ESPON BSR-TeMo
Territorial Monitoring for the Baltic Sea Region

Scientific Platform and Tools Project 2013/3/9

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Part C | Scientific Report

Volume C8 | Indicator and Variables - Technical Specification

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This report presents the final results of a “Scientific Platform and Tools” 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 provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This basic report exists only in an electronic version.

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1. Indicators and variables – Technical Specification

The purpose of this document/annex of the ESPON BSR-TeMo project, is to provide a guide for future updating and development of the monitoring system. Therefore we have compiled in this annex much of the information available also in other publications of the project, in order to facilitate an overview of the indicators and how to work practically on them. Besides the information on indicators and how they have been structures we also include in the tables for each indicator some information from the actual database; such as selected metadata information. The annex is structures as a collection of tables, one for each indicator. These tables give an insight into the definition, variables, geography, time series, application, etc. for each indicator. The purpose of these tables are to facilitate an easy uptake of information needed to initiate the work on updating indicators and for updating the applications (maps, tables, testing) where these indicators are included so far in the deliveries.

Basic information on the structure of domains, narrative descriptions of each sub-domain and its indicators, as well as the information and assesment criteria's for headline indicators can be found in annex C2 of this scientific report. In C2 the reader can also find information about suggestions for updating indicators as well as information on how to work with the 10 complex indicators (this information is also available in detail in the C4 annex.

2. Detailed description of indicators and statistical information

This section is the main section of this technical specification. It is made up of tables describing the indicators, the variables needed to construct them, and other information needed to initiate an update of the indicators. A first overview of the data availability and spatial level of the indicators is presented in table 1.

Table 1 Overall data availability, based on previous data releases

Indicator	Overall data availability*, based on previous data releases *) Gaps may exist for certain regions.	Spatial level
Economic performance and competitiveness		
GDP per capita	Yearly	NUTS-3/Oblast
GDP per person employed	Yearly	NUTS-3/Oblast
Unemployment rate, total	Yearly	NUTS-3/Oblast
Employment rate (20-64 years)	Yearly	NUTS-2/Oblast
Net migration rate	Yearly	NUTS-3/Oblast
Total population change	Yearly	NUTS-3/Oblast
Economic dependency ratio	Yearly	NUTS-2/Oblast
Access to services, markets and jobs		
Accessibility potential by road	Every 5 years (2001, 2006, 2011 …)	NUTS-3
Accessibility potential by rail	Every 5 years (2001, 2006, 2011 …)	NUTS-3
Accessibility potential by air	Every 5 years (2001, 2006, 2011 …)	NUTS-3
Multimodal accessibility potential	Every 5 years (2001, 2006, 2011 …)	
Functional areas: access to cities	Irregular (2011 …)	Grid, NUTS-3
Population potential within 50 km	Irregular (2008 …)	Grid, NUTS-3
Border crossings	Every 5 years (2000, 2005, 2010 …)	Border crossings
Households with internet access at home	Yearly	NUTS-2
Innovative territories		
Population with tertiary education (25-64 years)	Yearly	NUTS-2/Oblast
Employment in technology & knowledge sectors	Yearly	NUTS-2
Gross-domestic expenditures on R&D, business	Yearly	NUTS-2
Gross-domestic expenditures on R&D, total	Yearly	NUTS-2
Social inclusion and quality of life		
At-risk-of-poverty rate	Yearly	NUTS-2/Oblast
Severe material deprivation rate	Yearly	NUTS-2
Youth unemployment rate (15-24 years)	Yearly	NUTS-3/Oblast
Gender imbalances	Yearly	NUTS-3

Life expectancy at birth, in years	Yearly	NUTS-2/Oblast
Self-assessed general health status	Every 2 years (2006, 2008, 2010 …)	NUTS-2-3
	Environmental qualities	
New soil sealing per capita	Irregular (2006 …)	NUTS-3
Air pollution (PM10)	Irregular (2009 …)	NUTS-3/Oblast
Eutrophication	Yearly/Irregular (2009, 2010 …)	Per sea area
Fragmentation index	Every 3-4 years/Irregular (2002, 2006, 2009 …)	NUTS-3

2.1 Detailed information about indicators and variables.

In the 29 tables below (table 2 – 30), each indicator is described together with the variables that are needed to construct this indicator. Also, the way this indicator is applied in the testing and visualisation in reported.

Table 2 GDP per capita core information

Indicator core information	
Indicator name	GDP per capita
Indicator code	
Indicator description/Abstract	GDP per capita (in PPS) refers to the total value of all goods and services produced within a territory during a given period (here converted into purchasing power standards in order to accommodate transnational comparison).
Current time series	EU BSR: 2005-2011 Russia: 2005-2010 Belarus: 2005-2011
Next expected data update	EU BSR: 2013 Russia: March 2014 Belarus: December 2014
Current geographical scale	Nuts 3 / Oblasts
Statistical description/method for calculation	Calculation of regional GDP divided by total population (end of year).
Special consideration if currency based indicator	Conversions based on ECB and World bank currency exchange rates, for detailed information see indicator metadata sheet.
Variables/data needed for calculation (Each variable is explained further below)	1. GDP in mill. PPS 2. GDP in mill. euros 3. Total population at end of year
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	This data was collected from national sources, i.e. Rosstat and Belstat. For GDP in mill. PPS and GDP in mill. Euros the data had to be collected from tables of regional statistics in Belarus. For both Russia and Belarus the data has been converted to Euro using yearly exchange rates. The amount of gross regional product in Belarus and Russia is different from GDP because it does not include the value added by the collective non-market services (defence, public

	administration, etc.) provided by State institutions to society. Currency translations: and the resultant need to use other data sources than EUROSTAT (e.g. World Bank, which collects comparative GDP data for most countries of the world, including Russia and Belarus). Russian experts pointed out that Belorussian economic data (e.g. Gross Regional Product) must be analysed with great care, as it may be distorted by the economic policy of the state (due to the systemic differences between a centrally planned economy and a market economy, i.e. Belarus compared to Russia and EU).
Indicator application	
Derived maps in volume 3 of final report.	1. GDP per capita in PPS 2010, BSR. 2. GDP per capita in PPS 2010, ESPON Space. 3. Real GDP change 2005-2010, BSR 4. Territorial discontinuity at NUTS3 level in GDP per capita in PPS, BSR
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	Calculated for all 10 complex indicators as part of the application. Se the documentation of testing in vol. 4 of the final report
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Included in the analysis of territorial cohesion, migration, boarder regions as well as benchmarking.
Variable 1 information	
Name of variable	GDP in mill. PPS
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the GDP in mil. PPS of the ESPON BSR Area and Belarus and north western Russia at NUTS3 and Oblast levels.
Temporal extent	EU BSR: 2005-2009

(start/end year for collected data)	Russia: 2000-2010 Belarus: 2008-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=NAMA_R_E3GDP http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For Russia own calculation based on: 1. Source: Russian Federation Federal State Statistics Service (Gross Regional Product in Russia; 2000-2010; roubles) 2. Conversion based on European Central Bank Rouble/Euro yearly averages (2000-2010) 3. Source: World Bank - GNI, PPP (Russian Federation, 2000-2010, current international mln $) 4. The GRP PPP based on the ratio between the world bank GDP Russia/and GRP Russia EUR For Belarus own calculations based on: 1. Regions of the Republic of Belarus in Figures 2005-2011 (Регионы Республики Беларусь в цифрах 2005-2011 гг.): GRP 2008-2011; bl BYR) 2. Conversion based on Belarusan Rouble/Euro yearly averages (2008-2011) National Bank of the Republic of Belarus 3. Source: World Bank - GNI, PPP (Belarus, 2008-2011, current international mln $)
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No
Variable 2 information	
Name of variable	GDP in mill. euros
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the GDP in mil. Euros of the ESPON BSR Area and Russia and Belarus at NUTS3 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2000-2010 Belarus: 2008-2011

URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=NAMA_R_E3GDP http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For Russia own calculation based on: 1. Russian Federation Federal State Statistics Service (Gross Regional Product; 2000-2010; roubles) 2. Conversion based on European Central Bank Rouble/Euro yearly averages (2000-2010) For Belarus own calculations based on: 1. Regions of the Republic of Belarus in Figures 2005-2011 (Регионы Республики Беларусь в цифрах 2005-2011 гг.): GRP 2008-2011; bl BYR) 2. Conversion based on Belarusian Ruble/Euro yearly averages (2008-2011) Source: National Bank of the Republic of Belarus
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No
Variable 3 information	
Name of variable	Total population at end of year
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the total Population in the beginning or end of each year of the ESPON BSR Area and Russia and Belarus at NUTS3 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russia: 2001-2011 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=DEMO_R_PJANAGGR3 http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/

	catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For EU BSR and Belarus the original data contains inhabitants as of January 1st, this data has been used as end of year observations.
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No

Table 3 GDP/person employed core information

Indicator core information	
Indicator name	GDP/person employed
Indicator code	
Indicator description/abstract	GDP per person employed (in PPS) refers to the GDP measure as described for the GDP per capita measure, but with number of employed persons as the denominator. It is used as an indicator for labour productivity (i.e. how much output a given number of persons are producing). For measuring regional production it alleviates the measurement problem of commuting and provided a more truthful picture of regional productivity than does GDP/capita.
Current time series	EU BSR: 2005-2009 Russia: 2005-2010 Belarus: 2005-2011
Next expected data update	EU BSR: 2013 Russia: March 2014 Belarus: June 2014
Current geographical scale	Nuts 3 / Oblasts
Statistical description/method for calculation	Calculation of regional GDP divided by number of employed persons (end of year).
Special consideration if currency based indicator	Conversions based on ECB and World bank currency exchange rates, for detailed information see indicator metadata sheet.
Variables/data needed for calculation (Each variable is explained further below)	1. GDP in mill. PPS 2. GDP in mill. euros 3. Persons employed (all age groups)
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering	This data was collected from national sources, i.e. Rosstat and Belstat. For GDP in mill. PPS and GDP in mill. Euros the data had to be collected from tables of regional statistics in Belarus. For both Russia and Belarus the data has been converted to Euro using yearly exchange rates.

for Russia and Belarus	The amount of gross regional product in Belarus and Russia is different from GDP because it does not include the value added by the collective non-market services (defence, public administration, etc.) provided by State institutions to society. Currency translations: and the resultant need to use other data sources than EUROSTAT (e.g. World Bank, which collects comparative GDP data for most countries of the world, including Russia and Belarus). Russian experts pointed out that Belorussian economic data (e.g. Gross Regional Product) must be analysed with great care, as it may be distorted by the economic policy of the state (due to the systemic differences between a centrally planned economy and a market economy, i.e. Belarus compared to Russia and EU). For Russia the data on employed persons displays the employment rate 15-72 years; People who during the period (the surveyed week) perform work at least one hour per week of employment for consideration in money or in kind, as well as self-employed for profit or family gain, temporarily absent from work, do the work in as helping the family business. Considered as employed persons engaged performing work on the production of household goods for sale.
Indicator application	
Derived maps in volume 3 of final report.	1. GDP per employee, 2009, BSR
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	GDP in mill. PPS

Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the GDP in mil. PPS of the ESPON BSR Area and Belarus and north western Russia at NUTS3 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2000-2010 Belarus: 2008-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=NAMA_R_E3GDP http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For Russia own calculation based on: 1. Source: Russian Federation Federal State Statistics Service (Gross Regional Product in Russia; 2000-2010; roubles) 2. Conversion based on European Central Bank Rouble/Euro yearly averages (2000-2010) 3. Source: World Bank - GNI, PPP (Russian Federation, 2000-2010, current international mln $) 4. The GRP PPP based on the ratio between the world bank GDP Russia/and GRP Russia EUR For Belarus own calculations based on: 1. Regions of the Republic of Belarus in Figures 2005-2011 (Регионы Республики Беларусь в цифрах 2005-2011 гг.): GRP 2008-2011; bl BYR) 2. Conversion based on Belarusan Rouble/Euro yearly averages (2008-2011) National Bank of the Republic of Belarus 3. Source: World Bank - GNI, PPP (Belarus, 2008-2011, current international mln $)
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No
Variable 2 information	
Name of variable	GDP in mill. euros
Providers of data	Eurostat Rosstat

	Belstat
Description of variable (describe format if needed)	This data contains the GDP in mil. Euros of the ESPON BSR Area and Russia and Belarus at NUTS3 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2000-2010 Belarus: 2008-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=NAMA_R_E3GDP http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For Russia own calculation based on: 1. Russian Federation Federal State Statistics Service (Gross Regional Product; 2000-2010; roubles) 2. Conversion based on European Central Bank Rouble/Euro yearly averages (2000-2010) For Belarus own calculations based on: 1. Regions of the Republic of Belarus in Figures 2005-2011 (Регионы Республики Беларусь в цифрах 2005-2011 гг.): GRP 2008-2011; bl BYR) 2. Conversion based on Belarusian Ruble/Euro yearly averages (2008-2011) Source: National Bank of the Republic of Belarus
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No
Variable 3 information	
Name of variable	Persons employed (all age groups)
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains information about total number of persons employed (in varying definitions and periods of data collection) of the ESPON BSR Area and Russia and Belarus (at NUTS3 and Oblast levels). It is based on labour market surveys (reference weeks) and estimates on the number of persons employed in any form during this period.

Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2000-2010 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu /nui/show.do?dataset=lfsi_emp_a&lang=en http://www.gks.ru/bgd/regl/B11_14p /IssWWW.exe/Stg/d01/04-02.htm http://belstat.gov.by/homep/ru/indicators/regions/l2.php
Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No

Table 4 Unemployment rate core information

Indicator core information	
Indicator name	Unemployment rate, total
Indicator code	
Indicator description/abstract	Unemployment rate (total) is the most widely used indicator of labour market performance but is connected with a number of measurement imperfections and should be considered as a complementary indicator to employment rate. The indicator is measured as the ratio of unemployed people in relation to overall work force. It can be viewed both from an economic and from a social point of view, in the latter case particularly when disaggregated either by gender, age, education or at the level of the individual. Only data from Labour Force Surveys (LFSs) are comparable across countries.
Current time series	EU BSR: 2005-2009 Russia: 2005-2011 Belarus: 2005-2011
Next expected data update	EU BSR: Unknown. Russia: June 2014 Belarus: June 2014
Current geographical scale	Nuts 3 / Oblasts
Statistical description/method for calculation	Ratio of unemployed people in relation to overall work force
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	1) Nr of unemployed persons aged 20-64 years (annual average, or month of April) 2) Nr of persons in labour force aged 20-64 years, annual average (=employed + unemployed)
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view	Information about unemployed persons in NUTS3 regions is not available in Eurostat. Also there is change in NUTS nomenclature in Eurostat. Unemployment rate from INTERCO database is used as a substitute.

on data gathering for Russia and Belarus	Indicator is directly collected from ESPON, Rosstat and Belstat, i.e. the calculated indicator. http://www.espon.eu/main/Menu_Projects/Menu_ScientificPlatform/interco.html http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/regions/l1.php
Indicator application	
Derived maps in volume 3 of final report.	1. Total unemployment rate 2009, BSR. 2. Total unemployment rate 2009, ESPON Space. 3. Territorial discontinuity in unemployment rate 2009, BSR.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Used to assess the patterns of migration (explanatory variable). Used to assess the development of boarder regions. Used in the overall analysis of territorial cohesion.
Variable 1 information	
Name of variable	Nr of unemployed persons aged 20-64 years
Providers of data	N/A (indicator was directly collected from ESPON, Rosstat and Belstat.
Description of variable (describe format if needed)	Unemployed persons comprise persons aged 15-74 (16 to 74 in ES, UK, IS and NO) who were (all three conditions must be fulfilled simultaneously): 1. without work during the reference week; 2. available for work at the time (i.e. were available for paid employment or self-employment before the end of the two weeks following the reference week); 3. actively seeking work (i.e. had taken specific steps in the four-week period

	ending with the reference week to seek paid employment or self-employment), or who found a job to start within a period of at most three months.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2005-2011 Belarus: 2005-2011
URL of data bases from where data was downloaded	N/A
Methodology (if raw data has been modified)	N/A
Quality	N/A
Constraints in public data access	No
Copyrights	No
Variable 2 information	
Name of variable	Nr of persons in labour force aged 20-64 years
Providers of data	N/A (indicator was directly collected from ESPON, Rosstat and Belstat.
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2005-2011 Belarus: 2005-2011
URL of data bases from where data was downloaded	N/A
Methodology (if raw data has been modified)	N/A
Quality	N/A
Constraints in public data access	No
Copyrights	No

Table 5 Employment rate core information

Indicator core information	
Indicator name	Employment rate (20-64 years)
Indicator code	
Indicator description/abstract	Employment rate (for persons aged 20-64 years) is included as an official indicator in the EU SDS and is furthermore a headline indicator of the EU 2020 Strategy's "Smart growth" and "Inclusive growth" priorities, aiming for 75 % of the 20-64 year-olds to be employed by 2020. It refers to the number of persons aged 20-64 years that are employed as a share of all persons of that age. Concerning such normative goals, there are some measurement challenges included in that a high employment rate of e.g. persons aged 20-24 years would de facto imply that they do not attend education, which in the long run for some would be counterproductive.
Current time series	EU BSR: 2005-2011 Russia: 2005-2010 Belarus: 2005-2011
Next expected data update	EU BSR: 2014 Russia: June 2014 Belarus: July 2014
Current geographical scale	Nuts 2 / Oblasts
Statistical description/method for calculation	Employment rate refers to the number of persons aged 20-64 years that are employed as a share of all persons of that age.
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	1. Persons aged 20-64 that are employed 2. Persons aged 20-64 years
Recommendations of frequency of indicator updates	Yearly

Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	For Russia the age groups included in the data for persons that are employed is 15-72, which differs from the Eurostat data.
Indicator application	
Derived maps in volume 3 of final report.	1. Persons employed aged 20-64 years, annual average change rate 2005-2009, BSR. 2. Persons employed aged 20-64 years, annual average change rate 2005-2009, ESPON Space. 3. Persons employed aged 20-64 years in 2012, BSR. 4. EU2020 strategy employment rate targets – Typology of regions, BSR.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	The indicator on total employment is one of those for which all ten complex indicators have been calculated in order to conceptualise territorial cohesion in the BSR.
Political target values and thresholds (if available)	Employment rate (for persons aged 20-64 years) is included as an official indicator in the EU SDS and is furthermore a headline indicator of the EU 2020 Strategy's "Smart growth" and "Inclusive growth" priorities, aiming for 75 % of the 20-64 year-olds to be employed by 2020.
Inclusion in applications and testing	The indicator on total employment is one of those for which all ten complex indicators have been calculated in order to conceptualise territorial cohesion in the BSR. Also, employment rate has been used as an indicator in the analysis of the territorial divides as well as a background factor for analysing migration. It is also used to contextualise border regions.
Variable 1 information	
Name of variable	Persons aged 20-64 that are employed
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	

Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: 2000-2010 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://www.gks.ru/bgd/regl/B11_14p/ IssWWW.exe/Stg/d01/04-02.htm http://belstat.gov.by/homep/ru/indicators/regions/l2.php
Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	N/A
Variable 2 information	
Name of variable	Persons aged 20-64 years
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	Persons aged 20-64 years
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russia: 2005-2010 Belarus: 2005-2011
URL of data bases from where data was downloaded	http://belstat.gov.by/homep/ru/publications/ demographic_yearbook/2012/Demographic _ Yearbook_2012.rar http://belstat.gov.by/homep/ru/publications/ population/2011/Population_of_the_Republic _of_Belarus_2011.rar
Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: high

Constraints in public data access	No
Copyrights	N/A

Table 6 Net migration rate core information

Indicator core information	
Indicator name	Net migration rate
Indicator code	
Indicator description/abstract	Net migration rate is defined as the difference between immigrants and emigrants of a region, divided by region population. A positive value means that more people enter a region than leaving it, while negative values mean that more people leave the region than entering into it.
Current time series	EU BSR: 2005-2010 Russia: 2005-2009 Belarus: 2005-2011
Next expected data update	EU BSR: 2014 Russia: Unknown Belarus: March 2014
Current geographical scale	Nuts 3 / Oblasts
Statistical description/method for calculation	Net migration rate is defined as the difference between immigrants and emigrants of a region, divided by region population
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	1. Net migration in persons per year 2. Total population (end of year)
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Russia: Data on international and internal migration are based on processing of primary forms of arrival and departure (forms of statistical registration of a migrant and coupon to them) received from territorial bodies of the Federal Migration Service, which are filled in while registration or deregistration of population at the place of residence. Primary statistical forms are not filled in for migrants that are registered at the place of stay independently of duration of stay.

Indicator application	
Derived maps in volume 3 of final report.	1. Net migration average annual rate 2005-2010, BSR. 2. Net migration average annual rate 2005-2010, ESPON Space.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	Employment rate (for persons aged 20-64 years) is included as an official indicator in the EU SDS and is furthermore a headline indicator of the EU 2020 Strategy's "Smart growth" and "Inclusive growth" priorities, aiming for 75 % of the 20-64 year-olds to be employed by 2020.
Inclusion in applications and testing	Net migration is used as an indicator to describe territorial cohesion in the BSR. It is also used to analyse the territorial divides described for the BSR. It is also used for the thematic testing of migration. Finally it is used in the analysis of the border regions.
Variable 1 information	
Name of variable	Net migration in persons per year
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	EU BSR: 2005-2010 Russia: 2001-2009 Belarus: 2005-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=DEMO_R_GIND3 http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1137674209312 http://belstat.gov.by/homep/ru/publications/demographic_yearbook/2012/Demographic_Yearbook_2012.rar http://belstat.gov.by/homep/ru/publications/population/2011/Population_of_the_Republic_of_Belarus_2011.rar

Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: high
Constraints in public data access	No
Copyrights	N/A
Variable 2 information	
Name of variable	Total population (end of year)
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	Persons aged 20-64 years
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russia: 2000-2011 Belarus: 2001-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/ portal/ product_details/dataset?p_product_code=DEMO_R_PJANAGGR3 http://www.gks.ru/wps/wcm/connect/rosstat_ main/rosstat/ru/statistics/publications/catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/ regions_annual_data/ regions_annual_data.php
Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	N/A

Table 7 Population change core information

Indicator core information	
Indicator name	Population change
Indicator code	
Indicator description/abstract	Population change, defined generally, is the difference in the size of a population between the end and the beginning of a given time period (usually one year)
Current time series	EU BSR: 2005-2011 Russia: 2005-2010 Belarus: 2005-2011
Next expected data update	EU BSR: 2013 Russia: October 2013 Belarus: Un-known
Current geographical scale	Nuts 3 / Oblasts
Statistical description/method for calculation	Difference in population size at the end of two consecutive years.
Special consideration if currency based indicator	-
Variables/data needed for calculation (Each variable is explained further below)	1. Population size at the end of the current year 2. Population size at the end of the previous year
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	
Indicator application	
Derived maps in volume 3 of final report.	1. Total population change 2005-2011 per year in average, BSR 2. Total population change 2005-2011 per year in average, ESPON Space
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI	Calculated for all 10 complex indicators

coefficient, beta and sigma convergence, time series analyses)	
Political target values and thresholds (if available)	No political targets
Inclusion in applications and testing	
Variable 1 information	
Name of variable	Total population at end of year
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the total Population in the beginning or end of each year of the ESPON BSR Area and Russia and Belarus at NUTS3 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russia: 2001-2011 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu /portal/page/portal/product_details/ dataset?p_product_code=DEMO_R_PJANAGGR3 http://www.gks.ru/wps/wcm/connect/rosstat _main/rosstat/ru/statistics/publications/ catalog/doc_1138625359016 http://belstat.gov.by/homep/ru/indicators/ regions_annual_data/regions_annual_data.php
Methodology (if raw data has been modified)	For EU BSR and Belarus the original data contains inhabitants as of January 1st, this data has been used as end of year observations.
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	Generally no
Copyrights	N/A

Table 8 Economic dependency ratio(s) core information

Indicator core information	
Indicator name	Economic dependency ratio(s)
Indicator code	
Indicator description/abstract	Ratio refers to the theoretical number of unemployed persons supported by the number of persons employed.
Current time series	EU BSR: 2005-2011 Russia: 2005-2010 Belarus: 2005-2010
Next expected data update	EU BSR: 2013 Russia: Un-known Belarus: Un-known
Current geographical scale	Nuts 2 / Oblasts
Statistical description/method for calculation	Calculation of persons employed of all age groups divided by the total population at the end of the year
Special consideration if currency based indicator	-
Variables/data needed for calculation (Each variable is explained further below)	1. Total population at end of year 2. Persons employed (all age groups)
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	
Indicator application	
Derived maps in volume 3 of final report.	Economic dependency ratio, 2009, BSR
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	No indicators calculated

Political target values and thresholds (if available)	No political targets
Inclusion in applications and testing	
Variable 1 information	
Name of variable	Total population at end of year
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	This data contains the total Population in the beginning or end of each year of the ESPON BSR Area and Russia and Belarus at NUTS2 and Oblast levels.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russia: 2001-2011 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=demo_r_d2jan&lang=en
Methodology (if raw data has been modified)	For EU BSR and Belarus the original data contains inhabitants as of January 1st, this data has been used as end of year observations.
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	Generally no
Copyrights	N/A
Variable 2 information	
Name of variable	2) Persons employed (all age groups)
Providers of data	Eurostat Rosstat Belstat
Description of variable (describe format if needed)	Employed population consists of those persons who during the reference week did any work for pay or profit for at least one hour, or were not working but had jobs from which they were temporarily absent.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2009 Russia: Belarus:
URL of data bases from where data was downloaded	
Methodology (if raw data has	

been modified)	
Quality	For EU BSR: high For Russia: For Belarus:
Constraints in public data access	Generally no
Copyrights	N/A

Table 9 Functional areas (access to cities) core information

Indicator core information	
Indicator name	Functional Areas: cities within reach
Indicator code	
Indicator description/abstract	The indicator on functional urban areas (FUAs) is defined as the number of cities with more than 50,000 inhabitants within 60 minutes car travel time from each location/region. This indicator represents a morphological, or structural indicator, based on the assumption that people honor a situation with a freedom of choice to choose between different cities to travel to for their activities (work, leisure, shopping, administrative duties, social contacts etc.). Not all of such urban functions can and need to be offered in small towns and villages, so access to cities become an important asset. The more cities that are within reach from a certain location, the higher the freedom of choice is.
Current time series	2011
Next expected data update	N/A
Current geographical scale	Grid (2.5x2.5 km), NUTS-3
Statistical description/method for calculation	In a first step, this indicator is calculated a grid level. All grid cells are connected to the road network, so as the city centres of all cities with more than 50,000 inhabitants. Then, the shortest travel time from each grid cell to each city centre is calculated; if this travel time is less or equal 60 minutes, the indicator values for that cell is increased by one. Having calculated all o/d-pairs of cells and cities, results in the overall indicator number for each grid cell. This calculation was done by the RRG Accessibility Model (RRG Spatial Planning and Geoinformation). In a second step, the grid level results are aggregated to NUTS-3 level as the average grid values weighted by grid population.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	The following input data are needed for the calculation of this indicator: 1. System of grid cells (resolution of 2.5x2.5 km). 2. Population numbers for the grid cells. 3. Coordinates of city centres of all cities with more than 50,000 inhabitants 4. Actual road network in GIS format, including information

	on speed limits All input data need to be available as GIS layers.
Recommendations of frequency of indicator updates	Every three or every five years (since the speed of change of the road infrastructures is quite slow)
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The input GIS layers used should ideally be taken from one source, and thus should already cover the entire BSR territory, so that no specific attempts of data collection in Russia and Belarus are necessary.
Indicator application	
Derived maps in volume 3 of final report.	1. Functional areas – cities within reach 2011 (grid level), BSR territory 2. Functional areas – cities within reach 2011 (grid level), Europe 3. Functional areas – cities within reach 2011 (NUTS-3 level), BSR territory 4. Functional areas – cities within reach 2011 (NUTS-3 level), Europe 5. Number of FUAs overlaying municipality territory by at least 10% (ESPON 1.1.1, grid level) 6. Functional areas – cities within reach 2011 (grid level), BSR territory (ESPON TRACC) 7. Functional areas – cities within reach 2011 (grid level), Europe (ESPON TRACC)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	

Name of variable	System of grid cells (2.5x2.5 km)
Providers of data	RRG Spatial Planning and Geoinformation (RRG)
Description of variable (describe format if needed)	Regular system of grid cells in vector format, i.e. system of regular quadratic polygons with same size and edge length of 2.5 km was generated. Edge length may be flexible (smaller and longer ones possible). Each polygon (i.e. grid cell) should have a unique ID, and center coordinates should be assigned as field. If it is intended to aggregate grid results to NUTS-2 or NUTS-3 levels, each polygon/cell should also have the corresponding NUTS code assigned (to be obtained by overlaying the grid layer with NUTS boundary layer).
Temporal extent (start/end year for collected data)	Grid system should be kept constant over time, to allow for comparisons. No need for variations.
URL of data bases from where data was downloaded	N/A
Methodology (if raw data has been modified)	Using standard GIS functions to generate the grid. Overlay with NUTS layer to obtain NUTS region codes. Assignment of unique ID for each cell by applying standard GIS functionalities.
Quality	High
Constraints in public data access	Dataset could be licensed through RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Population numbers for grid cells.
Providers of data	European Environment Agency (EEA Population grid), National statistical offices (Grid statistics, if available)
Description of variable (describe format if needed)	This variable provides information on the population numbers per grid cell. This information is needed of the grid results shall be aggregated to higher NUTS level by applying population-weighted averages. Either population information from the EEA population grid are transformed to the grid system, or information from grid statistics, as far as possible, from National Statistical Offices are transferred.
Temporal extent (start/end year for collected data)	Most recent information
URL of data bases from where data was	EEA: http://www.eea.europa.eu/data-and-maps/data/population-density-disaggregated-with-corine-land-

downloaded	cover-2000-2
Methodology (if raw data has been modified)	Overlay of the grid system with the EEA population grid and/or with layers from the National Statistical Offices
Quality	Estimates
Constraints in public data access	No public access to raw grid statistics (privacy constraints); aggregates at grid level can be used for averages.
Copyrights	EEA, National Statistical Offices
Variable 3 information	
Name of variable	Coordinates of city centres of all cities with more than 50,000 inhabitants
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of variable (describe format if needed)	Point layer with the coordinates of the city centres. Fields include x-/y- coordinates, city name and number of inhabitants
Temporal extent (start/end year for collected data)	2011
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=4&dId=66
Methodology (if raw data has been modified)	Cities with more than 50,000 inhabitants have been extracted from the overall cities layer, and have been assigned as nodes to the road network.
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 4 information	
Name of variable	Actual road network as GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of variable (describe format if needed)	The road network layer should at least include all motorways, dual-carriageway roads, E-roads and national roads, as well as other trunk roads. As far as available, also secondary roads

	should be included. Information on speed limits should be assigned to each road link. RRG GIS Database already covers entire Europe.
Temporal extent (start/end year for collected data)	2011 (RRG GIS Database includes information on the historic development of the road networks in Europe since 1950 to present)
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=2&dId=46
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG

Table 10 Accessibility potential by road core information

Indicator core information	
Indicator name	Accessibility potential by road
Indicator code	
Indicator description/abstract	This indicator is defined as the number of people that can be reached by car, where the attractivity of destinations is defined by their population size, subject to the car travel time to reach them. Indicator numbers will finally be standardized at the European average (=100).
Current time series	2001, 2006, 2011
Next expected data update	2014 (ESPON Matrices project; available end of 2014)
Current geographical scale	NUTS-3, excluding Russia and Belarus
Statistical description/method for calculation	The population of all other NUTS-3 regions is weighted by a negative exponential function of the car travel time to reach the destination region from the origin NUTS-3 region. This calculation was done by the Spiekermann&Wegener accessibility model (Spiekermann/Wegener Urban and Regional Research).
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1. NUTS-3 region GIS layer 2. Total population figures for the NUTS-3 region 3. Actual road network GIS layer
Recommendations of frequency of indicator updates	Every three year or every five year (since road networks are not changing that fast)
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The input GIS layers should already cover the entire BSR region, so that no extra data collection activities for Russia and Belarus are necessary.

Indicator application	
Derived maps in volume 3 of final report.	1. Accessibility potential by road 2006 (BSR) 2. Accessibility potential by road 2006 (ESPON space) 3. Regional potential accessibility by road (grid level) for Baltic States (ESPON TRACC) 4. Regional potential accessibility by road (LAU-2 level) for Baltic States (ESPON TRACC) 5. Regional potential accessibility by road (LAU-2 level) for Poland (ESPON TRACC)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	NUTS-3 region GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG), RRG GIS Database
Description of variable (describe format if needed)	Polygon layer representing the boundaries of the NUTS-3 regions in countries of the European Union, as well as of similar regions in non-EU countries. The NUTS-3 classification codes as defined by Eurostat should be assigned to the polygons.
Temporal extent (start/end year for collected data)	2010 NUTS classification (similar layers for earlier NUTS classifications would also be available); however, in order to allow for comparisons, no variations as to the NUTS classification should be implemented.
URL of data bases from where data	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=3&dId=59

was downloaded	
Methodology (if raw data has been modified)	N/A
Quality	Good
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Total population figures for NUTS-3 level
Providers of data	Eurostat (EU and most of non-EU countries) Rosstat (Russian regions) Belstat (regions in Belarus)
Description of variable (describe format if needed)	Total population figures for NUTS-3 regions and corresponding regions in non-EU countries, provided in tabular format. The table should include the NUTS region code.
Temporal extent (start/end year for collected data)	2001, 2006, 2011 (data for only these years were compiled, however, Eurostat offers population data at annual basis)
URL of data bases from where data was downloaded	Eurostat Regio Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
Methodology (if raw data has been modified)	Generally N/A. In case of data gaps for individual countries or regions, gaps filled by data provided through National Statistical Offices, or by proportionally disaggregated figures from higher NUTS levels.
Quality	Good
Constraints in public data access	No
Copyrights	Eurostat, Rosstat. Belstat
Variable 3 information	
Name of variable	Actual road network GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of	The road network layer should at least include all motorways,

variable (describe format if needed)	dual-carriageway roads, E-roads and national roads, as well as other trunk roads. As far as available, also secondary roads should be included. Information on speed limits should be assigned to each road link. RRG GIS Database already covers entire Europe.
Temporal extent (start/end year for collected data)	2011 (RRG GIS Database includes information on the historic development of the road networks in Europe since 1950 to present)
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=2&dId=46
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG

Table 11 Accessibility potential by rail core information

Indicator core information	
Indicator name	Accessibility potential by rail
Indicator code	
Indicator description/abstract	This indicator is defined as the number of people that can be reached by rail, where the attractivity of destinations is defined by their population size, subject to the rail travel time to reach them. Indicator numbers will finally be standardized at the European average (=100).
Current time series	2001, 2006, 2011
Next expected data update	2014 (ESPON Matrices project; available end of 2014)
Current geographical scale	NUTS-3, excluding Russia and Belarus
Statistical description/method for calculation	The population of all other NUTS-3 regions is weighted by a negative exponential function of the rail travel time to reach the destination region from the origin NUTS-3 region. This calculation was done by the Spiekermann&Wegener accessibility model (Spiekermann/Wegener Urban and Regional Research).
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1. NUTS-3 region GIS layer 2. Total population figures for the NUTS-3 region 3. Actual rail network GIS layer
Recommendations of frequency of indicator updates	Every three year or every five year (since rail networks are not changing that fast)
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The input GIS layers should already cover the entire BSR region, so that no extra data collection activities for Russia and Belarus are necessary.

Indicator application	
Derived maps in volume 3 of final report.	1. Accessibility potential by rail 2006 (BSR) 2. Accessibility potential by rail 2006 (ESPON space) 3. Regional potential accessibility by public transport (grid level) for Baltic States (ESPON TRACC) 4. Regional potential accessibility by public transport (LAU-2 level) for Baltic States (ESPON TRACC) 5. Regional potential accessibility by public transport (LAU-2 level) for Poland (ESPON TRACC)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	NUTS-3 region GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG), RRG GIS Database
Description of variable (describe format if needed)	Polygon layer representing the boundaries of the NUTS-3 regions in countries of the European Union, as well as of similar regions in non-EU countries. The NUTS-3 classification codes as defined by Eurostat should be assigned to the polygons.
Temporal extent (start/end year for collected data)	2010 NUTS classification (similar layers for earlier NUTS classifications would also be available); however, in order to allow for comparisons, no variations as to the NUTS classification should be implemented.
URL of data bases from where data	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cld=3&dId=59

was downloaded	
Methodology (if raw data has been modified)	N/A
Quality	Good
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Total population figures for NUTS-3 level
Providers of data	Eurostat (EU and most of non-EU countries) Rosstat (Russian regions) Belstat (regions in Belarus)
Description of variable (describe format if needed)	Total population figures for NUTS-3 regions and corresponding regions in non-EU countries, provided in tabular format. The table should include the NUTS region code.
Temporal extent (start/end year for collected data)	2001, 2006, 2011 (data for only these years were compiled, however, Eurostat offers population data at annual basis)
URL of data bases from where data was downloaded	Eurostat Regio Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
Methodology (if raw data has been modified)	Generally N/A. In case of data gaps for individual countries or regions, gaps filled by data provided through National Statistical Offices, or by proportionally disaggregated figures from higher NUTS levels.
Quality	Good
Constraints in public data access	No
Copyrights	Eurostat, Rosstat. Belstat
Variable 3 information	
Name of variable	Actual rail network GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of	The rail network layer should include rail passenger lines under

variable (describe format if needed)	operation today, including passenger rail stations. Information on average maximum rail travel times are associated with the links, so as excerpts from rail timetables. RRG GIS Database already covers entire Europe.
Temporal extent (start/end year for collected data)	2011 (RRG GIS Database includes information on the historic development of the rail networks in Europe since 1975 to present)
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cld=2&dId=48
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG

Table 12 Accessibility potential by air core information

Indicator core information	
Indicator name	Accessibility potential by air
Indicator code	
Indicator description/abstract	This indicator is defined as the number of people that can be reached by flights, where the attractivity of destinations is defined by their population size, subject to the flight travel time to reach them. Indicator numbers will finally be standardized at the European average (=100).
Current time series	2001, 2006, 2011
Next expected data update	2014 (ESPON Matrices project; available end of 2014)
Current geographical scale	NUTS-3, excluding Russia and Belarus
Statistical description/method for calculation	The population of all other NUTS-3 regions is weighted by a negative exponential function of the flight travel time to reach the destination region from the origin NUTS-3 region. This calculation was done by the Spiekermann&Wegener accessibility model (Spiekermann/Wegener Urban and Regional Research).
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1. NUTS-3 region GIS layer 2. Total population figures for the NUTS-3 region 3. Actual flight network GIS layer
Recommendations of frequency of indicator updates	Every three year or every five year
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The input GIS layers should already cover the entire BSR region, so that no extra data collection activities for Russia and Belarus are necessary.

Indicator application	
Derived maps in volume 3 of final report.	1. Accessibility potential by air 2006 (BSR) 2. Accessibility potential by rail 2006 (ESPON space)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	NUTS-3 region GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG), RRG GIS Database
Description of variable (describe format if needed)	Polygon layer representing the boundaries of the NUTS-3 regions in countries of the European Union, as well as of similar regions in non-EU countries. The NUTS-3 classification codes as defined by Eurostat should be assigned to the polygons.
Temporal extent (start/end year for collected data)	2010 NUTS classification (similar layers for earlier NUTS classifications would also be available); however, in order to allow for comparisons, no variations as to the NUTS classification should be implemented.
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cld=3&dId=59
Methodology (if raw data has been	N/A

modified)	
Quality	Good
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Total population figures for NUTS-3 level
Providers of data	Eurostat (EU and most of non-EU countries) Rosstat (Russian regions) Belstat (regions in Belarus)
Description of variable (describe format if needed)	Total population figures for NUTS-3 regions and corresponding regions in non-EU countries, provided in tabular format. The table should include the NUTS region code.
Temporal extent (start/end year for collected data)	2001, 2006, 2011 (data for only these years were compiled, however, Eurostat offers population data at annual basis)
URL of data bases from where data was downloaded	Eurostat Regio Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
Methodology (if raw data has been modified)	Generally N/A. In case of data gaps for individual countries or regions, gaps filled by data provided through National Statistical Offices, or by proportionally disaggregated figures from higher NUTS levels.
Quality	Good
Constraints in public data access	No
Copyrights	Eurostat, Rosstat. Belstat
Variable 3 information	
Name of variable	Actual air network GIS layer
Providers of data	Spiekermann&Wegener Urban and Regional Research (S&W)
Description of variable (describe format if needed)	The flight network layer includes all commercial flights according to timetables between all passenger airports in Europe. For each flight, the flight time and the frequency was coded as attributes. Resource information to set up this layer was taken from OAG Flight Atlas, as well as from online resources of airports and airlines.

Temporal extent (start/end year for collected data)	2006
URL of data bases from where data was downloaded	Spiekermann&Wegener Urban and Regional Research: http://www.spiekermann-wegener.de/
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed through RRG as authorized reseller, or directly through S&W.
Copyrights	RRG

Table 13 Multimodal accessibility potential core information

Indicator core information	
Indicator name	Multimodal accessibility potential
Indicator code	
Indicator description/abstract	This indicator is defined as the number of people that can be reached by all modes (road, rail, air), where the attractivity of destinations is defined by their population size, subject to the travel time to reach them. The individual car, train and plane travel times are summed up as logsum, to derive the overall multimodal accessibility potential. Indicator numbers will finally be standardized at the European average (=100).
Current time series	2001, 2006, 2011
Next expected data update	2014 (ESPON Matrices project; available end of 2014)
Current geographical scale	NUTS-3, excluding Russia and Belarus
Statistical description/method for calculation	The population of all other NUTS-3 regions is weighted by a negative exponential function of the modal travel times (road, rail, air) to reach the destination region from the origin NUTS-3 region. First, the individual indicators on accessibility potential by road, rail and air need to be calculated. Then, these indicators will be summed up as logsum to derive the multimodal accessibility potential. This calculation was done by the Spiekermann&Wegener accessibility model (Spiekermann/Wegener Urban and Regional Research).
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1. NUTS-3 region GIS layer 2. Total population figures for the NUTS-3 region 3. Actual road network GIS layer 4. Actual rail network GIS layer 5. Actual flight network GIS layer
Recommendations of frequency of indicator updates	Every three year or every five year

Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The input GIS layers should already cover the entire BSR region, so that no extra data collection activities for Russia and Belarus are necessary.
Indicator application	
Derived maps in volume 3 of final report.	1. Multimodal accessibility potential 2006 (BSR) 2. Multimodal accessibility potential 2006 (ESPON space)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	- Aggregation and comparison of multimodal accessibility potential for 2001 and 2006 for selected transnational regions in Europe (Baltic Sea Region, Alpine Space, North Sea Region) - Comparing border region performance in comparison to national average by using different indicators, of which multimodal accessibility potential for 2006 was one of them. - Comparing multimodal accessibility potential for 2001 and 2006, as well as its development 2001-2006, in the BSR by various types of territorial typologies.
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	This indicator was used as one of the headline indicator in the overall benchmarking, in the analyses of cross-border areas and in the analysis of territorial cohesion under the view of ensuring accessibility.
Variable 1 information	
Name of variable	NUTS-3 region GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG), RRG GIS Database
Description of variable	Polygon layer representing the boundaries of the NUTS-3 regions in countries of the European Union, as well as of similar regions in non-EU countries. The NUTS-3 classification codes as defined by Eurostat

(describe format if needed)	should be assigned to the polygons.
Temporal extent (start/end year for collected data)	2010 NUTS classification (similar layers for earlier NUTS classifications would also be available); however, in order to allow for comparisons, no variations as to the NUTS classification should be implemented.
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=3&dId=59
Methodology (if raw data has been modified)	N/A
Quality	Good
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Total population figures for NUTS-3 level
Providers of data	Eurostat (EU and most of non-EU countries) Rosstat (Russian regions) Belstat (regions in Belarus)
Description of variable (describe format if needed)	Total population figures for NUTS-3 regions and corresponding regions in non-EU countries, provided in tabular format. The table should include the NUTS region code.
Temporal extent (start/end year for collected data)	2001, 2006, 2011 (data for only these years were compiled, however, Eurostat offers population data at annual basis)

URL of data bases from where data was downloaded	Eurostat Regio Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database
Methodology (if raw data has been modified)	Generally N/A. In case of data gaps for individual countries or regions, gaps filled by data provided through National Statistical Offices, or by proportionally disaggregated figures from higher NUTS levels.
Quality	Good
Constraints in public data access	No
Copyrights	Eurostat, Rosstat. Belstat
Variable 3 information	
Name of variable	Actual road network GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of variable (describe format if needed)	The road network layer should at least include all motorways, dual-carriageway roads, E-roads and national roads, as well as other trunk roads. As far as available, also secondary roads should be included. Information on speed limits should be assigned to each road link. RRG GIS Database already covers entire Europe.
Temporal extent (start/end year for collected data)	2011 (RRG GIS Database includes information on the historic development of the road networks in Europe since 1950 to present)
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=2&dId=46
Methodology (if raw data has been	N/A

modified)	
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 4 information	
Name of variable	Actual rail network GIS layer
Providers of data	RRG Spatial Planning and Geoinformation (RRG GIS Database)
Description of variable (describe format if needed)	The rail network layer should include rail passenger lines under operation today, including passenger rail stations. Information on average maximum rail travel times are associated with the links, so as excerpts from rail timetables. RRG GIS Database already covers entire Europe.
Temporal extent (start/end year for collected data)	2011 (RRG GIS Database includes information on the historic development of the rail networks in Europe since 1975 to present)
URL of data bases from where data was downloaded	RRG GIS Database description available at http://www.brrg.de/database.php?language=de&cId=2&dId=48
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed from RRG
Copyrights	RRG
Variable 5 information	

Name of variable	Actual air network GIS layer
Providers of data	Spiekermann&Wegener Urban and Regional Research (S&W)
Description of variable (describe format if needed)	The flight network layer includes all commercial flights according to timetables between all passenger airports in Europe. For each flight, the flight time and the frequency was coded as attributes. Resource information to set up this layer was taken from OAG Flight Atlas, as well as from online resources of airports and airlines.
Temporal extent (start/end year for collected data)	2006
URL of data bases from where data was downloaded	Spiekermann&Wegener Urban and Regional Research: http://www.spiekermann-wegener.de/
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	Layer can be licensed through RRG as authorized reseller, or directly through S&W.
Copyrights	RRG

Table 14 Households with access to internet at home core information

Indicator core information	
Indicator name	Households with access to internet at home
Indicator code	
Indicator description/abstract	The indicator households with internet access at home is defined as the number of households with internet access in percent of the total number of households.
Current time series	EU BSR: 2006-2011 (partial) Russia: 2008-2011 (partial) Belarus: 2008-2011 (national level and only as total numbers, not shares)
Next expected data update	EU BSR: 2013/2014 Russia: Unknown Belarus: Unknown
Current geographical scale	Nuts 2 / Oblasts (Russia) /Nuts 0 (Belarus)
Statistical description/method for calculation	This indicator is obtained in this format from Eurostat and Rosstat. For Belarus no indicator is produced for reasons explained below. URL for Eurostat and Rosstat: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_r_iacc_h&lang=en http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/main/
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	N/A
Recommendations of frequency of indicator updates	Yearly

Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	The data from Eurostat and Rosstat is similar and allow for comparing. In Belarus, only data at national level is available and only regarding number of Internet subscribers (individuals and enterprises) and hence not as shares. No indicator is produced for Belarus.
Indicator application	
Derived maps in volume 3 of final report.	1. Households with access to internet 2011, BSR. 2. Households with access to internet 2011, ESPON Space.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Included as one aspect of analysing the East-West disparities in the BSR.

Table 15 Population potential within 50 km core information

Indicator core information	
Indicator name	Population potential within 50 km
Indicator code	
Indicator description/abstract	This indicator is defined as the number of population located within 50 km airline distance from any place. It characterizes the spatial structure of the European territory in terms of the market potential and population density. Indicator results are standardized at the European average (=100), indicating regions below the average (<100 index value) and above the European average (>100 index value).
Current time series	2008
Next expected data update	N/A
Current geographical scale	NUTS-3, grid level, both excluding Russia and Belarus
Statistical description/method for calculation	The airline distance from each grid cell to the next centre of the LAU-2 units will be calculated in the GIS. If the distance is less or equal 50 km, the LAU-2 population will be summed up as the population potential of the respective grid cell. Once the grid results are available, they will be aggregated as weighted average to NUTS-3 level.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	The following input data are needed for the calculation of this indicator: 1. System of grid cells (resolution of 2.5x2.5 km). 2. Coordinates of the centres of all LAU-2 units Both input data need to be available as GIS layers.
Recommendations of frequency of indicator updates	Every three year or every five year
Methodology for compiling data for several national sources with a view	The system of grid cells should be generated in a way to cover all BSR countries, including Belarus and Russian BSR territory. Ideally, GIS layers on LAU-2 units should also be compiled for Belarus and Russia; if such a layer is not available, a

on data gathering for Russia and Belarus	point layer of the centres of the main and secondary town and cities would also be sufficient, if population figures for these cities are available as well.
Indicator application	
Derived maps in volume 3 of final report.	1. Population potential within 50 km for BSR region (NUTS-3) 2. Population potential within 50 km for ESPON space (NUTS-3) 3. Population potential within 50 km for ESPON space (grid level))
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	System of grid cells (2.5x2.5 km)
Providers of data	RRG Spatial Planning and Geoinformation (RRG)
Description of variable (describe format if needed)	Regular system of grid cells in vector format, i.e. system of regular quadratic polygons with same size and edge length of 2.5 km was generated. Edge length may be flexible (smaller and longer ones possible). Each polygon (i.e. grid cell) should have a unique ID, and center coordinates should be assigned as field. If it is intended to aggregate grid results to NUTS-2 or NUTS-3 levels, each polygon/cell should also have the corresponding NUTS code assigned (to be obtained by overlaying the grid layer with NUTS boundary layer).
Temporal extent (start/end year for collected data)	Grid system should be kept constant over time, to allow for comparisons. No need for variations.

URL of data bases from where data was downloaded	N/A
Methodology (if raw data has been modified)	Using standard GIS functions to generate the grid. Overlay with NUTS layer to obtain NUTS region codes. Assignment of unique ID for each cell by applying standard GIS functionalities.
Quality	High
Constraints in public data access	Dataset could be licensed through RRG
Copyrights	RRG
Variable 2 information	
Name of variable	Coordinates of the centers of all LAU-2 units (point GIS layer)
Providers of data	RRG Spatial Planning and Geoinformation (RRG)
Description of variable (describe format if needed)	The point GIS layer represents the geographical centre of each LAU-2 unit, or the geographical centre of the settlement areas within each LAU-2 unit. These center points will be used as destinations to calculate the airline distances against (the delimitation/borders of the LAU-2 units is not needed). It is important to note that the LAU-2 population figures need to be transferred to these points.
Temporal extent (start/end year for collected data)	2008, excluding Belarus and Russia
URL of data bases from where data was downloaded	N/A
Methodology (if raw data has been modified)	A LAU-2 unit layer for Europe already available with RRG has been utilized. Total LAU-2 population figures have been collected from National Statistical Offices, and have been joined to the layer via unique LAU-2 ID. Next, a point layer representing the centers of the LAU-2 units has been generated by applying standard GIS functionalities.
Quality	Good
Constraints in public data access	No public data access allowed.
Copyrights	RRG

Table 16 Border crossings core information

Indicator core information	
Indicator name	Border crossings
Indicator code	
Indicator description/abstract	This indicator actually has two components: First, the average annual daily traffic (AADT) approaching the border, and second, the average truck waiting times for border control procedures, differentiated by direction
Current time series	AADT: 1995, 2000, 2005 Waiting times: Dec 2013 (earlier months would be available)
Next expected data update	AADT: 2010 (so far only aggregated country statistics available from UN-ECE website, data at road level not yet published) Waiting times: weekly updates available from IRU website for registered users
Current geographical scale	AADT: Basically entire Europe, including Belarus and Russia; however, data gaps for individual border crossings for certain years may be observed. Waiting times: only at border posts in Eastern Europe between EU and non-EU countries
Statistical description/method for calculation	AADT: N/A Waiting times: daily and weekly information by direction (inward and outward EU traffic) averages to derive monthly average waiting time.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	Following input data were used: AADT: the UN-ECE road GIS layer on E-road census and inventory Waiting times: Truck waiting times at border crossings from International Road Union (IRU)
Recommendations of frequency of indicator updates	AADT: UN-ECE data update interval is 5 years, however, annual or bi-annual intervals would be preferable. Waiting times: already available from website at daily/weekly frequency.
Methodology for compiling data for several national sources with a view	No specific actions needed since Russia and Belarus are already part of the UN-ECE dataset and of the IRU border crossings.

on data gathering for Russia and Belarus	
Indicator application	
Derived maps in volume 3 of final report.	1. AADT approaching at border crossings 1995 (BSR) 2. AADT approaching at border crossings 2000 (BSR) 3. AADT approaching at border crossings 2005 (BSR) 4. Truck waiting times at border crossings Dec 2013 (BSR)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	E-road census and inventory GIS layer
Providers of data	UN-ECE
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	1995, 2000, and 2005
URL of data bases from where data was downloaded	Datasets can be downloaded from UN-ECE statistics and data online webportal at http://www.unece.org/transport/areas-of-work/transport-statistics/statistics-and-data-online/e-roads

Methodology (if raw data has been modified)	
Quality	Estimates
Constraints in public data access	N/A
Copyrights	UN-ECE
Variable 2 information	
Name of variable	Waiting times at border crossings between EU and non-EU countries
Providers of data	International Road Union (IRU)
Description of variable (describe format if needed)	The online tool on truck border crossing waiting times provides daily and weekly information, separated for inward and outward EU traffic. These data were averaged to derive a monthly number for both travel directions. Since the web tool does not provide export functions, data were manually copied from the web tool to a GIS point layer of border crossings as generated under (1).
Temporal extent (start/end year for collected data)	Data available from 2007 until present
URL of data bases from where data was downloaded	Users registered at the IRU may access the IRU border delays web application from http://www.iru.org/bwt-app
Methodology (if raw data has been modified)	Averaging of daily/weekly waiting times to derive monthly figures.
Quality	Estimates
Constraints in public data access	Only for registered IRU users
Copyrights	International Road Union (IRU)

Table 17 Population with tertiary education core information

Indicator core information	
Indicator name	Population with tertiary education (25-64 years)
Indicator code	
Indicator description/abstract	The share of the population aged 25-64 years who have successfully completed university or university-like (tertiary-level) education with an education level ISCED 1997 (International Standard Classification of Education) of 5-6.
Current time series	EU BSR: 2003-2012 Russia: N/A Belarus: N/A
Next expected data update	EU BSR: 2013 Russia: Un-known Belarus: Un-known
Current geographical scale	Nuts 2 / N/A
Statistical description/method for calculation	Calculation of population aged 25-64 years who have successfully completed university or university-like (tertiary-level) education divided by the total population aged 25-64
Special consideration if currency based indicator	-
Variables/data needed for calculation (Each variable is explained further below)	1. Population size aged 25-64 years who have successfully completed university or university-like (tertiary-level) education 2. Population size aged 25-64
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Confirmed by Russian experts that no data comparable to EU/Eurostat data is available.
Indicator application	
Derived maps in volume 3 of final report.	1. Population with tertiary education 2011, BSR 2. Population with tertiary education 2011, ESPON Space 3. Population with tertiary education, change 2005-2011, BSR 4. Population with tertiary education, change 2005-2011, ESPON Space

Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	No indicators calculated
Political target values and thresholds (if available)	No political targets
Inclusion in applications and testing	Used in testing to show differences between Western BSR and Eastern BSR
Variable 1 information	
Name of variable	As a share of total age group 25-64 years
Providers of data	Eurostat
Description of variable (describe format if needed)	The share of the population aged 25-64 years who have successfully completed university or university-like (tertiary-level) education with an education level ISCED 1997 (International Standard Classification of Education) of 5-6.
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_lfse_11&lang=en
Methodology (if raw data has been modified)	-
Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A

Table 18 Employment in technology and knowledge-intensive sectors core information

Indicator core information	
Indicator name	Employment in technology and knowledge-intensive sectors
Indicator code	
Indicator description/abstract	The indicator is defined as the share of employees in technology and knowledge-intensive sectors on all employees.
Current time series	EU BSR: 2005-2008 Russia: N/A Belarus: N/A
Next expected data update	EU BSR: 2013 Russia: Un-known Belarus: Un-known
Current geographical scale	Nuts 2 / N/A
Statistical description/method for calculation	Calculation of human resources employed in high-technology manufacturing and knowledge-intensive high-technology service branches.
Special consideration if currency based indicator	-
Variables/data needed for calculation (Each variable is explained further below)	Human resources employed in high-technology manufacturing and knowledge-intensive high-technology service branches.
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Confirmed by Russian experts that no data comparable to EU/Eurostat data is available.
Indicator application	
Derived maps in volume 3 of final report.	1. Employment in technology and knowledge-intensive sectors 2008, BSR 2. Employment in technology and knowledge-intensive sectors 2008, ESPON Space 3. Employment in technology and knowledge-intensive sectors. Annual average change 2005-2008, BSR 4. Employment in technology and knowledge-intensive sectors. Annual average change 2005-2008, ESPON Space

Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	No indicators calculated
Political target values and thresholds (if available)	No political targets
Inclusion in applications and testing	
Variable 1 information	
Name of variable	1) Persons
Providers of data	Eurostat
Description of variable (describe format if needed)	Persons employed in technology and knowledge-intensive sectors
Temporal extent (start/end year for collected data)	Eurostat: 2005-2008
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=HTEC_EMP_REG
Methodology (if raw data has been modified)	Added employment in technology and knowledge-intensive sectors. However, because data for some NUTS regions is not available in one of the category, a separated employment in Technology and Knowledge-intensive sectors is also provided.
Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A
Variable 2 information	
Name of variable	2) as a share of all employed
Providers of data	Eurostat
Description of variable (describe format if needed)	Employed in technology and knowledge-intensive sectors as a share of total employed
Temporal extent (start/end year for collected data)	Eurostat: 2005-2008

URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/dataset?p_product_code=HTEC_EMP_REG
Methodology (if raw data has been modified)	Added employment rates in technology and knowledge-intensive sectors. However, because data for some NUTS regions is not available in one of the category, a separated employment rates in Technology and Knowledge-intensive sectors is also provided
Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A

Table 19 Gross domestic expenditure on R&D, of business sector core information

Indicator core information	
Indicator name	Gross domestic expenditure on R&D, of business sector
Indicator code	
Indicator description/abstract	Expenditure on R&D of business sector expressed as a share of GDP
Current time series	EU BSR: 2005-2011 N/A N/A
Next expected data update	EU BSR: 2013 N/A N/A
Current geographical scale	Nuts 2 / N/A
Statistical description/method for calculation	Calculation of business expenditure in R&D divided by GDP
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	1) Gross domestic expenditure on R&D, of business sector mill. PPS 2) Gross domestic expenditure on R&D, of business sector % of GDP
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Inquiries made regarding data from Ministry of Education and Sciences of the Russian Federation, but data cannot be combined with EU/Eurostat data due to territorial aggregation and methodology issues. The same situation with the data of Belarus.
Indicator application	
Derived maps in volume 3 of final report.	1. Business gross expenditures on R&D, mean rate 2005-2011, BSR 2. Business gross expenditures on R&D, mean rate 2005-2011, ESPON Space
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series	No indicators calculated

analyses)	
Political target values and thresholds (if available)	The GERD indicator is one of the headline indicators of EU2020 Strategy´s "Smart Growth" with the objective of reaching a level of public and private R&D expenditures of 3% of EU GDP by 2020
Inclusion in applications and testing	Used in testing to show differences between Western BSR and Eastern BSR
Variable 1 information	
Name of variable	Gross domestic expenditure on R&D, of business sector mill. PPS
Providers of data	Eurostat
Description of variable (describe format if needed)	Expenditure on R&D of business sector
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rd_e_gerdreg&lang=en
Methodology (if raw data has been modified)	
Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A
Variable 2 information	
Name of variable	Gross domestic expenditure on R&D, of business sector % of GDP
Providers of data	Eurostat
Description of variable (describe format if needed)	Expenditure on R&D of business sector expressed as a share of GDP
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rd_e_gerdreg&lang=en
Methodology (if raw data has been modified)	

Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A

Table 20 Gross domestic expenditure on R&D (total) core information

Indicator core information	
Indicator name	Gross domestic expenditure on R&D, total
Indicator code	
Indicator description/abstract	Expenditure on R&D of all sectors expressed as a share of GDP
Current time series	EU BSR: 2005-2011 N/A N/A
Next expected data update	EU BSR: 2013 N/A N/A
Current geographical scale	Nuts 2 / N/A
Statistical description/method for calculation	Calculation of all sectors expenditure in R&D divided by GDP
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	1) Gross domestic expenditure on R&D, of all sectors mill. PPS 2) Gross domestic expenditure on R&D, of business sector % of GDP
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Inquiries made regarding data from Ministry of Education and Sciences of the Russian Federation, but data cannot be combined with EU/Eurostat data due to territorial aggregation and methodology issues. The same situation with the data of Belarus.
Indicator application	
Derived maps in volume 3 of final report.	Total gross expenditures on R&D, mean rate 2005-2011, BSR Total gross expenditures on R&D, mean rate 2005-2011, ESPON Space
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	No indicators calculated

Political target values and thresholds (if available)	The GERD indicator is one of the headline indicators of EU2020 Strategy´s "Smart Growth" with the objective of reaching a level of public and private R&D expenditures of 3% of EU GDP by 2020.
Inclusion in applications and testing	
Variable 1 information	
Name of variable	Gross domestic expenditure on R&D, mill. PPS
Providers of data	Eurostat
Description of variable (describe format if needed)	Expenditure on R&D of all sectors
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rd_e_gerdreg&lang=en
Methodology (if raw data has been modified)	
Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A
Variable 2 information	
Name of variable	Gross domestic expenditure on R&D, % of GDP
Providers of data	Eurostat
Description of variable (describe format if needed)	Expenditure on R&D of all sectors expressed as a share of GDP
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011
URL of data bases from where data was downloaded	http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=rd_e_gerdreg&lang=en
Methodology (if raw data has been modified)	

Quality	Eurostat: high
Constraints in public data access	Generally no
Copyrights	N/A

Table 21 At-risk-of-poverty rate core information

Indicator core information	
Indicator name	At-risk-of-poverty rate
Indicator code	
Indicator description/abstract	EU BSR: Share (%) of persons with an equivalised disposable income (after social transfers) below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers Russian BSR: Population with money income below subsistence minimum level (subsistence minimum level - average per capita; RUR monthly)
Current time series	EU BSR: 2005-2011 Russian BSR: 2005-2010
Next expected data update	EU BSR: 2013 Russia: n.n.
Current geographical scale	NUTS 2 / SNUTS 2
Statistical description/method for calculation	Calculation of adjusted income deciles per household, calculation of population in each decile, division of the four lowest deciles with the median income.
Special consideration if currency based indicator	Can be estimated in national currency solely.
Variables/data needed for calculation (Each variable is explained further below)	
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering	Russian data not comparable to that of EU.

for Russia and Belarus	
Indicator application	
Derived maps in volume 3 of final report.	1. At-risk-of-poverty rate in the BSR 2011
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	Minimum-maximum regional distribution presented in the territorial cohesion test case.
Political target values and thresholds (if available)	EU 2020 Strategy headline target: at least 20 million fewer people in or at risk of poverty and social exclusion
Inclusion in applications and testing	The indicator is tested in the territorial cohesion test case.
Variable 1 information	
Name of variable	At-risk-of-poverty rate
Providers of data	Eurostat Rosstat
Description of variable (describe format if needed)	EU BSR: Share (%) of persons with an equivalised disposable income (after social transfers) below the at-risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income after social transfers Russian BSR: Population with money income below subsistence minimum level (subsistence minimum level - average per capita; RUR monthly)
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 Russian BSR: 2005-2010
URL of data bases from where data	http://epp.eurostat.ec.europa.eu / (ilc_li41) http://www.gks.ru/bgd/regl/b11_44/IssWWW.exe/Stg/d01/05-

was downloaded	23.htm
Methodology (if raw data has been modified)	
Quality	For EU BSR: high For Russia: N/A
Constraints in public data access	No
Copyrights	No restrictions

Table 22 Severe material deprivation rate core information

Indicator core information	
Indicator name	Severe material deprivation rate
Indicator code	
Indicator description/abstract	Share (%) of the population with enforced inability to afford at least four of nine listed basic items.
Current time series	2005-2011
Next expected data update	2013
Current geographical scale	NUTS 2
Statistical description/method for calculation	Share (%) of the population with enforced inability to afford at least four of the following nine items: 1: to pay their rent, mortgage or utility bills; 2: to keep their home adequately warm; 3: to face unexpected expenses; 4: to eat meat or proteins regularly; 5: to go on holiday; 6: a television set; 7: a washing machine; 8: a car; 9: a telephone.
Special consideration if currency based indicator	None
Variables/data needed for calculation (Each variable is explained further below)	
Recommendations of frequency of indicator updates	Yearly

Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Methodologically non-transferable outside EU countries (based on EU SILC – Survey on Income and Living Conditions).
Indicator application	
Derived maps in volume 3 of final report.	1. Severe material deprivation rate in the BSR 2011
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	Minimum-maximum regional distribution presented in the territorial cohesion test case.
Political target values and thresholds (if available)	EU 2020 Strategy headline target: at least 20 million fewer people in or at risk of poverty and social exclusion
Inclusion in applications and testing	The indicator is tested in the territorial cohesion test case.
Variable 1 information	
Name of variable	Severe material deprivation rate
Providers of data	Eurostat
Description of variable (describe format if needed)	Share (%) of the population with enforced inability to afford at least four of the following nine items: 1: to pay their rent, mortgage or utility bills; 2: to keep their home adequately warm; 3: to face unexpected expenses; 4: to eat meat or proteins regularly; 5: to go on holiday; 6: a television set; 7: a washing machine; 8: a car; 9: a telephone.
Temporal extent (start/end	2005-2011

year for collected data)	
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu / (ilc_mddd21)
Methodology (if raw data has been modified)	
Quality	For EU BSR: high
Constraints in public data access	No
Copyrights	No restrictions

Table 23 Youth unemployment rate (15-24 years) core information

Indicator core information	
Indicator name	Youth unemployment rate (15-24 years)
Indicator code	
Indicator description/abstract	Youth unemployment rate (15-24 years) can be viewed as an "early warning indicator" for future social exclusion. It is defined as unemployed persons aged 15-24 years as a share of all persons of that age group in the labour force. Interpretation of this indicator must be done cautiously, as a high youth unemployment rate does not necessarily imply that a large share of the total number of youth are unemployed (as they may be off the labour force, typically studying). It is therefore also at times calculated with the total population of that age as the denominator, which provides a more accurate picture of the relative volume of young unemployed persons.
Current time series	EU BSR: 2006-2011 Russia: 2005-2011 Belarus: 2009
Next expected data update	EU BSR: 2013 Russia: June 2014 Belarus: July 2014
Current geographical scale	Nuts 3 / Oblasts (Russia) / Nuts 0 (Belarus)
Statistical description/method for calculation	Ratio of unemployed people (15-24) in relation to overall work force in that age-span.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1) Nr of unemployed persons aged 15-24 years 2) nr of persons in labour force aged 15-24 years (i.e. unemployed + employed)
Recommendations of frequency of indicator updates	Yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	For Russian oblasts there are some data gaps for some years. Data for Leningradskaya oblast and St. Petersburg is available but was not provided. Moreover, two oblasts provided data for age group 15-29.

	For Belarus the data is only available at national level from Census 2009.
Indicator application	
Derived maps in volume 3 of final report.	1. Youth unemployment rate 2008, BSR. 2. Youth unemployment rate 2008, ESPON space. 3.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Used to assess the patterns of migration (explanatory variable).
Variable 1 information	
Name of variable	Nr of unemployed persons aged 15-24 years
Providers of data	Eurostat, Rosstat and Belstat.
Description of variable (describe format if needed)	Unemployed persons aged 15-24.
Temporal extent (start/end year for collected data)	EU BSR: 2006-2011 Russia: 2005-2011 Belarus: 2009
URL of data bases from where data was downloaded	
Methodology (if raw data has been modified)	N/A
Quality	For EU BSR: high For Russia: high For Belarus: low
Constraints in public data access	No
Copyrights	No

Variable 2 information	
Name of variable	nr of persons in labour force aged 15-24 years (i.e. unemployed + employed)
Providers of data	Eurostat, Rosstat and Belstat.
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	EU BSR: 2006-2011 Russia: 2005-2011 Belarus: 2009
URL of data bases from where data was downloaded	
Methodology (if raw data has been modified)	N/A
Quality	
Constraints in public data access	No
Copyrights	No

Table 24 Life expectancy at birth core information

Indicator core information	
Indicator name	Life expectancy at birth in years
Indicator code	
Indicator description/abstract	The mean number of years that a new-born child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).
Current time series	EU BSR: 2005-2010 BSR Russia: 2000-2009 Belarus: 2000-2011
Next expected data update	2013
Current geographical scale	NUTS 2 / SNUTS 2
Statistical description/method for calculation	The mean number of years that a new-born child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).
Special consideration if currency based indicator	None
Variables/data needed for calculation (Each variable is explained further below)	
Recommendations of frequency of indicator updates	Less than yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Methodologically fully comparable between EU and non-EU

Indicator application	
Derived maps in volume 3 of final report.	1. Changes life expectancy in the BSR 2005-2010
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	
Political target values and thresholds (if available)	
Inclusion in applications and testing	The indicator is tested in the territorial cohesion test case.
Variable 1 information	
Name of variable	Life expectancy at birth in years
Providers of data	EU BSR: Eurostat BSR Russia: Rosstat Belarus: Belstat
Description of variable (describe format if needed)	The mean number of years that a new-born child can expect to live if subjected throughout his life to the current mortality conditions (age specific probabilities of dying).
Temporal extent (start/end year for collected data)	EU BSR: 2005-2010 BSR Russia: 2000-2009 Belarus: 2000-2011
URL of data bases from where data was downloaded	http://epp.eurostat.ec.europa.eu /(demo_r_mlifexp) http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1137674209312 http://belstat.gov.by/homep/ru/indicators/regions/1.php
Methodology (if raw data has been modified)	

Quality	High
Constraints in public data access	No
Copyrights	No restrictions

Table 25 Gender imbalances core information

Indicator core information	
Indicator name	Gender imbalances
Indicator code	
Indicator description/abstract	Gender imbalances in a region is assessed by the ratio of male-female aged 25-39. Unbalanced gender compositions in a region hint at social problems, and are obstacles for further demographic and economic developments.
Current time series	EU BSR: 2005-2011 BSR Russia: 2003 and 2011 Belarus: 2010-2011
Next expected data update	BSR: 2014 Russia: October 2014 Belarus: April 2014.
Current geographical scale	NUTS-3/ Oblasts.
Statistical description/method for calculation	Simple ratio of male-female aged 25-39 in region.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is explained further below)	1) Number of males aged 25-39 years, at end of year 2) Number of females aged 25-39 years, at end of year
Recommendations of frequency of indicator updates	Yearly.
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Methodologically fully comparable between EU and non-EU. Due to lack of data, the average ratio in time period 2007-2011 has been calculated.
Indicator application	
Derived maps in volume 3 of final report.	1. Gender imbalances average 2007-2011, BSR. 2. Gender imbalances 2011, Nordic countries, Estonia, Latvia, municipalities.

Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Used in the assessment of territorial cohesion in the testing to describe situations of unsustainable demographic structures.
Variable 1 information	
Name of variable	Number of males aged 25-39 years, at end of year
Providers of data	EU BSR: Eurostat BSR Russia: Rosstat Belarus: Belstat
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	EU BSR: 2005-2011 BSR Russia: 2003 and 2011 Belarus: 2010-2011
URL of data bases from where data was downloaded	Multiple NSIs. Addresses/links to the exact pages can be found in the indicator metadata in the files delivered to ESPON CU.
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	No
Copyrights	No restrictions
Variable 2 information	
Name of variable	Number of females aged 25-39 years, at end of year
Providers of data	EU BSR: Eurostat BSR Russia: Rosstat Belarus: Belstat
Description of variable (describe format if needed)	
Temporal extent (start/end	EU BSR: 2005-2011

year for collected data)	BSR Russia: 2003 and 2011 Belarus: 2010-2011
URL of data bases from where data was downloaded	Multiple NSIs. Addresses/links to the exact pages can be found in the indicator metadata in the files delivered to ESPON CU.
Methodology (if raw data has been modified)	N/A
Quality	High
Constraints in public data access	No
Copyrights	No restrictions

Table 26 Subjective general health core information

Indicator core information	
Indicator name	Subjective general health
Indicator code	
Indicator description/abstract	Subjective assessment of a person's general health status based on surveys
Current time series	2006, 2008, 2010
Next expected data update	2012
Current geographical scale	EU BSR: NUTS 2-3 Russian BSR: Northwest Federal District
Statistical description/method for calculation	European Social Survey (ESS) question C15. Literal question: "How is your health in general? Would you say it is …" Response categories: "1. Very good"; "2. Good"; "3. Fair"; "4. Bad"; "5. Very bad", "7. Refusal"; "8. Don't know"; "9. No answer". Arithmetic average value of response categories 1 through five (hence omitting categories 7 through 9) summarised per regional unit. Individual raw frequency data weighted by design weight which adjusts the sample bias and selection probability to match that of each country. N.b. The data are unweighted by population whereupon summarising data for several countries is not feasible.
Special consideration if currency based indicator	None
Variables/data needed for calculation (Each variable is explained further below)	
Recommendations of frequency of indicator updates	Less than bi-yearly
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Methodologically fully comparable between EU and non-EU

Indicator application	
Derived maps in volume 3 of final report.	1. Self-assessed general health status in the BSR 2010
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	1. Subjective health 2006 and changes thereof 2006-2010 2. GDP/capita and subjective health 2010
Political target values and thresholds (if available)	
Inclusion in applications and testing	The indicator is tested in the territorial cohesion test case.
Variable 1 information	
Name of variable	Subjective general health
Providers of data	European Social Survey through Norwegian Social Science Data Services, Norway – Data Archive and distributor of ESS data
Description of variable (describe format if needed)	
Temporal extent (start/end year for collected data)	2006 (ESS3-2006 ed. 3.0) 2008 (ESS4-2008 ed. 3.0) 2010 (ESS5-2010 ed. 2.0)
URL of data bases from where data was downloaded	http://ess.nsd.uib.no/ess/
Methodology (if raw data has been modified)	European Social Survey (ESS) question C15. Literal question: "How is your health in general? Would you say it is …" Response categories: "1. Very good"; "2. Good"; "3. Fair"; "4. Bad"; "5. Very bad", "7. Refusal"; "8. Don't know"; "9. No answer". Arithmetic average value of response categories 1 through five (hence omitting categories 7 through 9) summarised per regional unit. Individual raw frequency data weighted by design weight which adjusts the sample bias and selection probability to match that of each country. N.b. The data are unweighted by population whereupon summarising data for

	several countries is not feasible.
Quality	Medium
Constraints in public data access	No
Copyrights	No restrictions

Table 27 New soil sealing per capita core information

Indicator core information	
Indicator name	New soil sealing per capita
Indicator code	
Indicator description/abstract	New soil sealing per capita is a measure of how much land is converted to a "built" surface in a wider definition. Hence this indicator is associated with land take for economic development and is associated with settlement structures and demographic development. Since soil sealing is associated also to the resilience and buffering capacity of nature this is an important indicator, as well as indicating the quality of landscapes for recreation and human well-being.
Current time series	EU BSR: 2006
Next expected data update	2014-2015
Current geographical scale	Nuts 3.
Statistical description/method for calculation	This indicator is defined as the amount of annual new soil sealing per inhabitant in a region through land take (in square meters). No calculations have been made in this project since this indicator is used from the Fifth Cohesion report (see method for compiling data below).
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion5/index_en.cfm
Recommendations of frequency of indicator updates	N/A
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Fifth Report on Economic, Social and Territorial Cohesion (EEA, Eurostat, REGIO-GIS). No data for Russia or Belarus.

Indicator application	
Derived maps in volume 3 of final report.	1. New annual soil sealing per capita 2006, BSR. 2. New annual soil sealing per capita 2006, ESPON Space.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Used in the testing to analyse sustainable growth, metropolitan regions. Used to analyse migration. Used in the benchmarking with other macro regions.

Table 28 Air pollution core information

Indicator core information	
Indicator name	Air pollution
Indicator code	
Indicator description/abstract	This indicator is defined as the number of days where PM10 concentration in yg/m3 at ground level exceeds the norm values. The indicator is based on values from measurement stations, i.e. point measurements.
Current time series	EU BSR: 2009
Next expected data update	2014-2015
Current geographical scale	Nuts 3. (Measurements are for stations in a city in a region).
Statistical description/method for calculation	Data from GMES Promote project, JRC, EFGS, REGIO-GIS (published in Fifth Report on Economic, Social and Territorial Cohesion). Indicator requires advanced calculations and has been calculated using 2009 data. Gaps for NO (NO not included in data).
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion5/index_en.cfm
Recommendations of frequency of indicator updates	Every 5 years.
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	Inquiries made in both Russia and Belarus, but data cannot be combined with EU/Eurostat data due to territorial aggregation and methodology issues. There is data on air pollution, but it is expressed as cumulative air emissions of harmful chemical compounds, e.g. SO2, NO, CO.
Indicator application	
Derived maps in volume 3 of final report.	1. Air pollution: PM10 (2009), BSR. 2. Air pollution: PM10 (2009), ESPON Space.

Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Used in the testing to analyse sustainable growth, metropolitan regions. Used to depict the north-south dimension. Used in the benchmarking with other macro regions.

Table 29 Eutrophication core information

Indicator core information	
Indicator name	Eutrophication (Helcom HEAT index)
Indicator code	
Indicator description/abstract	Eutrophication (HEAT index from Helcom) is an important indicator for the quality of the Baltic Sea and an indicator for how successful measures are to prevent the leakage of nutrients from agriculture and sewerage plants around the sea. Unlike other indicators of this monitoring system, this indicator is mapped for the Baltic Sea, not at regional level for BSR regions. The indicator is generated by using the HELCOM Eutrophication Assessment Tool (HEAT), where a total of 189 measurement stations are classified regarding the level of their affectiveness against eutrophication. The assessment ranges from moderate, poor and bad status (=affected) towards good and high status (=not affected)
Current time series	Baltic Sea: 2010
Next expected data update	2014-2015
Current geographical scale	Baltic Sea
Statistical description/method for calculation	Data obtained from Helcome in 2013.
Special consideration if currency based indicator	
Variables/data needed for calculation (Each variable is explained further below)	N/A
Recommendations of frequency of indicator updates	N/A
Methodology for compiling data for several national sources with a view on data gathering for Russia	Helcome provide this data for different basins in the Baltic sea.

and Belarus	
Indicator application	
Derived maps in volume 3 of final report.	1. Eutrophication in the Baltic Sea 2010.
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if available)	N/A
Inclusion in applications and testing	Included to provide context in the analysis and testing.

Table 30 Fragmentation index core information

Indicator core information	
Indicator name	Fragmentation Index
Indicator code	
Indicator description/abstract	EEA provides two different types of indicator definitions, which are: (i) Effective mesh size (MEFF) for fragmentation geometry in km2 (ii) Effective mesh density (SEFF) for fragmentation geometry, i.e., the number of meshes per 1000 km2
Current time series	2002, 2009
Next expected data update	Data for 2010 should be published soon by EEA
Current geographical scale	Grid level, NUTS-3
Statistical description/method for calculation	Indicator already calculated and provided 'as is' by European Environment Agency (EEA). No further processing required. A full documentation about the modelling approach for indicator calculation can be found at EEA website. The EEA computes three levels of fragmentation: FG-A1: Major roads, railroads and urban areas are used as fragmenting elements FG-A2: All roads, including secondary and local connecting roads, railways and urban areas are used as fragmenting elements FG-B2: All antrophogenic and natural (like lakes, mountains, rivers) are used as fragmenting elements. In ESPON BSR-TeMo it is recommended to use the last type of computation, i.e. FG-B2, as it accounts for the most comprehensive type of fragmenting elements.
Special consideration if currency based indicator	N/A
Variables/data needed for calculation (Each variable is	(i) Effective mesh size (MEFF) for fragmentation geometry in km2 (ii) Effective mesh density (SEFF) for fragmentation geometry, i.e., the number of meshes per 1000 km2

explained further below)	
Recommendations of frequency of indicator updates	Even though land take and landscape fragmentation is a continuous process, significant changes to the index may only appear over several years. So, update intervals of three years or of five years are recommended.
Methodology for compiling data for several national sources with a view on data gathering for Russia and Belarus	This indicator cannot be obtained from National Statistical Offices, as it is derived by a modelling approach using GIS techniques. In future, EEA may extend the spatial coverage of this index by including Belarus and Russia.
Indicator application	
Derived maps in volume 3 of final report.	1. Fragmentation Index: Effective mesh size 2002 (in km2) (BSR, NUTS-3) 2. Fragmentation Index: Effective mesh density 2002 (in km2) (BSR, NUTS-3) 3. Fragmentation Index: Effective mesh size 2002 (in km2) (BSR, grid level) 4. Fragmentation Index: Effective mesh density 2002 (in km2) (grid level, NUTS-3) 5. Fragmentation Index: Effective mesh size 2009 (in km2) (BSR, NUTS-3) 6. Fragmentation Index: Effective mesh density 2009 (in km2) (BSR, NUTS-3) 7. Fragmentation Index: Effective mesh size 2009 (in km2) (BSR, grid level) 8. Fragmentation Index: Effective mesh density 2009 (in km2) (grid level, NUTS-3) 9. Fragmentation Index: Reduction of mesh size 2002 – 2009 (in km2) (BSR, NUTS-3) 10. Fragmentation Index: Reduction of mesh size 2002 – 2009 (in %) (BSR, NUTS-3)
Derived statistical measures and charts (minimum, maximum, average, standard deviation, coefficient of variation, GINI coefficient, beta and sigma convergence, time series analyses)	N/A
Political target values and thresholds (if	N/A

available)	
Inclusion in applications and testing	N/A
Variable 1 information	
Name of variable	Effective mesh size (MEFF) for fragmentation geometry in km2
Providers of data	European Environment Agency (EEA)
Description of variable (describe format if needed)	Effective mesh size for fragmentation geometry in km2. This indicator is available in two data formats, (i) As polygon shapefile for NUTS-3 regions (Germany: NUTS-2) (ii) As polygon shapefile with regular grid cells For ESPON BSR-TeMo, EEA provided data for BSR territory only, with Russia and Belarus not covered. Data for other ESPON countries are available, but have not been provided.
Temporal extent (start/end year for collected data)	2002, 2009
URL of data bases from where data was downloaded	European Environment Agency: www.eea.europa.eu
Methodology (if raw data has been modified)	N/A
Quality	Good
Constraints in public data access	Provision of raw datasets (grid level, NUTS level) in ArcGIS format only upon request
Copyrights	EEA
Variable 2 information	
Name of variable	Effective mesh density (SEFF) for fragmentation geometry, i.e., the number of meshes per 1000 km2
Providers of data	European Environment Agency (EEA)
Description of variable (describe format if needed)	Effective mesh density for fragmentation geometry indicates the number of meshes per 1000 km2. This indicator is available in two data formats, (i) As polygon shapefile for NUTS-3 regions (Germany: NUTS-2)

	(ii) As polygon shapefile with regular grid cells For ESPON BSR-TeMo, EEA provided data for BSR territory only, with Russia and Belarus not covered. Data for other ESPON countries are available, but have not been provided.
Temporal extent (start/end year for collected data)	2002, 2009
URL of data bases from where data was downloaded	European Environment Agency: www.eea.europa.eu
Methodology (if raw data has been modified)	N/A
Quality	Good
Constraints in public data access	Provision of raw datasets (grid level, NUTS level) in ArcGIS format only upon request
Copyrights	EEA

3. Future updating of the indicators

Table 31 depicts the suggested cycle for updating the indicators. Some indicators are related to aspects of more rapid change whereas some are indicators of more sluggish shifts in society and places. For instance indicators related to accessibility, infrastructure, soil sealing and fragmentation does not need to be updated as often as economic performance, employment, migration and R&D spending. The need for updating the system is however also affected on the need for using the indicators in policy evaluation or development programing exercises.

Table 31 Suggested future updates

Indicator	**Over all data availability*, based on previous data releases** *) Gaps may exist for certain regions	**Next suggested update of TeMo**	**Suggested general update cycle**
Economic performance & competitiveness			
GDP per capita	Yearly	After project end	Yearly
GDP per person employed	Yearly	After project end	Yearly
Unemployment rate, total	Yearly	After project end	Yearly
Employment rate (20-64 years)	Yearly	After project end	Yearly
Net migration rate	Yearly	After project end	Yearly
Total population change	Yearly	After project end	Yearly
Economic dependency ratio	Yearly	After project end	Yearly
Access to services, markets & jobs			
Accessibility potential by road	Every 5 years (2001, 2006, 2011 …)	As soon as available	Every 5 years
Accessibility potential by rail	Every 5 years (2001, 2006, 2011 …)	As soon as available	Every 5 years
Accessibility potential by air	Every 5 years (2001, 2006, 2011 …)	As soon as available	Every 5 years
Multimodal accessibility potential	Every 5 years (2001, 2006, 2011 …)	As soon as available	Every 5 years
Functional areas: access to cities	Irregular (2011 …)	As soon as available	Every 5 years
Population potential within 50 km	Irregular (2008 …)	As soon as available	Every 5 years
Border crossings	Every 5 years (2000, 2005, 2010 …)	As soon as available	Every 5 years
Households with internet access at home	Yearly	After project end	Yearly
Innovative territories			
Population with tertiary education (25-64 years)	Yearly	After project end	Yearly

Employment in technology & knowledge sectors	Yearly	After project end	Yearly
Gross-domestic expenditures on R&D, business	Yearly	After project end	Yearly
Gross-domestic expenditures on R&D, total	Yearly	After project end	Yearly
Social inclusion & quality of life			
At-risk-of-poverty rate	Yearly	After project end	Yearly
Severe material deprivation rate	Yearly	After project end	Yearly
Youth unemployment rate (15-24	Yearly	After project end	Yearly
Gender imbalances	Yearly	After project end	Yearly
Life expectancy at birth, in years	Yearly	After project end	Yearly
Self-assessed general health status	Every 2 years (2006, 2008, 2010 …)	As soon as available	Every 2 years
Environmental qualities			
New soil sealing per capita	Irregular (2006 …)	As soon as available	Every 5 years
Air pollution (PM10)	Irregular (2009 …)	As soon as available	Every 5 years
Eutrophication	Yearly/Irregular (2009, 2010 …)	As soon as available	Yearly
Fragmentation index	Every 3-4 years/Irregular (2002, 2006, 2009 …)	As soon as available	Every 5 years

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