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EUROPEAN RESEARCH PROJECT //

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

Slovenia-Austria

Border profile

March 2026

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Table of contents

List of figures

List of tables

1 Introduction

1.1 Context and objective of the border profile

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

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

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

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

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

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

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

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

1.2 Presentation of the border area

The Interreg VI-A border region 'Slovenia–Austria' covers the area between southern Austria and northern Slovenia (see Figure 1.1). In Slovenia, the programme area includes most of the regions of Western Slovenia and Eastern Slovenia, comprising a total of 8 NUTS3 regions. In Austria, it covers parts of the federal states of Styria, Carinthia, and Burgenland, located in southern and eastern Austria, encompassing a total of 8 NUTS3 regions.

Figure 1.1: Overview map

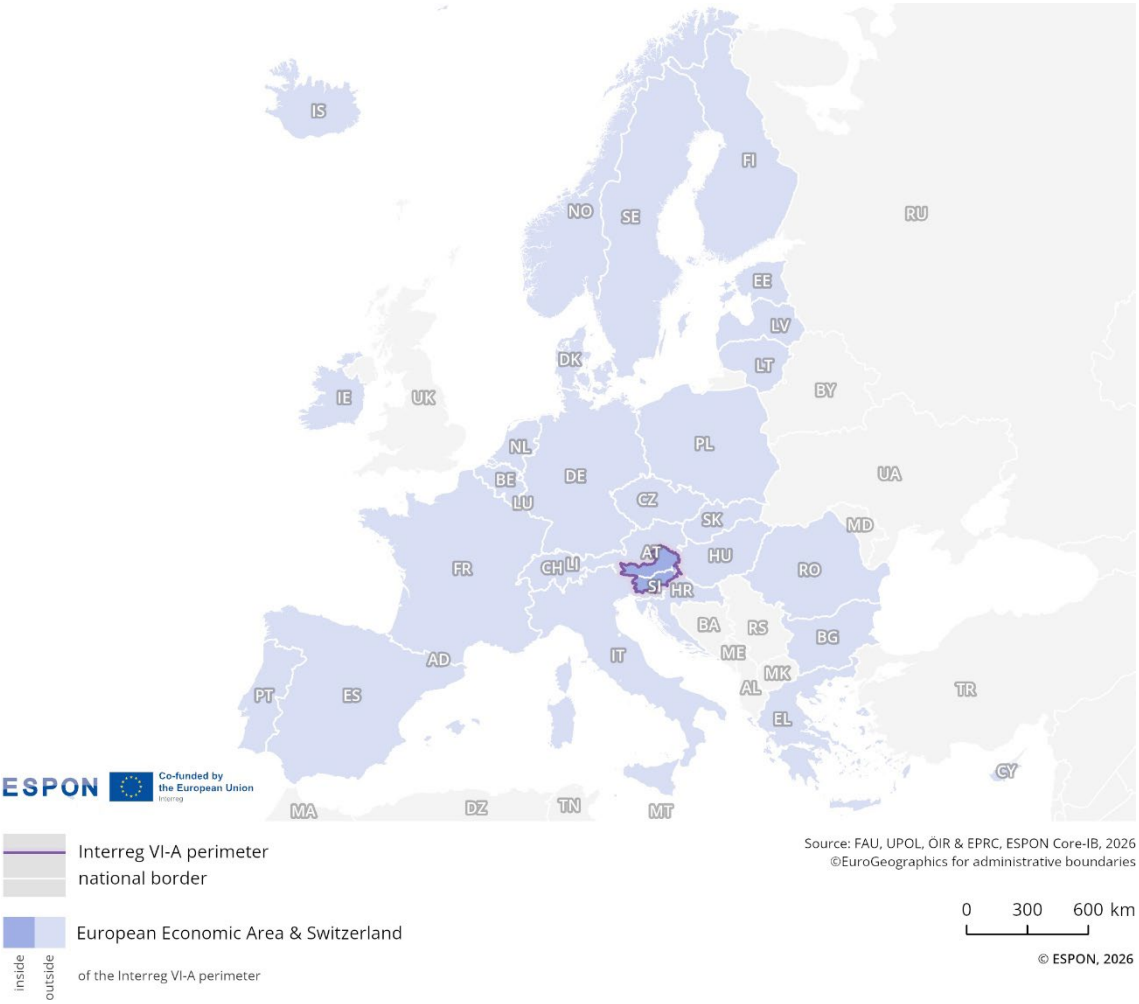
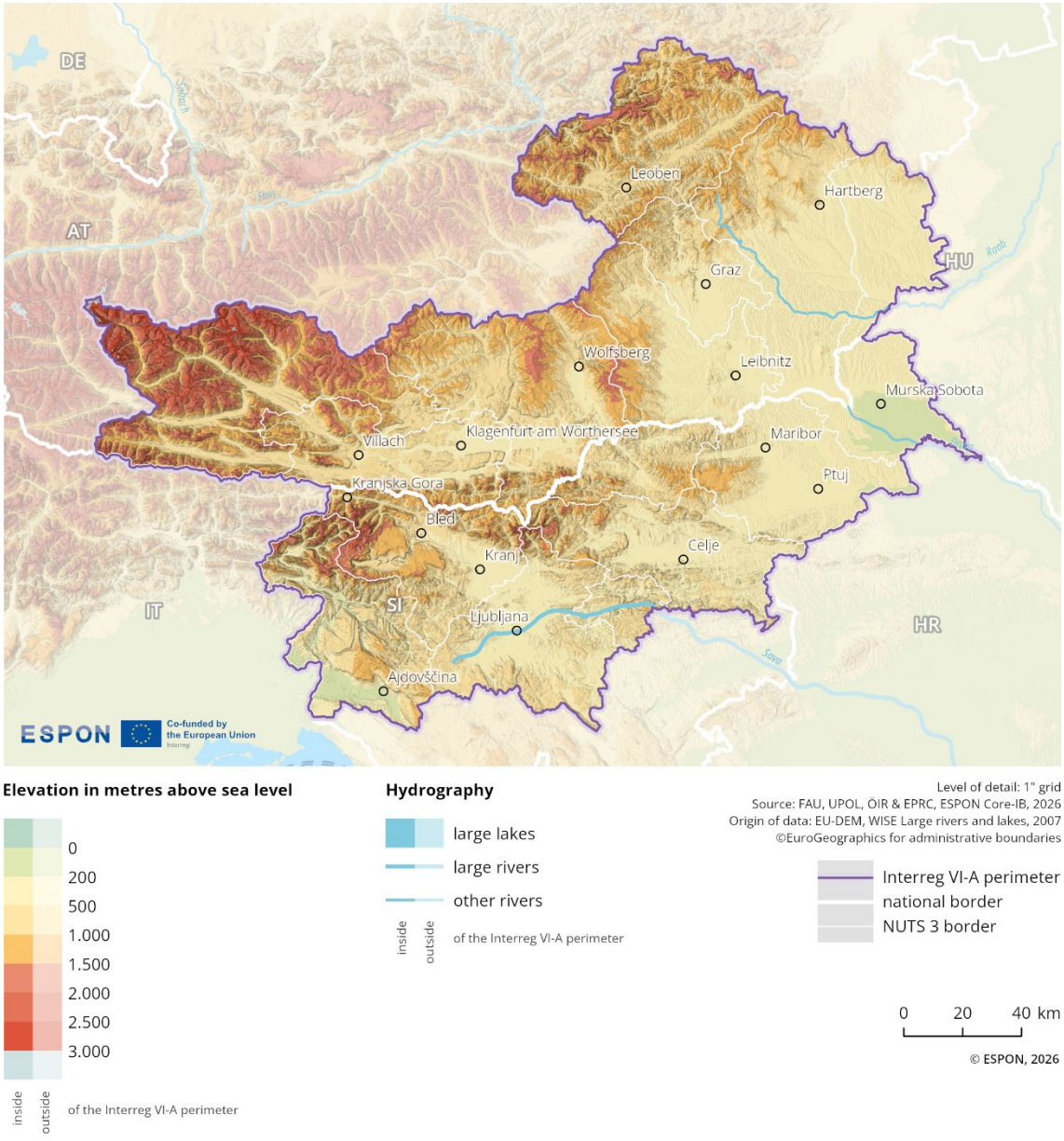


Figure 1.2 illustrates the region's geomorphological features and the perimeter of the current Interreg VI A programme area. Spanning approximately 35,156 km², the border area exhibits a high degree of

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

heterogeneity. The map illustrates the topographical and functional differences, ranging from sub-areas of significant international importance to more peripheral regions.

Figure 1.2: Geographical features and characteristics[3]



The border region extends along the entire 310-kilometre length of the Austrian–Slovenian border. The western part crosses high, mountainous Alpine terrain, including the Julian Alps and the Karavanke/Karawanken range, which forms a prominent natural barrier. Moving eastwards, the terrain gradually transitions into more hilly and low mountainous landscapes, such as the Pohorje and Kozjak ranges, before flattening into the Pannonian Basin.

The cross-border region is characterised by valleys, karst plateaus and river basins, including the Drava/Drau and Sava valleys. These provide important natural corridors and settlement axes. In many areas, the Karavanke and the Mura act as natural barriers, with only a few crossing points via mountain passes (e.g., the Loibl Pass and the Wurzen Pass), tunnels and bridges.

[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.

Key towns in the programme area include Ljubljana and Maribor in Slovenia, and Graz, Klagenfurt, Villach, and Leoben in Austria. The region comprises a mix of rural and urban areas, which are often shaped by valley floors and transport routes through alpine passes. The border area comprises several protected areas and Natura 2000 sites, including parts of Triglav National Park and the Karavanke Geopark, as well as cross-border river ecosystems. The climate varies from alpine in the west to continental in the east, influencing agricultural patterns, forestry, and tourism.

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/km^2

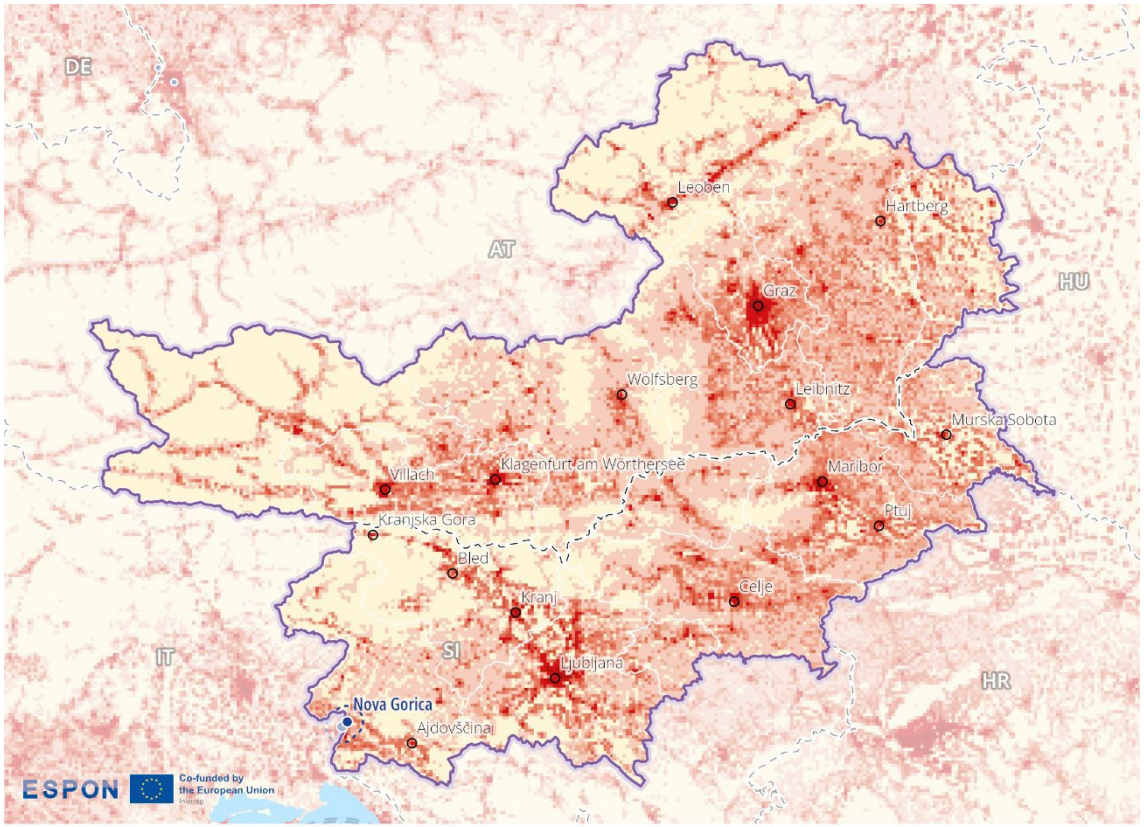
Please refer to the technical annex for more information.

The border region includes 8 urban centres with a population of over 30,000 inhabitants. The map indicates that population density is lower in the western parts of Austria and Slovenia. The highest density is in the vicinity of the Slovenian capital, Ljubljana (284,000 inhabitants), in the southern part of the border region. The towns of Maribor (95,000), Celje, and Ptuj follow it. The most densely inhabited area is around Graz (292 thousand inhabitants) in the east of Austria. Other major Austrian cities include Klagenfurt am Wörthersee and Villach, which have higher population densities. To the west, the population is concentrated in mountain valleys and along roads.

The population density in this whole border region is 96 inhabitants/km², which is therefore lower than the EU average of 109 inhabitants/km², and it is lower than the aggregated average of all EU evaluated border regions, which is 125 inhabitants/km² (see Figure 2.1).

The part of the border region in Austria has an average population density of around 80 inhabitants/km². It is lower than the national average population density in Austria (106 inhabitants/km²). The part of the border region in Slovenia has an average population density of around 118 inhabitants/km². It exceeds the national average population density in Slovenia (102 inhabitants/km²).

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
- national border
- NUTS 3 border

0 20 40 km

© ESPON, 2026

2.1.1.2 Population development (by age groups)

Indicator description

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

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

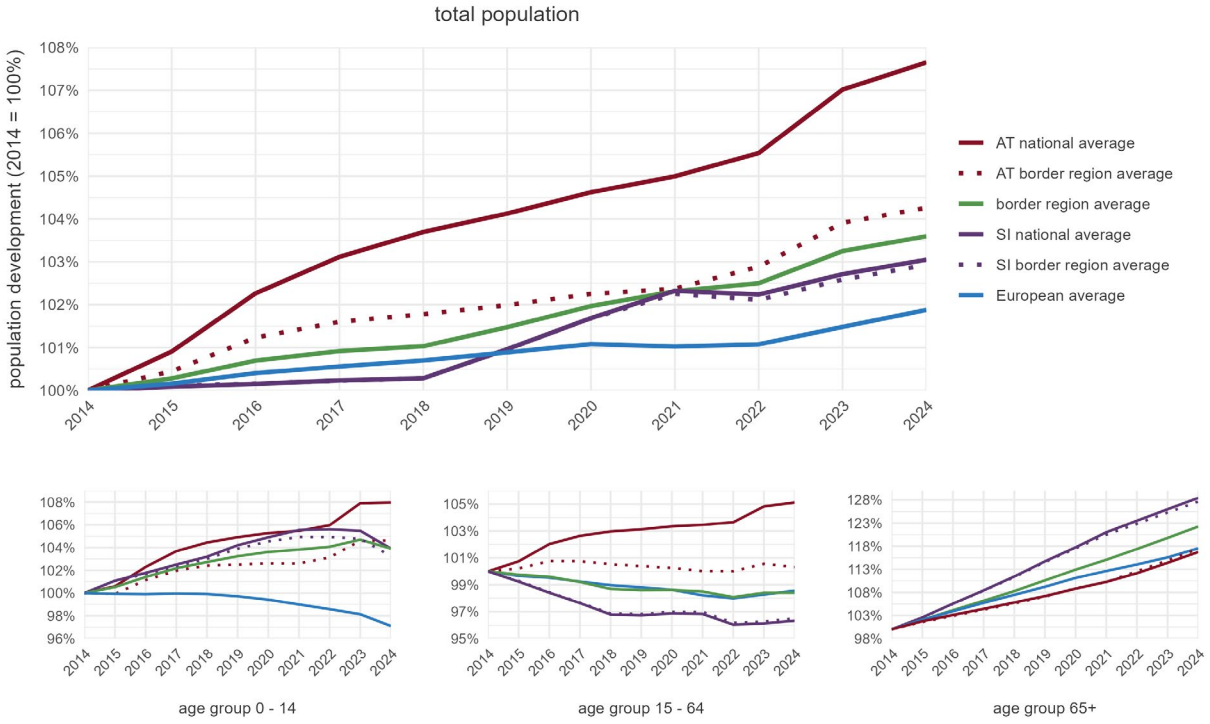
Please refer to the technical annex for more information.

Population in the Slovenia–Austria region in 2024 (Eurostat): 3.5 million inhabitants, of which:

- 49.5% in the Slovenian border territory (1.7 million inhabitants)
- 50.5% in the Austrian border territory (1.8 million inhabitants)
- Region within the border region with the highest population increase since 2014: Graz (AT221) at 12.2%

Figure 2.2 shows the population growth in the Slovenia–Austria region between 2014 and 2024. During this period, the region has experienced moderate growth of 3.6%, with the highest growth rate observed on the Austrian side.

Figure 2.2: Population development (2014=100)



Population growth across the border region is slightly above the European average (3.6% vs. 1.9%) and moderately higher than the average development in all border regions (3.6% vs 1.5%). While the

Slovenian border area shows similar growth to the national average (2.9% vs. 3.1%), the Austrian border area shows substantially lower growth than the national average (4.3% vs. 7.7%). Nevertheless, it experiences greater growth than the Slovenian part of the border region.

In terms of the development of individual age groups in the overall border region, the population aged 0–14 experienced a slight increase of 3.9%, while the working-age population (15–64) showed a slight decrease of -1.6%. The population aged 65 and over underwent a substantial increase of 22.2%.

2.1.1.3 Change in settlement areas

Indicator description

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

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

Please refer to the technical annex for more information.

Figure 2.3 illustrates the change in settlement areas at municipal level between 2012 and 2018. Overall, the map shows similar patterns of change in settlement areas on both sides of the Slovenian-Austrian border. Changes are evident in particular around the urban centres of Hartberg, Graz, Ljubljana and Celje. Leoben, Wolfsberg, Villach, Bled, Ptuj, Maribor and Murska Sobota show no significant changes during the observed time period. High growth in settlement areas is particularly evident in the valleys towards Graz as well as in the valley around the Austrian city Bleiburg, east of Klagenfurt am Wörthersee at the border. In close proximity to the national borders, the settlement area increases mainly on the Austrian side in the valleys towards Graz and around Bleiburg. The map also reflects the topographical characteristics of the border region, with hardly any changes in settlement areas visible in steep, high-altitude mountainous areas.

Figure 2.3: Settlement area dynamics

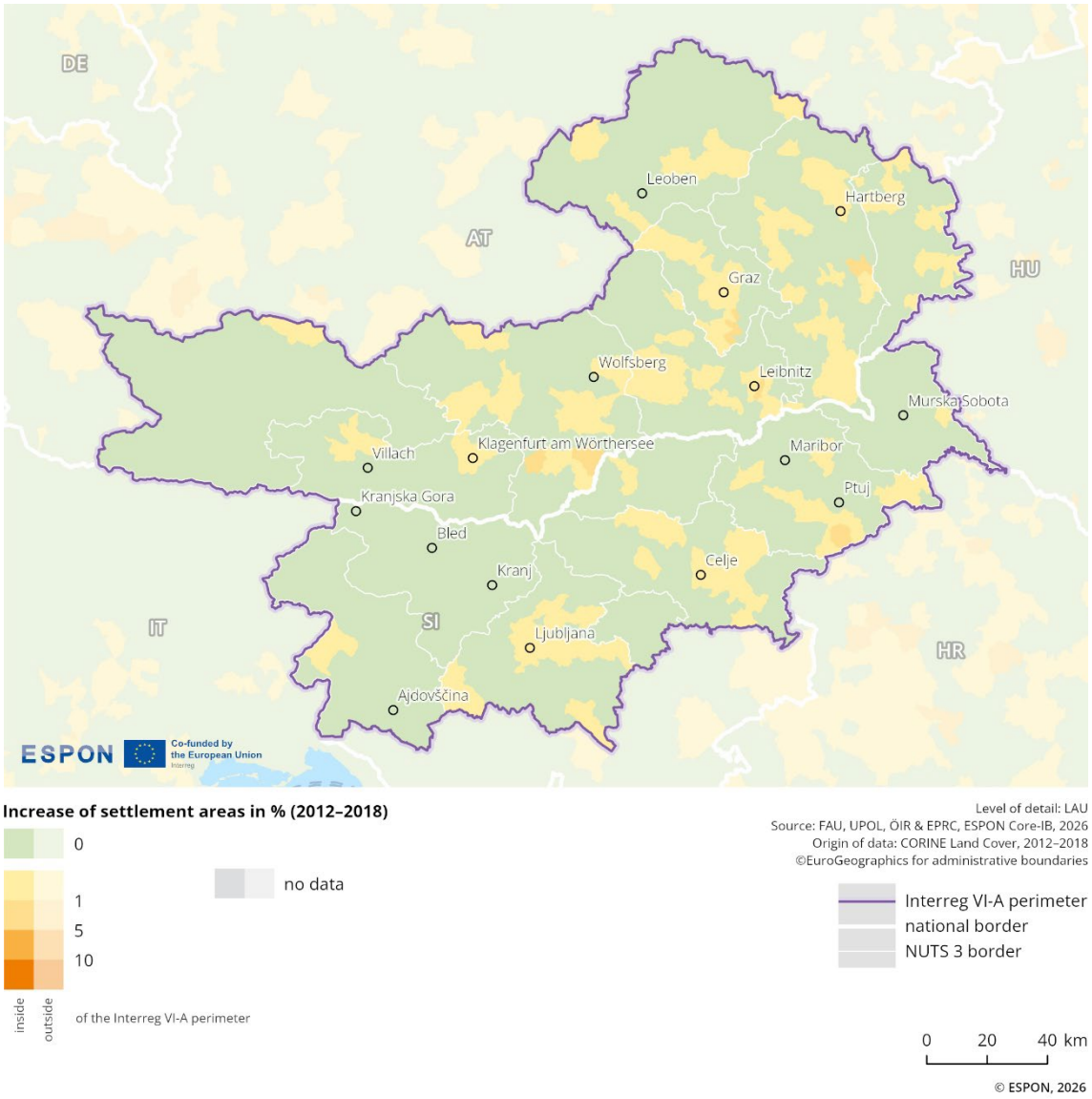
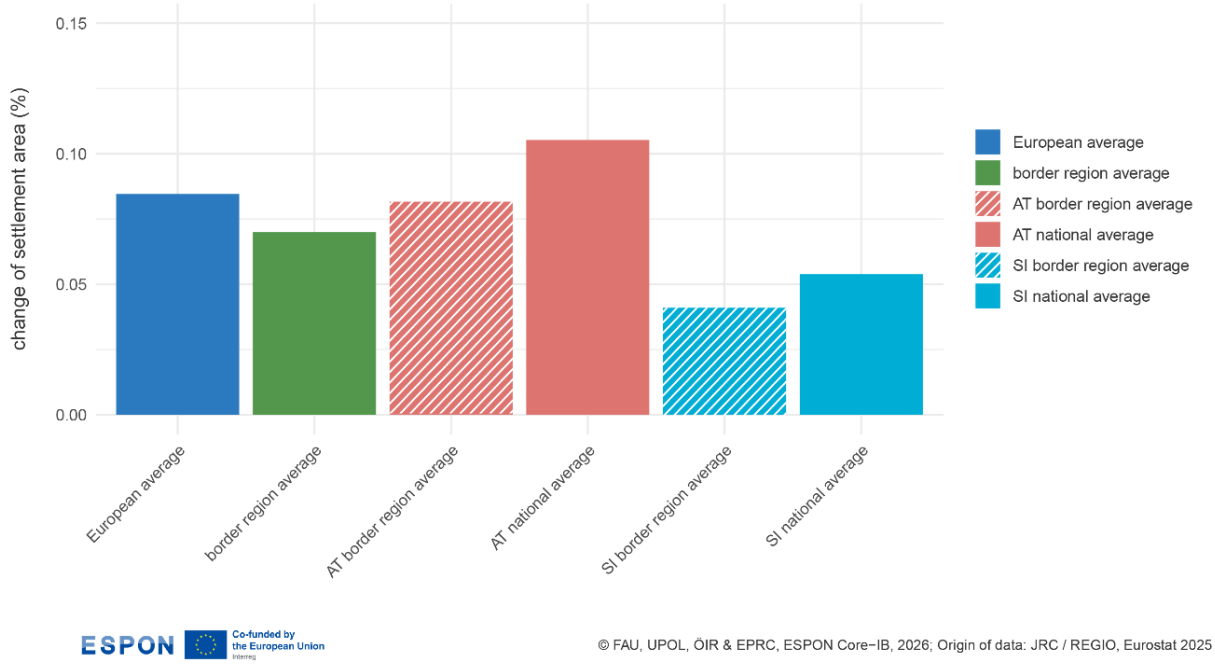


Figure 2.4 presents the change in settlement areas from a comparative perspective. The average for the Slovenia-Austria programme area is lower than the overall European average, which includes both EU member states and the EFTA (European Free Trade Association) countries Switzerland, Liechtenstein, and Norway. The Austrian values are significantly higher than the Slovenian ones, which applies for both, the national average as well as the border regions. Both border-regional averages lie below the national averages.

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

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



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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

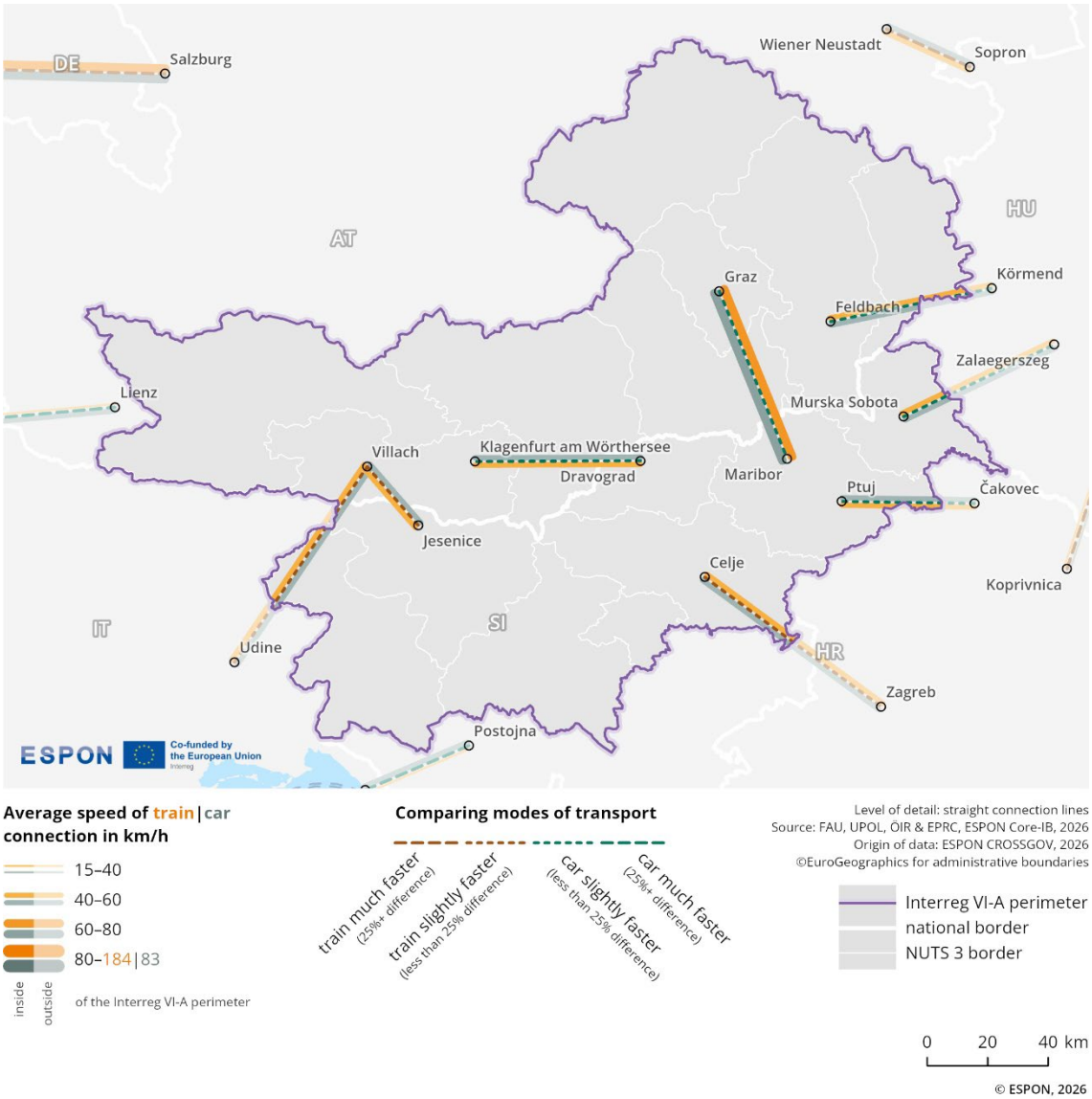
The indicator presents a comparative perspective for different modes of transport (public and private) and their average travel speed (so-called space-time-lines). As such it helps to understand and interpret accessibility patterns along the border and highlights the comparative quality of selected cross-border 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 Slovenia-Austria 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[4]. These criteria include the presence of a railway station, population size, distance to the border, node hub and functionality. The thickness of the lines (orange for trains, grey for cars) indicates the average speed of connections in km/h, with thicker lines representing faster connections. Dotted lines in-between reflect the indexed ratio between train and car speeds. A brown colour scale (values below 100) denotes that trains are faster than cars along the specific route, while a green scale (values above 100) indicates the opposite.

The selected connections within the programme area include Villach–Jesenice, Klagenfurt am Wörthersee–Dravograd, and Graz–Maribor. For most of these routes, namely Klagenfurt am Wörthersee–Dravograd and Graz–Maribor, car travel outperforms train connections in terms of speed. However, for the route from Villach to Jesenice via the Karawanks Tunnel, the train provides a faster option, as potential congestion is reflected in the analysis of travel times for cars.

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

2.1.2.2 Cross-border catchment area based on mobility flows

Indicator description

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

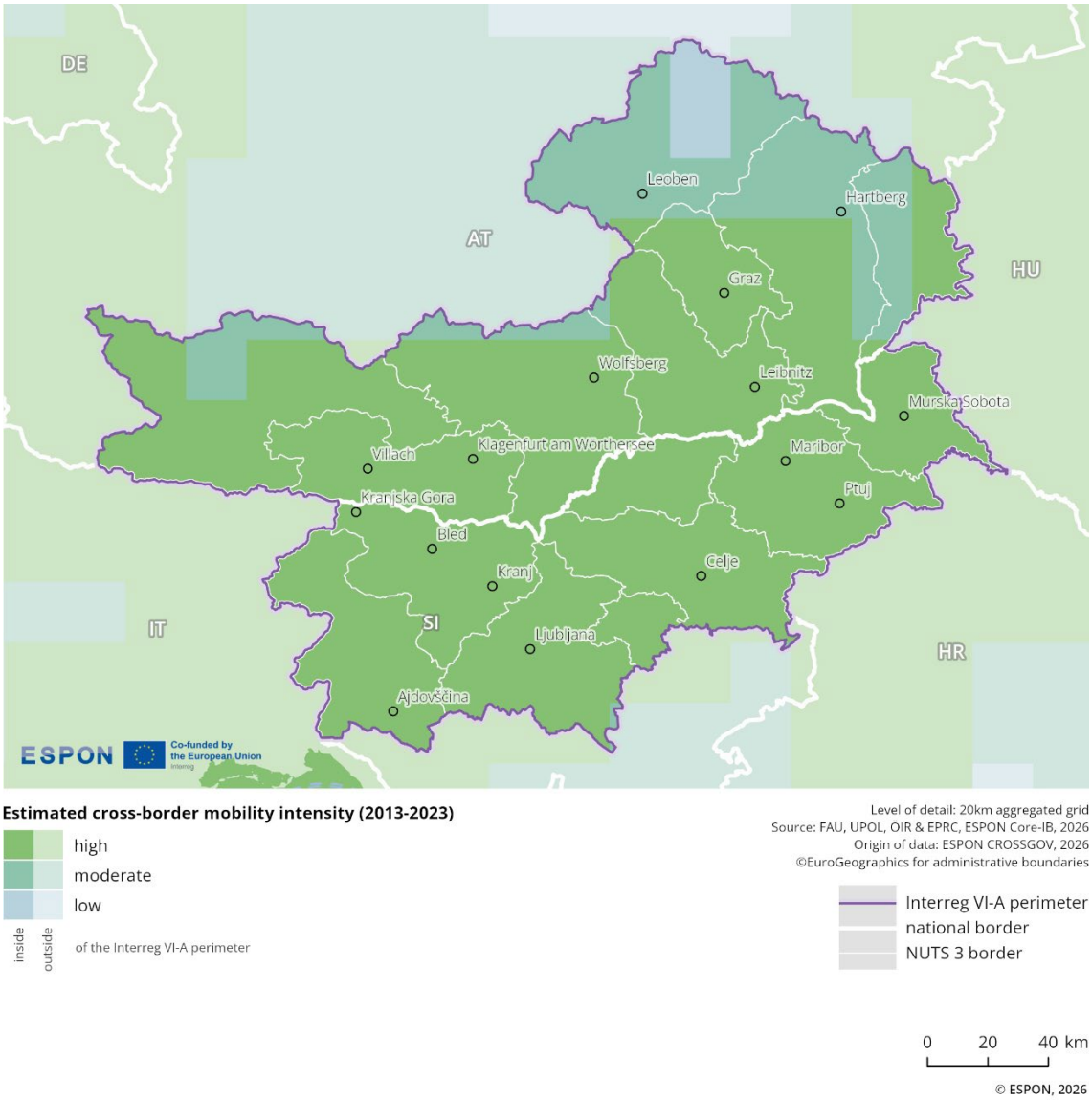
- **Source/method of retrieval**: The indicator is calculated based on Twitter (currently X) data. The digital footprint of individual users provides information about physical mobility flows and is used to calculate cross-border catchment areas of different intensity.
- **Temporal coverage**: 2013-2023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

Please refer to the technical annex for more information.

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

The intensity of cross-border mobility of people within this cross-border region is homogeneous. The highest mobility intensity is recorded across the majority of the region's territory. Moderate mobility intensity is depicted only in the northern part of the region, particularly around the cities of Leoben and Hartberg. A small area of low intensity is located northeast of Leoben.

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

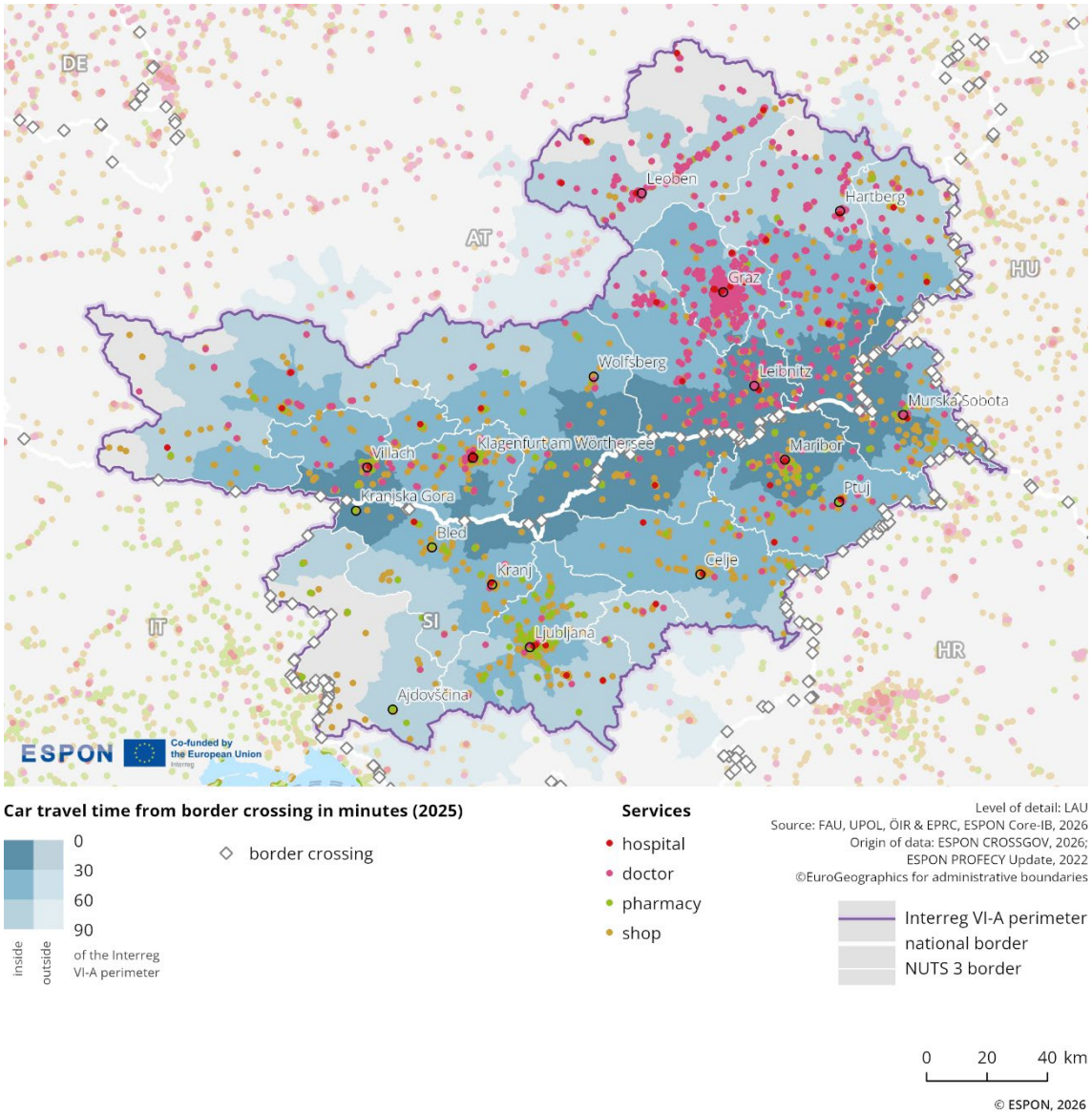
Please refer to the technical annex for more information.

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 that travel accessibility is under 30 minutes along nearly the entire cross-border area, with a broader corridor in the eastern border region supported by far more border crossings. In the western part of the border, there are 2 short sub-sections with longer travel distances of up to 60 minutes, one on each side of the border north of Bled, and the second only for the Austrian border area southeast of Klagenfurt am Wörthersee. The dominant categories are travelling time under 60 and 90 minutes in the region area, which includes the Slovenian capital city Ljubljana. Only small, distant areas are above a 90-minute travel time in both countries. Overall, the accessibility of this cross-border area through its road network is diverse.

Services such as shops, hospitals, doctors' offices, and pharmacies can predominantly be found in Maribor or Villach within a 30-minute drive from the border. The next 2 main centres of service are in Ljubljana and Graz, both within a 60-minute travel time category. Services are evenly distributed in both countries, with the exception of doctors, who demonstrate much higher spatial coverage in eastern Austria.

Figure 2.7: Travel-time accessibility from border crossings



2.1.3 Key messages on the territorial dimension

The Slovenia–Austria border region is characterised by a mix of urban centres and relatively strong cross-border accessibility despite the mountainous western border area. Population patterns reveal contrasts and complementarities. On the Slovenian side, population density is higher than the national average, particularly around Ljubljana and Maribor, whereas the Austrian side remains sparsely populated, with concentrations around Graz, Klagenfurt and Villach. Overall, the border region's population density is below the European average, reflecting the influence of mountainous terrain and the concentration of settlements in valleys and transport corridors.

Population growth has been moderate but steady over the past decade, slightly above the European average. Graz stands out with its particularly strong growth. However, an ageing population is evident across the entire border area, with a significant increase in the proportion of people aged over 65. This demographic shift will have implications for service provision, labour markets and future cross-border mobility patterns.

These demographic and functional dynamics are reflected in settlement change. The most visible expansion has occurred around the main urban centres and along valleys, particularly towards Graz

and Bleiburg, while high-altitude areas have remained largely untouched. Compared with wider European trends, settlement growth is moderate; however, the resulting pressures highlight the necessity of coordinated cross-border spatial planning to balance urban expansion with agriculture, tourism and environmental protection.

The road network ensures that most cross-border journeys can be completed in under 30 minutes and that service centres are evenly distributed across both sides of the border. Car travel generally outperforms train links, though the Graz-Maribor as well as the Karavanks tunnel route offer competitive rail services as a sustainable public transport solution. Mobility flows across the border are strong and fairly homogeneous, reflecting the geographic proximity of urban centres and the integration of service catchment areas.

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

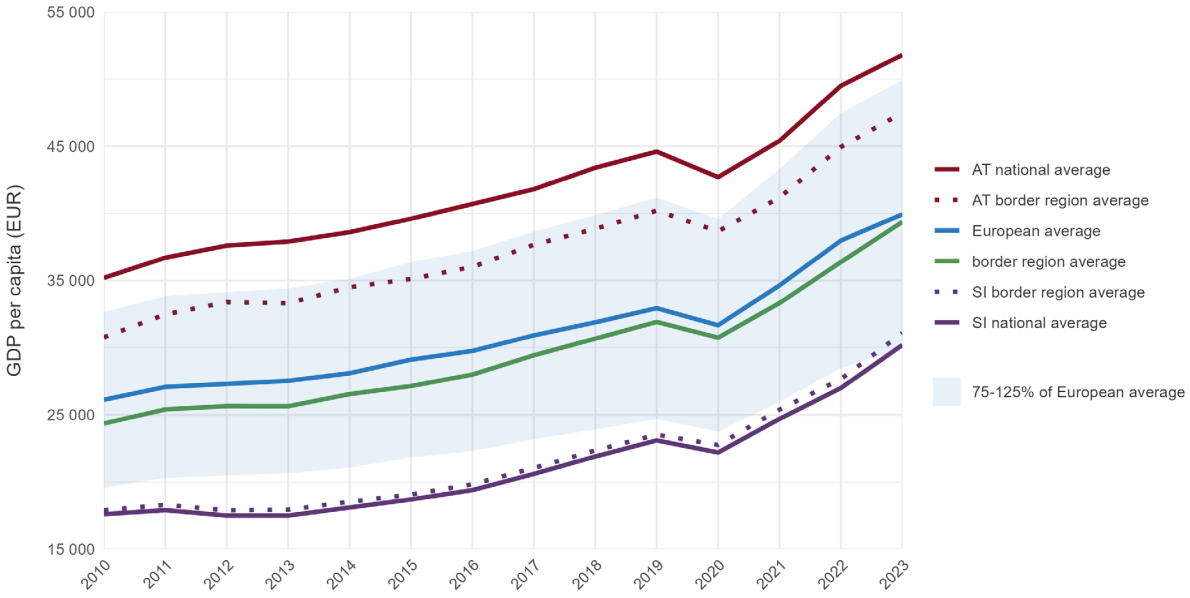
Please refer to the technical annex for more information.

The border region shows a GDP/capita value of 99.1% of the EU average in 2022 and 102.5% of the average in European border regions in general (see Figure 2.8). The region marks a 37.3% increase of GDP per capita in the border region between 2014 and 2022[5]. This corresponds to a 1.7 percentage points higher increase of GDP per capita in the border region compared to the EU average. Furthermore, this corresponds to 2.2 percentage points higher increase of GDP per capita in the border region compared to the average of European border regions. The GDP per capita of the Slovenian

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

border region grew by 49.4% since 2014. Both in term of GDP per capita and growth rate the border region develops similar yet slightly above to the national average, as the Slovenian border area covers most of Slovenia. The whole border region is very similar to the EU average in terms of GDP per capita because it comprises one above-average (Austria) and one below-average (Slovenia) country.

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



ESPON Co-funded by the European Union Interreg

2.2.2 Labour market and commuting

This sub-dimension highlights the existing and potential functional links within the labour market of the border region. It examines the employment situation and commuting patterns, as well as the role of telework agreements, and considers developments over time based on analysed indicators. The analysis identifies factors that facilitate or hamper cross-border labour market integration.[6]

2.2.2.1 Share of employment

Indicator description

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

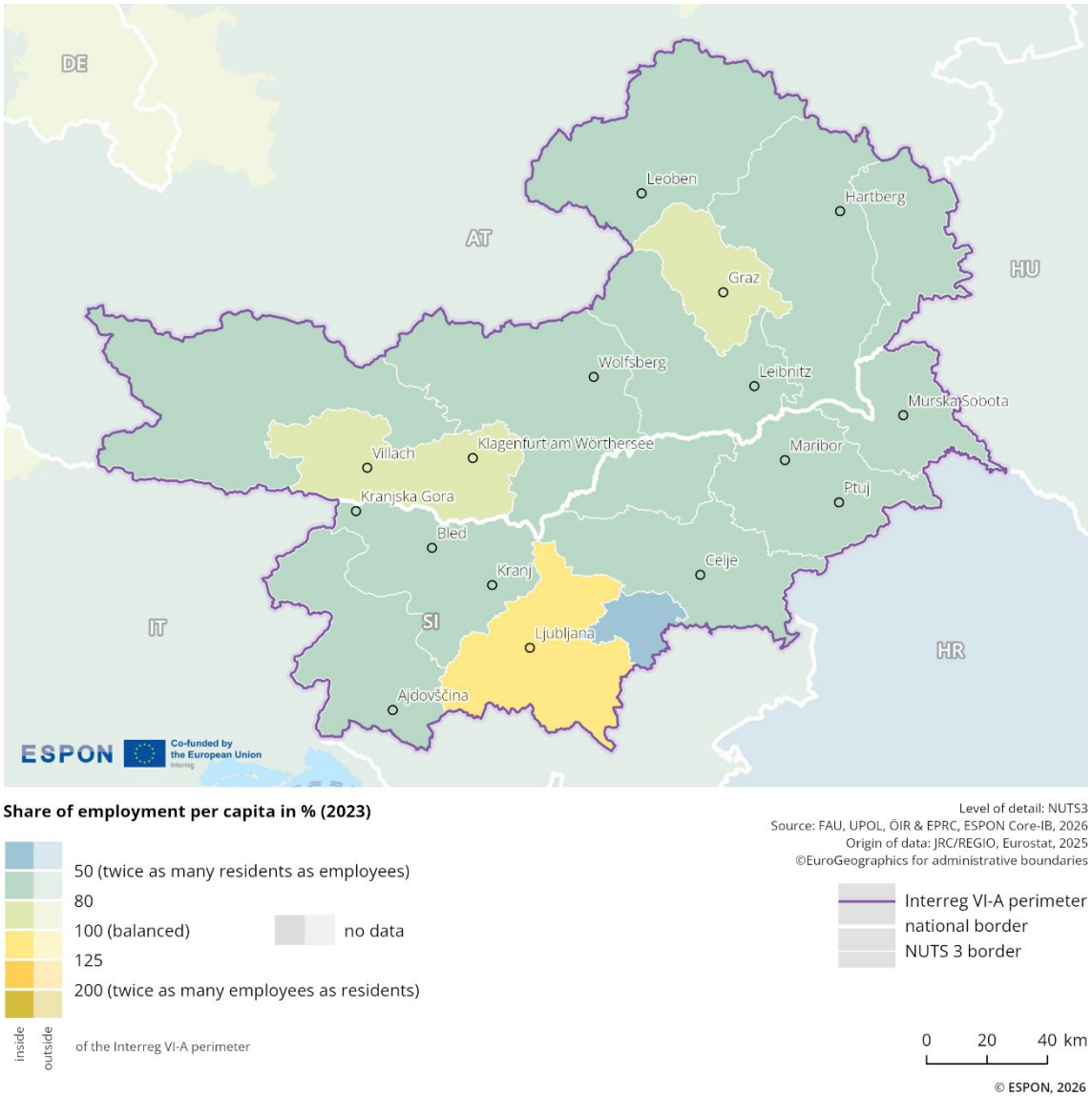
- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2014-2023
- **Unit**: Share in %

Please refer to the technical annex for more information.

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

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

Figure 2.9: Employment share[7]



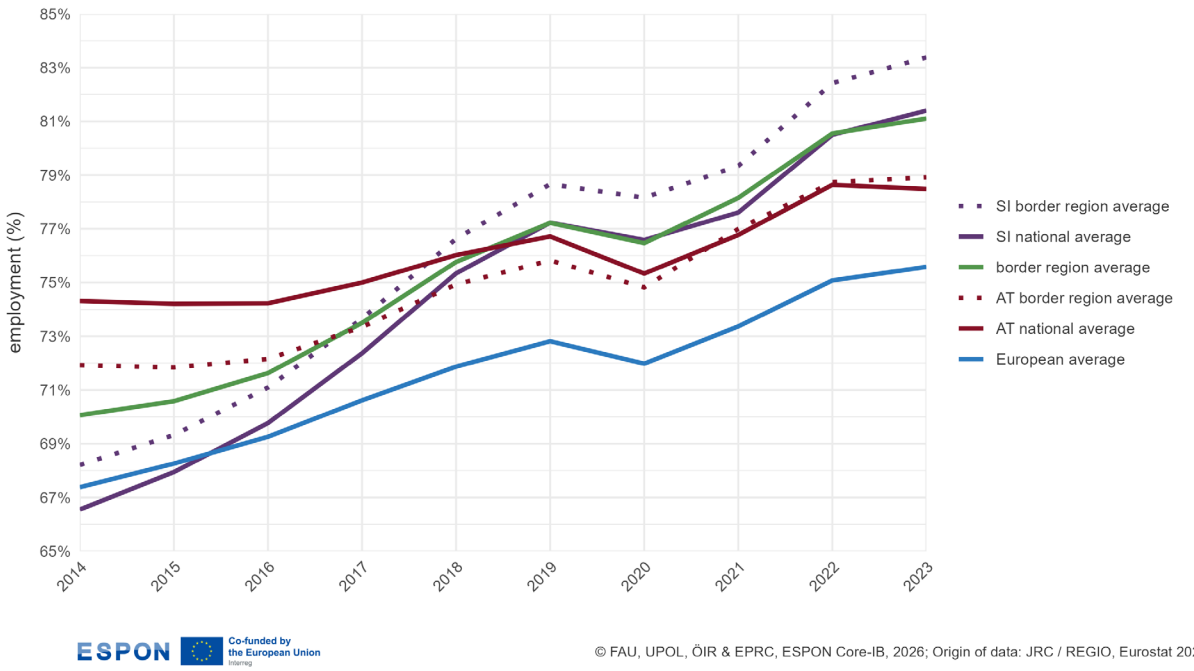
The share of employment per capita in this border region is relatively stable, with the average for the entire region at 81.1% in 2023, having increased by 11 percentage points since 2014. Across much of the region the share of employment values are mostly within the range of 50% to 80%. Around the cities of Villach and Graz, the values range from 80% to 100%, and around Ljubljana, they even reach between 100% and 125%. East of Ljubljana, the share of employment is low (up to 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 border regional average is higher by 5.5 percentage points (2023), while in 2014, the difference was 2.7 percentage points.
- Compared to the Austrian average, values in the cross-border region are higher by 2.6 percentage points (2023), while in 2014 they were lower by 4.3 percentage points indicating a substantial shift.
- Compared to the Slovenian average, values are lower by 0.3 percentage points in 2023, whereas in 2014 they were higher by 3.5 percentage points.

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

- Compared to the average of all cross-border regions, values are higher, with the difference increasing from 3.76 percentage points in 2014 to 6.66 percentage points.
- The Austrian border area reaches values 0.4 percentage points higher than the Austrian national average, while the Slovenian border area exceeds the Slovenian national average by 2 percentage points.

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 %

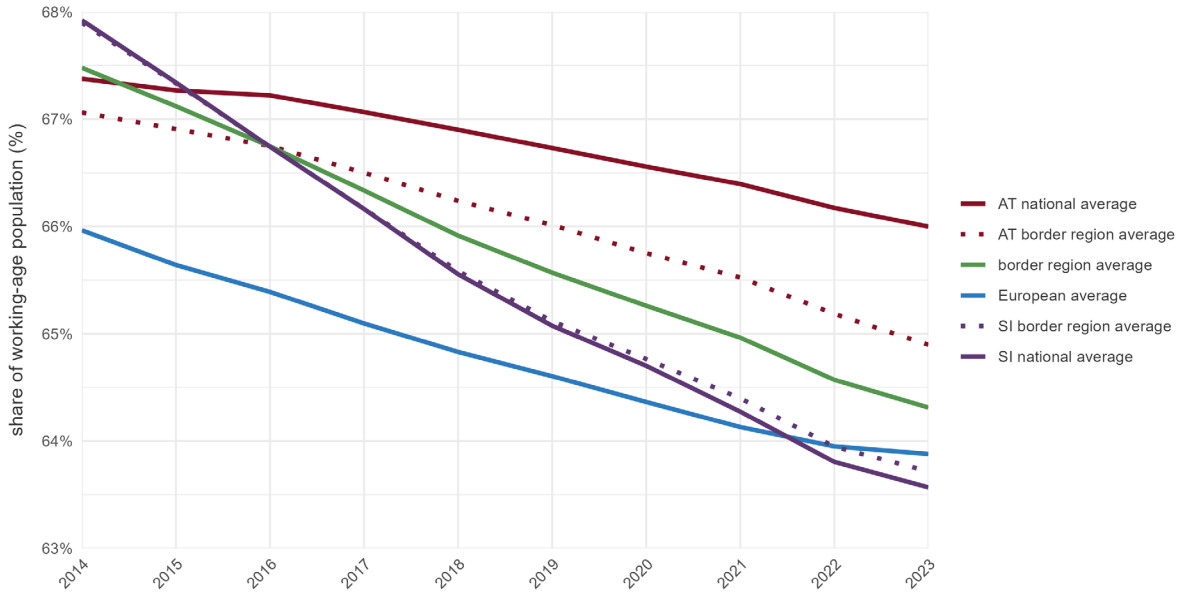
Please refer to the technical annex for more information.

Figure 2.11 illustrates the evolution of the share of the working-age population in the Slovenia–Austria cross-border region between 2014 and 2023. In 2023, the border region shows an average working-age population share of 64.3%, compared to the European average of 63.9% and 63.7% for the average of all cross-border regions.

The share of the working-age population in the whole cross-border region is slightly lower than the Austrian border average (64.9%) and slightly higher than the Slovenian border average (63.7%). Compared to national levels, it is moderately lower than the Austrian national average (66.0%), and slightly higher than the Slovenian national average (63.6%).

The Slovenia–Austria cross-border region experienced a moderate 3.2 percentage point decrease in the share of the working-age population between 2014 (67.5%) and 2023 (64.3%). This decline is similiar to the European average, which decreased by 2.1 percentage points during the same period. While all areas in the region show a declining trend, the rate of decline has been more pronounced in the Slovenian parts (-4.2 percentage points at the border and -4.3 percentage points at the national level) than in the Austrian parts (-2.2 percentage points at the border and -1.4 percentage points at the national level). In 2023, the region remained slightly above the European average, with differing levels between the 2 national sides.

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



ESPON Co-funded by the European Union Interreg

2.2.2.3 Employment by sector

Indicator description

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

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

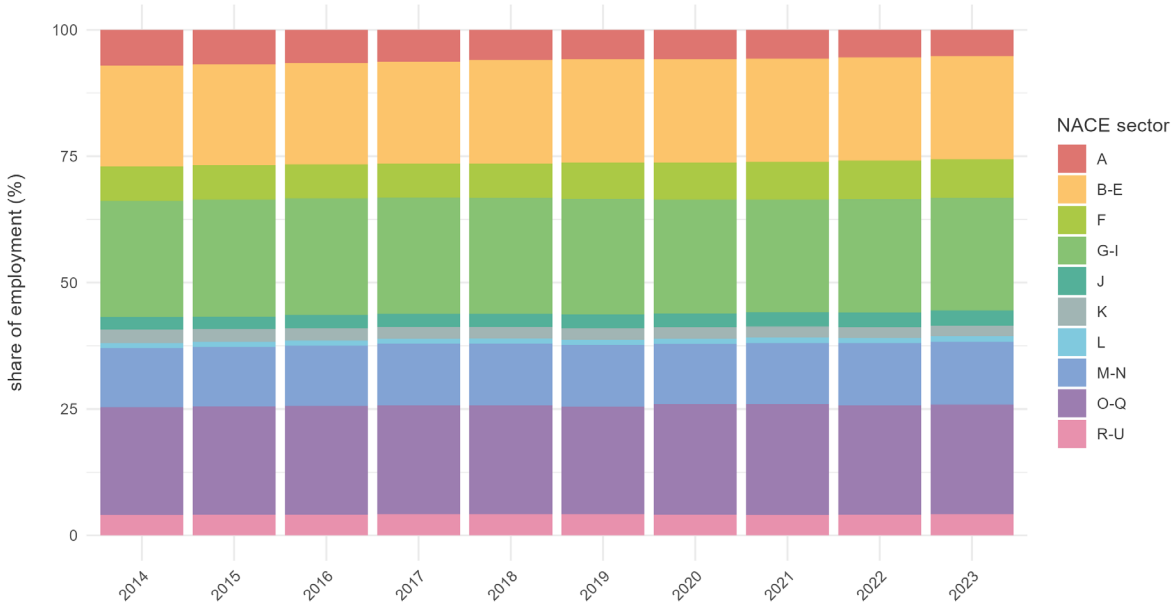
Please refer to the technical annex for more information.

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

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

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

Figure 2.12: Employment by sector (comparison)



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

Between 2014 and 2023, the relative number of jobs in the different sectors remains fairly stable. There is a slight decline in the share of employment in agriculture, forestry and fishing (A). Conversely, there is a modest increase in the number of jobs in Construction (F).

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

2.2.2.4 Outgoing cross-border commuters

Indicator description

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

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

Please refer to the technical annex for more information.

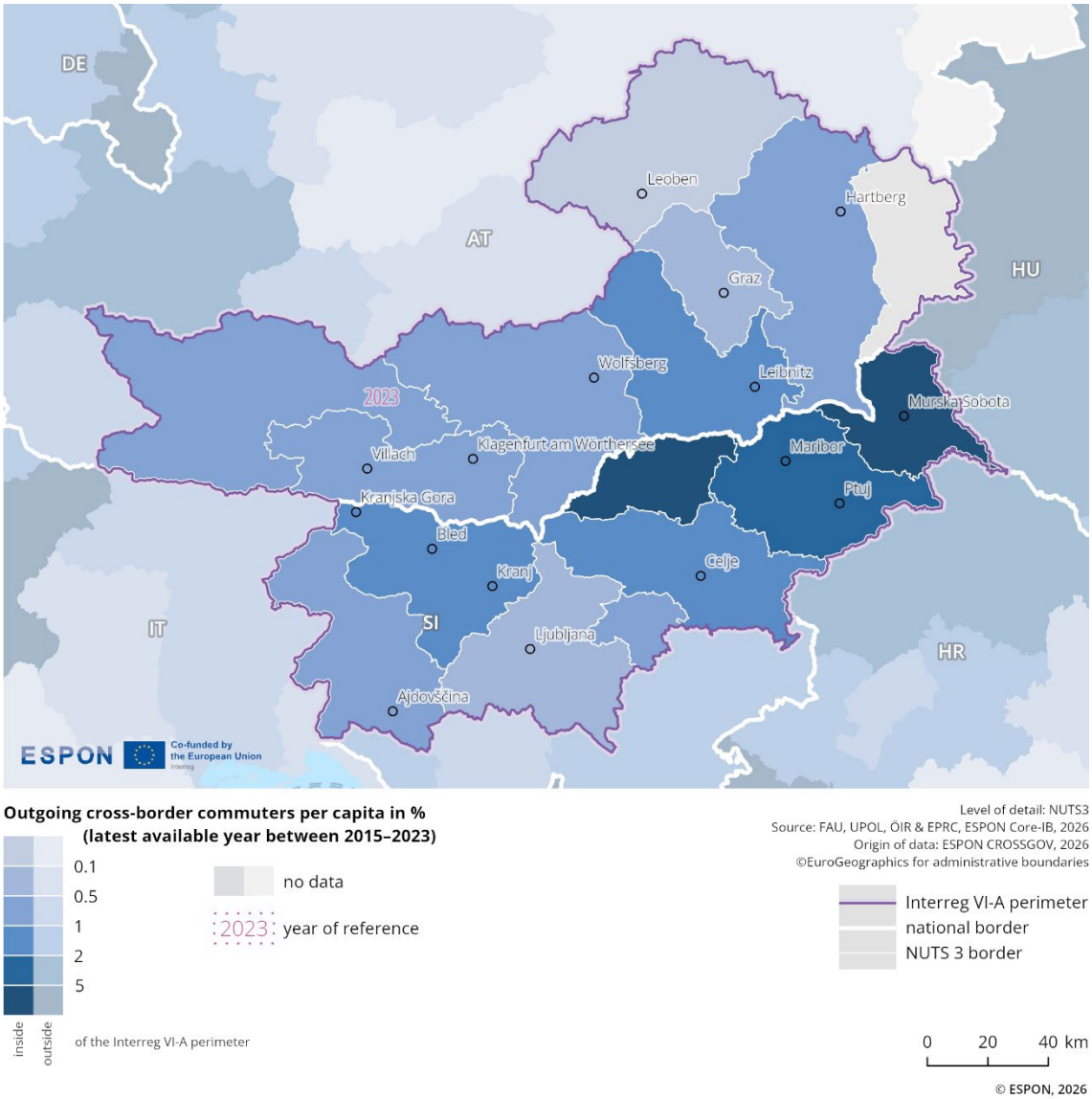
Commuting is one of the most relevant cross-border flows to identify functional linkages. Figure 2.13 illustrates the share of outgoing commuters per capita for each NUTS3 region (more concretely speaking the share of outgoing commuters among the residential population of the age group 15-64 years old,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

The map illustrates the share of cross-border commuters, based on the most recent available year of data. It reveals relatively high level of disparate cross-border commuting activity in areas directly adjacent to the border.

The Slovenian side stands out in particular, with high levels of outgoing commuters in the regions of Koroška, Podravska and Pomurska[8]. Other 'hotspots', to a lesser degree, include the regions of Savinjska and Gorenjska in Slovenia, and West- und Südsteiermark in Austria. These NUTS3 regions also show elevated shares of outgoing cross-border commuters per capita.

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

The 2 countries involved in the programme are signatories of the 2023 Framework Agreement on Cross-Border Telework. Under this agreement, cross-border workers can telework from their country of residence for up to 50% of their total working time without affecting their social security affiliation.

2.2.3 Competitiveness

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

2.2.3.1 Gross value added at basic prices by sector

Indicator description

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

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

Please refer to the technical annex for more information.

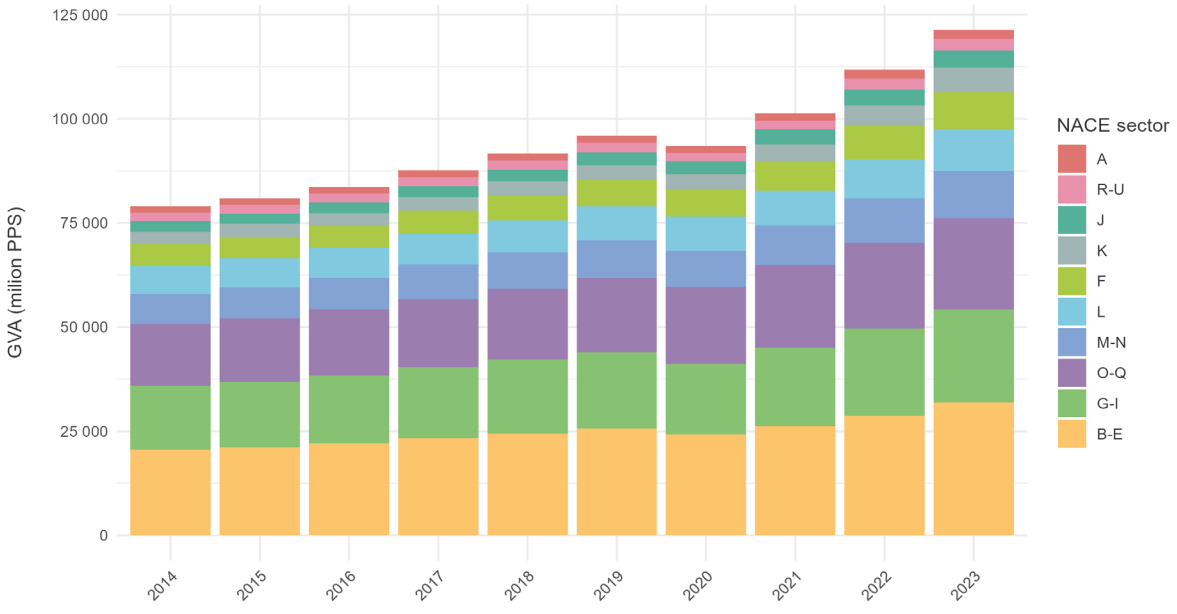
Figure 2.14 visualises gross value added (GVA), which is an important indicator of economic activity. GVA measures the value created by all economic activities involved in producing goods and services in a specific area. It is differentiated by sectors to provide detailed insights into the economic contributions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

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

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

Between 2014 and 2023, the GVA in the border area of Slovenia-Austria increased from 79,019 million purchasing power standards (PPS) to 121,363 million PPS — a growth of 54%. Sector groups B–E, G–I, and O–Q together make up over half of the total GVA, highlighting their significant contribution to the regional economy within the border area. The sector groups B–E contributed the largest share, with a total of 31,960 million PPS in 2023. This underlines the significance of sectors such as Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E) in the Slovenia-Austria 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)
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K: Financial and insurance activities
L: Real estate activities
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O-Q: Education (O), Human health and social work activities (Q)
R-U: Arts, entertainment and recreation (R), Other service activities (S), Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use (T), Activities of extraterritorial organisations and bodies (U)

2.2.3.2 Nominal compensation per hour worked

Indicator description

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

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

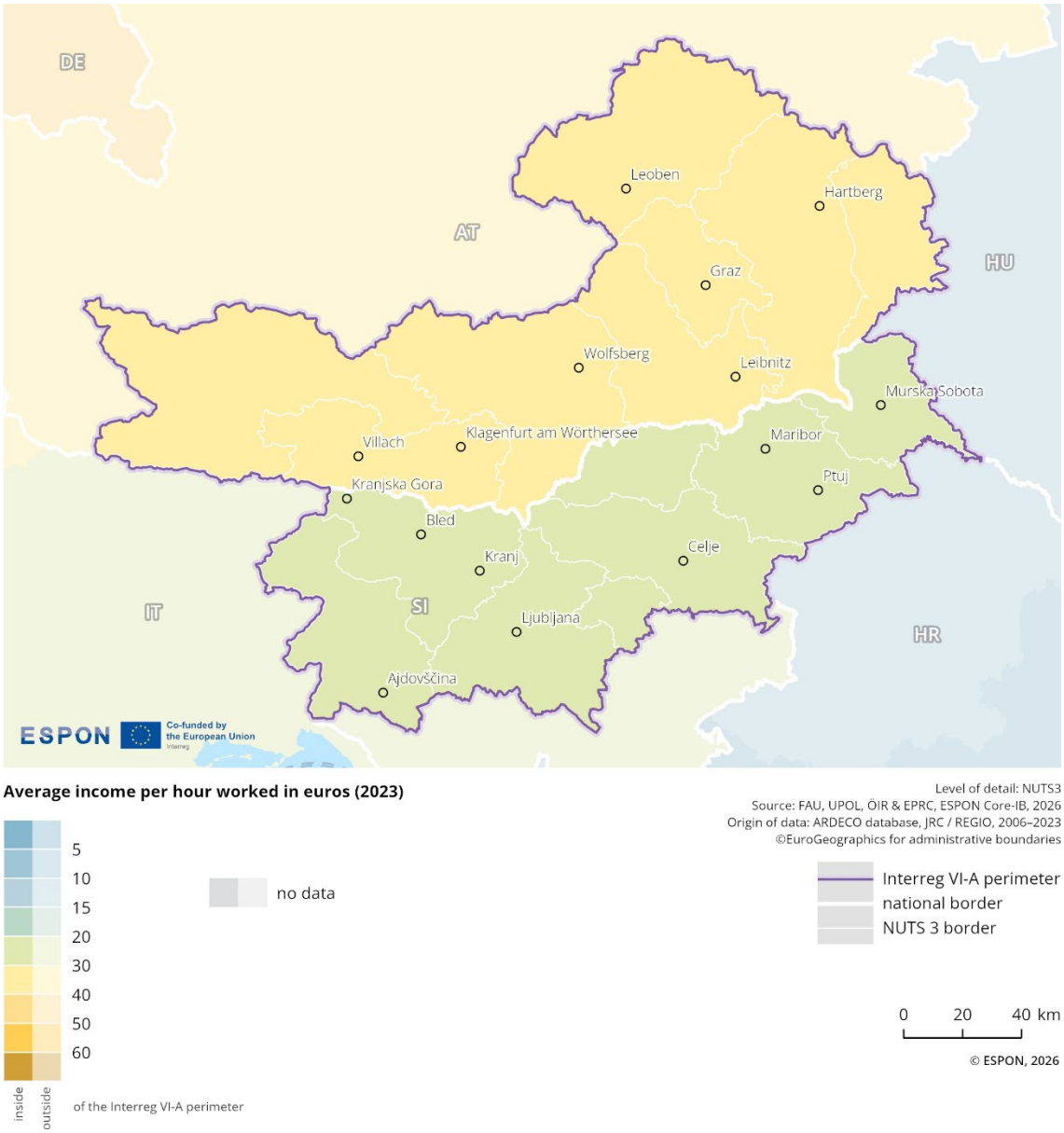
Please refer to the technical annex for more information.

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

In 2023, nominal compensation per hour worked in the Slovenia–Austria border region appears to be distributed relatively unevenly. In the Austrian areas of the cross-border region, the average hourly income ranges between €30 and €40, with no region reporting values significantly above this range. In the Slovenian areas, the average hourly income ranges between €20 and €30, and no region reports a value above the general range. To contextualise the regional pattern shown in the figure, it is noteworthy that the national average hourly compensation reaches €23.20 in Slovenia and €37.90 in Austria, which helps situate the border region within national labour productivity context.

Cross-border wage differences can encourage labour migration from lower-wage areas to more economically prosperous neighbouring regions, creating both opportunities and challenges for local labour markets and social systems. In this particular border region, the wage differences do not appear to be particularly pronounced, yet provide a relevant differential.

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.

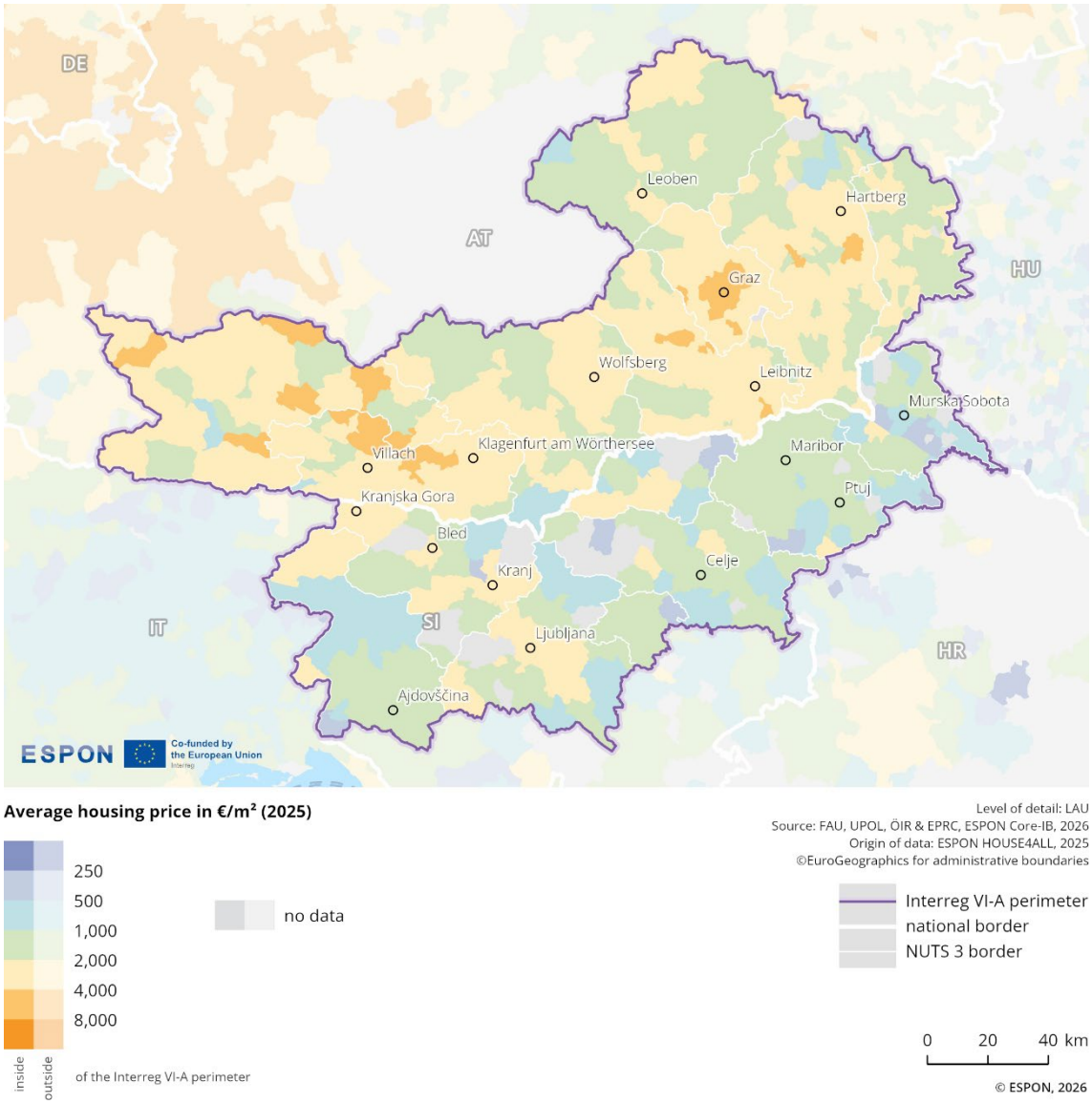
- **Source/method of retrieval**: Processed ESPON House4all data. The original data is collected via web-scraping of national listing websites over a one-year period.
- **Temporal coverage**: 2024/2025
- **Unit**: Average price per square meter (€/m^2)

Please refer to the technical annex for more information.

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

In the Slovenian part of the cross-border area, the average price varies and ranges from 250 to a maximum of 4,000 €/m². The highest category features most notably the cities of Ljubljana, Kranj, Bled and Kranjska Gora. On the Austrian side of the border, the average price predominantly ranges from 1,000 to a maximum of 4,000 €/m², while few areas in and around Graz as well as close to Villach and Klagenfurt am Wörthersee exceed the 4,000€/m² limit. Overall, the advertised sales prices for housing are comparably higher in Austria than in Slovenia. Therefore, the border represents an evident difference in terms of average sales prices.

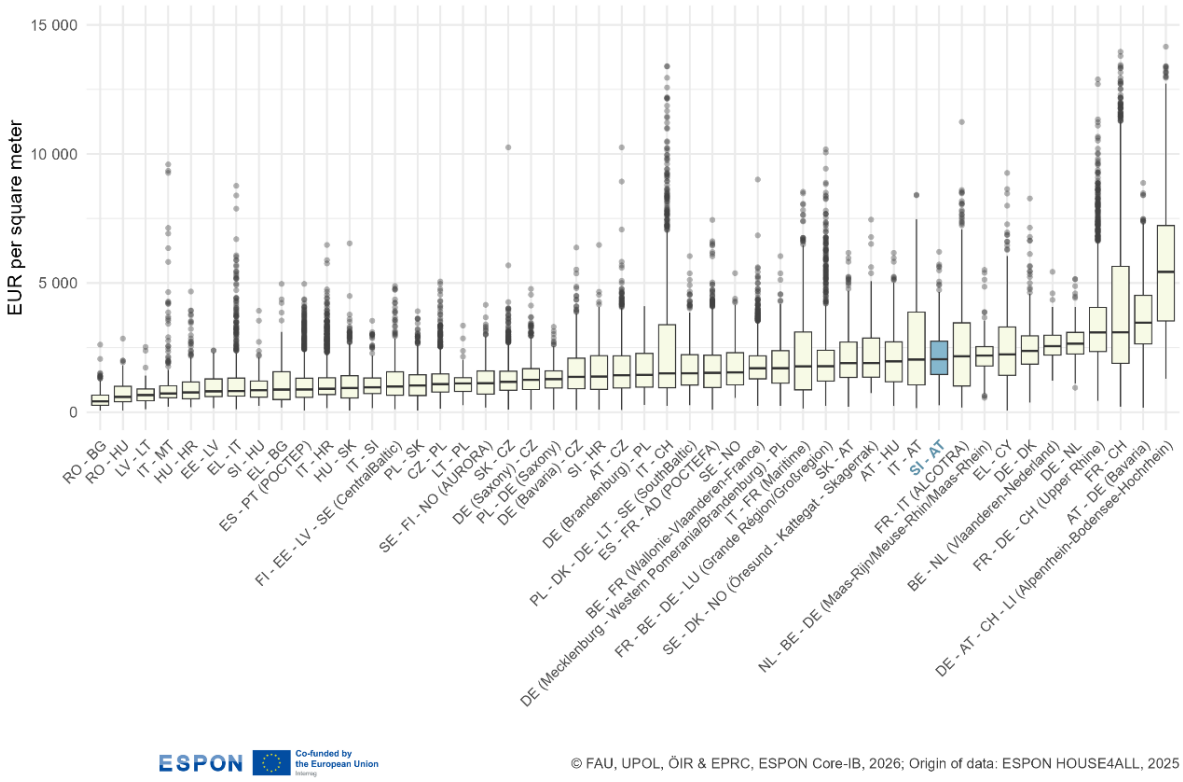
Figure 2.16: Advertised housing prices



The part of the border region in Slovenia has an average advertised sales price of around 1,359 €/m², while the average advertised sales price in the in the Austrian border region is around 2,453 €/m², nearly twice as expensive. The average advertised sales price in this entire border region is 2,177 €/m². It slightly exceeds the average of all EU evaluated border regions, which is 1,900 €/m². All prices per municipality are below the European average of €5,600/m² with the exception Graz as a key urban centre.

In the European context this cross-border region is in the 8 decile of all EU evaluated border regions (see Figure 2.17) regarding its median value, making it one of the more expensive housing markets in European border regions. The value distribution highlights the local differences with several rather low values as well as a few outliers (shown as individual dots) above 4,500 €/m².

Figure 2.17: Advertised housing prices (comparison)



2.2.4.2 Average internet speed

Indicator description

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

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

Please refer to the technical annex for more information.

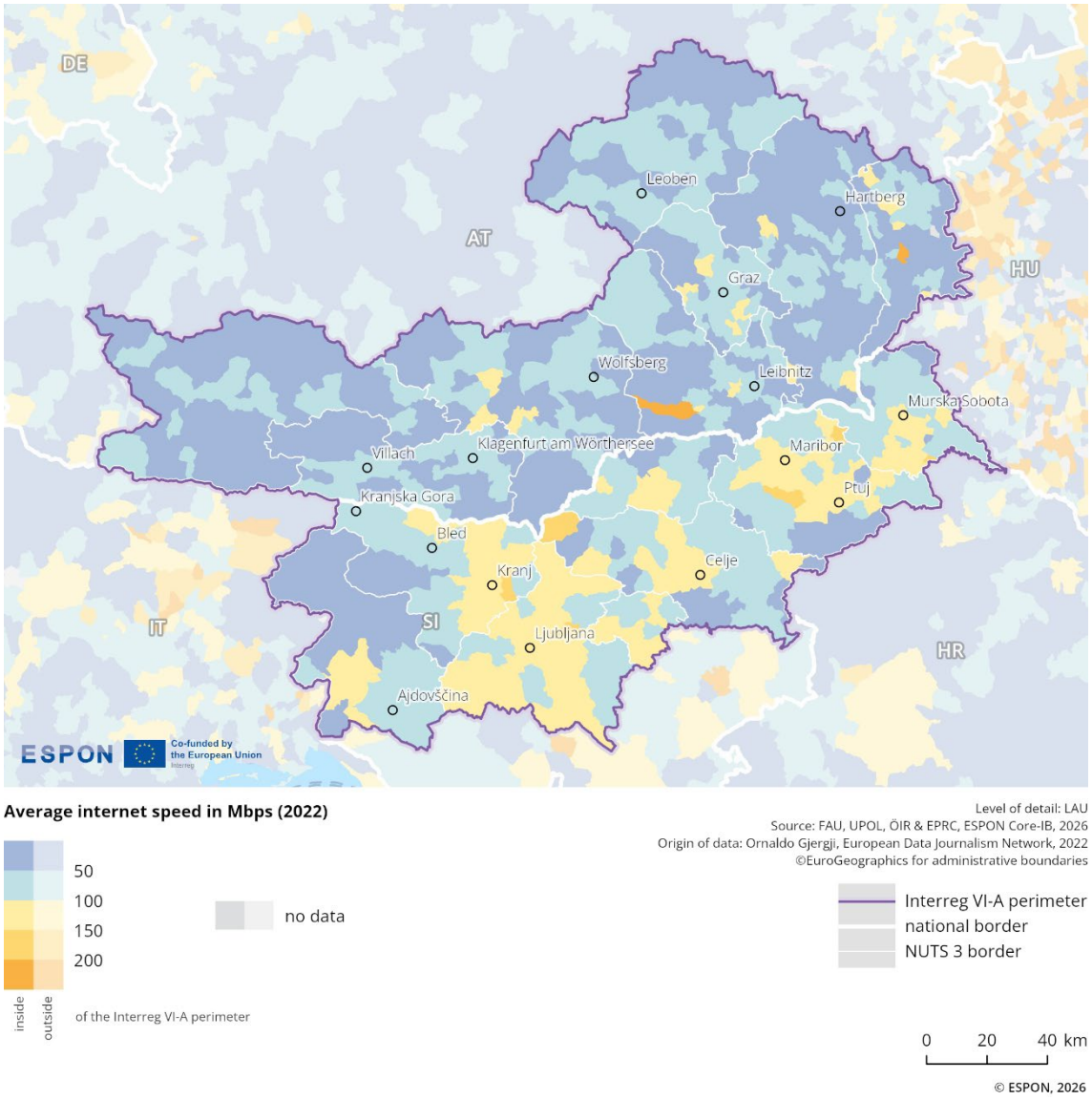
Digitalisation is a highly relevant issue in European border regions, with the overarching objective of ensuring appropriate digital access. It is widely recognised as a key precondition for successful regional and economic development. A major challenge in this process is preventing 'digital divides',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

Average internet speed is a telling indicator of such disparities, highlighting differences in 'digital preparedness' at the local level. Figure 2.18 shows the average download speed at the municipality level. The colour scheme ranges from dark blue (very slow speeds) to orange (very fast speeds). The

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

The map reveals significant differences between urban and rural areas, with values ranging from under 50 Mbps to over 200 Mbps. Cities such as Ljubljana, Celje, Maribor, Ptuj, and Murska Sobota report relatively high average speeds, while 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 exhibit high download speed. Bled, Villach, Wolfsberg, Graz, Leoben, and Hartberg, for example, do not stand out in this regard. Mountainous terrain on both sides of the border clearly poses a challenge to providing high-speed internet, even though Slovenia's average internet speed is higher than Austria's. This results in the border constituting a barrier with regard to this aspect of infrastructure.

Figure 2.18: Average internet download speed



2.2.5 Key messages on the economic dimension

The border region has a strong and balanced economic profile, with many indicators close to or slightly above the European average. GDP per capita has risen steadily and aligns with the EU average. Employment shares confirm this positive trend by exceeding the European average. Employment shares are particularly high around Ljubljana, as the capital city of Slovenia providing key functions. On the Austrian side, slightly lower employment shares are recorded in the regional centres of Villach/Klagenfurt am Wörthersee and Graz.

However, demographic change poses challenges. The share of the working-age population has fallen more substantially than the EU average, particularly in Slovenia, highlighting the pressures of an ageing population and emigration. Nevertheless, the region remains slightly above the European average, suggesting that its labour markets are comparatively resilient. Sectoral structures are stable, with manufacturing, trade and services, and education and health dominating employment and gross value added. This indicates a diversified economy combining traditional industry with service functions, which contributes to stabilising growth.

Cross-border labour mobility further illustrates functional integration.[9] High levels of commuting, particularly from Slovenian regions such as Koroška and Pomurska to Austria, demonstrate that although wage differences are not significant, they are sufficient to encourage daily cross-border movement. The 2023 telework agreement could strengthen these connections by enabling more flexible working arrangements.

Other factors also influence the economic context. Housing prices are markedly higher in Austria, reflecting stronger purchasing power, while internet speeds reveal significant disparities between urban and rural areas, which are constrained by mountainous terrain. These disparities demonstrate how geography continues to impact development patterns, even as the border region becomes more closely integrated.

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.

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

2.3.1.1 Protected areas

Indicator description

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

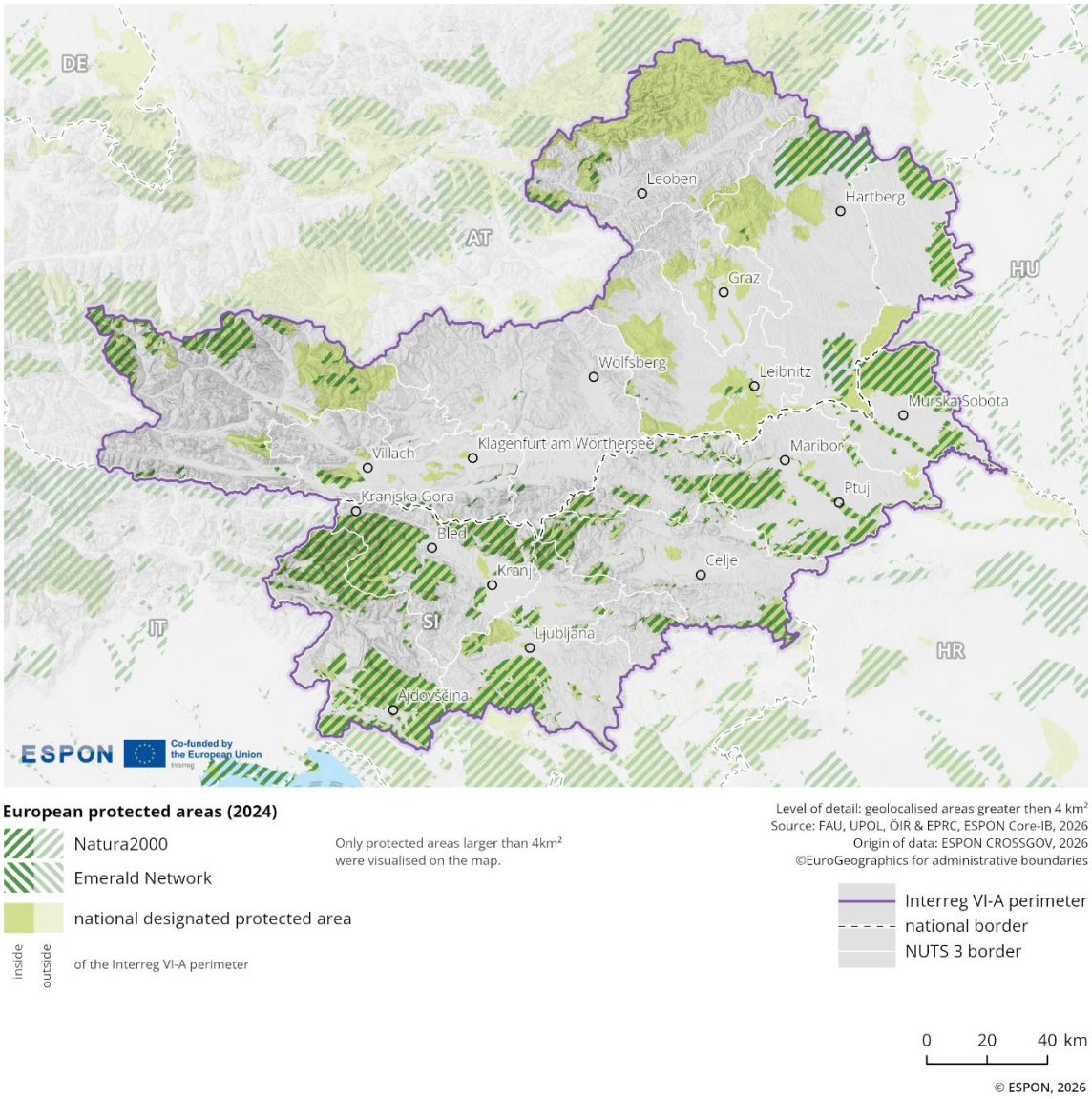
- **Source/method of retrieval**: The indicator represents a combination of nationally designated areas, Natura 2000 and Emerald network provided by EEA (European Environment Agency) Geospatial data catalogue.
- **Temporal coverage**: 2024
- **Unit**: n/a

Please refer to the technical annex for more information.

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

Protected areas within the Interreg region along the Austria–Slovenia border are mainly concentrated in the southern part, particularly around Bled, Kranj, Maribor and Murska Sobota, where large contiguous Natura 2000 and national designations overlap. In general, this cross-border region has a high density of comparably large protected areas, most of which are located in mountainous regions. However, spatial coverage is more scattered in the northeastern and central sections of the Interreg area. The Triglav National Park, located in the western border region, is one of the largest protected areas in this cross-border region, although it only extends into Italian territory. The Karawanks mountain range represents a crucial example of the discontinuation of protected areas, since only the Slovenian side features a designation. Only a few protected zones show clear cross-border continuity, especially nort of Mursk Sobota and to a lesser degree between Maribor and Leibnitz.

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

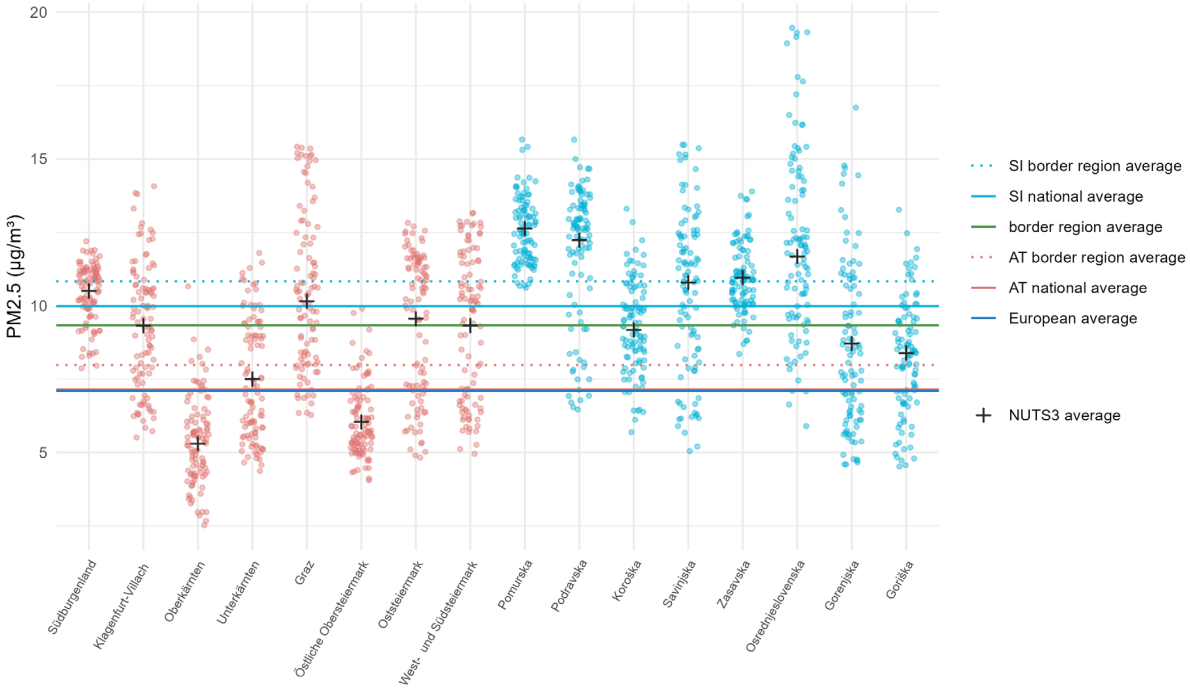
Please refer to the technical annex for more information.

Figure 2.20 illustrates PM2.5 concentrations (in µg/m³) across NUTS3 regions in Slovenia and Austria. Each small dot represents an individual measurement, while the black crosses indicate the average PM2.5 concentration for each NUTS3 region[10]. The regions are aligned along the x-axis, with Austrian regions on the left (in red) and Slovenian regions on the right (in blue).

PM2.5 values in both countries span a wide range. Overall, Slovenia shows both a higher border regional and national average PM2.5 level than Austria. The national average in Slovenia is lower than the average in its border region, a pattern that also appears in the Austrian data. Primarily, predominantly urban NUTS3 regions suffer from higher levels of fine particulate matter pollution, most notable Graz and Osrednjeslovenska including Ljubljana,

The European average is almost aligned with the Austrian national average. Accordingly, Slovenian values lie above the European average, resulting in an average for the cross-border region that is also above the European average.

Figure 2.20: Air pollution



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

2.3.1.3 Water pollution

Indicator description

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

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

Please refer to the technical annex for more information.

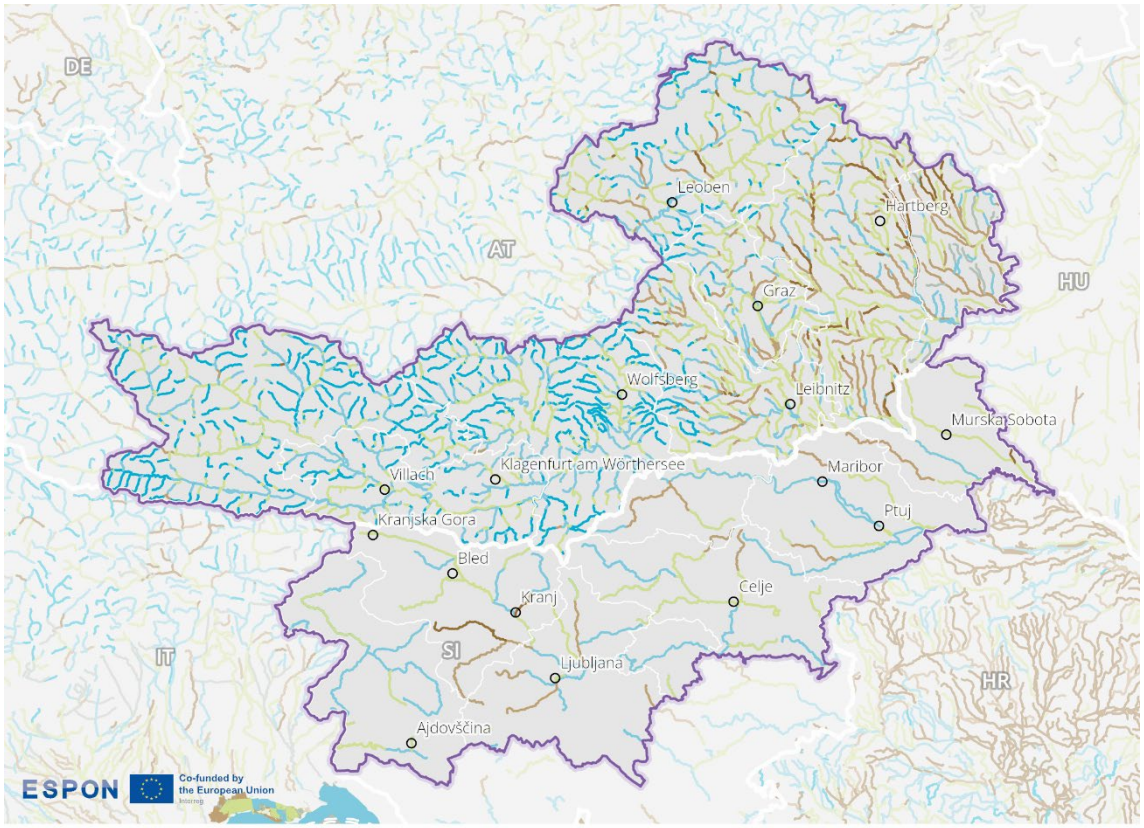
Figure 2.21 illustrates water pollution levels in the Austria–Slovenia Interreg region in 2022. Water quality is represented using 6 colour-coded categories, ranging from "bad" to "high", encompassing an "unknown" category[11].

In the Austrian part of the Interreg region, rivers in the central and western border region are predominantly rated as “high” or “good”, but towards the east, water bodies are increasingly classified as “moderate”, “poor” or “bad”.

In the Slovenian part of the Interreg region, rivers shows a more diverse pattern of classification, but fewer water bodies are rated as "bad" or "high".

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

Figure 2.21: Water quality patterns



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.[12]

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

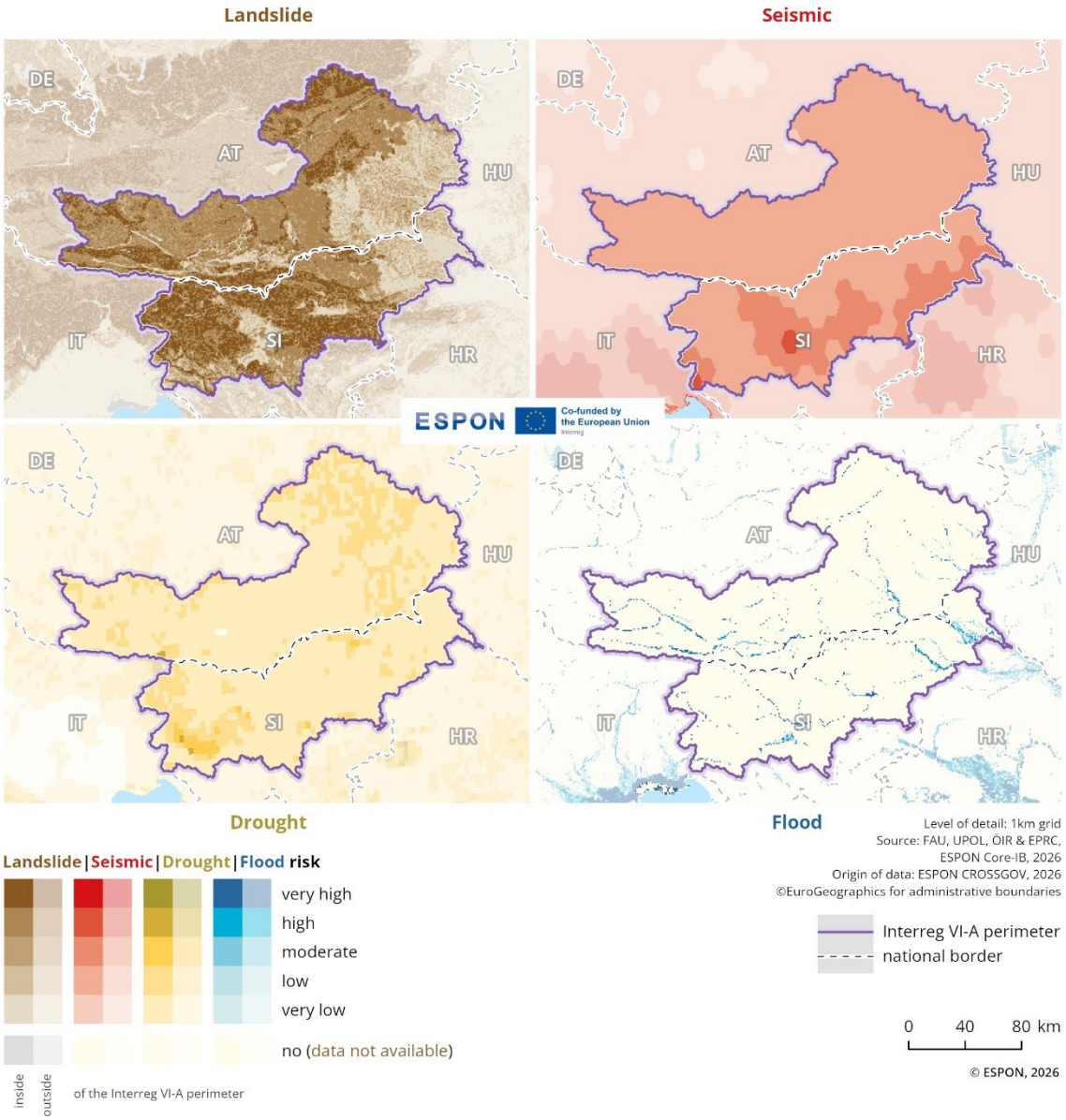
Please refer to the technical annex for more information.

Figure 2.22 illustrates the spatial distribution of natural hazards in the Slovenia-Austria region, highlighting areas where risks are shared across national boundaries and where certain risks are more country specific.

As large parts of the Austrian-Slovenian border region are located in the Alps, a high or very high risk of landslides is common in vast parts of the region, except the eastern parts. Some of the areas most at risk are located in the Karawanken Mountains, which are situated right along the border. The risk of earthquakes is generally low on the Austrian side, but in some areas of Slovenia the risk is described as moderate, even stretching towards the border in the east. Close to the Adriatic Sea and around Ljubljana there is even a localised high risk of seismic activities. Areas at risk of flooding are rather local and mostly located along the Drava and Mura rivers, which both cross both Austria and Slovenia. The risk of drought across the cross-border region is low, with the exception of some areas in the southwest, located on the Slovenian side, as well as in the border triangle of Austria, Slovenia and Italy.

[12] See also: European Commission 2024: Strengthening the Resilience of EU Border Regions, https://ec.europa.eu/regional_policy/sources/studies/KN-02-24-586-2A-N.pdf

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.[13]

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

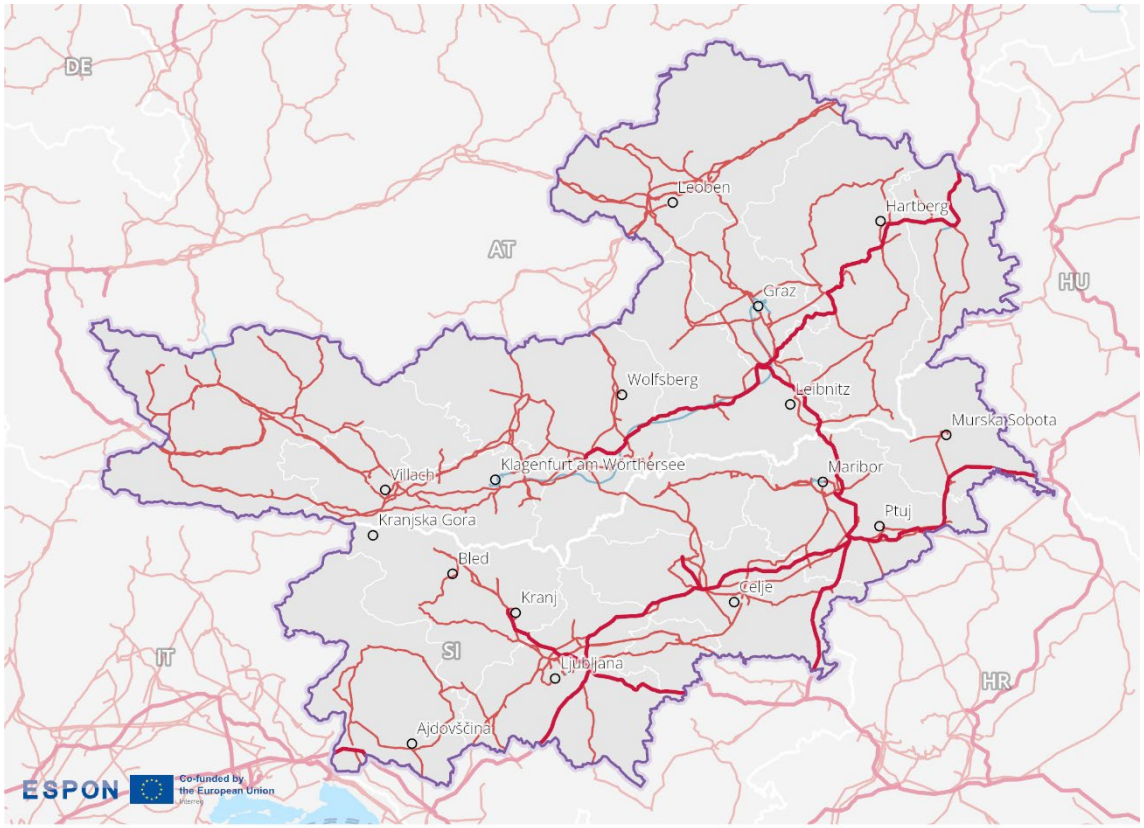
Please refer to the technical annex for more information.

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 cross-border region of Slovenia/Austria features relatively dense high- and extra high-voltage energy infrastructure. A direct extra high-voltage power line connection between the 2 countries is located in the east of the region between Graz (Austria) and Maribor (Slovenia). There is also one high-voltage line crossing the national border in the central part of the territory south of Wolfsberg (Austria). On both sides of the border, extra high-voltage power lines run more or less parallel to the state border, transiting to high voltage in Austria in a westerly direction. In the high mountain terrain near the state border, especially in the Slovenian part of the region, the density of high-voltage power lines is significantly lower (compared to the rest of the territory). Additionally, no cross-border energy interlinkages are present along this western, mountainous border segment.

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

Figure 2.23: High-voltage transmission infrastructure



Overhead power lines (2025)

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

Underground power cables (2025)

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

inside / outside of the Interreg VI-A perimeter

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

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

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

0 20 40 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.

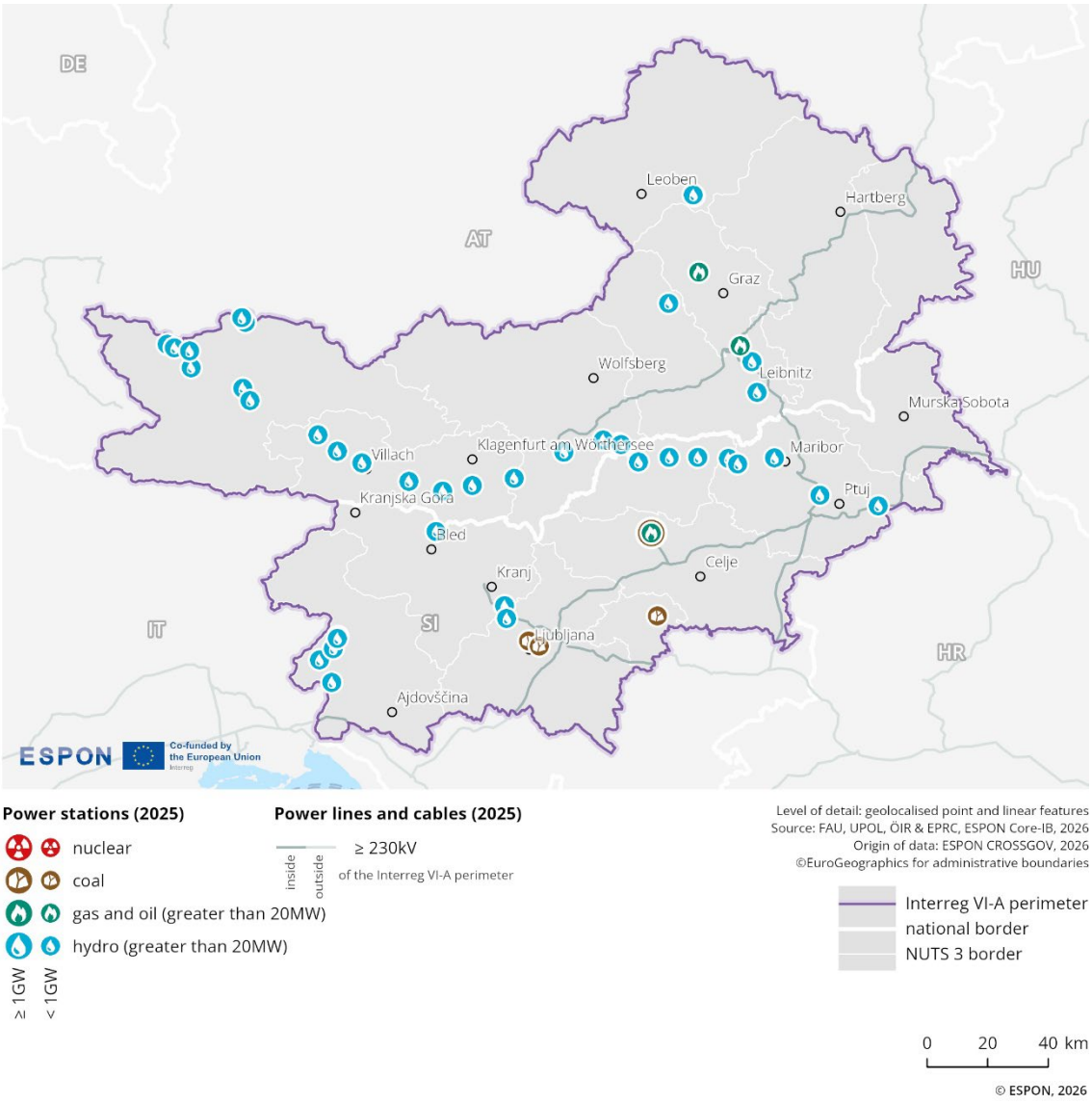
In the Slovenia-Austria cross-border region, in total, there are 55 power station locations (see Table 1), while the dominant ones are represented by hydroelectric power stations, running horizontaly throughout the perimeter along the river Mura (see Figure 2.24).

Table 1: Number and type of power stations

Power stations/plants	Less than 1GW	1GW and up
Nuclear	/	/
Coal	3	1
Gas and oil	4	/
Hydro	47	/

16 of these stations belong to Slovenia, while the remaining 31 are located in Austria. Each country operates 2 gas and oil power stations, while coal-fired power stations are exclusively in use on the Slovenian side (one of them has a high-energy output of over 1GW, located northwest of Celje). Furthermore, no nuclear power plant is present in the whole region.

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

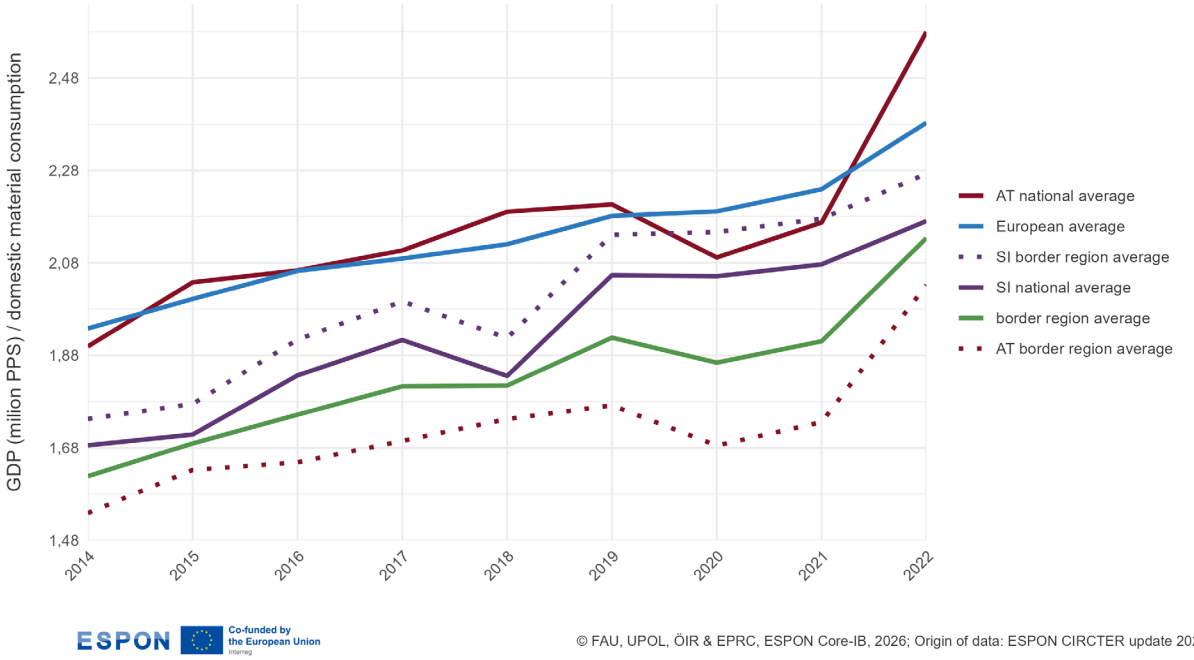
The indicator shows the economic value generated per unit of material consumed for each region within the cross-border area. Developments over time provide insights if the decoupling of productivity from resource use is progressing on regional level.

- **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 Austrian national average shows an upward trend during the observed period, with a slight decline in 2020. After that, it increases sharply again, reaching an overall value of around 2.58 million PPS/DMC in 2022. The Austrian border region average follows a similar pattern but at significantly lower levels, being represented by the lowest line in the graph. Overall, the Slovenian national average remains at

a lower level than the Austrian national average, showing a consistently increasing trend, with the exception of a brief decline in 2018. The Slovenian border region average follows a similar trend, but at a slightly higher level.

The European average lies significantly above the Slovenian national average and the overall border region average, but is closely aligned with the Austrian national average. The border region average represents the combined average of the lower Austrian border region values and the higher Slovenian border region values, reaching a value of around 2.08 million PPS/DMC in 2022. However, notable disparities exist within the border region itself.

2.3.4.2 Generation of waste per GDP

Indicator description

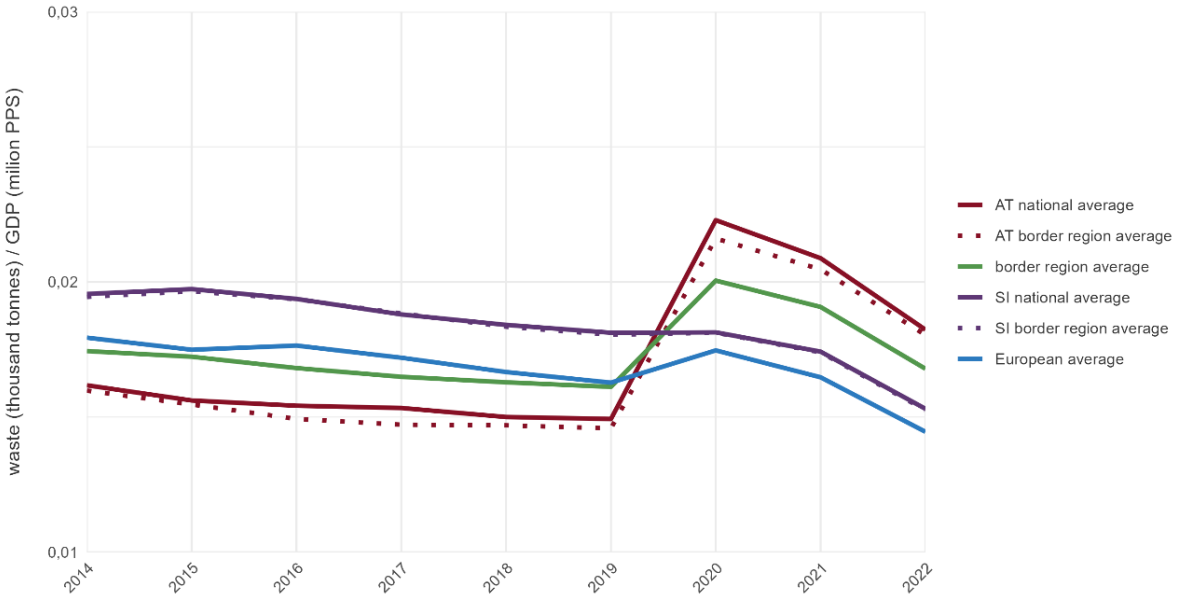
The indicator shows the regional distribution of waste creation in relation to the GDP development. Comparing waste generated to GDP reflects the waste intensity of the economy and provides a measure of "eco-efficiency". Observation of its change from year to year permits to assess whether the economy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

Figure 2.26 illustrates the trend in waste generation relative to economic output, measured in tonnes of waste per million PPS (purchasing power standards) of GDP from 2014 to 2022 in Slovenia, Austria and their Interreg border region.

Figure 2.26: Waste generation per GDP



ESPON Co-funded by the European Union Interreg

The Slovenian national average of waste per GDP steadily decreases over time, reaching a value of approximately 0.015 tonnes of waste per GDP in 2022. The Slovenian border region average follows a nearly identical trend, remaining very close to the national average. For the period from 2014 to 2019, the Austrian national and border region averages are at a lower level than the Slovenian values, before both experience a sharp increase to over 0.02 tonnes of waste per GDP. Afterwards, both Austrian values decline again but remain above the Slovenian values.

The European average gradually decreases from around 0.018 in 2014 to approximately 0.015 in 2022. Slovenia's national and border region values remain above the European average throughout the period but begin to converge towards it from 2020 onwards. Austria's national and border values are below the EU average until 2019, but then rise above it significantly from 2020 onwards.

The combined border regional average steadily decreases until 2019, then rise sharply in 2020, followed by a moderate decline to a value of approximately 0.017 tonnes of waste per million PPS in 2022. Until 2019, it is either below or aligned with the European average. After 2019, however, due to the sharp increase in the Austrian border region average, it rises above the European average.

2.3.5 Key messages on the green dimension

This border region presents a complex interplay of environmental assets, risks and resource allocation. Protected areas are a notable feature, particularly in the southern border area around Bled, Kranj, Maribor and Murska Sobota, where large Natura 2000 zones are present. However, cross-border continuity is limited. This fragmented pattern reflects the different national approaches to conservation, highlighting the potential for more coordinated strategies.

Environmental pressures are also evident in the region's air quality. While PM2.5 values (in µg/m³) vary, the cross-border average is higher than the EU averag, being closer to Slovenian levels than Austrian ones. This suggests that industrial activity, settlement patterns and topography combine to create localised pollution hotspots. Similarly, natural hazards are widely common across the border. Landslide risks dominate much of the Alpine terrain, while flood risks are concentrated along rivers such as the Drava and the Mura. Earthquake risks are more significant in Slovenia, particularly around Ljubljana, highlighting how exposure to hazards can differ yet overlap across the border.

Energy infrastructure adds another layer of interconnection. Dense, high-voltage networks run along and across the border, connecting key urban centres such as Graz and Maribor. Hydropower is the dominant energy source, with stations spread across both countries along the border crossing rivers of Mura and Drava. Coal, however, remains significant only in Slovenia. These patterns highlight both the similarities and differences in the 2 countries' energy mixes.

Resource productivity and waste generation further highlight these differences. While Austria, overall, achieves high productivity levels, its border region falls below the national average. Slovenia's figures are lower but steadily improving. Waste generation, however, presents a different pattern: Slovenia is reducing its waste generation intensity, moving closer to the EU average, while Austria has experienced a significant increase in recent years.

2.4 Socio-economic dimension

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

2.4.1 Social integration

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

2.4.1.1 Cross-border connectivity in social media

Indicator description

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

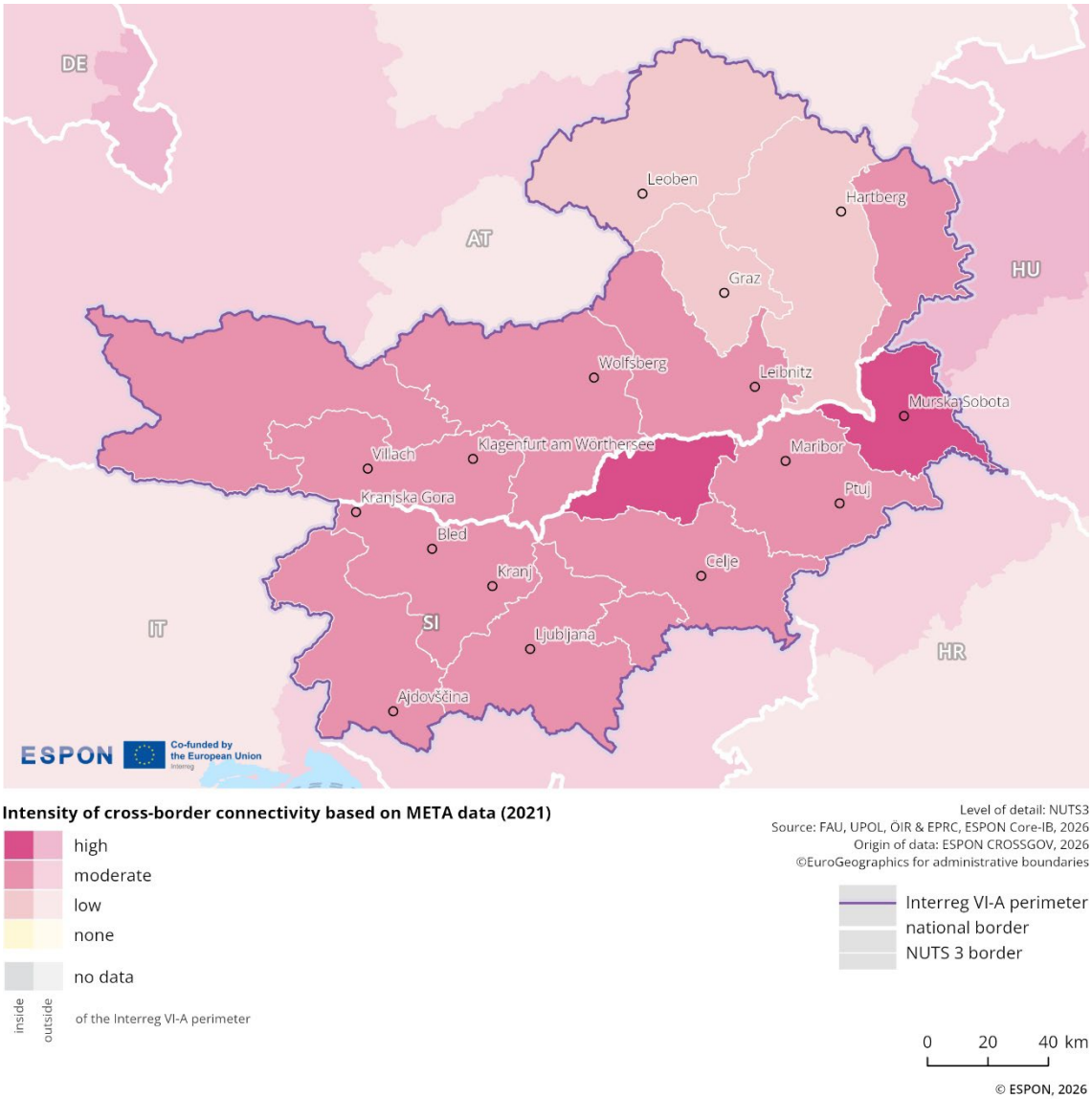
- **Source/method of retrieval**: Processing Facebook data on existing connections across the border (data for Good Meta)
- **Temporal coverage**: 2021
- **Unit**: n/a

Please refer to the technical annex for more information.

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

The intensity of social connectivity among residents of this border region is relatively uniform, and thus no major cross-border differences are evident between the included countries. Interaction is at a moderate level across most areas of the region, including cities such as Wolfsberg, Villach, Bled, Ljubljana, Celje, and Maribor. Low cross-border connectivity is observed in the eastern part of the Austrian section of the region, around Graz, Leoben, and Hartberg. High values of connectivity intensity are recorded in one NUTS3 unit in the central Slovenian part of the region (north of Celje) and in another NUTS3 unit in the eastern Slovenian part (around Murska Sobota).

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 majority of the border regions population is using the language of the respective countries which do not share similarities. However, the minority population of Slovenes in Austrian regions close to the border can reach up to 30% of the total population and thus on regional level sometimes a significant share of the population has no language barriers to neighbouring Slovenia. On the other hand, the number of German speakers in the Slovene border regions is small.

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.

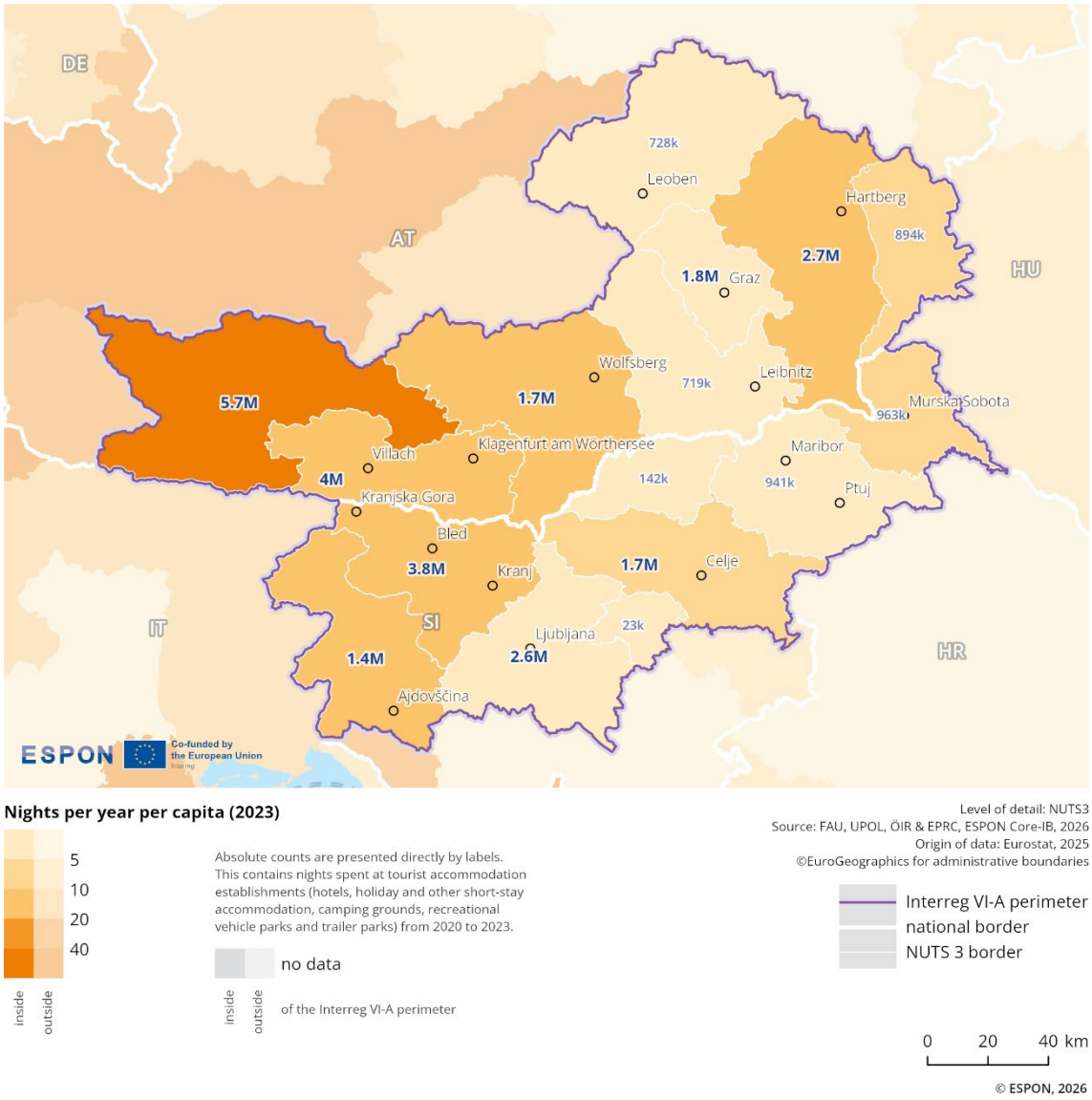
- **Source**: Eurostat
- **Temporal coverage**: 2020-2023
- **Unit**: Nights per capita

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. This is in particular the case in places of overtourism, seasonal pressures, and increasing land-use conflicts.

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

Figure 2.28: Overnight stays in tourism



In Austria, the NUTS3 region Oberkärnten exceeds 40 nights per capita in 2023[14]. With 10 to 20 nights per capita Klagenfurt-Villach, Unterkärnten, Oststeiermark in Austria and Goriška, Gorenjska in Slovenia also show relatively high figures.

In terms of total overnight stays over the 3-year period, the leading tourism regions are mostly located in Austria: Oberkärnten (approx. 5.7 million), Klagenfurt-Villach (approx. 4 million), Oststeiermark (approx. 2.7 million), Graz (approx. 1.8 million) and Unterkärnten (approx. 1.7 million). The neighbouring Slovenian regions have significantly lower absolute figures, except for Gorenjska (approx. 3.8 million), Osrednjeslovenska (approx. 2.6 million), Savinjska (approx. 1.7 million) and Goriška (approx. 1.4 million). Overall, high tourism numbers are predominantly located in the mountainous areas of this cross-border region.

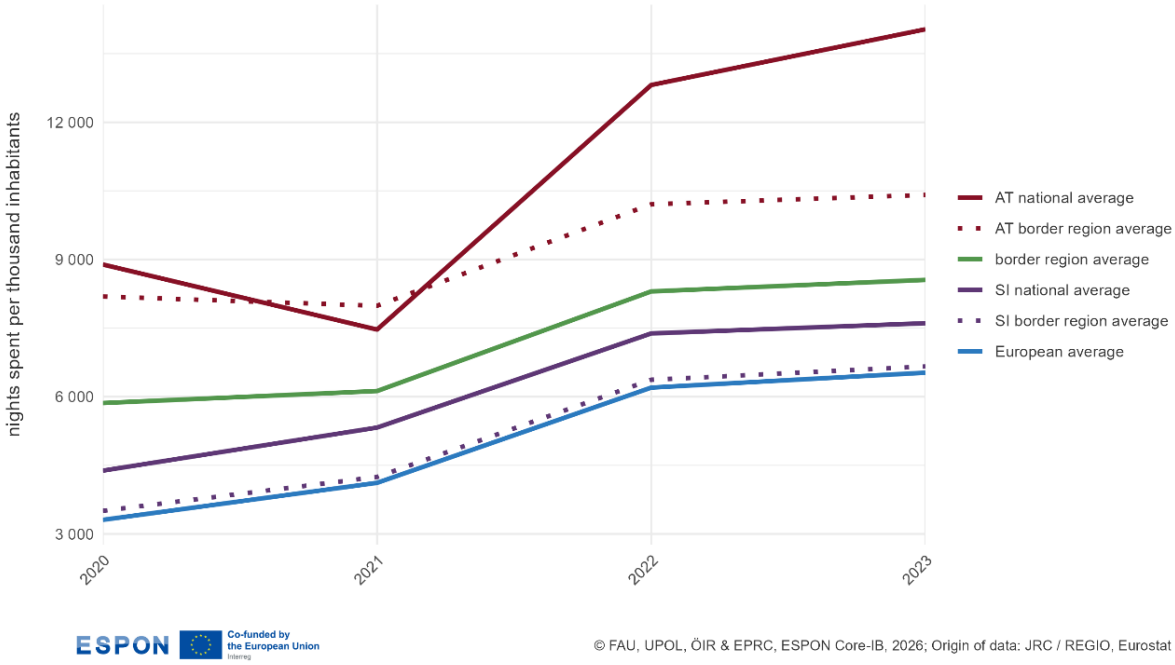
Figure 2.29 illustrates the development of nights spent at tourist establishments per thousand inhabitants from 2020 to 2023. Over the entire period, the average for the Slovenia-Austria programme area is higher than the overall European average, which includes EU member states and the EFTA

[14] 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&

countries Iceland, Liechtenstein, Switzerland and Norway. In nearly all 4 years, the border regional averages of both countries are lower than their respective national averages. Additionally, the regional average for the Austrian border area is significantly higher than that for the Slovenian throughout the given period. However, both border regions outperform the European average, albeit only by a small margin in the case of Slovenia.

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

Figure 2.29: Overnights 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 maps display accessibility to:

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

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

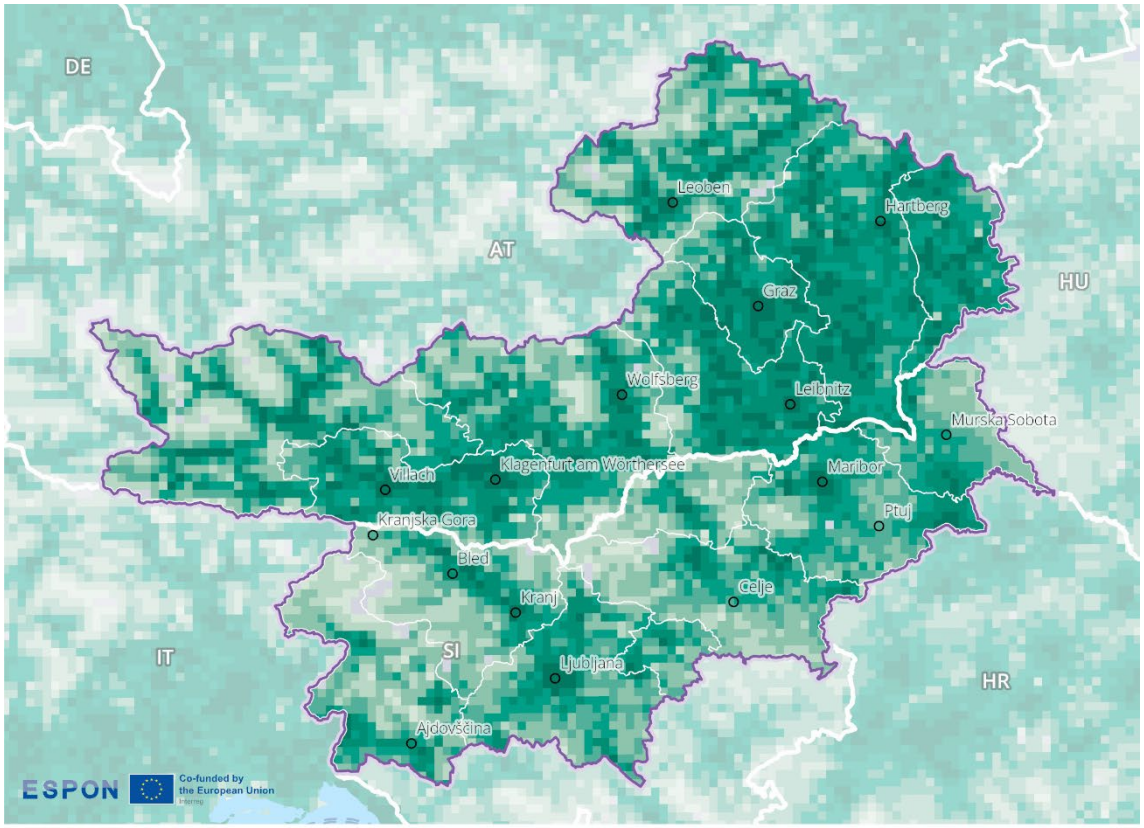
In the Slovenia–Austria border area, essential services such as hospitals, doctors, pharmacies, schools, and grocery shops are not evenly distributed, with generally shorter travel times in the eastern parts of the area. In the western Alpine regions, these services are mostly concentrated in the main valleys, which are relatively well accessible. In some parts of the programme area, travel times even exceed one hour.

Near the national border, travel times to schools, grocery shops, doctors, and pharmacies tend to be longer in Slovenia than in Austria.

The mountainous terrain along the border creates accessibility challenges. Some areas located directly at the national border, such as those in the Karawanks and in Triglav national park, are more difficult to access. Steep mountains make it difficult to build and maintain transport infrastructure. Consequently, travel times to essential services are often longer in these regions.

As a medical service, hospitals are mainly located in cities and more densely populated areas. This creates an urban–rural gradient, with shorter travel times in and near urban centres and longer travel times in rural or remote regions. The same pattern, in an amplified manner, applies to cinemas as a cultural service.

Figure 2.30: Travel time to secondary schools



Car travel time to the nearest secondary school (2021)

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

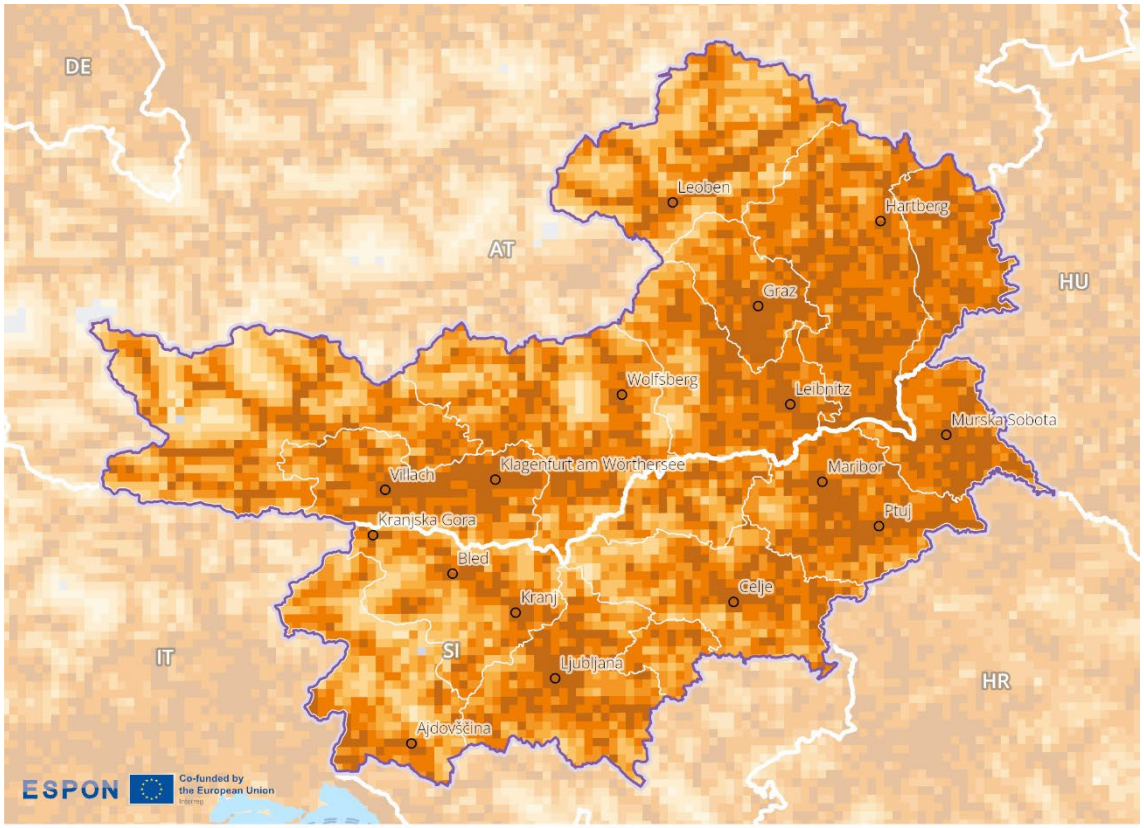
inside outside of the Interreg VI-A perimeter

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

Interreg VI-A perimeter
national border
NUTS 3 border

0 20 40 km

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

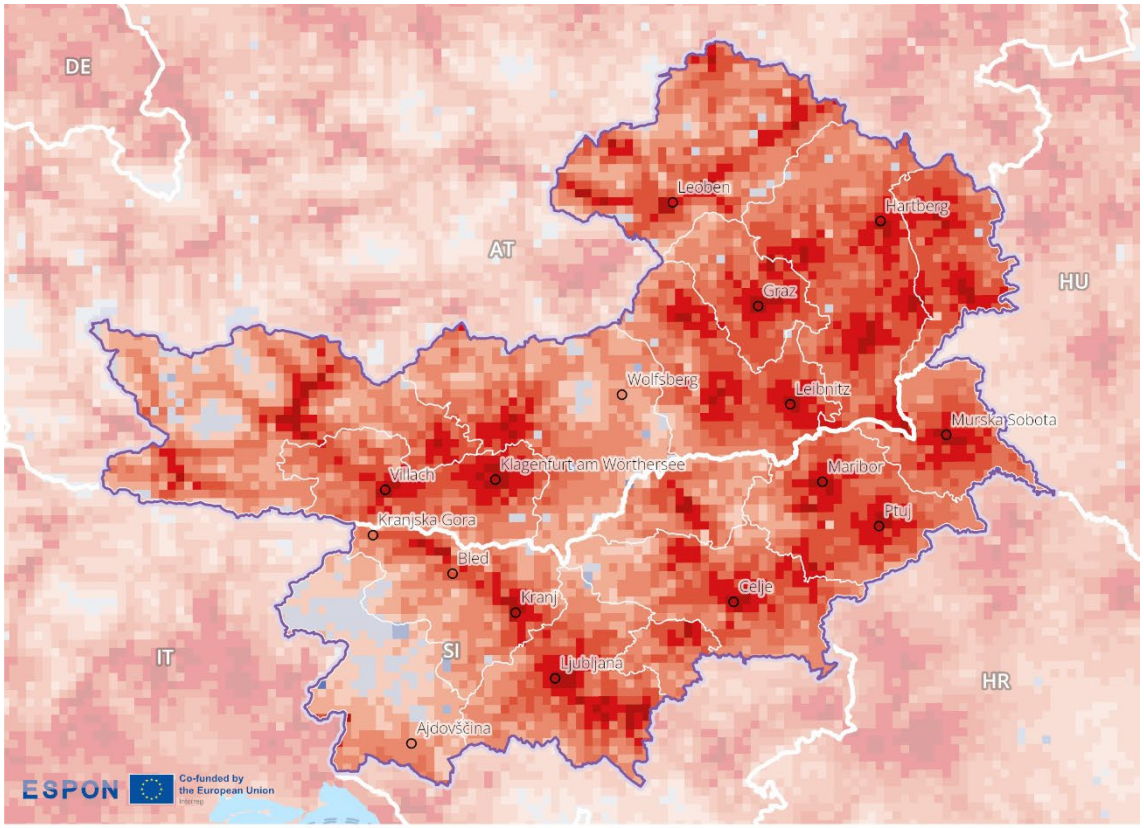
inside outside of the Interreg VI-A perimeter

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
national border
NUTS 3 border

0 20 40 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

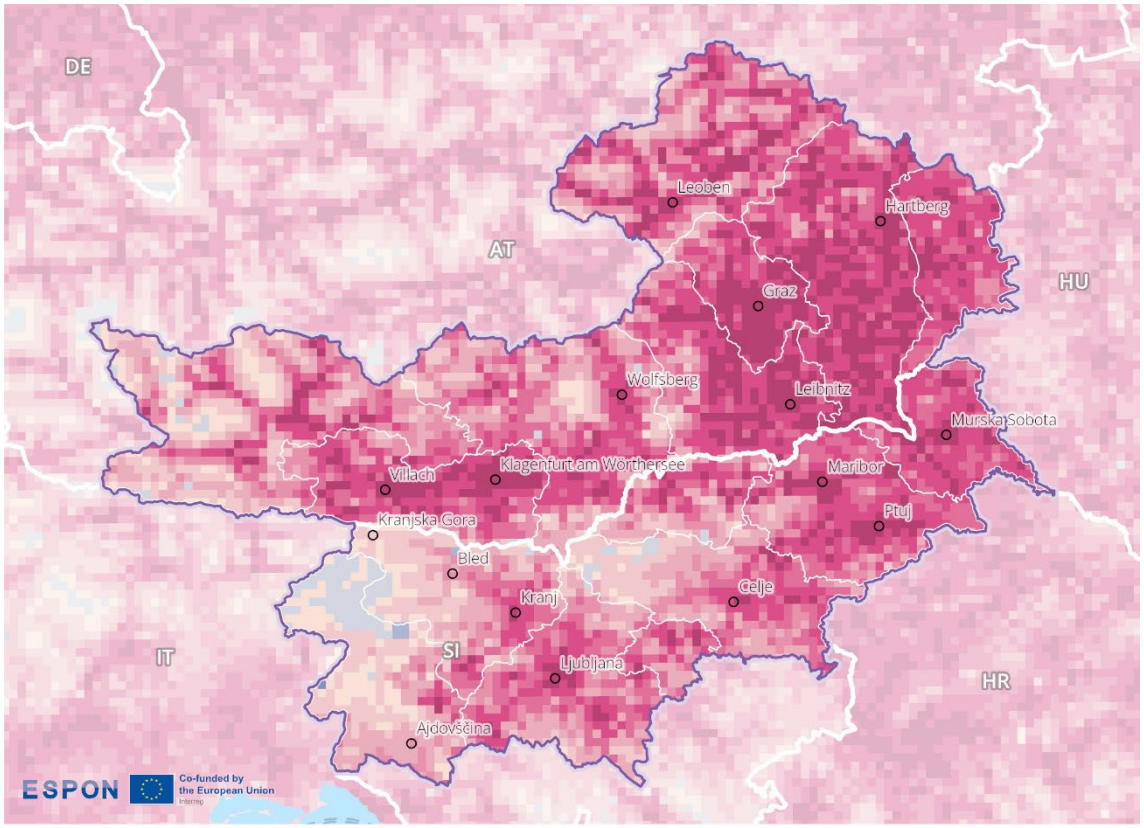
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
national border
NUTS 3 border

0 20 40 km

© ESPON, 2026

Figure 2.33: Travel time to doctors



Car travel time to the nearest doctor (2021)

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

inside outside of the Interreg VI-A perimeter

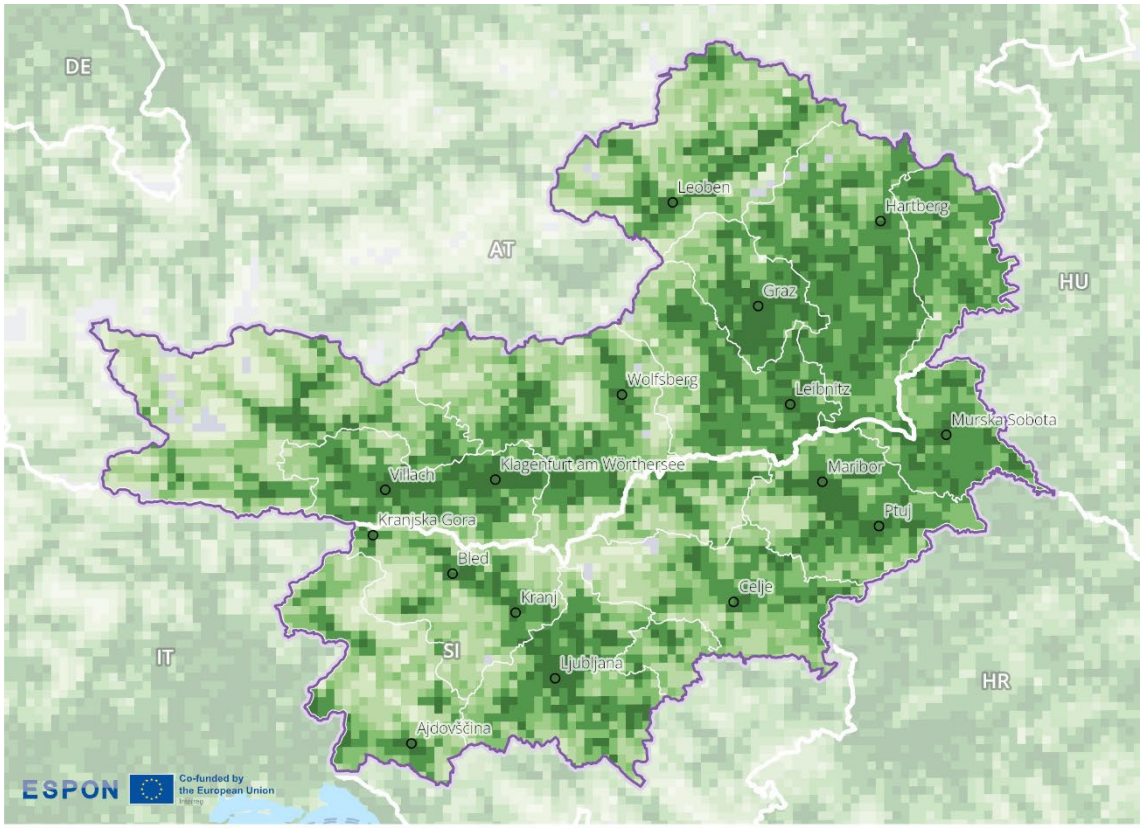
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
national border
NUTS 3 border

0 20 40 km

© ESPON, 2026

Figure 2.34: Travel time to pharmacies



Car travel time to the nearest pharmacy (2021)

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

inside outside of the Interreg VI-A perimeter

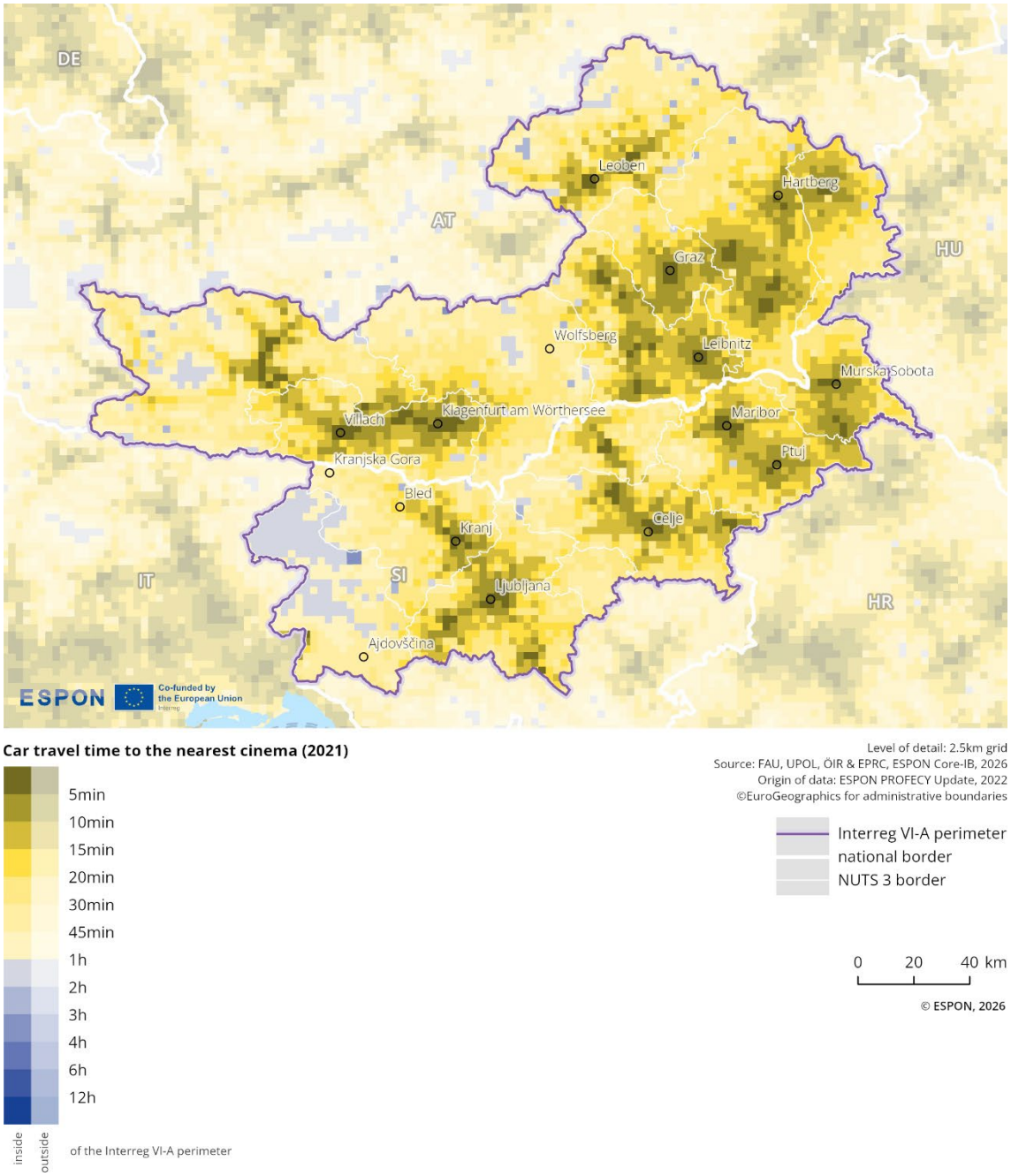
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
national border
NUTS 3 border

0 20 40 km

© ESPON, 2026

Figure 2.35: Travel time to cinemas



2.4.4 Key messages on the socio-economic dimension

The border region is characterised by moderate social interaction and common tourism dynamics. Access to essential services is unevenly distributed, and all of these factors are influenced by geographical and cultural diversity. Social exchanges based on social media analysis are relatively balanced across the border, with little difference between the 2 countries. However, interaction is not equally strong everywhere; it is lower around Austrian cities such as Graz, Leoben and Hartberg, while some Slovenian areas demonstrate a particularly high level of cross-border interaction. Language is another driver of interaction: although German and Slovenian are not mutually intelligible, the presence of Slovenian minorities in Austrian border areas reduces barriers and enables closer connections.

Tourism represents both an economic strength and a source of social pressure. Austrian destinations such as Oberkärnten and Klagenfurt-Villach attract very high numbers of overnight stays, while Slovenian regions such as Gorenjska and Osrednjeslovenska also record high figures. The overall border regional average on overnight stay per capita exceeds the European average, highlighting the importance of tourism for income, employment, and infrastructure. However, concentrated flows, seasonal peaks and international demand put pressure on housing markets, local services and environmental assets. This creates tensions between economic benefits and social or ecological acceptance.

While travel times to schools, doctors, shops and pharmacies are generally shorter in Austria, some areas along the Slovenian border face longer journeys, sometimes exceeding an hour. Mountainous terrain intensifies this issue, as steep valleys and scattered settlements make it challenging to ensure equal accessibility. Hospitals and cinemas, which are located mainly in urban centres, make the urban–rural gap even more pronounced.

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:

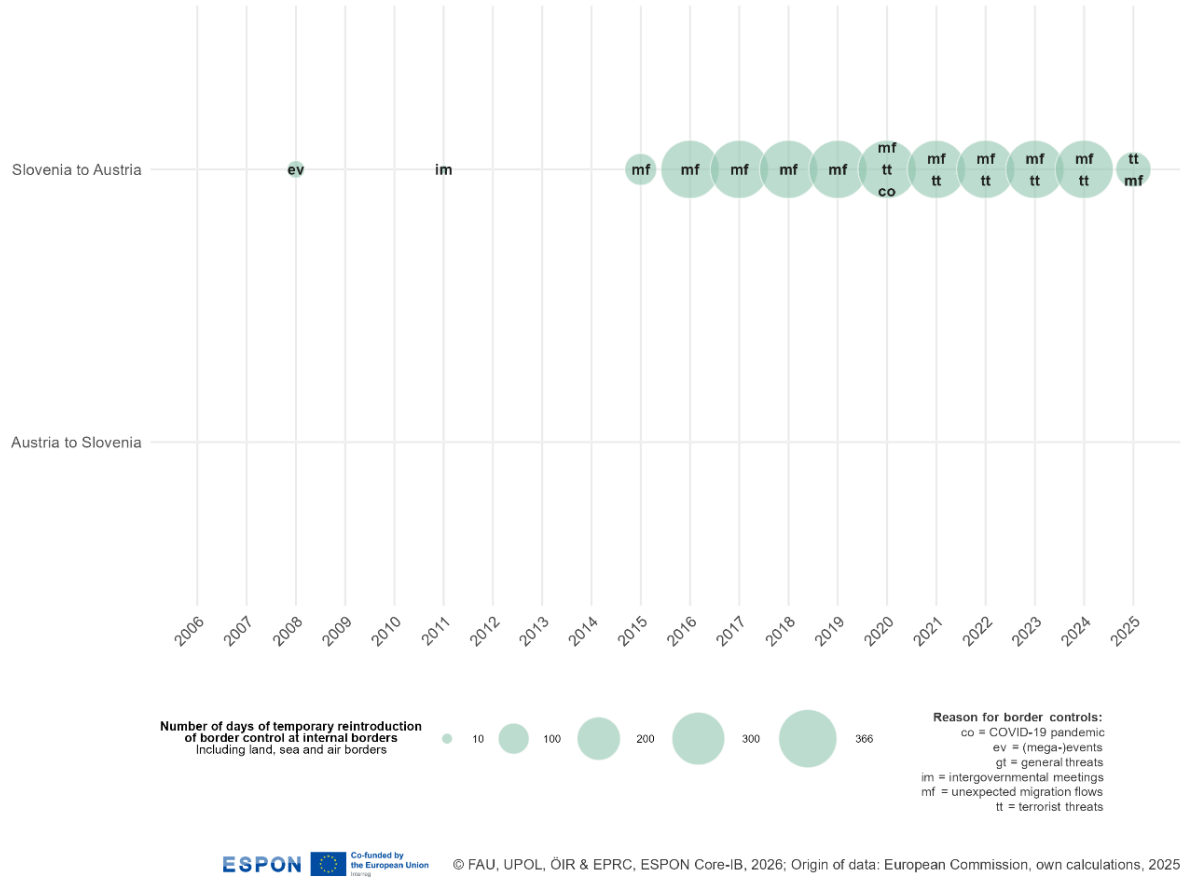
- co – COVID-19 pandemic
- ev – (Mega-)events
- gt – General threats
- im – Intergovernmental meetings
- mf – Unexpected migration flows
- tt – Terrorist threats

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.

Austria had already been part of the Schengen Area by 2006, while Slovenia joined in 2007.

Figure 2.36: Temporary reintroduction of border controls



The Slovenia–Austria border area is characterised by an asymmetric pattern:

- Crossing the border from Slovenia to Austria: Temporary border controls occurred in 13 of 20 years, mainly tied to migration influx (2015–2025), but also to specific events like the EURO 2008, World Economic Forum 2011 and COVID-19 (2020).
- Crossing the border from Austria to Slovenia: Between 2006 and 2025, Slovenia did not reintroduce any temporary border controls to Austria.

From a comparative perspective, Austria has implemented controls for significantly more days than Slovenia, indicating an unequal impact on cross-border movement in one direction.

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

2.5.2 Key messages on the border security dimension

The Slovenia–Austria border is characterised by an asymmetric pattern of temporary border controls, reflecting broader European challenges and national policy choices. Although the Schengen framework is based on open borders and free movement, Austria has repeatedly reintroduced temporary border controls, whereas Slovenia has not applied reciprocal measures. Between 2006 and 2025, Austria

implemented such controls for 13 out of 20 years, often for extended periods. These were primarily in response to influxes of migrants since 2015, but also in reaction to other pressures, such as major events, security threats or the pandemic. In contrast, Slovenia has never reintroduced controls on the border with Austria.

This creates a clear imbalance in cross-border life. The re-establishment of controls, even temporarily, disrupts the day-to-day functioning of the border region. Commuters, businesses and logistics operators experience delays, uncertainty and additional costs.

2.6 Governance dimension

The Austria–Slovenia cross-border region has developed strong cooperative ties, supported by shared cultural and linguistic links. Since Slovenia's accession to the EU and Schengen Area in 2004 and 2007, collaboration has intensified under the Interreg Slovenia–Austria programme. The programme aligns with EU macro-regional strategies (EUSALP and EUSDR), enhancing cooperation in areas such as climate change, mobility, and regional development. A diverse set of regional and thematic structures supports this, including LEADER/CLLD groups, Regional Development Agencies, and specialised agencies for energy efficiency and climate adaptation. These entities foster cooperation beyond the local scale and contribute valuable expertise for addressing cross-border challenges; however, their mandates do not always extend across the border. The EGTC Karavanke/Karawanken Geopark connects 14 municipalities across the border in a model of integrated territorial governance. Bilateral risk and crisis management agreements also support coordinated emergency planning, including joint work on seismic risk with Italy. Nevertheless, cooperation faces constraints due to differences in administrative systems - Austria's federal structure versus Slovenia's centralised one - and limited capacity among many small municipalities to engage consistently in cross-border initiatives.

2.6.1 Cross-border cooperation

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

2.6.1.1 Cross-border governance structures

Indicator description

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

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

Please refer to the technical annex for more information.

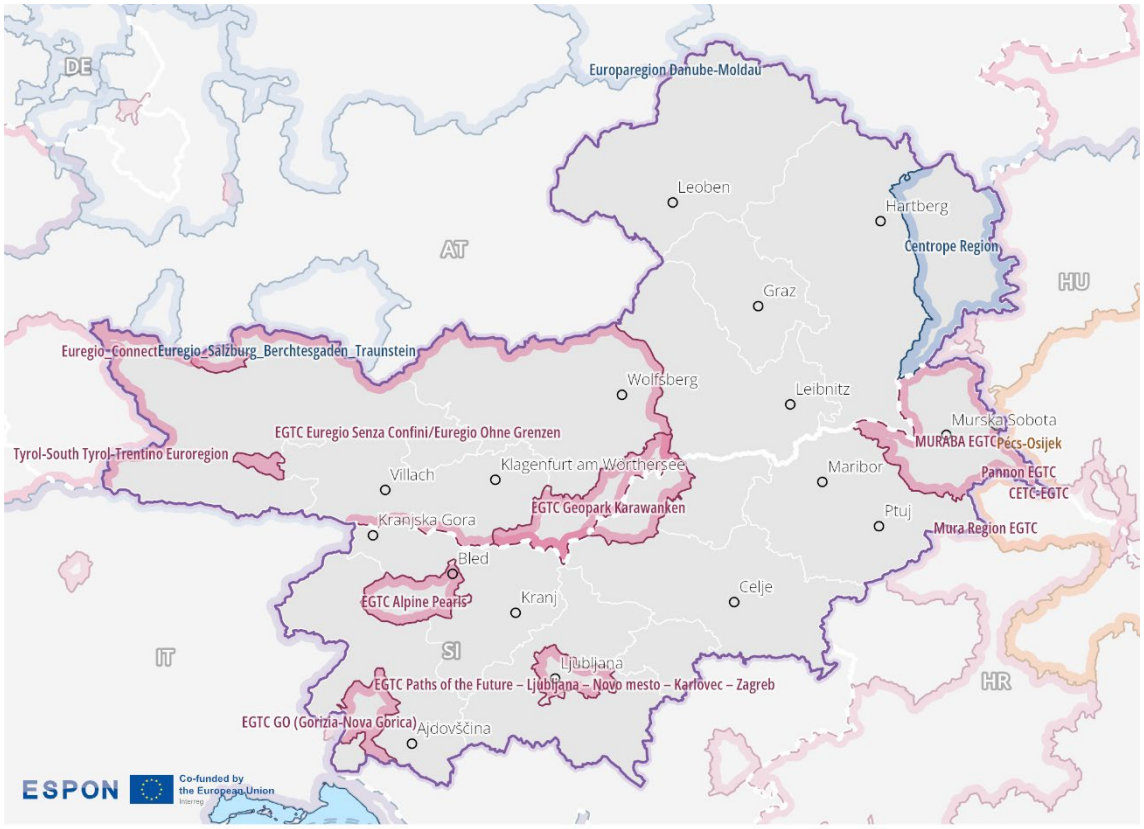
Figure 2.37 shows the different types of institutionalised cooperation. These governance structures either function as cross-border entities or bring together stakeholders from the cross-border region around shared topics. The governance structures covered include Eurocities, Euroregions, European

Groupings of Territorial Cooperation (EGTCs), cross-border associations and councils. Project-based cooperation is not included.

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

The multi-level governance structure in this programme area shows sparse spatial coverage along the border. While some areas are not addressed by cross-border cooperation formats, the EGTCs Euregio Senza Confini and Muraba do not concern this particular border region. Consequently, the EGTC Geopark Karawanken is the only relevant cross-border governance structure in this border region, though featuring a high level of institutionalised cooperation.

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.

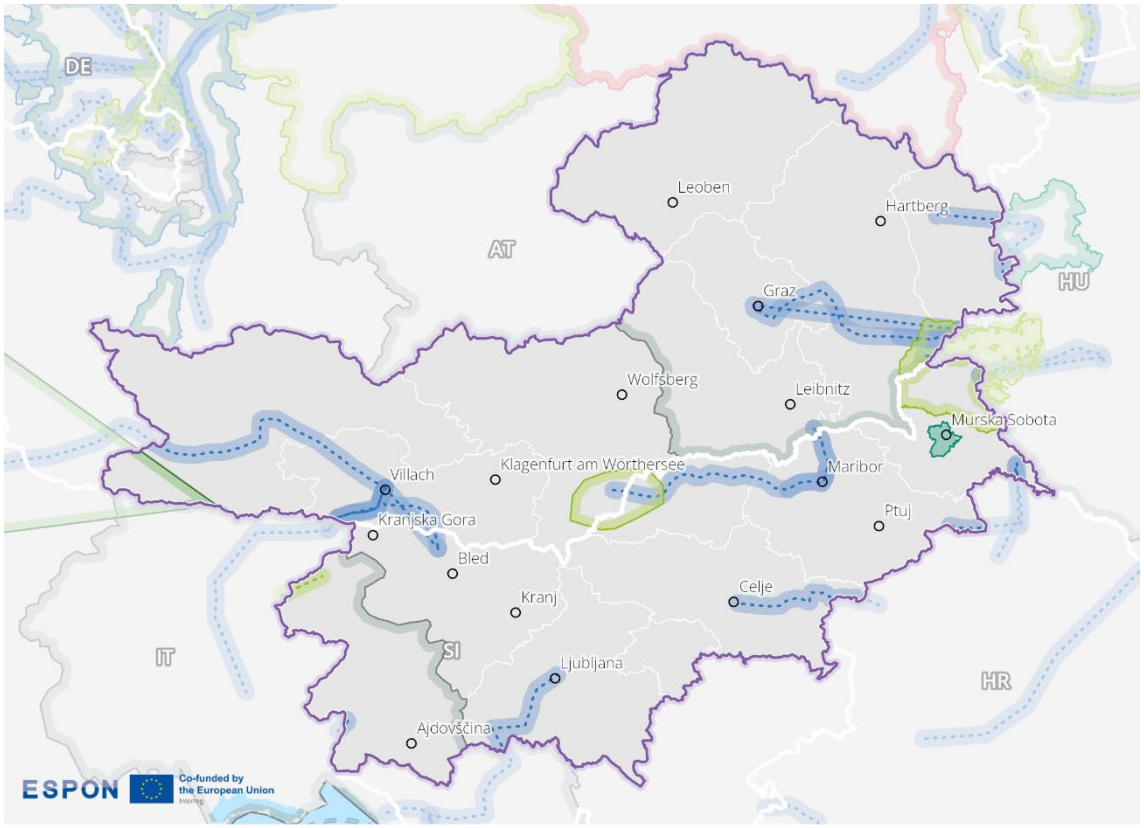
- **Source**: ESPON cross-border public services (CPS) 2.0 database
- **Temporal coverage**: 2022
- **Unit**: n/a

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 in the Austria–Slovenia border are limited and thematically concentrated. Transportation services can be found the most, going through Graz and Maribor, as well a crossing the border from Villach. Isolated areas of environment & water are visible north of Murska Sobota, south of Wolfsberg and at the Slovenian-Italian border. In addition, one single education & research service is surrounding Murska Sobota. Meanwhile, other themes such as health care, disater management, tourism & information and culture are absent.

Figure 2.38: Cross-border public services



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

areal | linear | character of the service

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

inside | outside | inside | outside | of the Interreg VI-A perimeter

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

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

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

0 20 40 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. For the case of the Slovenia-Austria programme area, no participation in b-solutions projects has been reported yet.

2.6.1.4 Institutionalised advice centres for cross-border issues

Indicator description

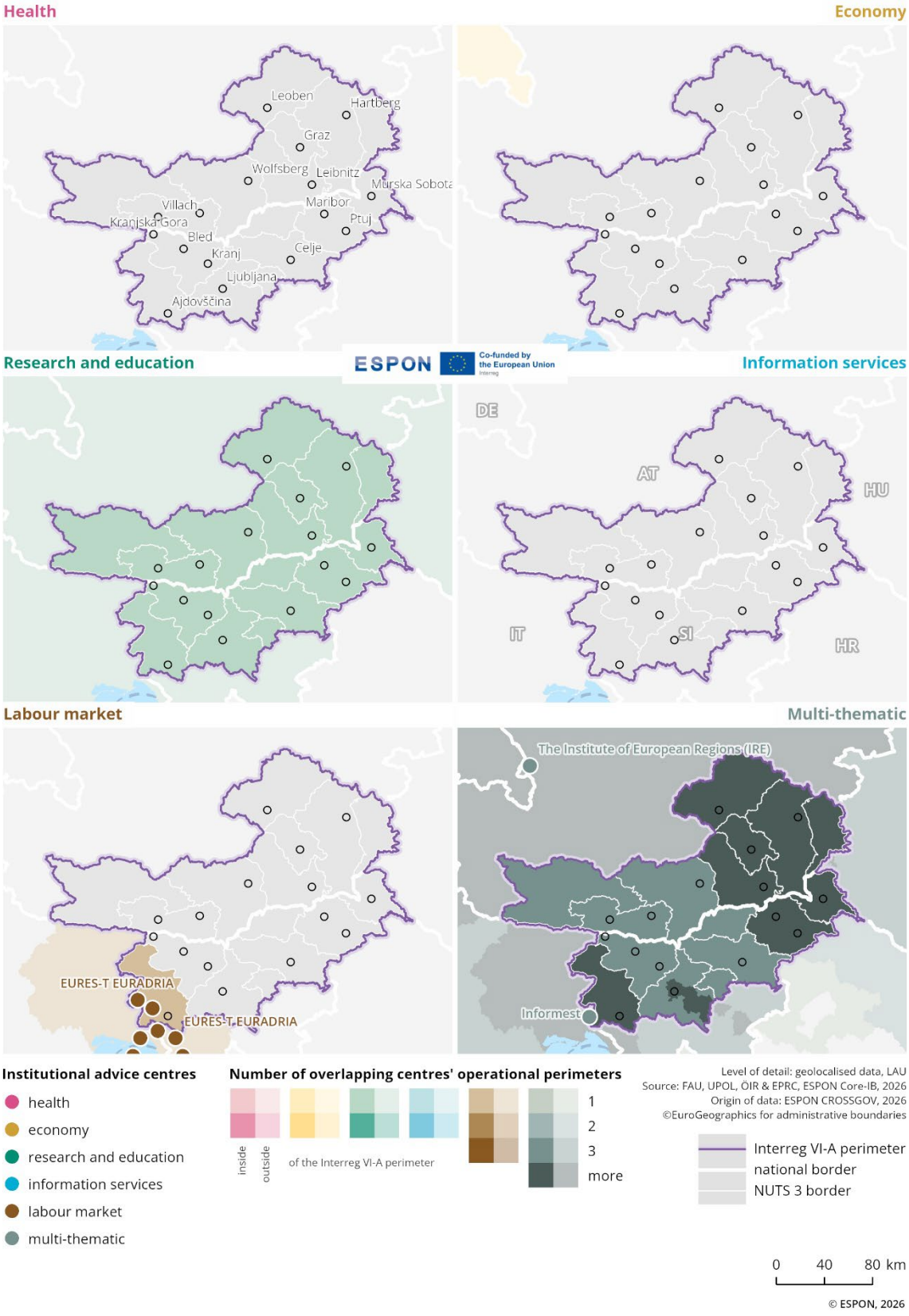
The indicator shows where institutionalised advice centres on cross-border issues are located, including their thematic focus and geographical perimeter.

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

Please refer to the technical annex for more information.

Figure 2.39 shows the locations and types of institutionalised advice centres, along with their operational domains, in the cross-border Interreg region between Slovenia and Austria. These centres throughout Europe provide support in various fields such as health, economy, research & education, information services, the labour market, and multi-thematic issues. The operational domains of these centres are also indicated by coloured shading on the map. The more intense the colour, the stronger the influence of that specific domain in the corresponding area.

Figure 2.39: Institutionalised cross-border advice centres



Institutionalised advice centres are concentrated only in the southern part of the Interreg region. 2 labour market institutionalised advice centres, both from EURES-T EURADRIA, are located there. Further south, outside of the Interreg region, there are several more centres from EURES-T EURADRIA.

In the same area, at the border of the Interreg region, there is also a multi-themtic institutionalised advice centre called Informest. However, they are not focused on the Austrian-Slovenian border region but rather on the maritime area.

Centres with multi-thematic, as well as research and education operational domains, are represented in both countries within the Interreg area, but there are regional differences. Centres with these operational domains are more pronounced in the northeastern part of the Interreg region. In the southern part, which is only valid for the Slovenian part of the region, there are also some labour market operational domains.

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
Sustainable economic development	▪ Key economic sectors include manufacturing, trade, transport, and tourism. ▪ SMEs (Small and medium-sized enterprises) play a central role; business support environments could benefit from stronger cross-border cooperation to foster innovation and resilience. ▪ R&D and innovation are concentrated in regional centres, with limited outreach to peripheral and border areas; stronger links with SMEs are needed. ▪ Common R&D interests exist, particularly in green and circular economy fields. ▪ Economic activity shows spatial disparities, with some areas facing declining business dynamism and fewer new enterprises. ▪ Enhancing digital skills and integrating digital technologies in climate, environment, and disaster risk management is a recognised common need. ▪ The border region is rich in natural assets and protected areas; tourism based on natural and cultural heritage is economically significant. ▪ A more strategic and sustainable approach to tourism development is needed. ▪ The cultural and creative industries hold untapped potential. ▪ Sustainable regional mobility is important for tourism but remains a challenge.

Topic	Key development opportunities and challenges identified for Interreg 2021-27
Nature protection, environment and climate	▪ Strong potential to pilot integrated sustainability solutions at the economy–society–ecology nexus. ▪ Shared river systems require better policy coordination and joint management. ▪ Common mechanisms for rapid disaster response are needed. ▪ Gaps remain in public transport, especially in rural and cross-border areas. ▪ Future mobility options include micro-transport, last-mile solutions, e-mobility, and bicycle infrastructure - especially for tourism and access to protected areas. ▪ Advancing the circular economy is a shared regional priority.
Skills	▪ Shortages of skilled workers in key sectors. ▪ Persistent unemployment among long-term unemployed, low-skilled, older workers, and youth. ▪ Asymmetric labour mobility from Slovenia to Austria creates regional imbalances. ▪ Rural areas face brain drain, fewer job opportunities, limited access to quality training. ▪ Social innovation and the social economy can improve employability and inclusion. ▪ Digital and green transitions demand new skills; digital literacy remains a challenge. ▪ Lifelong learning and cross-border language/intercultural education is vital for future resilience.
Coordination	▪ Scope to intensify exchange and create more stable cooperation platforms/structures, to avoid duplication of common activities; ▪ Common interest in arrangements to foster cooperation of actors with small-size projects primarily focusing on cooperation among people living in the area.

Total Budget: EUR 57,307,749.98

Figure 2.40: Split of Interreg allocation

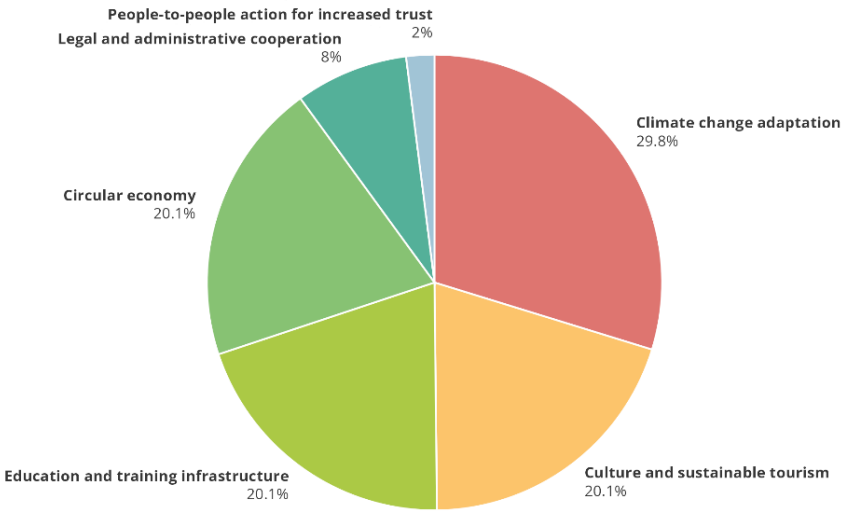


Table 3 shows the number of Interreg 2021-2027 cross-border and transnational programmes which share at least one NUTS3 region with the border area. Each programme has its own distinct rationale, value and territorial focus. However, for the purposes of, for example, planning and capitalisation activities 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.[15] The 4 Interreg C programmes Interreg ESPON, Interact, Interreg Europe and URBACT (Urban Action) cover the whole EU territory and provide a range of joint services and initiatives.

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

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

Key aspects

- As overall funding is relatively modest, investments are targeted at limited thematic areas to advance circular economy, sustainable tourism, and education.
- Climate change adaptation receives the largest share of resources, highlighting the region's commitment to shared environmental resilience.
- Culture and sustainable tourism, along with education and training infrastructure, are equally prioritised, reflecting the importance of shared heritage, rural vitality, and skills development.
- The programme also includes targeted support to foster trust building and cooperation among people and institutions.
- Potential for synergies across programmes, both through the Interreg A and B programmes.

[15] 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.

- 3 NUTS3 regions from the programme area are also part of Interreg VI-A Italy–Slovenia, and another 3 are included in Interreg VI-A Italy–Austria for the 2021–2027 period.
- 2 NUTS3 regions from the programme area are also part of Interreg VI-A Slovenia–Hungary, and 3 others participate in Interreg VI-A Austria–Hungary for the 2021–2027 period.
- 5 of the NUTS3 region from the programme area are also part of the 2021-2027 Interreg VI-A Slovenia-Croatia.
- All 16 NUTS3 regions from the programme area are part of the 2021-2027 Interreg VI-B Alpine Space, 2021-2027 Interreg VI-B Central Europe, 2021-2027 Interreg VI-B Danube.
- All of the Slovenian NUTS3 regions from the programme area are part of the 2021-2027 Interreg VI-B EURO Mediterranean (EURO MED) and the 2021-2027 Interreg VI-B IPA Adriatic-Ionian.

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[16]. Nevertheless, this development should be interpreted as indicative, as variations in partner name reporting and general limitations regarding the representativeness of the dataset affect the robustness of the results.

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

Please refer to the technical annex for more information.

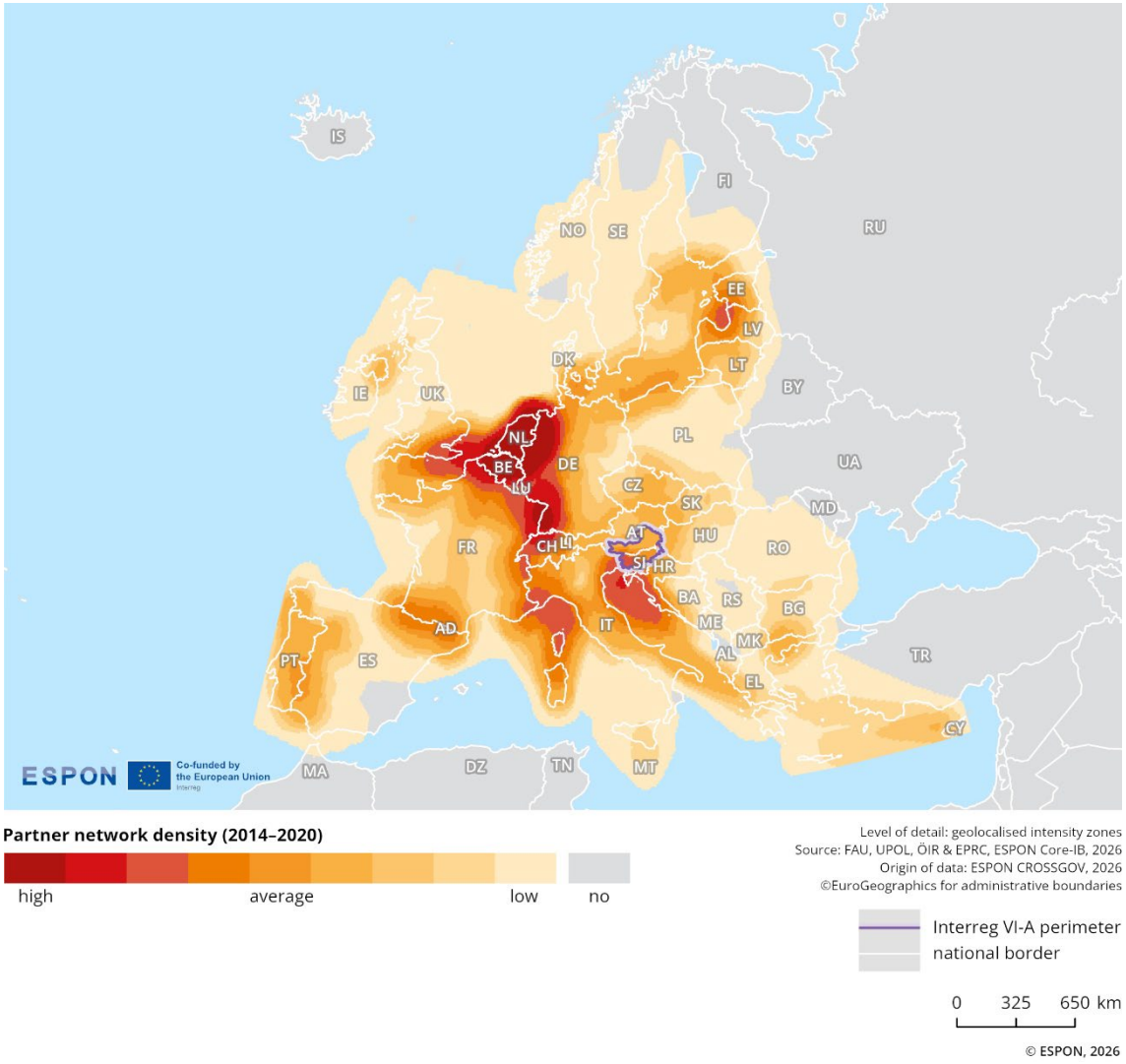
Cooperation activities and networks are among the most meaningful types of information for delineating cross-border functional areas. As such, the indicator on cooperation through Interreg can help to identify networks among cross-border actors and highlight the density of cooperation in specific border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

Figure 2.41 shows the density of Interreg V A (2014–2020) partner networks. The indicator includes the location of, and links between, Interreg project partners within a project consortium. From a European perspective, partner network density in the Slovenia-Austria border area appears to be somewhat unevenly distributed. The southwestern programme area shows particularly high network levels, while regions further northeast show more average levels. Overall, the partner network density in this border area is slightly higher than the European average. Based on the keep.eu database and excluding duplicates, the number of project partners decreased from 310 in Interreg IV-A (2007–2013) to 204 in Interreg V-A (2014–2020), a decrease of about 34%. It is important that these changes are considered

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

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

The Austria–Slovenia border region illustrates a high level of cross-border cooperation. Since Slovenia joined the EU and the Schengen Area, governance has been strengthened through Interreg programmes, bilateral agreements and thematic partnerships. Notably, a wide range of stakeholders are involved, including local municipalities, regional development agencies, and specialised institutions, who collaborate on issues such as climate adaptation, mobility, and sustainable development. The EGTC Karavanke/Karawanken Geopark demonstrates how municipalities can pool resources for joint territorial governance, and bilateral agreements on risk management extend cooperation to emergency planning.

Apart from this EGTC, however, the multi-level governance structure in this programme area has sparse spatial coverage along the border and barely addresses issues within this context. Additionally, no b-solution initiative has yet been initiated. Similarly, cross-border public services remain limited and are mainly concentrated along transport links between Graz, Maribor and Villach. There are only a few examples in education, research, and environmental management. This suggests strong project-based and sectoral collaborations, but limited implementation through strategic frameworks.

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 Slovenia-Austria border region combines dense Slovenian urban areas (Ljubljana, Maribor) with more dispersed Austrian centres (Graz, Klagenfurt, Villach), showing moderate but uneven population growth alongside ageing trends; • Settlement expansion is concentrated around main urban centres and valleys, highlighting pressures for coordinated spatial planning to balance urban growth with agriculture, tourism, and environmental protection; • Strong cross-border accessibility, with most journeys under 30 minutes and well-distributed services within non-mountainous areas, supports integration, though rail lags behind road except on key routes like Graz–Maribor and via the Karawanks tunnel.

Territorial dimension	
Policy options	**Population and settlement related aspects** • A focus could be on addressing specifically the sparsely populated border areas to sustain local services and maintain settlement viability; • Cooperation projects could systematically integrate the demographic trends across all age groups to anticipate future service needs; • Strategy development approaches could address settlement growth around cities and along valley corridors via polycentric and environmentally sensitive spatial development, limiting land-use conflicts and environmental pressures. **Accessibility related aspects** • Strategy development, pilot projects and knowledge exchange can explore the potentials of last-mile solutions to improve accessibility in mountainous areas, while supporting more sustainable mobility patterns and reducing the car dependency; • Cross-border rail connections such as Graz–Maribor and Villach–Jesenice-Ljubljana could be addressed as strategic backbones for sustainable mobility, daily commuting and deeper regional integration.

Economic dimension	
Key analytical findings	• The border region shows strong economic performance, with GDP per capita at the EU average, high employment rates (notably around Ljubljana, Villach/Klagenfurt am Wörthersee, and Graz), and a diversified economy balancing industry and services; • Challenges stem from demographic decline and ageing, uneven employment opportunities, and spatial disparities such as higher Austrian housing prices and urban–rural digital gaps; • Cross-border integration is reinforced by commuting flows from Slovenia to Austria and new instruments like the 2023 telework agreement, underlining the need for coordinated strategies linking growth, mobility, and accessibility.

Economic dimension	
Policy options	**Competetiveness related aspect** • Cooperation projects could build on Slovenia's comparatively advanced digital infrastructure to support economic development, reduce GDP disparities and strengthen innovation capacity and competitiveness on both sides of the border. **Cross-cutting aspect** • A focus could be on addressing common challenges such as the declining working-age population and spatial wage asymmetries, to support labour mobility, reduce pressures on long-distance commuting and contribute to balanced territorial development.

Green dimension	
Key analytical findings	• The border region is defined by rich natural assets, especially Natura 2000 areas, but fragmented conservation efforts, with stronger protection in Slovenia than Austria; • Shared environmental pressures include above-EU-average air pollution, widespread natural hazards (landslides, floods, earthquakes), and interconnected but divergent energy systems, with hydropower common to both sides and coal significant only in Slovenia; • Resource use shows contrasting trends: Austria with higher but regionally uneven productivity and rising waste generation, Slovenia with lower but improving productivity and declining waste, highlighting the need for coordinated cross-border strategies for sustainable development.

Green dimension	
Policy options	**Climate risks and resilience related aspects** • A focus could be on joint strategy development, early-warning systems and adaptive infrastructure planning to strengthen cross-border risk management and reduce vulnerabilities to natural hazards across the border region in particular, regarding landslides in the joint mountainous region and flooding along the Drava and Mura rivers. **Cross-cutting aspects** • Cooperation projects could specifically address reducing the air and water pollution, especially in the eastern part of the border region as well as setting up cross-border monitoring systems; • Cross-border cooperation could address the transition towards a greener economy by improving the resource efficiency , and encouraging sustainable production models via joint learning mechanisms.

Socio-economic dimension	
Key analytical findings	• The border region shows moderate but uneven social interaction, supported by minority language communities, with stronger ties in some Slovenian areas along with higher levels of outgoing cross-border commuting and weaker links around northeastern Austrian cities; • Tourism is a major economic driver on both sides, with above-EU-average overnight stays, but concentrated flows and seasonal peaks create pressures on housing, services, and the environment; • Access to essential services is more balanced in Austria than Slovenia, where mountainous terrain and dispersed settlements cause longer travel times, highlighting spatial inequalities that shape everyday life.

Socio-economic dimension	
Policy options	**Cross-cutting aspects** • Cross-border social connectivity could be addressed by building on the role of Slovenian minorities in Austria as facilitators of cultural exchange, everyday interaction and community cohesion; • A focus could be on coordinated cross-border tourism approaches to balance visitor flows, and reduce pressures on the housing markets and sensitive natural environments; • Cooperation projects could focus on joint initiatives to improve access to essential health services via coordination approaches, digital solutions and shared service provision models.

Border security and safety dimension	
Key analytical findings	• The border shows an asymmetric pattern of temporary controls: Austria has frequently reinstated checks (13 of 20 years), while Slovenia has never done so; • Controls are mainly triggered by migration pressures, major events, security concerns, and health crises, creating delays and uncertainty for commuters, businesses, and local communities.
Policy options	**Cross-cutting aspects** • The impacts of border controls on cross-border commuting and logistics can be mitigated through coordinated and institutionalised cross-border policy dialogue, with a particular focus on the Karawanks tunnel as a key transit route; • 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	• The Austria–Slovenia border exhibits a high level of cross-border cooperation, supported by EU frameworks, Interreg programmes, and diverse actors including municipalities, regional agencies, and specialised institutions; • Although it leaves room for improvement with regard to institutionalisation in terms of multi-level governance structures and long-term strategic frameworks; • Cooperation is uneven due to differences in governance systems, with Austria's federal structure and Slovenia's centralised system creating alignment challenges, and cross-border public services concentrated mainly in transport corridors.
Policy options	**Cross-cutting aspects** • Exploratory cooperation and pilot frameworks could assess the potential for new cross-border governance arrangements along key transport corridors such as Graz–Maribor and Villach–Kranj, supporting integration and coordinated territorial development; • A focus could be on multi-level governance via long-term strategic frameworks that align local, regional and national priorities and investment decisions; • Mechanisms for coordination and institutional dialogue could help bridge the differences in governance systems and address alignment challenges.

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