ESPON

Co-funded by the European Union
Interreg

EUROPEAN RESEARCH PROJECT //

# Collecting and analysing data for the post-27 INTERREG (Core-IB)

## Poland-Denmark-Germany-Lithuania-Sweden

**Border profile**

March 2026

This European Research Project is conducted within the framework of the ESPON 2030 Cooperation Programme, partly financed by the European Regional Development Fund.

The ESPON EGTC is the Single Beneficiary of the ESPON 2030 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

This delivery does not necessarily reflect the opinions of members of the ESPON 2030 Monitoring Committee.

**Coordination**
Andreea China, Laura Dimitriu, Martin Gauk, Nikos Lampropoulos, Nicolas Rossignol – ESPON EGTC

**Lead authors**
Tobias Chilla, Dominik Bertram, Elias Günther, Stefan Hippe – Friedrich-Alexander University Erlangen-Nürnberg
Irene McMaster, Heidi Vironen, Neli Georgieva, Stefan Kah, Virginia Arena – Stichting EPRC Strathclyde University
Roland Gaugitsch, Sabrina Mansutti, Helene Gorny, Michelle Wiest, Erich Dallhammer, Cristian Andronic, Manon Badouix, Chien-Hui Hsiung, Robert Badea – ÖIR GmbH
Vít Pászto, Radek Barvíř, Karel Macků, Jaroslav Burian, Zdena Dobešová, Oldřich Bittner – Palacký University Olomouc

**Steering Committee**
Jean-Pierre Halkin, Gaëlle Doleans, Simona Pohlová, Maria Sioliou, Robert Spisiak – Unit D2 Interreg, Cross-Border Cooperation, Internal Borders, Directorate-General for Regional and Urban Policy, European Commission (EC-DG Regio)
Milada Hronkova – Ministry of Regional Development, Department of European Territorial Cooperation (CZ)
Josiane Meier - Federal Ministry for Housing, Urban Development and Building, Division Spatial Planning, Spatial Planning Law and European Spatial Development Policy BMWSB (DE)
Margarita Golovko – Ministry of Regional Affairs and Agriculture (EE)
Olivier Bichel, Sébastien Keiffer– Ministry of Housing and Spatial Planning, Department of Spatial Planning (LU)

**Acknowledgements**
We gratefully acknowledge the support and constructive feedback received during the project implementation, from the ESPON Monitoring Committee members, INTERREG programme Managing Authorities/Joint Secretariats, Ministries and DG Regio desk officers. The insightful comments and recommendations provided have been instrumental in enhancing the quality, coherence, and robustness of the analysis.

**Information on ESPON and its projects can be found at www.espon.eu.**
The website provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.



ISBN: 978-2-919816-91-0

Layout and graphic design by BGRAPHIC, Denmark



Contact: info@espon.eu

ESPON

Co-funded by the European Union
Interreg

EUROPEAN RESEARCH PROJECT //

# Collecting and analysing data for the post-27 INTERREG (Core-IB)

## Poland-Denmark-Germany-Lithuania-Sweden

**Border profile**

March 2026

# Table of contents

# List of figures

# List of tables

# 1 Introduction

## 1.1 Context and objective of the border profile

The ESPON Core-IB project (Collecting and analysing data for the post-27 INTERREG) provides evidence-based, non-binding analytical work to support the next generation of Interreg programmes post-2027. By collecting and analysing harmonised territorial data, the project highlights key socio-economic characteristics, cross-border interactions, and governance structures. Its spatial focus covers 48 cross-border cooperation areas (40 land and 8 maritime), including all EU internal border regions and those bordering Liechtenstein, Switzerland, and Norway. The findings are analytical and informative; they do not create regulatory or policy obligations for Member States, the European Commission, or programme authorities. Each border profile serves as a comparable knowledge base for policymakers at EU, national, and regional levels, supporting dialogue and reflection rather than prescribing policy choices. The profiles aim to provide consistent, data-driven territorial evidence that can inform strategic discussions about future cross-border cooperation and contribute to the preparation of Interreg programmes post-2027.

The Core-IB border profiles are designed to support the upcoming steps in the Interreg programming process with analyses based on data that is available at the European scale, including ESPON, Eurostat, DG REGIO, JRC, and Interreg databases. Their main purpose is to ensure comparability of data analyses and to provide programme areas with access to recent harmonised data at high geographical resolution (NUTS3 level or finer). Member States may hold additional or more detailed data which can further enrich or contextualise the findings beyond the Core-IB project. These national sources are essential for refining and validating territorial evidence in policymaking processes, including additional regional, fine-scale information and insights from political processes related to prioritisation and objective setting. All border profiles follow a systematic and methodologically robust approach. They provide territorial evidence, structured along 6 thematic dimensions, offering insights into the geographic, economic, environmental, socio-economic, border security and governance characteristics of the border region. Quantitative data and qualitative analyses are combined to ensure meaningful insights into all 48 border areas. Due to methodological constraints and limited resources, local studies and national datasets falling outside the European data framework could not be included. Visualisations, such as maps and charts based on descriptive statistics, facilitate understanding and support evidence-based policymaking. The profiles analyse the border region as a whole at NUTS3 (2021) level (corresponding to the current Interreg VI-A programme area)[1] and position it within a broader European context. For comparative purposes, several reference categories are applied:

- European averages (EU27 + Norway, Switzerland and Liechtenstein, depending on data availability)
- National averages
- National border region averages
- Aggregated border region averages

To complement the quantitative evidence, the profiles also draw on strategic and qualitative sources, including:

- Strategic documents from the Interreg Programme 2021-2027
- Border Orientation Papers from the 2021-2027 programming period
- Information from the keep.eu database on cross-border cooperation activities
- Information from the Cohesion Open Data platform
- Information from the b-solutions initiative
- Information from recent ESPON Projects (i.e., CROSSGOV, House4All, PROFECY Update, CPS 2.0)

[1] As defined by Annex 1, Commission Implementing Decision (EU) 2022/74 of 17 January 2022, as amended by Commission Implementing Decision (EU) 2023/1638 of 14 August 2023 (OJ L204, 17.8.2023, p. 9): https://eur-lex.europa.eu/eli/dec_impl/2022/75/oj/eng

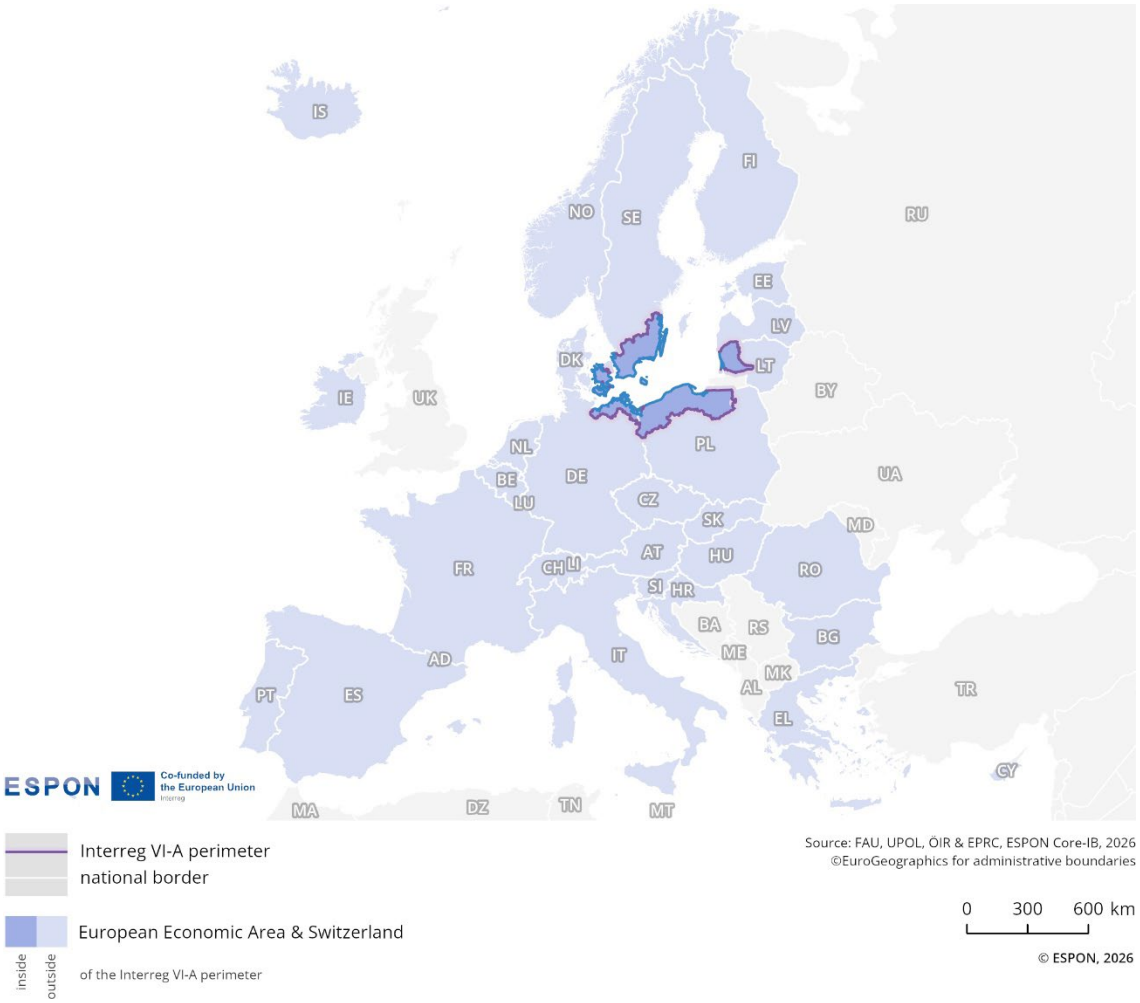
Within the ESPON framework, the CROSSGOV project (Governance mechanisms for cross-border functional areas) has been implemented in parallel to Core-IB. The CROSSGOV hub[2] provides a comprehensive platform for interactive data exploration, and selected data have been incorporated into this study.

Additional project-related information can be explored separately in the Core-IB **Final Report**. Further technical information on this border profile can be found in a separate **Technical Annex** providing an overview of data and methods.

## 1.2 Presentation of the border area

The Interreg VI-A border region 'Poland–Denmark–Germany–Lithuania–Sweden (South Baltic)' covers the area between northern Poland, eastern Denmark, north-eastern Germany, western Lithuania, and south-eastern Sweden (see Figure 1.1).

**Figure 1.1: Overview map**



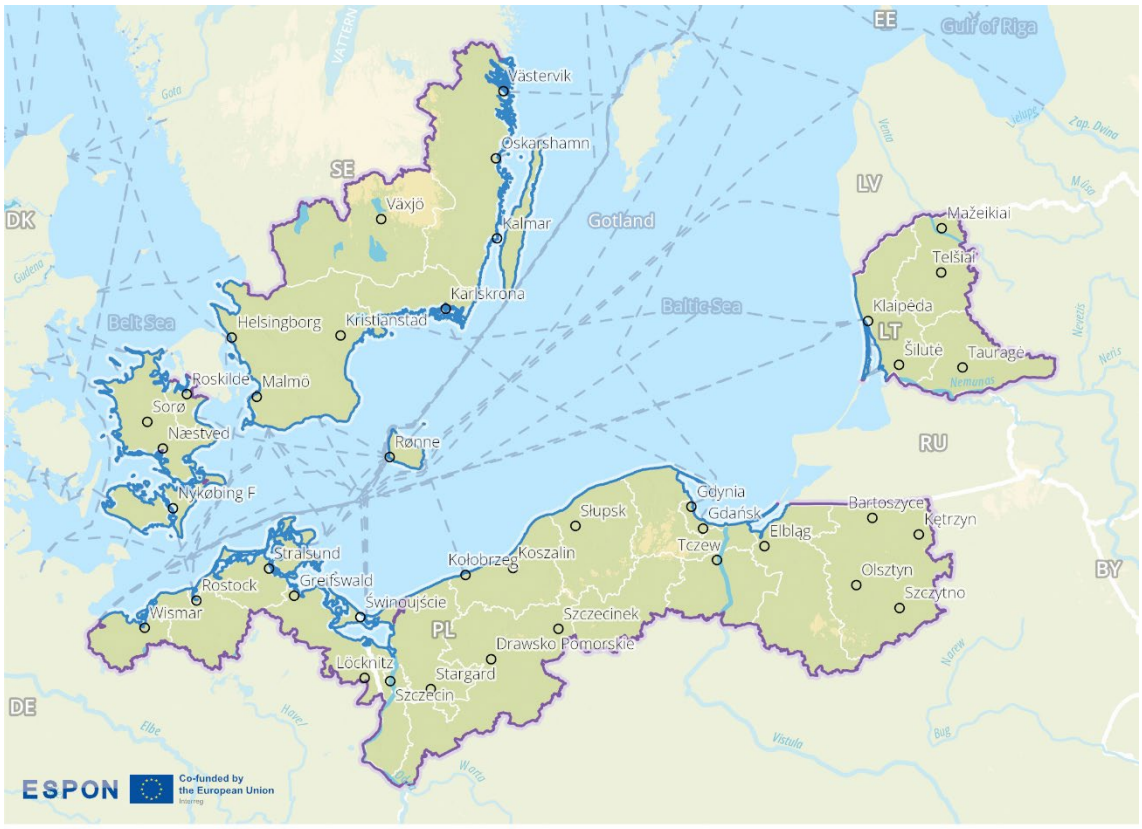

In Poland, the programme area includes the Pomeranian Voivodeship, West Pomeranian Voivodeship and parts of Warmian-Masurian Voivodeship (Elbląg County), located in the Northern and North-Western Macroregions, comprising a total of 11 NUTS3 regions. In Denmark, it covers the Capital Region and Zealand, encompassing a total of 3 NUTS3 regions. In Germany, it includes 5 NUTS3 regions

[2] ESPON CROSSGOV Hub: https://gis-portal.espon.eu/arcgis/apps/experiencebuilder/experience/?id=27e3b86ef44441b08793a2239c370607

in Mecklenburg-Vorpommern, which is also a NUTS1 region. In Lithuania, the programme area covers the Central and Western Lithuania Region, comprising 3 NUTS3 regions. In Sweden, it includes South Sweden in the Southern Sweden NUTS1 region, comprising a total of 4 NUTS3 regions.

Figure 1.2 illustrates the cross-border region's geomorphological features and the perimeter of the current Interreg VI-A programme area.

## Figure 1.2: Geographical features and characteristics[3]




**Elevation in metres above sea level**

0
200
500
1.000
1.500
2.000
2.500
3.000

inside / outside of the Interreg VI-A perimeter

**Hydrography**

large lakes
large rivers
other rivers

inside / outside of the Interreg VI-A perimeter

Level of detail: 1" grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: EU-DEM, WISE Large rivers and lakes, 2007
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

This programme area covers the southern coastal zones of the Baltic Sea across 5 countries: Poland, Denmark, Germany, Lithuania and Sweden. Stretching from the German coast in the west to the Lithuanian coast in the east, it encompasses important maritime regions and coastal hinterlands. The terrain is predominantly flat and was shaped by glacial and post-glacial processes. It consists of low-lying coastal plains, morainic hills, lagoons and dune systems.

[3] The selection of displayed settlements is based on factors such as size, administrative or cultural importance, transport links, regional coverage and cartographic clarity. This is part of a standard cartographic generalisation process with no pre-set thresholds, and the main aim is to provide orientation.

The highly diversified coastline includes barrier islands, sandy beaches, cliffs, estuaries, lagoons and island groups. Notable natural features include the Szczecin and Vistula lagoons in Poland, the Curonian Spit in Lithuania, the southern Swedish archipelago and Bornholm Island in Denmark. The cross-border region's natural environment is further shaped by numerous rivers, such as the Oder, Nemunas, and Vistula, as well as many lakes and peatlands.

Several important cities are located within the programme area. In Poland, major urban centres include Gdańsk, Gdynia, and Szczecin, which are significant coastal port and industrial cities. In Germany, Rostock is a key economic and transport hub. In Sweden, the cities of Kalmar, Karlskrona and Malmö (the latter bordering the Øresund region) are notable. Denmark contributes notably with the island city of Rønne on Bornholm. In Lithuania, the port city of Klaipėda is the eastern anchor of the South Baltic area.

These geographical and urban characteristics impact the spatial organisation and settlement patterns within the programme area, thereby reinforcing its maritime and cross-border connectivity across the southern Baltic Sea.

# 2 Cross-border analysis

## 2.1 Territorial dimension

The territorial dimension refers to the spatial characteristics and dynamics of a border region. It specifically depicts how factors such as population density, demographic trends, changes in settlement areas and accessibility influence and reflect cross-border integration.

### 2.1.1 Population and settlements

This sub-dimension illustrates the population characteristics and land use dynamics of the border region, based on analysed indicators. It examines population density, population development by age groups, and changes in settlement areas. The analysis highlights whether the border functions as a catalyst for integration or as a barrier. Comparisons with the respective countries and the EU average provide context for understanding the cross-border region's dynamics.

#### 2.1.1.1 Population density

**Indicator description**

Population density refers to the number of residents per km². This indicator shows the number of inhabitants per square kilometre in a 1x1 km grid. It therefore provides information on the distribution and concentration of population across the region and allows to identify agglomerations of high density. In particular agglomerations at or close to the border area of key interest.

- **Source**: Eurostat
- **Temporal coverage**: 2021
- **Unit**: Inhabitants/km²

Please refer to the technical annex for more information.

The territories of all 5 states exhibit a similar, uniform settlement pattern, characterised by small central settlements. The most extensive and densely populated area is around the Polish city of Gdańsk (c. 487,000 inhabitants) in the South Baltic cross-border. The second most populous town in Poland is Szczecin. Another significant settlement centre is around Malmö in Sweden. Each of these 2 cities has more than 300,000 inhabitants, not taking into account their respective metropolitan areas. The border region includes 37 urban centres with a population of over 30,000 inhabitants. In Lithuania, the population is more concentrated around the port city of Klaipeda (more than 150,000 of inhabitants).

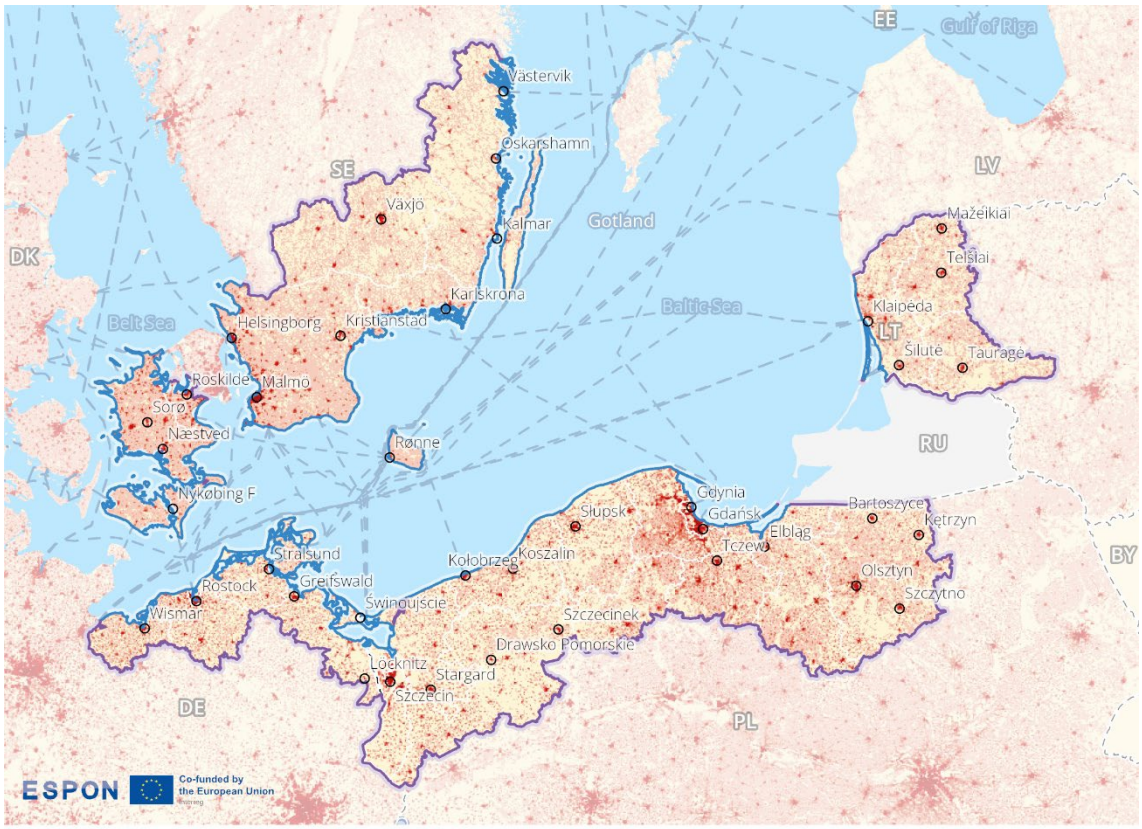
The average population density across the entire border region is 72 inhabitants per square kilometre, which is below both the EU average of 109 inhabitants per square kilometre (according to Eurostat) and the aggregated average of all EU-evaluated border regions (125 inhabitants per square kilometre).

Within the border region, the Polish part records an average population density of approximately 83 inhabitants per square kilometre, which is lower than the national average in Poland (118 inhabitants per square kilometre). The Danish part shows an average density of around 102 inhabitants per square kilometre, also below Denmark's national average of 129 inhabitants per square kilometre. Similarly, the Lithuanian part has an average population density of approximately 39 inhabitants per square kilometre, compared to a national average of 43 inhabitants per square kilometre.

In contrast, the Swedish part of the border region records an average population density of about 55 inhabitants per square kilometre, which exceeds Sweden's national average of 23 inhabitants per

square kilometre. Finally, the German part has an average population density of approximately 79 inhabitants per square kilometre, remaining well below the national average in Germany (231 inhabitants per square kilometre).

## Figure 2.1: Spatial patterns of population distribution




**Number of inhabitants/km² (2021)**

- 1–50
- 51–100
- 101–200
- 201–500
- 501–1,000
- 1,001–5,000
- 5,001–56,158
- no population

inside / outside of the Interreg VI-A perimeter

**Twin cities (2025)**

cities/towns with 10,000+ inhabitants not further than 5km from another one accross a country border

**Border cities (2025)**

other cities/towns with 10,000+ inhabitants not further than 10km from another one accross a country border

Level of detail: 1km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: GISCO Population Grid (version 1.3), 2021
OpenStreetMap, 2025
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

### 2.1.1.2 Population development (by age groups)

#### Indicator description

Population development refers to the percentage change in population at regional level between 2014 and 2024. The data reflects on the total population, as well as on the age groups 0-14, 15-64 and 65+.

- **Source**: Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2024
- **Unit**: Change in %

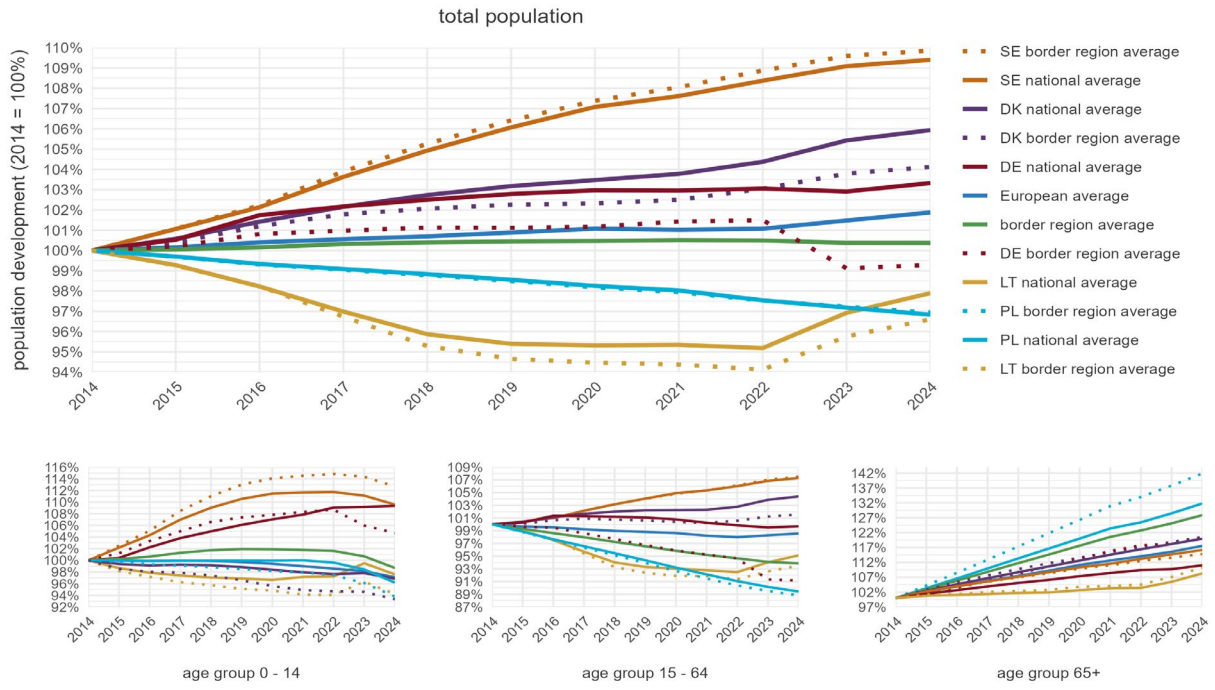
Please refer to the technical annex for more information.

Population in the South Baltic Region in 2024 (Eurostat): 9.42 million inhabitants, of which:

- 52.2% in the Polish part (4.92 million inhabitants)
- 6.0% in the Lithuanian part (0.56 million inhabitants)
- 10.9% in the German part (1.02 million inhabitants)
- 9.5% in the Danish part (0.89 million inhabitants)
- 21.5% in the Swedish part (2.03 million inhabitants)
- Region within the border region with the highest population increase since 2014: Gdański (PL634) at 14.2%

Figure 2.2 shows the population growth in the South Baltic Region between 2014 and 2024. During this period, the programme area experienced slight growth of 0.4%, with the highest growth rate observed in the Swedish part.

**Figure 2.2: Population development (2014=100)**



Population growth in the cross-border region is slightly below the European average (0.4% vs. 1.9%) and also slightly below the average development in all border regions (0.4% vs 1.5%). Both the Polish border and national parts show similar average decrease (-3.1% vs. -3.2%), while Lithuania's border region has a slightly greater decrease compared to the national value (-3.4% vs. -2.1%). In Germany, the border region is decreasing compared to the national average (-0.7% vs. 3.3%). Denmark's border area has slightly lower growth than the national average (4.1% vs. 5.9%), while in Sweden, the border region shows similar growth to the national average (9.9% vs. 9.4%).

In terms of the development of individual age groups in the programme area, the population aged 0–14 experienced a slight decrease of -1.3%, while the working-age population (15–64) showed a marked decrease of -6.1%. The population aged 65 and over underwent a substantial increase of 27.9%.

#### 2.1.1.3 Change in settlement areas

**Indicator description**

The indicator shows the relative change in settlement areas per LAU in the border region. It considers changes in land cover, from non-artificial areas (such as agricultural, forest and seminatural areas, wetlands and water bodies) to artificial areas (such as urban, industrial, construction sites) between 2012 and 2018. This indicator has to be viewed alongside population development in particular.

- **Source/method of retrieval**: The indicator is retrieved via processing of raster data from CORINE Land cover. The raster information is crossed with Local Administrative Units (LAU) to calculate a change in %.
- **Temporal coverage**: 2012-2018
- **Unit**: Change in %

Please refer to the technical annex for more information.

Figure 2.3 illustrates the change in settlement areas at municipal level between 2012 and 2018. Overall, the map shows mostly similar patterns of change in settlement areas on all sides of the Polish-Danish-German-Lithuanian-Swedish border. Changes are evident in particular around the urban centres of Olsztyn, Gdańsk, Koszalin, Szczecinek, Drawsko Pomorskie, Szczecin, Klaipėda, Malmö, Helsingborg, Kristianstad, Växjö, Oskarshamn and Västervik. Even though, especially on the Danish, Lithuanian and Swedish sides, the changes are not mainly centred around the cities and are in large parts of the cross-border region. Świnoujście, Stralsund, Karlskrona and Kalmar are exceptions, with no significant changes observed during this period. High growth in settlement areas is particularly evident on the Polish side between Szczecin and Koszalin along the coast as well as around Gdańsk and Olsztyn. In close proximity to the national borders, the settlement area increases mainly in Denmark and Lithuania. On the Polish and Swedish sides, the increase shows along the coastline and the coastal cities Malmö and Szczecin. The map also reflects the topographical characteristics of the border region, with significant changes in settlement areas visible along the coastlines.

## Figure 2.3: Settlement area dynamics

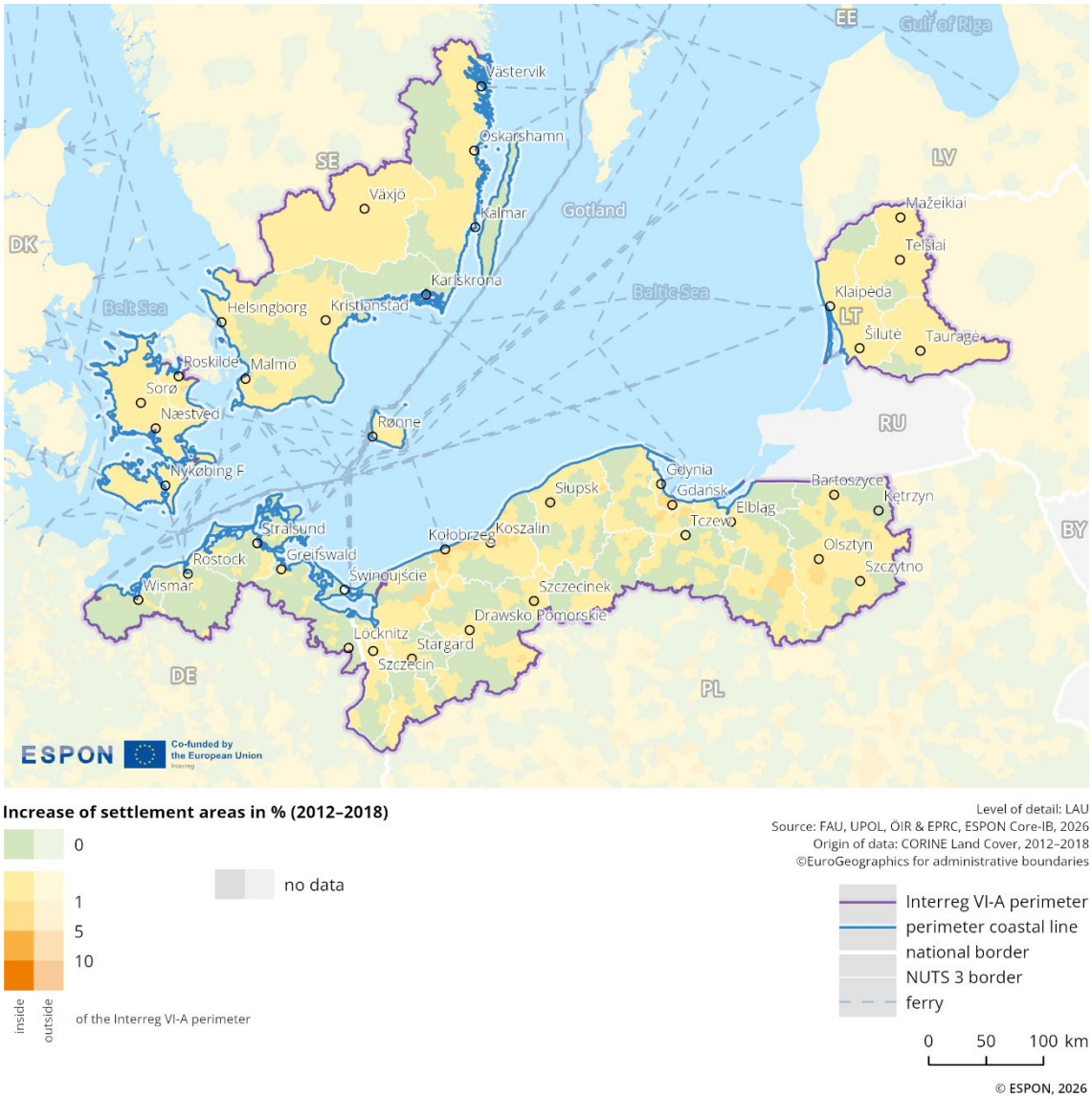
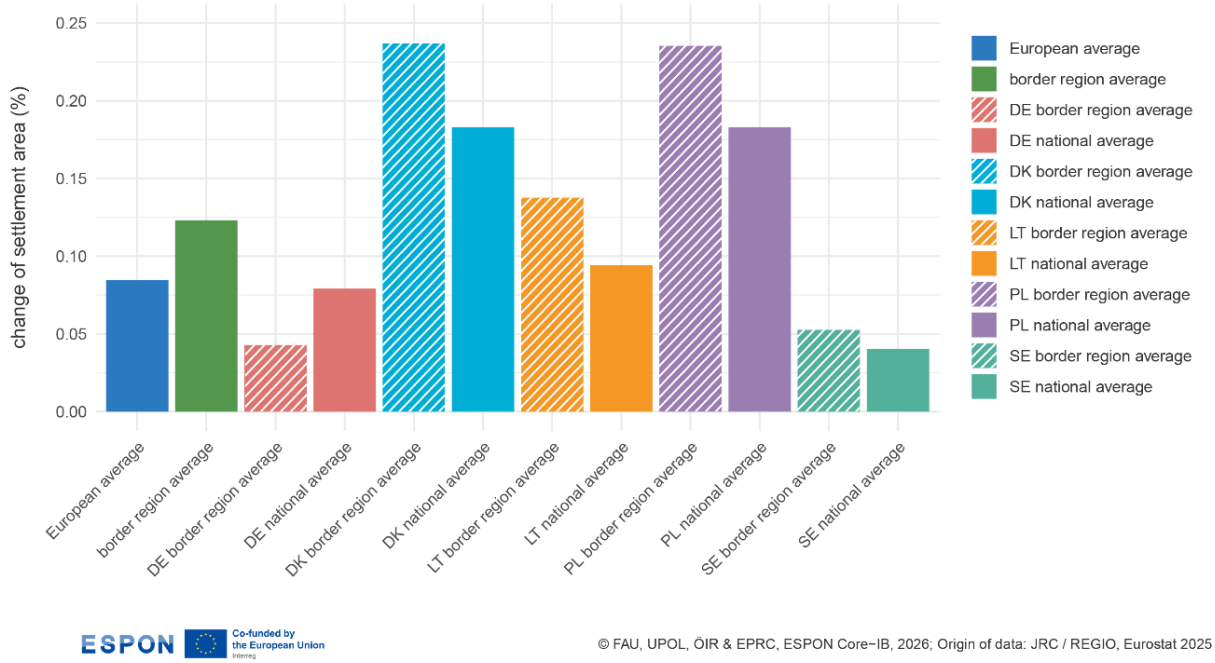



Figure 2.4 presents the change in settlement areas from a comparative perspective. The average for the Poland-Denmark-Germany-Lithuania-Sweden (South Baltic) programme area is higher than the overall European average, which includes both EU member states and the EFTA countries Switzerland, Liechtenstein, and Norway. The national Danish and Polish values are similar and lie above the German, Lithuanian and Swedish national values. The Danish and Polish border-regional averages are also similar and lie above the German, Lithuanian and Swedish border-regional averages. The Danish, Polish, Lithuanian and Swedish border-regional averages are higher than the national averages, whereas the German border-regional average lies below the national averages.

In general, the programme area shows a dynamic settlement development. The need for an integrated approach to spatial development is obvious. Spatial development has to balance the various demands on land use (e.g., residential, commercial, tourism, transport, agriculture, and nature conservation), and this requires ongoing coordination and exchange, also across the border.

**Figure 2.4: Change in settlement areas (2012-2018) (comparison)**




ESPON Co-funded by the European Union



### 2.1.2 Accessibility of the border area

This sub-dimension illustrates the functional travel connections that already exist in the border region. It examines average cross-border travel times for different modes of transport and cross-border catchment areas based on mobility flows. It also considers travel times to and from border crossings. The analysis shows whether mobility flows are integrated between border regions or if the border hampers mobility.

#### 2.1.2.1 Comparative quality of selected cross-border connections

**Indicator description**

The indicator presents a comparative perspective for different modes of transport (public and private) and their average travel speed (so-called space-time-lines). As such it helps to understand and interpret accessibility patterns along the border and highlights the comparative quality of selected cross-border connections.

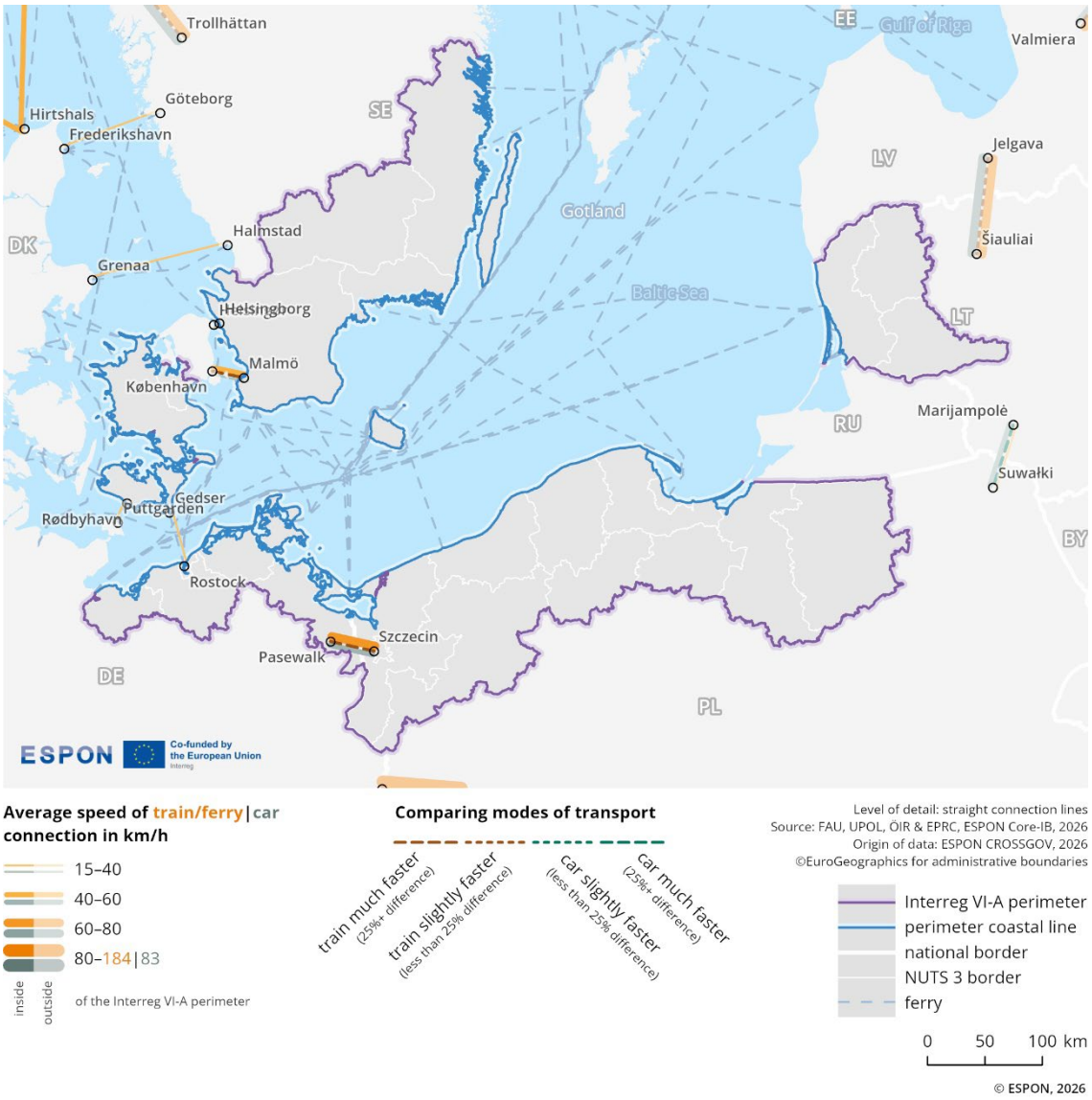
- **Source/method of retrieval**: Average number and speed of rail connections/ferries, average speed of car connections between selected cities and towns in border regions using Rail Travel Sites, Google Maps, luftlinie.org, Direct Ferries, local ferry companies
- **Temporal coverage**: 2025 (first quarter)
- **Unit**: km/h

Please refer to the technical annex for more information.

Cross-border accessibility shapes cross-border interactions. Figure 2.5 illustrates this using a "space-time-line" map, which shows parts of a European overview of car, train and ferry travel times in the Poland-Denmark-Germany-Lithuania-Sweden (South Baltic) border region. This visualisation enables

an assessment of transport quality by highlighting differences between public (train, ferry) and private (car) transport modes.

## Figure 2.5: Comparative quality of selected cross-border connections




The selection of cities and connections covered is based on a set of criteria applied throughout Europe within the ESPON CROSSGOV project[4]. These criteria include the presence of a railway station, population size, distance to the border, node hub and functionality. The thickness of the lines (orange for trains and ferries, grey for cars) indicates the average speed of connections in km/h, with thicker lines representing faster connections. Dotted lines in-between reflect the indexed ratio between train and car speeds. A brown colour scale (values below 100) denotes that trains are faster than cars along the specific route, while a green scale (values above 100) indicates the opposite.

The selected connections within the programme area include Pasewalk–Szczecin and the ferry Rostock–Gedser. For the Pasewalk–Szczecin route, the train connection outperforms car travel in terms of speed. In contrast, the Rostock–Gedser ferry is characterised by relatively slow travel times[5].

[4] ESPON CROSSGOV Atlas, see Storymap on 'Space-time-lines': https://gis-portal.espon.eu/arcgis/apps/storymaps/collections/345c978adf784ad-fac30c16b90219d35?item=4

[5] For more information on European ferry routes see this online map: https://maritime-forum.ec.europa.eu/contents/map-week-ferry-routes_en

#### 2.1.2.2 Cross-border catchment area based on mobility flows

**Indicator description**

This indicator measures the movement of people across borders. The density of cross-border movements by Twitter/X users is displayed on a grid cell covering an area of 20x20 km. The indicator does not differentiate between reasons for movement.

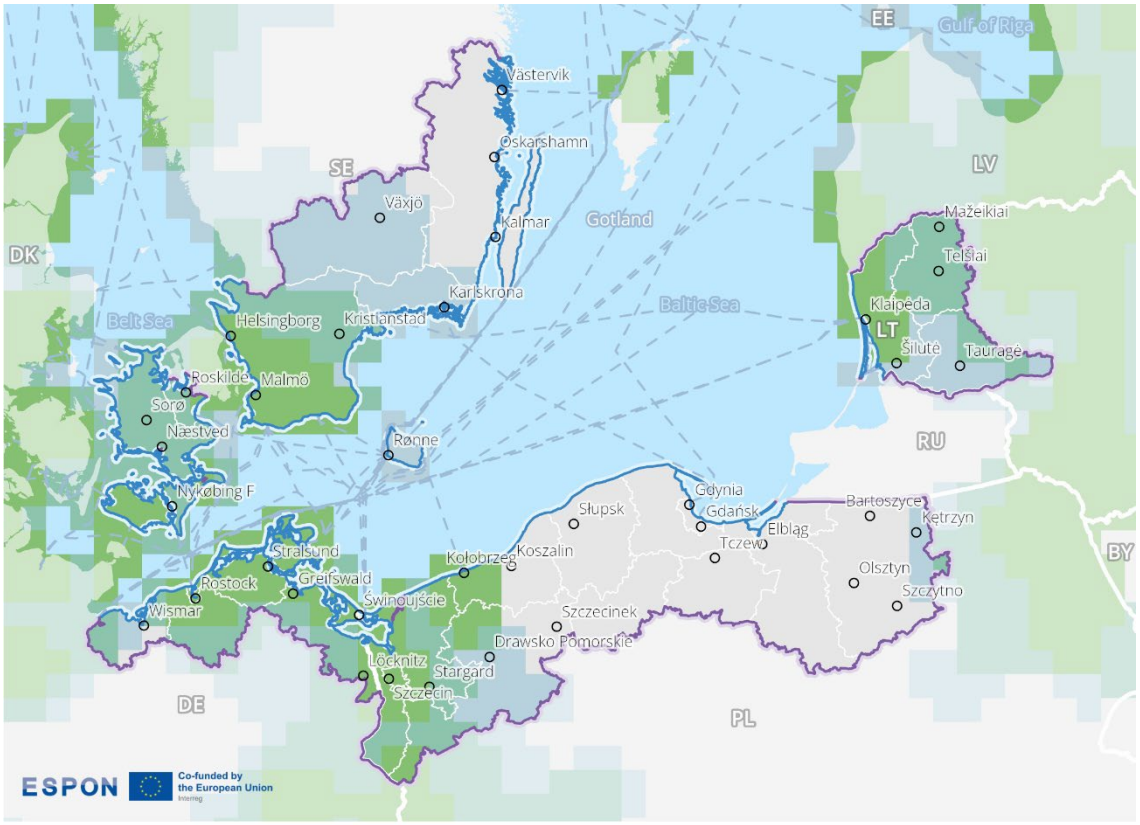
- **Source/method of retrieval**: The indicator is calculated based on Twitter (currently X) data. The digital footprint of individual users provides information about physical mobility flows and is used to calculate cross-border catchment areas of different intensity.
- **Temporal coverage**: 2013-2023
- **Unit**: n/a

Please refer to the technical annex for more information.

Figure 2.6 shows the cross-border catchment area in the border region based on mobility flows from 2013 to 2023, highlighting estimated cross-border mobility intensity across 3 different quartiles. The first quartile represents the 25% highest mobility intensity shown in dark green, the second quartile represents 25-50% coloured in green-blue, and the third quartile represents 50-75% in light blue.

The intensity of cross-border mobility of people within this cross-border region is highly variable. High levels of mobility intensity are recorded around the cities of Helsingborg and Malmö, near the Baltic Sea coast cities of Stralsund, Świnoujście, and Szczecin, as well as around the Lithuanian city of Klaipėda. Moderate intensity is observed around the city of Kristianstad, to the west of Malmö, in the eastern part of the Lithuanian section of the programme area, and in the southwestern part of the cross-border region. Low cross-border mobility intensity is found near the Swedish cities of Växjö and Karlskrona, around Drawsko, and in the southern part of the Lithuanian section. No intensity is recorded or data are unavailable in the northern part of the Swedish section and the eastern part of the Polish section of the cross-border region.

## Figure 2.6: Cross-border mobility intensity




**Estimated cross-border mobility intensity (2013-2023)**

high
moderate
low

inside / outside of the Interreg VI-A perimeter

Level of detail: 20km aggregated grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CROSSGOV, 2026
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

#### 2.1.2.3 Cross-border travel-time accessibility

**Indicator description**

The indicator shows the time it takes to travel from any location within a region to the next border crossing, using grid data and subsequent categorisations into accessibility groups of 30, 60 and 90 minutes. It reflects the accessibility in cross-border areas, considering road transport. The indicator can describe the quality and speed of road connections and thus spatial reach of the cross-border services.

- **Source/method of retrieval**: Based on the OpenStreetMap road network, the travel time to the border is calculated for a grid of the border are. Based on this, areas are calculated within which border crossings can be reached below thresholds of 30, 60 and 90 minutes. As additional visual element, key services pharmacies, doctors, hospitals and shops (retrieved from the ESPON PROFECY project) are displayed and categorised into the accessibility groups.
- **Temporal coverage**: 2025 (first quarter, for accessibility data), 2021 (for service facility data)
- **Unit**: Minutes

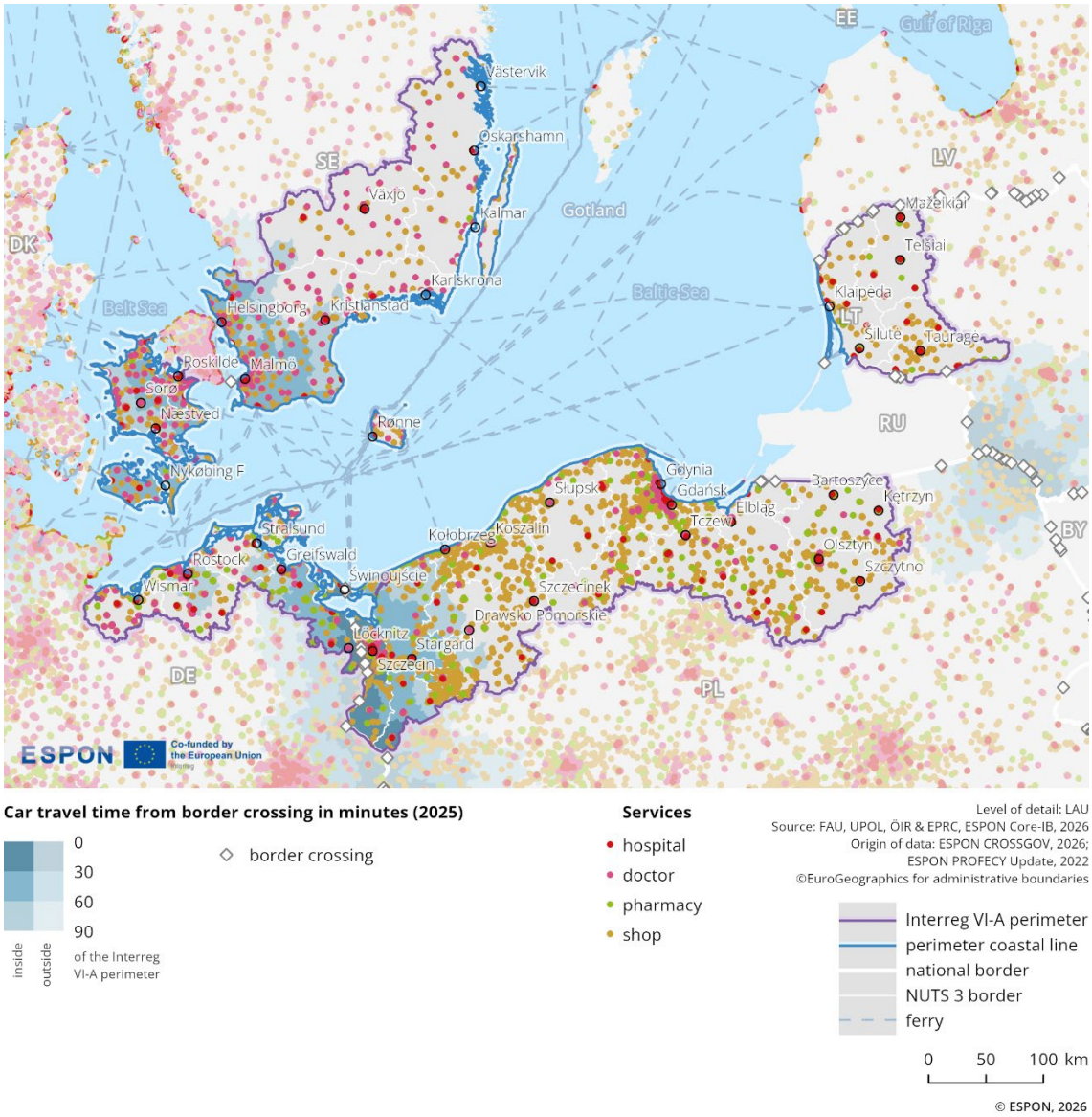
Please refer to the technical annex for more information.

Figure 2.7 illustrates cross-border travel time accessibility in the Interreg area, showing the time distance from the national border in 2025. The legend indicates 3 travel time categories in minutes (30, 60, 90) represented by different shades of blue. In addition, it marks the location of services, including hospitals, doctors (general practitioners), pharmacies, and shops (supermarkets and conventient stores), with distinct coloured symbols.

The map shows that this partially maritime cross-border region has limited road connections. Part of the short land border between Poland and Germany can be accessed from both sides within 30 minutes. This part has a good road connection. The areas around the coast borderline, near Malmö, Helsingborg, Copenhagen, and Szczecin, belong to the second category, with accessibility within 60 minutes. This band is surrounded by a narrow, variable band of category, up to 90 minutes of travel time. Other areas have longer travel times, exceeding 90 minutes, particularly the entire eastern region of Lithuania and the eastern part of Poland.

Services such as shops, hospitals, doctors, and pharmacies are distributed fairly evenly, with greater density in Poland and large towns or cities.

**Figure 2.7: Travel-time accessibility from border crossings**




## 2.1.3 Key messages on the territorial dimension

The territories of all 5 states in the S. Baltic area exhibit a similar, comparatively uniform settlement pattern, characterised by small central settlements. The most extensive and densely populated area is around the Polish city of Gdańsk. Population growth in the programme area is slightly below the European average (0.4% vs. 1.9%), declines are most pronounced along the Polish border and Lithuania's border region, representing and east-west split in the area. Notably, the working-age population (15–64) of the area showed a marked decrease of -6.1%. In contrast, the population aged 65 and over underwent a substantial increase of 27.9%. This highlights the importance of planning around high dependency ratios and aging populations in the area.

Changes in settlements are concentrated around urban settlements. However, on the Danish, Lithuanian and Swedish sides, wider changes are also evident in large parts of the cross-border region. The selected cross-border transport links show train links outperforming road in terms of speed and slow ferry times. The map shows that this partially maritime cross-border region has limited road connections across some parts of the area. However, key connections such as the Øresund bridge and

regular ferry links have supported cross-border links including regular commuting between Sweden and Denmark. The land border between Poland and Germany is easily crossed from both sides.

Partly reflecting these physical and transport barriers, the intensity of cross-border mobility of people within this cross-border region is highly variable. High levels of mobility intensity are recorded around the cities of Helsingborg and Malmö, near the Baltic Sea coast cities of Stralsund, Świnoujście, and Szczecin, as well as around the Lithuanian city of Klaipėda, but lower levels elsewhere. The levels of activity around Klaipėda are particularly notable, given the maritime border and lack of a direct land border to other parts of the area.

## 2.2 Economic dimension

The economic dimension includes analyses of gross domestic product, labour market conditions, competitiveness, and key infrastructure and housing indicators. The aim is to illustrate the impact of the border on economic performance, whether it acts as a barrier or a bridge, and the extent to which integration is supported by labour mobility, remote working, and infrastructure connectivity.

### 2.2.1 Gross Domestic Product

This sub-dimension illustrates the economic situation of the border region by analysing gross domestic product (GDP). It shows economic development within the border region and how this has changed over time. Comparisons with the respective countries and the EU average provide important context for understanding the cross-border region's dynamics.

#### 2.2.1.1 Gross domestic product per capita at current market prices

**Indicator description**

The indicator shows the regional GDP/capita in current prices and its development over the past years. It highlights structural differences and similarities between the border region and the respective national figures as well as the European average. Furthermore, it highlights patterns within the border region, although has to be interpreted with care in the case of a strong presence of commuters.

- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2010-2023
- **Unit**: Euro per capita

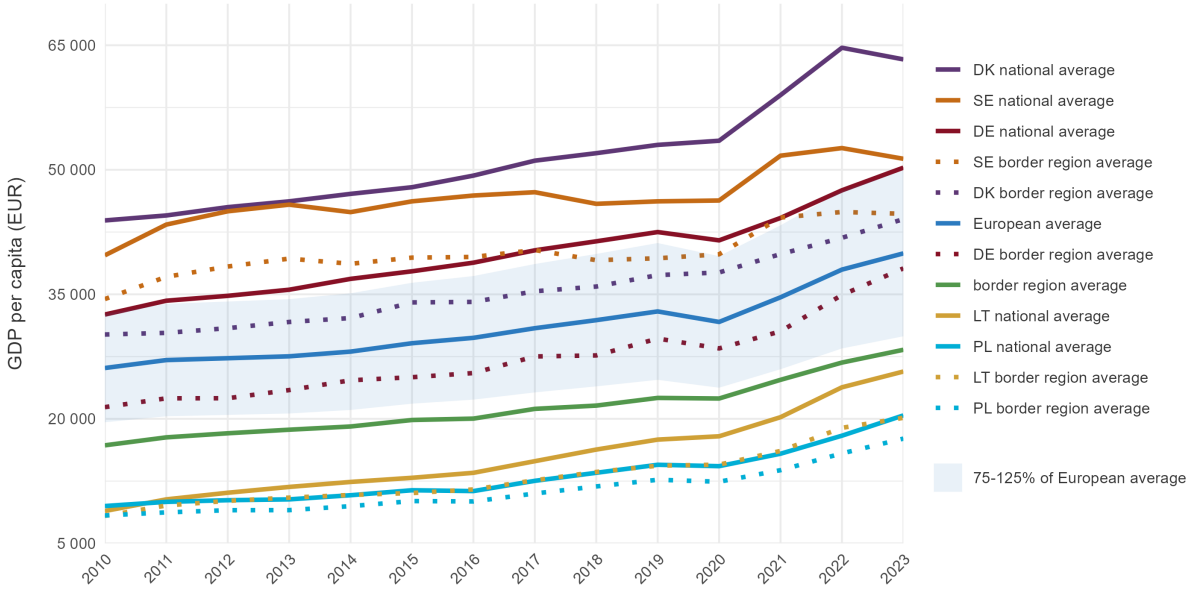
Please refer to the technical annex for more information.

In 2022, the cross-border region's GDP per capita was 73.9% of the EU average in 2022 and 75.1% of that of the average in other European border regions in general. The programme area saw a 41% increase in GDP per capita in the border region between 2014 and 2022[6]. This is a 5.3 percentage points higher than the EU average. Furthermore, this corresponds to 5.8 percentage points higher increase of GDP per capita in the border region compared to the average of European border regions. The total Danish, German and Swedish GDP per capita is higher than the EU average, however only Danish and Swedish border regions exceed it. In all 3 cases, the respective border regions have a lower

[6] Percentage changes are calculated using Eurostat data to ensure harmonised statistics from official sources. The latest year for which full coverage of all European regions is available on Eurostat is 2022. For visualisation purposes, ARDECO data has been used to enable longer time series to be visualised by filling the official dataset's existing gaps with model-based estimates. Therefore, slight deviations between the calculation and visualisation are possible.

GDP per capita than the national average. The GDP per capita of the Polish and Lithuanian border regions is also below the national average.

**Figure 2.8: Gross domestic product at current market prices (per capita)**




ESPON Co-funded by the European Union Interreg

### 2.2.2 Labour market and commuting

This sub-dimension highlights the existing and potential functional links within the labour market of the border region. It examines the employment situation and commuting patterns, as well as the role of telework agreements, and considers developments over time based on analysed indicators. The analysis identifies factors that facilitate or hamper cross-border labour market integration.[7]

#### 2.2.2.1 Share of employment

**Indicator description**

This indicator shows the share of employees in the population aged 15 to 64. Although it does not fully capture entrepreneurs, marginal employees, or civil servants, this is an important statistic for understanding general labour market patterns. It covers 2 aspects: first, high values can result from a high proportion of the resident population being employed. Second, high values can result from a high number of incoming commuters (from other NUTS3 regions within the country or from neighbouring countries). The same arguments apply to low values: they may indicate low levels of employment, or they may result from high shares of outgoing commuters. Values of more than 100% are possible, since the number of incoming commuters can exceed the number of inhabitants aged 15 to 64 (including both domestic and cross-border commuters).

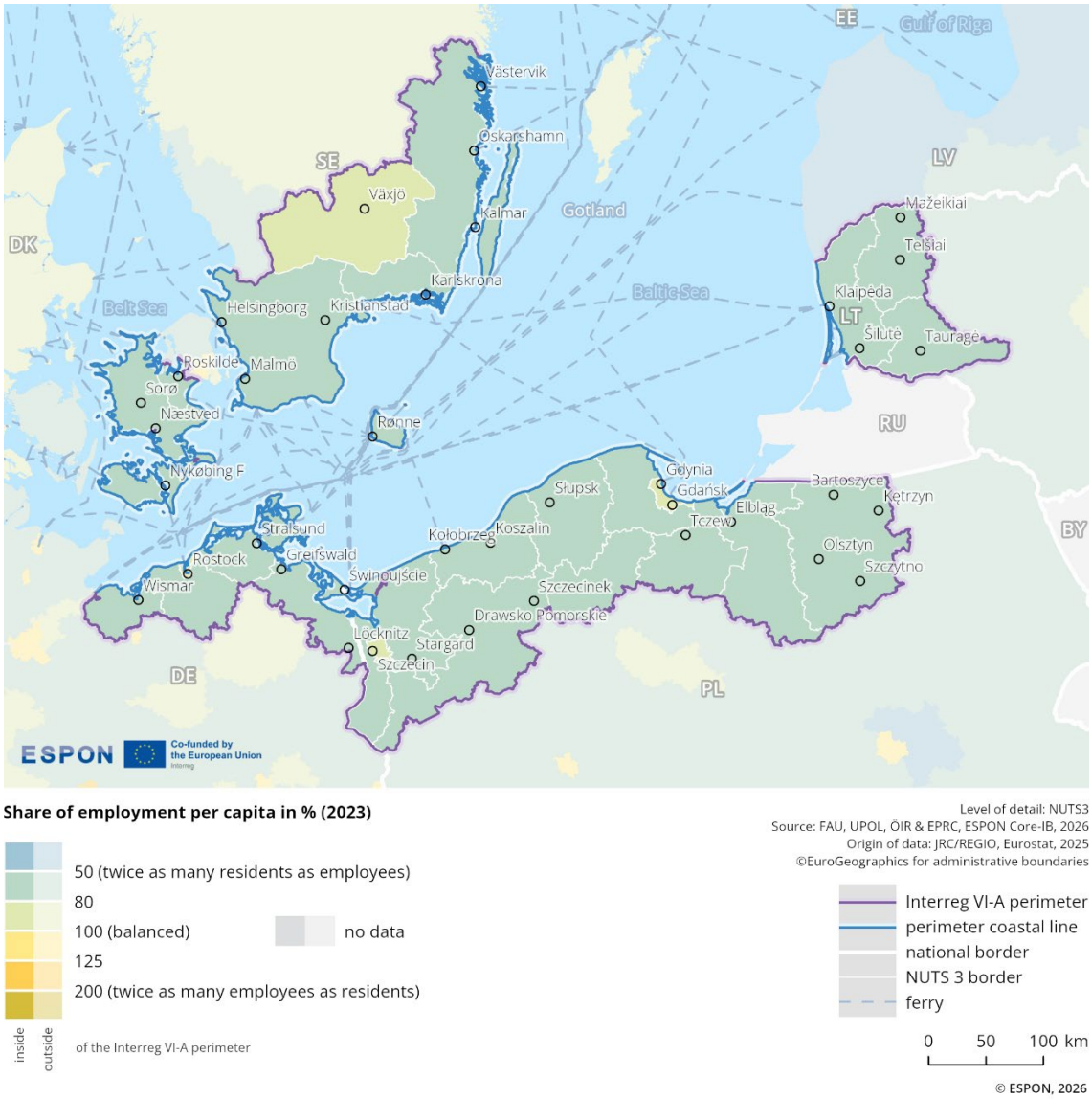
- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

Figure 2.9 illustrates the share of employment per capita in the population aged 15 to 64 in 2023. The data are categorised into ranges from below 50% (twice as many residents aged 15 to 64 as employees) to above 200% (twice as many employees as residents aged 15 to 64), with 100% representing a balanced ratio. Blue or green-coloured regions indicate more residents aged 15 to 64 than employees, while yellow regions indicate more employees than residents aged 15 to 64.

[7] See also: European Commission 2024: Cross-Border Regional Labour Market Analysis, https://op.europa.eu/s/AazM

## Figure 2.9: Employment share[8]



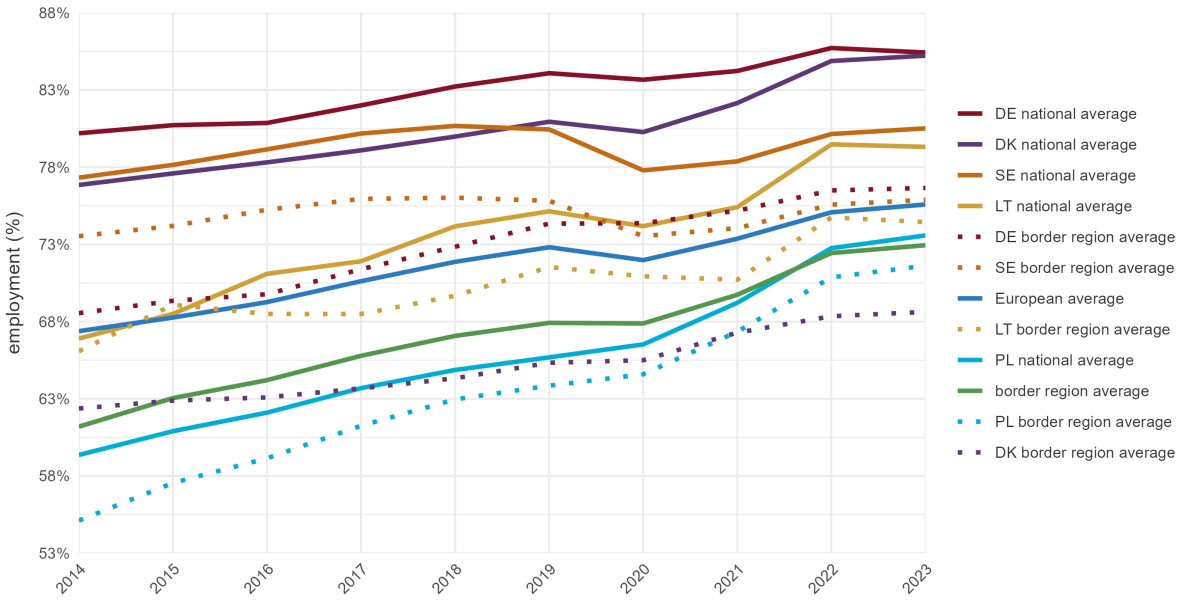

The share of employment in this border region has remained relatively stable, with the regional average reaching 72.9% in 2023, representing an increase of 11.8 percentage points since 2014. In most parts of the programme area, share of employment values range between 50% and 80%. Only in the areas surrounding the cities of Växjö, Szczecin, and Gdańsk do the values fall between 80% and 100%. When comparing the share of employment in this border region with different averages, the following can be observed (see Figure 2.10):

- Compared to the European average, values in the cross-border region are lower by 2.6 percentage points; in 2014, the difference was 6.2 percentage points.
- Compared to the national average in Sweden, values are lower by 7.6 percentage points; in 2014, the difference was 16.1 percentage points.
- Compared to the national average of Poland, values are 0.6 percentage points lower; in 2014, they were 1.8 percentage points higher.
- Compared to the national average of Lithuania, values are lower by 6.4 percentage points; in 2014, the difference was 5.7 percentage points.

[8] Note: In this map, 'residents' refers to the population aged 15 to 64.

- Compared to the national average of Denmark, values are lower by 12.3 percentage points; in 2014, they were 15.7 percentage points higher.
- Compared to the national average of Germany, values are lower by 12.5 percentage points; in 2014, the difference was 19 percentage points.
- The Swedish border area records values 4.6 percentage points below the Swedish national average; the Polish border area is 2 percentage points below the Polish national average; the Lithuanian border area is 4.9 percentage points below the Lithuanian national average; the Danish border area is 16.6 percentage points below the Danish national average; and the German border area is 8.8 percentage points below the German national average.
- Compared to the average of all cross-border regions, values in this region are lower by approximately 1.5 percentage points; in 2014, the difference was 5.1 percentage points.

**Figure 2.10: Employment share over time (comparison)**




ESPON Co-funded by the European Union Interreg

#### 2.2.2.2 Share of working-age population

**Indicator description**

This indicator shows the share of people aged 15 to 64 in the total population, reflecting the potential working-age population. The population counted includes all residents who live in the country permanently, excluding foreign students and military personnel. Using the 15–64 age range is a standard European statistical proxy, since differences in retirement age or labour participation across countries cannot be captured systematically. It allows for regional differentiation of potential workforce throughout the border region.

- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

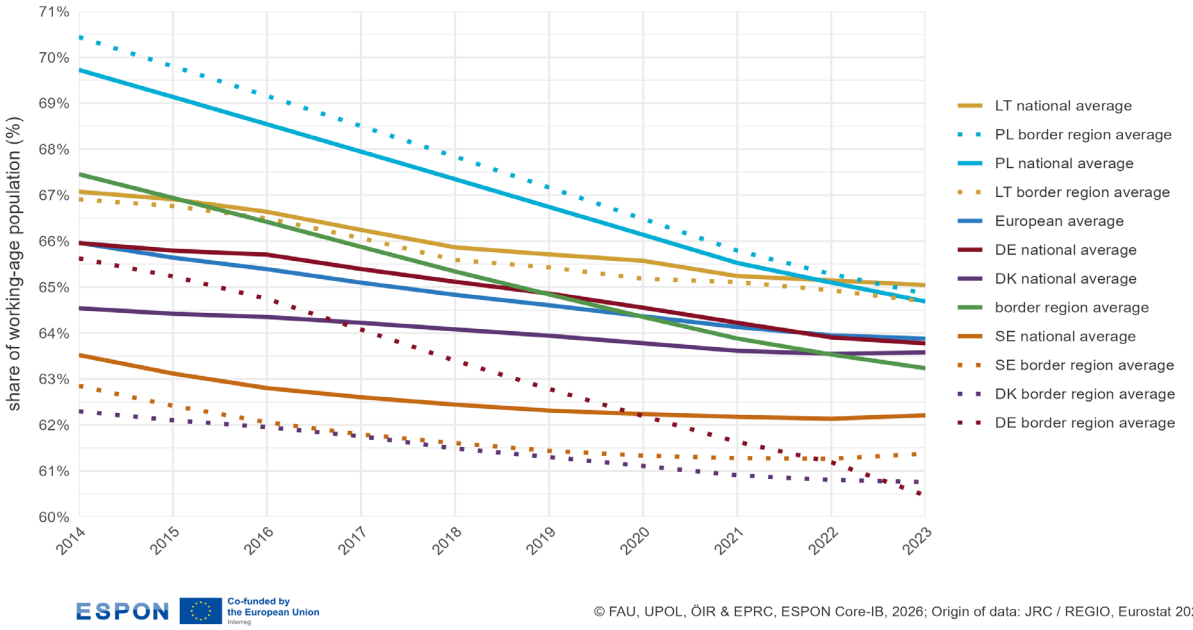
Figure 2.11 illustrates the evolution of the share of the working-age population in the Poland–Denmark–Germany–Lithuania–Sweden (South Baltic) cross-border region between 2014 and 2023. In 2023, the cross-border region shows an average working-age population share of 63.2%, compared to the European average of 63.9% and 63.7% for the average of all cross-border regions.

The share of the working-age population in the whole cross-border region is clearly lower than in the Polish border area (64.9%) and moderately lower than in the Lithuanian border area (64.7%). It is also moderately higher than in the Swedish border area (61.4%), Danish (60.8%) and German (60.5%) border areas. When compared to national averages, the regional value is moderately lower than in Poland (64.7%) and Lithuania (65%), slightly lower than in Germany (63.8%) and Denmark (63.6%), and slightly higher than in Sweden (62.2%).

The programme area experienced a noticeable 4.3 percentage point decrease in the share of working-age population between 2014 (67.5%) and 2023 (63.2%). This decline is substantially higher than the European average, which dropped by 2.1 percentage points in the same period. All parts of the cross-border region show a declining trend, with the most pronounced decrease observed in the Polish parts (-5.5 percentage points at the border and -5.0 percentage points at the national level), followed by the German parts (-5.1 and -2.2), the Danish parts (-1.5 and -0.9), and the Swedish parts (-1.5 and -1.3). The smallest decline occurred in the Lithuanian parts (-2.2 percentage points at the border and -2.1 percentage points at the national level).

The South Baltic cross-border region recorded a relatively pronounced demographic decline between 2014 and 2023, particularly in its Polish and German parts. Despite differences in national contexts, all countries showed a downward trend in the share of the working-age population.

**Figure 2.11: Share of working-age population over time (comparison)**




ESPON Co-funded by the European Union Interreg



### 2.2.2.3 Employment by sector

#### Indicator description

The indicator differentiates the number of jobs in a region by sector. This indicator focuses on workplace-based employment, providing insight into the employment landscape of a region. The dataset can be disaggregated according to "10-sector" NACE (Nomenclature statistique des activités économiques dans la Communauté européenne) classifications, allowing for detailed analysis of employment distribution across various industries.

- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

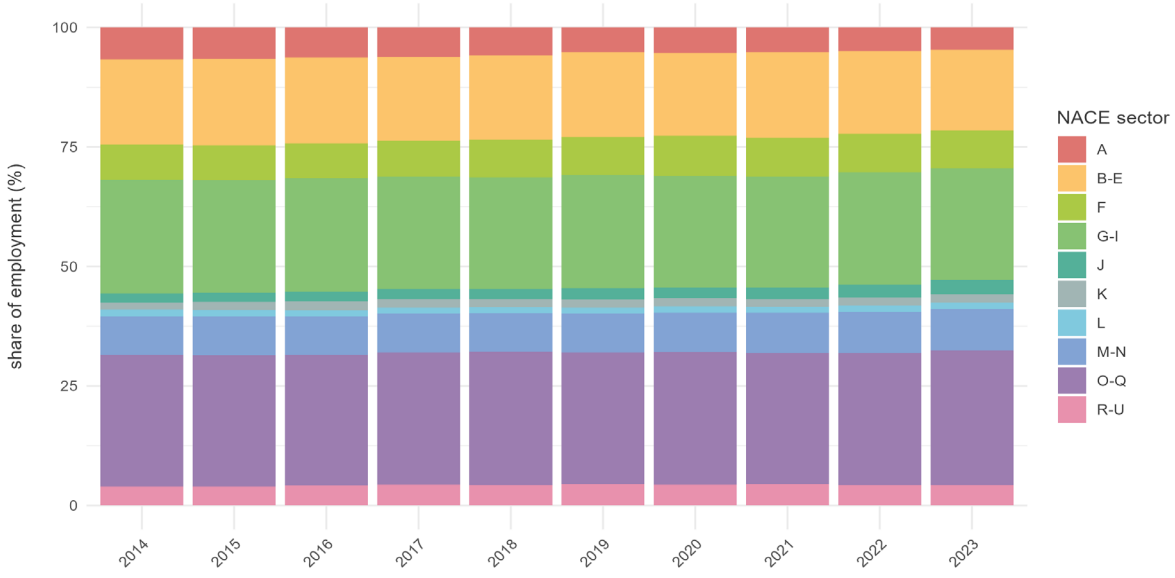
Figure 2.12 illustrates the relative number of jobs in the border area differentiated by sectors. It shows where jobs are located (not where employed persons live). This workplace-based indicator offers insight into the employment structure of a region.

The dataset uses a '10-sector' classification based on NACE categories. The sectoral breakdown is as follows:

- A: Agriculture, forestry and fishing
- B-E: Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E)
- F: Construction
- G-I: Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I)
- J: Information and communication
- K: Financial and insurance activities

- L: Real estate activities
- M-N: Professional, scientific and technical activities (M), Administrative and support service activities (N)
- O-Q: Education (O), Human health and social work activities (Q)
- R-U: Arts, entertainment and recreation R), Other service activities (S), Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), Activities of extraterritorial organisations and bodies (U)

## Figure 2.12: Employment by sector (comparison)




**A:** Agriculture, forestry and fishing
**B-E:** Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E)
**F:** Construction
**G-I:** Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I)
**J:** Information and communication
**K:** Financial and insurance activities
**L:** Real estate activities
**M-N:** Professional, scientific and technical activities (M), Administrative and support service activities (N)
**O-Q:** Education (O), Human health and social work activities (Q)
**R-U:** Arts, entertainment and recreation (R), Other service activities (S), Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), Activities of extraterritorial organisations and bodies (U)



Between 2014 and 2023, the relative number of jobs in the different sectors remains fairly stable. There is a slight decline in the share of employment in agriculture, forestry and fishing (A), mining and quarrying (B), manufacturing (C), electricity, gas, steam and air conditioning supply (D) and water supply; sewerage, waste management and remediation activities (E). Conversely, there is a modest increase in the number of jobs in information and communication (J), professional, scientific and technical activities (M) and administrative and support service activities (N).

Over the entire period, the sectors with the highest share of jobs are 'B-E' (mining, quarrying, manufacturing, electricity, gas, steam and air conditioning supply, water supply; sewerage, waste management and remediation activities, 'G-I' (wholesale and retail trade; repair of motor vehicles and motorcycles, transportation and storage, accommodation and food service activities) and 'O-Q' (education, human health and social work activities).

#### 2.2.2.4 Outgoing cross-border commuters

**Indicator description**

The indicator shows outgoing cross-border commuting dynamics at NUTS3 level. Even though no origin-destination information can be provided, it is assumed that commuters primarily travel across the nearest border. Spatial, economic and population arguments are combined to calculate the number of outgoing cross-border commuters.

- **Source/method of retrieval**: Eurostat/LFS data on outgoing commuters currently available on NUTS2 level has been regionalised for NUTS3 by means of weighting by border length, NUTS3 population-weighted centroid distance to border, population per NUTS3 region (15–64 years old) and real compensation per employee
- **Temporal coverage**: 2015-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

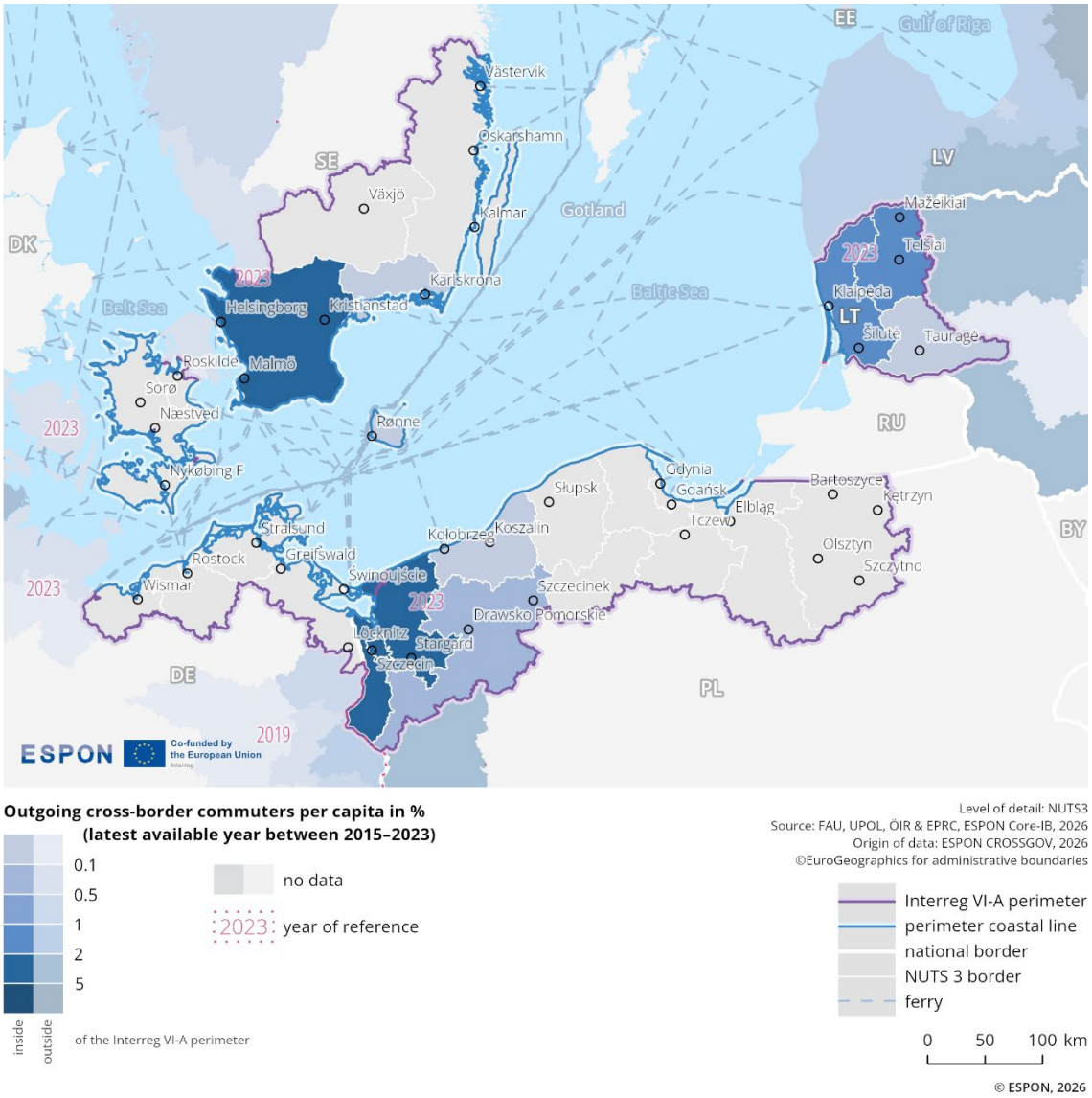
Commuting is one of the most relevant cross-border flows to identify functional linkages. Figure 2.13 illustrates the share of outgoing commuters per capita for each NUTS3 region (more concretely speaking the share of outgoing commuters among the residential population of the age group 15-64 years old, resembling the potential labour force). Origin-destination information cannot be provided, but the share of outgoing commuters in regions close to the border indicates the relevance of commuting. It highlights functional relations in the labour market within the cross-border region.

The map illustrates the share of cross-border commuters, based on the most recent available year of data. It shows relatively strong cross-border commuting activity in some coastal areas of Sweden and Poland.

Outgoing commuter 'hotspots' include the Polish region of Szczeciński, suggesting cross-border commuting to Germany across the land border[9]. The relatively high shares of outgoing commuters in the Swedish regions of Blekinge län and Skåne län could indicate commuting in multiple directions. Outgoing commuting is also comparatively high in Lithuania, especially in Telšiai County. However, as there is no information on the commuting destination this might be related to other borders in the vicinity, e.g., to Latvia.

[9] See Eurostat Statistical Atlas for NUTS3 (2021) regions: https://ec.europa.eu/statistical-atlas/viewer/?config=typologies.json&ch=NUTS&mids=BKGCNT,NUTS2021L3,CNTOVL&o=1,1,0.7&center=49.69576,14.3332,4&lcis=NUTS2021L3&

## Figure 2.13: Outgoing cross-border commuting patterns




### 2.2.2.5 Cross-border telework agreements

#### Indicator description

The indicator shows what kind of legal framework for cross-border telework is enacted.

- **Source/method of retrieval**: The indicator is based on information about the legal framework for social security regarding cross-border teleworking, categorised by border pair.
- **Temporal coverage**: Status as of March 2025
- **Unit**: n/a

Please refer to the technical annex for more information.

Denmark is not a signatory state of the 2023 Framework Agreement on Cross-Border Telework. Therefore, for cross-border work involving Denmark, all countries apply the standard rules under Article 13 of Regulation (EC) No. 883/2004. This means that cross-border telework is generally limited to 25% of the total working time, beyond which social security affiliation may shift to the country of residence. All other countries of the programme are signatories of the 2023 Framework Agreement on Cross-Border Telework. Under this agreement, cross-border workers can telework from their country of residence for up to 50% of their total working time without affecting their social security affiliation.

### 2.2.3 Competitiveness

This sub-dimension illustrates the competitiveness of the border region by analysing the main industry sectors that contribute to its economic development. It assesses gross value added (GVA) at basic prices by sector, as well as nominal compensation per hour worked, in order to understand productivity levels and sectoral strengths.

#### 2.2.3.1 Gross value added at basic prices by sector

**Indicator description**

The indicator shows the gross value added (GVA), which is a measure of the contribution of a country or region to the economy. Regional GVA represents the value generated by all units involved in the production of goods and services within a specific area. This indicator can be disaggregated by industry and service sector, allowing for a detailed analysis of economic contributions across different fields. Additionally, the sum of GVA across all industries or sectors, combined with taxes on products and minus subsidies on products, yields the gross domestic product (GDP) of the region. The dataset is available in "10-sector" NACE classifications, facilitating comprehensive evaluations of the regional economy.

- **Source**: Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Million purchasing power standards (PPS)

Please refer to the technical annex for more information.

Figure 2.14 visualises GVA, which is an important indicator of economic activity. GVA measures the value created by all economic activities involved in producing goods and services in a specific area. It is differentiated by sectors to provide detailed insights into the economic contributions of different fields.

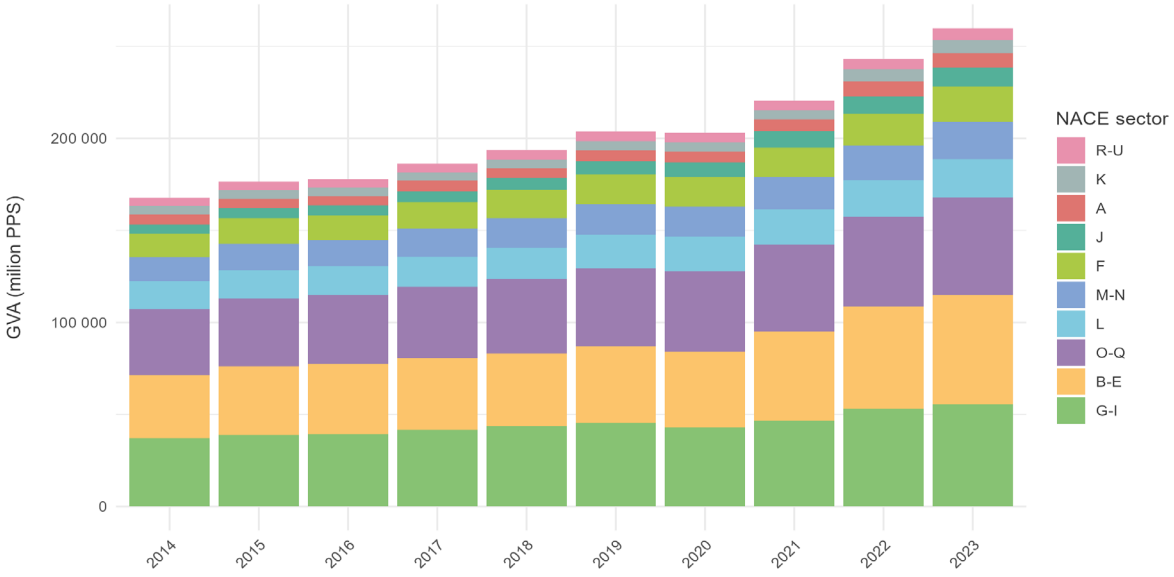
The dataset uses a '10-sector' classification based on NACE categories. The sectoral breakdown is as follows:

- A: Agriculture, forestry and fishing
- B-E: Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E)
- F: Construction
- G-I: Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I)
- J: Information and communication
- K: Financial and insurance activities
- L: Real estate activities
- M-N: Professional, scientific and technical activities (M), Administrative and support service activities (N)

- O-Q: Education (O), Human health and social work activities (Q)
- R-U: Arts, entertainment and recreation R), Other service activities (S), Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), Activities of extraterritorial organisations and bodies (U)

Between 2014 and 2023, the GVA in the South Baltic border area (comprising Poland, Denmark, Germany, Lithuania and Sweden) increased from 167,803 million purchasing power standards (PPS) to 259,753 million PPS, representing growth of 55%. Sector groups B–E, G–I, and O–Q together make up over half of the total GVA, highlighting their significant contribution to the regional economy within the border area. The sector groups B–E contributed the largest share, with a total of 59,549 million PPS in 2023. This underlines the relevance of the blue economy and the significance of sectors such as Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E) in the Poland-Denmark-Germany-Lithuania-Sweden (South Baltic) border region.

## Figure 2.14: Gross value added at basic prices by sector (comparison)




**A:** Agriculture, forestry and fishing
**B-E:** Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E)
**F:** Construction
**G-I:** Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I)
**J:** Information and communication
**K:** Financial and insurance activities
**L:** Real estate activities
**M-N:** Professional, scientific and technical activities (M), Administrative and support service activities (N)
**O-Q:** Education (O), Human health and social work activities (Q)
**R-U:** Arts, entertainment and recreation (R), Other service activities (S), Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), Activities of extraterritorial organisations and bodies (U)

ESPON Co-funded by the European Union

#### 2.2.3.2 Nominal compensation per hour worked

**Indicator description**

The indicator shows the average income paid for each hour worked, known as compensation per hour worked. This measure is calculated by dividing the "compensation of employees at current prices" by the total number of "hours worked (employees)." Employees, in this context, are defined as individuals engaged by contract in productive activities for a resident unit, receiving remuneration irrespective of their place of residence. The total hours worked is considered the most appropriate measure of labour input, representing the aggregate number of hours actually worked by employees. This indicator provides valuable insights into labour productivity and wage dynamics within the economy.

- **Source**: Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2023 (missing data from 2023 in Switzerland were supplemented by values from 2022)
- **Unit**: Euro

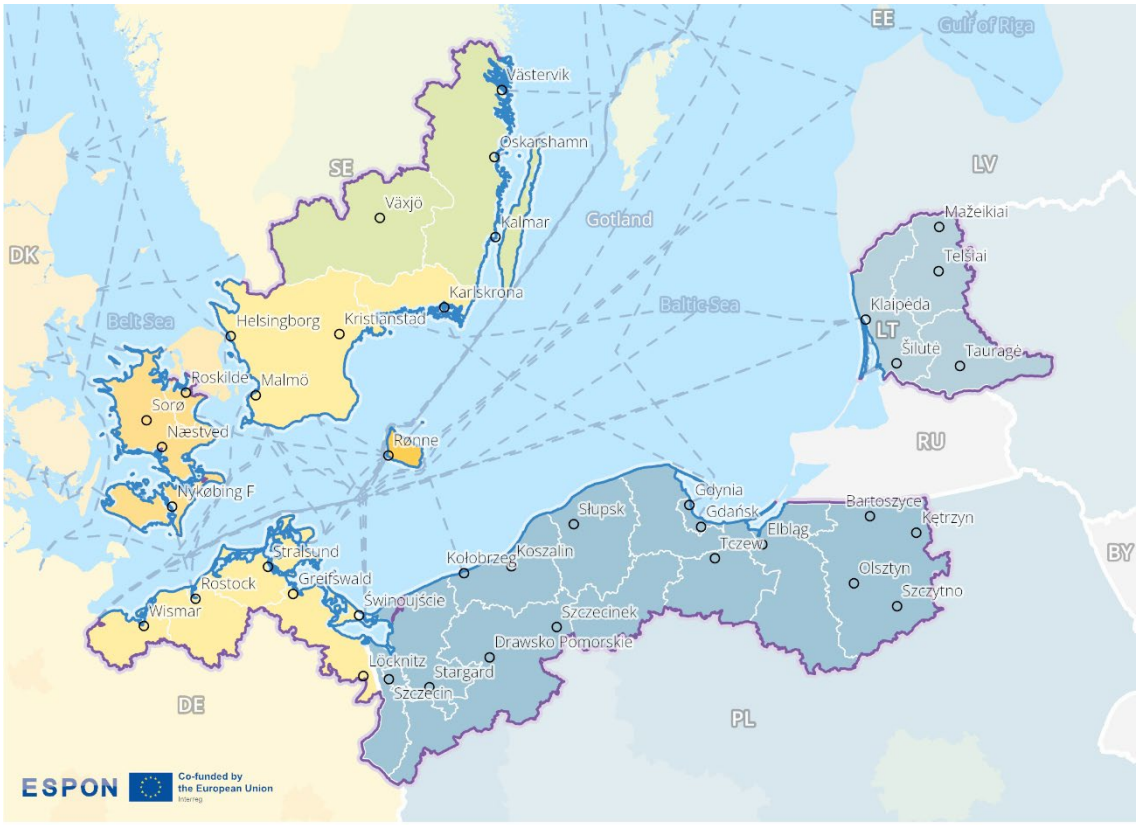
Please refer to the technical annex for more information.

Figure 2.15 shows the average values for the 'compensation per hour worked'. This indicator is calculated by dividing the total compensation of employees (at current prices) by the total number of hours worked by those employees. In this context, 'employees' are defined as individuals engaged by contract in productive activities. The data is available for the place of work, regardless of the place of residence. Total hours worked represent the actual number of hours worked by employees and are considered the most accurate measure of labour input.

In 2023, nominal compensation per hour worked in the Poland–Denmark–Germany–Lithuania–Sweden border region appears to be quite unevenly distributed. In the Swedish areas of the cross-border region, the average hourly income ranges between €20 and €40. In the Danish regions, the average hourly income ranges between €40 and €50, except for Bornholm that shows a slightly higher value (€51.30). In the German border areas, the average hourly income ranges between €30 and €40, with no region reporting values above this range. In the Polish areas, the average hourly income ranges between €5 and €10. In Lithuania, no region reports values above the national average range of €10 to €15. In comparison, the national averages of nominal compensation per hour worked for 2023 were €31.20 in Sweden, €49.20 in Denmark, €39.40 in Germany, €9.90 in Poland and €13.20 in Lithuania.

Cross-border wage differences can encourage labour migration from lower-wage areas to more economically prosperous neighbouring regions, creating both opportunities and challenges for local labour markets and social systems.

## Figure 2.15: Average income per hour




**Average income per hour worked in euros (2023)**

5
10
15
20
30
40
50
60
no data
inside
outside
of the Interreg VI-A perimeter

Level of detail: NUTS3
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ARDECO database, JRC / REGIO, 2006–2023
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

### 2.2.4 Infrastructure and housing

This sub-dimension shows the impact of the border on infrastructure and housing in the cross-border region. It assesses housing prices and average internet speed in order to identify cross-border effects, including potential price spillovers and disparities. The analysis reveals whether infrastructure and housing markets facilitate integration or expose structural challenges that are specific to the border area.

#### 2.2.4.1 Advertised sales prices

**Indicator description**

The indicator shows the advertised sales price per square meter for houses/appartements as retrieved from commercial real estate websites at national level. In the cross-border region, local differences between average sales prices are highlighted and the "cutting" effect of the border and its influence on price levels is visualised.

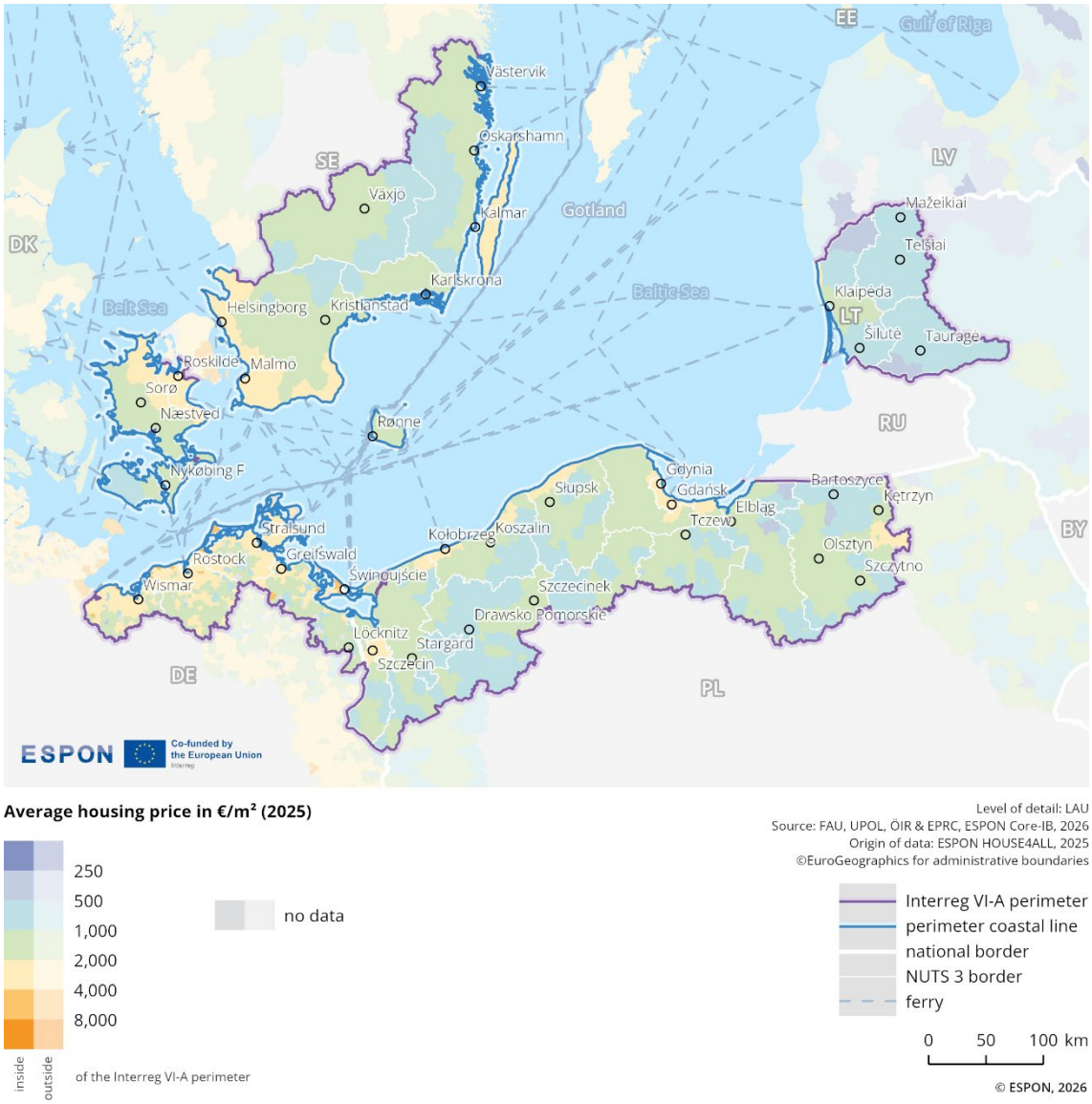
- **Source/method of retrieval**: Processed ESPON House4all data. The original data is collected via web-scraping of national listing websites over a one-year period.
- **Temporal coverage**: 2024/2025
- **Unit**: Average price per square meter (€/$m^2$)

Please refer to the technical annex for more information.

Figure 2.16 illustrates the advertised sales price of housing in 2025 across the border region. The data are categorised into ranges of average housing price per square metre, from below 250 €/m² up to more than 8,000 €/m², shown in colours ranging from purple and blue to green, yellow and orange.

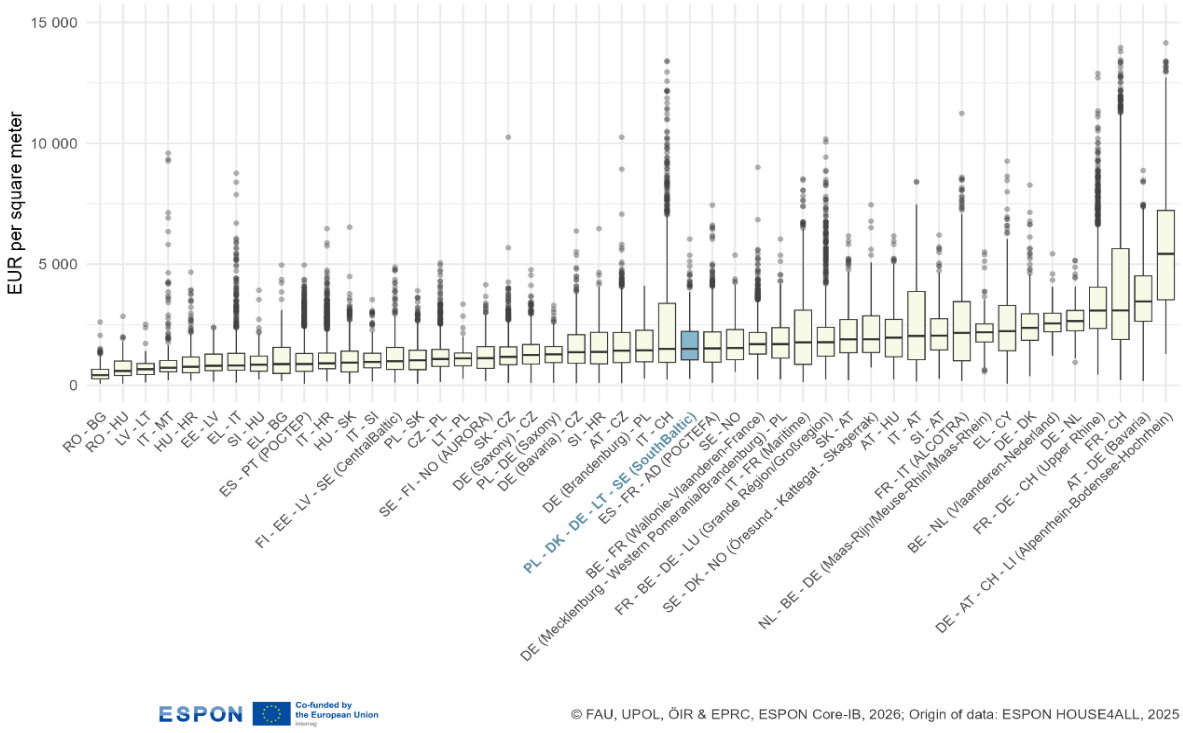
The map shows that prices are higher in Germany, where the coastal area ranges from €2,000 to €4,000/m², with small areas having even higher prices of up to €8,000/m². In Denmark, prices are higher in the north than in the south. Sweden has higher prices on the coast, particularly around the cities of Malmö and Helsingborg, as well as on the island of Öland. In Poland, prices range from €2,000 to €4,000/m² on the coast and in the cities of Szczecin and Gdańsk, while inland areas are dominated by prices ranging from €500 to €2,000/m². The lowest prices across the cross-border are in Lithuania, where prices between €500 and €1,000/m² prevail. The border forms a price divide, particularly between Germany in the west and Lithuania in the east.

## Figure 2.16: Advertised housing prices




The German and Danish parts of the border region record relatively high average advertised residential sales prices, at approximately €2,159 and €2,189 per square metre, respectively. Lower average prices are observed in the Swedish part (€1,595 per square metre), while substantially lower levels are reported in the Polish and Lithuanian parts, with averages of about €1,237 and €923 per square metre, respectively. Overall, the average advertised sales price across the entire border region is estimated at €1,723 per square metre. This figure is slightly below the average for all EU-evaluated border regions (€1,900 per square metre) and remains well below the European average of approximately €5,600 per square metre.

**Figure 2.17: Advertised housing prices (comparison)**




ESPON Co-funded by the European Union



### 2.2.4.2 Average internet speed

#### Indicator description

The indicator shows the population weighted average internet speed available at municipal level. It highlights differences in the "digital preparedness". In border regions, this indicator is particularly relevant for identifying digital infrastructure gaps that may hamper balanced development and cross-border integration.

- **Source/method of retrieval**: Processing of data provided by Speedtest by Ookla Global Fixed and Mobile Network Performance Maps, based on Ookla's analysis of Speedtest Intelligence data.
- **Temporal coverage**: 2022
- **Unit**: Download speed in Mbps

Please refer to the technical annex for more information.

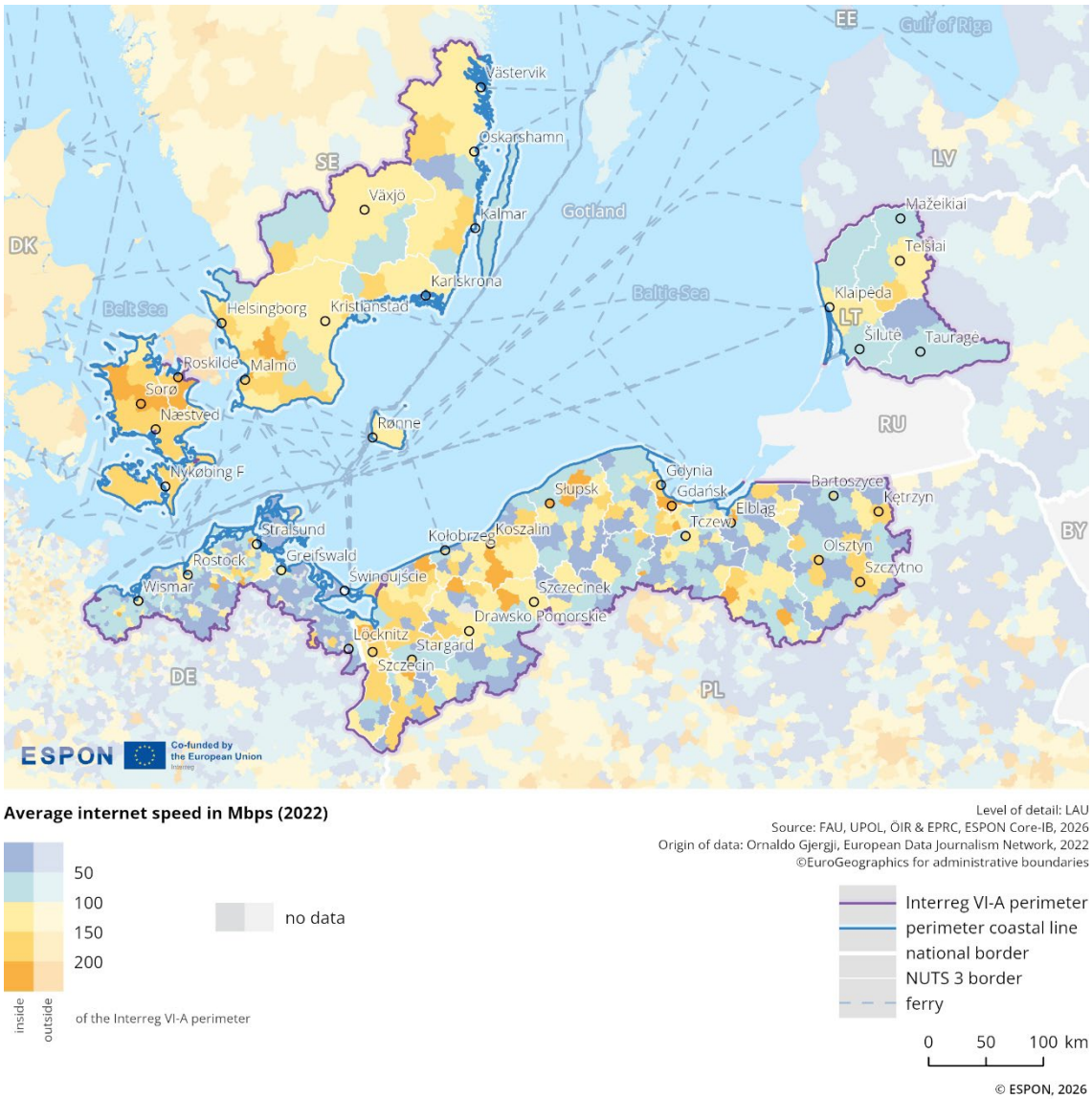
Digitalisation is a highly relevant issue in European border regions, with the overarching objective of ensuring appropriate digital access. It is widely recognised as a key precondition for successful regional and economic development. A major challenge in this process is preventing 'digital divides'— i.e., avoiding significant disparities in economic, social, and spatial terms.

Average internet speed is a telling indicator of such disparities, highlighting differences in 'digital preparedness' at the local level. Figure 2.18 shows the average download speed at the municipality level. The colour scheme ranges from dark blue (very slow speeds) to orange (very fast speeds). The data, prepared by OBC Transeuropa for EDJNet, is based on Speedtest Intelligence data from Speedtest/Ookla's Global Fixed and Mobile Network Performance Maps for the first quarter of 2022.

The average download speeds are expressed in megabits per second (Mbps)—not to be confused with megabytes per second (MBps).

The map reveals significant differences between urban and rural areas. Values range from under 50 Mbps to over 200 Mbps. Cities such as Szczecin, Drawsko Pomorskie, Koszalin, Szczecinek, Gdańsk, Olsztyn, Malmö, Helsingborg, Kristianstad, Karlskrona, Växjö, Kalmar, Oskarshamn, Västervik, Stralsund, and Klaipėda report relatively high average speeds, while surrounding areas tend to have significantly lower values. This may be due to the greater return on investment typically associated with digital infrastructure projects in urban areas rather than in rural ones. However, not all urban areas in this border region have high download speeds; for example, Świnoujście does not stand out in this regard. Sweden and Denmark show high internet speeds across almost the entire area, whereas internet speeds are generally lower in Germany and Lithuania. In the case of islands and remote coastal areas, digital disparities need to be understood within the specific context of maritime geography. These territories often face structural disadvantages in connectivity compared to the mainland, resulting from their physical isolation, limited infrastructure, and higher costs of network deployment and maintenance.

## Figure 2.18: Average internet download speed



### 2.2.5 Key messages on the economic dimension

Overall, the area has an average GDP 73.9 % the EU average but has been experiencing growth rates above the EU average. However, within the area there are variable GDP rates, representing a West to East split with the Danish and Swedish border regions exceeding EU averages. The share of employment in the area has remained stable, with the regional average of 72.9% in 2023 but values in the cross-border region are lower by 2.6 percentage points than the EU average. The programme area experienced a notable, 4.3%, decrease in the share of working-age population between 2014 and 2023. This decline is substantially higher than the European average, which dropped by 2.1 percentage points in the same period.

Between 2014 and 2023, the relative number of jobs available in the different sectors remained stable. There is a slight decline in primary and manufacturing jobs and an increase in services and professional, scientific and technical activities. The highest share of jobs is recorded in 'B-E, 'G-I' and O-Q, which represent a diverse range of activities. These groups also make up over half of the areas GVA. GVA levels in the area have increased by 55% between 2014 and 2023.

The analysis shows relatively strong cross-border commuting activity in some coastal areas of Sweden and Poland. Outgoing commuter 'hotspots' include the Polish region of Szczeciński, suggesting cross-border commuting to Germany across the land border. There are also relatively high shares of outgoing commuters in the Swedish regions of Blekinge län and Skåne län. Contributing to shifting working patterns and places, cross-border teleworking agreements are in place across the area, with the exception of Denmark. In terms internet connectivity, the area has significant differences between urban and rural areas and between Sweden and Denmark and parts of Germany and Lithuania. Values range from under 50 Mbps to over 200 Mbps.

The average income earned per hour worked are unevenly distributed and are split west to east. For example, in the Danish regions, the average hourly income ranges between €40 and €50. In Lithuania, no region reports values above the national average range of €10 to €15. Housing prices are similarly variable with high demand in, for example, coastal areas of Germany, ranging from €2,000 to €4,000/m and even up to €8,000/m² and low prices in Lithuania (€500 and €1,000/m²). This indicated not just a price divide not only across the area, but within specific parts of the programmes area

## 2.3 Green dimension

The green dimension highlights the environmental characteristics, vulnerabilities and sustainability-related interactions within the border region. The analysis provides insight into the environmental interdependence of border regions. Additionally, the spatial distribution of renewable and conventional energy infrastructure, alongside indicators of resources and the circular economy, reveals whether the border facilitates collaborative transitions towards sustainability.

### 2.3.1 Nature protection and pollution

This sub-dimension investigates cross-border functional links in protected areas and areas affected by air and water pollution. It analyses the presence of protected areas in order to identify cross-border ecological links and conservation efforts. It also highlights the extent to which air and water pollution affects people living in border regions.

#### 2.3.1.1 Protected areas

**Indicator description**

The indicator shows the presence and territorial coverage of protected areas based on the combination of 3 data sources, i.e., Nationally designated areas, Natura 2000 Network and Emerald Network.

- **Source/method of retrieval**: The indicator represents a combination of nationally designated areas, Natura 2000 and Emerald network provided by EEA (European Environment Agency) Geospatial data catalogue.
- **Temporal coverage**: 2024
- **Unit**: n/a

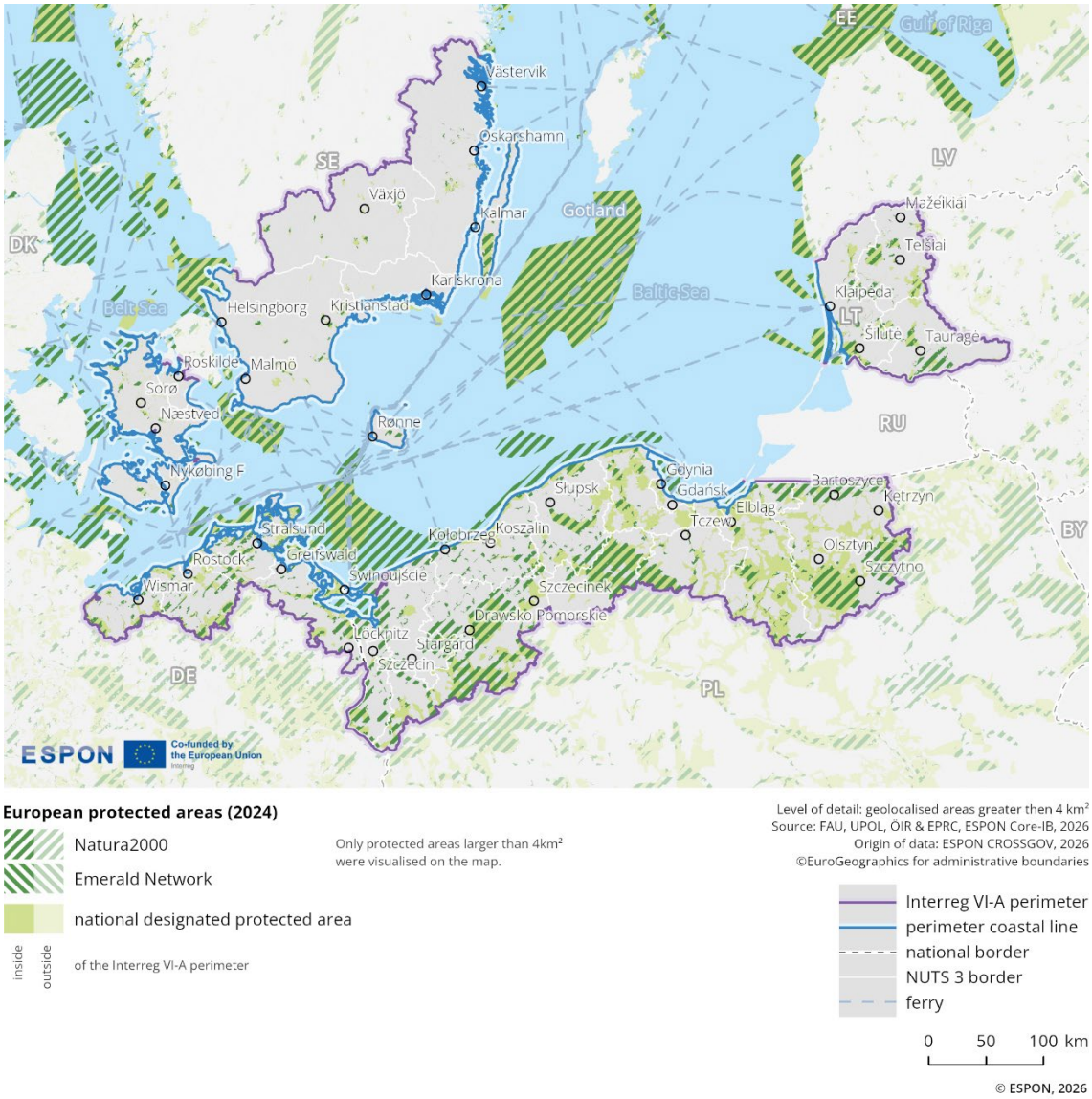
Please refer to the technical annex for more information.

Figure 2.19 illustrates the distribution of protected areas in 2024 across the border region. The data differentiate between Natura 2000 sites, the Emerald Network, and nationally designated protected areas, with only protected areas larger than 4 km² displayed.

Protected areas within the Interreg region are densely concentrated along the southern Baltic Sea coast, particularly around Gdańsk, Świnoujście, and Stralsund, where extensive marine and coastal Natura 2000 and national designations overlap. Inland areas in northern Poland, western Lithuania and northeast Germany show a large number of medium-sized and scattered patches, while southern Sweden has fewer protected zones, mostly located along the Kalmar coast and archipelago.

Numerous marine protected areas display clear transboundary counterparts across the Baltic Sea, especially between Germany, Poland, and Sweden. These form continuous corridors along the coastline, whereas inland zones remain more fragmented with limited cross-border linkage (except for the German-Polish border).

**Figure 2.19: Nature protected areas**




### 2.3.1.2 Air pollution

#### Indicator description

The indicator shows the air pollution from fine particulates (PM2.5) at NUTS3 level. The data shows the population-weighted average air pollution level (µg/m³), providing an indication of the extent to which the regional population is affected by air pollution.

- **Source/method of retrieval**: Processing and analysis of European Environment Agency data
- **Temporal coverage**: 2022
- **Unit**: Population weighted average of µg/m³

Please refer to the technical annex for more information.

This graph illustrates PM2.5 concentrations (in µg/m³) across NUTS3 regions in Poland, Denmark, Germany and Lithuania in the South Baltic border region. Each small dot represents an individual measurement, while the black crosses indicate the average PM2.5 concentration for each NUTS3 region[10]. The regions are aligned along the x-axis, with German regions on the left (in red), Danish regions in blue, Lithuanian regions in orange, Polish region in purple and Swedish regions on the right (in green).

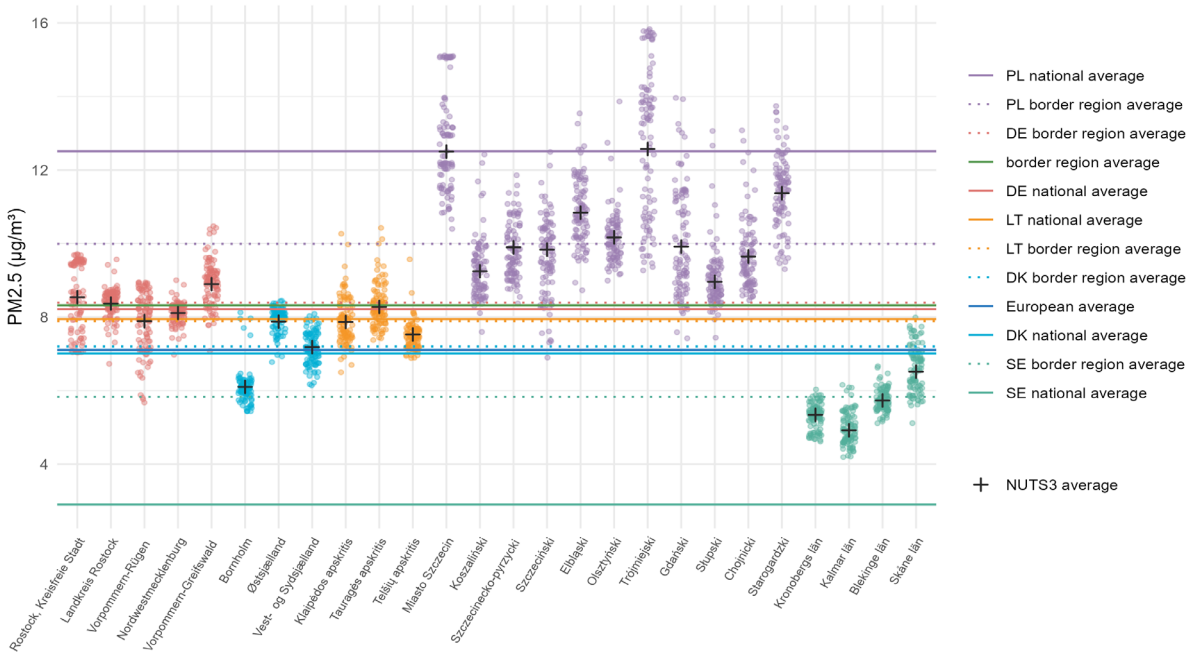
Poland has the highest PM2.5 levels, followed by Germany and Lithuania. Denmark and Sweden show significantly lower levels of PM2.5.

The national average PM2.5 concentration in Poland exceeds 12 µg/m³, which is significantly higher than the average in its border region. In contrast, both Germany and Lithuania have national averages of around 8 µg/m³, with their respective border region averages being approximately at the same level. Denmark reports a national average close to 7 µg/m³, which is nearly identical to both its border region average and the European average. Sweden records the lowest national PM2.5 average, with values below 4 µg/m³; however, the average in its border region is considerably higher.

Poland, Germany, and Lithuania all show national and border averages above the European average. Denmark and Sweden maintain national and border averages below the European level, particularly in Sweden.

The cross-border average lies slightly above 8 µg/m³. This value is higher than the overall European average but remains lower than the national average of Poland. In contrast, it exceeds the national averages of Denmark and Sweden. When compared to the individual border region averages, the cross-border average aligns closely with those of Germany and Lithuania. It is higher than the border region averages of Denmark and Sweden, but lower than the border average observed in Poland.

## Figure 2.20: Air pollution






[10] See Eurostat Statistical Atlas for NUTS3 (2021) regions: https://ec.europa.eu/statistical-atlas/viewer/?config=typologies.json&ch=NUTS&mids=BKGCNT,NUTS2021L3,CNTOVL&o=1,1,0.7&center=49.69576,14.3332,4&lcis=NUTS2021L3&

#### 2.3.1.3 Water pollution

**Indicator description**

The indicator shows the ecological status or potential for coastal and river water bodies. It is based on an assessment of biological, hydro-morphological, chemical and physico-chemical quality elements.

- **Source/method of retrieval**: Processing and analysis of European Environment Agency data
- **Temporal coverage**: 2022 (supplemented by 2016 data)
- **Unit**: n/a

Please refer to the technical annex for more information.

The map illustrates water pollution levels in Poland, Denmark, Germany, Lithuanian and Sweden in the South Baltic region within their Interreg region in 2022. Water quality is represented using 6 colour-coded categories, ranging from "bad" to "high", including an "unknown" category[11].

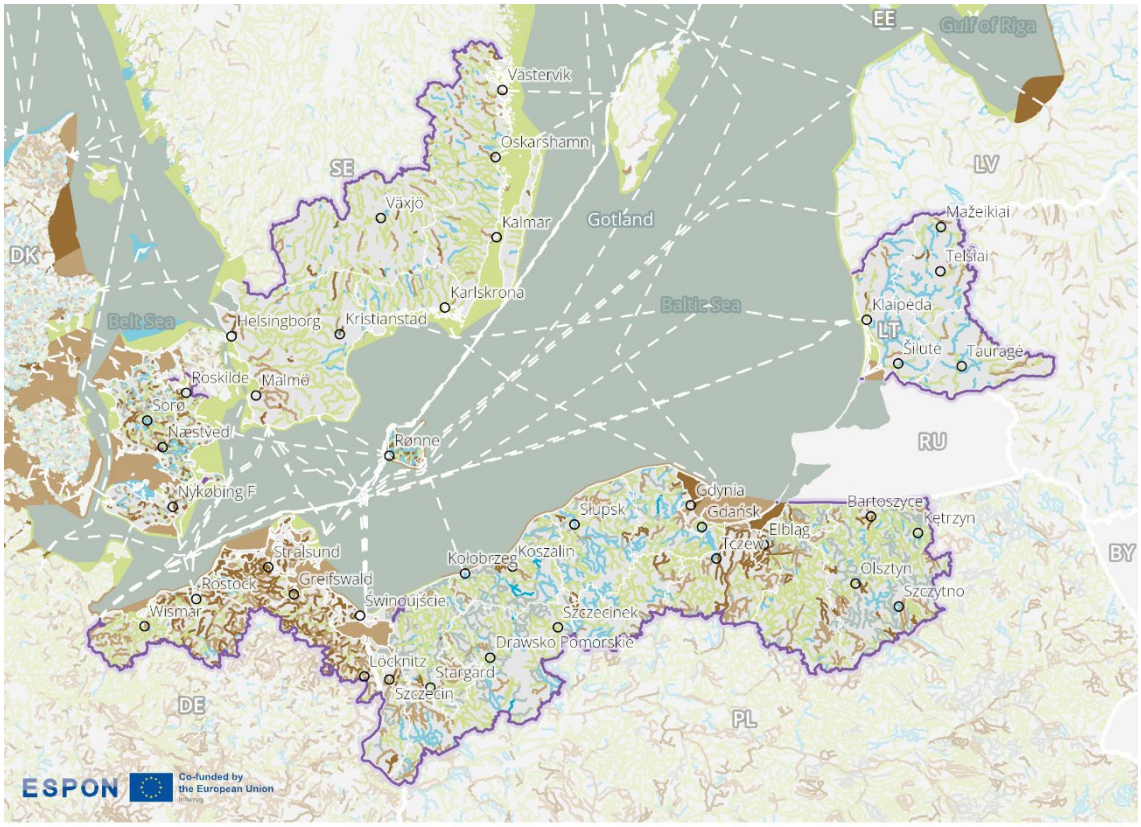
The German, Polish, and Lithuanian mainland areas show a varied range of water quality levels. The Polish and German coastal regions are mostly rated as having "poor" water quality, while the Lithuanian coastal areas are predominantly rated as "moderate". The German inland areas are largely characterised by "poor" to "bad" water quality, whereas the Polish inland areas show mostly "moderate" levels, with some areas rated as "good" or "high". In the Polish part of the Interreg region, several rivers are also classified as having "unknown" water quality.

The Swedish part of the Interreg region is predominantly characterised by "moderate" water quality, especially in the eastern areas. However, there are also isolated rivers rated as either "bad" or "high". Overall, the Swedish coastal areas are rated as having "moderate" water quality.

The Danish part of the Interreg region shows a varied range of water quality levels, particularly in inland areas. However, along the Danish western coastal areas, water quality is mostly rated as "poor" or "bad", while the eastern coastal areas are predominantly rated as "moderate". In the northern part, there are also a few water bodies with "high" water quality.

[11] For more information see the Water Framework Directive Reporting Guidance (2022): https://cdr.eionet.europa.eu/help/WFD/WFD_715_2022

## Figure 2.21: Water quality patterns




**Water quality (2022*)**

- high
- good
- moderate
- poor
- bad
- unknown

inside outside inside outside of the Interreg VI-A perimeter

Level of detail: geolocalised lines and areas
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: © European Environment Agency, 2025
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- national border
- NUTS 3 border
- ferry

0 50 100 km

### 2.3.2 Climate risks and resilience

This sub-dimension examines cross-border functional links relating to climate risks and resilience. It analyses exposure to natural hazards such as landslides, earthquakes, droughts and floods in order to identify vulnerabilities and risks.

#### 2.3.2.1 Natural hazard risks

**Indicator description**

The indicator shows the risk the border region is facing in relation to natural hazards (floods, droughts, landslides and earthquakes). The map highlights potential cross-border affectedness and allows to judge the relative relevance of each risk for the cross-border region.

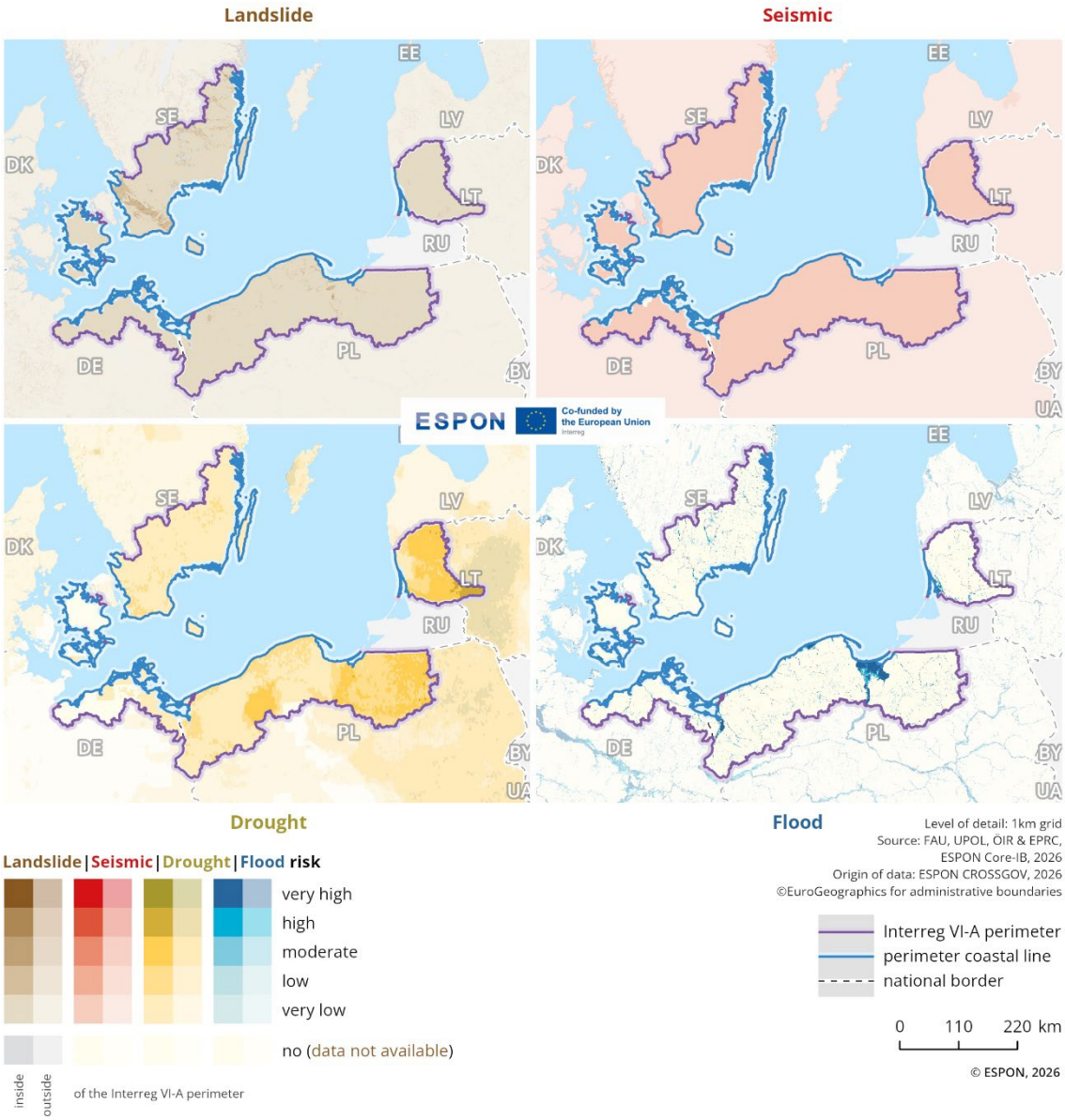
- **Source/method of retrieval**: The indicator is based on geodata from the Disaster Management Risk Knowledge Centre/JRC. It provides the likelihood of specific natural hazard events at grid level.
- **Temporal coverage**: 2024
- **Unit**: n/a

Please refer to the technical annex for more information.

The maps illustrate the spatial distribution of natural hazards in the South Baltic region, highlighting areas where risks are shared across national boundaries and where risks are not necessarily cross-border relevant.

The cross-border region has a very low risk of landslides and earthquakes that is shared across all sides of the border. The risk of droughts increases in the eastern parts of the programme area, primarily in Poland and Lithuania. Coastal areas in Lithuania (Curonian Spit) and Poland (Vistula Spit) are also threatened by flooding.

## Figure 2.22: Natural hazard risks



### 2.3.3 (Renewable) Energy and energy infrastructure

This sub-dimension assesses cross-border functional links in energy supply and infrastructure, focusing on existing connections and missing links. The distribution of power lines, energy infrastructure and power stations is analysed to identify supply patterns and potential integration gaps. The analysis reveals whether the border facilitates energy cooperation and connectivity, or if infrastructural differences create barriers.[12]

#### 2.3.3.1 Power lines and energy infrastructure

**Indicator description**

The indicator shows the distribution of power lines and energy infrastructures in the cross-border region. The geodata highlights the existing links and gaps in the cross-border interconnections of the energy transmission network.

- **Source/method of retrieval**: Geodata on high-voltage energy infrastructure (100 kV and above) has been collected and processed from OpenStreetMap.
- **Temporal coverage**: 2025
- **Unit**: kV

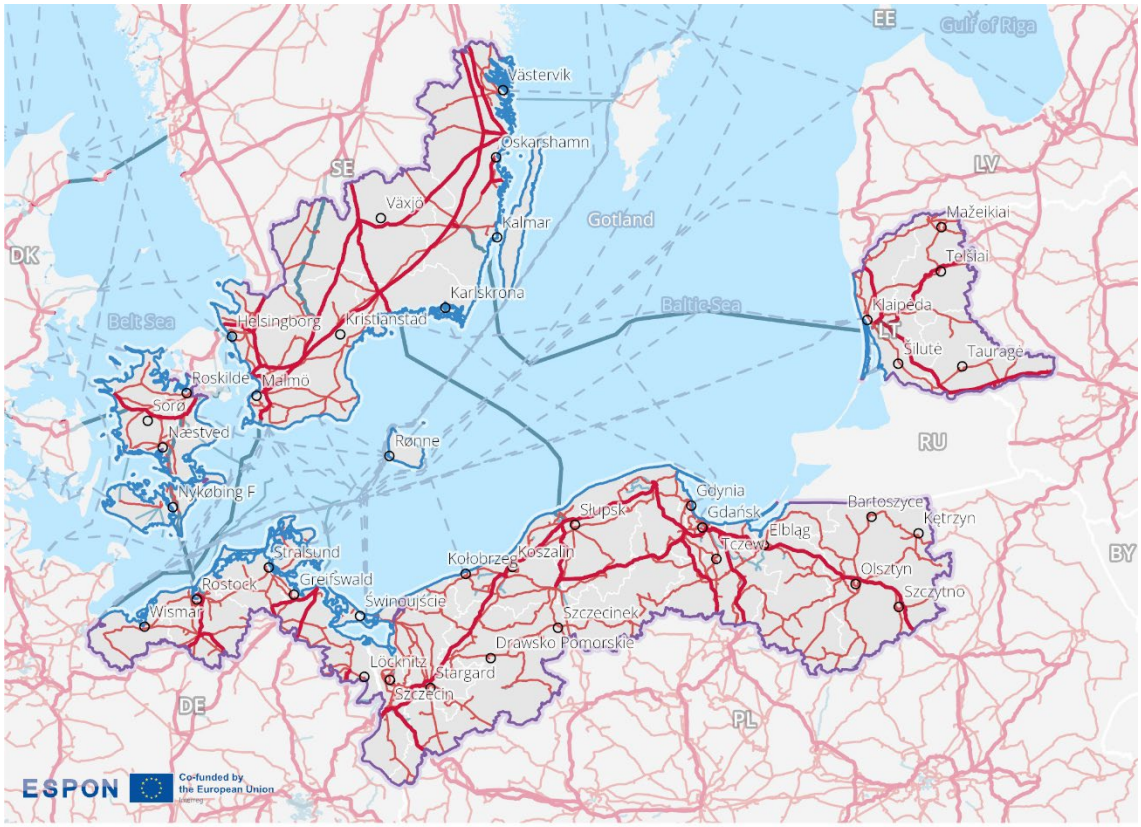
Please refer to the technical annex for more information.

Figure 2.23 illustrates the distribution of power lines and cables in 2025 across the border region. The data distinguish between overhead and underground power lies, further classified into high-voltage (100-230 kV), extra high-voltage (230-1,000 kV), and ultra-high voltage (above 1,000 kV).

The Poland-Denmark-Germany-Lithuania-Sweden cross-border region shows extensive and, at least in some parts, dense high- and extra-high-voltage transmission infrastructure. Focusing on extra high-voltage networks, their common feature is that they connect the main and significant populated areas or industrial sites in each country. An important feature of this cross-border region is the connection between individual countries via undersea cables. The map clearly shows the direct connections between Denmark and Germany, Sweden and Poland, Germany and Lithuania. Denmark is indirectly connected to Sweden, and directly from another Danish territory not related to this cross-border region. Poland is not directly connected to either Germany or Lithuania within this region.

[12] See also: European Commission 2025: Handbook on Cross-border Energy Communities, https://ec.europa.eu/regional_policy/sources/studies/2025/Handbook_on_Cross-border_Energy_Communities.pdf

## Figure 2.23: High-voltage transmission infrastructure




**Overhead power lines (2025)**

- High Voltage (100–230 kV)
- Extra High Voltage (230–1.000 kV)
- Ultra High Voltage (1.000 kV+)

**Underground power cables (2025)**

- High Voltage (100–230 kV)
- Extra High Voltage (230–1.000 kV)
- Ultra High Voltage (1.000 kV+)

inside / outside of the Interreg VI-A perimeter

ANSI Standard C84.1 was used for classification of power lines.

Level of detail: geolocated lines
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CROSSGOV, 2026
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

#### 2.3.3.2 Power stations

**Indicator description**

The indicator shows the location of power stations by type and energy production levels (coal, gas and oil, nuclear, hydro). It can indicate differences and complementarities in the national energy supply systems as well as highlight potential supply-demand links when viewed in conjunction with power lines infrastructure.

- **Source**: OpenStreetMap, Global Energy Monitor, JRC Hydro-power plants database
- **Temporal coverage**: 2025
- **Unit**: MW

Please refer to the technical annex for more information.

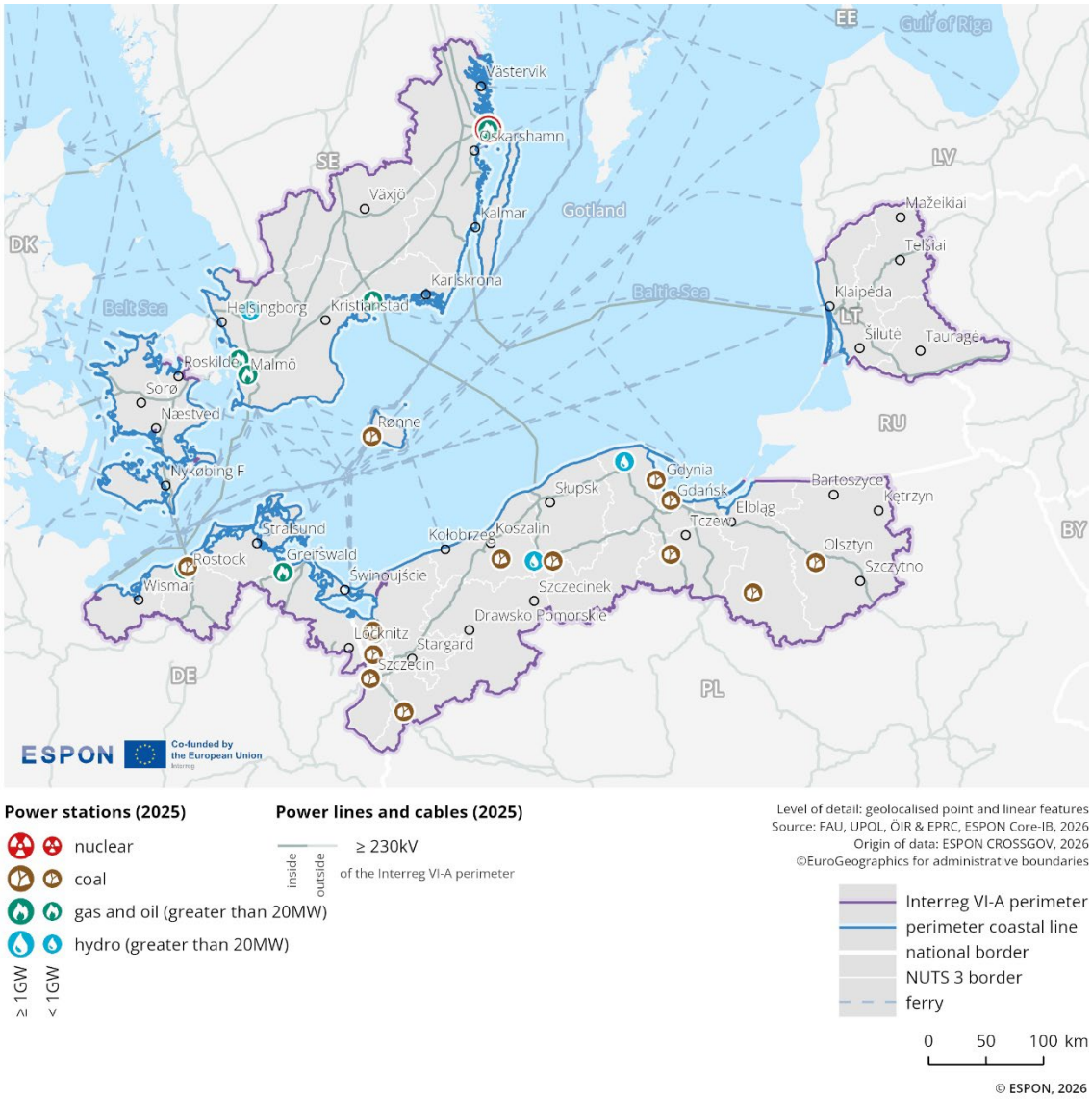
In the Poland-Denmark-Germany-Lithuania-Sweden cross-border region, in total, there are 26 power station/plant locations, while the most common is represented by coal-fired power stations (see Table 1).

**Table 1: Number and type of power stations**

| Power stations/plants | Less than 1GW | 1GW and up |
|---|---|---|
| Nuclear | / | 1 |
| Coal | 15 | / |
| Gas and oil | 7 | / |
| Hydro | 3 | / |

Of the 15 coal-fired power plants in the cross-border region, 13 are located in Poland, 5 of which are near Szczecin on the German border, with the remaining 8 located elsewhere in Poland (see Figure 2.24). One coal-fired power plant is located in Germany near Rostock and one on Bornholm (Denmark). There are 7 gas and oil power stations in the programme area, 4 in Sweden, 2 in Germany and one in Poland (again on the border with Germany near Szczecin). There are also 3 hydroelectric power plants in the cross-border region, one of which is located in Sweden east of the city of Helsingborg, and the other 2 in Poland in the central part of its territory. However, the only high-performance nuclear power plant in the cross-border is located in the northern part of Sweden, near the town of Oskarshamn. There are no power plants of the examined types located within this cross-border perimeter in Lithuania.

## Figure 2.24: Power stations infrastructure




**Power stations (2025)**

- nuclear
- coal
- gas and oil (greater than 20MW)
- hydro (greater than 20MW)

≥ 1GW < 1GW

**Power lines and cables (2025)**

inside outside ≥ 230kV of the Interreg VI-A perimeter

Level of detail: geolocalised point and linear features
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CROSSGOV, 2026
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

### 2.3.4 Resources and circular economy

This sub-dimension focuses on resource use patterns in the border region and their implications for circular economy practices. It analyses resource productivity and waste generation in order to evaluate the efficiency and sustainability of resource utilisation across the border.

#### 2.3.4.1 Resource productivity

**Indicator description**

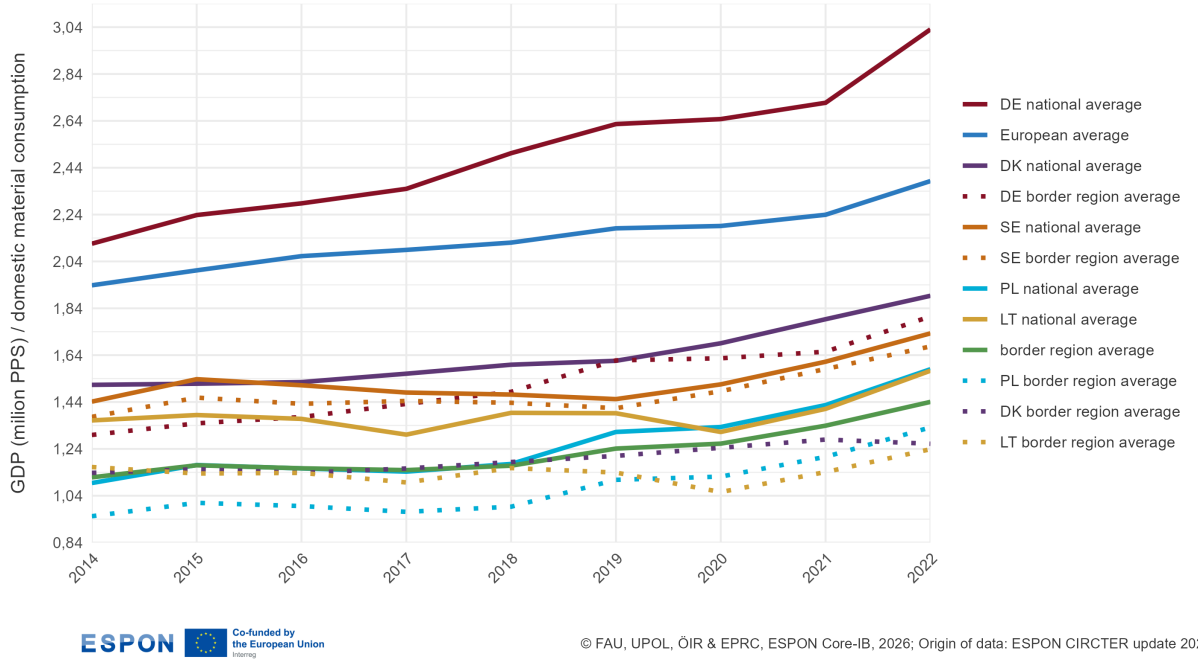
The indicator shows the economic value generated per unit of material consumed for each region within the cross-border area. Developments over time provide insights if the decoupling of productivity from resource use is progressing on regional level.

- **Source/method of retrieval**: Processing of Eurostat and ESPON CIRCTER (Circular Economy and Territorial Consequences) Update data
- **Temporal coverage**: 2014-2022
- **Unit**: PPS/tons

Please refer to the technical annex for more information.

Figure 2.25 illustrates the development of GDP per unit of domestic material consumption in million PPS/DMC (purchasing power standards per domestic material consumption) between 2014 and 2022. The data compare the national averages, the averages of their respective border regions, and the overall border regional average with the European average.

**Figure 2.25: Resource productivity**




ESPON Co-funded by the European Union Interreg



While the German national average is significantly higher than the other national averages, reaching around 3.04 million PPS PPS/DMC in 2022, the others range between 1.44 and 1.84 million PPS/DMC in the same year. All countries show a general growth in resource productivity over the observed period, but always with slightly lower values in their respective border regions.

The European average lies significantly above the national averages of all countries except Germany. The border region average is almost aligned with those for Denmark and Lithuania, while the average for the Polish border region is slightly lower, and the averages for the Swedish and German border regions are notably higher. In 2022, it reached a value of around 1.44 million PPS/DMC per unit of domestic material consumption.

### 2.3.4.2 Generation of waste per GDP

#### Indicator description

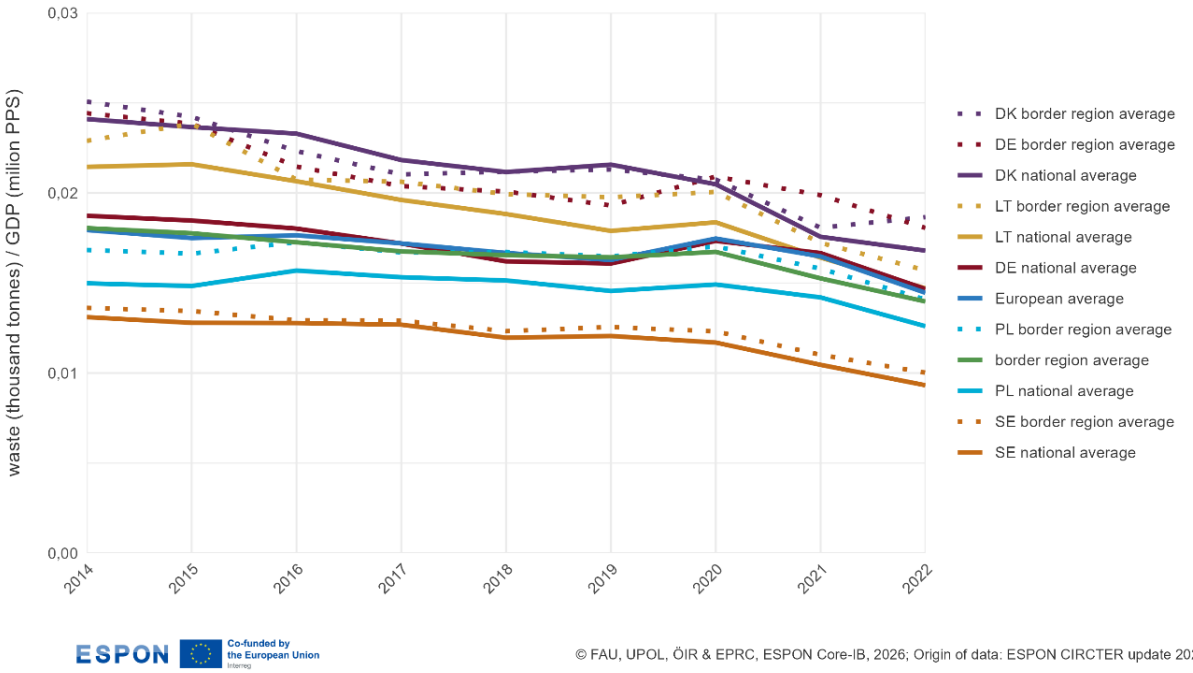
The indicator shows the regional distribution of waste creation in relation to the GDP development. Comparing waste generated to GDP reflects the waste intensity of the economy and provides a measure of "eco-efficiency". Observation of its change from year to year permits to assess whether the economy is able to produce more wealth while at same time generating less waste.

- **Source/method of retrieval**: Processing of Eurostat and ESPON CIRCTER Update data
- **Temporal coverage**: 2014-2022
- **Unit**: Tons/PPS

Please refer to the technical annex for more information.

The graph illustrates the trend in waste generation relative to economic output, measured in tonnes of waste per million PPS (Purchasing Power Standard) of GDP from 2014 to 2022 in the Interreg region South Baltic (Poland-Denmark-Germany-Lithuania-Sweden).

**Figure 2.26: Waste generation per GDP**




ESPON Co-funded by the European Union Interreg



All national and border region averages in this graph for the 5 countries show a steady decline over time, without major fluctuations. While the Swedish and Polish values are the lowest in the graph, the Danish values, the Lithuanian values, and the German border region average represent the highest ones. The German border region average is significantly higher than the German national average.

The German national average, the Polish border region average, the European average, and the cross-border regional average are all closely aligned, each reaching approximately 0.015 tonnes of waste per million PPS in 2022.

### 2.3.5 Key messages on the green dimension

Connection through the shared maritime and coastal areas are a key characteristic of this area. Related, protected areas comprise numerous marine protected areas and these have clear transboundary counterparts across the Baltic Sea, especially between Germany, Poland, and Sweden. There are continuous corridors along the coastline, whereas inland zones remain more fragmented with limited cross-border linkage (except for the German-Polish border).

In terms of pollution levels there is a variable pattern across the cross-border region. For air pollution, Poland has the highest PM2.5 levels (in µg/m³), followed by Germany and Lithuania. All 3 countries also all show national and border averages above the European average. The German, Polish, and Lithuanian mainland areas show a varied range of water quality levels. Across the indicators, Denmark and Sweden show significantly lower levels of pollution. In terms of resource productivity in PPS, the German national average is significantly higher than the other national averages—reaching around €3.04 million PPS GDP per unit of domestic material consumption in 2022, while the others range between €1.44 and €1.84 million PPS per unit in the same year. All countries show a general growth in resource productivity over the observed period. The European average is significantly higher than the national averages of all countries except Germany. The 5 countries show a steady decline in waste production over time.

The cross-border region of Poland-Denmark-Germany-Lithuania-Sweden shows extensive and dense high- and extra high-voltage transmission infrastructure. An important feature of this cross-border region is the connection between individual countries via undersea cables. Another feature is the reliance on coal-fired power stations in Poland. Of the 15 coal-fired power plants in the cross-border region, 13 are located in Poland, 5 of which are near Szczecin on the German border.

The programme area has a very low risk of key natural hazards. However, the risk of droughts increases in the eastern parts of the cross-border region, primarily in Poland and Lithuania. Coastal areas in Lithuania (Curonian Spit) and Poland (Vistula Spit) are also threatened by flooding.

## 2.4 Socio-economic dimension

The socio-economic dimension examines patterns of social integration, tourism, and access to public services in the border region. It identifies how socio-cultural links, visitor flows and essential services influence development in the cross-border area. By examining interpersonal interactions via social media, language similarities, tourism intensity, and the accessibility of facilities such as secondary schools, grocery shops, hospitals, doctors, pharmacies and cinemas, this dimension highlights both functional integration and potential socio-spatial differences.

### 2.4.1 Social integration

This sub-dimension evaluates the level of cross-border connectivity in the border region by identifying areas with low or high cross-border connectivity. It analyses cross-border connectivity in social media and language similarities across and along national borders to evaluate the potential for cultural and social integration.

#### 2.4.1.1 Cross-border connectivity in social media

**Indicator description**

The indicator refers to the existing connections between users of META social media (in particular Facebook) across the border. It aims at giving an overview of the degree of personal connectivity between inhabitants of the border area. Even though not all these internet connections will relate to real communication exchanges but sometimes just "following" content from other users, they give an overview of interpersonal and cultural knowledge of the social media landscape from across the border.

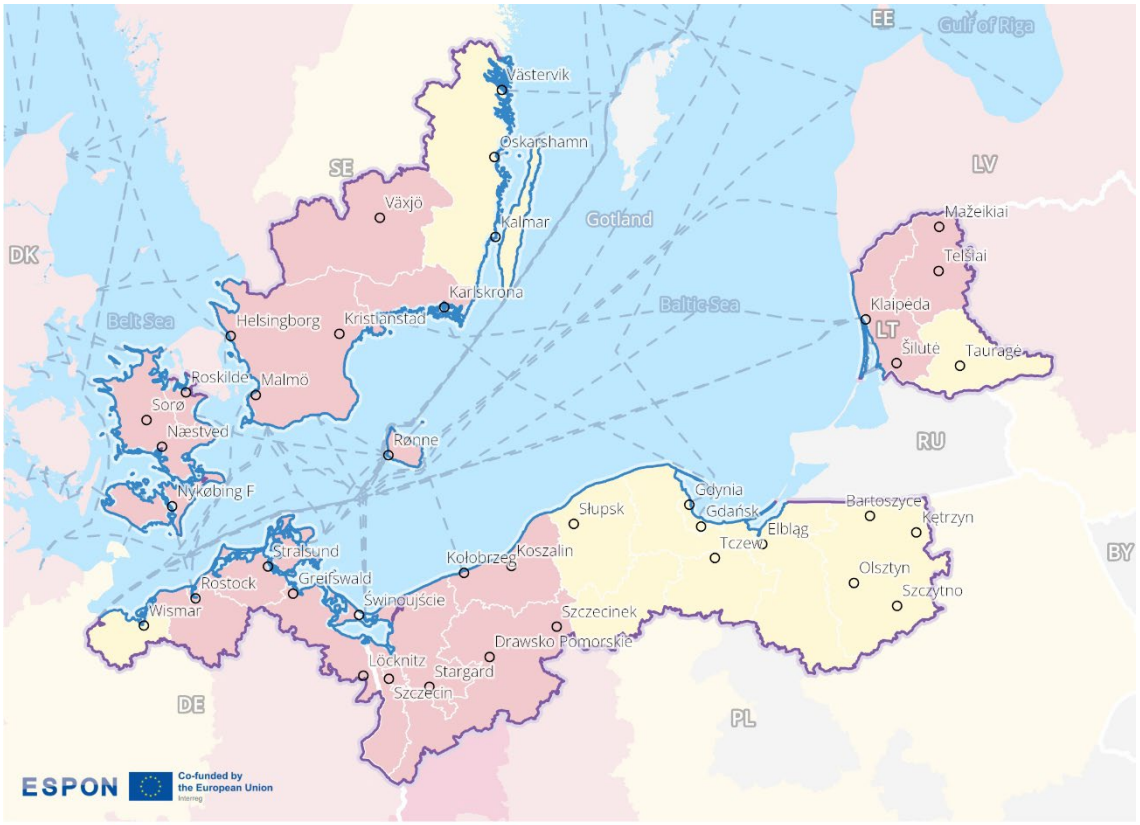
- **Source/method of retrieval**: Processing Facebook data on existing connections across the border (data for Good Meta)
- **Temporal coverage**: 2021
- **Unit**: n/a

Please refer to the technical annex for more information.

Figure 2.27 illustrates the spatial distribution of cross-border connectivity based on Facebook information in the border area. The different shades of pink indicate varying intensities of connectivity, ranging form low to high, with darker tones representing stronger intensity of cross-border connectivity in social media.

The intensity of cross-border connectivity among residents of this border region is relatively uniform, and thus no cross-border differences are evident between the included countries. In most areas of the cross-border region, connectivity intensity is low, including cities such as Växjö, Helsingborg, Malmö, Karlskrona, Stralsund, Świnoujście, Szczecin, Drawsko, and Klaipėda. No connectivity is recorded in the remaining areas, including the Swedish areas around Oskarshamn, Västervik, and Kalmar, the southern part of the Lithuanian section (southeast of Klaipėda), the western area of the German section, and the eastern part of the Polish section (including Gdańsk and Olsztyn).

## Figure 2.27: Cross-border connectivity in social media




**Intensity of cross-border connectivity based on META data (2021)**

- high
- moderate
- low
- none
- no data

inside / outside of the Interreg VI-A perimeter

Level of detail: NUTS3
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CROSSGOV, 2026
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

© ESPON, 2026

### 2.4.1.2 Language similarities along national borders

#### Indicator description

The indicator specifies whether the language is the same across the border, whether the respective national languages have commonalities, whether while different, there are local linguistic commonalities, and whether the language is different.

- **Source/method of retrieval**: ESPON cross-border public services (CPS) 2.0 database along border segments
- **Temporal coverage**: 2022
- **Unit**: n/a

Please refer to the technical annex for more information.

Multiple different languages characterise the border region, with no similarities and no widespread knowledge of the neighbouring regions language recorded on a larger scale. On regional level, some minority populations of the respective neighbouring countries exist.

### 2.4.2 Tourism

This sub-dimension identifies key tourism hotspots in the border region to highlight tourism dynamics. It analyses the number of nights spent in tourist accommodation establishments in order to evaluate the attractiveness of, and developments in, the tourism sector. Comparisons with the respective countries and the EU average provide context for understanding the cross-border region's dynamics.

#### 2.4.2.1 Nights spent at tourist accommodation establishments

**Indicator description**

The indicator shows the number of nights a guest or tourist actually spends in a tourist accommodation establishment or non-rented accommodation (overnight stays). This may reveal the tourism attractiveness of a region and shed light on the role of tourism in the local economy, i.e., tourists/guests staying overnight may spend more in the region than one-day visitors.

- **Source**: Eurostat
- **Temporal coverage**: 2020-2023
- **Unit**: Nights per capita

Please refer to the technical annex for more information.

The spatial distribution of overnight stays highlights the importance of key tourist destinations in border areas. Tourism contributes significantly to regional income, infrastructure development and employment, and thereby supports regional prosperity. At the same time, it affects environmental and living conditions, which may reduce local acceptance despite its economic benefits. This is in particular the case in places of overtourism, seasonal pressures, and increasing land-use conflicts.

Figure 2.28 shows the number of overnight stays per capita at tourist accommodation establishments in 2023. It includes hotels, holiday and other short-stay accommodation, as well as campsites, caravan and trailer parks. The map uses a colour gradient, with darker shades indicating a higher number of nights spent per capita in 2023. It also shows the cumulative number of overnight stays from 2020 to 2023.

In 2023, several NUTS3 regions show more than 20 nights per capita, Landkreis Rostock, Rostock, Kreisfreie Stadt, Vorpommern-Greifswald and Vorpommern-Rügen even exceeding 40 nights spent per capita.[13] In Poland, the per capita figures are somewhat lower, though still relatively high in coastal regions (e.g., Koszaliński). Bornholm in Denmark exceeds 20 nights spent per capita, while in Sweden and Lithuania, all NUTS3 regions show somewhat lower values. In terms of total overnight stays over the 3-year period, the leading tourism regions are located in Vorpommern-Rügen (approx. 9.6 million), Koszaliński (approx. 8.9 million), Skåne län (approx. 6.6 million), Vorpommern-Greifswald (approx. 5.9 million) and Szczeciński (approx. 5.2 million).

[13] See Eurostat Statistical Atlas for NUTS3 (2021) regions: https://ec.europa.eu/statistical-atlas/viewer/?config=typologies.json&ch=NUTS&mids=BKGCNT,NUTS2021L3,CNTOVL&o=1,1,0.7&center=49.69576,14.3332,4&lcis=NUTS2021L3&

## Figure 2.28: Overnight stays in tourism

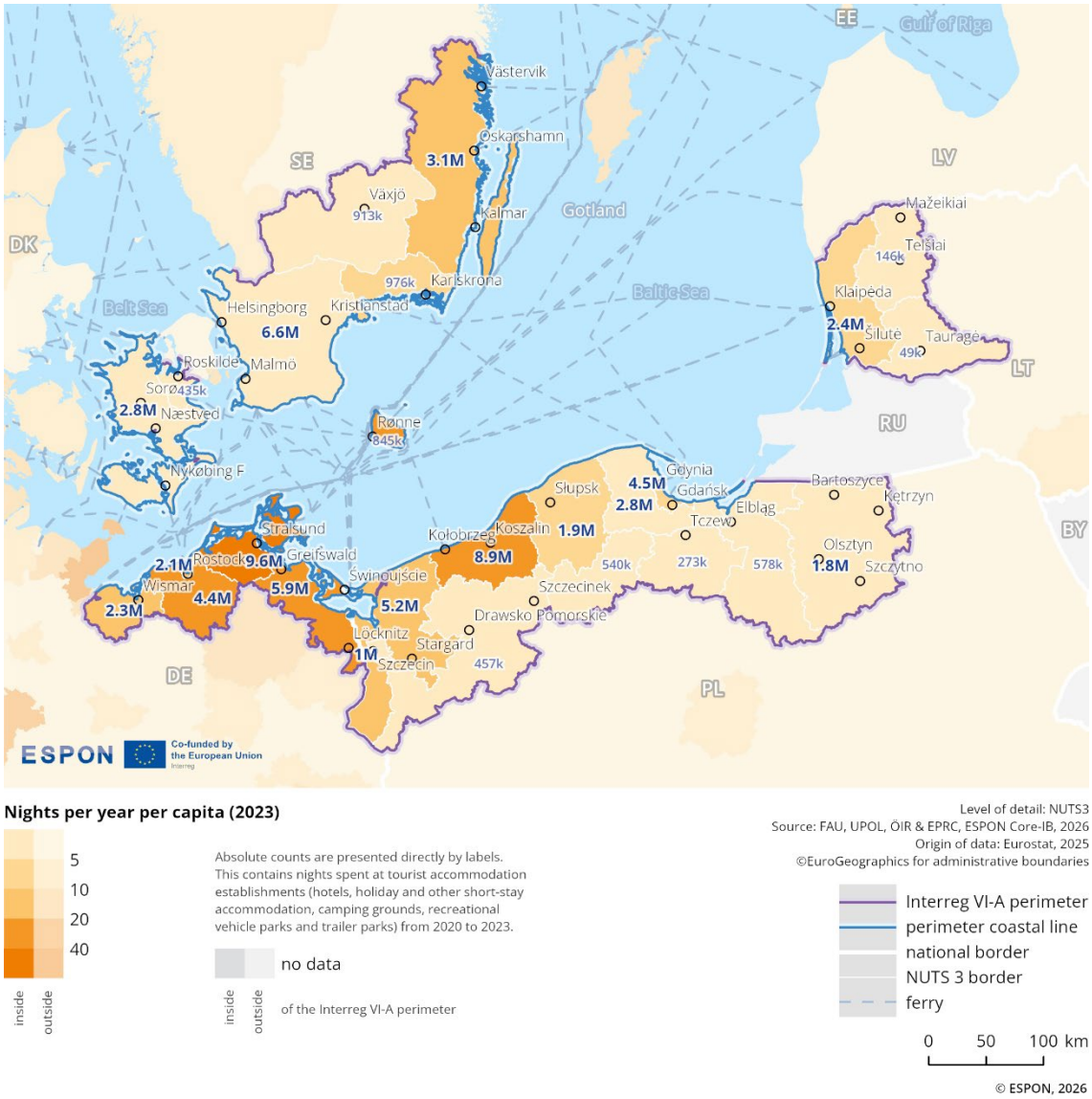
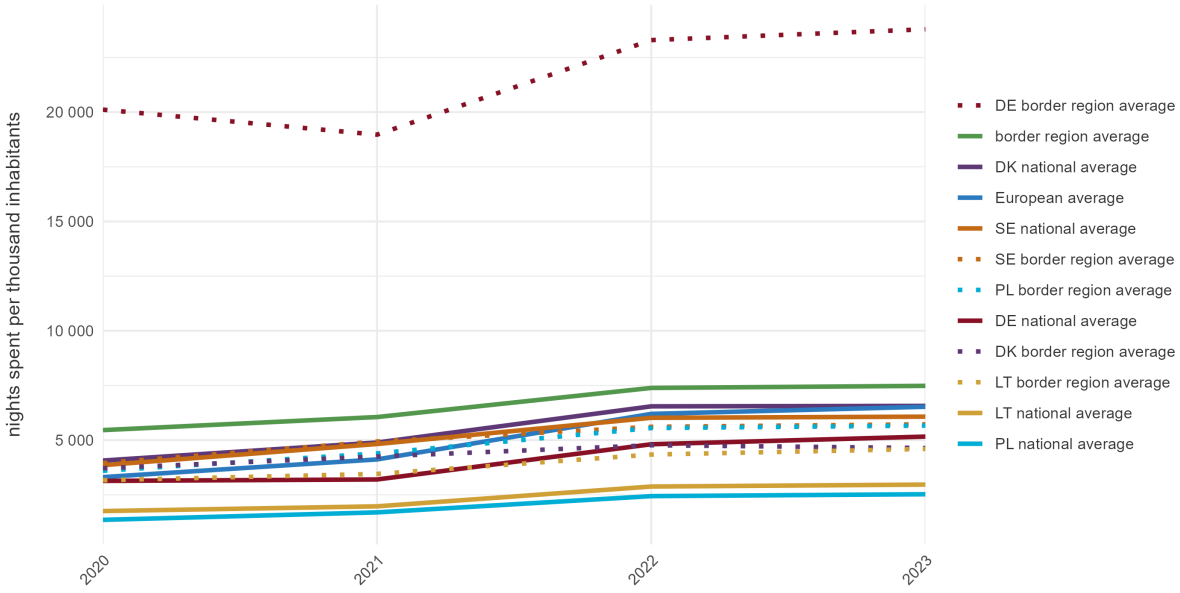



Figure 2.29 illustrates the development of nights spent at tourist establishments per thousand inhabitants from 2020 to 2023. Over the entire period, the average for the Poland-Denmark-Germany-Lithuania-Sweden programme area is higher than the overall European average, which includes both EU member states and the EFTA countries Iceland, Liechtenstein, Switzerland and Norway. While the border regional averages in Germany and Poland are higher than the national averages for all 4 years, the Swedish and Danish border regional averages are lower than the national averages. In the case of Lithuania, the border regional average is the same as the national average. Additionally, the regional average for the German border area is significantly higher than that for the Swedish, Polish, Danish and Lithuanian throughout the given period.

Touristic patterns have a series of implications for spatial development on either side of the border. Transport infrastructure has to consider peak volumes and balancing recreating activities with socio-cultural as well as environmental heritage can be a challenge.

## Figure 2.29: Overnight stays in tourism (comparison)




ESPON Co-funded by the European Union Interreg

### 2.4.3 Services of general interest

This sub-dimension looks at how accessible services of general interest (SGIs) are in the border region, identifying areas that are well-served and those that are more difficult to access. It analyses access to essential services such as secondary schools, grocery shops, hospitals, doctors, pharmacies and cinemas.

#### 2.4.3.1 Accessibility to services of general interest

**Indicator description**

The indicator shows, for the below listed facilities and services, the average driving time to the nearest facility of a series of services of general interest.

- **Source/method of retrieval**: Processing and analysis of standardised travel-time accessibility to secondary schools, grocery shops, hospitals, doctors, pharmacies and cinemas available in the ESPON PROFECY Update (2022)
- **Temporal coverage**: 2021
- **Unit**: Minutes (in 2.5 x 2.5 km grid)

Please refer to the technical annex for more information.

Figures 2.30 to 2.35 visualise average car travel times to services of general interest within the programme area. The maps display accessibility to:

- Secondary schools (Figure 2.30)
- Grocery shops (Figure 2.31)
- Hospitals (Figure 2.32)
- Doctors (Figure 2.33)
- Pharmacies (Figure 2.34)
- Cinemas (Figure 2.35)

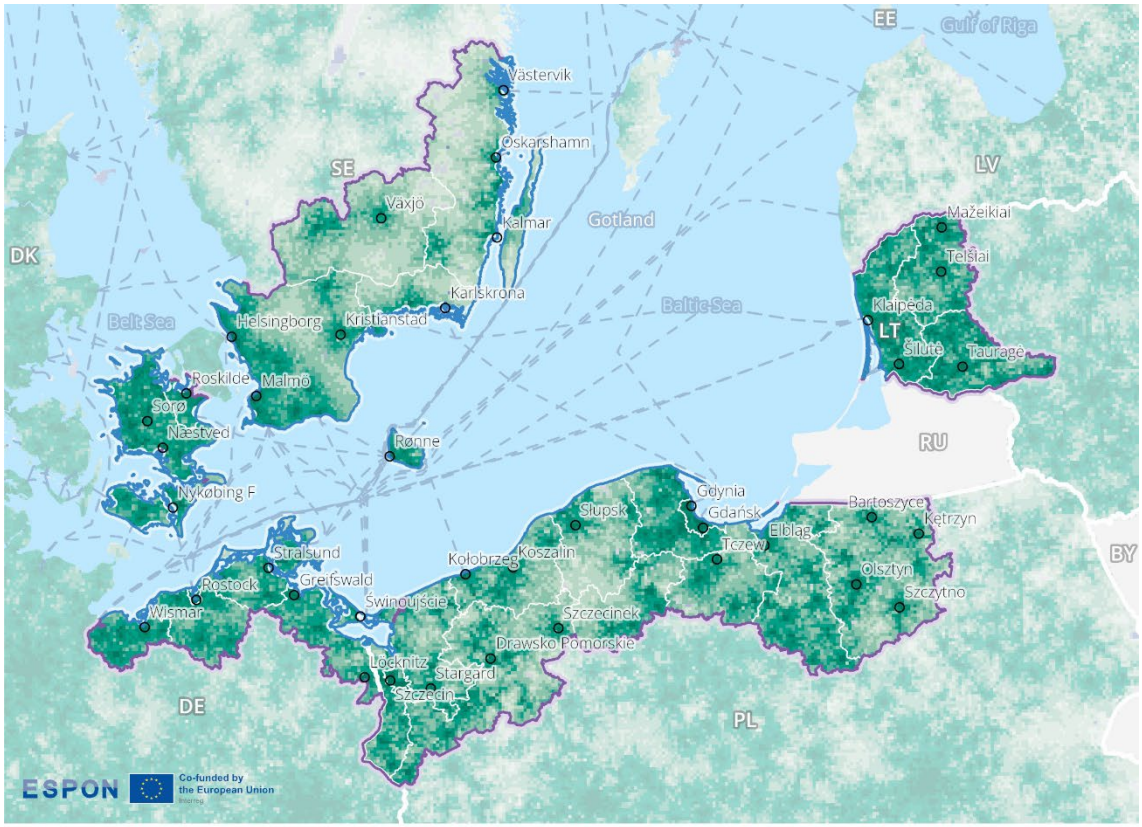
These indicators show how long, on average, it takes to reach the nearest facility by car. The data comes from the ESPON PROFECY Update project (2022) and is visualised based on a 2.5-kilometer grid.

In the Poland–Denmark–Germany–Lithuania–Sweden border area, essential services such as schools and grocery shops are evenly distributed in Germany, Denmark, and Lithuania. In Sweden, accessibility is better in the southern parts, while in Poland, travel times are somewhat longer. This results in travel times of less than one hour throughout most of the programme area.

For doctors and pharmacies, travel times are shortest in Germany and Denmark due to an even distribution. In Sweden, Poland, and Lithuania, these services are more concentrated in densely populated areas. In Sweden and Poland, travel times are generally under one hour, but in Lithuania, the north-western and southwestern regions have travel times exceeding one hour.

Hospitals, as a medical service, are mainly located in cities and more densely populated areas. This common challenge in Polish, Danish, German, Lithuanian and Swedish border areas creates an urban–rural gradient, with shorter travel times in and near urban centres and longer travel times in rural or remote regions. The same applies to cinemas as a cultural service.

## Figure 2.30: Travel time to secondary schools




**Car travel time to the nearest secondary school (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

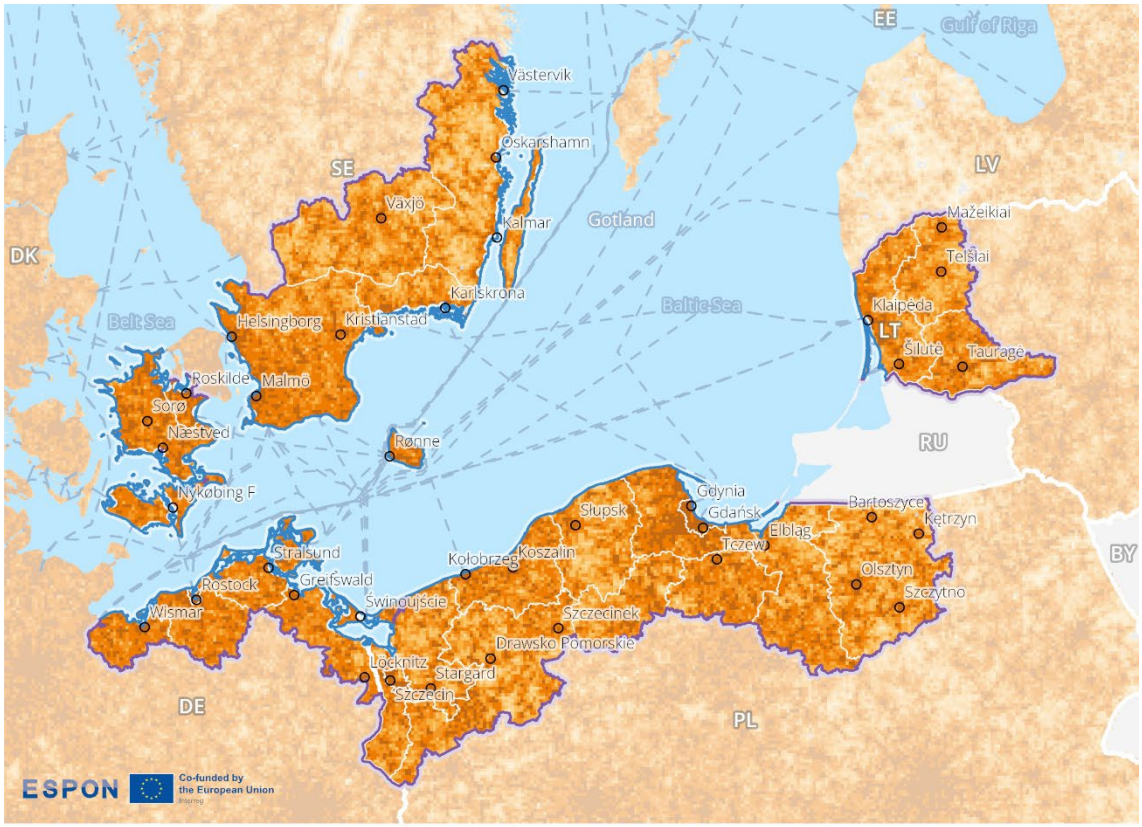
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

## Figure 2.31: Travel time to grocery shops




**Car travel time to the nearest shop (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

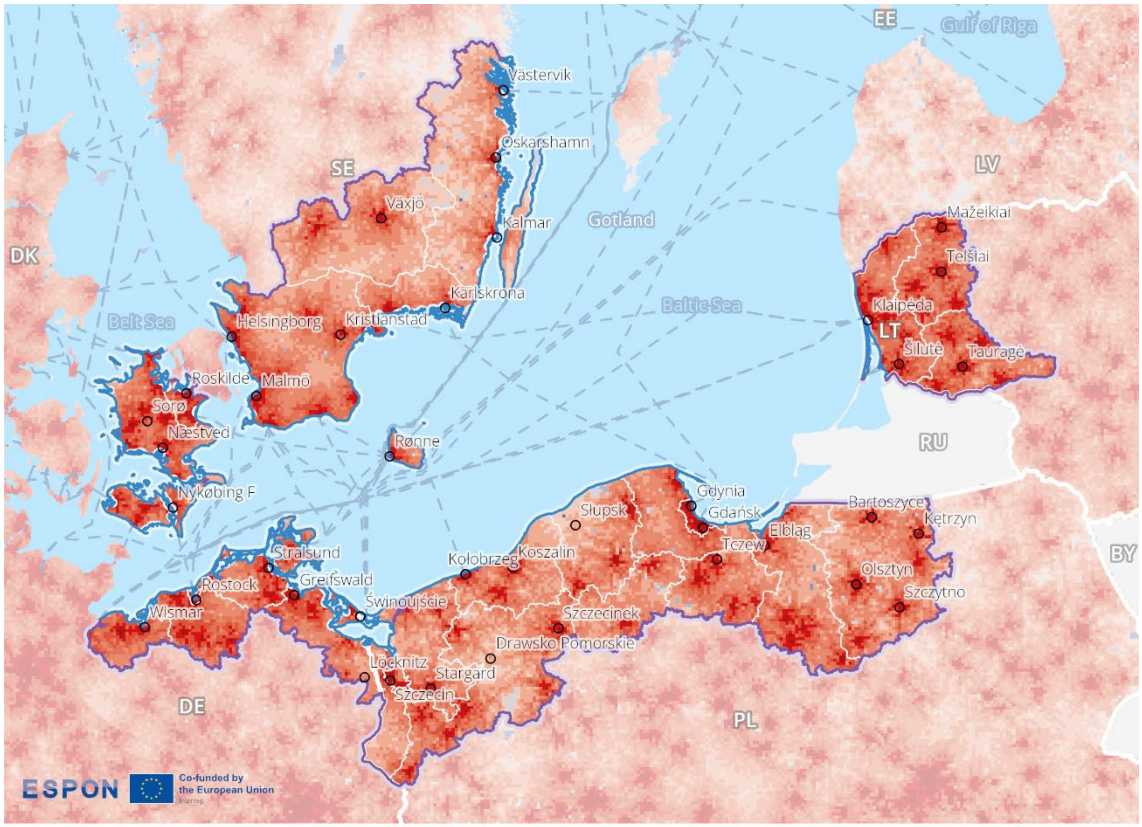
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

## Figure 2.32: Travel time to hospitals




**Car travel time to the nearest hospital (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

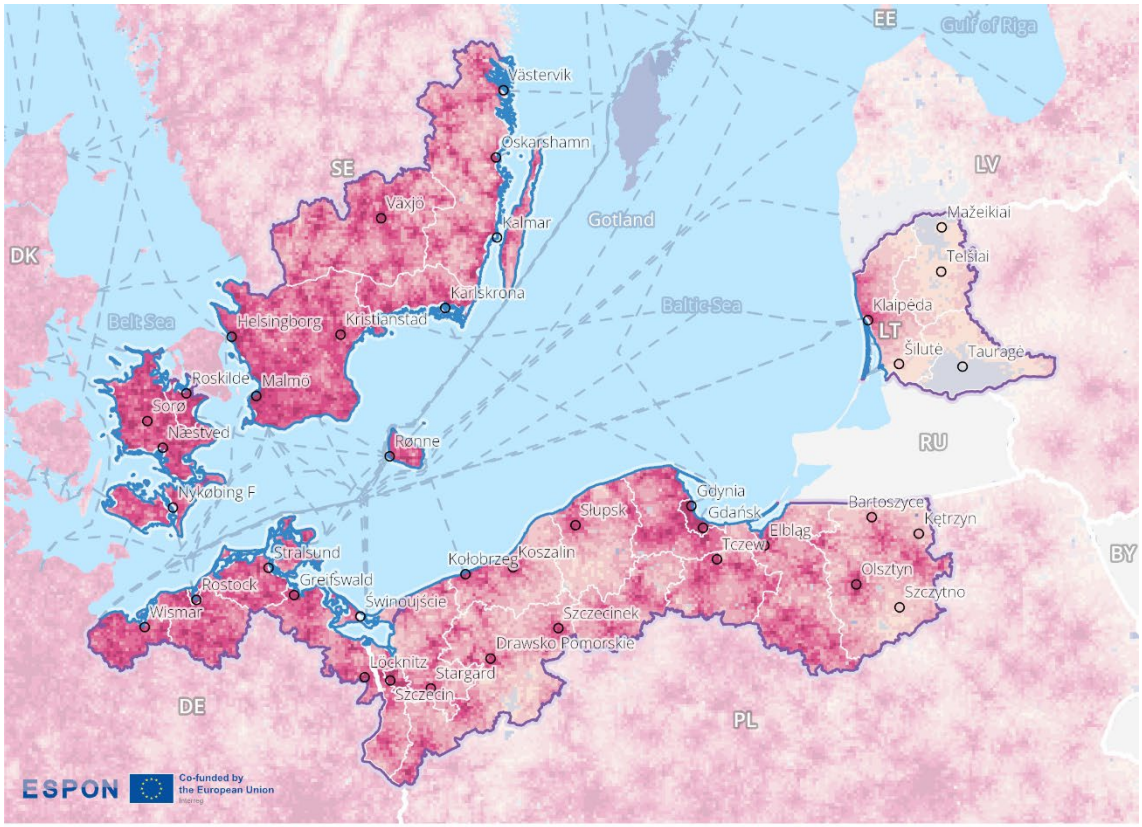
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

## Figure 2.33: Travel time to doctors




**Car travel time to the nearest doctor (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

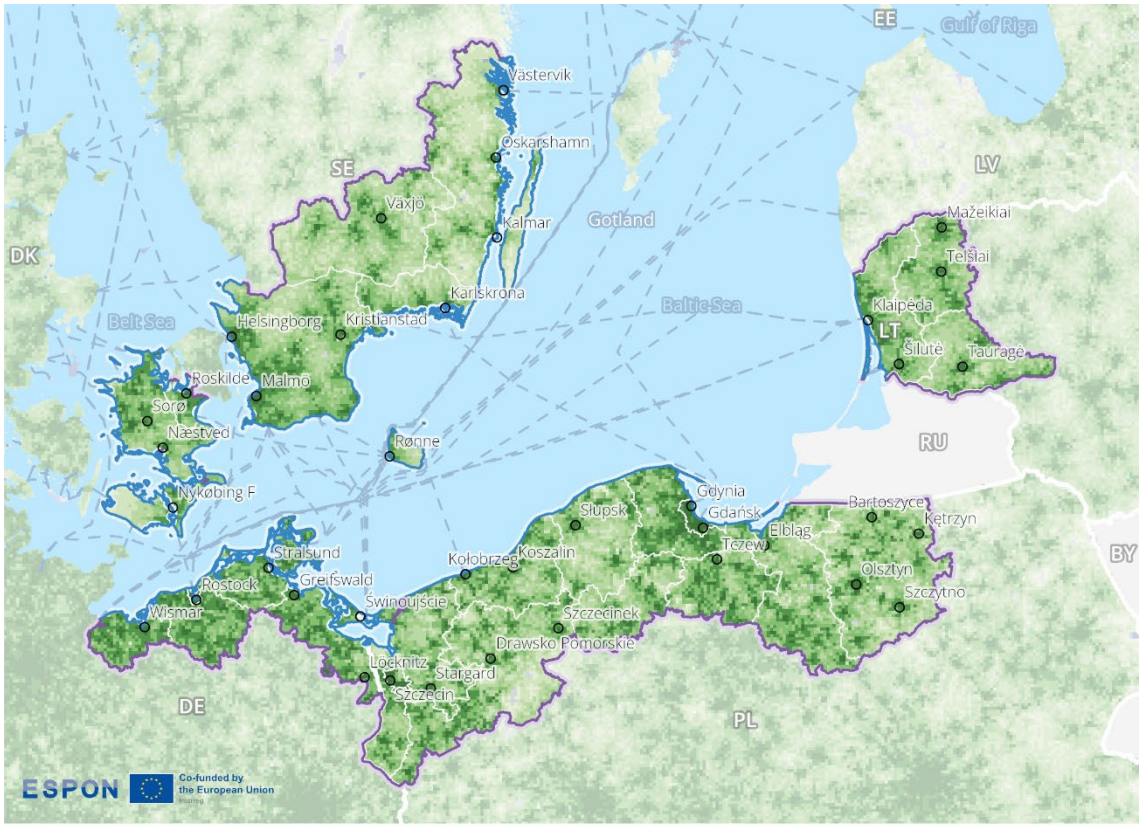
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

## Figure 2.34: Travel time to pharmacies




**Car travel time to the nearest pharmacy (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

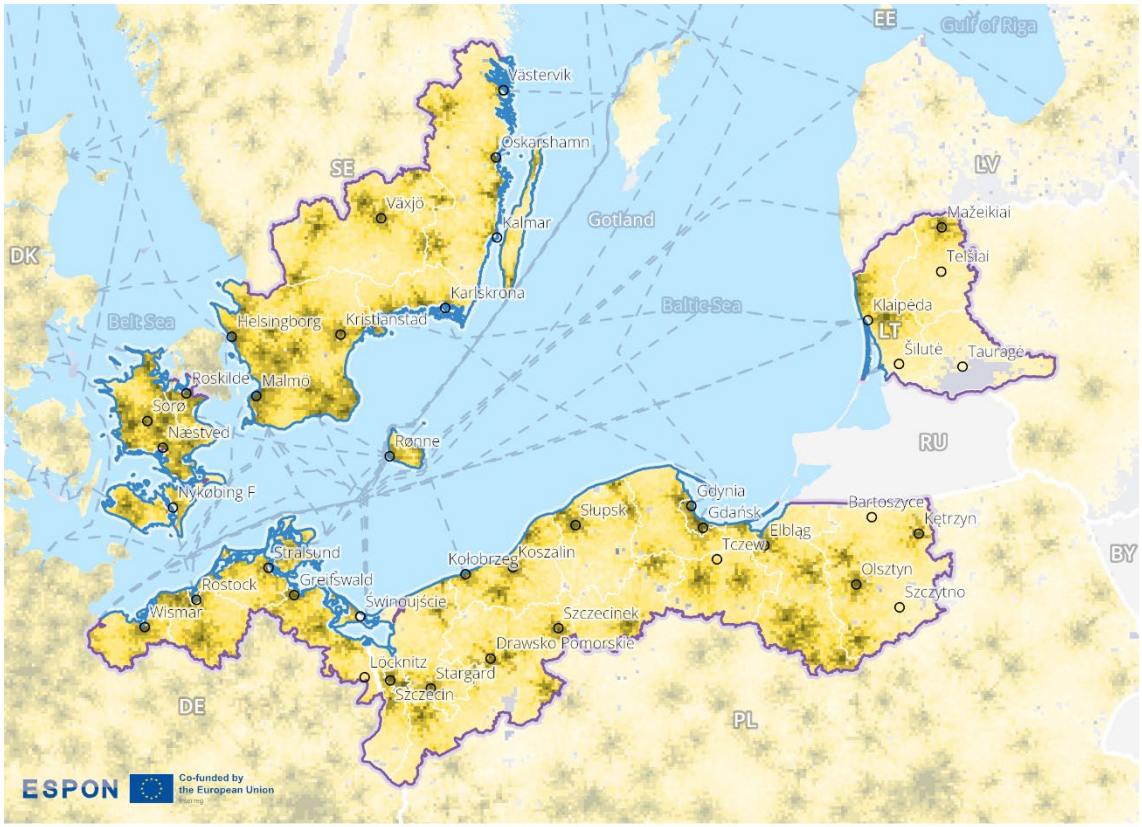
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

## Figure 2.35: Travel time to cinemas




**Car travel time to the nearest cinema (2021)**

5min
10min
15min
20min
30min
45min
1h
2h
3h
4h
6h
12h

inside outside of the Interreg VI-A perimeter

Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
perimeter coastal line
national border
NUTS 3 border
ferry

0 50 100 km

© ESPON, 2026

### 2.4.4 Key messages on the socio-economic dimension

The intensity of social interaction among the inhabitants of this border region is relatively homogeneous and at low levels. Multiple different languages characterise the border region, with no widespread knowledge of the neighbouring regions language recorded on a larger scale.

Patterns of tourism are mixed across the area. In 2023, several NUTS3 regions show more than 20 nights per capita, Landkreis Rostock, Rostock (Kreisfreie Stadt), Vorpommern-Greifswald and Vorpommern-Rügen even exceeding 40 nights spent per capita. The average for the Poland-Denmark-Germany-Lithuania-Sweden programme area is higher than the overall European average.

In the Poland–Denmark–Germany–Lithuania–Sweden border area, essential services such as schools and grocery shops are evenly distributed in Germany, Denmark, and Lithuania. In Sweden, accessibility

is better in the southern parts, while in Poland, travel times are somewhat longer. This results in travel times of less than one hour throughout most of the programme area.

## 2.5 Border security and safety

This dimension shows the security and safety conditions in border regions. It analyses the number of days on which border control is temporarily reintroduced at internal borders, using this as an indicator of security concerns and restrictions on cross-border movement.

### 2.5.1 Temporary reintroduction of border controls at internal borders

#### Indicator description

The indicator shows the number of days of temporary reintroduction of border control at internal borders, including the official reasons behind. The reintroduction of border control at the internal borders must be applied as a last resort measure, in exceptional situations, and must respect the principle of proportionality. The scope and duration of reintroduced border control should be restricted to the bare minimum needed to respond to the threat in question.

- **Source/method of retrieval**: Processing and analysis data of European Commission information pursuant to Article 25 and 28 et seq. of the Schengen Borders Code
- **Temporal coverage**: 2006-2025 (cut-off: 08 May 2025, in order to allow data treatment before work package completion)
- **Unit**: Days per year

Please refer to the technical annex for more information.

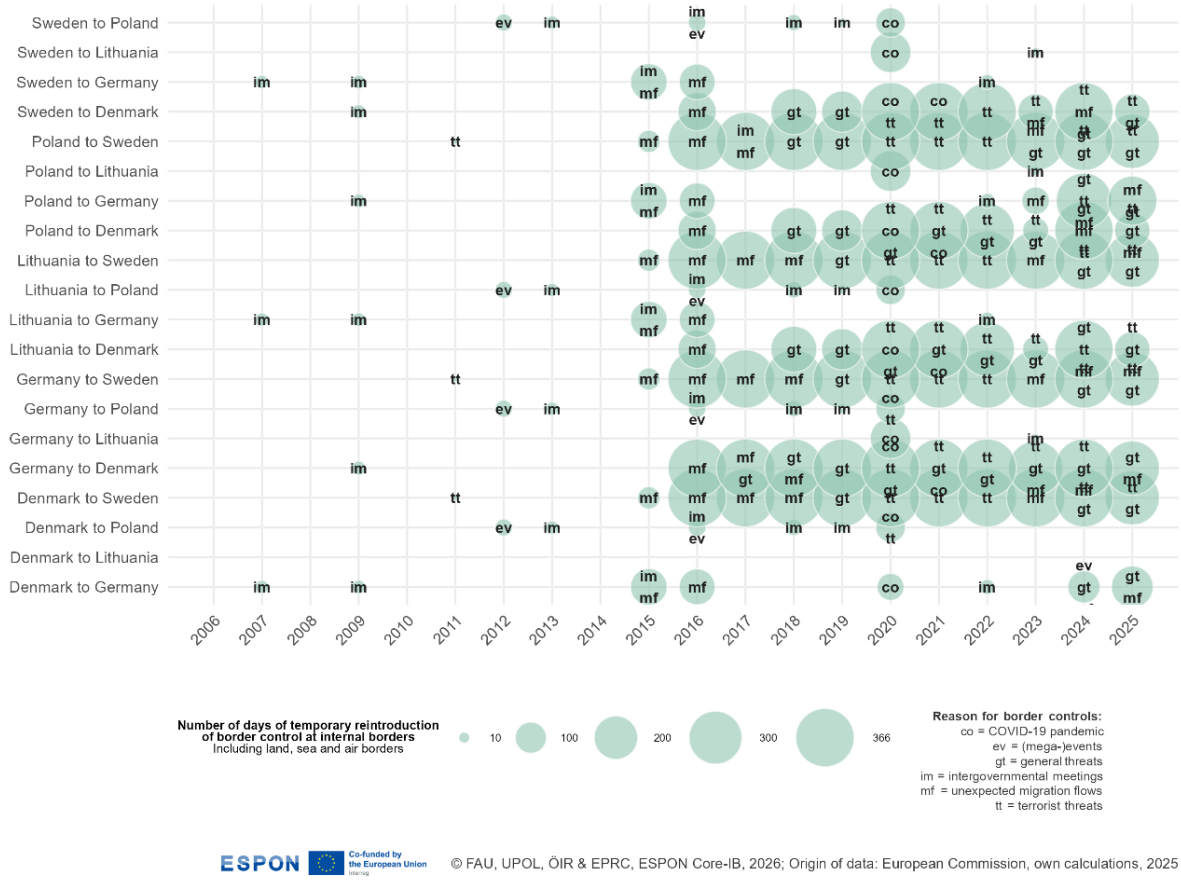
Figure 2.36 illustrates the number of days during which temporary border controls were reintroduced at internal borders within the Schengen Area. Each bubble represents a specific year with bubble sizes indicating the number of days the respective border was under control. The categories of reasons for reintroducing controls include:

- co – COVID-19 pandemic
- ev – (Mega-)events
- gt – General threats
- im – Intergovernmental meetings
- mf – Unexpected migration flows
- tt – Terrorist threats

The data spans from 2006 to 2025 (cut-off: 08 May 2025) and is based on notifications from the European Commission information pursuant to Article 25 and 28 et seq. of the Schengen Borders Code. In line with Schengen rules, the reintroduction of controls is to be used only as a last resort, for exceptional circumstances, and with strict adherence to the principle of proportionality—both in duration and scope.

Denmark, Germany and Sweden had already been part of the Schengen Area by 2006, while Poland and Lithuania joined in 2007.

## Figure 2.36: Temporary reintroduction of border controls




The Poland-Denmark-Germany-Lithuania-Sweden (South Baltic) border area is characterised by an asymmetric pattern:

- Crossing the border from Sweden to Poland: Temporary border controls occurred in 6 out of 20 years, mainly driven by intergovernmental meetings like a NATO summit (2016) and international events like EURO 2012 or World Youth days (2016), but also by COVID-19 (2020).
- Crossing the border from Sweden to Lithuania: Temporary border controls in 2 out of 20 years, due to COVID-19 (2020) and a NATO meeting (2023).
- Crossing the border from Sweden to Germany: Temporary border controls in 5 out of 20 years, reasons are intergovernmental meetings like G7/G8 (2007, 2015, 2022) and a NATO summit (2009) as well as unexpected migration flows (2015-2016).
- Crossing the border from Sweden to Denmark: Temporary border controls occurred in 10 out of 20 years, driven by multiple security threats like organised crime, terrorist threat or uncertainty in Europe (2018-2015) as well as COVID-19 (2020-2021) and unexpected migration flows (2015, 2024).
- Crossing the border from Poland to Sweden: Temporary controls occurred in 12 out of 20 years, driven by terrorist threats due to a bomb explosion in Oslo and unexpected migration flows. Other causes are e.g., general threats to internal security and terrorist threats.
- Crossing the border from Poland to Lithuania: Similar to the patterns of temporary border controls when going from Sweden to Lithuania.
- Crossing the border from Poland to Germany: Similar to the patterns of temporary border controls when going from Sweden to Germany, with the addition of controls due to migration issues (2023-2025).
- Crossing the border from Poland to Denmark: Similar to the patterns of temporary border controls when going from Sweden to Denmark, except of no controls in 2011.

- Crossing the border from Lithuania to Sweden: Similar to the patterns of temporary border controls when going from Poland to Sweden.
- Crossing the border from Lithuania to Poland: Similar to the patterns of temporary border controls when going from Sweden to Poland.
- Crossing the border from Lithuania to Germany: Similar to the patterns of temporary border controls when going from Sweden to Germany.
- Crossing the border from Lithuania to Denmark: Similar to the patterns of temporary border controls when going from Poland to Denmark.
- Crossing the border from Germany to Sweden: Similar to the patterns of temporary border controls when going from Poland to Sweden.
- Crossing the border from Germany to Poland: Similar to the patterns of temporary border controls when going from Sweden to Poland.
- Crossing the border from Germany to Lithuania: Similar to the patterns of temporary border controls when going from Sweden to Lithuania.
- Crossing the border from Germany to Denmark: Temporary controls in 11 out of 20 years due to the UN Climate Conference in Copenhagen (2009). Between 2016 and 2025 the border was permanently controlled, mainly due to unexpected migration flows (2016-2025), internal security issues (2017-2025) and COVID-19 (2020-2021)
- Crossing the border from Denmark to Sweden: Similar to the patterns of temporary border controls when going from Poland to Sweden.
- Crossing the border from Denmark to Poland: Similar to the patterns of temporary border controls when going from Sweden to Poland.
- Crossing the border from Denmark to Lithuania: Between 2006 and 2025, Lithuania did not reintroduce any temporary border controls to Denmark.
- Crossing the border from Denmark to Germany: Similar to the patterns of temporary border controls when going from Poland to Germany, with the addition of controls due to COVID-19 (2020).

From a comparative perspective, Sweden and Denmark controlled the border on significantly more days than the other countries, indicating an unequal impact on cross-border movements.

These controls tend to have a tangible effect on the smooth functioning of cross-border flows, especially commuting and logistics, as they introduce delays and unpredictability.

### 2.5.2 Key messages on the border security dimension

From a comparative perspective, Sweden and Denmark controlled the border on significantly more days than the other countries, indicating an unequal impact on cross-border movements. Controls were linked to specific events, covid and migration issues.

Another prominent border issue is proximity to Russia and Belarus for some parts of the area and activity in the Baltic Sea.

## 2.6 Governance dimension

There is a long history of cooperation in the area involving public and private partners and various scales. The area is part of the EU Baltic Sea Region Strategy. The territory has a European Grouping of Territorial Cooperation (EGTC) "European Transport Corridor EGTC Ltd3" as well as several cooperation bodies such as the "Kvarken Council", "Greater Copenhagen" (which also covers the Swedish region of Skåne) or the "Baltic Euroregion". The Baltic Sea region also benefits from multiple intergovernmental and supra-regional international cooperation arrangements, in particular the Council of the Baltic Sea States (CBSS), the Barents Euro-Arctic Council and the Northern Dimension (ND) Partnerships. The CBSS and the ND partnership on health and social wellbeing also already coordinate a number of EUSBSR priority areas.

### 2.6.1 Cross-border cooperation

This sub-dimension identifies the extent of cross-border cooperation in the border region. It illustrates areas of high cooperation intensity and identifies functional links in governance structures across borders. It also identifies areas with high awareness of obstacles and the willingness and support services to overcome them, as well as areas where Interreg cooperation intensity is already strong.

#### 2.6.1.1 Cross-border governance structures

**Indicator description**

The indicator shows active institutionalised cooperation that act as cross-border entities. It includes cooperation formats such as Eurocities, Euroregions, EGTC, cross-border associations, cross-border councils, etc.

- **Source/method of retrieval**: Localisation and categorising of cross-border cooperation formats (Eurocities, Euroregions, EGTC, cross-border associations, cross-border councils, conferences, working communities), based on desktop research.
- **Temporal coverage**: Status as of October 2025
- **Unit**: n/a

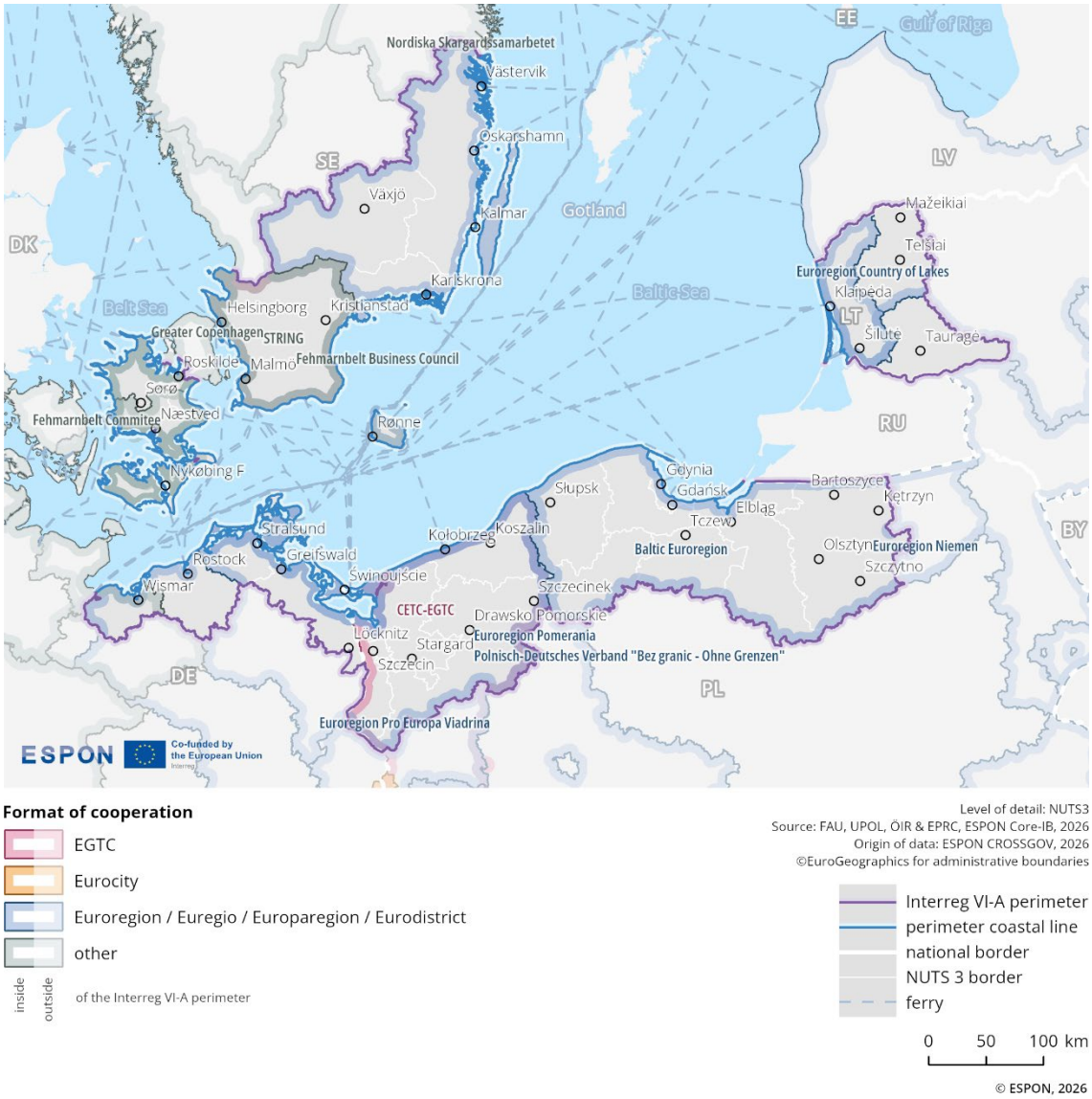
Please refer to the technical annex for more information.

Figure 2.37 shows the different types of institutionalised cooperation. These governance structures either function as cross-border entities or bring together stakeholders from the cross-border region around shared topics. The governance structures covered include Eurocities, Euroregions, EGTCs, cross-border associations and councils. Project-based cooperation is not included.

The coloured markings on the map indicate different types of institutionalisation: EGTCs are shown in red, Eurocities in yellow, Euroregions/Euregios/Europaregions/Eurodistricts in blue, and other formats in grey.

The multi-level governance structure along the borders of this programme area shows broad spatial coverage. Overall, the programme area exhibits high levels of cooperation along its national borders. The most prevalent formats are councils, committees and conferences and formats at the Euroregional level.

## Figure 2.37: Cross-border governance structures




**Format of cooperation**

- EGTC
- Eurocity
- Euroregion / Euregio / Europaregion / Eurodistrict
- other

inside / outside of the Interreg VI-A perimeter

Level of detail: NUTS3
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CROSSGOV, 2026
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

© ESPON, 2026

### 2.6.1.2 Cross-border public services

#### Indicator description

The indicator shows different services specialised on cross-border challenges and development potential, including their domain of operation. As a specific form of services of general interest, cross-border public services (CPS) address joint problems or development potentials of border regions that are located on different sides of one or more national borders.

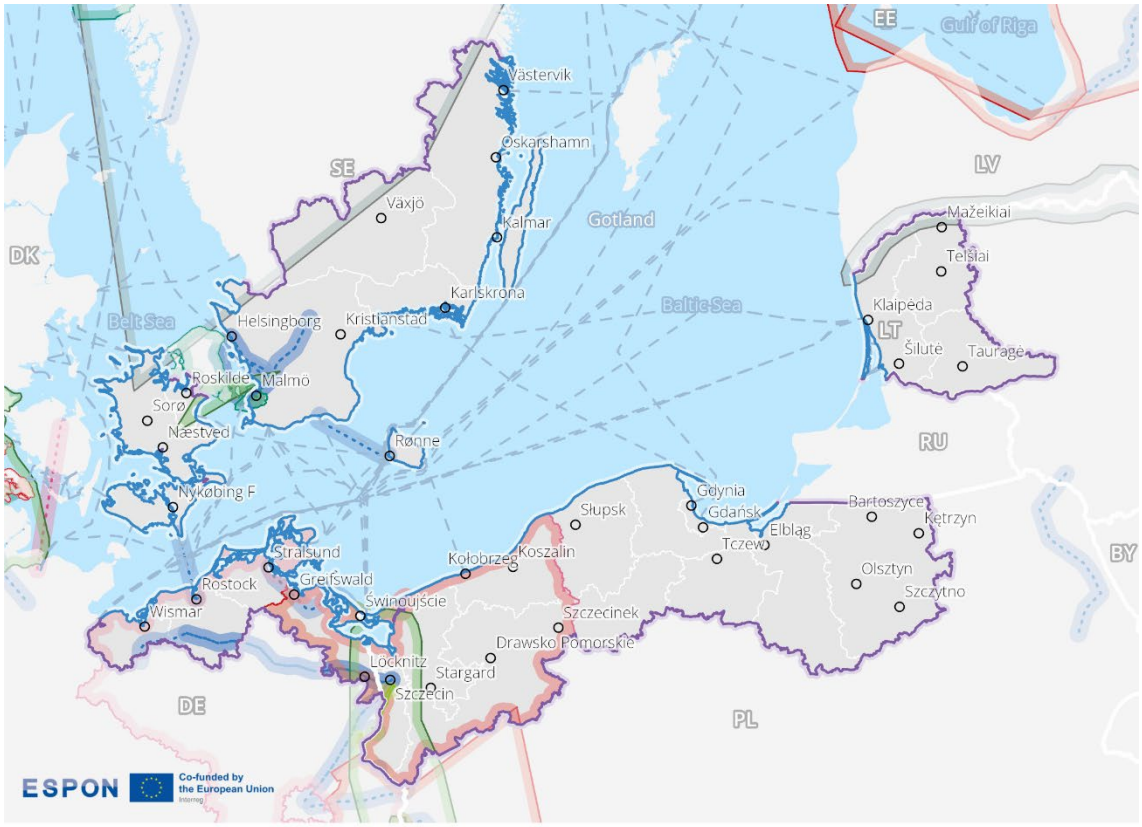
- **Source**: ESPON cross-border public services (CPS) 2.0 database
- **Temporal coverage**: 2022
- **Unit**: n/a

Please refer to the technical annex for more information.

Figure 2.38 depicts the geographical extent of cross-border public services in the border area in 2022. Different thematic areas are represented by distinct symbols and colours, indicating services such as disaster management, health care, transportation, education, environment, energy, job placement, and culture. The visualisation highlights where these services operate across the national boundary.

Cross-border public services in the southern Baltic region are concentrated in the coastal areas of Sweden, Denmark, Lithuania, Germany and northern Poland. The most extensive service type is healthcare, covering the whole south of the cross-border region and transportation, connecting Helsingborg, Malmö, Szczecin and Germany, and Świnoujście with Stralsund. Disaster management services are particularly visible in the Germany-Poland border area but dominate on the Polish side. tourism & information services appear in the Polish-German border area as well and around Malmö. Another large "other" service corridor is located on the Sweden-Denmark Interreg region border and the Lithuania-Latvia border.

## Figure 2.38: Cross-border public services




**Geographical extent of cross-border public service themes (2022)**

areal linear character of the service

- Disaster management
- Health care
- Transportation
- Tourism & information
- Education & research
- Environment & water
- Heating & energy
- Job placement
- Culture

inside outside inside outside of the Interreg VI-A perimeter

Cross-border public services covering more than one theme have been assigned only to one. Furthermore, some polygons have been excluded because they were only approximately and not accurately spatially defined.

Level of detail: geolocalised lines and areas
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON CPS, 2022
©EuroGeographics for administrative boundaries

- Interreg VI-A perimeter
- perimeter coastal line
- national border
- NUTS 3 border
- ferry

0 50 100 km

© ESPON, 2026

#### 2.6.1.3 Perceived cross-border obstacles in b-solutions

**Indicator description**

The indicator shows cases of legal or administrative obstacles selected in the framework of the b-solutions initiative. This indicator lists the number, location and nature of suggested solution of cases in the b-solutions initiative, including the topic and parties involved.

- **Source/method of retrieval**: Processing and analysis of the b-solutions initiative data
- **Temporal coverage**: 2018-2025 (first quarter)
- **Unit**: n/a

Please refer to the technical annex for more information.

The b-solutions initiative is a European Union project that supports the resolution of legal, operational and administrative cross-border obstacles. It offers funding for pilot actions and legal expert advice in border regions. A high level of cross-border integration often reveals strong barriers of cross-border functioning. In order to exploit the cross-border potentials, these obstacles have to be overcome or at least addressed. Both the number of reported obstacles and the general interest in solutions serve as important indicators of cross-border interaction.

As part of the ESPON CROSSGOV project, all b-solutions initiatives were analysed to deepen the understanding of the thematic focus of the perceived cross-border obstacles across different border regions and the suggested solution. For the particular case of the Poland-Denmark-Germany-Lithuania-Sweden program area, no participation in b-solutions projects has been reported yet.

#### 2.6.1.4 Institutionalised advice centres for cross-border issues

**Indicator description**

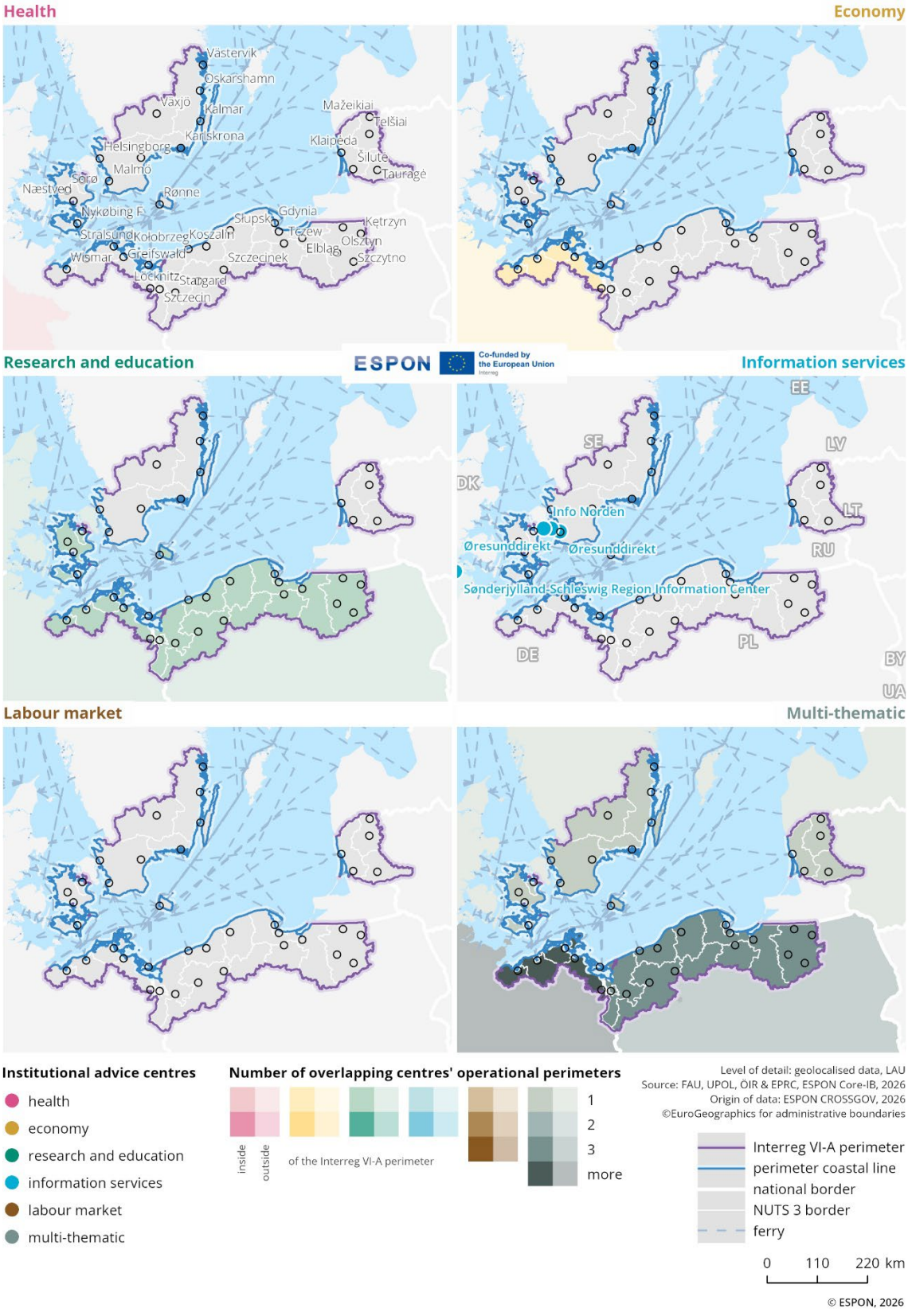
The indicator shows where institutionalised advice centres on cross-border issues are located, including their thematic focus and geographical perimeter.

- **Source/method of retrieval**: Localisation and thematic focus of advice centres for cross-border issues are identified via desktop research.
- **Temporal coverage**: Status as of February 2025
- **Unit**: n/a

Please refer to the technical annex for more information.

This map shows the locations and types of institutionalised advice centres, along with their operational domains, in the South Baltic cross-border Interreg region between Poland, Denmark, Germany, Lithuania and Sweden. These centres throughout Europe provide support in various fields such as health, economy, research and education, information services, the labour market, and multi-thematic issues. The operational domains of these centres are also indicated by coloured shading on the map. The more intense the colour, the stronger the influence of that specific domain in the corresponding area.

## Figure 2.39: Institutionalised cross-border advice centres




Inside the Interreg region, there are 3 information service-related institutionalised advice centres, all of which are located at the Denmark-Sweden border. One is called Info Norden, while the other 2 are

affiliated with Øresunddirekt. There are no further institutionalised advice centres outside the Interreg region shown on the map.

Multi-thematic operational domains are represented in all 5 countries within the Interreg area, although they are more pronounced in the German part. Research and education operational domains are present in both the Polish and German parts of the Interreg region, while economic operational domains can only be found in Germany.

### 2.6.2 Outline of Interreg activities

The following section outlines the key Interreg activities in the 2021-27 programming period. The aspects included concern the development opportunities and challenges identified (see Table 2), the budget available and split of allocation (Figure 2.40), overlapping Interreg programmes and the key aspects drawn from the programme.

**Table 2: Interreg VI (2021-27): Opportunities and challenges**

| Topic | Key development opportunities and challenges identified for Interreg 2021-27 |
|---|---|
| **Economy** | ▪ The South Baltic Area (SBA) has a distinct blue (maritime sector) and green development.<br>▪ Blue Economy plays an important role in the economies of the SBA.<br>▪ Dominance of micro/small enterprises, which employ 1-9 people.<br>▪ Disparities in innovation and R&D capacities. |
| **Population/spatial** | ▪ Non-metropolitan, mostly rural character, with scattered settlement structures. The population is concentrated in a few large urban centres, which are the main poles of social and economic development.<br>▪ divergence between the North-West of the area (Denmark, Germany and Sweden) and the South-East of the area (Lithuania and Poland). |
| **Environment** | ▪ Environmental, marine and air pollution. |
| **Tourism** | ▪ Tourism is one of the leading industries in the South Baltic Area. However, large disparities between SBA regions are noted in the level of development of the tourist infrastructure. |
| **Climate energy** | ▪ Diverse sources of renewable energy are exploited.<br>▪ Significant potential of the cross-border region for the development of sectors producing (i) wind energy, (ii) bioenergy and (iii) solar energy. |

| Topic | Key development opportunities and challenges identified for Interreg 2021-27 |
|---|---|
| **Population** | ▪ Inflow of immigrants with highest inward migration, but overall patterns vary - highest levels in 2 Swedish regions with some of the subregions experiencing negative growth rates.<br>▪ Rural regions tend to experience most heavy depopulation.<br>▪ Population aging society, with associated challenges for labour market and services.<br>▪ Programme area and poor public transport connections between rural and urban areas. |
| **ICT** | ▪ High level of access to IT/telecommunications infrastructure.<br>▪ Disparities between countries and regions in terms of access to advanced ICT services.<br>▪ Insufficient supply of labour force in this area may constitute a significant challenge. |

**Total Budget:** EUR 117,253,016

### Figure 2.40: Split of Interreg allocation

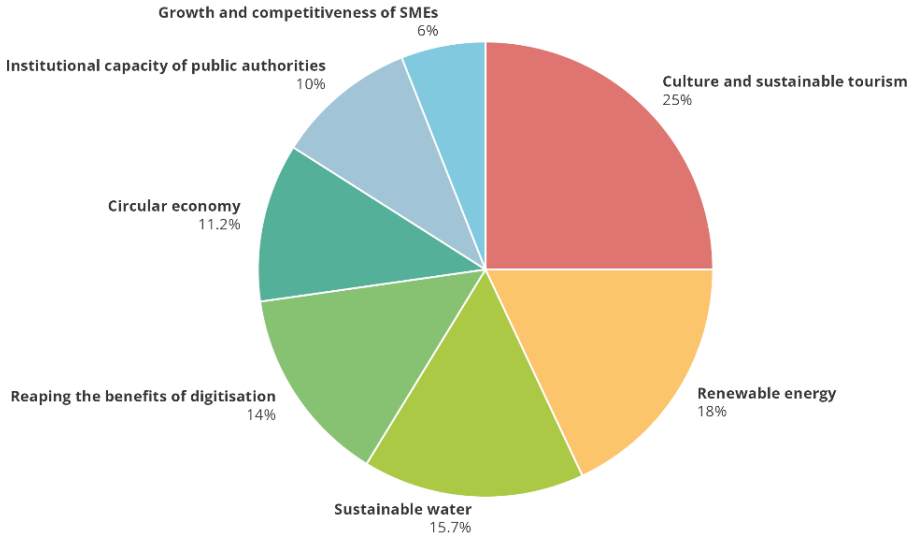





Table 3 shows the number of Interreg 2021-2027 cross-border and transnational programmes which share at least one NUTS3 region with the border area. Each programme has its own distinct rationale, value and territorial focus. However, it is potentially helpful for programmes and programme stakeholders to be aware of and connected to other Interreg programmes with which they share a

direct territorial link, for the purposes of planning and capitalisation activities for example.[14] The 4 Interreg C programmes Interreg ESPON, Interact, Interreg Europe and URBACT cover the whole EU territory and provide a range of joint services and initiatives.

### Table 3: Shared geographies with other cross-border and transnational programmes

| Interreg A (cross-border) | Interreg B (transnational) |
|---|---|
| 5 | 3 |

**Key aspects**

- Cross-border cooperation among regions in 5 EU countries: Germany, Denmark, Sweden, Lithuania, and Poland.
- Focuses on digitisation, environmental sustainability, and economic growth, particularly through SME cooperation and technology transfer.
- Key areas include renewable energy, sustainable water management, and the circular economy.
- The programme area includes territories covered by a large number of other 2021-27 Interreg A and B programmes: Interreg A Sweden-Denmark-Norway (Öresund-Kattegat-Skagerrak), Germany-Denmark, Germany-Poland (Mecklenburg-Vorpommern/Brandenburg/Poland), Latvia-Lithuania, Lithuanian-Poland, Interreg VI-B Baltic Sea Region, Interreg VI-B North Sea, and Central Europe.

[14] It is noted that synergies and links with a wide range of other territorial cooperation and sectoral programmes and initiatives are also valuable and this is reflected in the wider analyses presented in this border profile, but not specifically covered in this table.

#### 2.6.2.1 Interreg cooperation

**Indicator description**

Based on the keep.eu database, this indicator illustrates the network density of Interreg V-A (2014–2020). It is derived from the geographical location of all partners within a project consortium and reflects the intensity of cooperation between them. For the analysis, project networks were visualised by drawing lines between the locations of partners within a consortium. These connections were subsequently aggregated and spatially abstracted by calculating line density using GIS software. Dark red areas indicate a high density of connections between project partners, while yellow areas represent a lower density of cooperation links.

An additional element in this section is the development of project partner numbers between Interreg IV-A (2007–2013) and Interreg V-A (2014–2020), based on data from the keep.eu database. The datasets were cleaned to remove duplicates, using the partner names as reported in keep.eu. For both programming periods, keep.eu indicates a high level of data completeness[15]. Nevertheless, this development should be interpreted as indicative, as variations in partner name reporting and general limitations regarding the representativeness of the dataset affect the robustness of the results.

- **Source/method of retrieval**: Processing and analysis of the keep.eu database
- **Temporal coverage**: 2007-2013 (Interreg IV-A), 2014-2020 (Interreg V-A)
- **Unit**: n/a

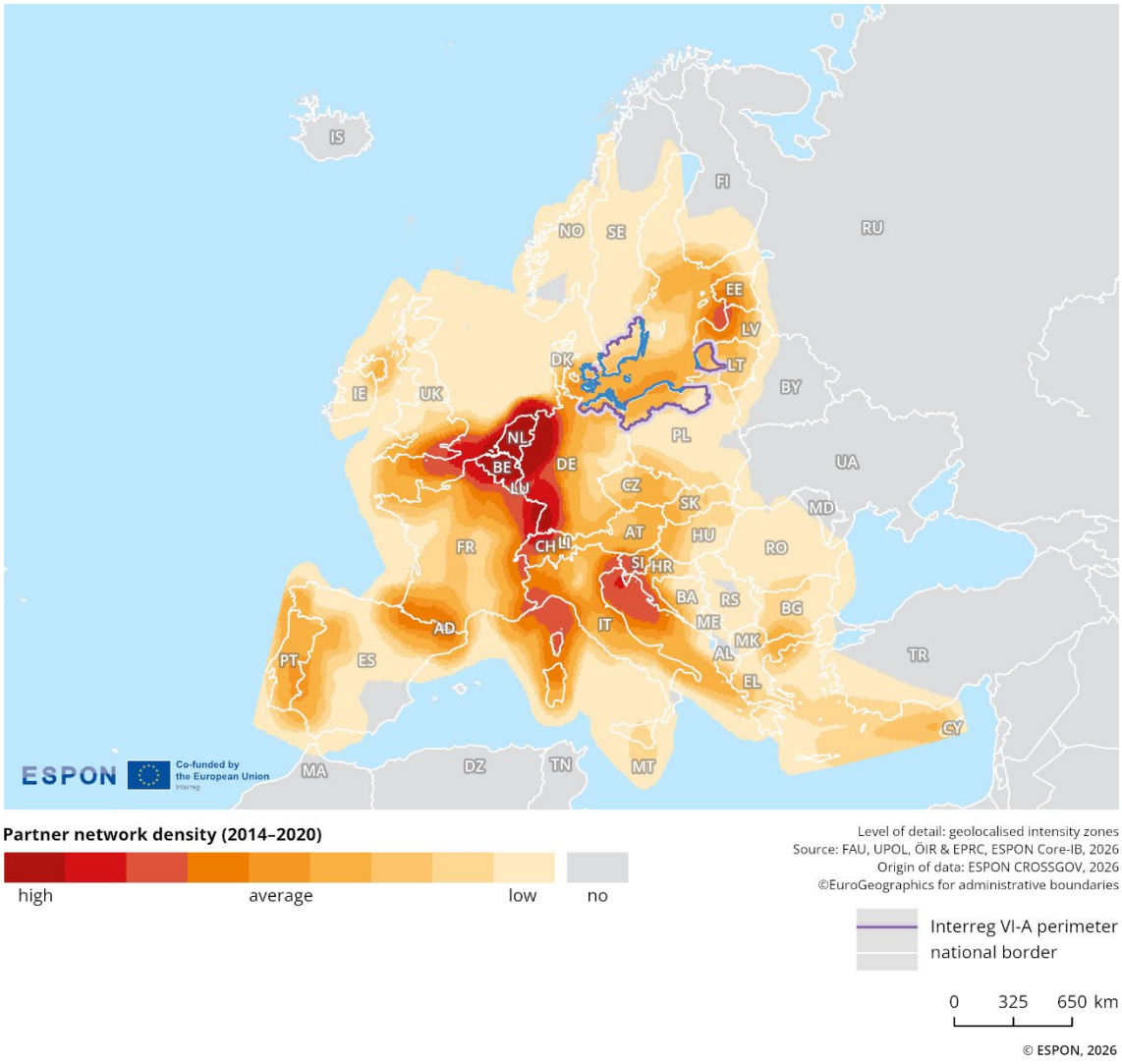
Please refer to the technical annex for more information.

Cooperation activities and networks are among the most meaningful types of information for delineating cross-border functional areas. As such, the indicator on cooperation through Interreg can help to identify networks among cross-border actors and highlight the density of cooperation in specific border segments.

Figure 2.41 shows the density of Interreg V-A (2014–2020) partner networks. The indicator includes the location of, and links between, Interreg project partners within a project consortium. From a European perspective, partner network density in the South Baltic border area appears quite evenly spread. Overall, the partner network density in this border area is slightly lower than the European average. Based on the keep.eu database and excluding duplicates, the number of project partners decreased from 363 in Interreg IV-A (2007–2013) to 326 in Interreg V-A (2014–2020), an decrease of about 10%. However, recent data for 2021-27 show an increase to 388 partners. It is important that these changes are considered in the context of factors such as change in programme budgets between 2007-13 and 2014-20, emphasis on targeting impact, and numbers of strategic projects.

[15] see Keep.eu representativeness: Interreg, Interreg-IPA and ENI cross-border

**Figure 2.41: Interreg V-A partner network density**




## 2.6.3 Key messages on the governance dimension

There is a long history of cooperation in the area involving public and private partners and various scales. The area is part of the EU Baltic Sea Region Strategy. The Baltic Sea region also benefits from multiple intergovernmental and supra-regional international cooperation arrangements. Overall, the cross-border region exhibits high levels of cooperation along its national borders. The most prevalent formats are councils, committees and conferences and formats at the Euroregional level.

Cross-border public services in the southern Baltic region cluster around the coastal areas of Sweden, Denmark, Lithuania, Germany and northern Poland. The most extensive service type is healthcare, covering the whole south of the programme area and transportation, connecting Helsingborg, Malmö, Szczecin and Germany and Świnoujście with Stralsund. Disaster management services are particularly visible in the Germany-Poland border area but dominate on the Polish side. Tourism & information services appear in the Polish-German border area as well and around Malmö. Another large "other" service corridor is located on the Sweden-Denmark Interreg region border and the Lithuania-Latvia border.

No b-solutions have been taken up, but there are 3 information service-related institutionalised advice centres, all of which are located at the national border between Denmark and Sweden. Interreg cooperation focuses on digitisation, environmental sustainability, and economic growth, particularly

through SME cooperation and technology transfer. Key areas include renewable energy, sustainable water management, and the circular economy. The programme area includes territories covered by a large number of other 2021-27 Interreg A and B programmes: Interreg A Sweden-Denmark-Norway (Öresund-Kattegat-Skagerrak), Germany-Denmark, Germany-Poland (Mecklenburg-Vorpommern/ Brandenburg/Poland), Latvia-Lithuania, Lithuanian-Poland, Interreg VI-B Baltic Sea Region, Interreg VI-B North Sea, and Central Europe. From a European perspective, cooperation density in the South Baltic border area appears quite evenly spread.

The partner network density in this border area is slightly lower than the European average. Although, based on the keep.eu database and excluding duplicates, the number of project partners decreased from 363 to 326 between Interreg IV-A and Interreg V-A, recent data for 2021-27 show an increase to 388 partners. It is important that these changes are considered in the context of factors such as change in programme budgets between 2007-13 and 2014-20, emphasis on targeting impact, and numbers of strategic projects.

# 3 Summary and key observations

To support the strategic dialogue on cross-border cooperation beyond 2027, this territorial analysis provides harmonised and comparable information. Its data-driven evidence helps to inform the future direction of cross-border cooperation by facilitating alignment with EU priorities and the evolving regulatory framework. The Core-IB border profiles adopt a harmonised methodology and provide programme areas with access to recent European data. As this approach comes along with limitations, member states may hold additional or more detailed data which can further enrich or contextualise the findings beyond the Core-IB project (see final report and technical annex of this project). These national sources are essential for refining and validating territorial evidence in policymaking processes, including: a) regional, fine-scale data and b) insights from political processes related to prioritisation and objective setting. The study's findings are analytical and are intended to support reflection and discussion. They do not create regulatory or policy obligations for Member States, the European Commission, or programme authorities.

Table 4 provides 2 types of information. Firstly, it summarises the key analytical findings for the border region, as discussed earlier in this profile. Secondly, it suggests policy options based on the analytical findings. These options are intended to provide a practical and informative basis for the strategic dialogue among programme bodies, managing authorities and the European Commission.

Generally speaking, the aim of cohesion policy is to promote harmonious territorial development (also) across borders. The objective is to mitigate the impact of borders and achieve 360° functionality, thereby enhancing the quality of life and fostering prosperous development on both sides of the border. The upcoming Interreg period offers an opportunity to address these objectives and potentials through targeted cooperation projects.

## Table 4: Evidence-based conclusions

| Territorial dimension | |
|---|---|
| **Key analytical findings** | • The maritime border is a key characteristic of the area, meaning blue as well as green growth is a key opportunity for the area;<br>• The territories of all 5 states in the S. Baltic area exhibit a similar, comparatively uniform settlement pattern, characterised by small central settlements and rural areas;<br>• Population growth in the cross-border region is slightly below the European average, declines are most pronounced along the Polish border and Lithuania's border region, representing and east-west split in the area;<br>• Notably, the working-age population showed a marked decrease of -6.1%. In contrast, the population aged 65 and over underwent a substantial increase. This highlights the importance of planning around high dependency ratios and aging populations in the area;<br>• Changes in settlements are concentrated around urban settlements. Indicating and urban-rural split. However, on the Danish, Lithuanian and Swedish sides wider changes are also evident in large parts of the programme area;<br>• This partially maritime cross-border region has limited road connections across some parts of the area. In most case, the 5 Member States lack direct land borders between them, with the exception of Germany-Poland. The selected cross-border transport links show train links outperforming road in terms of speed and ferry travel times are slow. However, key connections such as the Øresund bridge and regular ferry links have supported cross-border links including regular commuting between Sweden and Denmark. The land border between Poland and Germany is easily crossed from both sides;<br>• Partly reflecting these physical and transport barriers, the intensity of cross-border mobility of people within this cross-border region is highly variable. |
| **Policy options** | **Cross-cutting aspects**<br>• Cooperation projects could focus on advancing blue and green growth, building on the central role of maritime connections for territorial cohesion and economic development;<br>• A focus could be on targeted cooperation frameworks to support planning and growth processes in small towns, enhancing their functional role for surrounding rural areas;<br>• Joint approaches could contribute to bridging development gaps between rural and urban areas, supporting more balanced territorial development across the programme area. |

| Economic dimension | |
|---|---|
| **Key analytical findings** | • The area as a whole has an average GDP 73.9 % the EU average but has been experiencing growth rates above the EU average;<br>• Within the area, there is an east-west split in terms of GDP, with the Danish and Swedish border regions exceeding EU averages. Despite this variation there are shared sectoral strengths which can be capitalised on to boost value chains and links;<br>• Sectoral links include economic sectors based on natural resources in the blue and green economy;<br>• The share of employment has remained stable but values in the cross-border region are lower by 2.6 percentage points than the EU average. The cross-border region experienced a notable, 4.3%, decrease in the share of working-age population between 2014 and 2023. Attracting and retaining skilled workers and young people are an important consideration;<br>• There is a slight decline in primary and manufacturing jobs and an increase in services and professional, scientific and technical activities;<br>• Analysis shows relatively strong cross-border commuting activity in some coastal areas of Sweden and Poland;<br>• In terms internet connectivity, the area has significant differences between urban and rural areas and between Sweden and Denmark and parts of Germany and Lithuania;<br>• The average income earned per hour worked are unevenly distributed and are split west to east;<br>• Housing prices are similarly variable This indicates not just a price divide not only across the area, but within specific parts of the programmes area. |
| **Policy options** | **Cross-cutting aspects**<br>• Cross-border cooperation offers scope to support initiatives aimed at more balanced regional growth, with a particular emphasis on green and sustainable economic sectors;<br>• A focus can be on improvements in internet connectivity across the territory to be developed and supported through cross-border cooperation, enabling communities and businesses to benefit from enhanced digital access;<br>• Strategic cooperation could facilitate responses to the changing employment structures, including through joint training provision and measures addressing language-related barriers. |

| Green dimension | |
|---|---|
| **Key analytical findings** | • Connection through the shared maritime and coastal areas are a key characteristic of this area. Related, protected areas comprise numerous marine protected areas and these have clear transboundary counterparts across the Baltic Sea, especially between Germany, Poland, and Sweden;<br>• In terms of pollution levels there is a variable pattern across the rea. For air pollution, Poland has the highest PM2.5 levels, followed by Germany and Lithuania. Across the indicators, Denmark and Sweden show significantly lower levels of pollution. Reducing pollution and environmental protection are therefore ongoing opportunities for exchange;<br>• In terms of resource productivity in PPS, the German national average is significantly higher than the other national averages. All countries show a general growth in resource productivity over the observed period. The European average lies significantly above the national averages of all countries except Germany. The 5 countries show a steady decline over time in waste production;<br>• The cross-border region of Poland-Denmark-Germany-Lithuania-Sweden shows extensive and dense high- and extra high-voltage transmission infrastructure. An important feature of this cross-border region is the connection between individual countries via undersea cables. Another feature is the reliance on coal-fired power stations in Poland;<br>• Of the 15 coal-fired power plants in the cross-border region, 13 are in Poland, 5 of which are near Szczecin on the German border. Cooperation on energy transformation and connectivity continues to be important;<br>• The cross-border region has a very low risk of key natural hazards. However, the risk of droughts increases in the eastern parts of the programme area, primarily in Poland and Lithuania. Coastal areas in Poland and Lithuania are also threatened by flooding. |
| **Policy options** | **Green aspects**<br>• Cooperation projects could focus on integrated cross-border approaches to environmental protection and climate change impacts;<br>• The transfer of practices and experience across the territory may help reduce pollution and waste, particularly in those areas facing higher environmental pressures;<br>• A focus could be on supporting the energy transition, including efforts to improve energy connectivity and strengthen system resilience. |

| Socio-economic dimension | |
|---|---|
| **Key analytical findings** | • The intensity of social interaction among the inhabitants of this border region is relatively homogeneous and at low levels;<br>• Patterns of tourism are mixed across the area. The average for the Poland-Denmark-Germany-Lithuania-Sweden programme area is higher than the overall European average. Linked to, e.g., cross-border nature parks, there potential for cross-border cooperation on tourism remains high;<br>• In the Poland–Denmark–Germany–Lithuania–Sweden border area, essential services such as schools and grocery shops are evenly distributed in Germany, Denmark, and Lithuania. In Sweden, accessibility is better in the southern parts, while in Poland, travel times are somewhat longer. |
| **Policy options** | **Social aspects**<br>• Cross-border cooperation projects could address strengthening people-to-people connections, particularly in parts of the territory characterised by low levels of social connectivity;<br>• Sustainable tourism can be supported through coordinated cross-border approaches, contributing to economic diversification.<br><br>**Cross-cutting aspect**<br>• The territorial evidence on demographic change can be addressed through cross-border cooperation that supports the planning, accessibility and long-term sustainability of services. |

| Border security and safety dimension | |
|---|---|
| **Key analytical findings** | • From a comparative perspective, Sweden and Denmark controlled the border on significantly more days than the other countries, indicating an unequal impact on cross-border movements;<br>• Controls were linked to specific events, covid and migration issues;<br>• Overall, the geographic position of the area, in particular Lithuania and Poland's proximity to Russia and Belarus means wider security concerns are an issue. |
| **Policy options** | **Cross-cutting aspects**<br>• The impacts of border controls on cross-border commuting and logistics can be mitigated through coordinated and institutionalised cross-border policy dialogue;<br>• The mitigation of border control effects can form part of cross-border cooperation projects in various sectors. Economic networks, transport infrastructure initiatives and tourism-related actions can incorporate considerations related to the impacts of border controls. |

| Governance dimension | |
|---|---|
| **Key analytical findings** | • There is a long history of cooperation in the area involving public and private partners and various scales. The area is part of the EU Baltic Sea Region Strategy;<br>• Cross-border public services in the southern Baltic region cluster around the coastal areas. The most extensive service type is healthcare. Work has also been undertaken in relation to disaster management, tourism and information services;<br>• No b-solutions have been taken up, but there are 3 information service-related institutionalised advice centres, all of which are located at the national border between Denmark and Sweden;<br>• Interreg cooperation focuses on digitisation, environmental sustainability, and economic growth, particularly through SME cooperation and technology transfer;<br>• The programme area includes territories covered by a large number of other 2021-27 Interreg A and B programmes. From a European perspective, cooperation density in the South Baltic border area appears quite evenly spread. |

| Governance dimension | |
|---|---|
| **Policy options** | **Cross-cutting aspects**<br>• Strong institutional cross-border frameworks provide a basis for reinforcing links with the macro-regional strategy and for expanding cooperation into new fields, such as housing, security and preparedness;<br>• Cross-border governance structures can be mobilised to develop integrated responses to common challenges related to blue growth, energy, transport, land use, nature protection and demographic change. |

ESPON

Co-funded by the European Union
Interreg

espon.eu

**ESPON 2030**

ESPON EGTC
11 Avenue John F. Kennedy
L-1855 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: info@espon.eu
www.espon.eu

The ESPON EGTC is the Single Beneficiary of the ESPON 2030 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway, and Switzerland.