

ESPON Territorial Indicators

A first selection of ESPON Territorial Indicators
based on the Final Results of the ESPON INTERCO project

Working Paper

Introduction

The INTERCO project has resulted in 29 indicators organised in thematic groups, capturing key policy objectives of the aim of European territorial cohesion. The proposed selection followed a participatory process involving a number of events, including two sessions with the ESPON Monitoring Committee. After delivering their Final Report the *participatory process* continued with several special sessions for MC members and the European Commission. These sessions provided valuable input to the political validation, complementing and categorisation of a limited number of ESPON territorial indicators and for drafting this particular working paper.

At its meeting of 11-12 June 2012 the ESPON Monitoring Committee has decided on the resulting first selection of territorial indicators. The ESPON MC also agreed on testing the selected territorial indicators by the ‘European Territorial Monitoring System’ project and to annually review the selected territorial indicators as follow-up of their practical use. Finally, the MC agreed to have this working paper drafted by the ESPON CU for dissemination and inspiration to all ESPON projects.

This paper first explains the criteria that have been used to select the key indicators related to territorial cohesion. Then, it describes the categories that have been defined to group the indicators into similar groups. These categories serve to distinguish between the different characteristics of the indicators. After that the indicators proposed are presented in such a way that they are each linked to a territorial objective and to a category. Finally, some linkages are made to methods, proposed by the INTERCO project, to use, explain and present the indicators.

An overview of the first selection of ESPON territorial indicators can be found in Annex 1. This Annex shows the indicators proposed by the INTERCO project in white and those added by ESPON stakeholders in grey. More detailed information on the indicators proposed by the INTERCO project and the process that has been used to arrive at this set can be found in the Final Report of the INTERCO project (available at the ESPON Intranet). An overview of the INTERCO indicators including their indication of disparities and trends is included as Annex 2. The reasoning why the INTERCO project proposed these indicators, the inter-linkages between these indicators and their linkages to policy relevant documents can be found in the Main Report in Section B.2.2 “Reasoning scheme for the final set of indicators”.

Criteria for selection

The key indicators should in first instance cover sufficiently the EU 2020 Strategy, the Territorial Agenda 2020 and the aims within territorial cohesion of:

- Reducing territorial inequalities in access to services
- Improving the natural environment
- Reducing poverty and exclusion
- Increasing territorial innovation
- Enhancing territorial governance

Furthermore, the following criteria are also considered to be important for the selection of key indicators related to Territorial Cohesion:

- Change: They should be able to indicate a clear direction of change.
- Normative: They should indicate the value of a direction of change (larger is better - or worse).
- Policy: They should be sensitive to policy change and be able to measure the outcome or impact of a policy measure.
- Regular updates: They should be available for time series, i.e. the data should be updated regularly, preferably annually.
- Sub-national: They should be available at sub-national level, preferably at NUTS3.
- Territorial Cohesion: They should focus on the added value of territorial cohesion and cover its dimensions and not so much on economic or social cohesion.

Categories

All indicators proposed by INTERCO, DG Regio and the MC are related to territorial cohesion. However, they do not all have the same character. This is why four categories have been defined to distinguish between specific abilities to catch territorial cohesion, i.e. do they capture change in the short term, are they more related to territorial structures or do they rather explain the territorial context of regions in relation to territorial cohesion? In addition, some indicators currently lack the data behind. The fourth category is made for those indicators for which data availability and/or indicator development is not yet sufficient, and should be promoted.

The four categories are explained in more detail below:

- Change (Ch): These include indicators that can show the assets/opportunities of regions, the disparities and changes in the short term and for which policy makers have the means to act and improve them. They all have a clear direction, saying whether an increase/decrease is good or bad.
- Structure (St): These include indicators related to territorial structural elements, like urban fabric and polycentricity, accessibility, infrastructure, soil sealing, Natura 2000 areas. These indicators in general change only slowly over time. However they are important for capturing territorial cohesion. They also might be highly related to context indicators.
- Context (Co): These include indicators that show the contextual situation of regions, and are more expressing the framework conditions related, for example, to economic or social

cohesion. They are important to be included in order to learn about the context of the regions: their economic base and social amenities in relation to territorial cohesion aspects. But they are not considered to be indicators of territorial cohesion per se. They are to be used in combination with the change indicators.

- Wish list (W): These include indicators that may belong to one of the three other categories, but for which the data does not fulfil sufficiently the criteria mentioned above on regular updates or sub-national data or for which the indicators are not yet sufficiently developed.

Themes capturing territorial cohesion

The themes capturing the objectives of territorial cohesion as proposed by the INTERCO project have been slightly adapted and modified during the preparatory meeting on 30 April 2012 in order to accommodate wishes raised and to facilitate the communication of the main content of the objectives. In this process, the proposed 6 objectives were enlarged and rephrased into the 7 following themes:

- Economic performance and competitiveness
- Environmental qualities
- Social inclusion and quality of life
- Innovative territories
- Access to services, markets and jobs
- Territorial cooperation and governance
- Polycentric territorial development

First selection of territorial indicators

The indicators proposed by the INTERCO project and later complemented by ESPON stakeholders (in grey) have been linked to one (or more) of the 4 categories defined above, crossed with the 7 themes, and put in a table (see next page). The result is presented in Annex 1. The indicators placed on the wish list all have a link to one of the other three categories in case (in the future) the criteria set for them are sufficiently covered. This is indicated in brackets behind each of the indicators.

The *linkages* of all indicators selected to the objectives of the 5th Cohesion Report and the TA2020 can be found in the table in Annex 3. A linkage to the 5th Cohesion Report is indicated with a 'X' in case the indicator is cited and calculated in this report; an 'x' is indicated when the indicator is not as such calculated, but the aspect is nevertheless mentioned. A linkage to the TA2020 is indicated with an 'x' in case the indicator could be relevant for quantifying the TA2020 objectives.

Data availability for the indicators proposed by INTERCO is clarified and detailed in their Final Report. Data availability for the indicators proposed in addition has been checked too. Annex 4 shows the overview of the spatial resolution (NUTS and/or Degree of Urbanisation) and the years available for the indicators selected. Those indicators that are available at NUTS3 level or lower and cover 10 years or more are indicated as very good. Those indicators that have potential to become available for multiple years are indicated as such in the last column.

The linkage of the indicators to the themes is not always equally strong and sometimes indicators are linked to more than one theme. This means that indicators can be used multiple times. The table in Annex 5 shows in the last column indicators that are linked to an additional theme. Each theme has its own *basket of indicators* and each basket is filled with boxes comprising change, context and structural indicators and indicators on the wish list. The baskets are separated by a solid line and the boxes by a dotted line. The way the baskets might be used is as follows: a policy maker, looking for indicators that are relevant for one of the themes, will find all indicators that are in the basket of the respective theme; if the policy maker is only interested in change indicators of that specific theme, then the box with the change indicators will be opened.

Using the indicators

All ESPON projects dealing with indicators to measure territorial cohesion, should first consider the indicators included in the first selection of ESPON Territorial Indicators (Annex 1). Their experiences in using these indicators, but also their argumentation to prefer another indicator over the ones included in Annex 1, will be valuable input for the annual review of this first selection. The ESPON projects are therefore invited to send their remarks to the ESPON CU.

When using and presenting the indicators, the projects are invited to consider the fact sheets, developed by the INTERCO project for the indicators resulting from their project. These fact sheets show different ways to communicate the indicators themselves and with that territorial cohesion. The fact sheets can be found in the INTERCO Scientific Report (C.3. Indicators presentation).

The INTERCO project also developed a set of tools and a database to support working with the territorial indicators. The tools and database are shortly described in Section B.2.6 of the INTERCO Main Report and explained in more detail in Section C.5 and Annex 9 of the Scientific Report. The tools can be obtained upon request by the ESPON CU.

Next steps

Now that the ESPON MC has validated the first selection of territorial indicators, the indicators will be tested by the ‘European Territorial Monitoring System’ project. But, as mentioned above, also experiences of other ESPON projects with this first selection are welcome and will be taken into account in the annual review. In addition, the first selection of indicators could be complemented with new indicators developed by ESPON projects or with indicators related to new policy developments. The first annual review is foreseen to take place in summer 2013.

Annexes

Annex 1. Indicators for Territorial Cohesion - grouped per theme and category

Annex 2. INTERCO's final proposal of indicators

Annex 3. Indicators for Territorial Cohesion - relevance for TA2020 and Cohesion Reports

Annex 4. Indicators for Territorial Cohesion - spatial resolution and availability

Annex 5. Indicators for Territorial Cohesion - all relevant indicators for each theme

Annex 1. Indicators for Territorial Cohesion - grouped per theme and category

(The indicators in grey are added to the INTERCO indicators by ESPON stakeholders)

Themes	Categories: Change (Ch)	Structure (St)	Context (Co)	Wish list (W)
Economic performance and competitiveness	- Unemployment rate		- GDP per capita in PPS - Old age dependency ratio - Labour productivity in industry and services - Labour productivity per person employed - Primary employment rate - Tertiary employment rate	
Environmental qualities	- *Air pollution: PM10 - *Air pollution: Ozone concentrations - *Soil sealing per capita (St) - *Accessibility to Natura 2000 (St)	- Wind power potential	- Potential vulnerability to climate change - Fresh water resources - Noise pollution - Photovoltaic potential - Aggregated Natural Hazards	- Natural resources (Co) - Biodiversity (St) - Mortality, hazards and risks (Co)
Social inclusion and quality of life	- Disposable household income - Proportion of early school leavers - Quality of housing - % in risk of poverty		- Life expectancy at birth - Gender imbalances - Difference in female-male unempl. rates - Ageing index - % of households very low in work - Deprived persons	
Innovative territories	- Population aged 25-64 with tertiary education - Creative workforce - % of high growth firms		- Intramural expenditures on R&D - Employment rate 20-64 - Birth rates and survival rates of firms	
Access to services, markets and jobs	- Access to compulsory school (St) - Access to hospitals (St) - *Accessibility of grocery services (St) - Access to university (St) - Access to primary health care - Households with broadband access	- *Accessibility potential by road - *Accessibility potential by rail - *Accessibility potential by air		
Territorial cooperation and governance	- *Cooperation intensity - *Cooperation degree		- Variation in corruption, discrimination & victimization	- Use of integrated place based strategies (Ch) - Use of functional regions (St) - Use of territorial impact assessments (Co)
Polycentric territorial development		- *Population potential within 50 km	- Net migration rate	- *Polycentricity index (St)

- * The Indicators marked with an * have intrinsic territorial dimensions meaning that they
- include the notion of distance, i.e. all the "accessibility" indicators + "Population potential within 50 km"
 - are calculated using areas/volumes (soil sealing, air pollution)
 - relate 2 or more territories (the cooperation indicators)

Annex 2. INTERCO's final list of indicators

Data availability, disparities and general trends in convergence for each indicator grouped by territorial objective are synthesised in Table 1:

Indicator	Spatial resolution	Years available	Disparities (1)	Trend (2)
Strong local economies ensuring global competitiveness				
GDP per capita in PPS	NUTS 3	1997-2008	high	
Unemployment rate	NUTS 3	1999-2009	high	
Old age dependency ratio	NUTS 3	2000-2010	medium	
Labour productivity in industry and services	NUTS 2	2007	n.a.	n.a.
Labour productivity per person employed	NUTS 0	1995-2010	medium	
Innovative territories				
Population aged 25-64 with tertiary education	NUTS 2	2008-2010	medium	
Intramural expenditures on R&D	NUTS 2	2007	high	n.a.
Employment rate 20-64	NUTS 2	1999-2009	small	
Fair access to services, market and jobs				
Access to compulsory school	NUTS 0, degree of urbanisation	2008	very high	n.a.
Access to hospitals	NUTS 0, degree of urbanisation	2008	very high	n.a.
Accessibility of grocery services	NUTS 0, degree of urbanisation	2007	very high	n.a.
Access to university	(SILC data)	2007		n.a.
Accessibility potential by road	NUTS 3	2001, 2006	very high	
Accessibility potential by rail	NUTS 3	2001, 2006	very high	
Accessibility potential by air	NUTS 3	2001, 2006	high	

1: Disparities: StDev / Avg = 0-0.2 small disparities; 0.2-0.4 medium disparities; 0.4-0.6 high disparities; >0.6 very high disparities

2: Trends towards cohesion: strong trend towards cohesion  , trend towards cohesion  , disparities remained stable  , widening gaps 

Indicator	Spatial resolution	Years available	Disparities (1)	Trend(2)
Inclusion and quality of life				
Disposable household income	NUTS 2	1996-2007	medium	
Life expectancy at birth	NUTS 2	2000-2008	small	
Proportion of early school leavers	NUTS 1	2000-2010	high	
Gender imbalances	NUTS 3	2000-2009	small	
Difference in female-male unemployment rates	NUTS 2	1999-2010	very high	
Ageing index	NUTS 3	2000-2010	small	
Attractive regions of high ecological values and strong territorial capital				
Potential vulnerability to climate change	NUTS 3	2011	n.a.	n.a.
Air pollution: PM ₁₀	NUTS 3	2009	small	n.a.
Air pollution: Ozone concentrations	NUTS 3	2008	medium	n.a.
Soil sealing per capita	NUTS 3	2006	very high	n.a.
Mortality, hazards and risks	n.a.	n.a.		
Biodiversity	n.a.	n.a.		
Renewable energy potential	n.a.	n.a.		
Integrated polycentric territorial development				
Population potential within 50 km	NUTS 3	2008	very high	n.a.
Net migration rate	NUTS 3	2007	medium	n.a.
Cooperation intensity	NUTS 2	2008	high	n.a.
Cooperation degree	NUTS 2	2008	medium	n.a.
Polycentricity index	n.a.	n.a.		

Table 1. Territorial objectives and top indicators - territorial cohesion analysis

1: Disparities: $StDev / Avg = 0-0.2$ small disparities; $0.2-0.4$ medium disparities; $0.4-0.6$ high disparities; >0.6 very high disparities

2: Trends towards cohesion: strong trend towards cohesion  , trend towards cohesion  , disparities remained stable  , widening gaps 

Annex 3. Indicators for Territorial Cohesion - relevance for TA2020 and Cohesion Reports

(The indicators in grey are added to the INTERCO indicators by ESPON stakeholders)

Themes	Indicators	Aimed direction	5th Cohesion report	TA2020
Economic performance and competitiveness	Unemployment rate (Ch)	down	X	X
	GDP per capita in PPS (Co)	up	X	X
	Old age dependency ratio (Co)	stable		X
	Labour productivity in industry and services (Co)	up	X	X
	Labour productivity per person employed (Co)	up	X	X
	Primary employment rate (Co)	up		x
	Tertiary employment rate (Co)	up		
Environmental qualities	Air pollution: PM10 (Ch)	down	X	X
	Air pollution: Ozone concentrations (Ch)	down	X	X
	Soil sealing per capita (Ch, St)	stable	X	
	Accessibility to Natura 2000 (Ch, St)	up	x	
	Potential vulnerability to climate change (Co)	down	X	X
	Fresh water resources (Co)	up	x	X
	Noise pollution (Co)	down	x	X
	Aggregated Natural Hazards (Co)	down	x	X
	Photovoltaic potential (Co)	up	X	X
	Wind power potential (St)	up	X	X
	W: Natural resources (Co)	up	x	X
	W: Biodiversity (St)	up	x	X
	W: Mortality, hazards and risks (Co)	down	x	X
Social inclusion and quality of life	Disposable household income (Ch)	up	X	
	Proportion of early school leavers (Ch)	down	X	
	Quality of housing (Ch)	up	x	
	% in risk of poverty (Ch)	down	X	
	Life expectancy at birth (Co)	up	X	
	Gender imbalances (Co)	down	X	
	Difference in female-male unemployment rates (Co)	down	X	
	Ageing index (Co)	stable		X
	% of households very low in work (Co)	down	X	
Deprived persons (Co)	down	X		
Innovative territories	Population aged 25-64 with tertiary education (Ch)	up	X	
	Creative workforce (Ch)	up		
	% of high growth firms (Ch)	up	x	
	Intramural expenditures on R&D (Co)	up	X	
	Employment rate 20-64 (Co)	up	X	
	Birth rates and survival rates of firms (Co)	up		
Access to services, markets and jobs	Access to compulsory school (Ch, St)	up to 100%	X	X
	Access to hospitals (Ch, St)	up	X	X
	Accessibility of grocery services (Ch, St)	up	x	X
	Access to university (Ch, St)	up	x	X
	Access to primary health care (Ch)	up	X	X
	Households with broadband access (Ch)	up	X	
	Accessibility potential by road (St)	up	x	X
	Accessibility potential by rail (St)	up	x	X
Accessibility potential by air (St)	up	x	X	
Territorial cooperation and governance	Cooperation intensity (Ch)	up	x	X
	Cooperation degree (Ch)	up	x	X
	Variation in corruption, discrimination & victimization (Co)	down	x	
	W: Use of integrated place based strategies (Ch)	up	x	X
	W: Use of functional regions (St)	up	x	X
W: Use of territorial impact assessments (Co)	up	x	X	
Polycentric territorial development	Population potential within 50 km (St)	?	x	X
	Net migration rate (Co)	?	X	X
	W: Polycentricity index (St)	up		X

Annex 4. Indicators for Territorial Cohesion - spatial resolution and availability

(The indicators in grey are added to the INTERCO indicators by ESPON stakeholders)

Themes	Indicators	Spatial resolution	Years available	very good	has potential
Economic performance and competitiveness	Unemployment rate (Ch)	NUTS3	1999-2009	X	
	GDP per capita in PPS (Co)	NUTS3	1997-2008	X	
	Old age dependency ratio (Co)	NUTS3	2000-2010	X	
	Labour productivity in industry and services (Co)	NUTS3	2007		
	Labour productivity per person employed (Co)	NUTS3	1995-2010	X	
	Primary employment (Co)	NUTS2	1995-2008		
	Tertiary employment (Co)	NUTS2	1995-2008		
Environmental qualities	Air pollution: PM10 (Ch)	NUTS3	2009		X
	Air pollution: Ozone concentrations (Ch)	NUTS3	2008		X
	Soil sealing per capita (Ch, St)	1km grid/NUTS3	2006		X
	Accessibility to Natura 2000 (Ch, St)	1km grid/NUTS3	2006		X
	Potential vulnerability to climate change (Co)	NUTS3	2011		
	Fresh water resources (Co)	NUTS2	2008		
	Noise pollution (Co)	NUTS0,1,2 DofU	?		
	Aggregated Natural Hazards (Co)	NUTS3	2004		
	Photovoltaic potential (Co)	NUTS2	2005		
	Wind power potential (St)	NUTS2	2005		
	W: Natural resources (Co)	?	?		
	W: Biodiversity (St)	n.a.	n.a.		
	W: Mortality, hazards and risks (Co)	n.a.	n.a.		X
Social inclusion and quality of life	Disposable household income (Ch)	NUTS2	1996-2007		
	Proportion of early school leavers (Ch)	NUTS1	2000-2010		
	Quality of housing (Ch)	NUTS0,1,2 DofU	2006		
	% in risk of poverty (Ch)	NUTS0,1,2 DofU	2006		
	Life expectancy at birth (Co)	NUTS2	2000-2008		
	Gender imbalances (Co)	NUTS3	2000-2009	X	
	Difference in female-male unemployment rates (Co)	NUTS2	1999-2010		
	Ageing index (Co)	NUTS3	2000-2010	X	
	% of households very low in work (Co)	NUTS0,1,2 DofU	2006		
Deprived persons (Co)	NUTS0,1,2 DofU	2006			
Innovative territories	Population aged 25-64 with tertiary education (Ch)	NUTS2	2008-2010		
	Creative workforce (Ch)	NUTS2	2001-4, 2005-8		
	% of high growth firms (Ch)	NUTS3	?		
	Intramural expenditures on R&D (Co)	NUTS2	2007		
	Employment rate 20-64 (Co)	NUTS3	1999-2009	X	
	Birth rates and survival rates of firms (Co)	NUTS3	?		
Access to services, markets and jobs	Access to compulsory school (Ch, St)	NUTS0,1,2 DofU	2008		
	Access to hospitals (Ch, St)	NUTS0,1,2 DofU	2008		
	Accessibility of grocery services (Ch, St)	NUTS0,1,2 DofU	2007		
	Access to university (Ch, St)	NUTS0,1,2 DofU	2007		
	Access to primary health care (Ch)	NUTS3 (grid)	2011		
	Households with broadband access (Ch)	NUTS2	2010		
	Accessibility potential by road (St)	NUTS3	2001, 2006, 2011	X	
	Accessibility potential by rail (St)	NUTS3	2001, 2006, 2011	X	
	Accessibility potential by air (St)	NUTS3	2001, 2006, 2011	X	
Territorial cooperation and governance	Cooperation intensity (Ch)	NUTS2	2008		X
	Cooperation degree (Ch)	NUTS2	2008		X
	Variation in corruption, discrimination & victimization (Co)	NUTS0,1,2 DofU	2006		
	W: Use of integrated place based strategies (Ch)	?	?		
	W: Use of functional regions (St)	?	?		
	W: Use of territorial impact assessments (Co)	?	?		
Polycentric territorial development	Population potential within 50 km (St)	NUTS3	2008		X
	Net migration rate (Co)	NUTS3	2007		
	W: Polycentricity index (St)	n.a.	n.a.		

Annex 5. Indicators for Territorial Cohesion - all relevant indicators for each theme

(The indicators in grey are added to the INTERCO indicators by ESPON stakeholders)

Themes	Indicators	Indicators in addition (from other themes)	
Economic performance and competitiveness	Unemployment rate (Ch)	Disposable household income (Ch)	Change
		% of high growth firms (Ch)	
	GDP per capita in PPS (Co)	Photovoltaic potential (Co)	Context
	Old age dependency ratio (Co)	Ageing index (Co)	
	Labour productivity in industry and services (Co)	Employment rate 20-64 (Co)	
	Labour productivity per person employed (Co)	Birth rates and survival rates of firms (Co)	
	Primary employment rate (Co)		
	Tertiary employment rate (Co)		
		Wind power potential (St)	St W
		W: Natural resources (Co)	
Environmental qualities	Air pollution: PM10 (Ch)		Change
	Air pollution: Ozone concentrations (Ch)		
	Soil sealing per capita (Ch, St)		
	Accessibility to Natura 2000 (Ch, St)		
	Potential vulnerability to climate change (Co)		Context
	Fresh water resources (Co)		
	Noise pollution (Co)		
	Aggregated Natural Hazards (Co)		
	Photovoltaic potential (Co)		
	Wind power potential (St)		
W: Natural resources (Co)		St Wish list	
W: Biodiversity (St)			
W: Mortality, hazards and risks (Co)			
Social inclusion and quality of life	Disposable household income (Ch)	Unemployment rate (Ch)	Change
	Proportion of early school leavers (Ch)	Air pollution: PM10 (Ch)	
	Quality of housing (Ch)	Air pollution: Ozone concentrations (Ch)	
	% in risk of poverty (Ch)	Accessibility to Natura 2000 (Ch, St)	
		Access to compulsory school (Ch, St)	
		Access to hospitals (Ch, St)	
		Accessibility of grocery services (Ch, St)	
		Access to university (Ch, St)	
		Access to primary health care (Ch)	
		Households with broadband access (Ch)	
	Life expectancy at birth (Co)	GDP per capita in PPS (Co)	Context
	Gender imbalances (Co)	Fresh water resources (Co)	
	Difference in female-male unemployment rates (Co)	Noise pollution (Co)	
Ageing index (Co)	Aggregated Natural Hazards (Co)		
% of households very low in work (Co)			
Deprived persons (Co)			
	W: Mortality, hazards and risks (Co)	W	
Innovative territories	Population aged 25-64 with tertiary education (Ch)		Change
	Creative workforce (Ch)		
	% of high growth firms (Ch)		Context
	Intramural expenditures on R&D (Co)		
	Employment rate 20-64 (Co)		
Birth rates and survival rates of firms (Co)			
Access to services, markets and jobs	Access to compulsory school (Ch, St)		Change
	Access to hospitals (Ch, St)		
	Accessibility of grocery services (Ch, St)		
	Access to university (Ch, St)		
	Access to primary health care (Ch)		
	Households with broadband access (Ch)		Structure
	Accessibility potential by road (St)		
Accessibility potential by rail (St)			
Accessibility potential by air (St)			
Territorial cooperation and governance	Cooperation intensity (Ch)		Change Co
	Cooperation degree (Ch)		
	Variation in corruption, discrimination & victimization (Co)		
	W: Use of integrated place based strategies (Ch)		Wish list
	W: Use of functional regions (St)		
W: Use of territorial impact assessments (Co)			
Polycentric territorial development	Population potential within 50 km (St)		St Co W
	Net migration rate (Co)		
	W: Polycentricity index (St)		