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EUROPEAN RESEARCH PROJECT //

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

Germany-Netherlands

Border profile

March 2026



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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 BMWWSB (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)

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This document is a final report.

The information contained herein is subject to change and does not commit the ESPON EGTC and the countries participating in the ESPON 2030 Cooperation Programme.

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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

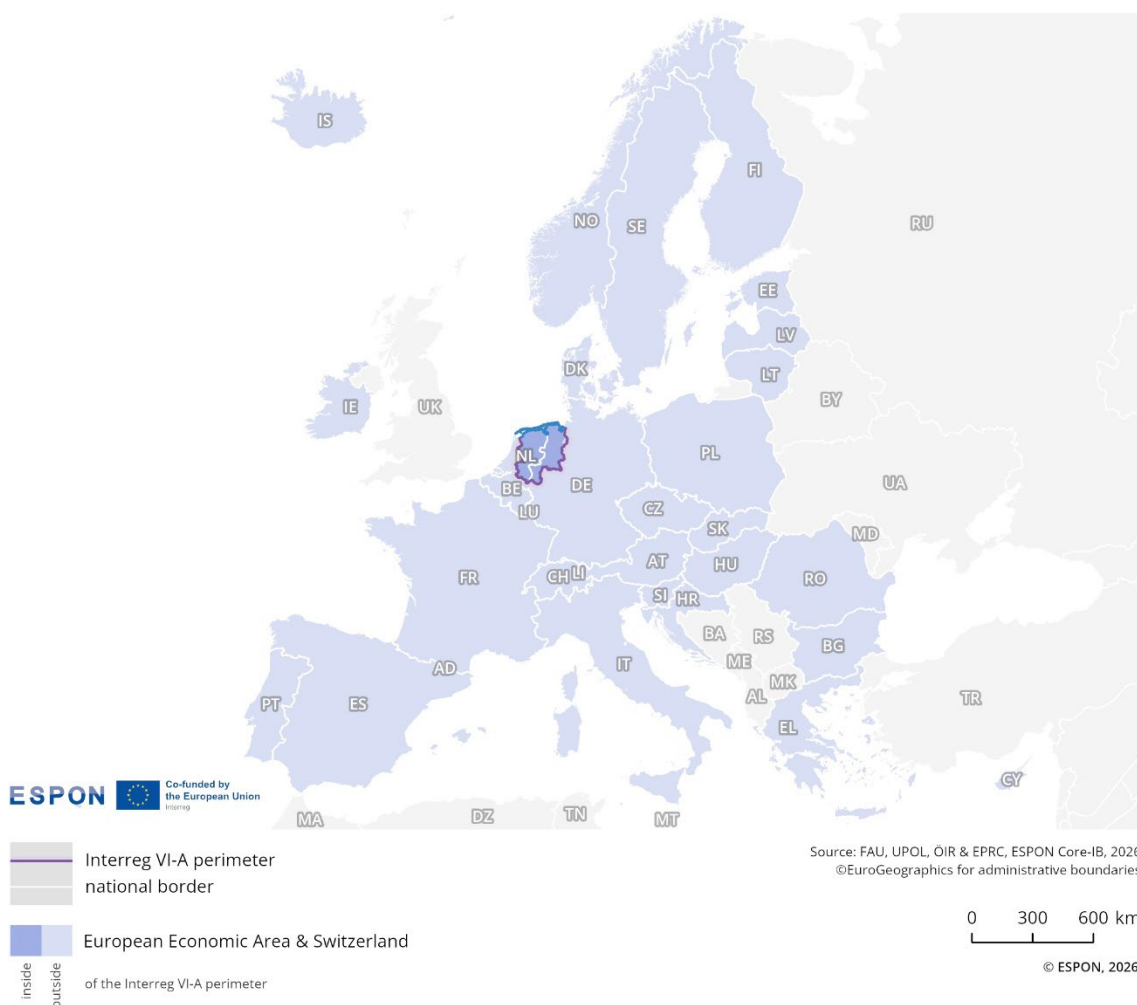
Within the ESPON framework, the CROSSGOV project (Governance mechanisms for cross-border functional areas) has been implemented in parallel to Core-IB. The CROSSGOV hub² provides a comprehensive platform for interactive data exploration, and selected data have been incorporated into this study.

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 ‘Germany-Netherlands’ covers the area between north-western Germany and the eastern Netherlands (see Figure 1.1). In Germany, the programme area includes the regions of Weser-Ems, Münster, and Düsseldorf in Lower Saxony and North Rhine-Westphalia, comprising a total of 30 NUTS3 regions. In the Netherlands, it covers parts of the regions of Gelderland, Groningen, Flevoland, Limburg, Drenthe, Friesland, Overijssel, and North Brabant, located in East Netherlands, North Netherlands, Flevoland, and South Netherlands, encompassing a total of 21 NUTS3 regions.

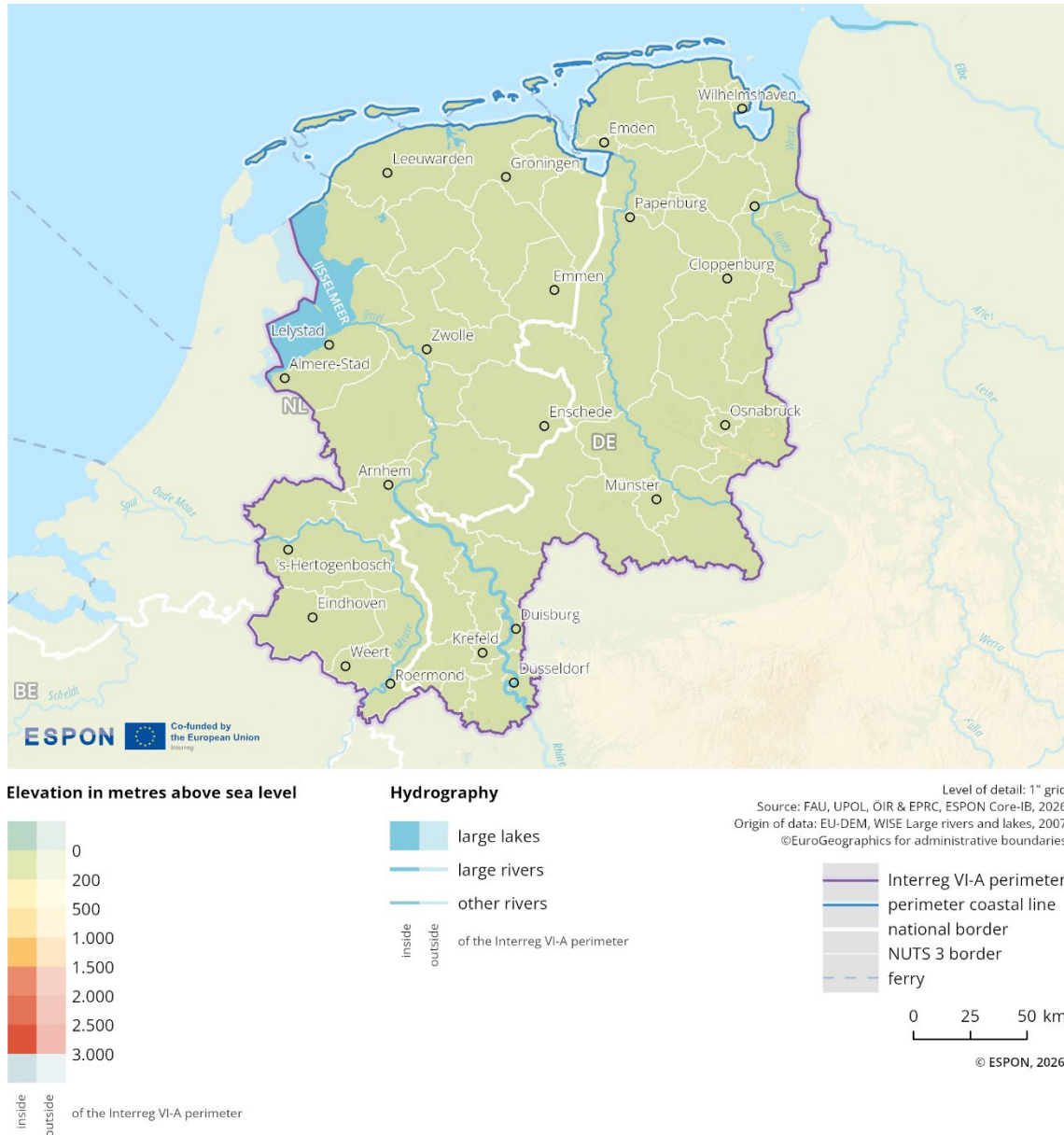
Figure 1.1: Overview map



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

Figure 1.2 illustrates the cross-border region's geomorphological features and the perimeter of the current Interreg VI-A programme area. Spanning approximately 47,380 km², the programme area runs along the German-Dutch border, roughly following the courses of the Meuse and Ems rivers, and extending to the North Sea coast. The programme area lies between the metropolitan areas of Düsseldorf, Oldenburg and Groningen, in the centre of the north-western European economic core zone.

Figure 1.2: Geographical features and characteristics³



The area is predominantly flat, forming part of the North European Plain which was shaped by glacial and fluvial processes. It encompasses a variety of natural landscapes, including coastal marshes, riverine lowlands, heathlands and peat bogs. In the north, near the Wadden Sea, the coastal zones are characterised by extensive tidal flats and coastal wetlands, some of which are UNESCO World Heritage

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.

Sites. The inland areas are characterised by wide river valleys, man-made canals and polders resulting from centuries of water management.

The programme area's dense hydrological network strongly influences the area's geography: major rivers such as the Rhine, Meuse, Ems and IJssel cross the cross-border region, contributing to a landscape of floodplains, dikes and reclaimed land. The interaction between land and water has resulted in complex drainage systems and water retention infrastructure.

In addition to large urban areas, the programme area comprises several medium-sized cities and towns, such as Münster, Osnabrück, Enschede and Arnhem.

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. 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.

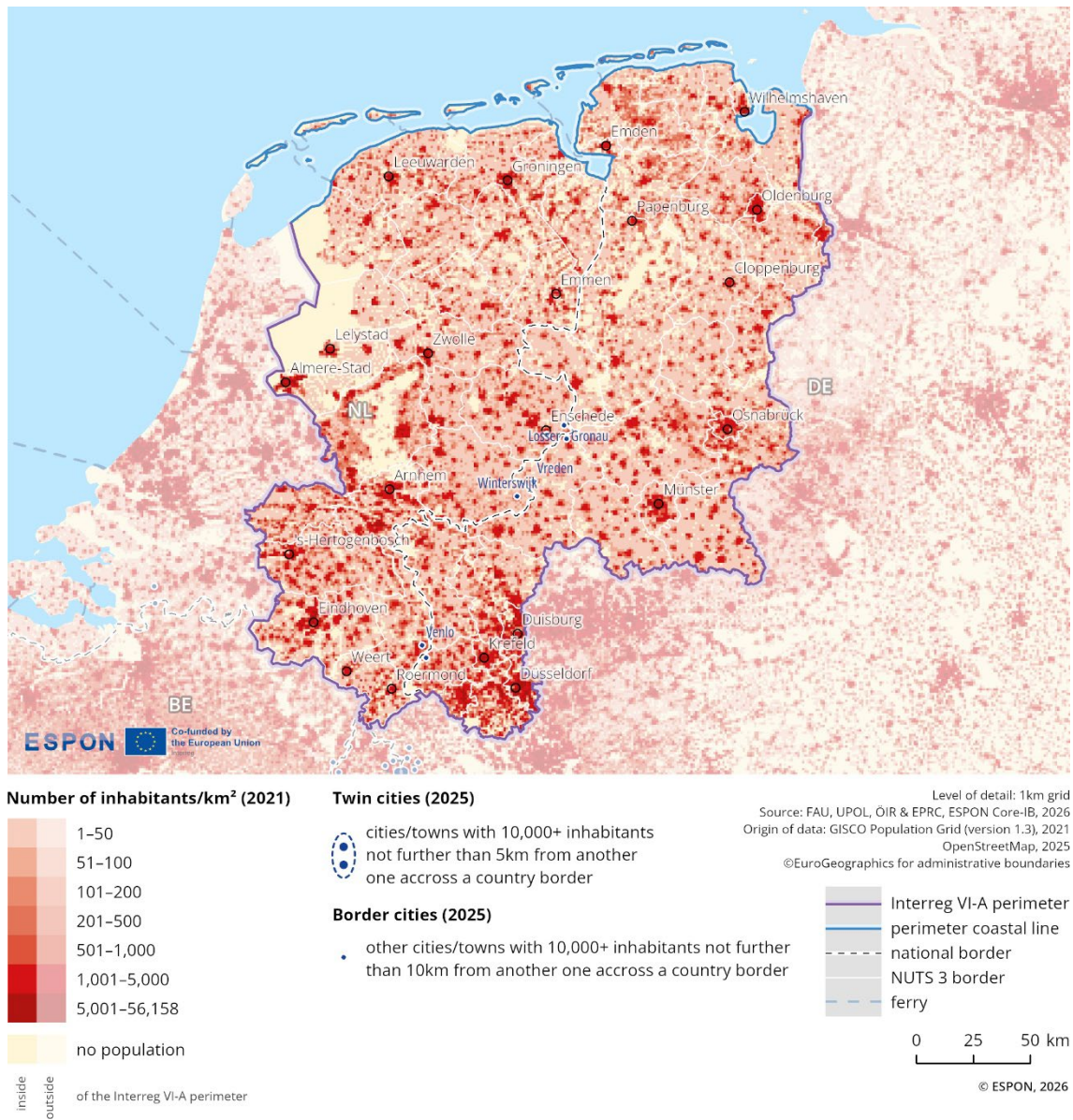
Figure 2.1 shows that the area is dominated by cities with higher population densities. The border region includes 78 urban centres with a population of over 30,000 inhabitants. The northern part of the programme area is only slightly less populated than the highly populated southern area. The southern part has almost no sparsely populated areas, the exception being a small western part of the Netherlands. There is a high concentration of larger towns including Düsseldorf (more than 600,000). Other German cities with larger populations include Oldenburg, Osnabrück and Münster. Towns with larger populations, such as Eindhoven and Arnhem in the south, Enschede in the centre, and Groningen and Leeuwarden in the north, dominate the Dutch part of the border region.

The population density in the border region as a whole is 293 inhabitants/km², which exceeds the EU average of 109 inhabitants/km² (according to Eurostat), and the aggregated average of all EU evaluated border regions, which is 125 inhabitants/km².

The German part of the border region has an average population density of around 286 inhabitants/km². It exceeds the national average population density in Germany (231 inhabitants/km²).

The Dutch part of the border region has an average population density of around 296 inhabitants/km². It is therefore lower than the national average population density in the Netherlands (455 inhabitants/km²).

Figure 2.1: Spatial patterns of population distribution



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 %

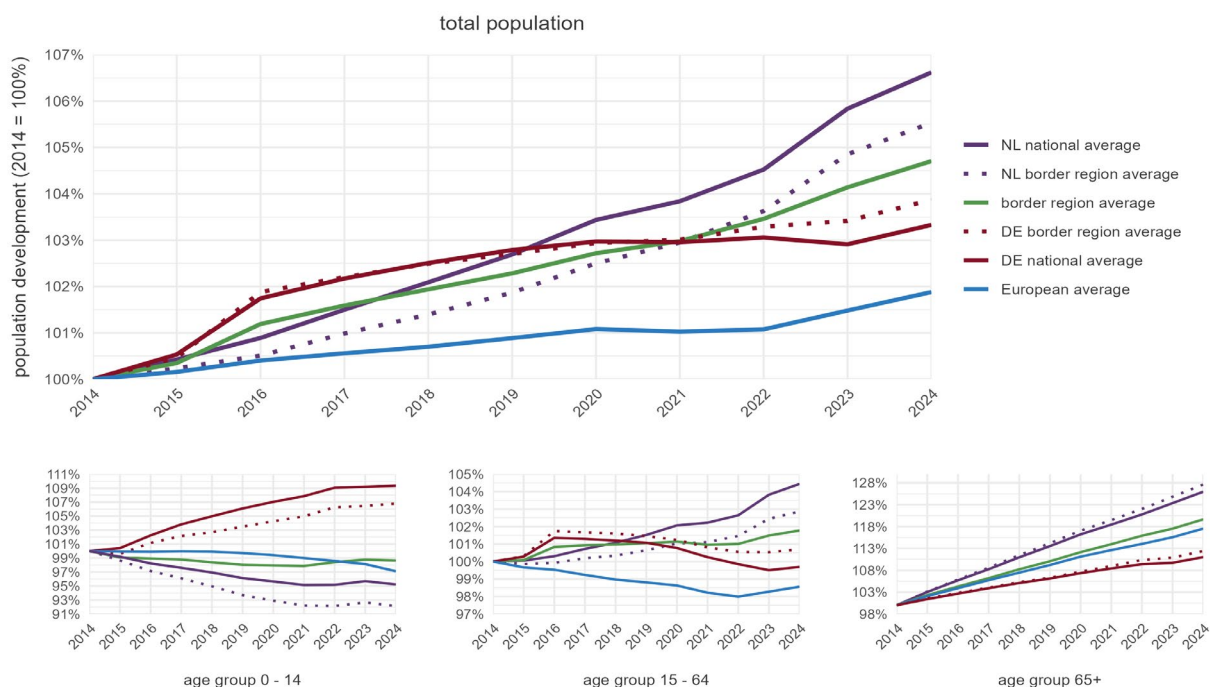
Please refer to the technical annex for more information.

Population in the Germany–Netherlands Border Region in 2024 (Eurostat): 14.95 million inhabitants, of which:

- › 49.3% in the German part (7.37 million inhabitants)
- › 50.7% in the Dutch part (7.58 million inhabitants)
- › Region within the border region with the highest population increase since 2014: Flevoland (NL230) at 12.7%

Figure 2.2 shows population growth in the Germany–Netherlands border region between 2014 and 2024. During this period, the cross-border region experienced moderate growth of 4.7%, with the highest growth rate observed in the Dutch parts of the area.

Figure 2.2: Population development (2014=100)



Population growth in the cross-border region is above the European average (4.7% vs. 1.9%) and above the average development in all border regions (4.7% vs 1.5%). The German border region exhibits

slightly higher growth than the national average (3.9% vs. 3.3%), whereas the Dutch border region has a slightly lower growth than the national average (5.8% vs. 6.6%).

In terms of the development of individual age groups in the programme area, the population aged 0–14 experienced a slight decrease of -1.4%, while the working-age population (15–64) showed a slight increase of 1.8%. The population aged 65 and over underwent a substantial increase of 19.7%.

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 similar patterns of change in settlement areas on both sides of the German-Dutch border. Changes are evident in particular around the urban centres of Düsseldorf, Münster, Osnabrück, Oldenburg, Groningen, Leeuwarden, Lelystad, Enschede, Arnhem and Eindhoven. Roermond is an exception, with no significant change during the observed time period. High growth in settlement areas is particularly evident around the Ruhr area in Germany and around the Dutch cities Groningen, Arnhem, Zwolle and Venlo. Close to the national borders, the settlement area increases along both borders. On the Dutch side, the increase is higher around the cities of Arnhem and Venlo.

Figure 2.3: Settlement area dynamics

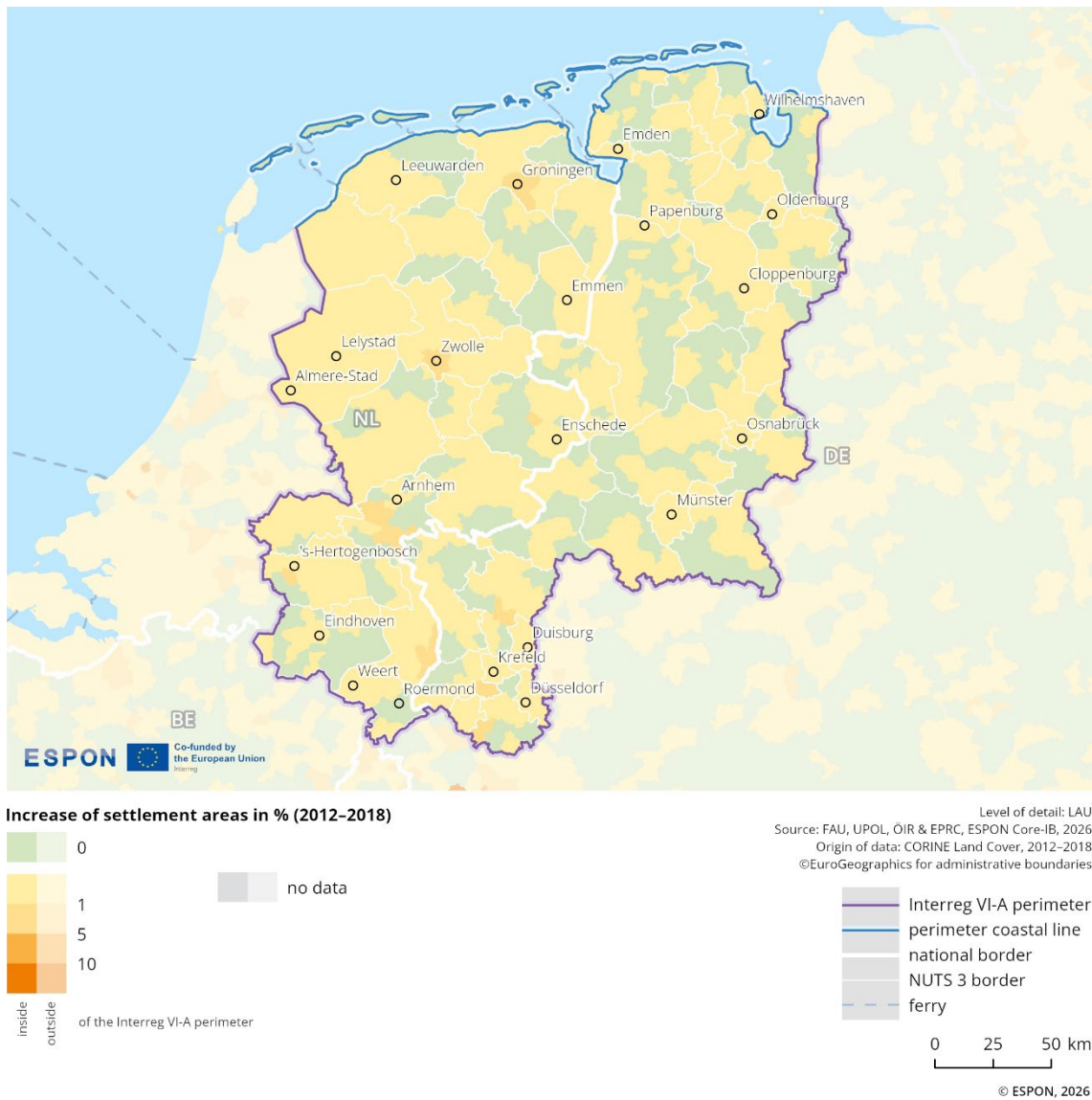
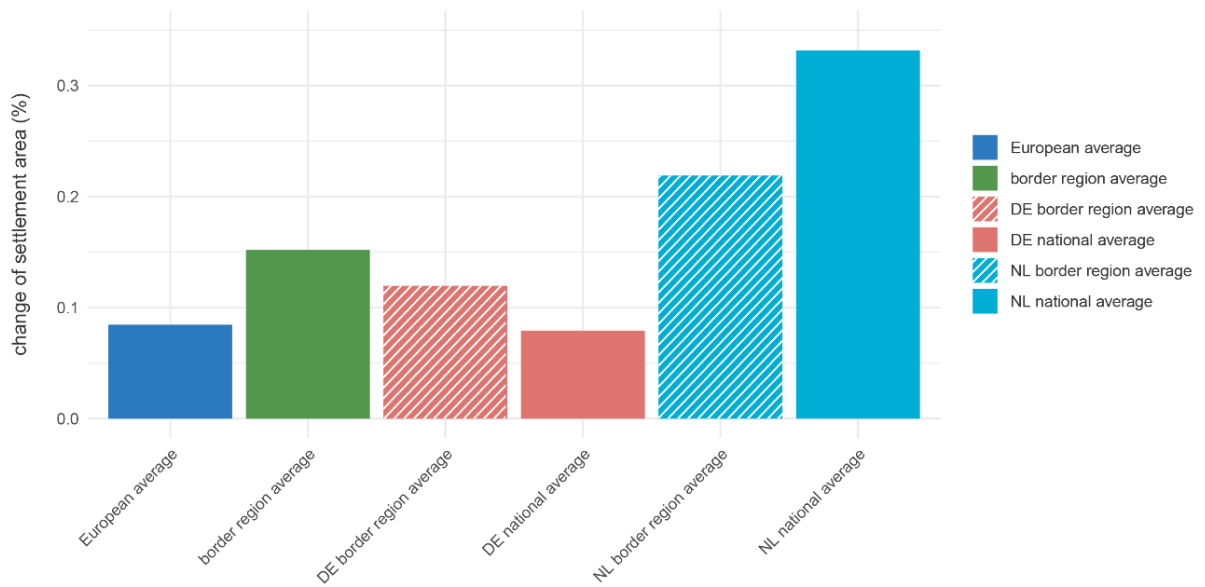


Figure 2.4 presents the change in settlement areas from a comparative perspective. The average for the Germany-Netherlands programme area is higher than the overall European average, which includes both EU member states and the EFTA countries Switzerland, Liechtenstein, and Norway. The national average in the Netherlands is higher than in Germany, as is the Dutch border-regional average compared to the German border-regional average. However, the Dutch border-regional average is lower than the national Dutch average, while in Germany the border-regional is higher than the national German average.

These diverse and dynamic patterns of development highlight the need for an integrated approach to spatial development. 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)



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

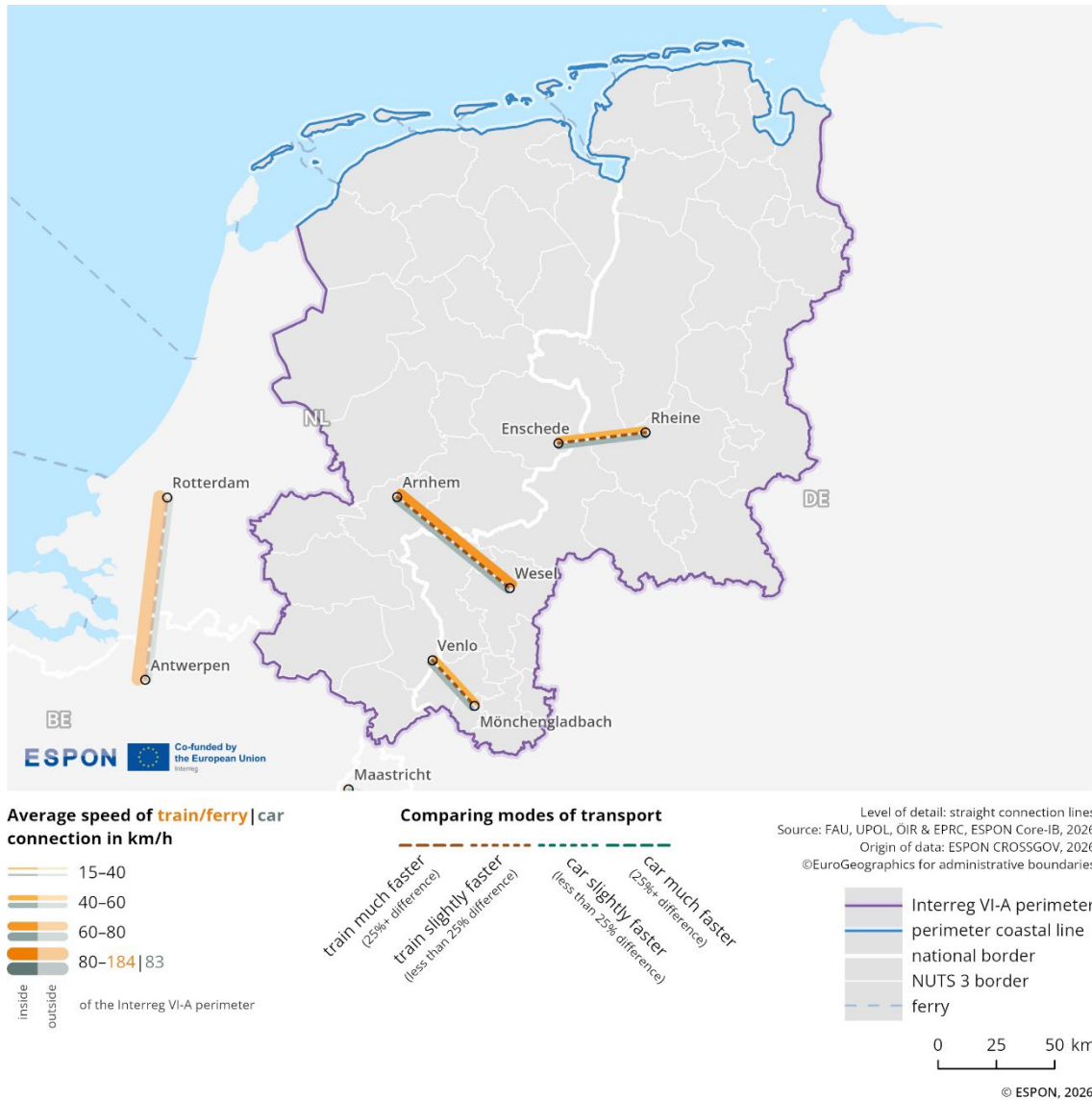
The indicator presents a comparative perspective for different modes of transport (public and private) and their average travel speed (so-called space-time-lines). As such it helps to understand and interpret accessibility patterns along the border and highlights the comparative quality of selected cross-border 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 and train travel times in the Germany-Netherlands border region. This visualisation enables an assessment of transport quality by highlighting differences between public (train) 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 project⁴. 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 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) shows 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 Enschede–Rheine, Arnhem–Wesel, and Venlo–Mönchengladbach. For all of these routes, train connections outperform car travel in terms of speed. However, it is notable that all connections also offer a relatively fast car option.

⁴ ESPON CROSSGOV Atlas, see Storymap on 'Space-time-lines': <https://gis-portal.espon.eu/arcgis/apps/storymaps/collections/345c978ad7f84ad-fac30c16b90219d35?item=4>

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.

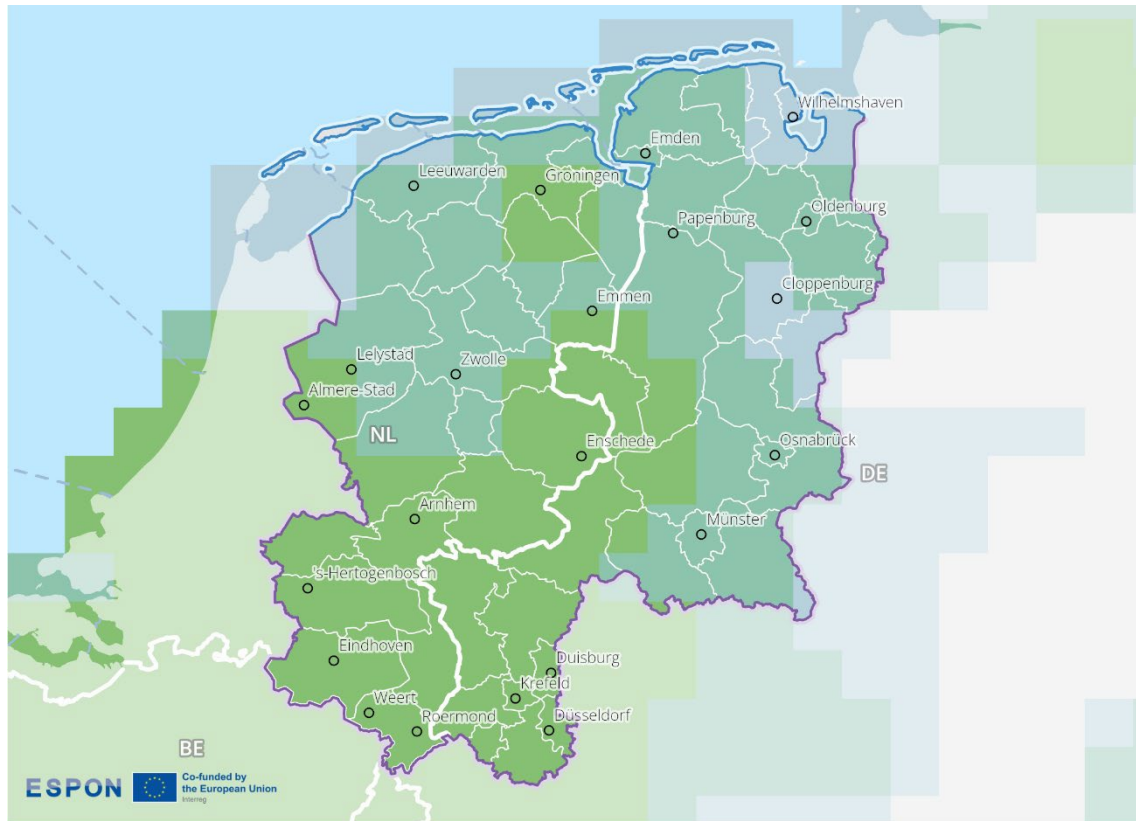
- **Source/method of retrieval:** The indicator is calculated based on Twitter (currently X) data. The digital footprint of individual users provides information about physical mobility flows and is used to calculate cross-border catchment areas of different intensity.
- **Temporal coverage:** 2013-2023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

Please refer to the technical annex for more information.

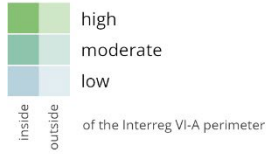
Figure 2.6 shows the cross-border catchment area in the border region based on mobility flows from 2013 to 2023, highlighting estimated cross-border mobility intensity across 3 different quartiles. The first quartile represents the 25% highest mobility intensity shown in dark green, the second quartile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

As the map illustrates, the intensity of cross-border mobility of people within this cross-border region varies. High levels of mobility intensity are recorded in the southern part of the cross-border region, particularly around the cities of Arnhem, Enschede, and Roermond, as well as in a smaller area near the city of Groningen. In the northern part of the programme area, mobility intensity is moderate, including areas around cities such as Leeuwarden, Münster, and Oldenburg. Low intensity is observed in the coastal zone and in a smaller area between the cities of Oldenburg and Osnabrück.

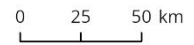
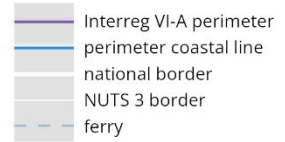
Figure 2.6: Cross-border mobility intensity



Estimated cross-border mobility intensity (2013-2023)



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



© ESPON, 2026

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 area. 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

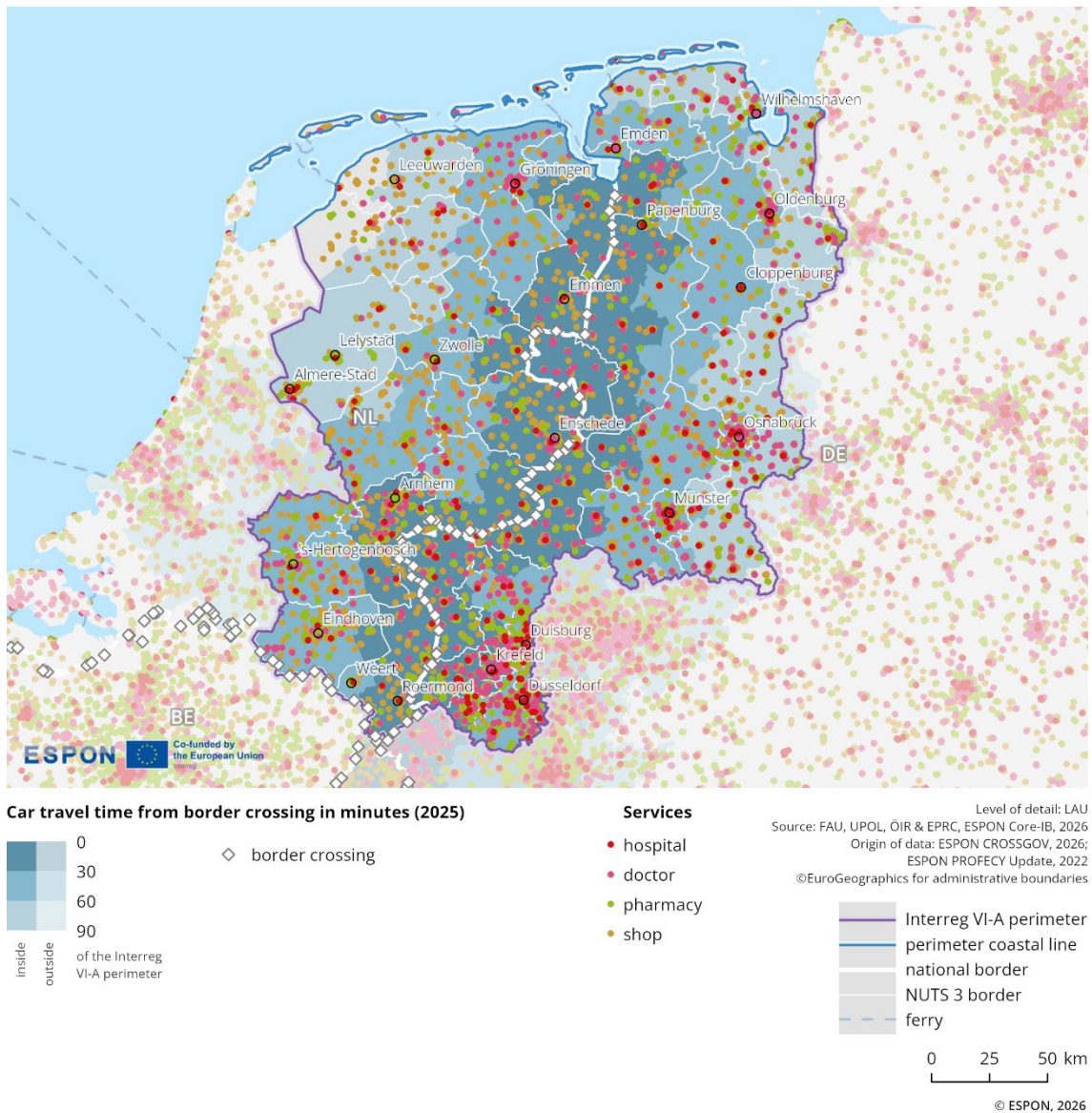
Please refer to the technical annex for more information.

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 and 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 convenient stores), with distinct coloured symbols.

The map shows that the border between Germany and the Netherlands is surrounded on both sides by a wide zone of the shortest travel time category, up to 30 minutes, and a wide band with accessibility within 60 minutes to 90 minutes of travel time. The area is almost entirely covered by the first 2 categories (up to 30 and 60 minutes) of travel time. There is hardly any category above 90 minutes of travel time from the border, except a very small part of the Netherlands in the north-west. This means that the border regions have very good road connections.

Key services, including shops, hospitals, doctors, and pharmacies, are relatively evenly distributed, with several notable concentrations. For example, the density is higher in the south of the border region. 2 towns with services, Arnhem and Enschede, are directly in the zone up to 30 minutes from the border. Towns such as Düsseldorf, Münster, Osnabrück, Oldenburg, and Groningen are located within the travel zone, with a travel time of up to 60 minutes to the border.

Figure 2.7: Travel-time accessibility from border crossings



2.1.3 Key messages on the territorial dimension

The programme area is densely populated area, especially in the south and in many areas closely connected in terms of territorial characteristics. The border region includes 78 urban centres with a population of over 30,000 inhabitants and has a population density of 293 inhabitants/km², which far exceeds the EU average of 109 inhabitants/km².

The area has also seen growth in settlements, especially around urban centres. Both sides of the border have experienced population growth at levels above EU averages, with the highest level in the Netherlands. The working-age population (15–64) showed a slight increase of 1.8%. The population aged 65 and over underwent a substantial increase of 19.7%.

Transport connections show good rail and road travel options across the border and travel times to the border are all in the shortest time category. The intensity of cross-border mobility varies, with high levels of mobility intensity recorded in the southern part of the cross-border region, particularly around the cities of Arnhem, Enschede, and Roermond. Lower intensity is observed in the northern part of the programme area and coastal zone and in a smaller area between the cities of Oldenburg and Osnabrück.

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.

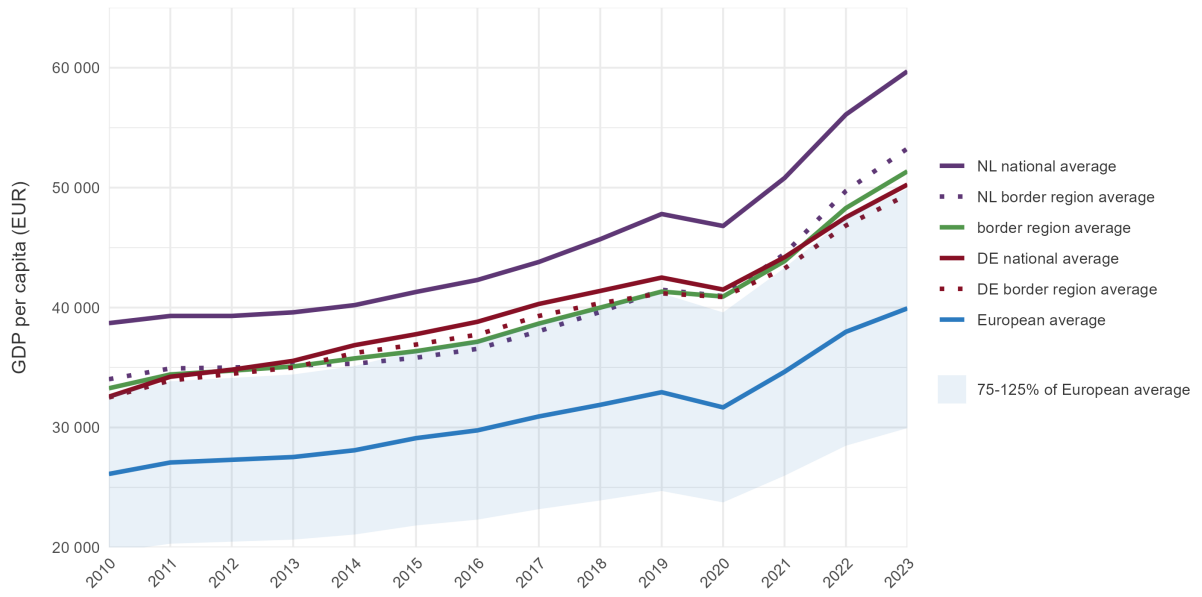
- **Source:** Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage:** 2010-2023
- **Unit:** Euro per capita

Please refer to the technical annex for more information.

In 2022, the cross-border region showed a GDP/capita value of 134% of the EU average and 136% of the average in European border regions in general. The programme area saw a 36.7% increase in GDP per capita in the border region between 2014 and 2022⁵. This corresponds to an increase in GDP per capita that is 1.1 percentage points higher than the EU average. Furthermore, this is 1.5 percentage points higher than the average increase in GDP per capita in European border regions. The German border region has a similar GDP per capita as the national average. In contrast, the Dutch border region lags behind the national average and is more in line with the German figures. Both sides of the border region have similar levels of GDP per capita. However, the Dutch border region grew around 10 percentage points more than the German regions since 2014.

⁵ 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.

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



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.⁶

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).

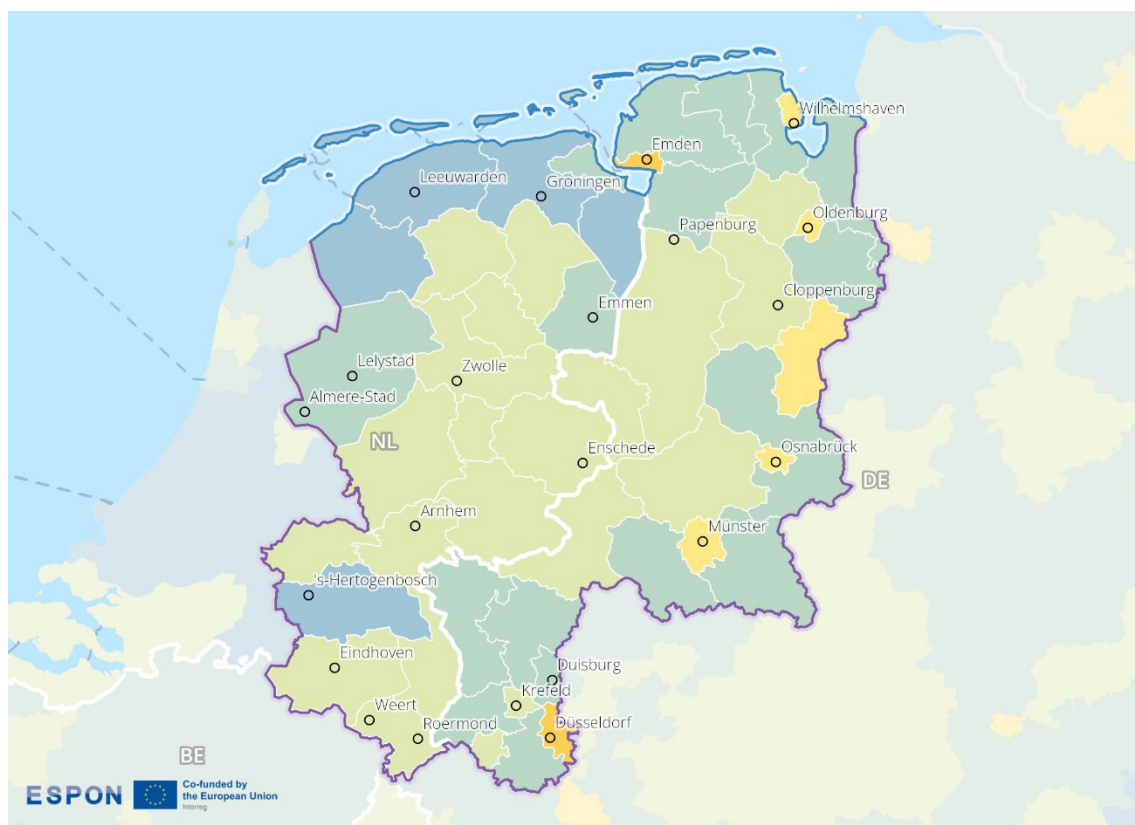
- **Source:** Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage:** 2014-2023
- **Unit:** Share in %

Please refer to the technical annex for more information.

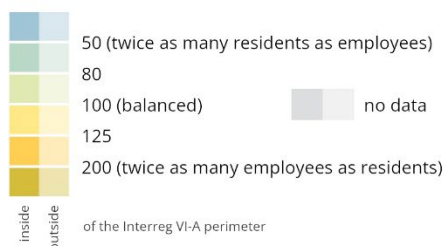
Figure 2.9 illustrates the share of employment per capita in the population aged 15 to 64 in 2023. The data are categorised into ranges from below 50% (twice as many residents aged 15 to 64 as employees) to above 200% (twice as many employees as residents aged 15 to 64), with 100% representing a balanced 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.

⁶ See also: European Commission 2024: Cross-Border Regional Labour Market Analysis, <https://op.europa.eu/s/AazM>

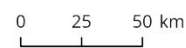
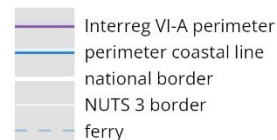
Figure 2.9: Employment share⁷



Share of employment per capita in % (2023)



Level of detail: NUTS3
 Source: FAU, UPOL, OIR & EPRC, ESPON Core-IB, 2026
 Origin of data: JRC/REGIO, Eurostat, 2025
 ©EuroGeographics for administrative boundaries



© ESPON, 2026

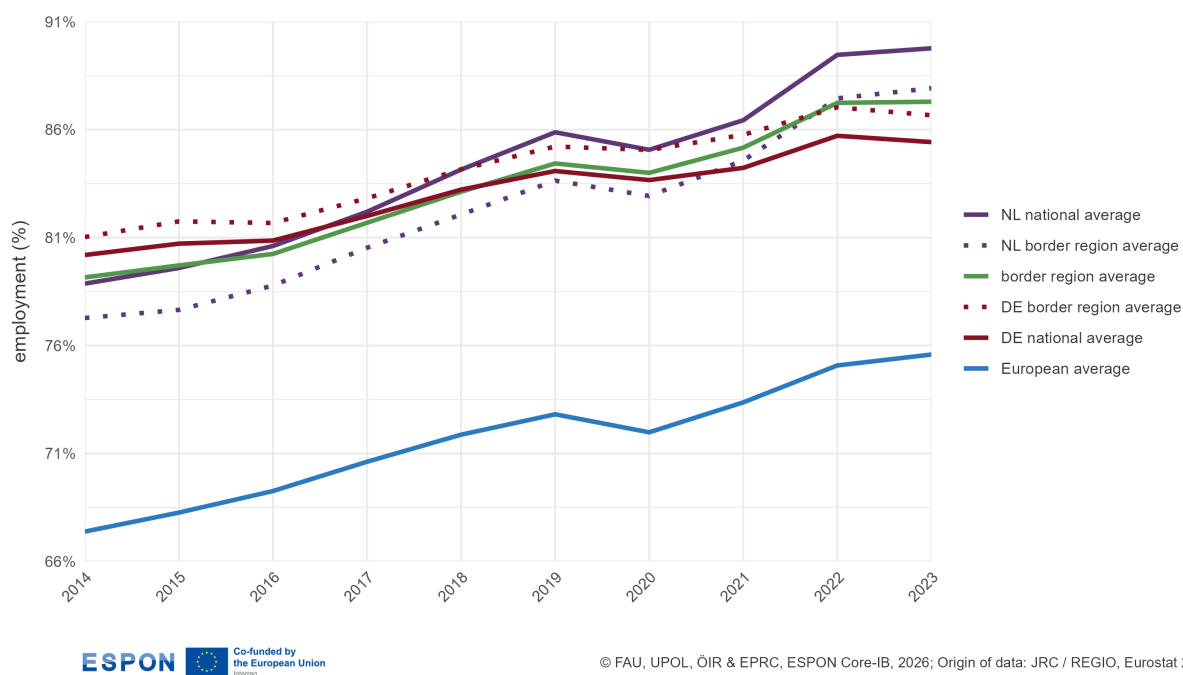
The share of employment in this border region varies across the territory. The average of the area as a whole was 87.3% in 2023, representing an increase of 7.7 percentage points since 2014. The share of employment in the central part of the cross-border region ranges from 80% to 100%. In the northern areas of the Dutch part of the programme area and north of the city of Eindhoven, values fall below 50%. Around the cities of Münster, Osnabrück, and Oldenburg, as well as to the north of Osnabrück and Oldenburg, values range from 100% to 125%. High values in share of employment (125% to 200%) are found around the city of Düsseldorf and east of the city of Groningen. In the remaining parts of the cross-border region, values range from 50% to 80%. 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 higher by 11.7 percentage points; in 2014, the difference was 12.3 percentage points.
- › Compared to the national average of Germany, values in the cross-border region are higher by 1.9 percentage points; in 2014, they were 0.5 percentage points lower.

⁷ Note: In this map, 'residents' refers to the population aged 15 to 64.

- › Compared to the national average of the Netherlands, values in the cross-border region are lower by 2.5 percentage points; in 2014, they were 0.8 percentage points higher.
- › The German border area records values 1.2 percentage points above the German national average, while the Dutch border area is 1.6 percentage points below the Dutch national average.
- › Compared to the average of all cross-border regions, this cross-border region's share of employment is higher by approximately 12.9 percentage points; in 2014, the difference was 13.4 percentage points higher.

Figure 2.10: Employment share over time (comparison)



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 Germany-Netherlands cross-border region between 2014 and 2023. In 2023, the cross-border region has an

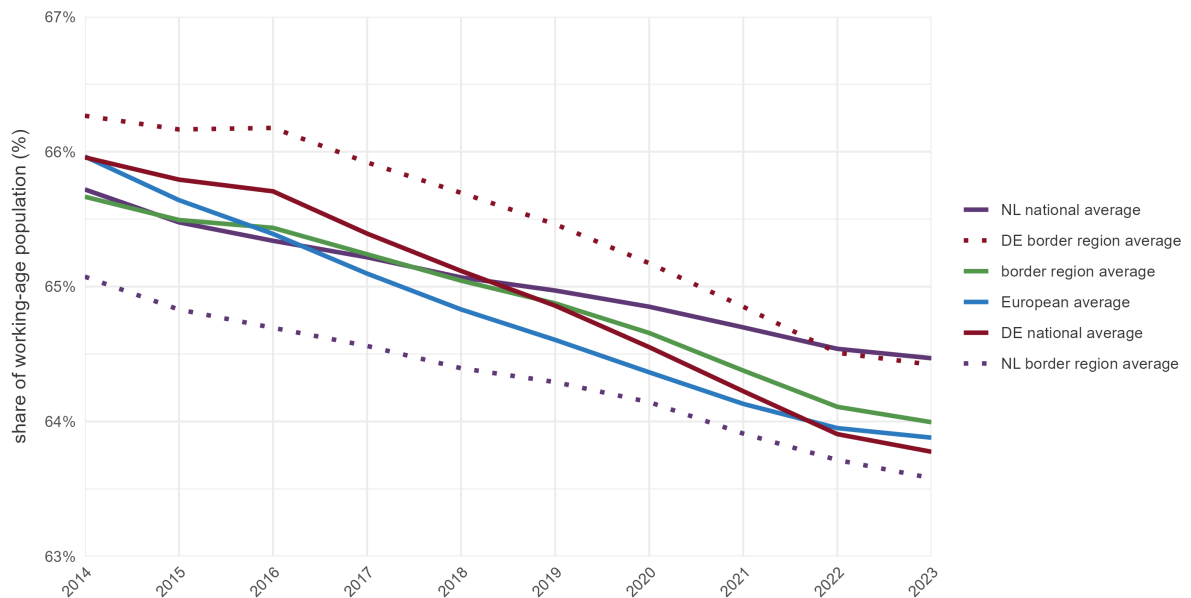
average working-age population share of 64%, compared to the European average of 63.9% and 63.7% for the average of all cross-border regions.

The share of the working-age population in the whole cross-border region is slightly lower than the German border average (64.4%) and slightly higher than the Dutch border average (63.6%). Compared to national averages, the value in the programme area is slightly lower than the Dutch national average (64.5%) and comparable to the German national average (63.8%).

The cross-border region experienced a slight decrease of 1.7 percentage points in the share of working-age population between 2014 (65.7%) and 2023 (64%). This decline is slightly slower than the European average, which dropped by 2.1 percentage points in the same period. Both countries recorded a decreasing trend, with the decline being slightly more pronounced on the German side (-1.9 percentage points at the border and -2.2 at the national level) compared to the Dutch side (-1.5 percentage points at the border and -1.2 percentage points at the national level).

The Germany–Netherlands cross-border region experienced a moderate decrease in the share of working-age population, with both countries showing a similar pattern of decline and the cross-border region remaining close to the EU and cross-border averages in 2023.

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



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 %

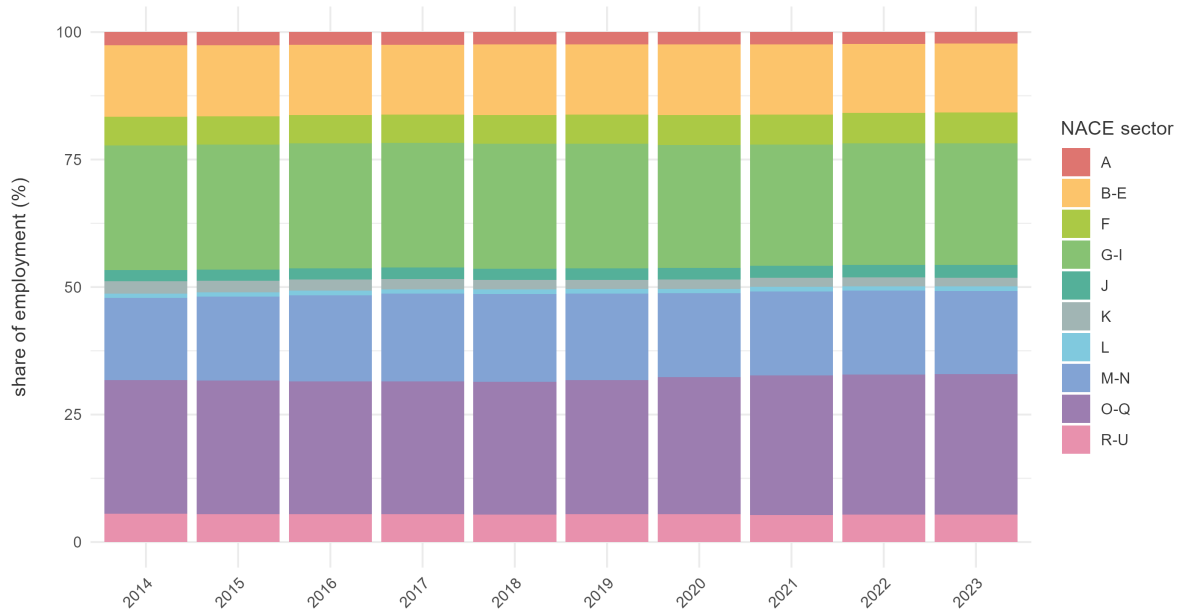
Please refer to the technical annex for more information.

Figure 2.12 illustrates the relative number of jobs in the border area differentiated by sector. 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 remained relatively stable. There is a small decline in the share of employment in agriculture, forestry and fishing (A). Conversely, there is a modest increase in the number of jobs in education (O), human health and social work activities (Q).

Over the entire period, the sectors with the highest share of jobs are '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.

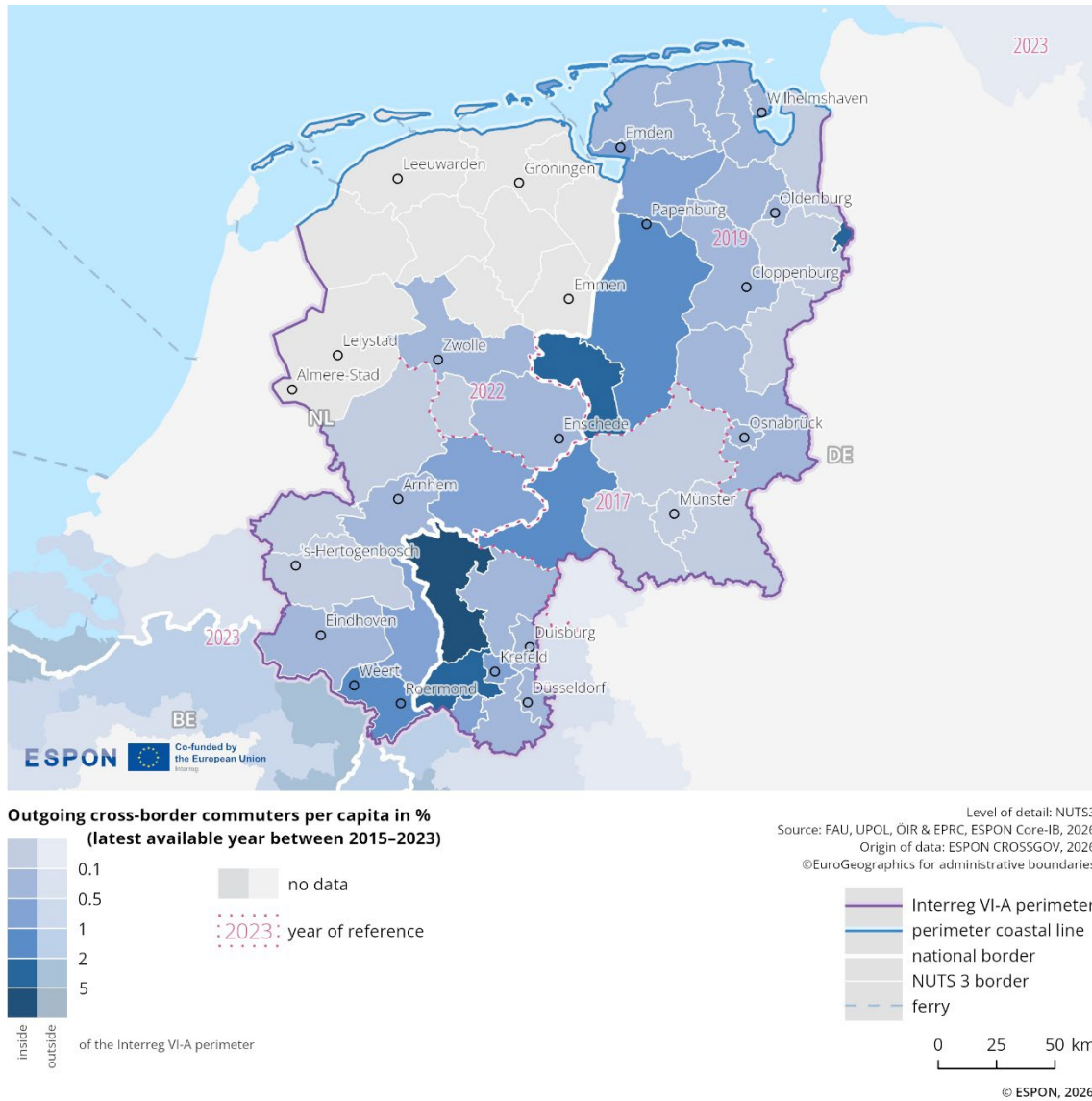
Commuting is one of the most relevant cross-border flows to identify functional linkages. Figure 2.13 illustrates the share of outgoing commuters per capita for each NUTS3 region (more concretely speaking the share of outgoing commuters among the residential population of the age group 15-64 years old, resembling the potential labour force). Although origin-destination information cannot be provided, 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 areas directly adjacent to the border, mostly on the German side. No data is available for the northern part of the Netherlands.

"Outgoing hotspots" are particularly notable on the German side. The regions of Grafschaft Bentheim and Kleve stand out in particular, while Viersen, Borchen, and Emsland also show high activity.⁸ On the Dutch side, the region of Midden-Limburg also shows elevated shares of cross-border commuters per capita.

⁸ 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¢er=49.69576,14.33324&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.

The 2 countries involved in 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.

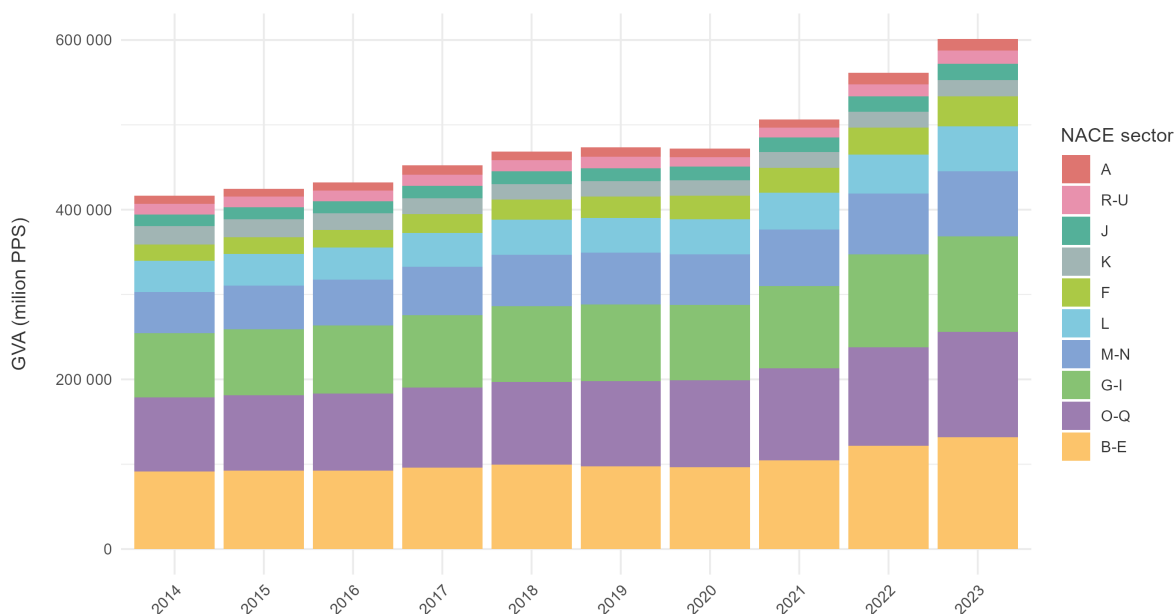
Figure 2.14 visualises gross value added (GVA), which is an important indicator of economic activity. GVA measures the value created by all economic activities involved in producing goods and services in a specific area. It is differentiated by sectors to provide detailed insights into the economic contributions 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 border area increased from 416,386 million purchasing power standards (PPS) to 601,133 million PPS - a growth of 44%. 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 113,844 million PPS in 2023. This underlines 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 Germany-Netherlands 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)

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 Germany–Netherlands border region is relatively evenly distributed. In most areas, the average hourly income ranges between €30 and €40. In the Dutch part of the cross-border region, Noordoost-Noord-Brabant (€41.10), Zuidoost-Noord-Brabant (€40.90) as well as Oost-Groningen (€40.20), Overig Groningen (€41.20), and Delfzijl en omgeving (€41) report a slightly higher values.⁹ Several German NUTS3 areas in the southern part of the cross-border region also report slightly higher values than €40, such as Krefeld, Düsseldorf and Duisburg (all €42). In comparison, the national averages of nominal compensation per hour worked for 2023 were €39.40 in Germany and €42.20 in the Netherlands.

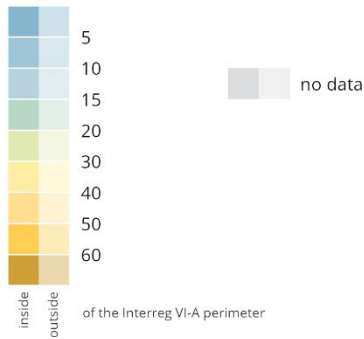
Cross-border wage differences can encourage labour migration from lower-wage areas to more economically prosperous neighbouring regions, creating both opportunities and challenges for local labour markets and social systems. However, in this particular border region, wage differences are not especially pronounced.

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¢er=49.69576,14.33324&lcis=NUTS2021L3&>

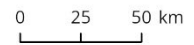
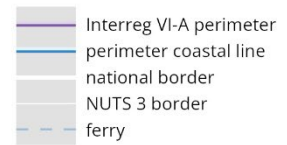
Figure 2.15: Average income per hour



Average income per hour worked in euros (2023)



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



© ESPON, 2026

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.

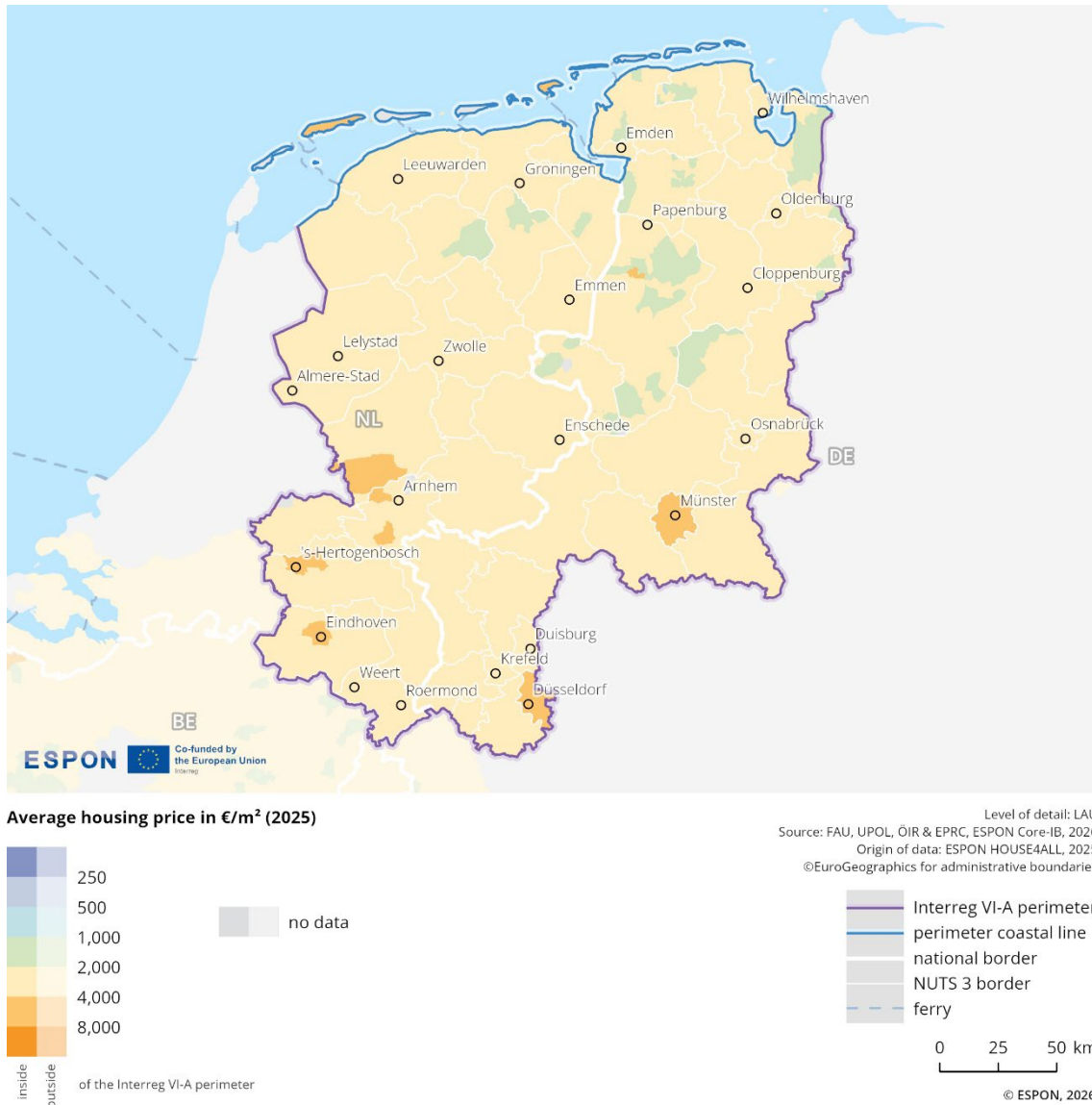
- **Source/method of retrieval:** Processed ESPON House4all data. The original data is collected via web-scraping of national listing websites over a one-year period.
- **Temporal coverage:** 2024/2025
- **Unit:** Average price per square meter (€/m²)

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.

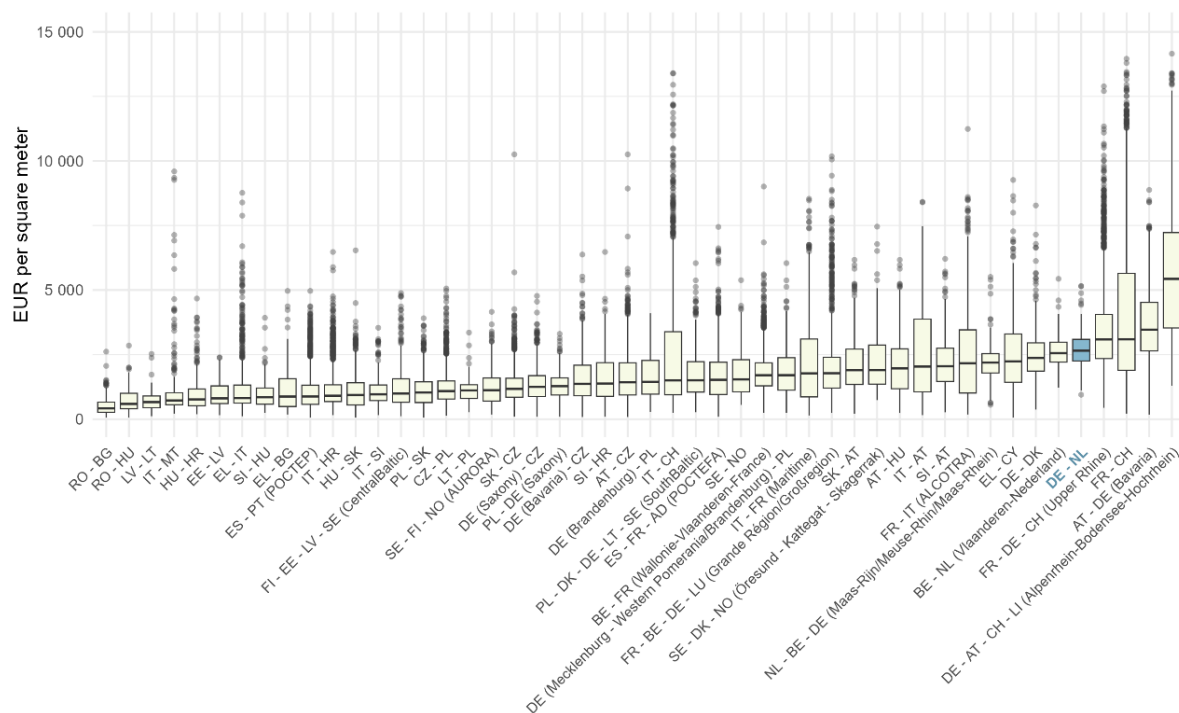
The map indicates that land prices are relatively balanced in both countries, with most areas falling within the €2,000 to €4,000/m² category. Higher categories with prices up to €8,000/m² are found in the cities of Münster, Düsseldorf (Germany), Eindhoven and Arnhem (Netherlands), and their surroundings. Higher prices are also found on some islands. Only small areas in both countries have prices below €2,000/m². The border does not form a price divide on this cross-border between Germany and the Netherlands.

Figure 2.16: Advertised housing prices



The German part of the border area has an average advertised sales price of around €2,472/m². The Dutch parts of the border region have an average advertised sales price of around €3,104/m². The average advertised sales price in the border region as a whole is €2,647/m², which exceeds the average of all EU evaluated border regions, which is €1,900/m². The prices are below European average of €5,600/m².

Figure 2.17: Advertised housing prices (comparison)



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.

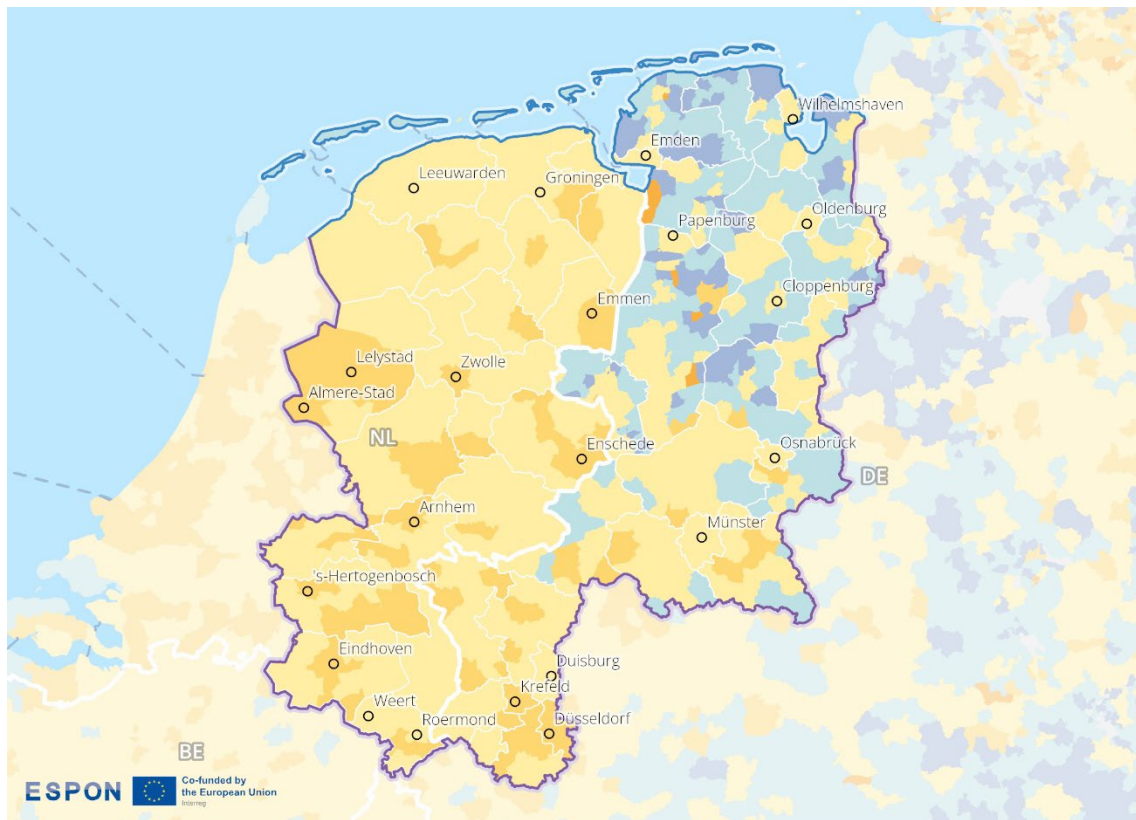
Digitalisation is a highly relevant issue in European border regions, with the overarching objective of ensuring appropriate digital access. It is widely recognised as a key precondition for successful regional and economic development. A major challenge in this process is preventing ‘digital divides’, 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

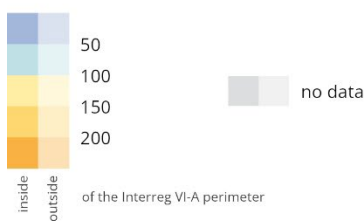
data, prepared by OBC Transeuropa for EDJNet, is based on Speedtest Intelligence data from Speedtest/Ookla's Global Fixed and Mobile Network Performance Maps for the first quarter of 2022. The average download speeds are expressed in megabits per second (Mbps), not to be confused with megabytes per second (MBps).

The map reveals differences between urban and rural areas. Values range from under 50 Mbps to over 200 Mbps. Cities such as Oldenburg, Osnabrück, Münster, Düsseldorf, Roermond, Eindhoven, Arnhem, Enschede, Lelystad, Groningen, and Leeuwarden report relatively high average speeds, while surrounding areas, especially in Germany, 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, this is not the case in the Netherlands, where almost the entire area shows high internet speeds, resulting in overall higher speeds than in Germany. 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.

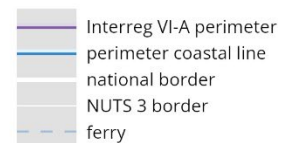
Figure 2.18: Average internet download speed



Average internet speed in Mbps (2022)



Level of detail: LAU
 Source: FAU, UPOL, OIR & EPRC, ESPON Core-IB, 2026
 Origin of data: Oraldo Gjergji, European Data Journalism Network, 2022
 ©EuroGeographics for administrative boundaries



© ESPON, 2026

2.2.5 Key messages on the economic dimension

The cross-border region has a GDP per capita of 134% exceeds the EU average, and it has experienced GVA growth over the period. The biggest contributions came from sector groups B-E, G-I, and O-Q. Compared to national averages, the German part of the border area share similar GDP levels, while the Dutch border areas lag behind domestic averages.

Across the area employment levels vary. For example, share of employment values in the central part of the cross-border area range from 80% to 100%, but in the northern areas of the Dutch part of the programme area and north of the city of Eindhoven values fall below 50%.

The working age population is 64% of the total, which is close to the European average. The cross-border region experienced a slight (1.7) decrease in the share of working-age population between 2014 and 2023, although this decline is slower than the European average. The highest share of jobs is in 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).

Cross-border commuting in the area is relatively strong in areas directly adjacent to the border, mostly on the German side. "Outgoing hotspots" are particularly notable on the German side, including Grafschaft Bentheim and Kleve, with Viersen, Borchen and Emsland, and in the Netherlands, the region of Midden-Limburg also shows elevated shares. The 2 countries involved in the programme are signatories of the 2023 Framework Agreement on Cross-Border Telework, which also support cross-border work.

In 2023, nominal compensation per hour worked is relatively evenly distributed. In most areas, the average hourly income ranges between €30 and €40. Similarly, land prices are relatively balanced in both countries, with the border not forming a price divide. In terms of internet speed, the map reveals differences between the 2 countries, with higher speeds in the Netherlands, but also between urban and rural areas in both countries.

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 mainly concentrated along the coastal and northwestern zones, stretching across the Friesian Islands, where Natura 2000 and national designations overlap. Inland coverage across the central and southern parts of the cross-border region, such as around Enschede and Osnabrück, is more fragmented and consists of smaller patches of mostly nationally designated areas. In contrast, areas around Dutch cities such as Lelystad and Arnhem show more densely concentrated protected areas.

All coastal protected areas, especially in the North Sea region, show clear cross-border counterparts between the Netherlands and Germany. In contrast, inland regions show fewer cross-border connections and a more dispersed network of protected areas. Many protected areas are located close to the border but do not stretch across it.

Figure 2.19: Nature protected areas








European protected areas (2024)

-  Natura2000
 -  Emerald Network
 -  national designated protected area
- inside
outside
of the Interreg VI-A perimeter

Only protected areas larger than 4km² were visualised on the map.

Level of detail: geolocalised areas greater than 4 km²
Source: FAU, UPOL, OIR & 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 25 50 km

© ESPON, 2026

2.3.1.2 Air pollution

Indicator description

The indicator shows the air pollution from fine particulates (PM_{2.5}) 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.

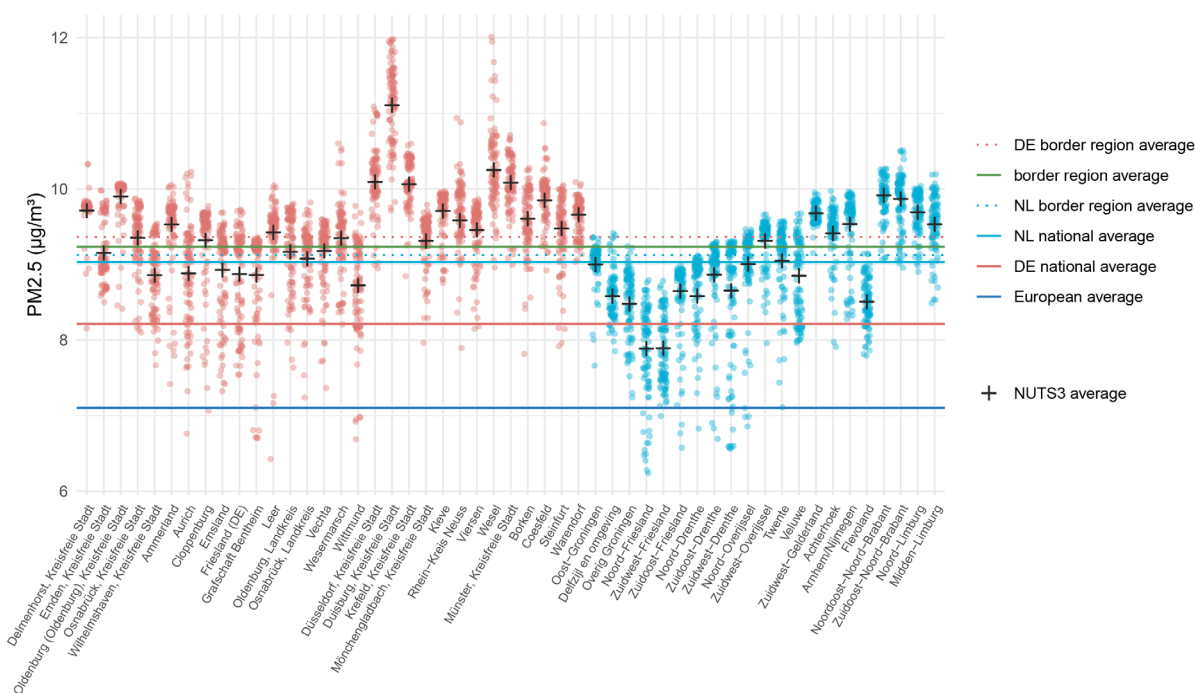
Figure 2.20 illustrates PM2.5 concentrations (in $\mu\text{g}/\text{m}^3$) across NUTS3 regions in Germany and the Netherlands. Each small dot represents an individual measurement, while the black crosses indicate the average PM2.5 concentration for each NUTS3 region.¹⁰ The regions are aligned along the x-axis, with German regions on the left (in red) and Dutch regions on the right (in blue).

PM2.5 values in both countries span a wide range. Overall, German regions show higher individual peaks in PM2.5 concentrations than Dutch regions. Dutch NUTS3 averages cluster below $10 \mu\text{g}/\text{m}^3$ with only few measurements exceeding $10 \mu\text{g}/\text{m}^3$. German NUTS3 averages display more variety and several exceed $10 \mu\text{g}/\text{m}^3$.

Germany's national average is around $8 \mu\text{g}/\text{m}^3$, with the border region average significantly higher. The Netherlands shows very similar values for both national and border averages, both near $9 \mu\text{g}/\text{m}^3$.

The European average is around $7 \mu\text{g}/\text{m}^3$, which is lower than both the German and Dutch values. The cross-border average is slightly above $9 \mu\text{g}/\text{m}^3$, making it significantly higher than the European average and the German national average. The cross-border average reflects the higher values observed in the German border region and the lower values in the Dutch border region.

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¢er=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

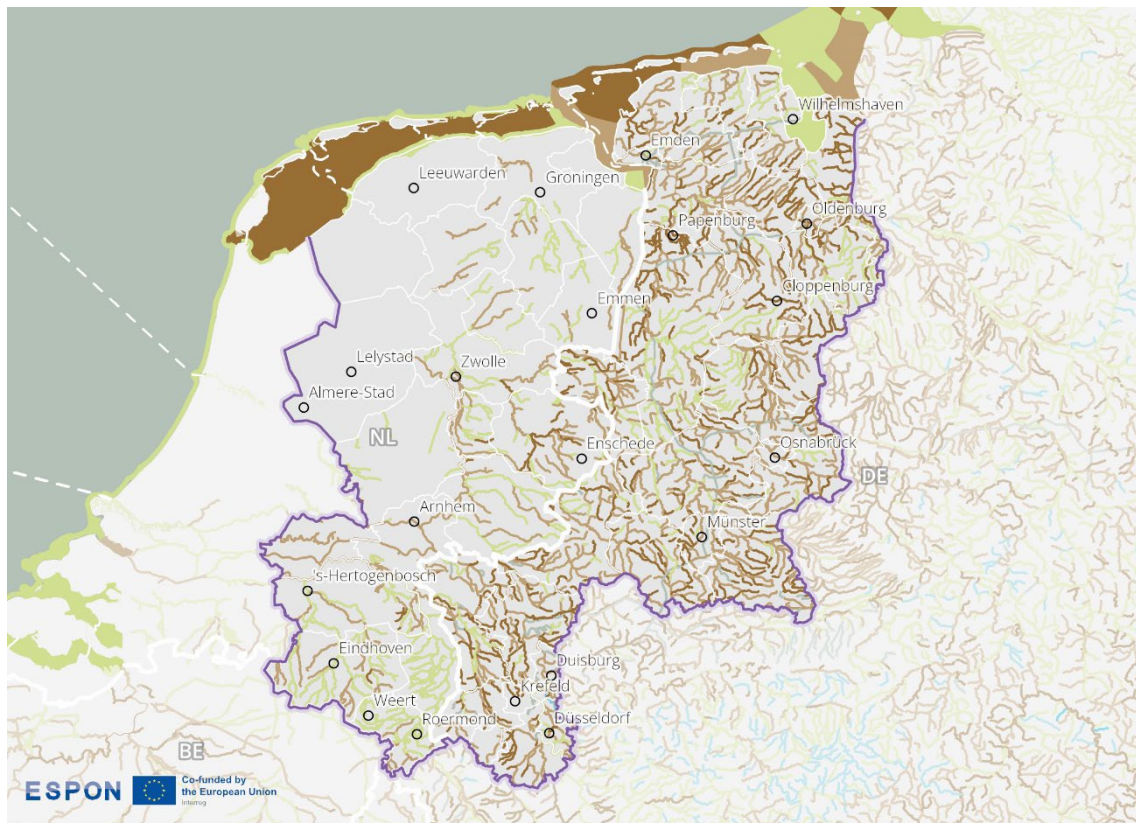
Please refer to the technical annex for more information.

The map illustrates water pollution levels in the Germany–Netherlands Interreg region in 2022. Water quality is represented using 6 colour-coded categories, ranging from "bad" to "high", including an "unknown" category.¹¹

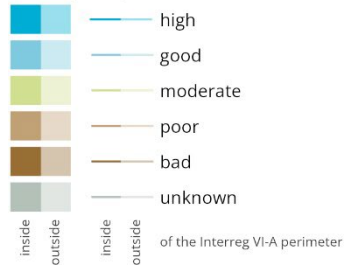
In the Dutch part of the programme area, the coastline and some rivers are classified as "poor" and "bad". There are no rivers rated "good" or "high". In the German part of the programme area, rivers are predominantly rated as "poor" and "bad". Some stretches are shown as "moderate" and very few as "good".

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

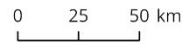
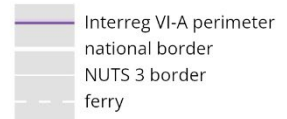
Figure 2.21: Water quality patterns



Water quality (2022*)



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



© ESPON, 2026

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.

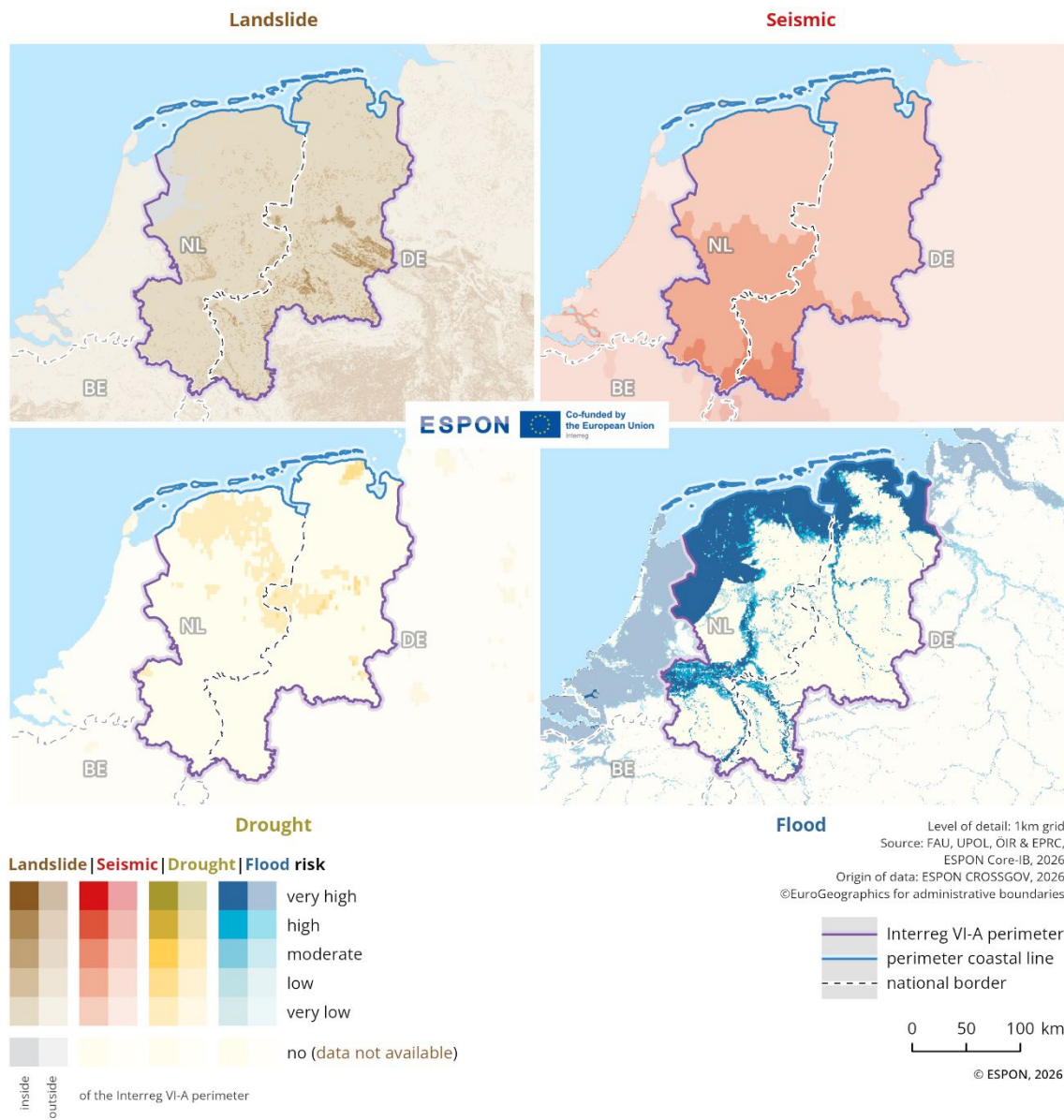
- **Source/method of retrieval:** The indicator is based on geodata from the Disaster Management Risk Knowledge Centre/JRC. It provides the likelihood of specific natural hazard events at grid level.
- **Temporal coverage:** 2024
- **Unit:** n/a

Please refer to the technical annex for more information.

The maps illustrate the spatial distribution of natural hazards in the Germany-Netherlands programme area. They highlight areas where risks are shared across national boundaries and where risks are not necessarily cross-border relevant.

Overall, the major challenge for the area is flooding caused by the North Sea. Land which is low-lying or sometimes even below sea level puts the coastal regions of both Germany and the Netherlands at a very high risk of flooding. The Frisian Island chain north of the mainland is also threatened by flooding. Furthermore, the Rhine delta creates another source for flooding concerns. In contrast, the risk of droughts and landslides is (very) low throughout the cross-border region. Seismic activities increase in the southern parts of the programme area. Alongside the southernmost part of the border there is a moderate (on a European scale) risk of earthquakes.

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

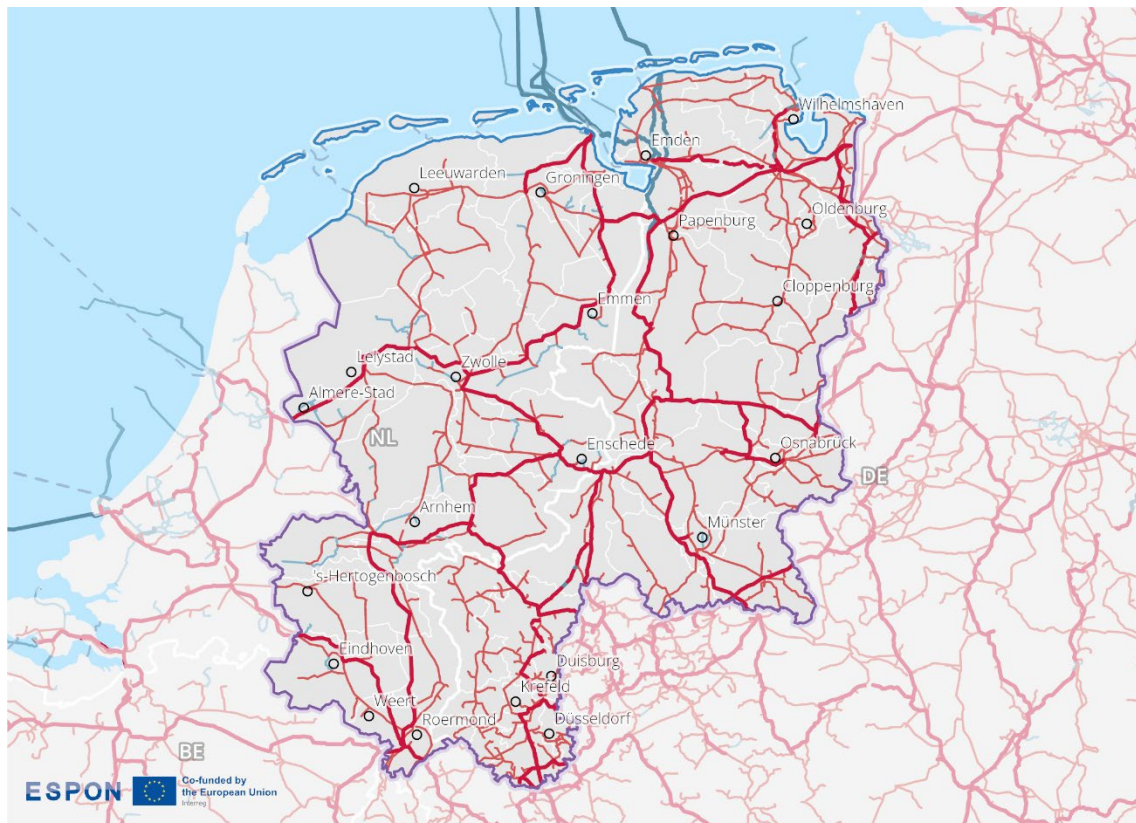
Please refer to the technical annex for more information.

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 lines, further classified into high-voltage (100-230 kV), extra-high-voltage (230-1,000 kV), and ultra-high voltage (above 1,000 kV).

The cross-border region of Germany-Netherlands features dense high- and extra high-voltage energy infrastructure. With the exception of natural parks in Germany north of Münster, where there is no extra high-voltage infrastructure, the rest of the territory is covered by a relatively extensive extra high-voltage network, which is complemented by a high-voltage power grid throughout the cross-border region. In the northern part of the programme area, mainly on German territory, there is a relatively dense network of underground cables, which then connect to submarine cables heading north to Scandinavia. Extra high-voltage lines directly connect only Germany and the Netherlands on 3 spots (near Arnhem, Enschede, and west of Groningen on the north).

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, OIR & 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 25 50 km

© ESPON, 2026

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.

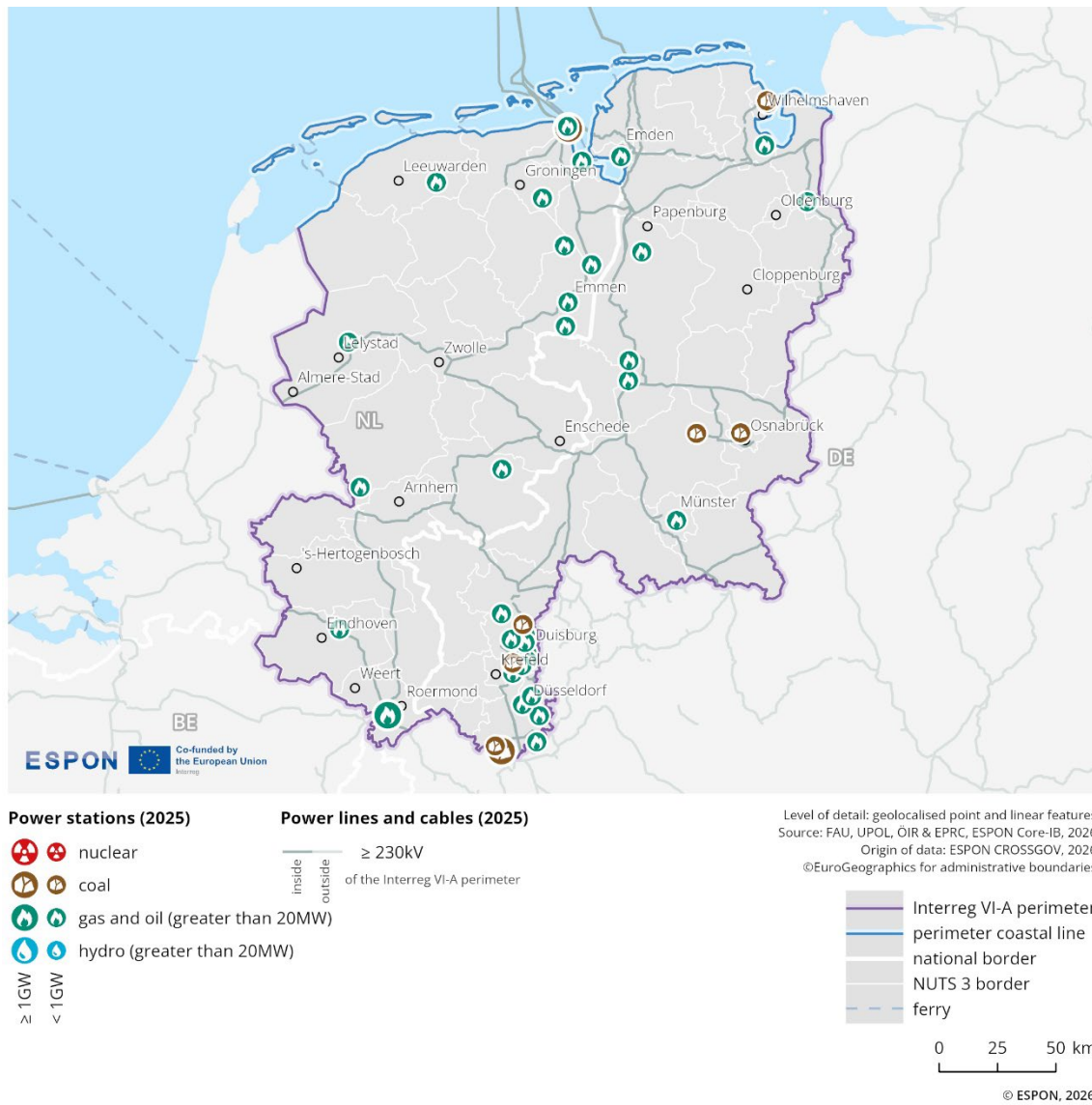
In the Germany-Netherlands cross-border region, there are 37 power station locations (see Table 1). The majority are gas and oil power stations.

Table 1: Number and type of power stations

Power stations/plants	Less than 1GW	1GW and up
Nuclear	/	/
Coal	2	1
Gas and oil	33	1
Hydro	/	/

Of the total 34 gas and oil power stations, 15 are located in the Netherlands (see Figure 2.24). All but 4 of these are located relatively close to the border with Germany. One in the southern part of the country offers a high output. The remaining 19 gas and oil power stations are in Germany, with a high concentration in the Ruhr area around Düsseldorf. Of the 9 coal-fired power stations, only one is located in the Netherlands (in the northern tip near Groningen), but it has a very high output. There is also one high-output coal-fired power station in the German part of the programme area, in its southern tip. No nuclear power plants and no hydroelectric power station are present in the area.

Figure 2.24: Power stations infrastructure



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

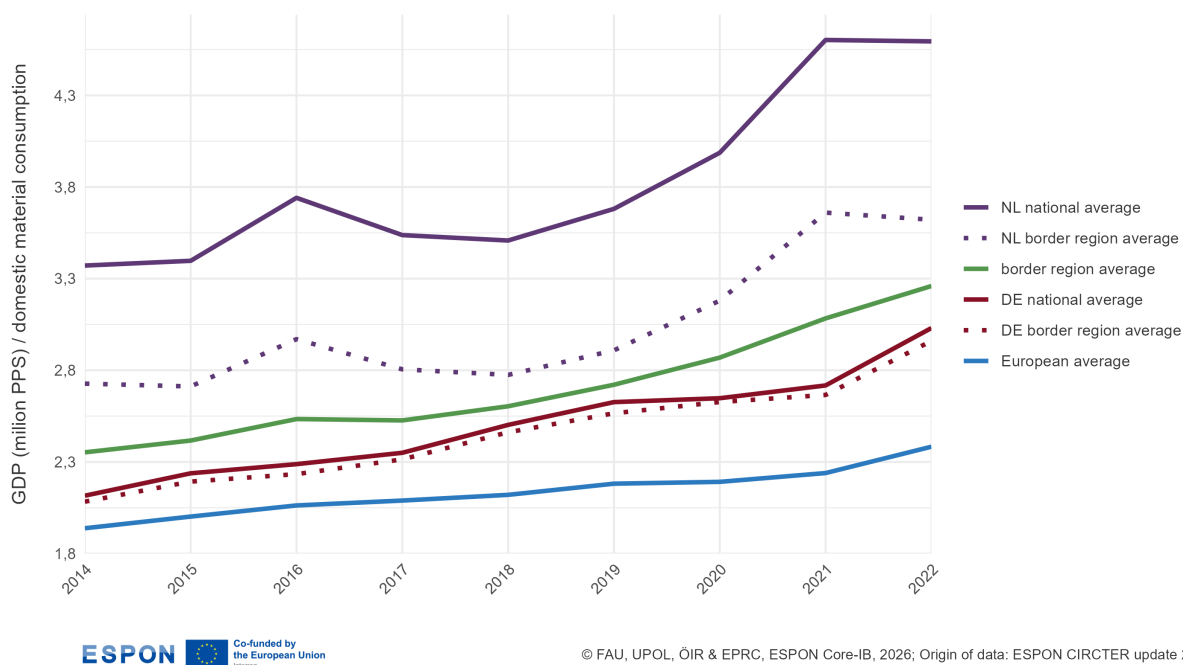
The indicator shows the economic value generated per unit of material consumed for each region within the cross-border area. Developments over time provide insights if the decoupling of productivity from resource use is progressing on regional level.

- **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



The Dutch national average of resource productivity is represented by the highest line in Figure 2.25. This shows an increase over the period from approximately 3.3 in 2014 to over 4.3 million PPS/DMC in 2022. The Dutch border region average follows a similar trend but remains significantly lower, reaching a value of around 3.5 million PPS/DMC in 2022.

The German national average also shows an upward trend over the observed period, remaining significantly below the Dutch national values, but still above the European average. The German border region average follows a similar pattern, albeit at slightly lower levels.

The European average lies notably below the German and Dutch values. The border region average represents the combined average of the higher Dutch border region values and the lower German border region values, reaching approximately 3 million PPS/DMC in 2022.

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.

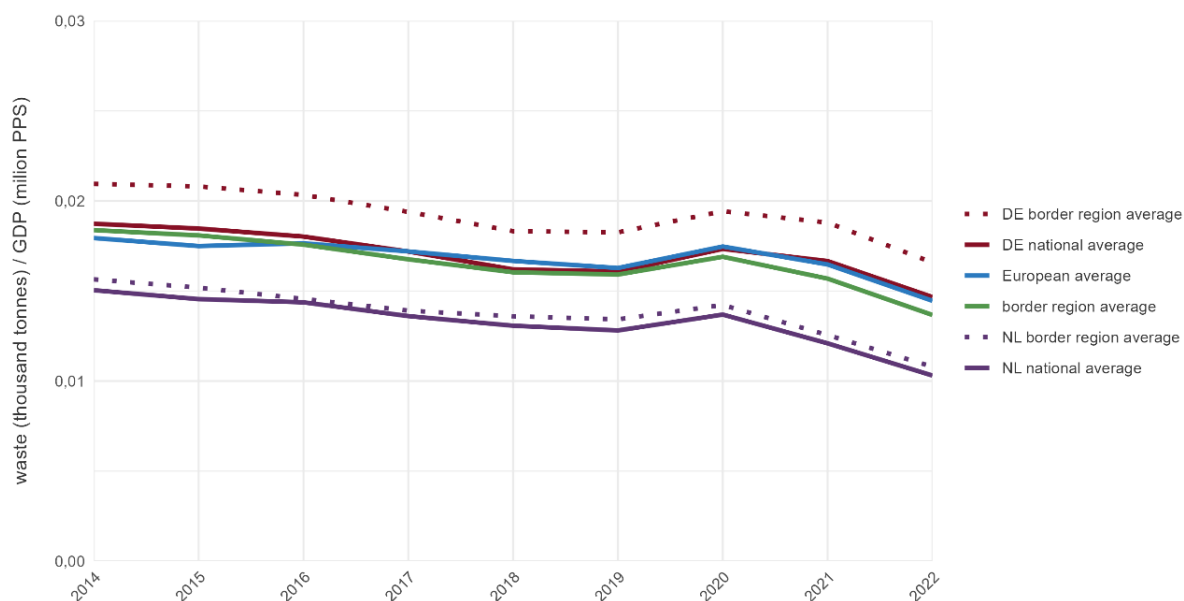
- **Source/method of retrieval:** Processing of Eurostat and ESPON CIRCTER Update data
- **Temporal coverage:** 2014-2022
- **Unit:** Tons/PPS

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 Germany, the Netherlands and their Interreg border region.

The German national and border region averages show a gradual downward trend over the entire period. The German border region average is higher than the national average, which is almost aligned with both the European average and the cross-border regional average. Overall, the Dutch values are lower than the German ones. The Dutch national average is the lowest line on the graph throughout the period and also shows a decreasing trend. The Dutch border region average is slightly higher than the national average.

The European average gradually decreases from around 0.018 in 2014 to approximately 0.015 tonnes of waste per million PPS in 2022. The cross-border regional average closely aligns with the European average and lies between the higher values of the German border region and the lower values of the Dutch border region. In 2022, it reaches approximately 0.015 tonnes of waste per million PPS.

Figure 2.26: Waste generation per GDP

2.3.5 Key messages on the green dimension

Protected areas within the Interreg region are mainly concentrated along the coastal and north-western zones, stretching across the Frisian Islands, where Natura 2000 and national designations overlap. Inland coverage is generally more fragmented. All coastal protected areas, especially in the North Sea region, show clear cross-border counterparts between the Netherlands and Germany.

In terms of pollution, the cross-border average of slightly above $9 \mu\text{g}/\text{m}^3$ is higher than the European and German national averages. In terms of environmental risks, the major challenge for the cross-border region is flooding from the North Sea and rivers. The low or sometimes even below sea level puts, e.g., the coastal regions of both Germany and the Netherlands at a very high risk of flooding.

The cross-border region of Germany-Netherlands features a dense high- and extra-high-voltage energy infrastructure. In the Germany-Netherlands cross-border region, in total, there are 37 power stations, the majority of which are gas and oil power stations.

Resource productivity levels have increased over the period from approximately €3.3 million in 2014 to over €4.3 million PPS GDP per unit of domestic material consumption in 2022. The Dutch border region average follows a similar trend but remains significantly lower, reaching a value of around €3.5 million in 2022. The European average lies notably below the German and Dutch values.

In generation of waste, German national and border region averages show a gradual downward trend over the entire period. Overall, the Dutch values are lower than the German ones. The cross-border regional average closely aligns with the European average.

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 social integration 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.

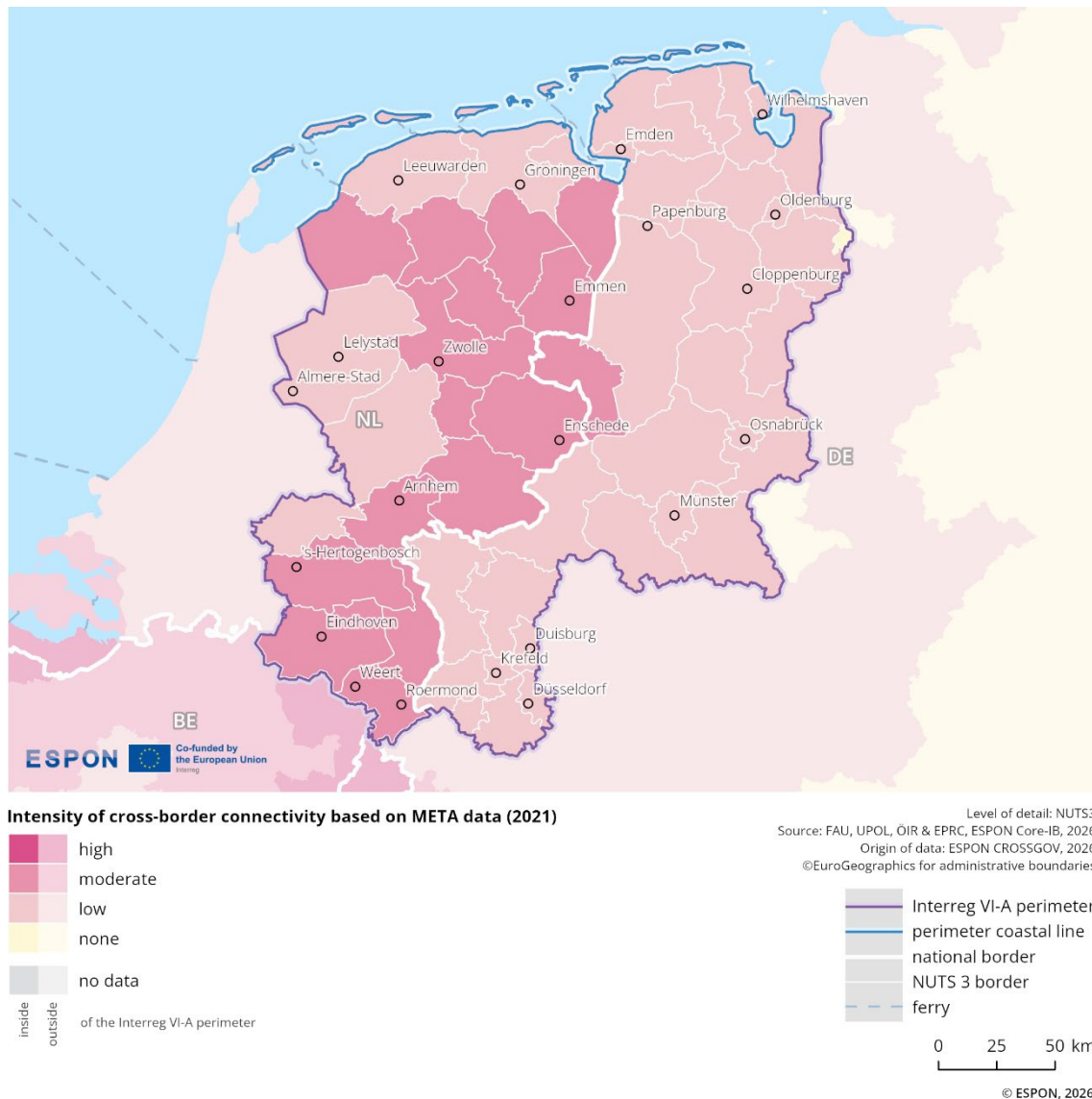
- **Source/method of retrieval:** Processing Facebook data on existing connections across the border (data for Good Meta)
- **Temporal coverage:** 2021
- **Unit:** n/a

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 from 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 heterogeneous, and thus differences between countries are evident due to varying connectivity levels on either side of the border. On the Dutch side of the programme area, moderate connectivity intensity is observed in all areas along the German border and in some areas further inland, including cities such as Roermond, Eindhoven, Arnhem, and Enschede. Low connectivity intensity is recorded around Lelystad, Leeuwarden, and Groningen. In the German part of the cross-border region, connectivity intensity is low across all areas, including Düsseldorf, Münster, Osnabrück, and Oldenburg, except for one NUTS3 unit located along the Dutch border near Enschede.

Figure 2.27: Cross-border connectivity in social media



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.

The border region is characterised by 3 different languages, which, however, share a common origin and some similar linguistic structures. Nevertheless, mutual understanding is limited but knowledge of both languages is not uncommon. Additionally, there is the Frisian language, which has the strongest recognition as an official language in Friesland (NL), Limburgish is officially protected only in the Netherlands, while Low Saxon is recognised as regional languages on both the Dutch and German sides of the border.

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.

A particularly high intensity of overnight stays is evident on the German coastal side of the border area. In 2023, the NUTS3 region Wittmund exceeds 40 nights per capita and Aurich shows 20 to 40 nights per capita.¹³ In the other NUTS3 regions in Germany and the Netherlands, the per capita figures are somewhat lower and comprise 10 to 20 or less. In terms of total overnight stays over the 3-year period, the leading tourism regions are in Veluwe (approx. 7.7 million), Zuidoost-Noord-Brabant (approx. 5.6 million), Noord-Limburg (approx. 5.4 million), Düsseldorf, Kreisfreie Stadt (approx. 5.4 million) and Noord-Friesland (approx. 4.2 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¢er=49.69576,14.33324&lcis=NUTS2021L3&>

Figure 2.28: Overnight stays in tourism

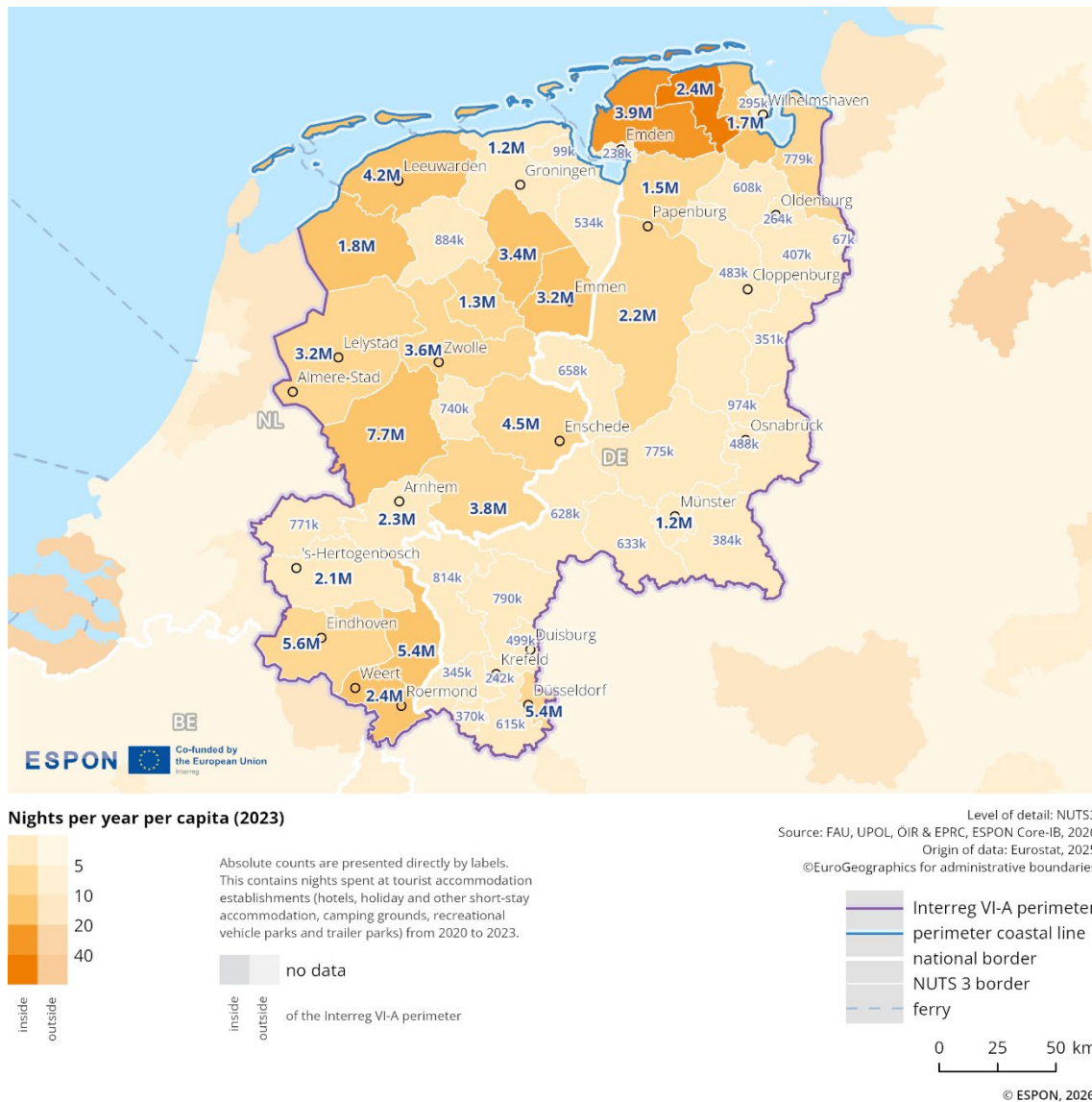
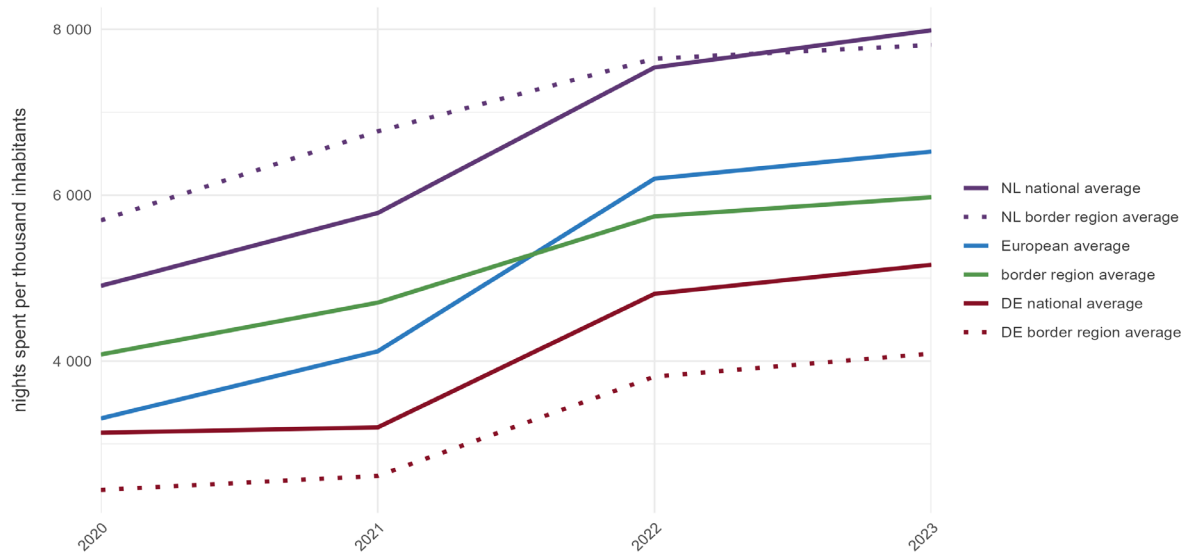


Figure 2.29 illustrates the development of nights spent at tourist establishments per thousand inhabitants from 2020 to 2023. Since 2022, the average for the Germany-Netherlands programme area is lower than the overall European average, which includes both EU member states and the EFTA countries Iceland, Liechtenstein, Switzerland and Norway. Before, it was above. While the border regional average in the Netherlands is generally higher than the national average, the German border regional average is lower than the national average. Additionally, the regional average for the Dutch border area is significantly higher than that for the German throughout the given period.

Patterns of tourism 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)



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)

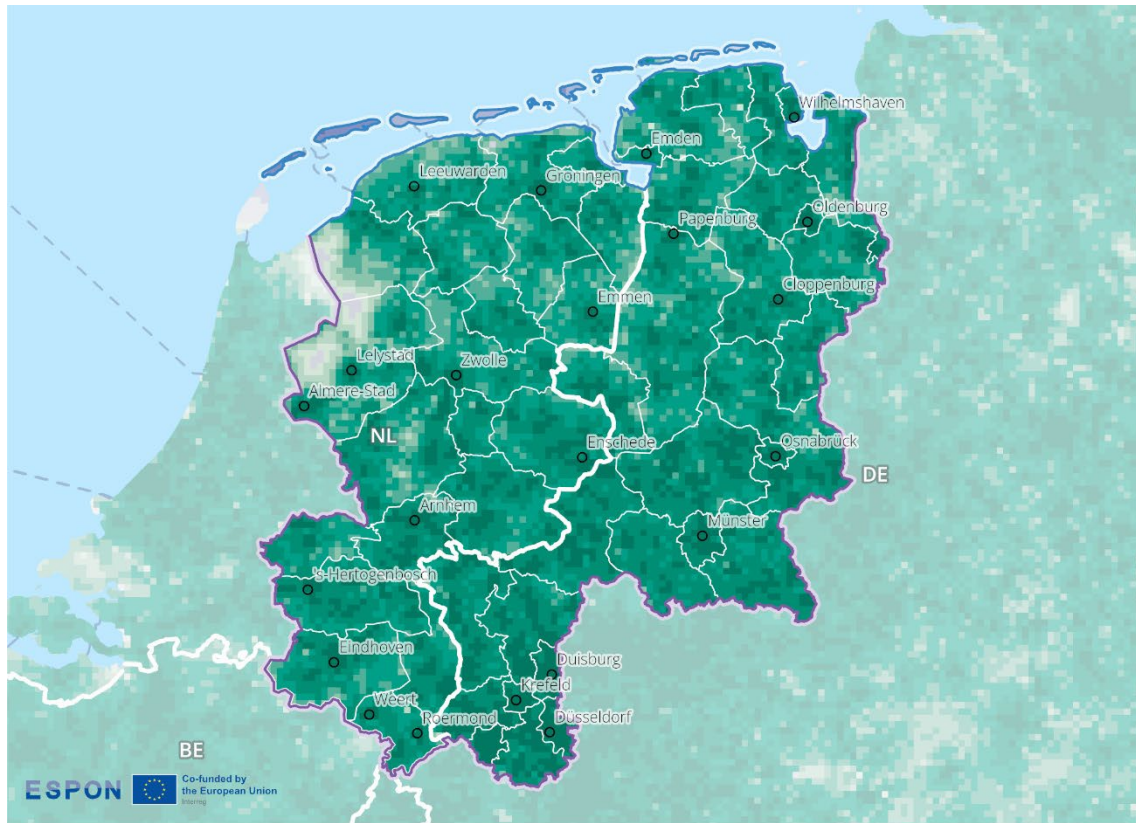
These indicators show, on average, how long it takes to reach the nearest facility by car. The data comes from the ESPON PROFECY Update project (2022) and is visualised based on a 2.5-kilometer grid.

In the Germany-Netherlands border area, essential services such as doctors, pharmacies, schools, and grocery shops are evenly distributed across most areas in both countries. This results in travel times of less than one hour throughout the programme area, with the exception of the westernmost parts of the Netherlands.

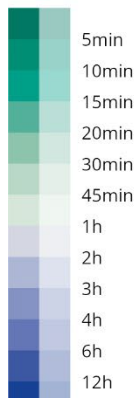
Near the national border, travel times to hospitals appear to be somewhat shorter in the southern regions compared to the northern ones. The same applies to travel times to doctors and pharmacies; however, in these cases, travel times tend to be slightly longer in the Dutch regions.

Hospitals, as a medical service, are mainly located in cities and more densely populated areas. This creates an urban-rural gradient, with shorter travel times in and near urban centres and longer travel times in rural or remote areas. The same is true for cinemas as a cultural service.

Figure 2.30: Travel time to secondary schools

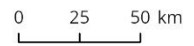
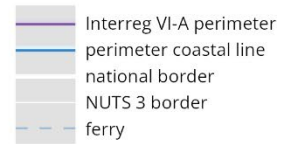


Car travel time to the nearest secondary school (2021)



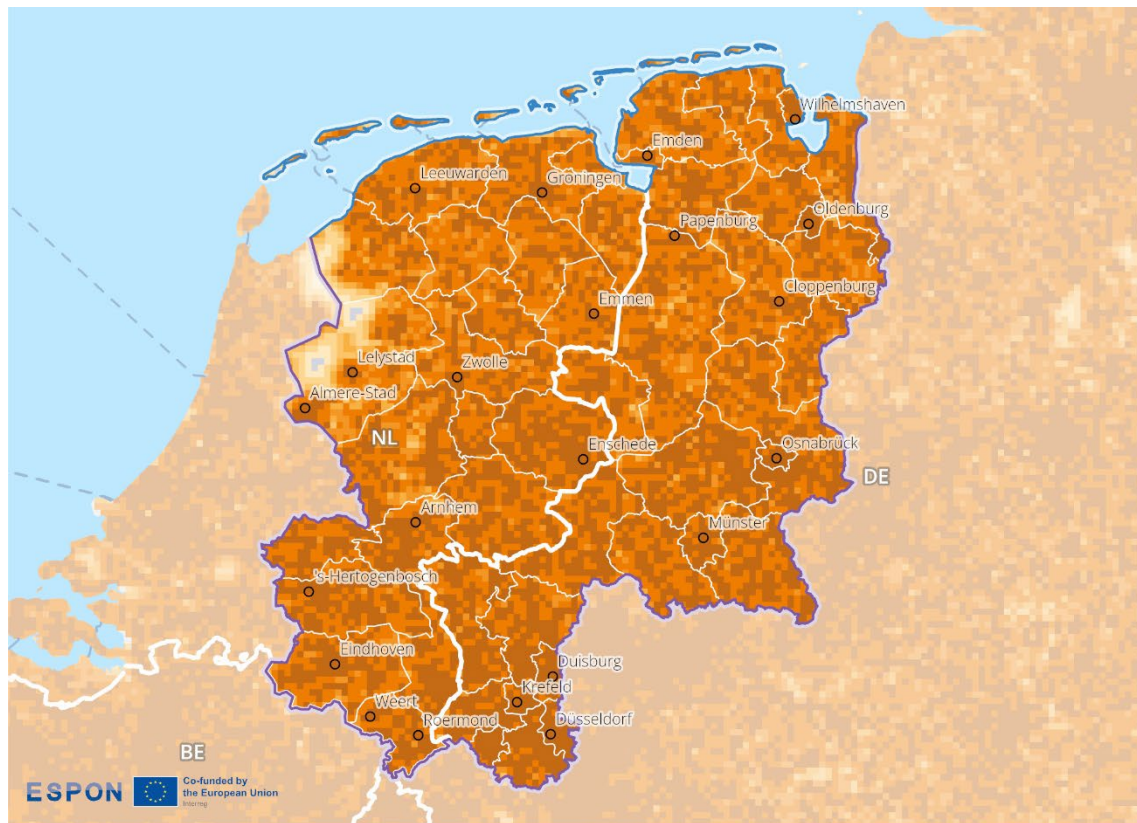
inside
outside
of the Interreg VI-A perimeter

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

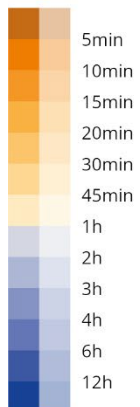


© ESPON, 2026

Figure 2.31: Travel time to grocery shops

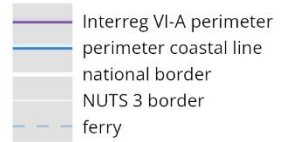


Car travel time to the nearest shop (2021)



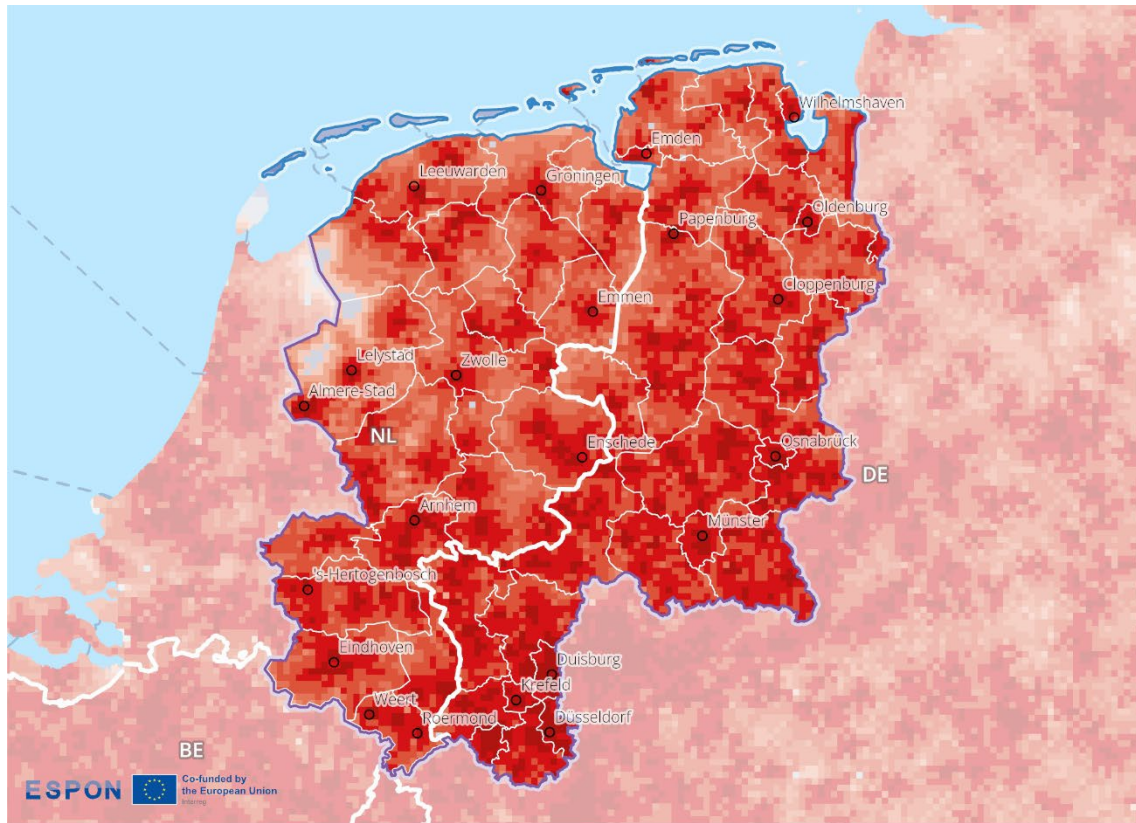
inside
outside
of the Interreg VI-A perimeter

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

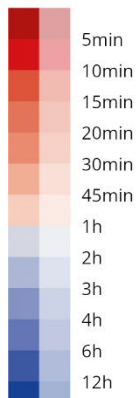


© ESPON, 2026

Figure 2.32: Travel time to hospitals

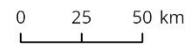
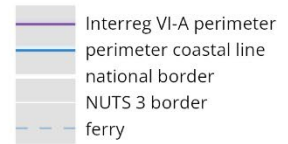


Car travel time to the nearest hospital (2021)



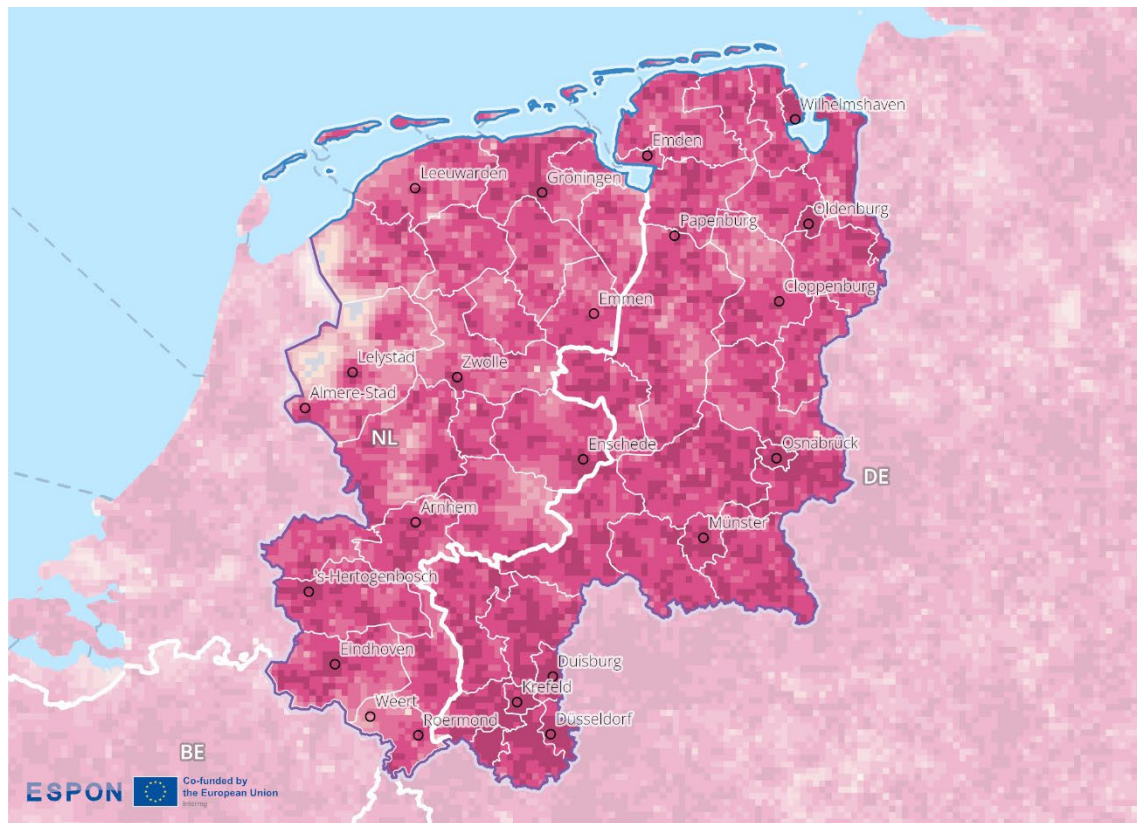
inside
outside
of the Interreg VI-A perimeter

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

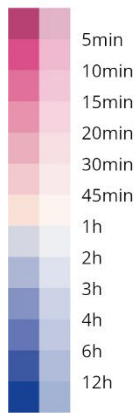


© ESPON, 2026

Figure 2.33: Travel time to doctors

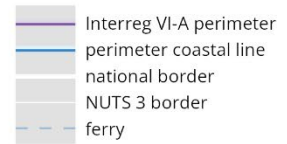


Car travel time to the nearest doctor (2021)



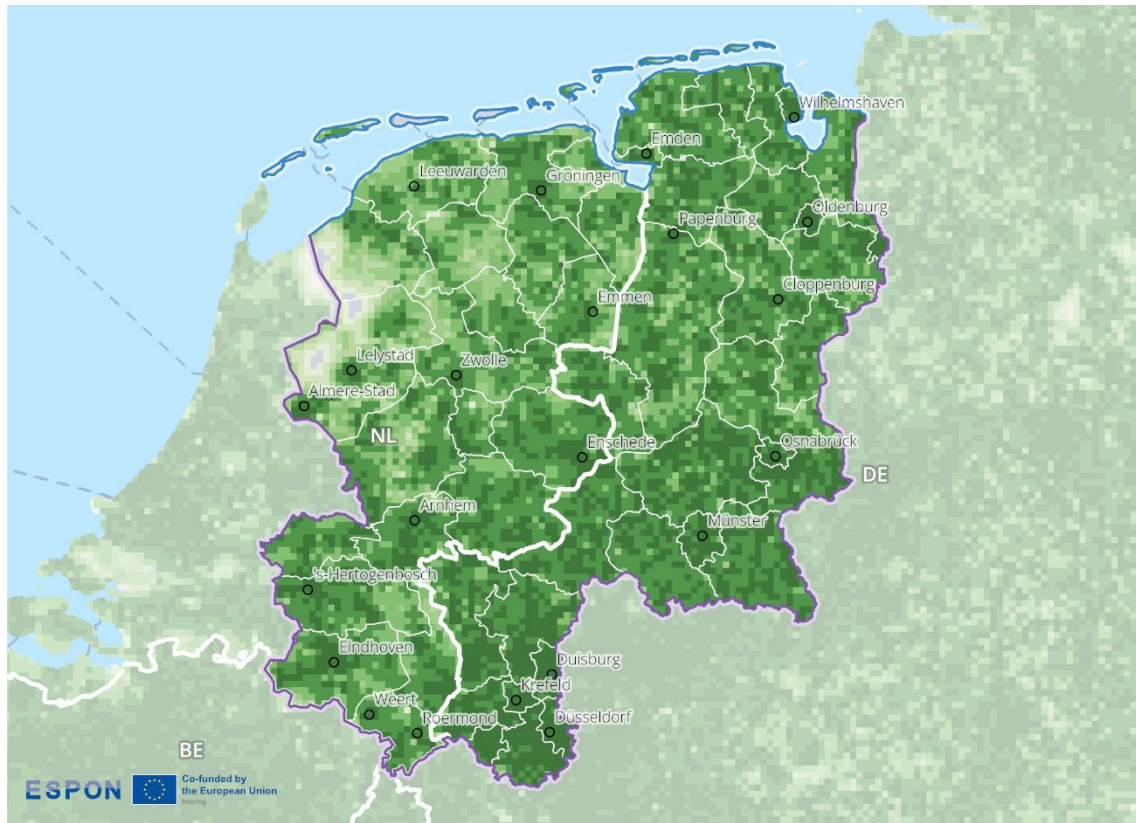
inside
outside
of the Interreg VI-A perimeter

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

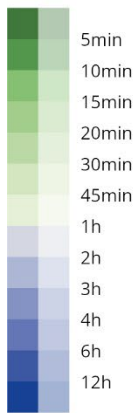


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Figure 2.34: Travel time to pharmacies

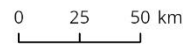
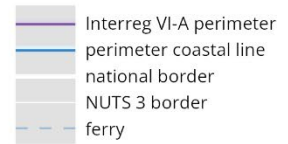


Car travel time to the nearest pharmacy (2021)



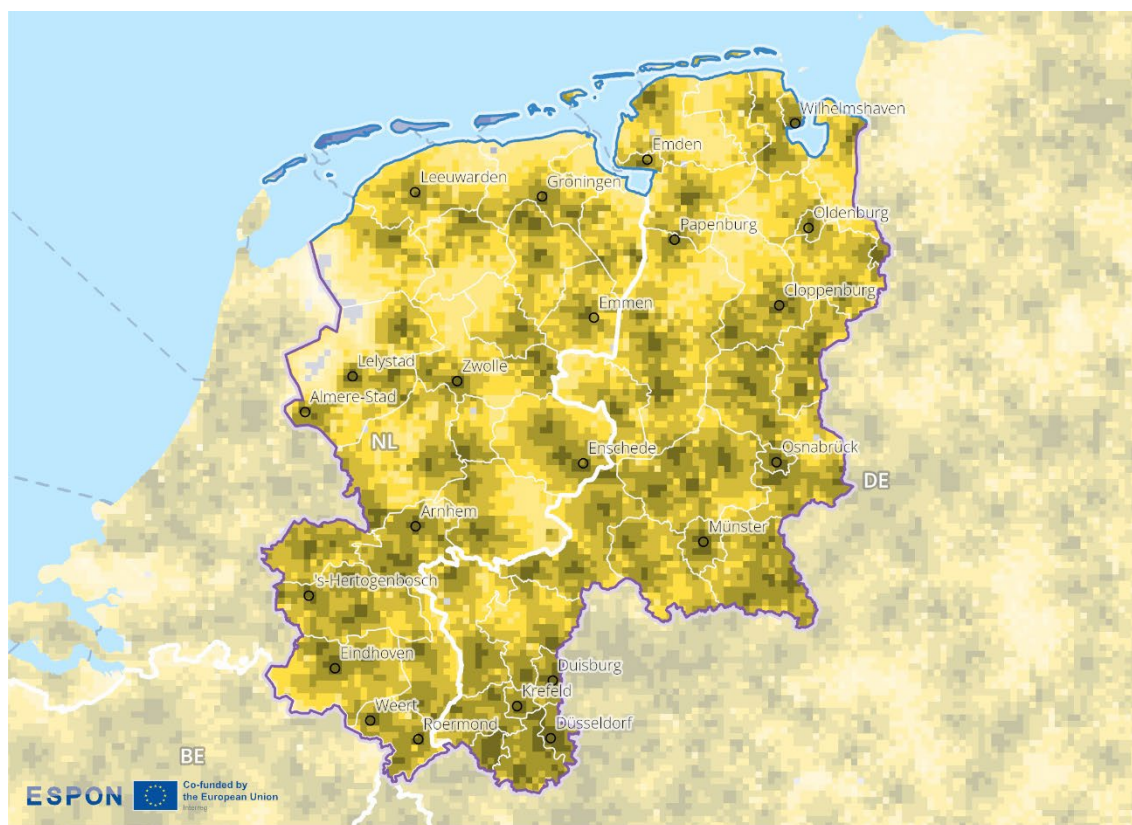
inside
outside
of the Interreg VI-A perimeter

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

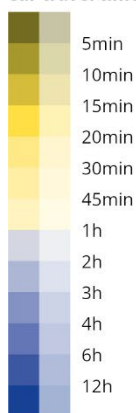


© ESPON, 2026

Figure 2.35: Travel time to cinemas

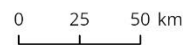
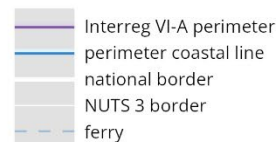


Car travel time to the nearest cinema (2021)



inside
outside
of the Interreg VI-A perimeter

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



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2.4.4 Key messages on the socio-economic dimension

The intensity of social interaction among the inhabitants of this border region is heterogeneous; consequently, due to differing levels of interaction intensity on both sides of the border, differences between the individual countries are evident. On the Dutch side of the cross-border region, moderate values are recorded in all areas along the border with Germany and in some areas further inland. Low interaction intensity is observed around the cities of Lelystad, Leeuwarden, and Groningen. In the German part of the programme area, interaction intensity is low across all regions except for one located along the Dutch border near the city of Enschede. The border region is characterised by 3 main languages, which, how-ever, share a common origin and some similar linguistic structures. Nevertheless, mutual understanding is limited but knowledge of both languages is not uncommon.

A particularly high intensity of overnight stays is evident on the German coastal side of the border area. In 2023, the NUTS3 region Wittmund exceeds 40 nights per capita and Aurich shows 20 to 40 nights per capita. In the other NUTS3 regions in Germany and the Netherlands, the per capita figures are somewhat lower and comprise 10 to 20 or less. In terms of total overnight stays over the 3-year period, the leading tourism regions are in Veluwe (approx. 7.7 million), Zuidoost-Noord-Brabant (approx. 5.6 million), Noord-Limburg (approx. 5.4 million), Düsseldorf, Kreisfreie Stadt (approx. 5.4 million) and Noord-Friesland (approx. 4.2 million). The average for the Germany-Netherlands programme area is lower than the overall European average. While the border regional average in the Netherlands is mostly higher than the national average, the German border regional average is lower than the national average.

In the Germany-Netherlands border area, essential services such as doctors, pharmacies, schools, and grocery shops are evenly distributed across most areas in both countries. This results in travel times of less than one hour throughout the programme area, with the exception of the westernmost parts of the Netherlands. Near the national border, travel times to hospitals appear to be somewhat shorter in the southern regions compared to the northern ones. The same applies to travel times to doctors and pharmacies; however, in these cases, travel times tend to be slightly longer in the Dutch regions.

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:

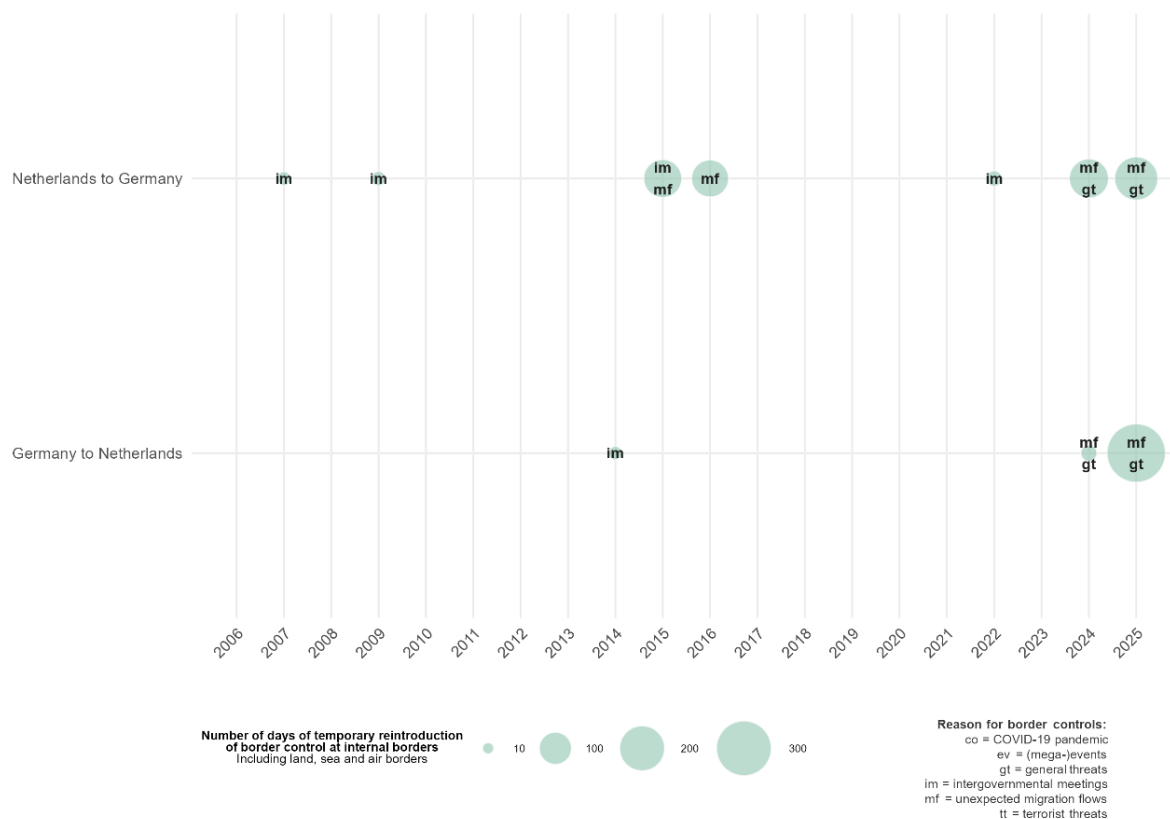
- > co – COVID-19 pandemic
- > ev – (Mega-)events
- > gt – General threats
- > im – Intergovernmental meetings
- > mf – Unexpected migration flows

> tt – Terrorist threats

The data spans from 2006 to 2025 (cut-off: 8 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 in terms of both duration and scope.

Both, Germany and the Netherlands had already been part of the Schengen Area by 2006.

Figure 2.36: Temporary reintroduction of border controls



ESPON Co-funded by the European Union © FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026; Origin of data: European Commission, own calculations, 2025

The Germany-Netherlands border area is characterised by a slightly asymmetric pattern:

- > Crossing the border from the Netherlands to Germany: Temporary border control occurred in 7 out of 20 years, driven by intergovernmental meetings like G7/G8 summits (2007, 2015, 2022) and unexpected migration flows (2015-2025).
- > Crossing the border from Germany to the Netherlands: Temporary border controls occurred in 3 out of 20 years, mainly driven by irregular migration and the increases of criminal incidents (2024-2025).

From a comparative perspective, both countries have implemented controls for several days, mainly due to migration issues.

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

The Germany-Netherlands border area is characterised by a slightly asymmetric pattern, with controls more frequent when travelling from the Netherlands into Germany than the opposite way. 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.

2.6 Governance dimension

This section covers the cross-border governance profile of the Germany-Netherlands programme area. With the establishment of the Euregios (from 1958) and the implementation of several Interreg programmes from 1989 onwards, a tradition of cross-border cooperation has continued. Consultations took place between Germany and the Netherlands at the national and regional levels, and numerous agreements and treaties were concluded, and joint declarations were drafted, establishing agreements on cooperation in the areas of climate protection, the environment, nature conservation, the economy, education, science, the labour market, internal security, and justice. Examples include: Strategie Noord (a cross-border strategy developed by the northern Dutch provinces and the Weser-Ems region in Germany) and the structural financing of the BorderInfoPoints along the German-Dutch border. Working groups have been established across administrative levels. In addition, there are also sector-specific initiatives. Concrete examples of initiatives include GROS (grensoverschrijdende samenwerking), the Borderland Conference, the coordination of smart specialisation strategies, the implementation of task-oriented innovation policy in the border region, the border information points, the development of cooperation agendas, and business cooperation, as well as the regular meetings of decision-makers from both countries. The border is also covered by 7 risk and crisis management strategies. Before 2007, the cross-border cooperation was based on 4 separate Interreg programmes, which have since then been integrated into one Interreg programme for the whole border region between Germany and the Netherlands. Within this structure the established structures of the 4 sub-areas are still very active and play an important role, especially for bottom-up input and initiatives. There are very active Euroregions linked to the 4 sub-areas in the border region.

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

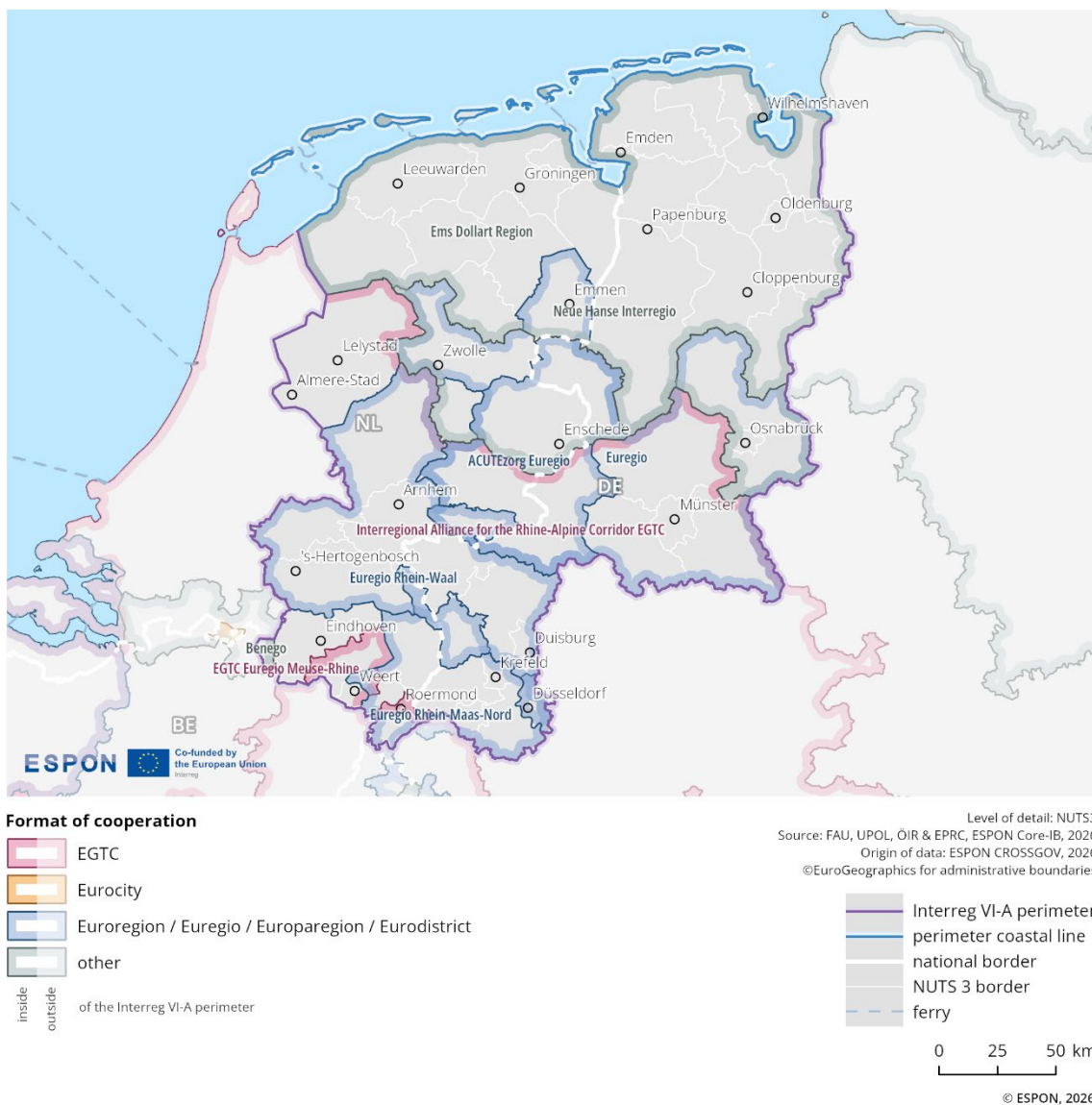
Please refer to the technical annex for more information.

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, European Groupings of Territorial Cooperation (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 cross-border region exhibits high levels of cooperation along its national borders, with rather small perimeters. The most prevalent formats are those at the Euroregional level and EGTCs.

Figure 2.37: Cross-border governance structures



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.

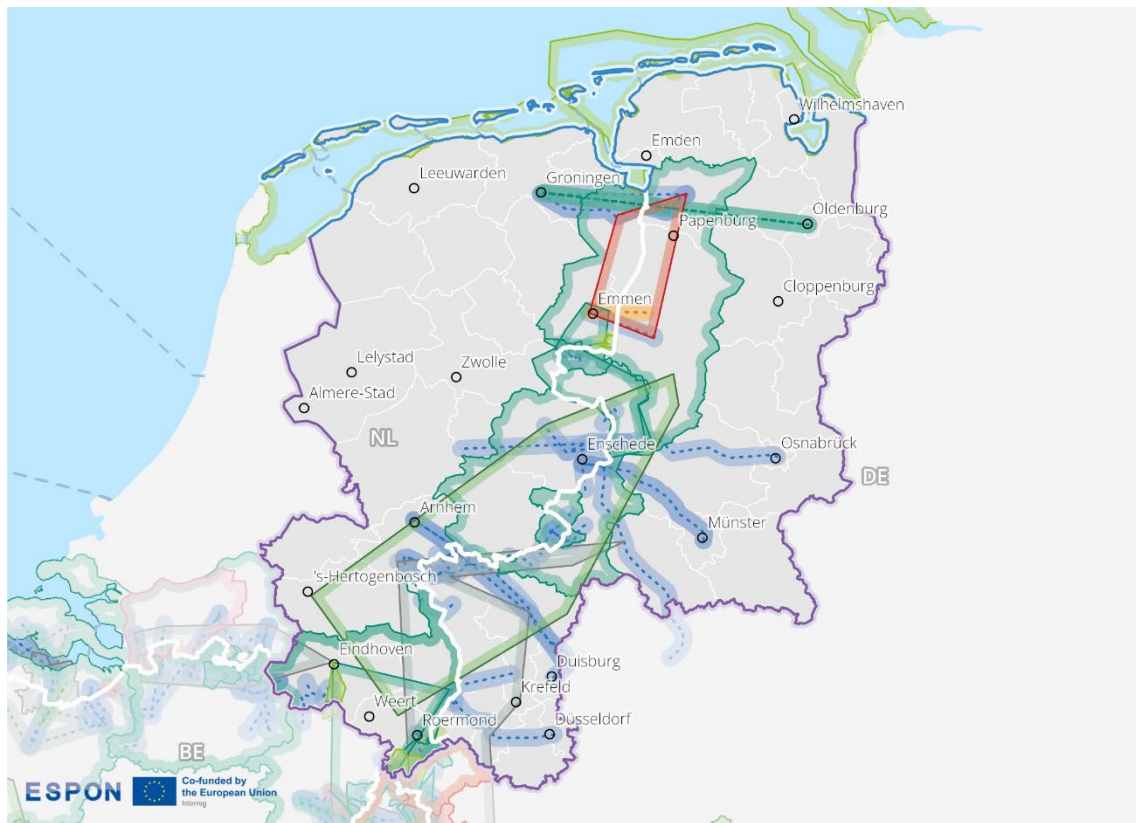
- **Source:** ESPON cross-border public services (CPS) 2.0 database
- **Temporal coverage:** 2022
- **Unit:** n/a

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 between the Netherlands and Germany concentrate along the border, with major corridors centred across the whole border region. Education & research dominates the whole border region from north to south. Transportation services dominate in the south and centre, with several links connecting cities such as Groningen, Arnhem, and Enschede to nearby German cities such as Osnabrück, Münster and Düsseldorf. Disaster management appears in the northern border region, partly overlapping with environment and water, as well as heating and energy services. The Wadden coast hosts a large corridor of environment and water in both the Netherlands and Germany extending to the Frisian islands.

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 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, OIR & 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



© 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. 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, from the European perspective.

In the border area of Germany-Netherlands, a wide range of twenty-one b-solutions pilot actions were identified to tackle legal and administrative obstacles across thematic sectors. These initiatives addressed challenges in cross-border employment of third-country nationals and students, social security coordination, health service access, energy exchange, institutional cooperation, youth welfare, waste transport, and tourism infrastructure. Applications for these pilots were mainly submitted by Euroregions, EGTCs, and public/public-equivalent bodies.

In this border area, transport and mobility issues include road transport, urban mobility, recognition of driving qualifications, and the implications of regulations such as the German driving ban on Sundays and public holidays. Institutional cooperation challenges focus on data exchange, administrative procedures, the interpretation of bilateral agreements, and improving cross-border governance, particularly in youth welfare, security cooperation, and technical interoperability.

Health and social security concerns are substantial, including access to youth psychiatric care, social security coordination for mobile workers, reimbursement of medical expenses, and insurance-related complications for frontier workers. In the area of energy and environment, significant topics include renewable energy exchange, infrastructure for circular economy practices, and obstacles to the transport of recyclable waste. Labour market and employment-related issues include cross-border recognition of qualifications, employment for students and third-country nationals, taxation complications with mini-jobs, and data sharing for registering labour migrants. Education-related pilots dealt with the recognition of foreign degrees and access to youth mobility programmes. Tourism pilots targeted administrative and regulatory challenges in equestrian tourism and related fee systems.

The solutions proposed are often hybrid in nature, combining legal, administrative, and operational measures. For example, efforts to recognise qualifications in high-demand professions involve the operational development of multilingual factsheets and guidance materials. Cross-border youth welfare initiatives include legal agreements under the Anholt Treaty and operational learning through Interreg projects. Employment cases targeting third-country nationals suggest a combination of legal reforms (e.g., extending EU Directive 2016/801), simplified administrative processes (such as positive lists for degree programmes), and joint action plans.

Health-related pilots frequently suggest hybrid solutions: legal agreements for service reimbursement, administrative improvements in data exchange, and operational tools like cross-border health cards. A notable pilot on drone-based medical transport focused entirely on operational aspects such as permit applications and expert consultations. Legal solutions also play a critical role in enabling home office work, granting medical note authority across borders, or securing exemptions to environmental laws for tourism projects.

Renewable energy exchange efforts involved legal measures to create cross-border Citizen Energy Communities (CECs) and amend national frameworks, supported by operational knowledge transfer from Interreg projects. Tourism pilots aimed at resolving fee structures and infrastructure gaps through hybrid approaches, combining legislative changes and public awareness campaigns.

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

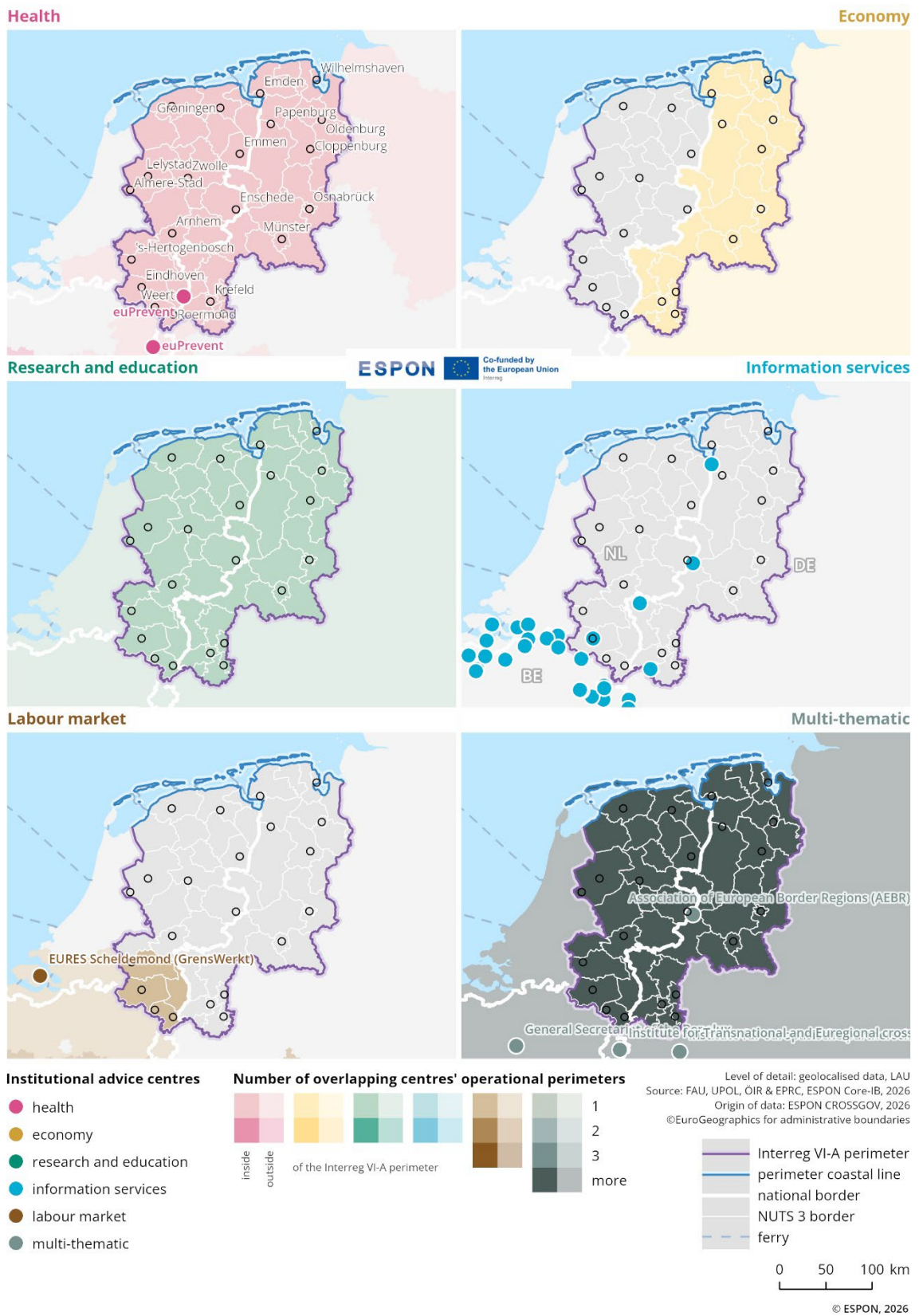
Please refer to the technical annex for more information.

This map shows the locations and types of institutionalised advice centres, along with their operational domains, in the cross-border Interreg region between Germany and the Netherlands. 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.

Inside the Interreg region, there are several information service-related institutionalised advice centres located along the national border between Germany and the Netherlands, such as the Association of European Border Regions (AEBR). However, these centres are rather scattered compared to the large number of information service-related institutionalised advice centres outside the Interreg region, particularly in the southwest along the Dutch-Belgian national border. In the southern part of the Interreg region, near the national border, there is euPrevent, a health-related institutionalised advice centre. Another euPrevent location can also be found further south, outside the Interreg region.

Centres with multi-thematic, health-related, as well as research and education operational domains are evenly represented in both countries within the Interreg area. However, the health-related operational domains stop at the Interreg border on the Dutch side and do not extend further into the Netherlands. In the southern part of the Interreg region, on the Dutch side, labour market-related operational domains are also active, while in the German part of the Interreg region, economic operational domains are present.

Figure 2.39: Institutionalised cross-border advice centres



2.6.2 Outline of Interreg activities

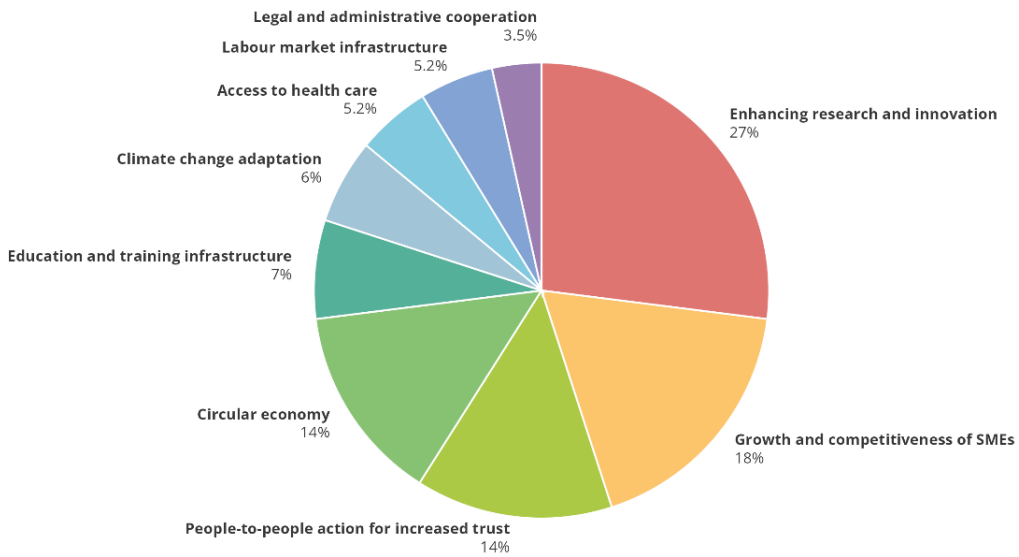
The following section outlines the key Interreg activities in the 2021-2027 programming period. The aspects included concern the development opportunities and challenges identified (see Table 2), the budget available and split of allocation (Figure 2.40), overlapping Interreg programmes and the key aspects drawn from the programme.

Table 2: Interreg VI (2021-2027): Opportunities and challenges

Topic	Key development opportunities and challenges identified for Interreg 2021-27
Territory	<ul style="list-style-type: none"> ▪ The programme area is characterised by its favourable and central location close to the delta of several major water systems within the north-western European economic core zone.
Service provision	<ul style="list-style-type: none"> ▪ There are differences in legal systems, public and private services, education, culture, and the labour market, which do not facilitate cross-border cooperation.
Economy	<ul style="list-style-type: none"> ▪ The economy in the programme area is highly open, with strong regional interdependencies, intensive economic cooperation, and extensive transport flows between the regions. ▪ Cross-border innovation through collaboration between SMEs and other partners.
Labour	<ul style="list-style-type: none"> ▪ Requirement to adapt to more flexible and digital working. ▪ Skilled workforce in sectors such as healthcare, agriculture, and technology.
Environment	<ul style="list-style-type: none"> ▪ Impact of climate change, especially linked to complex water systems. ▪ Vulnerability to extreme weather conditions.

Total Budget: €465,798,619.02

Figure 2.40: Split of Interreg allocation



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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, for the purposes of, for example, planning and capitalisation activities 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.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)
2	2

Key aspects

- › Highly integrated border area.
- › Noted barriers to greater cooperation around public and private services, education, culture, and the labour market, and that they do not facilitate cross-border cooperation.
- › Focus on fostering innovation and competitiveness including through research initiatives and technology transfer.
- › Territories within the programme area also participate in the Interreg B programmes North Sea and North West Europe and Interreg A programmes Belgium-Netherlands, and Netherlands-Belgium-Germany.

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

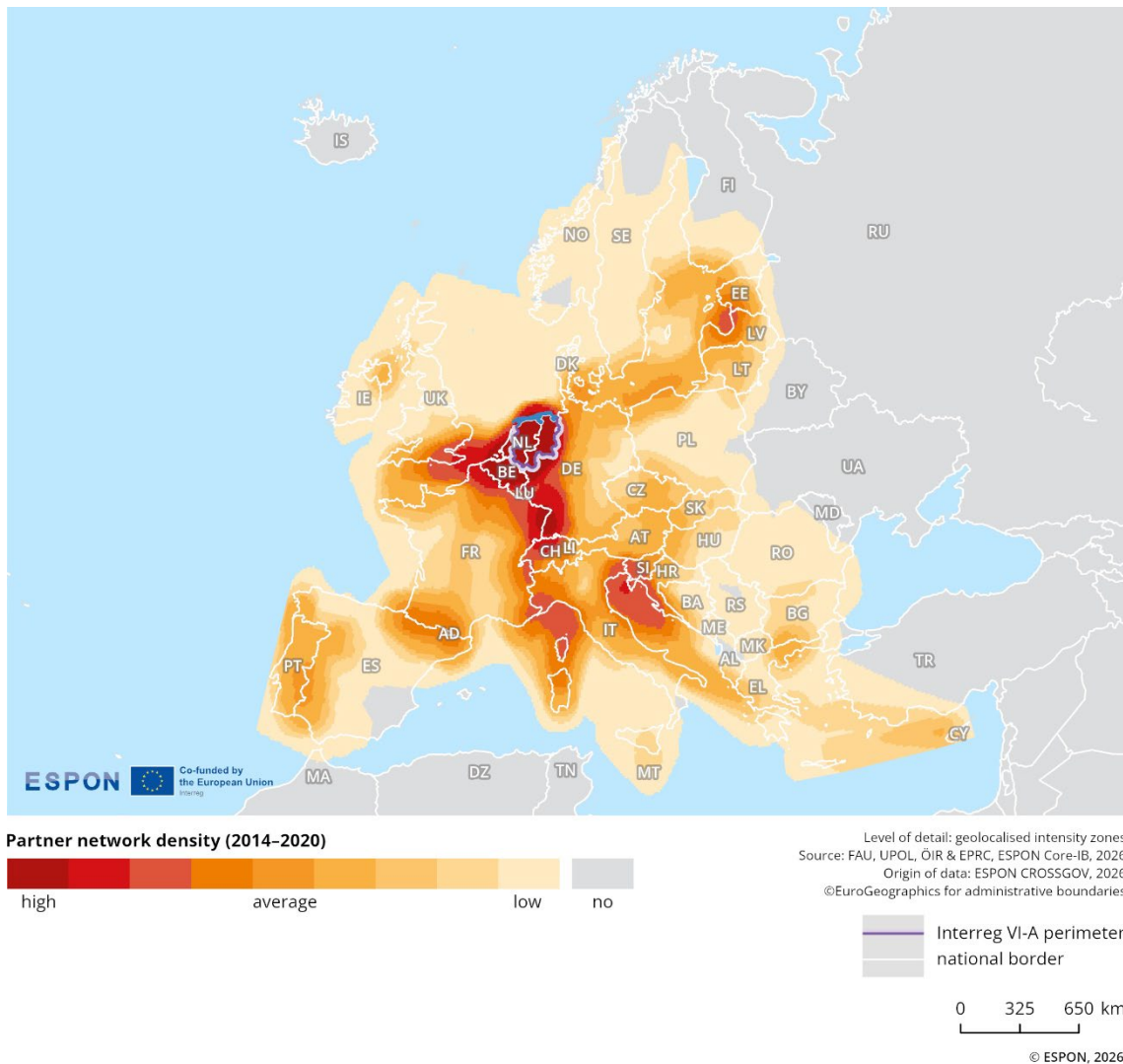
Please refer to the technical annex for more information.

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 Germany-Netherlands border area is evenly spread. The programme area has a particularly high level of partner network density. Overall, the partner network density in this border area is significantly higher than the European average. Based on the keep.eu database and excluding duplicates, the number of project partners increased from 254 in Interreg IV-A (2007–2013) to 2,404 in Interreg V-A (2014–2020), an increase of about 846%. It is important that these changes are considered in the context of factors such as change in programme budgets between 2007-2013 and 2014-2020, 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

With the establishment of the Euregios (from 1958) and the implementation of several Interreg programmes from 1989 onwards, a tradition of cross-border cooperation has continued. There are numerous formats of institutionalised cooperation.

Cross-border public services between the Netherlands and Germany concentrate along the border, with major corridors centred across the whole border region. The education and research sector dominates the whole border region from north to south. Transportation services dominate in the south and central areas. Disaster management appears in the northern border region, partly overlapping with environment and water services, as well as heating and energy services. The Wadden coast hosts a large corridor of environment & water.

In the border area of Germany-Netherlands, a wide range of twenty-one b-solutions pilot actions were identified to tackle legal and administrative obstacles across thematic sectors, addressing challenges in cross-border employment of third-country nationals and students, social security coordination, health service access, energy exchange, institutional cooperation, youth welfare, waste transport, and tourism infrastructure. There are several information service-related institutionalised advice centres located along the national border between Germany and the Netherlands, such as the Association of European Border Regions (AEBR).

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	<ul style="list-style-type: none"> • The border area is densely populated with many large urban centres, especially in its southern part; • The cross-border region has also seen growth in settlements, especially around urban centres and to a higher degree on the Dutch side of the border; • Population growth is above EU averages, but it shows a significant aging trend; • Transport connections by both rail and road are good, but cross-border mobility intensity is higher in the south than in the north.

Territorial dimension	
Policy options	<p>Cross-cutting themes</p> <ul style="list-style-type: none"> • Integrated cross-border approaches could contribute to managing population growth and development pressures around urban centres, supporting more coordinated spatial development across borders; • A focus could be on green and sustainable transport solutions that operate effectively across borders while delivering tangible benefits for local communities; • Cooperation projects could address integrated approaches at cross-border level to ensure access to and provision of key services, taking into account the population dynamics and, in particular, the ongoing demographic ageing trends.

Economic dimension	
Key analytical findings	<ul style="list-style-type: none"> • GDP/capita is well-above the EU average, showing an upward trend, although behind the Dutch average (and in line with the German one); • Employment levels are generally higher than EU average and increasing, with slightly decreasing share of working age population; • Cross-border commuting is strong, particularly from Germany into the Netherlands; • Salaries as well as land prices are relatively balanced between both countries; • Internet speeds tend to be higher in the Netherlands, but both parts of the border show an urban-rural divide.

Economic dimension	
<p>Policy options</p>	<p>Economic aspects</p> <ul style="list-style-type: none"> • The territorial evidence has shown that there is potential to advance territorial competitiveness, notably in relation to the green economy, the transition towards knowledge-intensive services and digitalisation; • Cross-border solutions can be explored to mitigate digital asymmetries and transport-related disparities, including through the development of telework hubs and shared innovation infrastructure. <p>Cross-cutting theme</p> <ul style="list-style-type: none"> • Cross-border accessibility could be improved by enhancing already ongoing efforts for integrated planning and joint training initiatives. These could support a wider labour market access and commuting opportunities, particularly in the context of a declining working-age population and broader economic transformation.

Green dimension	
<p>Key analytical findings</p>	<ul style="list-style-type: none"> • Protected areas are mainly concentrated along the coast and the northwest; • Air pollution is higher than EU and German averages, but below the Dutch one; • The main environmental risk is flooding caused by the North Sea, mainly related to significant areas at low or below sea level, but also in the Rhine delta; • There is a dense energy infrastructure with many power stations, mostly using fossil fuels; • Resource productivity levels are high and increasing, above EU and German average, but below the Dutch one; • Waste generation levels are close to the EU average but falling.

Green dimension	
Policy options	<p>Green aspects</p> <ul style="list-style-type: none"> • Cooperation projects could focus on activities to support integrated environmental protection and enhanced climate resilience; • A focus could be on pollution reduction and improved waste management, including the application of circular economy approaches; • Integrated cross-border solutions could facilitate the development of energy communities and contribute to reducing reliance on fossil fuels in energy production. <p>Cross-cutting theme</p> <ul style="list-style-type: none"> • Tailored and coordinated transition pathways can be developed through cross-border cooperation to respond more effectively to the common territorial challenges.

Socio-economic dimension	
Key analytical findings	<ul style="list-style-type: none"> • The intensity of social interaction differs and is typically higher on the Dutch side; • While 2 different languages are spoken on each side of the border, they share similarities and knowledge of both languages is not uncommon; • Tourism intensity is comparable to EU averages, but with a trend of falling behind, and tends to be higher on the coast as well as in selected cities; • Provision of essential services is generally very good, with only slightly lower levels in some remoter parts on the Dutch side.

Socio-economic dimension	
<p>Policy options</p>	<p>Social aspects</p> <ul style="list-style-type: none"> • Cross-border cooperation could address coordinated responses to demographic change, including its implications for service provision and social cohesion; • A focus could be on cross-border approaches to sustainable tourism development to avoid over-concentration and related pressures in specific towns and destinations; • Cooperation projects could address improvements in access to services, including digital solutions and shared service provision models.

Border security and safety dimension	
<p>Key analytical findings</p>	<ul style="list-style-type: none"> • There have frequently been controls in both travel directions, but more when travelling from the Netherlands into Germany than the other way.
<p>Policy options</p>	<p>Cross-cutting themes</p> <ul style="list-style-type: none"> • The impacts of border controls on cross-border commuting and logistics can be mitigated through coordinated and institutionalised cross-border policy dialogue; • 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	<ul style="list-style-type: none"> • This is a highly integrated border with long standing cooperation frameworks; • Engagement with new forms of cooperation such as b-solutions high-light the on-going opportunities around strengthening and deepening cooperation; • Ongoing engagement with long standing cooperation arrangements underline the value of retaining networks, work in new cooperation themes; • The high density of the partner networks suggests important opportunities for synergies.
Policy options	<p>Cross-cutting themes</p> <ul style="list-style-type: none"> • The existing strong institutional cross-border frameworks provide a foundation for driving cooperation in functional areas where asymmetries remain high or may intensify, including through targeted instruments such as b-solutions; • Cross-border governance structures could be used to develop integrated responses to interconnected challenges related to energy, transport, land use, nature protection and demographic change; • Further synergies across different forms of territorial cooperation could help maximise efficiency, coherence and overall impact.

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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

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