


Baltic Sea Region - Territorial Monitoring

March 2014





This publication synthesises the results of the ESPON BSR TeMo project, a Scientific Platform Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The BSR TeMo project included the stakeholders VASAB and the ESPON Coordination Unit.

This report does not necessarily reflect the opinion of the members of the ESPON Monitoring Committee.

Information on the ESPON Programme and projects can be found on www.espon.eu

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Foreword

The Baltic Sea Region Territorial Monitoring (BSR TeMo) is an ESPON Scientific Platform Project based on a demand from the countries in the Baltic Sea Region involved in the ESPON Programme and initiated by VASAB (Vision and Strategies around the Baltic Sea) for territorial evidence and analysis in the Baltic Sea Region.

The Baltic Sea Region (BSR) is a highly heterogeneous area in economic, environmental and cultural terms, yet the countries concerned share many common resources and demonstrate considerable interdependence. The BSR is characterised by a number of distinctive territorial challenges and opportunities, many of which have their own specific territorial expression. This creates the need to innovate and develop monitoring systems for territorial development that can support policy makers at different levels in order to contribute to European competitiveness and cohesion.

TeMo stands for Territorial Monitoring. The main objective of the TeMo project was to develop an operational indicator-based territorial monitoring system, comprehending a policy and a methodological dimension aimed at promoting territorial cohesion in the Baltic Sea Region.

The main objectives of the BSR TeMo project

The main objective of the BSR TeMo project is to develop an operational indicator - based territorial monitoring system and promote territorial cohesion in the Baltic Sea Region. This complements other monitoring systems at the European scale.

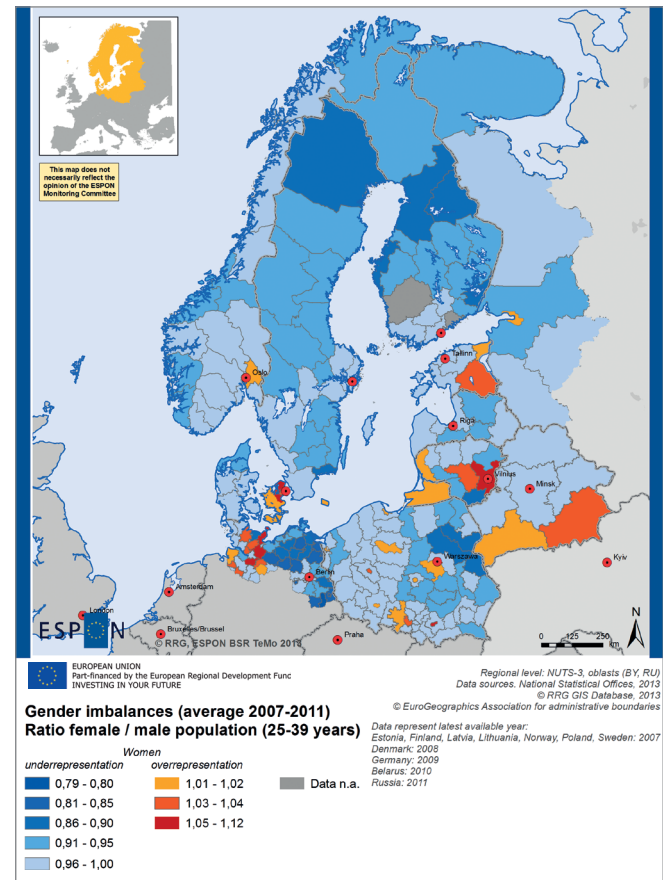
Territorial challenges. BSR TeMo is designed not only to address the general **policy objectives** but also to reflect the territorial challenges of the BSR. It portrays the BSR region and territorial cohesion, both in the short and in the long term. It is also a benchmark allowing to create similar monitoring systems in other **(macro) regions** of the EU.

Territorial approach. The system is also an instrument for supporting the so-called **place based policy**, as it can directly support the **territorial approach** to cohesion policy by supplying information on the regional socio-economic trends. This allows the specification of priorities in the area of potential intervention within the framework of cohesion policy.

Territorial typology. Statistical information is of more or less routine nature. The key challenge is to turn it into meaningful policy indicators responsive to the current policy needs and appealing to the minds of **policy makers** by e.g. aligning spatial attributes (e.g. typologies) to such information.

Map 1 shows an example of both territorial challenges and territorial typology and how this can be compiled and presented for analysis.

Map 1. Gender structure in the BSR, 2007-2011



Target group of BSR TeMo

Who are the main addressees of the BSR TeMo monitoring system?

The key feature of BSR TeMo is development of the system in close collaboration with its potential users –officers in the BSR countries responsible for territorial development. The conceptual and testing work was done in order to ensure applicability of the TeMo monitoring system for support in the implementation of key BSR and EU policy documents such as:

- *The EU Strategy for the Baltic Sea Region (EUSBSR),*
- *VASAB Long Term Perspective for the Territorial Development of the Baltic Sea Region (VASAB LTP)*
- *EU 2020 Strategy,*
- *Territorial Agenda 2020 (TA 2020).*

The potential addressees and users of the **BSR TeMo monitoring system** include:

- **Policy makers** responsible for cohesion, regional and spatial policy – at the different levels of government, ranging from local authorities (i.e. municipalities, cities and regions), through national agencies, to EU-level officials (e.g. of the European Commission and individual DGs); the system will offer these decision makers opportunities for dynamic analysis of indicators for the entire BSR area;
- **International organisations** (e.g. the VASAB-cooperation and the HELCOM organization), and local cross-border associations (i.e. Euroregions);

- **The ESPON community** (including policymakers, stakeholders, researchers and planners);
- **Institutions** implementing, managing and evaluating actions taken within the framework of the EU's cohesion policy;
- **Researchers** dealing with territorial cohesion, interested in the EU neighbourhood and similar policies, including experts working with GISs and databases;
- **Geographers** generally may utilize the BSR TeMo monitoring system to for their studies in human, economic and transport geography, where TeMo provides already a rich basket of harmonized and synthesized data and indicators.
- EU projects and initiatives like various **INTERREG projects** may benefit from data, indicators and maps and the analyses results provided through the TeMo system.
- **Pupils and teachers** wishing to learn about the BSR by using TeMo materials. Teachers may use the online presentation tool in their classes, or for preparing presentations, or may download raw data or maps to work within the class or in working groups.
- **Other interested actors**, including students, for whom the BSR TeMo system will provide opportunities for getting acquainted with the cohesion indicators in this part of Europe.

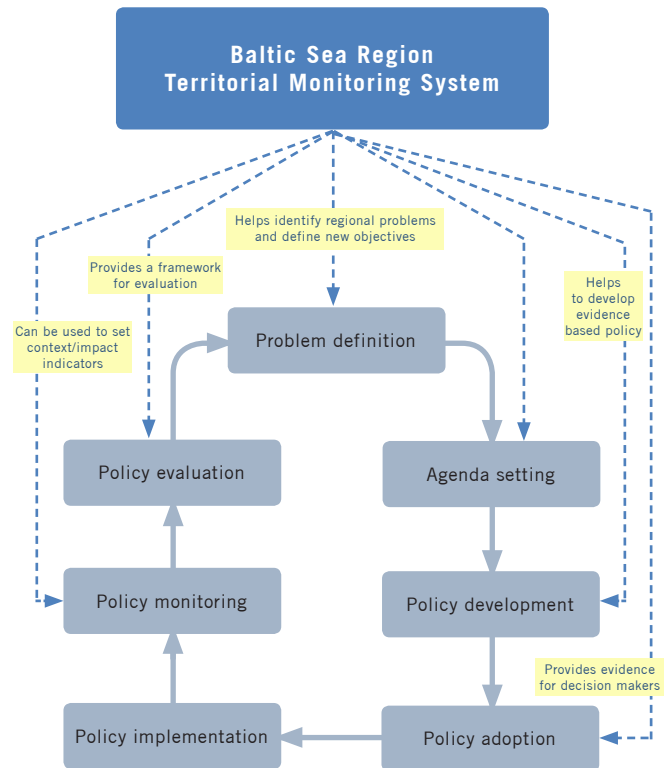
The position of monitoring in the policy cycle

What is the position of a monitoring system in the public policy cycle? For which purpose was the monitoring system created?

Key parameter of territorial monitoring system is its ability to feed relevant **information** into a **policy process** and provide territorial evidence and analysis to the **policy makers**, responsible for cohesion policy at the different levels of government.

- BSR TeMo provides relevant indicators for the entire BSR area necessary for **measuring progress and achievement of policy objectives** of territorial cohesion policy.
- BSR TeMo sets the background for **identification of territorial development opportunities and challenges at regional level, as well as patterns of economic and social development.**
- Monitoring data assists decision-makers in defining new objectives, specifying priorities in the area of potential intervention within the framework of cohesion policy and generally **helps to develop evidence-based policy.**
- Information supplied by BSR TeMo offers decision makers an opportunity to carry out dynamic analysis of indicators and, thus, provides **framework for policy evaluation,**
- The system provides a basis for a place-based dialogue between different tiers of government and other stakeholders.

Scheme 1. Baltic Sea Region territorial monitoring system



Geographical coverage

What is the geographical coverage of the monitoring system?

Geographically, the monitoring system covers the entire Baltic Sea Region including Denmark, Northern Germany, Estonia, Latvia, Lithuania, Poland, Finland, Sweden, Norway, North-West Russia and Belarus. A strength of the BSR TeMo monitoring system is that it covers, in dynamic terms, not only the EU countries but also countries neighbouring the EU.

The BSR TeMo monitoring system is based on the **NUTS classification** (with the lowest possible level of aggregation depending on the availability of data for the different indicators) and NUTS-3 and NUTS-2 levels are the main geographical scales.

Table 1. NUTS-3 and NUTS-2 levels in the Baltic Sea Region

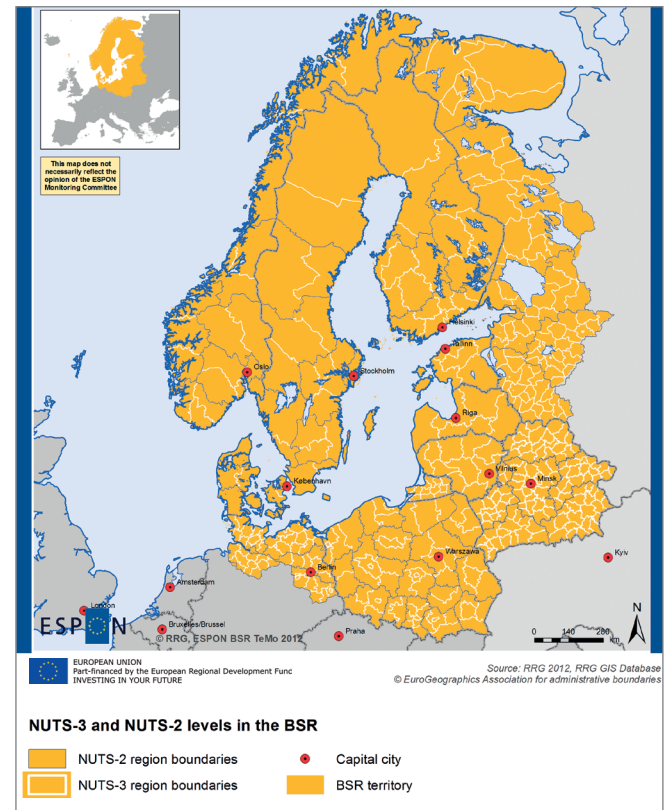
Country	NUTS-2		NUTS-3	
Belarus	Oblasts	7	Rayons (sNUTS4)	118 (130)
Denmark	Regioner	5	Landsdele	11
Estonia	Country	1	Groups of Maakond	5
Finland	Suuralueet/Storomraden	5	Maakunnat / Landskap	20/19
Germany	Regierungsbezirke	8	Kreise / Kreisfreie Stade	66
Latvia	Country	1	Reģioni	6
Lithuania	Country	1	Apskritis	10
Norway	Regions	7	Fylker	19
Poland	Wojewodztwa	16	Podregiony	66
Russia	Oblasts	7	Rayons (sNUTS4)	123
Sweden	Riksomraden	8	Lan	21

Seamless layers. The task for BSR TeMo was to generate seamless layers of administrative boundaries (NUTS-3, NUTS-2 and NUTS-0) for the study area including Belarus and Russia.

Spatial resolution. The project attempts to find additional data at lower geographical levels and alternative maps are shown presenting LAU-2 or raster data.

There are large differences in the number of regions across the BSR countries, both at NUTS-2 and NUTS-3 level.

Map 2. Geographical coverage and spatial units of BSR TeMo



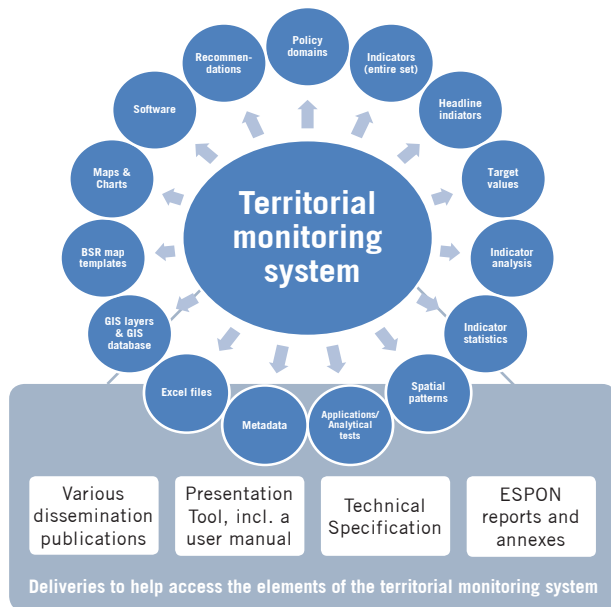
Structure of the system

What is the methodological approach of the monitoring system?

A territorial monitoring system consists of **numerous elements** - first and foremost policy domains and subdomains including indicators and variables. However, it is important to emphasise that methodological considerations when analysing the development and comparing the indicators across the territory are equally important elements of a well-functioning and relevant territorial monitoring system.

Complex structure. While the TeMo documents, including the ESPON deliveries, and the Presentation Tool are the tangible outputs of the TeMo project, the full set of elements (see figure below) comprises the full content of the territorial monitoring system.

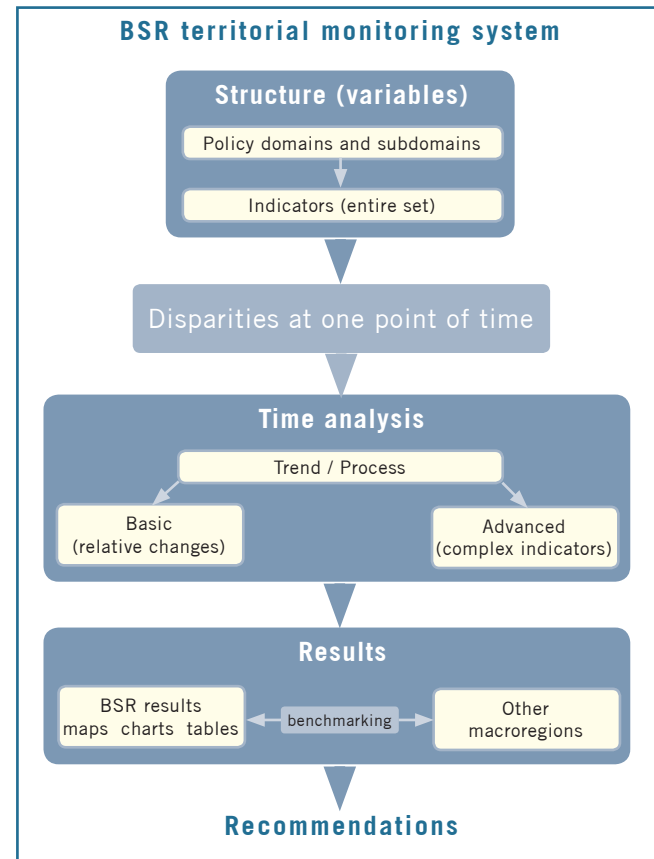
Scheme 2. Deliveries of territorial monitoring system



The monitoring system focuses on **three types of analytical approaches**, which are:

- portraying of disparities at one point in time,
- looking at developments over time (trends),
- benchmarking the Baltic Sea Region with other macro regions in Europe.

Scheme 3. Logical model of BSR territorial monitoring system



Organization of the system

What exactly is studied within the framework of the monitoring system?

The set of collected core variables was divided into domains and subdomains. The principal task of a monitoring system is its ability to provide direct territorial evidence and analysis for policy. Simplicity and sensitivity to rapid changes are key features that should be strived for.

Table 2. Overview of domains, subdomains and indicators

Domains	1. Economic performance and competitiveness
Subdomains and indicators	1.1. Macroeconomic development
	GDP per capita
	GDP per person employed
	1.2. Labour market
	Unemployment rate, total
	Employment rate (20 - 64 years)
	1.3. Demography
	Net migration rate
	Total population change
Economic dependency ratio	

Domains	2. Access to services, markets and jobs
Subdomains and indicators	2.1. Potential accessibility
	Accessibility potential by road
	Accessibility potential by rail
	Accessibility potential by air
	Multimodal accessibility potential
	2.2. Spatial structure
	Functional areas: access to cities
	Population potential within 50 km
	Border crossings
	2.3. Internet
	Households with internet access at home

Domains	3. Innovative territories
Subdomains and indicators	3.1. Human capital
	Population with tertiary education (25 - 64 years)
	Employment in technology & knowledge sectors
	3.2. Financing and institutions
	Gross-domestic expenditures on R&D, business
Gross-domestic expenditures on R&D, total	

Domains	4. Social inclusion and quality of life
Subdomains and indicators	4.1. Social inclusion
	At-risk-of-poverty rate
	Severe material deprivation rate
	Youth unemployment rate (15-24 years)
	Gender imbalances
	4.2. Health
	Life expectancy at birth, in years
Self-assessed general health status	

Domains	5. Environmental qualities
Subdomains and indicators	5.1. Consumption and production
	New soil sealing per capita
	Air pollution (PM10)
	Eutrophication
	5.2. Natural resources
	Fragmentation index

Headline indicators

What are the most important indicators under each domain?

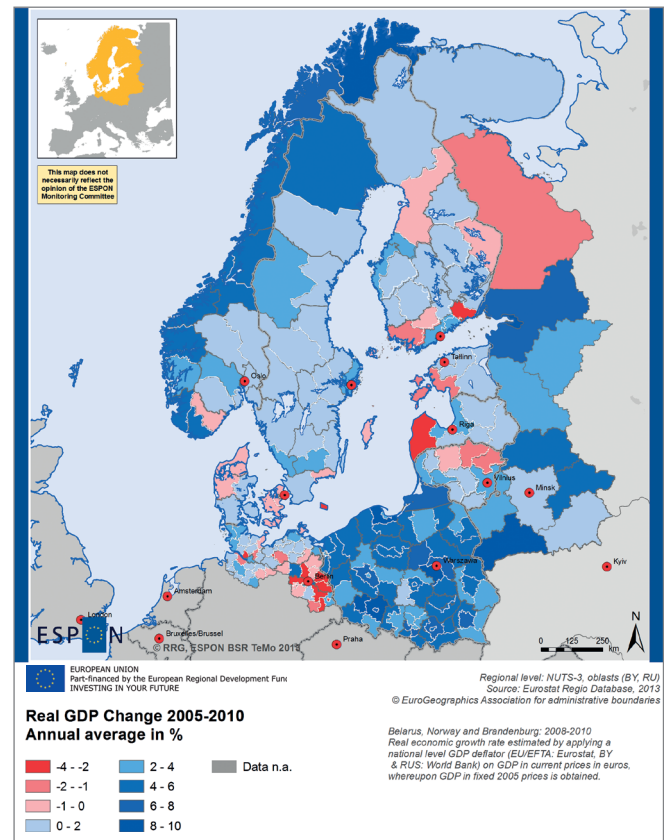
Headline indicators represent the most important indicators under each domain. The identification of the headline indicators is based on a comparative analysis, which considers important aspects, such as the conceptual coverage of the entire domain, the policy relevance of the indicator, time series availability and update frequency and availability within the European Statistical System.

Headline indicators. The following indicators have been selected:

- (1) GDP per capita in PPS (see Map 3)
- (2) Multimodal potential accessibility
- (3) Gross expenditures on R&D
- (4) At-risk-of-poverty rate
- (5) Soil sealing

However, since this is a choice which reflects many aspects of the indicators, the headline indicators may change during the life of the monitoring system.

Map 3. Real GDP change 2005-2010



Data and sources

Is data available and comparable?

Availability and comparability of statistical data provided by EUROSTAT and ROSSTAT, on the one hand, and BELSTAT, on the other, remain a major issue for territorial monitoring systems in the BSR.

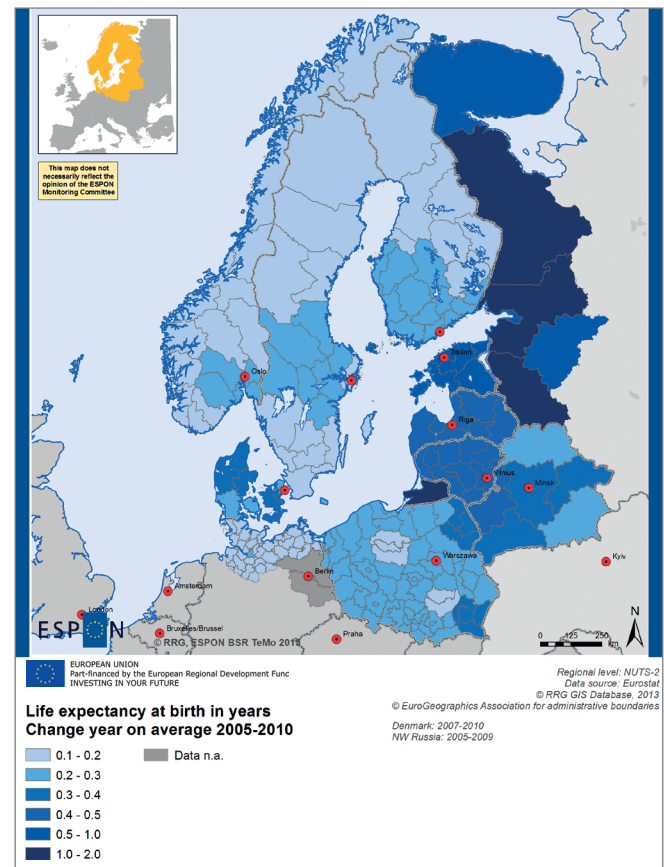
Data used for the indicators. Basic principles:

- Data needed for the project has been collected in the form of variables rather than indicators. The time frame for data to be collected was set to 2005 and up to latest available year.
- The main spatial levels for collected data have first and foremost been NUTS-3 regions and oblasts (NUTS-2) level. For indicators for which NUTS-3 data were not available, NUTS-2 data have been used.
- Ease of updating the monitoring system has been a priority. Three main sources, which provide easily accessible data and – to a certain extent – data on a yearly basis are: EUROSTAT (BSR EU countries and Norway), ROSSTAT (Russia) and BELSTAT (Belarus).
- Coherence regarding methodology and availability for data covering the BSR countries has been considered crucial. This has been of particular importance regarding combining data from EU states and Norway on the one hand, and Russia and Belarus on the other.
- Some indicators are based upon specific modelling approaches and/or special calculations, because these are composite indicators that are not directly available in statistics (accessibility indicators, fragmentation index, etc.)

Some challenges regarding integration of **Russian and Belarusian data**:

- Methodological disparities (e.g. at-risk-of-poverty rate; air pollution);
- Comparability of ROSSTAT/BELSTAT data (e.g. GDP) between national and regional levels;
- Lack of similar data (e.g. in the domains Innovative territories and Environmental qualities).

Map 4. Life expectancy at birth in years



Map 4 shows an example of where data is available and comparable.

Applications of the territorial monitoring system

How to evaluate and establish the functionality of the system?

The objective of the applications/testing of the monitoring system is to evaluate the functionality of it by pushing its analytical capacity in a selection of “real life situations”, where its ability to feed relevant information into a policy process constitutes the key parameter for assessing it. The investigations conducted so far proved the ability of the system to deliver important evidences able to guide development policies in space.

Examples of territorially cohesive trends in the BSR 2005-2011:

- Convergence in BSR employment rates (apart from Poland)
- Convergence in tertiary education

Four different topics were chosen for testing the monitoring system; these covered both thematic concepts as well as geographical aspects:

- Territorial cohesion: ability to handle **cross-cutting issues**;
- Migration: functionality within a pronounced **thematic focus**;
- Border regions: functionality to depict a particular **geographic scope**;
- **Overall benchmarking** ability (BSR is benchmarked against the **Alpine Space** and the **North Sea** transnational areas).

Figure 1. Employment rate and change 2005-2011

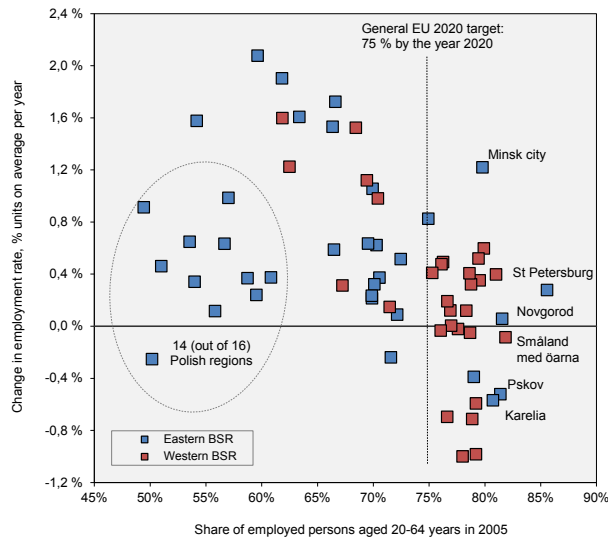
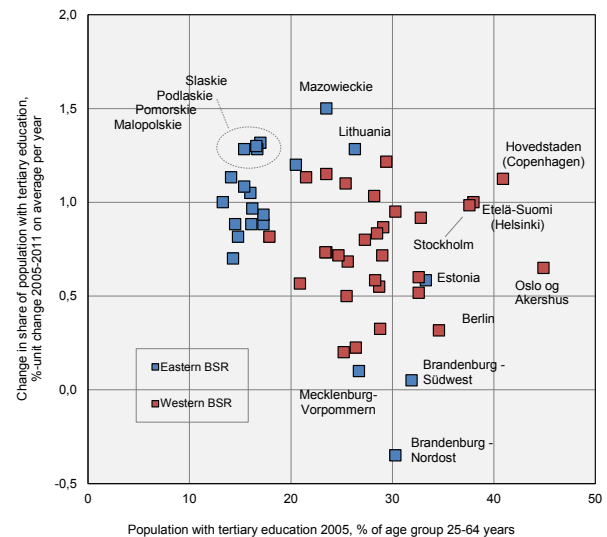


Figure 2. Tertiary education and change 2005-2011



Territorial development challenges and imbalances

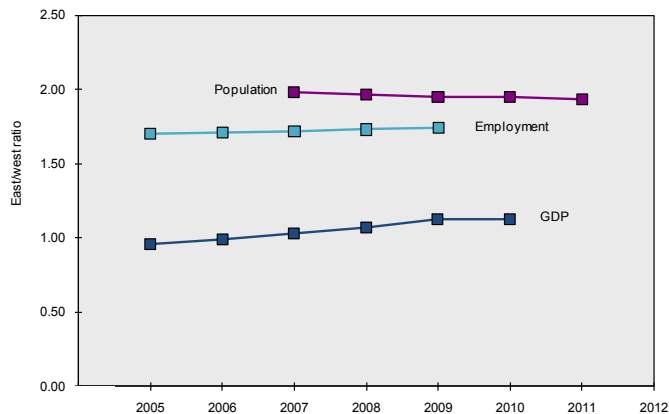
Are the principal BSR territorial divides diminishing?

The concept of the "BSR territorial divides" was developed in the VASAB Long Term Perspective for the Territorial Development of the Baltic Sea Region. The first BSR divide exists between more and less affluent countries (the **East-west divide**)

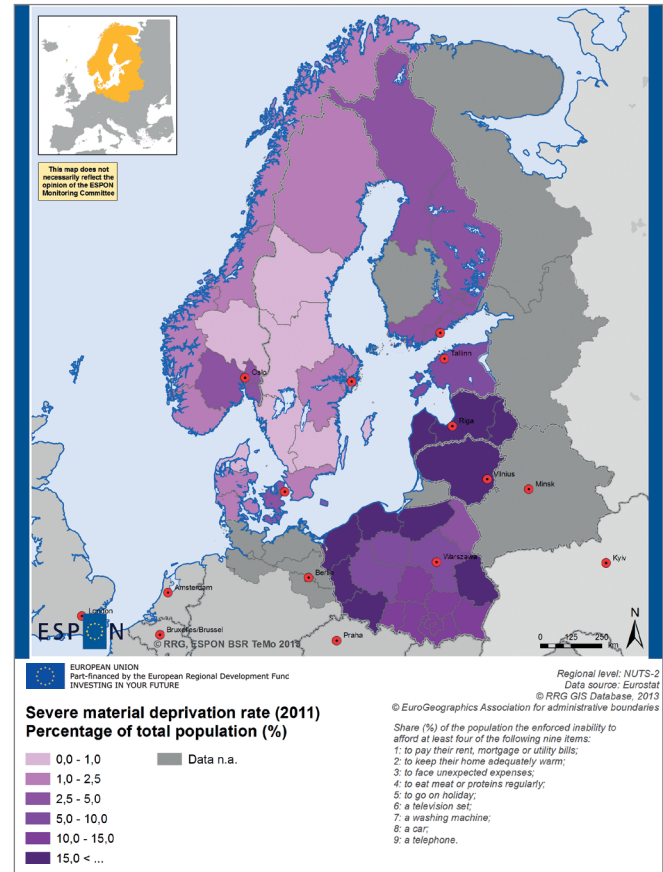
East-west divide

The BSR East-west divide exists and is partly growing further still (see Map 5). However, the gap in terms of pure economic weight is diminishing, as is indicated by the upward sloping line for the East-west balance in GDP. Hence the sharpest divide today can be found within the social spheres of development. In terms of for instance poverty (map to the right) or health, the BSR displays a substantial variation that still today by and large follows the old Iron curtain.

Figure 3. Development of the East/west ratio for GDP, employment and population in the BSR 2005-2011, at NUTS-3



Map 5. Severe material deprivation rate (2011)

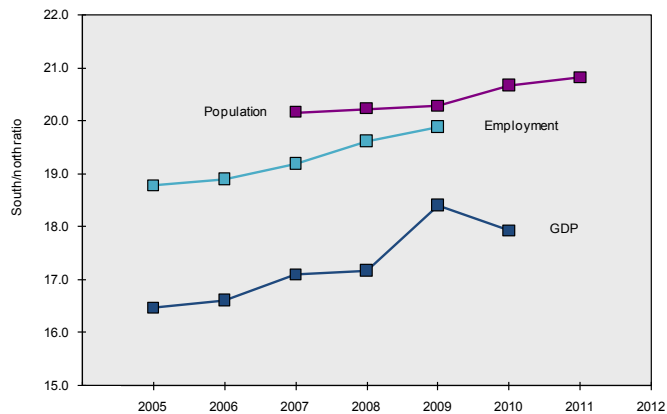


South-north divide

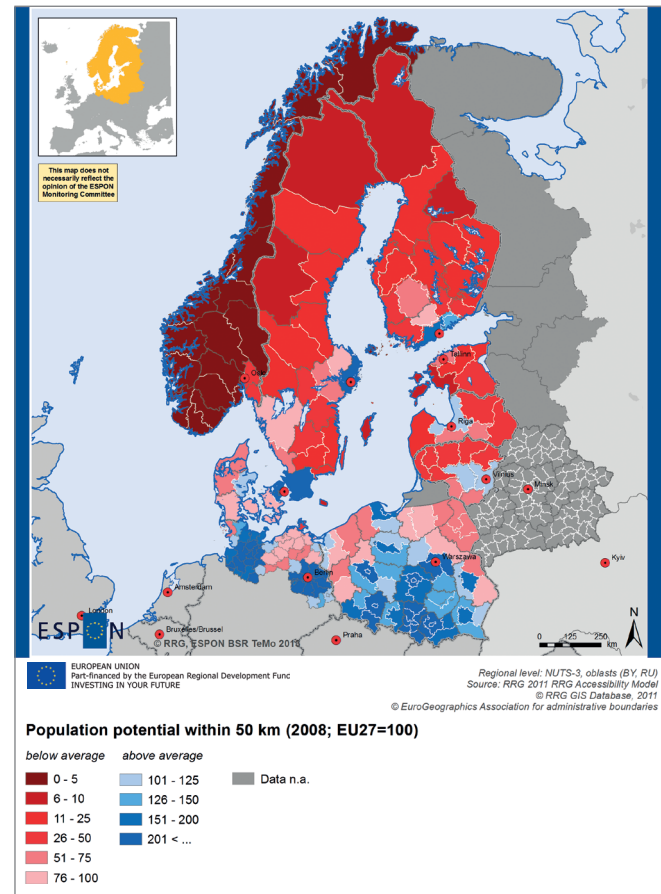
The second BSR divide exists between the densely populated south and the sparsely populated north (the **South-north divide**)

Sparsely populated regions are among the most disadvantaged types of the BSR territories and are lagging behind in most aspects of socioeconomic development, particularly when examined in a national context. Such evidence can be found in migration patterns, weak demographic structures, as well as in their poor physical accessibility. The upward slope of the South-north ratio indicates an increased relative shift of people, employment and production to the more densely populated areas of the BSR.

Figure 4. Development of the South/north ratio for GDP, employment and population in the BSR 2005-2011, at NUTS-3



Map 6. Population potential within 50 km (2008; EU27=100)

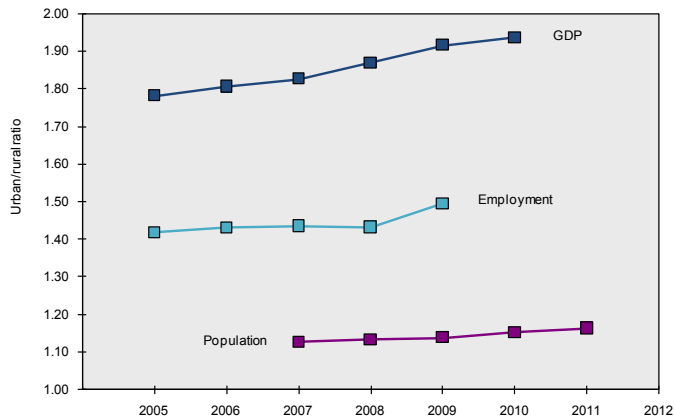


Urban-rural divide

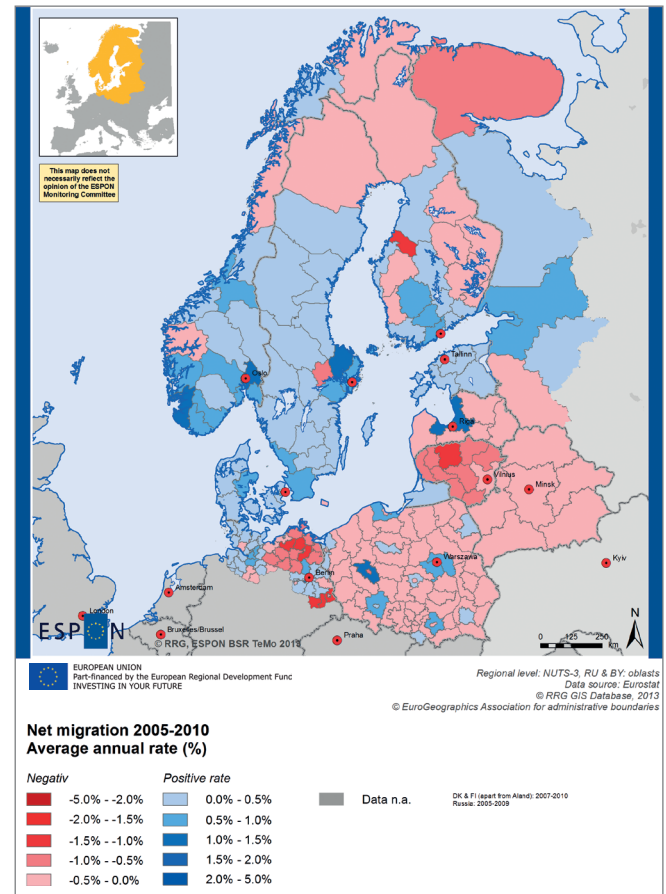
The third BSR divide exists between rural and urban areas (the **Urban-rural divide**)

With very few exceptions the rural areas of the BSR generally occupy the bottom positions regarding most aspects of socioeconomic development. The financial crisis also appears to have affected rural migration harder than any other types of regions. The upward slope of the Urban-rural ratio indicates an ever increasing concentration of production, jobs and people in the urban areas of the BSR.

Figure 5. Development of the Urban/rural ratio for GDP, employment and population in the BSR 2005-2011, at NUTS-3



Map 7. Net migration 2005-2010



Territorial monitoring tool

How can the monitoring system be accessed?

The Presentation Tool represents a robust and sound solution tailor-made for policymakers and stakeholders to easily interact with the monitoring system, and to retrieve all information.

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

The results are implemented as map templates in a Geographic Information System, GIS (ArcGIS), and laid down in tables and Excel files. All of these are available to the user through the so-called **Presentation Tool** – an easy-to-use browser application (i.e. the territorial monitoring system).

The Presentation Tool is particularly designed to enable people to access the monitoring results through a simple application. Users may inspect maps and indicator descriptions, download Excel files and maps, and access the reports and manuals generated for BSR TeMo.

The browser application also grants easy access to the domain and subdomain descriptions, indicator descriptions, data sets and metadata as well as specific implementation recommendations for each indicator. All this information can be printed or exported from within the browser application.

BSR-TeMo - Territorial Monitoring for the Baltic Sea Region: http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/bsr-temo.html

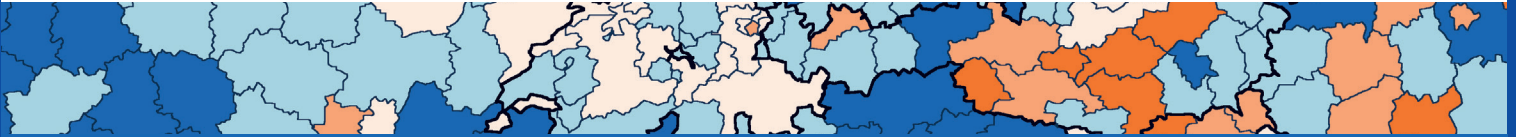
ESPON programme: www.espon.eu/main/

VASAB: www.vasab.org

Nordregio: www.nordregio.se

Picture 1. Webpage of the Baltic Sea Region monitoring system





www.espon.eu

Interested in ESPON?

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ESPON shall support Cohesion Policy development with European-wide comparable information, evidence, analyses and scenarios on framework con-

ditions for the development of regions, cities and larger territories. In doing so, it shall facilitate the mobilisation of territorial capital and development opportunities, contributing to improving European competitiveness, to the widening and deepening of European territorial cooperation and to a sustainable and balanced development. The Managing Authority responsible for the ESPON 2013 Programme is the Ministry of Sustainable Development and Infrastructures of Luxembourg.

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