

# // Territorial Scenarios for the Baltic Sea Region in 2050 – BT 2050

Nordregio

Spiekermann & Wegener, Urban and Regional Research (S&W)

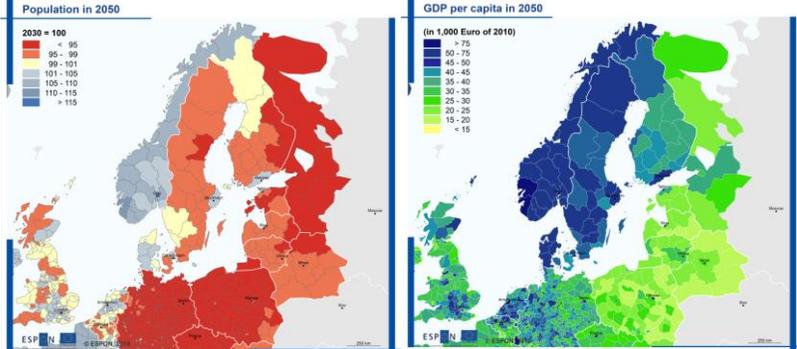
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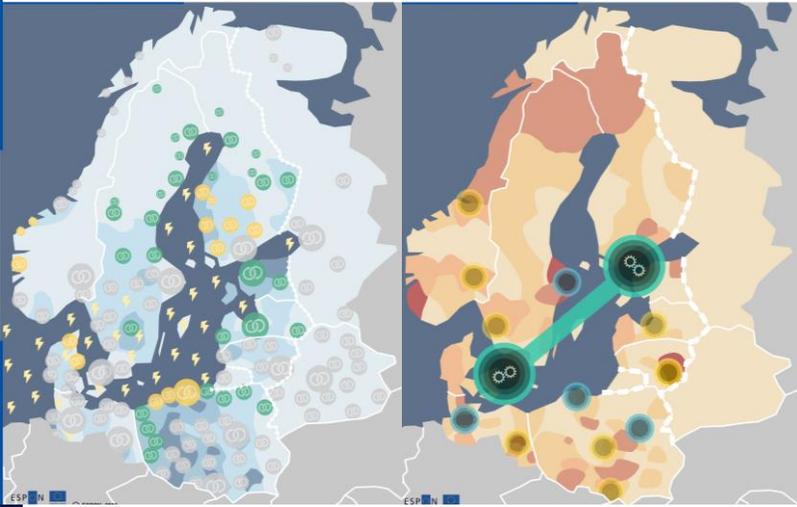


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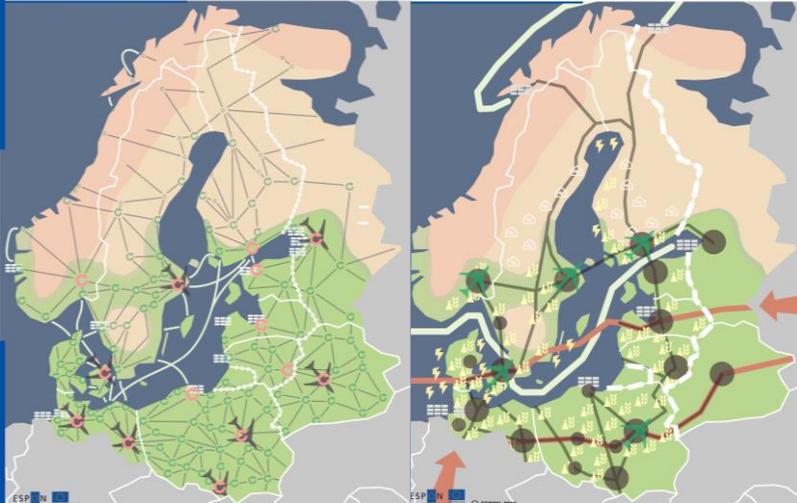
# The BT 2050 project



Circular Economy in the Baltic Sea Region, Scenario 2050



Transport and urban hierarchy in the Baltic Sea Region, Scenario 2050



# Aim & outcomes

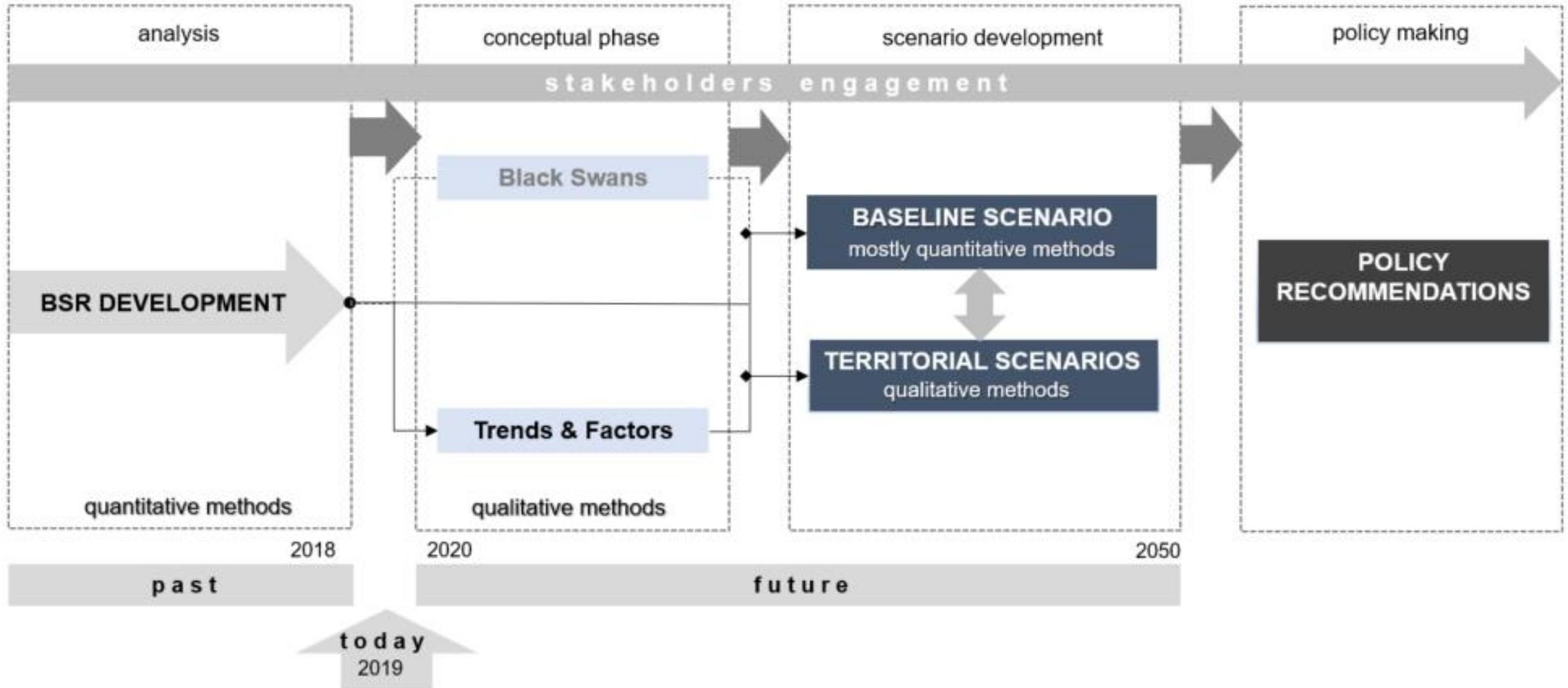
## Aim:

- Develop territorial scenarios for the BSR in order to increase evidence based on the territorial dimension
- Support the VASAB members in their work of designing and implementing sound policies for the future of the Baltic Sea Region

## Main outcomes:

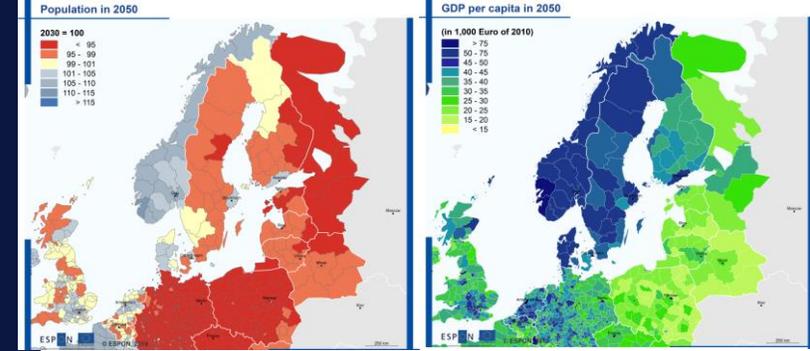
- An overview of the development of the region based on recent data
- Baseline Scenario for the Baltic Sea Region for the years 2030 and 2050.
- Two alternative territorial scenarios for the BSR 2050.
- Policy recommendations for the future of the Baltic Sea Region

# ESPON BT 2050 – research framework

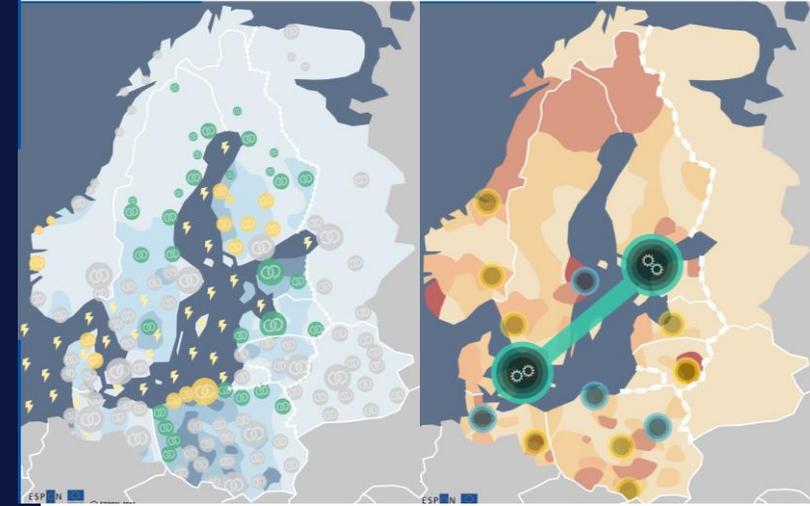


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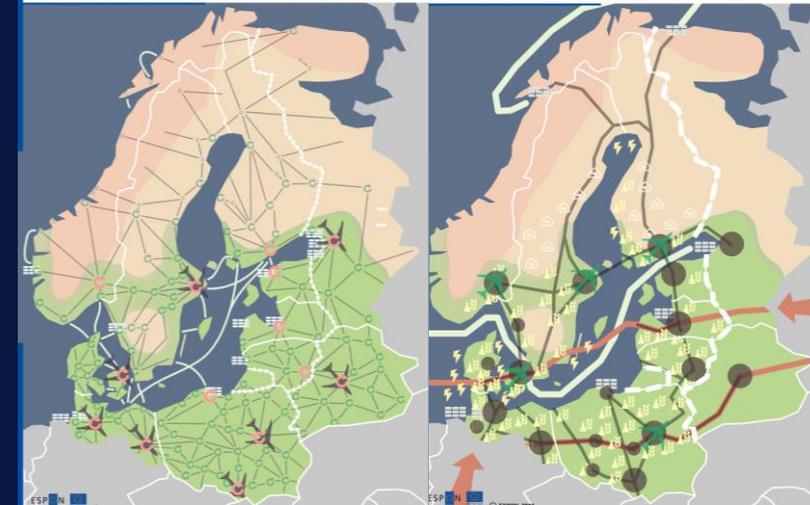
# The Baltic Sea Region today



Circular Economy in the Baltic Sea Region, Scenario 2050

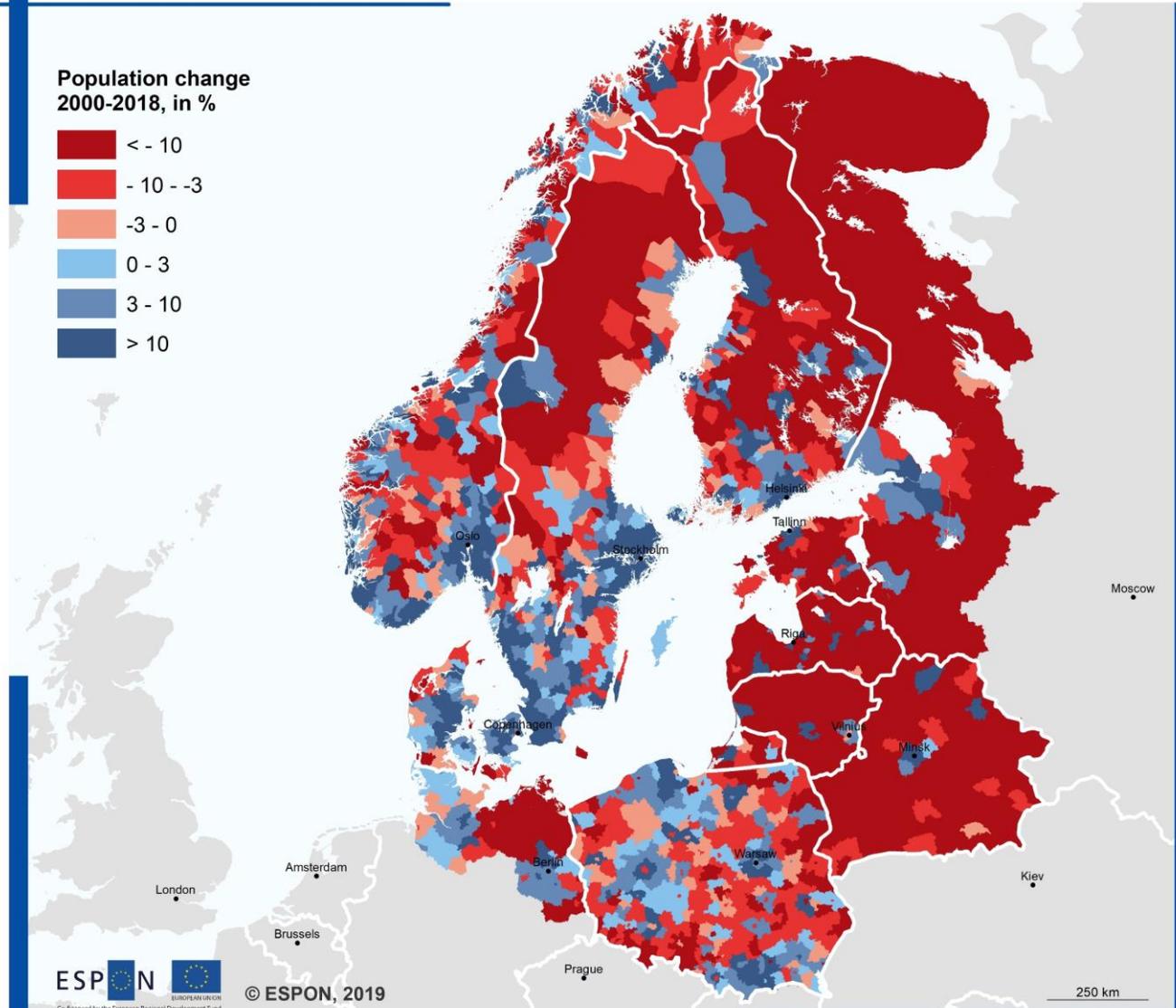


Transport and urban hierarchy in the Baltic Sea Region, Scenario 2050



# BSR population development

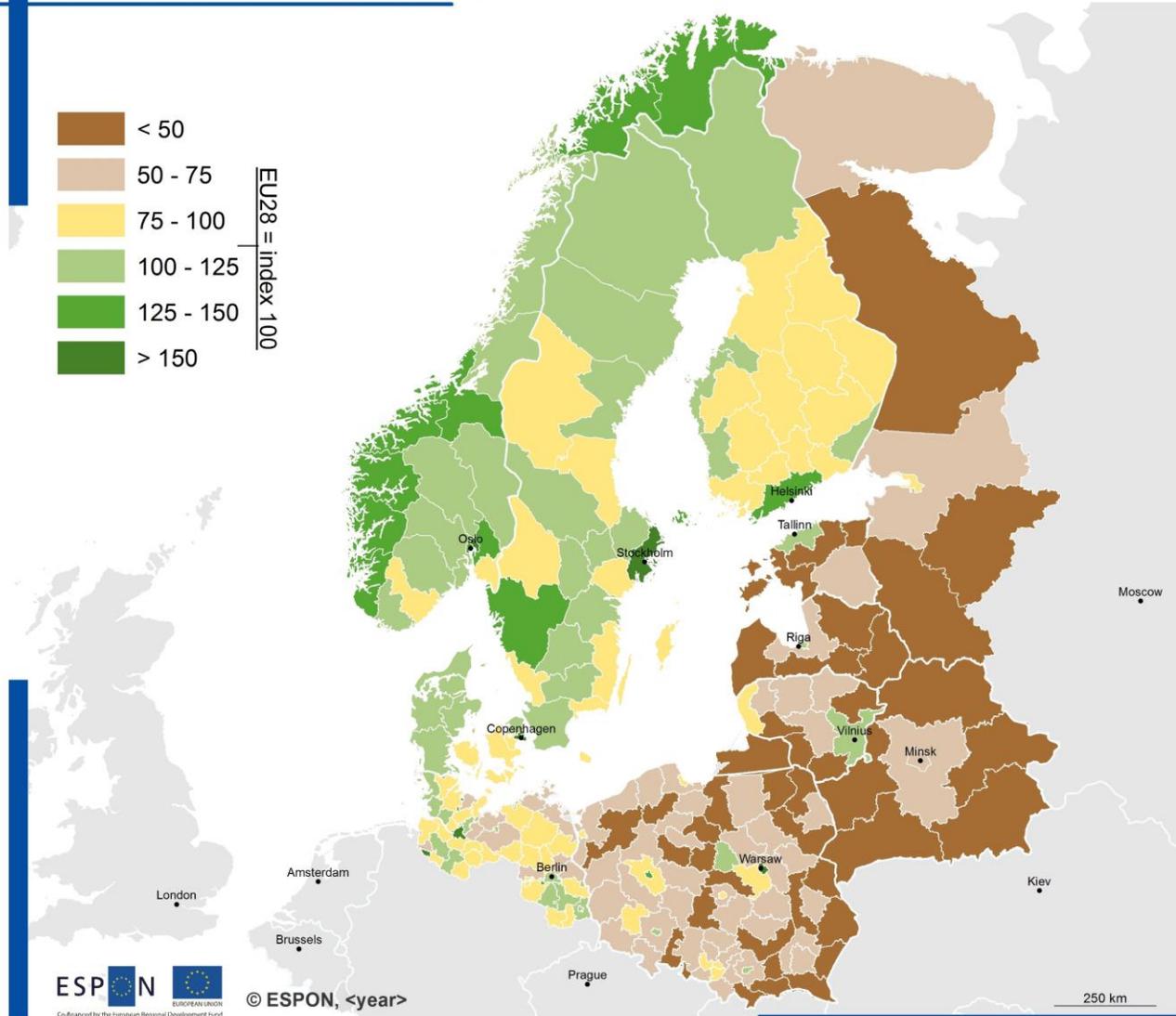
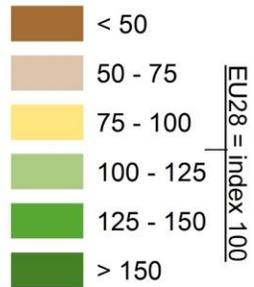
## Population change 2000-2018



- Although the BSR as a whole had a slow population increase between 2010 and 2018 most regions experienced population decline
- The eastern part have had higher depopulation than the Nordic region
- Depopulation of rural areas slowed down in the countries that received migrants in 2015-2016
- The urbanisation trend is strong in all BSR countries

# BSR economy

GDP (PPP) per capita 2016



- East-West disparities prevails in terms of GDP, but gap is closing
- Nordic countries and Germany had GDP per capita above the EU average in 2016.
- GDP is significantly higher in the bigger urban regions (especially in capital cities).
- The differences between regions are highest in Poland and Germany.
- A high share of the total trade flows in the BSR goes to other BSR countries
- For eight of the countries the biggest trade partner is another BSR country.

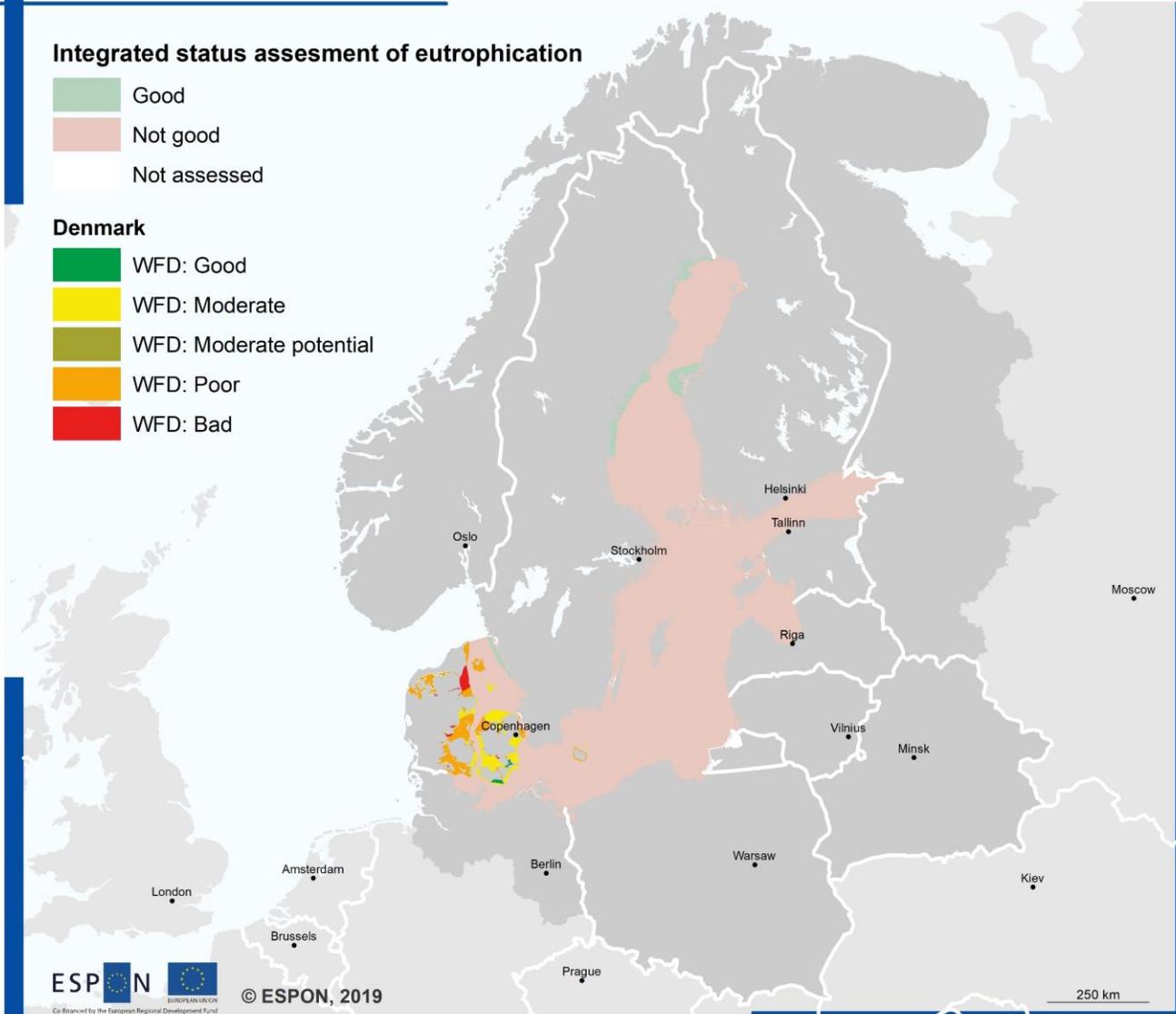
# BSR environment

## Eutrophication in the Baltic Sea 2011-2016

### Integrated status assesment of eutrophication



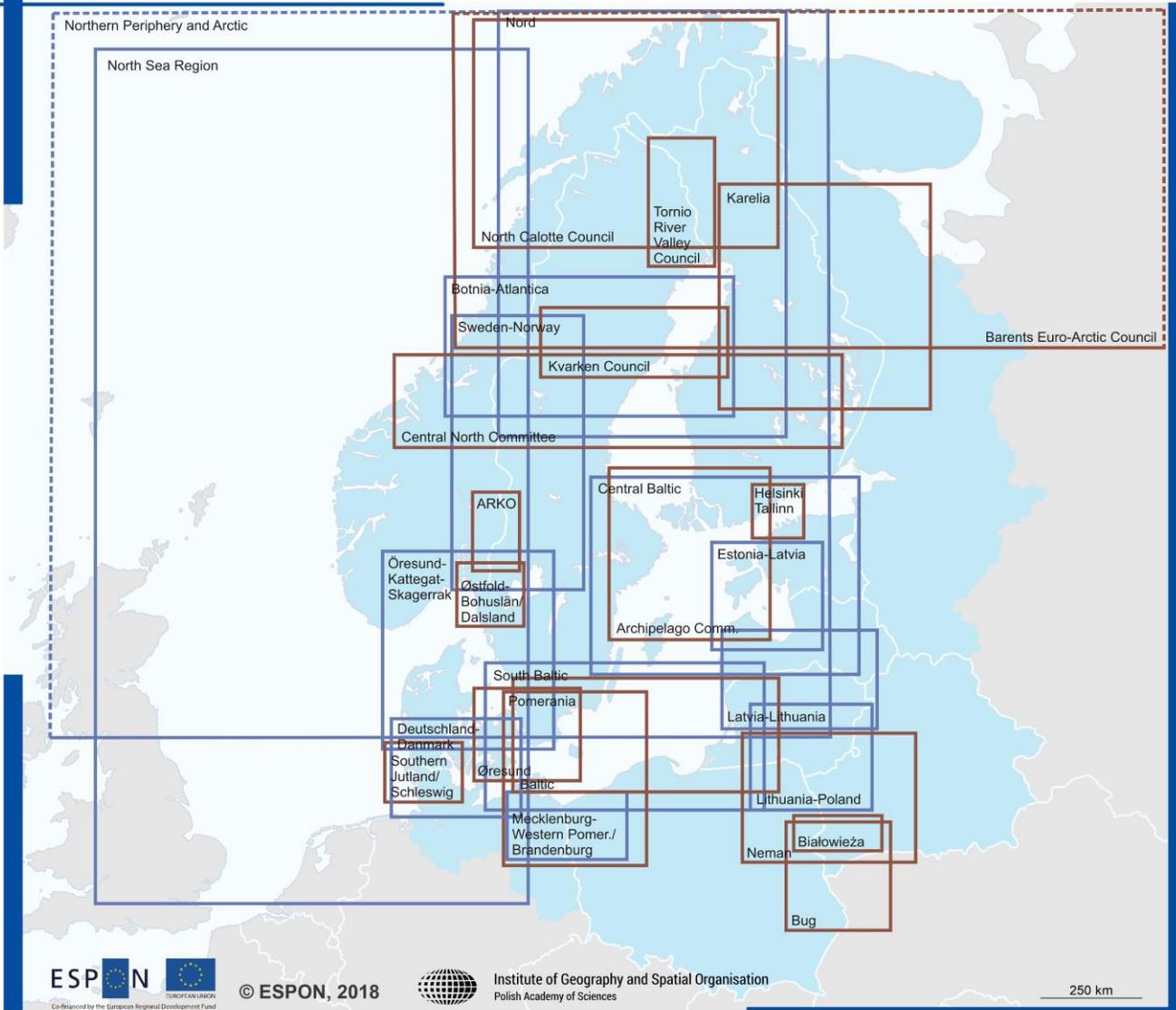
### Denmark



- The Baltic Sea is still suffering from Eutrophication, with at least 97% of the region being assessed as eutrophied in the 2011-2016 period
- Air pollution (PM10) is a concern in parts of the BSR (mainly in Polish cities). The trend is that PM10 levels are decreasing
- Only Latvia and Sweden had lower CO2 emissions than the EU average in 2017. Estonia, Denmark and Norway had the highest per capita emissions.

# BSR governance

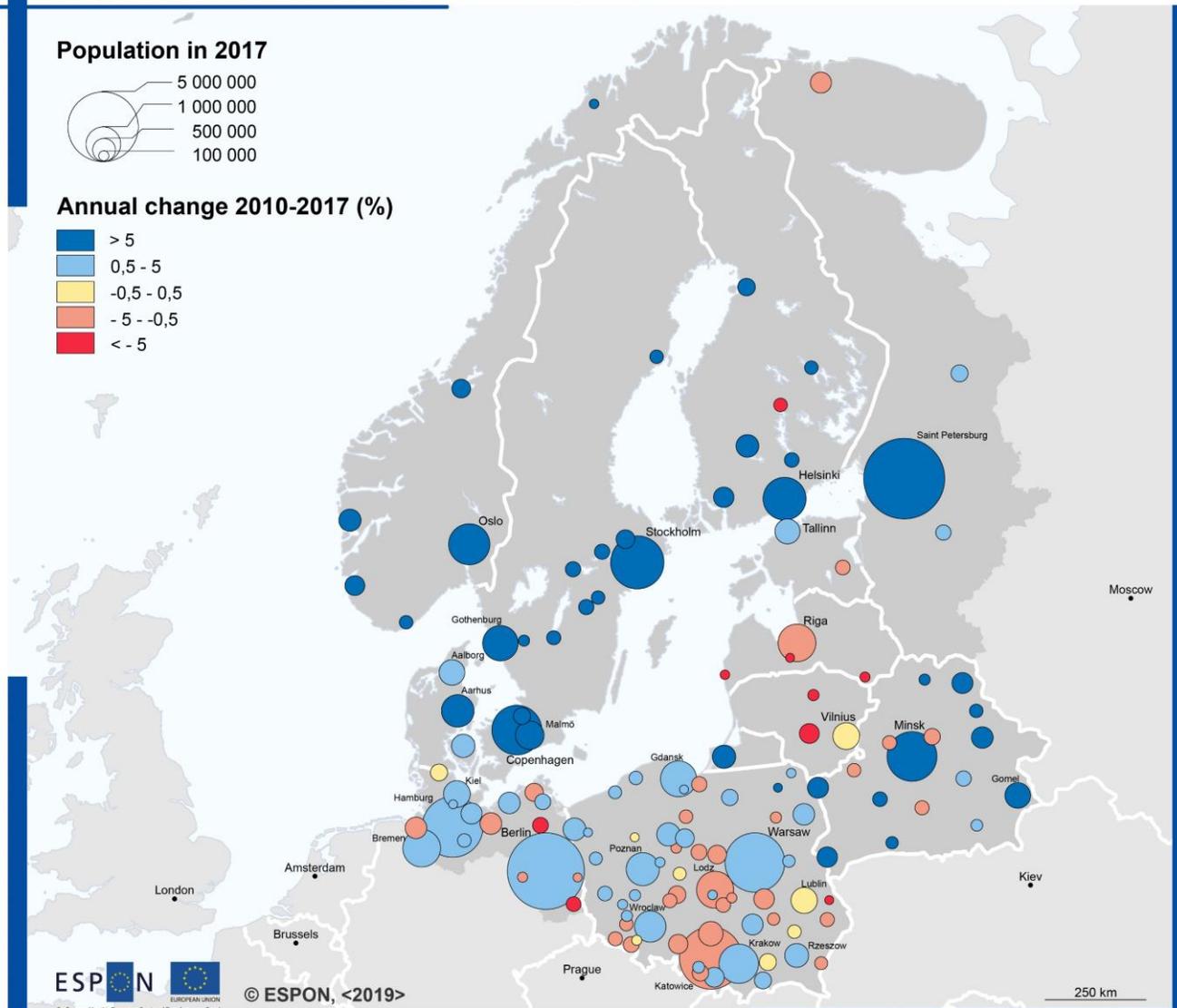
## The Baltic Sea Region



- Thick governance structure: great number of international organisations that cooperate in diverse fields
- The first macro-regional Strategy in Europe - the European Union Strategy for the Baltic Sea Region (EUSBSR) in 2009
- Distribution of competences in the field of spatial planning and territorial governance varies from country to country;

# The territorial profile of BSR

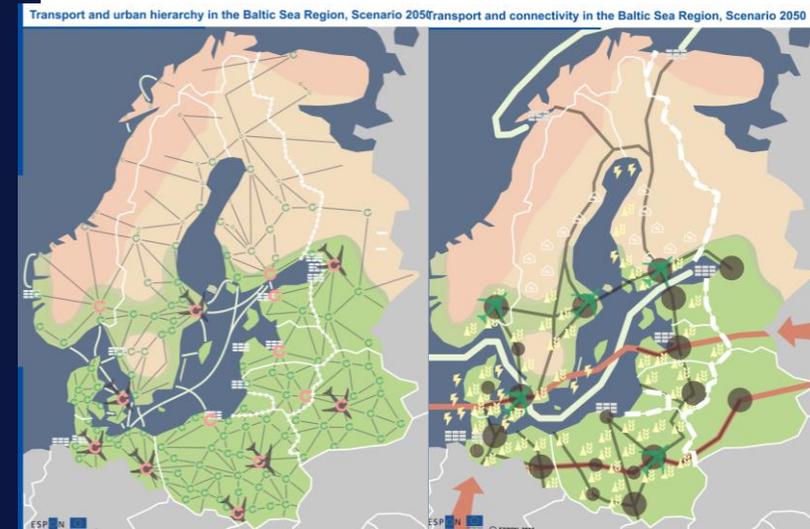
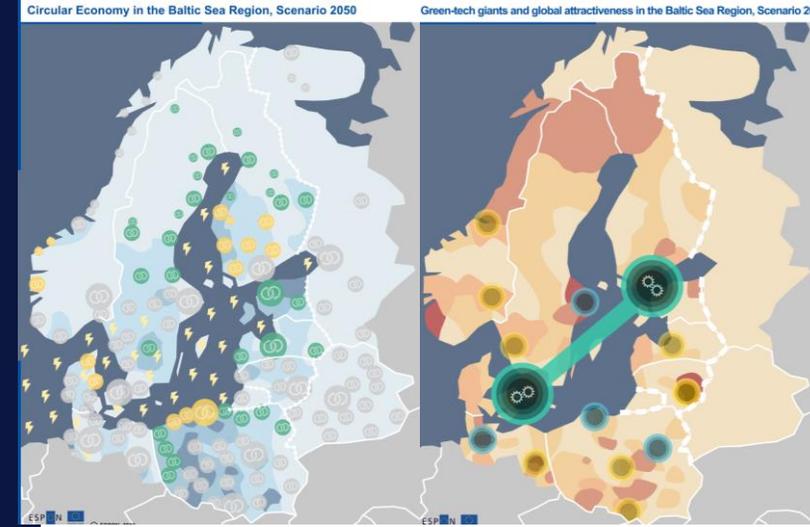
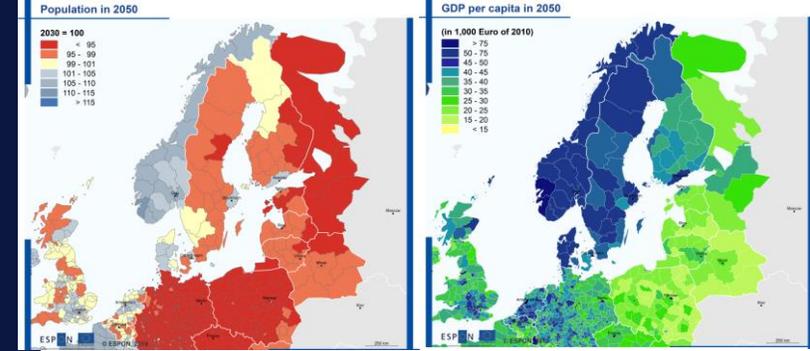
## Population size in Functional Urban Areas



- 135 Functional Urban Areas (FUA) with population above 55000 (urban core and the integrated surrounding area) compared to 660 in EU
- The 135 FUAs make out 63 % of the total population in the BSR.
- The FUAs had a population increase of 3.4% between 2010 and 2017. The rest of the BSR had a population decline of 2%
- Population density: The population density in the BSR is 43 inh/km<sup>2</sup> compared to the EU average of 115 inh/km<sup>2</sup>

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# Looking into the future of the Baltic Sea Region

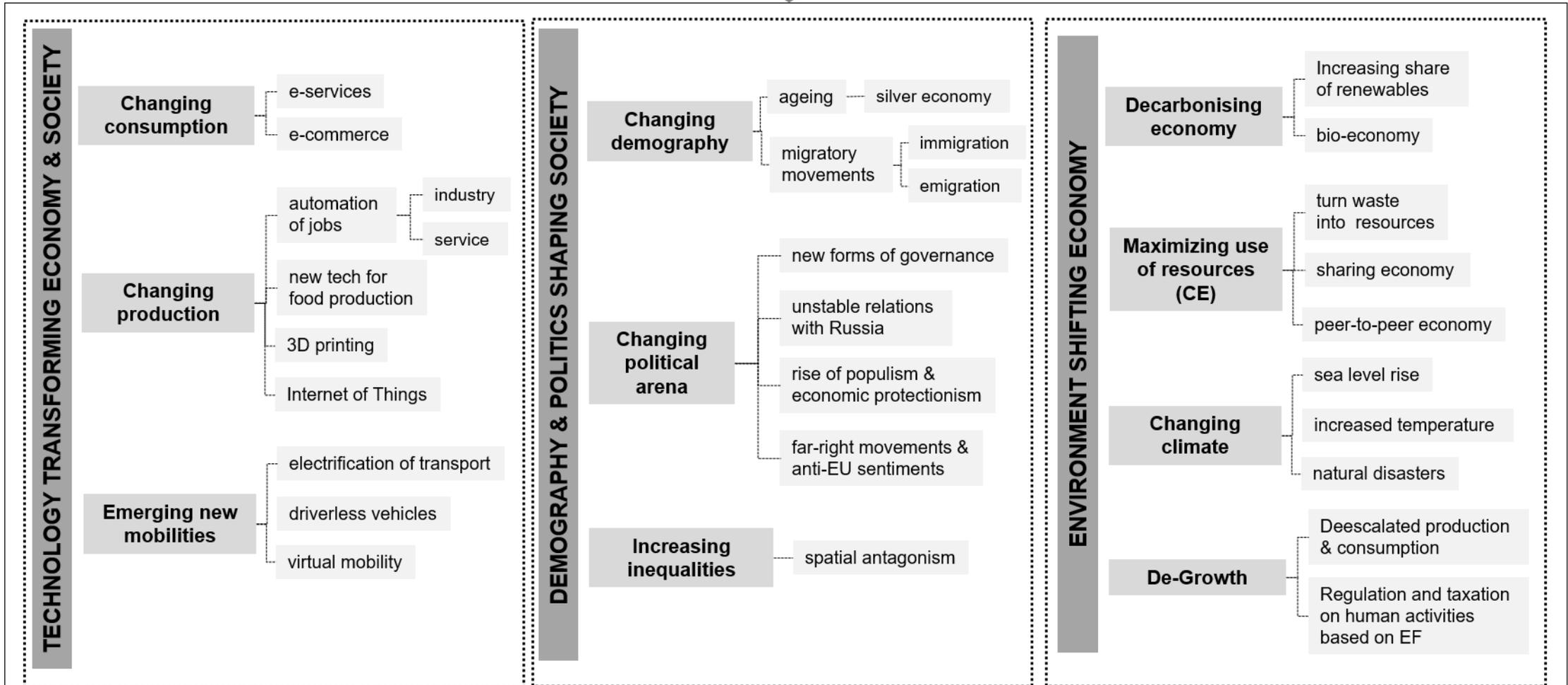


# BSR territorial development: trends and factors

## MEGA TRENDS

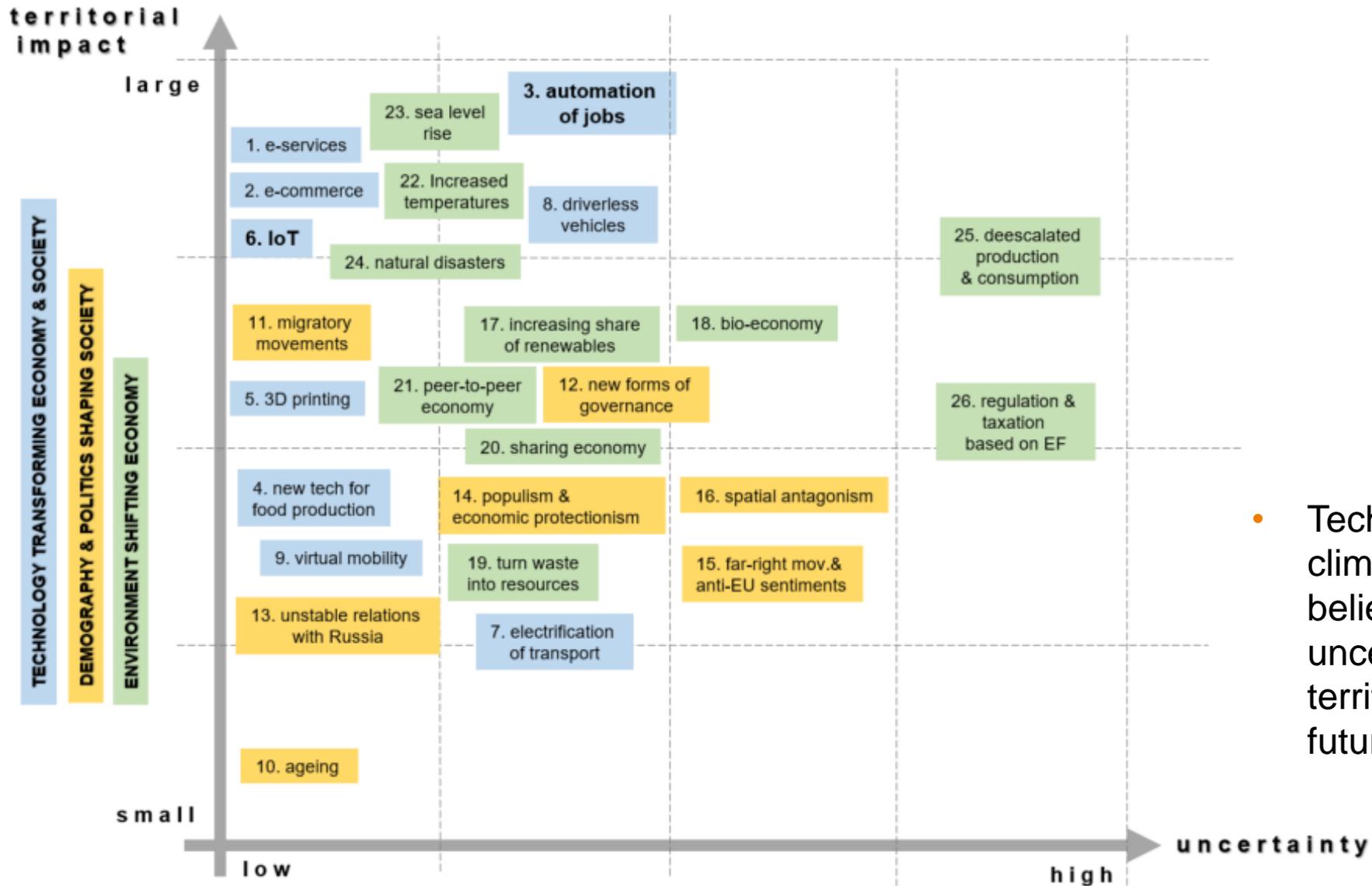


## PROCESSES



## TRENDS FACTORS

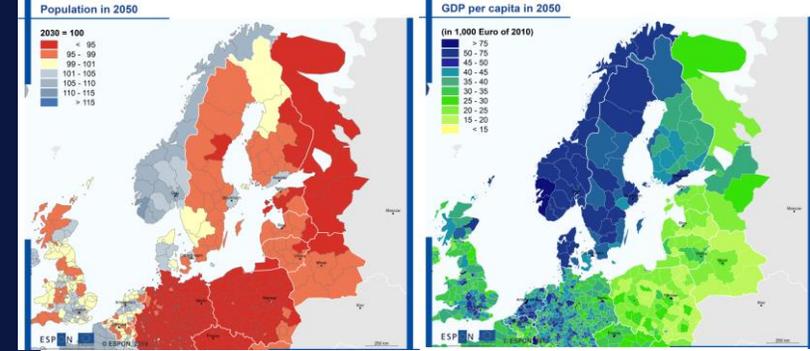
# Territorial impact x level of uncertainty



- Technological advancements and climate change factors were believed to have the lowest level of uncertainty and the most significant territorial impact for the BSR in the future

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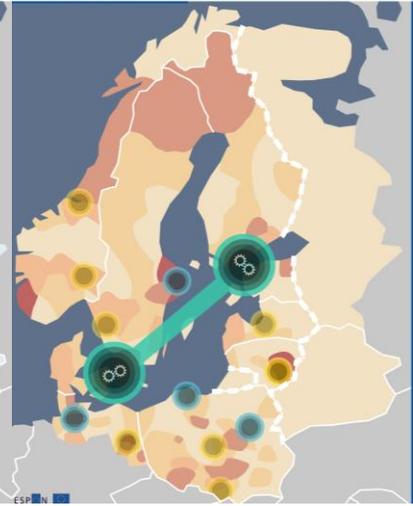
# BSR 2030 / 2050 Baseline scenario



Circular Economy in the Baltic Sea Region, Scenario 2050



Green-tech giants and global attractiveness in the Baltic Sea Region, Scenario 2050



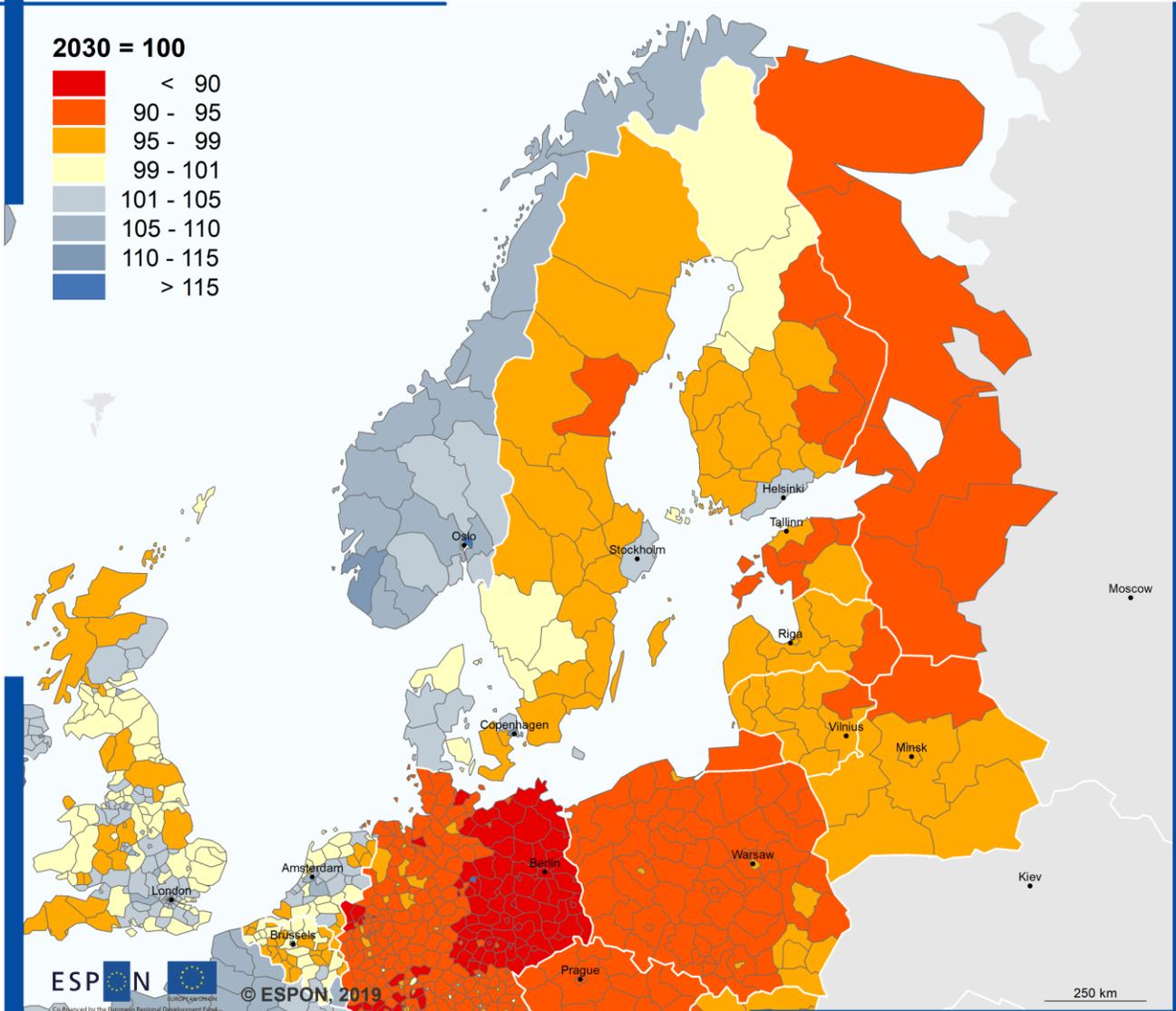
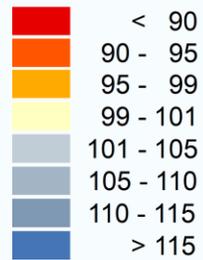
Transport and urban hierarchy in the Baltic Sea Region, Scenario 2050



# Population development

## Population in 2050

2030 = 100

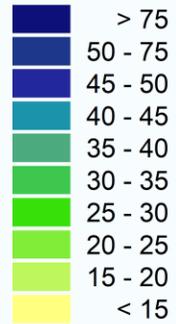


- Substantial population growth of agglomerations of the BSR, in particular in Nordic countries.
- Rural areas might face serious population losses.
- Rural areas in Nordic countries will start losing population only after 2030.

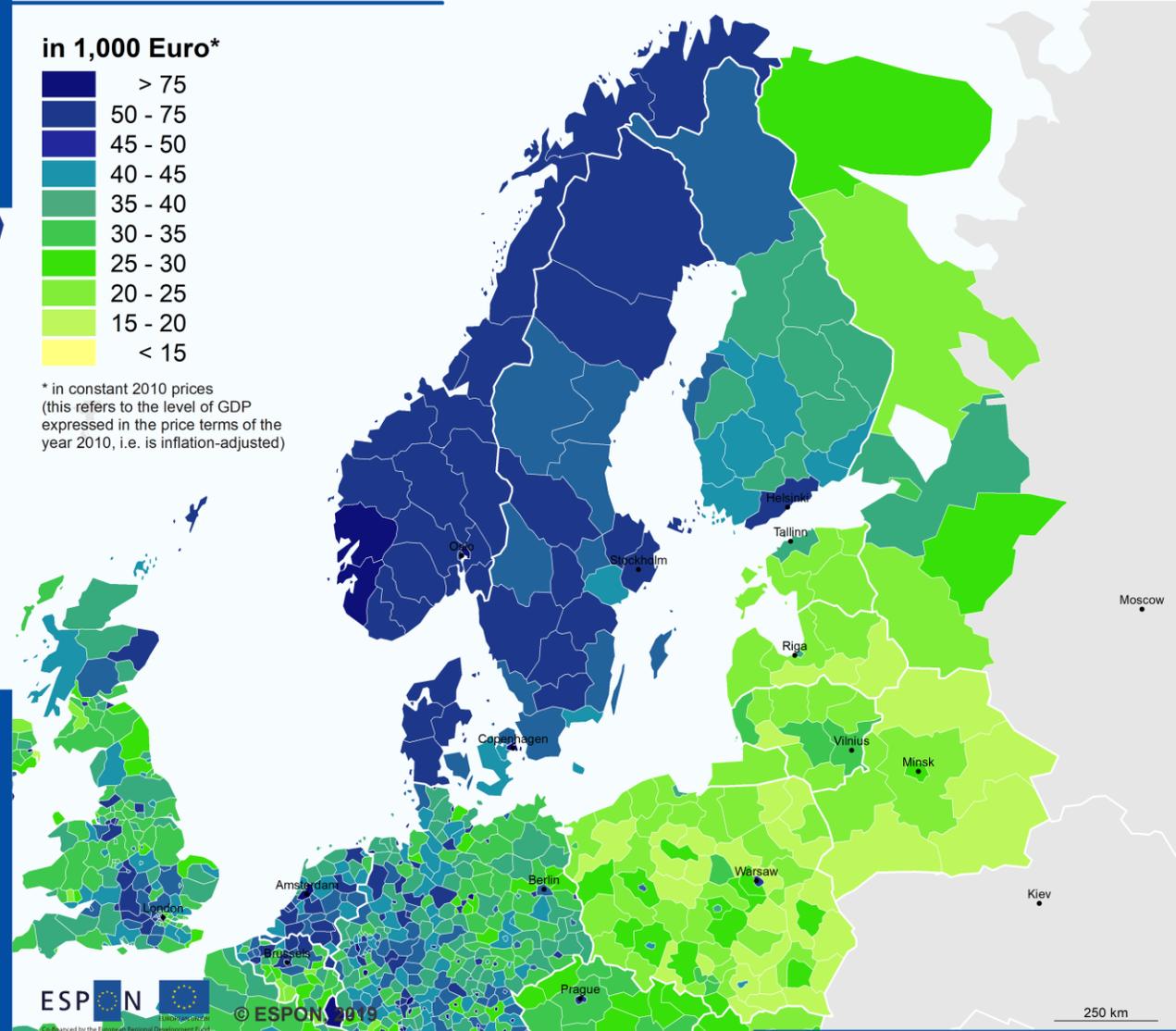
# GDP

## GDP per capita in 2050

in 1,000 Euro\*

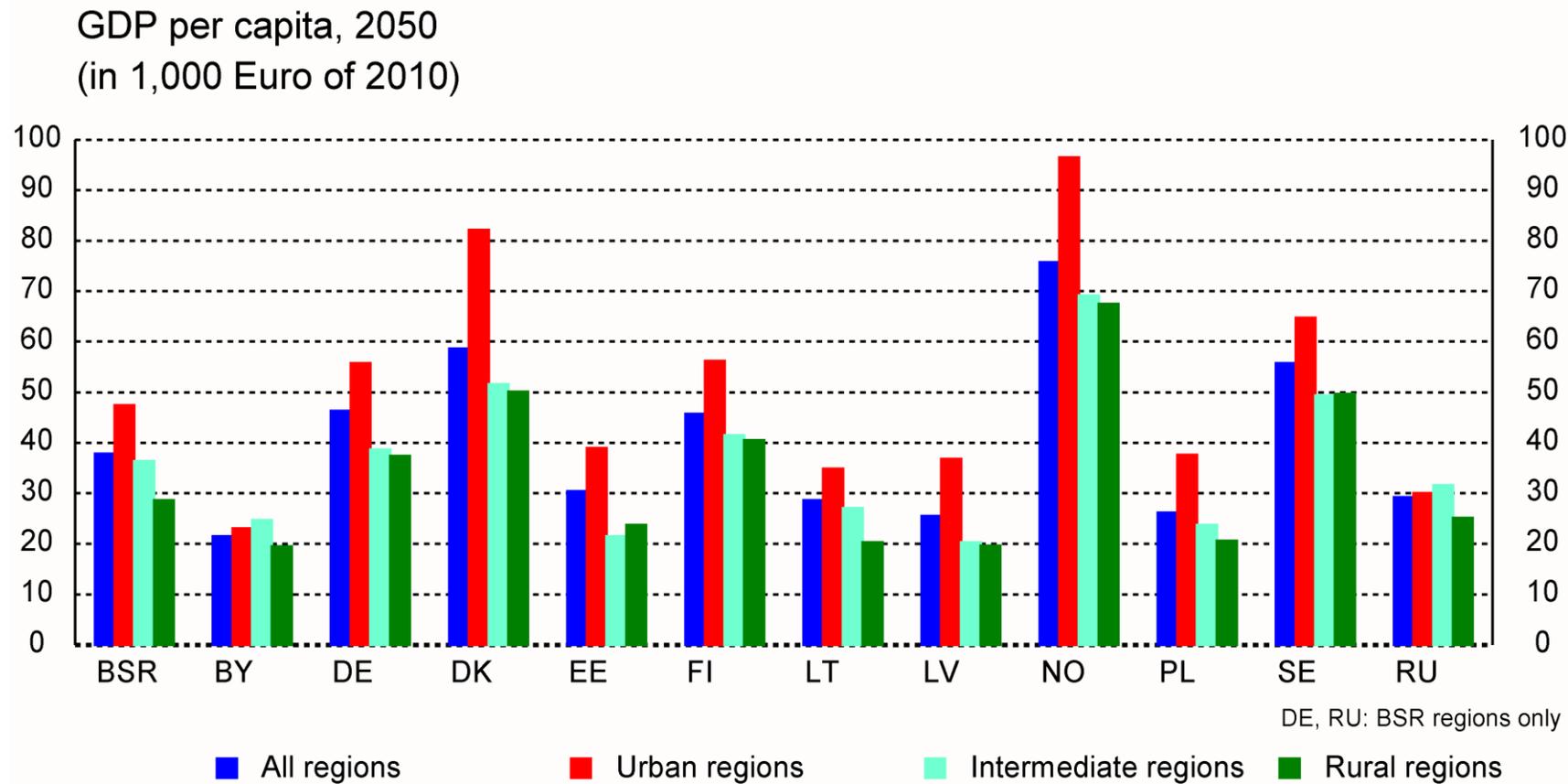


\* in constant 2010 prices  
(this refers to the level of GDP  
expressed in the price terms of the  
year 2010, i.e. is inflation-adjusted)



- Seems to be a persistent spatial distribution of higher and lower performing economic areas in the macro region reflecting still the old east-west divide of Europe.
- But exceptions from the general pattern: capital regions of Poland, the Baltic States, Belarus as well as the wider St. Petersburg region in Russia.

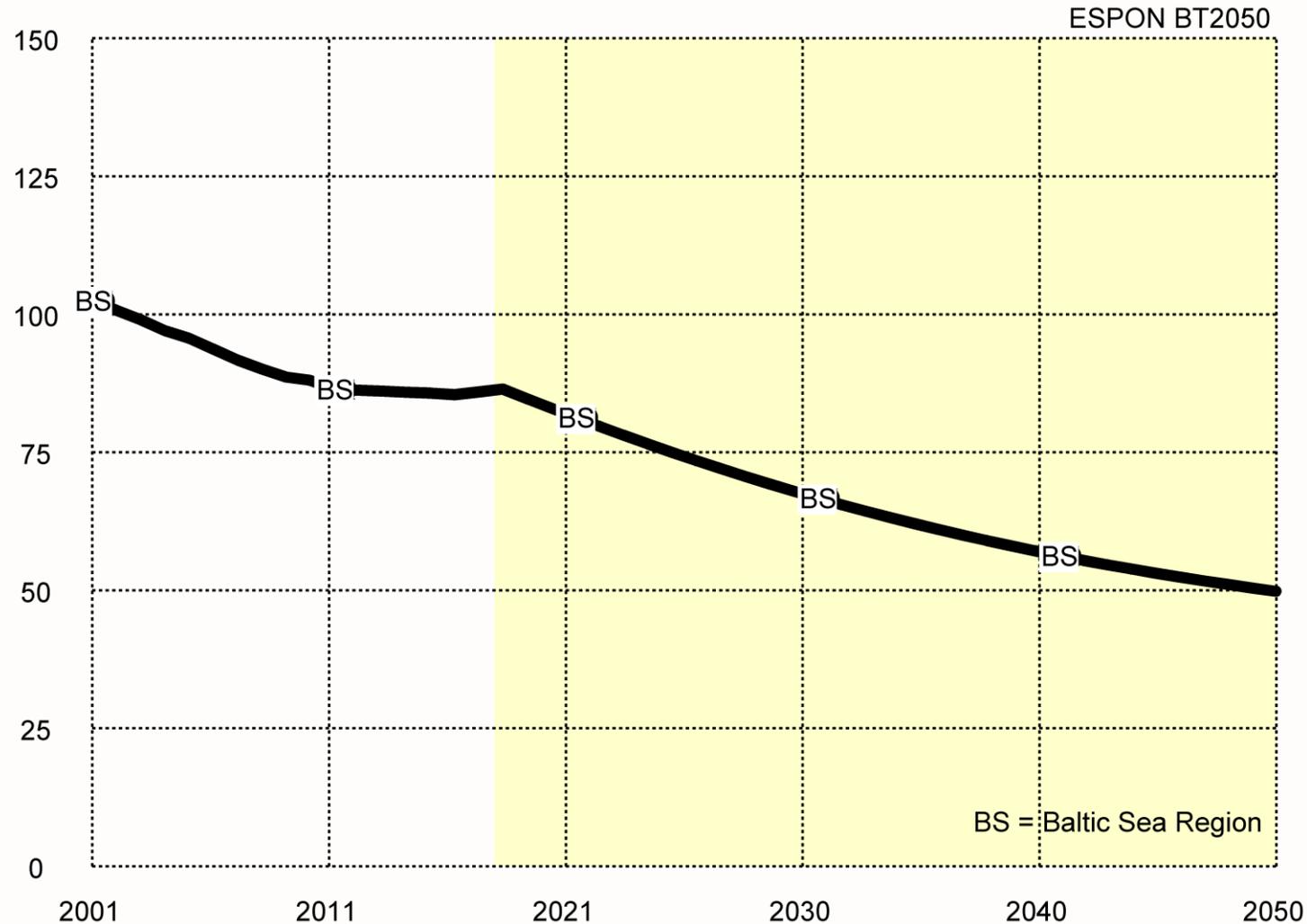
# Territorial implications



- Urban areas have much higher GDP per capita than intermediate and in particular rural areas.
- Urban areas of the Nordic countries have the highest economic performance by 2050, one of the reasons for the positive population development there.

# Territorial cohesion

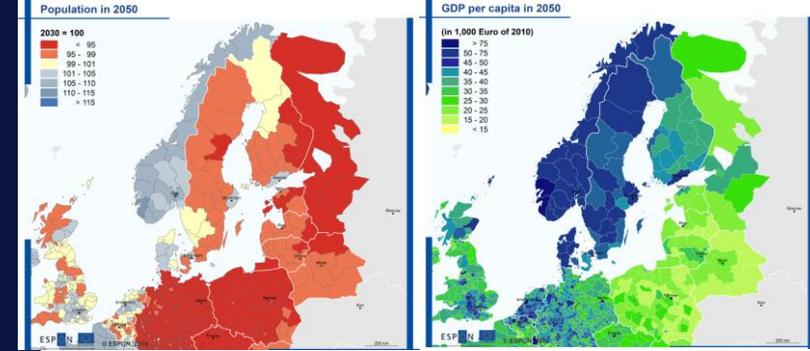
Coefficient of variation: GDP/capita



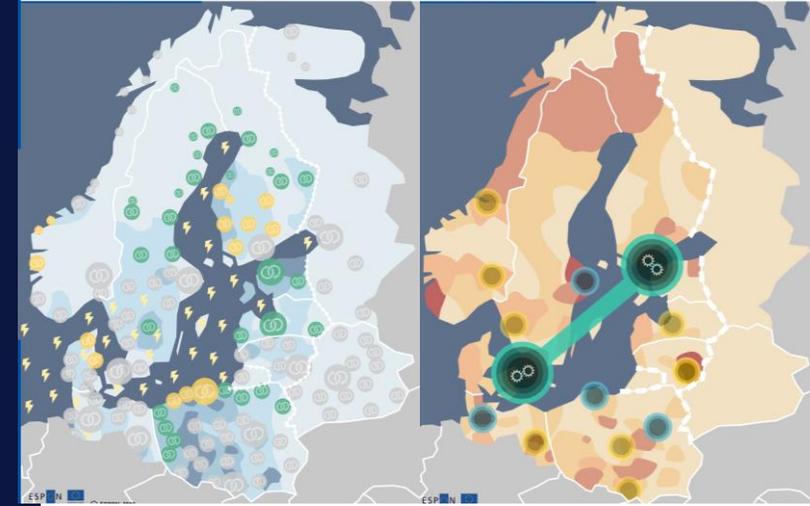
- Overall aggregate territorial cohesion within the BSR will continuously improve, but still clear internal disparities.
- Lagging countries of the BSR will narrow the gap to leading countries.
- In economic performance, the BSR is on average much closer to the European average in 2050 than in any period before.

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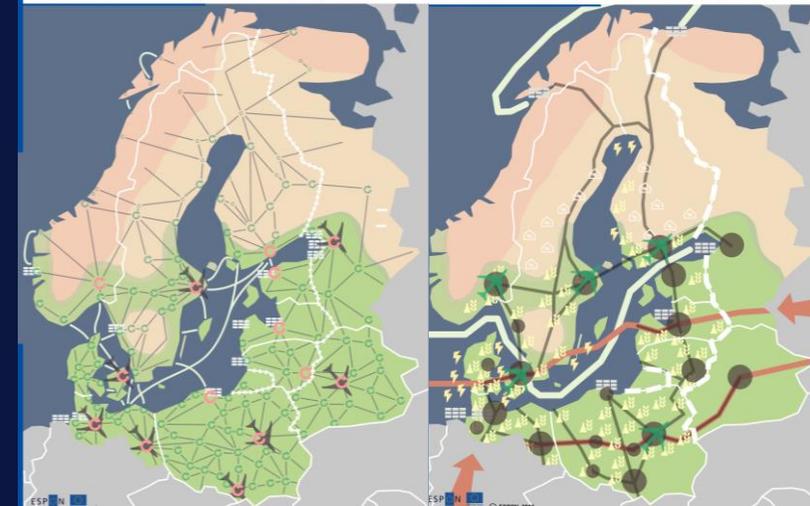
# BSR 2050 Alternative territorial scenarios



Circular Economy in the Baltic Sea Region, Scenario 2050



Transport and urban hierarchy in the Baltic Sea Region, Scenario 2050

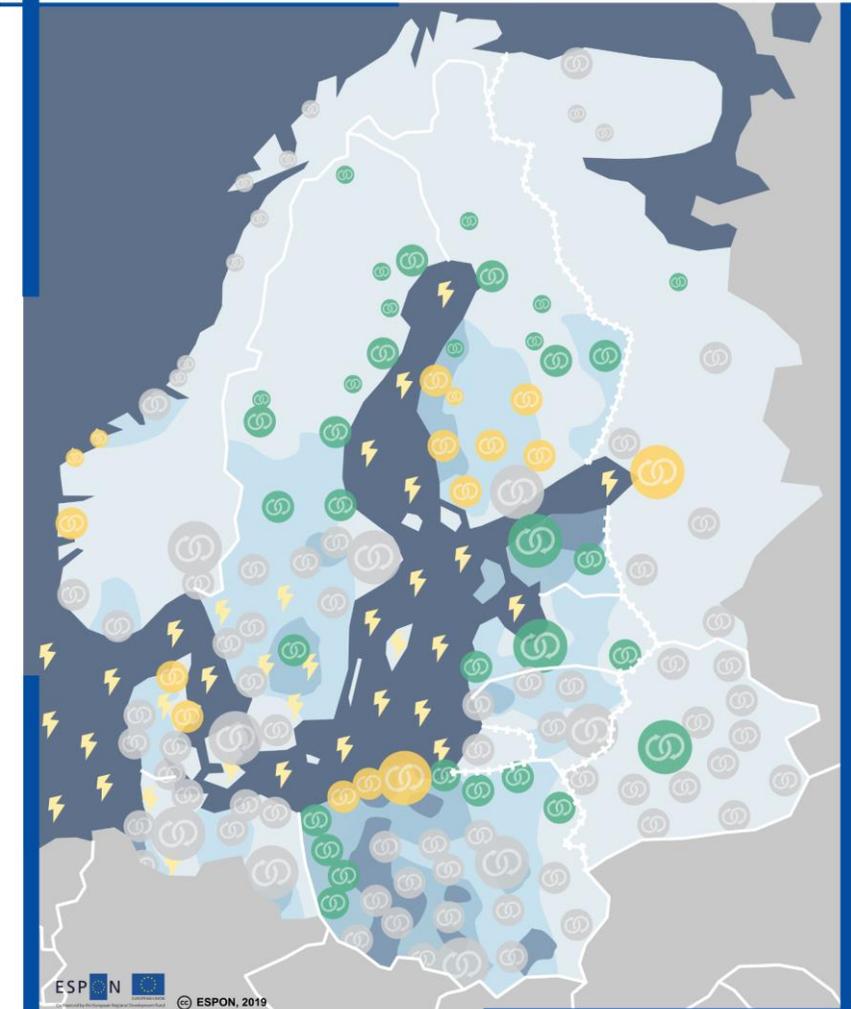


# Well-being in a circular economy – a RE-mind for a good life

- In 2050 the Baltic Sea Region has developed into a sharing and circular economy region, where citizens have consciously decided to change the existing linear economic model in favour of a better quality of life.
- A repairing and sharing culture, manufacturing and re-industrialisation and technology play a key role in this scenario.
- Decentralised patterns are observed, where second and third tier cities and towns become the main centres, reducing the importance and concentration in metropolitan and large urban areas.
- Regional manufacturing networks with high potential are found in the north and the west of Poland, around the regions of Wiekopolskie, Dolnoslaskie and Pomorskie, in the north east of Estonia (Kirde-Eesti), but also in some parts in Latvia and Lithuania, as well as south of Sweden and South of Finland.
- Material and technology economic centres are to be found in Aarhus and Aalborg in Denmark, in Gdynia and Gdansk in Poland, but also in Bergen, Norway, and in Finland, among others in Turku, Tampere and Kuopio.

## Decentralised circular economies

Baltic Sea Region 2050: Scenario 'Well-being in a circular economy'



### Legend

- Economy with a focus on technology provision
- Economy with a focus on providing material
- Diversified circular economy
- ⚡ Renewable energy production

- High potential for regional manufacturing networks
- Low potential for regional manufacturing networks

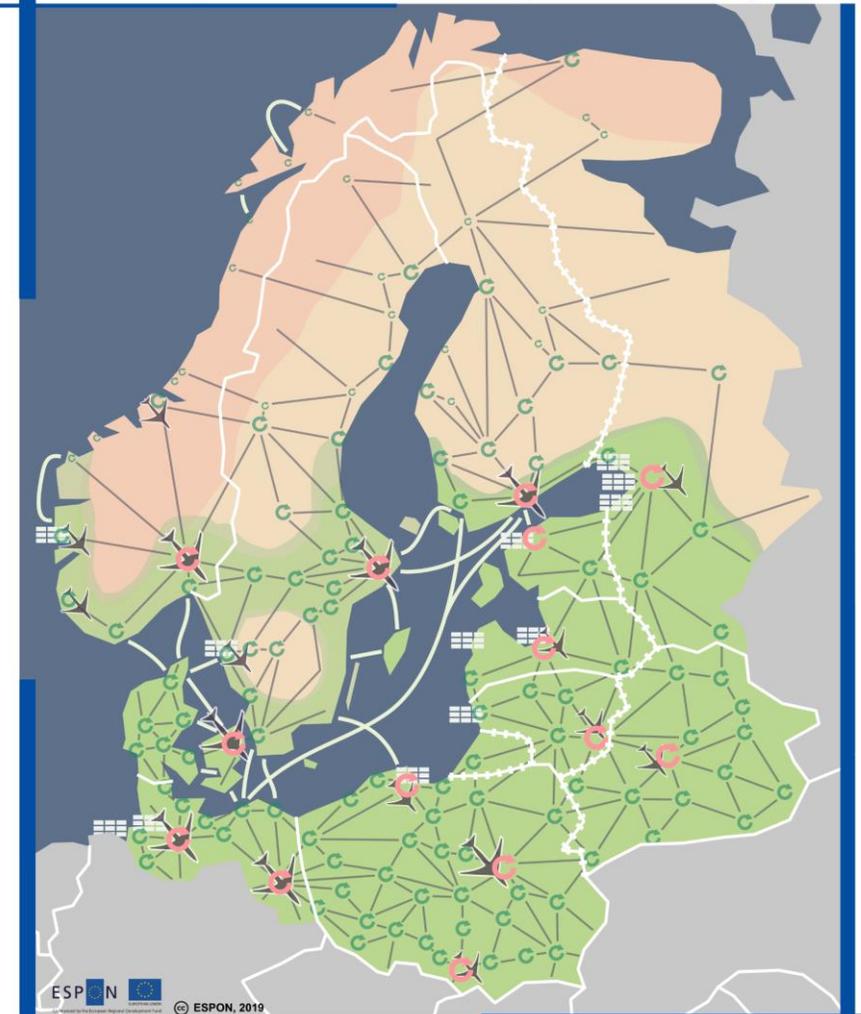
- Cooperation on external borders

Regional level: NUTS 0  
Source: ESPON BT2050 project, Spatial Foresight, 2019  
Origin of data: based on different quantitative and qualitative sources, such as Eurostat data, ESPON and VASAB reports, and BSR, national and regional studies  
© Spatial Foresight for administrative boundaries

# Well-being in a circular economy – a RE-mind for a good life

- Bio and organic agricultural production is in focus, while agricultural practices have become less intense.
- Freight transport and logistics become secondary due to the regionalization of production, the long livelihood of products due to their high quality, the minimalist choice of the way of living.
- Logistic centres depart, regional transport networks arrive. The importance of global and European airports in the region declines, with the airports of Copenhagen, Hamburg, Berlin, Warsaw, Krakow, Stockholm and St Petersburg serving smaller freight and passenger flights with fewer frequency than before.
- Given the special geomorphology of the region, places where a bio and organic production is possibly are limited. These mainly regard the agricultural and arable land in the southern part of the Baltic Sea Region, namely Poland, Lithuania, Latvia, north of Germany, parts of Russia and Belarus.
- The improvement of the environmental situation of the Baltic Sea Region is a priority of the citizens and governments in the region, with the aim of improving the quality of life and eudaimonia of the people.

Regional centres and transport  
Baltic Sea Region 2050: Scenario 'Well-being in a circular economy'



**Legend**

- |                                 |                         |
|---------------------------------|-------------------------|
| Declining metropolis            | Declining large air hub |
| Gaining regional centre         | Declining small air hub |
| Regionalised transport network  | Declining sea hub       |
| Remaining sea routes            | Food production zone    |
| Cooperation on external borders | Limited food production |

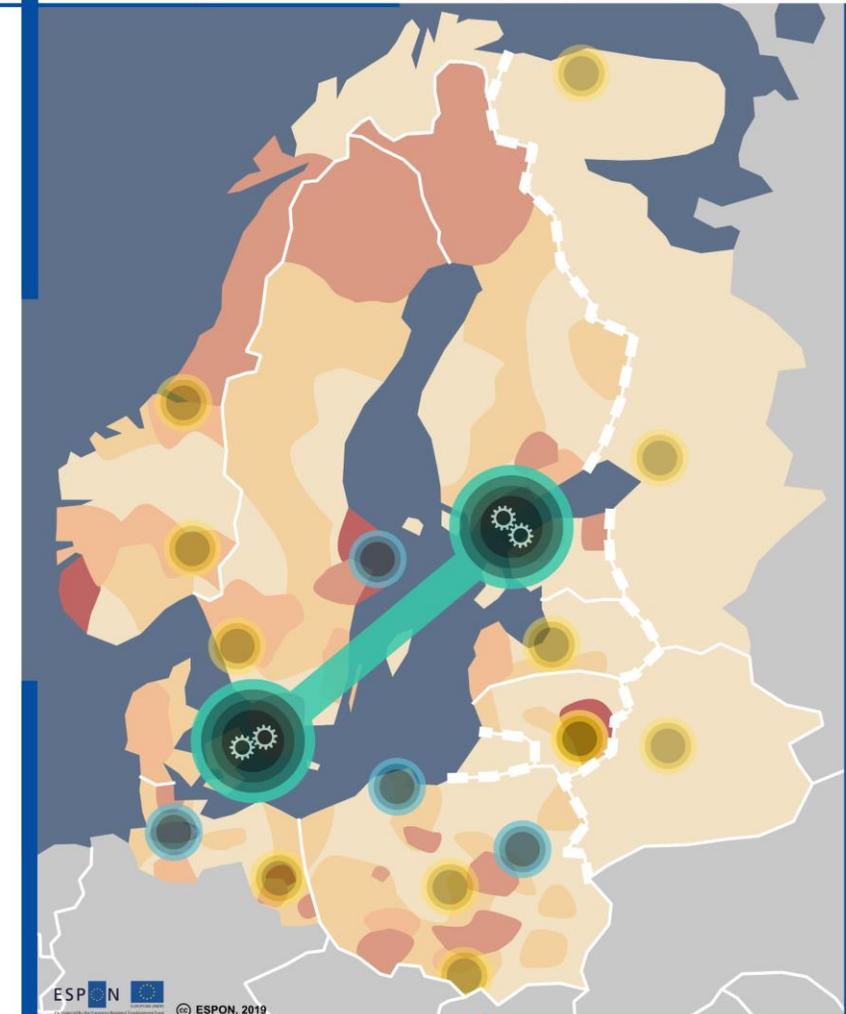
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# Growing into green-tech giants – the ecological footprint clear-up

- In 2050 the Baltic Sea Region is a giant in green technology. The achievements of the 4th industrial evolution are in the epicentre of everyday life. This mix of innovation and green technology have led to a reduction of the ecological footprint of the region.
- High-end innovation and the race for more growth have led to an increased 'guilt-free' consumerism.
- There is increasing concentration of economic activity around the present metropolitan areas and growth centres which in most cases are the capital cities.
- The four global greentech giants of the Baltic Sea Region are in the cross-border global urban network of Copenhagen and Malmo and Helsinki and Tallinn.
- Other urban green innovators follow such as urban areas in Germany, Poland and Sweden, and more specifically Hamburg, Gdansk, Warsaw and Stockholm.
- Green innovation happens in more urban centres such as urban centres of Trondheim, Gothenburg, Berlin, Lodz, Krakow, Vilnius and Riga.
- A high number of foreign direct investments is concentrated in the area of Helsinki-Uusima, Stockholm, Malmo, some of which are also among the green tech giants, followed by Vilnius and Krakow. Less potential is seen in the rest of Finland and southern parts of Norway, excluding Stavanger, and Sweden, excluding Malmo and Stockholm.

## Green-tech giants and global attractiveness

Baltic Sea Region 2050: Scenario 'Growing into green-tech giants'



### Legend

- Green circle with gear icon: Green-tech global giants
- Blue circle with gear icon: Green-tech innovator
- Yellow circle with gear icon: Green innovation diversification area
- Orange rectangle: Cooperation on external borders
- Red rectangle: High number of extra-EU FDI
- Yellow rectangle: Low number of extra-EU FDI

Regional level: NUTS 0  
Source: ESPON BT2050 project, Spatial Foresight, 2019  
Origin of data: based on different quantitative and qualitative sources, such as Eurostat data, ESPON and VASAB reports, and BSR, national and regional studies  
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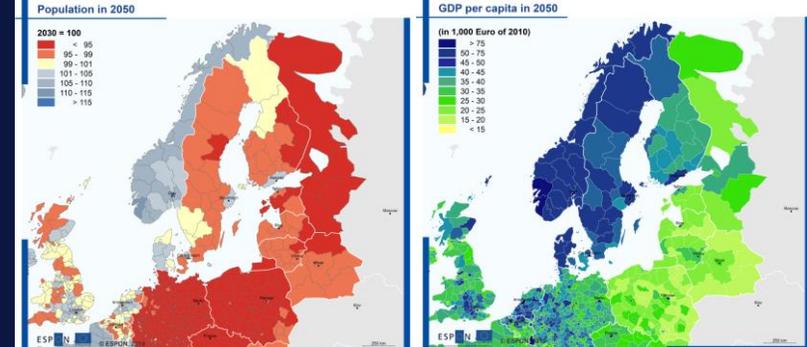
# Growing into green-tech giants – the ecological footprint clear-up

- Transport hubs gain importance and global air connections stay global, with the rest following.
- The airports of Stockholm, Copenhagen, Oslo, Helsinki remaining global hubs and increasing further. The airport of Warsaw, in particular, has gradually become a global gateway, being a bridge between the East and the West. Smaller airports continue playing a role in other major cities of the region, while they mainly serve for passenger flight.
- Ports gain more importance, particularly the ports in Gdansk and Riga, but also the German ports in Hamburg and Bremerhaven. Ports in Russia, such as the Ust-Luga port remains a high calibre gateway.
- Renewables production in limited places, potential is mainly located around Denmark and north of Germany, the South of Sweden, in the coastal area between Sweden and Finland.
- Smart farming gives a solution that affects most territories. Although the food production zone regards mainly the south part of the Baltic Sea Region, excluding the large northern parts of Sweden and Finland and most of Norway, these places can apply smart farming and genetically modified crops solutions and new technologies to change this patterns.
- The agricultural expansion towards the north of the region is done through the application of greenhouse farming, which, thanks to the cleaner energy, is available also in the least agricultural production parts of the region.



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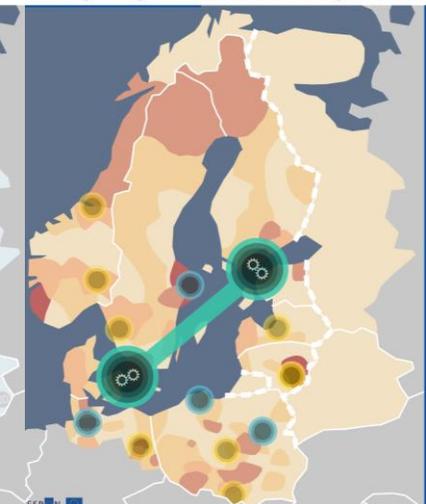
# Policy recommendations



Circular Economy in the Baltic Sea Region, Scenario 2050



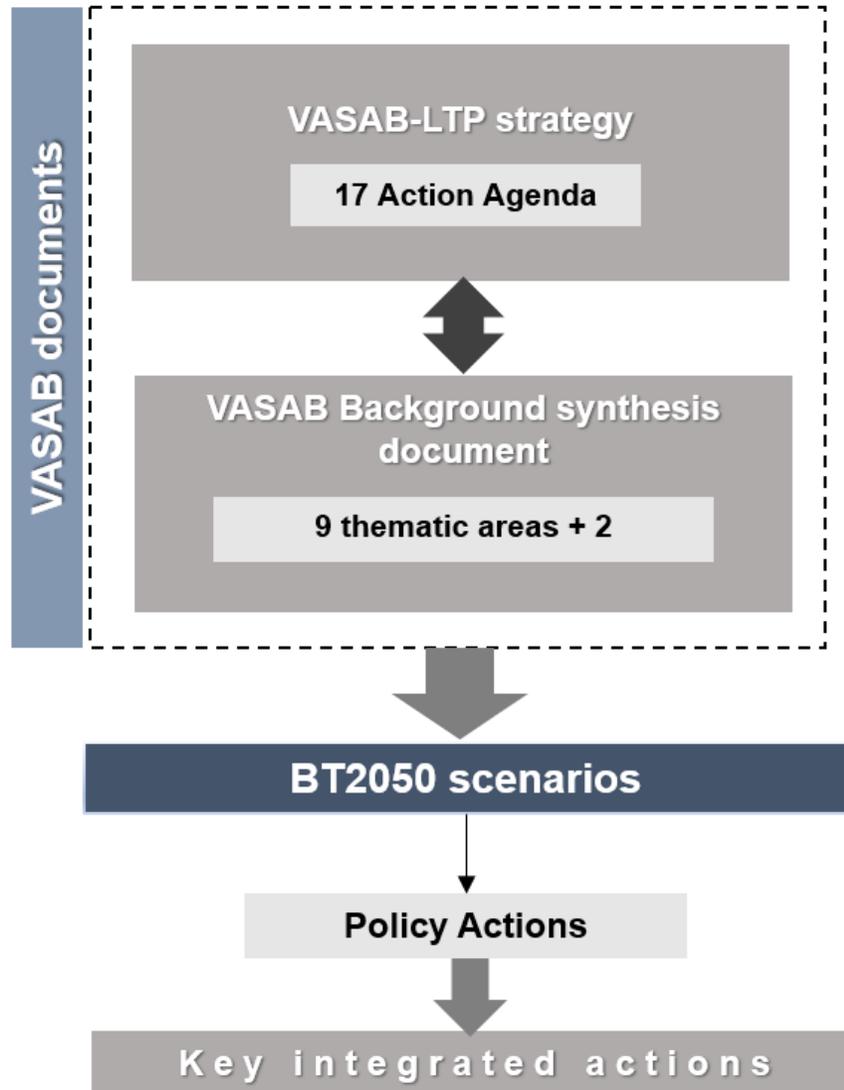
Green-tech giants and global attractiveness in the Baltic Sea Region, Scenario 2050



Transport and urban hierarchy in the Baltic Sea Region, Scenario 2050



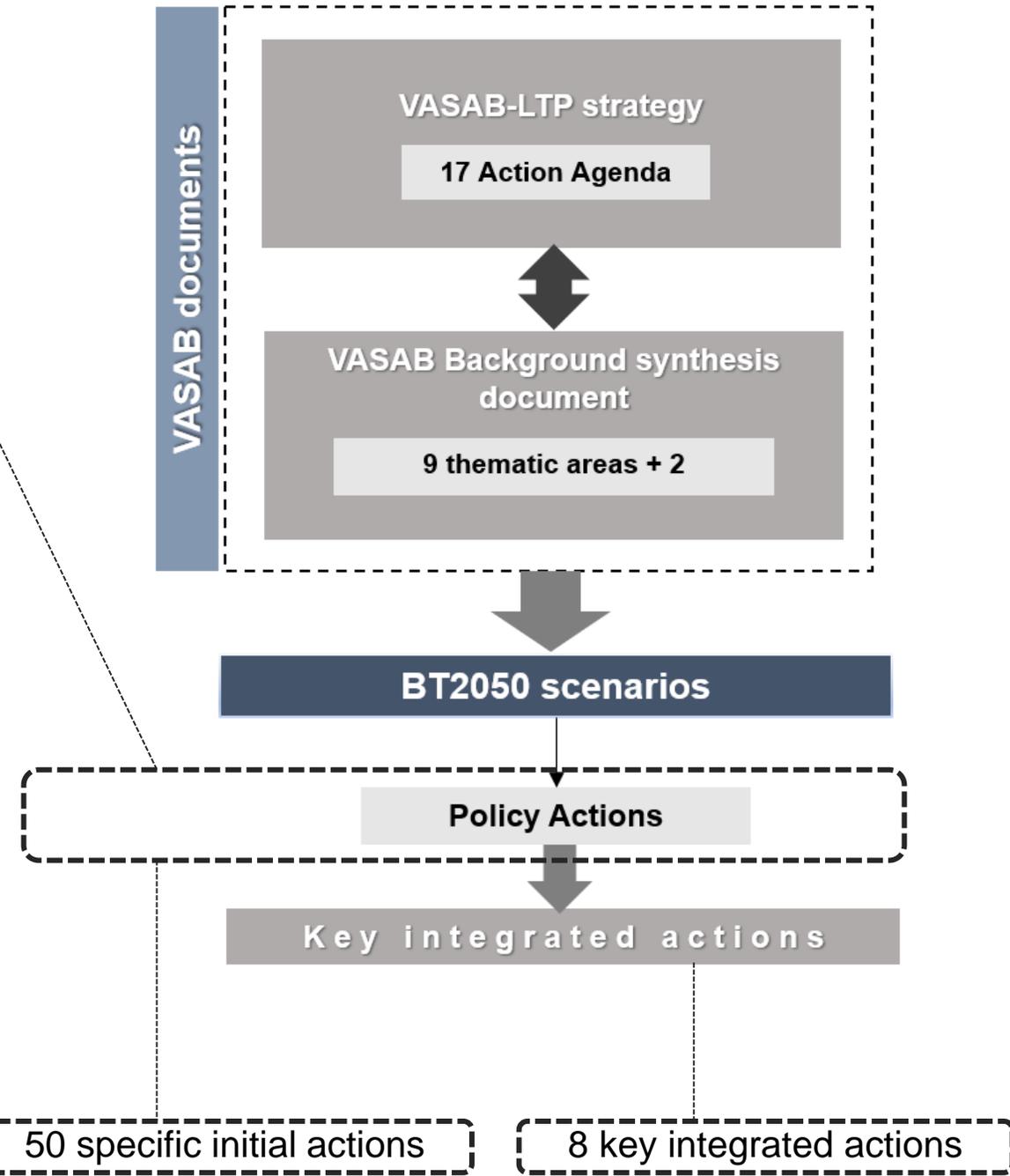
# The BSR 2030 vision – VASAB - LTP



- Seventeen specific actions from VASAB-LTP are correlated to the eleven chapters of the VASAB LTP Background Synthesis Document leading to the nine thematic areas + two additional (environment and society)
- The **recommendations** for each thematic area are structured as follow:
  - (i) begins with an account of the thematic area with description of the ‘Action Agenda(s)’ associated to each theme;
  - (ii) reflection on how the Baseline Scenario and unforeseen events (black swans) may impact the ‘action agenda(s) is made
  - (iii) concludes with a reflection on how aspects / features of both territorial scenarios (Well-being in a C-E and Growing into a Green-tech giant) are related to each thematic area and ‘Action Agenda(s)’.

# The VASAB – LTP & the BT 2050 scenarios

		specific initial actions	
THEMATIC AREAS		Well-being in a C-E	Green-tech giants
1	Economic integration, growth and trade	2	2
2	Metropolises as main hubs and centres of innovation	2	3
3	Small and medium sized cities	2	3
4	Strengthening urban and rural relations	4	3
5	Relations with EU and East neighbours	2	3
6	Accessibility/transport	3	4
7	Energy	1	1
8	Technology/internet	2	3
9	Sea use and maritime spatial planning	1	4
10	Environment	2	1
11	Society	1	1
		22	28



# Key integrated actions

- Strengthening the network of Baltic medium-size cities.
- Supporting cross border service networks based on new technologies.
- Connecting the Baltic infrastructure on the regional level.
- Supporting cross border metropolises.
- Using the Baltic Sea assets wisely.
- Adapting to climate change, water and green cross-border clusters.
- Attracting migrants to the BSR.
- Improving BSR integration through data integration, monitoring, research and spatial planning.



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# Thank you

BT 2050 research consortium