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

## Romania-Bulgaria

**Border profile**

March 2026

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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 hub[2] provides a comprehensive platform for interactive data exploration, and selected data have been incorporated into this study.

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

## 1.2 Presentation of the border area

The INTERREG VI-A border region 'Romania-Bulgaria' covers the area between southern Romania and northern Bulgaria (see Figure 1.1). In Romania, the programme area includes the regions South-Muntenia, South-East, and South-West Oltenia in Macroregion 3, Macroregion Two, and Macroregion 4, comprising a total of 7 NUTS 3 regions. In Bulgaria, it covers parts of the Northeastern, Northwestern, and Northern Central regions in Northern and Eastern Bulgaria, encompassing a total of 8 NUTS3 regions.

**Figure 1.1: Overview map**

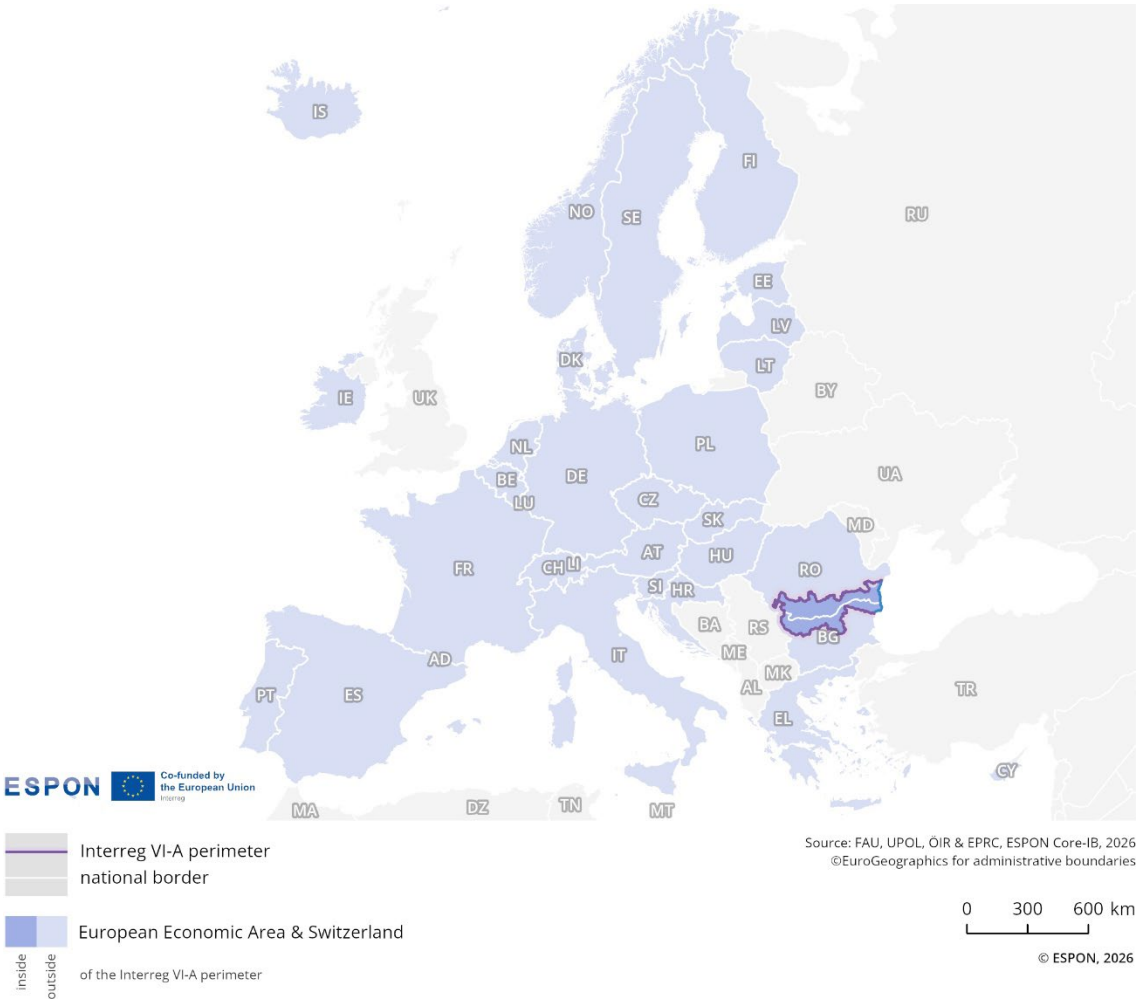
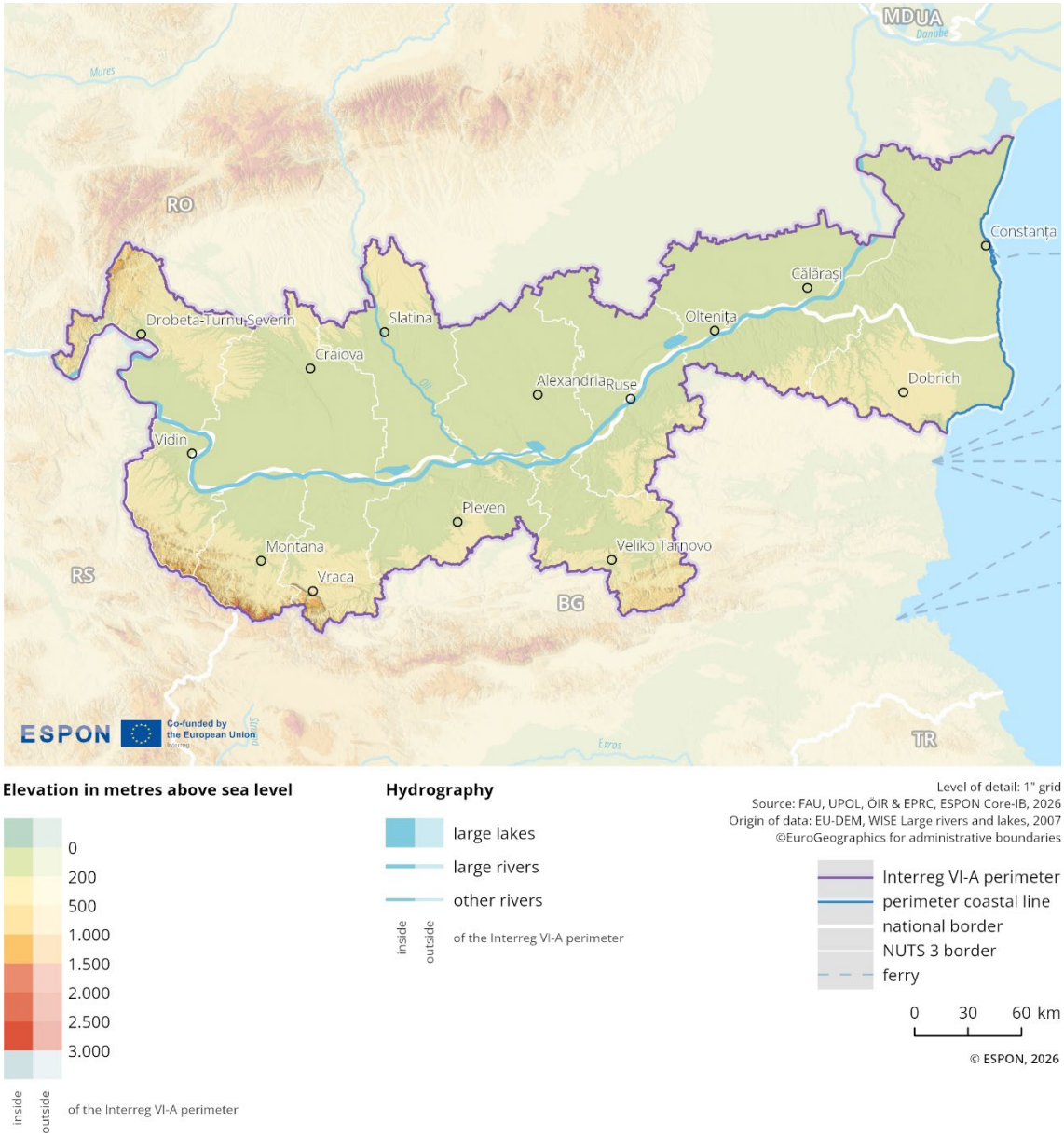



Figure 1.2 shows the region's geomorphological features and the perimeter of the current Interreg VI-A programme area. Covering an area of 69,285 km², the border region extends along the entire 630-

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

kilometre-length of the Romanian-Bulgarian border. Much of the border (470 km) is naturally defined by the Danube River, which forms one of Europe's most significant fluvial corridors.

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




The border region is characterised by predominantly flat to gently hilly terrain. Fertile plains on both sides of the Danube, such as the Wallachian Plain in southern Romania and the Danubian Plain in northern Bulgaria support intensive agriculture.[4] Further from the river, the landscape becomes more varied, featuring hills, low plateaus and isolated uplands, such as the Ludogorie Plateau and the Getic Sub-Carpathians. In the eastern section, the border region extends to the Danube Delta and the Black Sea coastline. Here, riverine, lacustrine, and maritime ecosystems combine to form ecologically significant wetland complexes, such as the Danube Delta and the Kalimok marshes.

[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.

[4] Interreg VI-B Territorial Analysis update, https://interregviarobg.eu/assets/2020/08/200618-territorial-analysis-updated.pdf

While large areas of the border region are used for agriculture, the territory also includes forests, grasslands, river valleys, and protected natural areas. Numerous streams and rivers feed into the Danube, shaping local drainage patterns and creating fertile floodplains.

Despite its rural character, the programme area encompasses significant urban centres, such as Constanța, Calarasi, Giurgiu, Drobeta-Turnu Severin and Craiova in Romania and Vidin, Ruse, Pleven, Veliko Tarnovo and Dobrich in Bulgaria. The Danube is a navigable route and a trans-European transport corridor, and a network of road and rail crossings, bridges and ferry connections further integrate the cross-border area.

# 2 Cross-border analysis

## 2.1 Territorial dimension

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

### 2.1.1 Population and settlements

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

#### 2.1.1.1 Population density

**Indicator description**

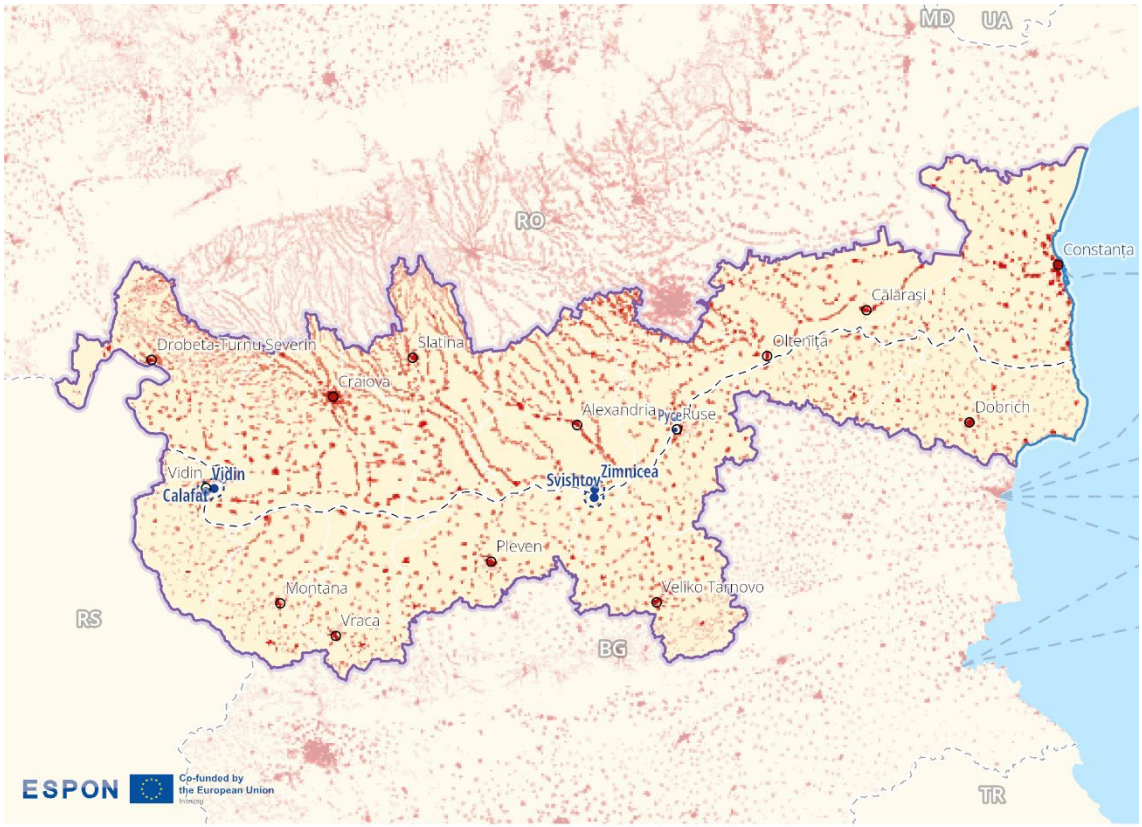
Population density refers to the number of residents per km². This indicator shows the number of inhabitants per square kilometre in a 1x1 km grid. It therefore provides information on the distribution and concentration of population across the region and allows to identify agglomerations of high density. 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 the spatial patterns of population distribution and concentration in the Romania-Bulgaria border region. The population is concentrated in several urban areas along the border, often forming twin cities such as Vidin–Calafat, Svishtov–Zimnicea, and Ruse–Giurgiu. Other larger urban centres, exceeding 30,000 inhabitants, are also found inland, including Craiova, Drobeta, Slatina and the port city of Constanta in Romania, as well as Pleven, Montana Veliko Turnovo, and Dobrich in Bulgaria. Overall, the border region includes 13 urban centres with a population of over 30,000 inhabitants, such as those mentioned above. On both side of the border, settlements are interspersed with zones of non-populated or agricultural land, indicating overall a moderately urbanised territory. Nevertheless, some differences in the settlement structures exist: in the Romanian part, populated areas (red dots) form relatively continuous networks, whereas on the Bulgarian side, settlements appear more spatially separated. From a European comparative perspective, the cross-border region has a relatively low population density of 56 inhabitants/km² on average — well below the EU average of 109 inhabitants/km² and the aggregate average for all EU border regions (125 inhabitants/km²). On the Romanian side, population density averages 69 inhabitants/km², which is lower than the national average of 80 inhabitants/km². On the Bulgarian side, density is 39 inhabitants/km², which is also below the national average of 57 inhabitants/km². The results of this indicator could be further enriched by incorporating national data for the period beyond 2018, where available. Developments after 2018 may reflect the impacts of major recent exogenous shocks, including the COVID-19 pandemic and the war in Ukraine.

## Figure 2.1: Spatial patterns of population distribution




**Number of inhabitants/km² (2021)**

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

inside / outside of the Interreg VI-A perimeter

**Twin cities (2025)**

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

**Border cities (2025)**

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

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

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

0 30 60 km

### 2.1.1.2 Population development (by age groups)

#### Indicator description

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

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

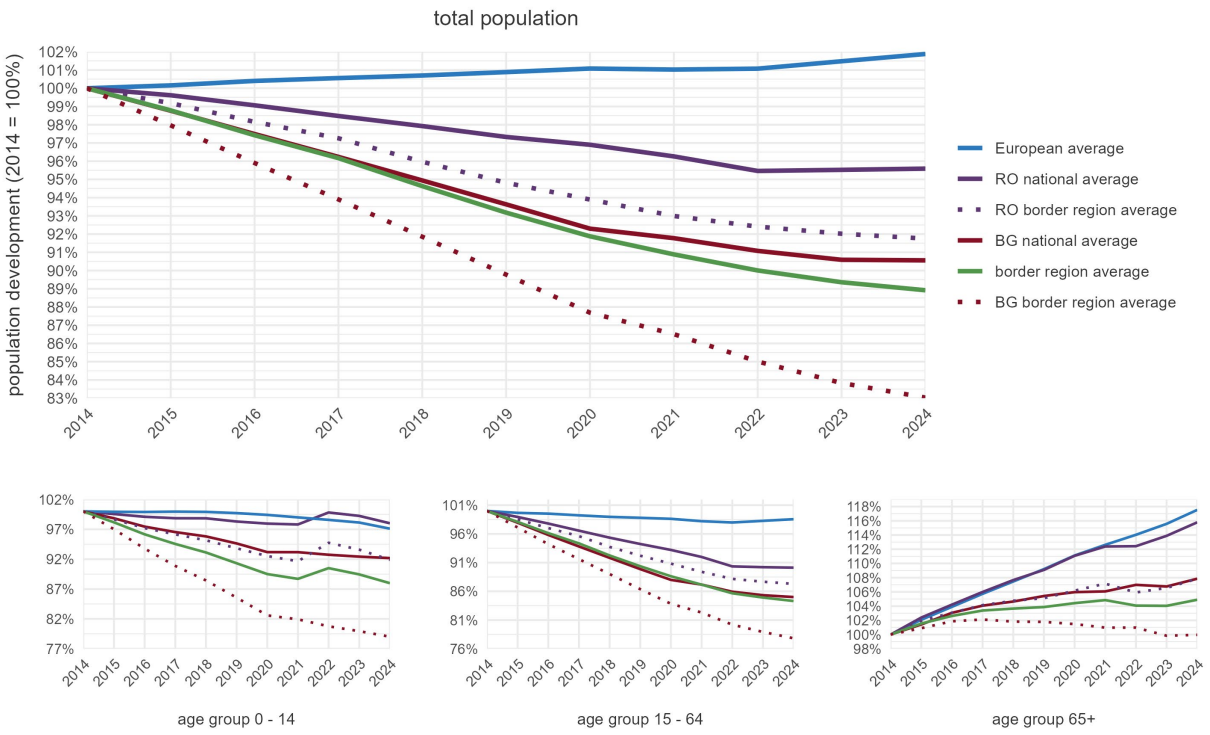
Please refer to the technical annex for more information.

The population of the Romania–Bulgaria Border Region in 2024 (Eurostat) was 3.90 million inhabitants, of whom:

- 69.7% in the Romanian part (2.72 million inhabitants)
- 30.3% in the Bulgarian part (1.18 million inhabitants)
- The region within the border region with the highest population decline since 2014 is Vidin (BG311), with a decrease of -23.1%

Figure 2.2 shows the population development in the Romania–Bulgaria border region between 2014 and 2024. During this period, the region experienced a significant population decline of -11.1%, with a greater decrease observed in the Bulgarian part of the region.

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



The region's population growth is substantially below the European average (-11.1% vs. 1.9%) and also substantially below the average for all border regions (-11.1% vs 1.5%). Compared to national levels, population decline is more intense in the respective border area compared to the national levels. The entire cross-border region faces major demographic challenges, particularly in the Bulgarian territories.

In terms of the development of individual age groups in the region, the population aged 0–14 experienced a sharp decrease of -12.0%, while the working-age population (15–64) showed an even sharper decrease of -15.7%. The population aged 65 and over increased slightly by 4.9%.

#### 2.1.1.3 Change in settlement areas

**Indicator description**

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

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

Please refer to the technical annex for more information.

Figure 2.3 shows how settlement areas changed at a municipal level between 2012 and 2018. Overall, similar patterns of change in settlement areas are evident on both sides of the Romanian-Bulgarian border. Notable changes are evident around the urban centres of Drobeta-Turnu-Severin, Craiova, Vidin, Pleven, Ruse and Dobrich. Constanța and Montana are exceptions, with no significant changes observed during this period. There was high expansion of the settlement areas between Ruse and Bucharest as well as in Slatina and Cernavodă. Near the national border, settlement areas mainly increased on the Bulgarian side around the cities of Ruse and Vidin. On the Romanian side, this is true towards Bucharest from Ruse. The results of this indicator could be further enriched by incorporating national data for the period beyond 2018, where available. Developments after 2018 may reflect the impacts of major recent exogenous shocks, including the COVID-19 pandemic and the war in Ukraine.

## Figure 2.3: Settlement area dynamics

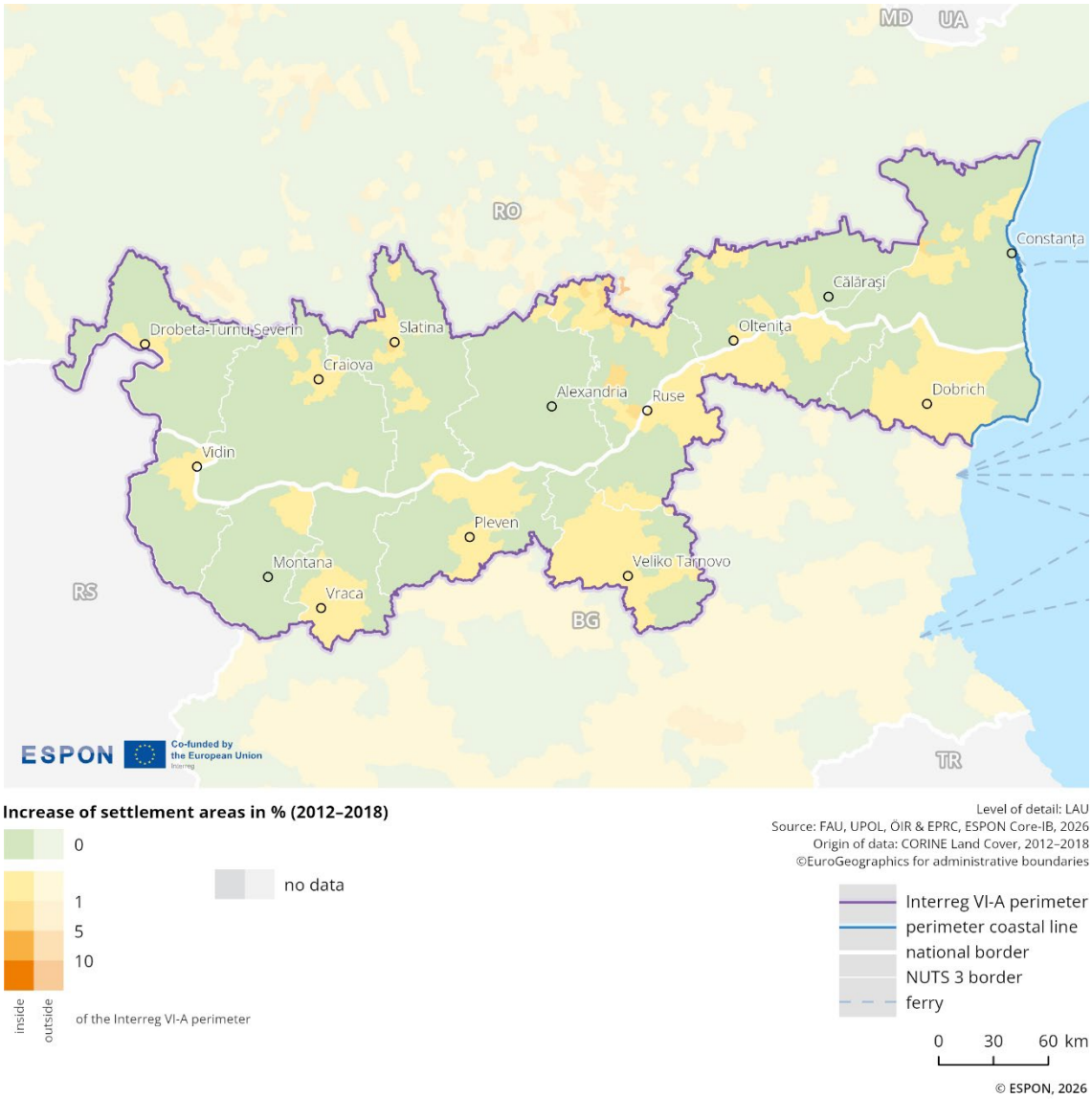
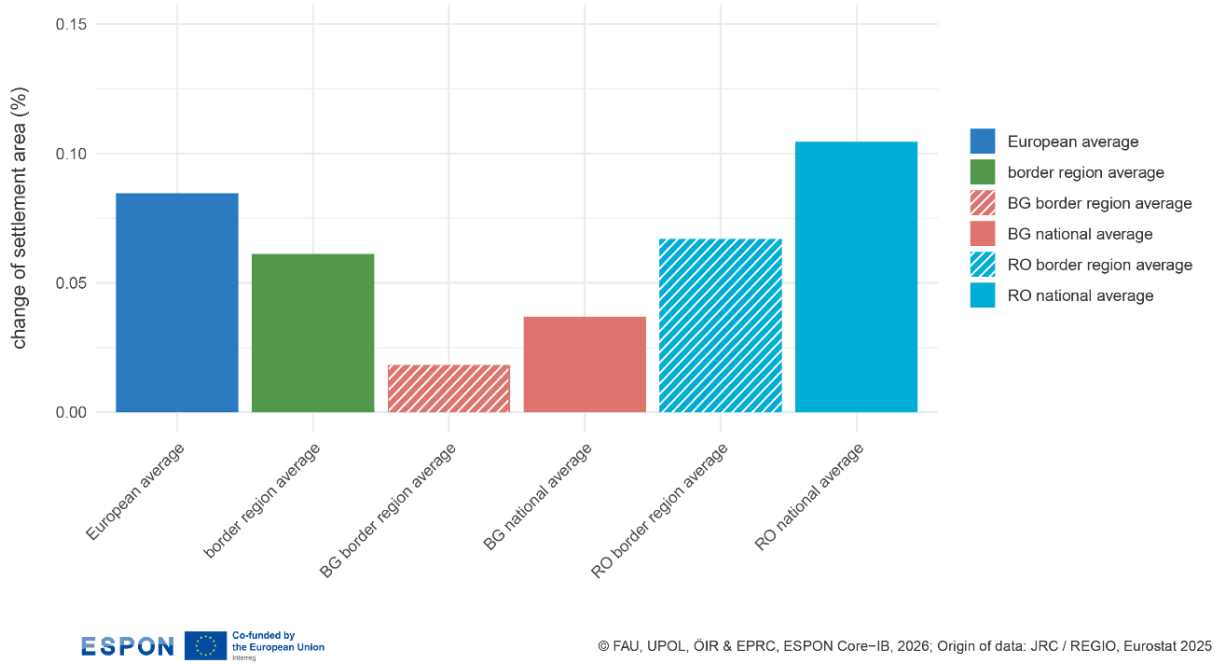



Figure 2.4 shows the change in settlement areas in a comparative context. The average for the Romania-Bulgaria border region is lower than the overall European average, which includes both EU member states and the EFTA countries of Switzerland, Liechtenstein, and Norway. The Romanian values are higher than the Bulgarian ones, for both the national average and the border regions. The Bulgarian and Romanian border-regional averages lie below the national averages.

In general, the border region exhibits relatively dynamic settlement development. The need for an integrated approach to spatial development is clear. Spatial development must balance the various land use demands (e.g., residential, commercial, tourism, transport, agriculture, and nature conservation), which requires coordination and exchange, including across borders.

**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.

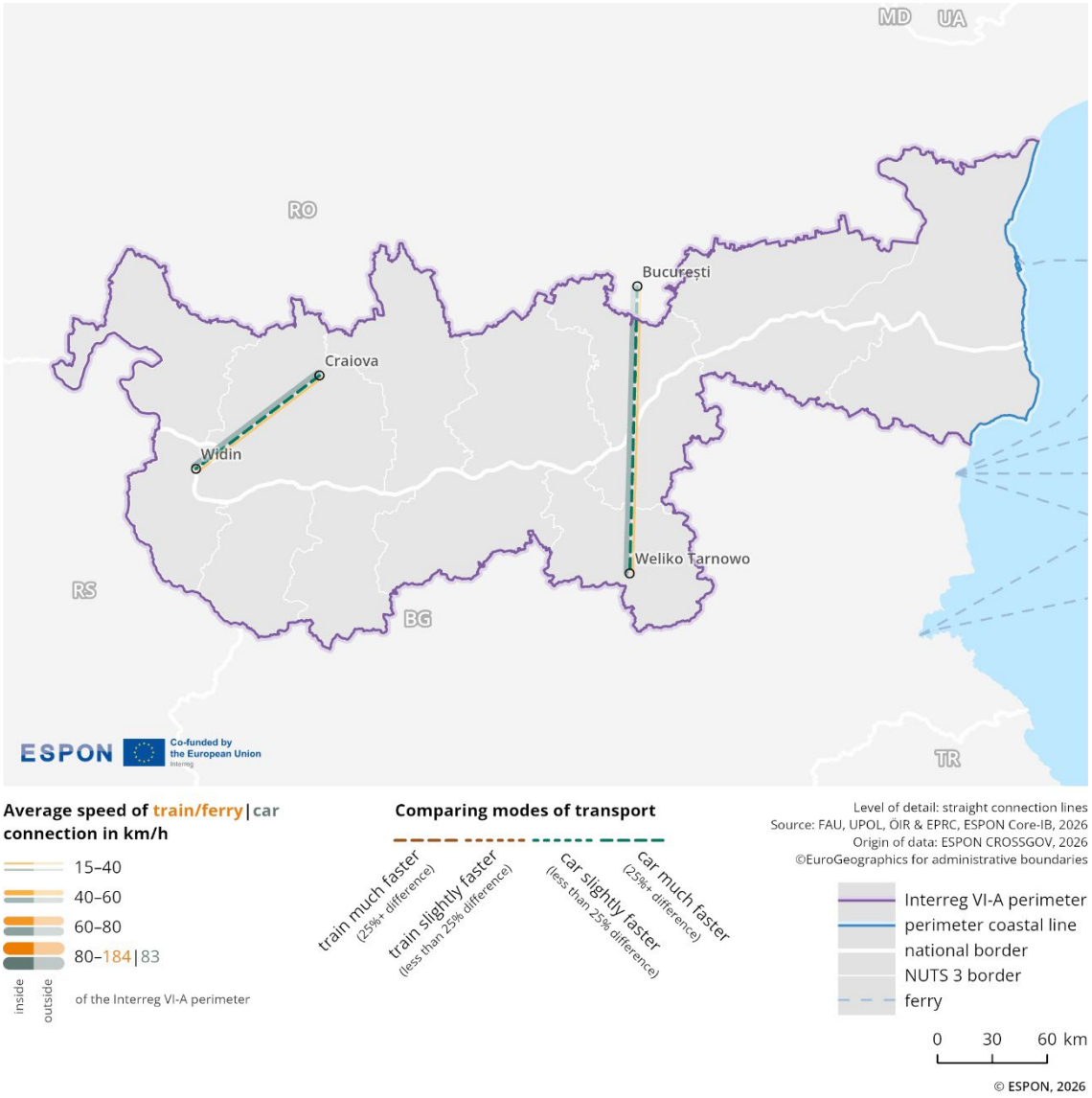
- **Source/method of retrieval**: Average number and speed of rail connections/ferries, average speed of car connections between selected cities and towns in border regions using Rail Travel Sites, Google Maps, luftlinie.org, Direct Ferries, local ferry companies
- **Temporal coverage**: 2025 (first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

Bulgaria 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 project[5]. 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, grey for cars) indicates the average speed of connections in km/h, with thicker lines representing faster connections. Dotted lines in-between reflect the indexed ratio between train and car speeds. A brown colour scale (values below 100) denotes that trains are faster than cars along the specific route, while a green scale (values above 100) indicates the opposite.

The results of applying this indicator, as visualised in Figure 2.5, capture 2 important transport connections – one through Vidin-Calafat and another one through Ruse-Giurgiu. In both cases, car travel outperforms the train connection in terms of speed.

[5] ESPON CROSSGOV Atlas, see Storymap on 'Space-time-lines': https://gis-portal.espon.eu/arcgis/apps/storymaps/collections/345c978adf784adfac30c16b90219d35?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.

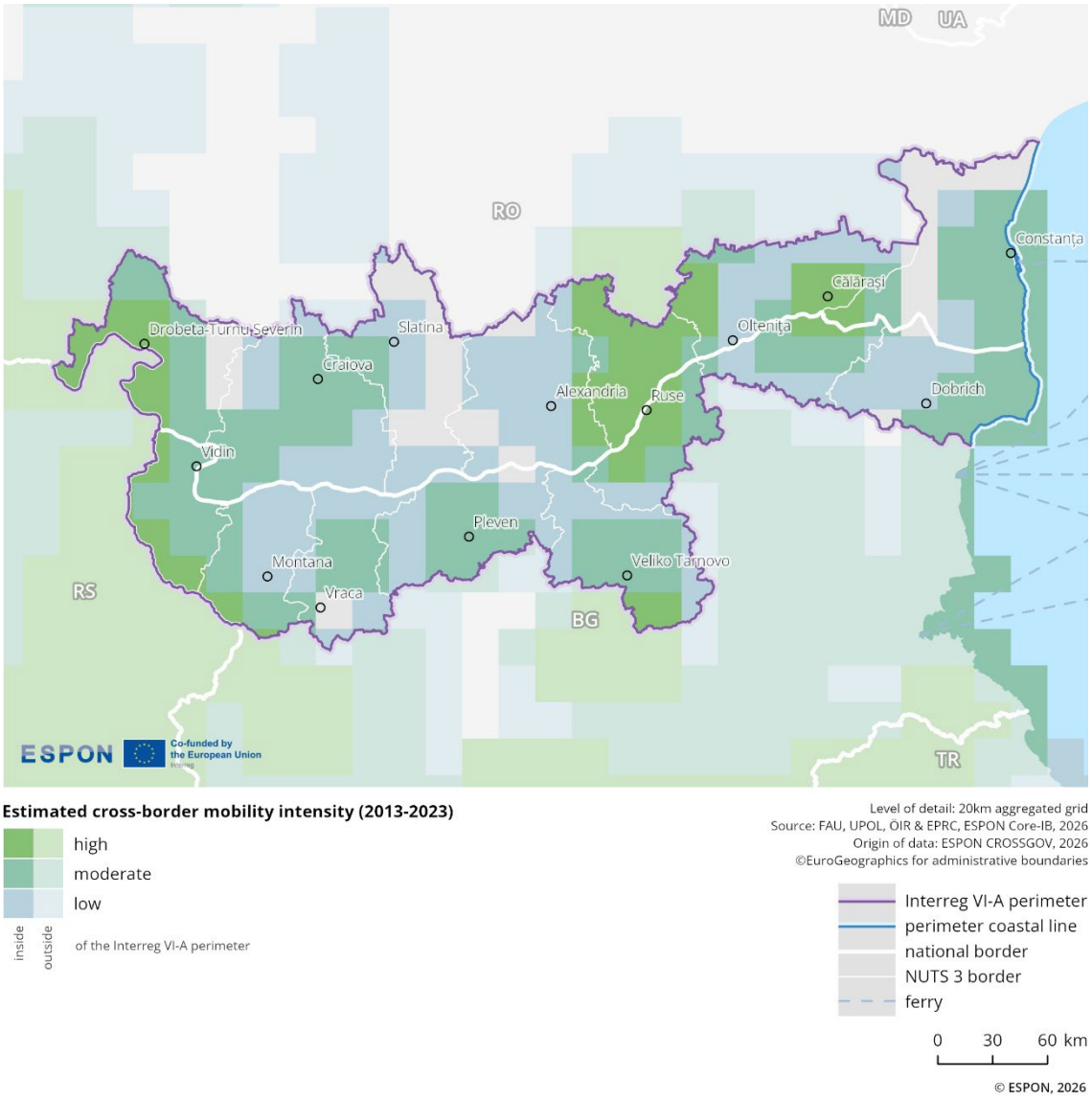
- **Source/method of retrieval**: The indicator is calculated based on Twitter (currently X) data. The digital footprint of individual users provides information about physical mobility flows and is used to calculate cross-border catchment areas of different intensity.
- **Temporal coverage**: 2013-2023
- **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. The data should be interpreted taking into account as there could be differences in the use and penetration of Twitter/X, which could affect the representativeness of the data across territories.

The intensity of cross-border mobility of people within this cross-border region is rather variable. High levels of mobility intensity are observed in the eastern part of the region, particularly between Ruse and Bucharest, where movement is facilitated by a bridge, and Silistra–Călărași (ferry connection). Around cities such as Vidin, Craiova, Constanța, and Pleven, the intensity is at a moderate level. In many other areas outside urban centres, however, the intensity is low or not recorded at all.

## Figure 2.6: Cross-border mobility intensity



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

**Indicator description**

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

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

Please refer to the technical annex for more information.

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

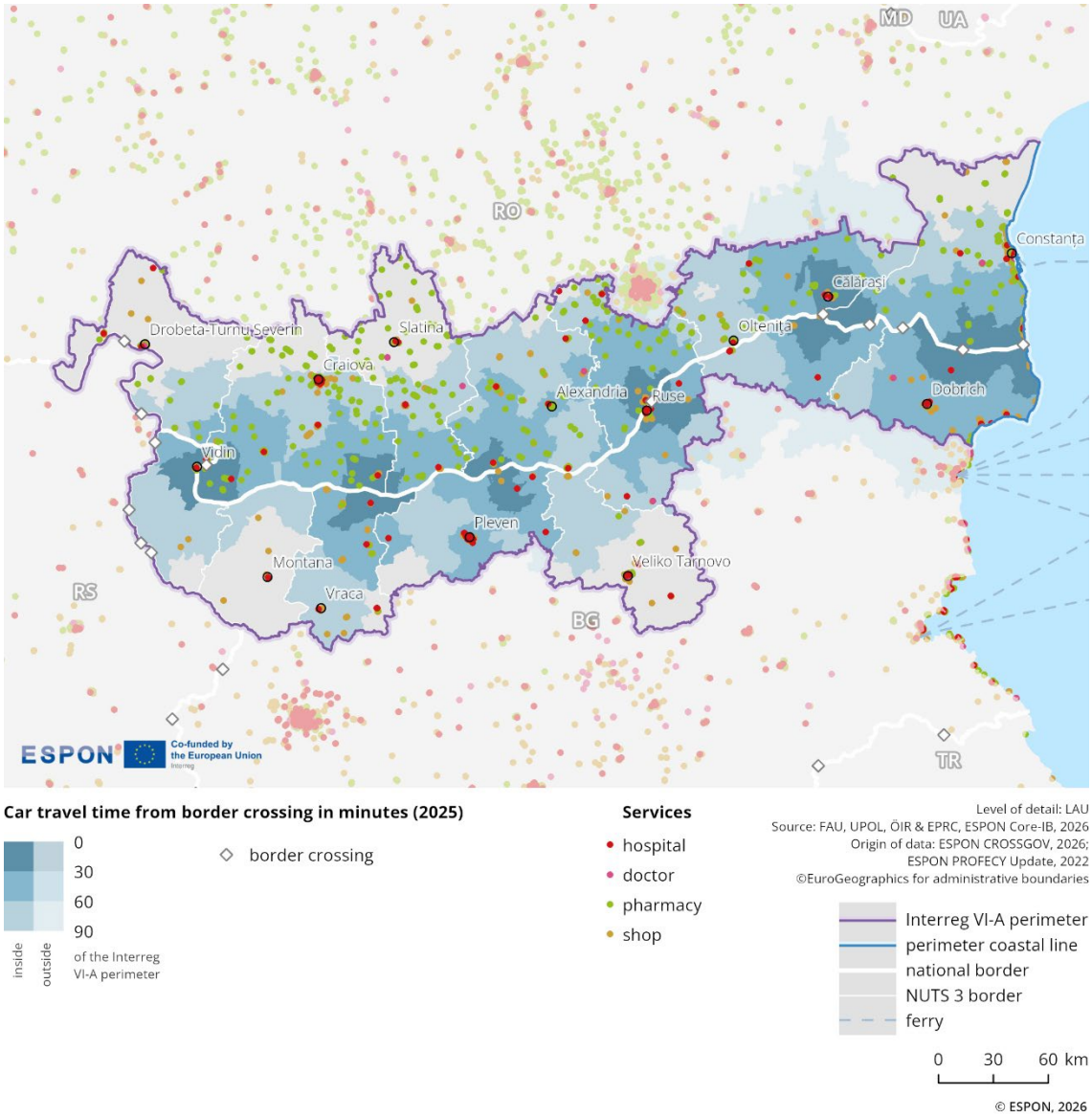
The map shows spatial disparities in accessibility to border crossings across the region. Several areas — including corresponding territories on both sides of the border, benefit from short travel times of under 30 minutes, indicating relatively good connectivity. Many urban centres located directly on or near the border fall within these zones: Vidin-Calafat; Oryahovo-Bechet; Nikopol-Turnu Măgurele; Silistra-Călărași; Ruse-Giurgiu; Kardam – Negru Vodă; Durankulak – Vama Veche.

These areas form clusters of higher accessibility, surrounded by a second zone extending inland on both sides, with travel times of up to 60 minutes. This zone includes urban centres such as Pleven, Dobrich and Alexandria. A third zone, requiring up to 90 minutes to reach the border, covers much of the remaining territory. This includes internal areas like Vratsa, Craiova, and Constanța. Some urban centres and surrounding areas, including Montana, Veliko Tarnovo, Slatina, and Drobeta, require more than 90 minutes to reach a border crossing, reflecting their distance from the border.

These disparities partly reflect distance from the border and variations in the transport network, which shape cross-border accessibility.

Figure 2.7 also illustrates that services such as shops, hospitals, doctors' surgeries, and pharmacies are relatively dispersed. However, several are located within the most time accessible zones, described above, which may facilitate integrated cross-border use of services. The density of service facilities is higher in Romania than in Bulgaria, although these facilities do not necessarily coincide with the most time-accessible areas.

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




## 2.1.3 Key messages on the territorial dimension

Topographic and hydrographic conditions influence the territorial structure of the Bulgarian–Romanian border region. While the Danube forms a continuous natural barrier, it also serves as a focal point for urban development, with several paired settlements located directly opposite each other across the river (e.g., Vidin–Calafat and Ruse–Giurgiu). Urban centres are also located further inland. In total, the border region includes 13 urban centres with a population exceeding 30,000. The moderately urbanised settlement pattern, characterised by towns and villages dispersed among agricultural/nonpopulated land, highlights the importance of balanced territorial development and maintaining strong functional linkages between urban and rural areas.

Between 2014 and 2024, the population declined by 11.1%, which is a much sharper decrease than the European average (+1.9% growth) and the average for all border regions (+1.5% growth). Vidin (BG311) experienced the most significant decline (-23.1%). The demographic losses were concentrated among young people (0–14 years old; -12.0%) and the working-age population (15–64 years old; -15.7%), while the share of elderly population increased (+4.9%). These shifts highlight the challenges of maintaining a vibrant labour market, retaining young people, and providing social care across the region. Despite

the overall decline, changes in settlement areas at a municipal level between 2012 and 2018 reveal localised growth around urban centres such as Drobeta-Turnu-Severin, Craiova, Vidin, Pleven, Ruse, and Dobrich. There was particularly dynamic expansion of the settlement area along the Ruse–Bucharest corridor and around Slatina and Cernavodă. This may signal both urban sprawl or population concentration in selected centres.

Cross-border rail accessibility along the Bulgarian–Romanian border was assessed at 2 crossings at Vidin–Calafat and Ruse–Giurgiu. The service speed at these locations is slower than for car travel. This suggests the potential to improve rail infrastructure and services at these locations.

Accessibility in terms of car travel time to the nearest border-crossing, as well as proximity to services, tends to be higher around areas with bridge and ferry crossings, as well as the main land crossings in the eastern part of the Bulgarian–Romanian border. In areas, where no major settlements and crossings are present, travel time to the nearest border-crossing tends to be higher and the availability of services more limited. As the indicator focuses on land-based accessibility to border crossings, it primarily captures functional connections via bridge and ferry crossings along the Danube. At the same time, the river could also function as an important transport and economic corridor shaping connectivity in the border region.

The intensity of cross-border mobility of people is overall low and spatially concentrated. The Ruse–Bucharest corridor demonstrates how accessible cross-border infrastructure between economic centres on both sides can encourage high levels of cross-border mobility integration and the expansion of settlement areas along the main transport route.

## 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 region's dynamics.

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

**Indicator description**

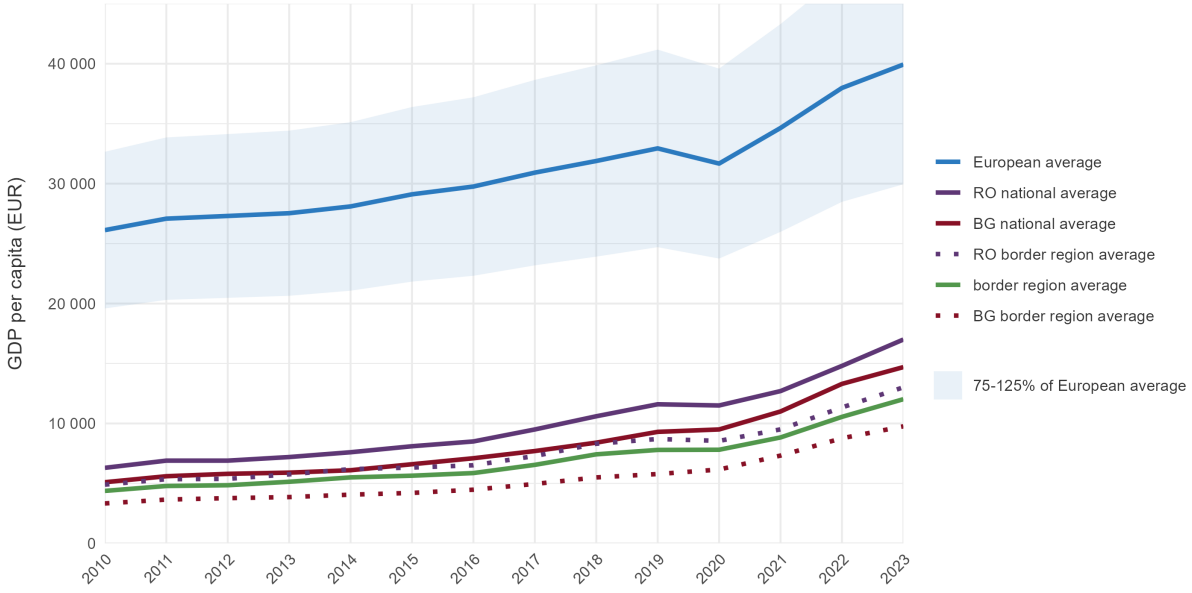
The indicator shows the regional GDP/capita in current prices and its development over the past years. It highlights structural differences and similarities between the border region and the respective national figures as well as the European average. Furthermore, it highlights patterns within the border 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 region's GDP per capita was 29.1% of the EU average and 29.5% of the average in European border regions in general. GDP per capita in the border region increased by 92.3% between 2014 and 2022.[6] This is 56.7 percentage points higher than the average increase in GDP per capita in the EU. Furthermore, this is 57.1 percentage points higher than the average increase in GDP per capita in the European border regions. Nevertheless, the cross-border region generally has some of the lowest GDP per capita within the EU (see Figure 2.8). The Bulgarian border region's GDP per capita is equal to 24.0% of the EU average, while the Romanian border region's GDP per capita is to 31.3% of the EU average. Conversely, economic development in these regions is among the most dynamic in the EU. Since 2014, GDP per capita has grown by 116.4% in the Bulgarian part of the cross-border region and by 83.7% in the Romanian part.

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

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

### 2.2.2 Labour market and commuting

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

#### 2.2.2.1 Share of employment

**Indicator description**

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

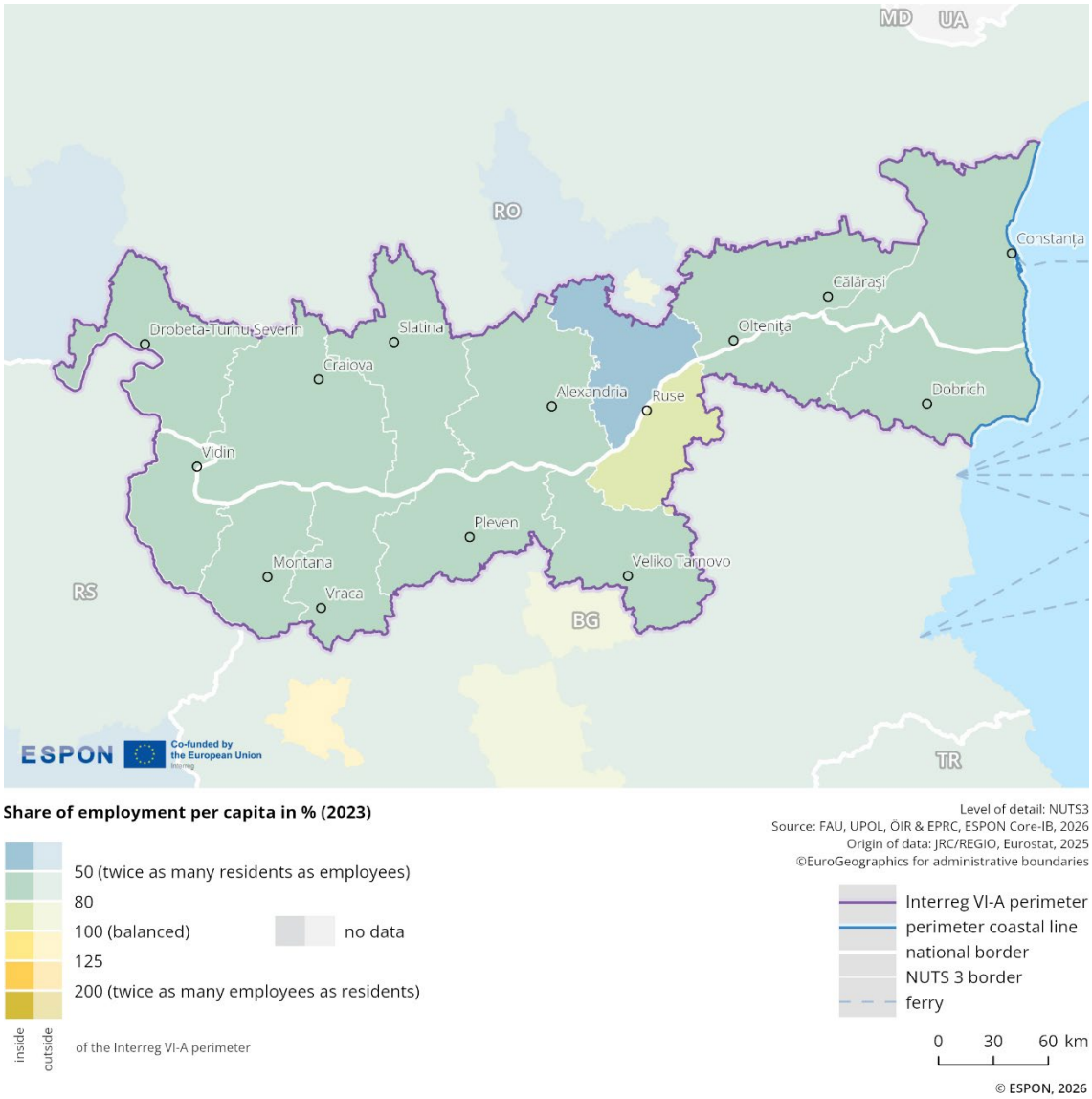
- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

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

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

## Figure 2.9: Employment share[8]



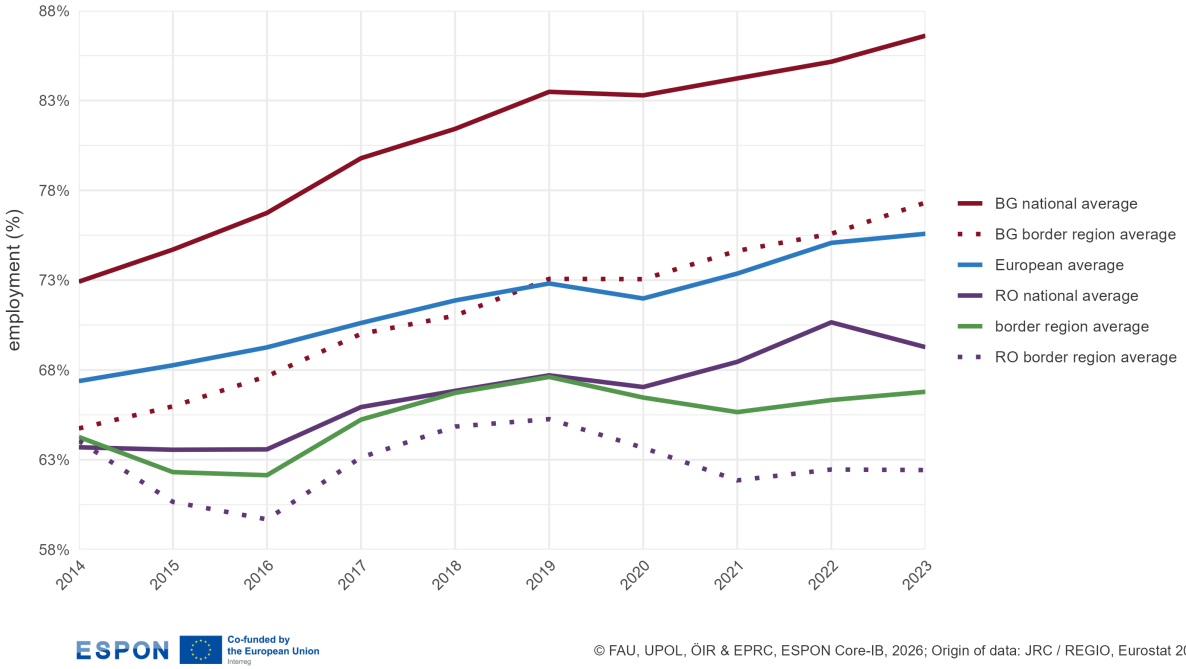

The share of employment in this border region has remained stable, reaching a regional average of 66.8% in 2023 – an increase of 2.5 percentage points since 2014. In most areas, values range from 50% to 80%. However, in the vicinity of the city of Ruse, values range from 80% to 100%. In the area north of this city, values fall below 50%. 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, the values in the cross-border region are 8.8 percentage points lower; in 2014, the difference was 3.1 percentage points.
- Compared to Romania's national average, the cross-border region is 2.5 percentage points lower; in 2014, the difference was 0.6 percentage points higher.
- Compared to Bulgarian national average, the values are 19.8 percentage points lower; in 2014, the difference was 8.6 percentage points lower.
- The Romanian part of the border region records values 6.9 percentage points below the Romanian national average, while the Bulgarian part is 9.3 percentage points below the Bulgarian national average.

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

› Compared to the average of all cross-border regions, this region's share of employment is approximately 7.7 percentage points lower; in 2014, the difference was 2 percentage points lower.

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

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### 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 shows how the share of the working-age population in the Romania–Bulgaria cross-border region has changed between 2014 and 2023. In 2023, the region had an average working-age population share of 62.5%, compared to European and cross-border region averages of 63.9% and 63.7%, respectively.

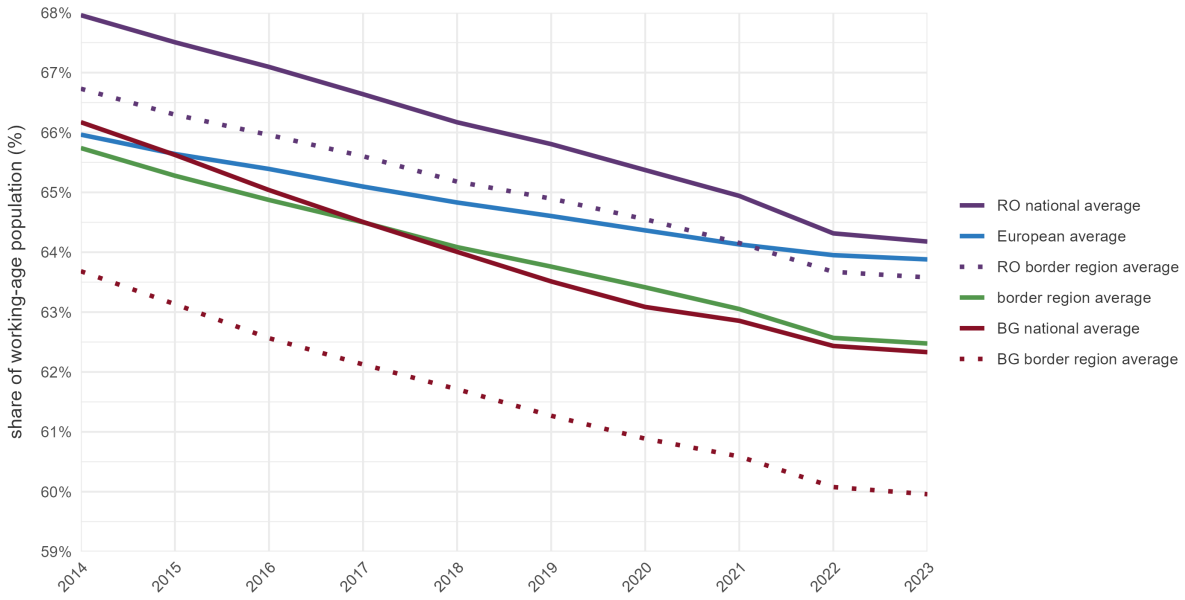
The share of the working-age population in the entire cross-border region is moderately lower than the Romanian border average (63.6%) and significantly higher than the Bulgarian border average

(60.0%). Compared to national averages, the regional value is moderately lower than the Romanian national average (64.2%) and very similar to the Bulgarian national average (62.3%).

The region experienced a moderate decrease of 3.2 percentage points in the share of the working-age population between 2014 (65.7%) and 2023 (62.5%). This decline is greater than the European average, which fell by 2.1 percentage points over the same period. There is a clear downward trend in both countries, with the decrease being more pronounced in Bulgaria (-3.7 percentage points at the border and -3.9 percentage points nationally) than in Romania (-3.1 percentage points at the border and -3.8 percentage points nationally).

The Romania–Bulgaria cross-border region saw a moderate overall decline in the share of the working-age population between 2014 and 2023. By 2023, the region's population was still slightly below the EU and cross-border averages, with a more pronounced demographic decline observed in Bulgaria.

**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 %

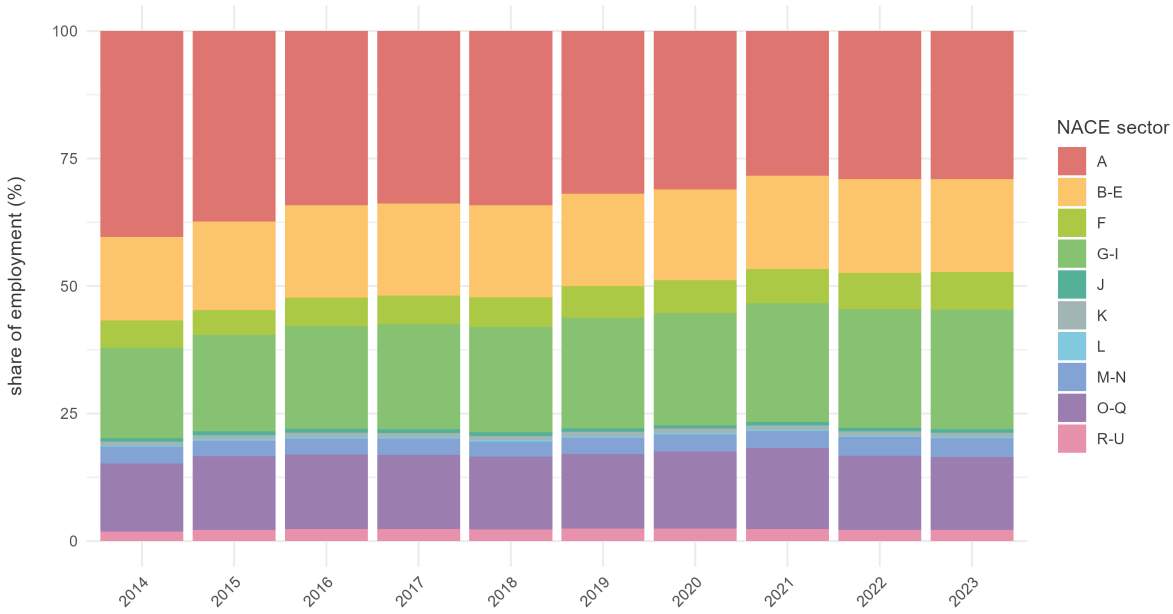
Please refer to the technical annex for more information.

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

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

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

## Figure 2.12: Employment by sector (comparison)




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



Between 2014 and 2023, the relative number of jobs in the different sectors was relatively dynamic. There was a slight decline in the share of employment in agriculture, forestry and fishing (A). Conversely, there was a modest increase in the number of jobs in Construction (F), wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H) and Accommodation and food service activities (I).

Throughout this period, the sectors with the highest share of jobs were A´ (Agriculture, forestry and fishing), ´B-E´ (Mining and quarrying, Manufacturing, Electricity, gas, steam and air conditioning supply, Water supply, sewerage, waste management and remediation activities) and ´G-I´ (Wholesale and retail trade, repair of motor vehicles and motorcycles, Transportation and storage, Accommodation and food service 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.

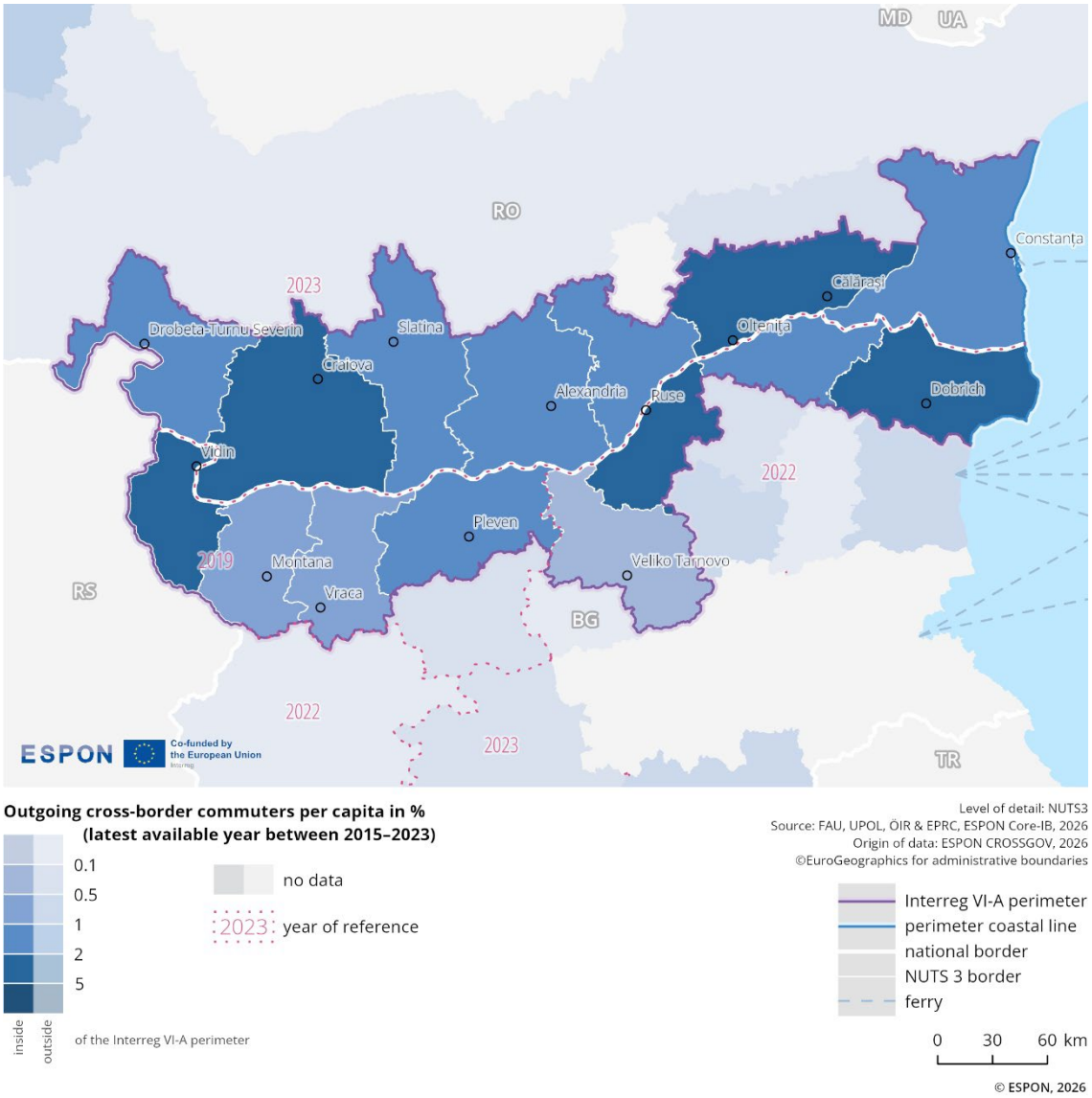
Commuting is one of the most relevant cross-border flows to identify functional linkages. Figure 2.13 illustrates the share of outgoing commuters per capita for each NUTS3 region and provides useful insights into the broader labour mobility tendencies of the Romania–Bulgaria border region (more concretely 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 identified, the share of outgoing commuters in regions close to the border indicates the potential relevance of commuting and helps highlight the potential degree of labour-market connectivity.

The map shows generally moderate levels of outgoing commuting across the border region. While there are no clear 'hotspots', several NUTS3 regions show slightly higher shares of outgoing cross-border commuters per capita[9]. These are Dobrich, Ruse, and Vidin in Bulgaria, and Călărași and Dolj in Romania, show slightly higher shares of outgoing cross-border commuters per capita[10], which is potentially linked to proximity to the border and border crossing points.

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

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

## 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.

As of March 2025, neither country has signed the 2023 Framework Agreement on Cross-Border Telework. Consequently, they apply the standard rules set out in Article 13 of Regulation (EC) No. 883/2004. This means that cross-border telework is generally limited to 25% of total working time, beyond which social security affiliation may shift to the country of residence.

### 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.

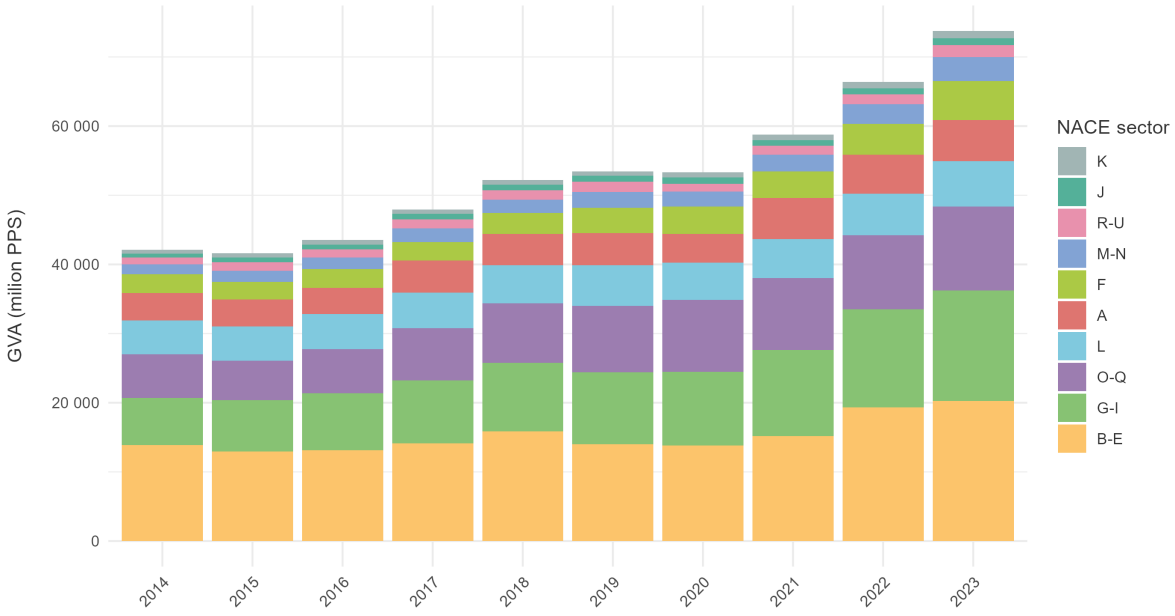
The dataset uses a '10-sector' classification based on NACE categories. The sectoral breakdown is as follows:

- 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 Romania-Bulgaria border area increased from 42,137 million purchasing power standards (PPS) to 73,742 million PPS — a growth of 75%. Sector groups B–E, G–I, and O–Q together accounted for over half of the total GVA, highlighting their significant contribution to the regional economy within the border area. Sector groups B–E contributed the largest share, totalling 20,268 million PPS in 2023. This emphasises the importance 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 Romania-Bulgaria 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)

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#### 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.

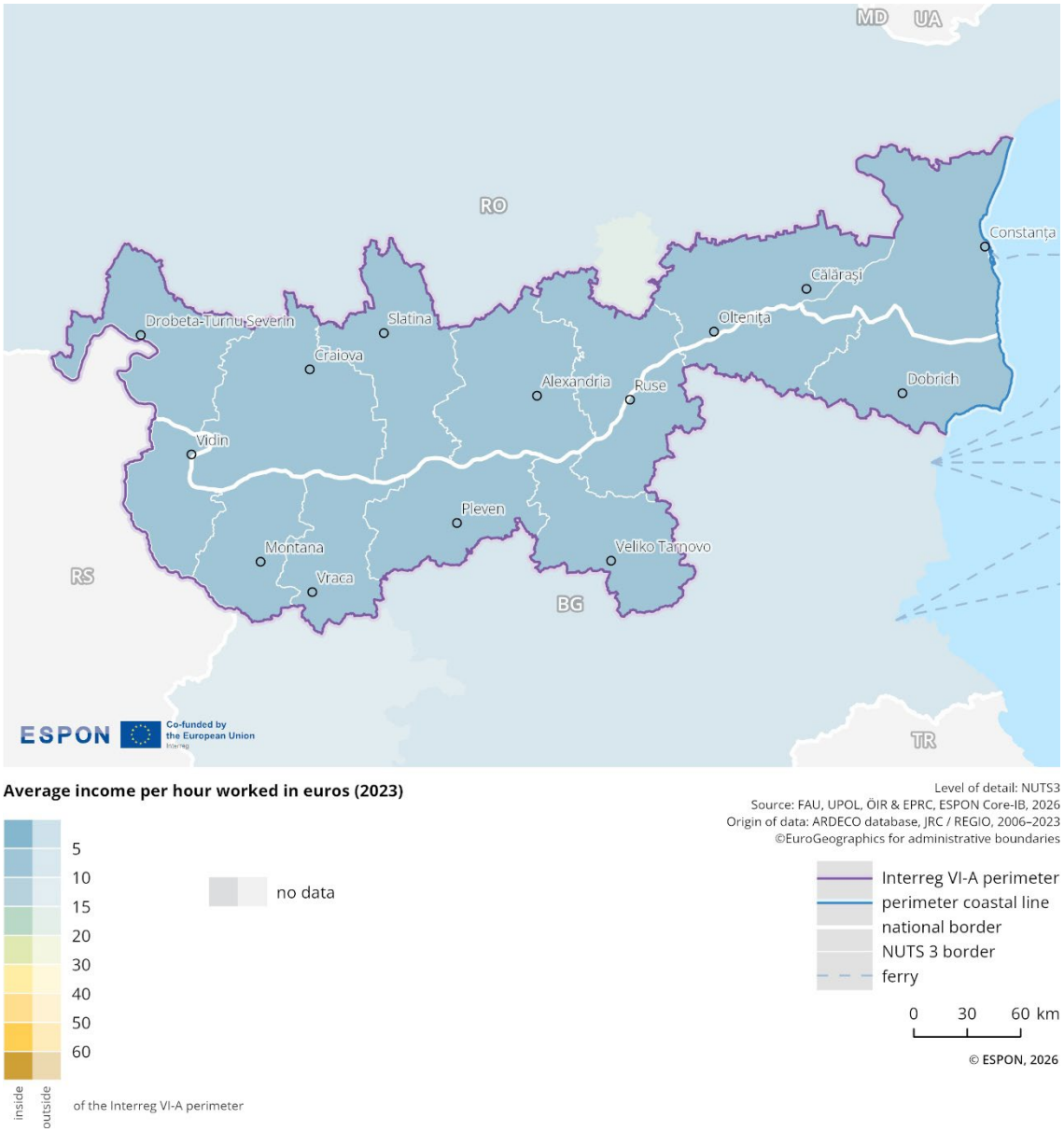
- **Source**: Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2023 (missing data from 2023 in Switzerland were supplemented by values from 2022)
- **Unit**: Euro

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, the distribution of nominal compensation per hour worked in the Romania–Bulgaria border region was relatively even. On the Romanian side, average hourly compensation generally ranged between €5 and €10; the Romanian national average stood at €8.80. On the Bulgarian side, values fell within a similar range, with the Bulgarian national average at €8.40. Within this context, wage differentials across the border are relatively modest and therefore unlikely, on their own, to act as a significant driver of cross-border labour mobility or to generate major disparities in regional labour market dynamics.

## Figure 2.15: Average income per hour



### 2.2.4 Infrastructure and housing

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

#### 2.2.4.1 Advertised sales prices

**Indicator description**

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

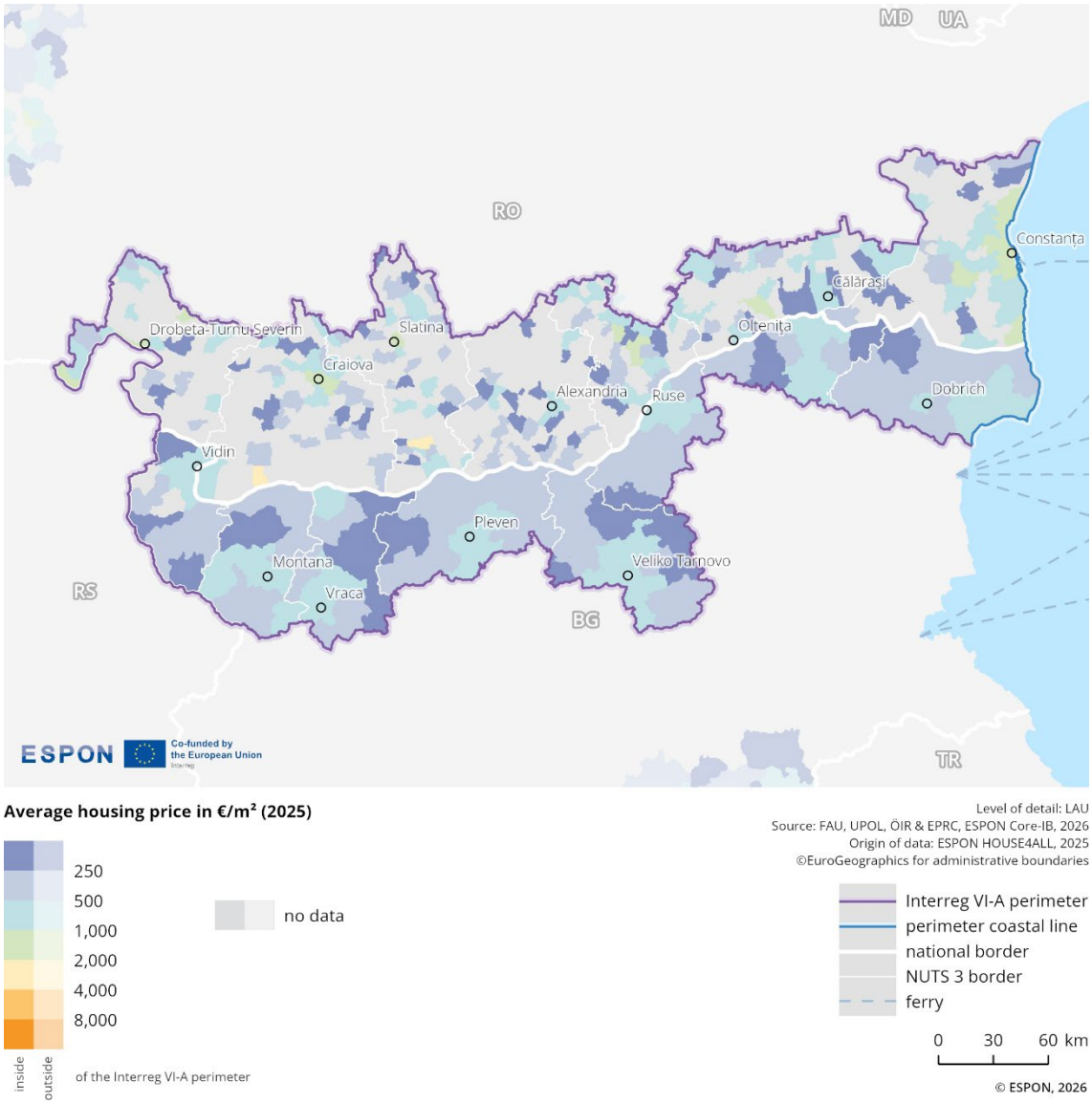
- **Source/method of retrieval**: Processed ESPON House4all data. The original data is collected via web-scraping of national listing websites over a one-year period.
- **Temporal coverage**: 2024/2025
- **Unit**: Average price per square meter (€/m$^2$)

Please refer to the technical annex for more information.

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

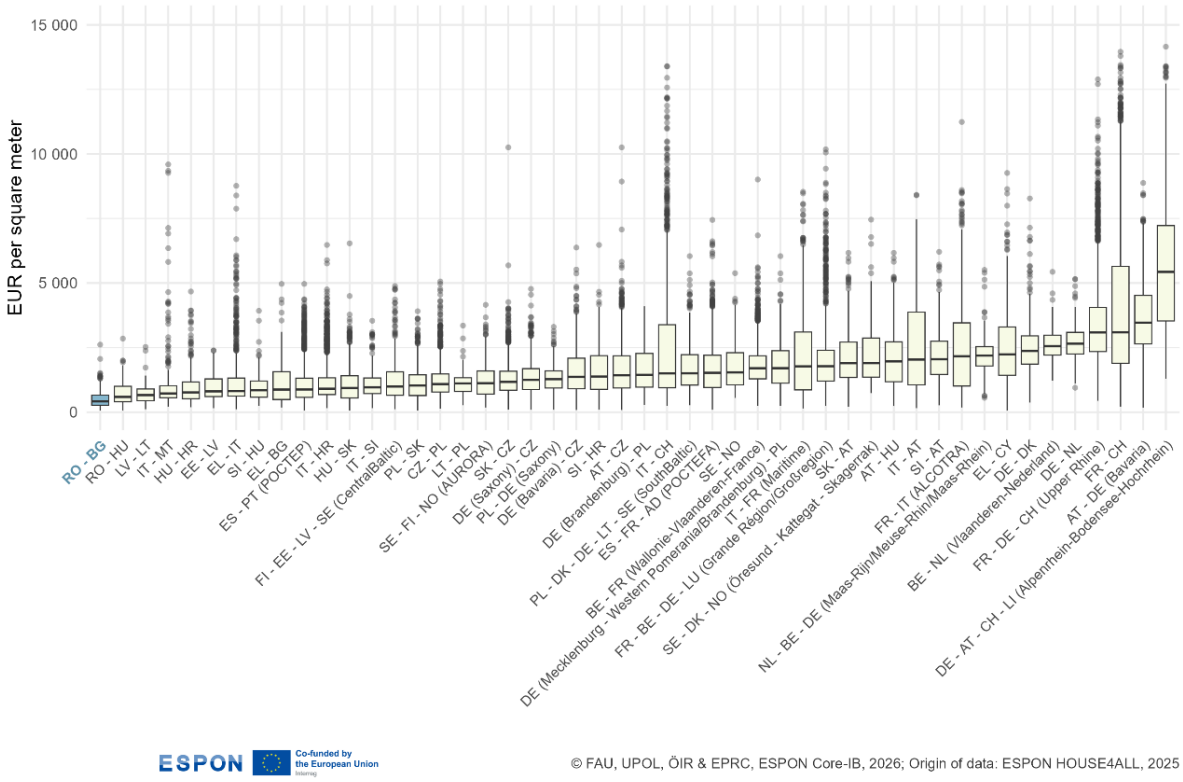
The map shows that land prices are similar in both countries, with most areas falling within the 50 €/m² to 1,000 €/m² range (the 3 lowest average sales price categories). The price is highest in the vicinity of Bulgarian cities such as Montana, Pleven, and Dobrich, reaching up to €1,000/m². Outside cities, prices are low, ranging from 250 €/m² to 500 €/m². In Romania, there are also low categories, with some cities, such as Craiova, Drobeta, and the coastal strip and port of Constanța, exceptionally reaching the category above 1,000 €/m². Data on the average selling price is not available for most of Romania. The border does not form a price divide between the Romania and Bulgaria cross-border area.

## Figure 2.16: Advertised housing prices




The Romanian side of the border region records an average advertised residential sales price of approximately 552 €/m². In contrast, the Bulgarian side shows a lower average price of about 372 €/m². Overall, the average advertised sales price across the entire border region is estimated at €504 per square metre. This value is substantially below the average for all EU-evaluated border regions, which stands at approximately 1,900 €/m², and far below the European average of around 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.

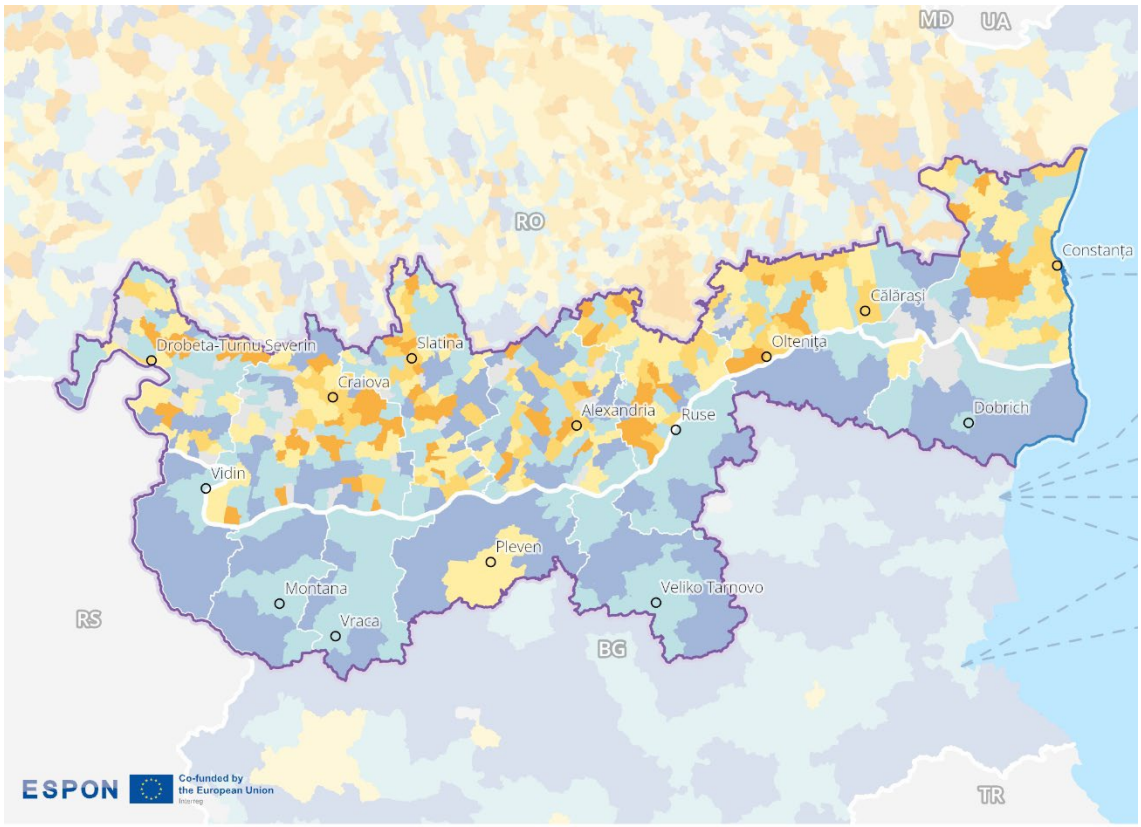
Digitalisation is a highly relevant issue in European border regions, with the overarching objective of ensuring appropriate digital access. It is widely recognised as a key precondition for successful regional and economic development. A major challenge in this process is preventing 'digital divides'—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

Figure 2.18 shows significant differences between urban and rural areas. Values range from under 50 Mbps to over 200 Mbps. Cities such as Drobeta-Turnu-Severin, Craiova, Constanța, and Pleven report relatively high average speeds, whereas the surrounding areas tend to have significantly lower values. This may be due to the greater return on investment typically associated with digital infrastructure projects in urban areas compared to rural ones. However, not all urban areas in this border region have high internet speeds; for example, Ruse, Vidin, Montana, and Dobrich do not stand out in this regard. In general, the average internet speed in Romania is significantly higher than in Bulgaria.

**Figure 2.18: Average internet download speed**




## 2.2.5 Key messages on the economic dimension

Although GDP per capita in the cross-border region is similar on both sides, it remains below national and well below EU averages. Nevertheless, GDP growth has been more dynamic than in other border

regions. Employment rates are higher on the Bulgarian side of the border (c. 80%) than on the Romanian side (c. 60%), indicating moderate divergence. Since 2014, however, the gap between the entire border region and the EU average has widened, likely due to fluctuations in employment on the Romanian side.

Agriculture remains a dominant employer, although its share has been declining since 2014. Trade, transport, accommodation, and food services form a major employment group (G-I) and have been gaining a larger share of employment over the same period. Mining, manufacturing, and certain public services (B-E) also account for a relatively large share of the workforce. Education, health, and social work (O–Q) represent moderate employers, while high-skill sectors such as finance (K), ICT (J), and science (M-N) employ only a small share of the workforce. The sector groups B-E, G-I and O–Q were the main contributors to significant GVA growth of 75% in the border between 2014 and 2023.

The increase in employment in sectors such as transportation, accommodation, and food services (G-I) could reflect the region's potential to utilise the shared natural resources of the Danube River and the Black Sea. The rise in accommodation and food services highlights the potential for developing ecotourism and sustainable coastal tourism, which could help to drive local economies, while preserving the region's natural river and marine resources. Furthermore, agriculture and fishing offer significant opportunities for sustainable practices such as aquaculture and eco-friendly fisheries, which can contribute to the region's blue economy. Additionally, growth in transportation and storage could indicate potential for enhanced river and maritime transport along the Danube and Black Sea, playing a key role in improving regional trade and connectivity.

Cross-border commuting is distributed fairly evenly across the region, with no significant variations between border areas. One factor contributing to this is likely to be the similarity in wages on both sides of the border. However, as of March 2025, opportunities for cross-border telework to boost the attractiveness of cross-border employment are limited to 25% of total working time, as neither country has signed the 2023 Framework Agreement on Cross-Border Telework. More generally, the teleworking potential appears low due to the dominance of sectors that are not conducive to working from home.

Overall, the competitiveness indicators are broadly similar on both sides of the border, except for average internet speed, which is significantly higher in the Romanian border area than in its Bulgarian counterpart. There is significant potential to improve internet speeds in Bulgarian urban centres such as Ruse, Vidin, Montana, and Dobrich, as well as to address the wider urban–rural digital divide within the border region.

## 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.

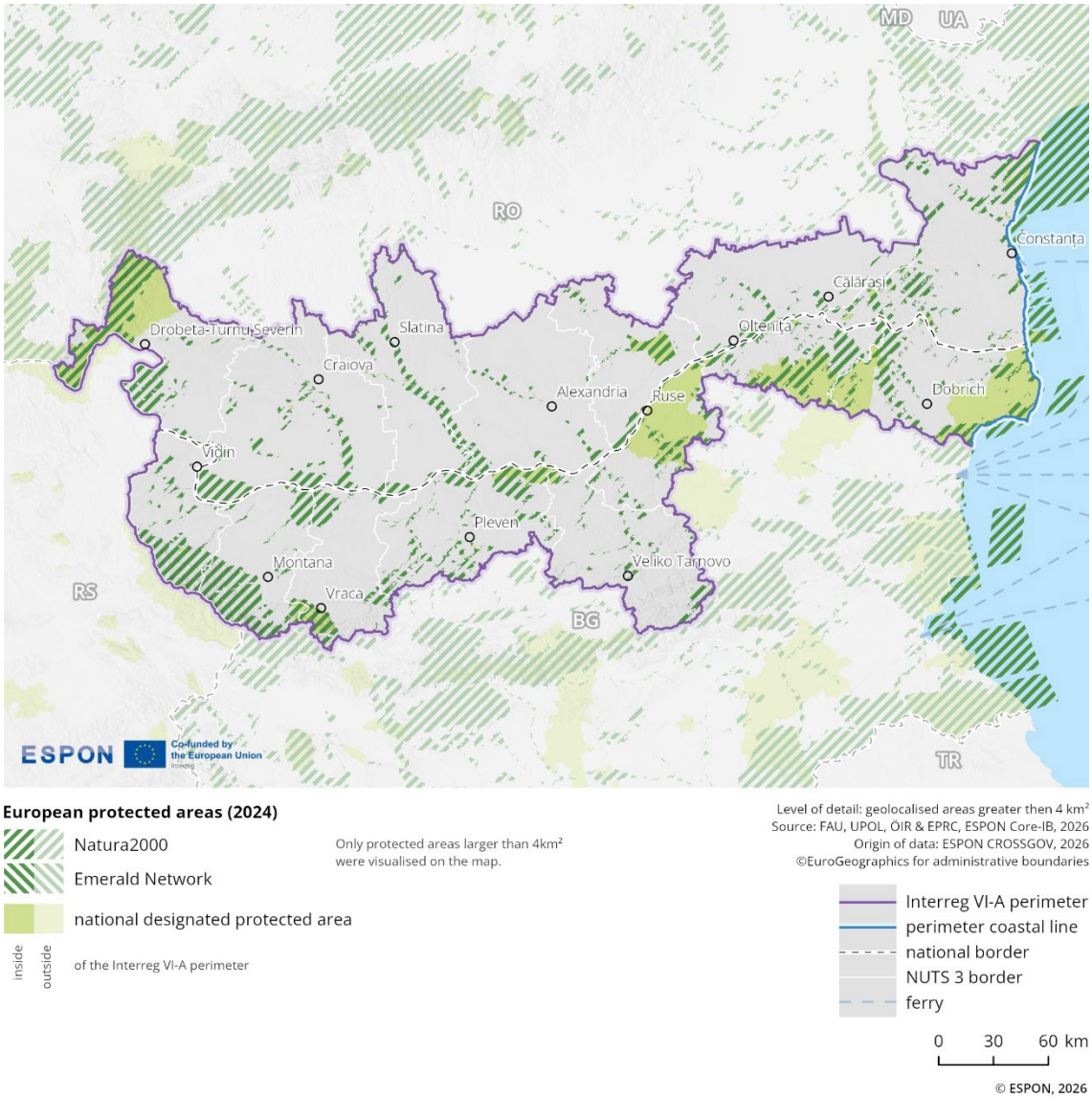
Protected areas within the Romania-Bulgaria region are mainly found along the Danube corridor, in the eastern coastal area, and close to Ruse, Drobeta-Turnu Severin, as well as to the south of Montana. The largest contiguous Natura 2000 and national protected zones are located near Ruse and Drobeta-Turnu Severin. The areas around Craiova, Pleven, and Vidin contain smaller, more scattered protected areas.

Several protected areas along the Danube have counterparts in the neighbouring country. These create visible linear corridors, while the network of protected areas in more inland areas is more fragmented.

In Romania, the areas of national interest include 4 nature parks: Mehedinți Plateau Geopark, Porțile de Fier Nature Park, Comana Nature Park, and Domogled National Park Cerna Valley. In Bulgaria, there are also 4 nature parks: the Vrachanscki Balkan Nature Park, the Persina Nature Park, the Rusenski Lom Nature Park (a UNESCO site) and the Zlatni Pyasatsi Nature Park.[11]

[11] Interreg VI-B Territorial Analysis up date, https://interregviarobg.eu/assets/2020/08/200618-territorial-analysis-updated.pdf, p. 118

## Figure 2.19: Nature protected areas




### 2.3.1.2 Air pollution

#### Indicator description

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

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

Please refer to the technical annex for more information.

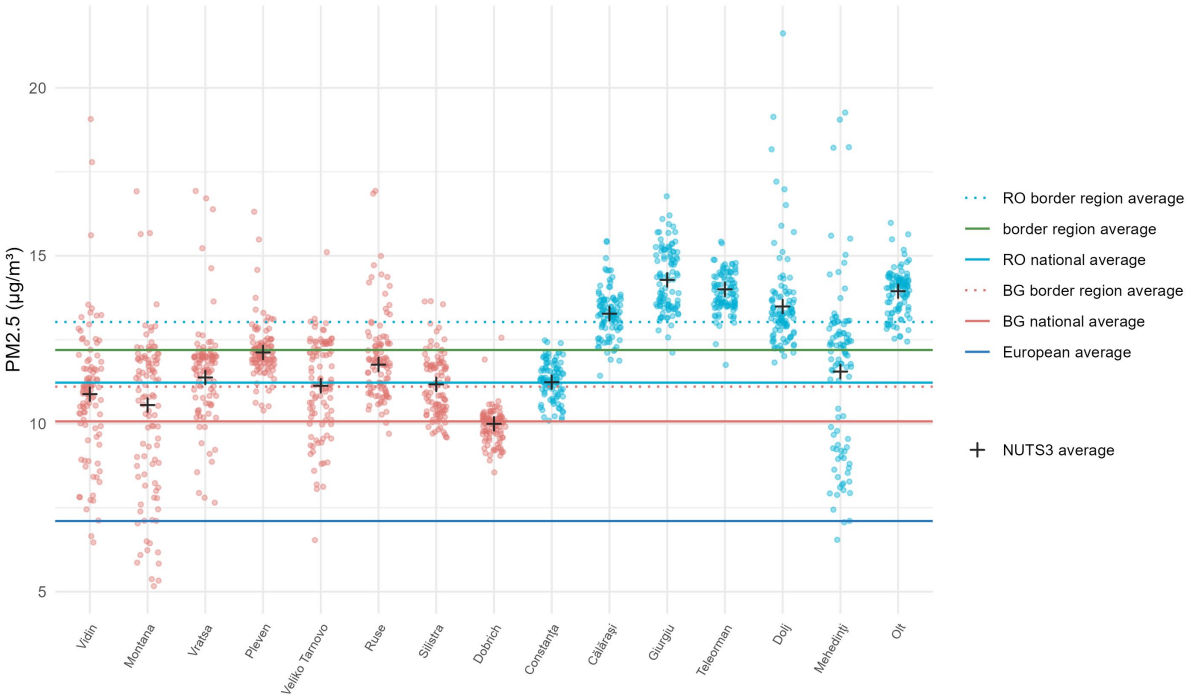
This graph illustrates PM2.5 concentrations (in µg/m³) across NUTS3 regions in Romania and Bulgaria. Each small dot represents an individual measurement, while the black crosses indicate the average PM2.5 concentration for each NUTS3 region[12]. The regions are aligned along the x-axis, with Bulgarian regions on the left (in red) and Romanian regions on the right (in blue).

PM2.5 values in both countries vary considerably. Romanian regions have higher individual peaks in PM2.5 concentrations than Bulgarian regions. Bulgarian NUTS3 averages cluster below 12.5 µg/m³, with only a few measurements exceeding 15 µg/m³. In contrast, Romanian NUTS3 averages display more variability, with several exceeding 15 µg/m³. The highest average levels are recorded in Giurgiu, Teleorman and Olt on the Romanian side, and in Pleven and Ruse on the Bulgarian side.

Air pollution levels in the border area exceed national averages in both Romania and Bulgaria. Romania's national average is around 11 µg/m³, whereas the average in the border region is significantly higher. A similar pattern can be observed in the Bulgarian data, where the national average is lower than the border region average.

The European average is around 7 µg/m³, which is lower than the values in both Romania and Bulgaria. The cross-border average is around 12.5 µg/m³, which is notably higher than the European and above national averages. This cross-border average reflects the higher values in the Romanian border region and the lower values in the Bulgarian border region.

## Figure 2.20: Air pollution

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

#### 2.3.1.3 Water pollution

**Indicator description**

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

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

Please refer to the technical annex for more information.

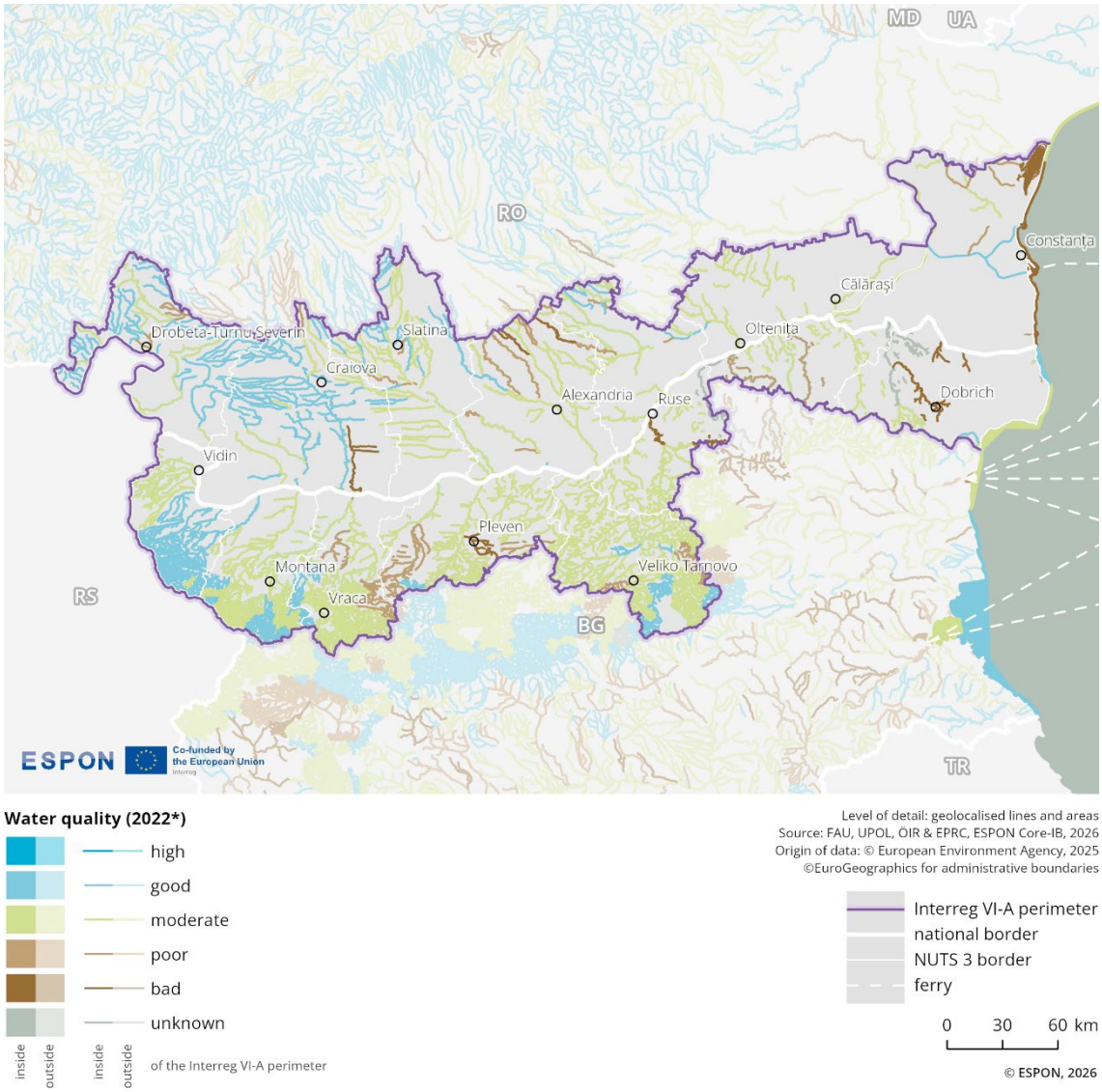
Figure 2.21 illustrates water quality levels in the Romania–Bulgaria Interreg region in 2022. Water quality is represented using 6 colour-coded categories, ranging from "bad" to "high", including an "unknown" category. [13].

In the Romanian part of the cross-border region, water quality ranges from “moderate” and “good” in the west to “moderate” and “poor” in the east, with some coastal areas classified as “bad”.

Much of the Bulgarian border region has bodies of water classified as “moderate” or “good”. This is particularly evident in the western and central regions. In contrast, quality drops to “poor” in targeted areas near Pleven, Dobrich and east of Vraca.

[13] 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



### 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.

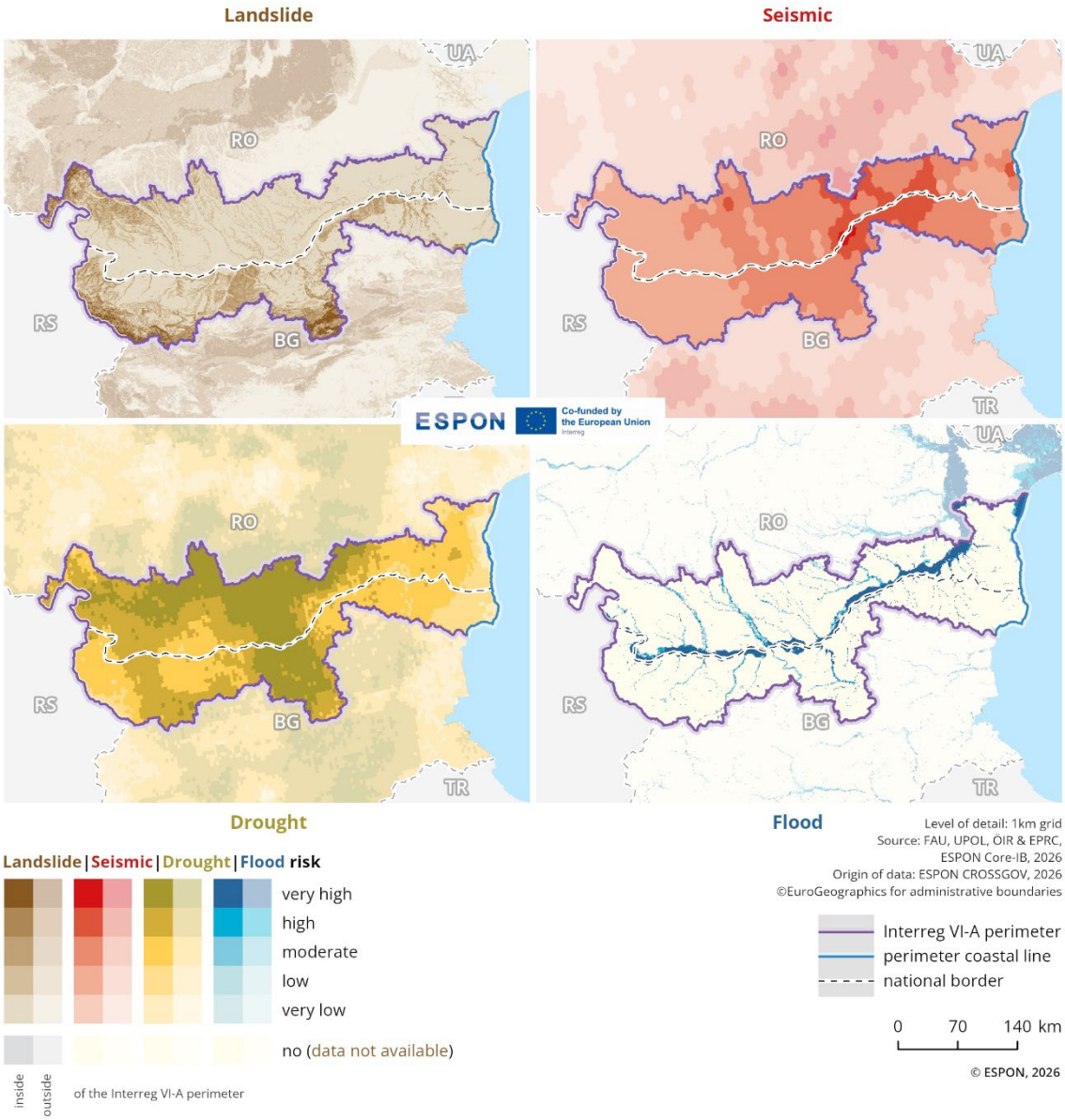
- **Source/method of retrieval**: The indicator is based on geodata from the Disaster Management Risk Knowledge Centre/JRC. It provides the likelihood of specific natural hazard events at grid level.
- **Temporal coverage**: 2024
- **Unit**: n/a

Please refer to the technical annex for more information.

Figure 2.22 illustrate the spatial distribution of natural hazards in the Romania-Bulgaria region, highlighting areas where risks are shared across national boundaries and where risks are not necessarily cross-border relevant.

There is a high risk of droughts throughout vast parts of the region, especially in the central areas on both sides of the border. Landslides pose a moderate to high risk in the foothills of the Carpathian Mountains in the northwest and Balkan Mountains in the south, but these have little cross-border relevance. Flooding is primarily associated with the Danube, which forms the natural border between the 2 countries in the western part of the border region. Moderate seismic threats occur in the area around Ruse (Bulgaria), which is located right on the border.

## 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.[14]

#### 2.3.3.1 Power lines and energy infrastructure

**Indicator description**

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

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

Please refer to the technical annex for more information.

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

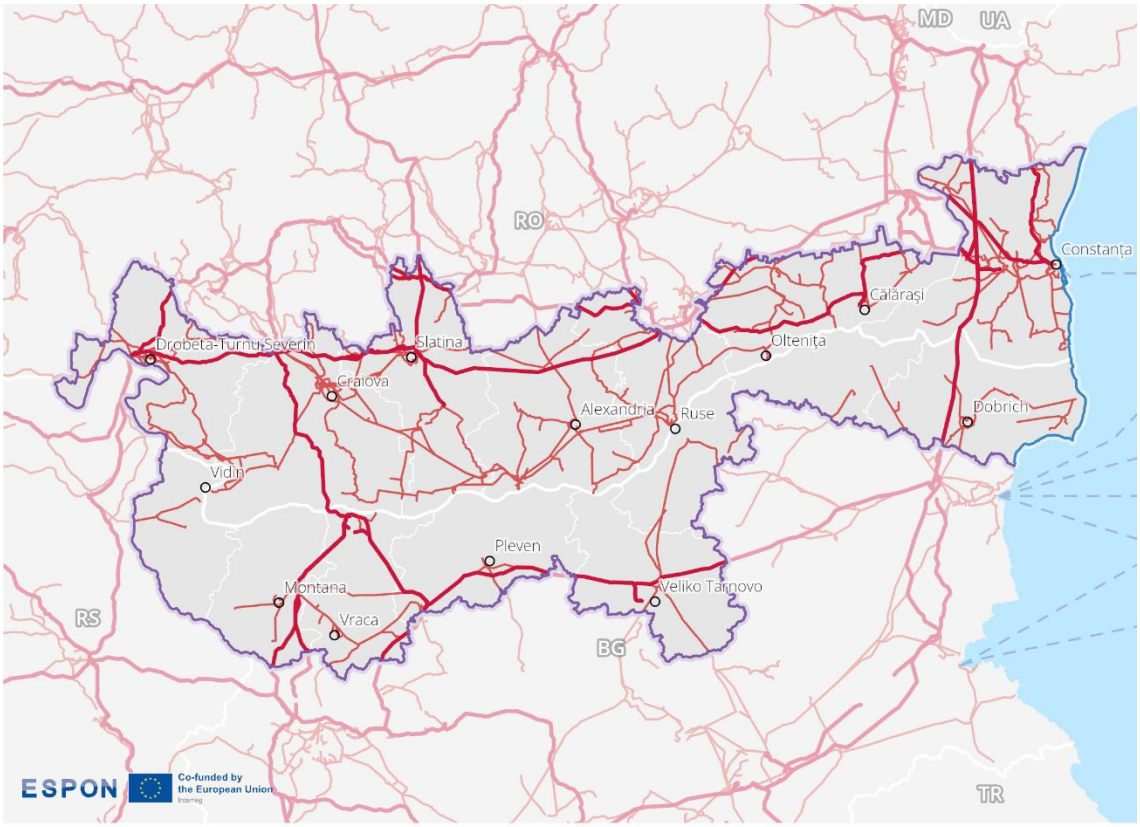
The Romania-Bulgaria cross-border region features extensive high- and extra-high-voltage energy infrastructure, with a much denser network visible in the Romanian part of the region. The border is crossed by an extra-high-voltage power line in 2 places: one further west where the line branches off to the Bulgarian nuclear power plant and then heads south into the Bulgarian interior. The second power line crossing the border is located in the eastern part of the region and is connected to a nuclear power plant, this time in Romania.

According to the 2025 EU Handbook on Cross-Border Energy Communities, Bulgaria and Romania collaborate closely on congestion management, ensuring the reliability and stability of their interconnected power grids, as well as the wider European electricity grid. However, natural barriers and technical and market limitations hinder grid integration.[15]

[14] 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

[15] Spatial Foresight et al (2025) Handbook on Cross-border Energy Communities, Annex 1 Border Fiches. European Commission https://ec.europa.eu/regional_policy/sources/studies/2025/Annex_1_Handbook_on_Cross-border_Energy_Communities.pdf

## Figure 2.23: High-voltage transmission infrastructure




**Overhead power lines (2025)**

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

**Underground power cables (2025)**

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

inside / outside of the Interreg VI-A perimeter

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

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

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

0 30 60 km

#### 2.3.3.2 Power stations

**Indicator description**

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

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

Please refer to the technical annex for more information.

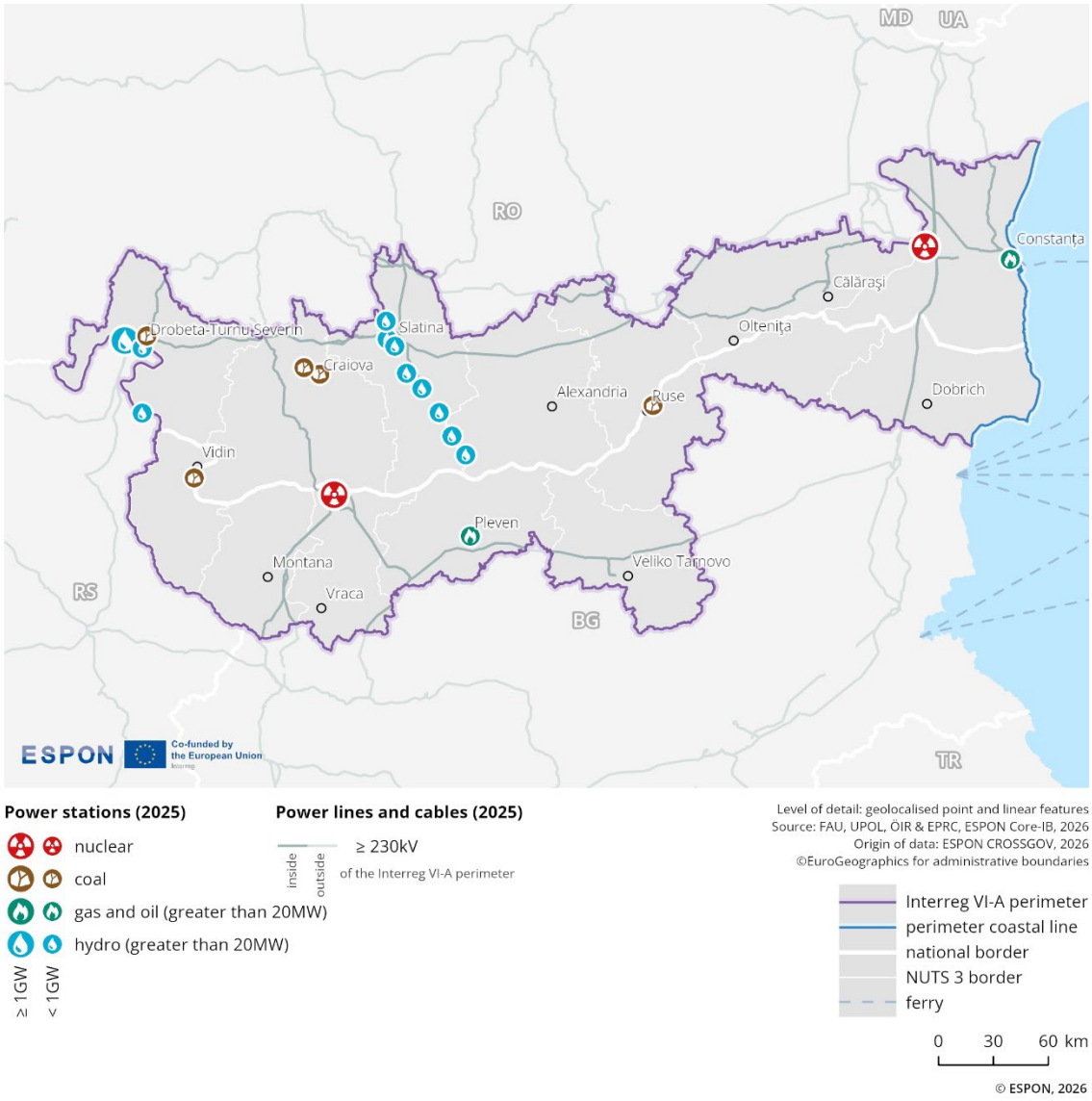
In the Romania-Bulgaria cross-border region, there are a total of 20 power station locations, the majority of which are hydroelectric (see Table 1).

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

| Power stations/plants | Less than 1GW | 1GW and up |
|---|---|---|
| Nuclear | / | 2 |
| Coal | 5 | / |
| Gas and oil | 2 | / |
| Hydro | 10 | 1 |

These are located exclusively in Romania, specifically on Olt River dam system in the central part of the country, as well as on the Danube in the west of the region (see Figure 2.24). 3 of the 5 coal-fired stations are located in Romania's northwest, while the remaining 2 are located in Bulgaria, right on the border with Romania. The entire region has 2 high-performance nuclear power plants, one in each country.

## 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**

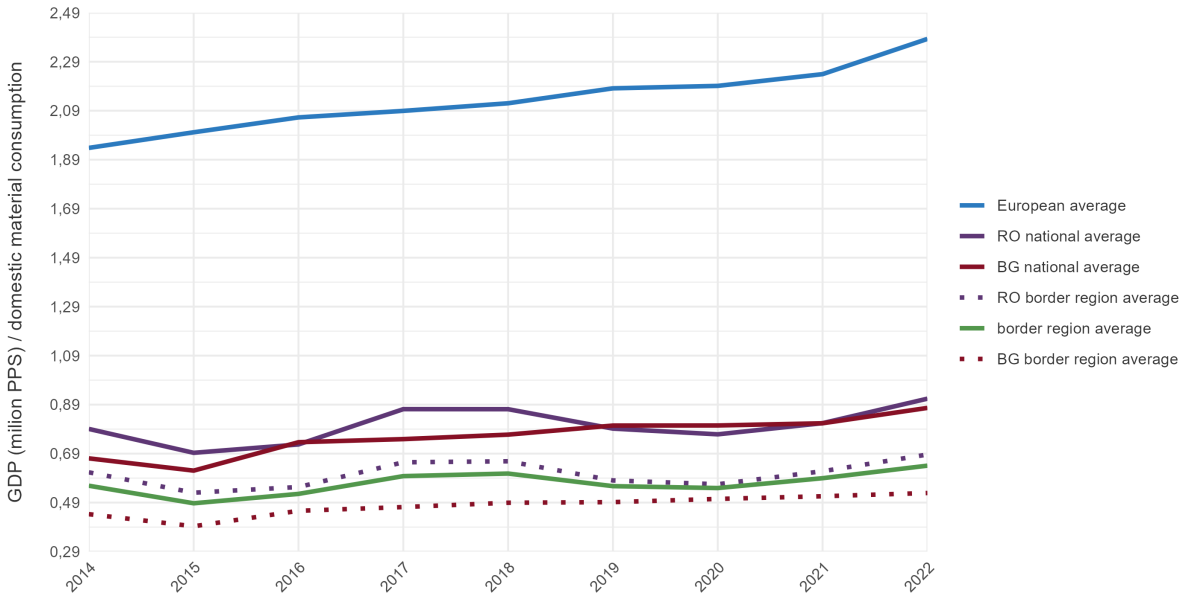
The indicator shows the economic value generated per unit of material consumed for each region within the cross-border area. Developments over time provide insights if the decoupling of productivity from resource use is progressing on regional level.

- **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**

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The chart shows a modest overall increase in resource productivity, measured in millions of purchasing power standards per domestic material consumption (PPS/DMC), in both the Romanian and Bulgarian national contexts (visualised by the purple and red filled lines). The national averages of resource

productivity are almost identical, both reaching approximately 0.89 million PPS/DMC in 2022. The averages in the border regions of both countries are lower, with the Bulgarian average being slightly below the Romanian average.

The European average is significantly higher than the Bulgarian and Romanian values, reaching around 2.39 million PPS/DMC in 2022. The border region average lies between the higher Romanian values and the lower Bulgarian values, reaching approximately 0.69 million PPS/DMC in 2022.

### 2.3.4.2 Generation of waste per GDP

#### Indicator description

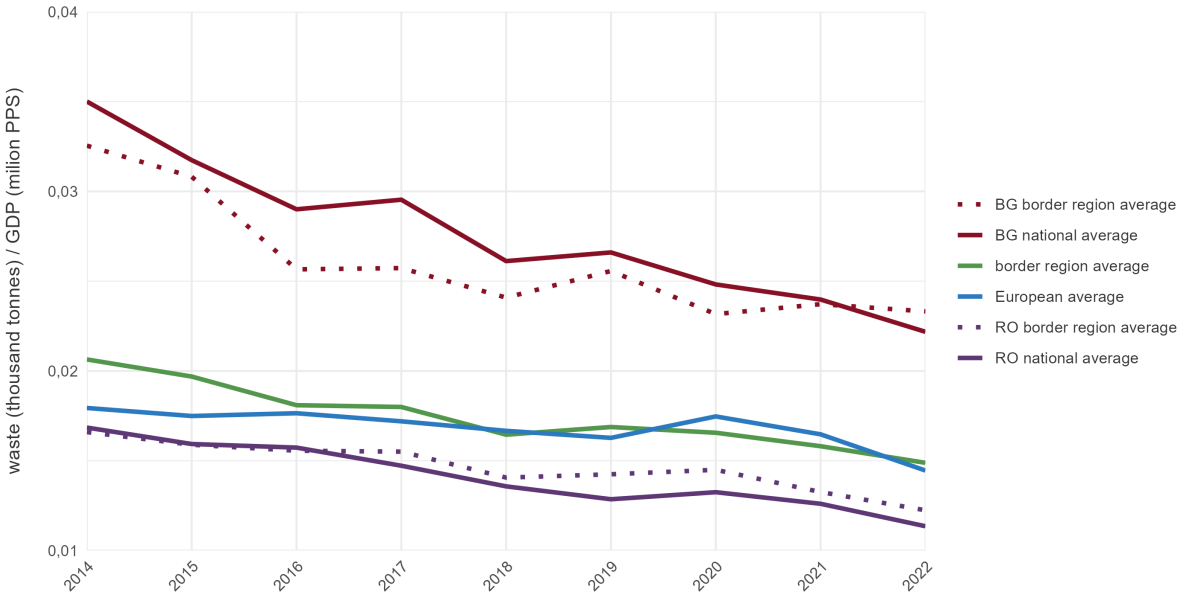
The indicator shows the regional distribution of waste creation in relation to the GDP development. Comparing waste generated to GDP reflects the waste intensity of the economy and provides a measure of "eco-efficiency". Observation of its change from year to year permits to assess whether the economy 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 in Romania, Bulgaria and their border region.

**Figure 2.26: Waste generation per GDP**

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Both Bulgaria and Romania show a steady downward trend over the observed period, with Bulgaria consistently reporting higher and more volatile values than Romania. However, the decline in Bulgaria

is considerably more pronounced: while the national average was around 0.035 tonnes of waste per million PPS in 2014, it had dropped to approximately 0.022 tonnes by 2022. The Romanian border region average is slightly higher than the national average, whereas the Bulgarian border region average remains below the national average until 2021.

The European average decreases gradually from around 0.018 tonnes of waste per million PPS in 2014 to approximately 0.015 tonnes by 2022. Throughout this period, this figure remains lower than Bulgaria's national average, but higher than Romania's. While the European average is initially below the cross-border average, the 2 values converge over time.

The average for the cross-border region consistently falls between the higher values for Bulgaria's border region and the lower values for Romania's border region. In 2022, the cross-border average was approximately 0.015 tonnes of waste per million PPS.

### 2.3.5 Key messages on the green dimension

The spatial arrangement of protected areas along the Bulgarian–Romanian border region indicates a shared recognition of the need for nature protection fostered by the Danube. Along the river, several protected areas, notably Natura 2000 sites, have been designated on both sides of the border, forming a visible transboundary corridor. These aligned strips may facilitate functional ecological connectivity. Further inland, comparatively large, more scattered areas - located in the western parts of Romania and the eastern part of the Bulgaria, offer opportunities for ecological coordination.

Air pollution constitutes a shared cross-border challenge. However, the intensity of air quality pressures varies, with higher PM2.5 levels (in µg/m³) observed in the central and eastern parts of the border region, while western areas record comparatively lower levels. The concentration of elevated values in specific adjacent regions (Giurgiu, Teleorman, Olt, Pleven and Ruse) points to territorially specific emission sources, potentially linked to economic activity, transport intensity, or residential heating practices.

Disaster risks are widely shared across the border region. One of the most significant risks is drought, particularly in the central part of the region. Other shared risks include flooding, which is linked to the Danube, and seismic activity in the Ruse–Giurgiu and Silistra–Călărași areas.

In the context of transitioning towards sustainability, territories on both sides of the border are facing shared challenges in improving resource productivity. The border average stands at approximately 0.69 million PPS EUR GDP per unit of domestic material consumption, which is significantly below the EU average of 2.39 million. Time-series data from 2014 to 2022 reveal gradual progress at the national level and in the border area, with an upward trend emerging since 2021.

## 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. It analyses cross-border connectivity in social media and language similarities across and along national borders to evaluate the potential for deeper 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.

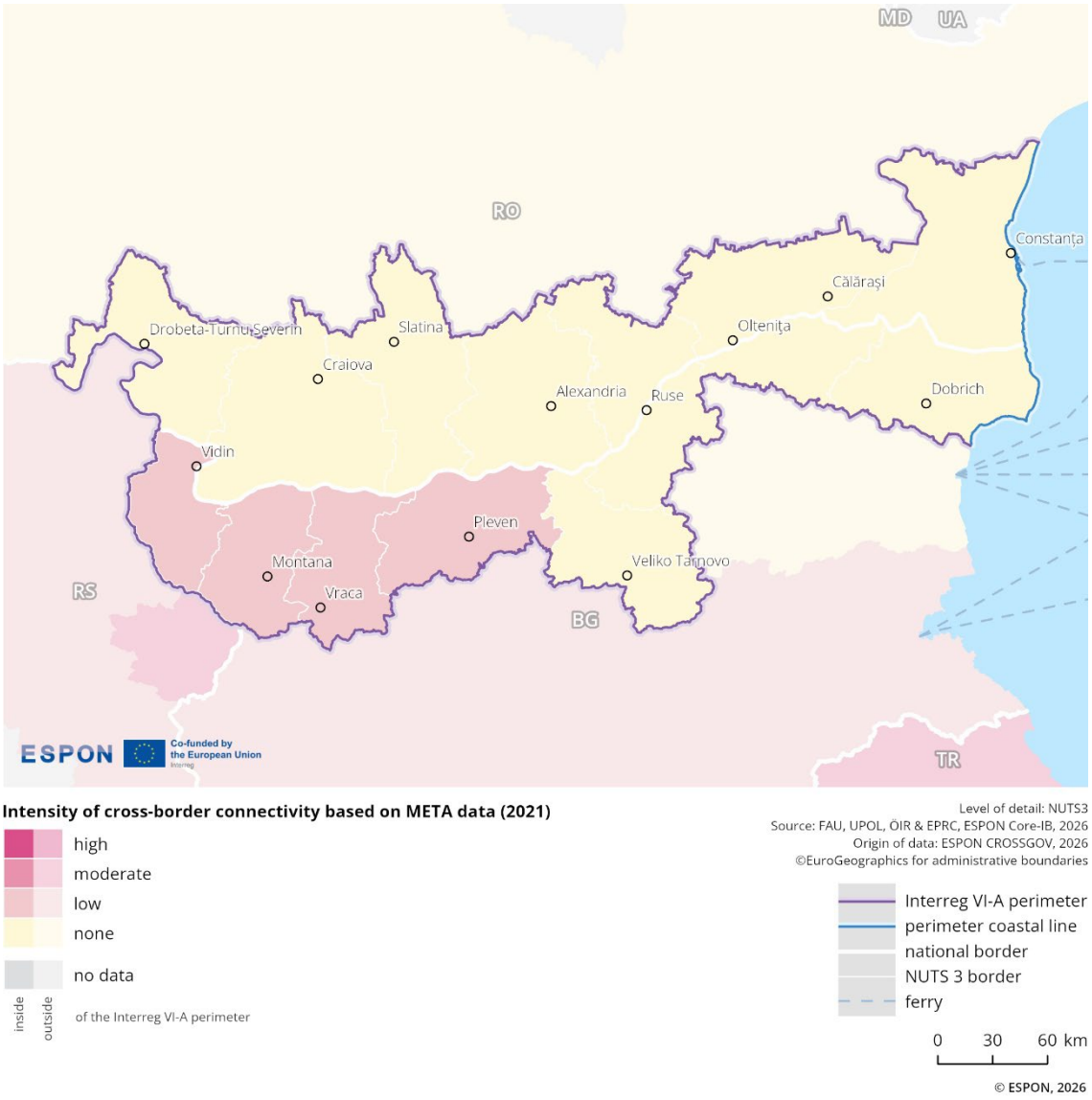
- **Source/method of retrieval**: Processing Facebook data on existing connections across the border (data for Good Meta)
- **Temporal coverage**: 2021
- **Unit**: n/a

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 interaction, ranging from low to high, with darker tones representing stronger intensity of cross-border connectivity in social media.

The map shows that the intensity of cross-border connectivity, measured by the number of existing connections between users of META social media platforms, is equally limited across majority of the cross-border territory. Yet, several western and central NUTS3 regions – part of the Bulgarian border region - show any presence of cross-border social media connectivity, albeit at a low intensity. This includes the cities of Vidin, Montana, and Pleven.

## 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 2 different languages, with no recorded similarities or widespread knowledge of the neighbouring region's language.

### 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 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.

Figure 2.28 shows the number of overnight stays per capita at tourist accommodation establishments in 2023. This includes hotels, holiday and other short-stay accommodation, as well as campsites, caravan and trailer parks. Darker shades indicate a higher number of nights spent per capita in 2023. The Figure also shows the cumulative number of overnight stays from 2020 to 2023.

In 2023, Dobrich in Bulgaria had 10 to 20 nights per capita, while Constanţa in Romania had 5 to 10 nights per capita[16]. Both regions are coastal. In terms of total overnight stays over the 3-year period, the leading tourism regions are Constanţa (approx. 5.2 million) and Dobrich (approx. 1.6 million).

## Figure 2.28: Overnight stays in tourism

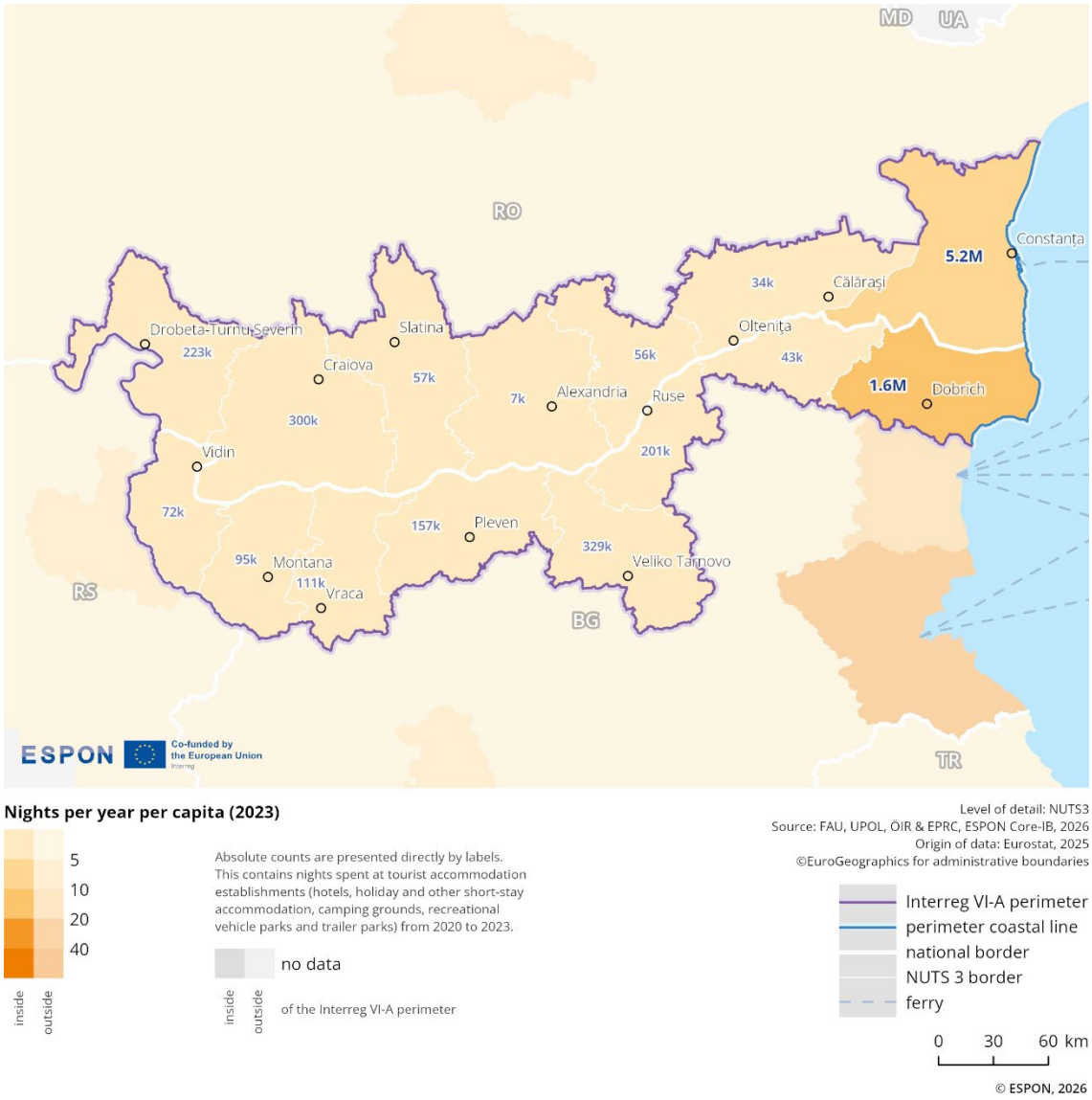
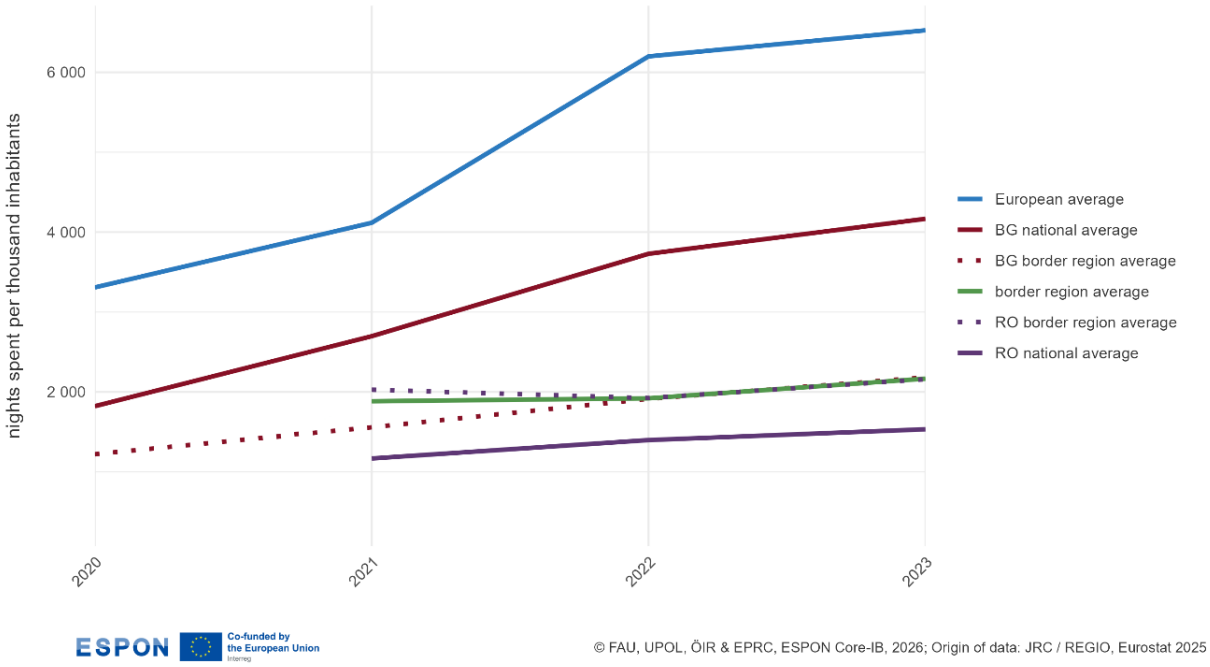



Figure 2.29 shows how nights spent at tourist establishments per thousand inhabitants have developed from 2020 to 2023. It should be noted that this period was significantly impacted by both Covid-19 and the war in Ukraine. Throughout this period, the average for the Romania-Bulgaria programme area is lower than the overall European average, which includes EU member states and the EFTA countries of Iceland, Liechtenstein, Switzerland and Norway. While the border regional average in Romania is somewhat higher than the national average for all years, the border regional average in Bulgaria is lower than the national average. Since 2022, the regional averages for the Bulgarian and Romanian border areas have been quite similar.

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

Tourist patterns have a number of implications for spatial development on either side of the border. Transport infrastructure must consider peak volumes and balancing recreational activities with socio-cultural and environmental heritage can be challenging.

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

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### 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 figures display accessibility to:

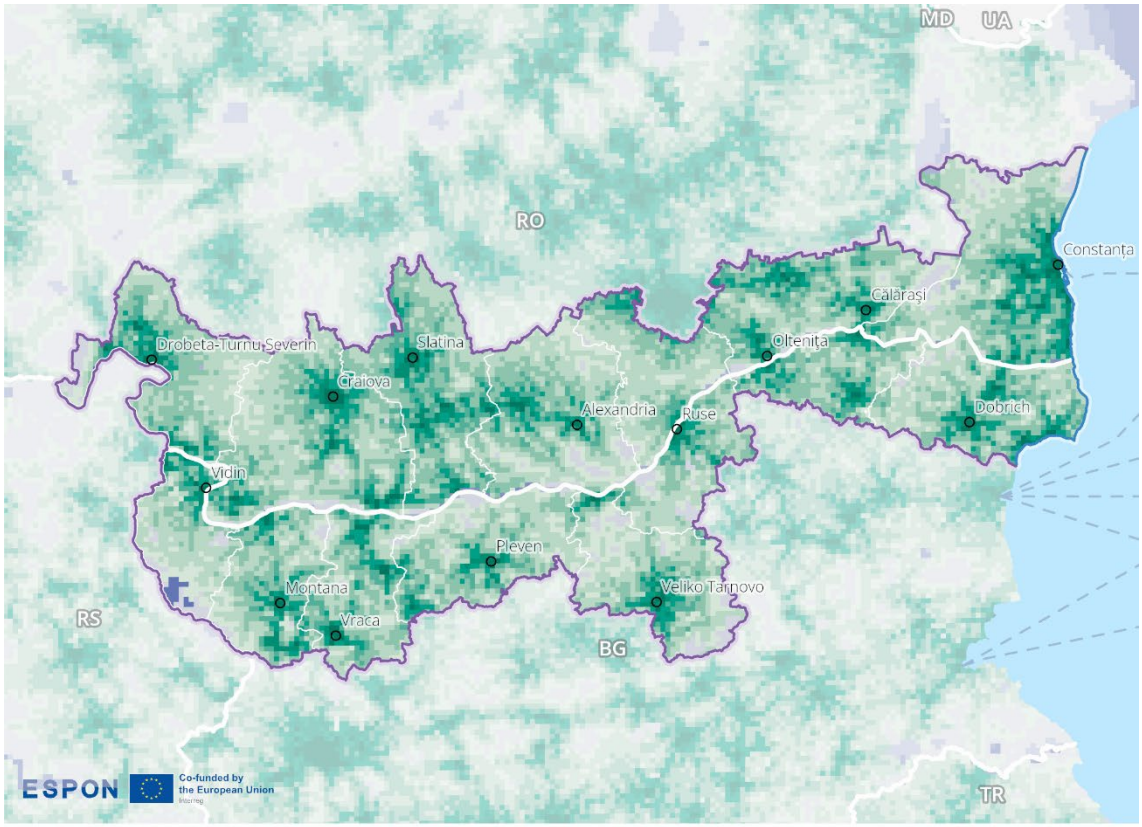
- Secondary schools (Figure 2.30)
- Grocery shops (Figure 2.31)
- Hospitals (Figure 2.32)
- Doctors (Figure 2.33)
- Pharmacies (Figure 2.34)
- Cinemas (Figure 2.35)

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

In the Romania–Bulgaria border region, essential services such as hospitals, doctors, pharmacies, schools, grocery shops, and cinemas are primarily situated in urban and more densely populated areas. This creates a clear urban–rural gradient, with shorter travel times in and near urban centres and longer travel times in rural or remote regions. In some parts of the programme area, travel times exceed one hour. The longest travel times for doctors are observed in the southwestern parts of the region.

Near the national border, travel times to most services are similar, though there are significant differences for pharmacies and doctors, which are more accessible in Romania than in Bulgaria.

## Figure 2.30: Travel time to secondary schools




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

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

inside outside of the Interreg VI-A perimeter

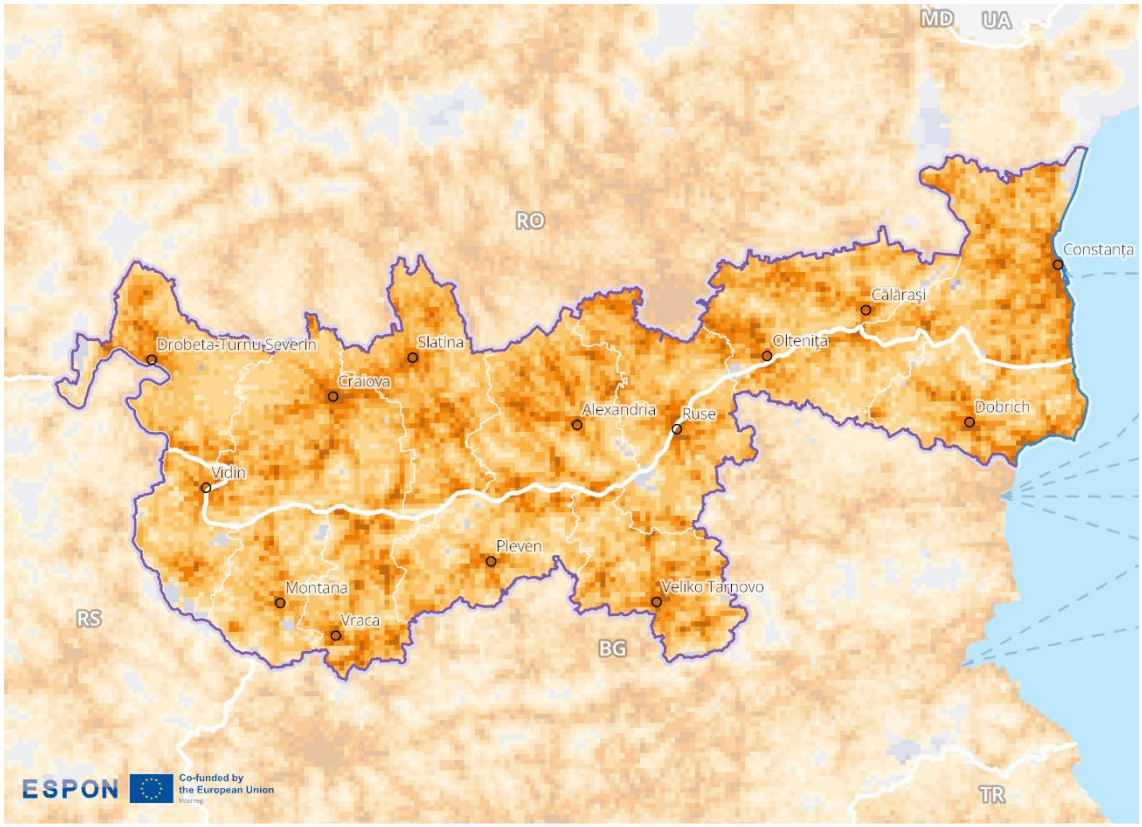
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

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

0 30 60 km

© ESPON, 2026

## Figure 2.31: Travel time to grocery shops




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

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

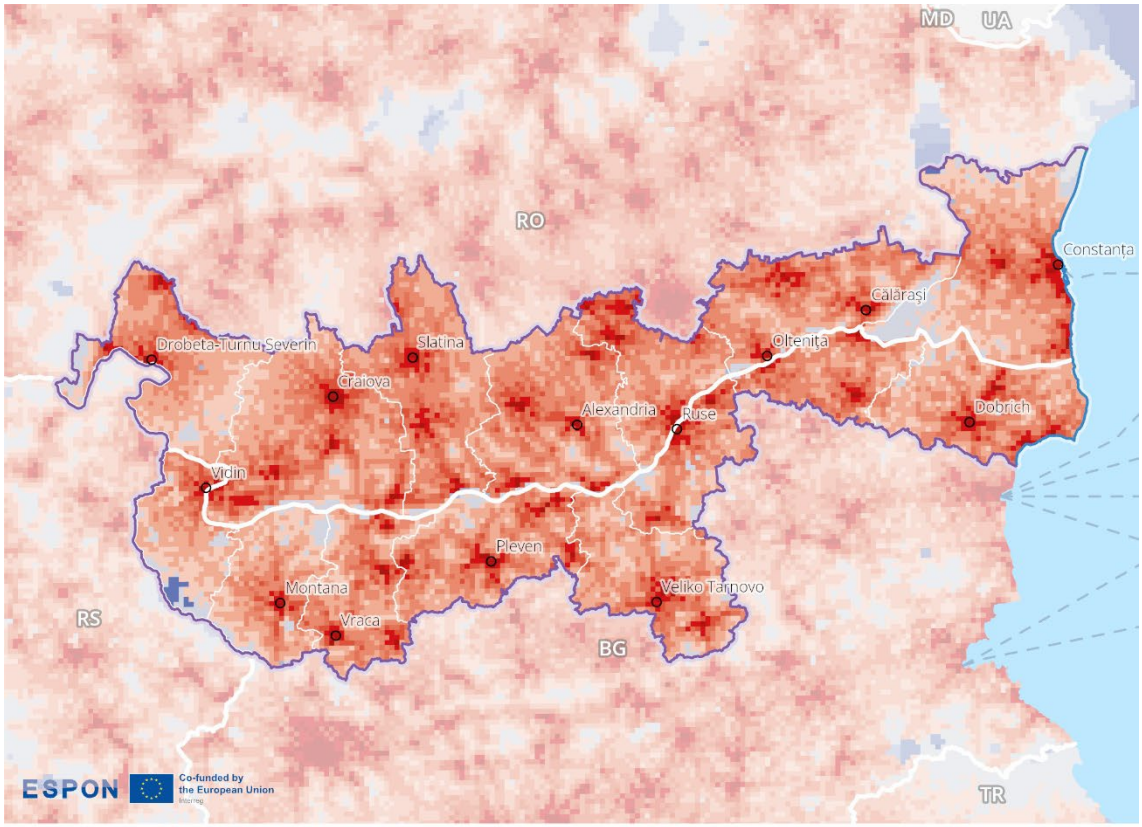
inside outside of the Interreg VI-A perimeter

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

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

0 30 60 km

## Figure 2.32: Travel time to hospitals




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

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

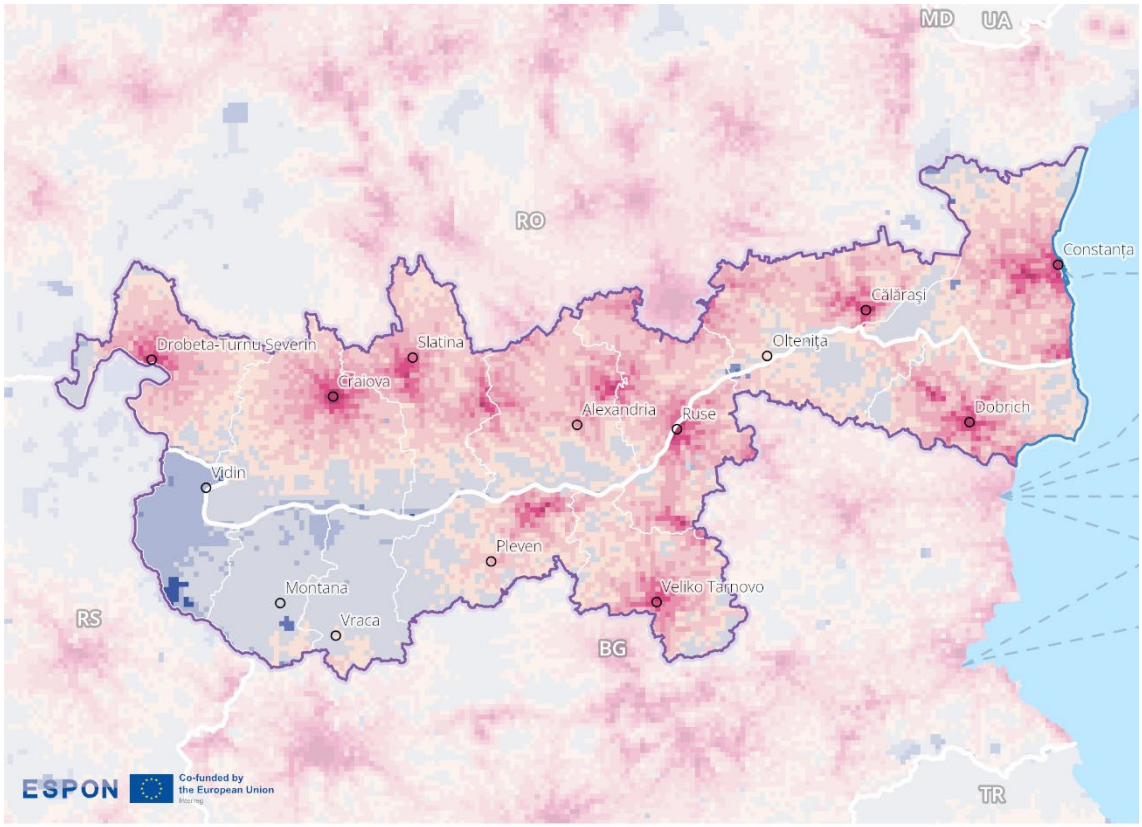
inside outside of the Interreg VI-A perimeter

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

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

0 30 60 km

## Figure 2.33: Travel time to doctors




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

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

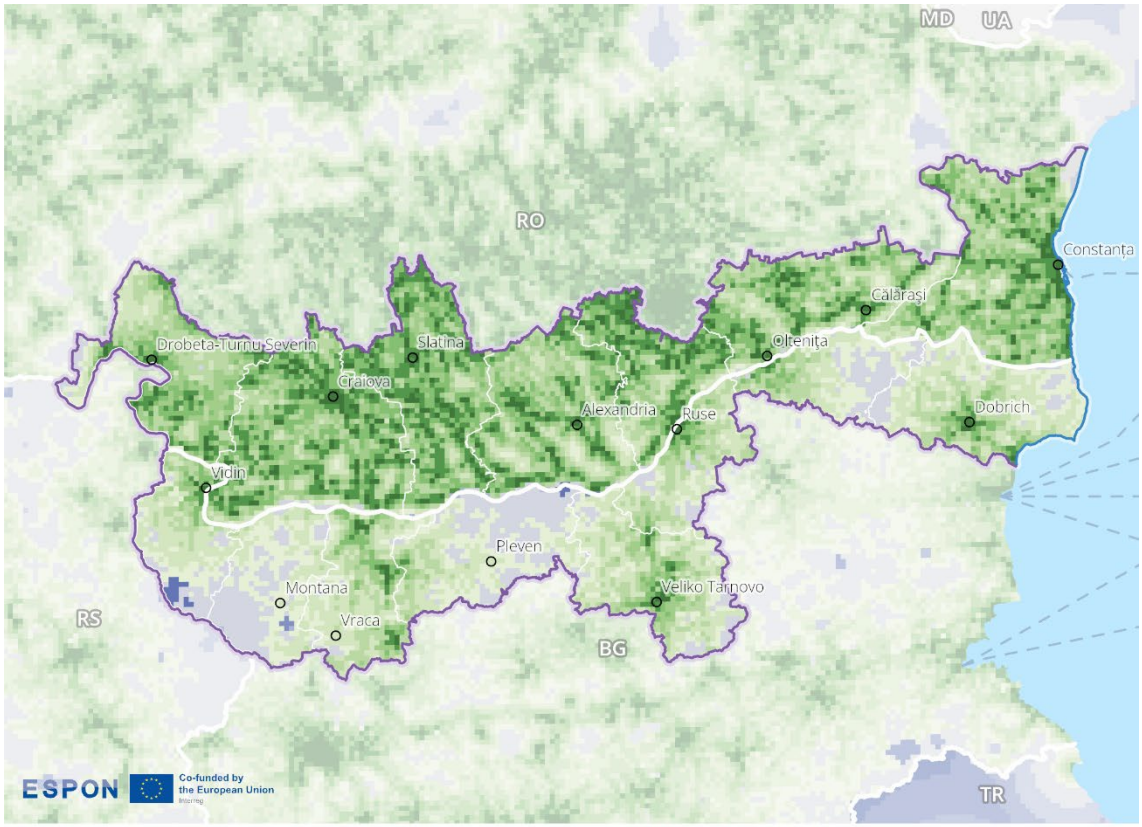
inside outside of the Interreg VI-A perimeter

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

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

0 30 60 km

## Figure 2.34: Travel time to pharmacies




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

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

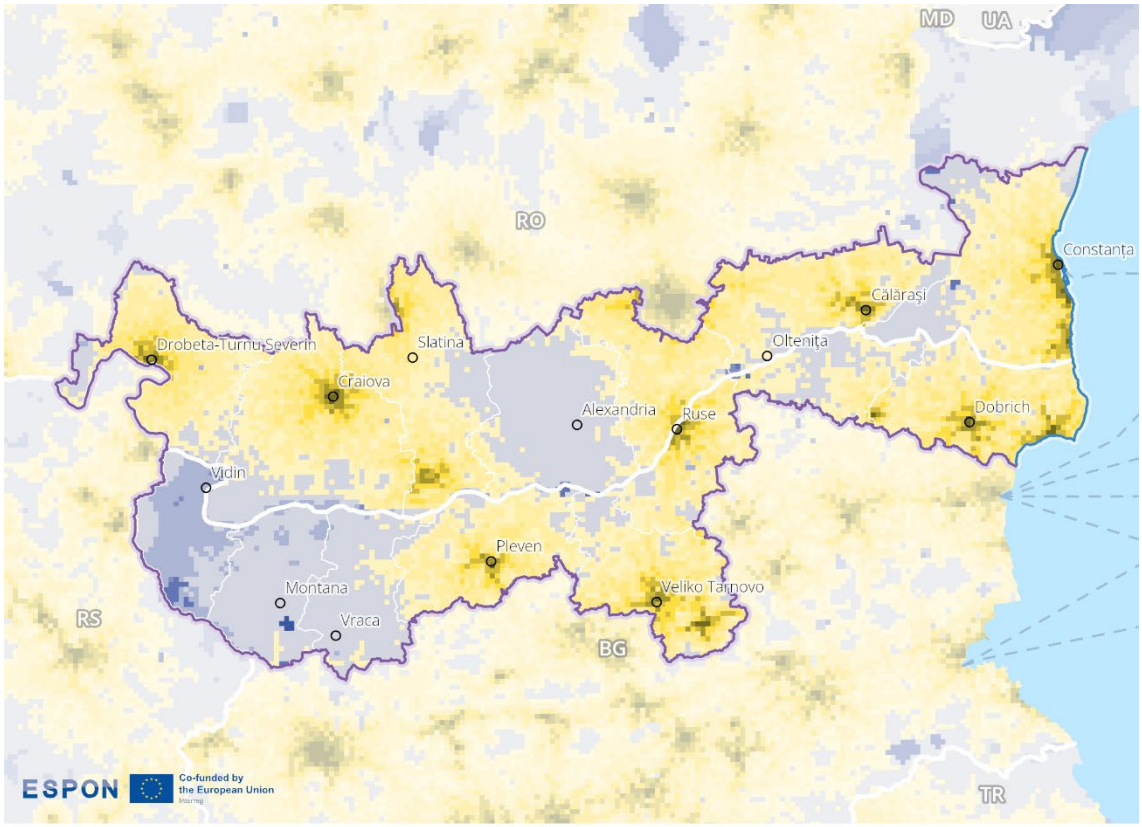
inside outside of the Interreg VI-A perimeter

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

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

0 30 60 km

**Figure 2.35: Travel time to cinemas**




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

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

inside outside of the Interreg VI-A perimeter

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

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

0 30 60 km

© ESPON, 2026

## 2.4.4 Key messages on the socio-economic dimension

This dimension examined patterns of cross-border connectivity through social media, alongside language similarities and differences, to better understand the potential for deeper cultural and social integration across the border. The data indicate that cross-border social-media connectivity is absent in most parts of the border region, with only a few areas on the Bulgarian side (Vidin, Montana, Vratsa, Pleven) showing some level of interaction. This points to generally weak informal ties, although the limited pockets where connectivity is present suggest foundations on which deeper social integration could potentially be built. The findings should also be interpreted in the light of the border region's aging population - older generations tend to be less active on social media – and the limited linguistic similarity across the border, both of which constrain opportunities for informal (online) exchange. Tourism in the border region, as measured by nights spent per capita in tourist accommodation, is

concentrated in the eastern areas on both sides of the border, particularly around Dobrich and Constanţa. This is likely due to the proximity to the Black Sea. In the Bulgarian border area, the average number of nights spent during 2020–2023 remains below the national average, which may be linked to the accessibility constraints highlighted in previous dimensions. In contrast, the Romanian border region records higher values than the national average, indicating stronger tourism appeal within the national context. Overall, however, tourism activity in the border region remains below the EU average, suggesting current limitations to the development of integrated cross-border tourism, which could include a variety of factors, including integrated transport, linguistic and cultural barriers, and access to services.

Data on services of general interest reveal disparities between urban and rural areas on both sides of the border, with urban centres and more densely populated areas experiencing shorter travel times. Travel times, particularly for accessing doctors, pharmacies and cinemas, are generally longer on the Bulgarian side and exceed one hour in the western regions including Vidin, Montana, and Vratsa. This highlights potential infrastructure- and service-related challenges. Similar issues, albeit with a more limited spatial scope, are evident in areas in the centre of the programme area in Romania.

## 2.5 Border security and safety

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

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

**Indicator description**

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

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

Please refer to the technical annex for more information.

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

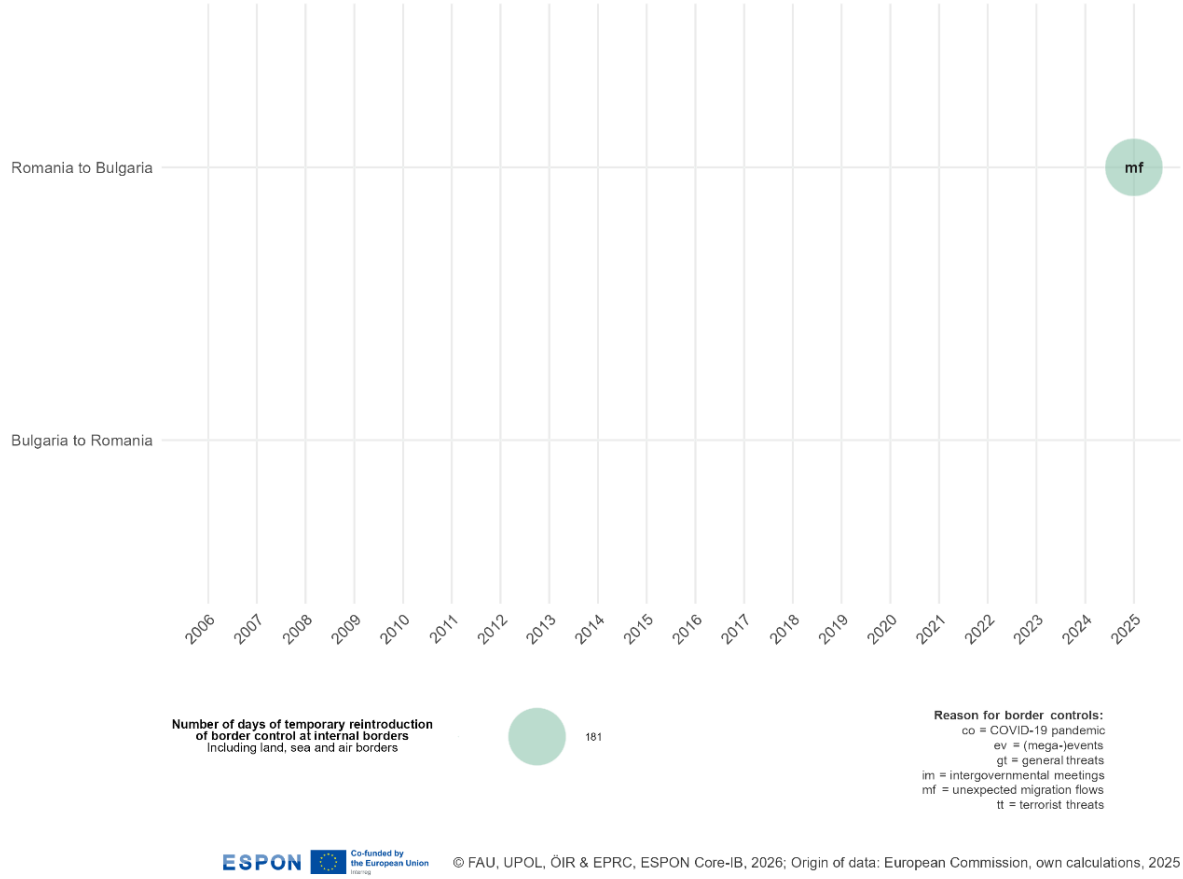
- co – COVID-19 pandemic
- ev – (Mega-)events
- gt – General threats
- im – Intergovernmental meetings
- mf – Unexpected migration flows
- tt – Terrorist threats

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

As Romania and Bulgaria joined the Schengen Area in 2024 for air borders and in 2025 for land borders, the application of above-described Code recently came into effect.

Figure 2.36 shows that in 2025 Bulgaria has implemented temporary controls in 2025 due to unexpected migration flows, indicating an unequal impact on cross-border movement in one direction. Such controls tend to disrupt the smooth functioning of cross-border flows, particularly for commuters and logistics, as they cause delays and unpredictability.

**Figure 2.36: Temporary reintroduction of border controls**




### 2.5.2 Key messages on the border security dimension

Bulgaria and Romania joined the Schengen Area in 2025, which makes the indicator on the temporary reintroduction of border controls less relevant at this stage. However, migration issues have led to one temporary restriction, imposed unilaterally by Bulgaria.

## 2.6 Governance dimension

Territorial cooperation in the Romania – Bulgaria cross-border programme area is supported by several instruments and frameworks, including institutional structures established under Interreg. Over

time, institutional cooperation in the region has developed, with the being fully or partially covered by cooperation structures such as the Danubius and Black Sea Euroregions, as well as Inter-Governmental Commissions. The latter have facilitated the formation of working groups, though their level of activity has varied. Additionally, 2 bilateral agreements have been established for disaster risk management, addressing the risk of animal and plant diseases and establishing a joint early warning and monitoring system for geological hazards along the Bulgarian and Romanian Black Sea coasts. A recent development that may further support cooperation is the full accession of both Bulgaria and Romania to the Schengen Area on 1 January 2025. Strategically, a large part of the programme area is also covered by the EU's Danube Macro-Regional Strategy.

### 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

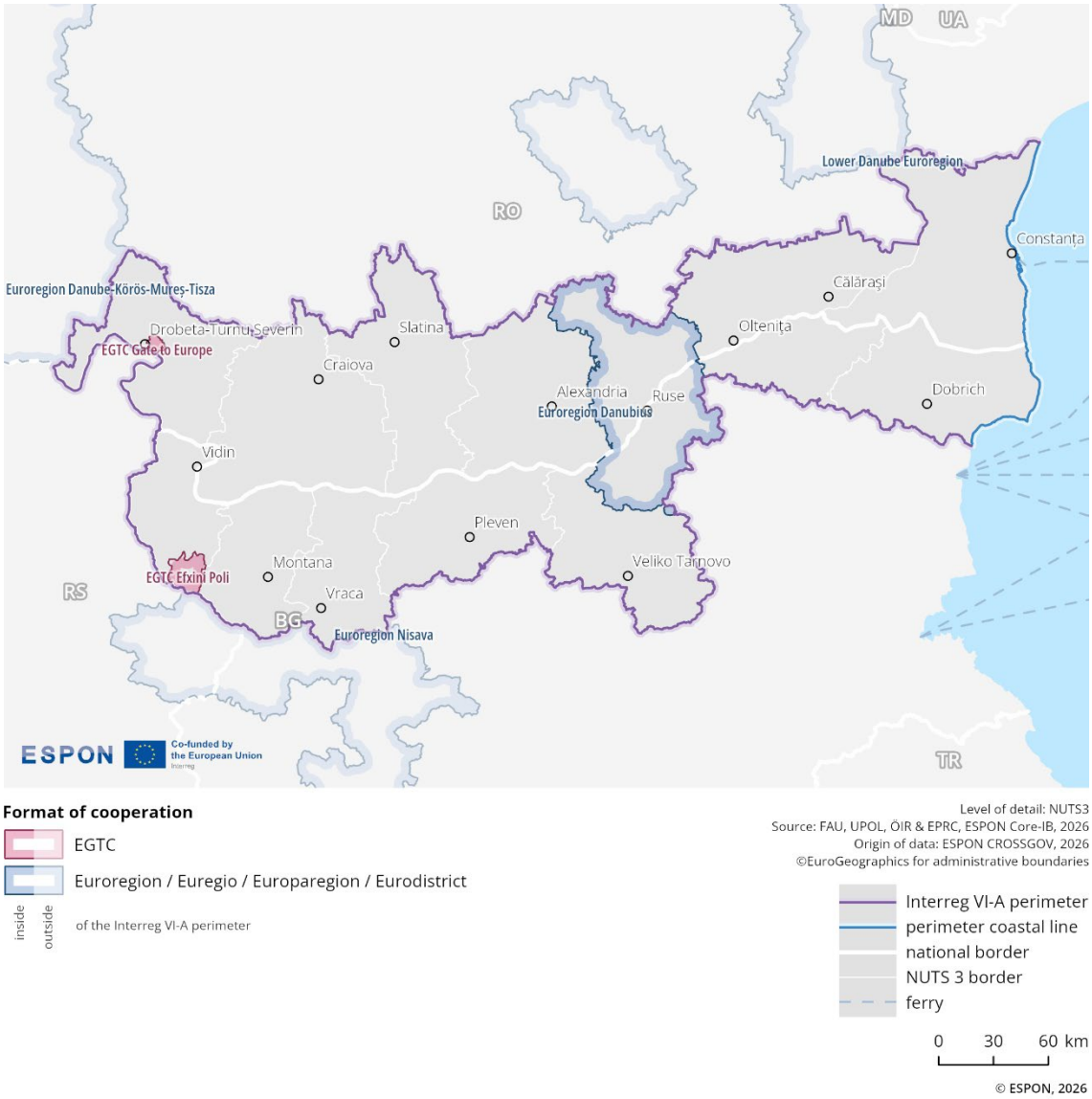
Please refer to the technical annex for more information.

Figure 2.37 shows the different types of institutionalised cooperation structures. These structures either function as cross-border entities or bring together stakeholders from the cross-border region around shared topics. The governance structures covered in the data gathering 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 figure indicate different types of institutionalisations: EGTCs are shown in red, Eurocities in yellow, Euroregions/Euregios/Europaregions/Eurodistricts in blue, and other formats in grey.

The map shows the existence of one Euroregion – Danubius - extending across the Romanian-Bulgarian border in the west. Spatially, it is concentrated around the Ruse-Bucharest corridor that was mentioned under different dimensions of this cross-border profile, while thematically it aims to encourage cross-border cooperation in the fields of infrastructure, environment, economic and social spheres. Other institutionalised cooperation formats, visualised on the map, include EGTCs and Euroregions that do not focus on both sides of the border region, and therefore have more limited relevance.

## 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.

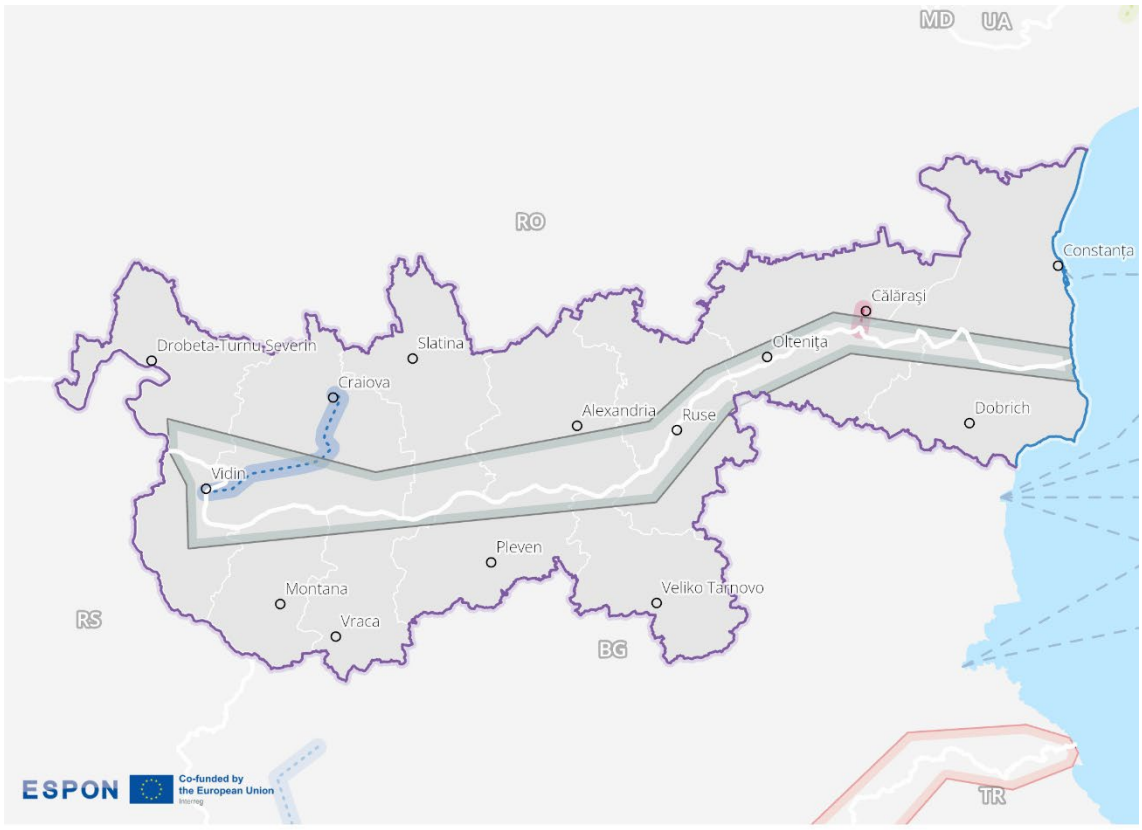
- **Source**: ESPON cross-border public services (CPS) 2.0 database
- **Temporal coverage**: 2022
- **Unit**: n/a

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 Romania and Bulgaria are sparse and spatially limited. A large corridor of "other" services is located at the border area surrounding the entire Danube. The only clearly identifiable activity is a single transport link connecting Craiova to Vidin. There is also a small health care area located on the eastern bank of the Danube in Romania.

## 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 (areal) | inside / outside (linear) | of the Interreg VI-A perimeter

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

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

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

0 30 60 km

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

**Indicator description**

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

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

Please refer to the technical annex for more information.

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

As part of the ESPON CROSSGOV project, all b-solutions initiatives were analysed to deepen the understanding of the thematic focus of the perceived cross-border obstacles across different border regions and the suggested solution, in particular from the European perspective.

One b-solutions pilot action addressing institutional cooperation with a focus on education and youth mobility was identified in the Bulgaria–Romania border area. This pilot was initiated by public/public-equivalent bodies.

The key challenges in this border area revolve around institutional cooperation, particularly with regard to youth mobility, recognition of skills, and harmonisation of education systems. Issues include the compatibility of degree recognition, joint interpretation of higher education legislation, and ensuring equal access to advanced training opportunities across borders.

The proposed solution is hybrid in nature, combining operational, legal, and administrative elements. In terms of operations, the pilot introduced an additional and compensatory training activities for students with a 3-year bachelor's degree during the master's course, while also ensuring a joint interpretation of the Bulgarian Higher Education Act (Art. 42). Legally, an amendment was proposed to broaden the range of possibilities available to students beyond their original professional fields. Administratively, a broader interpretation of Article 42 was recommended as a provision ensuring that all master's graduates meet a standard of at least 5 years of study, rather than as a barrier to admission to master's programmes. Furthermore, the pilot also incorporated the use of the European Cross-Border Mechanism (ECBM) to facilitate smoother cross-border educational cooperation.

#### 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

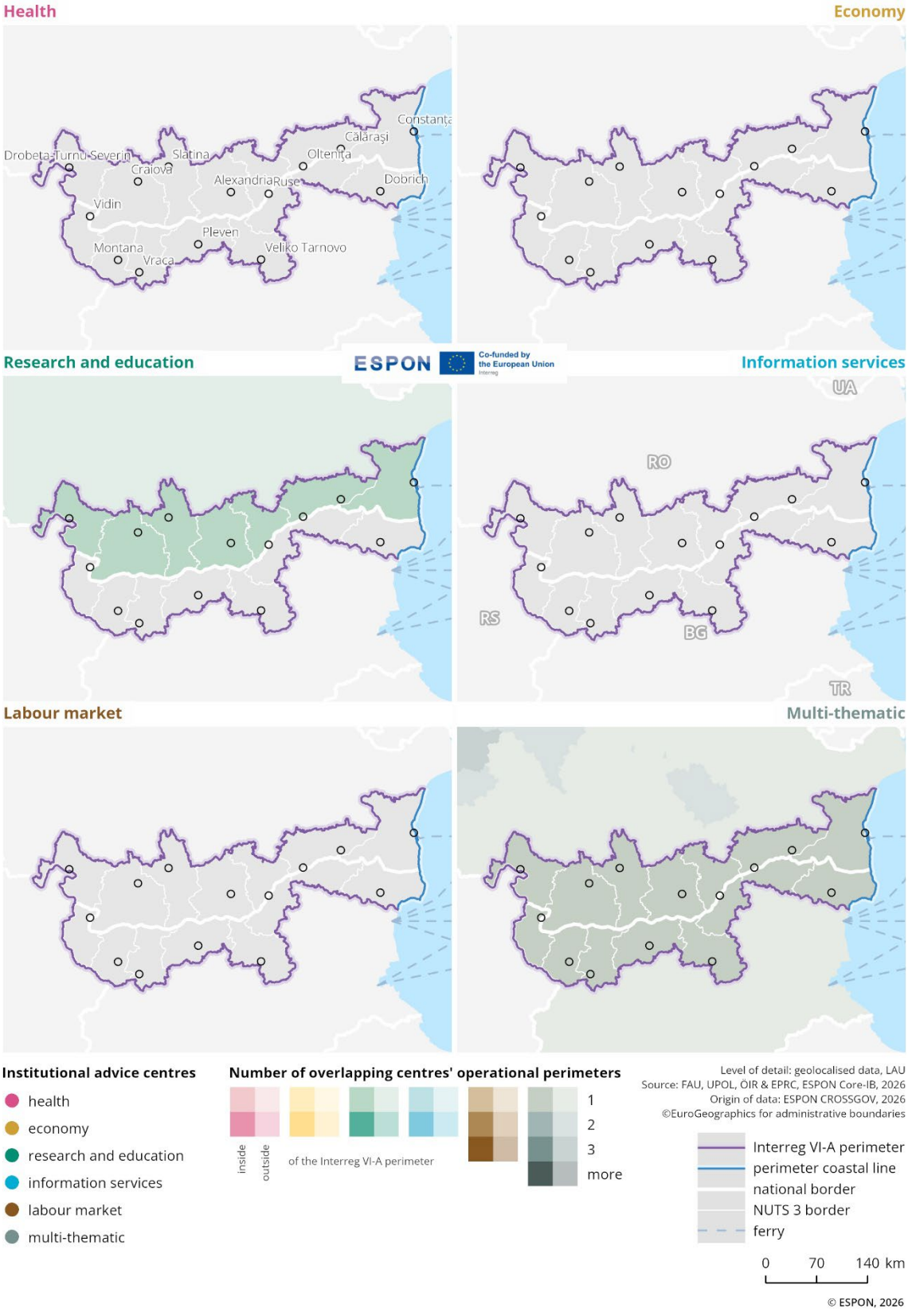
Please refer to the technical annex for more information.

Figure 2.39 shows the locations and types of institutionalised advice centres in the Romania-Bulgaria cross-border region, as well as their operational domains. These centres, which are located throughout Europe, provide support in various fields, including health, the 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 figure. The stronger the influence of that a specific domain, the more intense the colour.

There are no institutionalised advice centres in the region shown in the figure, nor outside it.

Multi-thematic operational domains are present in both countries within the cross-border region, but they are not particularly pronounced. Additionally, research and education operational domains are present in the Romanian part of the region.

## 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 |
|---|---|
| **Economy** | ▪ Modernisation of SME & strengthening of innovation eco-systems<br>▪ Potential for economic diversification through tourism, natural and cultural heritage<br>▪ Legal and administrative barriers hamper economic cooperation together with low physical connectivity |
| **Climate and Environment** | ▪ Shared environmental challenges provide a strong basis for the development of joint environmental monitoring and risk management systems<br>▪ Integrated investments targeting both natural and human-induced risks<br>▪ Climate change adaptation initiatives<br>▪ Biodiversity and nature protection<br>▪ Elimination of all types of pollution<br>▪ Awareness-raising and education initiatives covering people, enterprises and administrations |
| **Education and human capital** | ▪ Labour shortages and unemployment, language barriers, low educational attainment, especially in rural areas/among vulnerable groups<br>▪ Upskilling, reskilling, and digital skills<br>▪ Potential to enhance border interaction via labour mobility and joint education/educational networks |
| **Transport** | ▪ High potential for intermodal transportation system and sustainable mobility (e.g., Eurovelo Route) – connected to tourism,<br>▪ Development of Danube inland waterways<br>▪ Rail infrastructure modernisation<br>▪ Port and hinterland accessibility<br>▪ Border connectivity |

| Topic | Key development opportunities and challenges identified for Interreg 2021-27 |
|---|---|
| **Digitalization** | ▪ Digitalization of enterprises<br>▪ Broadband coverage, particularly in rural and low population density areas. |
| **Coordination** | ▪ Potential to strengthen functional approaches between twin-cities |

**Total Budget:** EUR 207,457,162.01

**Figure 2.40: Split of Interreg allocation**

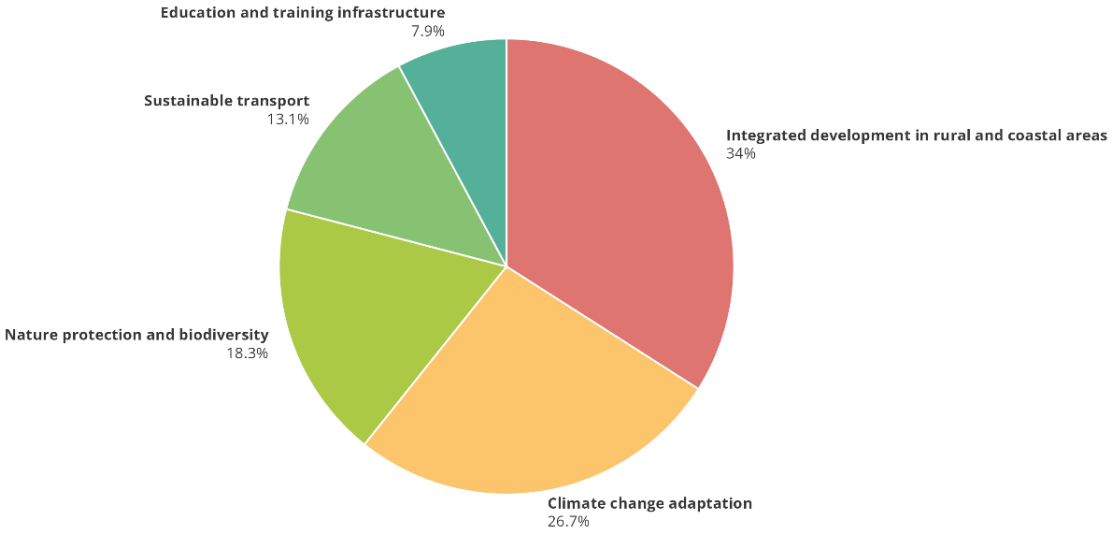





Table 3 shows the number of Interreg 2021-2027 cross-border and transnational programmes which share at least one NUTS3 region with the border area. Each programme aims to have its own distinct rationale, value and territorial focus. However, for the purposes of, for example, planning and capitalisation 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.[17] The 4

[17] 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.

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 |

**Key aspects**

- Interreg cooperation in 2021–2027 places a distinctive focus on supporting integrated economic development, particularly in the areas of tourism, enterprise support, and cycling infrastructure. Another key area with significant financial allocation is climate change, with investments targeting green infrastructure, upgraded systems for disaster monitoring, preparedness, warning and response, as well as ecosystem-based measures for climate change adaptation.
- Potential for synergies across programmes, particularly through the Interreg B programmes:
  - 11 of the programme area's NUTS3 regions are also part of the 2021-2027 Interreg VI-B Danube.
  - 8 of the programme area's NUTS3 regions are also part of the 2021-2027 Interreg VI-B EURO Mediterranean (EURO MED).

### 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[18]. 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

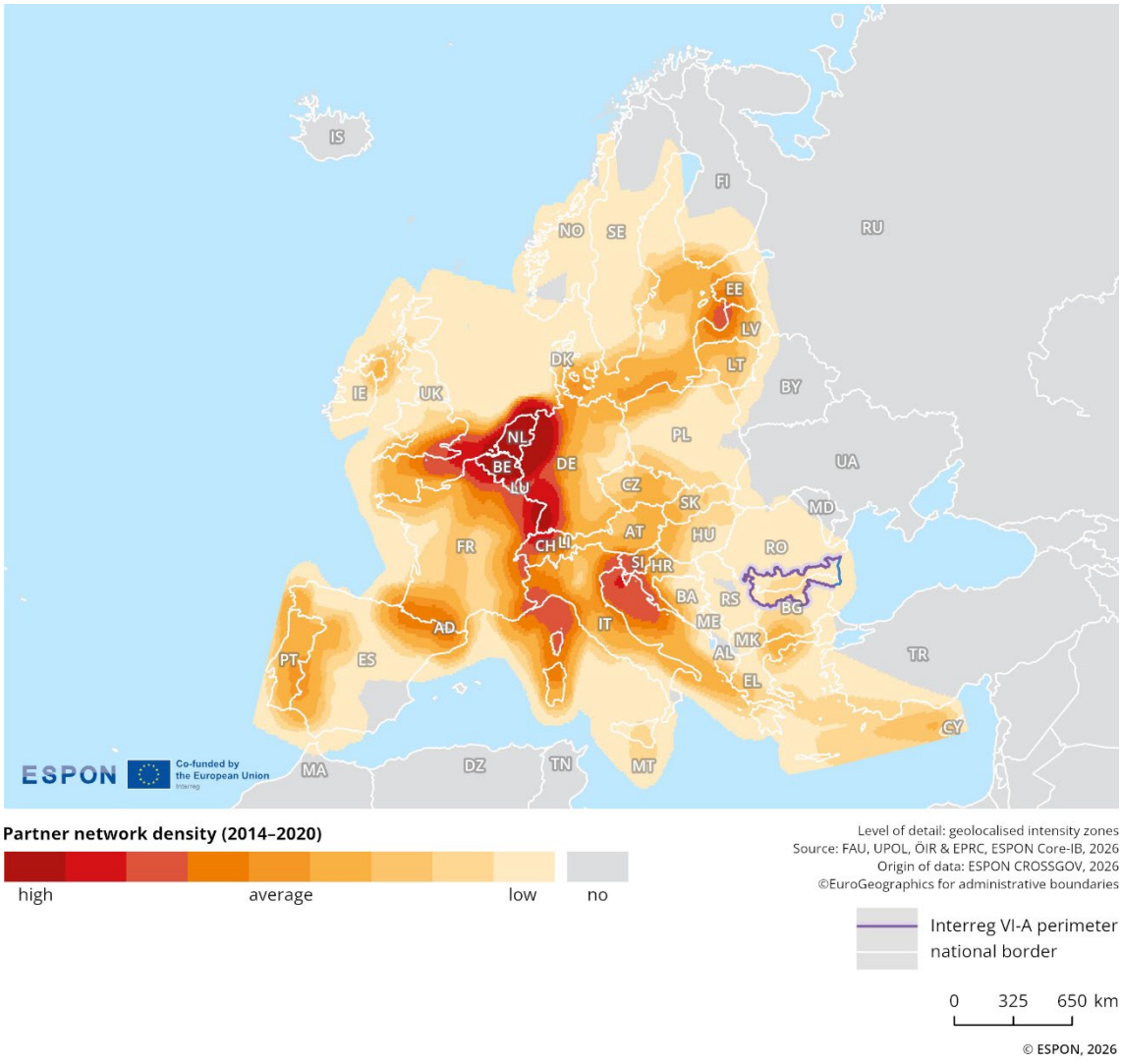
Please refer to the technical annex for more information.

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

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. The indicator shows a higher density of Interreg V A partner-to-partner connections in the central part of the programme area, while other parts of the territory show lower network density and fewer spatially overlapping project-based interlinkages. From a European perspective, the partner network density in this border area is lower than the European average. Based on the keep.eu database and excluding duplicates, the number of project partners decreased from 373 in Interreg IV-A (2007–2013) to 284 in Interreg V-A (2014–2020), a decrease of about 24%. 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.

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



### 2.6.3 Key messages on the governance dimension

Even before Bulgaria and Romania joined the EU, governance structures had facilitated contacts, exchanges and cooperation around cross-border interests, reflecting a long-standing tradition of cooperation. Several agreements and frameworks, such as the Intergovernmental Commissions and the Association Danubious Euroregion, have supported joint initiatives. However, these structures' level of activity and consistency varies, indicating scope to further strengthen institutionalised cooperation. There are agreements in place for disaster risk management in 2 areas: the prevention of animal and plant diseases, and a joint early warning and monitoring system for geological hazards.

This border region has an untapped potential in the form of a limited availability of services specialising in cross-border challenges. Apart from a broad range of "other" services along the Danube, limited cross-border transportation service has been identified, as well as small healthcare provision area around Silistra–Călărași. This gap likely contributes to the absence of institutionalised advice centres for cross-border issues, including health, the economy, research and education, information services, and the labour market. This restricts citizens' and institutions' access to guidance and support when engaging in cross-border activities. Obstacles identified through the b-solutions initiative, particularly in education and youth mobility, further highlight the need to strengthen governance arrangements that can provide operational, administrative, and legal solutions.

During the 2021-27 programming period, Interreg activities in the region cover a relatively broad range of themes, including the integrated development of rural and coastal areas, climate change adaptation, coordinated disaster risk prevention and resilience, improving transport accessibility and education and training infrastructure. Many NUTS3 regions in the Romania-Bulgaria border area are also part of 2 Interreg B programmes (Interreg VI-B Danube and Interreg VI-B EURO Mediterranean), which suggests high potential for synergies.

The observed higher density of partner-to-partner connections in the central part of the programme area suggests a stronger concentration of project-based interlinkages in this part of the territory. This may reflect either broad mobilisation of multiple actors, indicating a more inclusive cooperation ecosystem, or repeated participation by a smaller number of highly active organisations. Conversely, areas with lower network density (in the east and west) may reflect fewer participating organisations, geographically dispersed partnerships, or more selective engagement in projects.

# 3 Summary and key observations

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

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

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

## Table 4: Evidence-based conclusions

| Territorial dimension | |
|---|---|
| **Key analytical findings** | • The territorial character of the border region is shaped by the Danube River, which runs along the most of the border length. The Danube Plain covers vast areas on both sides and extends as far as the foothills of the Carpathian and Balkan Mountains;<br>• These topographic and hydrographic conditions influence the spatial structure of the region. The Danube is a focal point for urban development, with paired settlements established on the Romanian-Bulgarian border (e.g., Vidin–Calafat, Ruse–Giurgiu). Key urban centres are also located further way from the Danube, such as Constanta, Craiova, Pleven, Veliko Turnovo. In total, there are 13 urban centres with a population of over 30,000, where essential services are concentrated;<br>• The natural character of much of the river border increases the importance of bridge and ferry connections for mobility, trade, joint services and tourism;<br>• The region is characterised by low population density, except in urban areas;<br>• Between 2014–2024, the population declined by -11.1%, which was significantly sharper than in the EU and all border regions. The losses were concentrated among the youth (-12.0%) and working-age (-15.7%), while the elderly population grew (+4.9%). This may pose challenges for labour market vitality, youth retention, and elderly care provision;<br>• Despite an overall population decline, settlement expansion is evident around the urban centres, particularly along the Ruse–Bucharest corridor, Craiova-Vidin and around Slatina and Cernavodă in Romania. This may indicate localised growth and population concentration in selected centres;<br>• There are significant spatial disparities in accessibility to border crossings across the region. Only a few well-connected urban centres and their surrounding areas benefit from short travel times. Large portions of the territory appear less connected and this may be due to structural and infrastructural weaknesses;<br>• Cross-border rail accessibility through Vidin–Calafat on the west and Ruse–Giurgiu on the east is slower than travel by car. Accessibility by car to border crossings is uneven, which may reflect the physical structure of the border along the Danube as well as variations in road infrastructure. Overall, this highlights the potential for investment in rail connections at these crossings and water-based connectivity;<br>• Given that most of the border follows the Danube, water transport is also an important connectivity resource with potential to complement rail and road links. The Danube River could represent a key resource to enhance connectivity between the 2 sides of the border, supporting its role as a transport and economic corridor;<br>• Cross-border mobility of people remains low overall, but is highest where transport infrastructure connects major economic centres, particularly along the Ruse– Bucharest corridor, which benefits from multiple transport assets, including the road connection and Bucharest's international airport. This concentration of infrastructure underlines the interrelation between connectivity and territorial development, while also suggesting the need for more balanced provision along the Danube. |

| Territorial dimension | |
|---|---|
| **Policy options** | **Territory related aspects**<br>• A focus could be on the role of the Danube as a functional connector rather than a barrier, supporting deeper territorial integration and interaction across the border;<br>• Beneficial cross-border flows may be further promoted through coordinated planning of transport accessibility, including improved connections to wider networks beyond major urban centres;<br>• A coordinated mix of infrastructure, service and mobility solutions could be developed to reduce long travel times along Danube River sections where crossings are currently limited or absent;<br>• Cooperation projects could address urban–rural linkages, contributing to the reduction of regional inequalities and addressing the accessibility challenges faced by remote and rural areas;<br>• Knowledge exchange and mutual learning can build on experiences from areas with strong cross-border mobility and connectivity, such as the Ruse–Bucharest area, with a view to identifying transferable approaches for other parts of the cross-border territory.<br><br>**Cross-cutting aspect**<br>• Coordinated cross-border cooperation can support responses to the population decline and ageing, addressing gaps in essential service provision while helping to sustain labour markets and quality of life. |

| Economic dimension | |
|---|---|
| **Key analytical findings** | • Agriculture remains a dominant sector in the border economy, alongside trade and mining. Comparable industrial structures on both sides of the border create a basis for business growth, entrepreneurship, and skills development through cross-border collaboration;<br>• Employment rates are high on both sides of the border, while GDP per capita levels are comparable but remain well below the EU average, indicating shared development challenges as well as potential for economic convergence;<br>• The border region's economy is strongly shaped by labour-intensive sectors, including agriculture, industry and core services, which together account for more than half of total GVA. This concentration highlights the importance of fostering innovation, labour market resilience, and sustainability within these key sectors;<br>• Based on the region's territorial characteristics and sectoral profile, there are growing opportunities to leverage shared resources from the Danube and the Black Sea for sustainable development. Examples include eco-tourism, river and maritime transport, and sustainable fisheries;<br>• Several NUTS3 regions at the eastern and western ends of the border exhibit higher intensities of outgoing labour mobility, which may reflect both internal labour market dynamics and potential cross-border movements. As of March 2025, no framework for cross-border teleworking was in place, presenting a regulatory constraint to such opportunities;<br>• An urban–rural disparity in internet speed exists on both sides of the border. This pattern suggests uneven digital connectivity performance and indicates the potential need for targeted measures in rural and underserved areas. At the same time, some urban centres, particularly in Bulgaria, also exhibit comparatively weak connectivity performance;<br>• Cross-border differences in wages and housing costs are relatively modest, and are therefore unlikely, on their own, to generate strong incentives for cross-border labour mobility or major disparities in local economic dynamics. There is no clear evidence that one side of the border provides stronger employment opportunities or wage advantages that would draw commuters from the other side. |

| Economic dimension | |
|---|---|
| **Policy options** | **Competitiveness related aspects**<br>• Cooperation projects could specifically contribute to managing demographic pressures and long-term challenges related to access to skilled labour, particularly in peripheral and rural areas;<br>• A focus can be on strengthening international competitiveness in key sectors, while also enhancing the resilience of local economies;<br>• Enhancing access to training and upskilling opportunities, with particular attention to aligning provision with labour market needs in rural and border-adjacent areas.<br><br>**Cross-cutting aspects**<br>• Mobility across the Danube can be addressed as a central economic and social development potential through integrated cross-border planning solutions supported by territorial cooperation;<br>• Place-specific digital interventions, supported by improved monitoring and coordination across the border region, could complement transport-related measures, helping to mitigate the accessibility constraints and improve access to labour markets. |

| Green dimension | |
|---|---|
| **Key analytical findings** | • The border region shows ecological continuity through relatively small but contiguous protected areas located along the Danube. More isolated conservation zones are found further inland on both sides of the border;<br>• The programme area is renowned for its diverse fauna and flora, and its rich biodiversity and diverse environments. These diverse environments mean there is a variety of demands relating to environmental protection and management, covering maritime, river and inland environments;<br>• Air pollution is a shared cross-border challenge, but its intensity varies across the region. Higher PM2.5 concentrations in the central and eastern areas may reflect territorially specific emission sources, such as industrial activity, transport intensity, or residential heating. An extra-high-voltage power line crosses the border at 2 locations – one in the east and one in the west – and is connected to the nuclear power plants in each country;<br>• Energy installations in the border region largely use similar raw materials, except for hydroelectric power stations, which are present only in Romania;<br>• Exposure to natural hazards is widely shared. The risk of flooding is directly linked to the Danube River, which largely forms the natural national border. The risk of drought is shared and extends to a large part of the territory on both sides;<br>• Resource productivity and waste generation remain consistent across the border and remain below the EU average, indicating potential for joint or coordinated action on this challenge. This could be achieved by boosting the circular economy, and cooperating on waste management and recycling, for example. |

| Green dimension | |
|---|---|
| **Policy options** | **Environmental aspects**<br>• A focus could be on integrated approaches to environmental and biodiversity protection, reflecting the diversity of the spatial contexts and ecosystems across the area;<br>• Cooperation on integrated air pollution monitoring and management may be further developed, with particular attention to the combined impact of residential heating with solid fuels, agricultural emissions, industrial activity, and transport intensity along the Danube corridor;<br>• Cross-border waste management and resource productivity challenges can be reframed as circular economy opportunities through cross-border cooperation, including for small and medium-sized enterprises (e.g., reuse, repair, remanufacturing, sharing of secondary raw materials and testing of digital tools);<br>• Cooperation projects could address cross-border renewable energy topics, including exchange between neighbouring cities along the border, by identifying effective governance, infrastructure, regulatory and learning mechanisms, even where local energy production remains limited;<br>• Cross-border preparedness, mitigation and response to common climate-related environmental threats, such as flooding and drought, could be enhanced through coordinated approaches, including green and nature-based infrastructure, ecological corridors and shared monitoring systems.<br><br>**Cross-cutting aspect**<br>• Sustainable and green tourism solutions can be promoted through cross-border cooperation, building on common natural and cultural assets while managing pressures on sensitive areas. |

| Socio-economic dimension | |
|---|---|
| **Key analytical findings** | • The limited presence of cross-border online connectivity and linguistic proximity across the border region points to weaknesses in informal socio-cultural ties. Because such ties are important foundations for broader social and functional integration, the findings highlight the importance to further support everyday cross-border familiarity, interpersonal contact and cultural exchange;<br>• Tourism activity in the border region is broadly comparable on both sides but overall performance remains below European levels. The region has strong natural and cultural potential, with shared assets such as the Danube and the Black Sea, highlighting the potential for cross-border strategies that enhance accessibility, address language barriers, and promote joint tourism development;<br>• Services of general interest are distributed relatively evenly across the region. However, travel times, particularly to doctors' surgeries, pharmacies and cinemas, are longer on the Bulgarian side and exceed one hour in the western NUTS3 regions. This indicates the need to improve infrastructure quality and service provision. On the Romanian side, the largest 2 cities in the area, Constanta and Craiova, which are located further away from the Danube, concentrate a big part of the population as well as health and educational institutions;<br>• Longer travel times to basic health services highlight a potential for joint cross-border initiatives in health and mobility targeted at under-served communities. |
| **Policy options** | **Social aspects**<br>• Social connectivity and cultural exchange could be strengthened by supporting concrete actions and mechanisms that build on the existing interpersonal ties within the functional cross-border area;<br>• Coordinated cross-border tourism strategies to leverage common natural and cultural assets, improving performance, enhancing accessibility, addressing language barriers and supporting joint tourism development;<br>• The improvement of access to core services, particularly in more remote and rural areas, with a focus on digitalisation and enhanced physical accessibility. |

| Border security and safety dimension | |
|---|---|
| **Key analytical findings** | • Temporary border controls are a new feature in this border region, due to recent accession to the Schengen in 2025;<br>• Migration concerns on the Bulgarian side led to a one-time temporary reintroduction of border controls. |

| Border security and safety dimension | |
|---|---|
| **Policy options** | **Cross-cutting aspects**<br>• The lessons learned from the introduction of temporary border controls in other border regions can inform future crisis-management arrangements in this border region;<br>• The impacts of border controls on cross-border commuting and logistics can be mitigated through coordinated and institutionalised cross-border policy dialogue;<br>• The mitigation of border control effects can form part of cross-border cooperation projects in various sectors. Economic networks, transport infrastructure initiatives and tourism-related actions can incorporate considerations related to the impacts of border controls. |

| Governance dimension | |
|---|---|
| **Key analytical findings** | • Governance structures, including twin cities, one Euroregion, and several Intergovernmental Commissions, have played a key role in fostering contact, exchange, and joint initiatives. The value they add highlights the need to sustain their work and ensure a more balanced spatial distribution of such arrangements;<br>• More targeted arrangements are in place via 2 thematic disaster risk agreements;<br>• Overall, there is a clear shortage of services addressing cross-border challenges. This, together with the absence of institutionalised cross-border advice centres, represents an untapped potential for strengthening cooperation;<br>• Persistent legal and administrative barriers restrict cooperation in education, skills and youth mobility, among others, at a time when the border region faces service challenges and a sharp decline in young people. Removing these barriers could open the way for more flexible cross-border education and skills initiatives and support functional integration;<br>• The spatial distribution of project-based cooperation links suggests that participation in Interreg networks may be more concentrated in certain parts of the programme area. Areas with lower partner network density reflect fewer or less spatially overlapping project-based interlinkages among actors located in the territory. This may result from a smaller number of participating organisations, more selective engagement (including participation in fewer but larger projects), geographically dispersed partnerships, or single-entity projects. It may signal areas where further analysis could inform considerations regarding capacity-building support or programme instruments aimed at encouraging broader participation across the programme area. |

| Governance dimension | |
|---|---|
| **Policy options** | **Cross-cutting aspects**<br>• The reduction of legal and administrative barriers to cross-border cooperation, particularly in relation to service provision;<br>• The exploration of opportunities for more localised territorial cooperation along the Danube, including instruments such as EGTCs, and their potential use;<br>• A focus could be on capacity building for cross-border governance, contributing to effective, adaptive and resilient cooperation structures, and supporting broader participation of organisations across the programme area. |

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