ESPON

Baltic Sea Region
BSR Territorial Monitoring System
ESPON BSR-TeMo Project

Territorial Monitoring for the BSR

Handbook

EUROPEAN UNION
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INVESTING IN YOUR FUTURE

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This handbook 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 partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

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

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

The web site allows for downloading and consultation of the most recent documents produced by finalised and ongoing ESPON projects.

Foreword

The Baltic Sea Region Territorial Monitoring (BSR TeMo) is anESPON Scientific Platform Project based on an initial demand from VASAB (Vision and Strategies around the Baltic Sea 2010) 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 demonstrates 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 development monitoring system, comprehending a policy and a methodological dimension aimed at promoting territorial cohesion in the Baltic Sea Region.

The ESPON BSR TeMo Transnational Group (TPG) consists of seven partners from six European countries:

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Target group of the BSR TeMo

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

The key TeMo feature *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 system for suport of the implementation of key BSR and EU policy documents such as:*

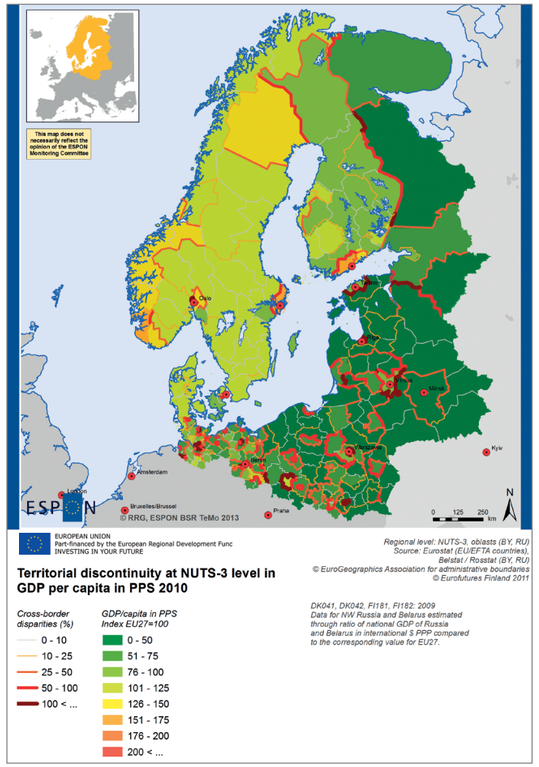
- *European Union Strategy for the Baltic Sea Region (EU BSR - Strategy),*
- *VASAB Long Term Perspective (VASAB LTP),*
- *EU 2020 Strategy,*
- *Territorial Agenda 2020 (TA 2020).*

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

- **Analysts and practitioners** working with **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 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 data bases;
- 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 synthezised 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.

Example of usefulness: "Two decades ago, the main territorial disparities in the BSR were primarily a case between the very wealthy and the very poor countries, whereas the situation today appears to be much more multifaceted."

Substantial local disparities in material wealth

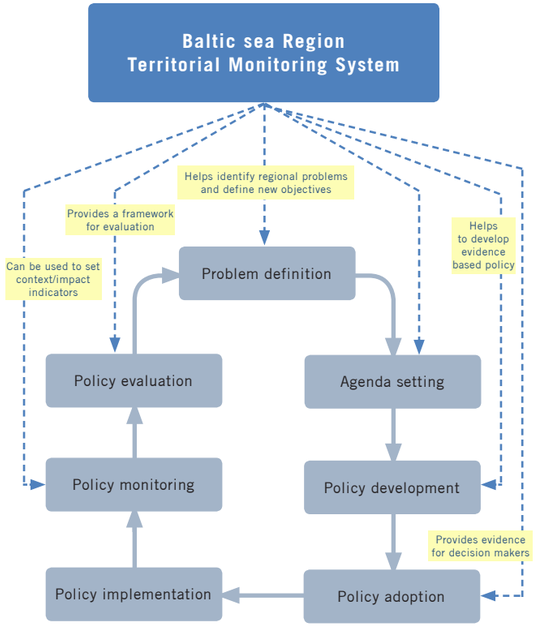


Purpose of the BSR TeMo system

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 sets the background for **identification of territorial development opportunities and challenges at regional level, as well as patterns of economic and social developments.**
- 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.**
- BSR TeMo provides relevant indicators for the entire BSR area necessary for **measuring progress and achievement of objectives** of territorial cohesion 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 development stakeholders.



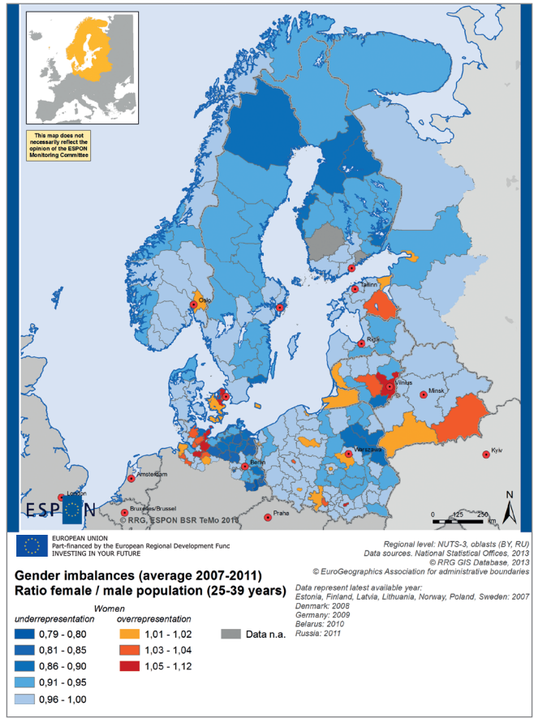
The main objective of the TeMo project is to develop an operational indicator - based territorial monitoring system and promote territorial cohesion in the Baltic Sea Region. This complements other monitoring systems at the European scale.

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 provides an image of the BSR region and territorial cohesion, both in the short term and in the long term. It is also a benchmark allowing for the future creation of analogous 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.

Few young females in rural/peripheral areas of the BSR



Geographical coverage

Which area is addressed in the monitoring system?

Geographically, *the monitoring system covers the entire Baltic Sea Region area 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). NUTS-3 and NUTS-2 levels are identified as the main geographical scales to work at in TeMo.

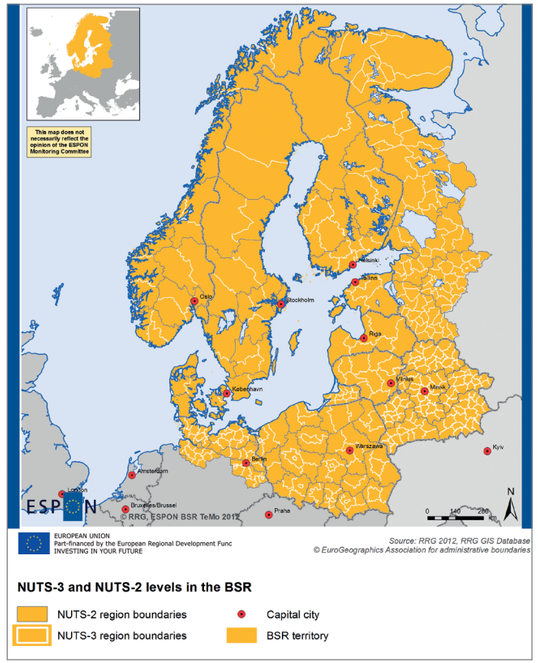
NUTS3 and NUTS2 levels in the Baltic Sea Region

Country	NUTS2		NUTS3	
Belarus	Oblasts	7	Rayons (sNUTS4)	118 (130)
Denmark	Regioner	5	Landsdeler	11
Estonia	Country	1	Groups of Maakond	5
Finland	Suuralueet/Storomraden	5	Maakunnat / Landskap	20
Germany	Regierungsbezirke	8	Kreise / Kreisfreie Stade	66
Latvia	Country	1	Regioni	6
Lithuania	Country	1	Apskritys	10
Norway	Regions	7	Fylker	19
Poland	Wojewodztwa	16	Podregiony	66
Russia	Oblasts	7	Rayons (sNUTS4)	123
Sweeden	Riksomraden	8	Lan	21

Seamless layers. The task for BSR TeMo was to generate seamless layers of administrative boundaries (NUTS3, NUTS2 and NUTS0) 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 between the BSR countries, both at NUTS-2 and NUTS-3 level. Many datasets used in the project are provided based upon NUTS classification and this is the backbone of the project.

Geographical coverage and spatial units of BSR TeMo

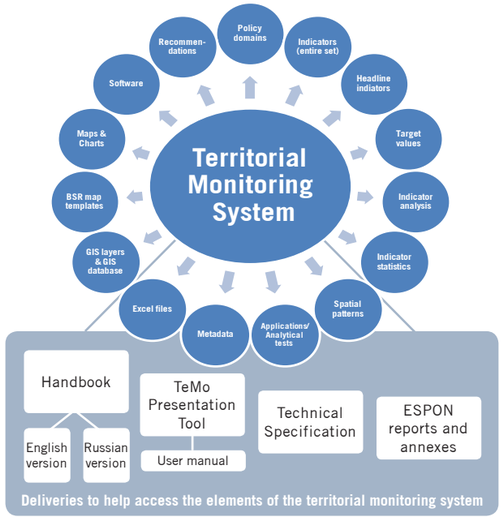


Structure of the system

What is the methodological approach of the monitoring system?

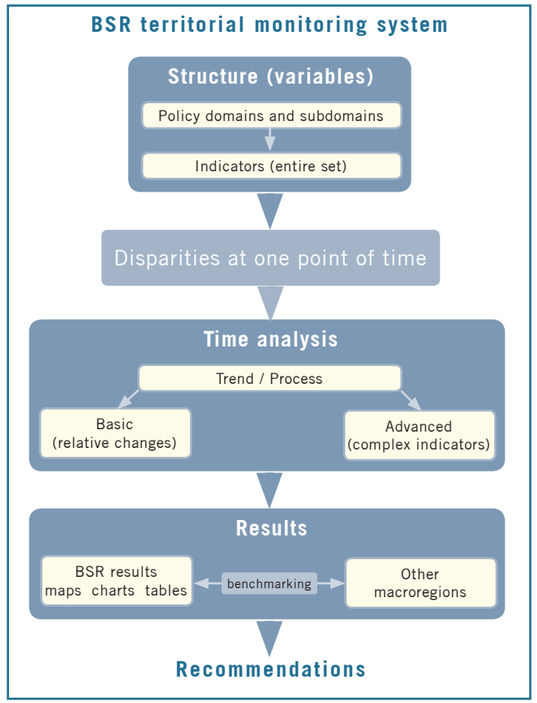
A territorial monitoring system consists of ***numerous elements*** *- first and foremost policy domains and subdomains including indicators and variables. However, it is important to emphasise that methodological considerations when analysing the development and comparing the indicators across the territory 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 TeMo Presentation Tool are the tangible outputs of the TeMo project, the full set of elements to the left (see figure below) comprises the full content of the territorial monitoring system.



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

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



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.*

Overview of domains, subdomains and indicators

Domains	1. Economic perfomance and competitivness
Subdomains and indicators	**1.1. Macroeconomic development**
	GDP per capita
	GDP per person employed
	1.2. Labour market
	Unemployement rate, total
	Unemployement rate (20 - 64 years)
	1.3. Demography
	Net migration rate
	Total population chamge
	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)
	Employement 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**
	A-risk-of-poverty rate
	Severe material deprivation rate
	Youth unemployement rate (15-24 years)
	Gender imbalances
	4.2. Health
	Life expectancy at birth, in years
	Self-assessed general health status

Domains	5. Enviromental qualities
Subdomains and indicators	**5.1. Consumption and production**
	New soil sealing per capita
	Air polution (PM10)
	Eutrophication
	5.2. Natural recourses
	Fragmentation index

What are the most important indicators under each domain?

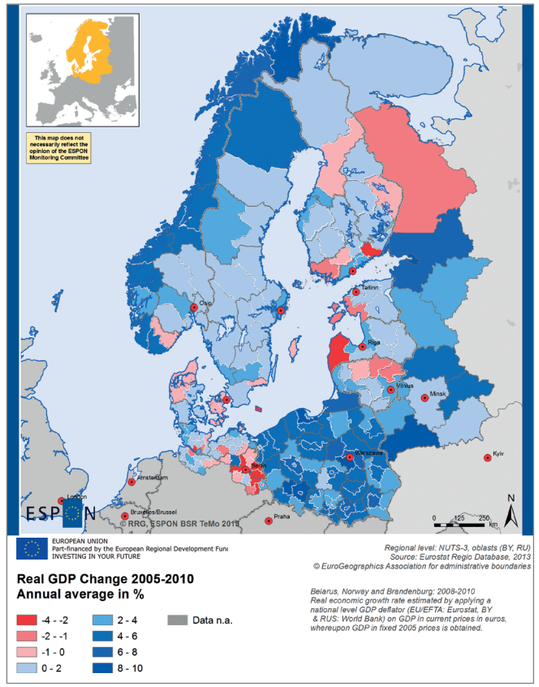
Headline indicators *represent the most important indicators under each domain. The identification of the headline indicators is based on a comparative analysis, which considers important aspects, such as the conceptual coverage of the entire domain, the policy relevance of the indicator, time series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

Headline indicators. The following indicators are selected:

(1) GDP per capita in PPS (see map on the right)
(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 reflect many aspects of the indicators, based on many selection criteria's, this list may change during the life of the monitoring system.

Uneven real economic growth in the BSR



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.

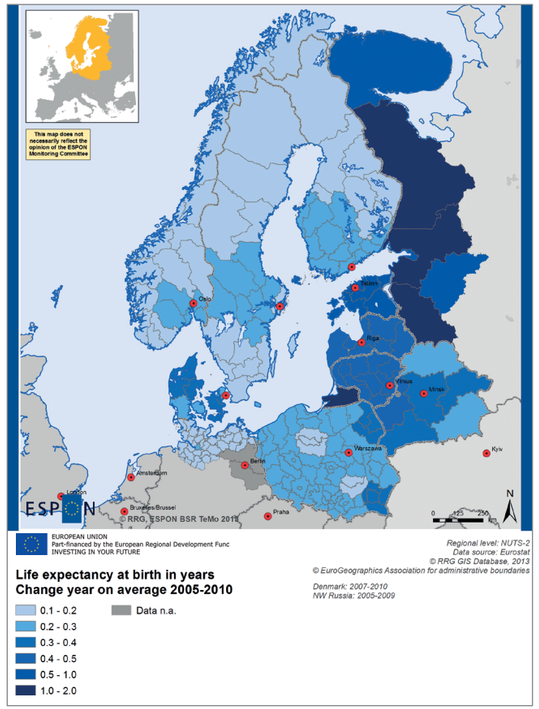
Data used for the indicators. Basic principles:

- 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 start in 2005, up to latest availableyear.
- 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 focus. 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 domains Innovative territories, Environmental qualities).

Example of good availability and comparability: life expectancy at birth (change 2005-2010)



How to evaluate and establish the functionality of the system?

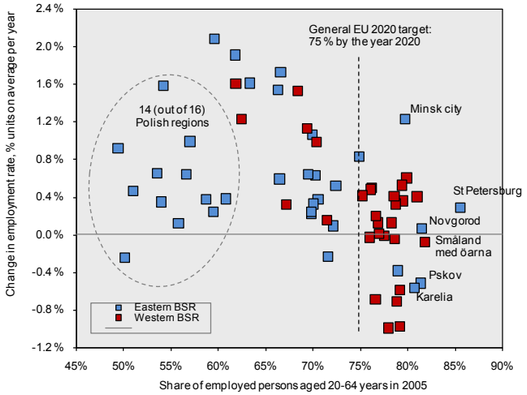
The objective of the applications/testing *of the monitoring system is to evaluate the functionality of it by pushing its analytical capacity in a selection of "real life situations", where its ability to feed relevant information into a policy process constitutes the key parameter for assessing it.The 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

Share of employed persons (2005-2011)
[Denmark: first year 2007, Russia: last year 2010]

Share of employed persons aged 20-64 years and annual average %-unit change thereof in NUTS2 areas of the BSR 2005-2011

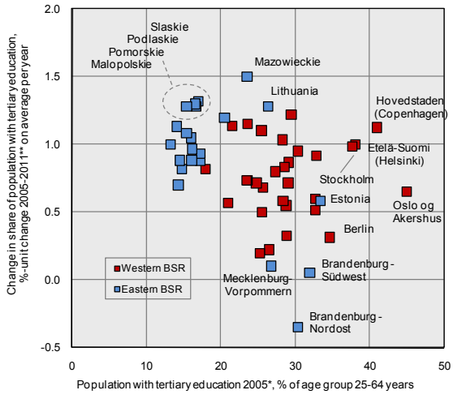


Four different topics were chosen for testing the monitoring system; these covered both thematic concepts as well as geographical aspects. These were:

- 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).

Population with tertiary education (2005-2011)

Population with tertiary education in the BSR, initial level 2005 and change 2005-2011, NUTS 2



* DK: 2007 ** DK: 2007-2011 Belarus & NW Russia: data n/a

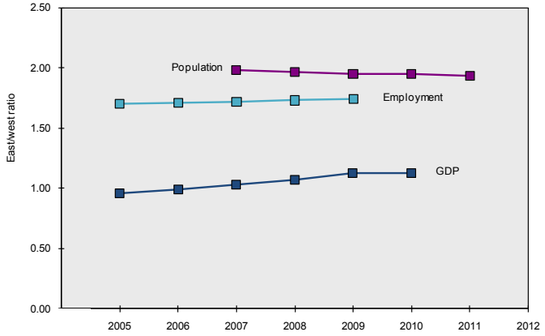
Are the principal BSR territorial divides diminishing?

The concept of the "BSR territorial divides" were 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**)*

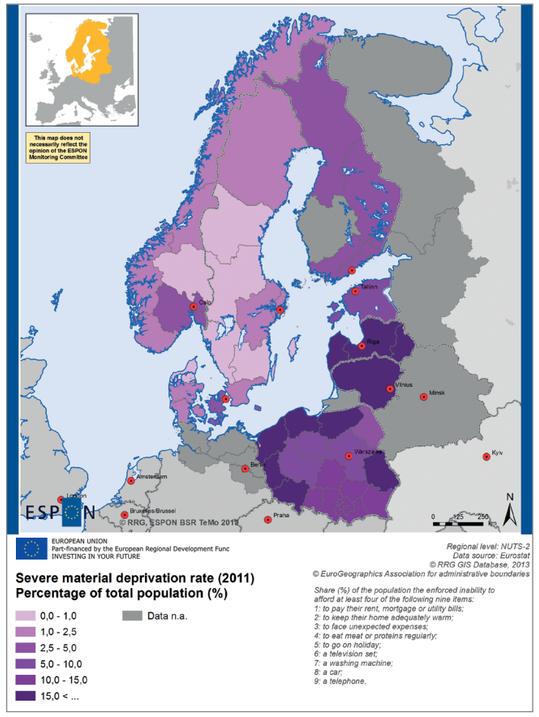
East-west divide

The BSR East-west divide exists and is partly growing further still. 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 at right) or health, the BSR displays a substantial variation that still today by and large follows the old Iron curtain.

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



An apparent East-west divide in absolute poverty

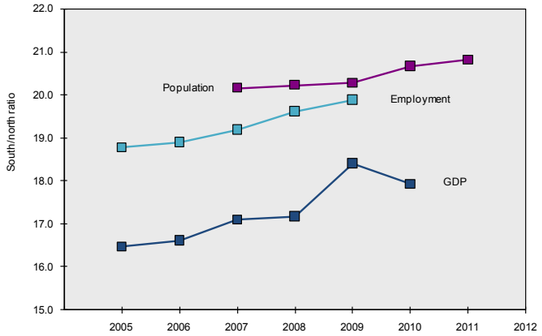


South-north divide

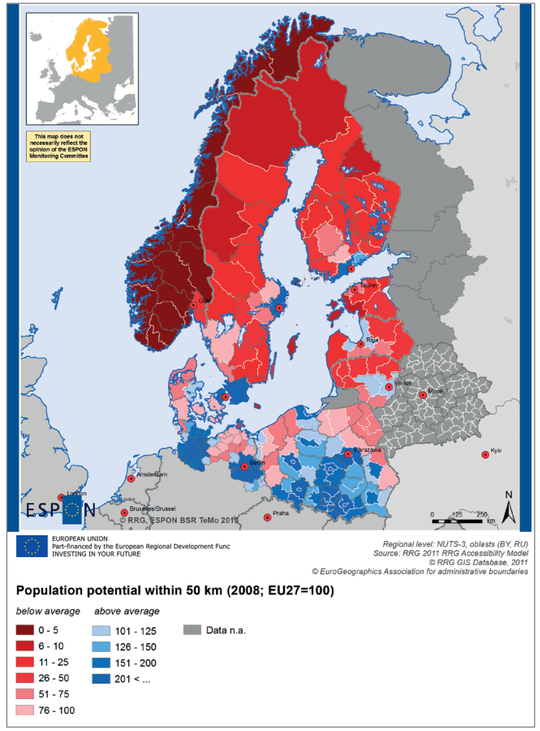
*The second BSR divide exists between the densely populated south and the sparsely populated north (the **South-north divide**)*

Sparsely populated regions are among the most disadvantaged types of 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 naturallyin 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.

Development of the South/north ratio for GDP, employement and population in the BSR 2005-2011, at NUTS level 3



A clear South-north pattern in population potential

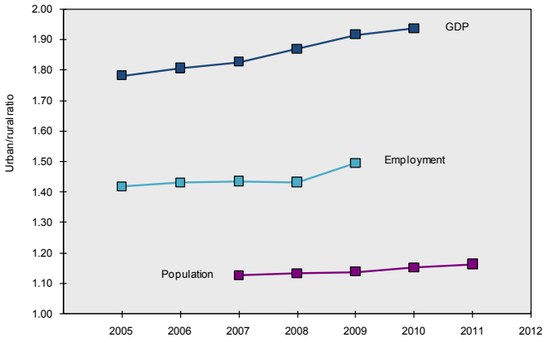


Urban-rural divide

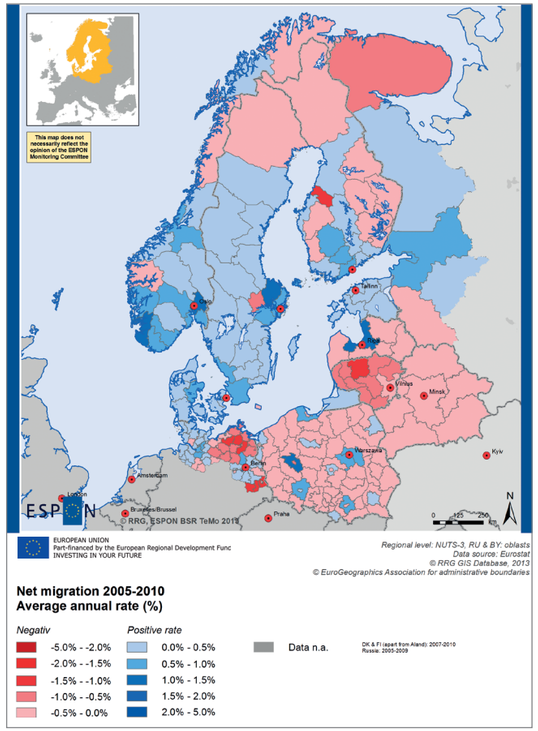
*The third BSR devide exists between rural and urban areas (the **Urban-rural divide**)*

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 to the urban areas of the BSR.

Development of the Urban/rural ratio for GDP, employement and population in the BSR 2005-2011, at NUTS level 3



Migration is primarily concentrated to urban areas of the BSR



How can the monitoring system be accessed?

The Presentation Tool represents a robust and sound solution tailor-made for politicians 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 local 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, may download Excel files and maps, and may access the reports and manuals generated for BSR TeMo

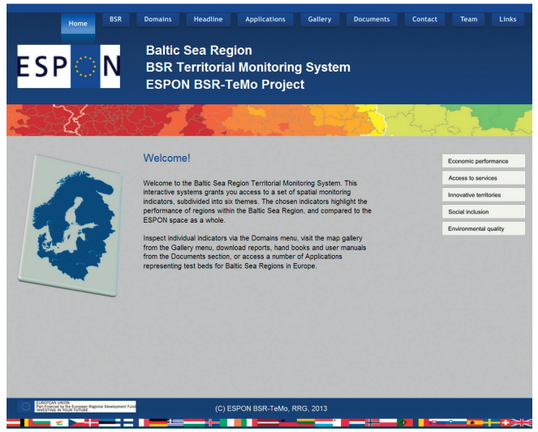
The local browser application grants easy access to the domain and subdomain descriptions, indicator descriptions, data sets and metadata as well as specific implementation recommendations for each single indicator. All this information can be printed or exported from within the browser application.

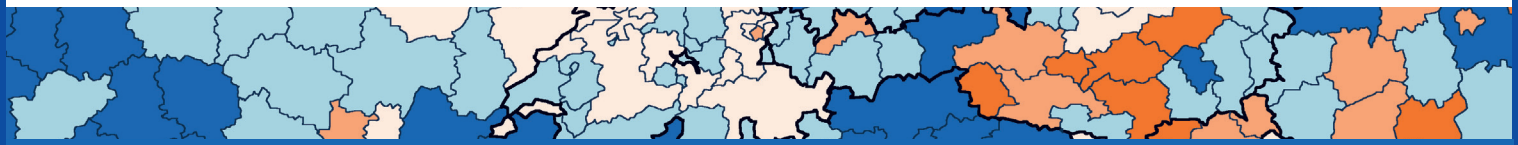
http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/bsr-temo.html

VASAB: www.vasab.org

Nordregio: www.nordregio.se

Starting page of the Presentation Tool / Gateway to the Monitoring system





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