
	Gender imbalances	NUTS 3	2000-2009
	Different female-male unemployment rate	NUTS 2	1999-2010
	Ageing index	NUTS 3	2000-2010
Attractive regions of high ecological values and strong territorial capital	Air pollution: PM10	NUTS 3	2009
	Air pollution: Ozone concentrations	NUTS 3	2008
	Soil sealing per capita	NUTS 3	2006
Integrated polycentric territorial development	Population potential within 50 km	NUTS 3	2008
	Net migration rate	NUTS 3	2007
	Cooperation intensity	NUTS 2	2008
	Cooperation degree	NUTS 2	2008

Annex 4. INTERCO Indicators at Global Level

Inventory of indicators in the global level (available all at NUTS 0)

Territorial Objectives	INTERCO Top Indicators	Equivalent indicators at the Global level	Unit	Year or period covered	Source	Other: Data Description / Gaps
Strong local economies ensuring global competitiveness	Labour productivity in industry and services	Labour productivity growth (only for OECD countries) **	% growth/ change	2000-2009 **	OECD	** Only OECD countries. Labour productivity is defined as GDP per hour worked. The measures of labour productivity are presented as rates of change.
		GDP per person employed **	PPP	1991-2008 **	World Bank	** Data not available for half of countries. GDP per person employed is gross domestic product (GDP) divided by total employment in the economy. PPP is GDP converted to constant international dollars using PPP rates. An international dollar has the same purchasing power over GDP that a U.S. dollar has in the United States.
	GDP per capita in PPP	GDP per capita in PPP	PPP	1991-2010	World Bank	GDP per capita based on purchasing power parity (PPP). Not available for all countries
	Unemployment rate	Unemployment Rate **	per cent	2009	UNDP - HDR 2009, 2010 based on ILO and OECD	** Incomplete data from ILO in time series. Calculations for 2009 and harmonised figures for this year only compiled by the United Nations HDR Report 2009.
		Unemployment rate by level of education **	per cent	2009-2010	UNDP - HDR 2009, 2010 based on ILO and OECD	** Incomplete data from ILO in time series. Calculations for 2009 and harmonised figures for this year only compiled by the United Nations HDR Report 2009.
	Old age dependency ratio	Old age dependency ratio	Old age ratio	1990 & 2009	UNDP - HDR 2009	Data on old age dependency helps identifying increases or decreases in labour force

Innovative territories	Population 25-64 with tertiary education	Tertiary-level gross enrolment ratio	per cent	Period varies	UN and UNESCO	Tertiary-level gross enrolment ratio and Women's share of third level enrolment (%)
	Intramural expenditures on R&D	GERD as % of GDP **	% of GDP	1996-2009	UNESCO	** Data from UNESCO: not available for a considerable (half) number of countries.
		Public expenditure as % of GDP in R&D **	% of GDP	2000-2007	UNDP HDR ´10	** Data from UNDP HDR 2010: compiled data for the latest year available for the period 2000-2007. One-year-data.
	Employment rate 20- 64	Employment indicators	Diverse	1999-2008	ILO Laborsta Database	Employment general, employment by economic activity, by occupation, by status in employment

Fair access to services, market and jobs	Access to university	Enrolment ratios in secondary and tertiary education **	gross ratio	2001-2009	UNESCO and UNDP – HDR 2010	** Data refer to the most recent year available during the period specified; compiled by UN HDR Report.
	Accessibility potential by road	Travel time to major cities: A global map of Accessibility	grid format	2000	European Commission Joint Research Centre	Estimated travel time to the nearest city of 50,000 or more people in year 2000. Global Environment Monitoring Unit - Joint Research Centre of the European Commission, Ispra Italy. Available at http://bioval.jrc.ec.europa.eu/products/gam/
	Accessibility potential by rail					
	Accessibility potential by car					
	Access to hospitals	:	:	:	:	:
	Accessibility to grocery services	:	:	:	:	:
	Access to compulsory school	:	:	:	:	:

Inclusion and quality of life	Disposable household income	GINI coefficient of income disparities **	GINI coefficient	2009, 2010 **	World Bank / UNDP - HDR 2010	** Incomplete data for time series but harmonised figures for the period 2000-2010 compiled by the United Nations HDR Report corresponding to the latest available figure during this period. The Gini index lies between 0 and 100. A value of 0 represents absolute equality and 100 absolute inequality and measures the degree of inequality in the distribution of income in a given society.
	Life expectancy at birh	Life expectancy at birth	years	1996-2010	World Bank	Life expectancy at birth indicates the number of years a new-born infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.
	Proportion of early school leavers	Children out of school	persons	1999-2009**	UNESCO at World Bank	** Data incomplete for a number of countries. Number of primary-school-age children not enrolled in primary or secondary school by males and females
	Gender imbalances	% of women by level of education	per cent	1999-2010	UNESCO	School age population in primary, secondary and tertiary level
		Employment: ratio of female to male rates **	ratio	2000-2008	UNDP - HDR 2010 based on ILO data	** Data refer to the most recent year available during the period specified. Compilation of figures by the United Nations HDR Report 2010. Data not available for all countries
	Different female-male unemployment rate	Employment: ratio of female to male rates **	ratio	2000-2008	UNDP - HDR 2010 based on ILO data	** Data refer to the most recent year available during the period specified. Compilation of figures by the United Nations HDR Report 2010. Data not available for all countries
	Ageing index	Old age dependency ratio	ratio	1990 & 2009	UNDP - HDR 2009	Data on old age dependency helps identifying increases or decreases in labour force

Attractive regions of high ecological values and strong territorial capital	Air pollution	Global CO2 emissions (metric tons per capita) per country	metric tons per capita	1990-2009	World Bank	Carbon dioxide emissions are those stemming from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.
		Greenhouse Gas Emissions and/or GHG emissions per capita	mio. tonnes of CO2 equivalent	1994-2008 **	UN Framework Convention on Climate Change (UNFCCC)	** Data refer to the most recent year available during the period specified. Compilation of figures by UN. One year-data

	Biodiversity	Global biodiversity Indicators	several indicators	:	UNEP - Biodiversity Indicators Partnership	Biodiversity Indicators Partnership launched by the United Nations Environment Programme - A compilation of 17 indicators available at http://www.twentyten.net/
	Renewable energy potential	Renewable electricity production	billion kilowatt hours	1998-2008	EIA Database	Last update: EIA database accessed march 2011
		Share of renewable generation in respect to total electricity generation	% of total electricity	1998-2008	EIA Database	Last update: EIA database accessed march 2011
	Potential vulnerability to climate change (ESPON Climate)	:	:	:	:	:
	Soil sealing per capita	:	:	:	:	:
	Mortality, hazards and risks	:	:	:	:	:

Integrated polycentric territorial development	Population potential within 50 km	Population density	inhab/km2	1981-2010	World Bank	Midyear population divided by land area in square kilometres. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, which are generally considered part of the population of their country of origin.
	Net migration rate	Net migration rate	rate	1960-2010	World Bank	Data are five-year estimates. To derive estimates of net migration, the United Nations Population Division takes into account the past migration history of a country or area, the migration policy of a country, and the influx of refugees in recent periods.
	Cooperation intensity from ESPON TERCO	:	:	:	:	:

	Cooperation degree from ESPON TERCO	:	:	:	:	:
	Polycentricity index	:	:	:	:	:

The ESPON 2013 Programme

INTERCO
Indicators of Territorial Cohesion

Scientific Platform and Tools Project 2013/3/2

Annex 5

Sydsverige & Eastern Denmark
(Sweden and Denmark)

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Table of contents

Figures, maps and tables

Objectives

The objective of the INTERCO case studies is to locally explore the headline indicators defined in the framework of the project as a way to characterize local situations.

The analysis of the feasible indicators is intended to show that higher spatial inequalities are revealed when going beyond the traditional NUTS 3 level of study. Territories which seem to have certain level of spatial disparities in the traditional NUTS-3 level of analysis might register other degrees of disparities/inequalities at a local level. The idea is to observe if the analyses at LAU level bring important new insights regarding TC patterns at NUTS 3 level as well as differences between them.

Additionally to this it is of interest to identify indicators available in the local case-studies that do not exist at the EU regional level but that might be of interest for the other levels in the framework of Territorial Cohesion.

Summarising, the main objective is to create awareness of the existence of another spatial layer/level of study additional (and complementary) to the traditional NUTS 2-3 scales, where more complex spatial patterns exist but seem to be imperceptible in the traditional way of displaying indicators on the basis of these regional scales.

1. Case study introduction

1.1. General Features

This case study area is constituted by the cross border regions of Sydsverige in Sweden and Sjælland and Hovedstaden in Denmark. Sydsverige is located in the southernmost extreme of Sweden, sharing the strait of Öresund with the Danish island of Zealand where the Copenhagen Capital City Region is located. Both sides of the strait share historical, geographical and economical backgrounds which nowadays constitute a major example of a cross border cooperation region in the Nordic context.

The case study covers both rural peripheral sparsely populated areas as well as important urban agglomerations such as Stor-Malmö (Greater Malmö) and Storkøbenhavn (Metropolitan Copenhagen) which together constitute one of the most densely populated areas in the Nordic Countries.

From a geographic point of view the case study area is dominated by plain areas with little elevation and no mountain areas. The Danish side is consisted by islands including Zealand (where Copenhagen is located) Lolland, Falster and Møn located in the southern periphery of the case study. The island of Bornholm is located east of the rest of Denmark. In Sydsverige, region Skåne is dominated by open, non mountainous landscapes differing from the traditional densely forested and lake-rich landscape of the rest of Sweden. Areas covered with forests in Sydsverige are only found in the northern parts of Skåne, as well as areas next to the Linderödsåsen -a minor ridge that stretches from the north-west to the south-east- and region Blekinge which is almost entirely covered by forest and a large amount of water bodies.

The largest settlements are found along the coasts of the Öresund Strait (see map 1) which is also the geographical centre of the case study. Copenhagen is the capital city of Denmark and Greater Copenhagen is the largest urban agglomeration of the country including municipalities and satellites cities around the municipalities of Copenhagen and Frederiksberg with a population of more than 1,8 inhabitants. *Stor-Malmö* or Greater Malmö is one of the 3 *storstadsregioner* or metropolitan areas of Sweden according to the latest official regional divisions of the country[1] gathering 12 municipalities and about 655,000 in population. Apart from Greater Copenhagen and Greater Malmö other significant urban areas in the case study includes Helsingborg and Lund (over 100 000 inhab.) followed by Roskilde, Næstved, Kristianstad, Slagelse (between 70-80 000 inhab.) and Karlskrona, Holbæk, Nykøbing and Helsingör (between 60-70 000 inhab.). Areas with relatively low population densities are located in the north and east of Sydsverige and on the north-west and south-west peripheries of the Danish side.

The case study area is then composed by regions in two different Nordic countries, sharing both a national capital region, and a major urban region like Malmö-Lund. But it also includes rural and/or peripheral areas in eastern and southern Skåne, Blekinge and southern and western parts of Zealand, Lolland, Falster and Bornholm which altogether have many similarities as they have low population densities and they benefit from wide expanses of nature. These characteristics create a typical spatial core-periphery

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[1] SCB (2011): Regional divisions in Sweden on 1 january 2011, Statistics Sweden, 2011

structure that brings together a number of disparities between local sub-regions as it will be shown later in this study.
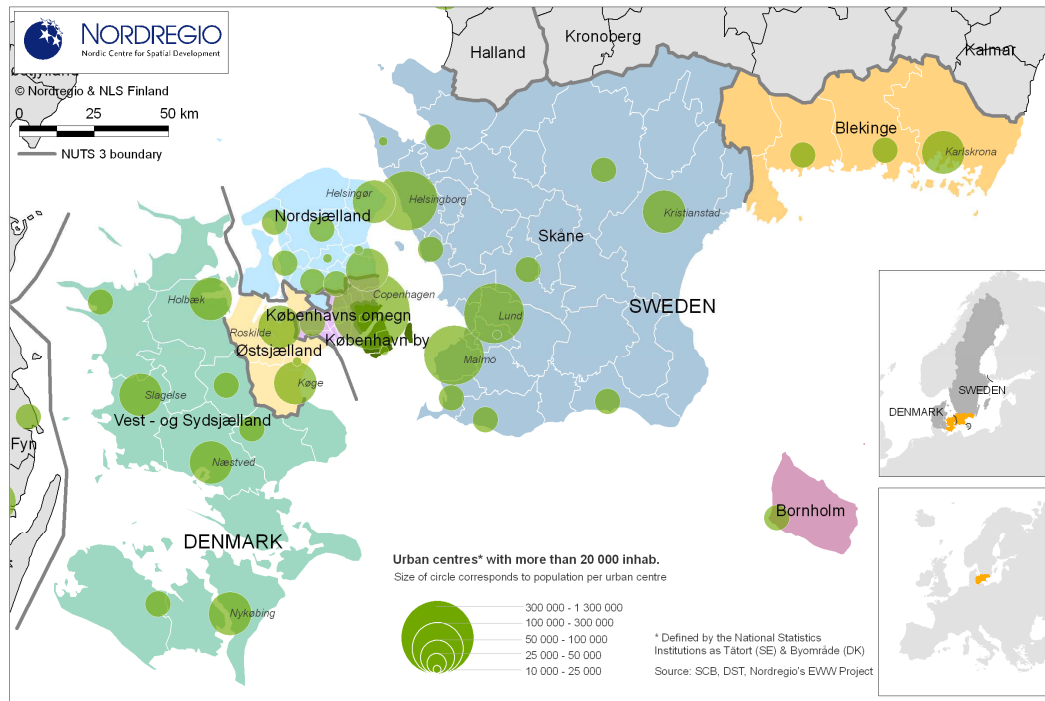
Map 1: NUTS 3-LAU borders and major urban centres in Sydsverige-Eastern Denmark
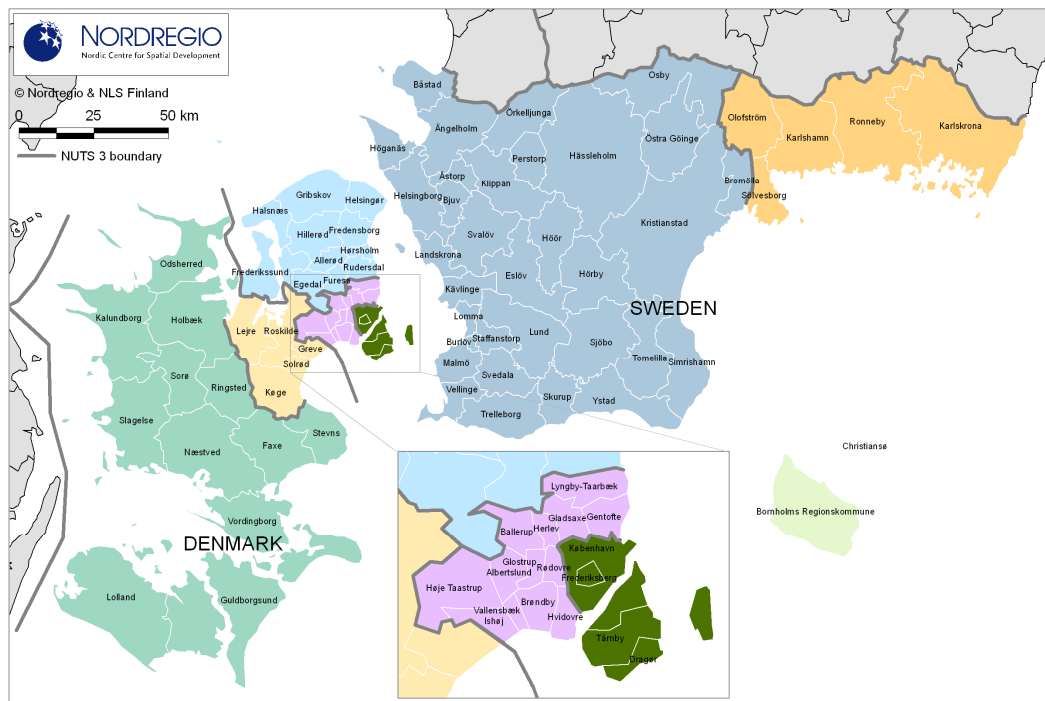
Map 2: LAU (municipalities) in in Sydsverige-Eastern Denmark

1.2. NUTS/LAU level classification

Sweden is divided into 21 NUTS 3 regions which correspond to LAU level 1 units, and a total of 290 municipalities which correspond to LAU level 2 units. Sydsverige on its own covers the NUTS-3 regions/LAU-1 units of Skåne and Blekinge and contains 38 municipalities or LAU-2 units, 5 of them in Blekinge and 33 in Skåne.

Denmark on the other hand is divided into 11 NUTS 3 regions called *Landsdeler* and a total national of 99 municipalities which correspond to the LAU level 1. Region Sjælland or Zealand and Region Hovedstaden or Capital City are part of the Öresund Region. There are 6 Danish NUTS-3 regions in this case study: Byen København, Københavns omegn, Bornholm (which altogether form the NUTS 2 region Hovedstaden) as well as Nordsjælland, Sjælland, Østsjælland and Vest- og Sydsjælland (which altogether form the NUTS 2 region Sjælland) gathering 47 municipalities.

Altogether the case study consists of 8 different NUTS 3 regions (2 in Sweden, 6 in Denmark) and 85 municipalities (38 in Sweden, 47 in Denmark, see map 2) with a total area of 23 800 km2 and a total population of 3,884,448 as of 2010[2]

To produce a homogenous analysis this case study will take the local level as the municipal level which corresponds to LAU-1 in Denmark and LAU-2 in Sweden.

Table 1: Top largest and smallest LAU by population in Sydsverige-Eastern Denmark

Top 10 largest LAU by population in the case study

LAU name	NUTS 3	NUTS 2	Population 2010	Area	Density
København	København by	Region Hovedstaden	528 208	88	5 985
Malmö	Skåne län	Sydsverige	293 909	154	1 913
Helsingborg	Skåne län	Sydsverige	128 359	346	371
Lund	Skåne län	Sydsverige	109 147	431	253
Frederiksberg	København by	Region Hovedstaden	96 718	9	11 028
Roskilde	Østsjælland	Region Sjælland	81 947	212	387
Næstved	Vest- og Sydsjælland	Region Sjælland	81 112	684	119
Kristianstad	Skåne län	Sydsverige	78 788	1 250	63
Slagelse	Vest- og Sydsjælland	Region Sjælland	77 475	250	310
Gentofte	Københavns omegn	Region Hovedstaden	71 052	26	2 782

Top 10 smallest LAU by population in the case study

LAU name	NUTS 3	NUTS 2	Population 2010	Area	Density
Christiansø	Bornholm	Region Hovedstaden	101	0,22	459
Perstorp	Skåne län	Sydsverige	6 983	160	44
Örkelljunga	Skåne län	Sydsverige	9 639	322	30
Bromölla	Skåne län	Sydsverige	12 285	165	75
Osby	Skåne län	Sydsverige	12 656	578	22
Tomelilla	Skåne län	Sydsverige	12 936	399	32
Olofström	Blekinge län	Sydsverige	13 102	392	33
Svalöv	Skåne län	Sydsverige	13 290	390	34
Östra Göinge	Skåne län	Sydsverige	13 526	434	31
Dragør	København by	Region Hovedstaden	13 564	18	748

Source: National Statistics Institutions

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[2] Compiled figures taken from Statistics Denmark and Statistics Sweden.

1.3. An accessible regional example of innovative research, higher education and cross border cooperation

The case study area is a leader in promoting innovative research in several areas of technological development by creating a network between the many actors concentrated in the region (firms, research laboratories, universities, knowledge based industries, etc) where in particular universities and high education institutions have a major role in keeping and promoting a research platform specialised on a number of high-tech fields such as medical/pharmaceutical, bio-technology, IT, telecommunications, software, design, food processing and environmental technologies. Thanks to this, the region has appropriate conditions for cluster creation in any of these fields: an example here is Medicon Valley, Europe's leading cluster within the life science area, and an attractive place to find business partners. The region is also home to the largest concentration of highly educated people in the Nordic countries and hosts a well-developed working relationship between industry, higher education establishments and the authorities. (OECD, 2003; 2006) The case study area is then a major example of a region focused on knowledge-base as one of the main pillars for regional development.

It also hosts the Öresund Region, an important example of cross border cooperation. Since 1993, local, regional and national authorities have been cooperating in a regional policy forum called the Öresund Committee and the Öresund Region constituted for several years the Interreg II and III Programmes in the strand A (cross border cooperation). Regions in the case study are currently part of three of the EU Cohesion Policy 2007-2013 Cross Border Programmes under the European Territorial Cooperation Objective (Öresund-Kattegatt–Skagerrak, South Baltic and Sjælland-Ostholstein-Lübeck-Plön)

All in all, the case study is interestingly located as it acts as a gateway to the Nordic markets and gets benefited from the proximity to northern Germany, Poland and Balticum. Transport infrastructures include Copenhagen airport, one of the largest in Norden combined with regional airports in Malmö, Ängelholm-Helsingborg, Kristianstad and Ronneby and also major ports such as Copenhagen, Malmö, and Helsingborg, which participate in the Baltic Ports Organisation Ferry connections across the Baltic Sea operate from several smaller ports as well. The Baltic Sea and the Öresund strait remain one of the busiest routes in the world, including also strategic routes for oil shipping.

Investments after the construction of the Öresund Bridge increased drastically accessibility across both sides of the case study. Travel times between the two shores of the Öresund Strait were no longer than those between Copenhagen and one of its suburbs. Daily cross-border commuters multiplied from 2 000 at the opening of the bridge (2000) up to 10 000 after 5 years. Other important infrastructure projects include a new railway to Copenhagen International Airport, a new metro in Copenhagen, and several highway projects in Skåne. These investments have turned the Öresund Region into a major logistic hub in Europe.[3]

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[3] OECD (2006): Øresund Science Region: A cross-border partnership between Denmark and Sweden, Garlic S. etl al, June 2006

2. Data availability in the case study

The different Headline indicators of the Interco project have been examined in terms of data availability at LAU levels for this case study. The methodology to define Headline Indicators in Interco was included in the Interim Report but here there is a summary of it:

Definition of the different categories of indicators in INTERCO

INTERCO approaches territorial indicators differently from the ESPON Database as it focuses on territorial cohesion ones. It considered the following 5 categories of indicators -see the Note on the criteria for the thematic selection of indicators (sent to ESPON CU on 11.5.2011) complementing the Interim Report- :

1. **Synthetic/composite (headline) indicators**, i.e. the simplification of several indicators into one single index summarising all the underlying dimensions of the issues and policies at stake (8 indicators);

2. **Headline indicators**, i.e. a limited number of indicators that have the highest explanatory power and the highest relevance for the issues and policies at stake;

3. **Core indicators**: these indicators complement the headline indicators in the analysis of the main issues and policy objectives -see in detail in the above mentioned Note.

4. **Analytical indicators**, i.e. a full set of indicators that provide additional insights for the issues and policies at stake;

5. **Other data** (that may once become indicators under different circumstances, i.e. if issues of interest or policy objectives are modified).

The TPG decided to focus on the headline and core indicators for the entire ESPON space. Interco headline indicators are those with the highest explanatory power and highest relevance for the issues and policies at stake, but its feasibility at LAU level is restricted and therefore its selection depends on the data availability.

The results in Sydsverige-East DK show some coincidence with other case studies regarding the difficulties of finding available and comprehensive data at LAU level. The lack of a standardized database like Eurostat for the LAU level makes difficult the process of collection and harmonisation of data at this level. Limitations were found especially when looking for INTERCO headline indicators at a local level associated to thematic sub-categories on health, energy, poverty, environment, quality of life and governance categories. However other headline indicators in the sub-categories of population, employment and education were feasible to be included in the analysis.

Indicators were found across Sweden's and Denmark's National Statistics Institutions, National Employment Offices, National Institutes of Public Health and Ørestat (a local statistical institution supported by the national statistics institutions of Sweden and Denmark).

This exemplifies another constraint when locating and collecting data at LAU level since often it is necessary to track indicators among several sources in each individual country.

The selected set of relevant and comprehensive indicators calculated for this case study includes employment rate, unemployment rate, ageing index, population growth, tertiary level educated population and population density. Additionally indicators such as GDP, average disposable income and life expectancy are also included in the set as it was possible to find some data below the NUTS 3, however with some restrictions that will be explained in each section. When it comes to GDP it was possible to find data at FUA level from the ESPON FUA's Database 2013 corresponding to GDP in million of euro and GDP per inhabitant in thousands euro. Income data was found at Ørestat and life expectancy averages data were found at LAU level at the Public National Heath Institutes of Sweden and Denmark, but the different periods of time used to measure the average in each country established a difficulty when comparing results. In these indicators we tried also to exemplify local situations that might exist between different areas in the case study based on observations made in the Nordic context.

The rest of Interco Headline indicators represented a challenge when trying to find data at LAU level and therefore could not be included in this analysis because of the lack of publicly available or comprehensive data at LAU level.

Table 2 displays the list of Interco Headline Indicators and its availability (marked with green) at LAU level in the case study area Sydsverige – Eastern Denmark.

Table 2: Interco Headline indicators; data availability in Sydsverige-Eastern Denmark

Headline Indicator name	Availability Sydsverige - East DK	Observation
Ageing index (persons 65+ / persons 0-14)	**+**	
Dependency rate	**+**	
Life expectancy at birth	**+***	*Differentces between periods of time measured (between countries)*
Population potential within 5 km		
Population average annual growth	**+**	
Share of renewable energy in final energy consumption and increase needed to meet the 20% target		
Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target		
Share of tertiary educated people in %	**+***	*Difference in categorizations of tertiary level categories between SE and DK. Available data is not standardized so harmonised for 1year only.*
Healthy life expectancy (ESPON 3.2)		
Self-perceived personal state of health in EU Member States		
At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)		
Share of population living in workless or low work intensity households (5th CR)		
Work-life balance in EU Member States (5th CR)		
Happiness Index		
Share of population reporting crime, violence or vandalism by degree of urbanisation (5th CR)		
Difference between female and male employment rates, 20–64	*	
Employment rate change (growth) = employment rate, single year	**+***	*Only 1 year data calculated. LFS adjusted series.National Employment Officesdata only.*
Unemployment rate per age: classes of 5 years = Unemployment rate, single year	**+***	*No data found per classes of 5 years. Only 1year data calculated. LFS adjusted series.National Employment Officesdata only.*
Development of unemployment rate (male, female, young, total, 99-04)		
GDP per inhabitant (capita) in PPS or Euros, per year = GDP per inhab and million EUR	**+***	*Data available at FUA level. From ESPON FUA s Database. Data includes GDP in million of euro and GDP per inhabitant in euro. Does not include all LAUs*
GDP change per inhabitant (capita) in PPS or Euros	:	
Median disposable annual household income	**+***	*Data from Örestat who is keen to warn about comparing data between countries due to difference in tax systems.*
Public sector debt relative to GDP		
NATURA 2000 area (Share of Natura 2000 area in %)		
Consumption of water per capita		
Electoral participation	*	*Available but not calculated = Definitions vary between countries*
Voice and accountability		
Population density (Core Indicator)	**+**	

3. Analysis of territorial cohesion on the basis of feasible headline indicators

3.1. Competitiveness

3.1.1. GDP

Figures of GDP per capita in PPS at LAU level are unavailable for the case study area. However, from the ESPON Database 2013 it was possible to find GDP in million of euro and GDP per inhabitant in thousands euro per FUA. However not all LAUs in the case study are were included in the analysis since the Functional Urban Areas database excludes those LAUs not belonging to FUAs.

Economic performance, measured as GDP per capita in purchasing power standards (PPS), provides an indication of the value of all market and some non-market goods and services produced within a region. The adjustment to local price differences shows the ability of countries and regions to succeed in the global scenario. The level of production, in turn, sets the sustainable level of prosperity that can be earned by an economy.

One measure of the economic potential of the case study area is that about 1/4 of Denmark's and Sweden's total GDP comes from it. In 2007, the Danish side of the case study accounted for 48% of Denmark's total GDP (the Capital Region of Copenhagen alone accounted for 37% and Region Zealand for 11%) whereas Skåne's GDP represented 12% of the Swedish GDP (13% when also Blekinge is included in the NUTS 2 Sydsverige). This reveals the difference of the regions' significance in their national economies and the significance of major urban areas (such as Hovedstaden) in the regional economy of the case study.

As observed in the Nordic countries[4], the capital region is performing best in terms of GDP per capita, followed by other metropolitan regions and industrial areas.
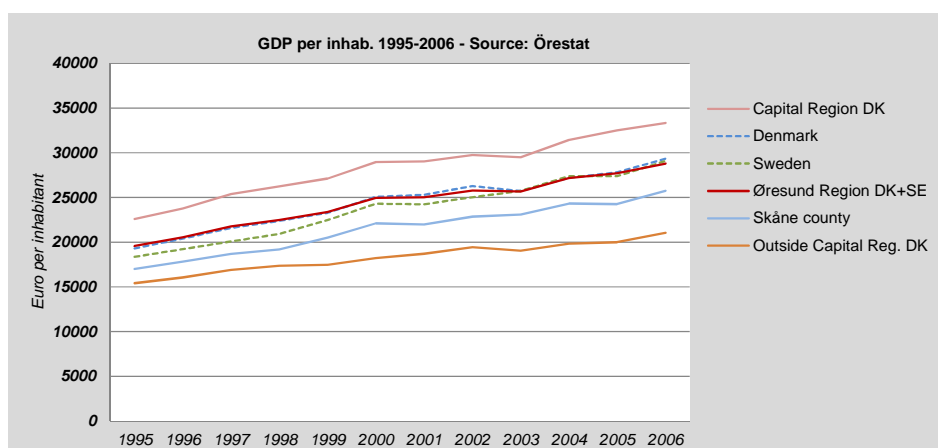
Figure 1: GDP (euro per inhabitant) development in Sydsverige-Eastern Denmark 1995-2006.

[4] Observations taken from the study "Regional Development in the Nordic Countries 2010", Nordregio

Local GDP values primarily in LAUs in Copenhagen might register therefore the highest figures in the case study followed by regional centres. On the other hand, the lowest scores in the Nordic countries are often found in primary production dominated rural regions. This might be the case of some LAUs in southern Zealand, Blekinge (except Karlskrona) and south-western and northern Skåne as well as Bornholm.

It was also observed that in Denmark and, to a lesser extent, Sweden, poorly performing regions in terms of GDP are also found near capital or major urban regions. In these regions, mainly residential, there are no, or very few, industries and a significant share of the population is out-commuting to other regions where the production of goods and services actually takes place. Local examples of this nature might exist in LAUs around the hinterland of Greater Copenhagen and/or Greater Malmö.

Maps 3 A) and B) shows indicators on GDP at FUA level[5] found in the ESPON 2013 Database for Functional Urban Areas. The picture gets broader than at a regional level. However the functional urban areas database excludes LAUs not belonging to FUAs which in this case study coincides with peripheral rural sparsely populated areas. However from map 3 A) and B) it is possible to confirm some of the Nordic patterns described before: GDP is indeed higher in areas around Copenhagen and figures gets lower in FUAs containing a number of sparsely populated LAU units and/or LAUs distant from main urban areas or regional centres.
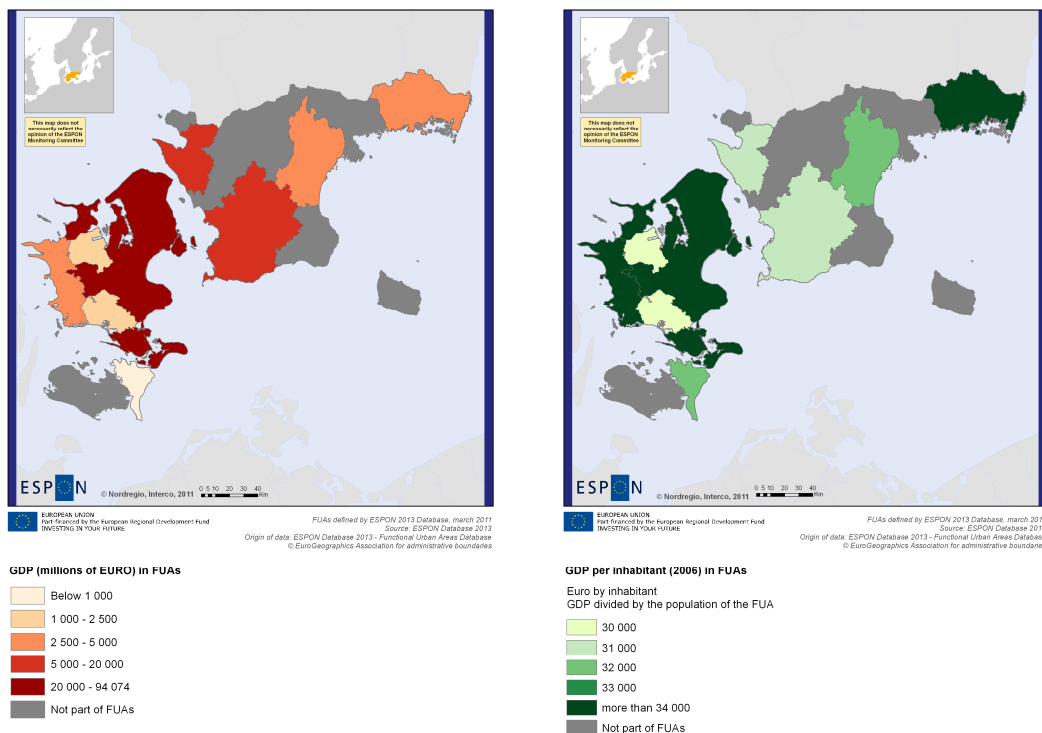
Map 3 A) GDP (millions of euro) in FUAs and 3 B) GDP per inhabitant (euro per inhab.) in Sydsverige-Eastern Denmark 2006

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[5] ESPON 2013 Database Technical report, march 2011: The Functional Urban Areas Database

3.1.2. Unemployment

Despite the remarkable upswing after the economic crisis of the 1990s, where a substantial number of jobs were created in the Nordic labour markets, the global financial crisis of the late 2000s resulted in a new increase in unemployment rates in all countries. In Denmark, the unemployment rate almost doubled between 2008 (3.3%) and 2009 (6.0%), though it still remains below the EU27 average while in Sweden, the level has fluctuated over the last three years. In Sweden, more or less all regions experienced an increase in unemployment after the crisis. In Denmark, after a long period of falling unemployment which reached the lowest level of recent times in the middle of 2008, rates began to increase and kept climbing throughout 2009. As Sweden has been relatively more affected by higher unemployment than Denmark, regions and LAUs in the Swedish side of the case study register therefore higher rates. (Figure 2)
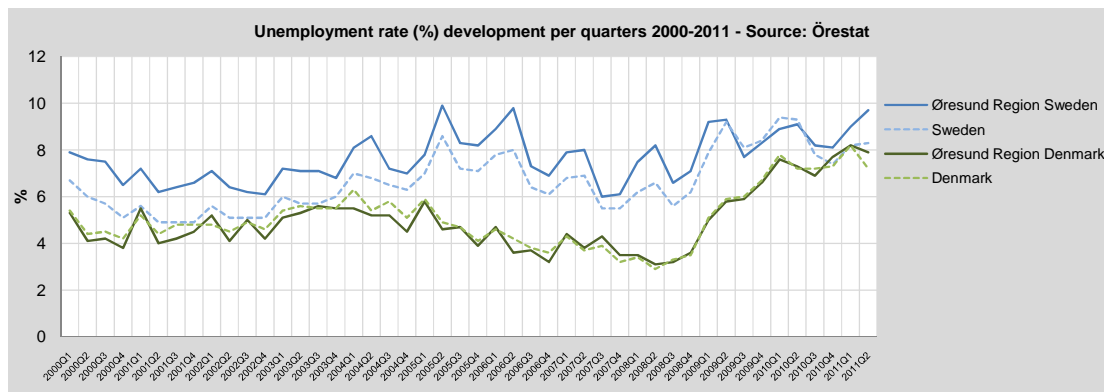
Figure 2: Unemployment in the Öresund Region in % and in total number of unemployed

By analysing the case study from the NUTS 3 level, it is possible to find highest percentages associated to Swedish regions and Bornholm where rates are around 9-10%. In contrast, lowest shares at a NUTS 3 level correspond to Danish regions such as Ostsjælland and Nordsjælland where figures are around 4%. The variation between the eight NUTS 3 regions span between 4,3% and 9,6% which contrasts to a larger variation between the 85 LAU units that span between 1,9% and 13,1% (Figure 6).

As unemployment is higher in Sweden, a larger number of LAUs with highest rates (more than 10%) are located in Skåne-Blekinge. Here a particular local situation is identified in LAUs characterised by low population (below 20-30,000 inhab.) and increasing ageing population which register high unemployment rates. LAU examples includes Tomelilla (10,1) and Östra Göinge (10,8) in Skåne and Sölvesborg (11,1) and Olofström (11,5) in Blekinge, a traditional manufacturing area which happens to be a peripheral region at national and case study levels. These local examples with a less prosperous development are those that tend to be characterised by an old-fashioned industrial structure based on manufacturing and natural resources-based industries.
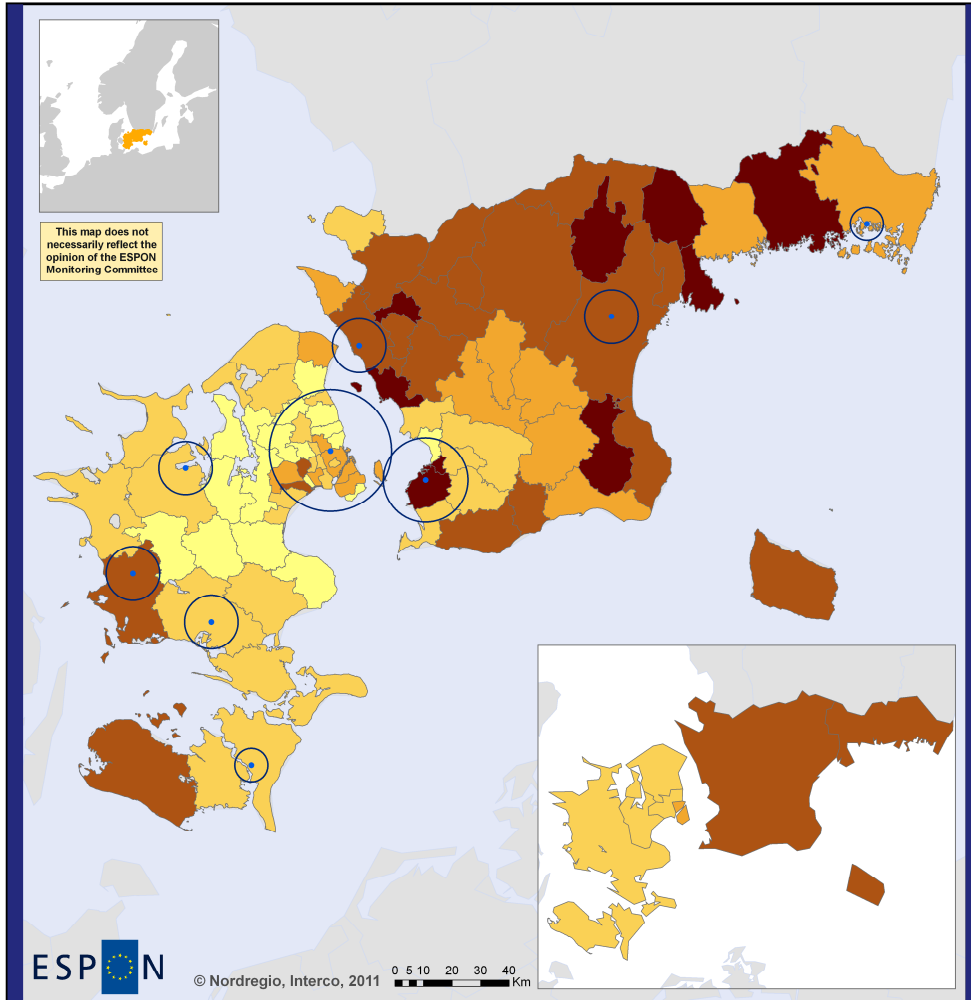
14
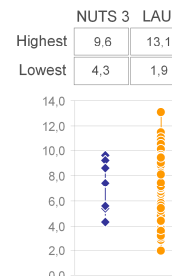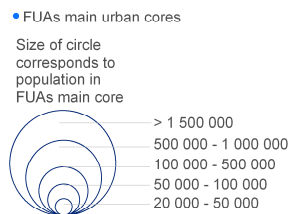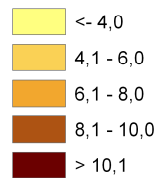
Map 4: Unemployment rate (%) in Sydsverige-Eastern Denmark, 2009

A similar local situation is also found in the Danish side, however this time including a non-central region such as Vest- og Sydsjælland (5,6) and two peripheral municipalities Slagelse (9,1) and especially Lolland (8,8) -dark brown areas to the left of map 4- where the relatively moderate regional unemployment rate does not reflect local examples with critical unemployment rates. The labour supply in these areas often simply does not possess all the qualities demanded by modern industries in central regions.

However local areas in industrialised central regions also experience high unemployment rates seen from a local point of view. So by looking at map 4 it can be seen that high unemployment rates are not exclusively found in peripheral areas far from the geographical centre of the case study (the Öresund Strait) but local examples of high unemployment also include LAUs in Greater Malmö and Greater Copenhagen. For example the NUTS 3 region of Københavns omegn registers an unemployment rate of 5,4% which seems relatively modest; but when going deeper into the local level it is possible to find nearby municipalities to Copenhagen with rates well above the regional rate such as Ishøj (9,5) or Albertslund (9,2). The situation is the same for the Greater Malmö area where central LAU areas such as Burlöv (10,6) and Landskrona (13,1) also register figures above the regional rate (8,2).

When comparing statistically the results given by NUTS 3 and LAU levels in general, the situation shown in figure 3 illustrate that maximum and minimum values for unemployment rates differ considerably among the LAU level and the NUTS 3 level.
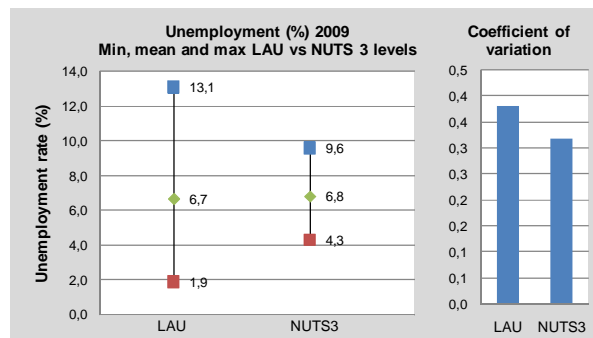
Source: National Employment Offices of Sweden and Denmark

Figure 3: Max. min, standard deviation and coefficient variation of unemployment rates (%) in 2009 between NUTS3 and LAU levels

While in the NUTS 3 level the highest figure register 9,6% it goes up to 13,1% in the LAU level. The analysis at a local level is able then to visualise the gap/disparities between those municipalities with figures higher than 9,6% (11 municipalities) and those under 4,3% (18 municipalities). The figure also shows a bigger coefficient of variation along the LAU level. This implies that the range of results is larger and therefore the level of complexity of the indicator at a local level is broader.

Figure 4 shows the disparities between LAU units per NUTS 3 region. The figure shows the maximum, average and minimum figures registered by LAU units in each of the eight NUTS 3 regions of the case study. The coefficients of variation confirms local situations previously explained where higher disparities exist not only between peripheral/remote

and central areas (LAUs in Vest- og Sydsjælland) but also among LAU areas in regions around Greater Copenhagen (Figure 4 to the right) which register the highest levels of disparities in the case study as figures here include both some of the highest and lowest unemployment rates.

Source: National Employment Offices of Sweden and Denmark
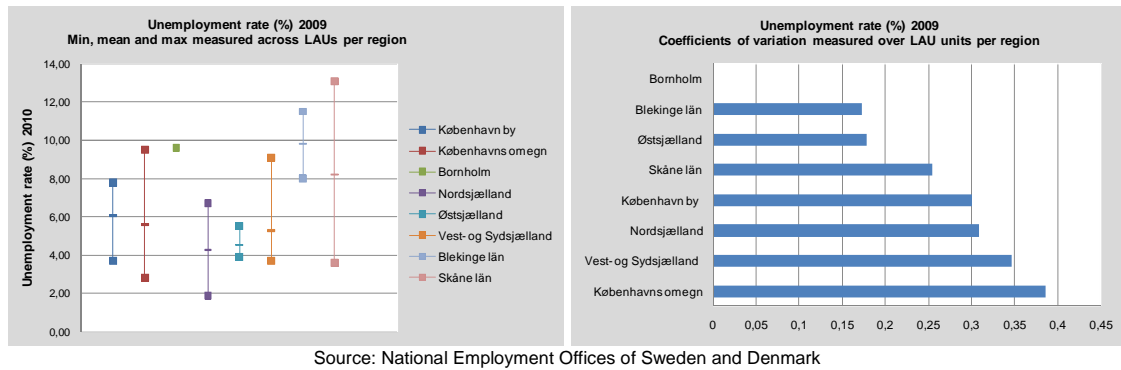
Figure 4: Unemployment rate (%) 2009 disparities measured across LAUs within the regions and coefficients of variation

3.1.3. Employment

In general terms employment rates are higher in the Danish side of the region and in some local examples in Sweden (Lomma, Vellinge and Lund). By analysing the case study from the NUTS 3 level it is possible to find the highest rates associated to regions in Denmark in the hinterland of the Capital Region such as Nordsjælland and Østsjælland where rates are above 80%.

In contrast, the lowest shares at a NUTS 3 level correspond to peripheral areas such as Bornholm and Blekinge where figures are around 71%. The variation between the eight NUTS 3 regions span between 71,1% and 82,6% which contrasts to a much larger variation between the 85 LAU units that span between 66,3% and 87,3% (Figure 5).

The analysis of the case study at a local level gives new inputs to these figures. At the local level, 36 out of 85 LAU in the case study have employment rates above the average and 22 LAUs all located in Denmark register rates above 80%. The majority of these LAU units are located around densely populated areas and/or areas with large population such as Greater-Copenhagen (Map 5). The situation in the Swedish side where figures are slightly lower shows higher employment rates located along the Öresund Strait, the area with the highest concentration of population in Skåne.

The lowest employment rates can be found in peripheral sparsely populated local examples with relatively far from large urban areas. That is the case of Bornholm, different LAUs especially in eastern and southern peripheral Vest- og Sydsjælland, and LAUs close to the border between Blekinge and Skåne and the whole of Blekinge.
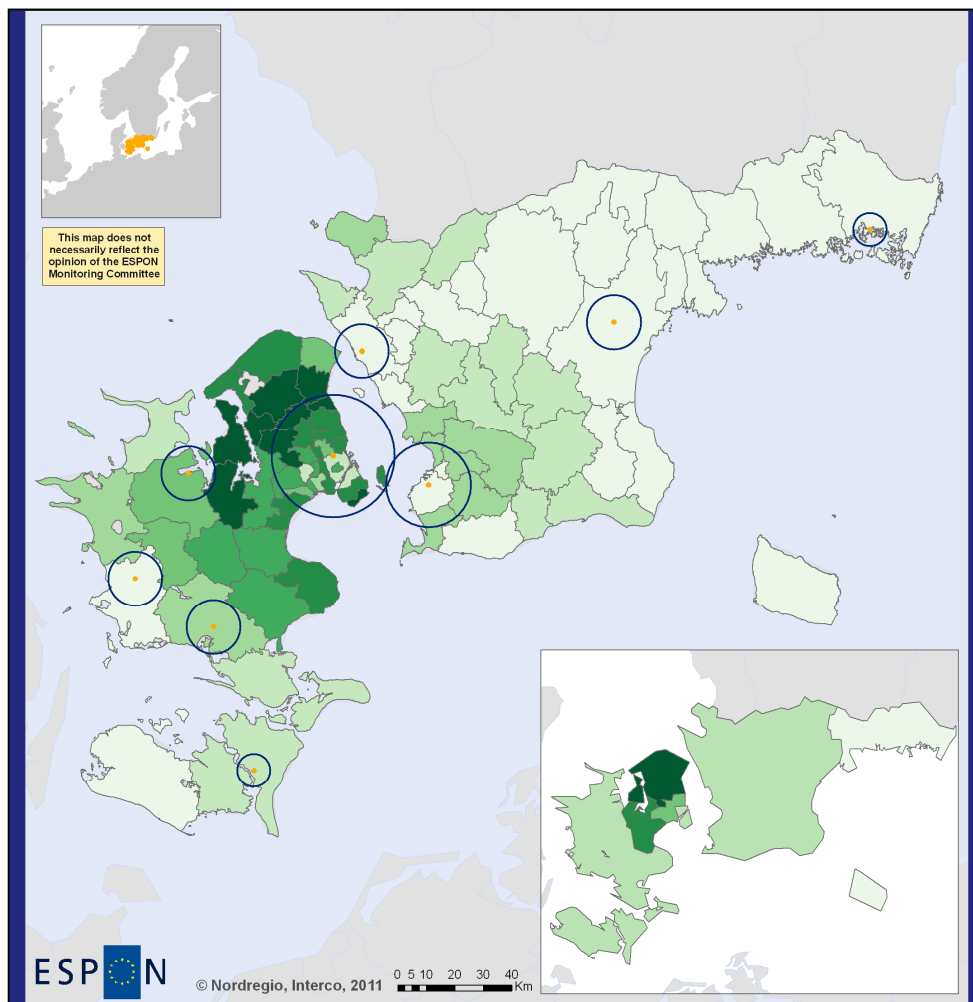
17

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0 5 10 20   30   40
Km

Employment rate (%) 2009 in LAU and NUTS 3 regions

LFS adjusted series.
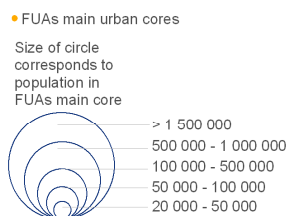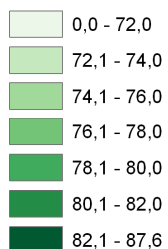
	NUTS 3	LAU
Highest	82,6	87,3
Lowest	71,1	66,3

- 0,0 - 72,0
- 72,1 - 74,0
- 74,1 - 76,0
- 76,1 - 78,0
- 78,1 - 80,0
- 80,1 - 82,0
- 82,1 - 87,6

● FUAs main urban cores

Size of circle
corresponds to
population in
FUAs main core

> 1 500 000
500 000 - 1 000 000
100 000 - 500 000
50 000 - 100 000
20 000 - 50 000

Map 5: Employment rate (%)in Sydsverige-Eastern Denmark, 2009
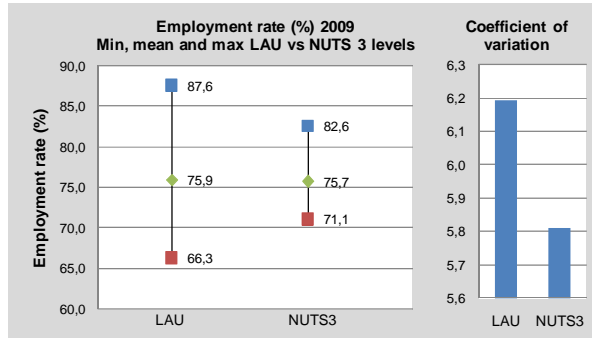
Figure 5: Max. min, standard deviation and coefficient variation of employment rates (%) in 2009 between NUTS3 and LAU levels

When analysing figures at the local level it is possible to find additional patterns: lowest rates are not exclusively associated to peripheral areas but are also found around major urban areas. Examples of LAUs below the average are found in municipalities such as Albertsund, Brøndby and København itself, as well as Malmö and Helsingborg. This shows that LAUs in areas around major urban areas register high local contrasts as they have both some of the highest and lowest figures in the case study. Figure 6 shows the evidence of such disparities in Kobenhavn by and Nordsjælland. However the highest disparities among LAUs within a region are found in Vest- og Sydsjælland which has the lowest rate in the case study in contrast with relatively high rates LAUs closer to Greater Copenhagen.

At the same time the average NUTS 2-3 figures can't reflect exceptional local examples such as Egedal, Allerød, Frederikssund or Dragør, all of them in Denmark with shares above 84% and up to 87,6% constituting some of the highest employment rates in the Nordic Countries. This is an example of notable local examples difficult to underline from NUTS 2-3 figures.
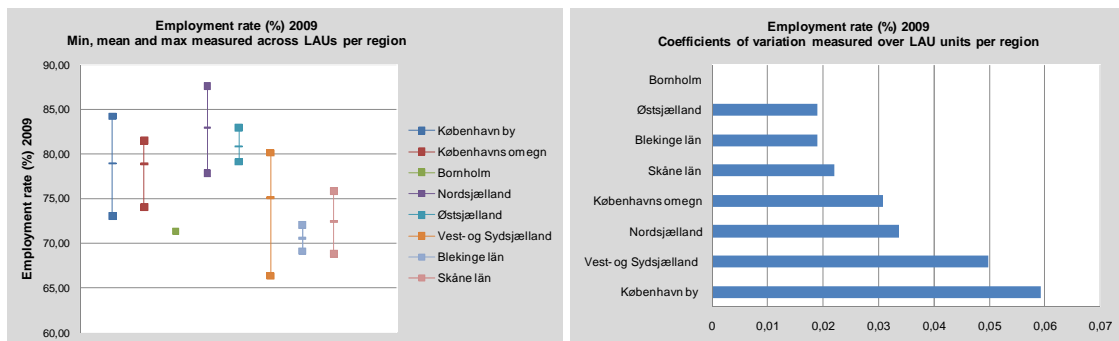
Figure 6: Employment rate (%) 2009 disparities measured across LAUs within the regions and coefficients of variation

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3.2. Inclusion

3.2.1. Population with tertiary education

An important asset for the Nordic labour market is its highly skilled labour force. All the Nordic Countries have higher share of tertiary educated persons than in EU on average (22 %) referring to persons with semi-long (bachelor level) and long (master's and PhD-level) higher education. On regional level, the regions with highest levels of population with a tertiary education in Europe can be found in the Nordic Countries.

On average 31,9% of the population aged 25 years or more in the case study area has a tertiary level education which is above the national averages for both Denmark and Sweden.

By analysing the case study from the NUTS 3 level it is possible to find the highest percentages associated to regions with large populations such as Københavns by and Skåne where rates are around 40%. In contrast, the lowest shares at a NUTS 3 level correspond to peripheral areas such as Bornholm and Vest- og Sydsjælland where figures are around 20%. The variation between the eight NUTS 3 regions span between 22,5% and 43% which contrasts to a much larger variation between the 85 LAU units that span between 17,5% and 66,7% (Figure 7).

Analysing the case study area from the local level gives new inputs to regional results. At the local level, 33 out of 85 LAU in the case study have shares above the case study average of 31,9%. The majority of these LAU units are located around densely populated areas and/or areas with large population such as Greater-Malmö or Greater-Copenhagen (Map 6). These major urban areas are often home to a number of high education institutions and thus create a spatial influence over surrounding local areas which are characterised by small size in terms of area and populations around 50-60,000 or below. At the local level also the regional centres with universities and other higher education institutions can be highlighted. That is the case of Lund (66,7%), Karlskrona (41,9%) and Roskilde (38%). Universities work then as instruments of local and regional development through specific initiatives, through education, research and cooperation with the surrounding society.

The lowest rates can be found in peripheral sparsely populated local examples with limited education possibilities relatively far from regional university centres or large urban areas. That is the case of different LAUs especially in eastern and southern peripheral Vest- og Sydsjælland, Bornholm, and LAUs close to the border between Blekinge and Skåne as well as northern Skåne.
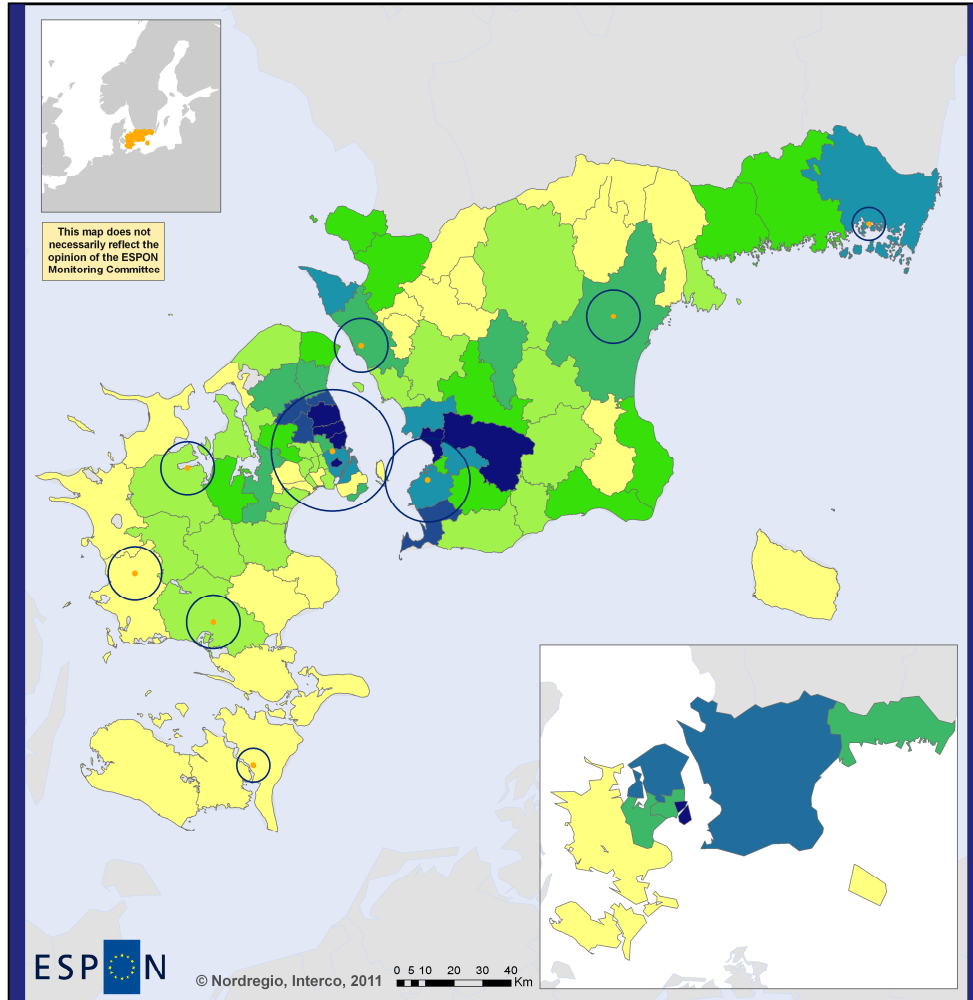
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0 5 10 20   30   40
Km

Tertiary educated people 2010 in LAU and NUTS 3 regions

% of total population

- < 25,0
- 25,1 - 30,0
- 30,1 - 35,0
- 35,1 - 40,0
- 40,1 - 45,0
- 45,1 - 50,0
- > 50,1

• FUAs main urban cores

Size of circle
corresponds to
population in
FUAs main core

> 1 500 000
500 000 - 1 000 000
100 000 - 500 000
50 000 - 100 000
20 000 - 50 000

	NUTS 3	LAU
Highest	43,3	66,7
Lowest	22,5	17,5
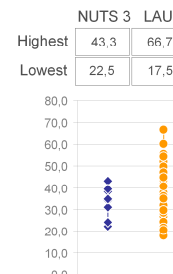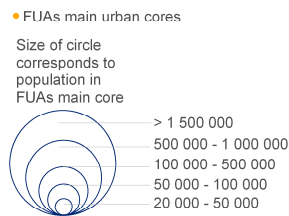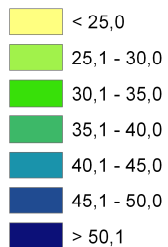
Map 6: Tertiary educated people (%)in Sydsverige-Eastern Denmark, 2010

When going deeper into the local level it is possible to find additional patterns: lowest shares of tertiary educated population are not exclusively associated to peripheral areas but are also found around major urban areas. Four local examples (Ishøj, Brøndby Tårnby and Høje-Taastrup located in the heart of the Capital Region of Copenhagen register some of the lowest shares of the case study (below 24%) which might be explained by the fact that all these LAU have income levels below the average of the Danish side. LAU in areas around major urban areas register high local contrasts as they have both some of the highest and lowest figures in the case study.

Source: National Statistical Offices of Sweden and Denmark
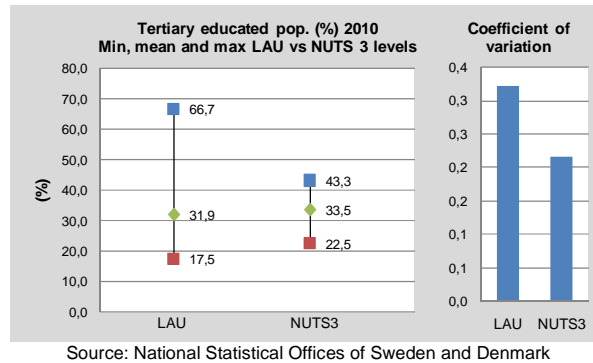
Figure 7: Max, min, standard deviation and coefficient of variation of tertiary educated people in 2010 between NUTS 3 and LAU level

At the same time the average NUTS 2-3 figures can't reflect exceptional local examples such as Lund, Lomma (Skåne), Getofte, Lyngby-Taarbæk (Københavns omegn) and Rudersdal & Hørsholm (Nordsjælland) all of them with shares above 50% up to 66,7% well above other LAU examples within their regions. These examples constitute some of the highest local shares of tertiary educated population in the Nordic Countries, probably in Europe. This is an example of remarkable local examples difficult to highlight from NUTS 2-3 figures.

Source: National Statistical Offices of Sweden and Denmark
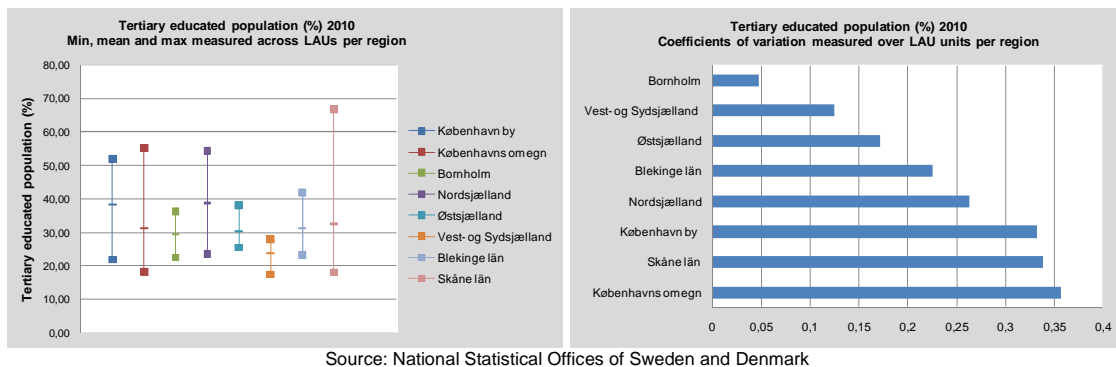
Figure 8: Tertiary educated pop (2010) disparities measured across LAUs within the regions and coefficients of variation

A major issue here was the difference in categorizations of tertiary level categories between Sweden and Denmark. Data was harmonised and calculated for one year only since it is not standardized between both countries.

3.2.2. Ageing Index

Ageing population is a pattern that has been affecting various regions across the Nordic Countries. Compared to the EU27 average, the age group 60-64 years is significantly larger in the Nordic countries while the age groups 20-54 years are slightly smaller. In contrast, the share of children aged 0-19 years is higher in Norden than in the EU, which means that relatively large age groups are not only currently exiting but also entering Norden's labour markets.

A common trend in the case study area is that the population in urban areas is younger, while in rural and sparsely populated local areas the population is older. Many of the peripheral and sparsely populated areas can be characterised as small economies facing demographic challenges. The ageing population is often explained by low fertility levels, higher average life expectancy and the out-migration of young people that aggravates the problem and creates depopulation and other related problems. At the same time, some of the larger urban regions are struggling to develop an approach to the provision of sustainable living conditions, for example in relation to access to housing and the provision of adequate communication infrastructures.

Specifically in map 7 it is possible to find some of these major urban local areas around the Öresund Strait (the central areas of the case study) with lower ageing indexes[6] than those registered in LAUs in peripheral areas. LAUs in Skåne are clearly divided into two different halves: the west containing major cities and largest industrial activity is characterised by low ageing index in contrast to the westernmost remote and peripheral regions characterised by old population and out migration patterns. This regional east-west divide situation is only perceptible when Skåne is analysed at a local level.

A similar situation is presented in Vest- og Sydsjælland where the indicator figures at the local level shows a clear regional divide, in this case north-south, between its different LAU units.

Another local situation is evident in Blekinge where all LAU areas have high ageing indexes except Karlskrona which is the region's capital city and an important regional university centre in southern Sweden. This example represents a case of high disparities within the region and between Blekinge's LAU units in relation to other LAU areas in the case study.

As expected, local areas around Copenhagen and Malmö municipalities present the lowest levels of ageing indexes due to the high presence of young population groups. The lowest local examples are located particularly in LAUs located in the vicinity of Copenhagen.

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[6] The ageing index is defined as the ratio of all persons older than 64 years to all persons under 15 years. Indicator values above 1 in the map (purple colors) indicate the presence of more elderly people than children whereas values below 1 indicate a majority (green colors) indicate a majority of children compared to elderly. Regions around 1 (pink color) indicate a balance between elderly and young people.
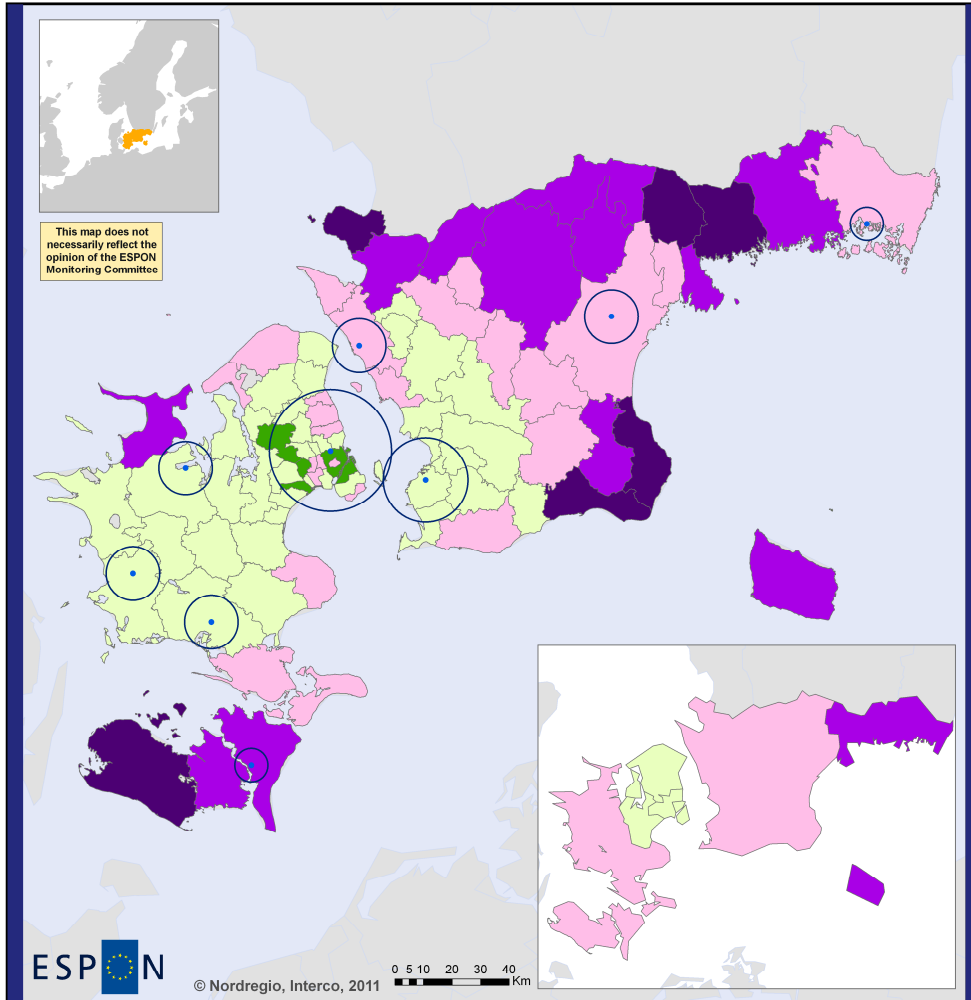
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0 5 10 20 30 40 Km

Ageing index 2010 in LAU and NUTS 3 regions

Persons 65+ / persons 0-14

- <- 0,70
- 0,71 - 1,00
- 1,01 - 1,30
- 1,31 - 1,50
- > 1,51

• FUAs main urban cores

Size of circle corresponds to population in FUAs main core

> 1 500 000
500 000 - 1 000 000
100 000 - 500 000
50 000 - 100 000
20 000 - 50 000

	NUTS 3	LAU
Highest	1,39	2,09
Lowest	0,77	0,48
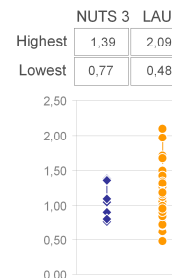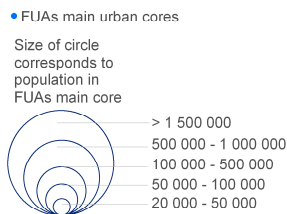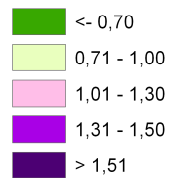
Map 7: Ageing index in Sydsverige-Eastern Denmark, 2010
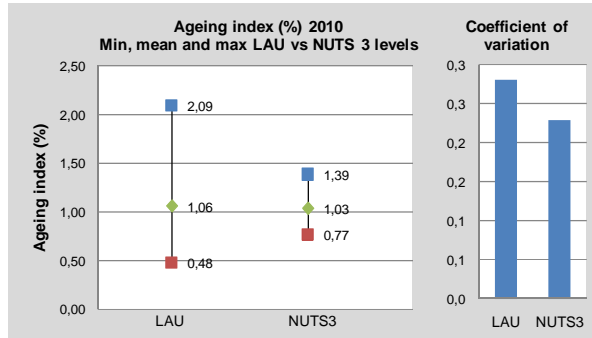
Source: National Statistical Offices of Sweden and Denmark

Figure 9: Ageing index 2010 (%): disparities within NUTS 3 and LAU levels

The statistical analysis shows a higher coefficient of variation regarding the LAU level than the one registered in the NUTS 3 level (Figure 9). The level of disparities gets broader when going down to the local level. At NUTS 3 level the highest ageing index registered is 1,39; however at local level there are a number of LAU units with indexes both higher or lower than outermost max. and min. regional figures.

As mentioned before, LAU units inside region Skåne followed by those in Vest og Sydsjaelland register some of the largest disparities in the case study in terms of ageing indexes (Figure 10). These local cases represents local examples of regional divides both within LAUs in the hinterland of major urban areas -characterised by a large proportion of young population- and both between central areas and peripheral and/or remote rural LAU units the latter characterised by a higher share of old population and out-migration patterns.
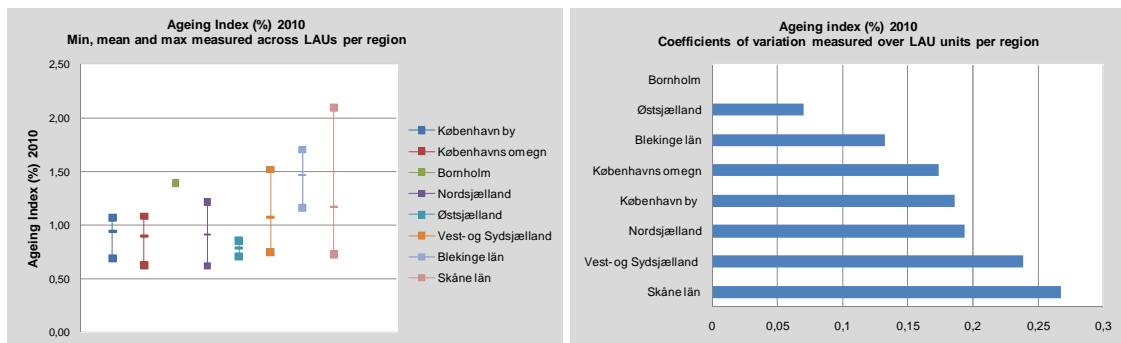
Source: National Statistical Offices of Sweden and Denmark

Figure 10: Ageing index (%) 2010 disparities measured across LAUs within the regions and coefficients of variation

3.2.3. Life expectancy

Because the case study is shared by regions in two different countries, it was not possible to find an indicator for the same period of time showing averages of life expectancy. In an effort to find the closest periods of time possible, data for Denmark 1998-2007[7] and Sweden 2003-2007[8] were founded, but the results in the maps are considered separately since the periods in question are different. The results shown in map 8 A) for the Danish side and 8 B) for the Swedish side give at least an idea of life expectancies at a local level.

Overall Nordic life-expectancy has grown steadily with few exceptions during the 20th century. Rising welfare levels and better living conditions, due to economic growth and better healthcare, have helped to reduce mortality. People's lifestyles and socioeconomic status are the two largest factors behind the change in life-expectancy.

Life expectancy in in Sjælland and Hovedstaden Regions
Average period 1998-2007

- 75,0 - 76,0
- 76,1 - 76,5
- 76,6 - 77,0
- 77,1 - 77,5
- 77,6 - 79,8

Life expectancy in SydSverige
Average period 2003-2007

- 79,3 - 80,5
- 80,6 - 81,0
- 81,1 - 81,5
- 81,6 - 82,0
- 82,1 - 83,2
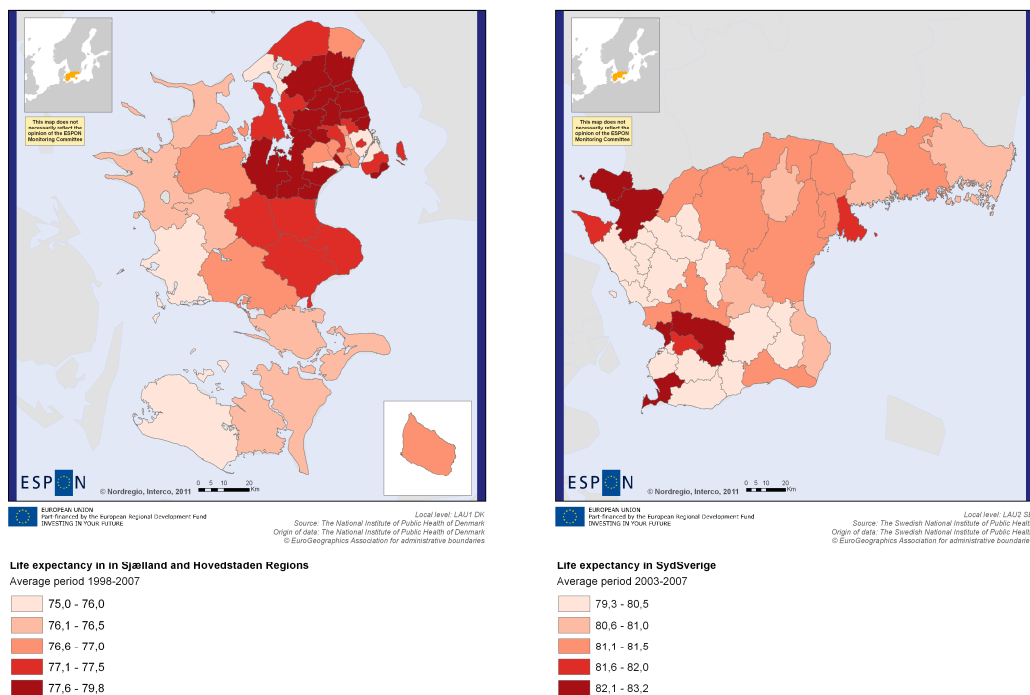
Map 8: A) Life expectancy average for 1998-2007 in LAU s of Sjælland and Hovedstaden Regions and B) Life expectancy average for 2003-2007 in LAUs in Sydsverige

The Danish life-expectancy level is still at a slightly lower level as compared to Sweden (approx. 2 years) but this might be the result of an extremely low infant mortality in Sweden. Disparities between the highest and lowest levels among Swedish LAUs is of 4 years whereas in the Danish LAUs is of 4,8 years.

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[7] Averages calculated by The National Institute of Public Health of Denmark. No other periods available.
[8] Averages calculated by The Swedish National Institute of Public Health. Other periods are also available.

In general, differences between life expectancy levels in Norden can be found between urban and more rural areas where life-expectancy is higher outside the urban centres. But also differences correspond to the socioeconomic development level in local areas, closely related to lifestyles and working conditions. Socioeconomic aspects such as high levels of education and high levels of income have an influence in high life-expectancy levels which combined with other factors (such as low fertility levels or out-migration of young people) contribute also to ageing population.[9] Other factors may affect mortality and life expectancies in a local area. A healthy population with good living conditions, good health habits and good health care contribute to higher life expectancy levels. Housing conditions/prices may also affect life expectancy as it creates different moving patterns between local areas: persons with low income (and poor health) will rarely settle in municipalities with expensive housing.[10]

Based on these aspects, it is possible to find some local patterns in the case study. Figure 11 to the right shows how LAUs in regions around major urban centres such as Copenhagen (København by, Københavns omegn and Nordsjælland) are those with the highest variations, since they register both some of the highest and lowest figures. A similar situation is perceived around Malmö-Lund. This shows a correspondence with the local disparities found in this study in/or around major urban areas regarding income and tertiary education levels patterns explained in the respective sections. A number of LAUs with high income and high levels of tertiary education in the case study have also high life expectancy levels and viceversa. Other examples with high levels of life expectancies are found in northwestern Skåne (Båstad, Höganäs, Ängelhom) which happen to be high income municipalities with relatively high levels of tertiary educated population. LAUs with the shortest average life expectancies in the Danish side are concentrated on low income LAUs in Lolland-Falster and south western Zealand (Slagelse, Lolland, Guldborgsund) but also as mentioned in the hinterland of Copenhagen (Ishøj, Halsnæs and Copenhagen itself). Shortest life expectancies in the Swedish side include local examples in LAUs located in the hinterland of Malmö-Lund and Helsingborg (Burlöv, Bjuv, and Malmö itself).

Source: Public National Heath Institutes of Sweden and Denmark
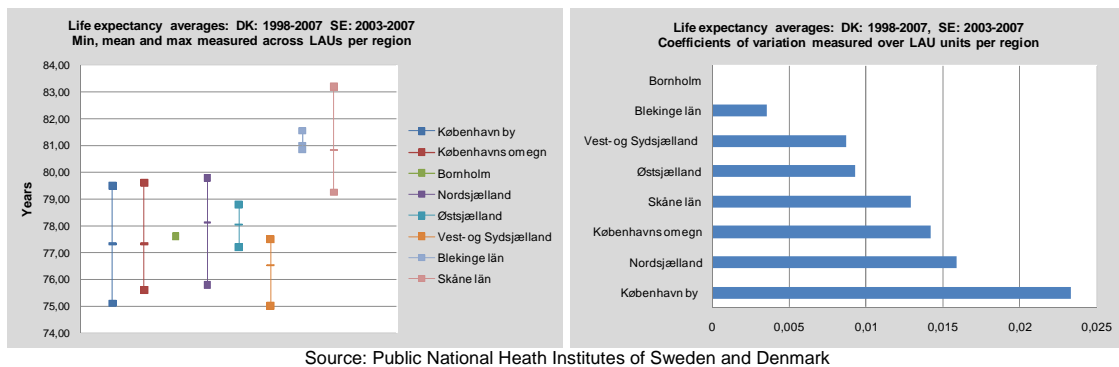
Figure 11: Life expectancy disparities measured across LAUs within the regions and coefficients of variation

[9] Rauhut D. et al. (2008): The Demographic Challenge to the Nordic Countries, Nordregio Working Paper 2008:1, Stockholm, Sweden
[10] The National Institute of Public Health of Denmark (2010): Middellevetider i danske kommuner Kvinder lever længere end mænd, men der er kommunale forskelle; week 3, 2010

3.2.4. Population density

The case study are can be considered as a special example in a Nordic context with regard to population densities where significant differences are registered between highly populated areas (which include Malmö-Copenhagen the largest urban conurbation of the Nordic Countries[11]) and remote rural sparsely populated areas (in the west, south and especially east).

However these variations are not easily perceptible when analysing the region at the traditional NUTS 2 or NUTS 3 averages. It is only by going to the local level that large disparities pop out. Accordingly, variations between LAU units in the case study are range from 22 inhab./km² (in Osby, Skåne) up to 11,028 in Frederiksberg (Københavns by), the most densely LAU unit in the Nordic countries. This clear variation is due to the fact that the LAU level reveals a higher spatial detail in regions that at a NUTS 3 level are basically imperceptible (variations between NUTS 3 averages are also large but at a lower extent, ranging between 52 (Blekinge) and 3,769 (Københavns by) inhab./km²).

The map of population densities in the case study at a LAU level (map 9) is therefore not uniform and important regional divides between the geographical centre and peripheries of the case study become evident. Coastal areas around the Öresund strait are considerable more densely populated. Here 14 out of the top 15 most densely populated LAU units above 1,000 and up to 11,028 inhab./km² are all located in the NUTS 3 regions of Københavns by and Københavns omegn in the geographical center of the case study; the other LAU unit in this group is Malmö.

On the other hand most of the LAUs in southern and eastern peripheries register the lowest densities in the case study. In the southern periphery (corresponding to Vest- og Sydsjælland) densities range between 53 (Lolland) and 310 inhab./km² (Slagelse) while in the eastern periphery (corresponding to eastern Skåne and Blekinge) 13 LAU units register the lowest densities in the case study, all of them below 50 inhabitants per km². Moreover half of the local units in the case study (42 out of 85) register population densities below 150 inhabitants per km². This predominance of low densities among LAUs in the case study become evident in figure 12 where the majority of averages in both NUTS 3 and LAU levels are much closer to the minimum values.

There are large differences between the LAUs in terms of size in this case study. The 85 LAUs have a population span from 101 to 528 208 inhabitants and size span from 0,2 km² to 1 276 km². Size therefore is a crucial factor to consider when analysing population density in the case study. Some of the local examples registering high densities do not necessarily contain a large number of inhabitants; that is the case of Burlöv and Lomma (contiguous to Malmö) or Glostrup and Vallensbæk (around Copenhagen). In fact these 4 examples have populations below 21,000, but the fact that their areas do not exceed 55 km² and the proximity to a major urban area, place them on top of the list. On the other hand many of the LAU units registering the lowest densities also have populations below 21,000 but the larger sizes in terms of area (especially evident in Swedish municipalities) combined with longer distances from largest urban agglomerations create completely different conditions of socio-economic development.

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[11] Norden (2009) available at: http://www.norden.org/en/the-nordic-region/population
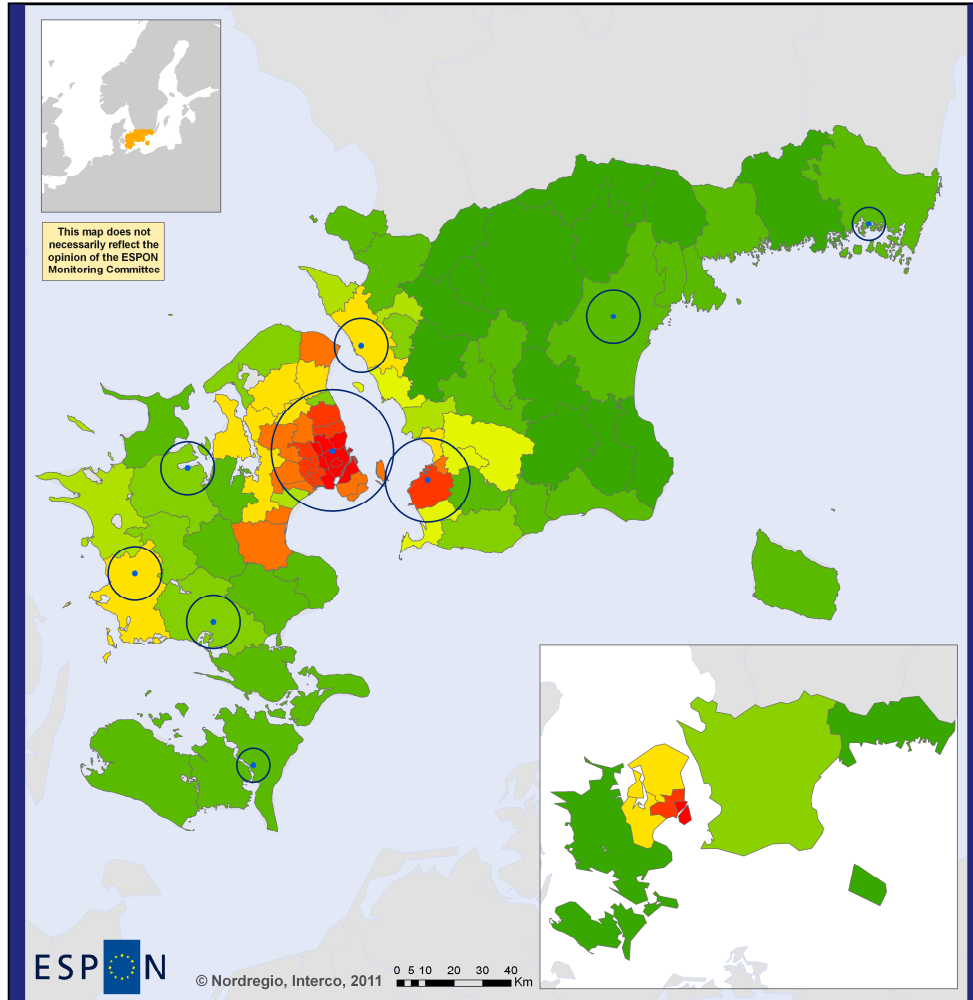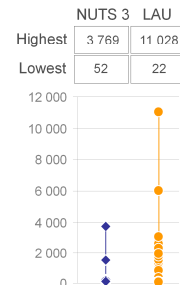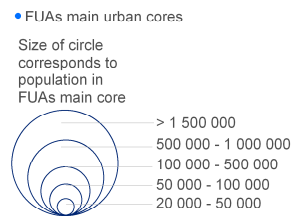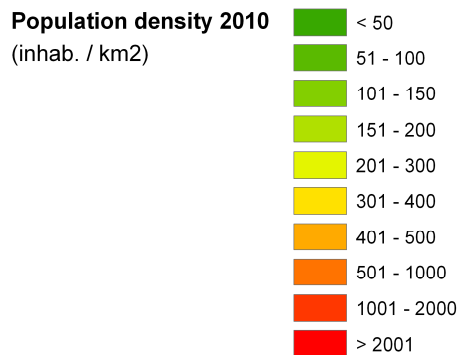
Map 9: Population density 2010 (inhab/km2) in Sydsverige-Eastern Denmark
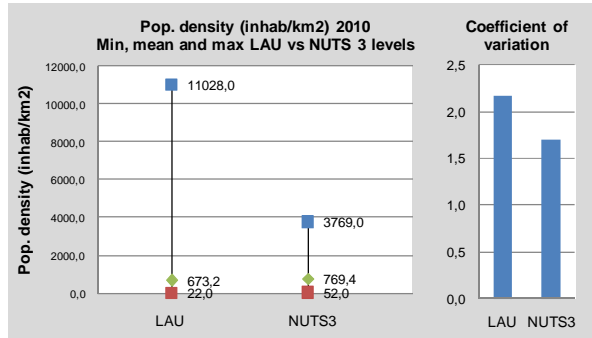
Source: National Statistical Offices of Sweden and Denmark

Figure 12: Max, min, standard deviation and coefficient of variation of population density in 2010 between NUTS 3 and LAU level

Figure 13 shows variations in terms of density registered within NUTS 3 regions measured over LAU units. As expected, larger disparities are found between LAUs in Skåne and København by, the two NUTS 3 regions containing some of the most densely populated LAUs in the case study. The contrast is more obvious in Skåne as the region is larger in terms of size and the different LAUs vary considerably in size, ranging from 19 km² (Burlöv) to 1276 km² (Hässleholm) which gives figures that also span considerably between 22 inhab/km² (Osby) and 1913 inhab/km² (Malmö). Disparities in København by on the other hand are derived from the fact that the region has the local area unit with the highest density in the case study (Frederiksberg 11028 inhab/km² in an area of only 9 km²), LAUs with small sizes and much less densely populated examples such as Tårnby where densities reach 622 inhab/km². LAUs in Københavns omegn and Blekinge register less disparities as all of their LAUs are of the same nature (small areas with large densities in the first one and large areas with large densities in the latter)
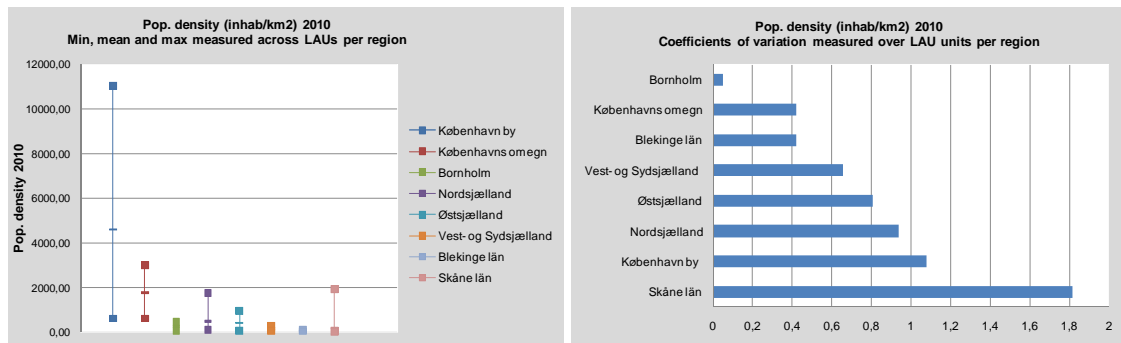
Source: National Statistical Offices of Sweden and Denmark

Figure 13: Population density (2010) disparities measured across LAUs within the regions and coefficients of variation

3.2.5. Population growth

The case study had a total population of 3,884,448 as of 2010 with about 2,500,835 people living in the Danish side and 1,383,653 in the Swedish side. Population in the case study is concentrated around the Öresund Strait with the majority on the Danish side. One of the main factors for population growth in the case study is migration. The general pattern indicates migration to larger cities mainly by young population moving from home to study or work. Population growth is also due to a surplus of immigrants. In total, a net of 100,000 persons have in-migrated from other countries than Denmark and Sweden, while the remaining net of 40,000 have come from both countries. Apart from migration another factor that has contributed to population growth in the case study includes a birth surplus mainly on the Danish side. Since the opening of the Öresund Bridge in 2000 and up until 2009, the population in the Öresund region has increased by about 180,000, with 90,000 people on each side. 13,000 persons have moved permanently from the Danish side to the Swedish side of Öresund. The main reasons for this are the low costs of living and especially housing in Skåne compared to Copenhagen capital area.[12]
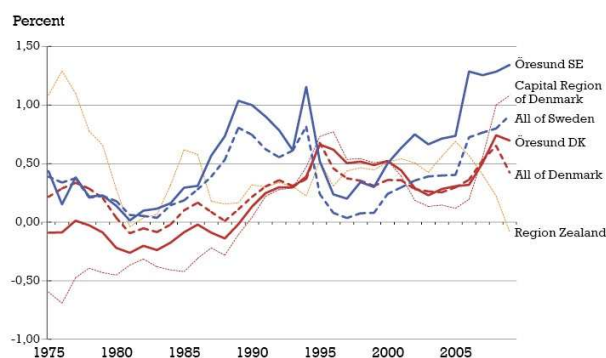
Figure 14: Population growth around the Öresund Region; source Tendens Öresund

According to forecasts developed by Tendens Öresund[13] the number of inhabitants in the Öresund region is expected to grow from 3,7 million in 2010 to 4 million in 2029, with a major concentration around Copenhagen and in the Swedish side, in contrast to Zealand where population rather will be stagnant. The population increase will be due to the increased life expectancy and, thus, it is the elderly share of the population that will increase.

In the case study, population has become increasingly concentrated to city regions and large labour markets with the option of commuting. In the Danish side over the last ten years the whole of Zealand has become part of the Copenhagen labour market, and in the Swedish side the population continues its concentration to regional centres.

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[12] Region Skåne (2010): Hur har det gått I Skåne? 2010 års uppföljning av regionalt utvecklingsarbete, Region Skåne, Koncernkontoret, 2010

[13] Tendens Öresund is published by the Öresund Committee, and it presents facts and statistics about the Øresund Region. The Öresund Committee was established in 1993 by the local and regional authorities, together with the national authorities, as the regional policy forum for cross border cooperation.
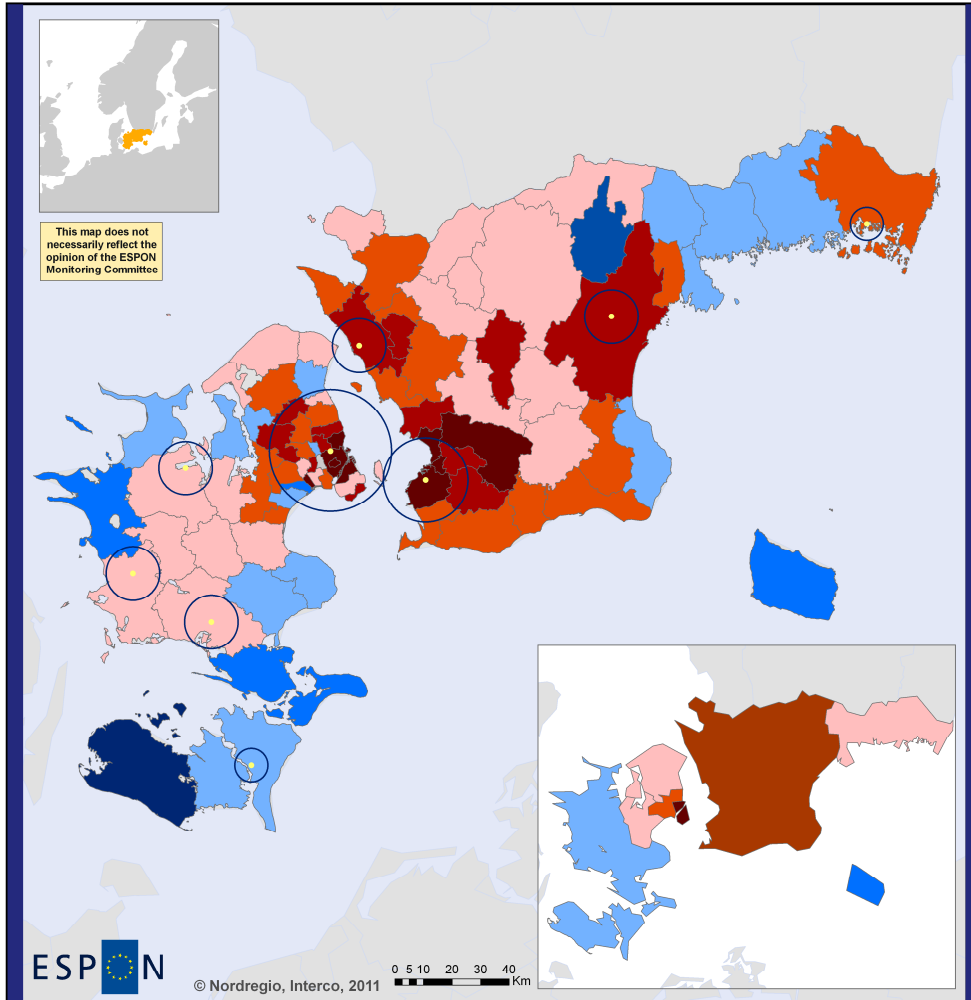
Population growth 2009-2010 in LAU and NUTS 3 regions

Growth rate in %

	< -15,0
	-14,9 - -10,0
	-9,9 - -5,0
	-4,9 - -0,1
	Stagnant
	0,2 - 5,0
	5,1 - 10,0
	10,1 - 15,0
	> 15,1

● FUAs main urban cores

Size of circle
corresponds to
population in
FUAs main core

> 1 500 000
500 000 - 1 000 000
100 000 - 500 000
50 000 - 100 000
20 000 - 50 000

	NUTS 3	LAU
Highest	17,3	49,6
Lowest	-9,5	-16,3
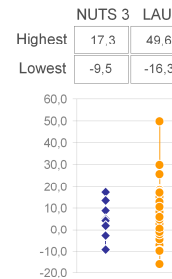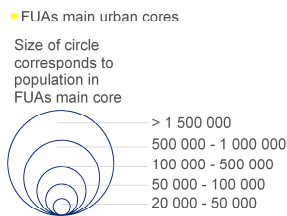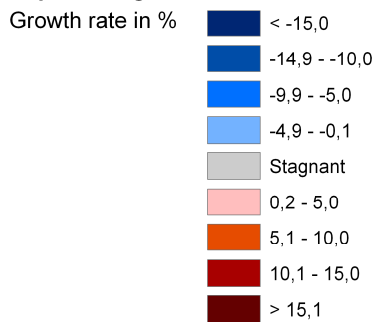
Map 10: Population growth (%)in Sydsverige-Eastern Denmark, 2009-2010

This is especially clear in Malmö-Lund due to the existence of important commuter flows to Copenhagen as well as a result of immigration to Skåne. In contrast to this, rural and sparsely populated local areas have generally experienced population decreases. Towns and villages in the Öresund region situated at some distance from the large urban areas suffer from decreasing population and a lack of economic growth (OECD, 2003). LAUs in the islands of Falster, Lolland, Mon and Bornholm as well as LAUs in Blekinge (except Karlskrona) have seen the largest population decrease both of which had experienced significant levels of out-migration.

Important variations exist between the NUTS 3 and LAU levels when it comes to population growth. Figures at NUTS 3 levels span from -9,5 to 17,3 while LAU figures span widely from -16,3 up to 49,6.

Source: National Statistical Offices of Sweden and Denmark
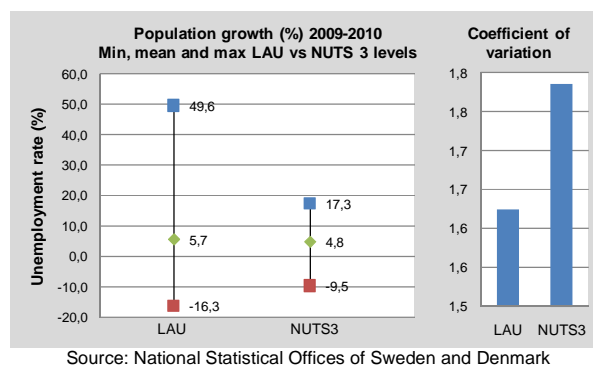
Figure 15: Max, min, standard deviation and coefficient of variation of population growth in 2010 between NUTS 3 and LAU level

A concrete example of differences expressed between NUTS 3 and LAU figures is found in Blekinge. While at regional level, Blekinge has a positive population growth of 2,2%, when going deeper into the LAU level it is only the municipality of Karlskrona, capital of the region, the one with a relatively high population growth (8,5). The remaining 4 municipalities have all negative figures between -1,3 and -4,9%, Population growth in the region is driven by Karskrona the largest urban centre of the region and an important university centre in Southern Sweden. In this case it is the local level the one which is able to display these negative population patterns and disparities within LAUs in the same region.

Within regions, variations between LAUs are evident. Skåne has both the 2nd highest and lowest rates in the region. Disparities goes from -10% in Östa Goinge (a peripheral LAU) up to 29,7% in Lomma (part of Greater-Malmo urban area). This situation shows a difference between central urban and peripheral rural areas in terms of population growth. However a similar situation is evident but this time in a relatively more homogenous region such as Københavns omegn (all of it part of Greater Copenhagen). Here variations goes from -7.3% in Ishøj up to 49,6% in Vallensbæk. The analysis from the local level shows then that disparities also exist in central urban regions.

3.2.6. Income

Due to the fact that the Sydsverige-Eastern Denmark is located in two different countries there were difficulties to find a single indicator of disposable household income for the whole case study area at the local level. It was possible to find an indicator calculated by Ørestat (the official local statistical institution of the Öresund Region supported by Statistics Sweden and Denmark) that measures average family income[14] after taxes, harmonised at Swedish kronors[15] at LAU level for the case study except Blekinge. Both the Swedish and Danish income statistics are based on information collected from the central tax authorities by Ørestat[16].

Even though the tax systems of Sweden and Denmark are very similar, payments to the social insurance systems differ considerably. As a result, salaries (and in turn income) in Sweden are lower than in Denmark (Maps 11A, 11B). In Sweden, it is the responsibility of the employer to pay a fee of 32.82 % of earnings. In addition to these employers' fees, employees also pay 7% of their income in general pension fees. In Denmark, employers only pay a small sum in fees for pensions and occupational accident insurance, and employees pay 8% to a labour market contribution fund. From 2003 onwards, employees also contribute another 1% to pensions. (Ørestat, 2005)

Therefore, Ørestat is keen to express that these differences indicate that it is not possible to directly compare income from salaries in Denmark and Sweden. As they say, differences between the two countries are less when comparing income after taxes, but in any case the income statistics calculated by Ørestat may be used within the limits of reason to follow development of disposable income as an indicator for income development in the various parts of the region.[17] Maps in this section are therefore presented individually for each country following Ørestats' recommendations.

From map 11A it can be seen that local examples with high average income per family in the Danish side are found in a number of LAUs around Copenhagen while the lowest figures are found in the southern periphery of Zealand, Bornholm and the single LAU unit of Copenhagen. In the Swedish side -map 11B- the pattern is similar and highest figures are found in LAUs around Malmö, while the lowest figures are found in peripheral eastern and northern LAUs as well as in the single LAU unit of Malmö.

The analysis at the local level allows us to identify some local patterns. Low figures are not exclusively associated to LAUs in remote or peripheral regions in this case study; LAU areas in or around major urban areas also register both some of the lowest but also the highest levels in the case study which leads to high local disparities between LAUs in

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[14] The indicator is available at the Ørestat databank, The indicator in question considers as total income the following categories: wages and salaries, income from self-employment, capital income, taxable pensions and other family transfers. Statistics are available at: http://www.dst.dk/extranet/oresund1/ Eurostat purchase power parities have been used to convert DKK to SEK and vice versa (see ESA95 aggregates 97-.
[15] Figures are also available in Danish kronors but to make the results somehow comparable it was decided to use a single currency, Swedish kronors.
[16] Complete methodology about Örestat's calculation of this indicator is available at: http://91.208.143.50/pxweb/Database/oresund/Income%20in%20%D8resund/Indkomster_UK.pdf
[17] Idem.

the hinterland of a major urban centre like Copenhagen. A couple of examples are also found around Malmö-Lund.

Average disposable family income 2010 in Sjælland and Hovedstaden Regions
SEK = Swedish Kronors, income after taxes

- < 300 000
- 300 000 - 330 000
- 330 000 - 360 000
- 360 000 - 400 000
- 400 000 - 451 863

Average disposable family income 2010 in SydSverige
SEK = Swedish Kronors, income after taxes

- < 230 000
- 230 000 - 250 000
- 250 000 - 270 000
- 270 000 - 300 000
- 300 000 - 359 667
- No data available (Blekinge)

Map 11: A) Average family income after taxes 2010 (SEK) in LAUs in Sjælland and Hovedstaden Regions, and B) Average family income after taxes 2010 (SEK) in LAUs in Sydsverige

Figure 16 shows that disparities are therefore higher in LAUs located in regions around Copenhagen (København by and København omegn) same as Skåne. In the Swedish side high figures include Vellinge, Lomma, Kavlinge and Staffanstorp, all of them in the vicinity of Malmö-Lund. In the Danish side highest figures include LAUs contiguous to Copenhagen especially in Nordsjælland and lowest figures apart from Copenhagen itself are found in LAUs in Lolland-Falster, Bornholm and north and south Zealland (Slagelse and Odsherred followed by Næstved and Kalundsborg).

Source: Ørestat
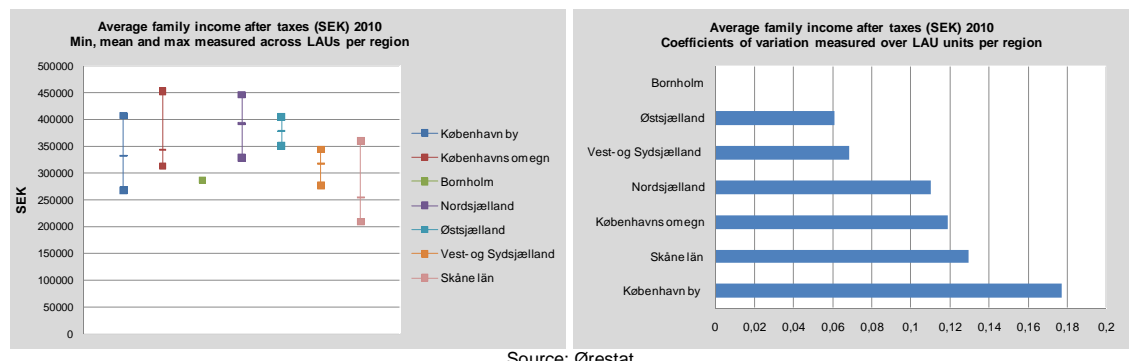
Figure 16: Average family income after taxes disparities measured across LAUs within the regions and coefficients of variation

4. Geographical specific/ indicators in the case study: searching for 'native' indicators

It is also of interest in this level to identify indicators available at the local level that do not exist at the EU regional level but that might be of interest for the other levels in the framework of Territorial Cohesion; that is geographically specific local indicators as examples to show efforts to measure relevant EU and national concepts at a local level.

Business Environment

Particularly in Sweden, there have been a number of efforts from different organisations to develop indexes able to measure business environments at a local level.

Under the approach of Europe 2020, business environment is pointed out as a crucial component of one of the 7 flagships initiatives to catalyse progress under the priority themes (smart, sustainable and inclusive growth): Europe 2020 promotes "*An industrial policy for the globalisation era" to improve the **business environment**, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally*". According to EC's "Summaries of EU legislation"[18] a favourable business environment is pointed out as essential to help entrepreneurs developing a business as well as it contributes to develop an entrepreneurial culture and making business in Europe more attractive. In Sweden and Denmark, entrepreneurship is part of the national strategic objectives of Cohesion Policy 2007-2013[19] and in particular the concept has a local importance for the case study as it is included In the Operational Programme for Sydsverige (Blekinge-Skåne) as a main component in one of the three main areas of intervention.[20]

Results from the indexes vary from each other depending on the methods and indicators measured. Aware of this, Region Skåne, in association with the Swedish Agency for Economic and Regional Growth (Tillväxtverket), developed an evaluation[21] of the different indexes existent. The aim of the study was to clarify how municipalities in Skåne can use the indexes for their own benefit as well as it constitute an attempt to locally compare indicators on business environment on the basis that companies, entrepreneurs and citizens have also the need to know how the municipality is performing. Even though the study concluded that the concept of business environment as such does not have a universal definition (and therefore the different indexes analysed are built on different sets of indicators and methods), the development of these type of indexes constitute an important effort to measure an important National and EU concept at a local level. One of the indexes analysed at a broader scale in the study (*Företagsklimat)* is randomly selected now with the intention to show an example of these efforts.

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[18] Available at: http://europa.eu/legislation_summaries/enterprise/business_environment/index_en.htm
[19] Sweden: http://ec.europa.eu/regional_policy/atlas2007/fiche/se_en.pdf ; Denmark: http://ec.europa.eu/regional_policy/atlas2007/fiche/dk_en.pdf
[20] Page 5, Regionalt strukturfondsprogram för regional konkurrenskraft och sysselsättning I Skåne-Blekinge 2007–2013
[21] Study available at: http://www.skane.se/upload/Webbplatser/Naringsliv/Dokument/DetLokalaKlimatet.pdf

Företagsklimat index: an effort to create a local index on business environment

The *Företagsklimat* index is published every year by the Confederation of Swedish Enterprise (Svenskt Näringsliv) based on structural indicators and surveys. Statistics are constructed in close cooperation with SCB, the Swedish National Statistics Institution, and surveys are conducted among entrepreneurs in all municipalities*. For the 2010 index, a total of 66,134 surveys were send to entrepreneurs having a response of over 55%. Entrepreneurs are selected as target group for the surveys as they are seen as those who have a better knowledge of the situation locally in each municipality in terms of current status, challenges and potentials to be considered. Every two years surveys are also send to local politicians (13,046 surveys sent with a response of 68%) even though their answers are not included in the final ranking; instead they are used as a tool to locally develop the different business environments in the municipalities.

Entrepreneurs get to rate how they perceive the business situation from a series of questions on different aspects and the ranking consider six structural business indicators managed by SCB. These aspects and indicators (and their respective weighting is presented in table below. The results are published on-line showing both the general index at a local level and the individual rankings for each of the aspects considered plus a number of additional business statistics all at a local level. **

Business environment Index – Indicators considered and weighting

STATISTICS (1/3)	SURVEY ANSWERS (1/3)	SURVEY ANSWERS (1/3)
Earned household income (from private sector)	Attitudes towards companies and entrepreneurs	The comprehensive review of the business environment in the municipality
Local municipal tax rates	Public local services	
Share of total municipal budgeted activities that are outsourced to private operations	Appropriate application of municipal laws and regulations	
Employment rate	Competition in the private sector	
Share of private sector employers per 1000 inhab. (in companies with at least 1 employee)	Infrastructure	
Share of new business starters per 1000 inhab. that became enterpreneurs* in the last year	Acess to qualified human resources	

*Entrepeneur is considered as a person responsible for the development of the company, declaring taxes, is partner in an active partnership, is manager, president or ordinary board member of an active company

Source: Svenskt Näringsliv. Adapted by Nordregio. For further details refer to Svenskt Näringsliv

*The survey was sent to 200 entrepreneurs in municipalities with less than 1,200 workplaces and less than 50,000 inhabitants, to 400 entrepreneurs in municipalities with more than 1,200 workplaces or 50,000 inhabitants, to 600 entrepreneurs in Malmö and Gothenburg and to 1,200 entrepreneurs in Stockholm

** Results at a local level are available online at: http://foretagsklimat.svensktnaringsliv.se/start.do

Regional Accessibility Atlas in Skåne

As mentioned in the introduction section, the case study as a whole register favourable accessibility conditions when it comes to infrastructure and connectivity due to the existence of major European air and harbour hubs both for passengers and cargo supported by an active network of airports, ports, railways and motorways that serve as a gateway to the Nordic countries. However this picture when viewed from a local perspective lifts up geographical disparities among different local areas, otherwise imperceptible at regional level:

Tillgänglighetsatlas: Geografisk tillgänglighet för Skåne or
*Accessibility Atlas: Geographical accessibility in Skåne ***

Region Skåne, aware of the geographical disparities in terms of size between the different administrative divisions traditionally used to presents results, developed an Atlas on accessibility calculated independent from administrative divisions (i.e. LAU, municipalities and local labour markets). What makes interesting the Atlas is not only the method used to generate the results but also that it allows the illustration of local situations with a higher geographical detail which facilitate the observation of disparities.

The method calculates accessibility including a system of cells (500x500 meter) and in cooperation with Statistics Sweden, Region Skåne developed a database that contains ground statistics for the cells.

Region Skåne's Atlas on accessibility conditions includes a wide set of indicators measuring accessibility (in time) by car and public transport to different physical and/or infrastructural elements such municipal cores, urban areas, hospitals, airports, national and regional train stations, regional bus stops, universities, schools, working places (i.e. reached before 30, 45 or 60 min.) among others. A sample of some of the maps produced by Region Skåne for this Atlas is shown in maps 12, 13 and 14, including accessibility by car to the left and by public transportation to the right to regional train stations, universities and hospitals respectively.

Results are different depending of the element in question and disparities goes beyond traditional LAU borders giving a more clear picture of areas with weaknesses.

Accessibility is a top priority in the Swedish NSRF 2007-2013** and this example reveals the intention of exploring a crucial theme for Territorial Cohesion at a regional-to-local level by own initiative in this case by Region Skåne. Equivalent studies in other regions in the case study area were not found.

Region Skåne's study is called (in Swedish) "Tillgänglighetsatlas: Geografisk tillgänglighet för Skåne". The report is developed by Oscar Monell, Per Arvidsson and Åke Boalt. Available in Region Skåne's website at:
http://www.skane.se/sv/Skanes-utveckling/Samhallsanalys/Tillganglighetsatlasen/
** http://ec.europa.eu/regional_policy/atlas2007/fiche/se_en.pdf
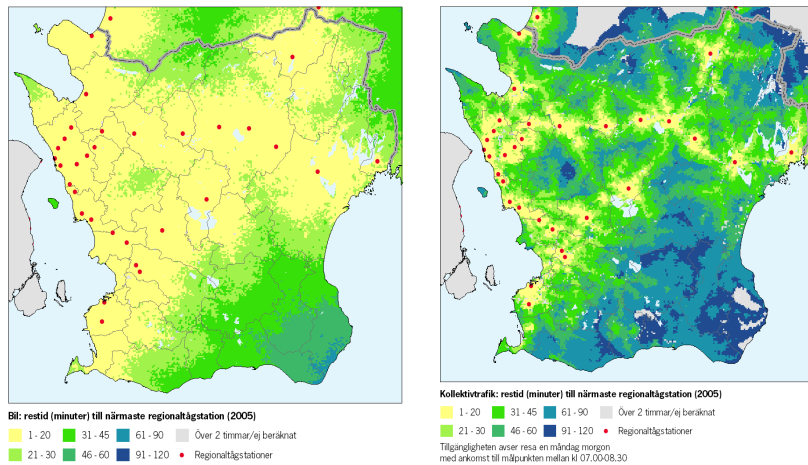
Map 12: Accessibility to regional train stations in Skåne. Source: Region Skåne
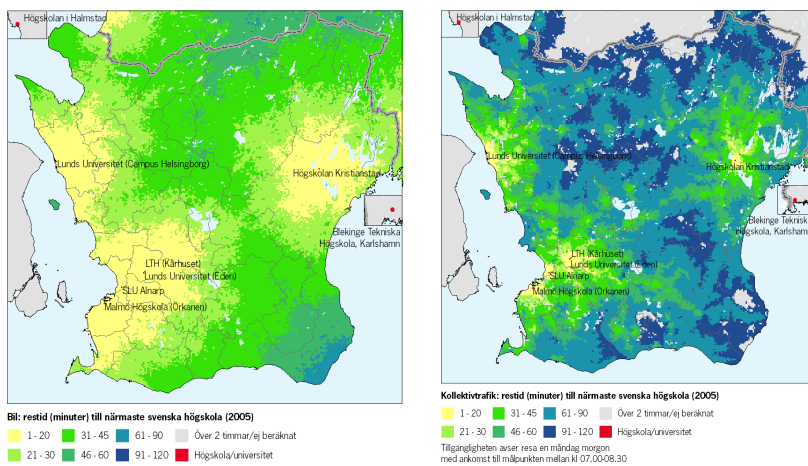
Map 13: Accessibility to high education institutions in Skåne. Source: Region Skåne
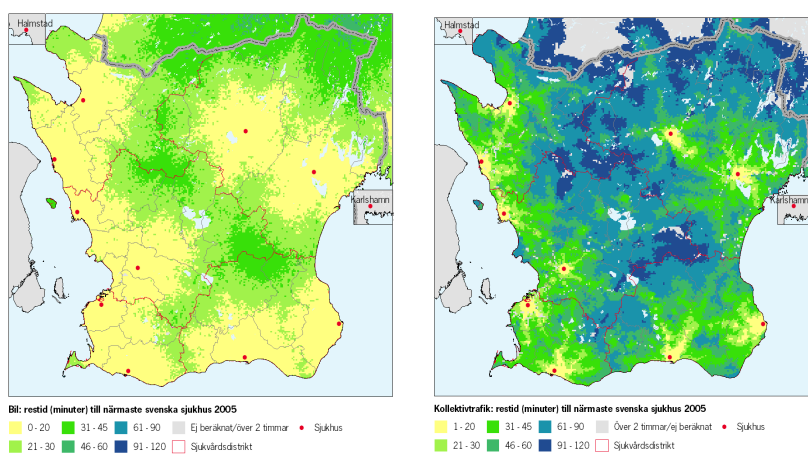
Map 14: Accessibility to hospitals in Skåne. Source: Region Skåne

5. Key findings and conclusions

The analysis of the case study area at LAU level displays important local disparities among the different parts of the region distinguishing local areas around urban centres with well-structured knowledge economies in contrast with local areas in need of economic restructuring and regeneration, and some sparsely populated rural local areas located at a relative distance from main urban centres.

The analysis at a local level was also able to visualise larger gaps between LAU units than NUTS regions as all the ranges of results at LAU level in all of the indicators selected were larger than the ones registered by NUTS 2 or 3 figures. Consequently figures at a local level show larger coefficients of variation implying therefore a broader level of complexity of the indicator at a local level.

Figures at local level were also able to illustrate strong disparities in a single NUTS 3 region depending on the settlement structure of its units. A clear example here is Skåne, where high local disparities were identified in terms of ageing indexes, distribution of population, education levels, unemployment patterns, among others, due to the diverse structure of the region where the majority of population and urban areas are located in the west (along the coastline) in contrast to the majority of rural and sparsely populated areas located inland in the north or east. Such complexity and diversity was better illustrated by conducting this analysis at local level.

But the analysis at a local level also enabled us to identify that weak performing local areas are not exclusively restricted to peripheral or rural sparsely populated areas but on the contrary low performing local examples are also found in central regions around major urban centres along the Öresund Strait in the hinterlands of Copenhagen, Malmö-Lund or Helsingborg. However the difficulties founded when trying to get available data at these LAU levels constitute a major constraint. Average regional figures are unable to show exceptional local situations for example remarkable LAUs with some of the highest shares of tertiary level educated population or critical LAU examples with some of the highest unemployment rates or ageing indexes.

The analysis of the feasible indicators has shown that by going beyond the traditional regional levels, a higher spatial detail is revealed, even in countries where disparities at national levels are low.

Efforts developing indicators to measure crucial National and EU concepts at a local level (such as accessibility) were found in Skåne thanks to the Atlas on local accessibility developed by Region Skåne. Also in Skåne and Blekinge an effort to measure business climate and entrepreneurship is found thanks to i.e. the Swedish *Kommunranking* which develops an index based on structural indicators related to business and entrepreneurship as well as surveys to local entrepreneurs in every single municipality/LAU.

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The ESPON 2013 Programme

INTERCO
Indicators of Territorial Cohesion

Scientific Platform and Tools Project 2013/3/2

Annex 6

Piedmont
(Italy)

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Abbreviations

EU-27: 27 Member States of the European Union
GDP: Gross Domestic Product
GDP PPS: GDP in Purchasing Power Parities
NUTS Nomenclature of Territorial Units for Statistics
TC: Territorial Cohesion
ISTAT Istituto nazionale di statistica (National Institute for Statistics of Italy)

Objectives

The objective of the case studies is to locally explore the Headline indicators defined in the framework of the Interco Project as a way to characterize local situations.

The analysis of the feasible indicators is intended to show that higher spatial inequalities are revealed when going beyond the traditional NUTS 3 level of study. Territories which seem to have certain level of spatial disparities in the traditional NUTS-3 level of analysis might register other degrees of disparities/inequalities at a local level. The idea is to observe if the analyses at LAU level bring important new insights regarding TC patterns at NUTS 3 level as well as differences between them.

Additionally to this it is of interest to identify indicators available in the local case-studies that do not exist at the EU regional level but that might be of interest for the other levels in the framework of Territorial Cohesion.

Summarising, the main objective is to create awareness of the existence of another spatial layer/level of study additional (and complementary) to the traditional NUTS 2-3 scales, where more complex spatial patterns exist but seem to be imperceptible in the traditional way of displaying indicators on the basis of these regional scales.

The local level is not intended to substitute or compete with other scales of analysis, but rather is intended to open a dialogue between different scales that increasingly overlap temporally and spatially. It is intended to serve as a complement to other scales, as a contributor to decipher the complexity of territorial cohesion.

1. Case study introduction

1.1. General features

The **region of Piedmont** (ITC1 – NUTS2 level) is situated in the north-western part of Italy *-see in the Map 1.1.1-;* it has an **area** of 25,402 km² and a **population** of about 4.4 million.

Map 1.1.1: Situation of Piedmont in Italy

Physical-geographical morphology
The half (43%) of the territory of Piedmont is mountainous, with the Alps forming a belt from north-north-east to south-west and dividing Piedmont from the Swiss regions of Valais and Ticino and from the French regions Rhône-Alpes and Provence-Alpes-Côte d'Azur.

Spatial economic structure
Piedmont can be hardly defined as a 'monocentric' region. Many of its eight provincial capital cities, as well as some other towns, maintain their socio-economic importance that is often based on specific industrial activities or agricultural production.

"The territory of the Piedmont region can be represented as constituted by different "quadrants", which barely are the results of an aggregation of Piedmont provinces (supra-municipal local authorities, with elected governments).
This aggregation is due to the need to overcome the lack of size concerning the capability to promote autonomous and effective strategic actions.

In this way, "four Piedmonts" are indentified as follows (Buran, 2010):
- North-West: constituted by the **Province of Torino**, and characterised by a **strong neo-industrial identity**, based on former Fordist organisation. It plays the role of international gateway for the region, thanks to the privileged links developed with other Italian and European cities and regions, in particular with Milan and Lion.
- **North-East -not included in the case study area-:** constituted by the Provinces of Biella, Novara, Verbania and Vercelli, this area hosts a high number of the industrial districts forming the so-called made-in-Italy (clothes, furniture, and machinery).
- South-East: it coincides with the **Province of Alessandria**; the location on the borders with the Genoa area and its harbour makes it particularly adapt to host logistic platforms

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- South-West: the **Provinces of Asti and Cuneo**; this area is dominated by the **agro-industrial industry** and has shown a recent and performing industrialisation, based on small firms; it also developed a set of interesting links and relations with the Western Riviera of the Liguria region as well as with the French region of Provence-Côte-d'Azur. Its spatial organisation is based on a highly cohesive network of medium-sized cities".
(DEMIFER 2010)

1.2. NUTS / LAU level classification

According to the Eurostat NUTS / LAU classification (see in EU RAMON NUTS) Italy is divided into 21 NUTS-2 units corresponding to Regions (Regioni), 107 NUTS-3 units corresponding to Provinces (Province) and 8,100 municipalities (comuni).

The Piedmont region includes the provinces -**NUTS3 level**- of Torino, Vercelli, Biella, Verbano-Cusio-Ossola, Novara, Cuneo, Asti and Alessandria. They are divided in 1,206 municipalities which correspond to **LAU2 units.** We note that there are not in Italy LAU-1 units.

We have decided to include in our study only the Piedmont's provinces of Torino, Cuneo, Asti and Alessandria (ITC11, ITC16, ITC17 and ITC18) because this sub-area of Piedmont enables us to analyse the inequalities among a metropolitan region and its periphery as well as those among urban and rural regions and among mountainous and lowland regions. So, in next where we mention the Piedmont region we refer to this specific four provinces – see in Map 1.2.1.

The Province of Torino (capital: Torino) has an area of 6,830 km², and a total population of 2,277,686 (31.12.2007). It includes 315 municipalities (comuni) (source of the data: ISTAT)

The Province of Cuneo (capital: Cuneo) has an area of 6,903 km², and a total population of 556,359 (2001). It includes 250 municipalities.

The Province of Asti (capital: Asti) has an area of 1.504,5 km², and a total population of 206,265 (2004). It includes 118 municipalities.

The Province of Alessandria (capital: Alessandria) has an area of 3,560 km² and a total population of 429,080 (2005). It includes 190 municipalities (comuni).
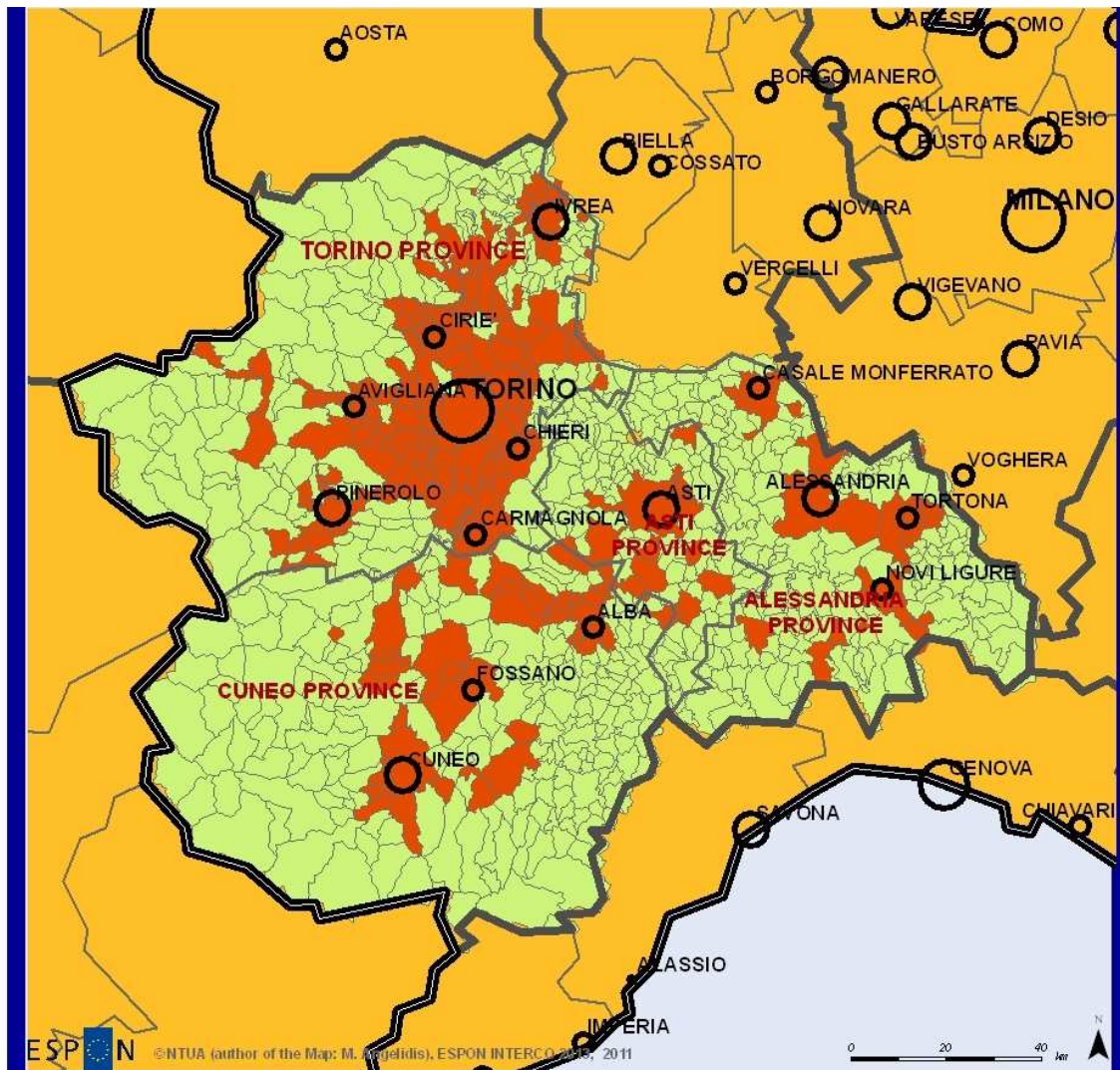
Map 1.2.1: Piedmont study area: NUTS3 units (provinces), LAU2 units (comuni) and FUA, urban and rural LAU-2 units (comuni)

Source of data: Eurostat and NSO of Italy, author of the Map: M. Angelidis

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1.3. Territorial typologies

In order the following case study analysis be representative at European level as much as possible, it is worthwhile to refer to a "mega-region" typology for the EU level as well as to territorial typologies at NUTS-3 and LAU level.

As for the "mega-region" typology for the EU level, we could point out, in general terms, hat the study area of Piedmont belongs to the type of European North territories.

Regarding the **NUTS-3 level**, we could refer to the ESPON territorial typologies (see in next). We should note that these typologies regard only the NUTS-3 level –not the NUTS-2 level.

As for the **urban-rural typology**, Piedmont includes one predominately urban NUTS-3 region which is also characterized as a big metropolitan region (Torino) and three predominately rural NUTS-3 regions - close to a city (Cuneo, Asti and Alessandria).

Piedmont also includes one moderately **mountainous** region under urban influence (Cuneo).

It also includes one NUTS-3 region which is characterized as a **coastal** region with a low share of coastal population (Alessandria)

Finally, Piedmont's regions (Torino, Cuneo, Asti, and Alessandria) are characterized as **industrial regions in transition** and more specifically as regions with industrial branches losing importance.

Regarding the **LAU level:**

As for the **settlements' network,** Piedmont has four important cities and a wide number of urban municipalities –defined here on the basis of the population density in 2001: > 150 inh. / Km2 – *see in Map 1.2.1.*

Piedmont's population is widely dispersed across the region. At the 2001 Population Census, just fewer than 7% of the population lived in isolated dwellings (but this proportion was more than 18% lived in the agricultural province of Asti and 16% in the mountainous province of Cuneo). The rest of population lived in a good 7,654 localities, collected into 1,206 municipalities that ranged from 46 to 865,263 inhabitants. Only 53 localities numbered more than 10,000 residents; only the city of Torino had more than 100,000 inhabitants (863,669);

1/6 of the population resided in communities of less than 1,000 inhabitants. 2/5 of the population lived at an altitude of between 250 and 600 metres and 55% lived below 250 metres above the sea level.

Finally, there are 15 ESPON **Functional Urban Areas** (FUAs) located in the Piedmont Region study area: Torino, Carmagnola, Pinerolo, Chieri, Avigliana, Cirie, Ivrea, Cuneo, Fossano, Asti, Casale Monferato, Alessandria, Tortona, Novi Ligure and Alba. *See in Map 1.2.1.*

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2. Data availability in the case study

We examined the **feasibility of the INTERCO headline indicators as for the data availability at LAU-2 level in the case of Piedmont region**. As it is presented in the Table 2.1 there are available data at LAU-2 level for Piedmont region for the following indicators:

(1) Population, unemployment, level of education

- Ageing index, dependency rate, population average annual growth

- Share of tertiary educated people in %

- Unemployment rate, difference between female and male employment rates 20–64, employment rate, and population density.

There are data from the censuses of 1991 and 2001. In 2011 there will be data from the population census of 2011. This remark refers to all EU-27 countries because almost all are implementing a population census in 2011. Therefore one will be able to calculate the interval values for 1991 to 2011.

(2) GDP, income.

In **Italy** there are data for GDP at NUTS-3 level.

It is difficult to find enough reliable data on households' income at LAU level. See in more detail in the EU – SILC survey for Italy.

For all other INTERCO headline indicators there are not directly available data at LAU-2 level for the Piedmont study area.

*Table 2.1: The list of the INTERCO headline indicators, availability of data for these indi-
cators at LAU-2 level for Piedmont region*

Thematic sub-category name	Indicator name	Data availability
		Piedmont at LAU-2 level
Population Structure*	Ageing index (persons 65+ / persons 0-14)	**+**
Population Structure*	Dependency rate	**+**
Population Structure*	Life expectancy at birth	
Total population	Population potential within 5 km	
Total population	Population average annual growth	**+**
Energy	Share of renewable energy in final energy consumption and increase needed to meet the 20% target	
Education	Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target	
Education	Share of tertiary educated people in %	**+**
Health	Healthy life expectancy (ESPON 3.2)	
Health	Self-perceived personal state of health in EU Member States (5th CR)	
Poverty	At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)	
Poverty	Share of population living in workless or low work intensity households (5th CR)	
Other social	Work-life balance in EU Member States (5th CR)	
Quality of life	Happiness Index	
Quality of life	Share of population reporting crime, violence or vandalism by degree of urbanisation (5th CR) -	
Employment, Unemployment	Difference between female and male employment rates, 20–64	**+**
Employment, Unemployment	Employment rate change (growth)	**+***
Employment, Unemployment	Unemployment rate per age: classes of 5 years	**+***
Employment, Unemployment	Development of unemployment rate (male, female, young, total, 99-04)	**+***
Income and Consumption	GDP per inhabitant (capita) in PPS or Euros, per year	
Income and Consumption	GDP change per inhabitant (capita) in PPS or Euros	
Income and Consumption	Median disposable annual household income	
Investments, Finances and Expenditures	Public sector debt relative to GDP	
Environment quality	NATURA 2000 area (Share of Natura 2000 area in %)	
Natural assets	Consumption of water per capita	
Governance	Electoral participation	
Governance	Voice and accountability	

* Years of censuses

3. Analysis of TC on the basis of feasible headline indicators

In this section we will analyse TC in the "local scale" case of Piedmont on the basis of both NUTS-3 and LAU-2 data as a major objective of our research is exactly to see at **which extent the TC pattern of Piedmont at the (local) LAU-2 level differs from the respective pattern at (regional) NUTS-3 level.**

As we have mentioned previously, we can't examine a great number of TC indicators at local level because the respective data are scarce. We will examine only five indicators:

- One indicator of "competitiveness": unemployment rate. In addition, we will comment the GDP at NUTS-3 level.

- Four indicators of "inclusion": ageing index (people aged 65+ / total population), population density, population growth and share of tertiary educated people. In addition, we will comment the Life expectancy at NUTS-3 level.

Therefore, we will not give a complete analysis of TC at local level in Piedmont. We will only try **to see if the analyses at LAU-2 level bring important new insights regarding the TC patterns at NUTS-3 level as well as on the differences between these two last.**

In more detail, we will examine several types of statistics of variation at NUTS-3 and LAU-2 level: min / max, mean (average), standard deviation and coefficient of variation and we will evaluate at which extent these statistics reflect the inequalities regarding TC.

The analysis of the feasible indicators is oriented to study TC inequalities regarding some of the more important ESPON **territorial typologies** at NUTS-3 level (between urban and rural areas, mountainous and lowland areas, coastal areas, islands, industrial decline areas) in the case of Piedmont. We will also try to study TC inequalities at LAU level according analogue typologies for this level – see in the section 1.3. Finally, we will try to assess TC inequalities among other territorial types as for instance among "peripheral" and central areas.

3.1. Competitiveness

The Piedmont region's economy was based until the '70s on industry including primarily a highly developed automotive sector but also an important textile sector, which both continue to represent the cornerstones of the regional economy. However, during the last decades both sectors showed a considerable reduction in wealth production, productivity and value added linked with the crisis of automotive and textile industry, Therefore, Piedmont is undoubtedly a region in "industrial transition".

> As it was pointed out in the ESPON FOCI case study for Piedmont (which focused on the urban system of the region –on the basis of NUTS3 data) (2010):
> "Within the condition of general economic recession that characterises the national scale [Italy], the north-western Italian regions have recently shown a slowdown which appears stronger, in comparison with the dynamism of the last twenty years. In this concern, the performance of Piedmont region appears to be even more negative".

Piedmont has actually some indisputable points of excellence in the different sectors (e.g., rice-growing in the province of Vercelli, fruit plants in the province of Cuneo, wine-growing and vegetable growing in various hill and plain areas; fine and automatic mechanics in the Torino, Biella and Novara areas; winter tourism in some famous mountain resorts; and the Torino Politecnico) (DEMIFER 2010) but despite the exploitation of these advantages the region has not overcome enough the industrial crisis.

The **GDP rate** of Piedmont Region for 2009 has been -5%, a huge fall down mostly provoked by the decrease of the internal demand, due to a reduction of investments and households consumption, as well as to the negative dynamics of the external demand (-20% of export) (ESPON FOCI 2010 referred to: IRES, 2008). During the last years, Piedmont's per capita GDP falls between the average figure for Italy as a whole and that for the regions in the North-West, and the same is true for productivity per labour unit (ESPON DEMIFER 2010 – see for more details in the two above mentioned documents)

The recession in industry has been accompanied by shrinkage in industrial **employment**, especially in the automotive and textile sectors. "This reduction has been compensated by a rise in services employment, particularly in services for business; however, this positive dynamics didn't manage to balance the whole increase of unemployment (+1,3% in 2009), which reached the rate of 6,8% in 2009 (in comparison to the 5,3% of Northern Italy and the 7,8% of the whole country)" (ESPON FOCI 2010).

> ESPON DEMIFER 2010 summarises the employment changes in Piedmont as follows: (i) Sharp reduction in younger workers (–99,000 overall, aged 15-34 years), mainly due to insufficient cohort turnover (–159,000), which has not been offset by net migration (+70,000), but was aggravated by a decrease in the employment rates (–10,000); (ii) Increase in older workers (+198,000 overall, aged 35 years and over), caused by the cohort turnover (+40,000), positive net migration (+40,000) and, especially, by an increase in the employment rates (+113,000), particularly for women (+84,000).

According to ESPON FOCI 2010: "The relatively high drawbacks of the described situation in terms of productivity and occupation and the associated reduction of the competitive advantage of the regional economy within the overall national scenario represent therefore **the main challenges that the region is currently trying to tackle**".

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3.1.1. GDP

As we have already mentioned, in Italy there are GDP data at NUTS-3 level (provinces) and above.

The province (NUTS-3) of Torino possesses GDP / inhabitant slightly higher than the national average (28.500 against 25.800) – *see in the Table 3.1.1.* The rest NUTS-3 units (provinces) of the Piedmont study area have GDP / inhabitant that are similar to the one of Torino.
During the period 2001-2007, the province of Torino presents a very low increase rate in GDP / inh: 6,3% which is much lower than both the EU27 (26%) and the national average (11%).
The predominantly rural NUTS3 units of Cuneo, Asti and Alessandria have higher rates than the predominantly urban[1] province of Torino (18,2%, 14,0% and 14,5% respectively, Torino: 7,5%) (Source of the data: Eurostat). We note that the GDP rate change is higher in the province of Cuneo which is "more mountainous" comparatively to the other provinces[2].

Table 3.1.1: GDP PPS per capita 2001-2007 in EU-27, Italy, Piedmont region (ITC1) and provinces (NUTS3) of the Piedmont study area

	GDP Purchasing Power Standard (PPS) per inhabitant			GDP Purchasing Power Standard per inhabitant in percentage of the EU average			GDP growth
	1997	**2001**	**2007**	**1997**	**2001**	**2007**	**2001-2007**
EU27	16200	19800	24900	100	100	100	26,3
IT - Italy	19300	23300	25800	119	118	104	11,2
ITC1 -Piemonte	21700	25800	28300	134	130	114	10,1
ITC11 - Torino	22900	26800	28500	141	135	115	7,5
ITC16 - Cuneo	21700	25800	30300	134	130	122	18,2
ITC17 - Asti	17800	22100	25200	110	112	101	14,0
ITC18 - Alessandria	18800	24100	27400	115	122	110	14,5

Source of the Table: DEMIFER 2010

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[1] According to the ESPON territorial typology of urban and rural regions at NUTS-3 level
[2] In the ESPON territorial typology of mountainous regions at NUTS-3 level, Cuneo is referred as: "moderately mountainous regions under urban influence" while the three other provinces are referred as "areas not covered by classification".

3.1.2. Unemployment

Unemployment rate: Definition of the indicator by Eurostat

Regional (NUTS level 2) unemployment rate represents unemployed persons as a percentage of the economically active population (i.e. labour force or sum of employed and unemployed). The indicator is based on the EU Labour Force Survey. Unemployed persons comprise persons aged 15-74 who were (all three conditions must be fulfilled simultaneously): 1. without work during the reference week; 2. currently available for work; 3. actively seeking work or who had found a job to start within a period of at most three months.

Unemployment rate (for the results published for the LAU level) is defined by ISTAT as follows: the percentage the population aged 15 and over in search of employment divided by the labour force of the same age group. So, this definition (that we have used here) differs slightly from that of Eurostat.

As we have mentioned, there are data for Piedmont for both the NUTS-3 and the LAU-2 levels – for the latter only for 2001 (census year).

Variations at NUTS-3 and LAU-1 levels, territorial typologies

The difference of the unemployment rates' variations **among the LAU-2 and the NUTS-3 level** are considerable, as it results from the *Figure 3.1.2*a; the max and min values for the unemployment rate differ considerably, while the respective means differ a few. Also the difference of the Coefficients of variation at LAU-1 and NUTS-3 level is pronounced.

Specifically, the rates of the four NUTS-3 regions range between 3,9% and 7,2% which contrasts to a larger variation between the 873 LAU units that range between 0,4% and 15,4%. So the analysis at lower level can reveal that there are 92 municipalities with unemployment rates higher than 7,2% and 310 municipalities with rates below 3,9%.

The LAUs with the higher rates (above the average rate of Piedmont) are located in Torino, which is also the NUT3 with the highest rate in Piedmont, as for example Trausella (15,4) and Mattie (12,3). But there are also LAUs in the top 10 of high unemployment in other NUTS-3 region as for example Argentera (14,0) in Cuneo and Casaleggio Boiro (10,5) in Alessandria. This wouldn't be evident without an analysis on LAU level.

Regarding the analysis at the Piedmont **NUTS-3 level**, the more important "territorial" result is that unemployment rates were (in 2008) higher in the predominantly urban province of Torino (5,6%) than in the predominantly rural provinces of Cuneo, Asti and Alessandria (source of data: Eurostat).

See for the unemployment rate % in 2001 in Piedmont measured across LAUs within the NUTS-3 regions and the respective coefficients of variation in *Figure 3.1.2b.*
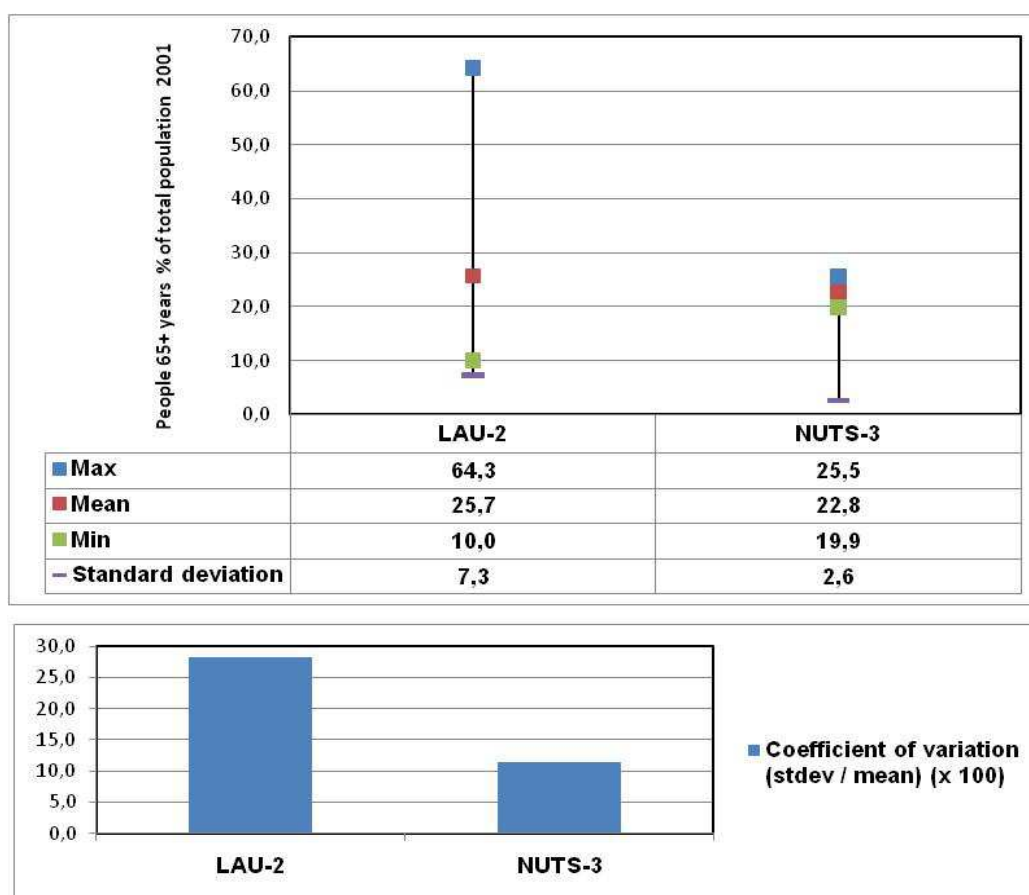
Figure 3.1.2a: Unemployment rate % in 2001 in Piedmont at NUTS-3 and LAU-2 levels: max, min, mean, standard deviation and Coefficient of variation

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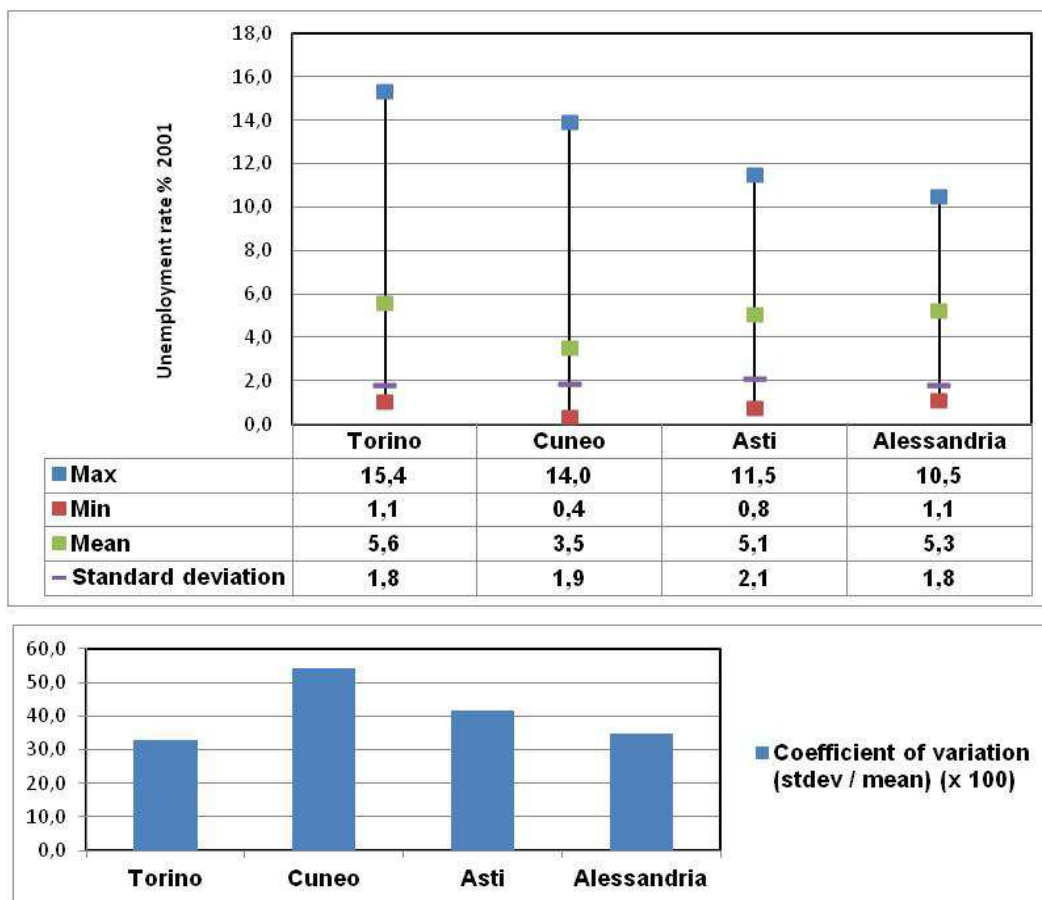
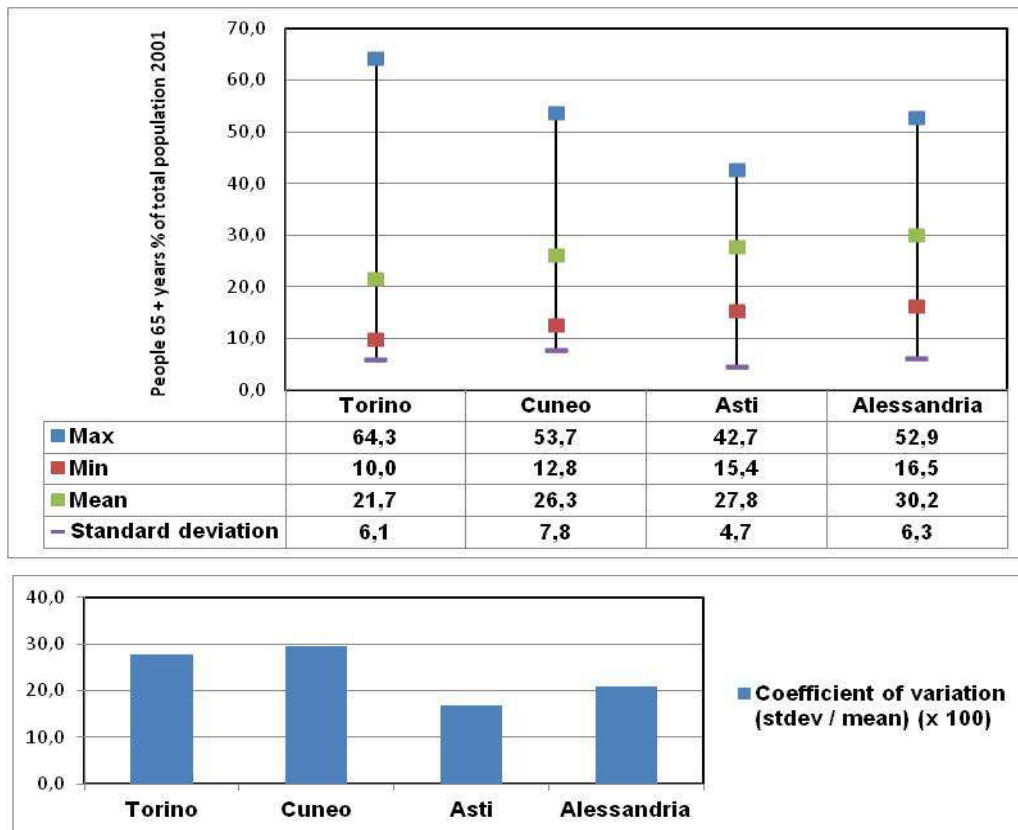*Figure 3.1.2b: Unemployment rate % in 2001 in Piedmont measured across LAUs within the NUTS-3 regions and coefficients of variation*

The analysis at LAU level on the basis of the **mountainous** typology and the urban-rural one has revealed that the mountainous LAUs of Cuneo perform better as for the unemployment rates than the more urbanised LAUs of Torino and Alessandria –see the Map 3.1.1. However there are 17 LAUs of Cuneo that present unemployment rates above the average rate of Piedmont and four of them are among the top 10 with the highest numbers (Argentera, Igliano, Briaglia and Valmala). Also it can be seen that high unemployment rates are found both in rural LAUs like Aramengo (rate 11,5 and population around 600 inh.) and in LAUs including big metropolitan cities, like Torino (rate 8,4 and population over 860.000 inh.),

Therefore, *the disparities among the urban and rural as well as among the mountainous and the lowland areas of the region are much more clearly presented through the LAU level analysis.*
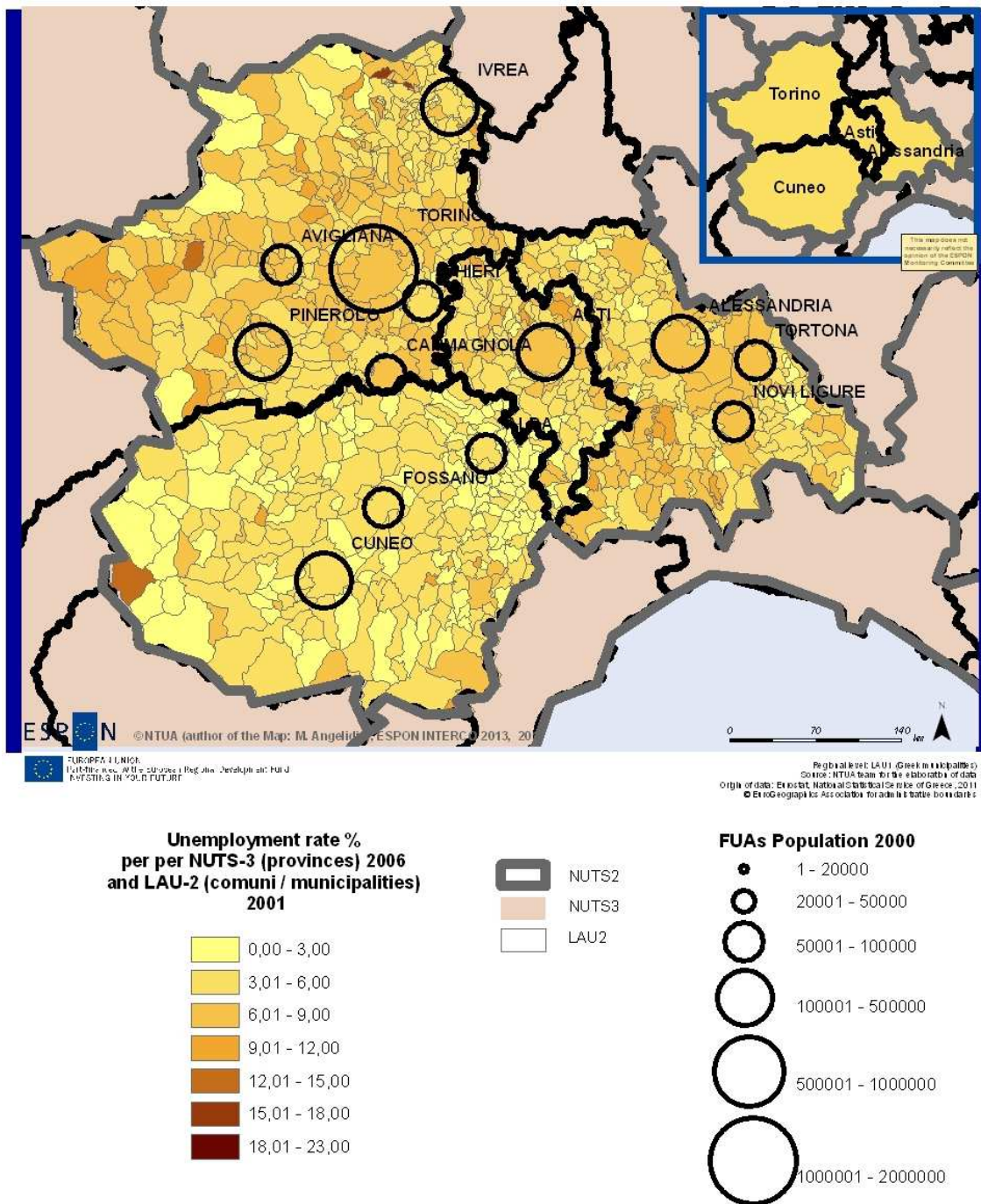
Map 3.1.2: Piedmont: Unemployment rate % per NUTS-3 (provinces) 2006 and LAU-2 (comuni) 2001

Source of data: Eurostat and NSO of Italy, author: M. Angelidis

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3.2. Inclusion

3.2.1. Share of tertiary educated people

Regarding the indicator "share of tertiary education %", we used in the case of Piedmont, both at NUTS-3 and LAU-2 levels, aggregations of the data for: holders of doctorate, holders of Master, graduates of University level institutions, graduates of Technological Educational Institutes.

Variations at NUTS-3 and LAU-1 levels, territorial typologies

The difference of the share of tertiary educated people variations **among the LAU-2 and the NUTS-3 level** are considerable. More specifically, the rates of the four NUTS-3 regions range between 5,3% and 7,8% which contrasts to a larger variation between the 873 LAU units that range between 0 % and 26,6%. So the analysis at lower level can reveal that there are 65 municipalities with shares of tertiary educated people higher than 7,8% and 631 municipalities with shares below 5,3%.

Also for this indicator, the difference of the Coefficients of variation at LAU-2 and NUTS-3 level is pronounced – *see the Figures 3.2.1a and 3.2.1b and the Map 3.2.1.*

	LAU-2	NUTS-3
■ Max	26,6	7,8
■ Mean	4,5	6,3
■ Min	0,0	5,3
— Standard deviation	2,3	1,2

Coefficient of variation (stdev / mean) (x 100)

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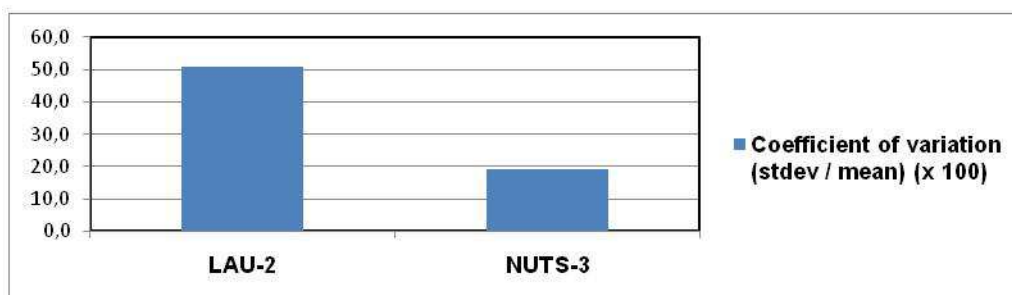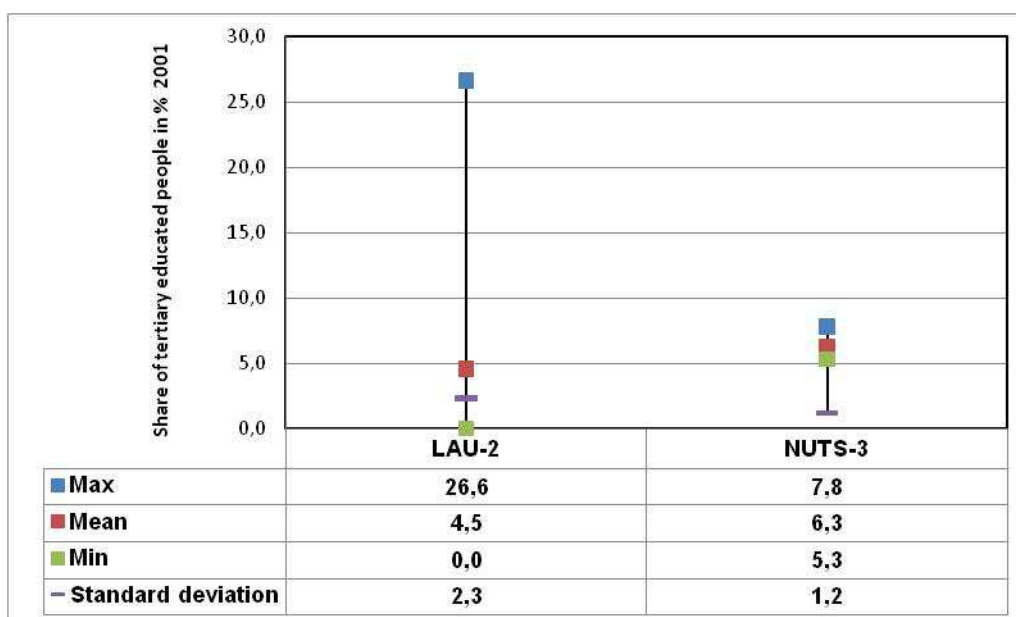
Figure 3.2.1a: Share of tertiary educated people % in Piedmont NUTS-3 and LAU-1 levels: max, min, mean, standard deviation and Coefficient of variation
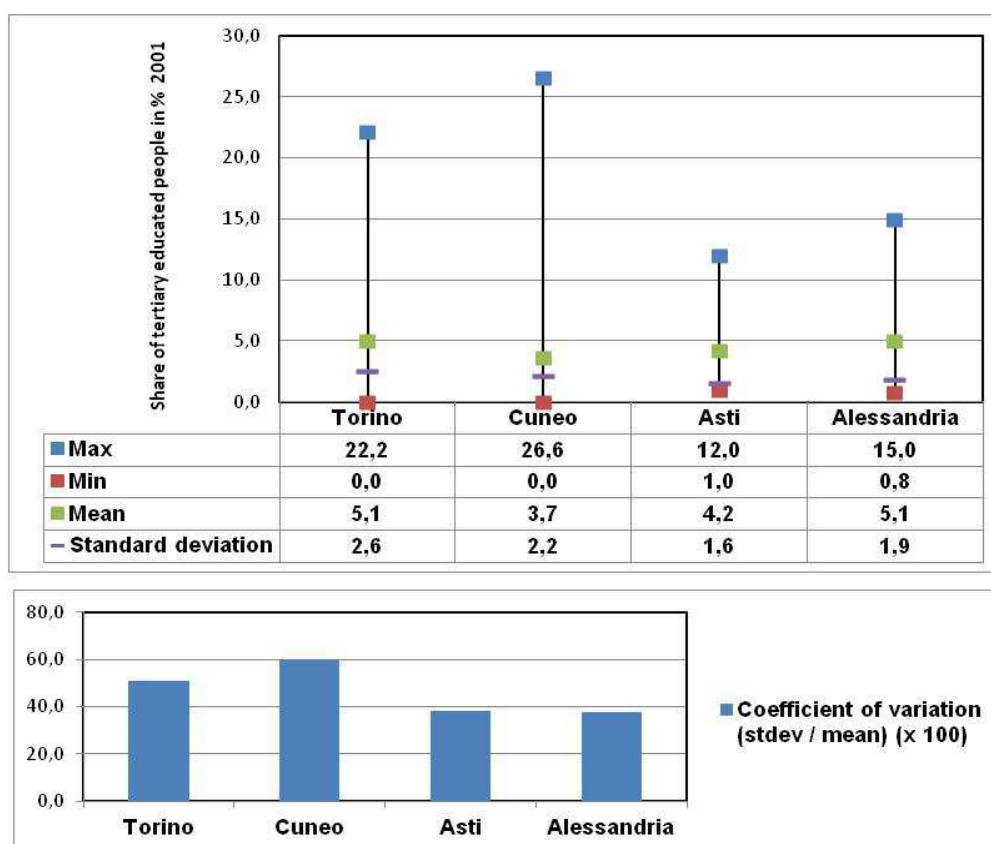
	Torino	Cuneo	Asti	Alessandria
■ Max	22,2	26,6	12,0	15,0
■ Min	0,0	0,0	1,0	0,8
■ Mean	5,1	3,7	4,2	5,1
─ Standard deviation	2,6	2,2	1,6	1,9

Coefficient of variation (stdev / mean) (x 100)

Figure 3.2.1b: Share of tertiary educated people (2001) measured across LAUs within the regions and coefficients of variation

An interesting finding which is evident only through the analysis at LAU level, is that despite the fact that the province of Cuneo (NUTS-3) presents one of the lowest shares, it includes the LAU with the highest share (Isasca with 26,6%). Opposing to that, the province of Torino presents the highest share of tertiary educated people and includes two LAUs with the lowest shares (Ingria with 0% and Frassinetto with 0,4%).

The analysis at LAU level on the basis of the mountainous typology and the urban-rural one has revealed that the shares of tertiary educated people show very large fluctuations among the mountainous LAUs, which present lower shares and the lowland LAUs near the big metropolitan city of Torino or Alessandria, which present shares much higher –see the *Map 3.2.1*.

Complementary to that the disparities are very big between the LAUs which include or are close to all the FUAs in the region of Piedmont and the peripheral/ more distant LAUs.

However, there are a few exceptions in that pattern, as for example FUAs like Bardonecchia (8,2%), Sestriere (8,8%) and Sauze di Cesana (8,9%), included in the NUTS-3 – Torino, which are three of the most distant FUAs from the metropolitan city of Torino and present very high shares of tertiary educated people.
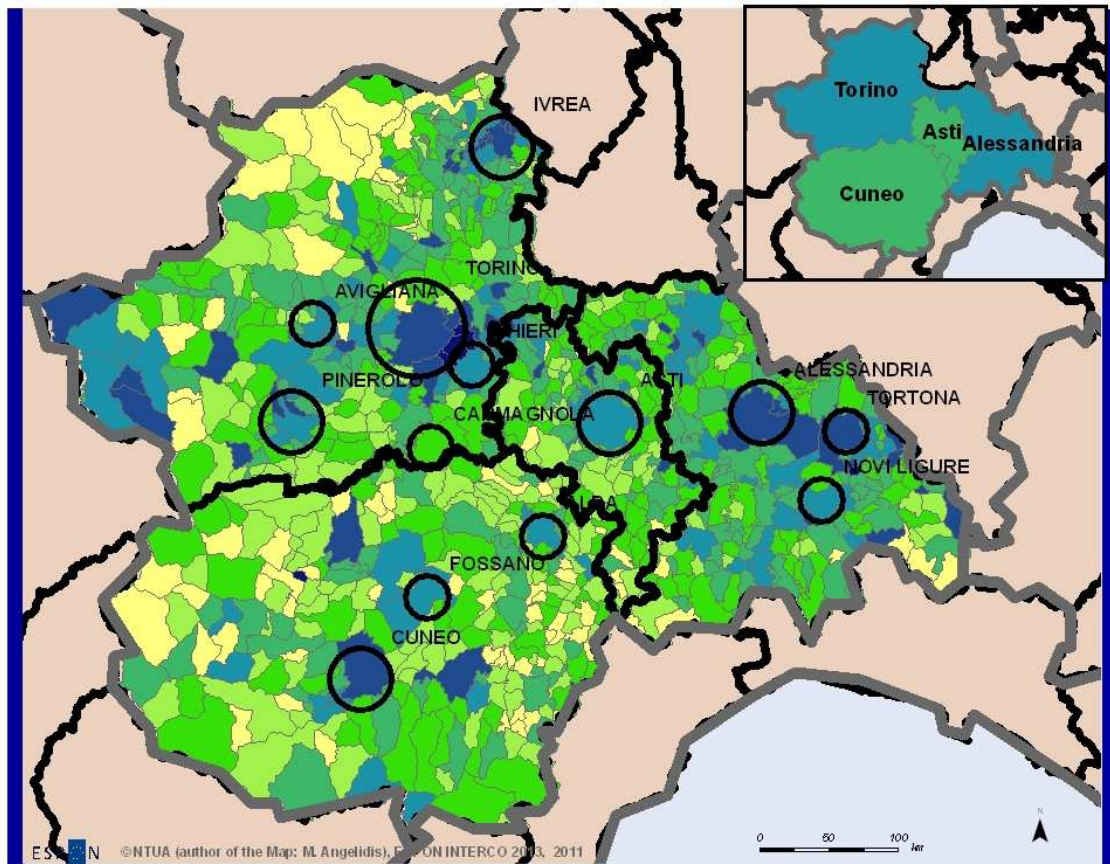
Therefore, *the disparities among the urban and rural as well as among the mountainous and the lowland areas of the region are much more clearly presented through the LAU level analysis.*

Share of tertiary level educated persons % 2001 per NUTS-3 (provinces) and LAU1 (comuni / municipalities)

	0,00 - 2,22
	2,23 - 3,49
	3,50 - 4,65
	4,66 - 6,02
	6,03 - 8,08
	8,09 - 12,60
	12,61 - 26,61

NUTS2
NUTS3
LAU1

FUAs Population 2001

- 1 - 20000
- 20001 - 50000
- 50001 - 100000
- 100001 - 500000
- 500001 - 1000000
- 1000001 - 2000000
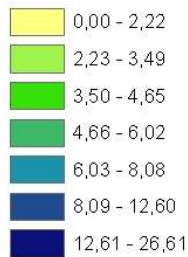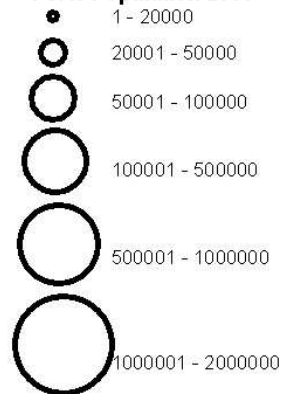
Map 3.2.1: Piedmont region: Share of tertiary educated people % LAU-2 and NUTS-3 2001, Functional Urban Areas (FUAs) population 2001

Source of data: Eurostat and ISTAT (NSO of Italy)

3.2.2. Population ageing

Variations at NUTS-3 and LAU-1 levels, territorial typologies

According to the *Figure 3.2.2a,* the minimum and maximum and also the average per-
centage of people 65+ years/ total population differ significantly, subject to the level of
measurement (NUTS-3, LAU-2).

Also the difference of the Coefficients of variation at LAU-2 and NUTS-3 level is pro-
nounced.

As it results from the Map 3.2.2, the disparities among the urban and rural and the
mountainous / lowland areas of the region are clearly presented through the LAU-2
level analysis.

|	LAU-2	NUTS-3
■ Max	64,3	25,5
■ Mean	25,7	22,8
■ Min	10,0	19,9
─ Standard deviation	7,3	2,6

**Figure 3.2.2a: People 65+ years % of total population 2001 in Piedmont at NUTS-3 and
LAU-2 levels: max, min, mean, standard deviation and Coefficient of variation**

	Torino	Cuneo	Asti	Alessandria
■ Max	64,3	53,7	42,7	52,9
■ Min	10,0	12,8	15,4	16,5
■ Mean	21,7	26,3	27,8	30,2
— Standard deviation	6,1	7,8	4,7	6,3

Figure 3.2.2b: People 65+ years % of total population (2001) in Piedmont measured across LAUs within the regions and coefficients of variation

As it is evident from the Map 3.2.2 the urban areas present lower ageing rates than LAUs in peripheral areas. However there is the exception of some distant western LAUs in the province of Torino that present low ageing rates (Sestriere with 10%, Sauze di Cesana with 14,5% etc) and are also characterized by high shares of tertiary educated people. Also a common pattern in the case study area is that the population in lowland areas is younger, while in mountainous areas the population is older.
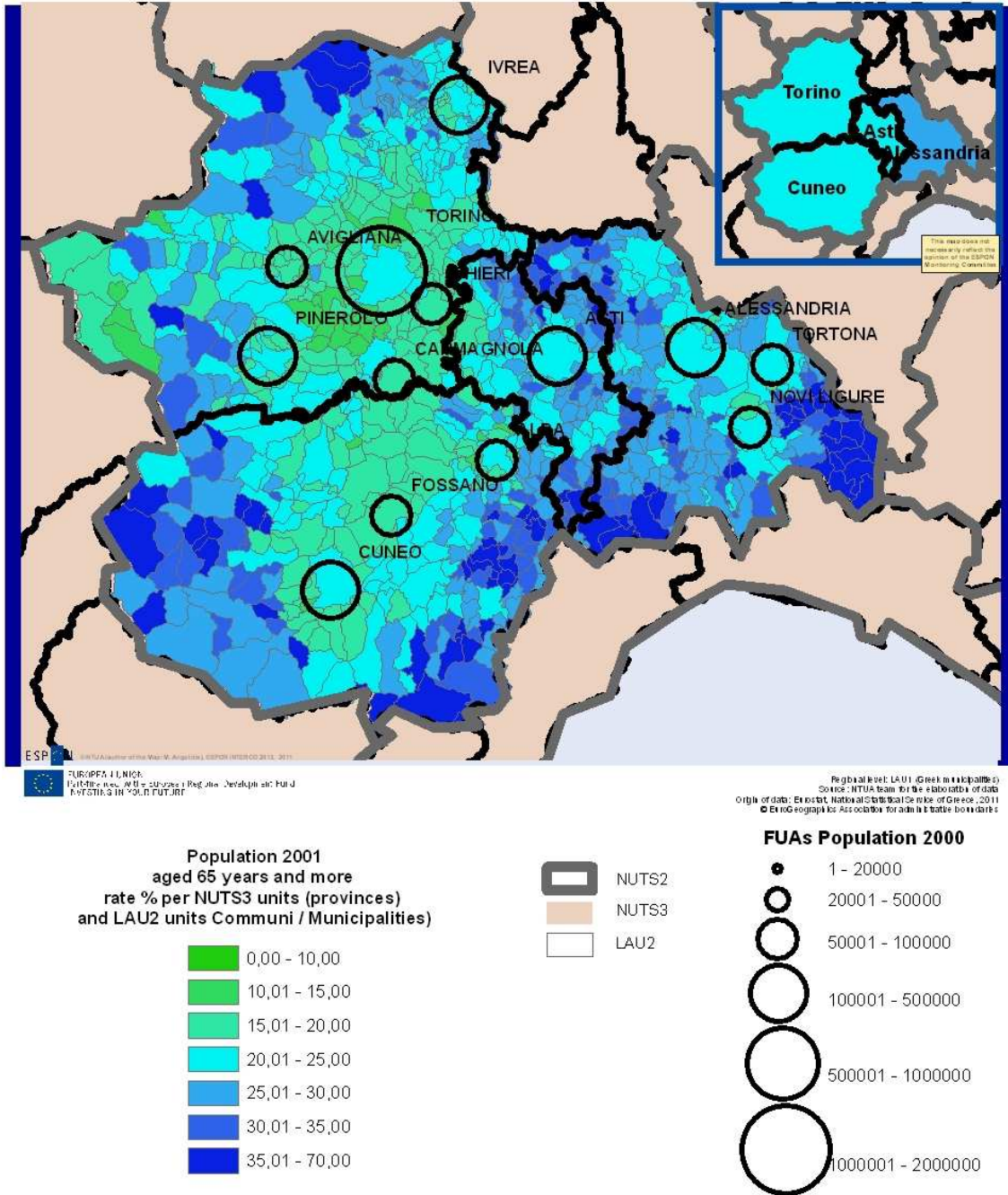
Map 3.2.2: Piedmont: Ageing rate % (persons aged 65+ years / Total population) per NUTS-3 (provinces) LAU-2 (comuni) 2001

Source of data: Eurostat and NSO of Italy, author: M. Angelidis

3.2.3. Life expectancy

As we have mentioned, there are data for Piedmont on Life expectancy by sex only for the NUTS-2 level.

We give below the comments of DEMIFER 2010 for the territorial differentiation of Life expectancy by NUTS-3 units (provinces) of Piedmont and by sex – see also the table 3.2.3.

If we compare the 2007 life tables with those of 1992, we can see that in the provinces of Piedmont there has been a gain in Life Expectancy at Birth (LEB) for males of between 4.3 and 6.2 years, and for females of between 2.5 and 3.8 years. The gains in LEB have therefore been greater for males (+6,7%) than for females (+4,3%), but for both genders the gain increases with age, so that male life expectancy at age 60 is 10% higher and for females at the same age it is 5% higher. The variability between male in the various provinces of Piedmont decreased, but it increased for women.

Table 3.2.3: Death rate and Life Expectancy at Birth (LE) by gender in the Piedmont region and its provinces(included in this case study)

Reference areas, Region, Provinces	Death rate (‰)		Male LEB (yrs)		Female LEB (yrs)	
	1992-2001	2002-2009	1992	2007	1992	2007
ITALY	*9.8*	*9.7*	*74.0*	*78.7*	*80.6*	*84.0*
North-West Italy	*10.6*	*10.2*	*73.3*	*78.8*	*80.7*	*84.3*
Piedmont	**11.5**	**11.2**	**73.6**	**78.5**	**80.6**	**84.1**
Torino	10.1	10.1	74.0	78.8	80.8	84.6
Cuneo	12.3	11.6	73.5	78.3	80.5	83.9
Asti	14.1	13.0	74.1	79.1	79.8	83.0
Alessandria	15.2	14.1	73.6	77.9	80.6	83.8
Province variability (100xCV)	*12.23*	*13.10*	*0.92*	*0.76*	*0.44*	*0.65*

Source of the Table DEMIFER 2010: Elaborations of data from the ISTAT database available at

http://demo.istat.it/.

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3.2.4. Population density

Population density: Definition of the indicator by Eurostat
Population density is the ratio between (total) population and surface (land) area

Variations at NUTS-3 and LAU-1 levels, territorial typologies

The minimum and maximum and also the average population density differ signifi-
cantly, at LAU-2 level compared with NUTS-3 level, indicating at LAU-2 that there are
both areas which have very low population density and dense urban areas –*Figure
3.2.4a.* Also the difference of the Coefficients of variation at LAU-2 and NUTS-3 level is
very big.
In more detail: the densities between the four NUTS-3 regions range between 81
(inh./Km2) and 317 which contrasts to a much larger variation between the 873 LAU
units that extend between 1 and 6647.

The LAUs with the higher densities are Torino (6647) and Grugliasco (2952), both lo-
cated in the NUT-3 region with the highest density (Torino) which is expected because
this is the only metropolitan province of Piedmont and the highest densities are nor-
mally found in this area. The interesting thing in this case is that in the NUTS-3 region
of Torino are also found some of the lowest densities as for example in Ceresole Reale
(2) and Valprato Soana (2). These substantial differences wouldn't be evident without
an analysis at LAU level.

See for the population density 2001 in Piedmont measured across LAUs within the
NUTS-3 regions and the respective coefficients of variation in *Figure 3.2.4b.*

The analysis at LAU level on the basis of the **mountainous** typology and the urban-
rural one has revealed that the population density shows very large fluctuations among
the mountainous LAUs, which present very low densities (they are almost uninhabited),
and the lowland LAUs near the big metropolitan city of Torino, which present densities
much higher –see the *Map 3.2.4*.

Complementary to that the disparities are enormous between the LAUs which include
or are close to all the FUAs in the region of Piedmont and the peripheral/ more distant
LAUs.

Therefore, *the disparities among the urban and rural as well as among the mountain-
ous and the lowland areas of the region are much more clearly presented through the
LAU level analysis.*

	LAU-2	NUTS-3
■ Max	6.647,2	317,1
■ Mean	151,5	163,3
■ Min	1,2	80,6
— Standard deviation	336,4	105,2
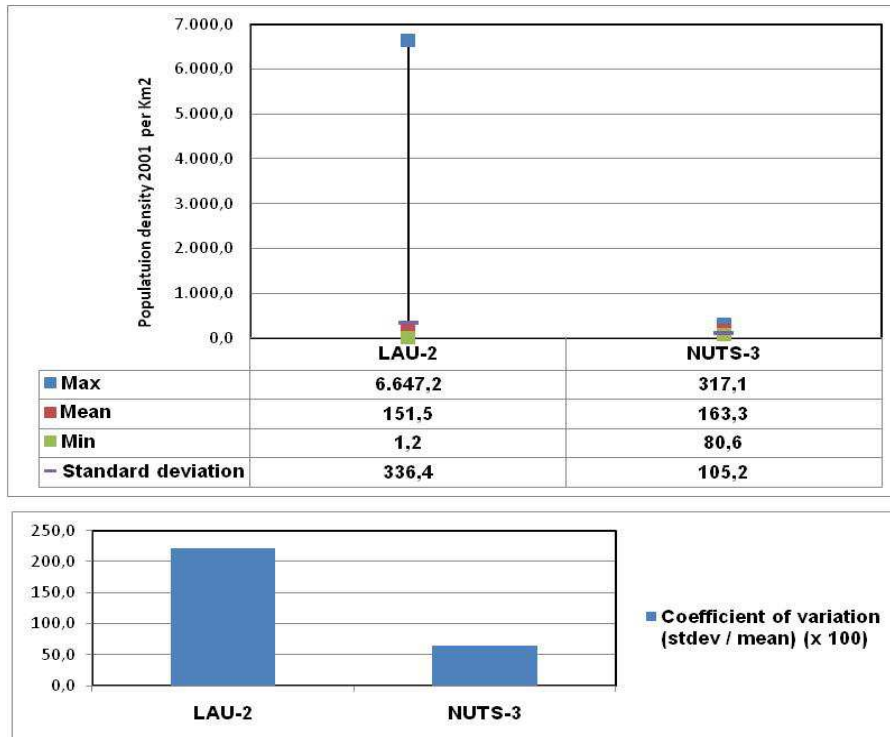
Figure 3.2.4a: Population density 2001 per Km2 in Piedmont at NUTS-3 and LAU-2 levels: max, min, mean, standard deviation and Coefficient of variation

	Torino	Cuneo	Asti	Alessandria
■ Max	6647,2	553,8	469,5	574,0
■ Min	1,6	1,2	13,8	2,1
■ Mean	269,4	81,0	90,5	86,6
— Standard deviation	529,7	87,0	65,8	84,5
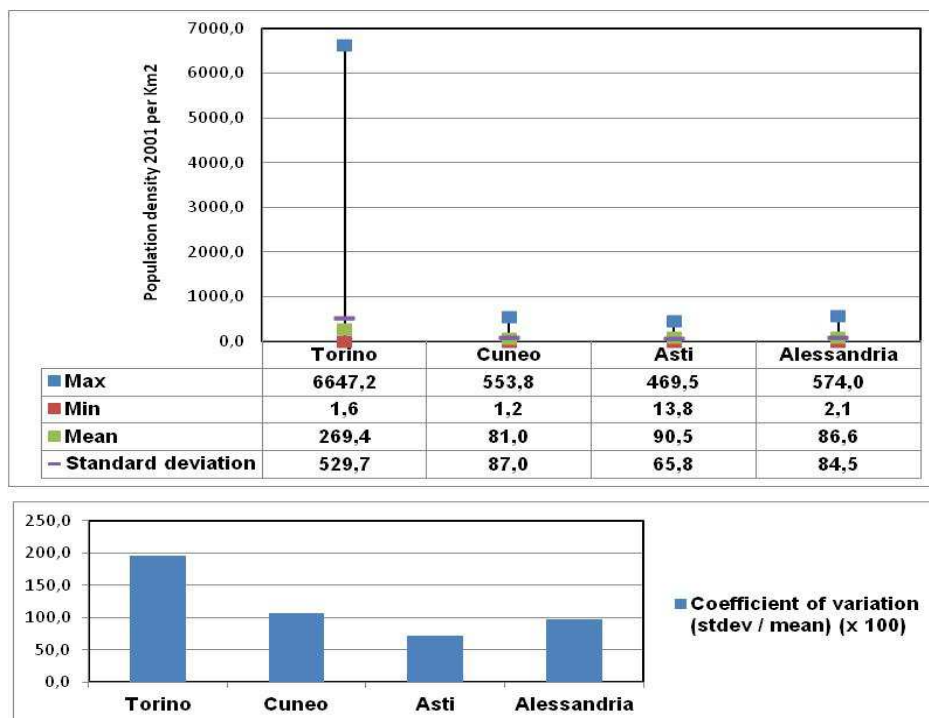
Figure 3.2.4b: Population density per Km2 (2001) in Piedmont measured across LAUs within the regions and coefficients of variation
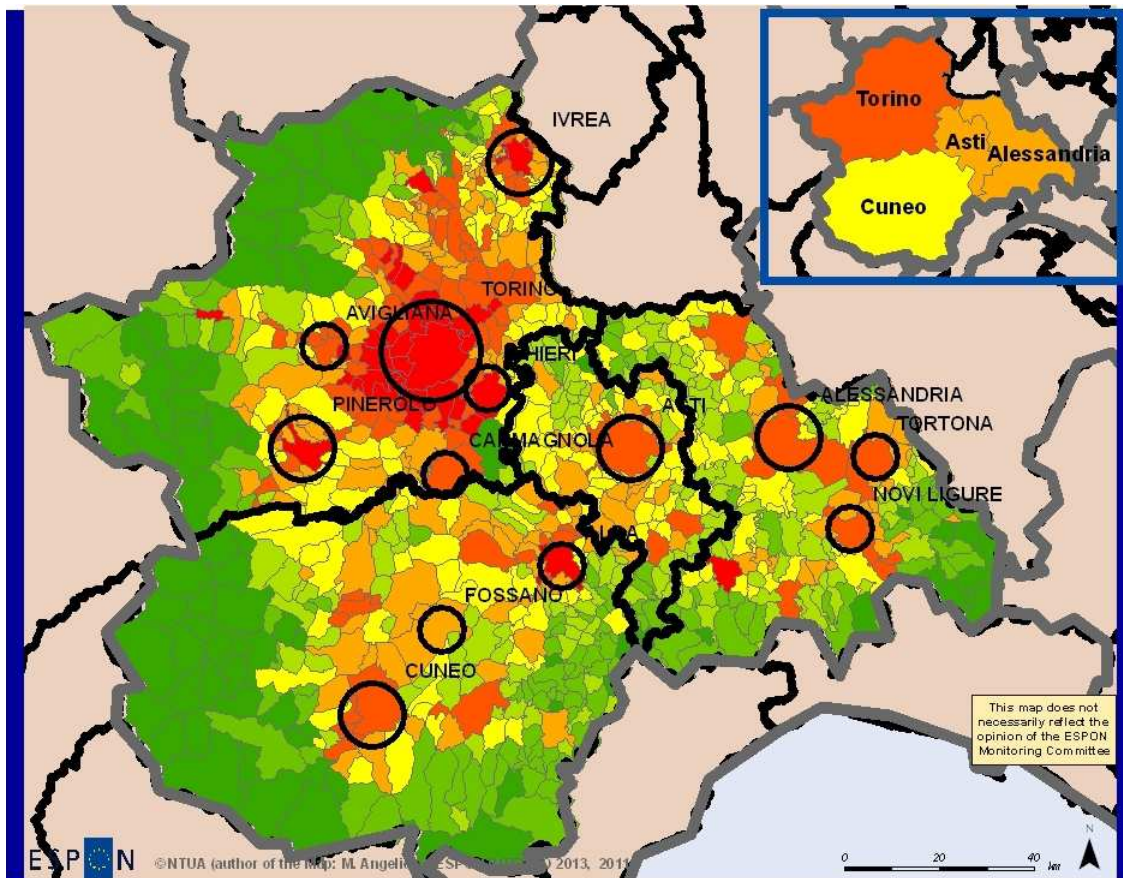
Map 3.2.4: Piedmont region: NUTS-3 (provinces) and LAU-2 (comuni) population density 2001, Functional Urban Areas (FUAs) population 2001

Source of data: Eurostat and NSO of Italy, author of the Map: M. Angelidis

3.2.5. Population growth

Variations at NUTS-3 and LAU-1 levels, territorial typologies

According to the *Figure 3.2.5a,* the minimum and maximum and also the average percentage of population change (growth) differ significantly, subject to the level of measurement (NUTS-3, LAU-2).

Also the difference of the Coefficients of variation at LAU-2 and NUTS-3 level is pronounced.

	LAU-2	NUTS-3
■ Max	42,7	0,9
■ Mean	0,4	-1,7
■ Min	-33,6	-4,6
— Standard deviation	9,7	2,6
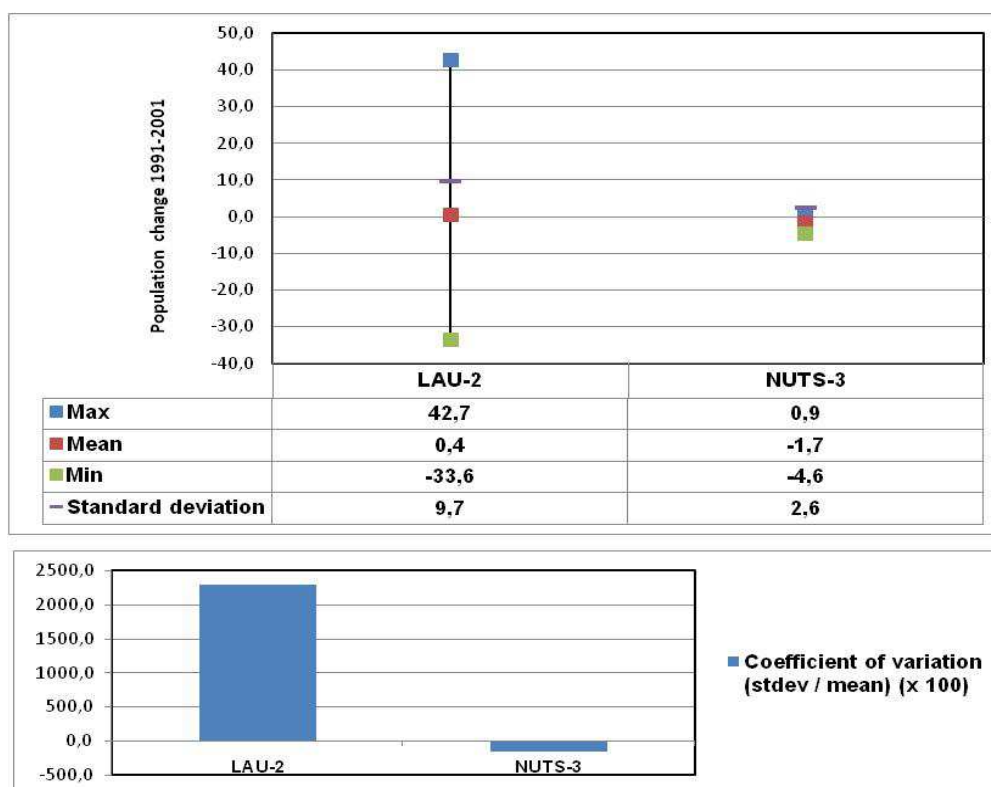
Figure 3.2.5: Population change (%) from 1991 to 2001 in Piedmont at NUTS-3 and LAU-2 levels: max, min, mean, standard deviation and Coefficient of variation

As it results from the *Map 3.2.5* (see also the Map 1.2.1), the disparities on population change among the urban and rural and the mountainous / lowland areas of the region are very clearly presented through the LAU-2 level analysis.

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	Torino	Cuneo	Asti	Alessandria
■ Max	42,7	33,8	34,3	19,5
■ Min	-28,8	-33,6	-25,7	-19,6
■ Mean	2,9	-1,4	1,8	-2,1
— Standard deviation	9,4	11,2	9,2	7,1
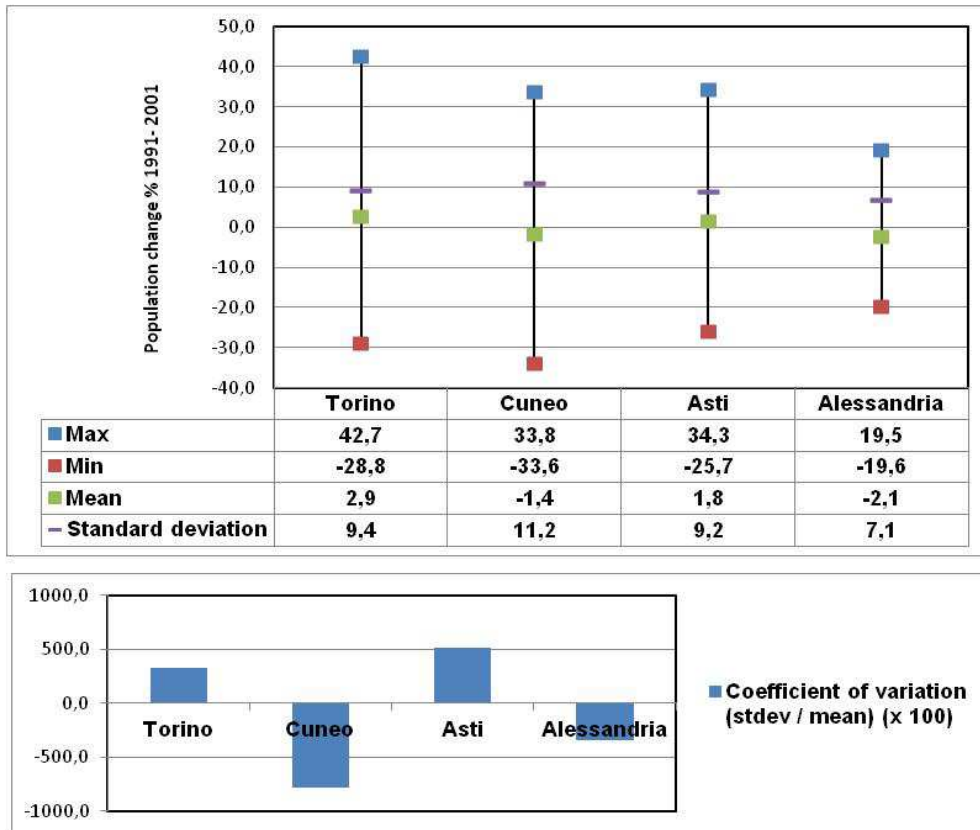
Figure 4: Population change % (1991- 2001) measured across LAUs within the regions and coefficients of variation
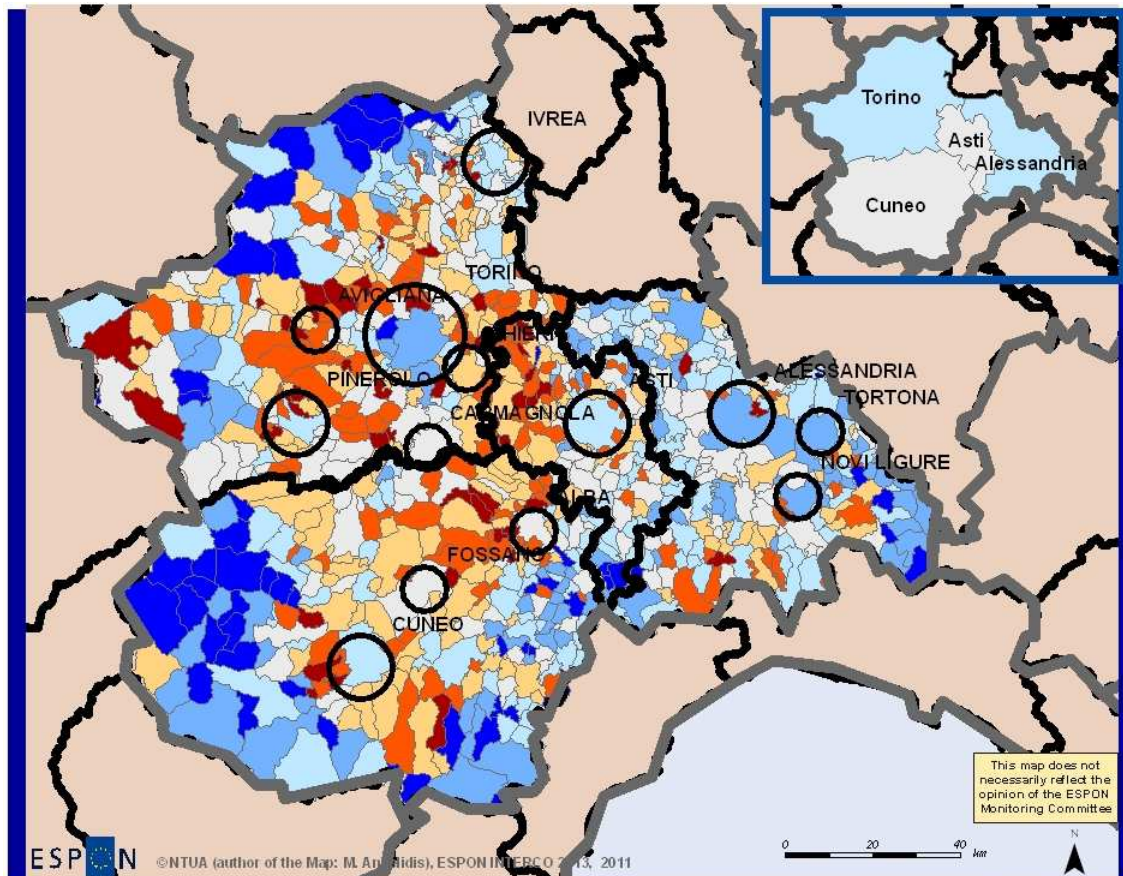
**Population change %
per NUTS-3 (provincies)
and LAU2 (comuni / municipalities)
1991-2001**

	-96,66 - -15,00
	-14,99 - -7,50
	-7,49 - -2,00
	-1,99 - 2,00
	2,01 - 7,50
	7,51 - 15,00
	15,01 - 62,00

NUTS2
NUTS3
LAU2

FUAs Population 2000

1 - 20000
20001 - 50000
50001 - 100000
100001 - 500000
500001 - 1000000
1000001 - 2000000
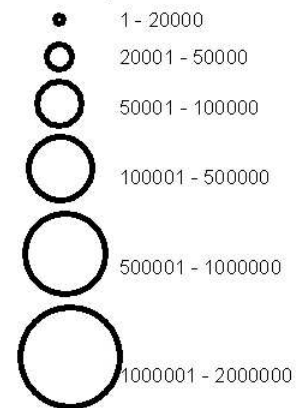
***Map 3.2.5: Piedmont: Population change % 1991-2001 per NUTS-3 (provinces) and LAU-2
(comuni / municipalities)***

Source of data: Eurostat and NS of Italy, author of the Map: M. Angelidis

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4. Geographically specific /local conditions indicators in the case study

In the section 2 we have presented the indicators for which there are available data for the case of Piedmont at LAU level. This refers to data published by ISTAT –which can be found online directly or online in .pdf format.

However, it is possible to have data for other indicators, for instance migration, using a procedure of specific request to the ISTAT. These data correspond to the censuses of 1991 and 2001.

Finally, it should be stressed that datasets useful to measure crucial National and EU concepts at a local (LAU) level in Piedmont regarding for instance business development are provided by NUTS-3 level Chambers

5. Key findings and conclusions

The case study area of Piedmont (NUTS-2 level) is situated in the north-western part of Italy.

It includes four important cities and a wide number of urban LAUs (municipalities). Piedmont can be hardly defined as a "monocentric" region. Many of the capital cities of its eight NUTS-3 regions (provinces), as well as some other towns, maintain their economic importance that is often based on specific industrial activities or agricultural production although Piedmont is undoubtedly a region in "industrial transition".

In this study we have decided to include only the Piedmont's NUTS-3 regions of Torino, Cuneo, Asti and Alessandria because this area enables us to analyse the inequalities among a big metropolitan region (Torino) and its periphery, among the urban NUTS-3 region of Torino and the three predominately rural NUTS-3 regions (Cuneo, Asti and Alessandria), as well as those among mountainous and lowland areas.

The NUTS-3 region of Torino maintains a strong neo-industrial identity and plays the role of international gateway for Piedmont. The coastal area of Alessandria has a location on the borders with the Genoa area and a harbour which makes it particularly appropriate for logistic activities. The agricultural area of Asti and the mountainous one of Cuneo are dominated by the agro-industrial industry and their spatial organization is based on a highly cohesive network of medium-sized cities.

The analysis, using several types of statistics of variation (min / max, mean (average), standard deviation and coefficient of variation) at NUTS-3 and LAU level has shown that the values for all the feasible TC indicators tested (unemployment rate, share of tertiary educated people, ageing index, population density and population growth) differ significantly at LAU level compared to NUTS-3 level. The coefficients of variation (which is the more appropriate statistic for this issue) are clearly higher at local level, implying therefore a broader level of complexity of the indicators at this level.

The analysis at LAU level has revealed important disparities in respect of all the ESPON **territorial typologies** (applying to the region) and all the indicators used. Regarding unemployment rates, the **mountainous** LAUs of Cuneo perform better than

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the **more urbanized** ones of Torino and Alessandria. Complementary to that, population ageing is higher in the peripheral and mountainous LAUs revealing great disparities in comparison to the more urban and close to the **metropolitan** area of Torino LAUs. This pattern also applies to the share of tertiary educated people. Finally, the density of the population shows very large fluctuations among the mountainous LAUs-which present very low densities-and the LAUs near the big metropolitan city of Torino, which present much higher densities.

Figures at local level were also able to illustrate strong **disparities inside single NUTS-3 regions** depending on its settlement structure. For instance, inside the big metropolitan region of Torino the peripheral areas show a totally different territorial pattern from the areas close to the city of Torino and perform differently in all the indicators tested (lower unemployment and share of tertiary educated people, higher ageing rates and negative population change)

The analysis at a local level also allowed us to identify that local areas which performs weaker as for some important dimensions of Territorial Cohesion are not exclusively restricted to peripheral or rural sparsely populated areas but on the contrary are also found around major urban centres: for instance LAUs with high shares of tertiary educated people are not only found in the LAUs which include FUAs, but are also presented in some of the most distant areas in the region of Torino and some areas in the mountainous region of Cuneo. It was also found that average regional figures are unable to show exceptional local situations.

It should also be stressed that datasets useful to measure crucial National and EU concepts at a local (LAU) level in Piedmont regarding for instance business development are provided and regularly updated at NUTS-2 / NUTS-3 levels.

Finally, the study of the Piedmont case has also demonstrated that "really territorial" aspects of cohesion could not be appropriately analysed using indicators at NUTS-3 level. The use of local indicators at LAU level could be very useful by complementing the latter analyses.

Regarding specifically the **data availability and quality for the INTERCO headline indicators at local (LAU) level**, the results for the case of Piedmont was in general terms satisfactory. There are data at LAU level for Piedmont for a considerable number of INTERCO headline indicators (8 out of 27). However, for some indicators (for instance: income and poverty), the harmonisation of the respective values for all the case studies is very difficult, because the implementation of the definitions of the respective indicators made by each EU country are probably very different. To a smaller extent, this is the case even for indicators such as unemployment where the definition used for the elaboration and publication of the national censuses data at LAU (local) level until the 2001 census round differ slightly from this one used by Eurostat. Therefore, as a respective policy recommendation, Eurostat should emphasise on the harmonisation of the definitions used for the "local" INTERCO headline TC indicators that we have mentioned, with emphasis in the national census rounds.

As a general conclusion, the study of the Piedmont case has demonstrated that "really territorial" aspects of cohesion could not be appropriately analysed using indicators at

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NUTS-3 level. The use of local indicators at LAU level could be very useful by complementing the latter analyses.

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The ESPON 2013 Programme

INTERCO
Indicators of Territorial Cohesion

Scientific Platform and Tools Project 2013/3/2

Annex 7

Thessalia
(Greece)

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Abbreviations

EU-27: 27 Member States of the European Union
GDP: Gross Domestic Product
GDP PPS: GDP in Purchasing Parities Standard
GSA: Greek Statistical Authority (created on 2010)
NSSG National Statistical Service of Greece (before 2010)
NUTS Nomenclature of Territorial Units for Statistics
TC: Territorial Cohesion

Objectives

The objective of the case studies is to locally explore the Headline indicators defined in the framework of the Interco Project as a way to characterize local situations.

The analysis of the feasible indicators is intended to show that higher spatial inequalities are revealed when going beyond the traditional NUTS 3 level of study. Territories which seem to have certain level of spatial disparities in the traditional NUTS-3 level of analysis might register other degrees of disparities/inequalities at a local level. The idea is to observe if the analyses at LAU level bring important new insights regarding TC patterns at NUTS 3 level as well as differences between them.

Additionally to this it is of interest to identify indicators available in the local case-studies that do not exist at the EU regional level but that might be of interest for the other levels in the framework of Territorial Cohesion.

Summarising, the main objective is to create awareness of the existence of another spatial layer/level of study additional (and complementary) to the traditional NUTS 2-3 scales, where more complex spatial patterns exist but seem to be imperceptible in the traditional way of displaying indicators on the basis of these regional scales.

The local level is not intended to substitute or compete with other scales of analysis, but rather is intended to open a dialogue between different scales that increasingly overlap temporally and spatially. It is intended to serve as a complement to other scales, as a contributor to decipher the complexity of territorial cohesion.

1. Case study introduction

1.1. General features

The **region of Thessalia** (GR14 – NUTS2 level) is situated in the central - eastern part of the mainland Greece *-see in the Map 1.1.1-* and its **area** (14.037 km²) amounts in 10.6% of the total of Greece.

Map 1.1.1: Situation of Thessalia in Greece

Thessalia occupies the east side of the Pindus watershed, extending south of Macedonia to the Aegean Sea. The northern tier of Thessalia is defined by a generally southwest-northeast spur of the Pindus Range that includes Mt. Olympus, close to the Macedonian border. Within that broken spur of mountains are several basins and river valleys. The easternmost extremity of the spur extends south-eastward from Mt. Olympus along the Aegean coast, terminating in the Magnesia Peninsula that envelops the Pagasetic Gulf and forms an inlet of the Aegean Sea (Wikipedia 2010). Thessalia's major river, the Pineios, flows eastward from the central Pindus Range just south of the spur, emptying into the Gulf of Thermaikos[1].

In summary, the **physical-geographical morphology** *of Thessalia,* with an extended lowland part which forms an important central plain (situated mainly in the prefectures of Trikala, Karditsa and Larisa) surrounded by mountainous bulges and, in the Eastern, the contact with Aegean Sea, *favours its internal territorial integration.*

The **population** *of Thessalia in 2009 (735,885 inhabitants) amounted to 6.5% of the total population of Greece* (Eurostat 2010). Its *population density in 2009 - 52.4 inhabitants / km²*- is slightly lower than that of Greece: 83 inhabitants / km2.

Thessalia is located in the main developmental and transport (road, rail) axis of the country: Patrai - Athens - Thessaloniki - Northern borders. Its distance from the two big developmental centres of Athens and Thessaloniki is, 3,5-4,0 and 1,5-2,5 hours, respectively (allowing same-day trips from and to the region). In a relatively small distance from its northern border, Egnatia highway will presumably become the major developmental axis of Western to Eastern Greece. Consequently, Thessalia is located in a strategic and easily accessible geographical position.

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[1] This paragraph is partly compiled from ESPON DEMIFER 2010

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The *rural sector of Thessalia* continues to have an important share in the *composition of the region's economy* (it covers roughly the 35% of the GDP and the 39% of the employment), despite the fact that it has shrunk during the last decades. The most important agricultural products are the hard wheat and the cotton, however important extents are also occupied by the remaining cereals, tobacco, arboraceous cultivations and the vines. In the livestock-farming there are, also, recorded important sizes of livestock while the production of cheese is very important. Structural changes attempted during the last years, such as the restructuring of the composition of the production in favour of more competitive products, grouping of farmers etc, were not completed. Despite this even unaccomplished modernisation, *Thessalia's agriculture remains labour force intensive.*

Industry, once very powerful in the region, especially in Volos, is limited permanently. Especially, the share of big industrial units in the entire sector was limited with corresponding consequences in the employment. *Tourism* is developing, mainly in the coastal areas of the region. The entire *service sector* is growing in terms of GDP and employment; however, the most important growth concerns services related to the construction, restaurants, health and education as well as public services, while the share of the most dynamic brunches of services such as the services to the enterprises remains week.

1.2. NUTS / LAU level classification

According to the Eurostat NUTS / LAU classification (see in EU RAMON NUTS 2011) Greece is divided into 13 NUTS-2 units (regions – "perifereies" in Greek), 52 NUTS-3 units (prefectures – "nomoi" in Greek), 1000 LAU-1 units approximately (Municipalities and Communes) and 5.000 LAU-2 units approximately (Municipalities and Communes before 1997).

In 1997 the 5.000 small Municipalities and Communes of Greece were grouped in 1.000 bigger municipalities (and a limited number of Communes).

Very recently, on the base of the *Plan "Kallikratis"* which was adopted in *June 2010* and went into force from the *beginning of 2011*, the 1.000 Municipalities of the country (LAU) were grouped in 335 more powerful Municipalities. Also, the self –governed prefectures (NUTS-3) became sub-divisions of the since then self-governed Regions (NUTS-2). See for the "Kallikratis" municipalities of Thessalia *in Table 1.2.1*

However, since it is decided that the division of the Greek spatial units according to the EU NUTS / LAU system of territorial division for statistics (see in the site RAMON NUTS) will remain unchanged until 31-12-2011, **we will not take into account the recent reform of the Greek administrative system on the base of the Plan "Kallikratis".**

So, Thessalia includes actually **four NUTS-3 level** units: the *prefectures* (Greek "nomoi" –called from 2011: "regional units") *of Karditsa, Larisa, Magnesia and Trikala*, They are divided in **104 LAU-1 units (**which correspond to the former 93 Municipalities and 11 Communes before the Plan "Kallikratis") – *see in the Map 1.2.1.*

As from 1997 and beyond there are few data at LAU-2 level (in practice, there are only data for the number of inhabitants), we decided to work at LAU-1 level.

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Table 1.2.1: Municipalities of Thessalia according to the "Plan Kallikratis" (applied from 2010): Population 2001 and 2011, area and density 2011

LAU2 name	NUTS-3	Population 2001	Population 2011	Area - Km2	Density 2011 - inh/Km2
Larissa	Larissa	145981	163380	335,96	486,28
Volos	Magnesia	142923	144420	385,04	374,52
Trikala	Trikala	78817	80900	608,71	133,15
Karditsa	Karditsa	57089	56460	651,78	87,21
Elassona	Larissa	35358	32110	1567,34	20,52
Tyrnavos	Larissa	25864	24970	525,90	47,53
Kalampaka	Trikala	22853	21280	1657,00	12,83
Kileler	Larissa	22719	21040	976,71	21,55
Sofades	Karditsa	21759	18910	720,73	26,24
Farsala	Larissa	23675	18650	739,60	25,21
Almyros	Magnesia	20139	18260	908,84	20,17
Palamas	Karditsa	18500	16730	381,95	43,71
Pyli	Trikala	15886	14210	751,52	18,97
Farkadona	Trikala	15133	13310	368,86	36,10
Mouzaki	Karditsa	16407	13090	313,27	41,71
Tempi	Larissa	15439	12830	575,96	22,25
Agia	Larissa	13120	11440	664,13	17,29
Rigas Feraios	Magnesia	11830	10970	549,76	19,92
Notiou Peliou	Magnesia	10745	10320	369,99	28,00
Skiathos	Magnesia	5788	6110	49,45	122,45
Skiathos	Magnesia	5788	6110	49,45	122,45
Zagora-Mouresi	Magnesia	6449	5830	150,28	38,79
Skopelos	Magnesia	4706	4830	95,95	37,27
Lake Plastiras	Karditsa	4022	4520	196,76	22,79
Argithea	Karditsa	2488	3360	373,50	9,01
Alonnisos	Magnesia	2425	2800	129,81	29,08

Source of data: GSA 2011. For the population 2011: provisional data of the population census 2011
We emphasise that these municipalities are not further taken into account because they do not correspond
actually to LAU units according to the Eurostat RAMON – see previously

1.3. Territorial typologies

In order the following case study analysis be representative at European level as much as possible, it is worthwhile to refer to a "mega-region" typology for the EU level as well as to territorial typologies at NUTS-3 and LAU level.

As for the "mega-region" typology for the EU level, we could point out, in general terms that the study area of Thessalia belongs to the type of European South territories

Regarding the **NUTS-3 level**, we could refer to the ESPON territorial typologies (see in next). We should note that these typologies regard only the NUTS-3 level –not the NUTS-2 level.

As for the **urban-rural typology**, Thessalia includes one intermediate NUTS-3 region - close to a city (Magnesia), one predominately rural NUTS-3 region - close to a city (Larisa) and two predominately rural NUTS-3 regions - remote (Karditsa, Trikala).
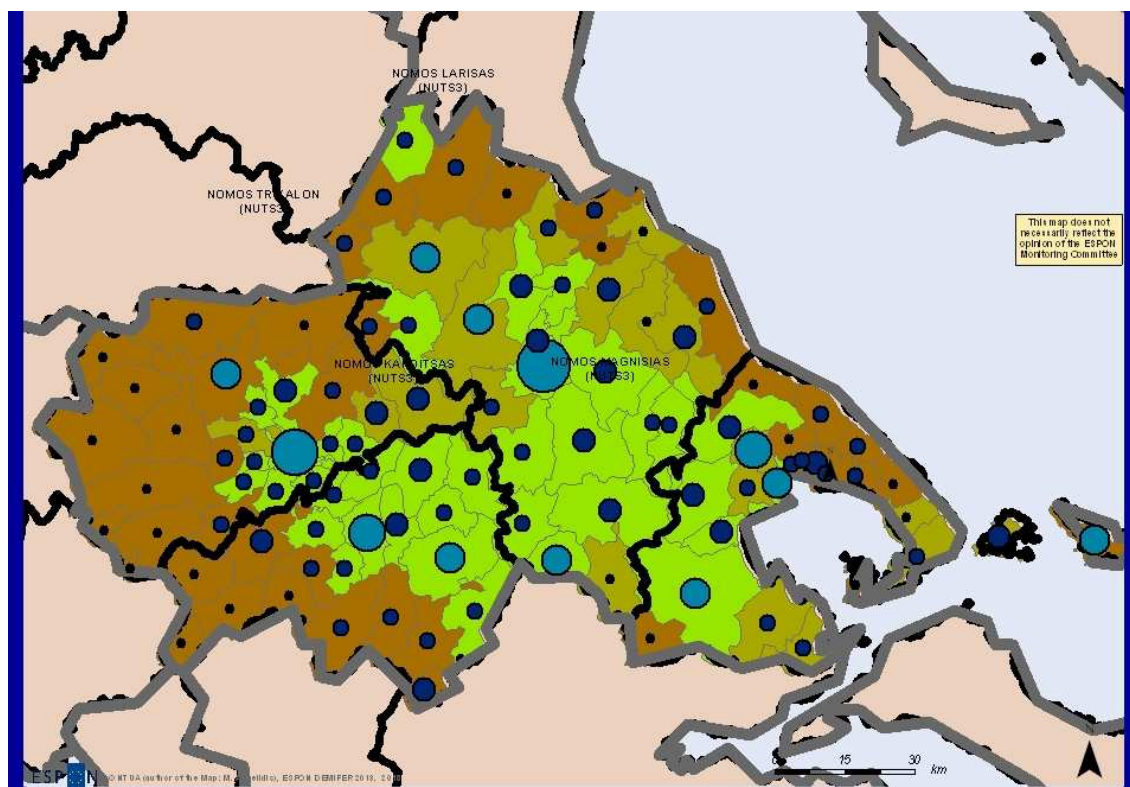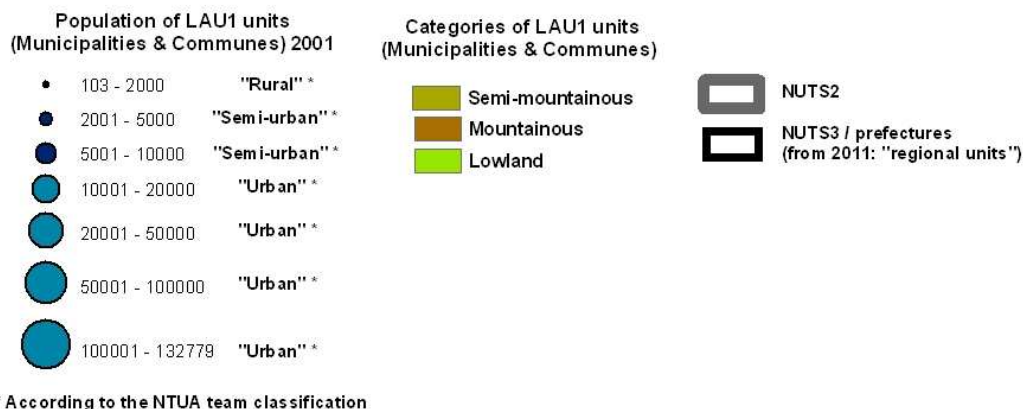
Map 1.2.1: Settlements' network structure of Thessalia: Population 2001 by Municipalities (LAU1) classified (by NSSG) in mountainous / semi-mountainous / lowland and urban / semi-urban / rural

Source of data: Eurostat and NSO of Greece, author of the Map: M. Angelidis

Thessalia also includes one predominantly **mountainous** region under urban influence (Magnesia), two moderately mountainous-remote regions (Karditsa, Trikala) and one moderately mountainous region under urban influence (Larisa).

Finally it includes one NUTS-3 region which is characterized as a **coastal** region with a low share of coastal population (Larisa) and one NUTS-3 region which is characterized as a coastal region with a very high share of coastal population (Magnesia).

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Regarding the **LAU level:**

Greek Statistical Authority (GSA)[2] classifies, since 2001, LAU2 units (Municipalities and Communes) the most populated settlement of which has less 2.000 inhabitants as "rural" and the rest as "urban". Before 2001 it classified as *"rural", "semi-urban" and "urban"*, the LAU2 units the most populated settlement of which had *less than 2,000 inhabitants, 2,000 –10,000 inhabitants and more than 10,000 inhabitants,* respectively.

As we work here up to the LAU1 level (municipalities, communes), we simulated as "urban" the LAU1 units (municipalities) of Thessalia with more than 2.000 inhabitants, those with 2.000-10.000 inhabitants as "semi-urban" and the rest as "rural –see in the *Map 1.2.1.*

On the basis of this simulation, 14 LAU1 units of Thessalia were urban in 2001 while 49 were semi-urban and 24 were rural. The "urban" population surpasses the "rural" population.

Further on, on the basis of the population of the LAU-1 units, the region's **settlements' network** -*see in the Table 1.1.1 and the Map 1.2.1*- includes:

- Two relatively large cities: Larisa and Volos –about 163,400 and 144,400 inhabitants in 2011[3], respectively-, and

- Two medium sized cities: Trikala and Karditsa, with about 80.800 and 56,500 inhabitants, respectively.

It also includes 15 small cities with population ranging between about 10,000 and 32,000 inhabitants in 2101, a large number of which are centres of rural territories.

Larisa and Volos, the most important urban centres of the region, form a *"bi-pole"* that has a capital city role in the spatial planning of the country.

This urban network is *cohesive* to a considerable degree as the small cities are closely related to the four big cities.

Regarding the classification of the LAU units in **mountainous** / non-mountainous: GSA[4] classifies also the Greek LAU-2 units ("dimotika diamerismata") in *mountainous[5], semi-mountainous[6] and lowland[7].* As we work here up to the LAU1 level (municipalities, communes), we simulated as "mountainous" the LAU1 units (municipalities) of Thessalia whose area is, in its larger part, mountainous. Similarly we characterised the rest LAU-1 units as "semi-mountainous" or "lowland" –see in the *Map 1.2.1.*

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[2] "National Statistical Service of Greece (NSSG)" before 2010

[3] Resident population of Municipalities. The population of 2011 of the municipalities (as they have been reformed with the Plan "Kallikratis" (2010 – see in next) is taken from the preliminary results of the 2011 population census; therefore it is not fully comparable with the population of the 2001 census.

[4] which has successes NSSG

[5] NSSG definition of the Mountainous LAU2 units: Settlements with slopping and uneven surface, broken by ravines and covered by steep mountains which create deep and multiple folds with elevation differences over 400 metres as well as settlements whose entire surface or the bulk of this lies at an altitude above 800 meters above sea level.

[6] NSSG definition of the Semi - mountainous LAU2 units: Settlements who are located in the foot of mountains or whose area is shared by half in the plain and by the other half in the mountain, but always with altitude below 800 metres in their larger part.

[7] See for the NSSG definition of the LAU2 units in the published results of the population censuses 1991 and 2001.

On the basis of this simulation, 46 LAU-1 units of Thessalia are mountainous, 20 are semi-mountainous while 43 are lowland. It is clear that the bigger in population LAU-1 units (municipalities) in 2001 are lowland.

It is useful to remark here that on July 2011 have been published preliminary results of the population **census of May 2011**[8]. The respective data (at LAU-1 / municipality level) refer only to the total population, the composition of the population per sex, the area and the density. As they are not fully checked, they are not fully compatible with the 2001 census data.

However, taking into account the previous remark on the degree of compatibility of the 2001 and 2011 population data, we could remark that:

- The population of the three bigger municipalities (Larissa, Volos and Trikala) has increased from 2001 to 2011 (the increase was more important in Larissa) while the population of the less urbanised municipality of Karditsa has decreased.

- The population of almost all the other municipalities, the majority of which is rural or semi – rural has decreased. Only the population of the touristic island or coastal municipalities has increased.

2. Data availability in the case study

We examined the **feasibility of the INTERCO headline indicators as for the data availability at LAU-1 level in the case of Thessalia region**. As it is presented in the **Table 2.1** there are available data at LAU-1 level for Thessalia region for the following indicators:

(1) Population, unemployment, level of education

- Ageing index, dependency rate, population average annual growth

- Share of tertiary educated people in %

- Difference between female and male employment rates 20–64, employment rate change (growth), and unemployment rate per age: classes of 5 years.

There are data from the censuses of 1991 and 2001.

Therefore we will be able to calculate the interval values for 1991 to 2011.

(2) GDP, income.

In Greece there are data for GDP only at NUTS-3 level.

There are published data for the declared income by households, businesses and public organisations at NUTS-3 level.

There are also published (on line) data on the declared average income by households before taxes (Greek Ministry of Economy and Finance) at LAU-1 level until the year 2003. It is possible to have these data for the subsequent years after request to the Ministry of Economy and Finance – see also in the section 3.2.6.

Also, it is possible, after request (see before), to have at LAU-1 level the values for the "average disposable annual household income" (after subtraction of taxes etc) and, further on, calculate, under conditions, the values of *"At persistent risk of poverty rate" indicator* (Population share with 60 % of the national equivalent median income).

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[8] We should remark that almost all EU-27 countries are implementing a population census in 2001

Table 2.1: The list of the INTERCO headline indicators, availability of data for these indicators at LAU-1 level for Thessalia region

Thematic sub-category name	Indicator name	Data availability Thessalia at LAU-1 level
Population Structure*	Ageing index (persons 65+ / persons 0-14)	**+**
Population Structure*	Dependency rate	**+**
Population Structure*	Life expectancy at birth	
Total population	Population potential within 5 km	
Total population	Population average annual growth	**+**
Energy	Share of renewable energy in final energy consumption and increase needed to meet the 20% target	
Education	Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target	
Education	Share of tertiary educated people in %	**+**
Health	Healthy life expectancy (ESPON 3.2)	
Health	Self-perceived personal state of health in EU Member States (5th CR)	
Poverty	At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)	
Poverty	Share of population living in workless or low work intensity households (5th CR)	
Other social	Work-life balance in EU Member States (5th CR)	
Quality of life	Happiness Index	
Quality of life	Share of population reporting crime, violence or vandalism by degree of urbanisation (5th CR) -	
Employment, Unemployment	Difference between female and male employment rates, 20–64	**+**
Employment, Unemployment	Employment rate change (growth)	**+***
Employment, Unemployment	Unemployment rate per age: classes of 5 years	**+***
Employment, Unemployment	Development of unemployment rate (male, female, young, total, 99-04)	**+***
Income and Consumption	GDP per inhabitant (capita) in PPS or Euros, per year	
Income and Consumption	GDP change per inhabitant (capita) in PPS or Euros	
Income and Consumption	Median disposable annual household income	**+**
Investments, Finances and Expenditures	Public sector debt relative to GDP	
Environment quality	NATURA 2000 area (Share of Natura 2000 area in %)	****
Natural assets	Consumption of water per capita	
Governance	Electoral participation	****
Governance	Voice and accountability	

 * Years of censuses

** See in more detail in the text

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However, the harmonisation of the respective values for all the case studies is difficult, because the definitions of the "declared income" per EU country are very probably different.

(3) Environment quality

Indicator: NATURA 2000 area (Share of Natura 2000 area in %)

There are .shp files for the boundaries of the NATURA 2000 regions. Therefore, it is possible to calculate the values of this indicator at LAU-1 level.

However, the harmonisation of the respective values for all the case studies is difficult, because the implementation of the definition of the "NATURA 2000 area" made by each EU country is probably different.

(4) Governance

Indicator: Electoral participation

There are such public data for Greece (and Thessalia) at LAU-1 level.

However, the harmonisation of the respective values for all the case studies is difficult, because the implementation of the definition of the "Electoral participation" made by each EU country is probably different.

For all other INTERCO headline indicators there are not available data at LAU-1 level for the Thessalia region.

Specific problems of availability and quality of data for Thessalia

During the last two decades, the National Statistical Service of Greece has made enough changes in the definitions of the indicators and spatial typologies which were used, a fact that has made the diachronical comparisons very difficult. Indicatively, while in most of the analyses of population before 2001, "de facto" population is used, since the 2001 (year of census) "resident population" is mainly used.

Furthermore the classification in urban / rural regions etc has changed.

Also, the published data for the 1991 and 2001 censuses has changed more than two times.

3. Analysis of TC on the basis of feasible headline indicators

In this section we will analyse TC in the "local scale" case of Thessalia on the basis of both NUTS-3 and LAU-1 data as a major objective of our research is exactly to see at **which extent the TC pattern of Thessalia at the (local) LAU-1 level differs from the respective pattern at (regional) NUTS-3 level.**

As we have mentioned previously, we can't examine a great number of TC indicators at local level because the respective data are scarce. We will examine only nine headline indicators:

- Two indicators of "competitiveness": unemployment rate and employment rate. In addition, we will comment the GDP at NUTS-3 level.

- Five indicators of "inclusion": **share of tertiary educated people, ageing index** (people aged 65+ / total population), **population density, population growth and average households income**. In addition, we will comment the Life expectancy at NUTS-3 level.

Therefore, we will not give a complete analysis of TC at local level in Thessalia. We will only try **to see if the analyses at LAU-1 level bring important new insights regarding the TC patterns at NUTS-3 level as well as on the differences between these two last.**

In more detail, we will examine several types of statistics of variation at NUTS-3 and LAU-1 level: min / max, mean (average), standard deviation and coefficient of variation and we will evaluate at which extent these statistics reflect the inequalities regarding TC.

The analysis of the feasible indicators is oriented to study TC inequalities regarding some of the more important ESPON **territorial typologies** at NUTS-3 level (between urban and rural areas, mountainous and lowland areas, coastal areas, islands, industrial decline areas) in the case of Thessalia. We will also try to study TC inequalities at LAU level according analogue typologies for this level – see in the section 1.3. Finally, we will try to assess TC inequalities among other territorial types as for instance among "peripheral" and central areas.

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3.1. Competitiveness

3.1.1. GDP

As we have already mentioned, in Greece there are GDP data only at NUTS-3 level. We will make an analysis at this level, taking in addition into account the type of each NUTS-3 unit according to an urban-rural typology and the presence of FUAs.

Regarding, specifically, GDP, we need examine its change in the frame of the evolution of the GDP in frame of the total of the country and the region of Thessalia[9].

GDP per capita in Greece in *1995* (12,300 - PPS / Purchasing Power Standard at current market prices) was equal to the 84.2% of the average in EU-27 (14,700). It rose up to 92.8% (23,100) of the respective average in *2007* (24,900). Therefore, *it gained 8.6 points – Table 3.1.1*[10].

GDP per capita in Thessalia in 1995 (10,900) was at 74.2% of the average in EU-27 and at 88.6% of the average in Greece. It decreased to 68.2% (17,000) of the EU-27 average and to 73.6% of the Greek average in 2007. Therefore, *Thessalia GDP decreased considerably compared to Greece and EU*; it lost 15.0 points and 6.0 points, respectively.

The GDP PPS per capita **has decreased** from 1995 to 2007 (in terms of % rate of the EU and Greece averages) **less in the relatively more urban NUTS-3 regions than in the relatively more rural ones;** specifically, losses were smaller for Trikala -17.8 percentage points- a slightly less "rural" prefecture than Karditsa, which lost 25.9 percentage points (its GDP per capita decreased from 80.5% of the national average in 1995 to 54.5% in 2007). The losses were even smaller for Larisa (12.8 points) which has an important rural sector but also a big urban centre. The smallest decrease was presented in the case of Magnesia (only 9.7 points) which has a comparatively less important rural sector. Thus the higher decreases could be attributed to the higher decrease of GDP in the rural sector.

Table 3.1.1a: EU27, Greece, Thessalia: GDP PPS at current prices per capita 1995, 2001, 2007

Code		Purchasing Power Standard (PPS) per inhabitant			Purchasing Power Parities per inhabitant in percentage of the EU average				Purchasing Power Parities per inhabitant in percentage of Greece average			
		1995	2001	2007	1995	2001	2007	Differences in % points 1995-2007	1995	2001	2007	Differences in % points 1995-2007
	EU27	14,700	19,800	24,900	100.0	100.0	100.0					
GR	Greece	12,300	17,100	23,100	84.2	86.5	92.8	8.6	100.0	100.0	100.0	
GR14	Thessalia	10,900	13,300	17,000	74.2	67.0	68.2	-6.0	88.6	77.8	73.6	-15.0
GR141	Karditsa	9,900	10,200	12,600	67.8	51.4	50.5	-17.3	80.5	59.6	54.6	-25.9
GR142	Larisa	11,000	14,600	17,700	75.2	73.7	71.0	-4.2	89.4	85.4	76.6	-12.8
GR143	Magnesia	12,000	15,100	20,300	81.6	76.1	81.4	-0.2	97.6	88.3	87.9	-9.7
GR144	Trikala	9,800	10,400	14,300	67.1	52.7	57.3	-9.8	79.7	60.8	61.9	-17.8

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[9] Some parts of the following paragraphs are compiled from the ESPON DEMIFER / Thessalia case study (2010)

[10] See for the GDP in Euros in the respective Table of ESPON DEMIFER (2010).

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Source of data: EUROSTAT - elaboration of the Table: NTUA

Using the ESPON Database 2013 dataset for FUAs (see in Bibliography – Sources) for the GDP in the four FUAs of Thessalia –see in Table 3.1.2- we reach similar conclusions to those for the respective NUTS-3 regions.

We note that: (a) GDP per FUA (2006) refers to the share of the GDP of the NUTS-3 intersecting with the FUA (b) GDP of the FUA per capita (2006) corresponds to the GDP (of the FUA) divided by the population of the FUA.

Table 3.1.1b: FUAs of Thessalia: GDP (millions of Euros) and GDP per capita (Euros per capita) 2006

FUAs	NUTS-3 region	GDP - millions of Euros	GDP per capita - Euros per capita 2006
Larisa	Larisa	2,673	14,000
Trikala	Trikala	1,133	12,000
Volos	Magnesia	2,620	17,000
Karditsa	Karditsa	571	10,000

Source of data: ESPON Database 2013 dataset for FUAs

3.1.2. Unemployment

We examined the unemployment rate % (INTERCO headline indicator) for 2001.

Unemployment rate: Definition of the indicator by Eurostat

Regional (NUTS level 2) unemployment rate represents unemployed persons as a percentage of the economically active population (i.e. labour force or sum of employed and unemployed). The indicator is based on the EU Labour Force Survey. Unemployed persons comprise persons aged 15-74 who were (all three conditions must be fulfilled simultaneously): 1. without work during the reference week; 2. currently available for work; 3. actively seeking work or who had found a job to start within a period of at most three months.

As we have mentioned, there are data for Thessalia for both the NUTS-3 and the LAU-1 levels –only for 2001 (census year) for the latter.

Regarding the long term evolution at national, regional (NUTS-2) and NUTS-3 levels, unemployment % rates (age: 15 years and over) decreased *in Greece and Thessalia* from 12.1% and 13.4%, respectively, in 1999 to *7.7% and 8.4% in 2008.* However, *the unemployment rates for Greece and Thessalia in 2008 were greater than that of the EU-27 (7.0%)* - Table 3.1.2.

Regarding the analysis at the Thessalia NUTS-3 level, the more important "territorial" result is that unemployment rates have decreased more from 1999 to 2008 in the rural prefectures of Karditsa and Trikala[11] than in the more urbanised prefectures of Larisa and Magnesia. in 2008 unemployment rates were higher in the more urbanised

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[11] DEMIFER (2010)

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prefectures of Larisa and Magnesia than in the rural prefectures of Karditsa and Trikala.

Table 3.1.2: Unemployment rate (population 15 years and over) - EU27, Greece, Thessalia % 1999-2008

		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
EU27						9.1	9.2	8.9	8.2	7.2	7.0
GR	Greece	12.1	11.4	10.8	10.3	9.7	10.5	9.8	8.9	8.3	7.7
GR14	Thessalia	13.4	12.9	12.9	11.4	10.7	9.8	9.5	8.2	7.8	8.4

Source of data: EUROSTAT - elaboration of the Table: NTUA team

We should note here that the definition of unemployment rate used for the following analysis for the census year 2001 at LAU and NUTS-3 level differs slightly from that of Eurostat.

Variations at NUTS-3 and LAU-1 levels, territorial typologies

The difference of the unemployment rates' variations **among the LAU-1 and the NUTS-3 level** were considerable in 2001, as it results from the Figure 3.1.2a; the max and min values for the unemployment rate differ considerably, while the respective means differ a few. Also the difference of the Coefficients of variation at LAU-1 and NUTS-3 level is pronounced.

Specifically, the rates of the four NUTS-3 regions range between 9,5% for the relatively more urbanized NUTS-3 of Larisa and 13,3% for the more rural NUTS-3 of Karditsa. The rate for Magnesia (more urban) amounted in 11,8% and the one for Trikala (more rural) in 9,9%.

This analysis of unemployment rate disparities contrasts to a larger variation between the 104 LAU units that range between 1,6% and 22,2%. So the analysis at lower level can reveal that there are 20 municipalities with unemployment rates higher than 13,3 and 45 municipalities with rates below 9,5.

The LAUs with the higher rates (above the average rate of Thessalia) are located in the NUTS-3 of Karditsa[12], which has also the highest rate in Thessalia. But there are also LAUs in the top 10 of high unemployment in other NUTS-3 regions as for example the LAUs of Aspropotamos (21,1%) in Trikala and Almyros (15,9%) in Magnesia. This wouldn't be evident without an analysis at LAU level.

See for the unemployment rate % in 2001 in Thessalia measured across LAUs within the NUTS-3 regions and the respective coefficients of variation in *Figure 3.1.2b.*

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[12] With highest rates in Rentina (22,2) and Mouzaki (16,4).
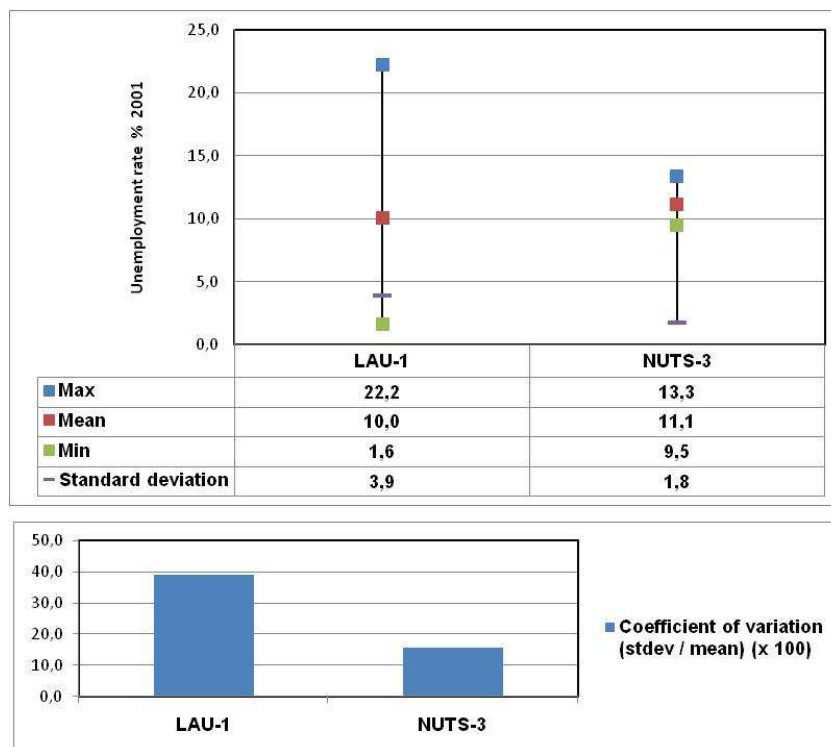
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Figure 3.1.2a: Unemployment rate % in 2001 in Thessalia at NUTS-3 and LAU-1 levels:
max, min, mean, standard deviation and Coefficient of variation
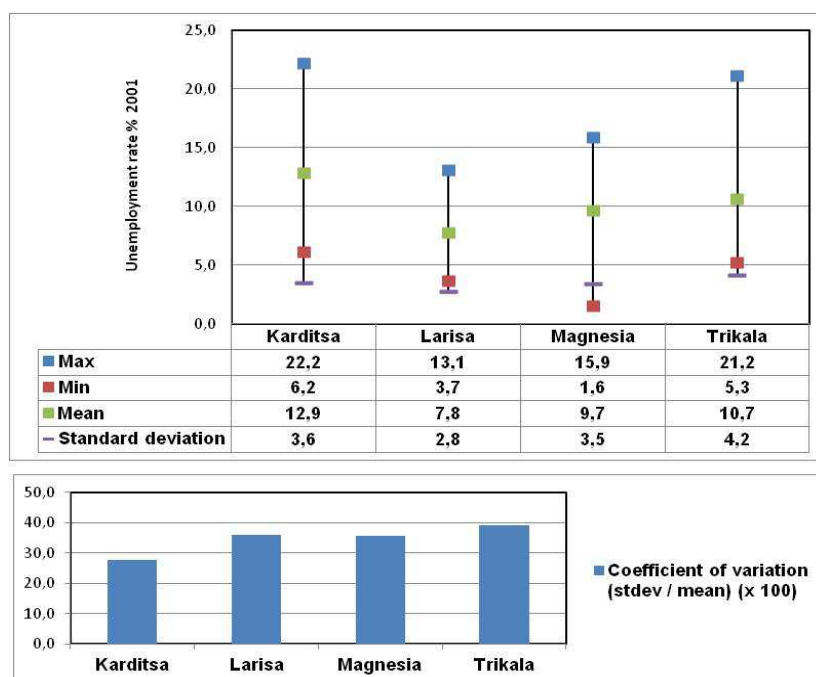
Figure 3.1.2b: Unemployment rate % in 2001 in Thessalia measured across LAUs within
the NUTS-3 regions and coefficients of variation

The analysis at LAU level **on the basis of the mountainous typology and the urban-rural one** has revealed that the mountainous LAUs of Thessalia present in most cases higher unemployment rates than lowland LAUs –see the Map 3.1.2 (and also the Map 1.2.1). Also it can be seen that high unemployment rates are not only found in

peripheral areas but local examples of high unemployment are also found in LAUs including cities, like Karditsa (rate 13,8 and population over 40.000 inh.), or close to big cities like Nea Ionia (rate 14,90 and population over 30.000 inh.).

Therefore, *the disparities among the urban and rural as well as among the mountainous and the lowland areas of the region are much more clearly presented through the LAU level analysis.*
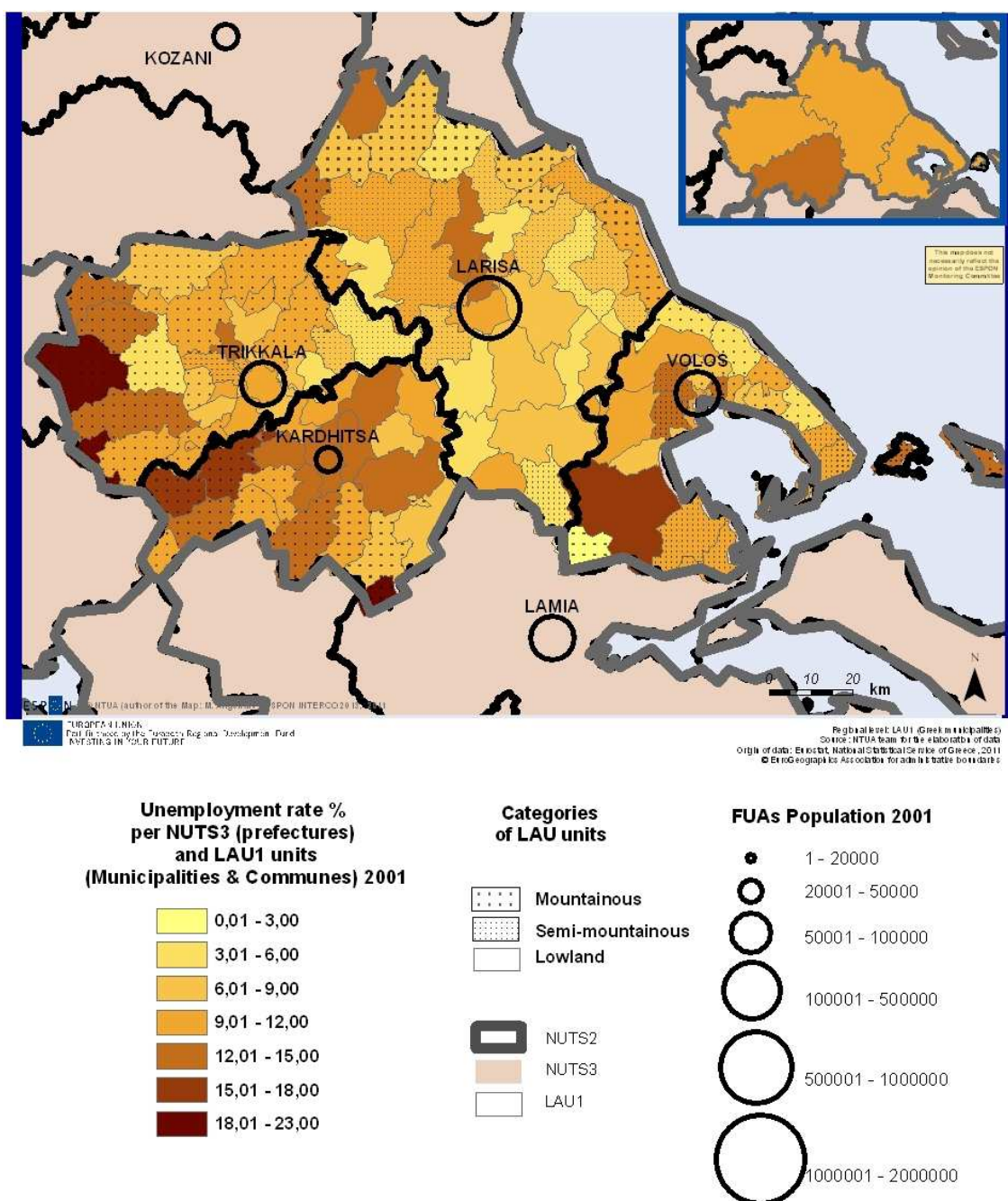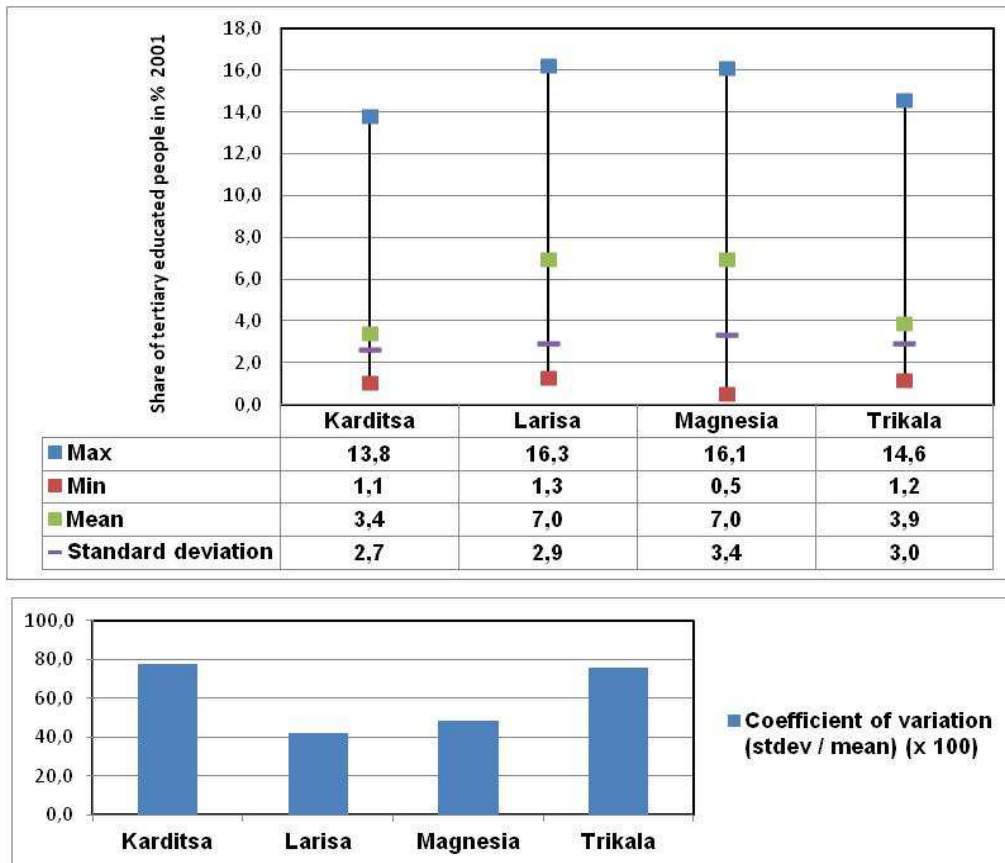

Map 3.1.2: Thessalia: Unemployment rate % 2001 per NUTS3 (prefectures) and LAU-1 (municipalities and communes) mountainous, semi-mountainous and lowland

Source of data: Eurostat and NSO of Greece, author: M. Angelidis

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3.1.3. Employment

We examined the employment rate % (INTERCO headline indicator) for 2001.
As it results from the *Map 3.1.3*, the disparities on employment rate among the urban and rural areas of the region are very clearly presented through the LAU-1 level analysis.
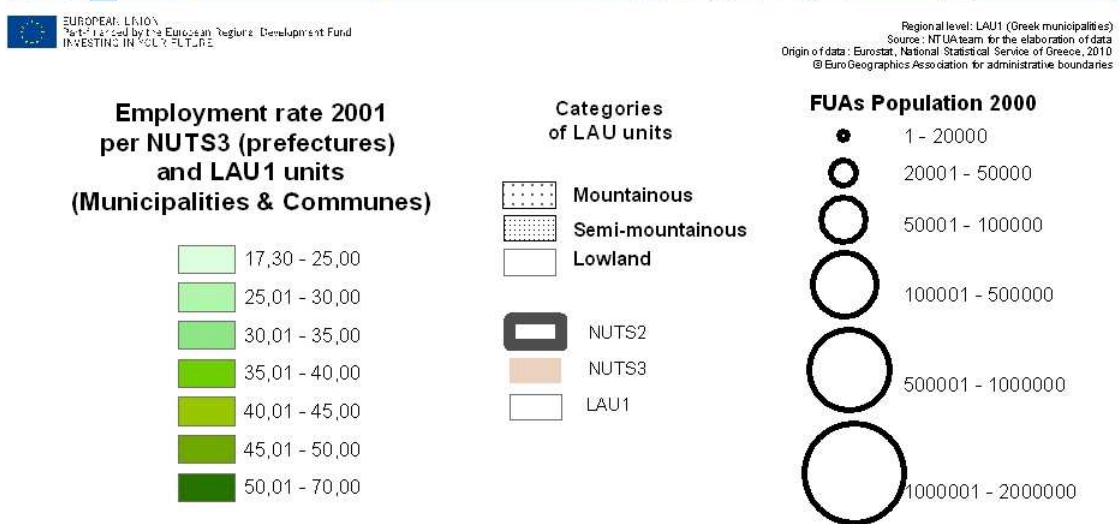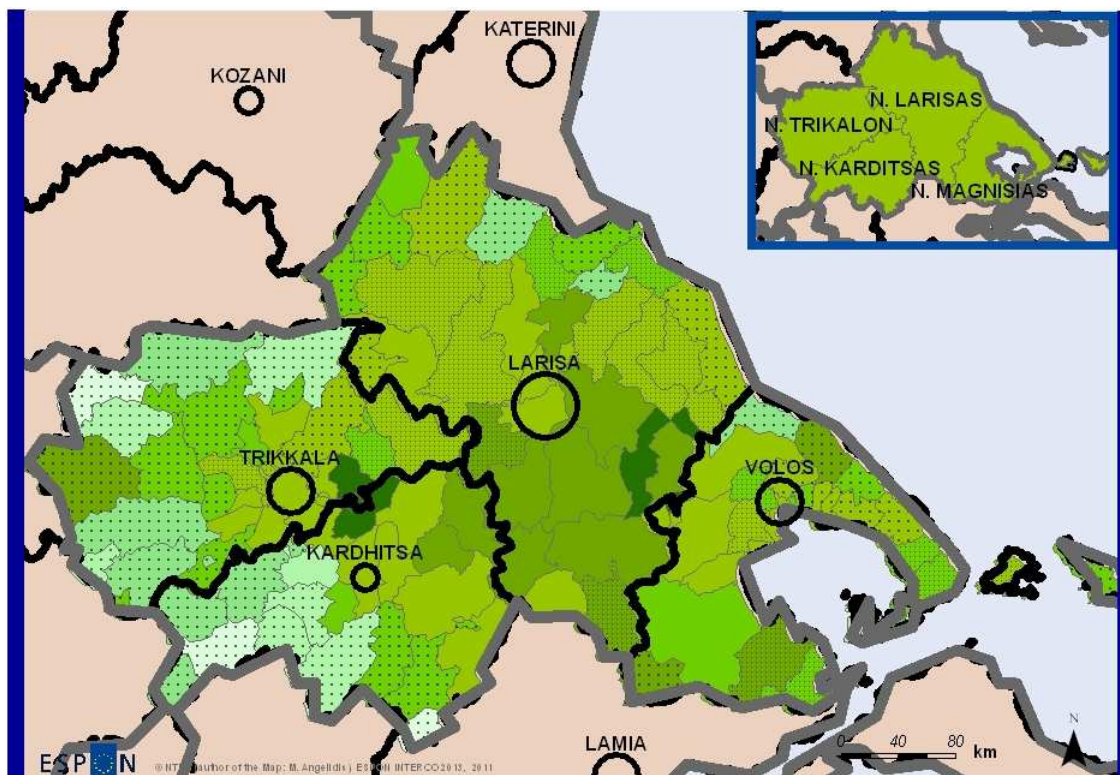
Map 3.1.3: Thessalia: Employment rate % 2001 per NUTS3 (prefectures) and LAU-1 (municipalities and communes) mountainous, semi-mountainous and lowland

Source of data: Eurostat and NSO of Greece, author: M. Angelidis

Disparities among mountainous / lowland areas are clear in this case, however with some exceptions; for example, the high development of tourism in the eastern coastal area of Thessalia (Mount Pelion) which is mountainous explains to a considerable degree the higher level of employment in comparison with the other mountainous parts of Thessalia.

We will further analyse the variation of this indicator at NUTS-3 and LAU level for the INTERCO Final Report.

3.2. Inclusion

3.2.1. Population with tertiary education

Regarding the indicator "share of tertiary education %", we used in the case of Thessalia for 2001 (census year), both at NUTS-3 and LAU-1 levels, aggregations of the data for: holders of doctorate, holders of Master, graduates of University level institutions, graduates of Technological Educational Institutes

Variations at NUTS-3 and LAU-1 levels, territorial typologies

Also for this indicator, the difference of the Coefficients of variation at LAU-1 and NUTS-3 level is pronounced – *see in the Figures 3.2.1a and 3.2.1b and the Map 3.2.1.*

	LAU-1	NUTS-3
Max	16,3	11,0
Mean	4,8	9,4
Min	0,5	6,9
Standard deviation	3,3	1,8
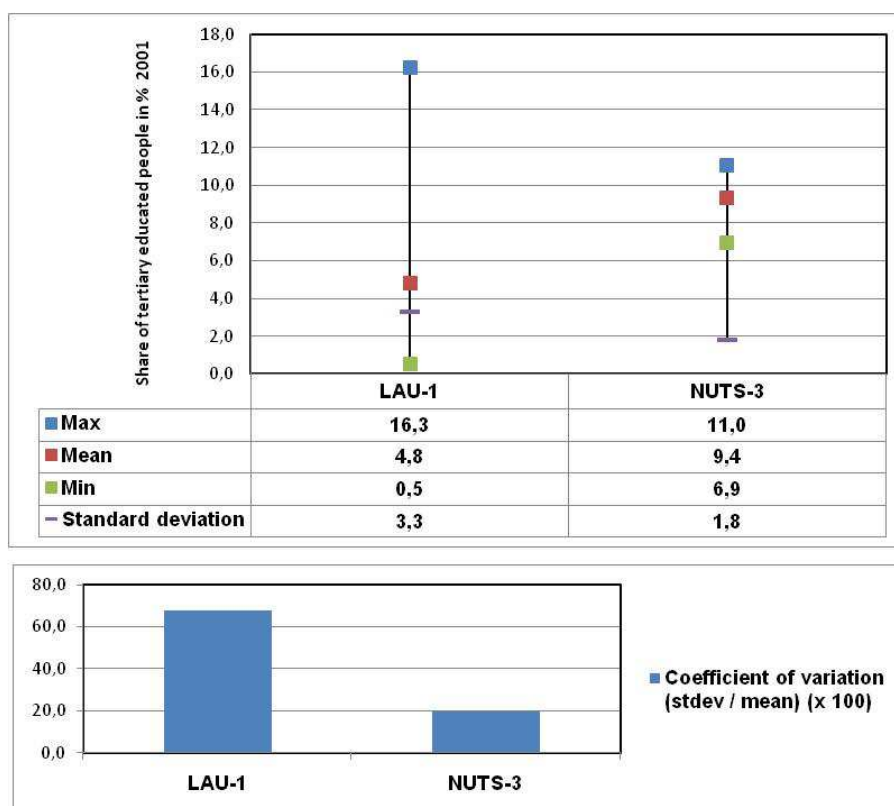
Figure 3.2.1a: Share of tertiary educated people % (2001) in Thessalia at NUTS-3 and LAU-1 levels: max, min, mean, standard deviation and Coefficient of variation

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The disparities as for the tertiary education % among the urban and rural and the mountainous / lowland areas of the region are much more clearly presented through the LAU-1 level analysis.
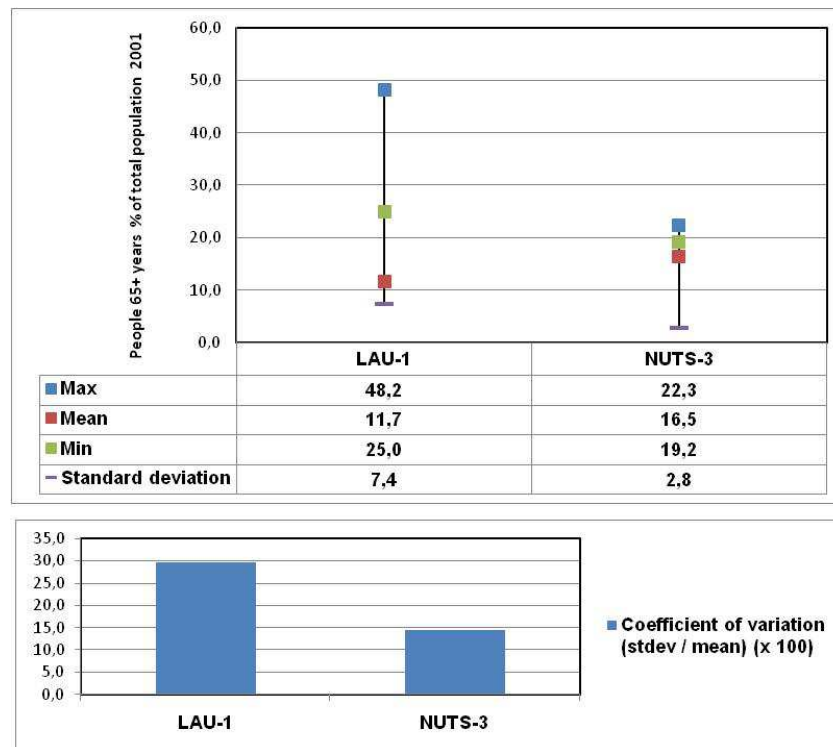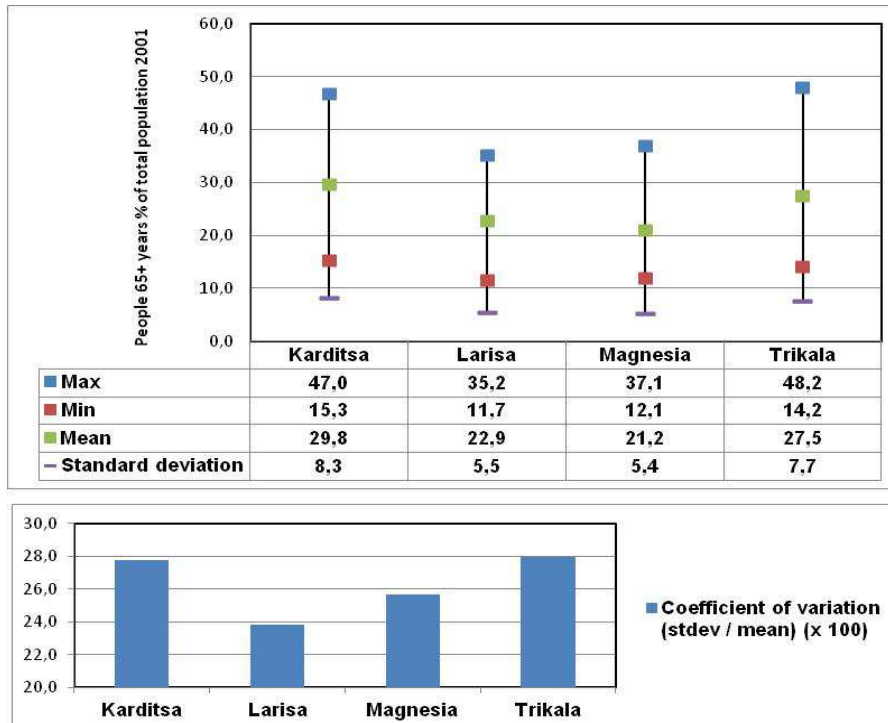

	Karditsa	Larisa	Magnesia	Trikala
■ Max	13,8	16,3	16,1	14,6
■ Min	1,1	1,3	0,5	1,2
■ Mean	3,4	7,0	7,0	3,9
— Standard deviation	2,7	2,9	3,4	3,0

Figure 3.2.1b: Share of tertiary educated people (2001) measured across LAUs within the NUTS-3 regions and coefficients of variation
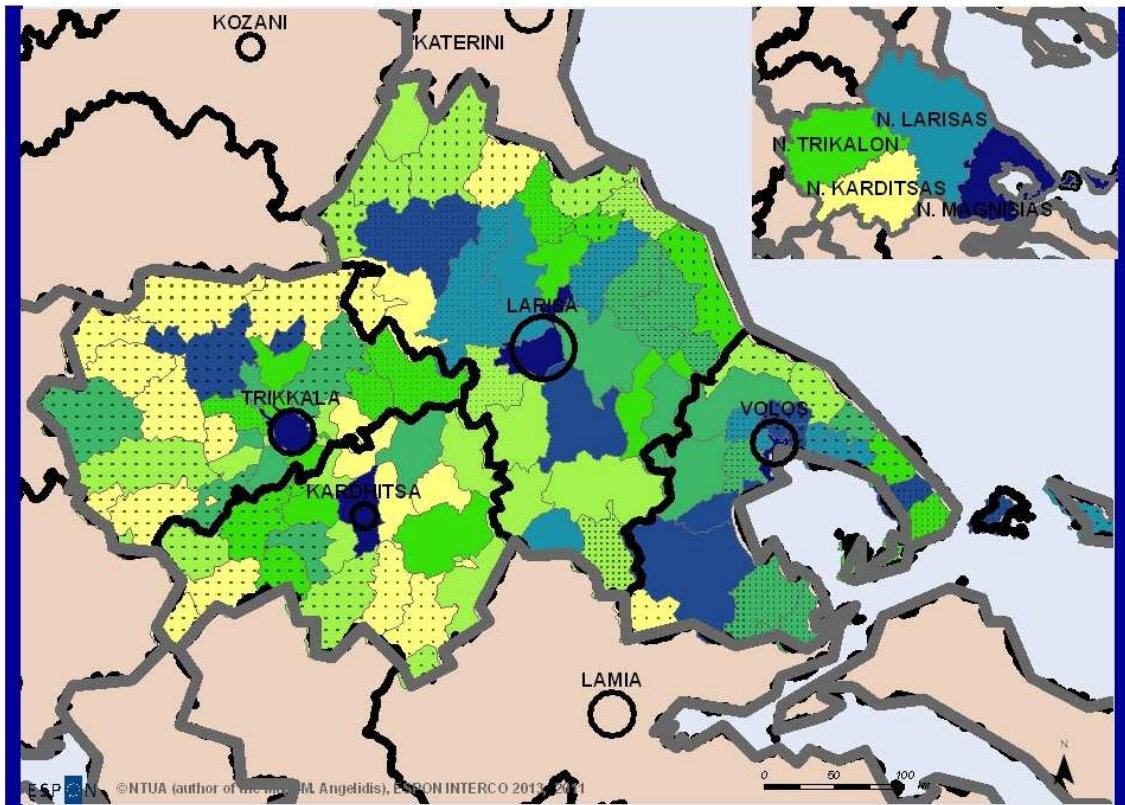
Share of tertiary educated people % 2001 per NUTS-3 (prefectures and LAU1 (municipalities)

- 0,00 - 2,22
- 2,23 - 3,49
- 3,50 - 4,65
- 4,66 - 6,02
- 6,03 - 8,08
- 8,09 - 12,60
- 12,61 - 26,61

Categories of LAU units

- Mountainous
- Semi-mountainous
- Lowland

- NUTS2
- NUTS3
- LAU1

FUAs Population 2000
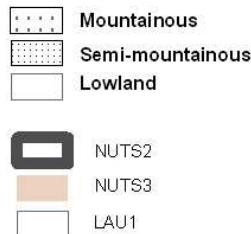
- 1 - 20000
- 20001 - 50000
- 50001 - 100000
- 100001 - 500000
- 500001 - 1000000
- 1000001 - 2000000
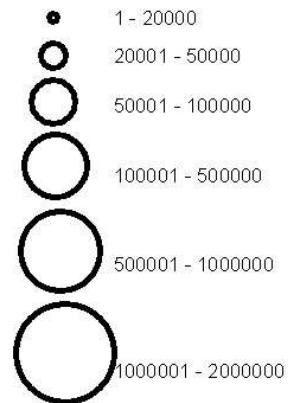
Map 3.2.1: Thessalia region: Share of tertiary educated people % 2001 in NUTS-3 (prefectures) and LAU-1 (municipalities): mountainous, semi-mountainous, lowland, Functional Urban Areas (FUAs) population 2001

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3.2.2. Population ageing

The analysis at national, regional (Thessalia) and NUTS-3 level shows that the population of Thessalia was in 2001 more aged than the country population. Populations of the more rural NUTS-3 units of Karditsa and Trikala were clearly more aged than the ones of the more urban NUTS-3 units of Larisa and Magnesia – see in Table 3.2.2.

Table 3.2.2: Population by age groups, NUTS3 regions of Thessalia 2001

Code	Regions	Total Pop. 2001	Pop. age: 0-14 years	Pop. age: 15-64 years	Pop. age: 65 or over	% Share of the pop. that is aged 15-64 years	% Share of the pop. that is aged 65 or over
GR	Greece	10,934,097	1,660,899	7,445,964	1,827,234	68.1	16.7
GR14	**Thessalia**	740,115	116,686	487,401	136,028	65.9	18.4
GR141	Karditsa	120,265	18,216	75,210	26,839	62.5	22.3
GR142	Larisa	282,156	45,965	189,666	46,525	**67.2**	**16.5**
GR143	Magnesia	205,005	32,033	137,783	35,189	**67.2**	**17.2**
GR144	Trikala	132,689	20,472	84,742	27,475	63.9	20.7

Source of Table: DEMIFER 2010. Source of data: Eurostat and NSS of Greece, our own elaboration

Variations at NUTS-3 and LAU-1 levels, territorial typologies

According to the *Figure 3.2.2a,* the minimum and maximum and also the average percentage of people 65+ years/ total population differ significantly, subject to the level of measurement (NUTS-3, LAU-1).

Also the difference of the Coefficients of variation at LAU-1 and NUTS-3 level is pronounced.

As it results from the Map 3.2.2 (see also the Map 1.2.1), the disparities among the urban and rural and the mountainous / lowland areas of the region are clearly presented through the LAU-1 level analysis.

	LAU-1	NUTS-3
■ Max	48,2	22,3
■ Mean	11,7	16,5
■ Min	25,0	19,2
— Standard deviation	7,4	2,8

Figure 3.2.2a: People 65+ years % of total population 2001 in Thessalia at NUTS-3 and LAU-1 levels: max, min, mean, standard deviation and Coefficient of variation

	Karditsa	Larisa	Magnesia	Trikala
■ Max	47,0	35,2	37,1	48,2
■ Min	15,3	11,7	12,1	14,2
■ Mean	29,8	22,9	21,2	27,5
— Standard deviation	8,3	5,5	5,4	7,7

Figure 3.2.2b: People 65+ years % of total population (2001) in Thessalia measured across LAUs within the regions and coefficients of variation

Map 3.2.2: Thessalia: Ageing rate % (persons aged 65+ years / Total population) per NUTS3 (prefectures) and LAU1 (municipalities) 2001

Source of data: Eurostat and GSA, author: M. Angelidis

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3.2.3. Life expectancy

As we have mentioned, there are data for Thessalia on Life expectancy by sex only for the NUTS-2 level.

Life expectancy at birth for men was higher in Greece than in EU-27 in 2002 as well as in 2007 - see in the Table 3.2.3. In contrast, while life expectancy at birth for women was higher in Greece than in EU-27 in 2002, it became comparatively lower in 2007.

In general terms, life expectancy in Thessalia both for less than 1 year and at 65 years has grown from 1999 to 2008 faster for men than for women. In 2008, life expectancy for women in Thessalia was clearly higher than for men.

Table 3.2.3: Life expectancy 1997-2008: EU-27, Greece, Thessalia by sex

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
		Life expectancy at birth (only), by gender											
Males	EU27						74.5	74.6	75.2	75.4	75.8	**76.1**	
	Greece	75.4	75.4	75.5	75.5	76.0	76.2	76.5	76.6	76.8	77.2	**77.1**	77.7
Females	EU27						80.9	80.8	81.5	81.5	82.0	**82.2**	
	Greece	80.4	80.3	80.4	80.6	81.0	81.1	81.2	81.3	81.6	81.9	**81.8**	82.4
		Life expectancy, by gender											
Thessalia Total	Less than 1 year	**77.4**	**77.6**	**77.8**	**77.9**	**78.3**	**78.3**	**78.7**	**78.5**	**79.2**	**79.7**	**79.2**	**79.8**
	65 years	17.2	17.2	17.2	17.3	17.4	17.3	17.8	17.6	18.3	18.5	**18.1**	18.5
	85 years and over	5.0	4.7	4.9	4.6	4.6	4.4	4.5	4.3	4.8	4.9	**4.7**	4.8
Thessalia Females	Less than 1 year	**80.2**	**80.3**	**80.4**	**80.5**	**80.7**	**80.9**	**81.2**	**81.1**	**81.9**	**82.3**	**81.9**	**82.4**
	65 years	18.2	18.2	18.3	18.3	18.4	18.2	18.8	18.5	19.2	19.5	**19.0**	19.4
	85 years and over	5.0	4.7	5.0	4.6	4.6	4.2	4.4	3.9	4.5	4.6	**4.1**	4.3
Thessalia Males	Less than 1 year	**74.7**	**75.1**	**75.3**	**75.5**	**76.0**	**75.8**	**76.3**	**76.1**	**76.7**	**77.3**	**76.7**	**77.3**
	65 years	16.1	16.1	15.9	16.1	16.3	16.3	16.7	16.7	17.3	17.5	**17.2**	17.5
	85 years and over	5.0	4.6	4.7	4.5	4.4	4.6	4.7	5.0	5.4	5.2	**5.6**	5.6

Source of the Table: DEMIFER 2010. Source of data: Eurostat - own further elaboration of data

3.2.4. Population density

Population density: Definition of the indicator by Eurostat

Population density is the ratio between (total) population and surface (land) area

Variations at NUTS-3 and LAU-1 levels, territorial typologies

The minimum and maximum and also the average population density differ significantly, at LAU1 level compared to NUTS3 level, indicating at LAU-1 that there are both areas which have very low population density and dense urban areas – *Figure 3.2.4a.* Also the difference of the Coefficients of variation at LAU-1 and NUTS-3 level is very big.

	LAU-1	NUTS-3
Max	1.076,4	77,7
Mean	76,6	53,7
Min	0,4	39,2
Standard deviation	163,3	16,9
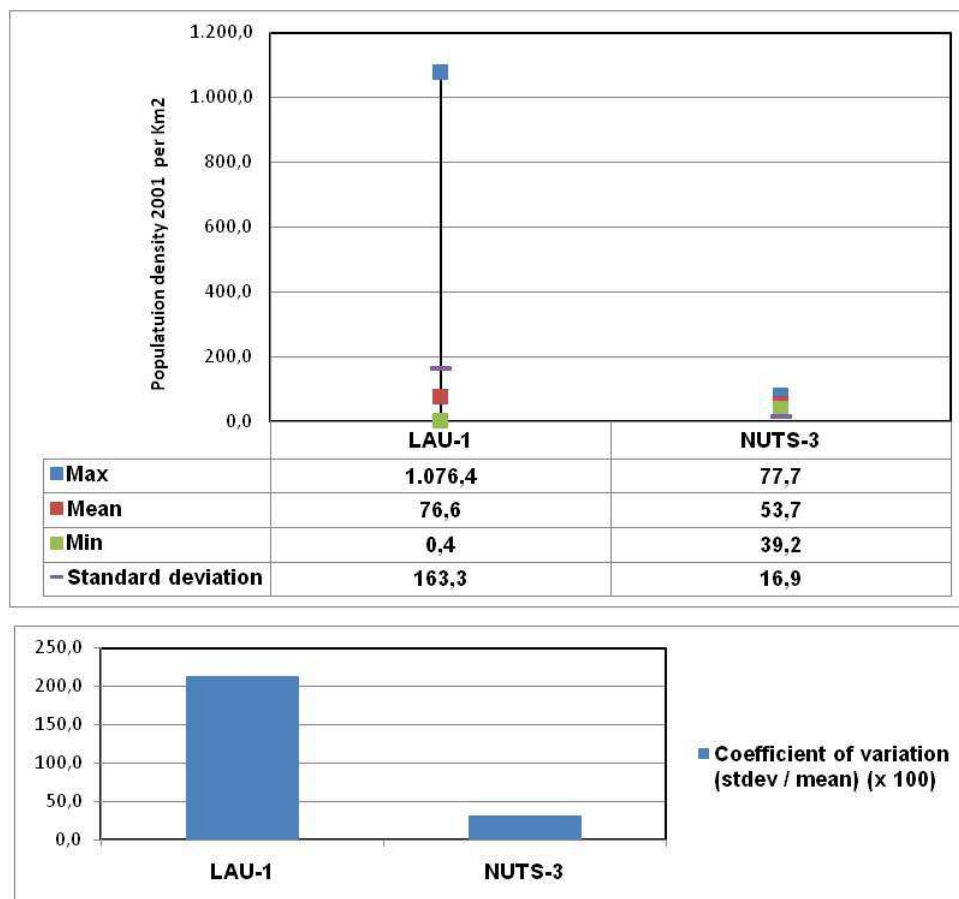
Figure 3.2.4a: Population density 2001 per Km2 in Thessalia at NUTS-3 and LAU-1 levels: max, min, mean, standard deviation and Coefficient of variation

Specifically, the range between the four NUTS 3 regions extend between 39 (inh./Km2) and 77 which contrasts to a much larger variation between the 104 LAU units that extend between 1 and 1076.

See for the population density 2001 in Piedmont measured across LAUs within the NUTS-3 regions and the respective coefficients of variation in *Figure 3.2.4b.*

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	Karditsa	Larisa	Magnesia	Trikala
■ Max	47,0	35,2	37,1	48,2
■ Min	15,3	11,7	12,1	14,2
■ Mean	29,8	22,9	21,2	27,5
─ Standard deviation	8,3	5,5	5,4	7,7
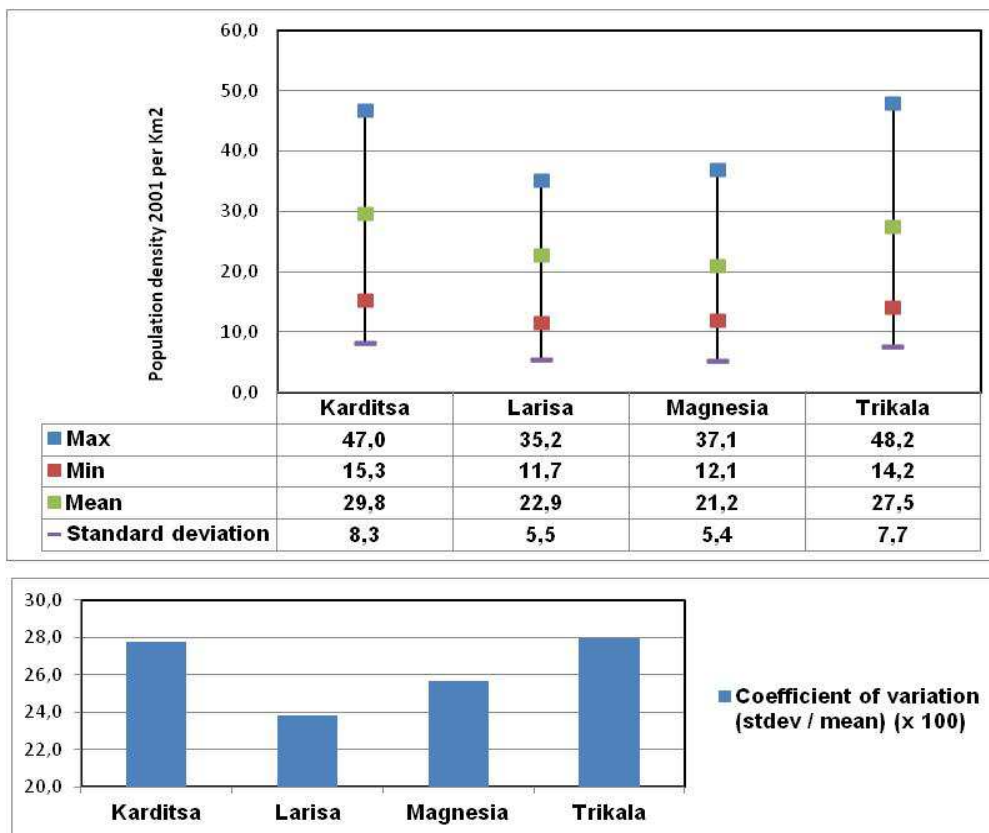
Figure 3.2.4b: Population density per Km2 (2001) in Thessalia measured across LAUs within the regions and coefficients of variation

As it results from the *Map 3.2.4* (see also the Map 1.2.1), the disparities among the urban and rural as well as among the mountainous and the lowland areas of the region are much more clearly presented through the LAU-1 level analysis.

In general terms, the mountainous LAUs present clearly lower population density then the lowland ones. Also, the coastal areas of Magnesia present relatively high population densities.
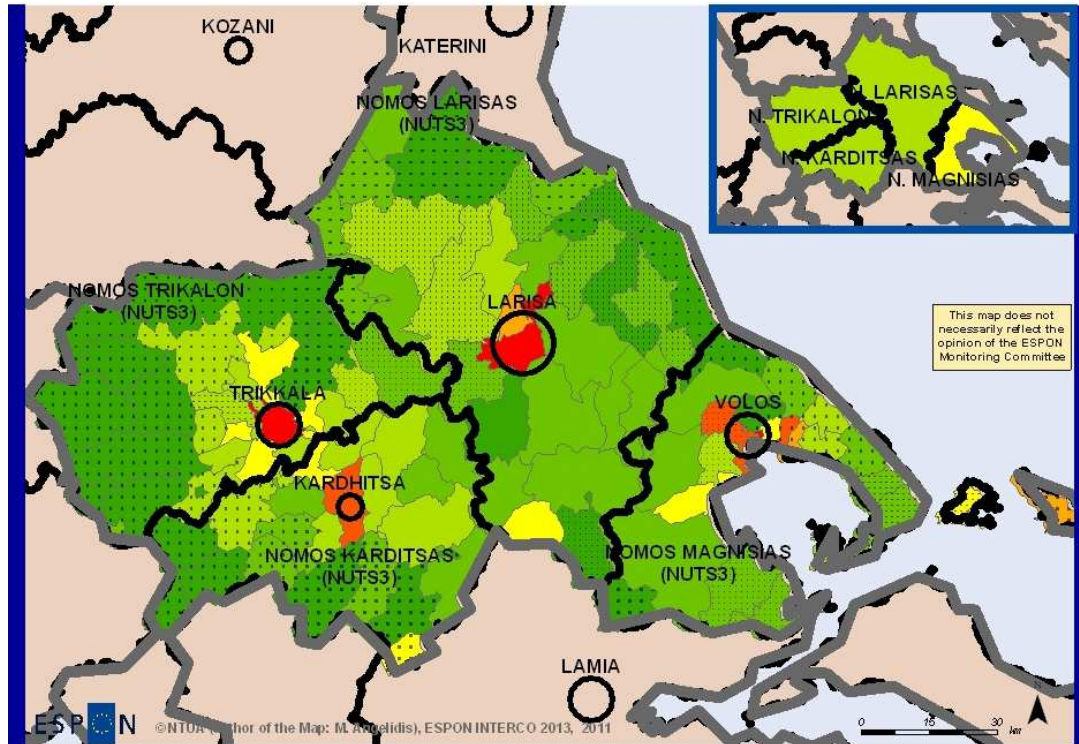
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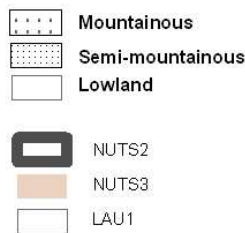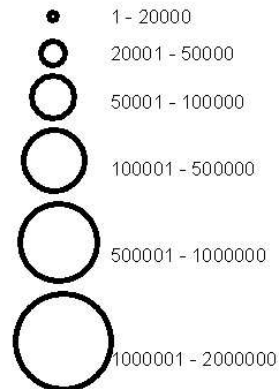
Map 3.2.4: Thessalia region: NUTS-3 (prefectures) and LAU1 population density 2001, Functional Urban Areas (FUAs) population 2001

Source of data: Eurostat and NSO of Greece

The LAUs with the higher densities are Larisa (1076) and Trikala (830) which are not located in the NUT-3 region with the highest density (Magnesia); the lowest densities are found in Aspropotamos (1) and Athamanes (3) which are characterized also by high unemployment rates. These substantial differences wouldn't be evident without an analysis on LAU level.

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3.2.5. Population growth

As it results from the *Map 3.2.5* (see also the Map 1.2.1), the disparities on population change among the urban and rural and the mountainous / lowland areas of the region are very clearly presented through the LAU-1 level analysis.
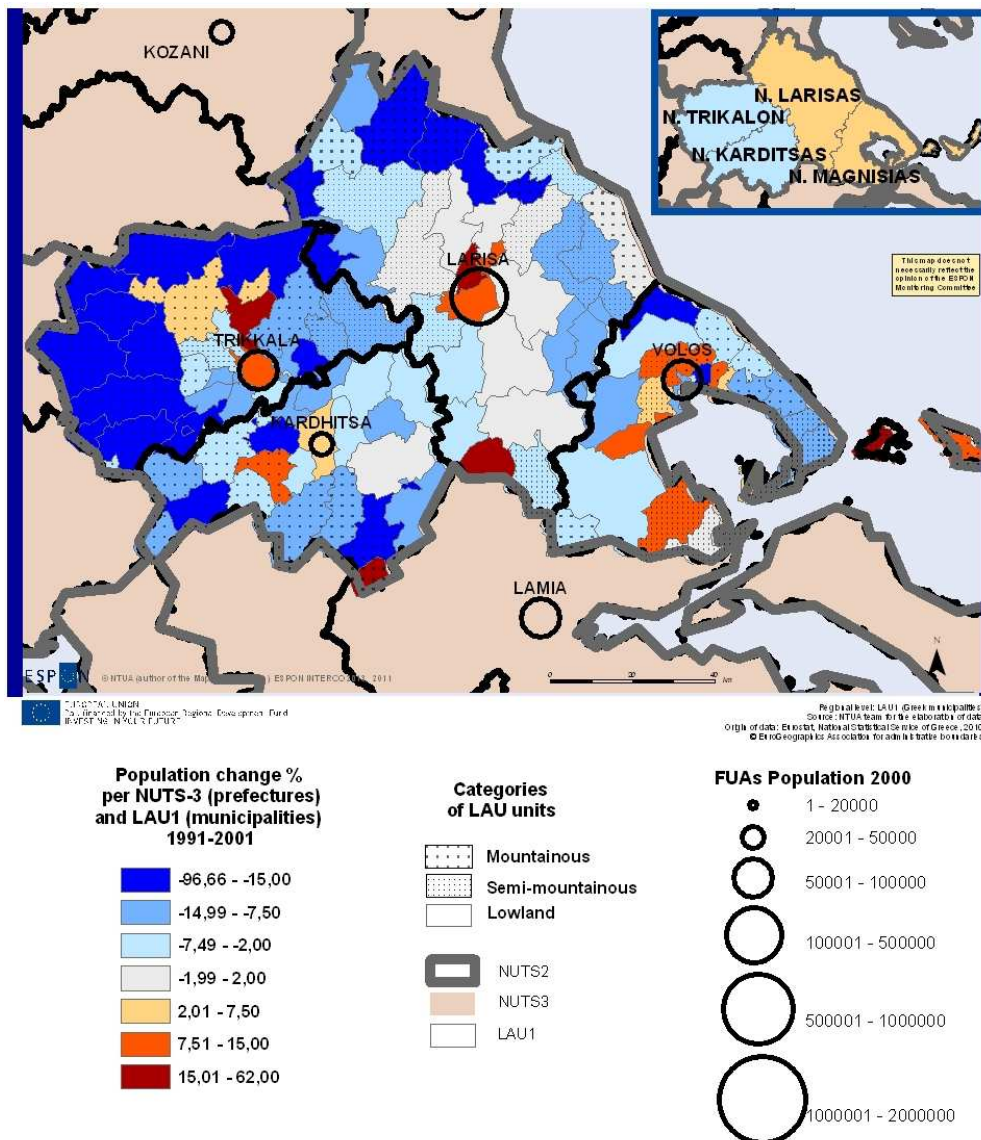
Map 3.2.5: Thessalia region: Population change % 1991-2001 per NUTS-3 (prefectures) and LAU1 (municipalities): mountainous, semi-mountainous, lowland

Source of data: Eurostat and NSO of Greece, author: M. Angelidis

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3.2.6. Income

Households' income is a crucial parameter of the inclusion dimension of TC.

We have used data on the average income (in Euros) declared by households before taxes) for the year 2003 at NUTS-3 and LAU-1 level of Thessalia. The data are provided by the Greek ministry of Economy. The Ministry provides data online at postcode level for the years 2000 to 2003. It is possible to acquire data for the years 2004-2009 after specific request.
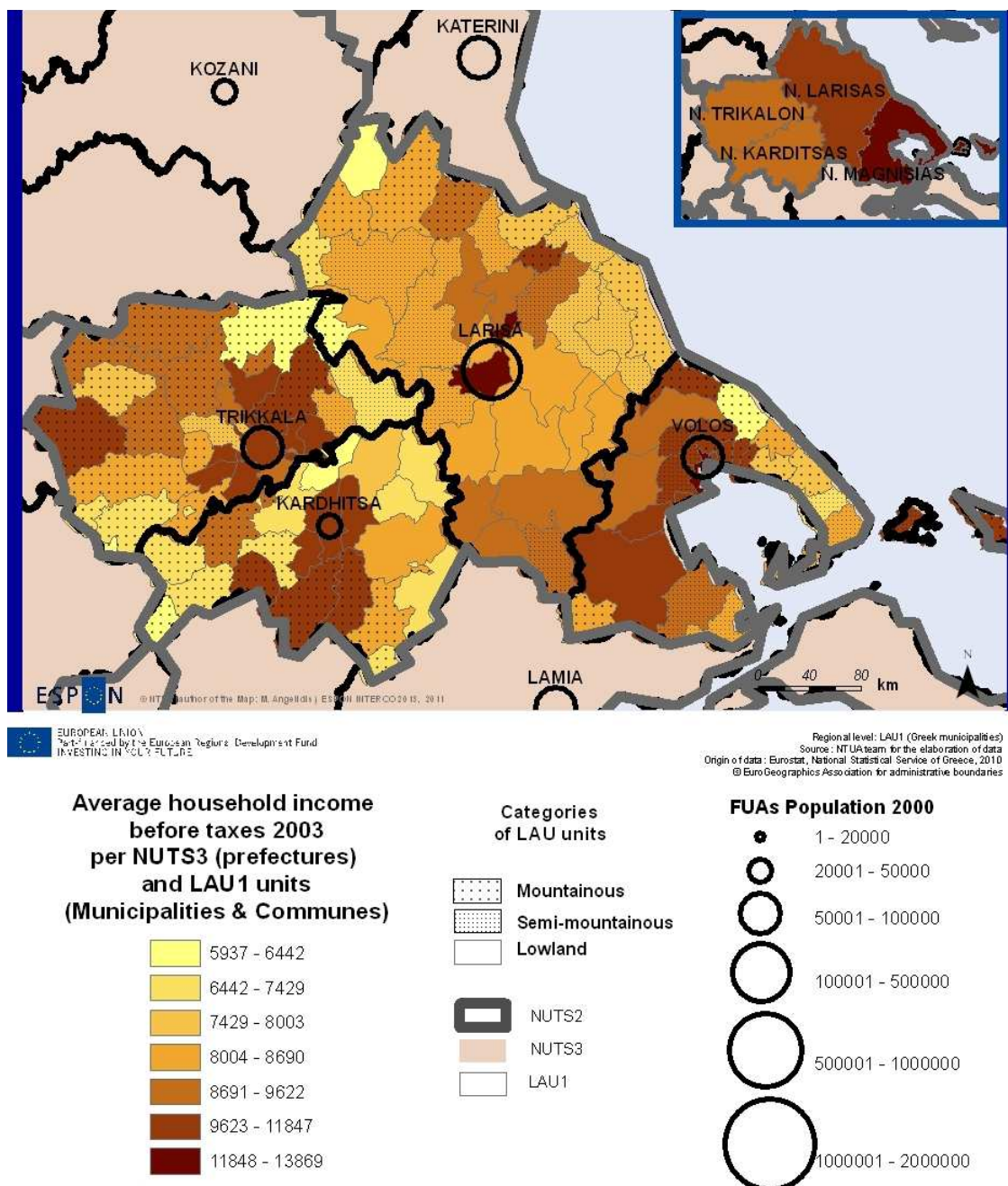
Map 3.2.6: Thessalia region: Average household income before taxes in Euros in NUTS-3 (prefectures) and LAU1 (municipalities): mountainous, semi-mountainous, lowland

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As it results from the *Map 3.2.6*, the disparities on average household income among the urban and rural areas of the region are very clearly presented through the LAU-1 level analysis. Disparities among mountainous / lowland areas are not so clear in this case for different reasons; for example, the high development of tourism in the eastern coastal area of Thessalia (Mount Pelion) which is mountainous explains to a considerable degree the higher level of income in comparison with the other mountainous parts of Thessalia.

We will further analyse the variation of this indicator at NUTS-3 and LAU level for the INTERCO Final Report.

4. Geographical specific indicators in the case study: searching for "native" indicators

In the section 2 we have presented the indicators for which there are available data for the case of Thessalia at LAU level. This refers to data published by GSA –which can be found in Greek online directly or online in .pdf format.

However, it is possible to have data for other indicators, for instance migration, using a procedure of specific request to the GSA. These data correspond to the censuses of 1991 and 2001.

Also, as we have stressed in section 2, it is possible to have at LAU-1 level the values for the following indicators: median disposable annual household income, at persistent risk of poverty rate, electoral participation and NATURA 2000 area (Share of Natura 2000 area in %), but the harmonisation of the respective values with LAUs of other ESPON countries is difficult, because the implementation of the definitions of these indicators made by each ESPON country is probably different.

Finally, it should be stressed that datasets useful to measure crucial National and EU concepts at a local (LAU) level in Thessalia regarding for instance business development or tourism activities are provided and regularly updated by NUTS-3 level Chambers.

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5. Key findings and conclusions

The case study area of Thessalia (Greece) is a NUTS-2 region and corresponds to four NUTS-3 units. It includes two relatively large cities: Larissa and Volos, and two medium sized cities: Trikala and Karditsa. Volos is centre of an Intermediate region, close to a city while the three other cities are centres of predominantly rural areas, according to the ESPON urban-rural typology.

While a large part of Thessalia is lowland, there are important in extent mountainous areas as well as coastal areas and islands.

The primary sector of the region while declining continue to be important at national level; the formerly considerably developed industry of the two bigger urban centres has strongly declined during the last thirty years, while the development of services and construction has partly compensated the losses of jobs in the region. Tourism continues to develop in the coastal area and even more in the islands of the region.

All these trends are typical for the Greek regions and to a considerable extent to the southern regions of the ESPON space.

The analysis, using several types of statistics of variation (min / max, mean (average), standard deviation and coefficient of variation) at LAU level (municipalities in this case) has shown larger gaps between LAU units than NUTS-3 regions as all the ranges of results at LAU level for all of the feasible TC indicators used (unemployment rate, employment rate, rate of the tertiary educated people, population growth and ageing, population density and income) were larger than the ones registered by NUTS-3 figures. The coefficients of variation (which is the more appropriate statistic for this issue) are clearly higher at local level, implying therefore a broader level of complexity of the indicators at this level.

The analysis at LAU level displays important disparities in respect of all the ESPON **territorial typologies** (applying to the region) and all the indicators used. **Rural** LAU population decreases strongly while the **urban** LAU one is stable or increase; the ageing and unemployment rates of the first are clearly higher and rise faster; its rate of tertiary educated people is clearly lower. Similar disparities are revealed when comparing the **mountainous** to the lowland population. It seems that the population of the **coastal** areas' and **islands**' LAUs –which are partly mountainous and rural- performs better than that of the respective comparable LAUs. Finally, the more intense **industrial decline** of the city of Volos explains to some extent its lower performance regarding population growth and structure.

Figures at local level were also able to illustrate strong **disparities inside single NUTS-3 regions** depending on its settlement structure. For instance, the economy of the western part of the NUTS-3 region of Trikala collapses because it is mountainous but also because it lacks small cities and the centre of the NUTS-3 region is relatively week.

The analysis at a local level also allowed us to identify that local areas which performs weaker as for some important dimensions of Territorial Cohesion are not exclusively

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restricted to peripheral or rural sparsely populated areas but on the contrary are also found around major urban centres: for instance LAUs with very high unemployment rates are found in the immediate neighbouring areas of Larissa and Volos; the unemployment rate of these LAUs surpasses the respective rates for the mountainous and very sparsely populated LAUs of Thessalia. It was also found that average regional figures are unable to show exceptional local situations.

It should also be stressed that datasets useful to measure crucial National and EU concepts at a local (LAU) level in Thessalia regarding for instance business development or tourism activities are provided and regularly updated by NUTS-3 level Chambers.

Regarding specifically the **data availability and quality for the INTERCO headline indicators at local (LAU) level**, the results for the case of Thessalia was in general terms satisfactory. There are data at LAU level for Thessalia for a considerable number of INTERCO headline indicators (13 out of 27). However, for four indicators (income and poverty, NATURA 2000 and electoral participation), the harmonisation of the respective values for all the case studies is very difficult, because the implementation of the definitions of the respective indicators made by each EU country are probably very different. To a smaller extent, this is the case even for indicators such as unemployment and employment where the definitions used for the elaboration and publication of the national censuses data at LAU (local) level until the 2001 census round differ slightly from those used by Eurostat. Therefore, as a respective policy recommendation, Eurostat should emphasise on the harmonisation of the definitions used for the "local" INTERCO headline TC indicators that we have mentioned, with emphasis in the national census rounds.

As a general conclusion, the study of the Thessalia case has demonstrated that "really territorial" aspects of cohesion could not be appropriately analysed using indicators at NUTS-3 level. The use of local indicators at LAU level could be very useful by complementing the latter analyses.

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ESPON

INTERCO
Indicators of territorial cohesion

Scientific Platform and Tools Project 2013/3/2

Annex 8

TERRITORIAL COHESION INDICATORS
FOR WESTERN BALKANS AND TURKEY

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December 2011

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Abbreviations

GDP: Gross Domestic Product
NUTS: Nomenclature of Territorial Units for Statistics

Countries
CC: Candidate Countries
PCC: Potential Candidate Countries
WB: Western Balkans

EU-27: 27 Member States of the European Union

AL: Albania, BA / FBiH: Federation of Bosnia and Herzegovina, HR Croatia,
ME: Montenegro, MK: FYROM / the Former Yugoslav Republic of Macedonia,
RS: Serbia, TR: Turkey, XK: Kosovo under UNSCR 1244/99

See for the abbreviations of EU-27 countries in Eurostat website.

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Executive summary

The working paper refers to: (a) the **Candidate Countries (CC):** Croatia, FYROM, Montenegro and Turkey: They have adopted the NUTS classification (b) the **Potential Candidate Countries** (PCC): Albania, Bosnia & Herzegovina, Serbia and Kosovo under UN Security Council Resolution 1244.

(1) Objective of the research

Objective of our research is to **assess the availability and quality of data for the indicators which reflect better the territorial cohesion in the Western Balkans countries and Turkey.** Thus, interested stakeholders could extend their territorial analyses in these countries, at least for the main facets of territorial cohesion.

We assessed the availability and quality of data for a large number of TC indicators. Now when the list of headline and core TC indicators is defined we can advance to a more in depth assessment based on these indicators.

We have implemented the following methodological steps:

- We have examined **the NUTS / LAU classification in the CC/PCC** (see in section 2)

- Next, we have commented the **feasibility of the INTERCO headline / core and final indicators** of different kinds as for the **data availability** in the CC / PCC (section 3)

- Then (in section 4) we have produced a **general overview of the development of the CC/ PCC in the European frame on the basis of existing literature** and we have analysed the different TC dimensions at country (NUTS0) and macro (overall CC/ PCC) levels

- Next, **we have used these indicators for the analysis of the territorial cohesion pattern in these countries** at NUTS-2 level and NUTS-3 level, the latter being more "territorial" (section 5). This exercise enabled us to **test the effectiveness of these indicators**

- Thus, finally (section 6), we have produced **conclusions** on the TC in CC/PCC, on the effectiveness and the gaps of the methods of exploitation of TC indicators used. We have also proposed recommendations to interested stakeholders on the appropriate improvement of their work on territorial data on these countries.

(2) NUTS / LAU classification in the CC / PCC

In the frame of the ESPON 2013 Database-1 project, in order to ensure a sound comparability **of data of the CC/PCC which have not adopted the NUTS classification**, the existing administrative units of these countries have been classified at different territorial levels in **"similar NUTS"** territorial units.
For this purpose the **criterion of population potential** of the EU NUTS classification has been used as well as the **overall structure of government** in these countries **with focus on the power of the respective regional and local authorities** and the **main features of territorial development** in each administrative level per country.
The "similar NUTS" divisions correspond almost fully with the respective divisions for the EU countries.
In the frame of INTERCO, we have checked the above classification and made necessary modifications and additions to the reasoning for the classification.

(3) Feasibility of "headline" / "core" and final indicators[1] as for the data availability in the CC / PCC.

We should first remind that ESPON 2013 Database-1 project has, in general terms, **focused on the NUTS3 level.** However, it referred only to some **"basic"** indicators at this level: GDP in Euros and GDP in PPS, area, total population, population density, population age pyramid, population by sex, crude birth rate, crude death rate, migration, natural Growth rate, active population, unemployment.

Following the scope of the entire INTERCO project, we have focused in the case of CC/PCC on a much larger range of indicators then the "basic". This range includes the **"headline" / "core" and final indicators** (see the previous footnote) which are defined by the "selection of indicators" task of INTERCO. Specifically, **we have assessed the feasibility of the above** as for the availability and quality of relevant data.
The latter data assessment showed that there are **available data at sub-national level** (NUTS2 or NUTS3 –which could be aggregated at national level) only for 9 **headline indicators** and for 5 others there is data **only at national level.** There is also data at national and / or sub-national level for the limited number of core indicators which have been examined. Finally, there are data **at sub-national level** only for 7 "final" indicators.

Data sources:
The data for **Croatia, FYROM and Turkey** are mostly from Eurostat, but data from NSO and other sources have also been added. For Montenegro and the **PCC**, Eurostat provides data only at NUTS0 level – therefore, additional data should be used from the National Statistical Organizations (NSO) and other sources. In general terms, for a number of headline indicators there are for the PCC only data at NUTS0 (country) level.

(4) Territorial cohesion trends at the macro level (overall CC/PCC) and the country level

The literature review which is mainly based on **country level (NUTS0) data** for these countries, has shown that the respective **Territorial Cohesion (TC) pattern in the CC/ PCC differs considerably from that for the EU-27.**
The EU-27 space could be divided in general terms regarding TC in **three distinct patterns":** those of the EU "Northern" countries, the "Southern" countries and "Eastern" countries. The CC/ PCC: W. Balkans and Turkey, could be reasonably associated to a **fourth territorial cohesion pattern**, the TC indicators of which are in general lines "worse" than the indicators of the "Eastern" countries, regarding all the TC "dimensions" examined: competitiveness, inclusion, environment quality, energy, connection and territorial structure.

(5) Analysis of territorial cohesion in the CC / PCC on the basis of feasible headline indicators - effectiveness of these indicators

In this section we have analysed in more detail TC in the CC/ PCC on the basis of both national and sub-national level (NUTS2-NUTS3) data as a major objective of our re-

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[1] The list of the "final" indicators (or "top" indicators) of the project has been developed very recently. Furthermore, the list will be really "final" after the submission of the dFR and the comments of the ESPON CU. So we have taken it into account as much as it was possible. We will take it into account fully towards the Final Report.

search is exactly to see **how the TC pattern of the CC/ PCC at the sub-national level differs from the respective pattern at national level**.
Because the respective data are scarce, we have examined only six indicators: three indicators of the TC dimension "competitiveness": GDP rate per capita, regional GDP dispersion and unemployment and three indicators of "inclusion": ageing index (people aged 65+/ total population), life expectancy at birth and population density.

We have specifically examined several types of indicators of variation (min / max, mean (average), standard deviation and coefficient of variation) at national (NUTS0) and sub-national level and examined how these statistics reflect the inequalities regarding TC.

(6) We concluded that the TC pattern in the CC/PCC differs clearly from that of the EU-27, while it is close to that of the EU east. However it differs from this last as for several aspects of TC dimensions. The pattern of inequalities by issue at national level differs considerably from that for the sub-national level.

While the results taken from the exploitation of the TC indicators go further than the existing literature, important weaknesses remain regarding the weights of the impacts of the different TC aspects to each TC dimension and to the "global" TC in these countries.

1. Introduction and methodological remarks

The CC / PCC[2]

This working paper examines territorial cohesion indicators in the *Western Balkans countries and Turkey*.

Western Balkans countries and Turkey are *Candidate Countries (CC)* or *Potential Candidate Countries (PCC)*. Specifically:

According to the overall enlargement strategy of the EU document adopted by the Commission on 8.11.2006 (http://ec.europa.eu/enlargement/countries/index_en.htm) *Croatia* and *Turkey* are *Candidate Countries*. In December 2005, the European Council granted the *Former Yugoslav Republic of Macedonia (FYROM)* the status of a *Candidate Country*; The European Council of 16-17.12.2010 agreed to give *Montenegro* the status of *Candidate country*; accession negotiations with the latter two countries have not started.

The statistics of Montenegro are not fully adapted to the EU statistics rules as it is the case for Croatia, FYROM and Turkey. They adapt gradually to these rules. Thus, in some of the following parts of the paper, we have included Montenegro in the Potential CC.

Albania, Bosnia and Herzegovina and Serbia including Kosovo (Under UN Security Council Resolution 1244) are *Potential Candidate Countries*: See in more detail in the 8.11.06 document and the corresponding following documents.

Objective of the research and methodological steps

In the frame of the **INTERCO project** we are interested to assess the availability and quality of data **for the indicators which reflect better the territorial cohesion in the Western Balkans countries and Turkey.** Thus, interested stakeholders could extend their territorial analyses in these countries, at least for the "headline" facets of territorial cohesion.

Specifically:

- We have examined shortly **the NUTS / LAU classification in the CC/PCC and the availability of a set of "basic" data in these countries.**

- Then, we have prepared a set of **hypotheses on the trends and driving forces of territorial cohesion in the CC / PCC on the basis of existing literature.**

- Next, we have assessed the **feasibility of "headline" / "core" and "final" indicators** of different kinds **for the case of CC / PCC.**

- Then we have **used these indicators for the analysis of territorial cohesion in these countries.**

- This exercise has enabled us to **test the effectiveness of these indicators**

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[2] A first version of this paper was submitted to the LP on June 2011, therefore it has taken into account the priority indicators selected at this time ("headline" and "core"). In this updated version we have taken into account as much as possible the latest selection of "final" indicators

• Thus, finally, we were able to propose **recommendations to interested stake-holders** (ESPON, DG Regio, Eurostat, CC / PCC NSOs) on the **appropriate improvement of their work on territorial data on these countries.**

Territorial cohesion indicators to be examined

In the frame of INTERCO[3], we have worked on a set of indicators *which reflect better territorial cohesion in CC / PCC.* As such indicators, we will use those which are defined by the "selection of indicators" task of INTERCO.

Specifically, we have used:

(a) The INTERCO **"headline"** indicators as well as a limited number of **"core"** indicators -see in the respective section of the INTERCO Interim Report.

Headline indicators are indicators (around 20) that have the highest explanatory power and the highest relevance for the issues and policies at stake -see in the Annex 2. **Core indicators**: these indicators complement the headline indicators in the analysis of the main issues and policy objectives. These indicators were identified as very important either in the policy documents, or by the participants of the INTERCO workshops or by the expertise of the INTERCO team.

(b) A number of the INTERCO **"final" indicators** which are not included in the list of the "headline" and "core" indicators[4]. The list of indicators was not fully finalised during the progress of this working paper. They will be fully taken into account for the Final Report. See in detail in the section 3.1.2.

2. The NUTS / LAU classification in the CC / PCC

2.1. General assessment

In order to be able to work on the above indicators and the respective data, we have used the **EU NUTS / LAU classification** per country (Eurostat RAMON NUTS classification 2011). For the cases of the CC / PCC where such classification does not exist, we have used a respective appropriate classification. The ESPON 2013 Database -1 project has created a relevant classification which has been used in INTERCO as a starting point.

In more detail:

In the frame of the ESPON 2013 Database -1 project, In order to ensure a sound comparability of data of the CC and PCC which have not adopted the NUTS classification, the existing administrative units of these countries have been classified at different territorial levels in **"similar NUTS"** territorial units.

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[3] The ESPON 2013 Database -1 project has done an in depth assessment of the availability and quality of data in the CC/PCC (Angelidis et al 2011). However, this referred only to some "basic" indicators –as these were defined in the frame of this project. Therefore, we have used some parts of this analysis, although we have extended it in order to cover a much more important number of indicators.
[4] We underline that in the first phase of INTERCO (towards the Inception Report) we had assessed the availability and quality of data for a larger number of indicators. See the respective Tables attached to the INTERCO Inception Report.

For this purpose the **criterion of population potential** of the EU NUTS classification has been used as well as the **overall structure of government** in these countries **with focus on the power of the respective regional and local authorities** and the main **features of territorial development** in each administrative level per country.

The implementation of this method ensured that the "similar NUTS" divisions correspond almost fully with the respective divisions for the EU countries.

While ESPON 2006 Database as well as several relevant to the CC / PCC studies in the frame of ESPON 2006 focused mainly on NUTS2 data, ESPON 2013 Database project has, in general terms, extended the scope of the Database to NUTS3 level data. In this line, the work on CC / PCC in the last project focused on the NUTS3 level.

The ESPON INTERCO project aims to highlight the territorial aspects of cohesion through the use of appropriate indicators; therefore it should focus on the NUTS-2 and even more on the NUTS-3 level for the case of the CC / PCC. Indicators at LAU level, which is even more appropriate level for TC, are examined in the frame of INTERCO only through case studies – see in the main Report of the dFR.

Therefore, in the frame of INTERCO, we have checked the NUTS classification used in the ESPON 2013 database project. Only a few new developments which are of minor importance on this issue which have occurred from 2010 until now or complement the discussion on the definition of "similar" NUTS for some PCC have been added: (a) in the case of Montenegro, the correspondence of one NUTS-3 unit to the NUTS-0 (country) area have been consolidated as "official" after the status of candidate country has been granted to Montenegro (see in Eurostat RAMON NUTS 2011) (b) proposals made for the division of the Republic of Srpska of Bosnia and Herzegovina in NUTS-3 units.

We present in the *Map 2.1.1* the overall division of the CC/PCC in NUTS-2, 3 and Similar NUTS-2, 3 units.

Map 2.1.1: NUTS-2 and 3 units of the Western Balkans countries and Turkey (CC/PCC)

We present in extent the definition of this classification according to the Eurostat RAMON NUTS 2011 in Annex 1.

In section 2.2, we discuss in more detail the specific to each candidate / potential candidate country features of this classification.

2.2. Specific features for the administrative divisions / territorial levels per country

Albania

Spatial units' levels:

The ***total population of the country*** amounted up to ***3.170.000 inhabitants*** in ***2008*** (Eurostat 2010).

Albania is divided into 12 prefectures (counties, Albanian: official qark/qarku, but often prefecture / prefektura), 37 districts and 351 municipalities.

Albania's prefectures could be assimilated to NUTS3 - Map 2.2.1 (AL).

There is not an official territorial division which could be assimilated to *EU NUTS2 division*. Several scenarios are now examined in the context of the EU – Albania collaboration.

Map 2.2.1 (AL): Albania similar NUTS2 and 3 units, Population per similar NUTS3 2001
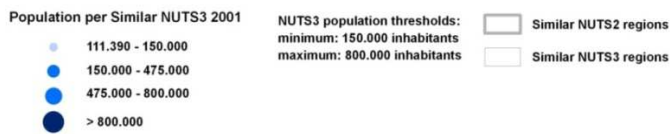
Bosnia and Herzegovina

Spatial units' levels:

The ***total population of the country*** amounted up to ***3.843.000 inhab.*** in ***2008*** (Eurostat 2010).

Bosnia and Herzegovina is divided into three entities*: Federation of Bosnia and Herzegovina (FBiH), Republic of Srpska (RS), and Brčko District*, which was established in 2000 out of land from both entities (It officially belongs to both, but is governed by neither, and functions under a decentralized system of local government).

The ***"similar NUTS2 level"***:

According to the respective population criterion: 800 000 - 3 million inhabitants, both FBiH and RS could be assimilated to NUTS2. Regarding also the administrative power / capacity criterion, these units could be assimilated to NUTS2. However, evidently, in the case of Bosnia and Herzegovina, the political criterion would be taken primarily into account, therefore even Brčko District could be assimilated to NUTS2.

The ***"similar NUTS3 level"***:

FBiH is divided in **10 cantons** -*Map 2.2.2 (BA)*- and 79 municipalities; Republic of Srpska has 62 municipalities; City of Brčko is a separate administrative unit - District.

The 10 cantons of FBiH could be assimilated to NUTS3.

For the RS there is not official division in NUTS-3 units. There are two main approaches of this division: (a) The division proposed by the Institute of Statistics which admits six counties: Banja Luka, Doboj, Bijeljina, East Sarajevo, Foca and Trebinje (b) The proposal of the Spatial Plan of Republic of Srpska, adopted in 2007 which emphasizes the necessity of establishing regional policy and proposes accordingly the division of the country into the following NUTS-3 units: Prijedor, Banja Luka, Doboj, Bijeljina, East Sarajevo and Trebinje (see, among others, in Mutabdzija 2006).

Map 2.2.2 (BA): Bosnia and Herzegovina similar NUTS2 and 3 units, Population per similar NUTS3 2001

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Croatia

Spatial units' levels

The **total population of the country** amounted up to **4.456.096 inhab.** in **2011** (NSO of Croatia – First results of the population census of 2011)**.**

- Croatia has already adopted the EU NUTS (1, 2, and 3) classification as follows:

NUTS 1: Country (Hrvatska), NUTS 2: Regija (3), NUTS 3: Counties / Jupanija (21).
See in the **Map 2.2.3 (HR)**.

Map 2.2.3 (HR): Croatia NUTS2 and 3 units, Population per NUTS3 2001

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FYROM

Spatial units' levels

The **total population of the country** amounted up to **2.045.000 inhab.** in **2008** (Euro-stat 2010).

FYROM has already adopted the EU classification of spatial units in NUTS; by level:

NUTS 1 and NUTS 2: Country, NUTS 3: Eight (8) Statisticki Regioni / Statistical Regions – See in the **Map 2.2.4 (MK).**
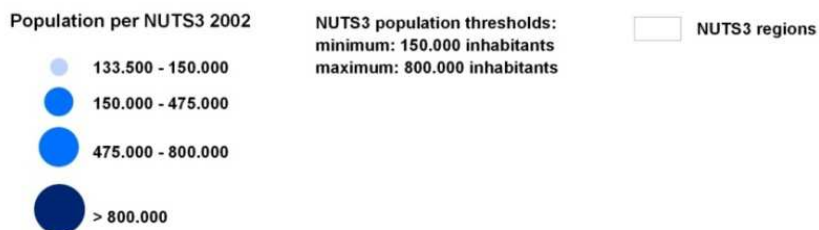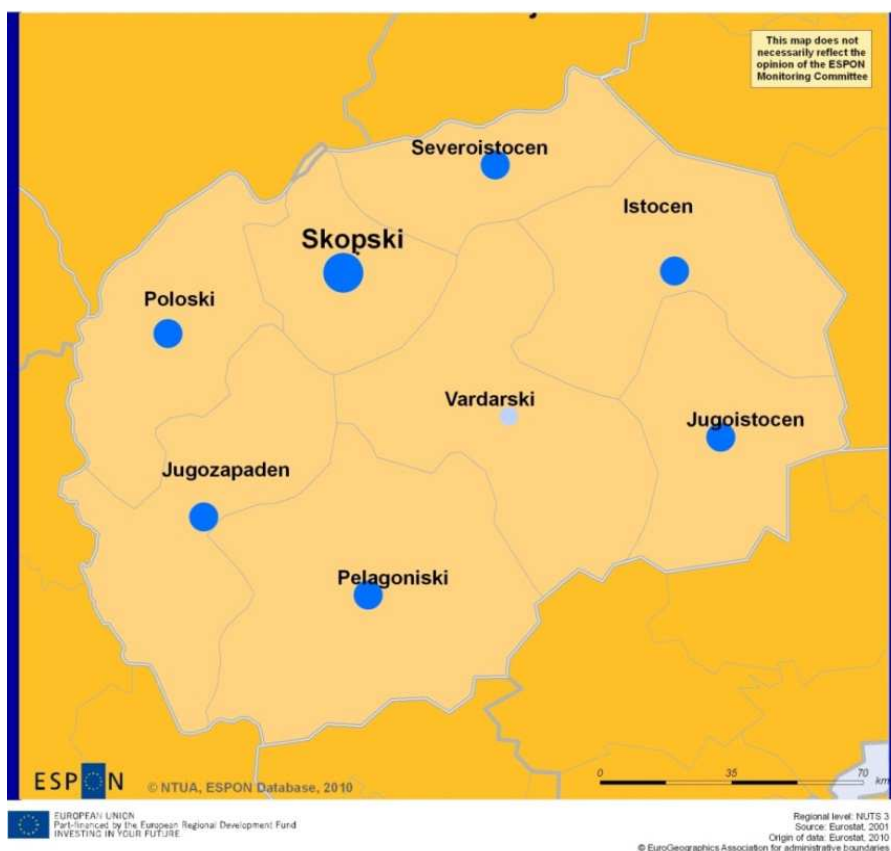
Map 2.2.4 (MK): FYROM NUTS2 and 3 units, Population per NUTS3 2001

Serbia

Spatial units' levels

The **total population of the country** amounted up to **7.120.666 inhabitants** in **2011** (NSO of Serbia – First results of the population census of 2011).

The "similar NUTS3" level

Serbia is divided into two parts: the **Central Serbia** and the autonomous province of **Vojvodina** and further into **24 districts** (excluding Kosovo) plus the **City of Belgrade**.

The districts and the City of Belgrade are further divided into 157 municipalities – See in **Map 2.2.5 (RS)** (the "similar NUTS2" divisions in the Map do not correspond to the recent official division of the Serbia territory in NUTS2 units –see in next)

- Districts could be reliably assimilated to NUTS3

The "similar NUTS2" level

According to the recent available documentation (to be used with caution)

(Wikipedia http://en.wikipedia.org/wiki/Statistical_regions_of_Serbia as of 10.1.2011)

Serbia is divided into **five statistical regions in accordance to NUTS 2**, which are in turn grouped **into two higher NUTS 1 statistical units (North and South)**.

In 2009, the Serbian parliament adopted the Law on Equal Territorial Development that formed seven statistical regions on the territory of Serbia. The Law was amended on 7 April 2010, so that the number of regions was reduced to five –see in **Figure 2.2.6 (RS).** The Eastern Serbia region was merged with Southern Serbia and Šumadija was merged with Western Serbia.

According to the above, the statistical regions and their NUTS codes are:

RS: Serbia

- RS1: Serbia - North
    - RS11: Belgrade
    - RS12: Vojvodina

- RS2: Serbia - South
    - RS21: Šumadija and Western Serbia
    - RS22: Southern and Eastern Serbia
    - RS23: Kosovo and Metohija

If we take into account the population criterion, the two Serbian provinces (plus, eventually, the City of Belgrade) could be assimilated to NUTS 2.
As we have mentioned, the statistical NUTS1 and NUTS2 regions created by the government in order to meet the NUTS criteria as well as the requirements of the EU regional policy, do not have actually a considerable administrative power; also, they are not self-governed entities. The political criterion prevailed for their creation.
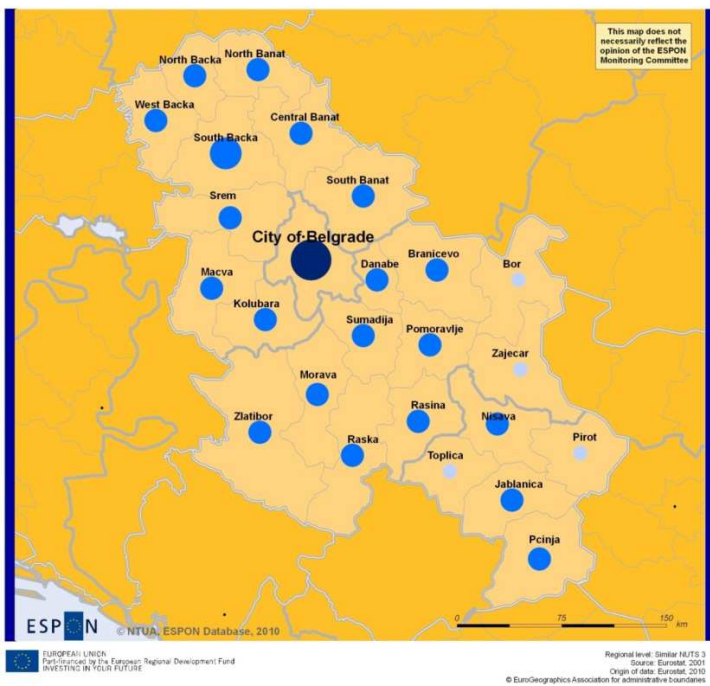
Map 2.2.5 (RS): Serbia similar NUTS2* and NUTS3 units, Population per similar NUTS3 2001

* Estimation in 2009, before the reform of 2010 –see in next
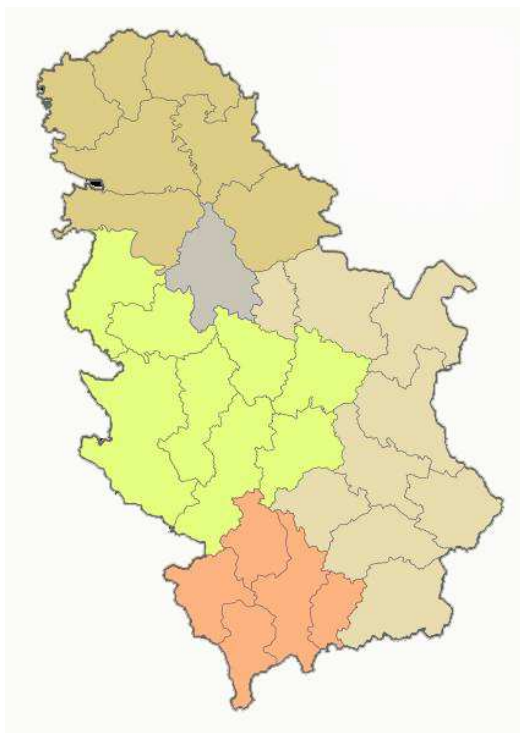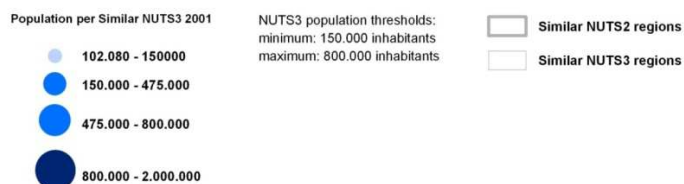
Figure 2.2.6 (RS): Serbia "similar NUTS2" according to the 2010 reform

Source: Wikipedia 2010

Montenegro

Spatial units' levels

The ***total population of Montenegro*** amounted in ***625.266 inhabitants*** in ***2011*** (NSO of Montenegro – First results of the population census of 2011).

As we have already mentioned, Montenegro has been recognised as candidate country at the end of 2010. In 2011 the country has been included in the Eurostat NUTS classification. In this frame, ***the total of the country corresponds to NUT1, NUTS2 and NUTS3 level – see in the Map 2.1.1.*** Obviously, it has been taken into account that according to the EU regulation limits for NUTS 3 spatial units their population should range between 150.000 and 800.000 inhabitants and only the municipality of Podgorica had more than 150.000 inhabitants (169.132) in 2003.

The country is divided in 21 *municipalities* which could be assimilated to *LAU1* level.

Kosovo (Under UN Security Council Resolution 1244)

Spatial units' levels

The ***total population of Kosovo*** amounted up to ***2.153.000 inhabitants in 2008*** (Eurostat 2010).

Republic of Kosovo is divided in **seven districts** and 30 municipalities.

According to the EU regulation limits for NUTS 3 spatial units their population should range between 150.000 and 800.000 inh; the population of more than the half of the Kosovo districts surpasses 150.000 inhabitants, therefore *the districts could be (difficultly) assimilated to NUTS 3 units.* Municipalities could be assimilated to LAU1 level.

Turkey

The ***total population of Turkey*** amounted in ***70.586.000 inhabitants*** in ***2008*** (Eurostat 2010).

Spatial units' levels:

Turkey, which has adopted the EU NUTS/LAU system, has:

- 12 NUTS1 units (Regions, BΦLGELER in Turkish),
- 26 NUTS2 units (Sub-regions, ALT BΦLGELER in Turkish) and
- 81 NUTS3 units (Provinces, ILLER in Turkish) –see in the ***Map 2.2.7 (TR).***
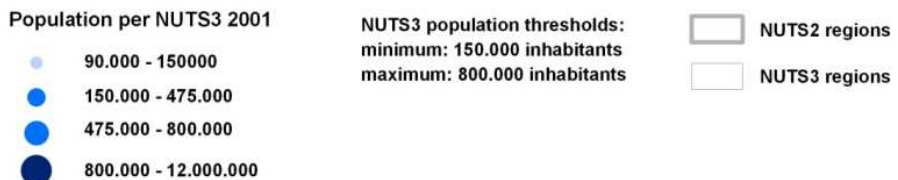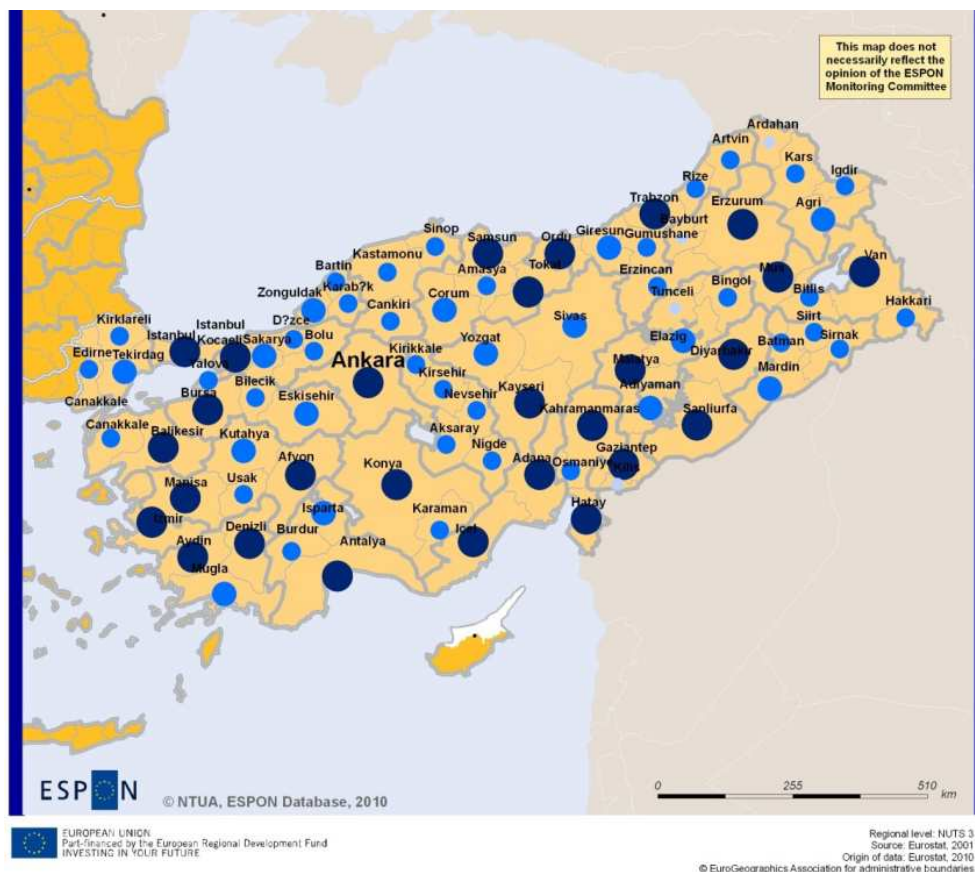
Map 2.2.7 (TR): Turkey NUTS2 and 3 units, Population per NUTS3 2001

2.3. Conclusions: Compatibility of "similar NUTS" divisions with the EU NUTS classification

Turkey, Croatia, Montenegro and FYROM have already adopted the NUTS classification.

For the rest WB countries, the results of the respective assessment per country, using the criteria of the population weight (formal criterion) together with the administrative capacity (informal criterion) -see for the methodology in the Introduction- ensured that the "similar NUTS" divisions used correspond almost fully with the respective divisions for the EU countries; Therefore, the "similar NUTS" could be used for the work on data without considerable problems.

3. Feasibility of the INTERCO headline / core and final indicators as for the data availability in the CC / PCC

3.1. General assessment

3.1.1. The ESPON 2013 Database-1 "basic" data / indicators

In line with the scope of the entire ESPON 2013 Database -1 project, the following **"basic"** themes and corresponding datasets which contain 132 indicators (themes x indicators per theme x years) for the CC/PCC have been elaborated and **integrated in the Database.**

- GDP in Euros and GDP in PPS
- Area
- Total population
- Population density
- Population age pyramid
- Population by sex

- Crude birth rate
- Crude death rate
- Migration
- Natural Growth rate
- Active population
- Unemployment

3.1.2. The INTERCO headline / core and final indicators

INTERCO approaches territorial indicators differently from the ESPON Database as it focuses on territorial cohesion ones.

In a first phase it considered the following five categories of indicators -see the Note on the criteria for the thematic selection of indicators (sent to ESPON CU on 11.5.2011) complementing the Interim Report- :

1. **Synthetic/composite (headline) indicators**, i.e. the simplification of several indicators into one single index summarising all the underlying dimensions of the issues and policies at stake (8 indicators);

2. **Headline indicators**, i.e. a limited number of indicators (31) that have the highest explanatory power and the highest relevance for the issues and policies at stake;

3. **Core indicators**: these indicators complement the headline indicators in the analysis of the main issues and policy objectives (28 indicators) -see in detail in the above mentioned Note.

4. **Analytical indicators**, i.e. a full set of indicators that provide additional insights for the issues and policies at stake;

5. **Other data** (that may once become indicators under different circumstances, i.e. if issues of interest or policy objectives are modified).

Assessment of the headline and core indicators

The TPG decided to focus in a first phase on the headline and core indicators for the entire ESPON space. **In the case of the CC/PCC, we focused in this first phase in the headline indicators** as in the case of the CC/PCC it is generally much more difficult to estimate the feasibility of core, analytical and other indicators as for the existence of relevant data –see in Table 3.1. Specifically, we have examined in depth only one of the **core indicators**: *population density* as it is very important and there are

available data at sub-national level. However, we have already done a first assessment of the availability of data for the CC/PCC for all core indicators (Table 3.2).

Table 3.1: INTERCO headline indicators

Thematic category name	Thematic sub-cat. nr	Thematic sub-category name	Indicator name	Data avail-ability * - na-tional level	Data avail-ability * - sub-national level
DEMOGRAPHY	2,01	Population Structure	Ageing index (persons 65+ / persons 0-14)	+	+ **
	2,01	Population Structure	Dependency rate		
	2,01	Population Structure	Life expectancy at birth	+	+ **
	2,01	Population Structure	Life expectancy		
	2,03	Total population	Population potential within 5 km		
	2,03	Total population	Population average annual growth	+	+ **
ENERGY	4,01	Energy	Share of renewable energy in final energy consumption and increase needed to meet the 20% target	+ *	
SOCIAL AND CULTURAL AFFAIRS, QUALITY OF LIFE	6,02	Education	High education population		
	6,02	Education	Share high educated population in percent	+ *	+ **
	6,02	Education	Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target (5th CR)		
	6,02	Education	Share of tertiary educated people in %	+ *	+ **
	6,03	Health	Healthy life expectancy (ESPON 3.2)		
	6,03	Health	Self-perceived personal state of health in EU Member States (5th CR)		
	6,04	Poverty	At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)	+ *	
	6,04	Poverty	Share of population living in workless or low work intensity households (5th CR)	+ *	
	6,05	Other social	Work-life balance in EU Member States (5th CR)		
	6,07	Quality of life	Happiness Index		
	6,07	Quality of life	Share of population reporting crime, violence or vandalism by degree of urbanisation (5th CR)		
ECONOMY, LABOUR FORCE	7,02	Employment, Unemploy-ment	Difference between female and male employment rates, 20–64	+ *	+ **
	7,02	Employment, Unemploy-ment	Employment rate change (growth)	+	+ **
	7,02	Employment, Unemploy-ment	Unemployment rate per age: classes of 5 years	+ *	+ **
	7,02	Employment, Unemploy-ment	Development of unemployment rate (male, female, young, total, 99-04)	+ *	+ **
	7,03	Income and Consumption	GDP per inhabitant (capita) in PPS or Euros, per year	+	

	7,03	Income and Consumption	GDP change per inhabitant (capita) in PPS or Euros	+ *	
	7,03	Income and Consumption	Median disposable annual household income		
	7,04	Investments, Finances and Expenditures	Public sector debt relative to GDP		
ENVIRONMENT QUALITY, NATURAL ASSETS, HAZARDS	8,01	Environment quality	NATURA 2000 area (Share of Natura 2000 area in %) (5th C.R.)		
	8,02	Natural assets	Consumption of water per capita		
GOVERNANCE	9,01	Governance	Electoral participation		
	9,01	Governance	WGI Index on voice and accountability		
NON - CROSS-THEMATIC DATA	99,01	Integrative indices and typologies	Intensity of multiple risks (number of challenges) for European Regions ("Regions 2020")		

* In some cases the definition of the data on CC/PCC differs to some extent from that of the EU-27 data
** Only for some CC / PCC

Table 3.2: INTERCO "core" indicators

Thematic category name	Thematic sub-cat. nr	Thematic sub-category name	Indicator name	Data availability * - national level	Data availability * - sub-national level
DEMOGRAPHY	2,03	Total population	Population density	+	+ **
	2,04	Urban - rural population	Urban - rural population in Europe based on national classification		
TRANSPORT, ACCESSIBILITY, COMMUNICATION	3,03	Accessibility	Potential accessibility to GDP by road		
	3,03	Accessibility	Potential accessibility to population by road		
	3,03	Accessibility	Time to the nearest motorway access		
	3,03	Accessibility	Travel time to railway stations		
ENERGY	4,01	Energy	Energy intensity of the economy		
	4,01	Energy	Renewable energy consumption		
SOCIAL AND CULTURAL AFFAIRS, QUALITY OF LIFE	6,02	Education	Early school leavers and distance to Europe 2020 target - 5th CR	+**	
	6,03	Health	Health expenditure per capita	+**	+**
	6,03	Health	Expenditure on health as part of GDP (national level)		
	6,04	Poverty	Number of homeless people as a proportion of total resident population		
	6,04	Poverty	Population suffering from severe material deprivation (% of total population)		
	6,07	Quality of life	Happiness and GDP per head		
	6,07	Quality of life	Homicide rate		
ECONOMY, LABOUR	7,01	Labour force	Labour productivity, gross domestic product as PPP per person employed	+	+ **

FORCE	7,02	Employment, Unemployment	Employment rate change %, 20–64 years, in certain time period and distance to Europe 2020 target		
	7,07	Innovation	% of households having broadband access	+	+ **
	7,07	Innovation	Human Resources in Science and Technology	+	+ **
	7,07	Innovation	GERD (Gross domestic expenditure on research and development)	+	+ **
ENVIRONMENT QUALITY, NATURAL ASSETS, HAZARDS	8,01	Environment quality	Residence density		
	8,01	Environment quality	Urban waste water treatment capacity		
	8,02	Natural assets	Share of areas with high ecological value		
	8,02	Natural assets	Dwellings connected to potable water system		
	8,02	Natural assets	% of green space per inhabitant		
	8,03	Climate change	Greenhouse gas emission	+	+ **
GOVERNANCE	9,01	Governance	Trust in the legal system (Share of persons having complete trust/ no trust at all in the legal system of a country)		
TERRITORIAL STRUCTURE	10,01	Urban structure	MEGA / Metropolitan European Growth Areas		

* In some cases the definition of the data on CC/PCC differs to some extent from that of the EU-27 data
 ** Only for some CC / PCC

We present in the **Table 3.4 of the Annex 2** (in Excel format) the available data on the CC/PCC **for the INTERCO headline and core indicators per theme, territorial level, time series and source.**

These data are coming from all available sources: **Eurostat, National Statistical Offices and other sources** and covers the years 2000 - 2010 (and fore some cases from 1995) and NUTS 0, 1, 2 and 3 or "similar NUTS" 1, 2 and 3 levels.

More specifically:

- For Croatia, FYROM and Turkey most of the data is from Eurostat, but other data has been added from NSO and other sources.

- For the rest CC / PCC, Eurostat provides data only at NUTS0 level –see in next; therefore, data from the National Statistical Organisations (NSO) and other sources has mainly been used. We remark that for the country (NUTS 0) level, Eurostat data for the CC / PCC cover a very wide range of themes as we have already seen in section 3.

Regarding the coverage rate of the CC / PCC per indicator, the situation varies considerably according to the country -see in Table 3.4 of the Annex 2..

Assessment of the "final indicators

See in the Table 3.3.

Obviously there are not available data for the CC/ PCC for a considerable number of INTERCO final indicators. See also in Table 3.5 of the Annex 2..

Table 3.3: INTERCO "final" indicators

Territorial objectives	indicator name	Data availability * - national level	Data availability * - sub-national level
Strong local economies ensuring global competitiveness	Labour productivity in industry and services		
	GDP per capita in PPP	+***	+**
	Overall unemployment rate	+	+**
	Old age dependency ratio	+	+**
Innovative territories	Population aged 25-64 with tertiary education		
	Intramural expenditures on R&D		
	Employment rate 20-64	+	+**
Fair access to services, market and jobs	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	****	****
Inclusion and quality of life	Disposable household income		
	Life expectancy at birth	+**	+**
	Proportion of early school leavers		
	Gender imbalances		
	Different female-male unemployment rate	+	+**
	Ageing index	+	+**
Attractive regions of high ecological values and strong territorial capital	Potential vulnerability to climate change (ESPON Climate)		
	Air pollution: PM10		
	Air pollution: Ozone concentrations	+*****	
	Soil sealing per capita		
Integrated polycentric territorial development	Population potential within 50 km		
	Net migration rate	+**	
	Cooperation intensity (number of common projects between partners, from ESPON TERCO)		
	Cooperation degree (the number of regions cooperating with each other)		

* In some cases the definition of the data on CC/PCC differs to some extent from that of the EU-27 data
** Only for some CC / PCC (usually: HR, MK and TR)
*** GDP per capita in Euros
**** Calculations are possible for some of the CC/ PCC
***** Total greenhouse gas emissions (CO_2 equivalent (1990=100)

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3.2 Analysis per country

Albania

Existing data at "similar NUTS3" level

(1) Official statistical data:

*Data at the level of **prefectures ("counties") / similar NUTS 3***:

- From the *population censuses of 1989 and 2001:*

(a) Population: total, distributions: per sex and age group, per education level

(b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary secondary and tertiary sector.

- From the housing census of 2001

The *Labour Force Survey of 2007* refers to the national level.

Moreover, some research about *population projections 2001-2021, gender perspectives, people and work and living conditions and inequality* exist only for national level or the level of regions (north, centre except from Tirana – Durres, South and Tirana – Durres).

Bosnia and Herzegovina

Existing data at "similar NUTS3" level

(1) Official statistical data:

Data at the level of 3 entities: Federation of Bosnia and Herzegovina (FBiH), Republic of Srpska (RS) and Brsko District.

- From the population census of 1991:

   (a) Population: total, distributions: per sex and age group, per education level

   (b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary secondary and tertiary sector.

- From the population official estimate 2008 (for the FBiH):
   Population per sex age etc, active population etc – see above.

- From the Labour Force Survey, carried out in 2007: total active population and its sex distribution, number of employed and unemployed persons, employment per primary, secondary and tertiary sector.

Data on the GDP exist for the FBiH and RS– at entity level.

Data at the level of cantons:

Population 2008 from the population official estimate 2008 –only for the FBiH.

(2) Data on land uses and environment -from CLC, UMZ.

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Croatia

Existing data at NUTS3 level

(1) Official statistical data:

*Data at **NUTS3 level**:*

- From the population censuses of 1991 and 2001:

    (a) Population: total, distributions: per sex and age group, per education level
    (b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary secondary and tertiary sector.
- From the population census of 2011 (provisional results): Population: total, distribution per sex
- From the population, *households and dwellings* census 2001 (31st March 2001).

(2) Data on land uses and environment -from CLC, UMZ.

Data at National level: Labour force survey -First Quarter of 2008.

FYROM

Existing data at NUTS3 level

(1) Official statistical data:

Data at the level of "Statistical Regions" / NUTS 3 (by aggregation of municipalities' data):

- From the population censuses of 1991 and 2002:

    (a) Population: total, distributions: per sex and age group, per education level

    (b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary secondary and tertiary sector.
- From the population, *households and dwellings* census 2002
- Specific surveys: labour force survey etc.

(2) Data on land uses and environment -from CLC, UMZ.

Serbia

Existing data at "similar NUTS3" level

 (1) Official statistical data:

Data at the level of municipalities and districts / similar NUTS 3 (by aggregation of municipalities' data):

-From the population censuses of 1991 and 2002:

(a) Population: total, distributions: per sex and age group, per education level

(b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary secondary and tertiary sector.

There also data on population (distribution per age, sex etc) from a very recent -2008- official estimate.

-From the population census of 2011 (provisional results): Population: total, distribution per sex at LAU (municipality) and NUTS-3 level

 (2) Data on land uses and environment -from CLC. There are data from CLC2006 but there are not data on UMZ (2009 documentation).

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Most of the data concerning censuses of the population and building, specific surveys etc are aggregated and published on the level of *municipalities (LAU1).*

Montenegro

Existing data at NUTS3 level

 (1) Official statistical data:

Data are available *mainly for the total of the country*

- From the population censuses of 1991 and 2003:
    (a) Population: total, distributions: per sex and age group, per education level
    (b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary, secondary and tertiary sector.
- For the education level, the available data exist only in the census of 2003.

(2) Data on land uses and environment -from CLC, UMZ.

Kosovo (Under UN Security Council Resolution 1244)

Existing data at "similar NUTS3" level (2009)

(1) Official statistical data:

Data at the level of districts / similar NUTS 3:

- From the population census of 1991 (only)

(a) Population: total, distributions: per sex and age group, per education level

(b) Active population (total, distributions: per sex), number of employed and unemployed persons, employment per primary, secondary and tertiary sector.

- No data available on GDP.

 (2) There are data from CLC 2006.

Data at national level:

Labour force survey 2002, Labour Market Statistics 2007

Turkey

Existing data at NUTS3 level

(1) Official statistical data:

- Data at **district level**:

From 1990 and 2001 censuses and from the *2008 Population Census which used the Address Based Population Registration System:*

Population by age group and sex, Age dependency ratio, City and village population, Sex ratio, Population density.

- Data from periodic results of households Labour Force Survey for Turkey, Urban and Rural regions (results of 1988 – 1999 terms, results of 2000- October 2007, results of November 2007 and after = Address Based Population Registration System)

 (2) There are data from CLC 2006

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3.3. Conclusions for all CC / PCC

Data availability at level NUTS 0

In general, it is very satisfactory for all CC / PCC; most of the data are provided by Eurostat, additional data are provided by the National Statistical Offices (NSO).

Specifically, existing data cover many aspects of all the TC dimensions / aspects (defined by INTERCO) except from "governance"

Data availability at NUTS2 and 3 levels

- It is in general very satisfactory *for **Croatia, Montenegro, FYROM and Turkey***. Data are fully comparable with the EU ones as these countries have adopted the NUTS classification. Available data from Eurostat cover at NUTS2 level a wide range of topics (see in the Annexes). They cover at NUTS3 level mainly the following aspects of TC dimensions:

- "Competitiveness" dimension aspects: economic accounts and labour market.

- "Inclusion" dimension aspects: demography.

Some additional data for specific topics are provided by the NSO of these countries.

- It is less satisfactory for the ***other Western Balkans countries*** (AL, BA, SR and XK); relevant data are provided by the NSO.

In more detail, at "similar NUTS3 level" of these countries:

(a) For the demography aspect of the TC dimension "inclusion" and the labour market aspect of the TC dimension" competitiveness", it is good only for some of them while for the rest it is nearly acceptable.

(b) For the rest TC dimensions / aspects, there are important differences according to the country. Concisely, availability is more satisfactory for Serbia, much less satisfactory for the other PCC.

The data assessment on the CC / PCC showed that there are **available data at subnational leve**l (NUTS2 or NUTS3 –which could be aggregated at national level) only for **nine headline indicators** and **seven "final" indicators**.
ageing index, life expectancy at birth, population average annual growth, share high educated population in percent, share of tertiary educated people in %, difference between female and male employment rates, employment rate change, unemployment rate per age, development of unemployment rate.

For 5 other indicators there is data **only at national level**:
Share of renewable energy in final energy consumption, population at persistent risk of poverty (rate), share of population living in workless or low work intensity households, GDP per capita in PPS or Euros, GDP change per capita.

See in the **Annex 2.**

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4. Territorial cohesion in the CC/PCC at macro[5] and country levels and per TC dimension

As we have already pointed out, we should approach the specific aspects of territorial cohesion in the WB and Turkey in the wider frame of the **territorial challenges** in EU and the **EU policies' territorial priorities** as these last are defined mainly by the Europe 2020 targets and the 5th Cohesion report policy recommendations.

In this section we followed several **methodological steps:**

We start with a **general overview of the development of the CC/ PCC –sub-section 4.1**- according to different sources (EU, World Bank, other publications). This **literature review** has focused on the above specific themes / issues. It is mainly based on **country level (NUTS0) data** for these countries for a large number of mainly economic development themes. We should remark that other literature uses data at different territorial levels but these data are generally older and refer only to a limited number of themes.

Approaching territorial development by different levels is of primary importance for both analysis and planning. Thus, in the **sub-section 4.2,** we try **analyse at higher levels: country (NUTS0) and macro (overall CC/ PCC) levels, the different dimensions of the TC.** We used statistical analyses included in the Eurostat "Pocketbook on candidate and potential candidate countries" 2010 (2011) (referred in next as "Pocketbook"). Both analyses (our work as well as this one of the "Pocketbook") have been based on recent Eurostat data for the CC/PCC at country level.

In the **sub-section 4.3** we will do **overall (synthetic) conclusions on the territorial cohesion trends at macro and country levels.**

The **conclusions** for these levels are used as **hypotheses** for the **section 5** which analyses TC at **the lower levels (NUTS2/NUTS3 and beyond)** of the CC/PC.
As we have already stressed, the more appropriate level for properly "territorial cohesion" analyses is the **sub-national level**: NUTS2/NUTS3 and beyond**.** NUTS3 level is clearly more appropriate for territorial analyses than NUTS level.

As the necessary data at this level for the CC/PCC are scarce, we will examine only a limited range of indicators: the headline indicators and a limited number of core indicators. **This work will enable us to define a different, more in depth pattern of TC in the CC/PCC.**

Further on, from the scope of INTERCO it is very important to just compare the "country (NUTS0) level" TC pattern with the sub-national level TC pattern for the CC / PCC. This comparison enhance the results of the other sections of the project which refer to the entire ESPON space.

In order to use in the latter analysis feasible indicators as for the availability of data at lower (sub-national) level, we have already presented the assessment of this availability in section 3.

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[5] Macro level = overall CC/PCC

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4.1. General overview of the development of the CC/ PCC in the European frame

During the '90, a reconversion process similar to this of the Eastern European countries was undergoing in the **Western Balkans countries**: transition to the market economy, slow but continuous integration to the global economy, shrinking of the agriculture and industry, raise of the service sector, important economic development difficulties accompanied for some of the WB countries with decrease of the population. In most cases, capital cities attracted population and activities at the expense of the smaller cities and the countryside.

Economic development, social structures and environment conditions in Western Balkans differ substantially from the EU space*. In 2008, GDP per capita - expressed in PPS- in most W. Balkans countries was lower than the half of the EU-27 average. Croatia has the higher rate (63, EU-27=100) while the rates of Turkey and FYROM were clearly lower (47 and 34, respectively). For the other CC/PCC we can use only GDP per capita in Euros -which is less appropriate for comparisons among countries. Compared to the value for FYROM which amounted in 2008 to 3.300 Euros per capita, the respective values for Montenegro and Serbia were higher: 4.720 and 4.220, respectively, while the value for the Bosnia and Herzegovina was lower -3.192- and those for Albania and Kosovo were much lower: 2.661 and 1.791, respectively[6].

The differences of the CC / PCC from the EU-27 countries as for the social and environmental features are also very important. If EU-27 could be divided into "North", "South" and "East" parts with decreasing competitiveness and, in more general, clearly different development patterns, the WB countries come under a fourth pattern with considerably lower level of development compared to the European "East". –see more details on this division in section 5.

S. Maric (2009) stresses that: "apart from geographic proximity, economies belonging to Western Balkan region have something in common – achieving worse economic performances in comparison to the countries of Central and Eastern Europe"[7]. From the same scope, P. Simic characterised the W. Balkans as a ***"European third world"***[8].

From 2000 to 2008, all the Western Balkans countries showed an impressive economic growth with annual real GDP growth rates between five and ten percent (Wunsch - Rappold 2010). "With some delay, the economic and financial crisis reached these states. The year 2009 marked a particularly strong reversal of the previous tendency. Croatia and Serbia, the largest economies in the region, showed a clear economic downturn of -5.8 percent and -3.0 percent respectively. Bosnia and Herzegovina (-3.4%) and Montenegro (-5.3%) were also hit strongly by the economic crisis" (ibid).

"The integration of the Western Balkans' financial sector into the global financial markets is limited, so that the immediate consequences of the financial crisis were hardly

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[6] Elaboration of Eurostat data by NTUA team
[7] Manic (2009) has also pointed out the lack of economic cohesiveness among the WB countries "represented by unenviable level of intra-regional trade seemed to be natural consequence of objective as well as subjective factors", as among others, the low level of cooperation among these countries.
[8] See in LIEIS 2005 (with reference to the contribution of P. Simic): "what tends to be forgotten or neglected in the West at large is the 'Third Europe' (tiers Europe), a 'European third world', beyond the periphery, which is euphemistically termed "South-East Europe" ".

felt in the region. However, by 2009 at the latest, the dramatic economic recession in the EU as the region's most important trade partner had a significant impact upon the small, mostly very open economies of the region…. [9] Since the economies in the region start from a low base level, a visible deterioration of the financial situation of the population and an increase in unemployment are highly likely. In 2009, the unemployment rate in FYROM reached 32.2 percent, in Bosnia and Herzegovina it climbed to 42.7 percent" (ibid).

The evidence and the conclusions on these issues which are included in the 5th Cohesion Report (EC 2010) as well as the results of our analysis of the respective indicators (see in next) corroborate the previous estimations.

Wunsch - Rappold 2010 has also stressed the need to limit existing structural differences in the WB "such as inflexible job markets, a lack of competitiveness, and insufficient infrastructure" as well as to change the prevalent growth model, which was excessively dependent on foreign capital, foreign trade and an increasing foreign debt. Further on, they have pointed out the necessity to develop and implement rapidly "a regional strategy for economic recovery and development, inspired by the "Europe 2020" strategy". The improvement of the regional cooperation and coordination could ensure the compatibility of the new strategy with existing national approaches.

According to the 5th Cohesion Report, the economy of **Turkey** "is a complex mix of modern industry, commerce and a traditional agricultural sector that still accounts for around 25% of employment. There is a strong and rapidly growing private sector and, while it remains a major participant in basic industry, banking, transport, and communications, the role of the State has been diminishing as the privatisation programme proceeds. The largest industrial sector, textiles and clothing, which accounts for a third of industrial employment, faces stiff competition in international markets…"

Real ***GDP growth has frequently exceeded 6% a year***, but has been interrupted by sharp declines in output in 1994, 1999 and 2001. Growth was particularly strong between 2002 and 2007 largely due to inward investment and IMF backing. GDP, however, declined in 2008 and 2009 as a result of the global recession"[10]. ***GDP per head in Turkey in PPS terms was less than half the EU average in 2006.*** Moreover, regional disparities in GDP per head are relatively wide, with the level well above the national average in regions in the West and well below in those in the East. The Istanbul region, which accounts for 20% of the total population (70 million), had a GDP per head in 2006 which was 70% above the national average, whereas in Van, on the Iranian border, it was almost 70% below the average. Between 1995 and 2005, GDP per head tended to increase by more in the regions with the lowest levels.

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[9] "Spillover effects triggered by the global economic downturn have become particularly manifest through decreasing exports and a lack of foreign direct investment. The decreasing demand for products originating from the Western Balkans has lead to a lower production level and a decrease in tax income" (ibid).
[10] "Despite the large current account deficit and substantial foreign debts, further economic and judicial reforms and prospective EU membership are expected to boosting foreign direct investment in the future" (ibid).

4.2. Analyses at country (NUTS0) and macro (overall CC/ PCC) levels per TC dimension

The previous "general overview" gave us first ideas / hypotheses on the development of the CC/ PCC based on the respective literature and on a limited number of indicators at country level (comparison among the countries) and at macro level (overall CC/PCC) in comparison with the EU-27. We advance here to an **analysis at macro and country (NUTS0) levels** using a much wider range of data / indicators at these levels which are available in Eurostat.

We present the respective results **per TC dimension.**

The TPG has defined several **"dimensions" of TC** –see in the Interim Report. In the same Report's "white paper" (Annex 5 of the Report) on the selection of indicators on the basis of the territorial challenges and EU policy priorities have been defined *seven Territorial Cohesion's (TC) major Issues* **corresponding more or less to "dimensions" of TC** – see in the following Table.

Dimensions of TC	TC major Issues
Competitiveness	• Smart, competitive development
Innovation	
Inclusion	• Inclusive development
Environment quality	• Environment sustainability and climate change
Energy	• Sustainable energy
Territorial structure	• Local development and rural areas
Connection	• Sustainable mobility and connectivity
Cooperation / governance	• Territorial governance, coordination of policies and territorial impacts

We also discuss **per TC dimension** the **specific** territorial challenges and policy priorities which are related to specific priority themes as, for example, the level of education, innovation, climate change, risk / hazards etc.

At the beginning of each sub-section, we remind the more important issues at stake for each section (see in the Interim Report, specifically in the Annex: "white paper" of the Report).

Our estimations which are presented in next take out the more important (from the point of view of INTERCO) estimations of the "Pocketbook" (2010) for the different TC issues at stake.

These estimations are based on the respective Eurostat data at NUTS0 level. These data correspond to the majority of INTERCO "headline" indicators, to a large number of INTERCO "core" indicators and to a relatively limited number of INTERCO "final" indicators.

We give in next per TC dimension, the lists of indicators used (at NUTS0 level) by the "Pocketbook" and their correspondence to INTERCO type of indicators

Competitiveness[11]

INTERCO Priority themes

• Economic performance: GDP Growth, Income, Trade, Investment, Inflation and Interest rates, Labour productivity, Mobility, Employment, Wages
• R&D and innovation performance
• Human capital
• EU enlargement (it could be studied using the rest of themes and indicators)

Indicators used by the "Pocketbook"	INTERCO type
GDP growth rates	Final / Headline
the share of final consumption expenditure in GDP	Headline
trade deficit	
proportion of total value added from the agriculture, forestry and fishing sector	
growth of the service sector	
industry sector	other
total number of persons employed	
labour productivity	Final / core
inward FDI flow	
Employment and activity rates	Final / headline (employment rate)
Employment and activity rates by gender	Final / Headline
economic activity rates of men	Final
employment rates for older workers	Headline
employment rate for older women	Headline
level of employment	
Number of persons employed and employment by sector	5th Cohesion Report
unemployment rates	Final / Headline
unemployment rate for women	Final / Headline

- Economic performance

Since 2002, all the CC/ PCC[12] have recorded sustained GDP growth in constant prices. More, **their GDP growth rates from 2003 were higher than that in the EU-27**. However, in most countries, there were substantial variations around the rising trend. For most countries where 2008 data are available, growth rates fell dramatically from 2007 to 2008.
Over the period 2000 to 2008, all CC/PCC, apart from Serbia (18%), recorded a higher percentage growth in GDP per head than that of the EU-27 at 31.4%[13].

The **proportion of GDP accounted for by final consumption expenditure** in the EU-27 was stable, at a little fewer than 80%, during the period 1998 to 2008. By and large, **the share of final consumption expenditure in GDP was higher in CC/ PCC than in the EU-27** and, in many cases, substantially so[14].

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[11] It corresponds to the major TC Issue: "Smart, competitive development" – see previously
[12] for which data are available
[13] Croatia, Bosnia and Herzegovina and Montenegro (2000 to 2007) more than doubled their GDP per capita over the period observed.
[14] Exceptions to this rule were Croatia with a continuing decrease since 2002, ending slightly below the EU-27 level in 2008.

During the period 2000 to 2008, **each of the CC/ PCC reported a trade deficit every year. This was in contrast to the surplus for goods and services recorded by the EU-27** (including intra-EU-27 trade) in each year.

Compared to the EU-27[15], the economies of **the CC/ PCC generated a considerably higher proportion of total value added from the agriculture, forestry and fishing sector**

The growth of the **service sector** between 2000 and 2007 was particularly pronounced in Serbia, Montenegro and Turkey. The rise in the service sector in all other countries, ranging from 1.3 to 3.5 percentage points, was broadly similar to the EU-27 figure of 2.0.

The **industry sector decreased in EU-27 and CC/PCC**, except Albania and Bosnia and Herzegovina. The share of the construction sector was generally stable or growing relatively moderately over the period 2000 to 2008. The only exceptions were Montenegro, Turkey and Bosnia and Herzegovina.

The total number of persons employed in the EU-27 rose every year over the period 2002 to 2008. None of the CC/ PCC reported such sustained increases over the same period.
Compared with the **EU-27, where there was a sustained and relatively stable increase in labour productivity** at between 0.9 and 2.2 per cent, **none of the CC/ PCC recorded positive changes over the entire of the period observed.**

Foreign direct investment (FDI)[16]
The EU-27 was a net investor abroad in 2008. **In contrast, inward FDI flows (investments by foreigners) were much greater than outward FDI flows (investments abroad) for all of the CC/ PCC in 2008.**
Despite relatively sharp falls in inward flows of FDI to the majority of the CC/ PCC between 2007 and 2008, the longer-term trend (since 2000) of inward flows of FDI was strongly upward.
> For example, although inward FDI flows to Turkey declined by EUR 3.8 billion between 2007 and 2008, they remained EUR 11.3 billion higher than in 2000. In contrast to the other CC/ PCC, outward FDI flows for Iceland were much greater than inward FDI flows for the nine years through to 2008. Outward FDI flows accelerated between 2003 (EUR 336 million) and 2007 (EUR 7.7 billion).

FDI intensity is the average of inward and outward FDI flows divided by GDP. It is an indicator (albeit sometimes volatile for developing countries) of integration with the international economy[17]. Among the CC/ PCC for which data are available, the highest level of FDI intensity in 2008 was recorded for Serbia (average FDI flows corresponding to 6.0% of GDP), although this was down sharply on the ratio recorded in 2001. **Only Croatia also had FDI intensity ratio** (3.6%) in 2008 **above that of the EU-2**7 (3.4%), in both cases this being higher than the respective ratios for 2000. The FDI intensity ratio for Albania fell back to 3.2% in 2008, below that of the EU-27. Arguably, the most volatility was recorded for Kosovo, where the FDI intensity ratio fell back from about 2.6% in 2005 to 0.1% in 2008, which might in large part reflect the scaling back of investment flows after the initial, post conflict, surge.

- Labour force, employment

Employment and activity rates (Final / headline indicator and 5th CR)

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[15] which recorded a value of under 2% in 2008
[16] Inward foreign direct investment (FDI) is investment made by foreign entities in enterprises resident in the reporting economy. Outward FDI (or FDI abroad) is investment by entities resident in the reporting economy in an enterprise abroad. Both inward and outward FDI are the net result of investment and disinvestment. The sign convention adopted for both inward and outward FDI flows is that investment is always recorded with a positive sign and a disinvestment with a negative sign. It should be borne in mind that FDI flows can fluctuate significantly from one year to another, particularly when there are changes in the economic climate.
[17] An increase in FDI intensity relative to GDP implies that the national economy has been further integrated into international markets through higher investments by foreign investors in the national economy and/or national investors increasing their investments abroad.

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The employment rate among the EU-27's population aged between15 and 64 years rose relatively steadily in the ten years through to 2008, from 61.2% to 65.9%. All CC/ PCC registered lower employment rates in 2008 than the average rate for the EU-27[18].
The proportion of the EU-27's population aged between15 and 64 years old that was **economically active** in **2008 was higher than in all CC/ PCC**. For the EU-27 as a whole, as well as the majority of the CC/ PCC, the economic activity rate in 2008 was higher than that recorded for 2000[19].

Employment and activity rates by gender (Final / headline indicator)

Across the EU-27 as a whole and among all the CC/ PCC, the economic activity rates of men were notably higher than those of women. This characteristic was most notable in Turkey and Kosovo.
These differences were also reflected in the employment rates for men and women. The gap between the employment rates of women and men in the EU-27 narrowed, from 18.3 percentage points in 1998 to 13.7 percentage points in 2008. The employment gender gaps in Croatia, Montenegro and Albania were relatively similar to that for the EU-27. The employment gender gap in Serbia was a little wider than the EU-27 average, the gaps in Bosnia and Herzegovina, Kosovo and, particularly, Turkey being much wider still.

The employment rate for older workers (aged 55-64) across the EU-27 as a whole rose to 45.6% in 2008, much higher than the corresponding rate (36.2%) ten years earlier but still beneath the target rate of 50% set for 2010. The employment rate for older workers in Albania that was recorded for 2007 (46.6%) was slightly higher than the EU-27 average. **The employment rates for older workers in other CC/ PCC were much lower than the EU-27 average** (except from Albania)**.**
> Nevertheless, rates rose relatively steadily from low levels in FYROM, in Kosovo and particularly in Croatia. In contrast, the employment rates for older workers in Serbia (at least through until 2006) and particularly in Turkey declined relatively sharply, in part reflecting the broader decline in the employment rate for the total population aged 15 to 64 years old.

As with the total labour force, **the employment rate for older women was lower than that of older men in the EU-27 and among all of the CC/ PCC**.
> The gender employment gap among older workers in the EU-27 was 18.1 percentage points in 2008, which was greater than the 13.7 percentage point gap among the total labour force. The relatively wider gender employment gap among older workers was a feature in all of the countries. The widest gap among older workers was recorded in Kosovo (34.0 percentage points in 2007).

Number of persons employed and employment by sector (5th CR indicator)
The **level of employment** in the EU-27 grew by 1.2% per year between 2000 and 2008. Among the CC/ PCC, **only Montenegro recorded stronger rates of growth** over the longer-term. Aside from Turkey and Serbia, **longer-term growth in the level of total employment in the other CC/PCC was much lower than that for the EU-27.**
Differences between the economies of the EU-27 as a whole and the CC/ PCC can be shown according to the **distribution of employment between different economic sectors**.
> Persons in services accounted for almost one half (49%) of total employment in the EU-27 in 2008. With the notable exception of Albania, the services sectors in the other CC/ PCC were either of a similar relative size or, as in the cases of Kosovo and Montenegro much larger. In contrast, employment in agriculture, forestry and fishing activities accounted for about one in every two persons in employment in Albania in 2007, nearly seven times the equivalent share for the EU-27 as whole. There were also relatively high shares of employment in agriculture in Turkey and Serbia.

Unemployment rates (Final / headline indicator and 5th CR indicator)

The average rate of unemployment across the EU-27 as a whole was 7.0% in 2008[20]

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[18] ranging from 26.2% (2007) in Kosovo to 57.8% in Croatia
[19] Declines over this period were recorded, however, in Turkey, Serbia and, in particular, Montenegro.
[20] which represented a marked turnabout from the 9.2% recorded in 2004

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The unemployment rate for women (7.5%) in the EU-27 was higher than that for men (6.6%) in 2008, and this characteristic was also common to the CC/ PCC.

Long-term and youth unemployment rates (5th CR)
The long-term unemployment rate across the EU-27 as a whole was 2.6% in 2008. **In all of the CC/ PCC[21] the latest annual long-term unemployment rate was higher than the EU-27 average for 2008.**
As with the overall unemployment rate, the highest long-term unemployment rates were in Bosnia and Herzegovina (2007), FYROM and Kosovo.
Across the EU-27 as a whole, the youth unemployment rate was 15.5% in 2008. Youth unemployment rates for 2008 were higher than that of EU-27 in FYROM (56.4%) and particularly Kosovo, Bosnia and Herzegovina and Serbia despite sharp falls since 2006. Only in Turkey and Albania (2007) were youth unemployment rates relatively close to the level for the EU-27.

Innovation[22]

Indicators used by the "Pocketbook"	INTERCO type
Gross domestic expenditure on research and development GERD	core
R&D expenditure	
R&D intensity	

The main measure used for research and development (R&D) statistics is **gross domestic expenditure on research and development** -often referred to as **GERD**-. Expenditure on R&D is composed of expenditure by business enterprises, higher education institutions, government and private non-profit organisations. Such expenditure data relates to research expenditure on national territory, regardless of the source of funds; **data are usually presented relative to GDP as R&D intensity.**
Research and development (R&D) lies at the heart of the EU's Lisbon strategy to become the most competitive and dynamic knowledge-based economy by 2010. Indeed, **one of the goals set in Lisbon was for EU R&D expenditure to increase to at least 3.0% of GDP by 2010.**
In 2007, the EU-27 GERD accounted for a 1.85% share of GDP, below the 3.0% goal.
For the CC/PCC where data were available for 2007, **Croatia, FYROM and Turkey recorded significantly lower R&D intensities than the EU-27.** They ranged between 0.18% in FYROM and 0.81% in Croatia.
In line with the EU-27, **R&D intensity has risen in Turkey and Montenegro** over the period shown, although no country has shown a consistent year-to-year increase. In contrast, **Croatia and FYROM recorded decreases in their R&D intensities but with year-to-year fluctuations.**

Inclusion[23]

INTERCO Priority themes
• Demographic changes and imbalances: population and workforce ageing, in-out migration, labour market segmentation
• Social tensions and disparities
• Downgrading and insufficient use of cultural assets for development

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[21] for which data are available (Montenegro excluded),
[22] It corresponds to the major TC Issue: "Smart, competitive development"
[23] It corresponds to the major TC Issue: "Inclusive development"

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Indicators used by the "Pocketbook"	INTERCO type
Population and population growth	Headline / 5th Cohesion Rep.
Population ageing	Final
Population structure by gender and age group	
Crude birth, death and natural increase rates	5th Cohesion Rep.
Life expectancy	Headline / 5th Cohesion Rep.
Early school leavers	Core / 5th Cohesion Rep.
Completion of upper secondary education	
Tertiary graduates in science and technology	Headline / 5th Cohesion Rep.
Expenditure in education and participation in training	5th Cohesion Rep.
Wages and salaries	
Income inequality	Final
Social inequality	Headline / 5th Cohesion Rep.
Household consumption expenditure and social expenditure	

Population and population growth (headline ind. and 5th CR)

As far as population growth is concerned, **most of the studied countries have recorded increases of population,** with the highest numbers presented in Kosovo (8.5%) as well as Bosnia and Herzegovina (8.3%). **The exceptions were Serbia and Croatia**.

Population ageing (Final indicator)

In 2008, **the working age population (15-64 years) accounted for more than two-thirds of the total population in the EU-27 and in all CC/ PCC.**
Between 2000 and 2008 **the share of those over 65 years of age rose in all territories where it remained stable and the EU-27** and Croatia where there were small declines. The only country with a small decline in the working age population (between 15 and 64) was Serbia with a reduction of 0.1 percentage points.
Over the same period, but for different reference periods for the individual countries, **a decrease of the share of those under the age of 15 years can be seen in all territories** for which data are available.

Population structure by gender

In the EU-27 (51.2%), Croatia (51.8%) and Bosnia and Herzegovina (51.0%), the share of women in the population exceeded 50%. The other CC/ PCC all had a small majority of men, with Serbia recording the lowest female share of 48.6%.

Crude birth, death and natural increase rates (5th CR)

For the latest year for which comparable data are available**, Croatia, Albania, Bosnia and Herzegovina and Serbia showed lower crude birth rates than the EU-27**, while FYROM, Turkey, Montenegro, and Kosovo recorded higher rates.
In 2008, the EU-27 **crude death rate** was 9.7 deaths per thousand inhabitants. For the latest year for which comparable data are available, **six out of the eight countries showed death rates below the EU-27 value**. Over a longer period Serbia and Croatia were the only countries showing crude death rates higher than crude birth rates.

Life expectancy (headline ind. and 5th CR ind.)

Life expectancy (LE) at birth in all CC/ PCC for 2008 is lower than in the EU-27 average in total and for both sexes*.*

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- Education

Early school leavers (5th CR)
While the number of early school leavers in the EU-27 has been reduced in 2007, there remained 15.2% of young persons aged between 18 and 24 who had not completed upper secondary education and who were not engaged in any education or training.
Within the CC/ PCC for which information is available, Turkey and the Former Yugoslav Republic of Macedonia had the highest shares for this group. While **the figures show a clear downward trend, there were year-to-year rises in Croatia, Turkey, and Serbia.**

Completion of upper secondary education
In 2008 **more than three quarters of the population aged 20 to 24 had completed at least upper secondary education in the EU-27**. **This was also the case for Croatia and Serbia. In contrast, the proportion in Turkey was around 49% in 2007**, the lowest percentage among all countries reporting.
All countries reporting have registered an increase in these percentages over time. Between 2000 and 2008 there was an increase in the number of students attending the first and second stages of tertiary education in the EU-27 as well as in CC/ PCC for which data is available.

Tertiary graduates in science and technology (headline ind. and 5th CR)
Enrolment rates in science and technology at tertiary level for women are nearly half the men's rate in the EU-27 (2007 data), and slightly above 40% in Turkey (2005 data). In the other CC/ PCC for which data are available, the female participation rate is never less than half that of the male rate. The male rate of the EU-27 (17.9% in 2007) is significantly higher than in the CC/ PCC.
Comparing the first and the last year for which data are available, enrolment rates for both men and women increased in all regions, with substantial rises in many CC/ PCC.

Expenditure in education and participation in training (5th CR)
 In 2006 EU-27 public sector investment in education was equal to 5.1% of GDP. **In all CC/ PCC for which information is available, it was smaller than in the EU-27.**
In 2008, **the proportion of the population aged 25 to 64 participating in education and training in all CC/PCC were at least three times smaller than in EU-27**. However, the proportions in each available country, except Serbia, have increased in the period observed.

- Social indicators

Wages and salaries
Nominal wages and salaries increased steadily in the EU-27 and all CC/ PCC, except Serbia, for the years for which data are available. Compared to a modest increase for the EU-27, nominal wages and salaries more than tripled in Serbia and Montenegro and almost doubled in Croatia as well as in Bosnia and Herzegovina.

The inequality of income distribution (Final indicator)
The measure of income inequality in the EU-27 averaged 5 in 2007. This means that the income of the wealthiest quintile was 5 times greater than that of the poorest. **Income inequality increased everywhere except Turkey, where it fell but still to a level well above the EU-27 figure.**

Social inequality (headline and 5th CR)
Comparing 2000 data for both, children and adults living in jobless households, with the latest available year, the EU-27 and Croatia showed a decrease and Serbia recorded an increase. In FYROM, the value for children remained stable while the value for adults showed a small rise.

Household consumption expenditure and social expenditure
As far as health and social protection expenditure as a proportion of GDP is concerned, it stood at 17.8% in the EU-27, slightly higher than the Croatian expenditure ratio of 16.5% or the Serbian expenditure ratio of 15.0%.

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On the other hand, health expenditure including the element financed by government, ranged between 2.0%in Montenegro and 7.6% in Turkey. Except Albania and Montenegro the figure was relatively close to the EU-27 value of 7.4%.

Environment quality[24]

Indicators used by the "Pocketbook"	INTERCO type
Municipal waste collected	
Greenhouse gas emissions	core

Municipal waste collected[25]
The **quantity of municipal waste collected per inhabitant in the EU-27 was slightly over 500 kg per person** in 2007. **Montenegro recorded higher figures for waste collected than the EU-27**, reaching almost 1 200 kg per person. **All the other CC/PCC achieved quantities lower than in the EU-27, particularly Albania and Serbia** with figures less than half the EU-27 level. Comparing the years 2000 and the latest available year, quantities collected per person were relatively stable in the EU-27, Turkey and Albania while they increased in Croatia and Montenegro. The only country to record a fall was Serbia.

Greenhouse gas emissions
The Kyoto Protocol set a **target for the EU to reduce climate changing greenhouse gas emissions by 8% between 1990 and 2008 to 2012**.
During the period 1998 to 2007 the EU-27 emissions fell, while emissions in the two countries, for which data are available (Croatia and Turkey), increased significantly. Turkey recorded the fastest rate of growth in greenhouse gas emissions.
Looking at the development **over the entire period, emissions in the EU-27 fluctuated slightly and reached a low point in 2007**. In Turkey, the level of emissions increased significantly up to 2000 but decreased in 2001. From 2002, the growth in Turkey regained momentum and grew steadily up to 2007 when it was more than twice the 1990 base year level. In Croatia emissions showed continuing growth throughout the period 1998 to 2007, except for a slight reduction in 2000 and 2004.

Energy

Indicators used by the "Pocketbook"	INTERCO type
Energy intensity, electricity generation and renewable energy*	core
* INTERCO indicator: Energy intensity of the economy	
The share of renewable energy in electricity consumption	core
* INTERCO indicator: Renewable energy consumption	
Primary production of energy	
Energy supply and consumption	
Breakdown of final energy consumption	

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[24] It corresponds to the major TC Issue: "Environment sustainability and climate change".
[25] Municipal waste can be recorded according to different concepts as waste collected and generated. Municipal waste collected does not include waste generated in areas not covered by a collection system. This publication presents data on waste collected, because most countries could not estimate the amount of waste generated in the areas not covered by a collection system.

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Energy intensity, electricity generation and renewable energy
The energy intensity of an economy is defined as the **ratio of gross inland energy consumption in kg of oil equivalent per EUR 1.000 of GDP** (kgoe/1.000 EUR) at constant prices (reference year 2000): **the lower the figure, the higher the energy efficiency.**
In 2006, the figure for the EU-27 was little over 200 kg of oil equivalent. All CC / PCC for which data are available recorded higher values (lower efficiency) than the EU-27. In 2007, they ranged from 282 kgoe/1 000 EUR in Turkey to around 660 kgoe/1 000 EUR in FYROM and Serbia.
Over the period observed, energy intensity has shown a downward trend in the EU-27 (-1.5% on average per year) **and all CC/PCC except Serbia. The decreases were moderate in the three candidate countries. This reflects the importance of energy intensive industries in their recent strong economic growth**.

> Albania showed a larger fall with 5.5%. Montenegro and Serbia recorded the highest negative and positive growths respectively, but over a very short run of years. **Except for Turkey and Serbia, the gap in energy efficiency between the EU-27 and the CC / PCC has narrowed over the years available.**
>
> **Since 1998, electricity production in the EU-27 has been growing** by 1.6% per year. Average annual growth in Turkey and Kosovo with about 6% each was much higher than in EU-27. In contrast, there was an annual average decline in Albania, FYROM and Serbia.

The *share of renewable energy in electricity consumption* measures the contribution of electricity from renewable energy sources to total national electricity consumption. This share can vary greatly and depends, to a large extent, on the geographic characteristics of the territory concerned, particularly for geothermal and hydroelectric generation.
Between 2000 and 2007, the proportion of renewable sources in electricity consumption in the EU-27 rose from 12.7% (2000) to 14.0% (2006). With the exception of FYROM in 2007, all countries for which data are available showed higher shares than the EU-27 for the two years compared. Croatia was alone in reporting an increase from 40.0% to 47.0% over the years 2000 to 2007. In contrast, **the two other CC and Serbia recorded a sharp decline in the share of renewable energy sources in electricity** consumption, falling 5.7 percentage points in FYROM, 5.2 in Turkey and 4.2 in Serbia between 2000 and 2007.

Primary production of energy
> To allow different types of energy to be aggregated, data on primary energy production: coal, oil, gas, nuclear heat, and hydro-electricity[26], is converted to a common unit, "tonnes of oil equivalent (toe)".
> **In the period since 1998, primary energy production has been falling in the EU-27 as well as in FYROM, Turkey and Albania.** The downward trend averaged 1.1% per year for the EU-27 (1998 to 2007) compared with 2.4% in Albania, 1.6% in FYROM and 0.7% in Turkey over the same period.
> In the EU-27, the major source in 2007 was "Other" –including nuclear and renewable sources- which far outweighed coal, natural gas and crude oil. It is calculated as the difference between the primary production of energy and the total of 'crude oil', 'hard coal and lignite' and 'natural gas'.
> *Hard coal and lignite was the main primary energy source in FYROM, Turkey and Serbia and was the sole source of primary energy recorded in Montenegro, Bosnia and Herzegovina and Kosovo (data available for recent years only). In Croatia, the most important source was natural gas, while crude oil and other products dominated in Albania.*

Energy supply and consumption
> The energy supply within a country is determined by primary production and by net imports (imports minus exports). Gross inland energy consumption is the amount of energy required to meet the energy needs of the country. It includes coal, oil, gas, nuclear power etc. required as input to electricity generation.
> Gross inland consumption = primary production + net imports ± changes in stocks – marine bunkers
> In the EU-27 and all CC / PCC, there was a growing reliance on energy imports to meet demand (Table 8.5). About half (55%) of the EU-27's energy consumption in 2007 was accounted for by net imports, compared with about 47% in 1998. In Turkey and Croatia dependency on net imports, was higher than that for the EU-27. In Turkey, net imports accounted for around 75% of the total in 2007,

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[26] The energy mix in primary production is determined to a large extent by the natural resource endowment of a territory, strategic policy decisions, with nuclear energy as an example and the development of renewable energy

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while Croatia recorded about 57%. Montenegro with 10.8% and Serbia with 19.2% had the smallest share of net imports in total gross inland consumption in the most recent year for which data is available. Regarding the longer-term trends, **Turkey and the EU-27 have been becoming more reliant on imports**. For the other countries, the trend to greater reliance on imports still emerges over the longer run.

The longer-term trends for primary energy production and gross inland energy consumption in the form of average annual growth rates shows no general pattern. There are four different scenarios:
• Decreasing production combined with increasing consumption: EU-27 and FYROM;
• Consumption growing faster than production: Croatia, Turkey and Albania;
• Production growing faster than consumption: Serbia;
• Faster decrease in production than consumption: Montenegro.

Breakdown of final energy consumption
Final use of energy can be broken down by sector (see for detailed definitions in the "Pocketbook"):
(a) The industrial sector (b) The transport sector (c) "Other sectors" which include agriculture, fishing, services, administrative bodies and households.
The structure of final energy demand differed substantially between the EU-27, and the CC / PCC in the latest year for which data is available. These differences reflect divergences in the structure of each country's economy (importance of industry and manufacturing, the rate of motorisation, modes of transport used, energy efficiency, etc.). In the EU-27, industry accounted for little over a quarter of final energy consumption, transport about a third with other sectors and households taking the remaining 40%. Croatia had a very similar distribution of energy consumption between sectors. In contrast, **in FYROM, Turkey, Montenegro, Serbia, and Kosovo, industry's share of total energy consumption was much larger**. Albania is a special case. The share of its energy consumption in transport sector at 42.2% is the highest percentage for all countries.
Between 1998 and 2007, **industry's share in final energy consumption decreased by 1.2% percentage points in the EU-27. The same trend is apparent for Croatia, FYROM, Albania and Montenegro**. On the other hand, **this share grew in Turkey, Serbia and Kosovo**.
In the EU-27 (growth of 2.9 percentage points, 1998 to 2007) **and in all CC / PCC, transport's share of final energy consumption grew** between 0.3 percentage points in FYROM and 7.0 percentage points in Albania.
In the EU-27, households alone accounted for around a quarter of final energy consumption in both 2000 and 2007. All CC/PCC, for which data are available, recorded shares above the EU-27 level in 2000, falling in every case except Montenegro in the last year observed. **The decreases in all countries were larger than in the EU-27**. Despite that fall, Kosovo still shows the highest share of households on total energy consumption of all countries for which data are available.

Territorial structure[27]

Indicators used by the "Pocketbook"	INTERCO type
Utilised agricultural area (UAA)	
Livestock	
Animals for slaughter	
Crop production	

Agriculture

Utilised agricultural area (UAA)[28]
UAA forms one part, along with wooded areas, land occupied by buildings and other land, of the total land area. **Changes in this breakdown indicate the extent to which man has modified**

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[27] It corresponds to the major TC Issues: "Local development and rural areas" and "polycentric development and cities".
[28] The utilised agricultural area (UAA) is the total area taken up by arable land, permanent grassland, permanent crops and kitchen gardens used by agricultural holdings, regardless of the type of tenure or whether it is used as common land.

the basic land resource of a territory for agriculture, industry and commercial establishments, human settlements, transport, recreation and other uses.

The use of land for agricultural purposes depends to a large extent on the topography, geology and agro-climatic conditions of a country. For example, mountainous and cold-climate regions will be less suitable for agriculture than flat and more temperate regions. **The utilised agricultural area of the EU-27 was 179 million hectares in 2008, about 15 million hectares less than in 1998.** The reduction in the UAA during this period was largest in Spain, Poland and Italy.

The utilised agricultural area of Turkey was by far the largest among the CC / PCC. **In contrast to the EU-27, the area of utilised agricultural land remained relatively stable in the majority of the CC / PCC during the period between 2000 and 2008.**

In 2008, almost two thirds (about 65%) of Serbia's total land area were used for agriculture. This was the highest share of any of the CC / PCC, and considerably more than the share (about 41%) for the EU-27 as a whole. For the latest years available in the other countries, the utilised agricultural area accounted for between about one quarter of the total land area of Croatia to one half of the total area of Turkey and Kosovo.

The structure of the EU's agricultural sector is extremely diverse, ranging from large, highly intensive farms to subsistence holdings. In the CC / PCC, where traditional working practices are still widespread, subsistence farming is often common. Land abandonment, under-grazing and a lack of capital to maintain agricultural infrastructure are some of the problems faced by farmers in the CC / PCC.

Across the EU-27 as a whole, arable land accounted for about three fifths (59.7%) of UAA in 2008, almost twice the share of permanent grassland (33.3%) and considerably more than the share of land under permanent crops (7.0%). The breakdown of UAA varied considerably among the CC / PCC.

Land under permanent crops showed the lowest percentages of all types of land in all countries reaching values above the EU level only in Montenegro (18.3%), Albania (11.0%) and Turkey (7.5%). Arable land accounted for about two thirds of UAA in both Croatia and Serbia in 2008 but only a quarter (24.1%) of the UAA of Montenegro. Permanent grassland accounted for more than a half of UAA in FYROM (50.9%) and Montenegro (57.6%), but for lower proportions in Croatia and Serbia. However, it accounted for only one fifth (20.8 %) of the UAA of Kosovo in 2001.

Livestock

The livestock population across the EU-27 comprised about 153 million pigs, 88 million head of cattle (of which 24 million were dairy cattle), 91 million sheep and about 1.5 billion poultry. **The number of pigs as well as the number of sheep and goats in the EU-27 was considerably lower in 2008 than a year earlier**, with the number of cattle in 2008 close to the relative low point recorded in 2006.

Among the CC / PCC, Turkey had by far the largest cattle population in 2008, followed by Serbia. Reflecting cultural beliefs and customs, there was relatively limited pig production in most of the CC / PCC.

The dairy herds of the CC / PCC were of much more significance in comparison with the EU-27, accounting for about 50% of cattle in FYROM and Serbia, about 60% in Kosovo and between 65% and 70% in Bosnia and Herzegovina, Albania and Montenegro.

Animals for slaughter[29]

Meat production in the EU-27 dwarfed that of the CC / PCC as a whole.

The differences in the composition of the livestock of the CC / PCC were reflected in the breakdown of meat production. Poultry meat accounted for a little over two thirds (70%) of meat production in Turkey and about one half (45%) of the production in Bosnia and Herzegovina, but only about 8% of meat production in FYROM.

Pig meat accounted for a small majority of meat production in Serbia and Croatia but little or none of the production in those countries where pig meat is not traditional for cultural reasons. Meat from cattle provided almost half of the meat production of Albania. In the ten years up to 2007, the level of meat

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[29] The respective information relates to bovine, porcine, equine, ovine and caprine species, as well as poultry

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production in the EU-27 remained remarkably stable. Among the few CC / PCC for which such series are available, there were contrasting developments –see more details in the "Pocketbook".

Crop production

The EU-27 cereal harvest (including rice) was 315 million tonnes in 2008, about 55 million tonnes more than the 2007 harvest. The CC / PCC were estimated to have harvested cereals equivalent to about 14% of the total for the EU-27 in 2008. In many of the CC/PCC, cereals production in 2008 rebounded strongly from the relatively poor harvest of 2007.

The sugar sector in EU agriculture is currently going through a period of structural reforms, with a phased renunciation of the sugar quota. This explains some of the sharp decline in the harvested production in 2006 to 110.4 million tonnes. In comparison, Turkey harvested 15.5 million tonnes of sugar beet in 2008, substantially more than any of the other CC / PCC for which data are available. Although this represented something of a rebound from the relative low in 2007, sugar beet production in Turkey remained much smaller than the 22.3 million tonnes harvested in 1998. Of the other countries, only Croatia and Serbia also had any notable sugar beet production, although harvest levels in 2008 were down markedly on those for 2006 and 2007.

Connection[30]

Indicators used by the "Pocketbook"	INTERCO type
Transport infrastructure	
Motorway density in the EU-27	
Inland transport and number of cars	
Freight transport	
Fixed and cellular telephony	
Personal computers and the Internet	
Enterprises and the Information Society	

Transport infrastructure

The EU-27 had 4.8 million km of roads (excluding motorways) in 2004. In 2008, Croatia recorded 28 thousand km and FYROM 14 thousand km. Turkey reported 352 thousand km for the same year.

For the years available[31], the EU-27 and all the CC / PCC, except Serbia, showed a growth of road lengths. For the EU-27, growth averaged around 0.7% per year while in Croatia and Turkey there was very little change (0.3% and 0.2% respectively). Road lengths in Albania grew by more than 7% per year, while Kosovo recorded an annual average rise of almost 11% but from a very low base.

In 2006, the EU-27 had 200 thousand km of railway lines in operation. Turkey had nearly 9 thousand km, Serbia 4 thousand km and Croatia 3 thousand km in 2008.

The length of lines in operation changes relatively slowly. In the period 2000 to 2006, the length of railway lines operating in the EU-27 declined by about one percent per year. Over the longer period from 1998 to 2008, Turkey was the only country recording growth, albeit at a very low rate, while all other countries showed a stable situation.

Motorway density in the EU-27, excluding Greece, Bulgaria and Romania, measured in kilometres per thousand km2 of land area was 11.2 in 2003.
From 2003 to 2008, there was growth in motorway density in all countries for which data are available, with values almost doubling in Croatia and slightly increasing in FYROM and Turkey. Exceptions are Serbia, where the value remained unchanged and Albania, where there are no more motorways in 2008.

Inland transport and number of cars

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[30] It corresponds to the major TC Issue: "Sustainable mobility and connectivity".
[31] The period examined is: 2000 to 2008. See details for the years available in the "Pocketbook"

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Between 1998 and 2007, the **number of passenger cars** in the EU-27 grew by 1.5% per year. In the CC / PCC very high annual growth rates have been showed in Kosovo (16%) and Albania (11%); all CC/PCC shown a sustained year on year increase except from Serbia and FYROM

The **car ownership per thousand inhabitants** provides a more direct comparison of the degree of motorisation between countries. On this measure, the EU-27 showed an increase of almost 6%. All CC/PCC, except FYROM and Montenegro, showed larger growth than the EU-27.

> The highest increases were recorded in Albania at around 144%, Kosovo with about 48% and Turkey with almost 46%. Croatia recorded a 39.2% increase, approaching levels equivalent to those in the EU-27.

In 2008, all countries, except Croatia, had densities (cars / 1.000 inhabitants) less than half the average in the EU-27.

Freight transport

For the EU-27, road freight transport's share in total inland transport has been rising slowly since 2000, reaching about 77% in 2007. **Croatia has levels very similar to the EU-27. Both FYROM and Turkey have much higher levels for road freight transport's share in the total inland market.**

> Regarding the allocation of freight transport between modes, **for the EU-27, road is clearly the dominant mode.** In 2008 Turkey recorded the highest value of all CC / PCC, but still less than a tenth of the EU-27 level. Road transport in all other CC/PCC was less than a tenth of Turkey's. A comparison of the first and last year's available for each country shows an **increase in road transport in all except Serbia.** In Serbia, transport by road more than halved from 1998 to 2008 despite a recovery since 2003. Serbia and FYROM were the only countries recording a fall between 2007 and 2008.

Rail is the **second largest transport mode in the EU-27 and most of the CC / PCC**.

> In 2006, all countries taken together accounted for less than 1% of the level of rail transport in the EU-27. The EU-27 level has changed little over the four years from 2003 to 2006. In contrast, Bosnia and Herzegovina with an average annual increase of 24.5% (2000 to 2008) and Kosovo with 18.0% (2005 to 2008) showed the largest increases. Despite showing long-term growth trend, Croatia, FYROM, Albania and Serbia recorded decreases between 2007 and 2008.

> For modes of transport other than road and rail, only pipeline transport emerged as important in Turkey.

Communication and information society

Fixed and cellular telephony

In the EU-27 there were nearly 234 million land telephone lines installed in 2006. In the same year, the figure for all CC / PCC, for which data were available, was about 26 million lines, around 11% of the EU-27 total.

A comparison of the latest two years for which data were available in each country shows that only three – Croatia, Albania and Serbia – increased the number of fixed lines. All other countries registered a fall.

There were 520 million mobile subscribers in the EU-27 in 2006, while the cumulative sum for the CC / PCC in the same year was a little more than 70 million subscribers, or 13.5% of the EU-27 total.

In the latest two years for which data is available, the total number of mobile subscribers in almost all CC / PCC increased at higher rates than in the EU-27 (10.2%).

The lowest growth was 4.1% in Serbia. Kosovo saw a rise between 2004 and 2008 of over 100%, some compensation for the fall in the number of land telephone lines.

> The markets for mobile telephony in the EU-27 and some of the CC / PCC, especially Croatia, FYROM, Montenegro, Serbia has reached saturation, with penetration rates in excess of 100%. This could reflect some subscribers having multiple subscriptions. Rapid growth was still being reported in all countries over the period available. The highest take-up of mobile subscriptions was recorded in Croatia, closely followed by Serbia. These two, together with FYROM, Montenegro had penetration rates above the EU-27 value of 105 subscriptions per 100 inhabitants. The biggest increases were recorded for FYROM and Bosnia and Herzegovina. The respective increase rates were much more important than in the EU-27, where the average value doubled between 2000 and 2006.

Personal computers and the Internet

In the EU-27, 60% of households owned one or more personal computers. Lower ownership figures were recorded for all other countries for which data are available.
The ownership rates are steadily increasing in the EU-27 and countries for which data is available. However, not all of these households have access to the Internet at home, covering all forms of Internet use including e-mail, web browsing, home banking and e-commerce.
The proportion of households with Internet access at home in the CC / PCC was less than half that of the EU-27 (60%) in FYROM, Turkey, Bosnia and Herzegovina and Serbia while it was three quarters of the EU-27 value in Croatia.
The proportion of regular Internet use, which is defined as the use of the Internet on average at least once a week, **was 56% in the EU-27. In Croatia and FYROM, regular Internet use was about two thirds of the EU-27 level.**

Enterprises and the Information Society
For enterprises, there were similar levels of access to the Internet in the EU-27 and the CC/PCC.
> 93.0% of EU-27 enterprises had access to the Internet, with a higher proportion in Croatia (97.0%) and a similar level in Serbia (91.5%). In both Turkey (89.2%) and FYROM (83.4%) the level was somewhat lower.

However, in no case did all enterprises having Internet access use it for interactions with public authorities. The shares ranged between 56% in Serbia to 69% in Turkey (68% in the EU-27).

4.3. Conclusions on the territorial cohesion at the macro (CC/PCC) and country levels: hypotheses for the lower levels (NUTS3 and beyond) analyses

The literature review on a global approach of Territorial Cohesion (TC) in CC/PCC as well as the specific analyses per TC dimension strengthened the estimations / hypotheses that the respective pattern of TC in these countries differs considerably from that for the EU-27. Specifically, the TC indicators of CC/PCC are in general lines "worse" than the indicators of the EU "Eastern" countries.
These general estimations are based, as we have already pointed out, on data / indicators at country (NUTS-0) on the actual situation and diachronic comparisons.
They refer to the majority of headline indicators of INTERCO, to some of the core indicators and some other INTERCO indicators, which are in many cases used also by the 5th Cohesion Report.
As these estimations have not taken into account data / indicators at sub-national level, they could be at this stage used as improved hypotheses for the lower levels (NUTS3 and beyond) analyses of the section 5.
Therefore it is not worthwhile to explain more here these global estimations. We will further examine these estimations at the sub-national level and we will integrate them in the section 6 on conclusions.

However, it is useful to summarize in the following the conclusions of the section 4.2 **per TC dimensions.** Specifically:

- Regarding *"Competitiveness":*

The **GDP growth rates** in these countries from 2003 were much higher than the average rate for the EU-27. However each of the CC/ PCC has a **trade deficit** every year, in contrast to the surplus for the EU-27. The share of **the rural sector in these countries remains much higher** than in the EU-27 (especially in Turkey) while **their service sector records increase rates more important than in the EU-27**. Their industrial sector decreases as in the EU-27.
Inward FDI in CC/PCC increases considerably (with the exception of the period after 2007) but **the FDI intensity ratio** reflecting the level of integration of a country with the international economy **remains much lower than in the EU-27**.

The total number of persons employed increases in these countries less than in the EU-27 and they do not record increases in labour productivity.
The CC/ PCC present **lower rates of active population, employment and activity rate of the older population**. In 2008 the **unemployment rates as well as the long- term and youth unemployment rates for the CC/ PCC were higher** and often much higher than the EU-27 average.

- Regarding *"Innovation"*

Gross domestic expenditure on research and development (GERD) as a share of GDP **remains in the CC/ PCC much lower than in the EU-27.**

- Regarding *"inclusion":*

The CC/ PCC reported **increases in population, with the exception of Serbia and Croatia**.
The ageing of population is important in these countries while the **life expectancy is lower than in the EU-27 for both sexes.**
The **shares of tertiary graduates in science and technology** in the population as well as **the public sector investment in education** (as share of the GDP) **are clearly lower** in all CC/ PCC compared to the EU-27 averages.
Income inequality increased in all CC/ PCC except Turkey where it fell but still to a level well above the EU-27 figure.

- Regarding the *"environment quality"*:

Only for two indicators:
- **Municipal waste collected per inhabitant is much lower in the CC/ PCC**.
- During the period 1998 to 2007 the EU-27 **greenhouse gas emissions** fell, while emissions **in the two countries for which data are available (Croatia and Turkey), increased significantly.**

- Regarding *"energy":*

In all CC/PCC, energy efficiency is clearly lower than in the EU-27 while the shares of renewable energy are lower in the CC/ PCC compared to the EU-27.

- Regarding *"connection":*

The CC/ PCC showed a small increase in their rates concerning transport infrastructure and freight, but are still very low in comparison to the EU-27.
In addition, the **proportion of households with internet access in most of the CC/ PCC was less than a half that of the EU-27.**

5. Analysis of territorial cohesion in the CC / PCC on the basis of feasible headline indicators - effectiveness of these indicators

As we have already mentioned, in this section we will analyse TC in the CC/ PCC on the basis of **both national and sub-national level** (NUTS2 / NUTS3 and beyond) data as a major objective of our research is exactly to **see at which extent the TC pattern of the CC/ PCC at the sub-national level differs from the respective pattern at national level.**

As we have mentioned in section 3, we can't examine a great number of TC indicators at sub-national level because the respective data are scarce. We will examine only six indicators:

- Three indicators of "competitiveness": GDP rate, GDP dispersion and unemployment rate.

- Three indicators of "inclusion": ageing index (people aged 65+ / total population), life expectancy and population density,

Therefore, we will not give a complete analysis of TC at this level. Inversely, **we will analyse in more depth these few TC indicators** than in the previous section 4 **in order to see if the additional results bring important insights regarding the TC patterns at national and sub-national (NUTS2 / NUTS3) level as well as on the differences between these two last.**

In more detail:

(a) We will examine several types of statistics of variation at NUTS0 and NUTS2 / NUTS3 levels: min / max, mean (average), standard deviation and coefficient of variation and we will evaluate at which extent these statistics reflect the inequalities regarding TC.

(b) We will use the assumption on the division of the EU-27+CC/CPC space in 4 mega-regions / groups of countries: north, south, east and CC/PCC as a hypothesis to check (further than in the section 4). See in more detail below –in section 5.1.

 (c) As one of our objectives is to see if the TC pattern in the CC/PCC differs from that of the EU-27, we will compare per theme / issue the values of TC indicators in the CC/PCC with the **EU-27 average.**

5.1. Competitiveness

GDP rate at country (NUTS-0) level

GDP is of primary importance in order to evaluate if there is a distinctive pattern of the CC/PCC in the frame of the EU-27+CC/PCC area

GDP in the EU countries and HR, TR and MK is expressed either in Euros or in PPS (Purchasing Power Standard). It is preferable to use GDP in PPS because this enables us to compare directly the purchasing powers of the national populations –see below the respective definition. Inversely, the comparison of GDPs in Euros is deformed to some extent.

Definition of GDP per capita in PPS by Eurostat

GDP (gross domestic product) is an indicator of the output of a country or a region. It reflects the total value of all goods and services produced less the value of goods and services used for intermediate consumption in their production. Expressing GDP in PPS (purchasing power standards) eliminates differences in price levels between countries. Calculations on a per inhabitant basis allow for the comparison of economies and regions significantly different in absolute size. GDP per inhabitant in PPS is the key variable for determining the eligibility of NUTS 2 regions in the framework of the European Union's structural policy.

However, as in the case of the CC/PCC there are data on GDP PPS only for HR, MK and TR, we have also used GDP per capita in Euros and GDP per capita in Euros as percentage of EU27 average (=100) in order to cover in addition the rest CC/PCC: AL, BA, ME, RS and XK.
We have also tested GDP per capita in PPS and GDP in PPS per capita in % of the EU-27 average (2006) only for the EU countries and HR, MK and TR.

Regarding the economic performance of the EU-27 countries, there are **two divisions / typologies** which are often used in regional / territorial analysis –see also previously.

(1st) The EU-27 countries are divided in **three major categori**es as for the economic performance per descending order **measured by the GDP per capita: highly developed, moderately developed and less developed.** See for instance the use of this division in the 5th Cohesion Report (2010).

On the basis of the following Graph 5.1.1, it is obvious that in the "less developed" countries are included most of the Eastern EU countries. **Croatia and Turkey are also included in this third category**.

All the other CC/PCC could be included regarding GDP per capita in a 4th category clearly distinguished from the third category. However, in this last group are also included two of the Eastern EU countries: RO and BG.

Inside this fourth group we could discern **3 sub-groups** in descending order of GDP per capita: (a) Montenegro and Serbia, (b) Bosnia & Herzegovina and FYROM and, finally, (c) Albania and Kosovo under UNSCR 1244/99.

In total for the CC/PCC we discern **four groups of countries**: the three latter and the group of HR and TR.

We should stress here that this division / typology does not take into account the territorial dimension, i.e. the inclusion of the countries in groups according to their geography / location which has a territorial meaning.

Therefore, in order to further assess the hypothesis of the existence **of four distinct territorial types / groups of countries** we need to check the degree of inequality inside each of these groups.

Specifically, these four groups contain the following countries:

- "Northern countries" -**EU "north"**-: LU, NO, CH, DK, IE, NL, SE, FI, AT, BE, DE, FR and UK.

- Southern countries" -**EU "south"- :** IT, ES, CY, GR, PT and MT.

- Eastern countries" -**EU "east"- :** SI, CZ, EE, SK, HU, LV, LT, PL, RO and BG.

- CC/PCC – WB and Turkey: HR, TR, ME, RS, BA, MK, AL and XK.

The inequalities among the 4 "territorial" groups –see in Graph 5.1.2 and Map 5.1.1- are similar to the previously analysed ones (among the highly, moderately and lowly developed countries) despite the fact that this time HR and TR as well as BG and RO are included in "territorial: groups. The means (averages) corresponding to the "territorial" groups are clearly different.

The comparison could be improved using the Standard deviation (stdev) and, even better, using the Coefficient of variation: stdev / mean.

From this scope, the CC/PCC presents the higher degree of inequalities: the respective coeff. of variation amounts in 60, while for the EU "north", the "south" and "east" amount in 36, 22 and 35, respectively – see in the Graph 5.1.2 and the Map 5.1.

Regarding the differences in GDP rate inside the group of CC/PCC (division in 4 sub-groups of countries –see before), it seems that they remain unchanged over time, from 2000 to 2008 –see in the Graph 5.1.3.
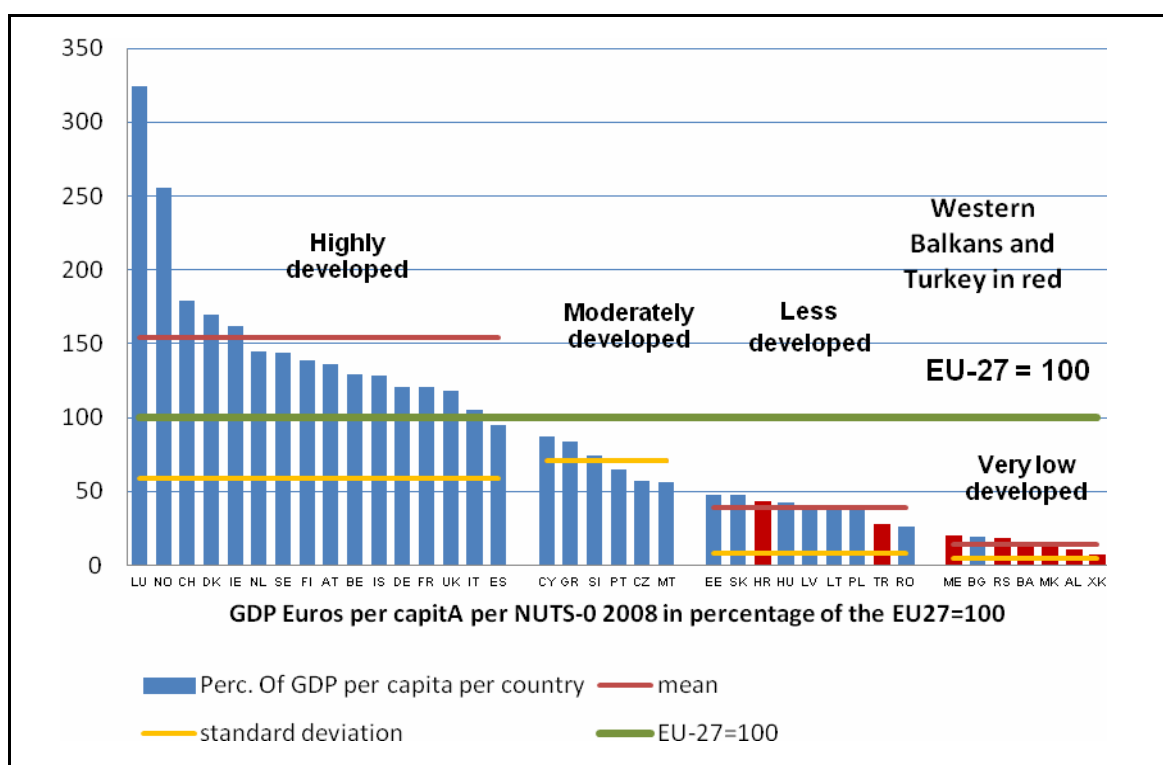
Graph 5.1.1: GDP in Euros per capita at current market prices per EU country (NUTS 0) and CC/PCC in % of the EU-27 average (=100) 2008
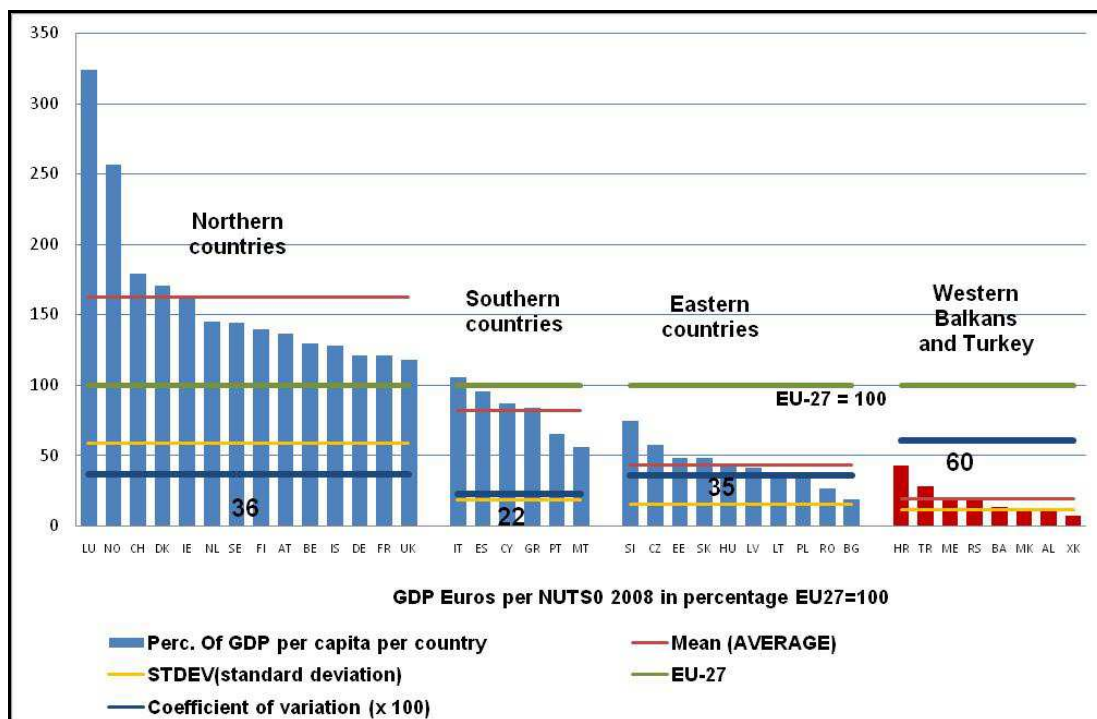
Graph 5.1.2: GDP in Euros per capita per EU country (NUTS 0) and CC/PCC in % of the EU-27 average (=100) 2008 – North, South, East, WB and Turkey
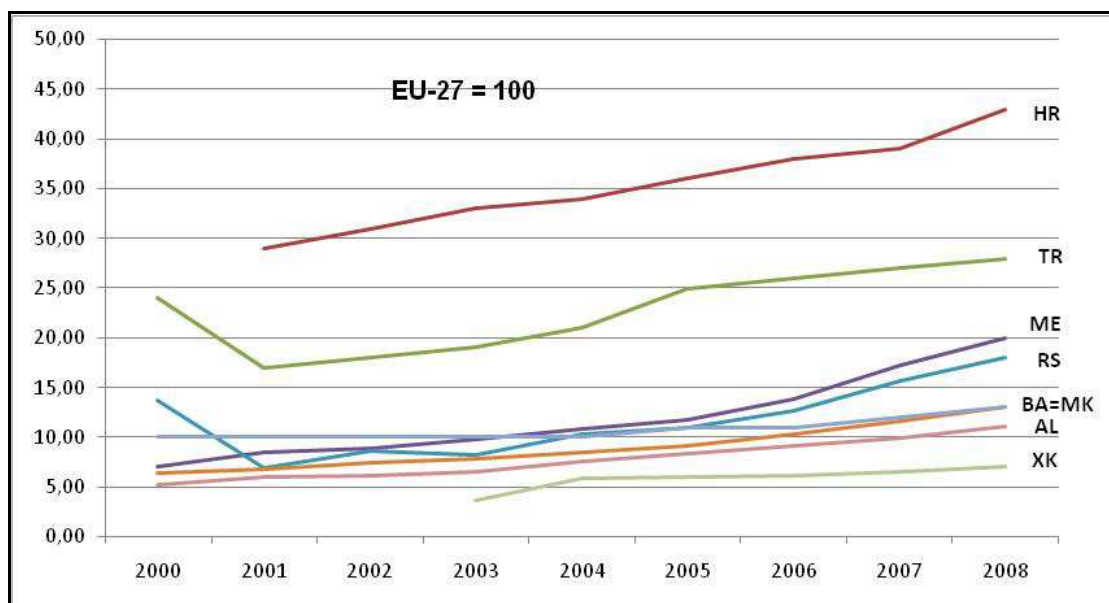
Graph 5.1.3: GDP Euro per inhabitant in percentage of the EU-27 average in CC/PCC 2000-2008
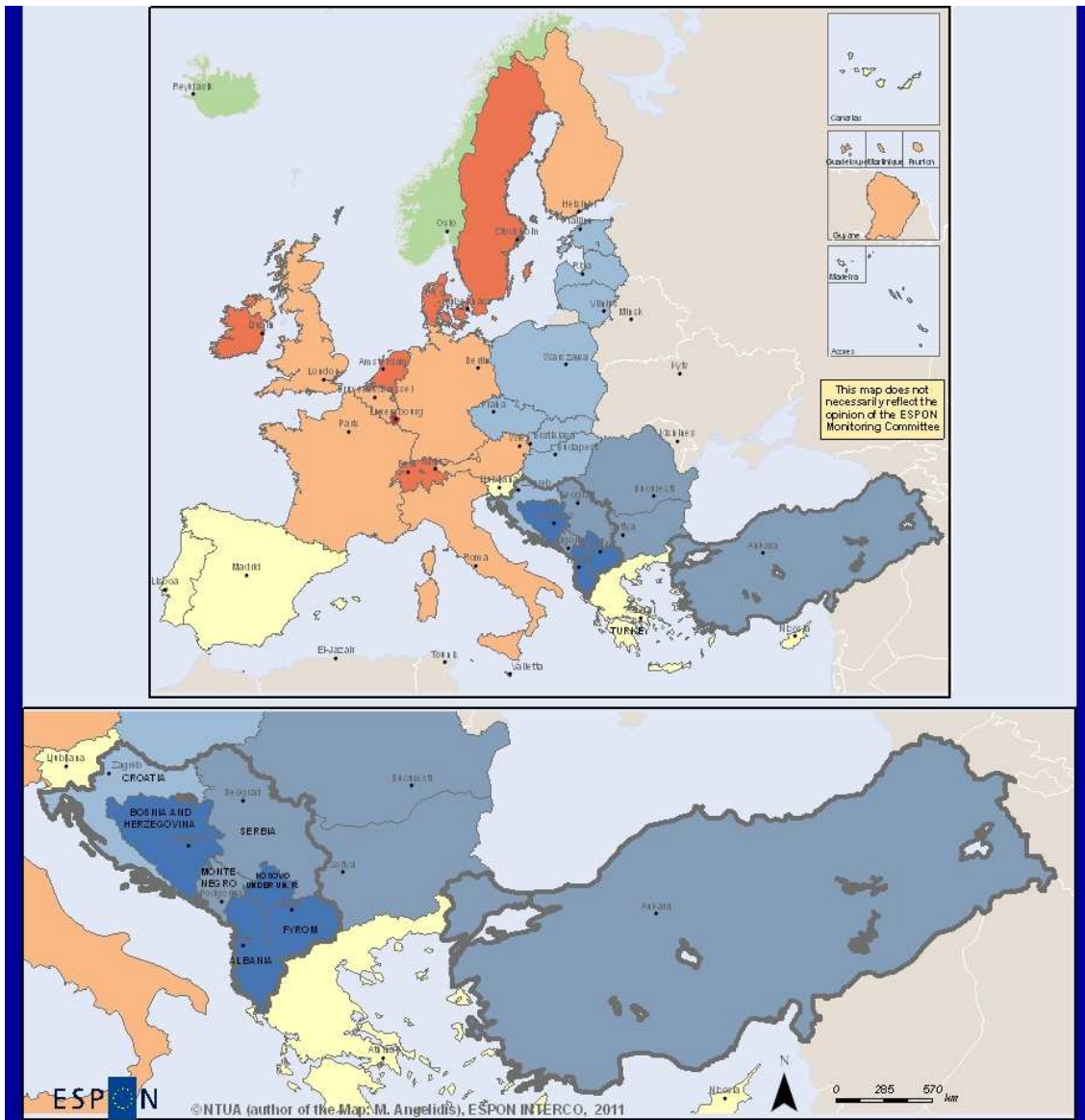
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Western Balkans and Turkey*
GDP in Euro per inhabitant** in percentage of the EU-27 average
at NUTS0 level 2008

GDP per capita Euros - % of EU-27=100
at NUTS0 level 2008

- No data
- 7 - 13
- 13 - 28
- 28 - 57
- 57 - 95
- 95 - 139
- 139 - 179
- 179 - 324
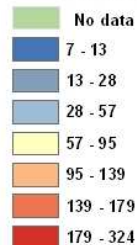
* Candidate or Potential Candidate countries
** st current market prices

Data sources (for the year 2008 at NUTS0 level):
- For EU countries, HR, MK and TR: Eurostat data (2011):
- For AL, BA, ME, RS and XK: our calculations
on the base of Eurostat (2011) data on the GDP per capita
in Euros at current market prices

Geometries sources: Eurogeographics
administrative boundaries 2006

NUTS2006-20M-NUTS0

Regional level: NUTS 0
Source: NTUA team for the elaboration of data
Origin of data: Eurostat, 2011
© Euro Geographics Association for administrative boundaries

Map 5.1.1: EU countries and CC/PCC: GDP per capita in Euros - % of the EU-27 average (=100) at NUTS0 level 2008

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GDP rate at sub-national (NUTS-2) level

In this case we have data only for HR and TR. We used GDP PPS per capita in per-centage of the EU-27 average at NUTS-2 level for the year 2006.

As he have already seen, HR and TR have national average (mean) rates which are clearly lower than the EU-27 average (EU-27=100) – see in the Graph 5.1.4 and the Maps 5.1.2 and 5.1.3 (in GDP Euros and GDP PPS respectively).

Obviously, regional inequalities measured on the base of the coefficients of variation are more pronounced in TR than in HR (44 against 28 –see in Graph 5.1.4). We could hardly compare these values with the value for the overall EU-27 (because this last corresponds to a very important number of countries and regions) which amounts in 38.

We could make a useful comparison with BG and RO which are neighbouring to the CC/PCC. The values of the corresponding coefficients of variation amount in 54 for RO and 43 for BG. Also, the Map 5.1.2 shows that intra-national inequalities in GDP are more pronounced in some countries in all the three parts of EU-27 (north, south and east). It is evident that in most cases differences between the capital cities' regions and the rest are important both in EU-27 and the CC/PCC.

However, it is preferable go in more depth in the comparison of the GDP per capita using the dispersion of GDP –see in next sub-section.

	HR	MK	TR	EU-27
max	73.0		73.0	
mean	56.7	30.0	37.8	100.0
min	41.0		15.0	
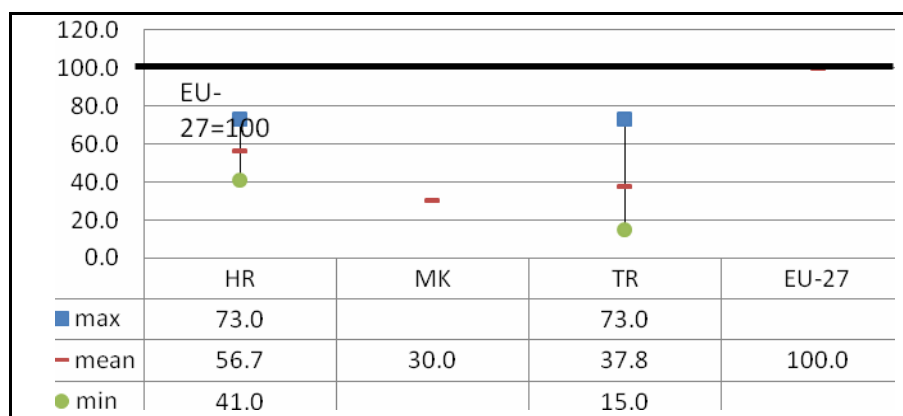
	HR	MK	TR	EU-27
Standard deviation	16,01		16,75	38,41
Coefficient of variation	0,28		0,44	0,38

Graph 5.1.4: GDP in PPS per capita in % of the EU-27 average (2006) at NUTS-2 level

From: Eurostat, table name: nama_r_e2gdp
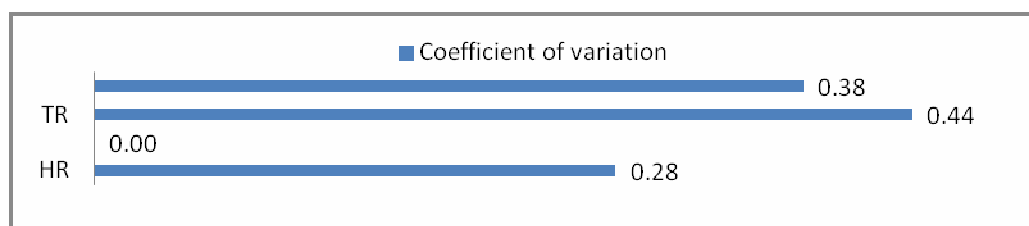
Graph 5.1.5: GDP in PPS per capita in % of the EU-27 average (2006): coefficients of variation measured at NUTS-2 level

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From: Eurostat, table name: nama_r_e2gdp
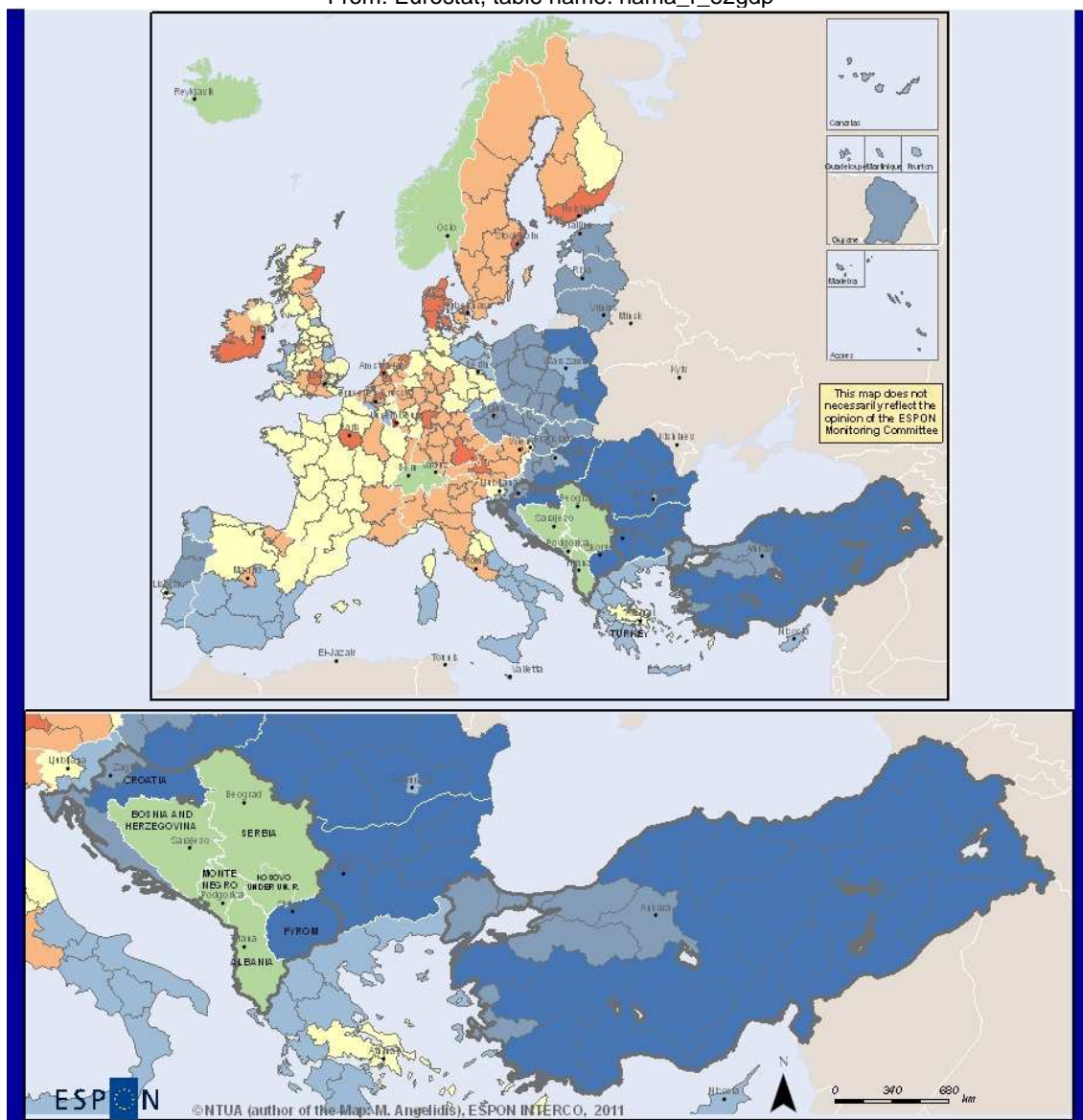
Western Balkans and Turkey*
GDP Euros per capita - percentage of EU-27 average
at NUTS2 level 2008**

GDP Euros per capita in
- % of the EU-27 average 2008

	No data
	10 - 31
	32 - 56
	57 - 87
	88 - 111
	112 - 149
	150 - 242
	243 - 353

* Candidate or Potential Candidate countrie
** at current market prices
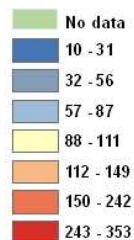
Data sources:
Eurostat data for the year 2008 at NUTS2 level (2011)

Geometries sources: Eurogeographics
administrative boundaries 2006

NUTS2006-20M-NUTS0

Map 5.1.2: EU countries and CC/PCC: GDP per inhabitant, in Euros – percentage of EU-27 average (=100) at NUTS 2 or similar NUTS 2 level 2008

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Map 5.1.3: EU countries and CC/PCC: GDP per inhabitant, in PPS – % of EU-27 average (=100) at NUTS 2 or similar NUTS 2 level 2006

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Dispersion of regional GDP per capita (NUTS-2 regions per country)

The use of the previous different statistics of variation (mean, standard deviation, coefficient of variation) presents a very important disadvantage. They take into account each NUTS2/NUTS3 region as 1 (each unit counts as 1); however, the population potentials of these regions differ substantially. Therefore, the different weights should be taken into account into a single indicator. This is done by the calculation of the "Dispersion" of regional GDP per capita (NUTS-2 or NUTS-3 regions per country) –see below the definition of the indicator by Eurostat.

Definition of the indicator by Eurostat

Since 2007, Eurostat has been calculating a new, derived indicator which records the differences between regional per-inhabitant GDP and the national average and makes them comparable between countries. This dispersion indicator is calculated at NUTS 2 and at NUTS 3 levels. The figures used by Eurostat are based on GDP in purchasing power standards (PPS).

For a given country, the dispersion 'D' of the regional GDP of the level 2 regions is defined as the sum of the absolute differences between regional and national GDP per inhabitant, weighted on the basis of the regional share of population and expressed in percent of the national GDP per inhabitant:

$$D = 100 \frac{1}{Y} \sum_{i=1}^{n} | (y_i - Y) | (p_i / P)$$

In the above equation:
- y_i is the regional GDP per inhabitant of region i;
- Y is the national average GDP per inhabitant;
- p_i is the population of region i;
- P is the population of the country;
- n is the number of regions in the country.

The value of the dispersion of GDP per inhabitant is zero if the values of regional GDP per inhabitant are identical in all regions of the country or economic area (such as the EU or the euro area), and it will show, all other things being equal, an increase if the differences in per-inhabitant GDP between the regions increase. A value of 30 % therefore means that the GDP of all regions of a given country, weighted on the basis of the regional population, differs from the national value by an average of 30 %.

Comparison among the four "territorial" groups of countries

For EU-27 as a whole, for NUTS-2 level, the dispersion in GDP per capita decreased over time, which means that territorial disparities in GDP were decreased.

For the same year (2006) it seems that dispersion (inequalities) is more often high in the EU east countries and in the CC/PCC – see the values of dispersion per country in the Graph 5.1.6.

Using the mean, stdev and coefficient of variation of the dispersion values for the four groups of countries, we conclude that regional inequalities are more pronounced in the group of the CC/PCC and in the EU east. There are lower in the south and even lower in the north (see the means in the Graph 5.1.6. However, the differences among countries inside each group as for this indicator are more important in the case of CC/PCC but they are equally important in the north compared to the east (see the coeff. of variation). Inversely, the differences (variation) among the southern EU countries are lower.

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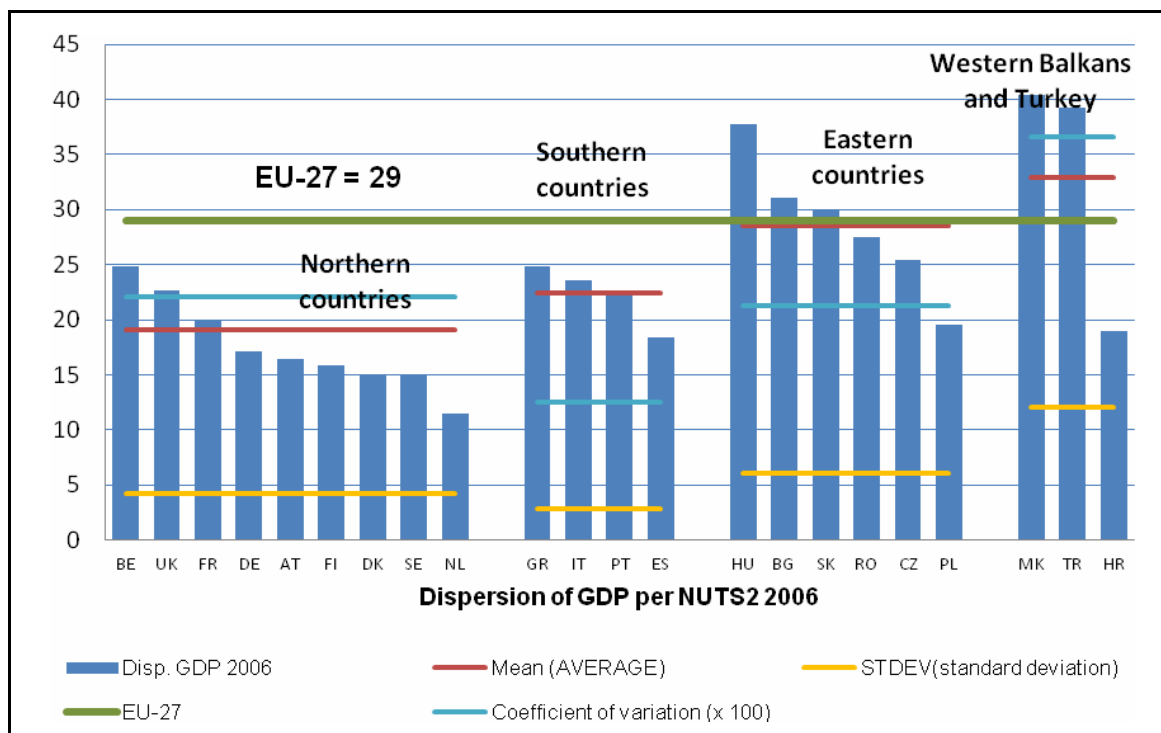
Graph 5.1.6: Dispersion of GDP per EU country (NUTS 2) and CC/PCC 2006

Disparities inside the CC/PCC group

While dispersion for EU-27 decreased slightly (Graph 5.1.7), the group of CC showed a contrary trend. For HR, MK and TR (for the PCC there weren't available data) the change of the dispersion of GDP per capita at regional level between 2001 and 2006 showed that **disparities were increased**, with FYROM showing the smallest increase.
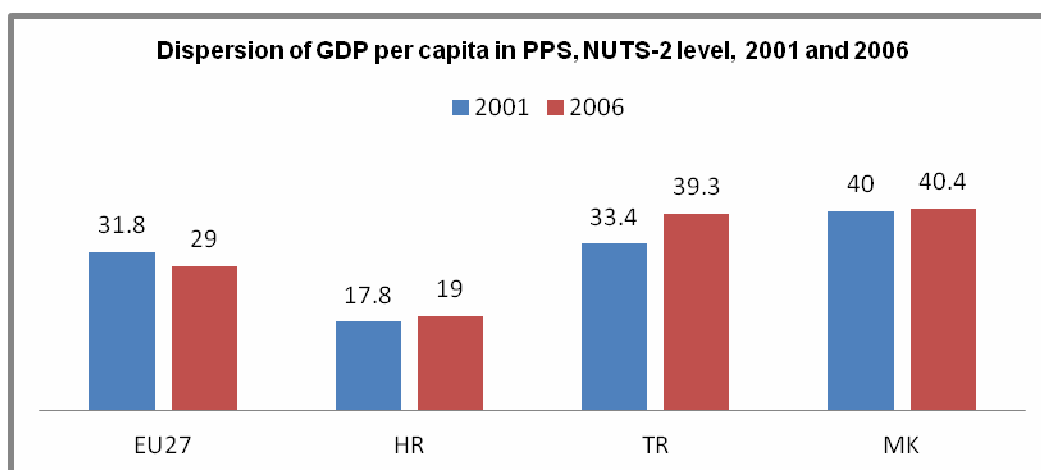
Graph 5.1.7: Dispersion of regional GDP per capita in PPS, NUTS-2 level, 2001 and 2006 (%) in the EU-27 and in CC

Source of data: Eurostat, table name: nama_r_e0digdp

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Unemployment rate at country (NUTS-0) level

The unemployment rates for all the CC/ PCC were higher and often much higher than the EU-27 average - see in Graph 5.1.8 and Map 5.1.4.
Regarding this indicator, the CC/PCC (NUTS-0 level) except from Croatia and Turkey present a totally different pattern from that of the EU countries. Croatia and Turkey present levels of unemployment similar to the EU-27 countries with higher rates of unemployment (ES, SK).

In order to better analyse the difference of the CC/PCC (possible) pattern from those of the 3 EU-27 groups of countries we have created the Graph 5.1.8 presenting the respective statistics of variation (inequalities).
The mean of the CC/PCC group is much higher than that of the EU east (which is higher from the EU north). The values of the coefficient of variation are much higher in the CC/PCC; this means that the inequalities among these countries are very high as obviously the rates for HR and TR are much lower than the rates for XK, MK and BA which are impressively high. The EU south and EU north follow.

Chart: Unemployment rate (%) 2008 per NUTS 0 in EU27, EU countries and CC/PCC. "Western Balkan countries and Turkey in red". EU-27 = 7,0
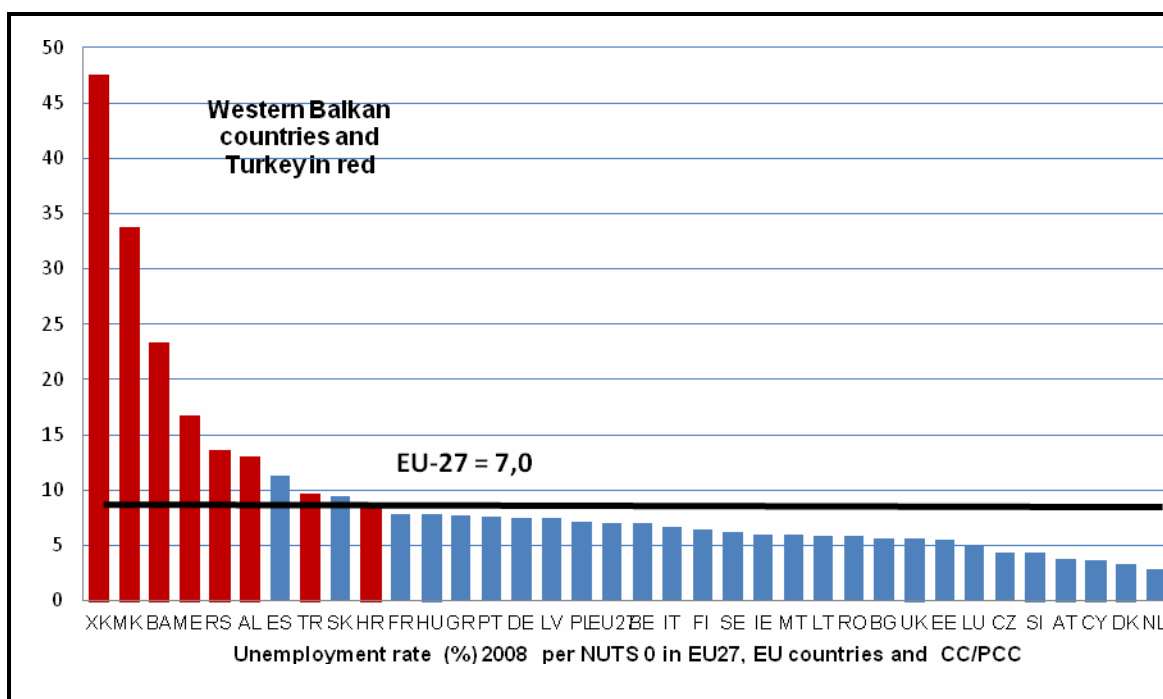
CC/PCC	AL	BA	HR	ME	MK	RS	TR	XK
2008	13	23,4	8,4	16,8	33,8	13,6	11	47,5

Graph 5.1.8: Unemployment rate (%) in 2008 per EU country (NUTS 0) and CC/PCC compared to EU-27 average
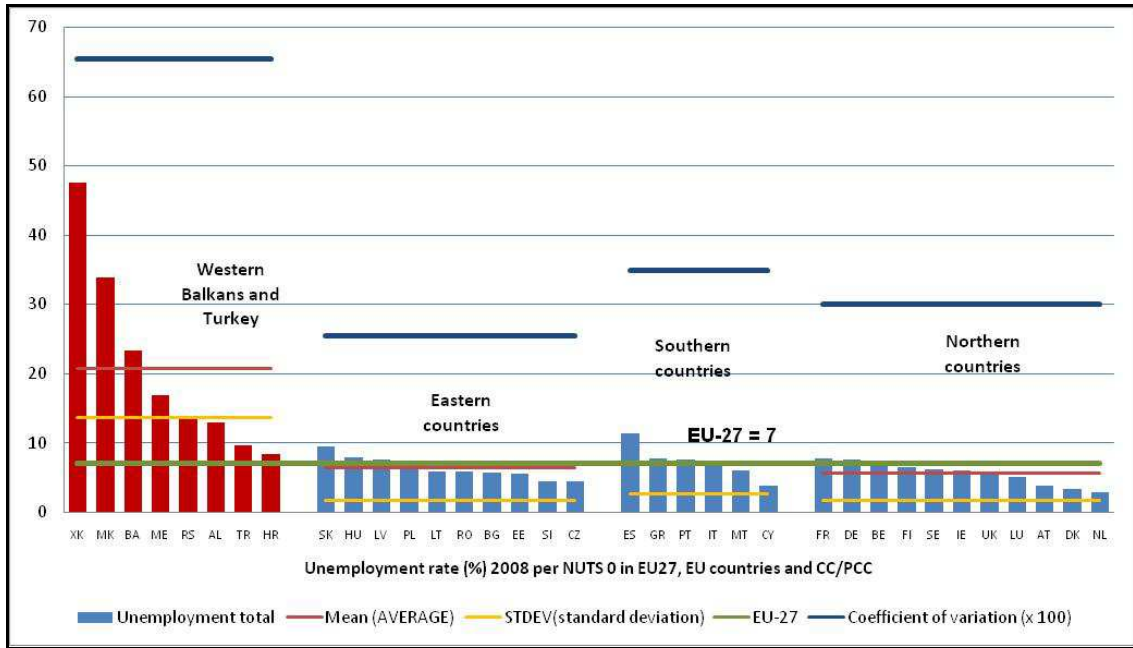
Graph 5.1.9: Unemployment rate (%) in 2008 per EU country (NUTS 0) and CC/PCC compared to EU-27 average – per groups of countries
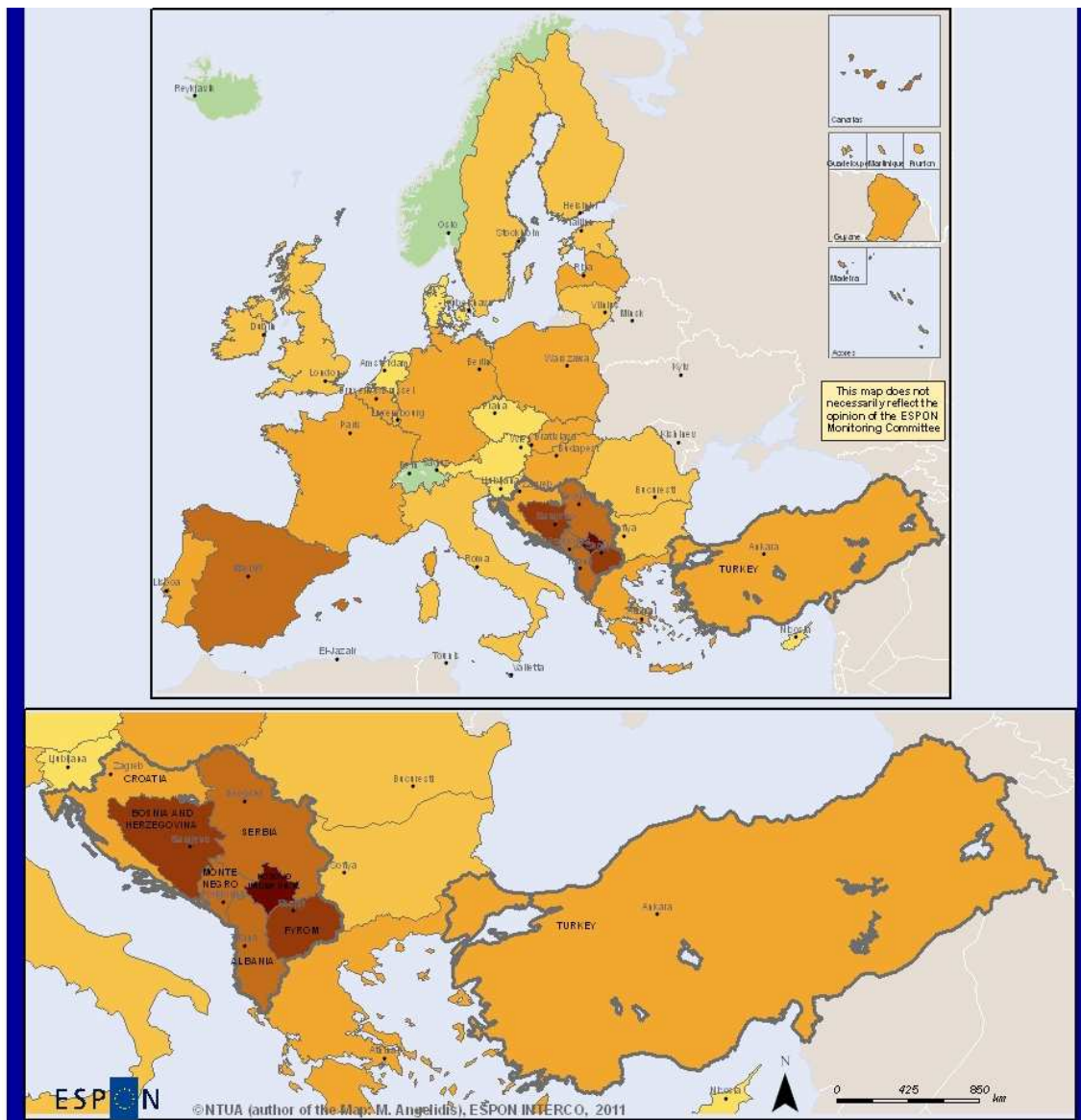
_____

Western Balkans and Turkey*
Unemployment rate % **
at NUTS0 level 2008

Unemployment rate % **
at NUTS0 level 2008

☐	No data
☐	0,0001 - 4,4000
☐	4,4001 - 6,4000
☐	6,4001 - 8,4000
☐	8,4001 - 11,3000
☐	11,3001 - 16,8000
☐	16,8001 - 33,8000

* Candidate or Potential Candidate countries
** Unemployed persons aged 15 years or over
/ population aged 15 years or over (%)

Data sources:
Eurostat data for the year 2008 at NUTS0 level (2011)
for the EU countries and the CC / PCC

Geometries sources: Eurogeographics
administrative boundaries 2006

☐ NUTS2006-20M-NUTS0

Map 5.1.4: EU countries and CC/PCC: Unemployment rate % at NUTS 0 level 2008

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Unemployment rate at sub-national level

Definition of the indicator by Eurostat

Regional (NUTS level 2) unemployment rate represents unemployed persons as a percentage of the eco-nomically active population (i.e. labour force or sum of employed and unemployed). The indicator is based on the EU Labour Force Survey. Unemployed persons comprise persons aged 15-74 who were (all three conditions must be fulfilled simultaneously): 1. without work during the reference week; 2. currently avail-able for work; 3. actively seeking work or who had found a job to start within a period of at most three months.

Regarding the inequalities at NUTS2 level per country inside the EU-27+CC/PCC area on 2009, we have data only for HR and TR from Eurostat and for RS from NSO.

As we have already remarked previously, the mean values for unemployment rates at national level are much higher in the three last countries compared to the EU-27 average – Graph 5.9 and Map

The coefficientss of variation in these two countries are relatively high; they are slightly lower than the respective coefficient for the EU-27 (we should be cautious about this last comparison as the number of NUTS2 regions in the EU-27 is much more important than the respective numbers for the 2 countries). See ib the Graphs 5.1.9 and 5.1.10 and the Map 5.1.5.

It seems that the regional inequalities on the base of the coeff. of variation are less important in HR and TR (in comparison with the respective coeff. for the entire EU-27; this comparison is less appropritate)

	HR	MK	TR	EU-27
max	13.7		19.9	
mean	9.57	0.00	11.63	8.74
min	5.4		4.2	

	HR	MK	TR	EU-27
standard deviation	4,15		3,90	4,25
Coeff. of variation	0,43		0,34	0,49

Graph 5.1.9: Unemployment rate (2009): variations within countries at NUTS-2 level.

From: Eurostat, table name: lfst_r_lfu3rt
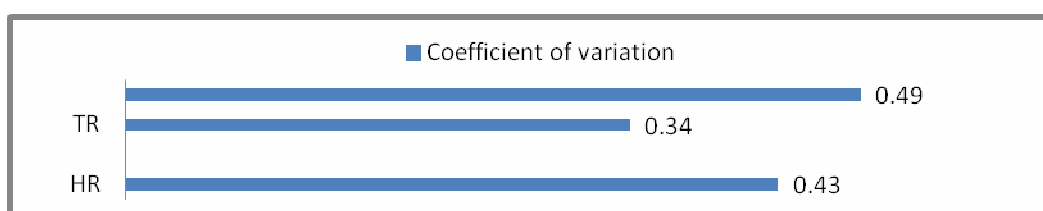
Graph 5.1.10: Unemployment rate (2009): coefficient of variation at NUTS-2 level.
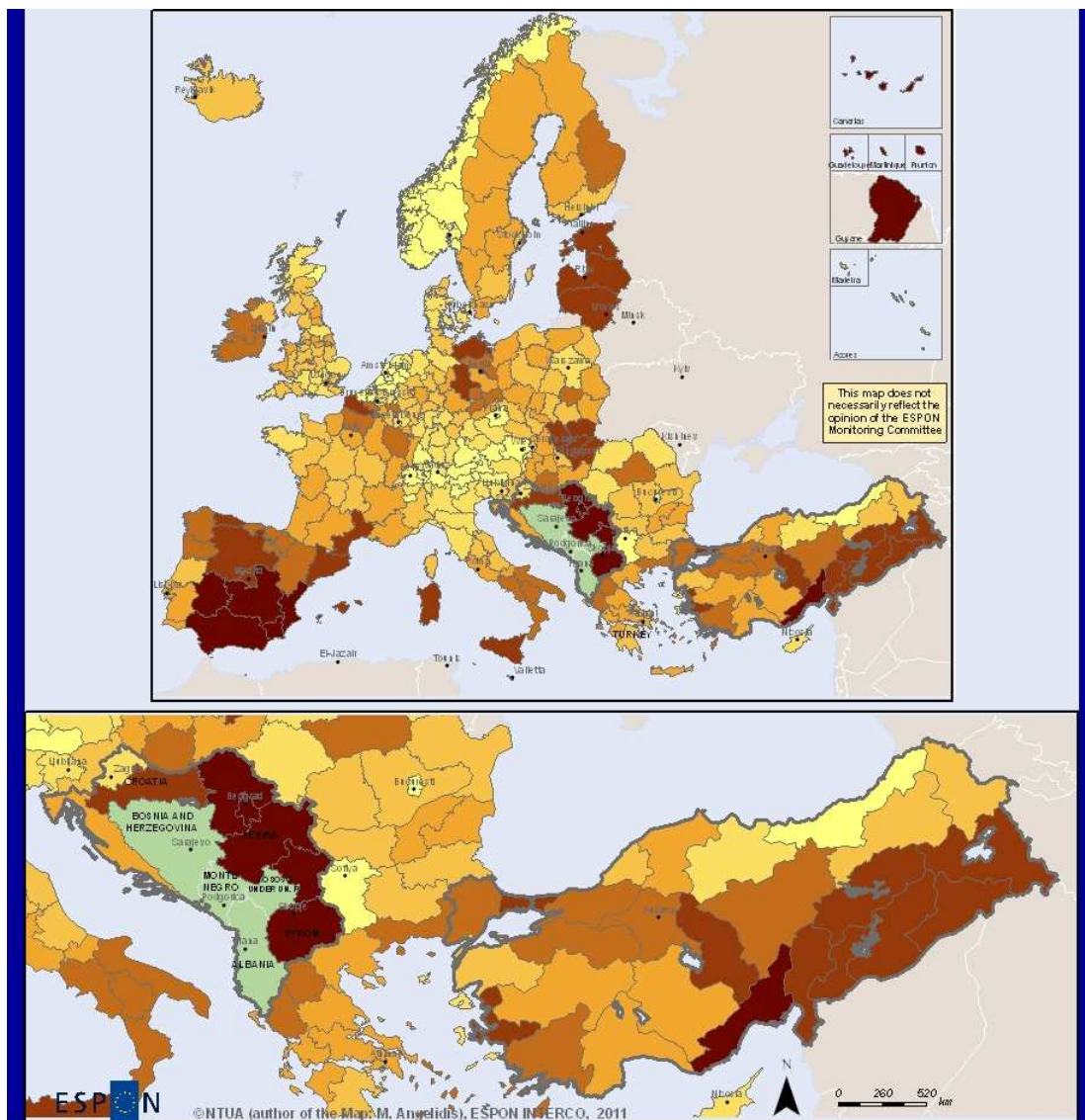
From: Eurostat, table name: lfst_r_lfu3rt

EU-27, Western Balkans and Turkey*
Unemployment rate % *
at NUTS2 level 2009

Unemployment rate % 2009 *
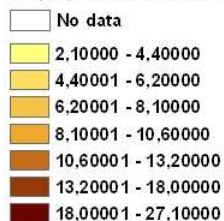
☐	No data
☐	2,10000 - 4,40000
☐	4,40001 - 6,20000
☐	6,20001 - 8,10000
☐	8,10001 - 10,60000
☐	10,60001 - 13,20000
☐	13,20001 - 18,00000
☐	18,00001 - 27,10000

* Candidate or Potential Candidate countries
** Unemployed persons aged 15 years or over
    / population aged 15 years or over (%)

Data sources:
- Eurostat data for the year 2009 at NUTS2 level (2011)
for the EU countries, HR, MK and TR
- For Serbia: NSO data

Geometries sources: Eurogeographics
administrative boundaries 2006

☐ NUTS2006-20M-NUTS2

Map 5.1.5: EU countries and CC/PCC: Unemployment rate % at NUTS 2 level 2009

5.2: Inclusion

The indicators that were tested are: life expectancy at birth (total) and people aged 65 or over as a share of the total population (demography indicators) as well as the population density

Population ageing at country (NUTS-0) level

We have used as indicator of population ageing the share (%) of the persons of 65 years and over to the total population in 2008 at NUTS0 level.
Turkey has an impressively lower rate compared to both the other CC/PCC and the EU-27 countries.

Three of the other CC/PCC: Albania, FYROM and Montenegro, have a similar pattern, clearly lower than that of the EU-27 average and the pattern of the majority of EU countries –see in Graphs 5.2.1 and 5.2.2.
On the other hand, the rates of Croatia and Serbia are slightly higher than the EU average.
Disparities among the members of the CC/PCC area are much higher than in the EU south, north and east –see in the Graphs 5.2.2 and 5.2.3 (the coeff. of variation) and the Map 5.2.1.
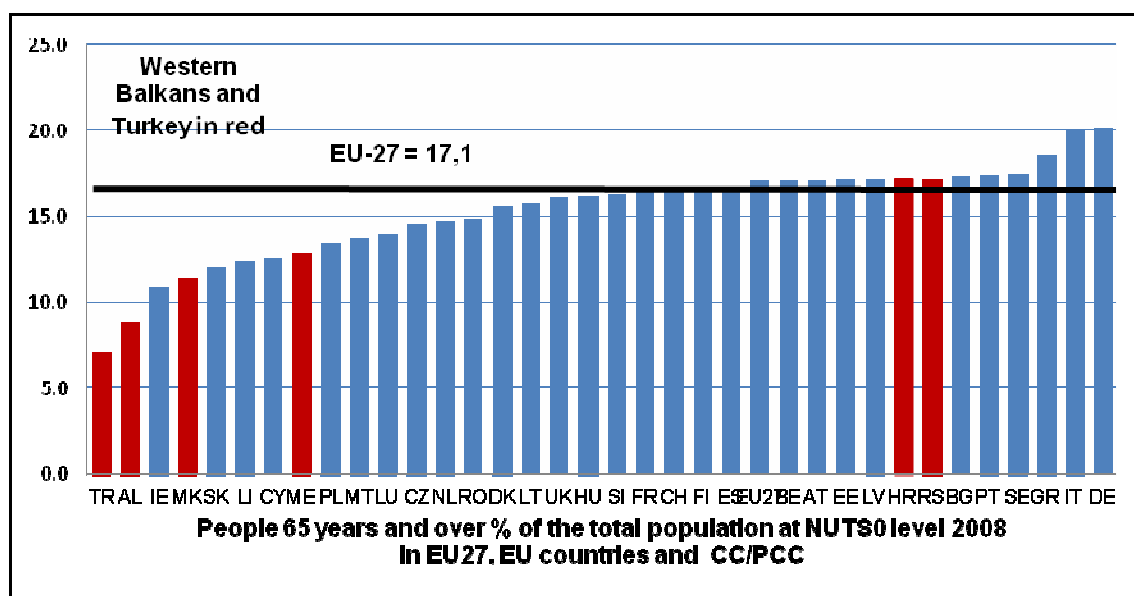
Graph 5.2.1: Percentage of the 65+ population in the total in 2008 at NUTS0 level in EU-27, EU countries and CC/PCC.
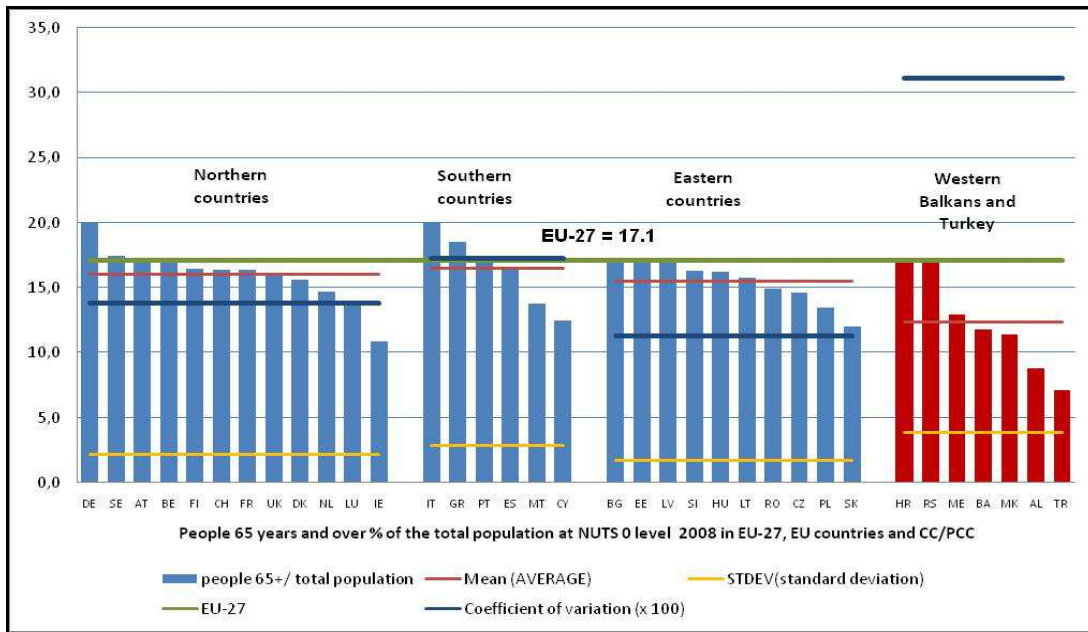
Graph 5.2.2: Percentage of the 65+ population in the total in 2008 at NUTS0 level in EU-27, EU countries and CC/PCC – per groups of countries
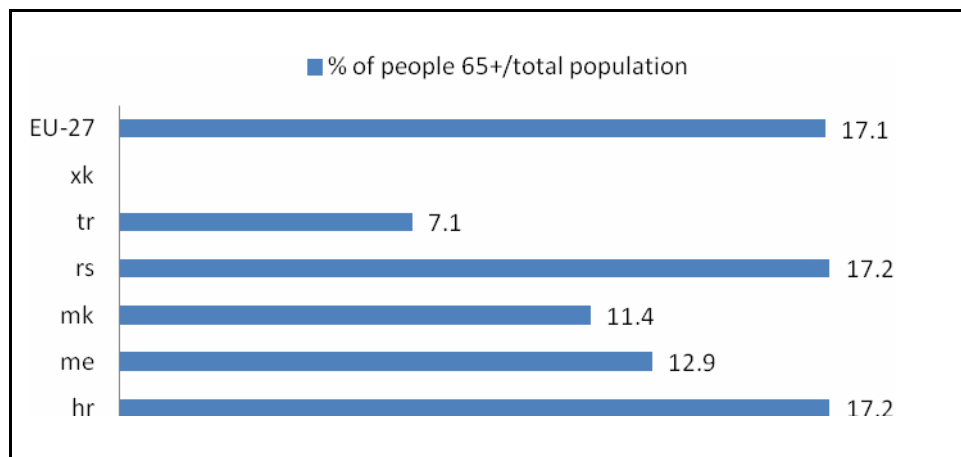
Graph 5.2.3: People aged 65+ as a percent of total population (2008) at NUTS-0 level.

Source of data: Eurostat, table name: demo_pjanind (2011)
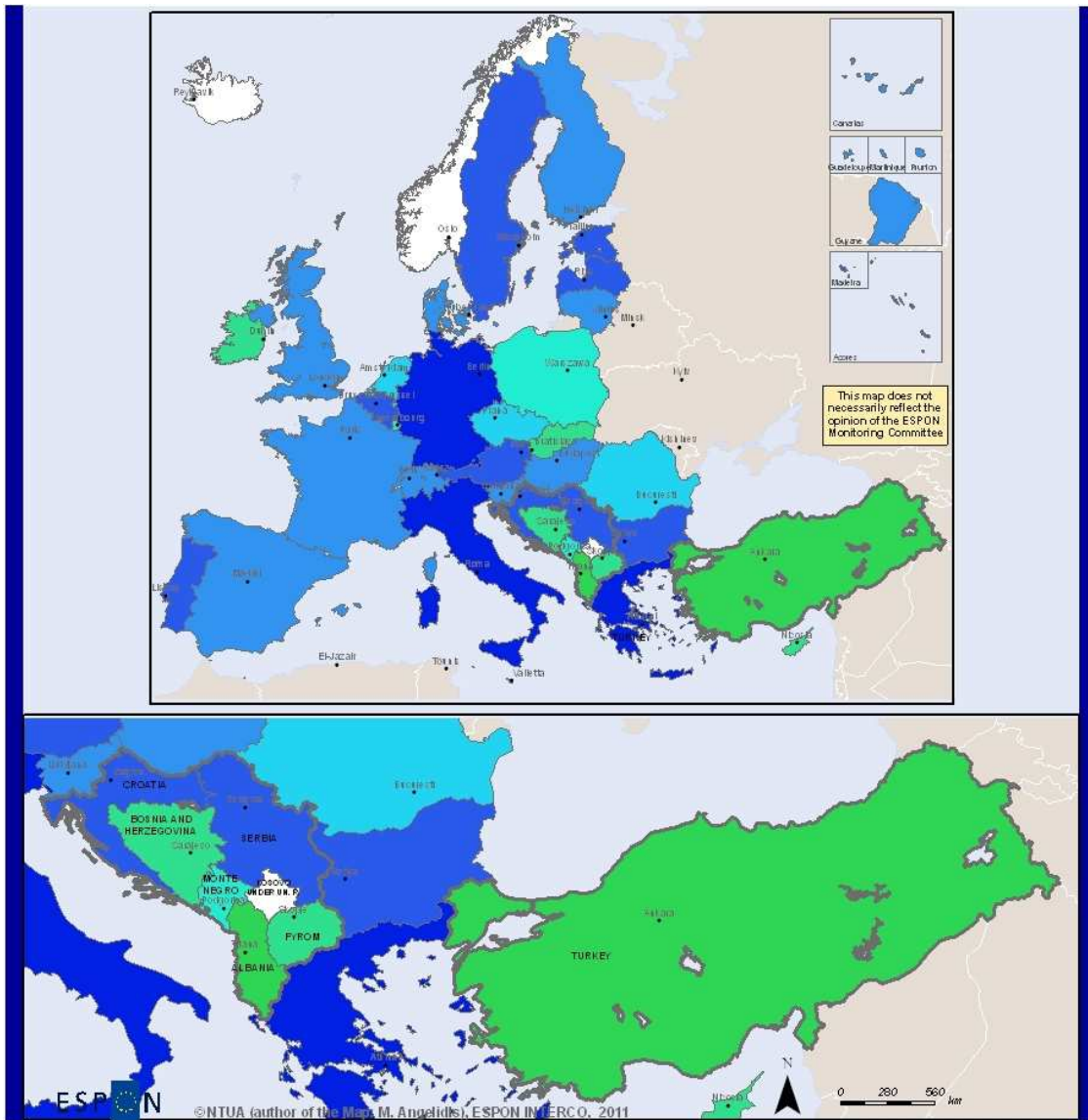
Western Balkans and Turkey*:
Population 65 y. and over / total population (%)
at NUTS0 level 2008
* Candidate or Potential Candidate countries

Population 65 years and over
/ total population (%) 2008*

	No data
	7,100 - 8,800
	8,801 - 12,500
	12,501 - 14,000
	14,001 - 14,900
	14,901 - 16,600
	16,601 - 17,500
	17,501 - 20,100

Data sources:
- Eurostat data for the year 2008 at NUTS0 level (2011):
- For B & H (BA): NSO data for 2004

Geometries sources: Eurogeographics
administrative boundaries 2006

NUTS2006 20M NUTS0

Regional level: NUTS 0
Source : NTUA team for the elaboration of data
Origin of data : Eurostat, 2011
© Euro Geographics Association for administrative boundaries

Map 5.2.1: EU countries and CC/PCC: Population 65 years and over Rate % at NUTS0 level 2008

Population ageing at sub-national level

This indicator was tested at sub national level (NUTS-3), as there were data for most of the CC/ PCC countries.

The intra-national disparities (coeff. of variation) are higher in BA and TR compared to the rest CC/PCC -see in Graphs 5.2.4 and 5.2.5 and Map 5.2.2.

People 65+/ total population: Min, mean and max (2008), NUTS-3 level

EU-27=18,26

	EU-27	AL	BA	HR	ME	MK	RS	TR	XK
max		0	21.7	23.7	0.0	15.2	23.9	15.1	0
mean	18.26	0	15.2	17.7	0.0	11.6	18.0	8.1	0
min		0	10.97	14.9	0	8.4	13.28	2.8	0
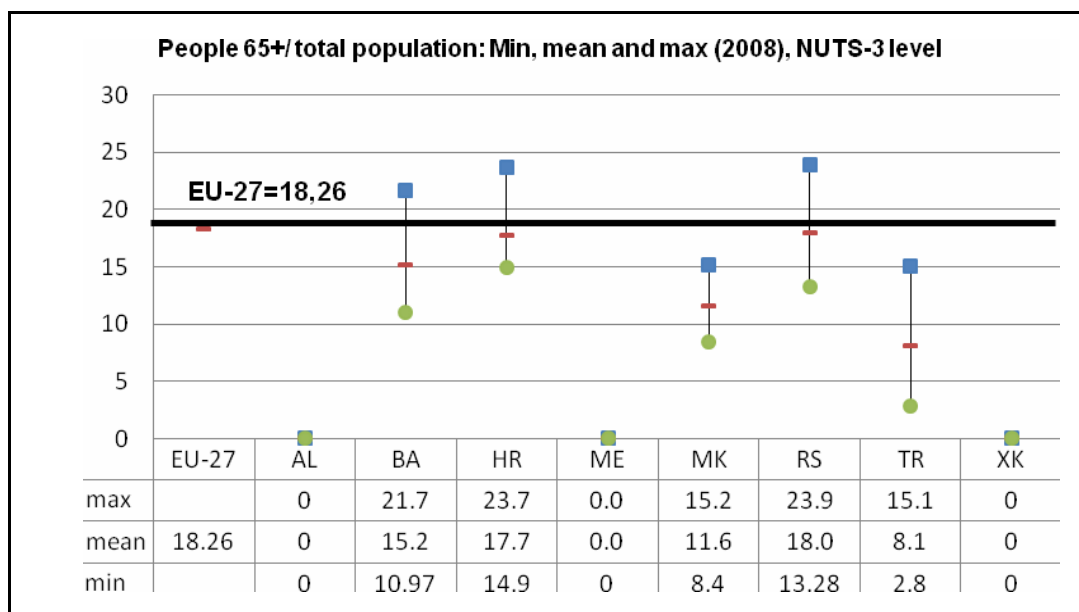
EU – CC/PCC	EU-27	AL	BA	HR	ME	MK	RS	TR	XK
Standard deviation	4,08	0	5,73	2,08	0	1,93	2,55	2,74	0
Coeff. of variation	0,22	0	0,42	0,12	0	0,17	0,14	0,34	0

Graph 5.2.4: People aged 65 and over as % of total population): variations within countries at NUTS-3 level and EU-27 mean 2008

Source of the data: Eurostat, table name: demo_r_pjanaggr3

Coefficient of variation

XK	0.00
TR	0.34
RS	0.14
MK	0.17
ME	0.00
HR	0.12
BA	0.22
AL	0.00
EU-27	0.22
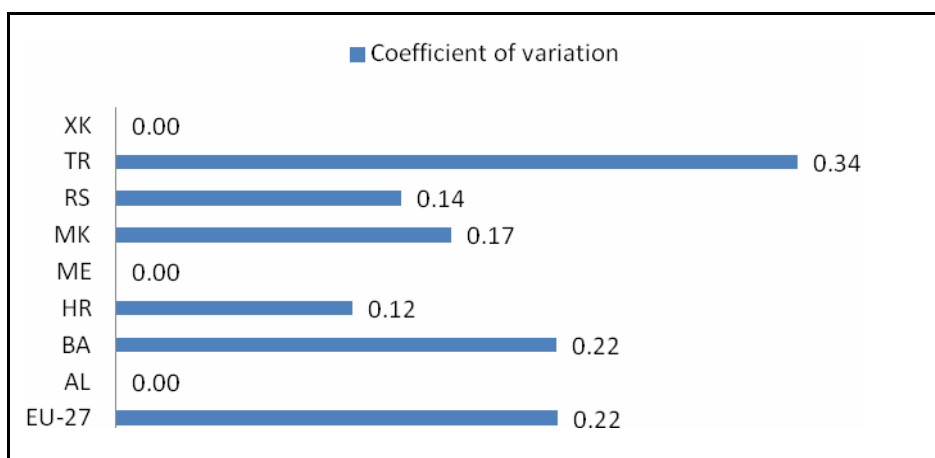
Graph 5.2.5: People aged 65 and over as % of the total population (2008): coefficient of variation measured at NUTS-3 level

Source of the data: Eurostat, table name: demo_r_pjanaggr3
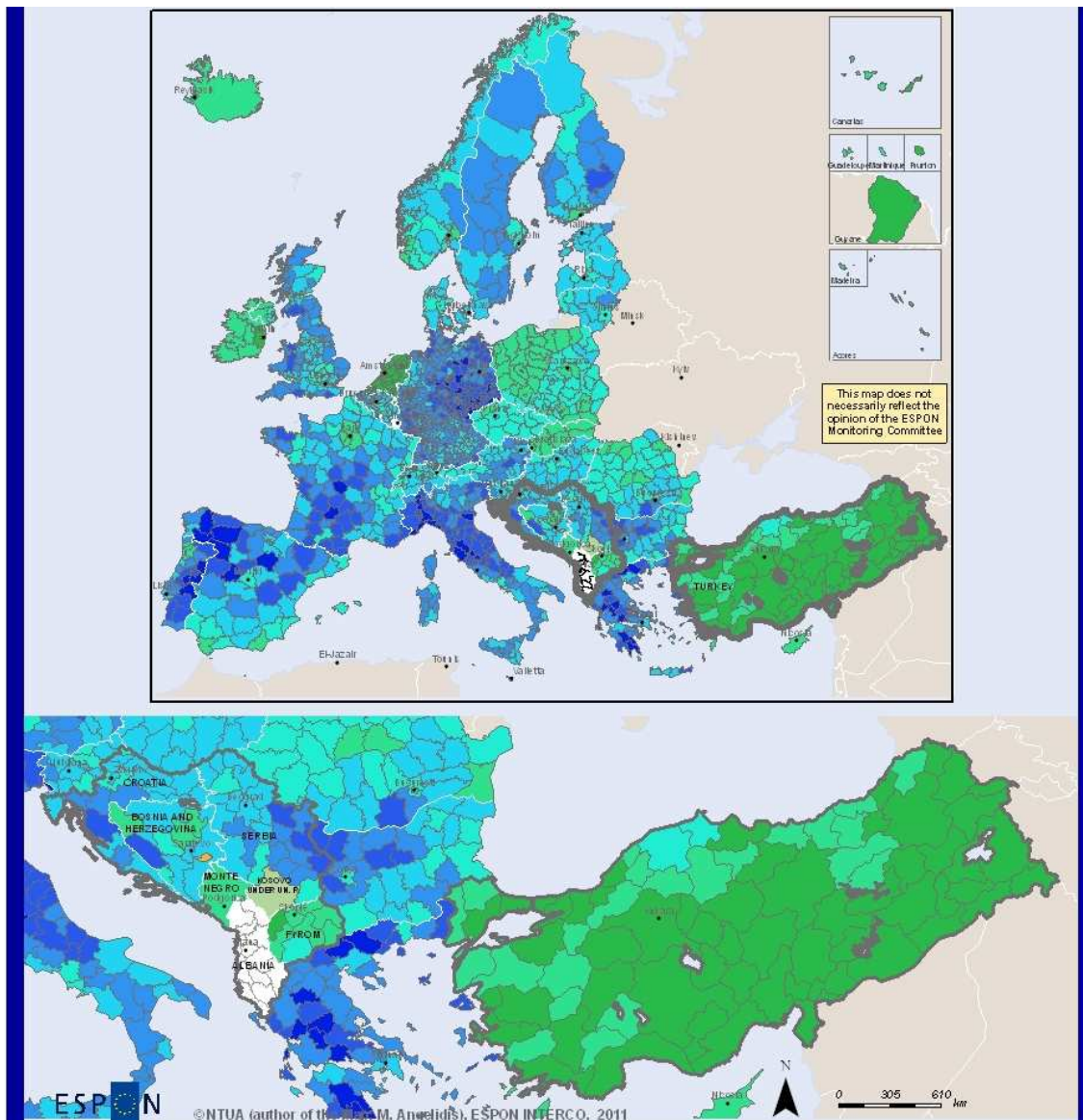
Population 65 years and over
Rate % of the Total population
at NUTS3 or similar NUTS3 level 2008 **
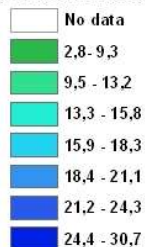
	No data
	2,8 - 9,3
	9,5 - 13,2
	13,3 - 15,8
	15,9 - 18,3
	18,4 - 21,1
	21,2 - 24,3
	24,4 - 30,7

* Candidate or Potential Candidate countries

** Data sources, reference year, NUTS or similar NUTS levels:
Eurostat data for the year 2008 at NUTS3 level (2011)
Except:
- Bosnia & Herzegovina and Serbia year 2008: at "Similar NUTS3" level,
Albania and Montenegro: year 2007 at country level:
estimations of NSO

Geometries sources: Eurogeographics administrative boundaries 2006
except: Albania, Serbia, B & H, Montenegro, Kosovo "similar NUTS3": other source

NUTS2006-20M-NUTS3

Map 5.2.2: EU countries and CC/PCC: Population 65 years and over Rate % at NUTS3 or similar NUTS3 level 2008

Life expectancy at birth (total population) at country (NUTS-0) level

Definition of the indicator by Eurostat

Life expectancy at certain ages represents the mean number of years still to be lived by a person who has reached a certain exact age, if subjected throughout the rest of his or her life to the current mortality conditions (age-specific probabilities of dying).

Life expectancy (LE) at birth (total population) in all CC/ PCC for 2008 is lower than in the EU-27 average –see in the Graphs 5.2.6 and 5.2.7 and the Map 5.2.3.

The values of LE in the CC/PCC are clearly closer to those for the Eastern EU countries
Inside the group of CC/PCC, AL and BA present the higher values of LE, while HR, and ME belong to a second rank and MK, RS and TR present similarly lower values of LE.

The ccoefficient of variation of the CC/PCC space is lower than that for the EU east; this means that the variation (inequalities) among the different CC/PCC is lower than that for the EU east –see in Graph 5.2.7.
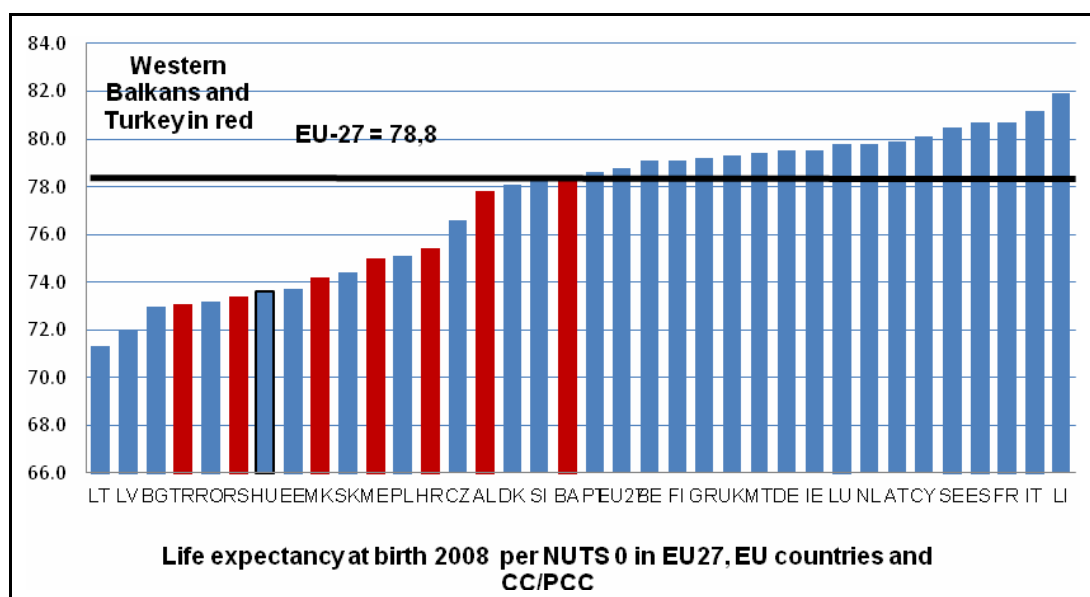
Graph 5.2.6: Life expectancy at birth 2008 per NUTS 0 in total EU-27, EU countries and CC/PCC
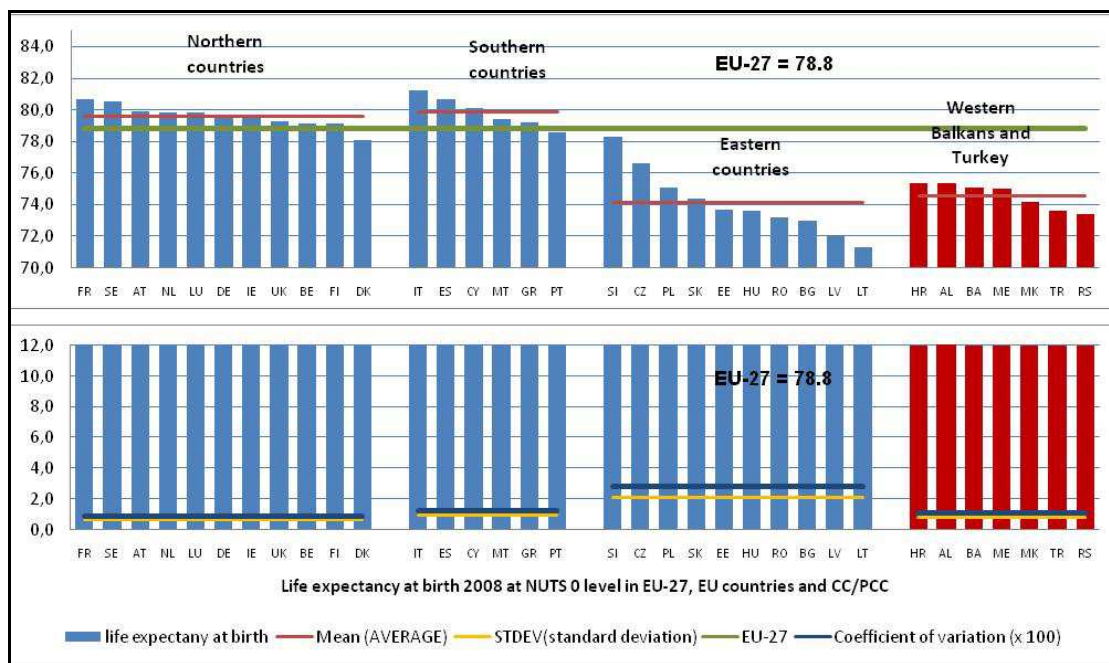
Graph 5.2.7: Life expectancy at birth 2008 per NUTS 0 in total EU-27, EU countries and CC/PCC
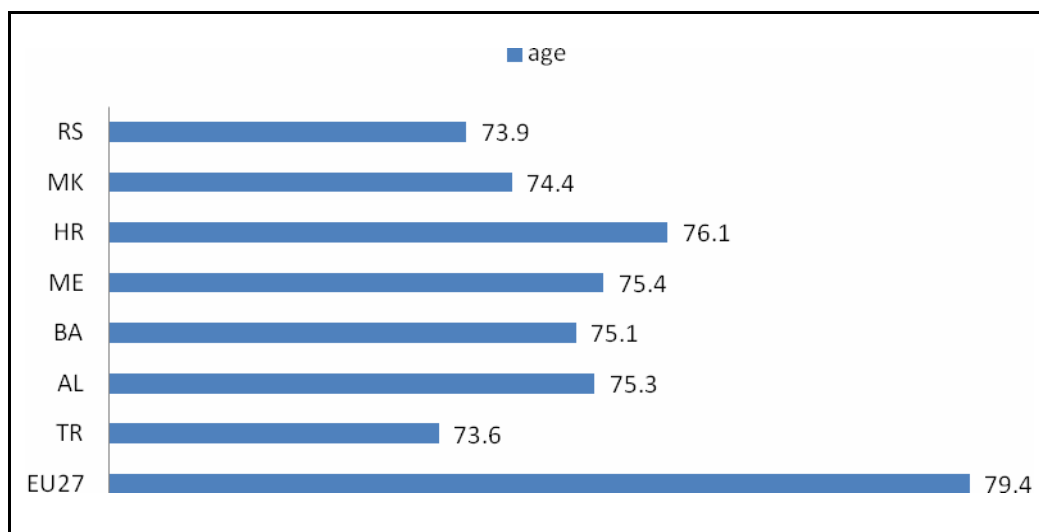
Graph 5.2.8: Life expectancy at birth (total population) in 2008 in years at NUTS0 level

Source of the data: Eurostat. For Albania, Bosnia & Herzegovina and Turkey the data was taken from Eurostat which has used calculations by the National Statistical Institutes.
(table name: demo_mlexpec)
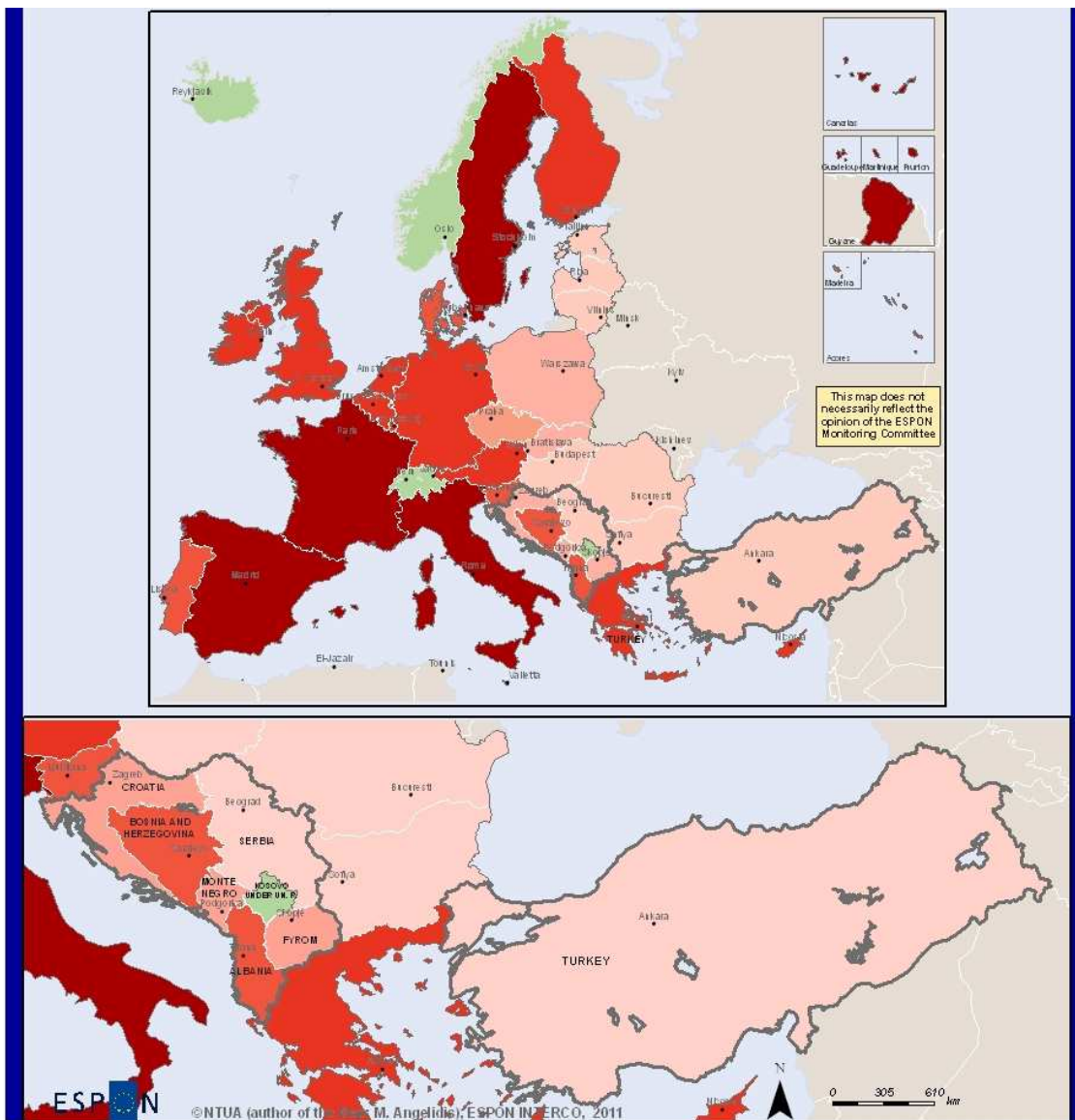
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Western Balkans and Turkey*
Life expectancy at birth (years)
at NUTS0 level 2008

* Candidate or Potential Candidate countries

Life expectancy at birth (years) 2008

- No data
- 0,1 - 73,7
- 73,8 - 75,4
- 75,5 - 76,6
- 76,7 - 78,6
- 78,7 - 80,1
- 80,2 - 81,9
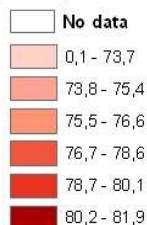
Data sources:
Eurostat data for the year 2008 at NUTS0 level (2011):
- For EU countries, ME, HR, MK and RS: Indicators calculated by Eurostat
- For AL, BA and TR: Indicators calculated by the National
  Statistics Institutes

Geometries sources: Eurogeographics
administrative boundaries 2006

- NUTS2006-20M-NUTS0

Map 5.2.3: EU countries and CC/PCC: Life expectancy at birth at NUTS0 level 2008

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Life expectancy at birth (total population) at sub-national level

Life expectancy in HR and MK NUTS-2 regions (where data is available) is much smaller than the EU-27 average – Graphs 5.2.9 and 5.2.10 and Map 5.2.4.
If we use (even with doubts) the coefficient of variation for all the EU-27 regions which amounts to 0,04, it seems that the internal to HR variation is comparatively low: 0,02.

Life expectancy at birth (2008), NUTS-2 level

EU-27=79,2

	HR	MK	EU-27
■ max	77.6		
— mean	76.1	74.4	79.20
■ min	74.7		
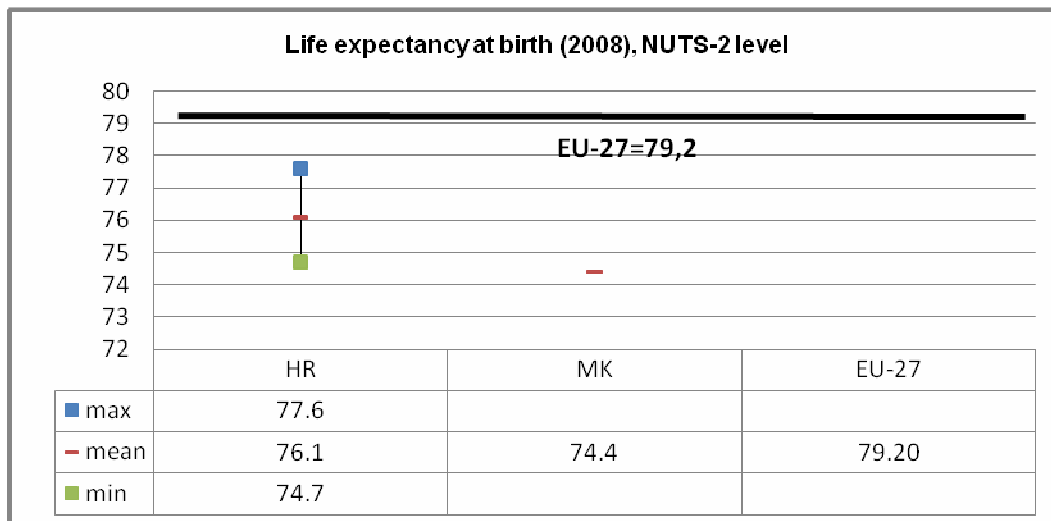
	HR	MK	EU-27
standard deviation	1,46		2,84
Coeff. of variation	0,02		0,04

Graph 5.2.9: Life expectancy at birth (2008): variations within CC/PCC and EU-27 at NUTS-2 level.

From: Eurostat, table name: demo_r_mlifexp
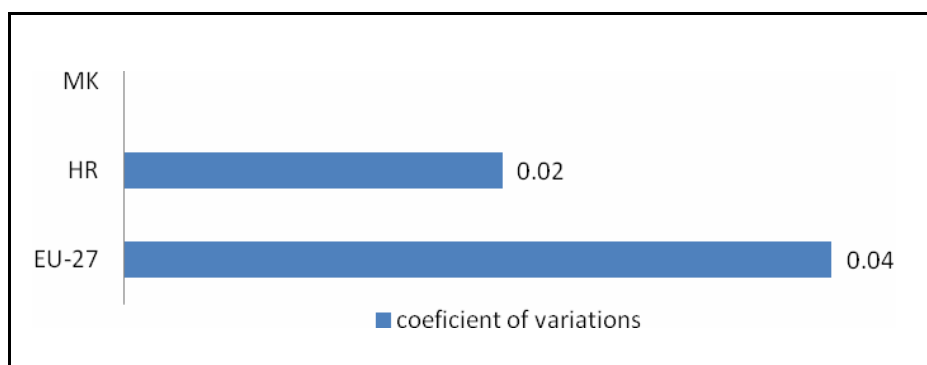
Graph 5.2:10: Life expectancy at birth, total (2008): coefficient of variation at NUTS-2 level. From: Eurostat, table name: demo_r_mlifexp
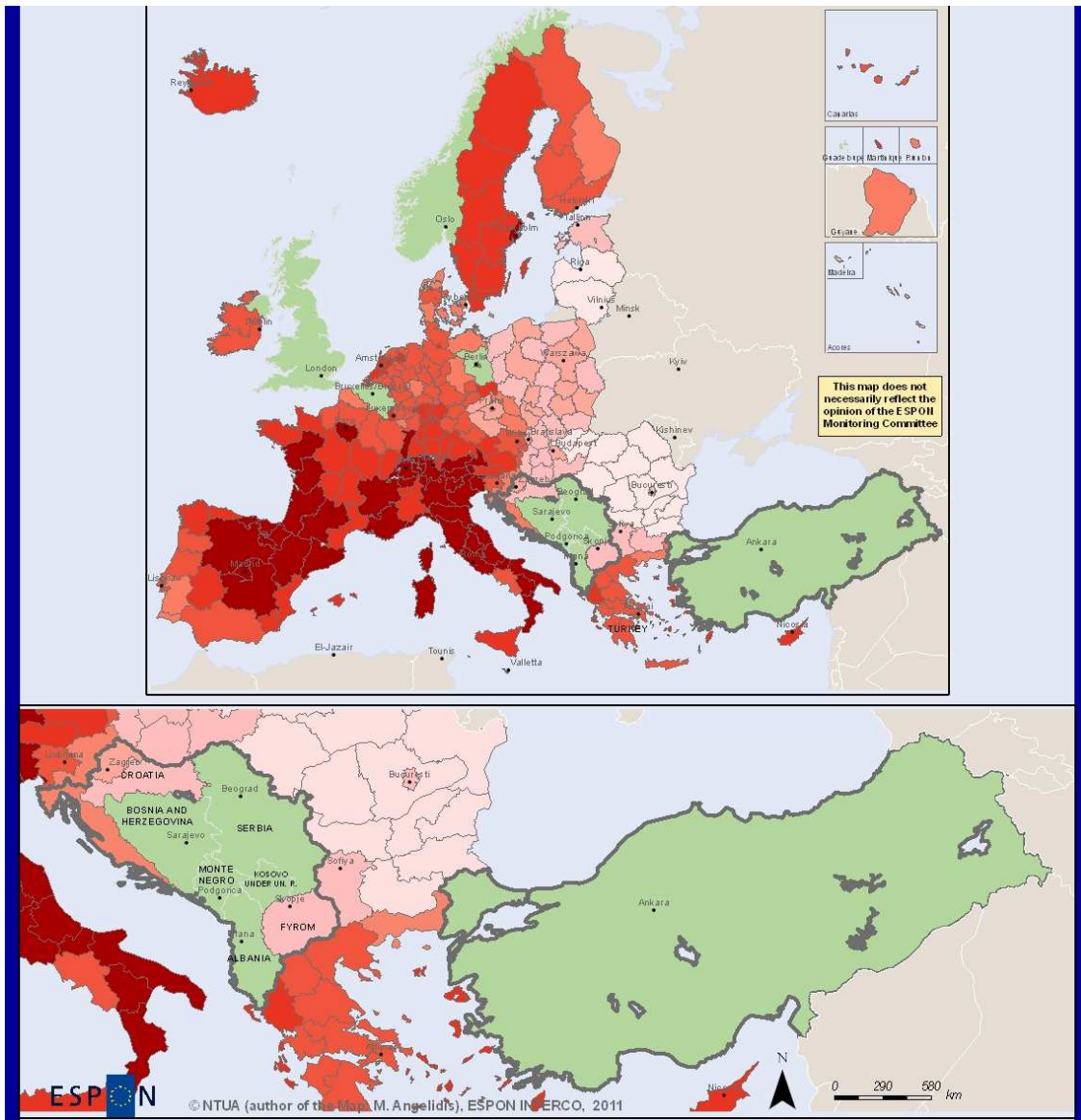
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Western Balkans and Turkey*
Life expectancy at birth (years)
per NUTS2 2008

Life expectancy at birth (years)
per NUTS2 2008

	No data
	72.0 - 73.8
	73.9 - 75.3
	75.4 - 77.4
	77.5 - 79.2
	79.3 - 80.5
	80.6 - 81.6
	81.7 - 83.8
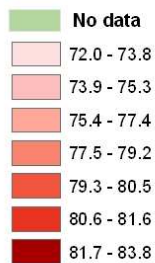
* Candidate or Potential Candidate countries

Data sources:
Eurostat data for the year 2008 at NUTS0 level (2011)
for the EU countries, HR and MK

Geometries sources: Eurogeographics
administrative boundaries 2006

	NUTS2006-20M-NUTS0

Map 5.2.4: EU countries and CC/PCC: Life expectancy at birth in 2008 at NUTS 2 or similar NUTS 2 level 2008

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Population density at country (NUTS-0) level

Definition of the indicator by Eurostat
Population density is the ratio between (total) population and surface (land) area

Population density is an important component of both competitiveness and inclusion. It is an index of agglomeration economies which improve regional competitiveness. Dense populated regions (even more –among these last- the capital regions and, more widely, the metropolitan regions) are usually more competitive.

On the other hand, according to the literature, dense populated regions have a different inclusion pattern from the under populated ones.

Population density rates in the CC/PCC (2008) are similar to those for the EU Eastern countries. The means in the two cases are slightly lower than the EU-27 average - Graph 5.2.11 and Map 5.2.5. The respective means for the EU north and south are higher than the EU mean.

Inside the CC/PCC area, XK rate is much higher than the EU-27 average while the density of ME is much lower than the latter.

The coefficient of density variation among the CC/PCC is low; it is equal to that of the EU east. The EU north and EU south have higher values
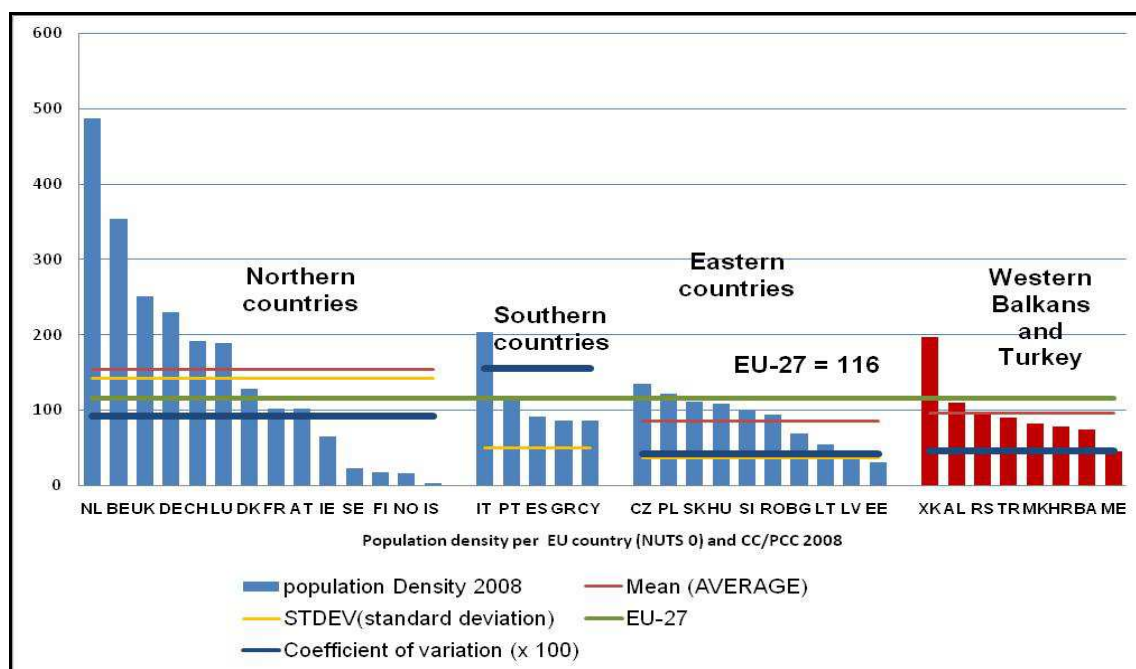
Graph 5.2.11: Population density per EU country (NUTS 0) and CC/PCC 2008 *

* We have excluded Malta (MT) which has a very high pop. density 2008 (1303 inh.) - in order to enhance the visibility of the graph

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Map 5.2.5: EU countries and CC/PCC: Population density at NUTS0 or similar NUTS0 (country) level 2008

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Population density at sub-national (NUTS-3) level

We present in the Graph 5.2.12 the coefficients of variation for all the EU-27 countries and the CC/PCC. TR and HR present a pattern of higher inequalities among the NUTS-3 regions while the rest CC/PCC have a clearly lower pattern.
See also the Graph 5.2.13 and the Map 5.2.6.
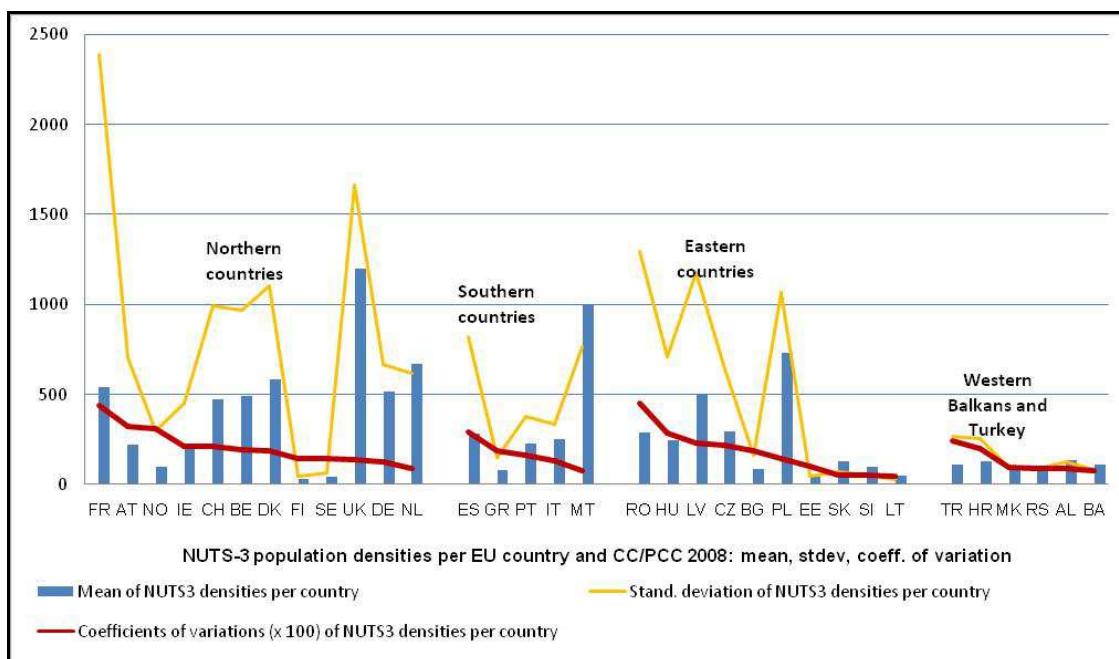
Graph 5.2.12: Coefficients of variation of NUTS-3 densities per EU country and CC/PCC 2008

_____
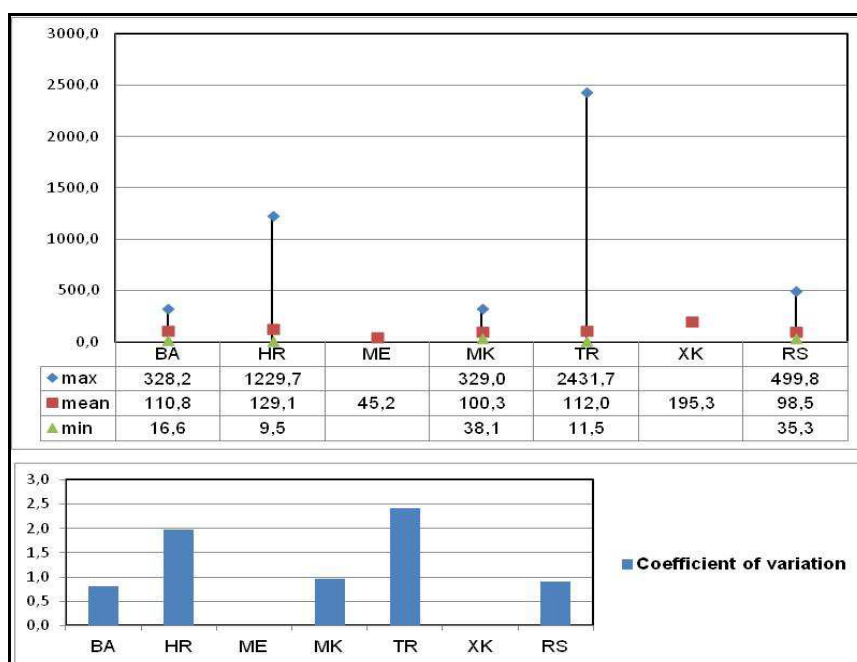
Graph 5.2:13: Population density in the CC/PCC 2008 at NUTS-3 level: min, mean, max, standard deviation and coefficient of variation

Population density: Inhabitants / Km2
at NUTS3 or similar NUTS3 level 2008**

	1,2 - 44,1
	44,2 - 70,0
	70,1 - 107,5
	107,6 - 160,9
	161,0 - 276,7
	276,8 - 754,8
	754,9 - 21021,9

* Candidate or Potential Candidate countries

** Data sources, reference year, NUTS or similar NUTS levels:
Eurostat data for the year 2008 at NUTS3 level (2011)
Except: (1) BA, ME, RS and XK: NSO data for 2007 (2) AL: NSO data for 2004

Geometries sources: Eurogeographics administrative boundaries 2006
except: Albania, Serbia, B & H, Montenegro, Kosovo "similar NUTS3":
other sources

NUTS2006-20M-NUTS3

Map 5.2.6: EU countries and CC/PCC: Population density at NUTS3 or similar NUTS3 level 2008

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6. Conclusions and policy recommendations

6.1. Conclusions

We started from the general hypothesis that **there is a TC pattern** (a substantial degree of homogeneity) **for the CC/PCC** which differs clearly from that for the entire EU-27. This last could be certainly divided into three distinct territorial parts: the EU north, south and east, on the basis of clearly different levels of competitiveness: higher, moderate and lower, respectively. The literature approach of the economic performance features of the CC/PCC provided us first arguments on the existence of a TC pattern for the entire territory of CC/PCC (total of the countries) which is similar to the EU east one but clearly less performing / competitive compared to the latter.

Further on, the specific analysis of the different TC dimensions on the basis of indicators at country level, showed that regarding the majority of the dimensions and "sub-dimensions" (more specific aspects of each dimension) there are specific patterns for the total of CC/PCC which are comparatively close to the EU east ones (and much and very much distant to the EU south and north, respectively); however, the respective indicators' values are often substantially different.

Inside the CC/PCC total, TC inequalities per country are pronounced.

Regarding mainly the competitiveness, HR and TR, which are candidates to join EU, are equally performing with the two "weaker" EU east countries: RO and BG. ME and RS perform less in economy than HR and TR and present also similar values regarding indicators of several other TC dimensions. MK, BA, AL and XK, even less developed, present a relative homogeneity regarding several TC dimensions.

Specifically, **per TC dimensions:**

- Regarding *competitiveness:*

We have examined in more depth indicators on economy as well as on employment / unemployment.

From the analysis in more depth of the GDP rates and the dispersion of regional GDP, we conclude that, apart from the inequalities regarding **GDP rate** mentioned above, it seems that **dispersion (regional inequalities) in GDP per capita** is more often high in the EU east countries and in the CC/PCC compared to the rest of EU-27. While, between 2001 and 2006, dispersion for EU-27 decreased slightly, it increased in HR, TR and MK.

In addition, it results from the analyses of the "Pocketbook" at country level that the **GDP growth rates** in these countries from 2003 were much higher than the average rate for the EU-27. **Income inequality increased in all CC/ PCC except Turkey where it fell but still to a level well above the EU-27 figure.**

However each of the CC/ PCC has a **trade deficit** every year, in contrast to the surplus for the EU-27. The share of **the rural sector in these countries remains much higher** than in the EU-27 (especially in Turkey) while **their service sector records increase rates more important than in the EU-27**. Their industrial sector decreases as in the EU-27.

Inward FDI in CC/PCC increases considerably (with the exception of the period after 2007) but **the FDI intensity ratio** reflecting the level of integration of a country with the international economy **remains much lower than in the EU-27**.

The total number of persons employed increases in these countries less than in the EU-27 and they do not record increases in labour productivity.

The CC/ PCC present **lower rates of active population, employment and activity rate of the older population**.

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From the analysis in more depth of the **unemployment** rates, it results that for all the CC/ PCC **these rates were higher than the EU-27 average and much higher for XK, MK and BA.** Regional unemployment' inequalities in HR and TR are relatively high.

In addition: In 2008 the **long- term and youth unemployment rates for the CC/ PCC were higher** and often much higher than the EU-27 average.

- Regarding *"Innovation"*

Gross domestic expenditure on research and development (GERD) as a share of GDP **remains in the CC/ PCC much lower than in the EU-27.**

- Regarding *"inclusion":*

The CC/ PCC reported **increases in population, with the exception of Serbia and Croatia**.

From the analysis in more depth of the **population ageing** at country level, it results that TR, AL, MK and ME have clearly less aged population than the EU-27 average and the pattern of the majority of EU countries. Disparities among the members of the CC/PCC area are much higher than in the EU south, north and east.
The intra-national disparities (sub-national level) are higher in BA and TR compared to the rest CC/PCC.

The analysis in more depth of the **Life expectancy** (LE) at birth **in all CC/ PCC** for 2008 **is lower than the EU-27 average**. The values for the CC/PCC are clearly closer to those for the EU east. Inside the group of CC/PCC, AL and BA present the higher values, HR, and ME moderate ones and MK, RS and TR lower values.
In addition: LE for both male and female is also **lower than in the EU-27 average.**

The respective in depth analysis proved that national **population density** rates in the CC/PCC (2008) are similar to those for the EU Eastern countries. The means in the two cases are slightly lower than the EU-27 average. Regarding inequalities among the NUTS-3 regions, TR and HR present clearly higher values while the rest CC/PCC have a lower pattern.

The **shares of tertiary graduates in science and technology** in the population as well as **the public sector investment in education** (as share of the GDP) **are clearly lower** in all CC/ PCC compared to the EU-27 averages.

- Regarding the *"environment quality"*:

Only for two indicators:
- **Municipal waste collected per inhabitant is much lower in the CC/ PCC**.
- During the period 1998 to 2007 the EU-27 **greenhouse gas emissions** fell, while emissions **in the two countries for which data are available (Croatia and Turkey), increased significantly.**

- Regarding *"energy":*

In all CC/PCC, energy efficiency is clearly lower than in the EU-27 while the shares of renewable energy are lower in the CC/ PCC compared to the EU-27.

- Regarding *"connection":*

The CC/ PCC showed a small increase in their rates concerning transport infrastructure and freight, but are still very low in comparison to the EU-27.
In addition, the **proportion of households with internet access in most of the CC/ PCC was less than a half that of the EU-27.**

More general conclusions:

Undoubtedly, regarding each dimension or, even more, each sub-dimension of TC **at country level**, the CC/PCC present important differences from the TC pattern already developed in the EU-27 both at national and sub-national level. Specifically, the "scores" of the indicators of CC/PCC for the respective TC dimensions are in most cases similar to the "scores" for the EU eastern countries; however they are different in some other cases.

The "sub-group" of CC/PCC composed from HR and TR has in many cases scores similar to the EU eastern countries but not in all cases. The other "sub-groups" of the CC/PCC –see previously- present often "worse" scores.

Results at **sub-national level** which constitute a more crucial component of the territorial aspect of cohesion are relatively poor because of the lack of data in most cases for the CC/PCC. Therefore the provision of the missing data at this level for the CC/PCC is necessary –see in next the respective recommendations.

Further on:

The previously presented conceptual and technical / statistical analyses on the basis of the headline / core and final indicators of INTERCO constitute also a test of both the selection of the headline / core and final indicators in INTERCO and the methods to use these indicators in order to approach territorial challenges and TC policy priorities. **The results of this test were satisfactory for the most regarding the country level and less satisfactory for the sub-national level** (because of the lack of data). Interesting answers for the actual territorial challenges and the implementation of TC policy priorities were given; these answers go to some extent beyond the answers given by the existing literature which has not exploit systematically the TC indicators.

However, apart from the un-sufficient coverage of the sub-national level, important deficiencies regarding the exploitation of the TC indicators remain. We do not know the impact (the weight) of each indicator "translating" a specific aspect ("sub-dimension") of each TC dimension on this dimension. Further on, we do not know the impact (the weight) of each TC dimension to the TC seen globally.

These questions have been examined to some extent in the part of INTERCO referred to "local" scale ("local" case studies)

6.2. Policy recommendations

We propose below policy recommendations for the improvement of territorial data collection on the CC / PCC.

Regarding the availability of data: Four CC: Croatia, FYROM, Montenegro and Turkey produce already data which are in line with the specifications of Eurostat.

The PCC should gradually be in line with the latter specifications concerning an important number of themes interesting TC. They should produce data corresponding by first priority to the "final" and by second priority to the headline and core indicators of INTERCO.

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Several online publications on economic development, population and social conditions, dwellings, environment etc – see in detail in Chapter 2: assessment per country.
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- Croatia: CROSTAT, Republic of Croatia – Central Bureau of Statistics: http://www.dzs.hr/

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Annex 1. NUTS and regional / territorial classification

We first had to assess *the conformity of the WB and Turkey spatial administrative divisions to the EU NUTS classification criteria.*

According to Eurostat, **NUTS – Nomenclature of Territorial Units for Statistics**, 2010[32], the NUTS classification is a hierarchical system for dividing up the economic territory of the EU for the purpose of:

- The collection, development and harmonisation of EU regional statistics:
- Socio-economic analyses of the regions.
    - NUTS 1: major socio-economic regions
    - NUTS 2: basic regions for the application of regional policies
    - NUTS 3: as small regions for specific diagnoses
- Framing of EU regional policies.
    - Regions eligible for aid from the Structural Funds (Objective 1) have been classified at the NUTS 2 level.
    - Areas eligible under the other priority objectives have mainly been classified at the NUTS 3 level.
    - The Cohesion report has so far mainly been prepared at the NUTS 2 level.

Principles and Characteristics of NUTS

- **Principle 1**: The NUTS regulation defines minimum and maximum population thresholds for the size of the NUTS regions:

NUTS 1	3 million	7 million
NUTS 2	800 000	3 million
NUTS 3	150 000	800 000

Despite the aim of ensuring that regions of comparable size all appear at the same NUTS level, each level still contains regions which differ greatly in terms of population.

- **Principle 2**: NUTS favours administrative divisions (normative criterion)

  For practical reasons the NUTS classification is based on the administrative divisions applied in the Member States that generally comprise two main regional levels. The additional third level is created by aggregating administrative units.

- **Principle 3:** NUTS favours general geographical units

  General geographical units are normally more suitable for any given indicator than geographical units specific to certain fields of activity.

EU NUTS classification uses almost exclusively the population criterion.

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[32] http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature Last update 28.07.2010

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In the above explanatory texts of the EU NUTS classification, NUTS2 units are seen (to some extent) as "basic regions for the application of regional policies" while NUTS3 units are approached as "small regions for specific diagnoses".

Regarding NUTS2 units in the case of the Western Balkans countries which have not adopted NUTS regulation, it is obvious that these countries should define "similar to NUTS2" units which are appropriate for the application of the EU regional policies (see, among others, in: Knezevic 2010). However, they would evidently apply a political criterion: the use of existing administrative divisions as they are or the limited readjustment of them or the creation of new divisions depend on the political will of these countries. Evidently, they will also take into account a relevant technical criterion: the territorial features of the existing "regions".

Therefore, it is essential to examine if the existing administrative divisions in these countries which fulfil the population criterion for NUTS2, fulfil also the "application of regional policies" criterion. In order to better clarify this criterion, we should refer, even very concisely, to the concept of "development policy region".

Regions can be defined by physical, "functional", economic, social, cultural, environmental characteristics and so on; each of the many branches of territorial analysis and planning approaches regions according to its general theoretical scope. For the case of "development policy regions" in the PCC of WB most appropriate approach is to examine whether "similar NUTS2" divisions according to the NUTS populations criterion, corresponding to existing administrative divisions, comply with the "regional level" of the «spatial governance" system of each of the examined countries.

Even more, it is useful to see whether the "similar NUTS2" and "similar NUTS3" units which will be defined comply with the overall spatial configuration of the interested countries with focus on the hierarchy and the networking of the urban centres of these countries.

In next we will examine these territorial features mainly for each of the Potential CC; we will also examine this issue, relatively less, for the cases of the CC which have already adopted the EU NUTS classification.

Annex 2. Availability of data for the INTERCO selected indicators

Annex 2. Table 3.4: Availability of dta for the INTERCO headline and core indicators in the Western Balkans and Turkey

Headline and core indicators

AL: Albania, BA: Bosnia and Herzegovina, HR: Croatia, ME: Montenegro, MK: FYROM, RS: Serbia, TR: Turkey

Inidica tor level	Thematic category name	Them atic sub-cat. nr	Thematic sub-category name	INTERCO Indicator name	Indicator / data name used by Eurostat and NSO	Eurostat data for HR, MK, TR: level, years			Eurostat data for AL, BH, ME, RS, XK		NSO data: level, years				
						Croatia	FYROM	Turkey	Lower available level	Availability per country	Albania	Bosnia & Herz.	Montenegro	Serbia	Kosovo
Headline	DEMOGRAPHY	2,01	Population Structure (age, sex, natural change)	Ageing index (persons 65+ / persons 0-14)	People aged 65+ (% of total population)										
				Dependency rate											
				Life expectancy at birth		NUTS2 2002-2008	NUTS2 1997-2008		NUTS0 1998-2009	AL,BA,ME,RS and XK 2003-2009					
				Life expectancy											
		2,03	Total population	Population potential within 5 km											
				Population average annual growth	Population change	NUTS 3, 1990-2007			NUTS 1, 1995-2009	ME,RS and XK	ME,RS and XK				
	ENERGY	4,01	Energy	Share of renewable energy in final energy consumption and increase needed to meet the 20% target											
	SOCIAL AND CULTURAL AFFAIRS, QUALITY OF LIFE	6,02	Education	High education population	Number of persons by educational attainment	NUTS 2, 2000-2008			NUTS 1, 1995-2009	AL,BA,ME,RS and XK					
				Share high educated population in percent											
				Population aged 30–34 with a tertiary education in 2008 and distance to Europe 2020 target (5th CR)											
				Share of tertiary educated people in %											
		6,03	Health	Healthy life expectancy (ESPON 3.2)											
		6,04	Poverty	At persistent risk of poverty rate (Population share with 60 % of the national equivalent median income)	At persistent risk of poverty rate	NUTS 2, 1997-2001			NUTS 1, 1995-2009	AL,BA,ME,RS and XK					
				Share of population living in workless or low work intensity households (5th CR)											
		6,05	Other social	Work-life balance in EU Member States (5th CR)											
		6,07	Quality of life	Happiness Index											
	ECONOMY, LABOUR FORCE	7,02	Employment, Unemployment	Difference between female and male employment rates, 20–64		NUTS2 2007-2009		NUTS2 2006-2009	NUTS0 2000-2009	AL,BA (2006-2009),ME (2007-2009),RS and XK (2001-2009)					
				Employment rate change (growth)	Employment growth	NUTS 2, 1999-2008		NUTS 2, 2006-2010							
				Unemployment rate per age: classes of 5 years											
				Development of unemployment rate (male, female, young, total, 99-04)											
		7,03	Income and Consumption	GDP per inhabitant (capita) in pps or euros, per year	GDP per inhabitant (capita) in pps or euros, per year	NUTS 3, 1995-2007			NUTS 0, 2000-2009	AL,BA,ME,RS and XK (2003-2009)		NUTS 3, 2005, 2007	NUTS 3, 2000-2004		
				GDP change per inhabitant (capita) in pps or euros	GDP change per inhabitant (capita) in pps or euros, per year	NUTS 3, 1995-2007									
				Median disposable annual household income	Median disposable annual household income	Urban Audit data for core cities and LUZ, 1989-2006									
		7,04	Investments, Finances and Expenditures	Public sector debt relative to GDP											

Annex 2. Table 3.4: Availability of dta for the INTERCO headline and core indicators in the Western Balkans and Turkey

Headline and core indicators

AL: Albania, BA: Bosnia and Herzegovina, HR: Croatia, ME: Montenegro, MK: FYROM, RS: Serbia, TR: Turkey

Inidicator level	Thematic category name	Thematic sub-cat. nr	Thematic sub-category name	INTERCO Indicator name	Indicator / data name used by Eurostat and NSO	Eurostat data for HR, MK, TR: level, years			Eurostat data for AL, BH, ME, RS, XK		NSO data: level, years				
						Croatia	FYROM	Turkey	Lower available level	Availability per country	Albania	Bosnia & Herz.	Montenegro	Serbia	Kosovo
	ENVIRONMENT QUALITY, NATURAL ASSETS, HAZARDS	8,01	Environment quality	NATURA 2000 area (Share of Natura 2000 area in %) (5th C.R.)											
		8,02	Natural assets	Consumption of water per capita											
	NON - CROSS- THEMATIC DATA	99,01	Integrative indices and typologies	Intensity of multiple risks (number of challenges) for European Regions ("Regions 2020")											
	GOVERNANCE	9,01	Governance	Electoral participation											
				WGI Index on voice and accountability											
Core	DEMOGRAPHY	2,03	Total population	Population density	Population density	NUTS3,1990-2008			NUTS 0, 2000-2009	AL,BA,ME,RS and XK (2003-2009)					
		2,04	Urban - rural population	Urban - rural population in Europe based on national classification	Urban - rural population in Europe based on national classification	Urban Audit data for core citiies and LUZ, 1989-2006									
	TRANSPORT, ACCESSIBILITY, COMMUNICATION	3,03	Accessibility	Potential accessibility to GDP by road											
				Potential accessibility to population by road											
				Time to the nearest motorway access											
				Travel time to railway stations											
	ENERGY	4,01	Energy	Energy intensity of the economy											
				Renewable energy consumption											
	SOCIAL AND CULTURAL AFFAIRS, QUALITY OF LIFE	6,02	Education	Early school leavers and distance to Europe 2020 target - 5th CR	Early school leavers	NUTS0 2002-2010	NUTS0 2006-2010	NUTS0 NUTS1 2006-2010	NUTS0	RS (2004-2009), XK (2004-2009)					
		6,03	Health	Health expenditure per capita	Health expenditure per capita				NUTS 0, 2000-2008	AL, RS (2001-2008)					
				Expenditure on health as part of GDP (national level)											
		6,04	Poverty	Number of homeless people as a proportion of total resident population											
				Population suffering from severe material deprivation (% of total population) (5th CR)											
		6,07	Quality of life	Happiness and GDP per head (5th CR)											
				Homicide rate (5th CR)											
		7,01	Labour force	Labour productivity, gross domestic product as PPP per person employed	Labour productivity	NUTS 2, 2000-2009									
		7,02	Employment, Unemployment	Employment rate change %, 20–64 years, in certain time period and distance to Europe 2020 target											
	ECONOMY, LABOUR FORCE			% of households having broadband access	% of households having broadband access	NUTS 2, 2006-2009			NUTS0	RS (2004-2008), XK (2001-2008)					

Annex 2. Table 3.4: Availability of dta for the INTERCO headline and core indicators in the Western Balkans and Turkey

Headline and core indicators

AL: Albania, BA: Bosnia and Herzegovina, HR: Croatia, ME: Montenegro, MK: FYROM, RS: Serbia, TR: Turkey

Inidicator level	Thematic category name	Thematic sub-cat. nr	Thematic sub-category name	INTERCO Indicator name	Indicator / data name used by Eurostat and NSO	Eurostat data for HR, MK, TR: level, years			Eurostat data for AL, BH, ME, RS, XK		NSO data: level, years				
						Croatia	FYROM	Turkey	Lower available level	Availability per country	Albania	Bosnia & Herz.	Montenegro	Serbia	Kosovo
		7,07	Innovation	Human Resources in Science and Technology (core) (5th CR)	Human Resources in Science and Technology	NUTS 2, 1995-2008									
				GERD (Gross domestic expenditure on research and development)	GERD (Gross domestic expenditure on research and development)	NUTS 2, 1998-2008									
	ENVIRONMENT QUALITY, NATURAL ASSETS, HAZARDS	8,01	Environment quality	Residence density											
				Urban waste water treatment capacity (5th C.R.) - 1st priority											
		8,02	Natural assets	Share of areas with high ecological value											
				Dwellings connected to potable water system											
				% of green space per inhabitant											
		8,03	Climate change	Greenhouse gas emission			NUTS 1, 1995-2009			AL (NUTS0-2006), ME (NUTS0-2007)					
	GOVERNANCE	9,01	Governance	Trust in the legal system (Share of persons having complete trust/ no trust at all in the legal system of a counrty)											
	TERRITORIAL STRUCTURE	10,01	Urban structure	MEGA / Metropolitan European Growth Areas											

Annex 2. Table 3.5: Availability of dta for the INTERCO headline and core indicators in the Western Balkans and Turkey

Final indicators

AL: Albania, BA: Bosnia and Herzegovina, HR: Croatia, ME: Montenegro, MK: FYROM, RS: Serbia, TR: Turkey

Territorial objectives	INTERCO Indicator name	Indicator / data name used by Eurostat and NSO	Eurostat data for HR, MK, TR: level, years			Eurostat data for AL, BH, ME, RS, XK		NSO data: level, years				
			Croatia	FYROM	Turkey	Lower available level	Availability per country	Albania	Bosnia & Herz.	Montene gro	Serbia	Kosovo
Strong local economies ensuring global competitiveness	Labour productivity in industry and services		NUTS 2, 2000-2009									
	GDP per capita in PPP		NUTS 3, 1995-2007			NUTS 0, 2000-2009	AL,BA,ME,RS and XK (2003-2009)	2005, 2007	2000-2004			
	Overall unemployment rate		NUTS2 2007-2010	NUTS0 2000-2009	NUTS2 2006-2010	NUTS0 2000-2009	AL,BA,ME,RS and XK					
	Old age dependency ratio		NUTS0 2001-2011	NUTS0 1995-2011	NUTS0 1995-2011							
Innovative territories	Population aged 25-64 with tertiary education	Share of tertiary educated people in %	NUTS2 2008-2010	NUTS2 2008-2011	NUTS2 2008-2012	NUTS0 1998-2009	AL, RS					
	Intramural expenditures on R&D											
	Employment rate 20-64		NUTS 2, 2007-2010		NUTS 2, 2006-2010							
Fair access to services, market and jobs	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											
Inclusion and quality of life	Disposable household income	Median disposable annual household income	Urban Audit data for core cities and LUZ, 1989-2006									
	Life expectancy at birh		NUTS1 NUTS2 2002-2008	NUTS1 NUTS2 1997-2008		NUTS0 1998-2009	AL,BA,ME,RS and XK 2003-2009					
	Proportion of early school leavers		NUTS0 2002-2010	NUTS0 2006-2010	NUTS0 NUTS1 2006 - 2010	NUTS0	RS (2004-2009), XK (2004-2009)					
	Gender imbalances											
	Different female-male unemployment rate		NUTS2 2007-2009		NUTS2 2006-2009	NUTS0 2000-2009	AL,BA (2006-2009),ME (2007-2009),RS and XK (2001-2009)					
	Ageing index		NUTS2 2002-2009	NUTS2 2003-2009	NUTS2 2008-2009	NUTS0 1998-2009	AL,BA,ME,RS and XK 2003-2009					
Attractive regions of high ecological values and strong territorial capital	Potential vulnerability to climate change (ESPON Climate)											
	Air pollution: PM10											
	Air pollution: Ozone concentrations	Total greenhouse gas emissions (CO2 equivalent (1990=100))	NUTS0 2000-2008		NUTS0 2000-2008		AL (NUTS0-2006), ME (NUTS0-2007)					
	Soil sealing per capita											
Integrated polycentric territorial development	Population potential within 50 km											
	Net migration rate		NUTS0 2000-2009	NUTS0 2000-2008								
	Cooperation intensity (number of common projects between partners)											
	Cooperation degree (the number of regions cooperating with each other)											

Annex 9. ESPON INTERCO GIS Tools and Database CD-ROM/DVD

(after approval of the Draft Final Report)

Structure of the CD-ROM/DVD

The overall output of all GIS works of INTERO will be made available on CD-ROM/DVD, which accompanies the INTERCO Final Report. The CD-ROM/DVD will store the user manual, all produced maps, the indicators themselves, as well as their input data, and the tools to calculate or process them.

All this will be made available on the CD-ROM/DVD in a comprehensive folder structure. The available folders are:

`CARTO` folder storing all generated MXD files for indicator mapping

`DOC` folder storing the metadata documentation and user manual

`EXCEL` collection of Excel files used as input for the indicator calculation

`LYRS` collection of layers files for mapping (referenced in MXD files)

`MAPS` collections of all produced maps in PNG file format, exported from ArcGIS

`TOOLS` folder storing the INTERCO toolbox and the developed scripts

The generated INTERCOD GIS Database (INTERCO_DB) is stored in parallel to these sub-directories.

Installation

To use this database, no specific installation routine is required. Just copy the files onto hard disc, create a new or use an already existing workspace. After copying, the database is immediately ready to process.

Prerequisites

Working with the Personal Geodatabase of INTERCO, with the map template files, the layer files, or with the INTERCO toolbox requires ESRI´s ArcGIS software, version 9.x or 10. The input data files under the `EXCEL` directory can be opened with MS Excel software. The produced maps stored in the MAPS folder can be opened with any drawing software, or with the Windows built-in picture viewers.

Annex 10. Indicator metadata

This annex provides metadata information for the selected territorial cohesion indicators according to the ToR of ESPON INTERCO. The metadata are provided indicator-by-indicator, with one table per indicator. The order of the indicator metadata follows the order of the indicator presentation (see chapter "C.3. Indicators presentation").

Aspect	Description
Indicator name	GDP per capita
Theme	Economy, labour force / business, all sectors
Policy objective	Strong local economies ensuring global competitiveness.
	The indicator provides insight into economic strength and regional growth.
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, ratio
Methodology	Indicator used as provided by Eurostat
Quality	Generally good quality and good spatial coverage as well as good temporal availability.
Availability	Available annually for the period 2001-2010; available for EU27, Iceland and Macedonia, partly for Turkey; for Norway and Switzerland only available at national levels
Frequency	annual updates; annual updates required from the point of view of territorial cohesion in order to analyse temporal dimension of territorial cohesion (sigma and beta convergences).
Improvements	Extend coverage at NUTS-3 level for Norway, Switzerland, Turkey and Western Balkans.
Geographic levels	Indicator available at NUTS-3 level and higher; highest relevance for territorial cohesion at NUTS-3 level
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Unemployment rate
Theme	Economy, labour force / employment, unemployment.
	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.
Policy objective	Strong local economies ensuring global competitiveness
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, ratio
Methodology	Indicator used as provided by Eurostat
Quality	Generally good quality and good spatial coverage as well as good temporal availability.
Availability	Available annually for the period 1999-2009; available for EU27, Iceland, Norway, Switzerland and Turkey
Frequency	annual updates; annual updates required from the point of view of territorial cohesion in order to analyse temporal dimension of territorial cohesion (sigma and beta convergences).
Improvements	Extend coverage at NUTS-3 level for Western Balkans and French Overseas Territories.
Geographic levels	Indicator available at NUTS-3 level and higher; highest relevance for territorial cohesion at NUTS-3 level
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Old-age dependency ratio
Theme	Demography / population structure
Policy objective	Strong local economies ensuring global competitiveness
	This indicator warns about overaging of population that may lead to severe problems in pension systems and also to social disruptions, affecting sustainability of local economies.
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, ratio
Methodology	Indicator defined as the ratio of the population aged 64 or above divided by the population aged 15-64, multiplied with 100.
Quality	Generally good quality and good spatial coverage as well as good temporal availability. Input data on population by age groups not available for all countries at NUTS-3 level (e.g. for UK).
Availability	Available annually for the period 2000-2010; available for EU27, Iceland, Norway, Switzerland and Turkey, except for UK and Western Balkans; data gaps for some regions for some years.
Frequency	annual updates; annual updates required from the point of view of territorial cohesion in order to analyse temporal dimension of territorial cohesion (sigma and beta convergences).
Improvements	Extend coverage at NUTS-3 level for UK, Western Balkans and French Overseas Territories.
Geographic levels	Indicator available at NUTS-3 level and higher; highest relevance for territorial cohesion at NUTS-3 level
Author	Carsten Schürmann (RRG), ESPON INTERCO. Input data on population by age groups taken from Eurostat Regio Database.

Aspect	Description
Indicator name	Labour productivity, overall
Theme	Economy, labour force / labour force
Policy objective	Strong local economies ensuring global competitiveness.

This indicator tells us the robustness of GDP produced and shows the competitiveness of a region in global economies. |
Core indicator	No
Type of indicator	composite, quantitative, dynamic indicator, ratio
Methodology	Indicator defined as GDP in PPS per person employed relative to EU27 average.
Quality	Good spatial coverage and temporal availability, however, missing spatial disaggregation does not allow to analyse spatial disparities. Explanatory power at national level is limited. This indicator was only used as proxy indicator because the alternative indicator on labour productivity in industry and services is not available as timer-series.
Availability	Available annually for the period 1995-2010; available for EU27, Iceland, Norway, Switzerland and Turkey. Data missing for Western Balkans.
Frequency	annual updates; annual updates required from the point of view of territorial cohesion in order to analyse temporal dimension of territorial cohesion (sigma and beta convergences).
Improvements	Disaggregation to regional level such as NUTS-3 is required in order to analyse spatial disparities.
Geographic levels	Indicator available at national level (NUTS-0); even though national level not useful to analyse territorial cohesion, so far no better time-series indicator on labour productivity is available.
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Labour productivity in industry and services
Theme	Economy, labour force / labour force
Policy objective	Strong local economies ensuring global competitiveness. This indicator tells us the robustness of GDP produced and shows the competitiveness of a region in global economies.
Core indicator	No
Type of indicator	composite, quantitative, ratio
Methodology	Indicator defined as GVA per person employed in industry and services relative to EU27 average.
Quality	Fairly good quality and coverage at NUTS-2 level, even though ESPON space is not fully covered.
Availability	Available only for 2007; available for entire ESPON space. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkans.
Frequency	Available only for 2007, no time series; annual time series data would be extremely interesting to analyse with view on the temporal development of territorial cohesion (sigma and beta convergences).
Improvements	Generation of timer series, and if possible further disaggregation to NUTS-3 level.
Geographic levels	Indicator available at NUTS-2 level
Author	Eurostat, DG Regio 5th Cohesion Report

Aspect	Description
Indicator name	Population aged 25-64 with tertiary education
Theme	Social and cultural affairs, quality of life / education
Policy objective	Innovative territories.
	This indicator measures the highly-qualified labour force as basis for future R&D activities. Human capital is an essential factor for innovation potential.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator, ratio
Methodology	Indicator used as taken from Eurostat. Indicator defined as population aged 25-64 with tertiary education as percentage of all population aged 25-64.
Quality	Fairly good quality and coverage at NUTS-2 level, even though ESPON space is not fully covered.
Availability	Available basically for ESPON space except for Iceland and Baltic States. Data missing for Western Balkans.
Frequency	Available annually for recent past for period 2008-2010
Improvements	Indicator should be available for longer timer periods, allowing keeping track of evolution across longer time span. If possible indicator to be collected at NUTS-3 level, allowing an even finer spatial analysis including a differentiation by type of region. Extend spatial coverage to cover Iceland, the Baltic States and Western Balkans.
Geographic levels	Indicator available at NUTS-2 level
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Total intramural R&D expenditures
Theme	Economy, labour force / innovation
Policy objective	Innovative territories.
	This indicator measures the future orientation of the regional economy in terms of investments in R&D, determinant for innovation capacity.
Core indicator	Yes
Type of indicator	composite, quantitative, ratio
Methodology	Indicator defined as total intramural R&D expenditures at universities or at other public research institutes, in percent of GDP.
Quality	Fairly good quality and coverage at NUTS-2 level, even though ESPON space is not fully covered. Existing data reveal quite interesting insights.
Availability	Available basically for ESPON space except for Belgium, Iceland, Norway, Switzerland, Turkey and Western Balkans.
Frequency	Available only for 2007, so far no time series.
Improvements	Indicator should be collected as time series indicator for longer periods to allow analysis of spatial dimension of territorial cohesion. Data gaps for said countries should be closed. If possible data disaggregation at NUTS-3 level appreciated.
Geographic levels	Indicator available at NUTS-2 level
Author	Eurostat, EC 5th Cohesion Report

Aspect	Description
Indicator name	Employment rate 20-64
Theme	Economy, labour force / employment, unemployment
Policy objective	Innovative territories. This indicator measures the actual participation of working age population in economic regional activities and in producing net added value. High employment rates reflect quality of labour market which constitutes a favourable context for innovative territories.
Core indicator	Yes
Type of indicator	simple, quantitative, dynamic indicator, ratio
Methodology	Indicator used as taken from Eurostat. Indicator defined as percentage of people employed aged 20-64 on all people aged 20-64
Quality	Very good data quality at NUTS-2 level with sufficient temporal dimension.
Availability	Available for entire ESPON space. Data missing for Western Balkans.
Frequency	Available as time series for 1999-2009
Improvements	Indicator should be made available for Western Balkans. Disaggregation to NUTS-3 level would be appreciated to further analyse spatial disparities at regional level by type of region.
Geographic levels	Indicator available at NUTS-2 level
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Access to compulsory schools
Theme	Transport, accessibility, communication / accessibility
Policy objective	Fair access to services, markets and jobs. This indicator measures fair access to basic education as a basic public service.
Core indicator	No
Type of indicator	quantitative, results of field survey, ratio
Methodology	Indicator defined as the percent of population experiencing difficulties in access to compulsory schools as results of a representative SILC survey.
Quality	Data situation poor. Indicator only taken as proxy since currently no better alternative European-wide data source existing which models or provides information on access to schools.
Availability	Available for EU27 only. Data missing for other European countries.
Frequency	Available only for 2008; since access to schools will not significantly change annually, the indicator should be made available in 5-year increments.
Improvements	Either, SILC survey results should be made available at NUTS-3 level, or the survey indicator could be replaced by modeled accessibility indicators such as "percent of regional population with more than X minutes travel time to next compulsory school", derived through GIS analyses. Such indicators are being calculated in ESPON TRACC for selected case study regions. Furthermore, the indicator should be calculated as time series with 5-year increments.
Geographic levels	Basically at national level, subdivided by degree of urbanisation (regions where interviewees reside classified as urban, intermediate or rural regions)
Author	Eurostat SILC survey, EC 5th Cohesion Report

Aspect	Description
Indicator name	Access to hospitals
Theme	Transport, accessibility, communication / accessibility
Policy objective	Fair access to services, markets and jobs. This indicator measures fair access to health care as a basic public service.
Core indicator	No
Type of indicator	quantitative, results of field survey, ratio
Methodology	Indicator defined as the percent of population experiencing difficulties in access to primary health care services as results of a representative SILC survey.
Quality	Data situation poor. Indicator only taken as proxy since currently no better alternative European-wide data source existing which models or provides information on access to hospitals.
Availability	Available for EU27 only. Data missing for other European countries.
Frequency	Available only for 2008; since access to hospitals will not significantly change annually, the indicator should be made available in 5-year increments.
Improvements	Either, SILC survey results should be made available at NUTS-3 level, or the survey indicator could be replaced by modeled accessibility indicators such as "percent of regional population with more than X minutes travel time to next hospital", derived through GIS analyses. Similar indicators are being calculated in ESPON TRACC for selected case study regions (access to basic health care facilities). Furthermore, the indicator should be calculated as time series with 5-year increments.
Geographic levels	Basically at national level, subdivided by degree of urbanisation (regions where interviewees reside classified as urban, intermediate or rural regions)
Author	Eurostat SILC survey, EC 5th Cohesion Report

Aspect	Description
Indicator name	Accessibility potential by road
Theme	Transport, accessibility, communication / accessibility
Policy objective	Fair access to services, markets and jobs.
	This indicator measures market potential and locational advantages of a region.
Core indicator	Yes
Type of indicator	Composite, quantitative, dynamic indicator, normalised
Methodology	Composite indicator calculated by accessibility model by using transport networks and population figures as input. Indicator defined as the reachable population weighted by time distance by using cars. Indicator standardised at European average.
Quality	Very good data quality, very good spatial coverage
Availability	Available for EU27, Iceland, Norway and Switzerland. Data missing for Turkey and Western Balkans.
Frequency	Available so far for 2001 and 2006; ESPON TRACC will update the indicator to 2011. Since accessibility potential is unlikely to change significantly annually, the indicator should be made available in 5-year increments.
Improvements	Indicator will be updated to 2011 by ESPON TRACC project, including geographical extensions to the missing countries. Indicator should be calculated beyond 2011 in five-year intervals.
Geographic levels	Available NUTS-3 level, perfectly fine to analyse territorial cohesion
Author	Spiekermann&Wegener (S&W), ESPON DB

Aspect	Description
Indicator name	Accessibility potential by rail
Theme	Transport, accessibility, communication / accessibility
Policy objective	Fair access to services, markets and jobs.
	This indicator measures market potential and locational advantages of a region.
Core indicator	Yes
Type of indicator	Composite, quantitative, dynamic indicator, normalised
Methodology	Composite indicator calculated by accessibility model by using transport networks and population figures as input. Indicator defined as the reachable population weighted by time distance by using railways. Indicator standardised at European average.
Quality	Very good data quality, very good spatial coverage
Availability	Available for EU27, Iceland, Norway and Switzerland. Data missing for Turkey and Western Balkans.
Frequency	Available so far for 2001 and 2006; ESPON TRACC will update the indicator to 2011. Since accessibility potential is unlikely to change significantly annually, the indicator should be made available in 5-year increments.
Improvements	Indicator will be updated to 2011 by ESPON TRACC project, including geographical extensions to the missing countries. Indicator should be calculated beyond 2011 in five-year intervals.
Geographic levels	Available NUTS-3 level, perfectly fine to analyse territorial cohesion
Author	Spiekermann&Wegener (S&W), ESPON DB

Aspect	Description
Indicator name	Accessibility potential by air
Theme	Transport, accessibility, communication / accessibility
Policy objective	Fair access to services, markets and jobs.
	This indicator measures market potential and locational advantages of a region.
Core indicator	Yes
Type of indicator	Composite, quantitative, dynamic indicator, normalised
Methodology	Composite indicator calculated by accessibility model by using transport networks and population figures as input. Indicator defined as the reachable population weighted by time distance by flights. Indicator standardised at European average.
Quality	Very good data quality, very good spatial coverage
Availability	Available for EU27, Iceland, Norway and Switzerland. Data missing for Turkey and Western Balkans.
Frequency	Available so far for 2001 and 2006; ESPON TRACC will update the indicator to 2011. Since accessibility potential is unlikely to change significantly annually, the indicator should be made available in 5-year increments.
Improvements	Indicator will be updated to 2011 by ESPON TRACC project, including geographical extensions to the missing countries. Indicator should be calculated beyond 2011 in five-year intervals.
Geographic levels	Available NUTS-3 level, perfectly fine to analyse territorial cohesion
Author	Spiekermann&Wegener (S&W), ESPON DB

Aspect	Description
Indicator name	Disposable household income
Theme	Economy, labour force / income and consumption
Policy objective	Inclusion and Quality of Life. This indicator measures the welfare of residence population in a region and reflect the level of poverty.
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, stock numbers
Methodology	Indicator used as taken from Eurostat. Simple indicator expressed in Euro.
Quality	Very good data availability at NUTS-2 level; explanatory power would be even higher if data at NUTS-3 level would be available.
Availability	Available for EU27. Data missing for Iceland, Norway and Switzerland, Turkey and Western Balkans.
Frequency	Available annually for time period 1996-2007. Annual data appreciate to keep track of small changes over time.
Improvements	Further disaggregation towards NUTS-3 and extension of spatial coverage towards missing countries.
Geographic levels	Currently available NUTS-2 level, from a territorial perspective a further disaggregation to NUTS-3 level would be appreciated since many NUTS-2 regions comprise both urban centres and rural surroundings which are unlikely to have the same levels of household income.
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Life expectancy at birth
Theme	Social and cultural affairs, quality of life / health
Policy objective	Inclusion and Quality of Life. This indicator represents a proxy for the overall quality of the health-care system in a region. It tells us about healthiness of living environment and together with ageing index it allows to assess social policies projections and risk of exclusion.
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, stock numbers
Methodology	Indicator used as taken from Eurostat. Simple indicator expressing the average life expectancy at birth for both women and men in years.
Quality	Very good data availability at NUTS-2 level; explanatory power would be even higher if data at NUTS-3 level would be available.
Availability	Available for entire ESPON space. Data missing for Turkey and Western Balkans.
Frequency	Available annually for time period 2000-2008. Annual data appreciated to keep track of small changes over time.
Improvements	Further disaggregation towards NUTS-3 and extension of spatial coverage towards missing countries.
Geographic levels	Currently available NUTS-2 level, from a territorial perspective a further disaggregation to NUTS-3 level would be appreciated.
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Proportion of early school leavers
Theme	Social and cultural affairs, quality of life / education
Policy objective	Inclusion and Quality of Life. This indicator measures the quality of the school system and potential inclusion in labour market.
Core indicator	Yes
Type of indicator	Simple, quantitative, dynamic indicator, ratio
Methodology	Indicator used as taken from Eurostat. Simple indicator defined as the proportion of early school leavers from education and training.
Quality	Generally poor data quality due to the large data gaps for individual regions and years. Almost no complete data set for any year. Also availability at NUTS-1 level is reducing explanatory power.
Availability	Basically available for entire ESPON space, plus Croatia and Turkey. Data missing for Baltic States, Iceland and Western Balkan; however, there are many data gaps at regional level for individual years preventing from performing comprehensive time series analysis.
Frequency	Available annually for time period 2000-2010. Annual data appreciated to keep track of small changes over time.
Improvements	Further disaggregation towards NUTS-3 and extension of spatial coverage towards missing countries, and filling data gaps.
Geographic levels	Currently available NUTS-1 level only. A further disaggregation towards NUTS-3 level is required.
Author	Eurostat Regio Database

Aspect	Description
Indicator name	Gender imbalances
Theme	Demography / population structure
Policy objective	Inclusion and Quality of Life.
	This indicator measures differences in the gender composition of a society. A balanced participation of men and women in activities is determinant for an inclusive society.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator, ratio
Methodology	Indicator defined as the ratio of female/male population, calculated based upon data on population by sex provided by Eurostat Regio Database.
Quality	Good data quality in both temporal and spatial dimension.
Availability	Data available for entire ESPON space and Turkey. Data missing for Western Balkan.
Frequency	Available as time series for 2000-2009. Even though indicator is only gradually changing over time, annual data availability is important to keep track of these small changes.
Improvements	No general improvements needed, except to extend the geographical coverage towards Western Balkan.
Geographic levels	Available at NUTS-3 level.
Author	Carsten Schürmann (RRG), ESPON INTERCO

Aspect	Description
Indicator name	Differences in female-male unemployment rates
Theme	Economy, labour force / employment, unemployment
Policy objective	Inclusion and Quality of Life.
	This indicator measures the female participation in economy, and thus the overall quality of labour markets of an inclusive society.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator
Methodology	Indicator defined as the difference in the female and male unemployment rates (female rate minus male rate). Input data on unemployment rates by sex taken from Eurostat Regio Database.
Quality	Good data quality in both temporal and spatial dimension, though explanatory power in light of territorial cohesion would be even bigger if data would be available at NUTS-3 level.
Availability	Data available for entire ESPON space and Turkey. Data missing for Western Balkan.
Frequency	Available as time series for 1999-2010. Even though indicator is only gradually changing over time, annual data availability is important to keep track of these small changes.
Improvements	No general improvements needed, except to extend the geographical coverage towards Western Balkan.
Geographic levels	Available at NUTS-2 level.
Author	Carsten Schürmann (RRG), ESPON INTERCO

Aspect	Description
Indicator name	Ageing index
Theme	Demography / population structure
Policy objective	Inclusion and Quality of Life. This indicator measures the balance of the age structure of the society.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator, ratio
Methodology	Indicator defined as the ratio of the population aged 64 and above divided by population of 15 years and below. Input data on population age structure taken from Eurostat Regio Database.
Quality	Good data quality in both temporal and spatial dimensions, despite data gaps for UK and Western Balkan.
Availability	Data available for entire ESPON space and Turkey. Data missing for the UK and Western Balkan.
Frequency	Available as time series for 2000-2010. Even though indicator is only gradually changing over time, annual data availability is important to keep track of these small changes.
Improvements	No general improvements needed, except to extend the geographical coverage towards the UK and Western Balkan.
Geographic levels	Available at NUTS-3 level.
Author	Carsten Schürmann (RRG), ESPON INTERCO

Aspect	Description
Indicator name	Air pollution: PM10
Theme	Environment quality, natural assets, hazards / environment quality
Policy objective	Attractive regions of high ecological values and strong territorial capital. The indicator tries measuring the degree of reductions in emissions for healthier natural living environments.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator
Methodology	Indicator defined as yearly average PM10 concentration at surface level in yg/m3, weighed by population.
Quality	Even though there is a good spatial coverage for 2009, results show that indicator is modeled since many neighbouring NUTS-3 regions have same levels.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan.
Frequency	Available for 2009 only. No time series so far, which would be needed to analyse the temporal development.
Improvements	So far indicator is modeled; modeling could be replaced by real measurement stations. Time series needed to analyse development over time.
Geographic levels	Available at NUTS-3 level.
Author	EC 5th Cohesion Report, JRC, EFGS

Aspect	Description
Indicator name	Air pollution: Ozone concentration
Theme	Environment quality, natural assets, hazards / environment quality
Policy objective	Attractive regions of high ecological values and strong territorial capital. The indicator tries measuring the degree of reductions in emissions for healthier natural living environments.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator
Methodology	Indicator defined as the number of days with ground level concentration exceedances of more than 120 yg/m3.
Quality	Even though there is a good spatial coverage for 2009, results show that indicator is modeled since many neighboring NUTS-3 regions have same levels.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan.
Frequency	Available for 2008 only. No time series so far, which would be needed to analyze the temporal development.
Improvements	So far indicator is modeled; modeling could be replaced by real measurement stations. Time series needed to analyze development over time.
Geographic levels	Available at NUTS-3 level.
Author	EC 5th Cohesion Report, JRC, EFGS

Aspect	Description
Indicator name	Soil sealing per capita
Theme	Environment quality, natural assets, hazards / climate change
Policy objective	Attractive regions of high ecological values and strong territorial capital. This indicator measures the degree of de-coupling of economic / demographic development and land take.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator
Methodology	Indicator defined as the annual soil sealing per inhabitant in sqm through land take.
Quality	Data quality for 2006 generally good, but time series is missing which is a prerequisite for looking into the temporal dimension of cohesion. Indicator results are, however, sometimes difficult to interpret since the indicator is a function of both the actual land take, the size of the region and the number of inhabitants, resulting in rather low figures in agglomerations and sometimes very high figures in sparsely populated areas.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan.
Frequency	Available for 2006 only. No time series so far, which would be needed to analyse the temporal development.
Improvements	So far indicator is modeled based upon satellite imageries. Modelling could be replaced by data from statistics, which may be more precise. Time series needed to analyze development over time.
Geographic levels	Available at NUTS-3 level.
Author	EC 5th Cohesion Report, EEA, Eurostat

Aspect	Description
Indicator name	Population potential within 50 km
Theme	Territorial structure / regional, territorial structure
Policy objective	Integrated polycentric territorial development.
	This indicator is a proxy for demand for provision of services, for market potential and for polycentricity.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator, normalised
Methodology	Indicator defined as the population within 50 km airline distance, calculated at 2.5 x 2.5 raster system and then aggregated and standardised to NUTS-3 regions as weighted averages.
Quality	Data quality is very good. Availability of raster level allows for aggregation to various LAU and NUTS levels, and for flexibility in different forms of analyses.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan.
Frequency	Available for 2008 only. No time series so far, which would be needed to analyse the temporal development. Since indicator will only change slowly, five-year intervals would be sufficient to capture the temporal dimension.
Improvements	Indicator should be extended to the missing countries, and should be calculated in 5-year increments to allow for construction of time series. ESPON could strive to establish a raster population database, allowing flexibility in the establishment of such indicators.
Geographic levels	Available at 2.5x2.5 km raster level, NUTS-3 level and at combined NUTS-2/3 level.
Author	Carsten Schürmann (RRG), ESPON INTERCO

Aspect	Description
Indicator name	Net migration rate
Theme	Demography / migration
Policy objective	Integrated polycentric territorial development. It measures attractiveness and trends of concentration within European territory.
Core indicator	Yes
Type of indicator	composite, quantitative, dynamic indicator, rate
Methodology	Indicator defined as the annual average of net migrants per thousand inhabitants.
Quality	Data quality is good. NUTS-3 results show interesting disparities and differences.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan.
Frequency	Available for 2007 only. No time series so far, which would be needed to analyse the temporal development.
Improvements	Indicator should be extended to the missing countries, and should be calculated regularly to keep track of migration processes in Europe. A full matrix of (annual) migration flows would even increase possibilities for analyses.
Geographic levels	Available at NUTS-3 level
Author	ESPON DB, 5th Cohesion Report

Aspect	Description
Indicator name	Cooperation intensity
Theme	Governance
Policy objective	Integrated polycentric territorial development. Cooperation and coordination can reinforce territorial integration.
Core indicator	Yes
Type of indicator	simple, quantitative, dynamic indicator, rate
Methodology	Indicator defined as the number of INTERREG projects per 100,000 inhabitants.
Quality	Data quality is good. NUTS-2 results show interesting disparities and remarkable differences.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan, but there are also gaps for some regions in EU27 (for instance in southern Germany, the UK, etc.).
Frequency	Available for 2008 only. No time series so far, which would be needed to analyse the temporal development. Since INTERREG projects usually last more than one year, indicator interval of 2 or 3 years would be sufficient.
Improvements	Indicator should be extended to the missing countries, and data gaps should be closed. Moreover, a time series should be constructed allowing to analyse changes over time.
Geographic levels	Available at NUTS-2 level
Author	ESPON TERCO project

Aspect	Description
Indicator name	Cooperation degree
Theme	Governance
Policy objective	Integrated polycentric territorial development. Cooperation and coordination can reinforce territorial integration.
Core indicator	Yes
Type of indicator	simple, quantitative, dynamic indicator, stock
Methodology	Indicator defined as the degree of cooperation in terms of the number of collaborating regions in INTERREG projects
Quality	Data quality is good. NUTS-2 results show interesting disparities and remarkable differences.
Availability	Data available for EU27. Data missing for Iceland, Norway, Switzerland, Turkey and Western Balkan, but there are also gaps for some regions in EU27 (for instance in southern Germany, the UK, etc.).
Frequency	Available for 2008 only. No time series so far, which would be needed to analyse the temporal development. Since INTERREG projects usually last more than one year, indicator interval of 2 or 3 years would be sufficient.
Improvements	Indicator should be extended to the missing countries, and data gaps should be closed. Moreover, a time series should be constructed allowing to analyse changes over time.
Geographic levels	Available at NUTS-2 level
Author	ESPON TERCO project

Annex 11. Acronyms

AL	Albania
BA	Bosnia & Herzegovina
CC	Candidate Countries
CU	ESPON Coordination Unit
EC	European Commission
EEA	European Environment Agency
ESDP	European Spatial Development Perspectives
ESPON	European Observation Network for Territorial Development and Cohesion (formerly : European Spatial Planning Observation Network)
EU	European Union
FUA	Functional Urban Area
FYROM	Former Yugoslav Republic of Macedonia
GBIF	Global Biodiversity Information Facility
GERD	Gross domestic expenditure on research and development
HDI	Human Development Index
HR	Croatia
ILO	International Labor Office
INTERCO	Indicators of territorial cohesion (ESPON Project 2013/3/2)
ISDR	International Strategy for Disaster Reduction
LAU	Local Administrative Unit
MC	ESPON Monitoring Committee
ME	Montenegro
MDG	Millennium Development Goals
NUTS	Nomenclature of Territorial Units for Statistic
PCC	Potential Candidate Countries
PP	Project Partner
RS	Serbia
SD	Sustainable Development
SILC	Statistics on Income and Living Conditions
TA	Territorial Agenda
TC	Territorial cohesion
TEC	Treaty establishing the European Community
TEU	Treaty on European Union
TEN	Trans-European Networks

TFEU	Treaty on the Functioning of the European Union
TPG	Transnational Project Group
TR	Turkey
TSP	Territorial State and Perspectives of the European Union
UNEP-WCMC	UNEP World Conservation Monitoring Centre
XK	Kosovo under UN Security Council Resolution 1244
WCSDG	World Commission on the Social Dimension of Globalisation