ESPON

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EUROPEAN RESEARCH PROJECT //

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

Austria-Hungary

Border profile

March 2026

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

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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

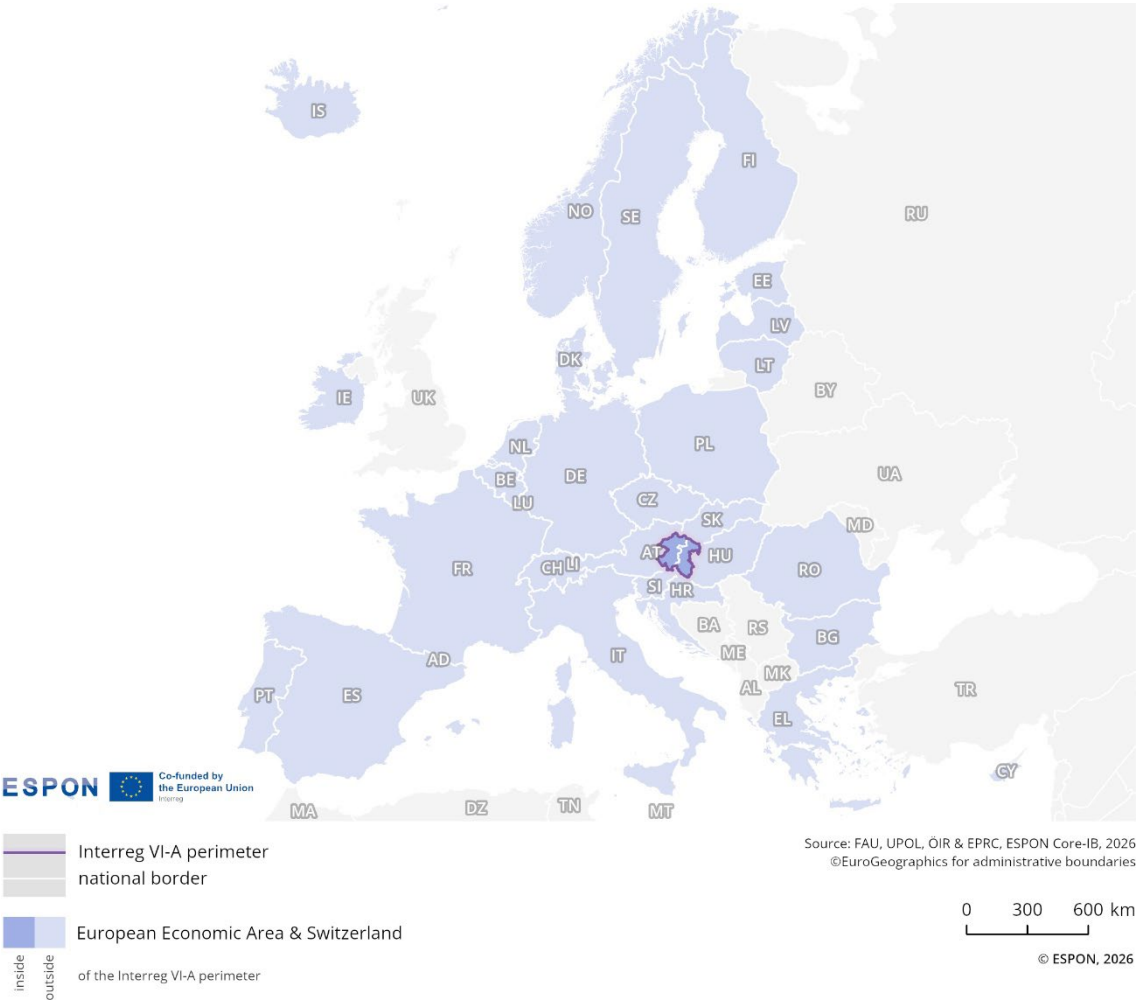
Within the ESPON framework, the CROSSGOV project (Governance mechanisms for cross-border functional areas) has been implemented in parallel to Core-IB. The CROSSGOV hub[2] provides a comprehensive platform for interactive data exploration, and selected data have been incorporated into this study.

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 'Austria–Hungary' covers the area between south-eastern Austria and western Hungary (see Figure 1.1). In Hungary, the programme area includes most of the Western Transdanubia region in Transdanubia, comprising a total of 3 NUTS3 regions. In Austria, it covers parts of the federal states of Lower Austria, Burgenland, Wien, and Styria, located in eastern and southern Austria, encompassing a total of 8 NUTS3 regions.

Figure 1.1: Overview map

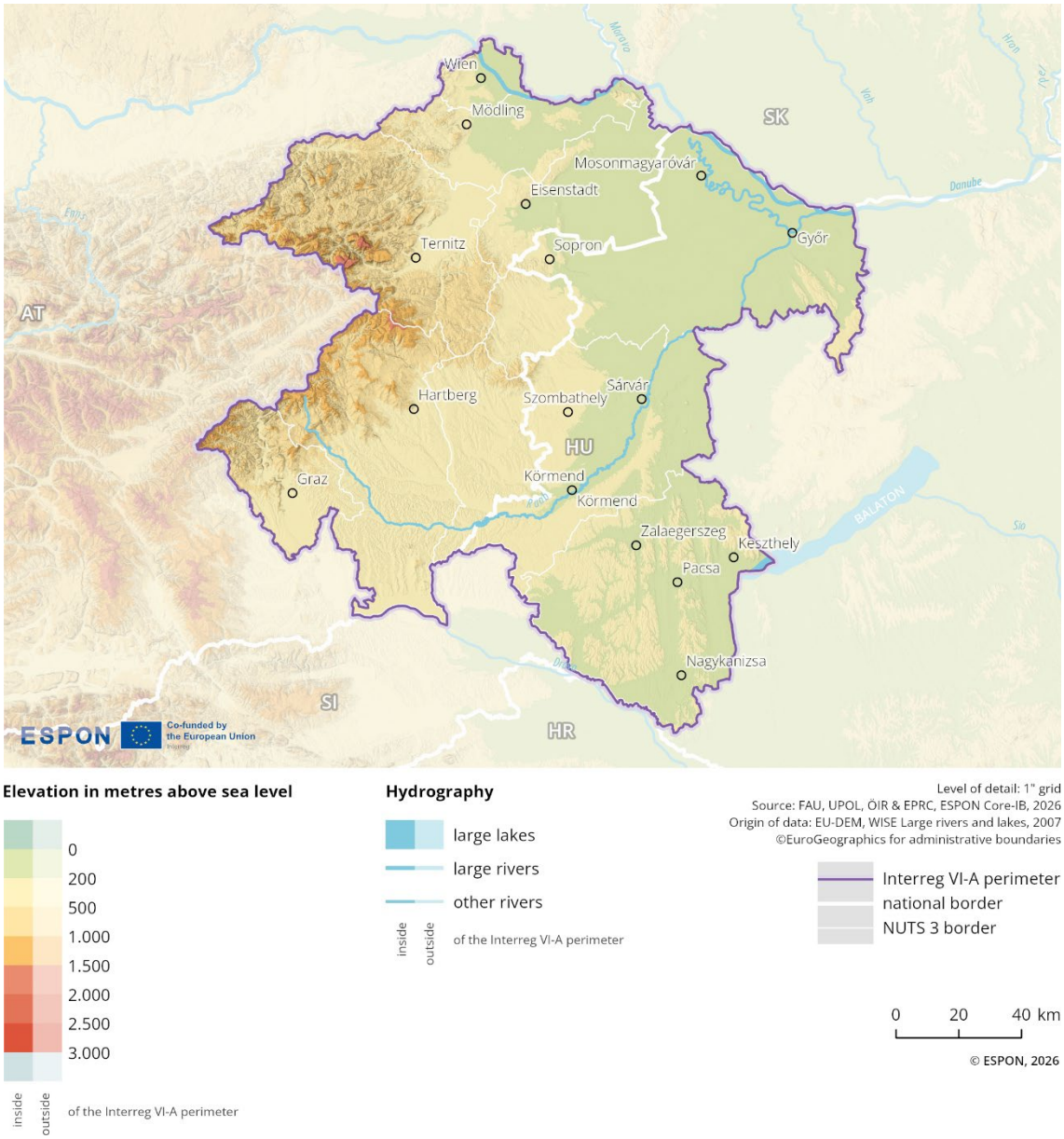


[2] ESPON CROSSGOV Hub: https://gis-portal.espon.eu/arcgis/apps/experiencebuilder/experience/?id=27e3b86ef44441b08793a2239c370607

Figure 1.2 illustrates the region's geomorphological features and the perimeter of the current Interreg VI-A programme area. Spanning approximately 25,000 km², the programme area plays a bridging role between Western and Eastern Europe. It stretches along a major north–south and east–west transport and economic corridor, connecting the Baltic and Adriatic Seas.

Extending along the entire Austrian–Hungarian border, the border region is characterised by diverse geomorphological and functional structures. The landscape is predominantly flat in the east, particularly in the Pannonian Basin and the Little Hungarian Plain. In contrast, the terrain in the west is shaped by the eastern foothills of the Alps. Several rivers, including the Donau/Duna, the Raab/Rába and the Lafnitz cross the programme area, as well as the cross-border Lake Neusiedl/Fertő, play important roles in hydrology, ecology and infrastructure development.

Figure 1.2: Geographical features and characteristics[3]



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

The programme area lies between major urban centres such as Wien, Graz, Győr, Szombathely and Nagykanizsa. Several protected areas and Natura 2000 sites highlight the region's ecological significance. These sites preserve steppe landscapes, wetlands, and traditional agricultural practices, which contribute to the region's identity and biodiversity.

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

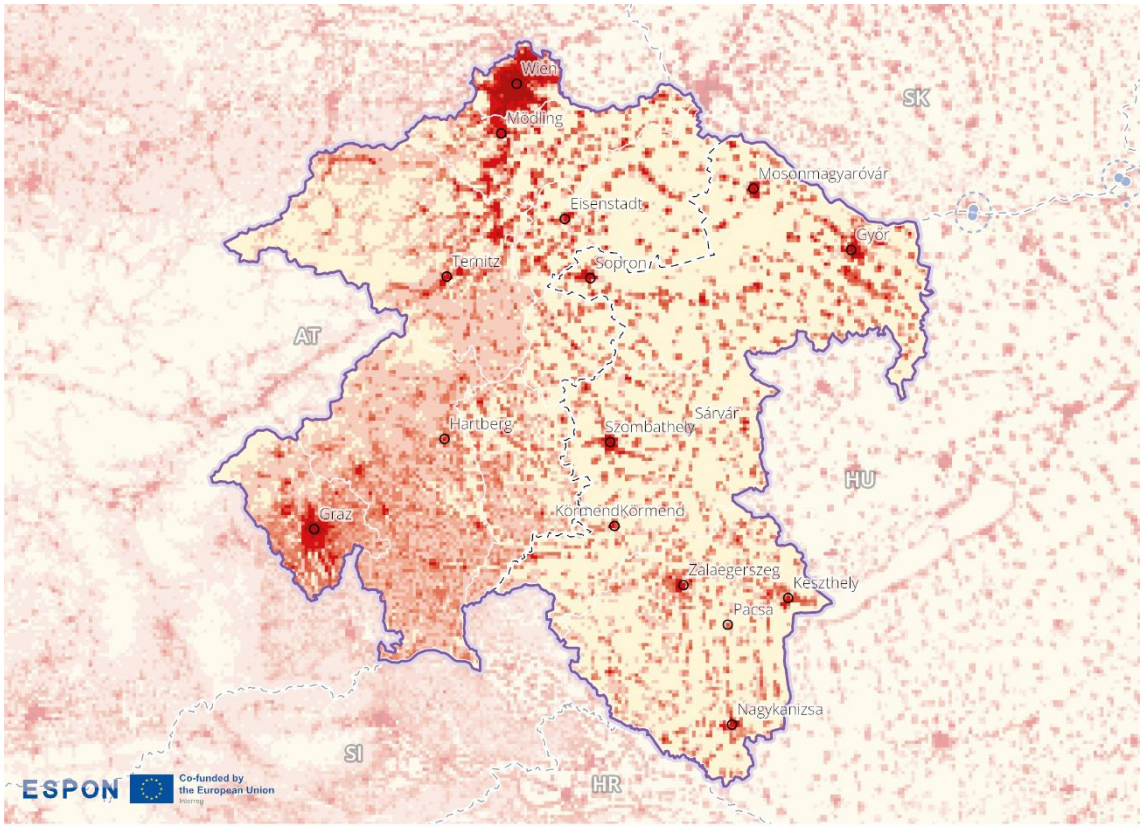
Please refer to the technical annex for more information.

The border region includes 9 urban centres with a population of over 30,000 inhabitants. Figure 2.1 shows that high population density is concentrated in the capital, Wien, Austria (1,974 thousand inhabitants), on the northern edge of the border. The second-largest Austrian town is Graz (270,000 inhabitants) in this cross-border area. It is evident that the population density is more evenly distributed in the Austrian part of the border region than in the Hungarian part, where the population is sparser. In Hungary, the population is spread across many smaller settlements and larger cities, such as Győr (130,000 inhabitants), Sopron, Szombathely, Zalaegerszeg, Mosonmagyaróvár and Nagykanizsa. Other Austrian towns of (regional) relevance are among others, e.g., Eisenstadt or Hartberg.

The population density in this whole border region is 177 inhabitants/km², which exceeds the EU average of 109 inhabitants/km² (according to EUROSTAT), and it also exceeds the aggregated average of all EU evaluated border regions, which is 125 inhabitants/km².

The part of the border region in Austria has an average population density of around 250 inhabitants/km². It exceeds the national average population density in Austria (106 inhabitants/km²). The part of the border region in Hungary has an average population density of around 85 inhabitants/km². It is therefore lower than the national average population density in Hungary (103 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

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 %

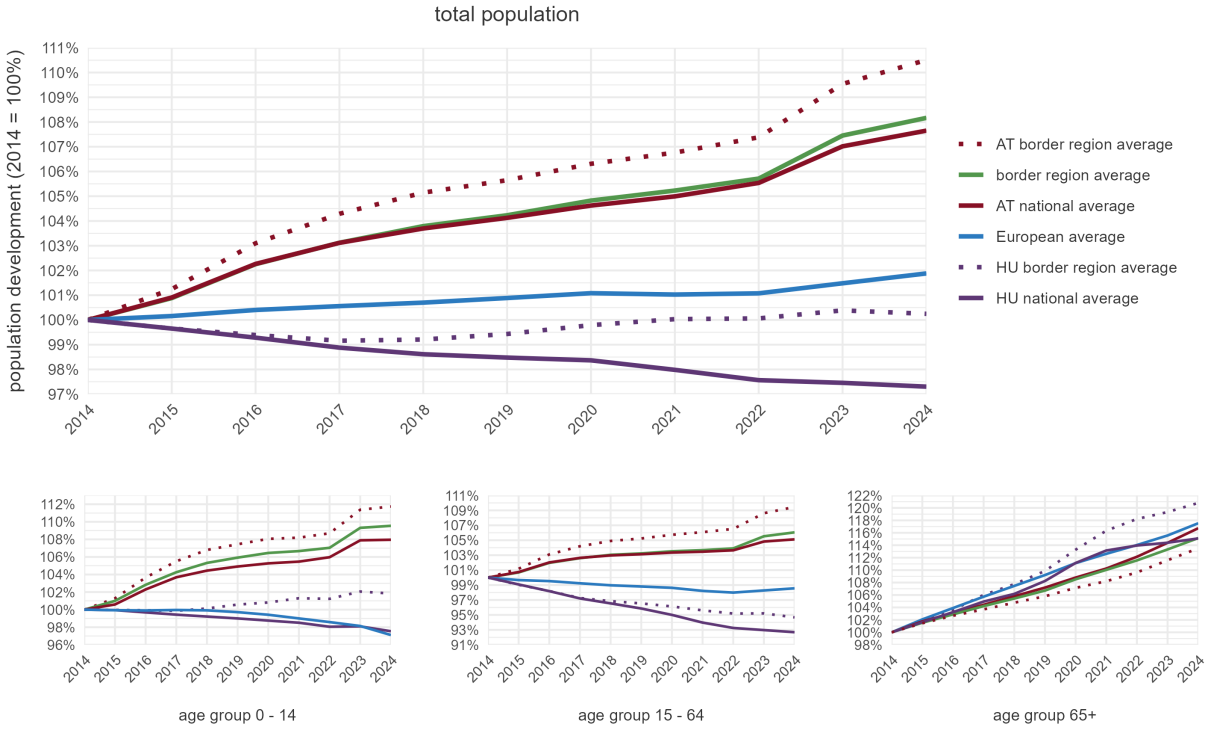
Please refer to the technical annex for more information.

Population in the Austria–Hungary region in 2024 (Eurostat): 4.6 million inhabitants, of which:

- 21.1% in the Hungarian border territory (1.0 million inhabitants)
- 78.9% in the Austrian border territory (3.7 million inhabitants, 2 million of which in Vienna)
- Region within the border region with the highest population increase since 2014: Wien (AT130) at 13.5%

Figure 2.2 shows the population growth in the Austria–Hungary region between 2014 and 2024. During this period, the cross-border region has experienced substantial growth of 8.2%, with the highest growth rate observed on the Austrian side.

Figure 2.2: Population development (2014=100)



Population growth across the border region is substantially above the European average (8.2% vs. 1.9%). The Hungarian border area shows slightly higher growth than the national average (0.2% vs. -2.7%), which is mirrored by the Austrian border area (10.5% vs. 7.7%) albeit on a different level overall.

In terms of the development of individual age groups in the region, the population aged 0–14 experienced a notable increase of 9.5%, the working-age population (15–64) showed anincrease of 6.1% and tThe population aged 65 and over underwent a substantial increase of 15.1%.

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 Austrian-Hungarian border. Changes are evident in particular around the urban centres of Wien, Eisenstadt, Hartberg, Graz, Szombathely, Győr and Zalaegerszeg as well as around the Csorna area. High growth in settlement areas is particularly evident between Győr and Szombathely as well as around the cities Eisenstadt, Zalaegerszeg and Keszthely at Lake Balaton. In close proximity to the national borders, the settlement area increases mainly along the Austrian border especially around Eisenstadt. On the Hungarian side, this is true for the area around Sopron.

Figure 2.3: Settlement area dynamics

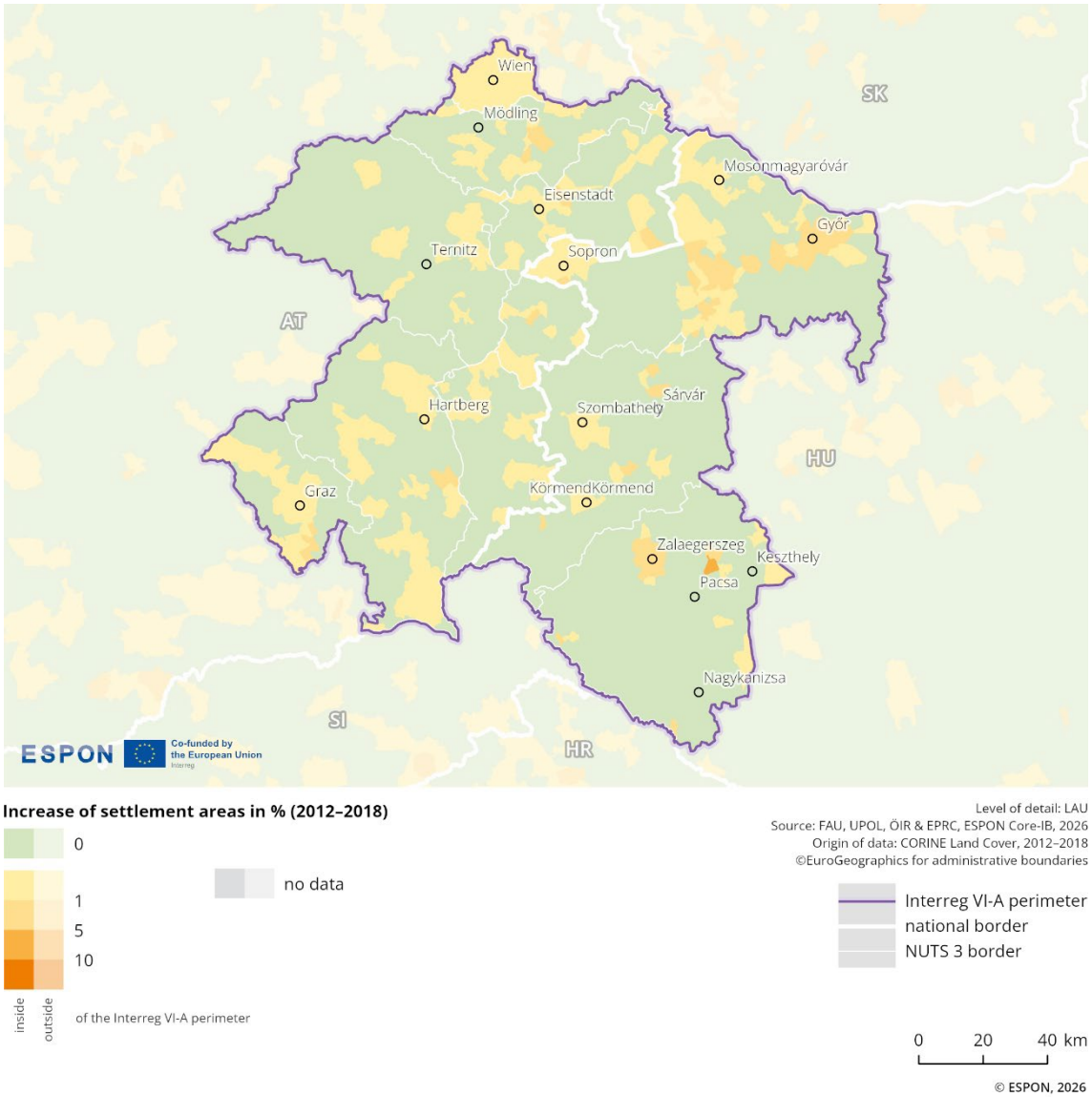
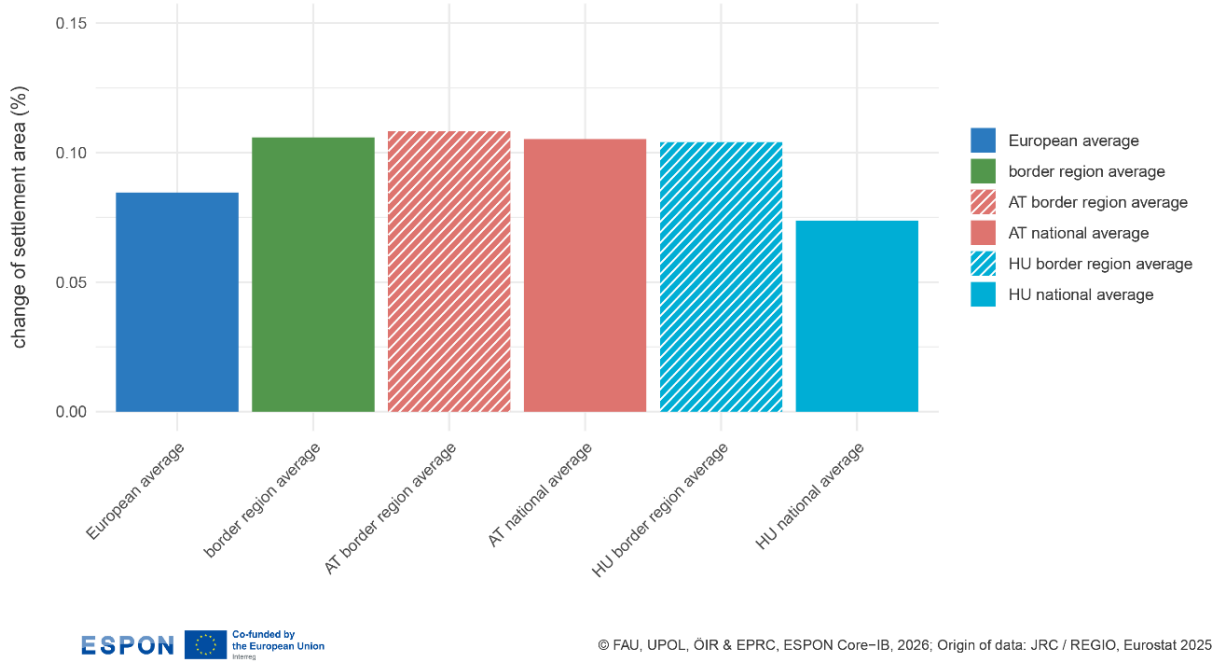


Figure 2.4 presents the change in settlement areas from a comparative perspective. The average for the Austria-Hungary programme area is higher to the overall European average (0.10% vs. 0.08%), which includes both EU member states and the EFTA countries Switzerland, Liechtenstein, and Norway. The Austrian values are higher than the Hungarian ones, which applies for both, the national average as well as the border regions. The Austrian and the Hungarian border-regional averages lie above the national averages.In general, the programme area shows a relatively dynamic settlement development.

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

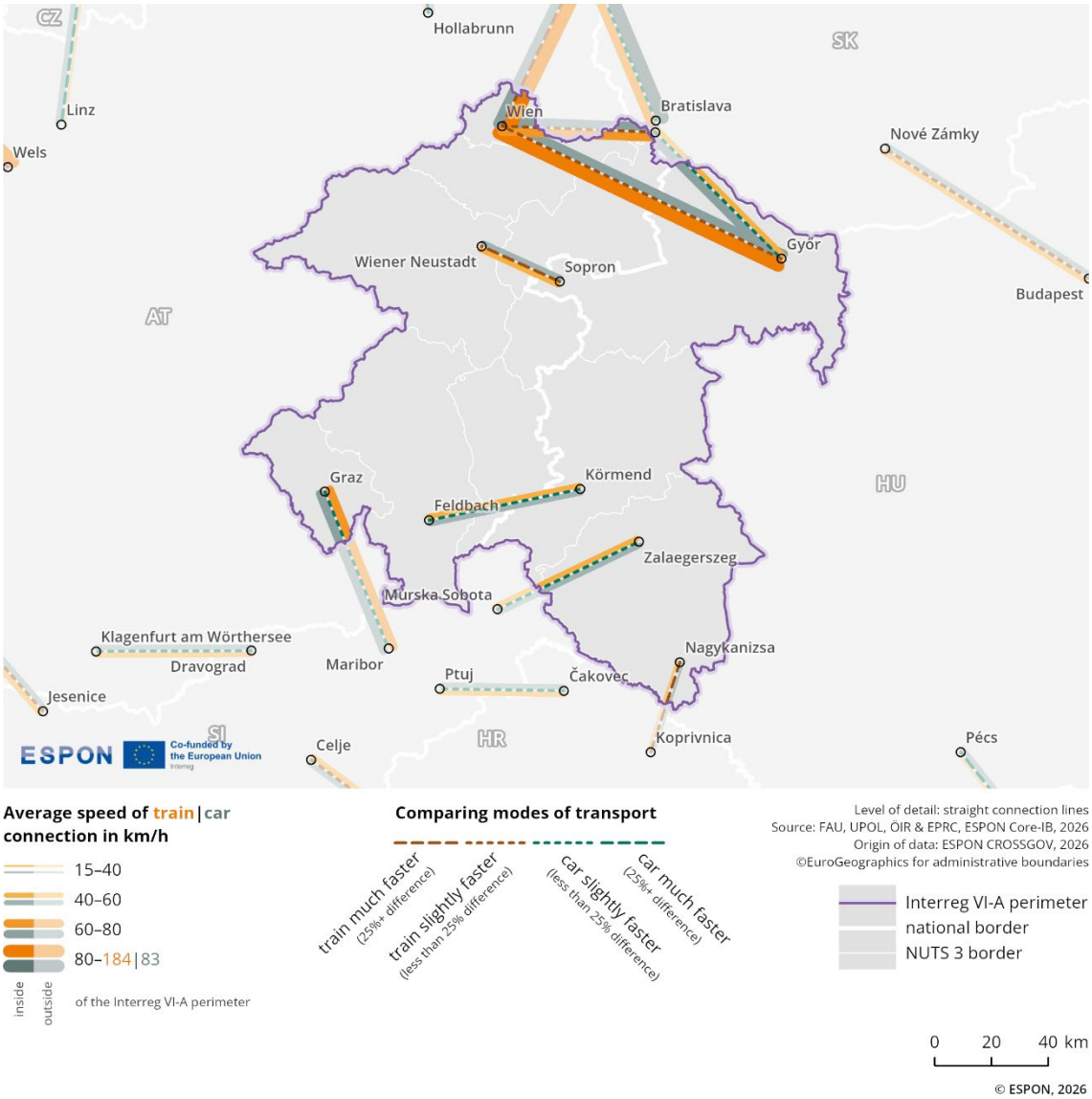
The indicator presents a comparative perspective for different modes of transport (public and private) and their average travel speed (so-called space-time-lines). As such it helps to understand and interpret accessibility patterns along the border and highlights the comparative quality of selected cross-border 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 Austria-Hungary 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 color 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 Wien–Győr, Wiener Neustadt–Sopron, and Feldbach–Körmend. For most of these routes, namely Wien–Győr and Wiener Neustadt–Sopron, train connections outperform car travel in terms of speed. Nevertheless, the Wien–Győr connection also offers a relatively fast car option. Further relevant links would e.g. include Sopron Wien or Eisentadt as well as Graz with hungarian border towns.

[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.

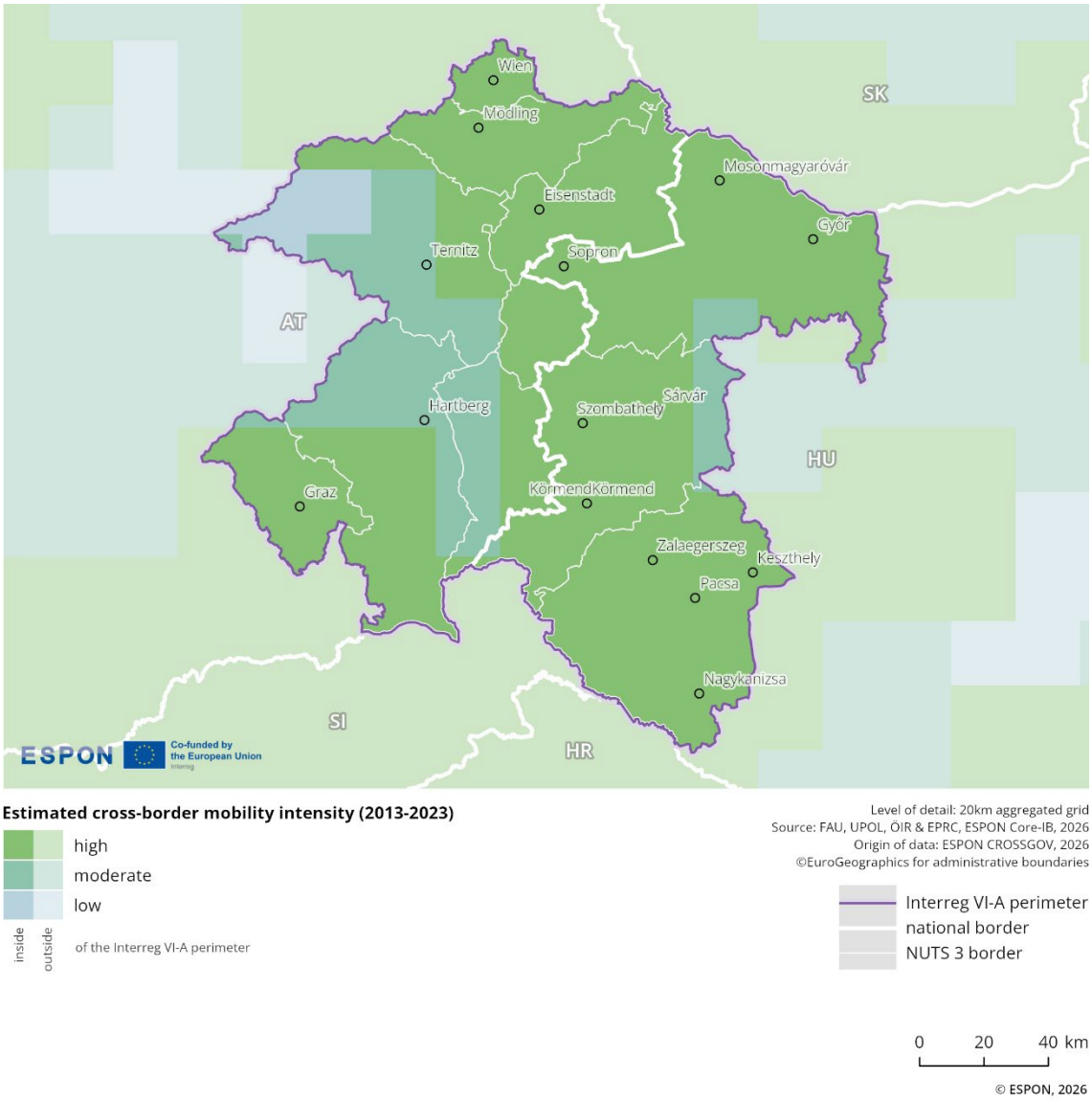
- **Source/method of retrieval**: The indicator is calculated based on Twitter (currently X) data. The digital footprint of individual users provides information about physical mobility flows and is used to calculate cross-border catchment areas of different intensity.
- **Temporal coverage**: 2013-2023
- **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 relatively homogeneous. The highest mobility intensity is recorded across most of the region's territory. Moderate mobility intensity is observed in the more mountainous western Austrian part of the region, particularly around the cities of Ternitz and Hartberg, as well as east of the city of Szombathely. Low mobility intensity is found in a small area west of Ternitz.

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

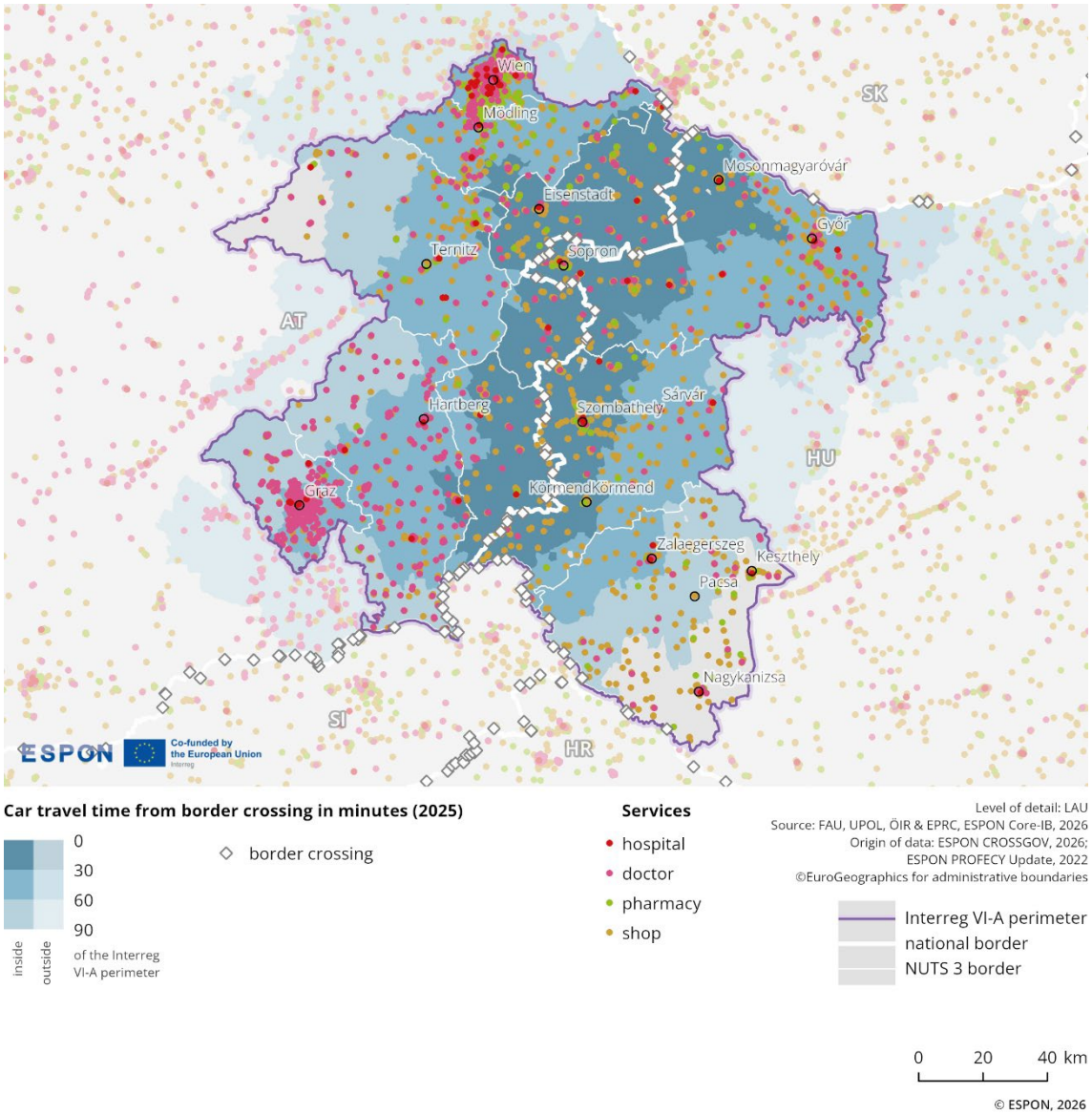
Please refer to the technical annex for more information.

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 along the entire cross-border, the travel accessibility is under 30 minutes without any interruption. The areas of travel time accessibility thresholds of 30, 60, and 90 minutes form parallel belts on both sides of the border. The belt of 30-minute travel time category is relatively wide in this border. Far areas above 90 minutes thresholds on both sides are very small. This indicates a good road network and accessibility in cross-border areas.

Services such as shops, hospitals, doctors' offices, and pharmacies are distributed uniformly throughout the border territory. 2 centres of services are far distant from the border: Wien (under 60 minutes travel time) and Graz (under 90 minutes travel time). Both are in Austria. On the Hungarian border, Sopron and Szombathely serve as centres of services on the Hungarian cross-border territory.

Figure 2.7: Travel-time accessibility from border crossings



2.1.3 Key messages on the territorial dimension

The territorial structure of the whole cross- border region is partially influenced by the natural circumstances, however considerably less than in other border regions. The western part is influenced by the beginning of the Alps, whereas the eastern part is dominated by the flat landscapes of the Pannonian Basin and the Little Hungarian Plain. These differences influence the analysed region's settlement patterns considerably: while population density is particularly high in Austria, with major metropolitan centres such as Wien and Graz, the Hungarian part of the border region is characterised by the largest city of the programme area Győr as well as smaller towns such as Szombathely, Zalaegerszeg and. In general the hungarian border region shows a more dispersed settlement structure. Notably, Austrian regions with similar topographic features in Burgenland follow this structure.

By contrast, settlement development in these areas of Hungary is more dynamic, particularly around Győr and, Szombathely, as well as in rural regions close to the border. Overall, the programme area exhibits above-average expansion of settlement areas compared to the rest of Europe.

Demographic dynamics further show a split in regional development. Overall, the cross-border region has experienced strong growth in the past decade, exceeding the European average. This growth is mainly driven by Austrian regions, particularly Wien, which accounts for a significant proportion of the population increase alone. By contrast, the Hungarian regions show more modest growth, though still outperforming national averages. Notably, throughout the whole border region all age groups have grown relatively, with highest growth rates in the 65+ and the 0-14 cohort.

In terms of accessibility, a strong network with short cross-border travel times characterises the cross-border area in particular when it comes to connections between larger settlements. Unlike many other programmes, a high share of the programme areas is located within 30 minutes of the border (including regional centres in both countries), and all major centres being located within 60 minutes. Rail connections also perform well on the Wien–Győr and Wiener Neustadt–Sopron routes, where trains are faster than cars.

From a territorial perspective, the Austria–Hungary cross-border region shows a very balanced mix of urban centres and well developing but more dispersed settlements. There are some considerable disparities between the 2 countries to be recognised, but those are no critical barriers to the overall development.

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.

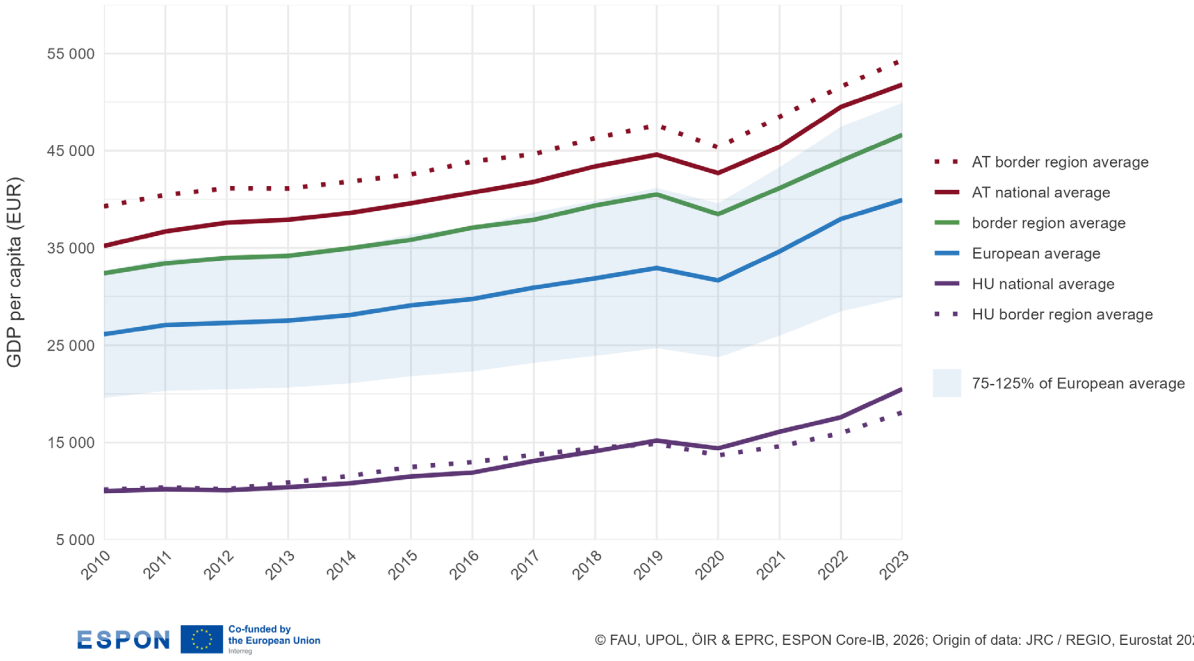
- **Source**: Eurostat, Annual Regional Database of the European Commission (ARDECO)
- **Temporal coverage**: 2010-2023
- **Unit**: Euro per capita

Please refer to the technical annex for more information.

The analysed area shows a GDP/capita value of 122.6% of the EU average in 2022 and 124.5% of the average in European border regions in general. The cross-border region marks a 26.4% increase of

GDP per capita between 2014 and 2022[5]. This corresponds to a 9.3 percentage points lower increase of GDP per capita in the border region compared to the EU average. Furthermore, this corresponds to 8.8 percentage points lower increase of GDP per capita in the border region compared to the average of European border regions. Austria's GDP per capita lays significantly above the EU average, while the Hungarian value lays firmly below it. The Austrian-Hungarian border region exhibits one of the most striking GDP/capita disparities between 2 neighbouring EU member states. Moreover, the Hungarian border region registered a GDP per capita growth that was considerably lower than the national average. This led to the Hungarian border region falling below the national average over the last years.

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



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[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.

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.

2.2.2.1 Share of employment

Indicator description

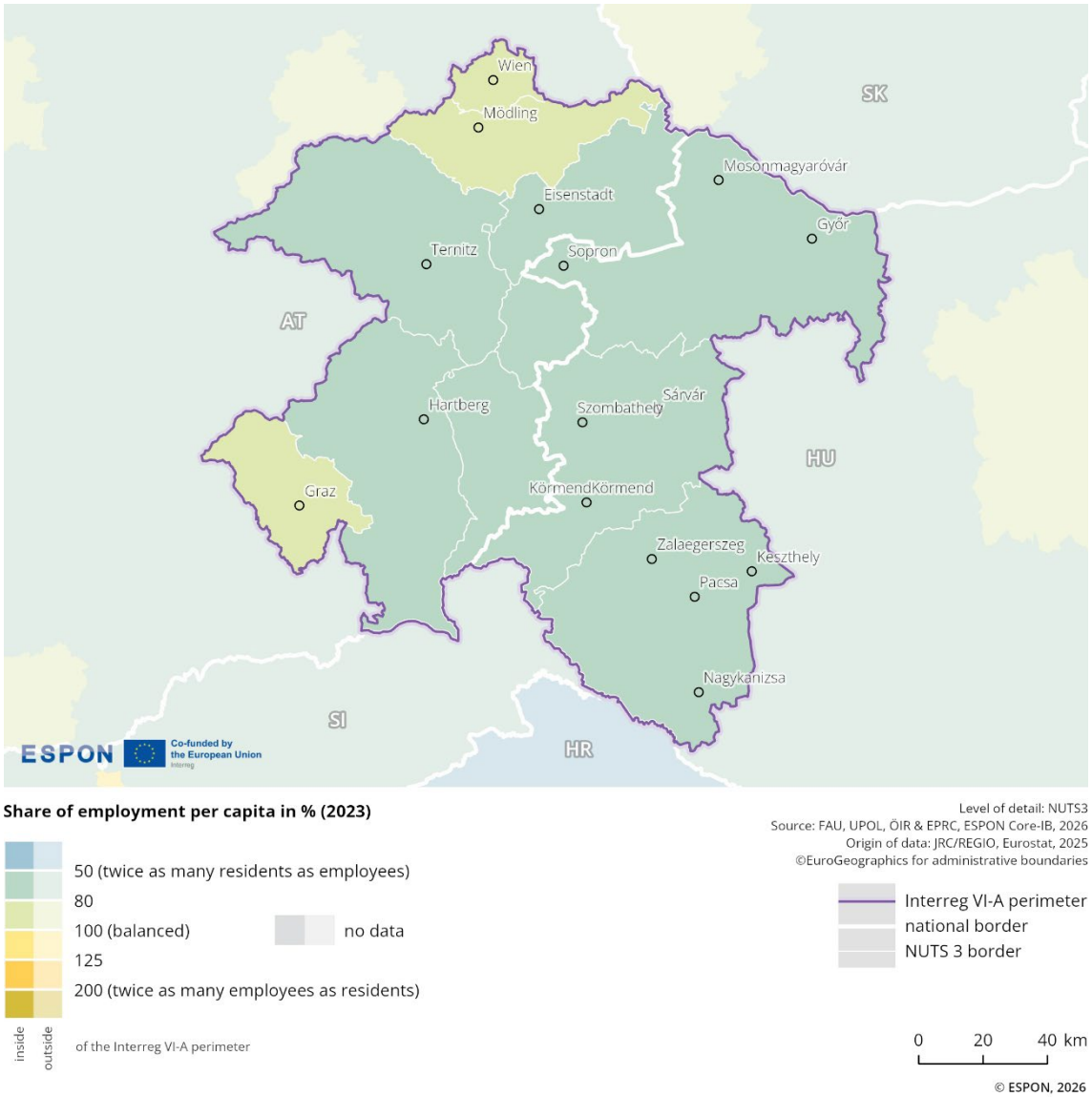
This indicator shows the share of employees in the population aged 15 to 64. Although it does not fully capture entrepreneurs, marginal employees, or civil servants, this is an important statistic for understanding general labour market patterns. It covers 2 aspects: first, high values can result from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

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

Please refer to the technical annex for more information.

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

Figure 2.9: Employment share[6]



The share of employment in this border region is rather stable[7], with the average for the entire region at 78.3% in 2023, representing an increase of 4.3 percentage points since 2014. The share of employment values are mostly in the range of 50% to 80% across much of the region. Around the cities of Graz and Wien, and further south, values range between 80% and 100%. When comparing the share of employment in this border region with different averages, the following can be observed (see Figure 2.10):

- Compared to the European average, values in the cross-border region are higher by 2.7 percentage points; in 2014, they were higher by 6.7 percentage points.
- Compared to the Austrian average, values in the cross-border region are lower by 0.2 percentage points; in 2014, they were lower by 0.3 percentage points.
- Compared to the Hungarian average, values in the cross-border region are higher by 1.4 percentage points; in 2014, they were higher by 11.1 percentage points.

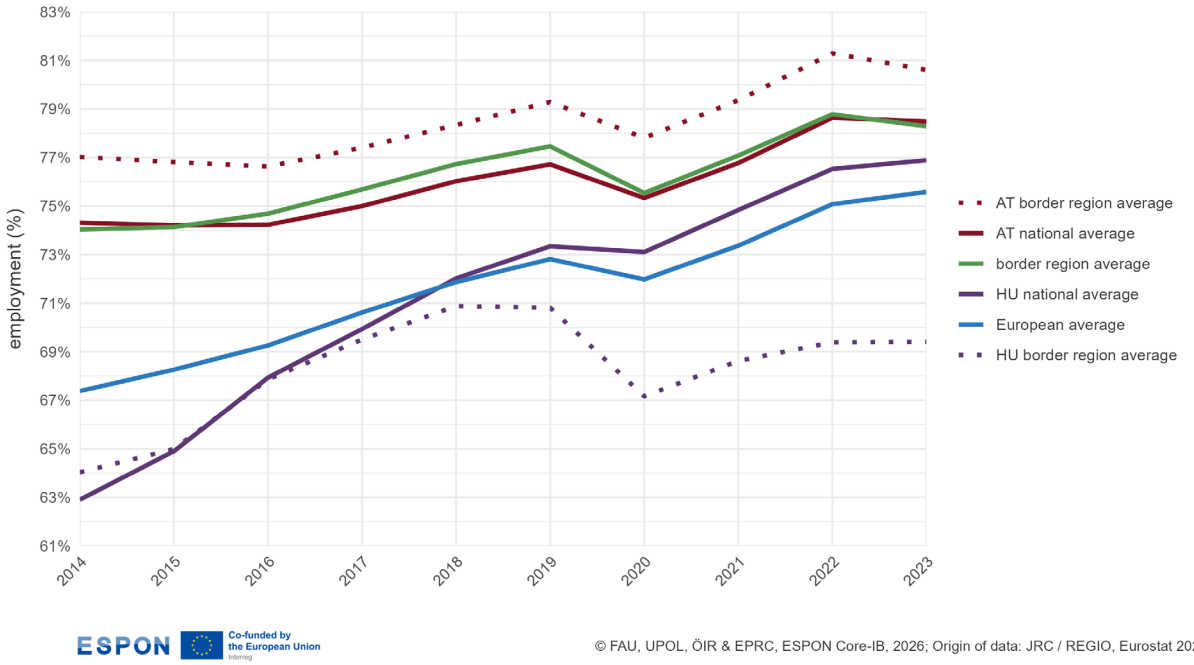
[6] Note: In this map, 'residents' refers to the population aged 15 to 64.

[7] For more information on the cross-border labour market between Austria and Hungary see: European Commission: Directorate-General for Regional and Urban Policy, AEBR, HÉTFA, Nordregio and ÖIR, *Cross-border regional labour market analysis – Final report*, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2776/1527569

- The Austrian border area reaches values 2.1 percentage points higher than the Austrian national average, while the Hungarian border area has 7.5 percentage points less than the Hungarian national average.
- Compared to the average of all cross-border regions, values are lower by 3.8 percentage points; in 2014, they were lower by 7.7 percentage points.

Of note, after the covid-induced shock, the post-pandemic recovery of employment has seen different trajectories in the 2 countries based on the cross-border region: Austrian regions recovered quickly and already 2021 reached pre-pandemic levels. Hungarian regions on the other hand until the end of the available data did not reach pre-pandemic levels.

Figure 2.10: Employment share over time (comparison)



ESPON Co-funded by the European Union Interreg

2.2.2.2 Share of working-age population

Indicator description

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

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

Please refer to the technical annex for more information.

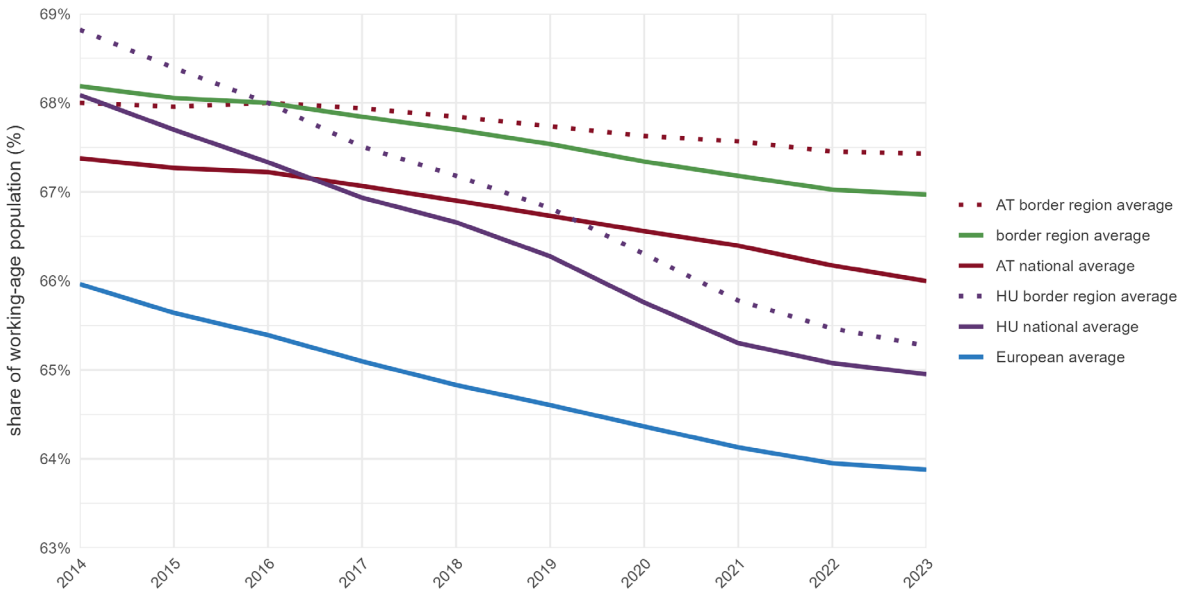
Figure 2.11 illustrates the evolution of the share of the working-age population in the Austria–Hungary cross-border region between 2014 and 2023. In 2023, the programme area shows an average working-age population share of 67.0%, compared to the European average of 63.9% and 63.7% for the average of all cross-border regions.

The share of the working-age population in the whole cross-border region is very similar to the Austrian border average (67.4%), and moderately higher than the Hungarian border average (65.3%). Compared to national levels, it is slightly higher than the Austrian national average (66.0%), and moderately higher than the Hungarian national average (65.0%).

The programme area experienced a slight 1.2 percentage point decrease in the share of the working-age population between 2014 (68.2%) and 2023 (67.0%). This decline is slower than the European average, which dropped by 2.1 percentage points in the same period. While all areas in the cross-border region show a declining trend, the rate of decline has been more pronounced in the Hungarian parts (-3.6 percentage points at the border and -3.1 percentage points at the national level) than in the Austrian parts, where the decrease was very slight (-0.6 percentage points at the border and -1.4 percentage points at the national level).

The Austria–Hungary cross-border region experienced a slight overall decline in the share of the working-age population between 2014 and 2023. In 2023, the cross-border region remained above both the European and cross-border averages, with differing trends on each side of the border.

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



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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 %

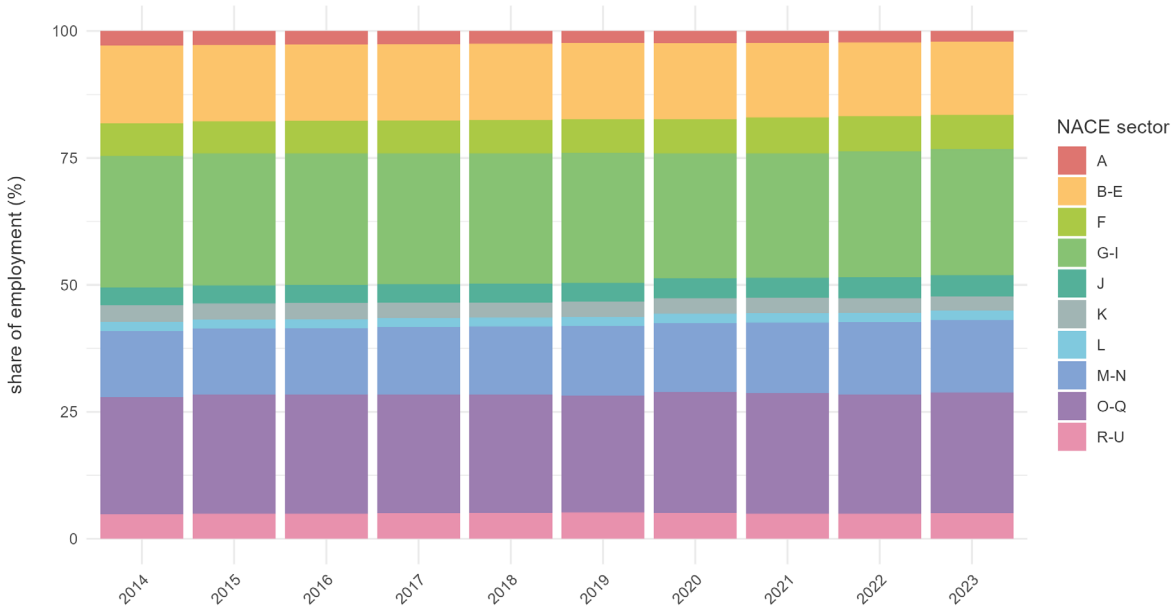
Please refer to the technical annex for more information.

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 employees in the different sectors remains fairly stable. There is a slight decline in the share of employment in agriculture, forestry and fishing (A), Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply; sewerage, waste management and remediation activities (E) and wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H) and Accommodation and food service activities (I). Conversely, there is a modest increase in the number of jobs in Professional, scientific and technical activities (M), Administrative and support service activities (N), Education (O) and Human health and social work activities (Q).

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 %

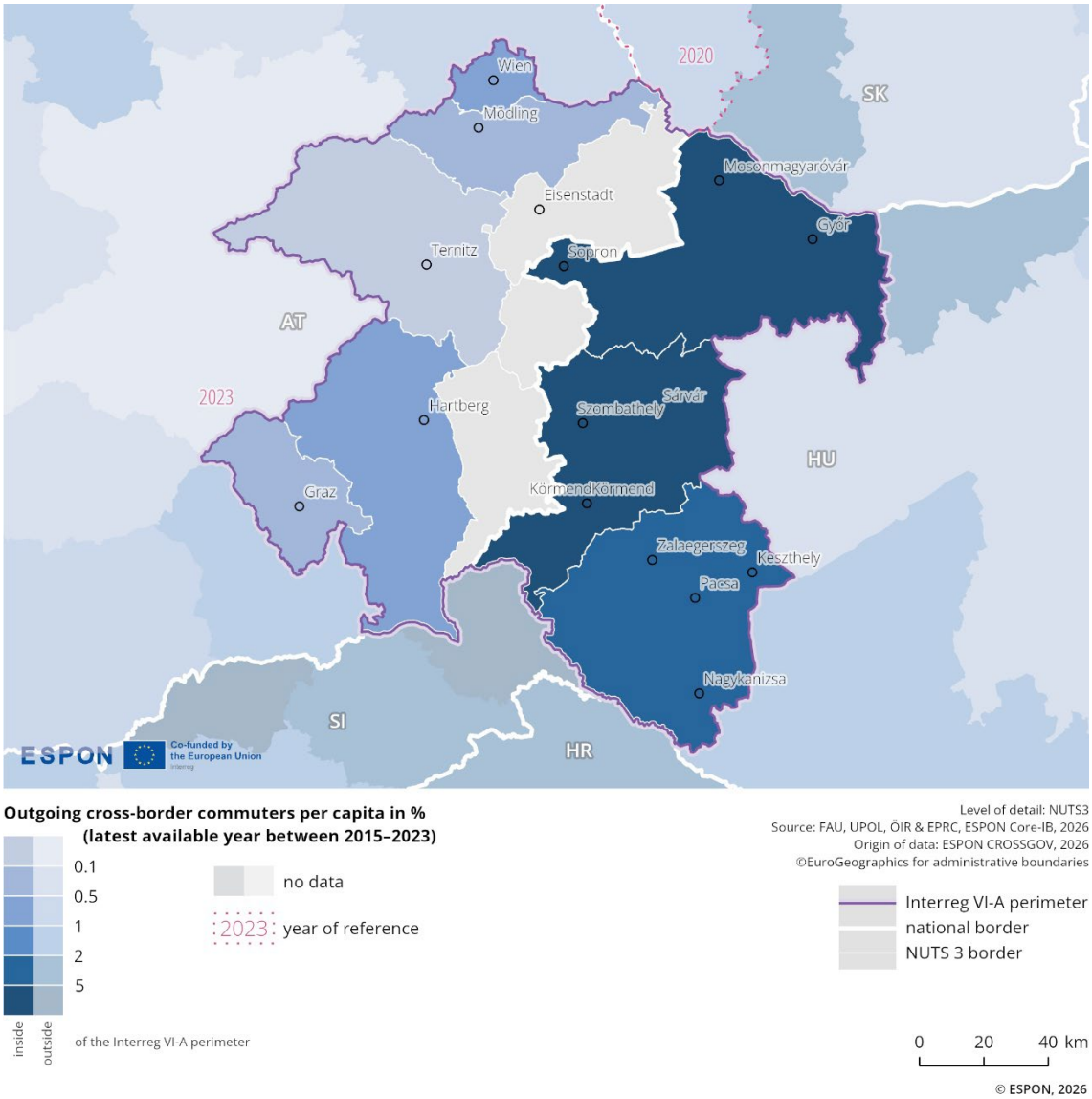
Please refer to the technical annex for more information.

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. Very strong cross-border commuting activity can be found in the areas directly adjacent to the border. For some Austrian regions, no data is available. However, the Hungarian side of the border stands out in particular, with high levels of outgoing commuters in the regions of Győr-Moson-Sopron, Vas, and Zala[8]. These NUTS3 regions show elevated shares of outgoing cross-border commuters per capita, the majority of which is likely commuting to Austria, however likely also to Slovakia and to a smaller degree also Slovenia or Croatia.

[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.

While Austria is a signatory state of the Framework Agreement on Cross-Border Telework, and Hungary is not, the 2 countries apply the standard rules under Article 13 of Regulation (EC) No. 883/2004. This means that cross-border telework is generally limited to 25% of the total working time, beyond which social security affiliation may shift to the country of residence.

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.

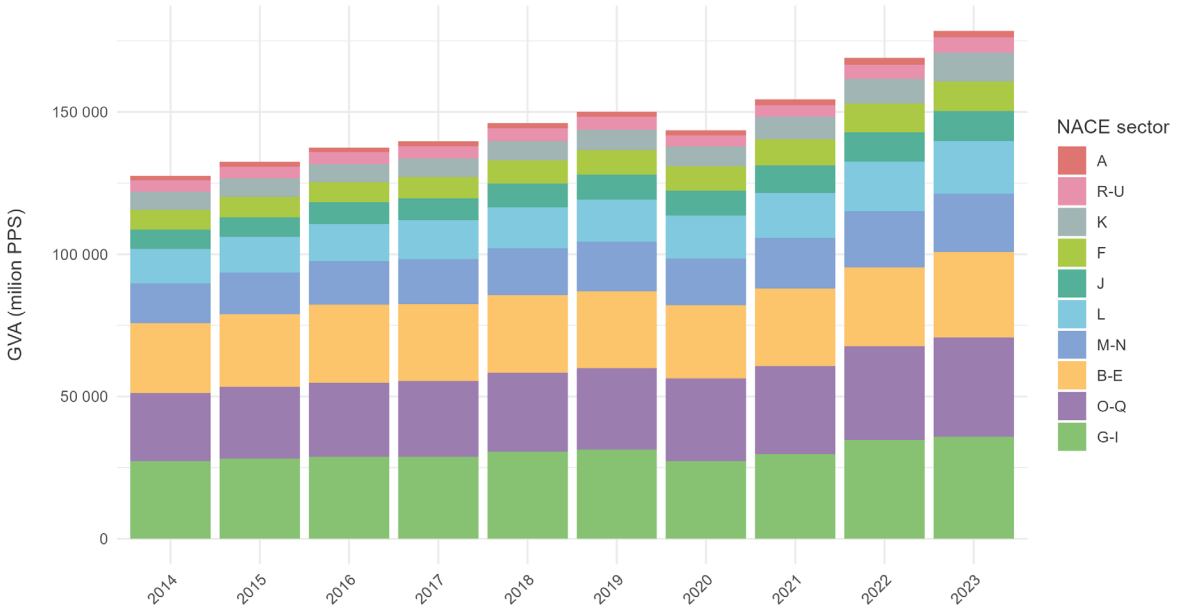
The dataset uses a '10-sector' classification based on NACE categories. The sectoral breakdown is as follows:

- 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 Austria-Hungary increased from 127,588 million purchasing power standards (PPS) to 178,430 million PPS — a growth of 40%. 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 G–I contributed the largest share, with a total of 35,819 million PPS in 2023. This underlines the significance of sectors such as Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I) in the Austria-Hungary border region.

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



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

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2.2.3.2 Nominal compensation per hour worked

Indicator description

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

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

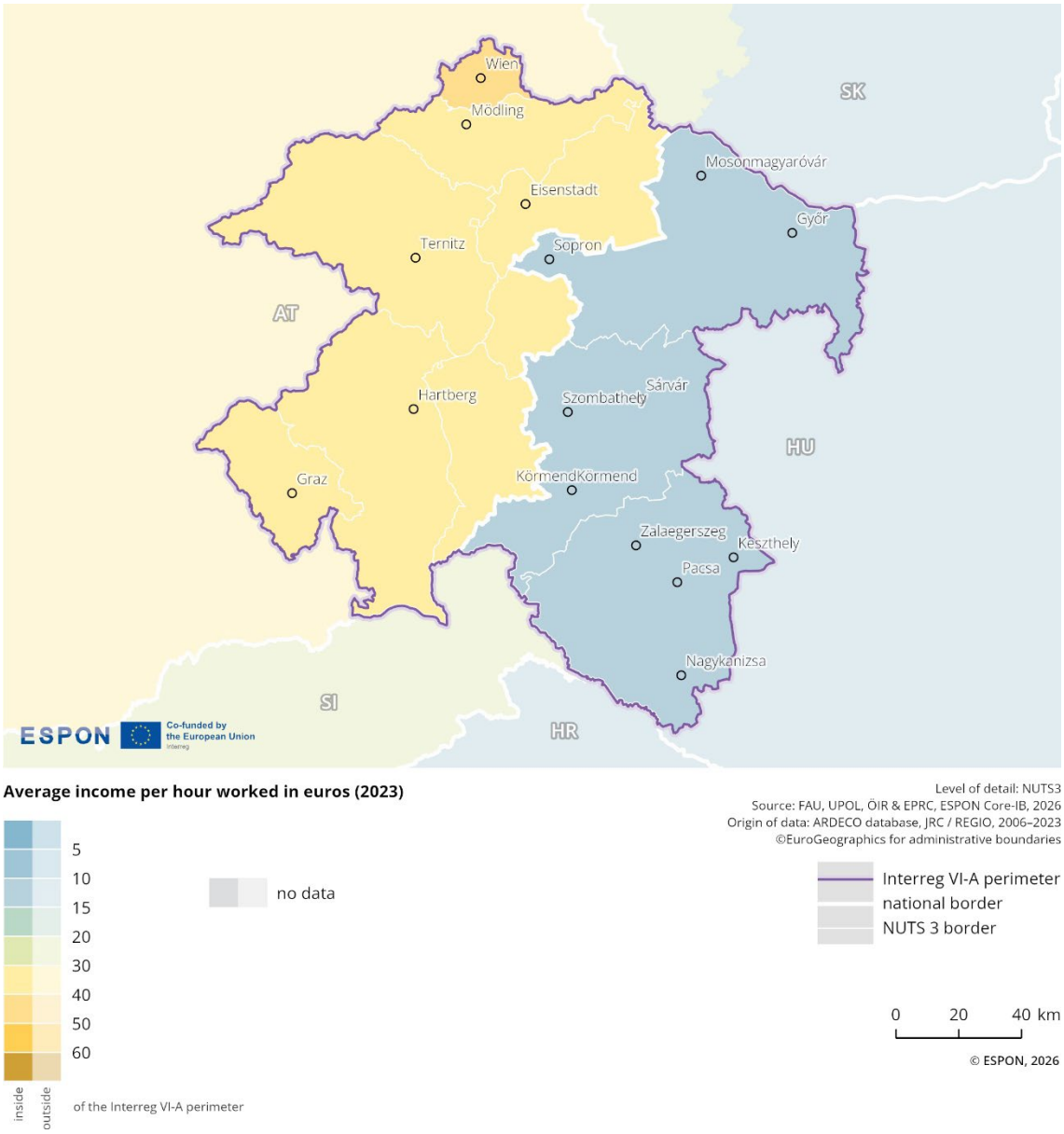
Please refer to the technical annex for more information.

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

In 2023, nominal compensation per hour worked in the Austria–Hungary border region appears to be quite unevenly distributed. In Austrian, the average hourly income is €37.90, with Wien (€42.20) reporting a slightly higher value. In the Hungarian areas, the average hourly income is €10.80, with no region reporting values significantly above this.

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

Figure 2.15: Average income per hour



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.

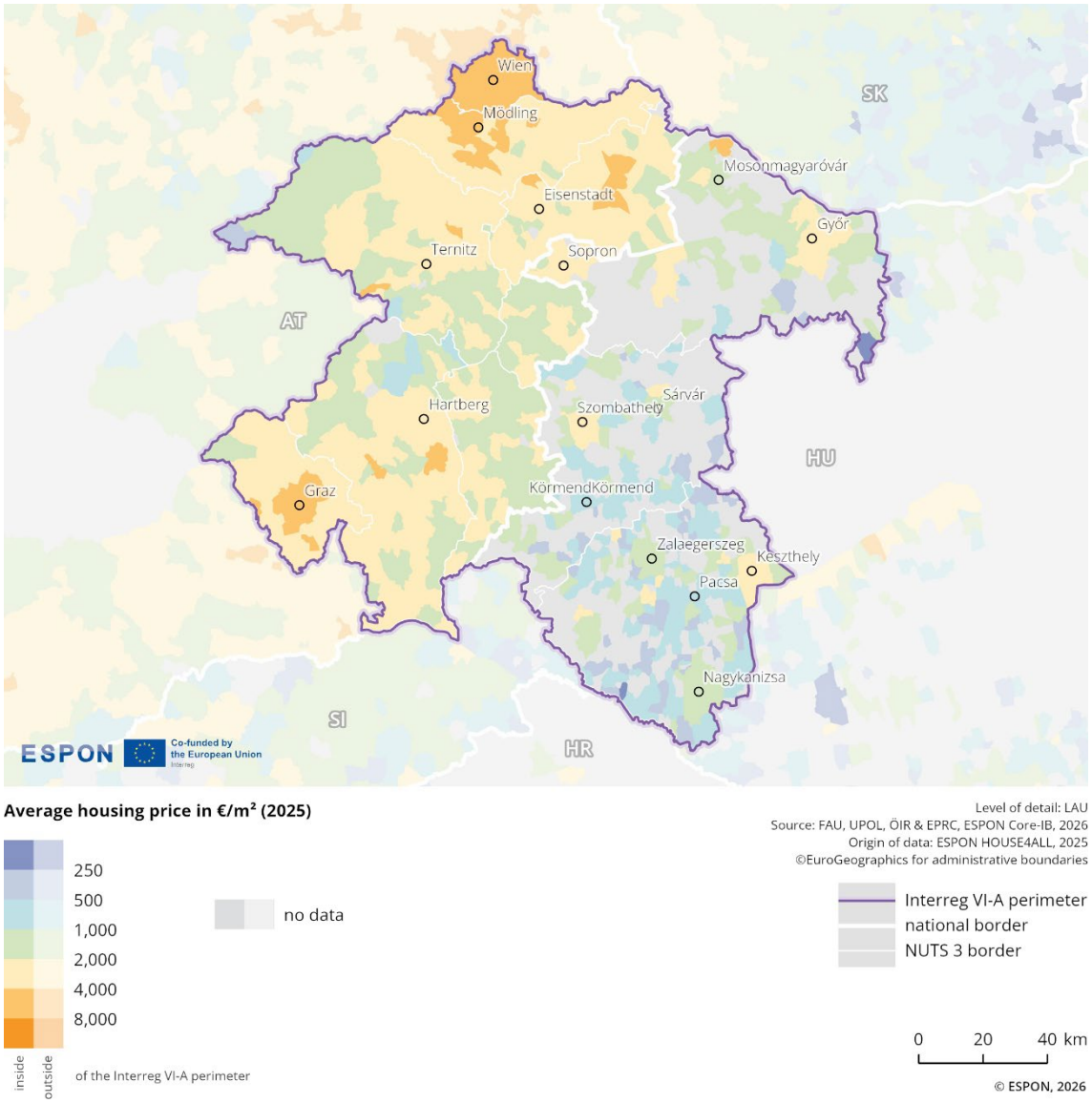
- **Source/method of retrieval**: Processed ESPON House4all data. The original data is collected via web-scraping of national listing websites over a one-year period.
- **Temporal coverage**: 2024/2025
- **Unit**: Average price per square meter (€/m^2)

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.

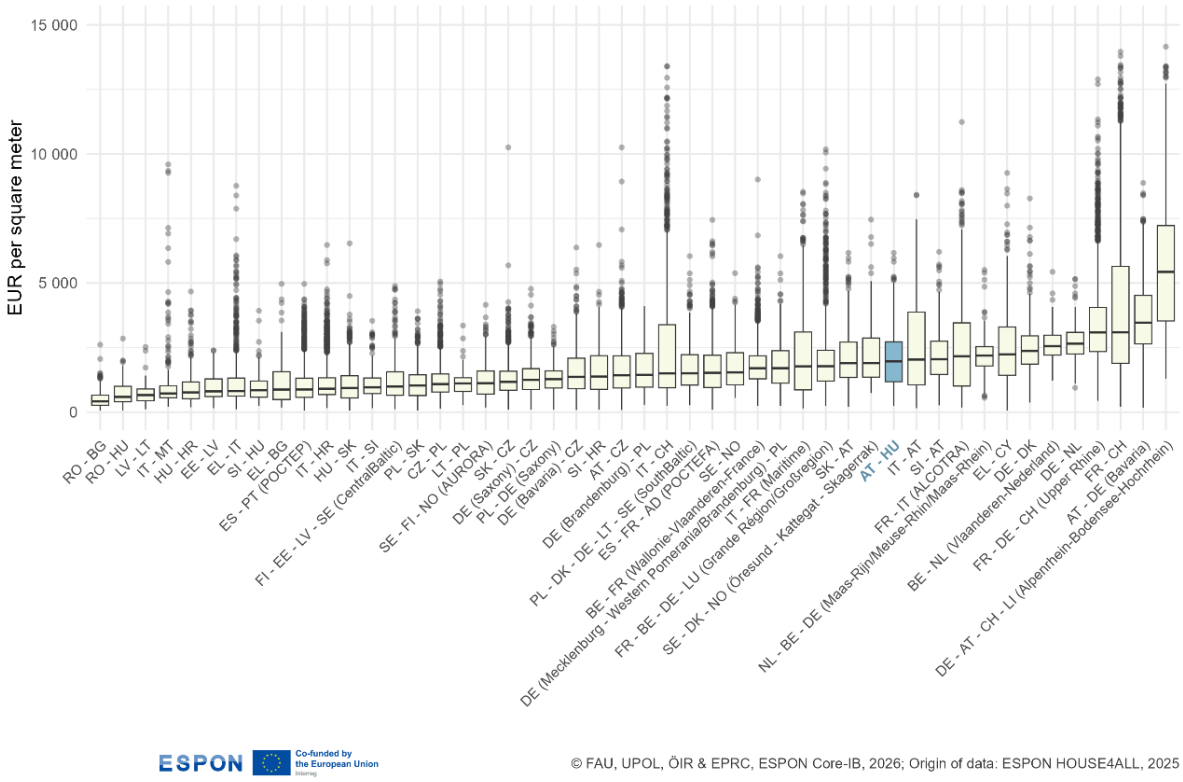
The map shows an evident difference in average sales prices. The average prices are in the range of 250 to a maximum of 2,000 €/m² in the Hungarian part of the cross-border area. The exception is the area around the towns of Szombathely, Sopron, Keszthely and Győr, where the prices are higher (up to 4,000 €/m²). Nearly half of the territory of the Hungarian cross-border area has no data on the average sales price due to the agricultural countryside. The average price in the Austrian par on the other hand predominantly ranges from 1,000 to a maximum of 4,000 €/m². Some parts touch the 8,000€/m² limit, especially in the capital Wien and Graz. In Hungary, overall prices are considerably lower than in Austria except for within vicinity of the Slovak capital. The border represents

Figure 2.16: Advertised housing prices



The Austrian part of the border region records an average advertised residential sales price of approximately €2,560 per square metre. In contrast, the Hungarian part reports a considerably lower average price of about €1,067 per square metre in the populated areas for which data are available. Overall, the average advertised sales price across the entire border region is estimated at €2,045 per square metre. This level is broadly comparable to the average for all EU-evaluated border regions (€1,900 per square metre) and remains below the European average of approximately €5,600 per square metre.

Figure 2.17: Advertised housing prices (comparison)



ESPON Co-funded by the European Union

2.2.4.2 Average internet speed

Indicator description

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

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

Please refer to the technical annex for more information.

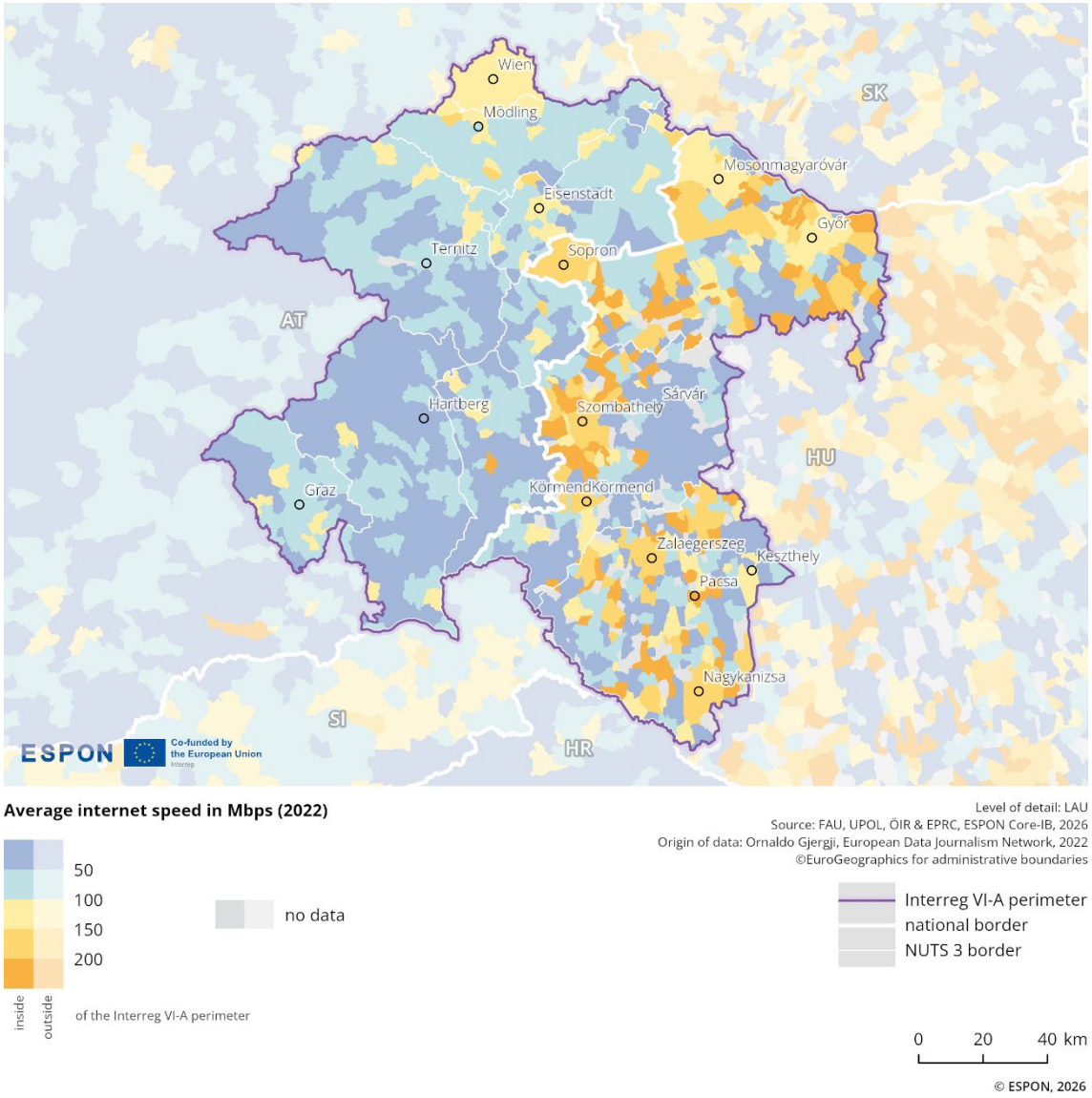
Digitalisation is a highly relevant issue in European border regions, with the overarching objective of ensuring appropriate digital access. It is widely recognised as a key precondition for successful regional and economic development. A major challenge in this process is preventing 'digital divides'—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

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

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

Figure 2.18 reveals significant differences between urban and rural areas, with values ranging from under 50 Mbps to over 200 Mbps. Cities such as Wien, Eisenstadt, Győr, Szombathely, Zalaegerszeg, and Nagykanizsa 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 have high download speeds, for example, Hartberg or Graz do not stand out in this regard. Overall in the hungarian part of the cross-border region the average internet speed is considerably higher than in the Austrian part.

Figure 2.18: Average internet download speed



2.2.5 Key messages on the economic dimension

The economic structure of the border region is characterised by sharp asymmetries which interestingly lead to functional complementarities. GDP per capita is well above the EU average in Austrian parts of the region, whereas in Hungarian parts it remains significantly below. This gap makes the border region one of the strongest examples of economic disparity within the EU. While both countries border regions in the area considered have recorded growth over the past decade, Hungarian regions in the cross-border area have expanded more slowly than the national average, resulting in further divergence.

Labour market indicators further underline these uneven patterns. Employment rates across the entire cross-border region exceed the European average, but Austrian areas show a considerably higher value than Hungarian ones. The working-age population has declined slightly overall yet remains above the EU average, however Hungarian regions show a considerably stronger decline. Sectoral structures reveal some similarities, as e.g. manufacturing, trade and services (including tourism, education and healthcare) dominate on both sides of the border as main sectors. Over the past 10 years, the GVA of the analysed area as a whole has increased by a notable 40%.

Wage differentials on the other hand show significant disparities in the region, with average hourly earnings in Austria being more than twice those in Hungary. Due to the absence of a cross-border teleworking agreement here, limited incentive is given to work remotely across borders in the region. The combination of these factors lead to a very strong incentive to commute and thus an imbalanced commuting pattern. Cross-border commuting is particularly significant from Hungary to Austria, with all Hungarian regions falling into the highest class of out-commuting.

Disparities are also strongly present in housing and infrastructure. Throughout the cross-border area, property prices in Austria are substantially higher, particularly in the urban areas of Wien and Graz (and their suburbs), whereas Hungarian towns generally have much lower average values, although there are some hotspots around Győr, Sopron and Szombathely. Internet connectivity shows an interesting inversion as on average, Hungarian municipalities show considerably higher download speeds than their Austrian counterparts.

Overall, the Austria–Hungary border region combines strong functional linkages, driven by labour mobility and shared transport corridors, with strong asymmetries in wages and demographic development. These strong disparities generate opportunities for integration and at the same time challenges for balanced development.

2.3 Green dimension

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

2.3.1 Nature protection and pollution

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

2.3.1.1 Protected areas

Indicator description

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

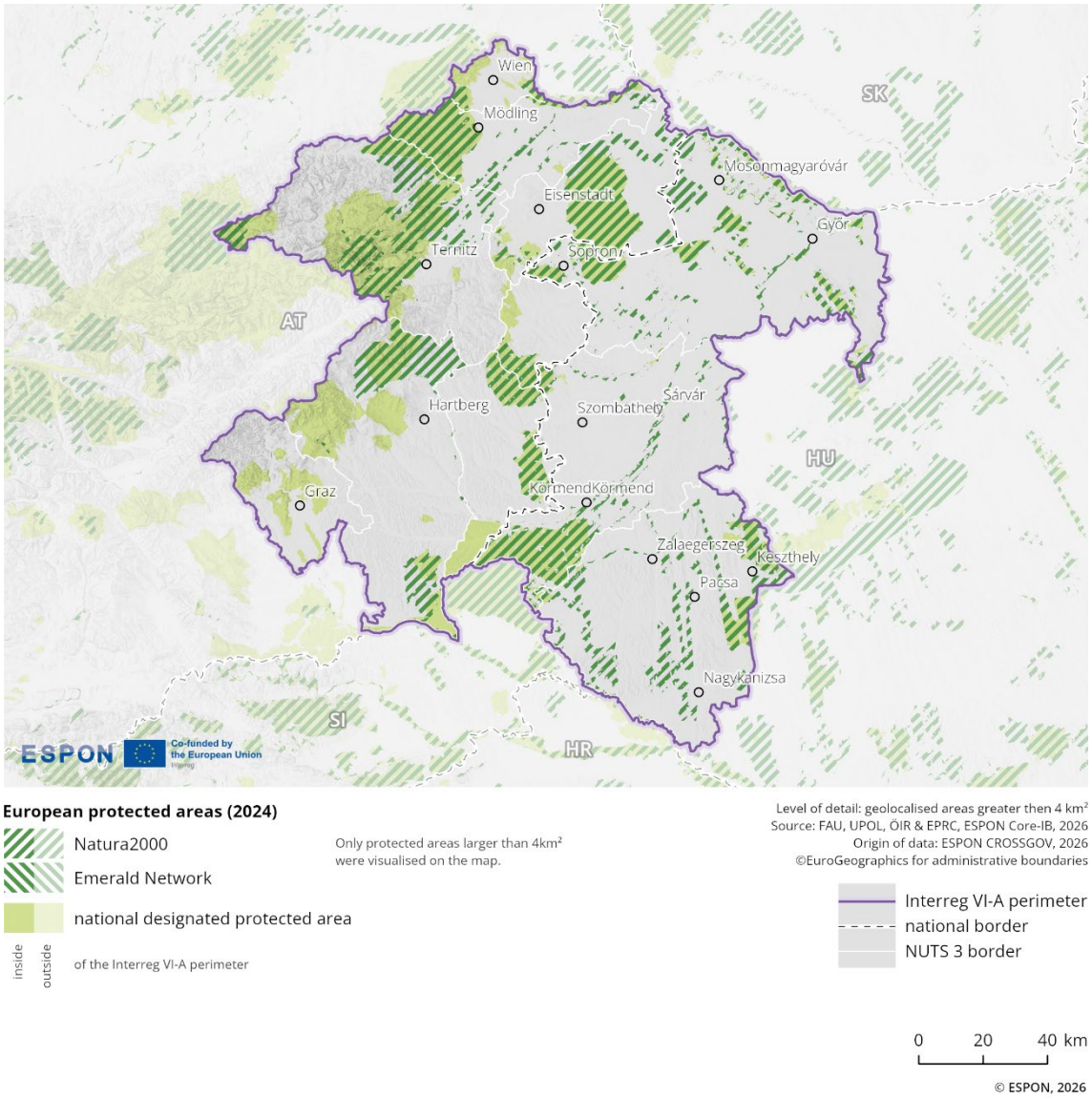
- **Source/method of retrieval**: The indicator represents a combination of nationally designated areas, Natura 2000 and Emerald network provided by EEA (European Environment Agency) Geospatial data catalogue.
- **Temporal coverage**: 2024
- **Unit**: n/a

Please refer to the technical annex for more information.

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

Protected areas within the Interreg region along the Austria–Hungary–border are concentrated in the southern and northern parts. Large contiguous zones are found both east (close to lake Balaton) and west of Zalaegerszeg, in a cross-border setting at Neusiedlersee-Fertő as well as near Mödling/Wien, Eisenstadt, and Ternitz, with overlapping Natura 2000 and national designations. Several protected areas form clear cross-border counterparts, especially between the southern parts, northern parts and a small counterpart in the central area. Northern and central areas, including near Eisenstadt and Szombathely, contain smaller, fragmented sites. The western edge near Graz and Hartberg also includes multiple clustered protected areas.

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.

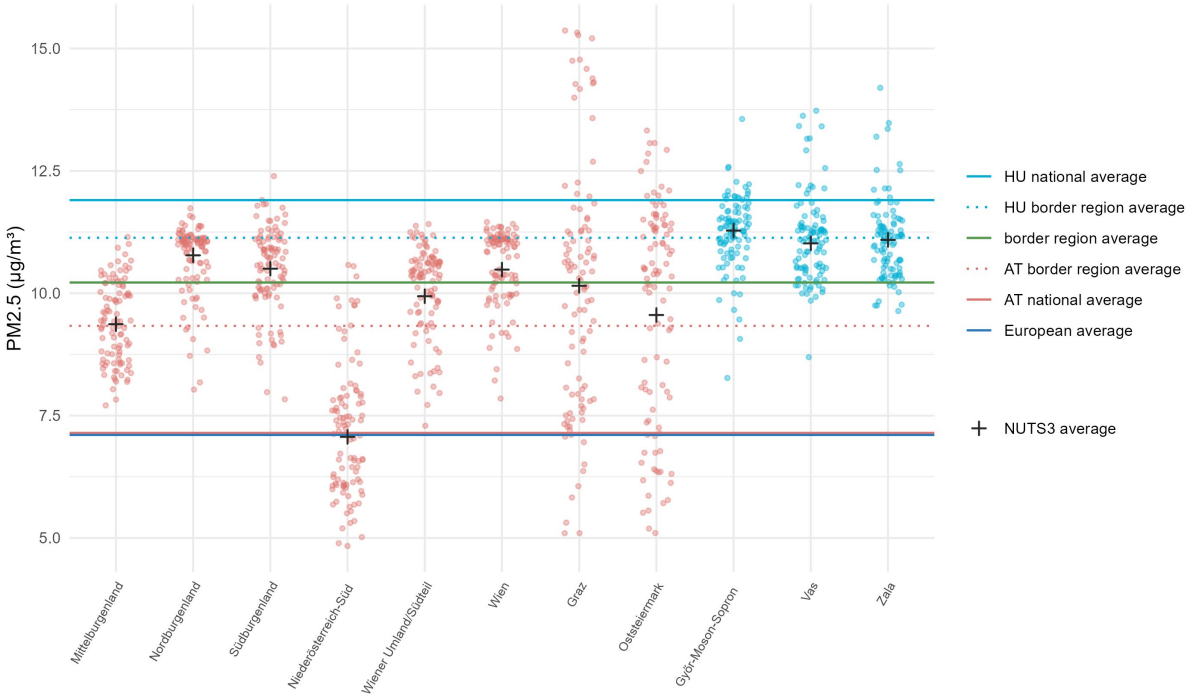
Figure 2.20 illustrates PM2.5 concentrations (in µg/m³) across NUTS3 regions in Austria and Hungary. Each small dot represents an individual measurement, while the black crosses indicate the average PM2.5 concentration for each NUTS3 region[9]. The regions are aligned along the x-axis, with Austrian regions on the left (in red) and Hungarian regions on the right (in blue).

PM2.5 values in both countries span a wide range. Overall, Hungary shows a higher national average PM2.5 level than Austria.

The national average in Hungary is higher than the average in the Hungarian border region. In contrast, the Austrian border region average is significantly higher than the Austrian national average.

The European average is almost aligned with the Austrian national average. Accordingly, the Hungarian values lie notably above the European average. The cross-border region average is located above the European average and lies between the Hungarian and Austrian border region averages.

Figure 2.20: Air pollution



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

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.

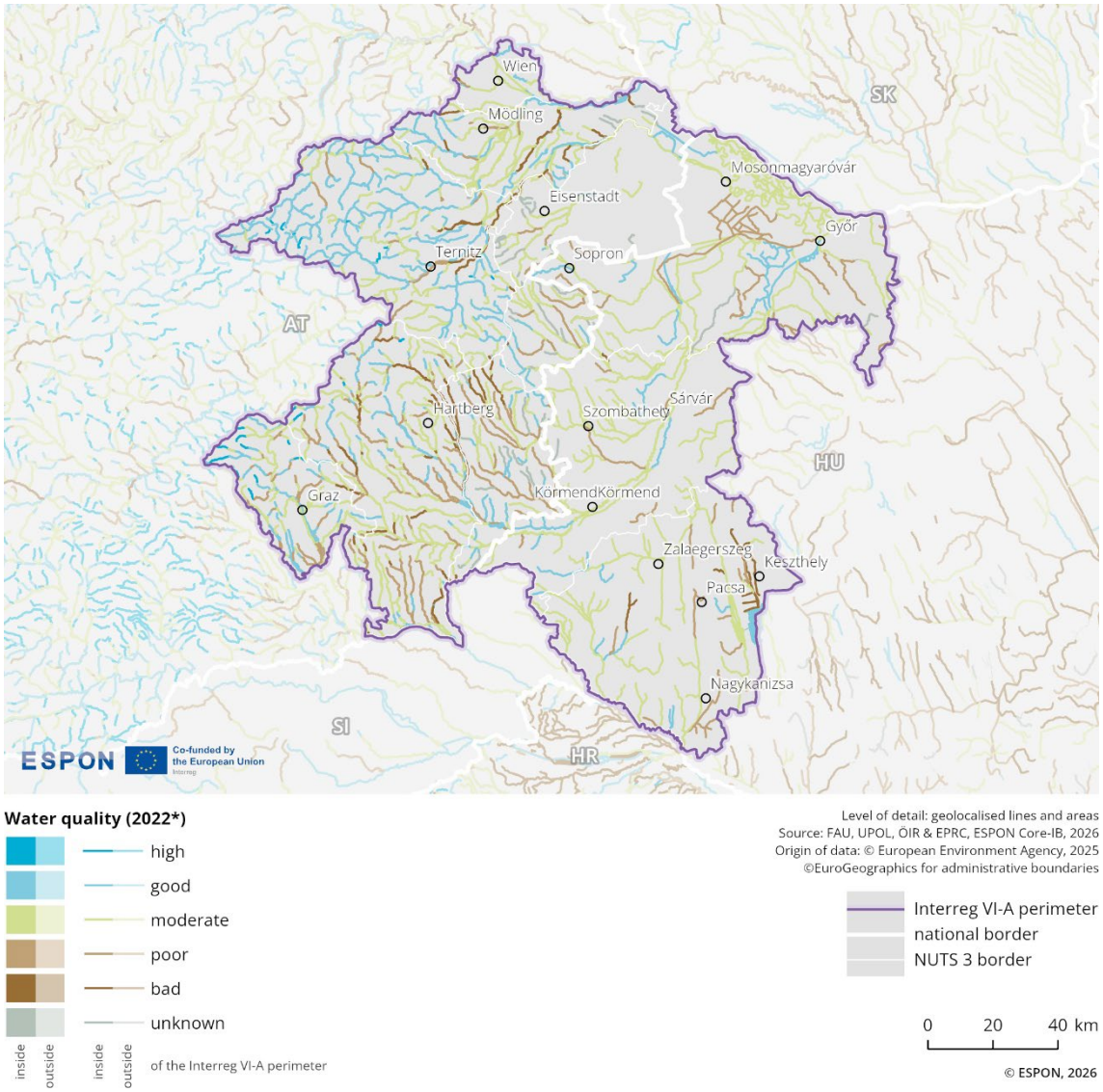
Figure 2.21 illustrates water pollution levels in the Austria–Hungary Interreg region in 2022. Water quality is represented using 6 colour-coded categories, ranging from "bad" to "high", including an "unknown" category[10] .

In the Austrian part of the Interreg region, rivers in the north and west (frequently in mountainous araes and potentially closer to the source) are predominantly rated as “high” or “good”. Moving south and east, more rivers are classified as “moderate” or “poor”, with a few stretches marked as “bad”.

In the Hungarian part of the Interreg region, rivers are predominantly rated as “moderated” with a few stretches north and south that are classified as “poor” and “good”.

[10] 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.[11]

2.3.2.1 Natural hazard risks

Indicator description

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

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

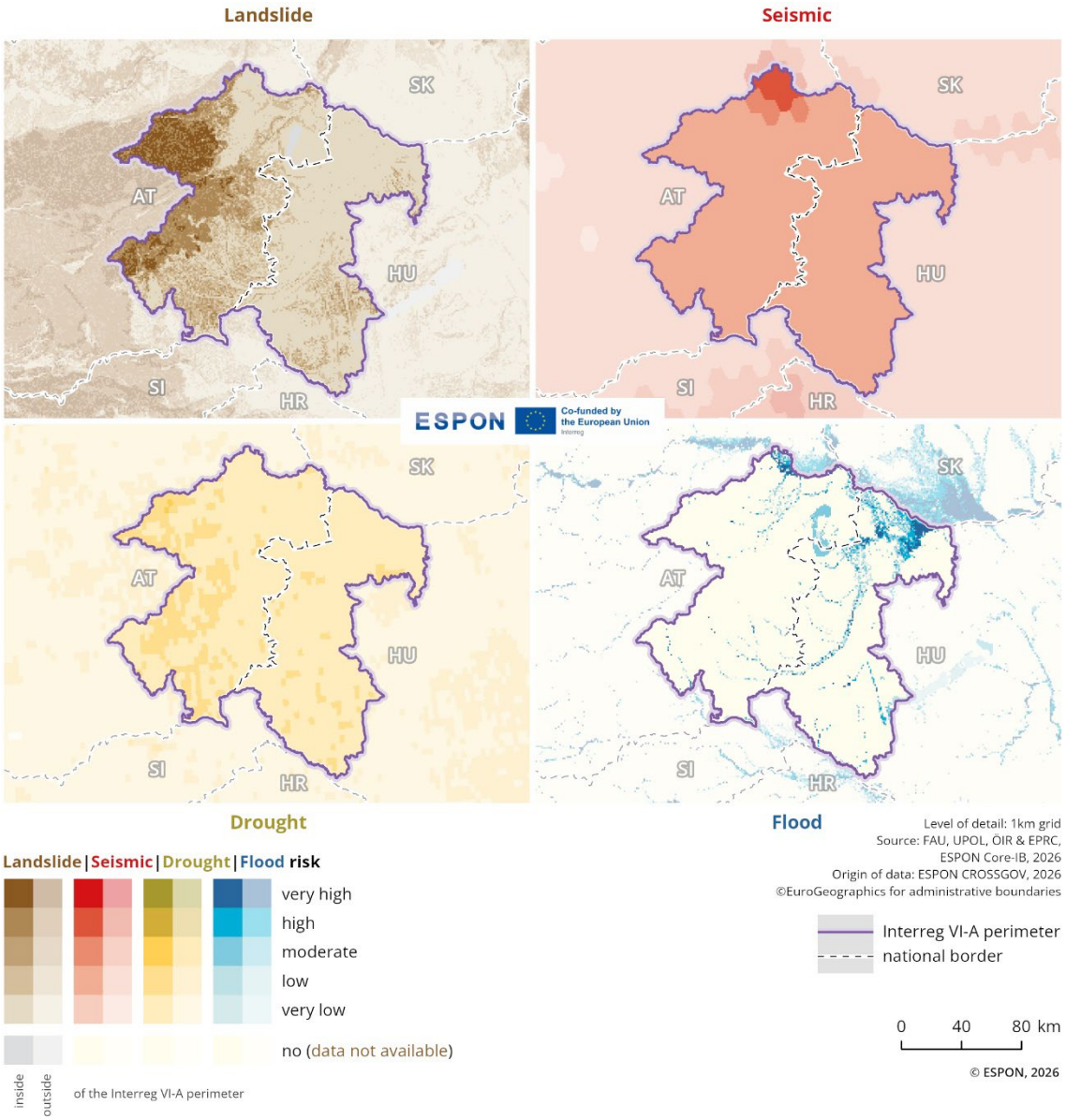
Please refer to the technical annex for more information.

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

Seismic activities are high in the Wien basin, a densely populated area, but otherwise low. Landslides are common in the outlets of the Alps in the west of the region, with little cross-border influence. The risk of drought throughout the programme area is low based on a European comparison indicated by the data. However, from a regional perspective low groundwater and a decreasing water level of Lake Neusiedl still indcate relevant challenges in terms of droughts . The Donau/Duna functions as the northern border of the region, flows both through Austria and Hungary and poses a moderate to very high risk of flooding for neighbouring areas. The Raab/Rába River also carries a risk of flooding. It has its source in Austria and then flows through Hungary.

[11] 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.[12]

2.3.3.1 Power lines and energy infrastructure

Indicator description

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

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

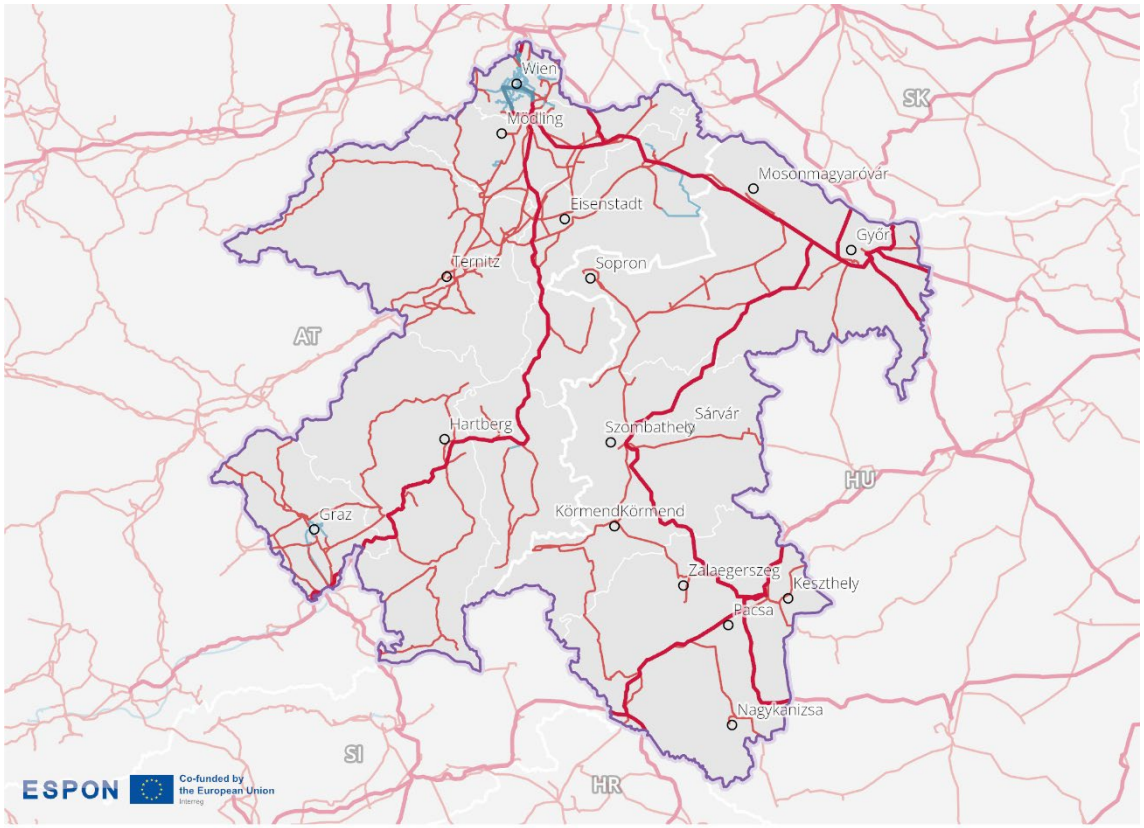
Please refer to the technical annex for more information.

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

The cross-border region of Austria-Hungary relatively extensive high- and extra high-voltage transmission infrastructure. There is one direct cross-border connection via extra high-voltage lines in the north of the region. Also worth mentioning in this area is the relatively long section of underground cabling east of Eisenstadt near Lake Neusiedl. Besides connecting Wien with Győr in Hungary via an extra high-voltage line, other lines of this level on both sides of the state border run more or less parallel in a north-south direction.

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

Figure 2.23: High-voltage transmission infrastructure



Overhead power lines (2025)

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

Underground power cables (2025)

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

inside / outside of the Interreg VI-A perimeter

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

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

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

0 20 40 km

© ESPON, 2026

2.3.3.2 Power stations

Indicator description

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

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

Please refer to the technical annex for more information.

In the Austria-Hungary cross-border region, in total, there are 8 power station locations[13], while the most prevalent is represented by gas and oil power stations (see Table 1).

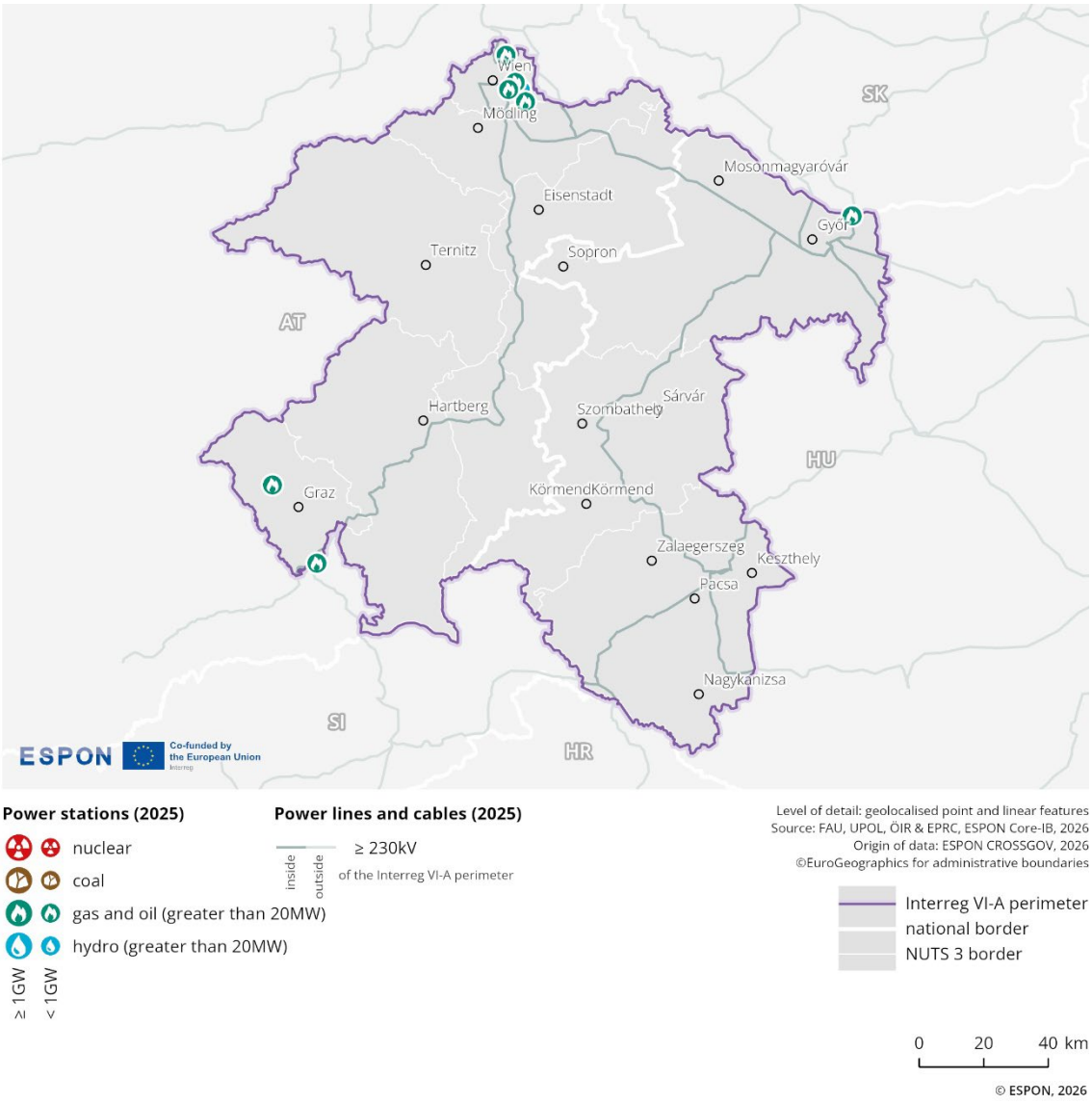
Table 1: Number and type of power stations

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

Only one power station (gas and oil) is located on Hungarian territory in this cross-border region on its northeastern edge on the border with Slovakia (see Figure 2.24). The remaining power plants are located in Austria, where, apart from one hydroelectric power station, Austria maintains the other 6 sites (gas and oil).. Furthermore, none of the power plants are located closer than 50 kilometers from the common border. No nuclear power plant or coal power stations are present in the whole region.

[13] For more information on cross-border energy communities between Austria and Hungary see: European Commission: Directorate-General for Regional and Urban Policy, Spatial Foresight, Eurac, EureConsult, Handbook on Cross-border Energy Communities – Final report, Publications Office of the European Union, 2025; https://data.europa.eu/doi10.2776/8146582

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

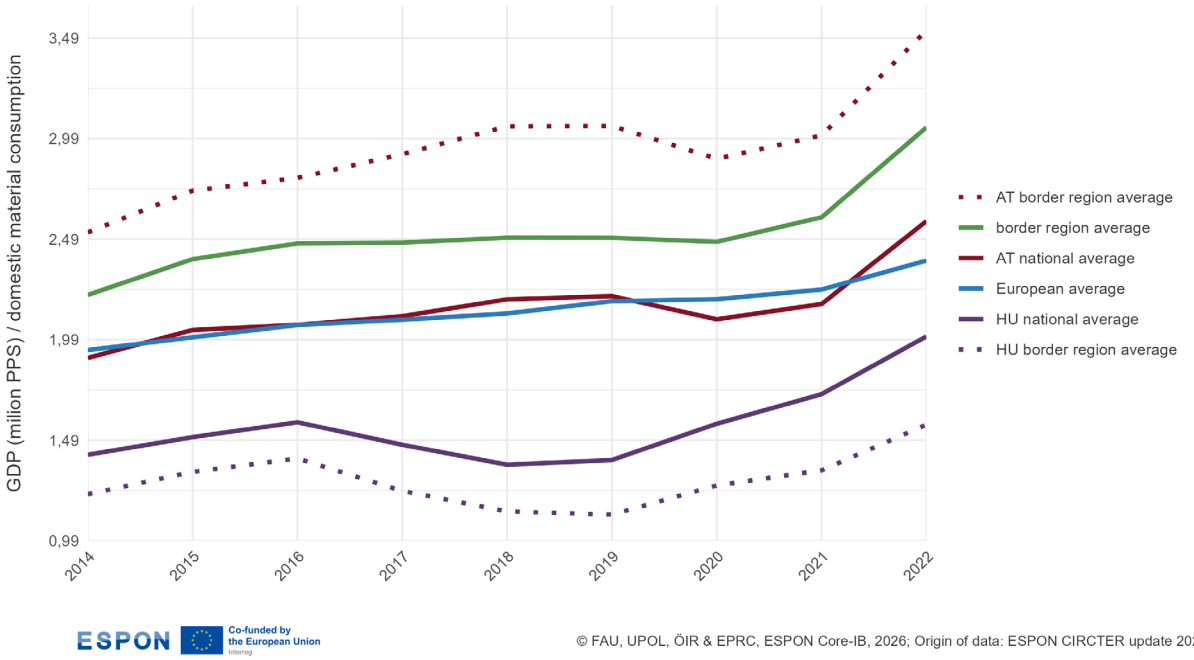
The indicator shows the economic value generated per unit of material consumed for each region within the cross-border area. Developments over time provide insights if the decoupling of productivity from resource use is progressing on regional level.

- **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 a slow upward trend during the observed period, with a slight decline in 2020. After that, it increases sharply again, reaching an overall value of around 2.49 million PPS/DMC in 2022. The Austrian border region average follows a similar pattern, but at significantly higher levels, reaching a value of around 3.49 million PPS/DMC in 2022.

The Hungarian national average remains below the Austrian national average, showing a consistently increasing trend, with the exception of a slight decline between 2016 and 2019. The Hungarian border region average follows a similar trend, but at a slightly lower level.

The border region average represents the combined average of the Austrian and Hungarian border region values, reaching approximately 3million PPS/DMC in 2022. The Hungarian and Austrian border region averages present notable disparities within the border region itself.

2.3.4.2 Generation of waste per GDP

Indicator description

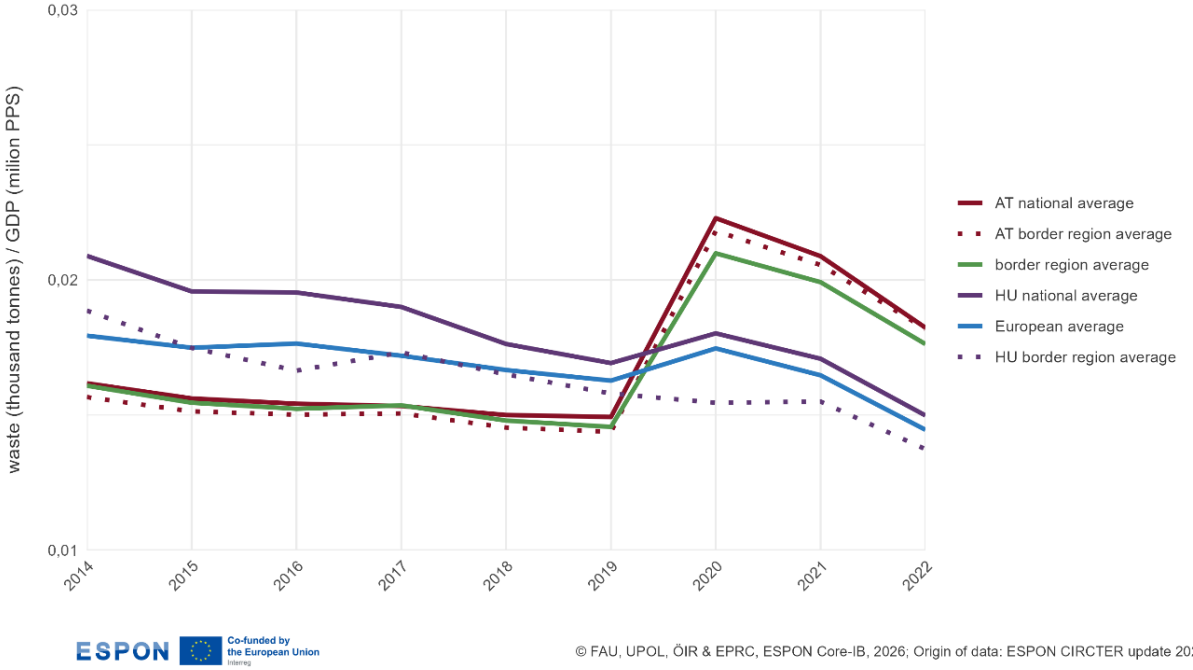
The indicator shows the regional distribution of waste creation in relation to the GDP development. Comparing waste generated to GDP reflects the waste intensity of the economy and provides a measure of "eco-efficiency". Observation of its change from year to year permits to assess whether the economy 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 Standard) of GDP from 2014 to 2022 in Austria, Hungary and their Interreg border region.

Figure 2.26: Waste generation per GDP



The Hungarian 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 Hungarian border region average follows a

similar trend, remaining notably below the national average. For the period 2014-2019, the Austrian national and border region averages are at a lower level than the Hungarian values until 2019, when both experience a sharp increase to over 0.02 tonnes of waste per GDP. Afterwards, both Austrian values decline again but remain above the Hungarian values.

The European average gradually decreases from around 0.018 in 2014 to approximately 0.015 in 2022. Hungary's national and border region values remain either slightly above or closely aligned with the European average throughout the period, but begin to converge more clearly towards it from 2019 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 slight decline to a value of approximately 0.017 tonnes of waste per million PPS in 2022. Over the observed period, the border region average is closely aligned with the Austrian border region average. It remains below the European average until 2019, after which it rises above it.

2.3.5 Key messages on the green dimension

Similar as for other dimensions, the border region demonstrates rather strong contrasts as well in the environmental dimensions. Some cross-border corridors of protected areas are apparent in the north and south of the border region, with general ecological connectivity being above average for European border regions. Nevertheless, there is also a number of protected areas without any cross-border counterparts.

Climate risks add another layer of cross-border interdependence, in particular in relation to flood risk where the Donau/Duna and Raab/Rába rivers floodplains are affecting both sides of the border. Landslides are more prevalent in the western part close to the Alps and have limited cross-border implications. Seismic activity is concentrated in the densely populated Wien Basin, with comparably lower risks in the majority of the border region.

Although energy infrastructure is relatively well developed from a national perspective, integration is very limited. The grid is currently connected by just one high-voltage line linking Wien and Győr, while all other energy infrastructure is set up without cross-border connections. While Austria has several gas and oil power stations, Hungary only has one within the programme area. Both production and transport of energy are not key priorities, therefore.

In terms of resource efficiency, considerable differences are visible as well. Austrian border regions achieve high resource productivity, significantly above the EU and Austrian averages, while Hungarian regions perform at a lower level. On the other hand, waste generation in Hungary has decreased steadily, reaching close to the EU average while Austrian border regions have experienced a sharp increase, surpassing both national and European levels, and only showing a slow decrease in the past years.

From an ecological perspective, the whole Austria–Hungary border region is characterised by comparably strong continuity in ecological corridors and some shared environmental risks, but rather low actual integration. There is therefore high potential for cooperation in nature protection and disaster management, as well as potential to improve cross-border connectivity.

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 cross-border connectivity in social media and language similarities across and along national borders to evaluate the potential for cultural and social integration.

2.4.1.1 Cross-border connectivity in social media

Indicator description

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

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

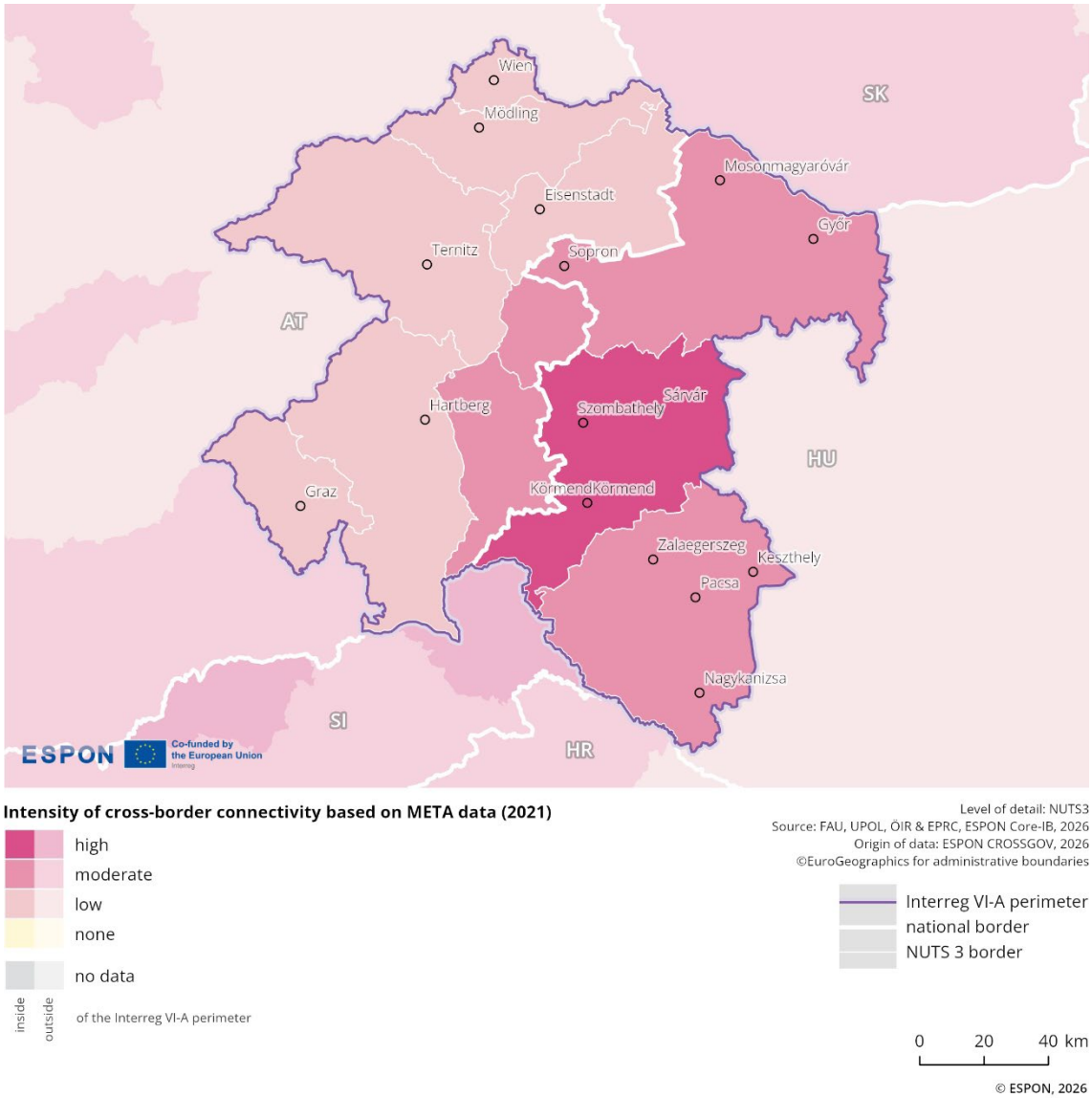
Please refer to the technical annex for more information.

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

The intensity of cross-border interaction on social media among residents of this border region is heterogeneous. Due to slightly differing levels of intensity on both sides of the border, minor differences between the countries are observable. On the Austrian side of the region, low values are recorded in almost all areas (around Graz, Hartberg, Ternitz, Eisenstadt, and Wien), while moderate values are observed in 2 NUTS3 units east of Hartberg and Ternitz. In contrast, high cross-border connectivity is recorded in the area including Szombathely, and in the remaining Hungarian parts of the cross-border region (including cities such as Győr, Zalaegerszeg and Nagykanizsa) cross-border connectivity in social media[14] is at a moderate level.

[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&

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.

2 different languages characterise the border region, with no similarities and no widespread knowledge of the neighbouring regions language recorded.

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

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

In 2023, the NUTS3 region Oststeiermark exceeds 10 nights per capita in 202315. In terms of total overnight stays over the 3-year period, the leading tourism regions are located in Wien (approx. 16 million), Oststeiermark (approx. 2.7 million) and Zala (approx. 2.5 million, mainly linked to lake Balaton).

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

Figure 2.28: Overnight stays in tourism

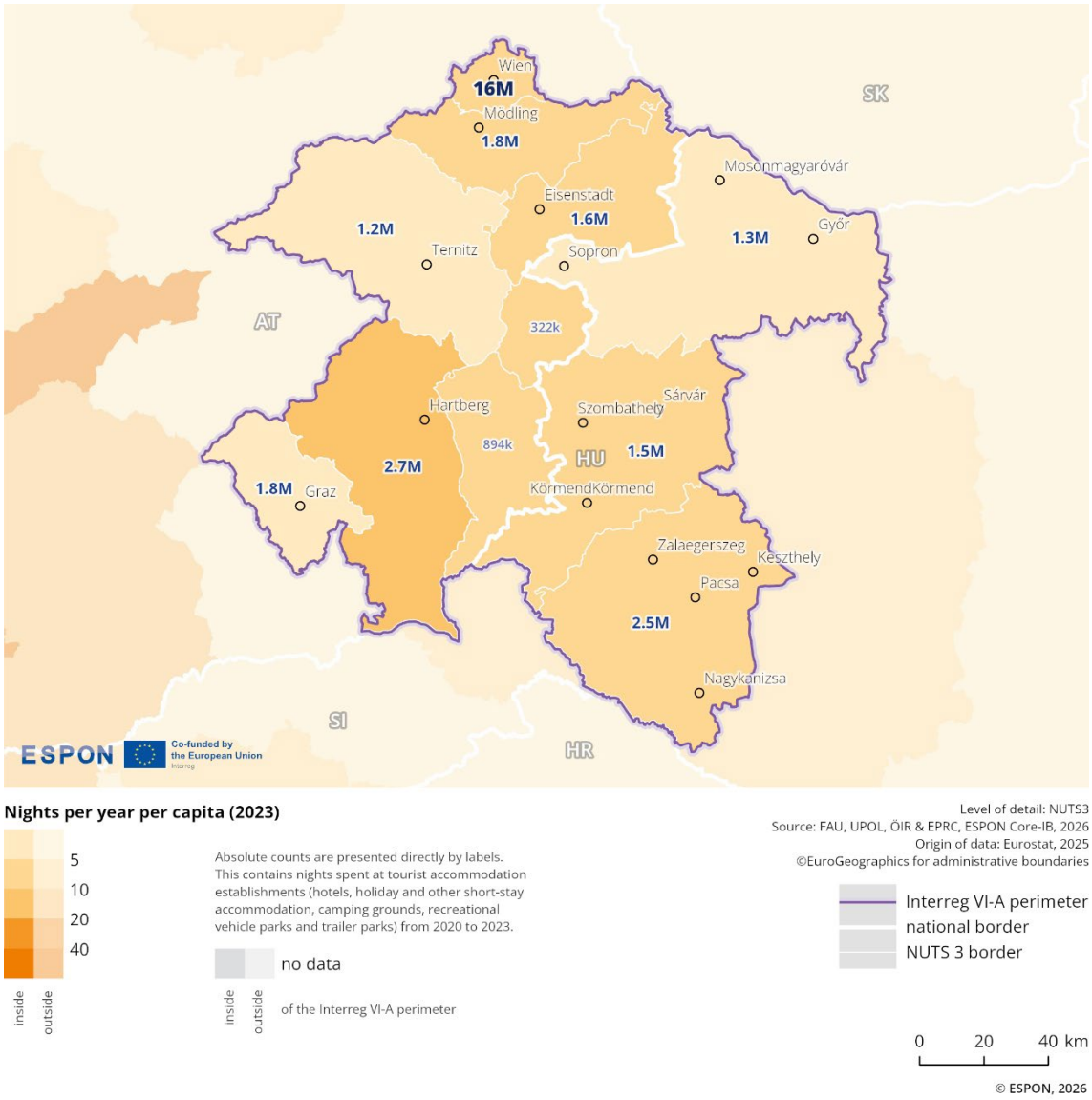
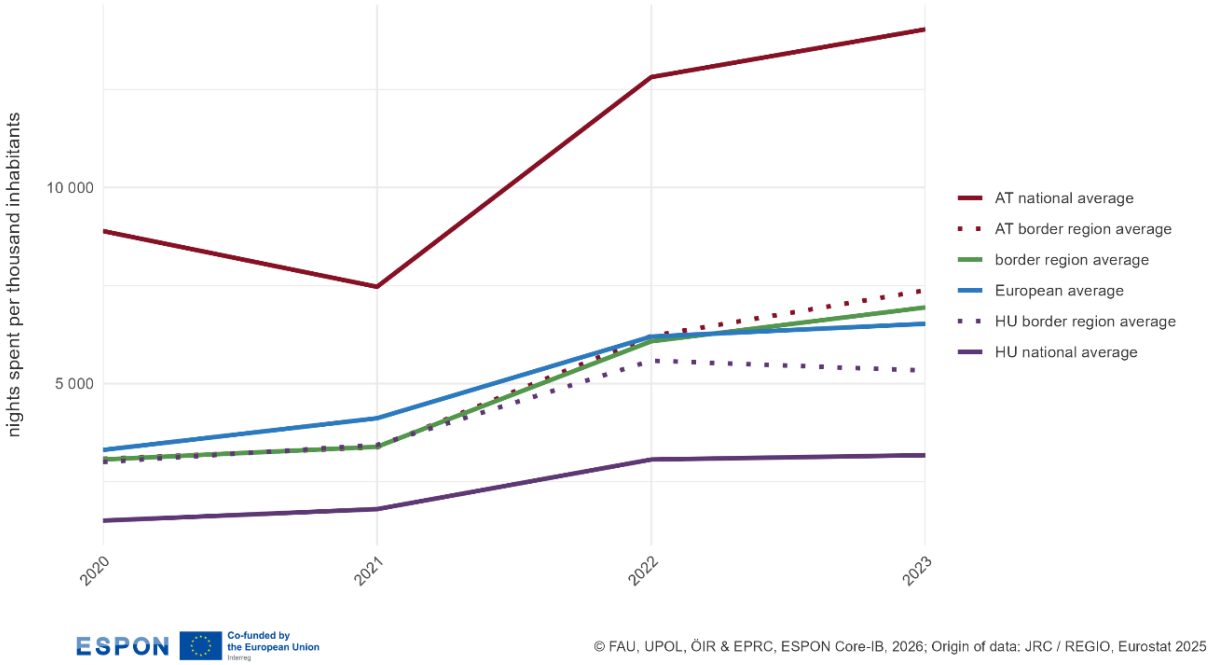


Figure 2.29 illustrates the development of nights spent at tourist establishments per thousand inhabitants from 2020 to 2023. Over the entire period, the average for the Austria-Hungary programme area is quite similar to the overall European average, which includes EU member states and the EFTA countries Iceland, Liechtenstein, Switzerland and Norway. While the border regional average in Hungary is higher than the national average for all 4 years, the Austrian border regional average is significantly lower than the national average. Additionally, the regional average for the Austrian border area is somewhat higher than that for the Hungarian.

Figure 2.29: Overnight stays in tourism (comparison)



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2.4.3 Services of general interest

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

2.4.3.1 Accessibility to services of general interest

Indicator description

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

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

Please refer to the technical annex for more information.

Figures 2.30 to 2.35 visualise average car travel times to services of general interest within the programme area. The 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)

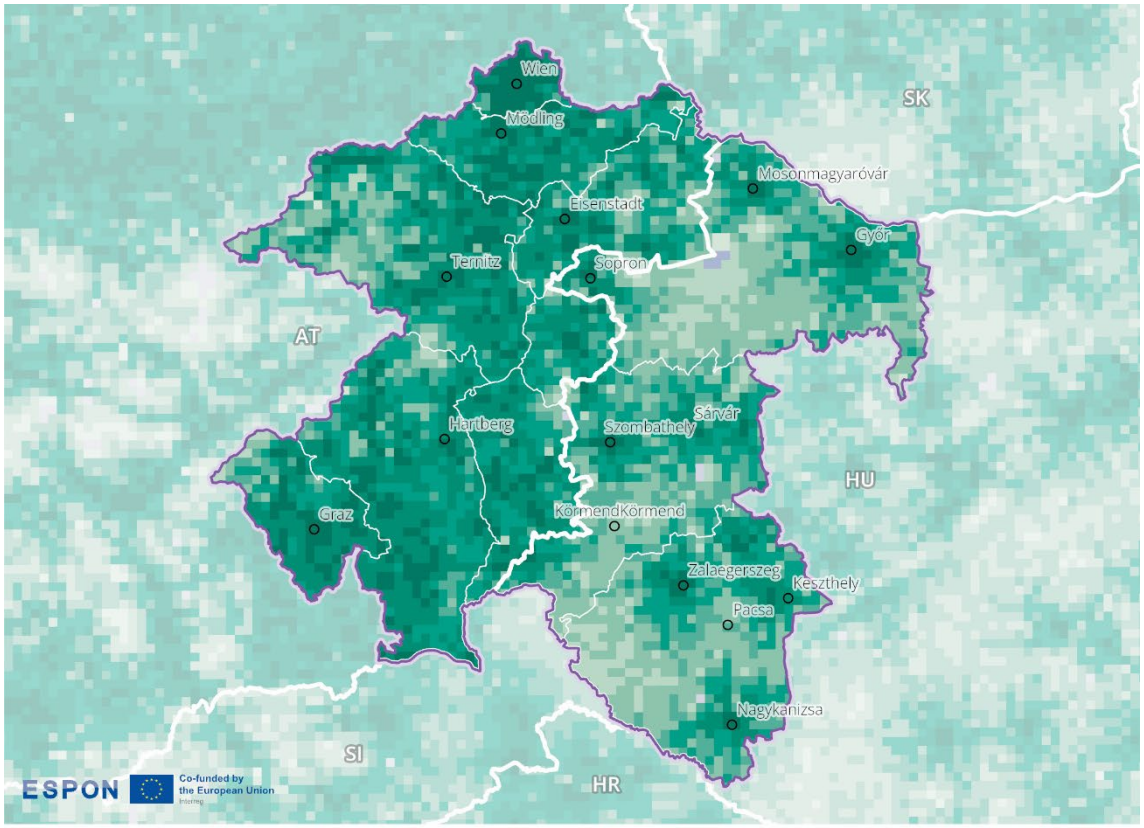
These indicators show how long, on average, it takes to reach the nearest facility by car. The data comes from the ESPON PROFECY Update project (2022) and is visualised based on a 2.5-kilometer grid.

In the Austria–Hungary border area, grocery shops are evenly distributed across most areas in both countries. Travel times to schools are shorter in Austria, while doctors and pharmacies are more accessible in southern Austria. The longest travel times are observed in southern Hungary and north-western Austria, with some areas experiencing travel times of more than one hour.

Near the national border, schools show the largest differences in accessibility between the 2 countries with considerably lower accessibility for many Hungarian parts of the border region.

Hospitals, as medical services, are mostly 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 ones in remote areas. Cinemas follow a similar pattern as a cultural service 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

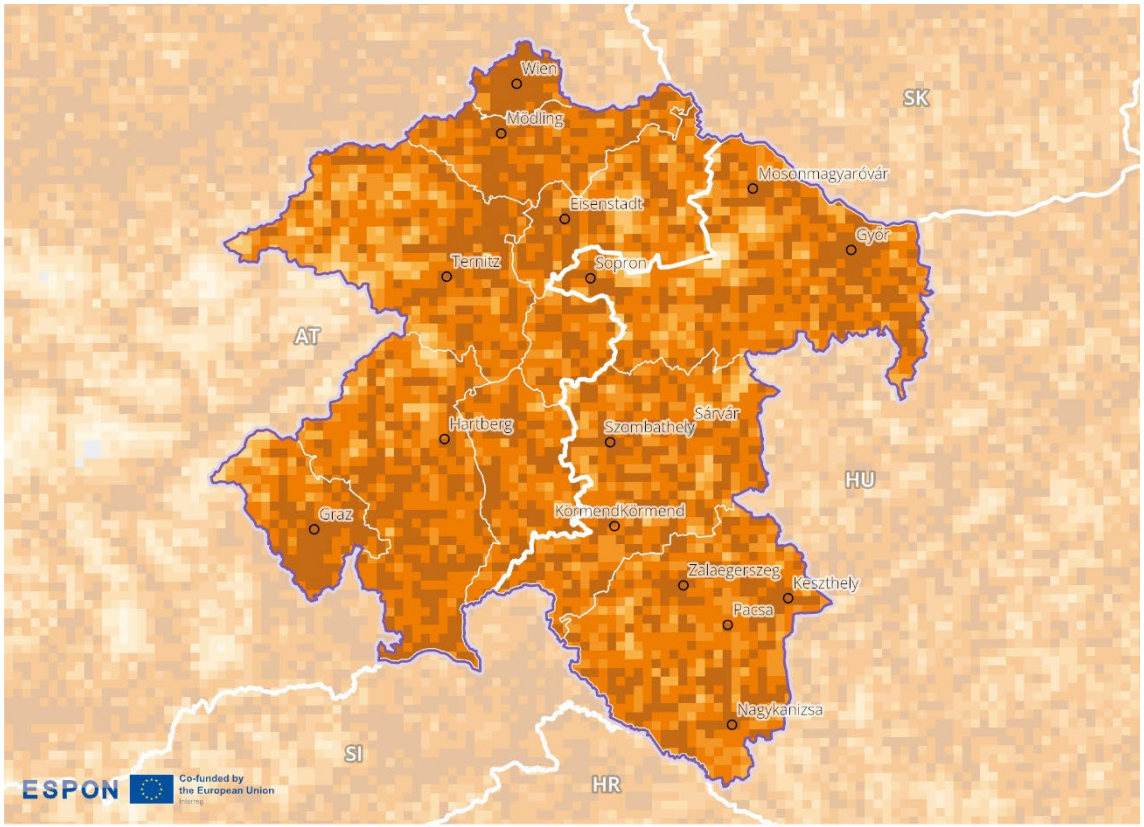
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

Interreg VI-A perimeter
national border
NUTS 3 border

0 20 40 km

© ESPON, 2026

Figure 2.31: Travel time to grocery shops



Car travel time to the nearest shop (2021)

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

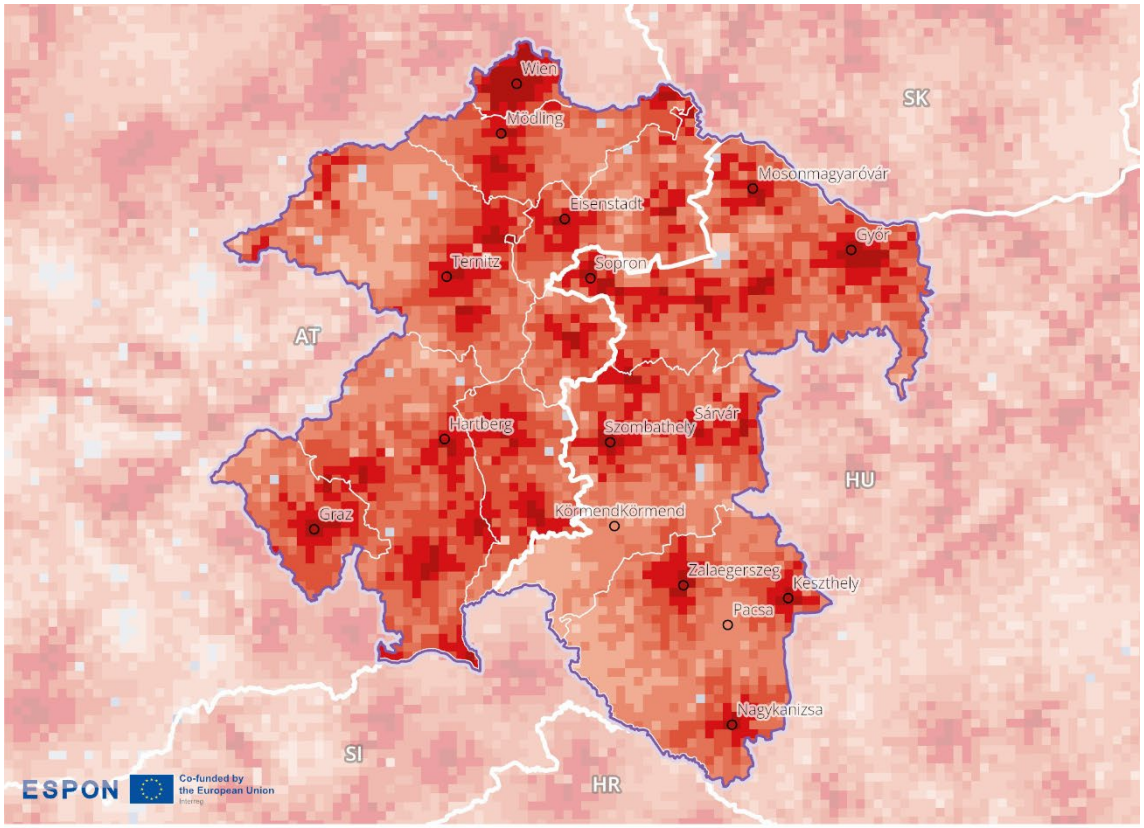
inside outside of the Interreg VI-A perimeter

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

Interreg VI-A perimeter
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

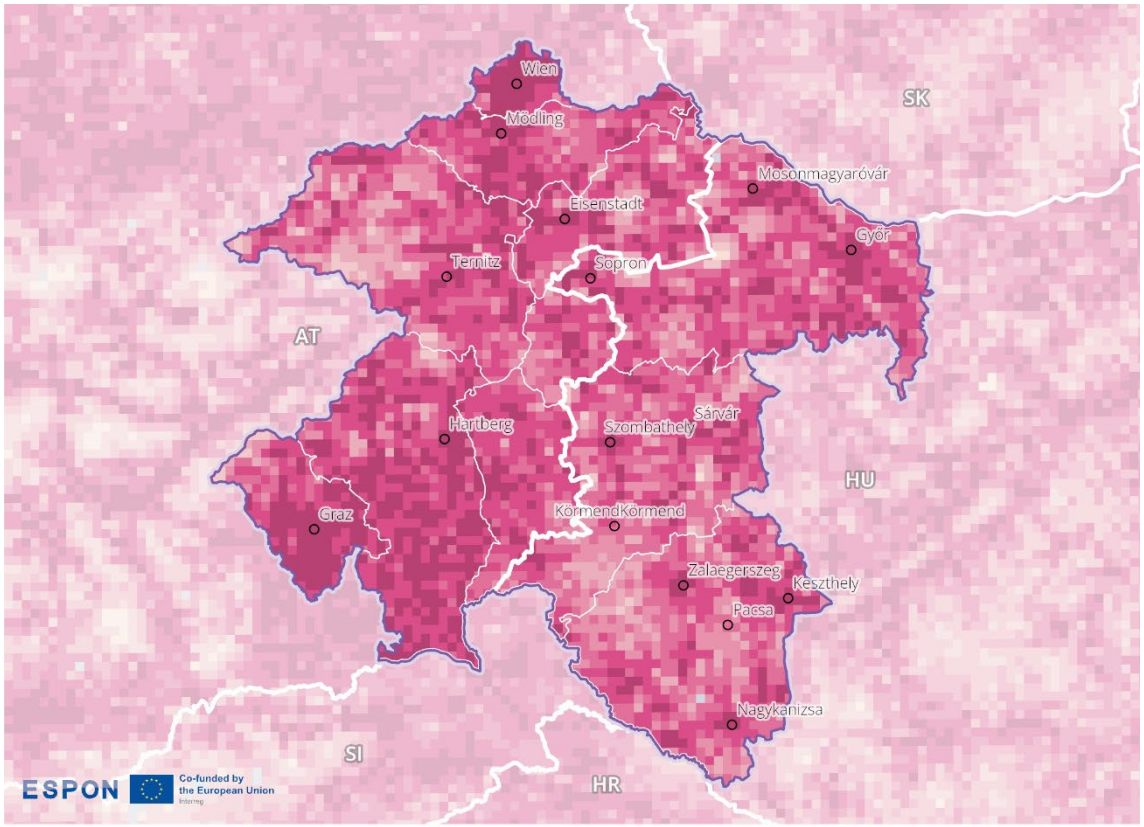
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

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

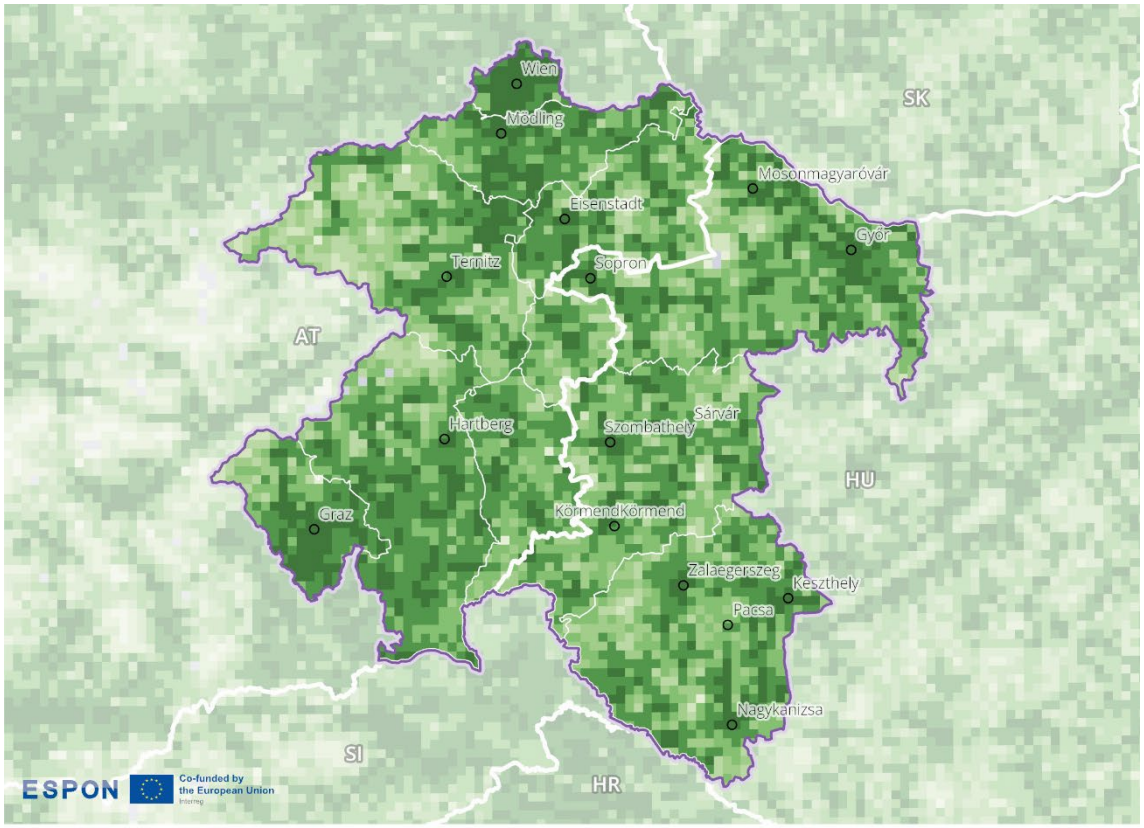
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

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

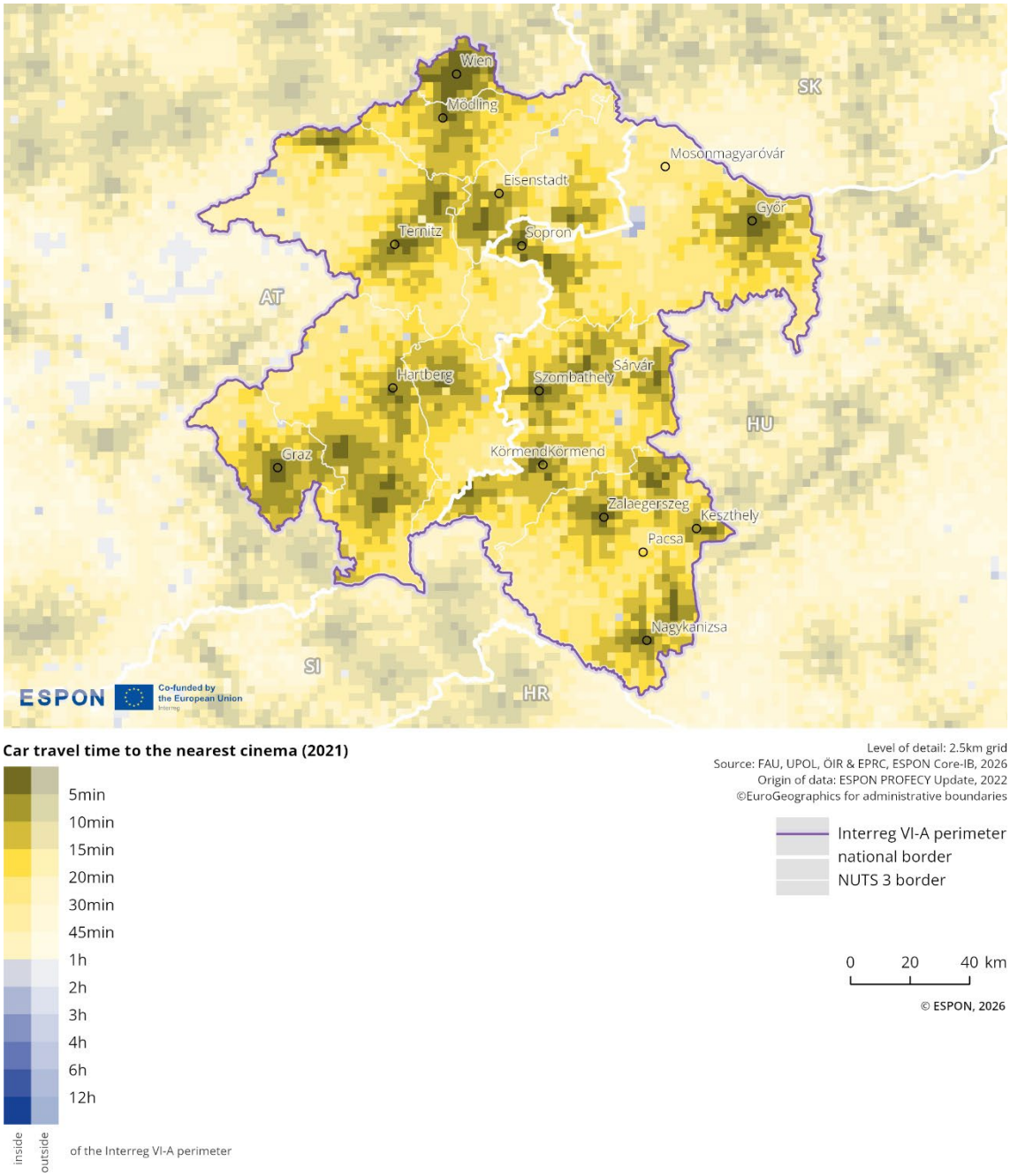
Level of detail: 2.5km grid
Source: FAU, UPOL, ÖIR & EPRC, ESPON Core-IB, 2026
Origin of data: ESPON PROFECY Update, 2022
©EuroGeographics for administrative boundaries

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

Within the socio-economic dimension, the whole cross-border region shows a fairly balanced picture related to accessibility of services, tourism and other key indicators. In terms of social media connectivity, some disparities emerge with regions around Szombathely in Hungary showing higher cross-border engagement, while Austrian regions generally show only low to moderate levels of interaction. The lack of a shared language remains a major barrier, even if German is a common second language in Hungarian border regions in particular.

Both countries border regions are attractive to tourists but show different degrees of tourism intensity. Austrian regions such as Oststeiermark register higher per capita overnight stays, e.g. related to alpine and spa tourism, which is also shared by some parts of the Hungarian border regions close to lake Balaton. Wien stands out as the region's tourism hub, with 16 million stays in the same period, likely

representing the most internationally known attraction of the cross-border region. Over-all, the analysed area exceeds or approaches European averages and nowhere show extreme tourism intensity.

Access to services of general interest is relatively good across most of the cross-border region, though there are important contrasts. Grocery shops are evenly distributed in both countries, while schools are on average more accessible in Austria. Healthcare provision is denser in southern Austria than in adjacent Hungarian regions, where travel times often exceed one hour. Hospitals and cultural services, such as cinemas, remain concentrated in more densely populated areaslike Wien, Graz, Győr and Szombathely, creating an urban–rural divide across the border.

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.

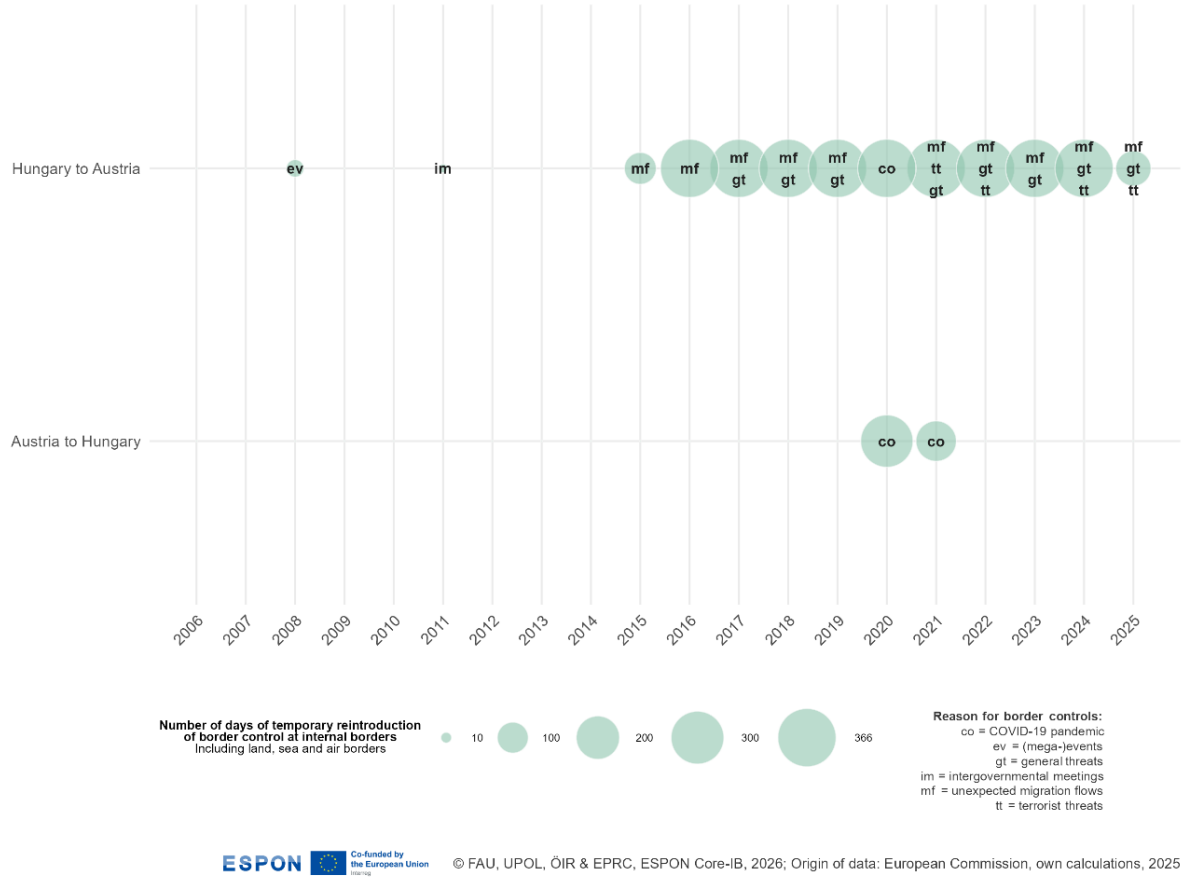
Figure 2.36 illustrates the number of days during which temporary border controls were reintroduced at internal borders within the Schengen Area. Each bubble represents a specific year with bubble sizes indicating the number of days the respective border was under control. The categories of reasons for 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 Hungary joined in 2007.

Figure 2.36: Temporary reintroduction of border controls



The Austria-Hungary border area is characterised by an asymmetric pattern:

- Crossing the border from Hungary 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 Hungary: Temporary border controls in 2 out of 20 years due to COVID-19 (2020-2021).

From a comparative perspective, Austria has implemented controls for significantly more days than Hungary, 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. The one-sided nature of commuting in combination with one-sided border closures places a particular burden on the cross-border area.

2.5.2 Key messages on the border security dimension

Analysis of temporary border controls reveals highly significant asymmetries in the border region with lasting negative effects on cross-border integration. Over the past 2 decades, Austria has reintroduced border controls far more frequently and for longer periods than Hungary has towards Austria. These measures have been particularly argued with the influx of migrants since 2015, as well as in connection with major events and the pandemic. By contrast, Hungary has only implemented such controls in 2

years, both of which were in connection with the pandemic. Besides the frequency, the duration of such controls is also noticeably high.

This imbalance has a tangible effect on daily cross-border flows. The unpredictability and delays caused by repeated and long reintroductions of controls reduce the efficiency of cross-border exchanges for commuters and logistics operators. Given the cross-border region's high level of labour mobility and its role as a European transport corridor, even temporary interruptions can disrupt established integration patterns. The asymmetry in implementation furthermore undermines trust between the 2 countries.

2.6 Governance dimension

This section covers the cross-border governance of the Austria-Hungary Interreg A programme. The area have longstanding cross-border links, which have been intensified since the end of 2007 as the Schengen Agreement allowed free movement of citizens to cross the border. Cooperation on spatial planning started as early as 1985 and a High-Level Coordination Forum on regional development in the joint cross-border region has also been established. The Austrian-Hungarian cross-border region is part of the macro-regional strategy "EU Strategy for the Danube Region" (Danube Strategy).

2.6.1 Cross-border cooperation

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

2.6.1.1 Cross-border governance structures

Indicator description

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

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

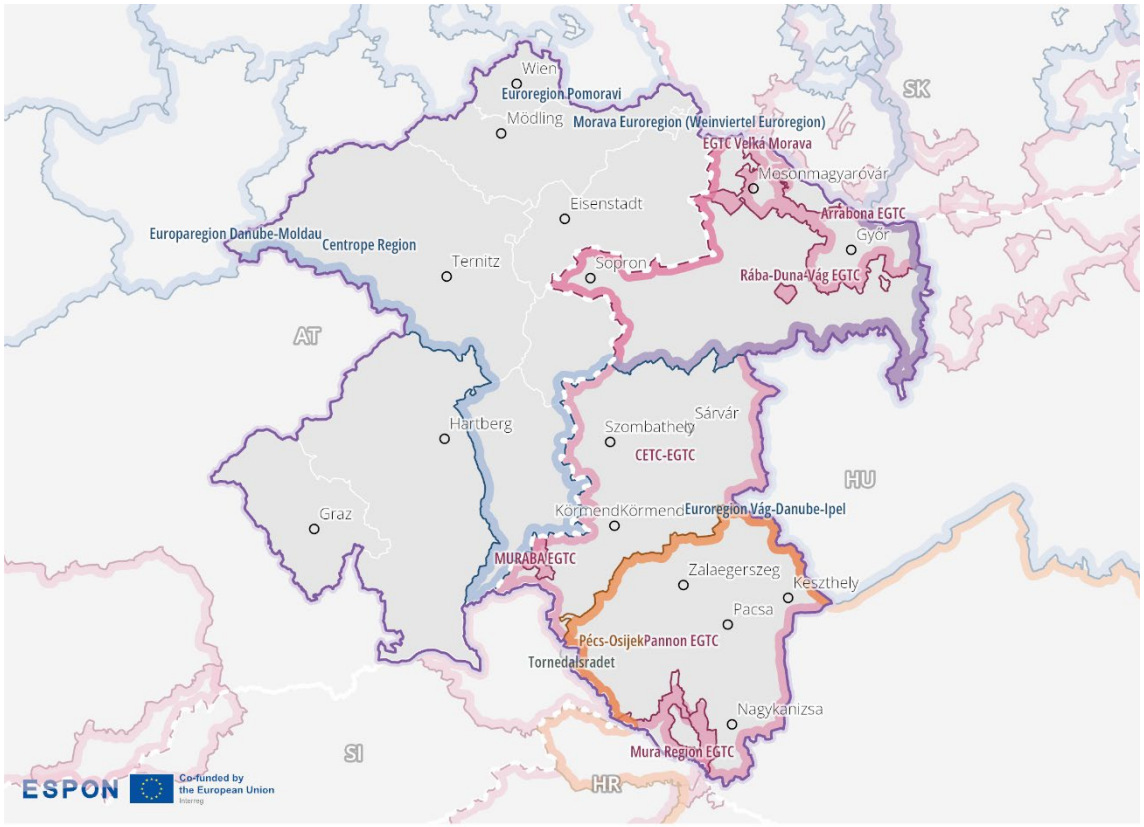
Please refer to the technical annex for more information.

Figure 2.37 shows the different types of institutionalised cooperation. 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 displays broad spatial coverage along the borders. Overall, the whole analysed area exhibits a high level of institutionalised cross-border cooperation. The most prevalent formats are those at the Euroregional level and EGTCs. However, several of the depicted institutionalised territorial cooperation structures are not relevant to Austria – Hungary cooperation but just active in the programme area.

Figure 2.37: Cross-border governance structures



Format of cooperation

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

inside / outside of the Interreg VI-A perimeter

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

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

0 20 40 km

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.

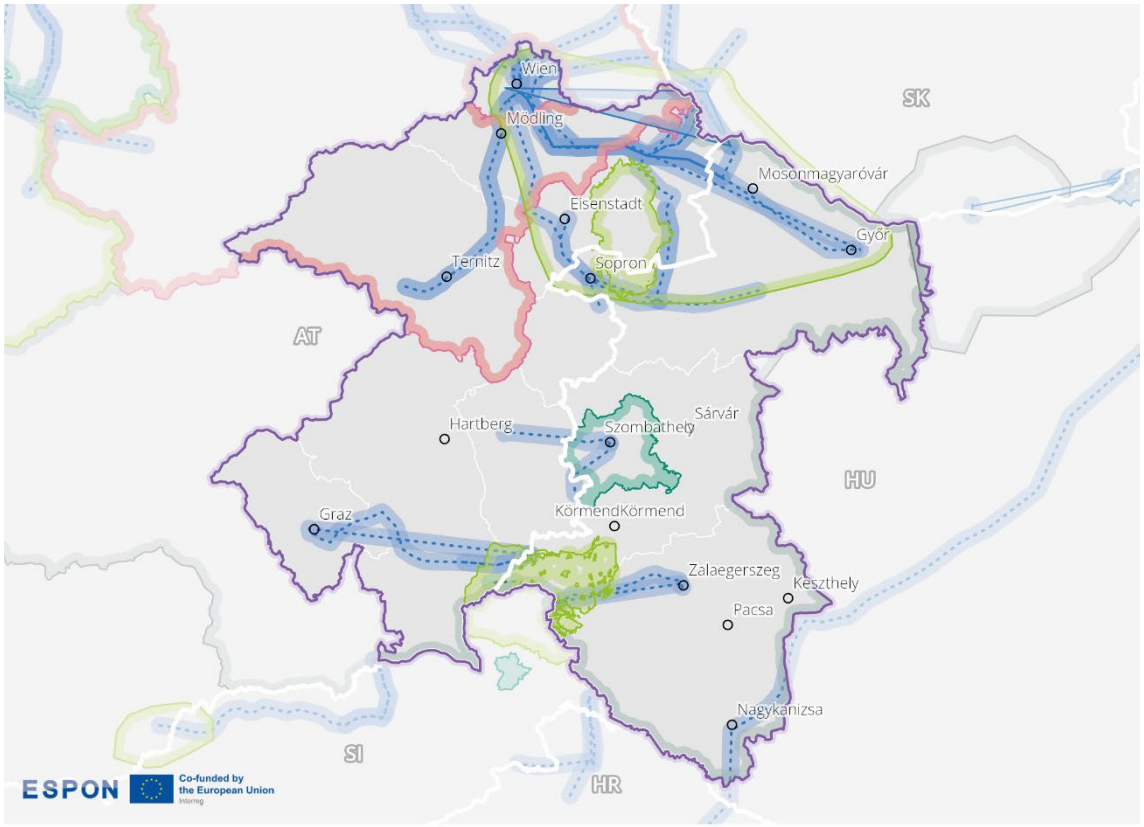
- **Source**: ESPON cross-border public services (CPS) 2.0 database
- **Temporal coverage**: 2022
- **Unit**: n/a

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–Hungary border region show a layered pattern. The Wien–Eisenstadt–Győr axis exhibits dense connections, particularly in transportation, health care, and environment & water. Furthermore the Wiener Neustadt – Sopron axis has connections in healthcare which are not covered by the indicator mapped below. Moving south, the Graz–Zalaegerszeg–corridor is characterised by strong cooperation in transportation and environment & water. Smaller service areas also appear near Szombathely and Hartberg as well as Oberwart, where transportation and education & research are the main sectors.

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, in particular from the European perspective.

In the border area of Austria–Hungary, one b-solution pilot action was identified[16]. This initiative focuses on promoting bilingualism in the Tri-Border Region of Austria, Hungary, and Slovakia, involving youth mobility, multilingualism, and enhancements to the education system. The application for this pilot was submitted by a public/public-equivalent body.

In this border area, in the field of multi-lingualism, issues relate to the need for effective communication and cooperation among youth across the 3 countries involved. Governance and institutional cooperation concern the implementation of educational initiatives that foster bilingualism and the development of curricula that support multilingual education. There are challenges regarding the integration of language learning into educational systems, which can affect students' mobility and opportunities in the region.

The solutions proposed in the pilot action are predominantly operational in nature. For example, the bilingualism initiative includes proposals for conducting a legal analysis, regional analysis, and surveys to assess the current state of language education and identify best practices. These operational measures aim to provide a comprehensive understanding of the linguistic dynamics in the Tri-Border Region, thereby facilitating improved educational programmes that promote multilingualism among youth. By addressing these issues, the initiative seeks to enhance cross-border cooperation and strengthen the ties among the communities in Austria, Hungary, and Slovakia.

[16] A platform to promote multilingual #PrimaryEducation

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

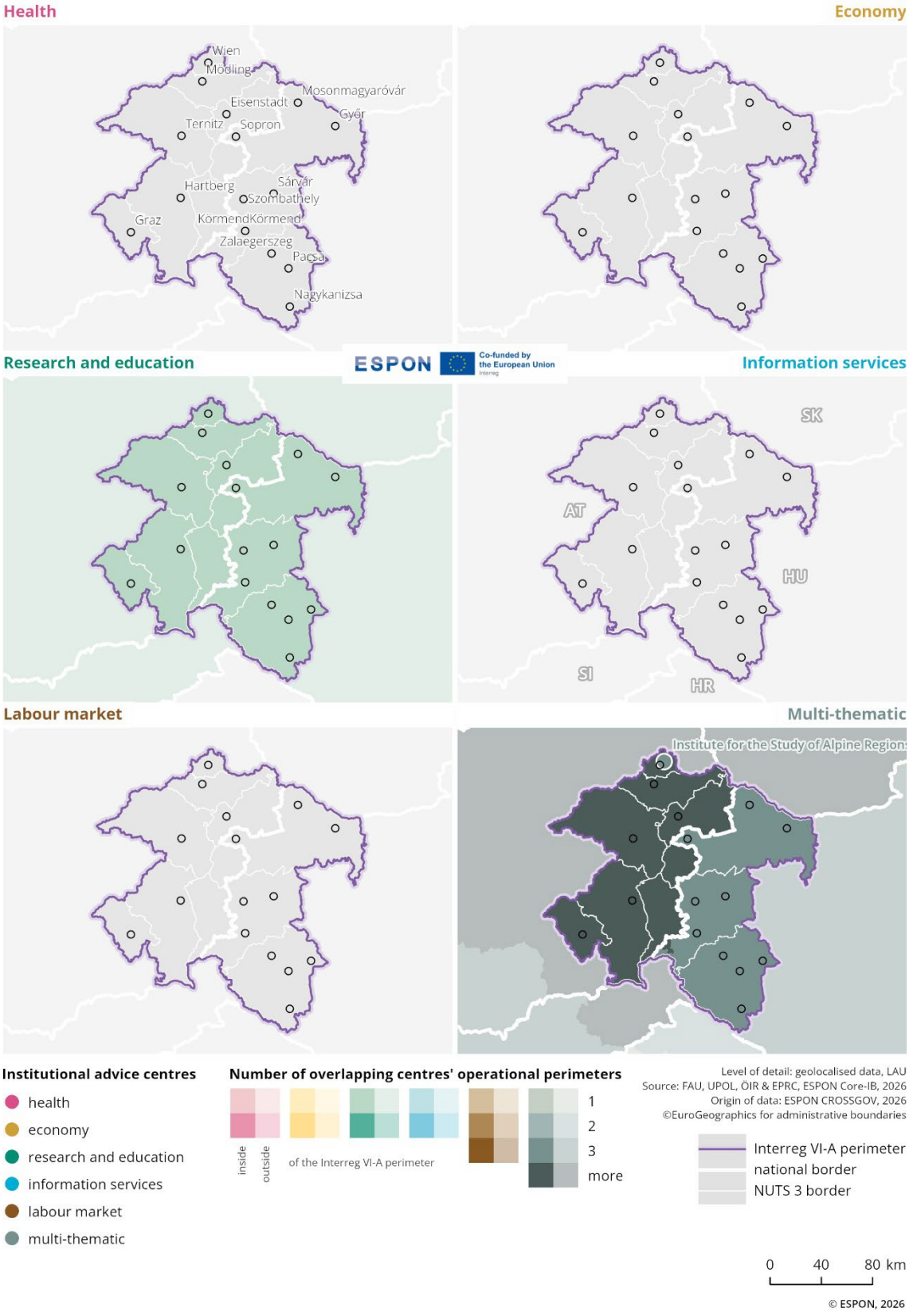
Please refer to the technical annex for more information.

Figure 2.39 shows the locations and types of institutionalised advice centres, along with their operational domains, in the cross-border region between Hungary 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.

There is one multi-thematic institutionalised advice centre located in the northern Austrian part of the cross-border region, the Institute for the Study of Alpine Regions and Mountain Areas (EURAC Research). There are no other institutionalised advice centres shown on the map outside of the immediate cross-border region.

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. Multi-thematic centres show a stronger coverage in the Austrian part of the cross-borderregion.

Figure 2.39: Institutionalised cross-border advice centres



2.6.2 Outline of Interreg activities

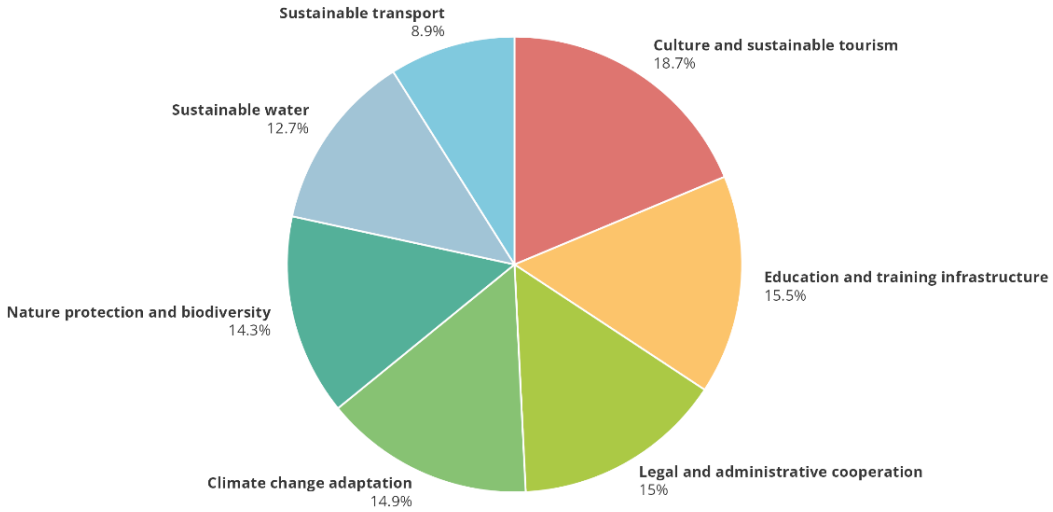
The following section outlines the key Interreg activities in the 2021-2027 programming period. The aspects included concern the development opportunities and challenges identified (see Table 2), the budget available and split of allocation (Figure 2.40), overlapping Interreg programmes and the key aspects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

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

Topic	Key development opportunities and challenges identified for Interreg 2021-27
Economy	▪ Characterised by substantial disparities ▪ Agriculture and forestry, as well as downstream industries such as wood- and food-processing play important role in the Hungarian border region ▪ Hungarian counties have been facing a clear shift from the primary to processing industries (secondary sector), ▪ Disparity in R&D capacity across the area ▪ SMEs play an important role in the economy of the area, although their performance and needs are significantly different in the 2 countries
Labour and population	▪ Cross-border commuting ▪ Cross-border tourism is emerging, ▪ Labour costs differ dramatically comparing the Austrian and Hungarian part of the programme area ▪ Clear gaps of the public transport
Social	▪ Education infrastructure is good on both sides of the border. ▪ Challenges around service and health care provision
Environment and climate	▪ Valuable eco-systems are protected as national parks, nature parks ▪ Increase in heat extremes increasing risk of river floods and of forest fires ▪ Joint management of water resources/bodies of water. ▪ Need for work on energy efficiency and climate adaptation

Total Budget: EUR 61,951,500.04

Figure 2.40: Split of Interreg allocation



ESPON Co-funded by the European Union

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.[17] The 4 Interreg C programmes Interreg ESPON, Interact, Interreg Europe and URBACT cover the whole EU territory and provide a range of joint services and initiatives.

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

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

Key aspects

- The programme tackles ecological, economic and demographic challenges and development disparities between territories in the cross-border area.
- Several territories in the area are also covered by other programmes including 2021-27 Interreg A programmes, Hungary-Slovakia, Slovakia-Austria, Slovenia-Hungary, Hungary-Croatia, Slovenia-Austria, and Interreg B Alpine Space, Central Europe and Danube.

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

2.6.2.1 Interreg cooperation

Indicator description

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

An additional element in this section is the development of project partner numbers between Interreg IV-A (2007–2013) and Interreg V-A (2014–2020), based on data from the keep.eu database. The datasets were cleaned to remove duplicates, using the partner names as reported in keep.eu. For both programming periods, keep.eu indicates a high level of data completeness[18]. Nevertheless, this development should be interpreted as indicative, as variations in partner name reporting and general limitations regarding the representativeness of the dataset affect the robustness of the results.

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

Please refer to the technical annex for more information.

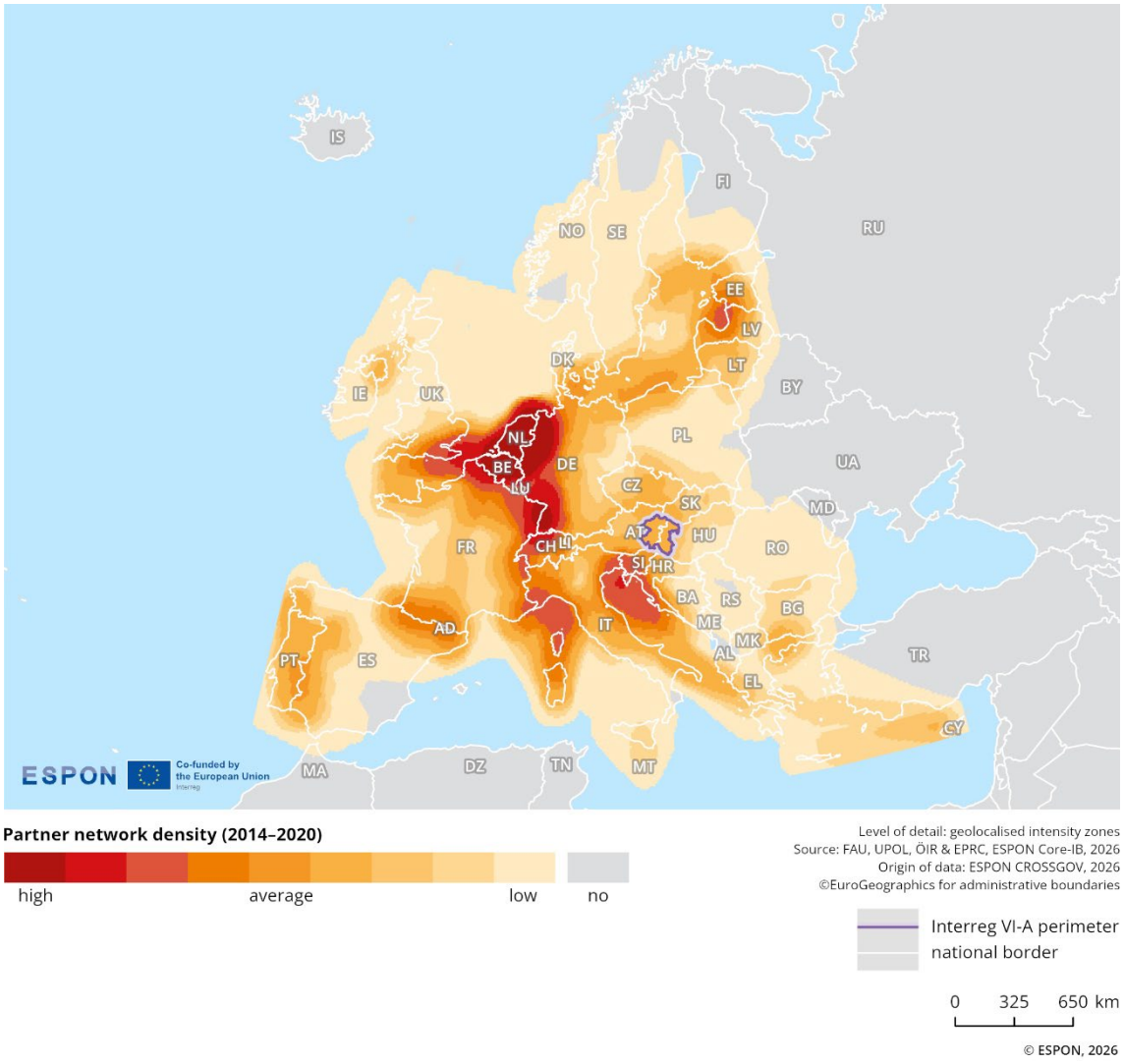
Cooperation activities and networks are among the most meaningful types of information for delineating cross-border functional areas. As such, the indicator on cooperation through Interreg can help to identify networks among cross-border actors and highlight the density of cooperation in specific border 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 Austria-Hungary border area appears quite evenly spread. No specific border segments within the programme area show significantly higher or lower partner network density levels than others. Overall, the partner network density in this border area is close to the European average. Based on the keep.eu database and excluding duplicates, the number of project partners decreased from 249 in Interreg IV-A (2007–2013) to 149 in Interreg V-A (2014–2020), an decrease of about 40%[19]. It is important that these changes are considered in the context of factors such as change in programme budgets between 2007-2013 and 2014-2020, emphasis on targeting impact, and numbers of strategic projects.

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

[19] Of note, for the lack of a unique identifier this analysis considers partners based on their names. Therefore, some bias is introduced by incoherences in naming of partners in the corresponding database. Different outcomes might be visible when investigating in detail all partners.

Figure 2.41: Interreg V-A partner network density



2.6.3 Key messages on the governance dimension

Governance in the whole cross-border region shows rather strong institutional traditions and well-established cooperation frameworks, however also persistent gaps in advisory support and resolution of obstacles. The border region has historical ties and a now long-standing tradition of cooperation linked to economic drivers. This was further strengthened after the Schengen Agreement enabled free movement and deepened the level of integration. Today, multi-level governance structures are in place, including Euroregions and EGTCs, which provide broad institutional coverage in the region. Cooperation is further embedded in the EU Strategy for the Danube Region, which integrates the immediate border region into macro-regional cooperation.

In terms of cross-border public services, a clear concentration along the Wien–Eisenstadt–Győr axis can be identified, where there are several cooperation initiatives in transport, healthcare, and environmental management. Smaller nodes exist in the south of the area as well, focusing in particular on education and research as well as transport. These corridors align roughly with the main demographic and economic centres.

However, despite the comparably high frequency of movements across borders, only one b-Solutions pilot action has been implemented in this border area, addressing youth mobility and bilingualism in the tri-border region with Slovakia. The limited number of such projects suggests that legal and

administrative obstacles likely remain under-addressed. This is further strengthened by the fact that despite there are strong commuting interrelations, there are few institutionalised advice centres, with only one multi-thematic centre identified in the Austrian part. This leaves gaps in citizen support and reduces access to guidance on cross-border issues, particularly in Hungary where especially commuters would see a strong need for support.

Interreg cooperation is active and covers a broad thematic scope, ranging from ecological protection to economic and demographic challenges. However, compared to other European border regions, the density of partner networks is only slightly above average, and the number of partners fell considerably between Interreg IV-A and V-A.

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	• Settlement structure and density differ considerably throughout the border area, with larger towns concentrated in Austria. The flat parts of the border area are mostly located in Hungary and with the exception of a couple of cities like Szombathely, Sopron and Zalaegerszeg feature mainly dispersed settlements"; • Population- and settlement development are counterintuitive: Hungarian regions see considerably lower growth in terms of population, but much higher settlement development; • The border region is generally well accessible at least by car, due to limited physical barriers and a high share of the border towns being within 30 minutes of the border.

Territorial dimension	
Policy options	**Population and settlement related aspects** • Cross-border actions and coordination mechanisms could address contrasting settlement dynamics, in particular strong settlement expansion in Hungarian regions compared to much lower population growth in neighbouring areas; • A focus could be placed on cross-border cooperation frameworks that allow for more coordinated spatial planning approaches in a border region characterised by asymmetric settlement dynamics. **Accessibility related aspects** • Coordinated cross-border strategies can build on the generally strong road accessibility across the entire border region to enhance functional integration; • Strengthening public transport connections may contribute to complementing good car-based accessibility, with particular benefits for the large share of smaller towns and rural areas on both sides of the border. **Cross-cutting aspect** • Territorial strategies could bring together responses to asymmetries in settlement dynamics and demography with other structural asymmetries, while avoiding the reinforcement of one-sided dependencies across the border.

Economic dimension	
Key analytical findings	• One of the strongest disparities in terms of GDP/capita throughout Europe. Hungarian regions are also trailing national averages in this regard; • Clear decline in working age population for most regions in the border area, but again stronger decline for Hungarian regions. On the other hand, employment rates still exceed European averages throughout the region; • Strong wage differentials drive the commuting dynamic. The border area has one of the most significant one-sided commuting patterns in Europe, with the majority commuting from Hungary to Austria; • Digital connectivity on the other hand is much better developed in Hungarian regions, which generally exceed Austrian regions in particular in more rural parts.

Economic dimension	
Policy options	**Competetiveness and labour market related aspects** • Cross-border cooperation measures offer potential to mitigate negative side-effects of stronger integration in a context of strongly one-sided commuting patterns and significant wage differentials; • Joint approaches could help address long-term risks related to labour depletion and population ageing in the cross-border area, including measures supporting endogenous development and job creation. **Digitalisation related aspects** • The comparatively strong digital connectivity, particularly in Hungarian regions, can be leveraged to foster cross-border business cooperation and facilitate remote working arrangements; • Digitalisation can play an important role in improving the competitiveness of smaller towns and rural areas within the cross-border economic space. **Cross-cutting aspect** • There is potential for forms of cross-border economic coordination that ensure that stronger functional linkages do not result in deepening territorial imbalances.

Green dimension	
Key analytical findings	• Cross-border connectivity for protected areas well developed; • Cross-border relevant risks are mainly limited to flooding caused by Donau/Duna and Raab/Rába. Droughts are less relevant, and landslides and seismic activities are locally confined; • Cross-border connectivity is likewise underdeveloped in terms of energy grids, with both countries featuring a well-developed national grid, but only one cross-border interconnection.

Green dimension	
Policy options	**Nature protection and resilience related aspects** • More coordinated planning and governance could support the strengthening of cross-border protected areas and contribute to the systematic closing of gaps in cross-border ecological networks; • Enhanced cross-border cooperation would allow for a more effective response to shared flood risks along the Donau/Duna and Raab/Rába rivers, taking upstream–downstream interdependencies into account. **Renewable energy and circular economy related aspect** • Cross-border cooperation can contribute to addressing the low level of integration between national energy grids, despite their high level of internal development. **Cross-cutting aspect** • Strengthened cross-border environmental governance may enable more integrated and coherent management of shared natural resources.

Socio-economic dimension	
Key analytical findings	• Cross-border connectivity in terms of social network activity is more developed in Hungary than it is in Austria. Hungarian regions show comparably high cross-border engagement while Austrian regions show low levels. Language knowledge of German in Hungary is much higher than conversely of Hungarian in Austria, which could contribute to this trend; • Tourism is a very relevant factor not only in larger cities (with Wien receiving the majority of tourists) but also for more peripheral regions in particular linked to spa tourism; • Service accessibility is generally good across most of the regions. Schools and hospitals however show considerably lower accessibility in Hungary than in Austria. Therefore, both an urban-rural divide as well as a cross-border divide is observed.

Socio-economic dimension	
Policy options	**Social integration related aspects** • Targeted cooperation measures can support stronger cross-border social interaction, while addressing imbalances in engagement levels between the Hungarian and Austrian sides of the border; • Language learning and intercultural exchange initiatives offer a means to reduce communication barriers and promote more balanced cross-border social integration. Existing projects based on b-solutions can be used as a starting point. **Tourism and services of general interest** • Cross-border cooperation approaches could use spa- and health-related tourism as a basis for more integrated cross-border value chains, while limiting additional pressures on local communities; • Cooperation measures may help reduce accessibility gaps in key services of general interest, particularly healthcare and hospital services, where Hungarian regions show comparatively lower access than Austrian regions. Existing cooperation can be used as a starting point; • Exploring forms of cross-border service coordination can help mitigate the combined effects of the urban-rural divide and the cross-border divide in health and education provision. **Cross-cutting aspect** • Socio-economic integration strategies can support stronger cross-border interaction while avoiding the reinforcement of existing asymmetries in social engagement, commuting patterns and other dimensions of cross-border integration.

Border security and safety dimension	
Key analytical findings	• Border controls are uneven, with Austria implementing them far more often and far more frequently than Hungary; • Especially due to integrated commuting patterns, border controls pose a considerably barrier and disproportionally affect Hungary.

Border security and safety dimension	
Policy options	**Cross-cutting aspects** • Improved anticipation and coordination of the asymmetric use of temporary border controls can help minimise disruptions in a highly integrated cross-border area; • The establishment of coordination mechanisms may reduce the disproportionate impacts of border controls on cross-border commuting and daily mobility, particularly affecting flows from Hungary to Austria; • The impacts of border controls on cross-border commuting and logistics can be mitigated through coordinated and institutionalised cross-border policy dialogue.

Governance dimension	
Key analytical findings	• The border region shows comparably strong institutionalised cooperation structures, which cover all regions of the border; • Cross-border public services are mainly implemented along the Wien-Eisenstadt- Győr axis, thus aligning with the main demographic and economic centres close to the border; • Interreg cooperation is slightly above average in European comparison, with a decline in partner continuity visible since the last 2 periods.
Policy options	**Cross-cutting aspects** • The comparatively strong and long-standing institutionalised cross-border cooperation structures can be more fully utilised to respond to emerging asymmetries in economic, social and territorial development; • Successful cross-border public service models offer potential for extension to other parts of the border region through structured knowledge exchange and strategic upscaling; • A stronger use of cross-border public services may contribute to addressing identified challenges related to labour mobility, demographic change and service accessibility across the region.

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