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# TERRITORIAL AND SOCIO-ECONOMIC ANALYSIS

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INTERREG PROGRAMME SLOVENIA-HUNGARY 2021-2027

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## Content

1. Methodology.....	5
2. Programme area .....	6
3. Demography.....	10
4. Spatial structure .....	15
4.1. Slovenia .....	15
4.2. Hungary .....	19
4.3. Conclusions.....	21
5. Innovation, economy .....	22
5.1. General economic performance .....	22
5.2. R&D and innovation .....	23
5.3. SMEs .....	27
5.4. Agriculture/food production.....	31
5.5. Industry and services .....	33
5.6. Conclusion .....	35
6. Tourism.....	36
6.1. Tourist turnover in the border region .....	36
6.2. Tourism supply in the border region .....	42
6.3. Tourism infrastructure in the border region.....	44
6.4. Conclusions.....	46
7. Environmental issues and nature protection .....	47
7.1. Nature protection.....	47
7.2. Environmental situation .....	50
7.2.1. Air quality .....	50
7.2.2. Water management.....	52
7.2.3. Environmental disaster management .....	56
7.2.4. Waste management .....	60
7.2.5. Energy.....	62
7.3. Circular economy .....	65
7.4. Conclusions.....	66
8. Connectivity.....	68
8.1. Digital connectivity.....	68
8.2. Public roads .....	69
8.3. Railway infrastructure.....	74
8.4. Bicycle infrastructure .....	76
8.5. Air transport.....	77

8.6. Water transport .....	78
8.7. Conclusions.....	78
9. Social inclusion .....	80
9.1. Labour market.....	80
9.2. Education and training.....	83
9.3. Socioeconomic integration of marginalised groups, social care.....	87
9.4. Health care.....	88
9.5. Conclusion .....	90
10. Cultural heritage and relations .....	92
11. Territorial governance.....	94
11.1. National structures.....	94
11.2. Cross-border governance .....	95
12. SWOT.....	96
13. Annexes.....	99
13.1. Detailed charts – share of overnight stays of municipalities/districts within the regions/counties.....	99
13.2. List of interviewed persons .....	101
13.3. List of relevant strategic documents.....	102
References.....	104
List of tables .....	106
List of figures.....	107

## 1. Methodology

The current analysis is primarily based on desk research. Data sources include European (Eurostat) and national statistics (Central Statistical Office of Hungary, Statistical Office of the Republic of Slovenia), and secondary data taken from various thematic research outputs and studies (European Commission, ESPON, national governments etc.). All used data and information sources are equipped with proper reference as footnote or in annex (with links to the documents used). The Border Orientation Paper (BOP) issued by the European Commission is also treated as an important input to the analysis, including the source provided therein.

The descriptive analysis was meant to be done preferably on NUTS level 3, being the level applied in definition of the programme's target area. In cases NUTS level 3 data was not available, information on NUTS 2 or higher level has been taken into consideration.

During the elaboration phase interviews have been carried out with various stakeholders that also provided valuable input to the analysis, particularly in cases where statistics or studies were not available.

The data gathered for territorial and socio-economic analysis is formed in a way that responds to the territorial objectives at the EU level and shows a clear link to criteria for choosing the priority thematic directions / priority objectives and future steps in the programming process.

## 2. Programme area

The programme area includes the following eligible NUTS III regions:

The Slovenian border region consists of two regions, Pomurje and Podravje.

- Pomurje region is located in the North-Eastern part of Slovenia (region: Vzhodna Slovenija – Eastern Slovenia) and comprises of 1,337 km<sup>2</sup>, 6.6% of Slovenia’s territory. It has approximately 114,000 inhabitants, the population density is about 86 persons / km<sup>2</sup>. The situation of this region is influenced by its close relations with the neighbouring countries Hungary, Austria and Croatia. The most important city of the region is Murska Sobota with 11,100 inhabitants.
- Podravje region covers a territory of 2,170 km<sup>2</sup>, which is about 11% of the area of Slovenia (region: Vzhodna Slovenija). Around 326,000 people live in this region; the population density is 152 persons / km<sup>2</sup>. The centre of the region is Maribor, the second biggest city in Slovenia with 112,000 inhabitants.

The Hungarian border region consists of two counties, Vas and Zala.

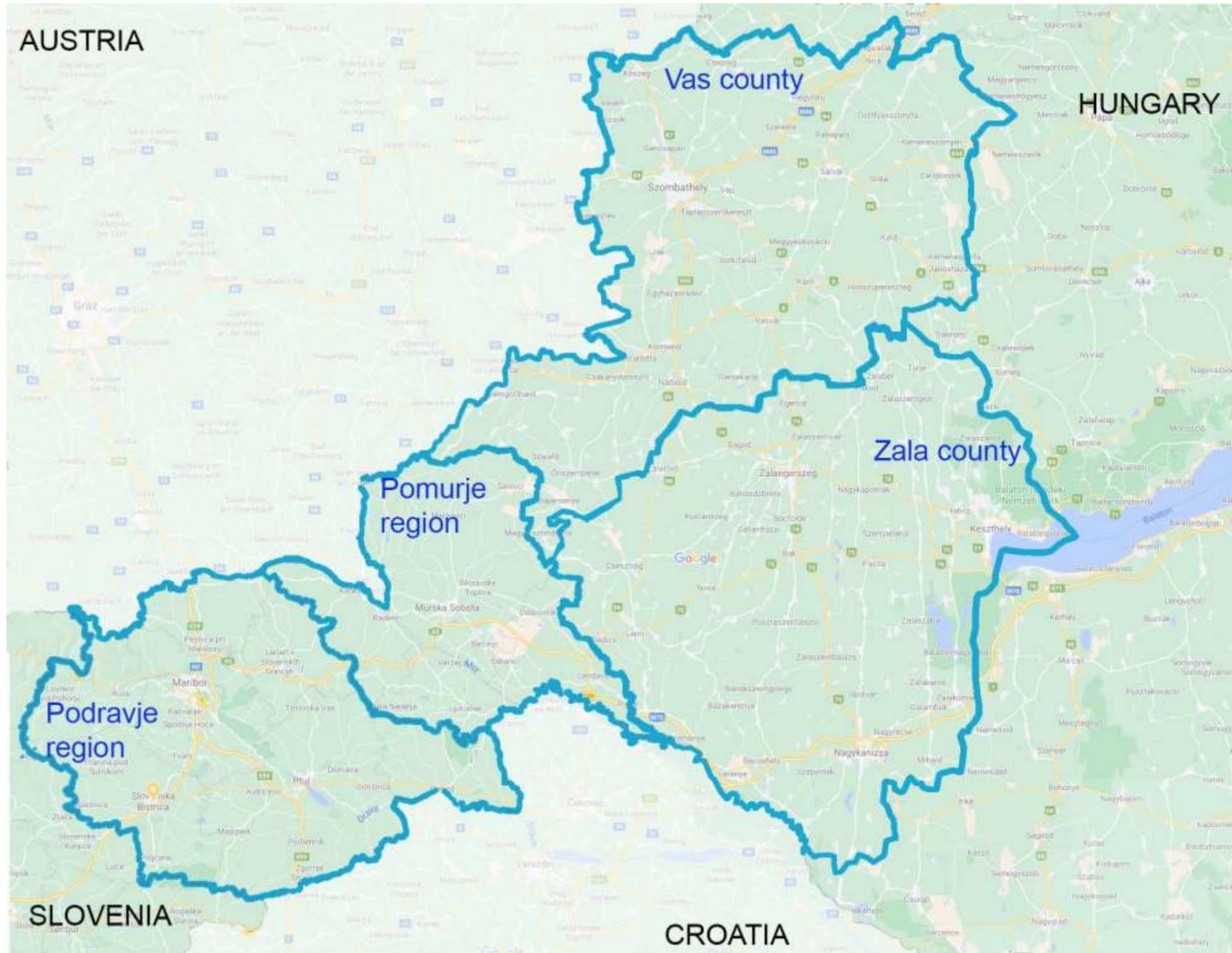
- County Vas is situated in the Western Transdanubian region of Hungary. The county has a 3,336 km<sup>2</sup> territory and close to 254,000 inhabitants; its population density is around 76 persons / km<sup>2</sup>. The county seat is Szombathely, a city with 76,000 inhabitants.
- County Zala is also located in the Western Transdanubian region of Hungary as well. The area of the county is 3,784 km. The population is around 267,000 people; the population density is 72 persons / km<sup>2</sup>. The county seat is Zalaegerszeg, with approximately 57,000 inhabitants; the other city with county rights is Nagykanizsa, with approximately 46,000 inhabitants.

Territorial unit	Territory (km <sup>2</sup> )	Population (2020)	Population density (persons/km <sup>2</sup> ) 2019
<b>EU-27</b>	4,233,262	558,706,209	109.0
<b>Hungary</b>	93,030	9,660,351	107.1
<b>Vas</b>	3,336	253,551	76.2
<b>Zala</b>	3,784	268.648	72.3
<b>Slovenia</b>	20,273	2,098,195	103.7
<b>Pomurje</b>	1,337	114,238	86.1
<b>Podravje</b>	2,170	325,994	151.6

1. Table: Main spatial indicators.

Source: Own edition

The border area is shown on Figure 1.



1. Figure Programme area.

Source: own edition based on EUROSTAT statistics<sup>1</sup>,

Territorial unit	Degree of urbanisation Cities	Degree of urbanisation Towns and suburbs	Degree of urbanisation Rural area	Urban-rural typology
<b>EU-27</b>	4.0	19.6	76.4	
<b>Hungary</b>	3.3	24.4	72.2	
<b>Vas</b>				Intermediate region
<b>Zala</b>				Predominantly rural region
<b>Slovenia</b>	2.1	22.6	75.3	
<b>Pomurje</b>				Predominantly rural region
<b>Podravje</b>				Predominantly rural region

The territory of the Slovenia-Hungary border region covers 10,658 km<sup>2</sup> in total, two-third of the area belongs to the Hungarian, one-third to the Slovenian border region. Both Zala and Vas counties represent about 4.4% of Hungary's territory. Pomurje covers 6.6% of the territory of Slovenia, while Podravje has a proportion of almost 11%. The total area of the SI-HU border region represents 9.4% of the aggregated territory of Hungary and Slovenia.

The population density of the border region (90,5 persons / km<sup>2</sup>) is below the national averages: except for Podravje with an outstandingly high-density rate (151.6), the region is characterised by a large extension of less populated (first of all rural) areas.

**The settlement structure shows some duality features: besides some populous cities covering the majority of people living in the area, numerous small villages compose the largest areas of the region.**

The Hungarian counties of the border region are characterised by a small- and micro-settlement structure, the level of urbanity is below the national average, the share of settlements with less than 500 inhabitants (and with typically ageing society) is very high.

- Vas county consists of 216 settlements, 13 cities have an urban status with more than 60% of the county's total population (level of urbanity). 30% of the population live in the county seat Szombathely (78,591 inhabitants, 2020), while the second largest city, Sárvár has only 15,301 inhabitants (2020). Six out of seven county districts are classified as rural.<sup>2</sup>

<sup>1</sup> [https://ec.europa.eu/eurostat/databrowser/view/demo\\_r\\_d3area/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/demo_r_d3area/default/table?lang=en)  
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<sup>2</sup> [Report on Territorial context analysis](#)

- There are 258 settlements in Zala county, out of which 10 have an urban status, therefore 96% of all the settlements are villages. The ratio of settlements with less than 500 inhabitants is outstandingly high (63%). 22% of the county's population live in the county seat Zalaegerszeg; the three most populated cities (Zalaegerszeg, Nagykanizsa and Keszthely) cover closely 50% of the county's total population. The level of urbanity is 55%, far below the national average.

In Slovenian part, main urbanisation and population areas are situated along 5. European transport corridor (Maribor – Murska Sobota), Mura valley and development axis Vienna – Zagreb (Maribor – Ptuj). Potentials for development areas lie along railways. The geographical features and settlement patterns of both regions are quite diverse but based on Urban-rural topology (2011)<sup>3</sup> both are predominately rural.

- Pomurje region is one of the less populated ones within Slovenia, similarly to the Hungarian counties: although the population density of its most important city, Murska Sobota is outstandingly high (770 inhabitants / km<sup>2</sup>), the rural areas are rarely populated. The spatial concentration of the region is more balanced; Murska Sobota covers only 10% of the region's population. It has the flattest and the most agricultural character of all Slovenian regions.
- The population density of Podravje region is high due to the densely populated Maribor (730 inhabitants / km<sup>2</sup>): 45% of Podravje's population lives in this city. In terms of natural geography, Podravje region is marked by hills in the northeast, subalpine wooded mountains (Pohorje and Kozjak) to the west and Dravsko-Ptujsko polje along the Drava River.

As a conclusion it can be stated, that the Programme area covers a considerable part of the territory of Hungary and a smaller part of the territory of Slovenia.

The area is characterised by dual features: besides some important larger cities, the majority of the area's extent is a typically rural, rarely populated region with lots of small villages (the level of urbanity is below the national averages). It is suggested that the activities of the programme should be oriented towards rural areas with supporting cooperation with the urban settlements.

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<sup>3</sup> Source:

<https://www.stat.si/dokument/5489/Map%20of%20statistical%20regions%20according%20to%20urban-rural%20topology%202011.pdf>

### 3. Demography

The Programme area has 961,640 inhabitants in total, whose 53,3% live in the Hungarian, and 46% in the Slovenian border region. In Hungary, the proportion of inhabitants living in the Programme area is only 5.4% of the national population, while in Slovenia this ratio is about 21%. The population of the SI-HU border region is 8.1% of the aggregated data of Hungary and Slovenia.

Territorial unit	Population		Natural change of population / 1000 persons 2019	Net migration / 1000 persons 2019	Aging index 2020	Life expectancy 2019	
	1000 persons 2020	change 2013-2020				men	women
<b>EU 27 (from 2020)</b>	447,319	+1.37%			136.0		
<b>Hungary</b>	9,770	-1.41%	-3.8	3.4	136.6	72.86	79.33
<b>Vas</b>	254	-0.45%	-4.7	7.0	153.4	73.09	79.66
<b>Zala</b>	267	-5.11%	-6.8	1.7	174.6	73.57	79.60
<b>Slovenia</b>	2,095	+1.80%	-0.6	7.8	134.3	78.50	84.22
<b>Pomurje</b>	114	-3.21%	-4.7	4.3	171.9	76.41	81.96
<b>Podravje</b>	326	+0.85%	-1.9	7.7	151.4	77.20	82.93

2. Table: Main demography indicators.

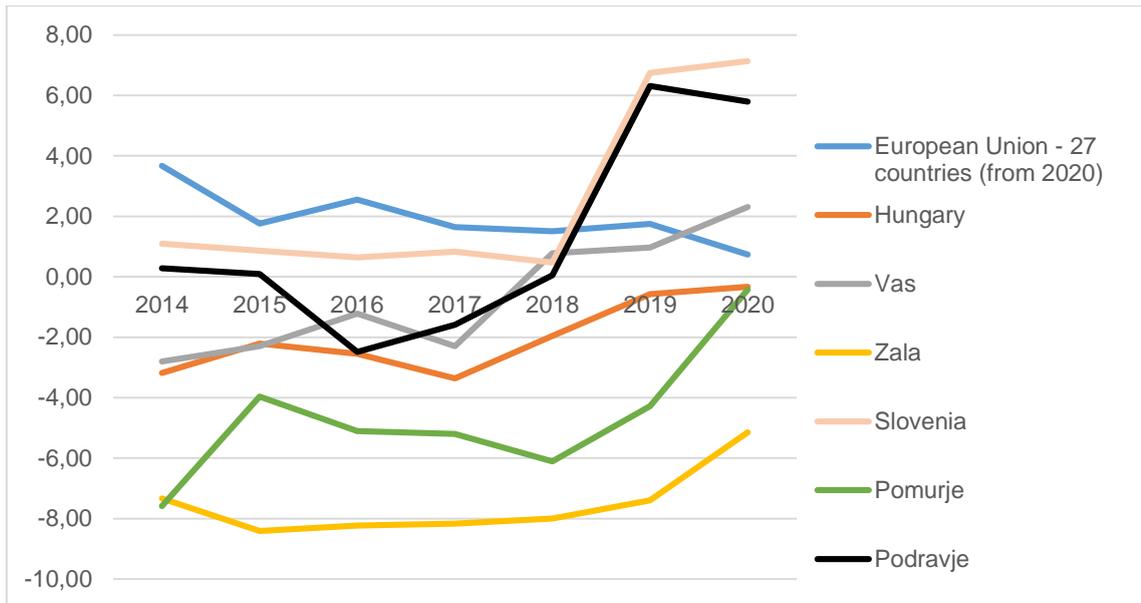
Source: own edition based on HCSO, SORS-SiStat and EUROSTAT statistics<sup>4</sup>

The general demographical indicators show negative tendencies; the Programme area is facing demographical problems:

- In the border regions – except for Podravje and Vas – the population declined in last 7 years, however the tendency of population loss started to decrease at around 2017 and 2018 in all regions. This means an increase in population in Podravje and Vas counties, while a lower trend in population decrease in Zala and Pomurje counties.
- The decrease of population mainly caused by natural loss (less births than deaths) and partly because of migration trends
- The population decline in Zala County was above the national average, while in Vas County it was lower than the national average.
- Population trends in Podravje region are similar to those in Slovenia, while the data about the Pomurje region show a significant population decline.

<sup>4</sup> Source:

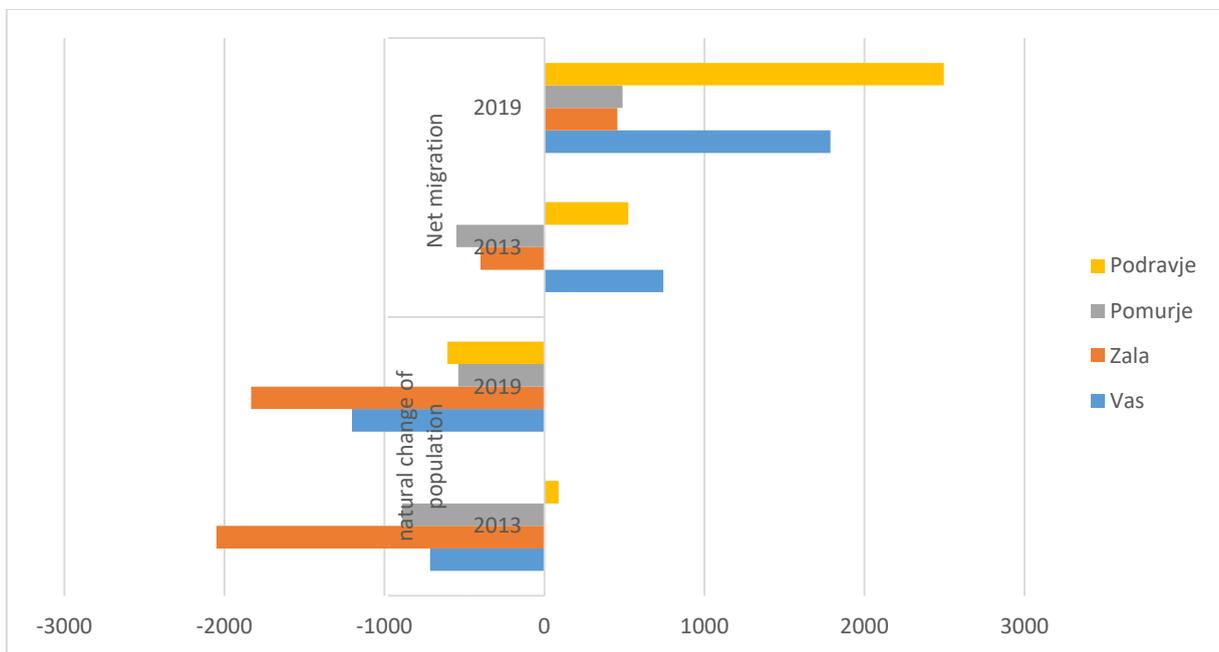
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2. Figure: Change of population compared to previous year / 1000 persons between 2013 and 2020.

Source: own edition based on Eurostat

Regarding natural loss, the number of deaths is higher than the number of births in the border region. Natural population decline has persisted in all counties for the past 7 years. It increased in Vas and Podravje counties by 2019 compared to 2013, while the rate of natural population decline decreased in Zala and Pomurje counties.



3. Figure: Causes of population change / 1000 persons between 2013 and 2019.

Source: own edition based on Eurostat<sup>5</sup>

<sup>5</sup> Source:

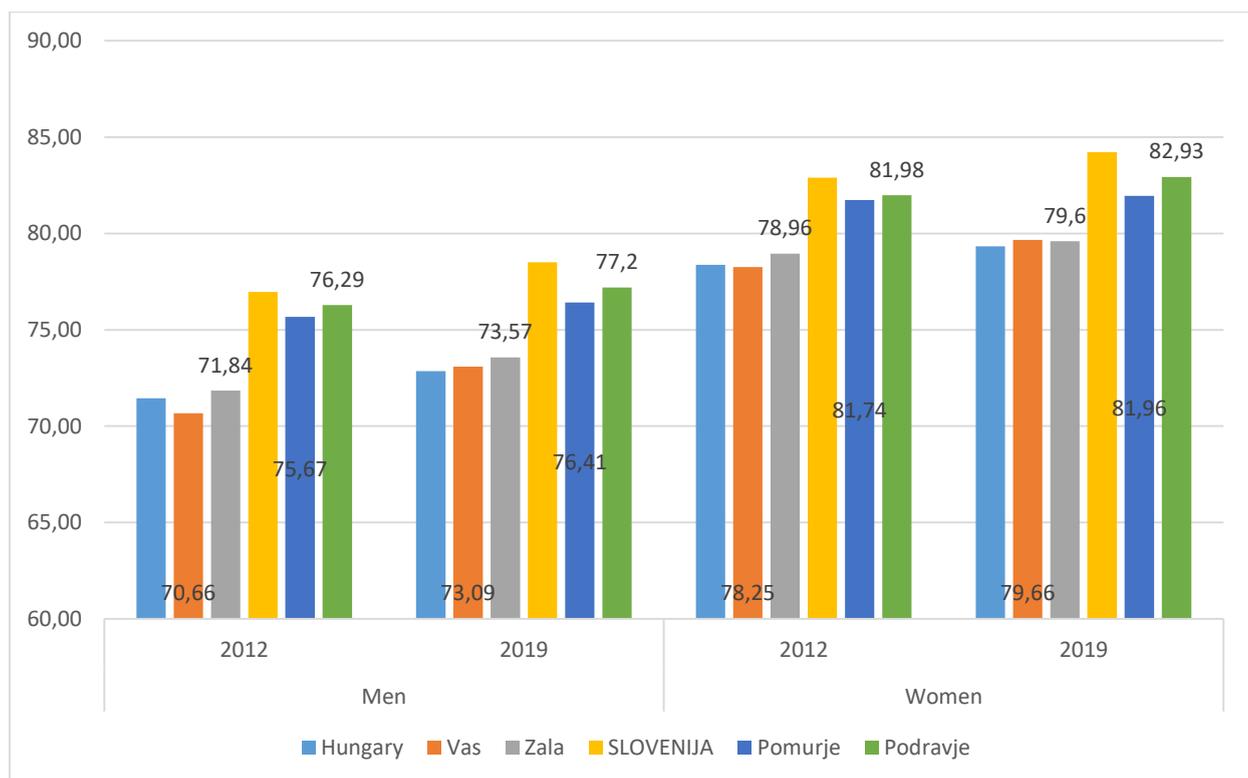
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The population decline in the Vas and Podravje regions was offset by immigration to the region. By 2019, the migration balance was already positive in all four counties of the border region. This means that the border area has become uniformly more attractive, with more and more people choosing to live here.

The improvement in the quality of life in the border area is supported by the increase of life expectancy among both men and women.

Life expectancy is different in the two countries. In Hungary and similarly in both counties of the Hungarian border region the average life expectancy is 73 years for men and 80 years for women. In Slovenia the average life expectancy is higher, 77 years for men and 82 for women with similar values in the border area. The difference between the two countries is significant but the reasons behind it can be very complex, related to economic, social or health conditions.

Life expectancy increased to a greater extent in Hungarian areas than in Slovenian counties by 2019 compared to 2012. This is due to the fact that life expectancy in Slovenia was already significantly higher in 2012 than in the Hungarian areas.

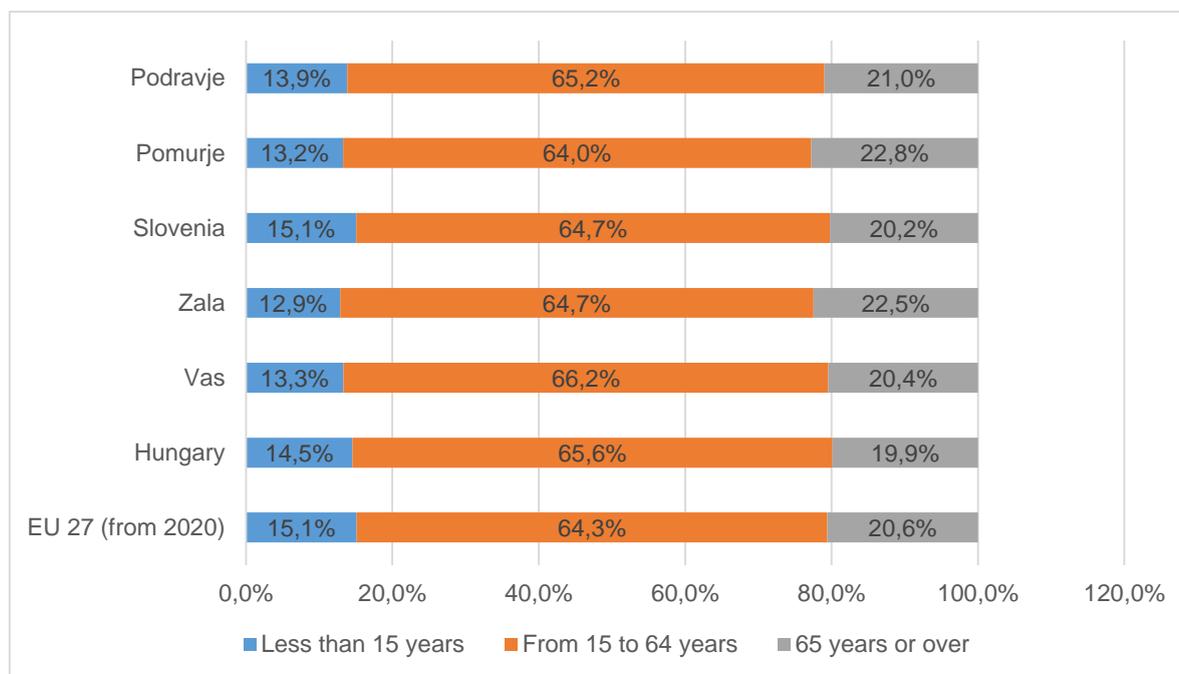


4. Figure: Life expectancy (year) between 2012 and 2019.

Source: own edition based on HCSO, SiStat<sup>6</sup>

<sup>6</sup> Source: [http://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_wdsd008.html](http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_wdsd008.html);  
<https://pxweb.stat.si/SiStatData/pxweb/en/Data/-/05L4010S.px>

Although the increase in life expectancy contributes to the positive change of the natural population, it also means the aging of the border region. The old-age index (the proportion of people over 65 compared to those under 15) is above the European and national average in all counties in the border region. Aging is expected to put further pressure and challenges on the health and social care system in the future.



5. Figure: Population by age groups in 2020.

Source: own edition based on EUROSTAT statistics<sup>7</sup>

The proportion of elderly people is highest in Zala and Pomurje counties.

The ethnic composition of the border region is the following:

- In Pomurje there is significant number of Hungarian minorities and Roma ethnic groups. The German speaking ethnic group is also significant in the region; they are located mostly near the Austrian border and in Murska Sobota. The traditional settlements of the Hungarian minorities, namely Lendava, Hodoš and Dobrovnik are bilingual areas (with a wide scale of minority rights). Hungarian minorities are present in Šalovci and Moravske Toplice in greater numbers as well.
- In Podravje the most significant traditional ethnic group is German one creating about 2% of the population.
- In the Hungarian border area, the ethnic situation is more homogeneous regarding the number of minorities. The most significant minorities are the Slovenians, and the German speaking groups thanks to the closeness of their origin countries. The Roma

<sup>7</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/DEMO\\_R\\_GIND3\\_custom\\_594638/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/DEMO_R_GIND3_custom_594638/default/table?lang=en)

minorities are also significant but this fact has a weak correlation with the geographical situation, since the Roma minority is the most significant one in the whole country.

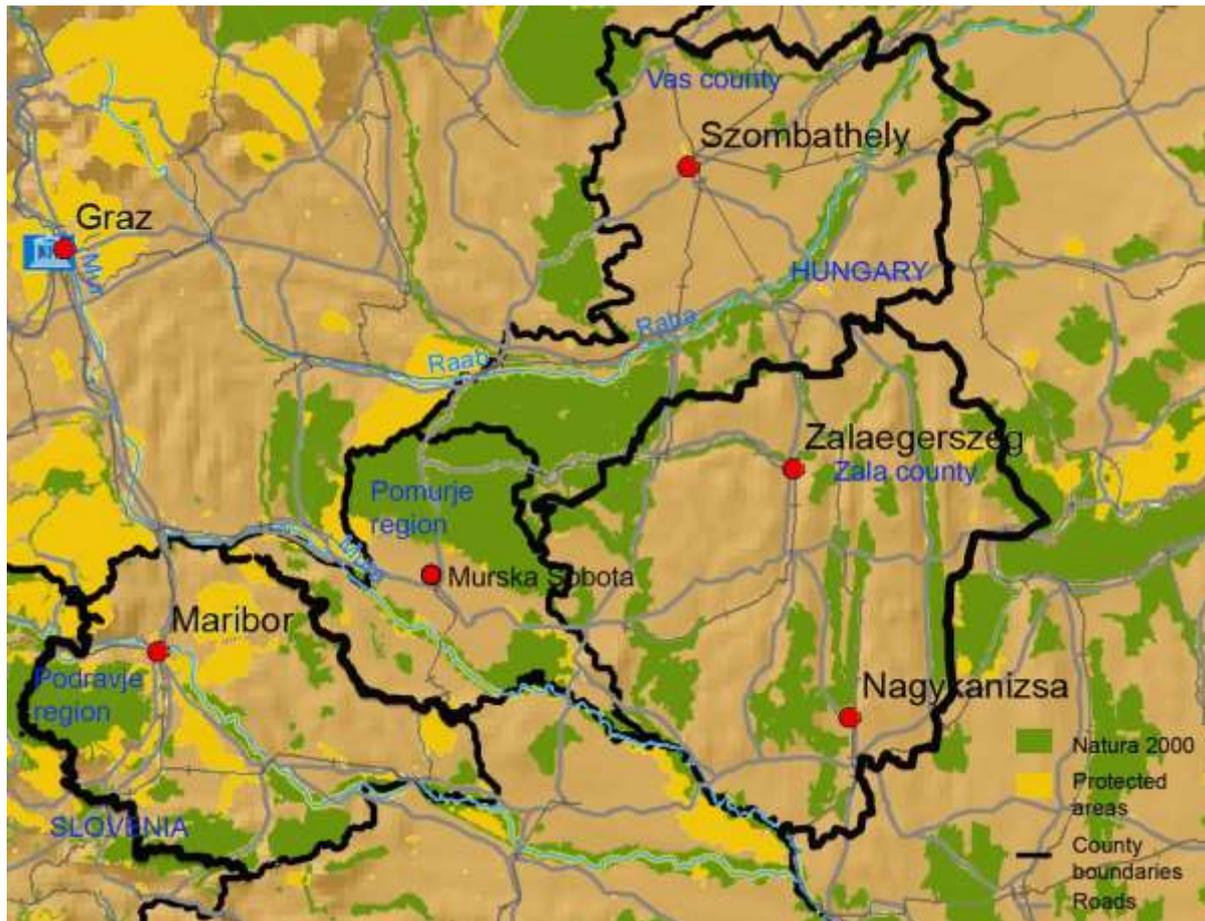
- In the Hungarian border areas, the Slovenes and in Slovenia the Hungarians unite in an alliance and use their civil society power to strive for improvements. Ethnic co-operation in neighbouring countries is strongly supported by the mother countries. On the Hungarian side, the National Slovenian Self-Government and the Association of Slovenes in Hungary, as well as in Slovenian territories the National Community of the Hungarian Municipality of Muravidék have significant development potential and capacity.

*As a conclusion* population has been declining slightly in Zala and Pomurje counties, while in Podravje and Vas counties it has stagnated in recent years.

In the border area, natural weight loss is offset by immigration. Life expectancy in the area is constantly increasing; the population is aging.

## 4. Spatial structure

The spatial structure of the Slovenia-Hungary programme area is shown in Figure 6. As it is seen from the map the border area is characterised by urbanised areas and a relatively large share of protected areas (national and Natura 2000). The landscape is also relatively varied: flat areas combined with hilly terrain.



6. Figure: Programme area with the main cities and topography data.

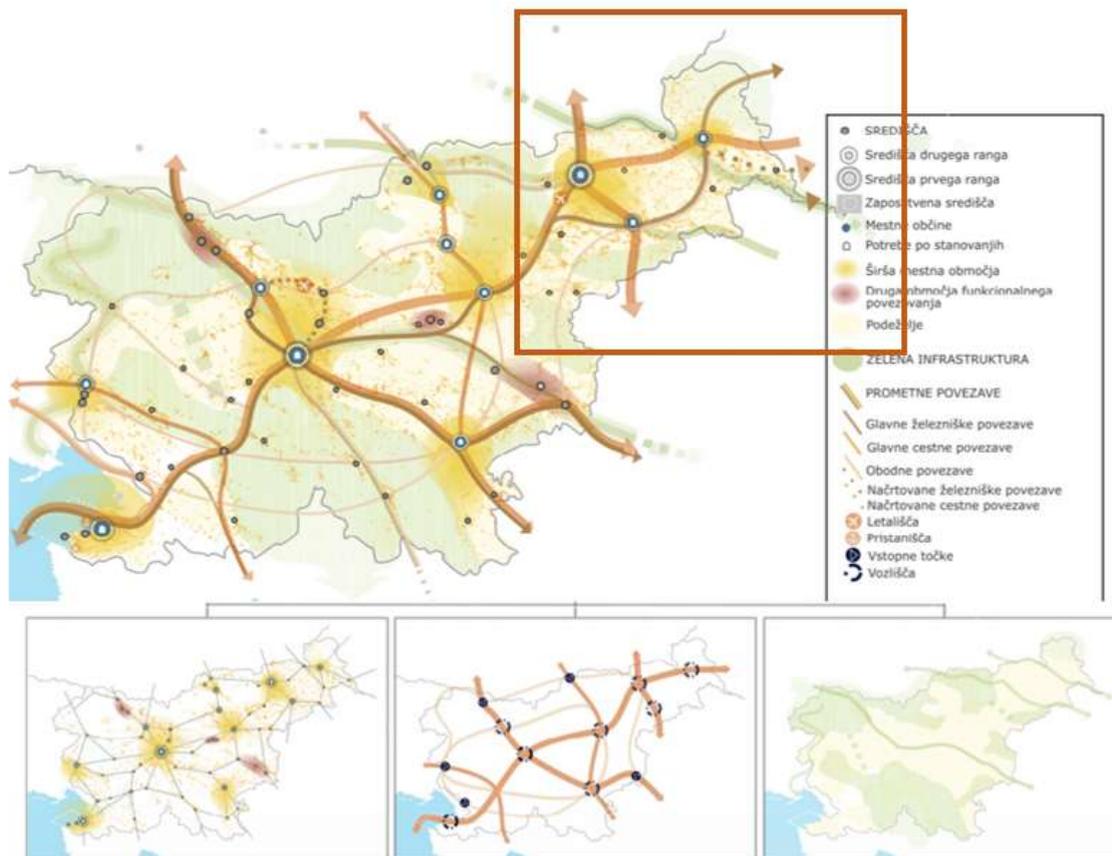
Source: Own edition.

On the map there the main cities of the area and the total share of Natura 2000 area are shown as well as protected areas in contrast to other areas which are also more urbanised. There are also the main roads and transport connections, the main rivers, and shade of hilly topography.

### 4.1. Slovenia

Figure 7 shows the spatial structure of the border area according to the Slovenian Spatial Development Strategy, including urban centres, transport corridors, and green infrastructure.

Transport corridors are connecting the area towards Austria, Croatia and Hungary. The dotted line in orange or yellow colour shows the planned railway/road connections. The concept of spatial development follows the principles of polycentric development and rational organisation of activities in space, promotes a polycentric urban system, inter alia pays particular attention to remote areas away from centres, encourages local communities to cooperate and complement each other across administrative borders, and to increase the development of areas to spatial potentials (spatial specialisation) (SPRS, 2020).



7. Figure: Integration of polycentric urban system, traffic infrastructure in green infrastructure in concept spatial development of Slovenia.

Source: SPRS (2020; p. 29), own edition.

Green infrastructure is a significant asset of the border region that at the regional level includes larger forest complexes, which are mostly Natura 2000 sites, protected areas of nature parks, larger river systems Drava and the Mura, and associated permanent or occasional lakes. The green infrastructure system at the national level also includes areas of landscape recognition and overflow areas of watersheds. Connectivity between the above core areas of green infrastructure is provided through natural lines (e.g. river) and points landscape elements or by establishing or restoring such links where necessary. Green infrastructure plays a significant role in safeguarding the area with high biodiversity and an attractive and healthy place for living.

The map for Pomurje (Figure 8) and Podravje (Figure 9) regions show connectivity lines from Maribor and Murska Sobota to the other urban centres, which are second priorities or border countries.



Legend:

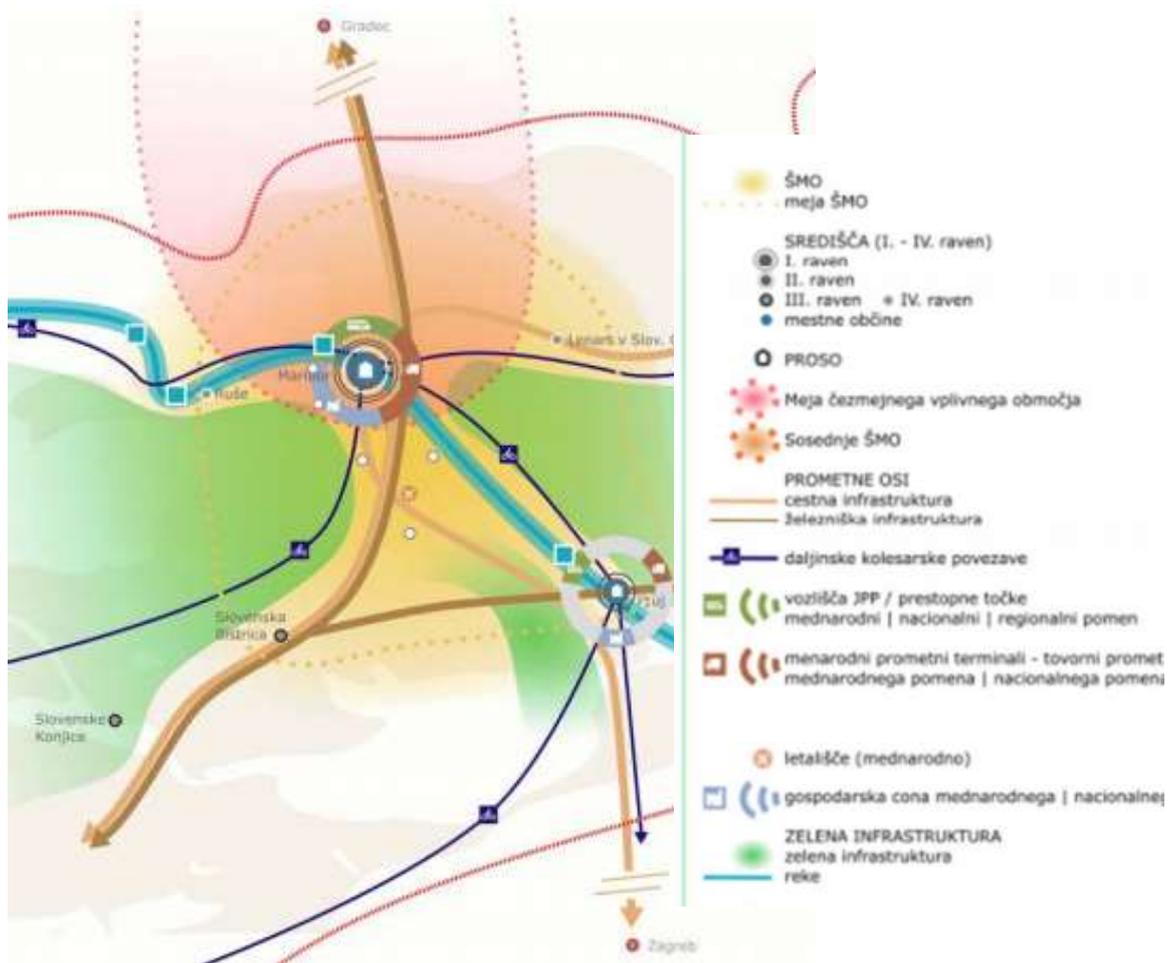
-  Road connections
-  Long distance cycling connections
-  International traffic terminal
-  Economic zone of international importance
-  Public passenger transport Hub
-  Green infrastructure
-  Rivers

-  ŠMO
-  meja ŠMO
- SREDIŠČA (I. - IV. raven)**
-  I. raven
-  II. raven
-  III. raven + IV. raven
-  mestne občine
-  PROSO
-  Meja čezmejnega vplivnega območja
-  Sosednje ŠMO
- PROMETNE OSI**
-  cestna infrastruktura
-  železniška infrastruktura
-  daljinske kolesarske povezave
-  vozišča JPP / prestopne točke  
mednarodni | nacionalni | regionalni pomen
-  menarodni prometni terminali - tovorni promet  
mednarodnega pomena | nacionalnega pomena
-  letališče (mednarodno)
-  gospodarska cona mednarodnega | nacionalnega
- ZELENA INFRASTRUKTURA**
-  zelena infrastruktura
-  reke

8. Figure: Pomurje, Murska Sobota wider area.

Source: SPRS (2020; p. 54).

Murska Sobota together with the urban centres Lendava, Gornja Radgona, and Ljutomer forms a functionally connected wider urban area of Pomurje.



Legend:

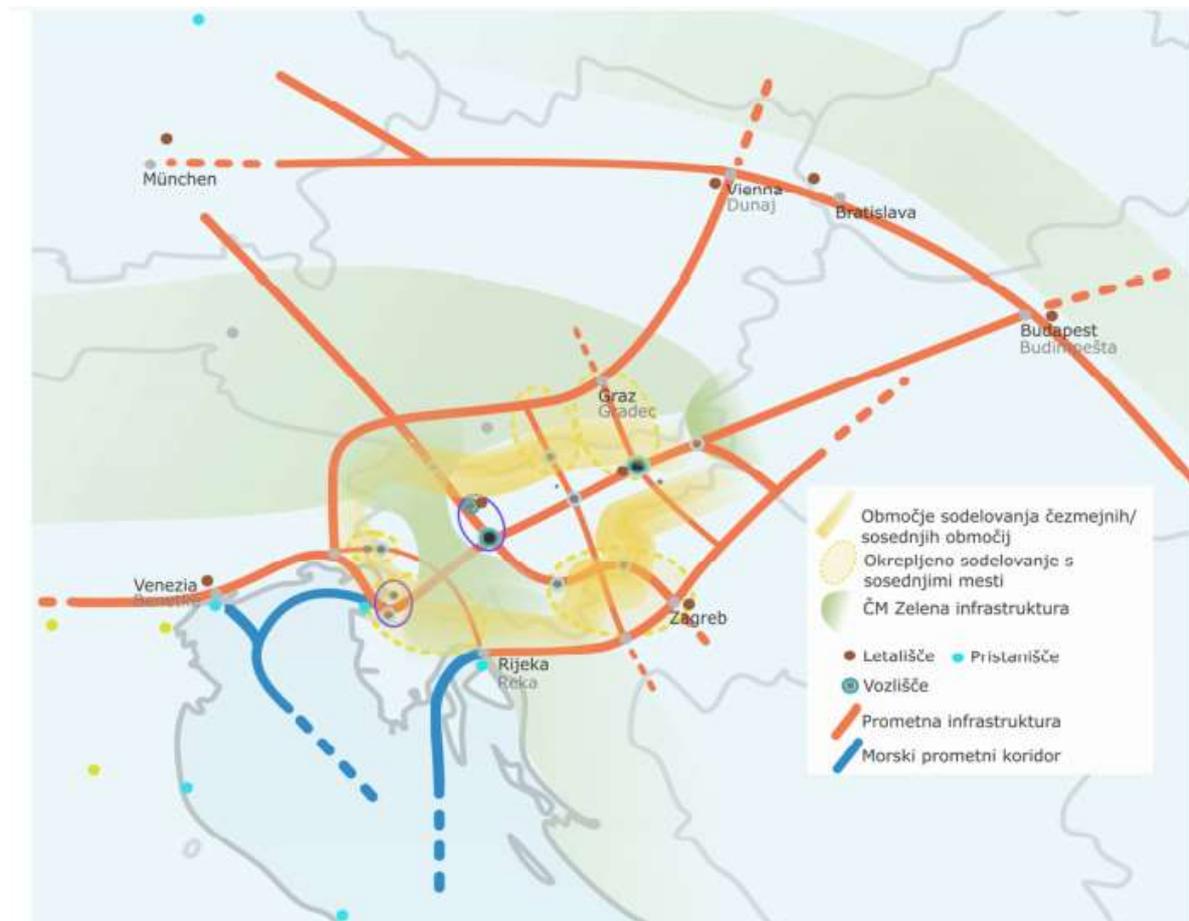
- Road connections
- Remote cycling connections
- International traffic terminal
- Economic zone of international importance
- Public passenger transport Hub
- Green infrastructure
- Rivers

9. Figure: Podravje, Maribor wider city area.

Source: SPRS (2020; p. 50).

Maribor is developing as the centre of the eastern part of the country with an emphasis on cross-border importance as an important university and employment centre and the core transport hub of the TEN-T network with potential for the development of intermodal terminals for passenger and freight transport. Maribor, in cooperation with Ptuj, is forming Podravska wider urban area, strong in population and economy.

Internationally, the strengthening of connections with Budapest will be achieved through opened Slovenian Hungarian cross-border area (Figure 10).



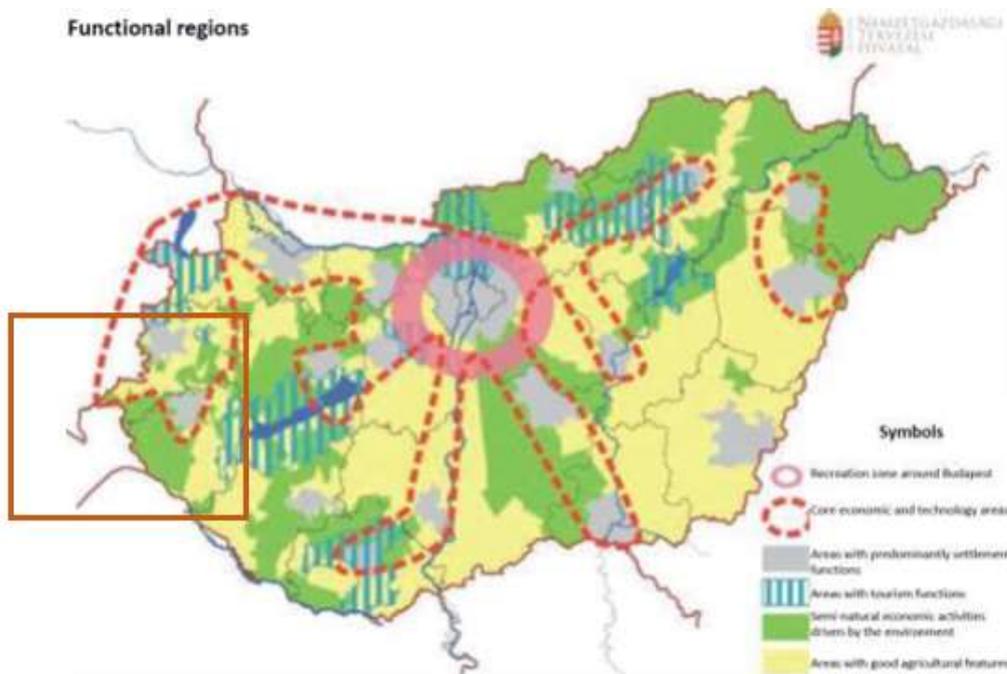
10. Figure: International connections.

Source: SPRS (2020; p. 32)

## 4.2. Hungary

The “National Development 2030 – National Development and Territorial Development Concept” of Hungary defines Hungary’s geopolitical position, in the heart of Europe, with Budapest as a macro-regional centre. The relationship between Budapest and the countryside is defined as a spatial structural problem (National Development 2030, 2014). Concerning the border area; the importance of the rural areas, due to their role in the preservation of ecological diversity, in the light of their landscape, natural and cultural values; and the cross-border

space-organising power of the border towns, and the traditional contacts between the areas lying on the two sides imply major development potentials.

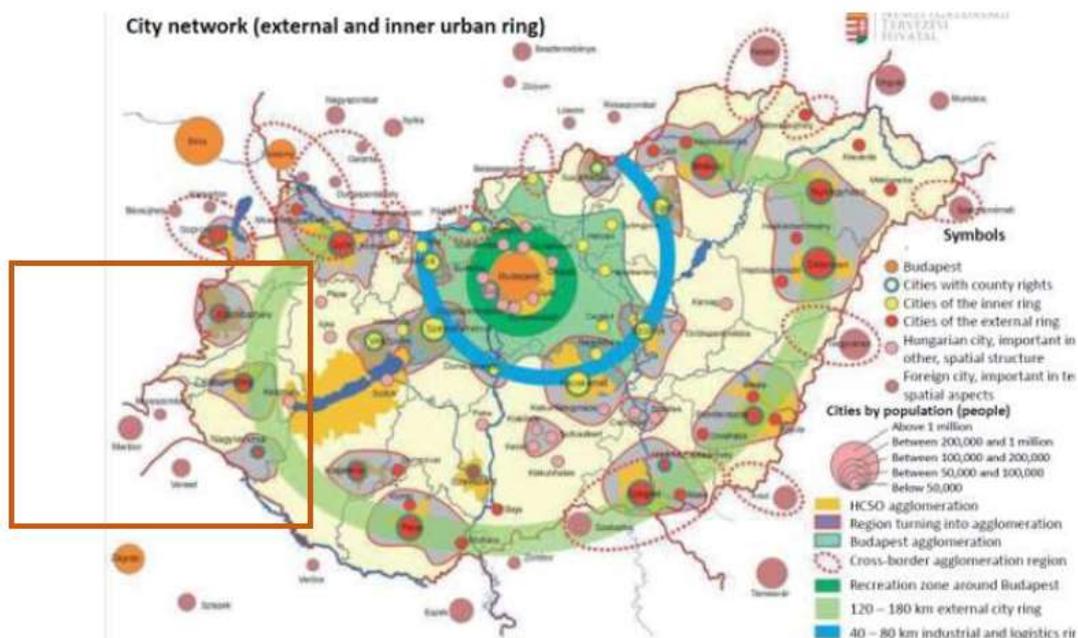


11. Figure: Functional territories.

Source: *National Development 2030* (2014; p. 118).

According to the map on Figure 11 Vas county and a part of Zala is inside the core economic and technology area. Vas county has also good agriculture features and areas for tourism as well. It has a smaller share of area with predominantly settlement function and semi-natural economic activities driven by the environment (nature friendly activities). Zala county has a bigger share of the area of semi-natural economic activities driven by the environment (nature friendly activities), by the border area with Slovenia. Other territory has good agriculture features and also some smaller share of predominantly settlements functions in the border area with Vas county and area with tourism facilities around Balaton lake (only a smaller part of the Balaton lake is included in the programme area) and settlements with thermal spas (e.g. Hévíz, Zalakaros, Lenti, Zalaszentgrót).

Vas and Zala county have three larger cities: Zalaegerszeg and Nagykanizsa, located at the external urban ring and Szombathely, just beyond the ring.



12. Figure: City network.

Source: *National Development 2030* (2014; p. 151).

### 4.3. Conclusions

Both countries have similar spatial characteristics in the cross-border areas, but both programme country areas are more connected to the regions inside their countries (mobility, settlements) and they lack stronger connections with the cross-border regions towards better development of the cross-border territory. Besides, both countries are quite centralised with the capitals as the main decision-making centres are located in the geographical centres of the countries. Both programme country areas are located relatively far away from the national capitals and main country's transport nodes adding to the isolation of this region.

Although the regions and counties of the Hungarian-Slovenian border area are similar in economic structure, they differentiate in some other characteristics. However, both the more touristic and cultural areas (e.g. thermal spas), as well as the typically rural areas and, are struggling with the disadvantages arising from the peripheral nature of border areas: ageing and declining population, low levels of entrepreneurial spirit and initiative, innovation, economic grouping and networking.

## 5. Innovation, economy

### 5.1. General economic performance

The GDP has increased in the whole programme area by 2018, compared to 2013. The growth was most significant in Zala county. Growth rate was almost the same in Vas, Pomurje and Podravje (22-23%). In case of all NUTS 3 units the GDP growth rate exceeded the EU growth rate, but lagged behind the respective national averages (Table 3).

Territorial unit	GDP at current market prices (million euro)	GDP per capita		
		2018	2018 (1000 EUR)	Change (2013-2018)
<b>EU 27 (from 2020)</b>	13, 483,857	30.16	16%	100%
<b>Hungary</b>	133,782	13.69	33%	45%
<b>Vas</b>	3,149	12.43	23%	41%
<b>Zala</b>	2,797	10.38	31%	34%
<b>Slovenia</b>	45,755	22.08	25%	73%
<b>Pomurje</b>	1,714	14.93	23%	50%
<b>Podravje</b>	5,749	17.84	22%	59%

3. Table: GDP data, 2013 and 2018.

Source: own edition based on EUROSTAT statistics<sup>8</sup>

Despite of significant growth GDP per capita is the lowest in Zala county in the border region. GDP per capita is higher in the Slovenian part of the border region, the most developed region is Podravje, then Pomurje, which is followed by Vas in the ranking.

Only Podravje county exceeds the average value of EU27 countries, the value of Pomurje is 50%. In the Hungarian border area Vas county is closer to the national average compared to Zala county, but the GDP per capita of Vas county is also below the national average. In Slovenia both border regions belong to the less economic developed regions.

Examining long-term tendencies, it can be stated that the differences in economic performance (GDP per capita) among the counties/regions of border region didn't change significantly, the ranking of the areas is the same.

In 2020 Hungary exports to Slovenia was US\$1.31 Billion and Slovenia exports to Hungary was US\$970.92 Million during 2020, according to the United Nations COMTRADE database

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<sup>8</sup> Source: [https://ec.europa.eu/eurostat/databrowser/view/nama\\_10r\\_3popgdp/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/nama_10r_3popgdp/default/table?lang=en)

on international trade<sup>9</sup>. In the years before 2020, the countries exported similar values to each other. Slovenia was Hungary's 21st most important export partner, while Slovenia was Hungary's 10th most important export partner in 2020. In 2019, the following product groups had the highest value in trade between Slovenia and Hungary.

Hungary exports to Slovenia	Value	Slovenia exports to Hungary	Value
Electrical, electronic equipment	\$262.73M	Electrical, electronic equipment	\$148.36M
Pharmaceutical products	\$135.27M	Pharmaceutical products	\$142.99M
Vehicles other than railway, tramway	\$108.58M	Mineral fuels, oils, distillation products	\$114.94M
Mineral fuels, oils, distillation products	\$97.99M	Vehicles other than railway, tramway	\$91.62M
Machinery, nuclear reactors, boilers	\$95.26M	Machinery, nuclear reactors, boilers	\$84.66M
Plastics	\$53.56M	Plastics	\$50.18M
Iron and steel	\$44.04M	Iron and steel	\$45.58M
Cereals	\$38.83M	Residues, wastes of food industry, animal fodder	\$40.54M
Rubbers	\$36.99M	Paper and paperboard, articles of pulp, paper and board	\$34.99M
Essential oils, perfumes, cosmetics, toiletries	\$35.00M	Aluminium	\$29.24M

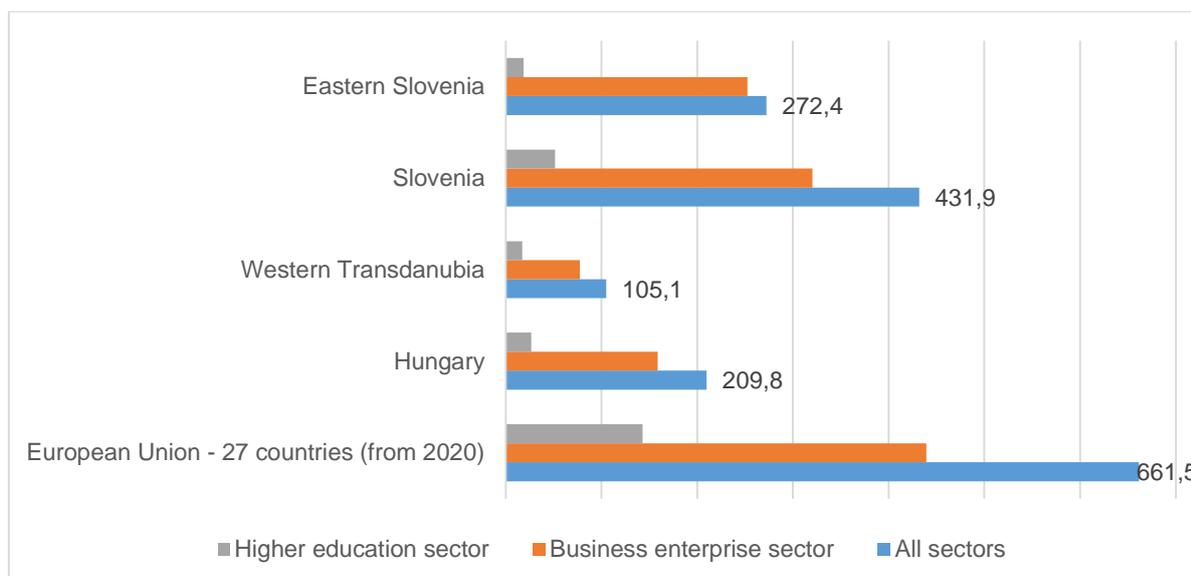
4. Table: 10 most valuable export products in relation to Slovenia and Hungary, 2019

Source: [tradingeconomics.com](https://tradingeconomics.com)

## 5.2. R&D and innovation

The data of R&D expenditure is only available on NUTS 2 level. The R&D expenditure per inhabitant is significantly lower in the border region than in the EU27. The total expenditure is higher in Eastern Slovenia (Vzhodna Slovenija) compared to Western Transdanubia (Nyugat-Dunántúl). There are differences especially in the R&D expenditure of the business sector. The R&D expenditure per inhabitant is lower both in the Slovenian and in the Hungarian border region, compared to the respective national averages.

<sup>9</sup> Source: <https://tradingeconomics.com/hungary/exports/slovenia> and <https://tradingeconomics.com/slovenia/exports/hungary>



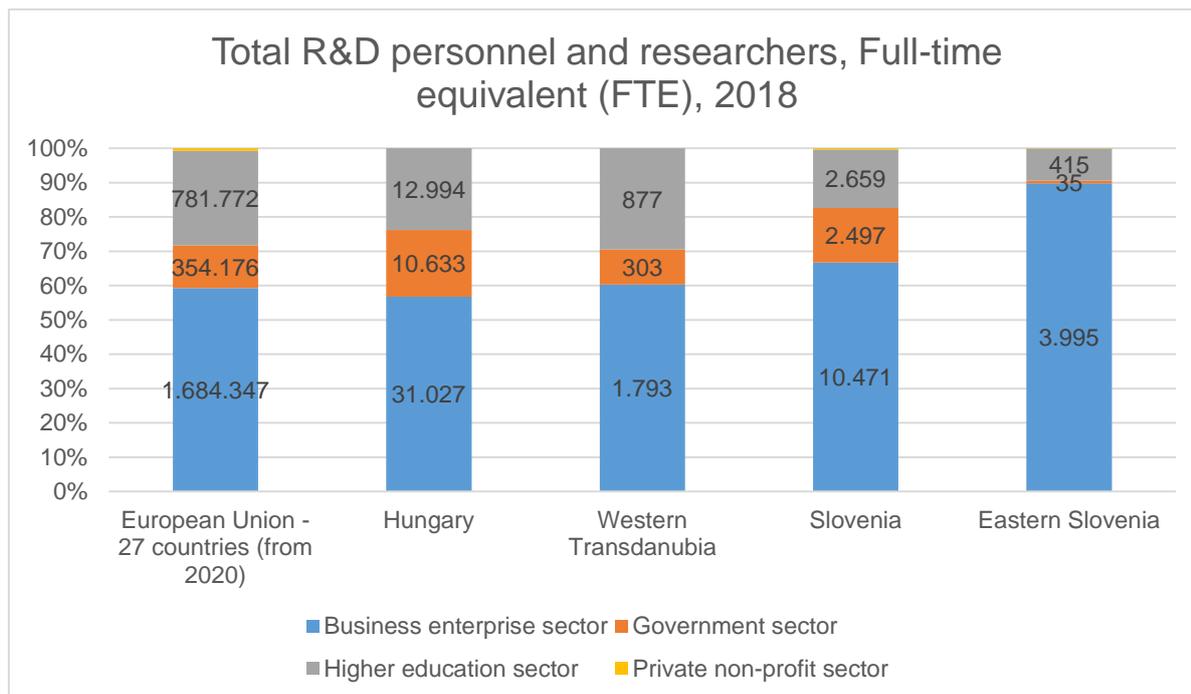
13. Figure: Intramural R&D expenditure (Euro per inhabitant), 2018.

Source: own edition based on EUROSTAT statistics<sup>10</sup>

The distribution of researchers working in the sector is almost the same in Western Transdanubia as in EU27 countries. In Eastern Slovenia the proportion of researchers working in the private sector is more than twice as high as in the Hungarian border area, but in the border region more researchers work at Hungarian universities than at Slovenian ones. On the Slovenian side only 35 researchers (0.85% of the total researchers) work in the governmental sector.

<sup>10</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/RD\\_E\\_GERDREG\\_custom\\_594731/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/RD_E_GERDREG_custom_594731/default/table?lang=en)



14. Figure: Total R&D personnel and researchers (FTE), 2018.

Source: own edition based on EUROSTAT statistics

According to the 2019 data of the European Innovation scoreboard, both Slovenia and Hungary belong to the moderate innovator category. Based on the attractiveness of the research system, the value of Slovenia is significantly higher than the value of Hungary (100.95 versus 66.67), while the value of Slovenia is also 27% higher in the innovation index (SLO 92.42- HU 72.29). The value of Slovenia is higher than that of Hungary in many categories, such as Basic-school entrepreneurial education and training system, design application; employment fast growing enterprises of innovative sector, lifelong learning. At the same time, the value of the two countries in the innovation friendly environment is almost the same.

In the Hungarian border area, the research activity can be found in the universities beside of larger companies. The dominated higher education centre of Vas county is in Szombathely, the Savaria University Centre (currently belonging to the Eötvös Lóránt University of Budapest) has several faculties, which participate in research and development activities: business management, pedagogy, psychology, engineering, programme designer and IT, sport. In Kőszeg one state owned research institution operates, namely Institute of Advanced Studies Kőszeg<sup>11</sup>, which provides space for interdisciplinary research activities. A non-profit research institute, the Plant Breeding Station of Gabonakutató Nonprofit Ltd. in Táplánszentkereszt operates in the county. NAIK Forestry Research Institute also operates at the Sárvár and Kámon arboretums.

The Pannon Business Network (PBN) provides innovation-oriented and engineering services for development activities of enterprises. The PBN operates a Digital Innovation Hub<sup>12</sup>, as am-

<sup>11</sup> Source: <https://iask.hu/en/>

<sup>12</sup> Source: <https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool>

LAB13, which is the single qualified institution in Western Transdanubia. The am-LAB is a service centre specialized on the application and presentation of most recent manufacturing technologies to develop smart end-user products in strong co-operation with the key costumers.

In Vas county industrial parks can be found in Szombathely and close to the Slovenian border in Körmen and Szentgotthárd, where the enterprises find favourable location for their plants.

Universities operate in all larger cities of Zala County, as Zalaegerszeg, Nagykanizsa, and Keszthely. In Zalaegerszeg there are health studies, business management and mechatronic engineering. In the latter mentioned domain research activity is undergoing quick growth, due to cooperation with the Zala Zone test and development centre for future vehicles, especially for autonomous and electric vehicles. There is an excellent potential in the cooperation of automotive industry with the involvement of Zala Zone test centre<sup>14</sup>. In Keszthely there is a huge tradition of agriculture education, which operates the BioInnovation centre, belonging to the newly formed Hungarian University of Agriculture and Life Sciences (MATE). The centre could help the development activities of enterprises working in the agriculture sector, as producer or local food producing company. The Pannon University has a campus in Nagykanizsa with different education areas, such as engineering, tourism, IT, water management and business administration. This institution is particularly active in different cross-border research and innovation projects.

In Zala county the industrial and logistics zones can be found in the larger cities: Zalaegerszeg, Nagykanizsa, Keszthely, and further ones in Zalalövő, Lenti and Rédics that are located near the Slovenian border. The Zala County Enterprise Development Foundation is one the most active player in entrepreneurship development in the county.

In Hungary chambers of industry, commerce and agriculture provide counselling services for operation and innovation of enterprises, but on project basis several organisations – such as the entrepreneurship development foundations, local employment pacts, LEADER groups – help the daily operation and innovation activity of enterprises by valuable information. The Chamber of Commerce of Zala County plays an important role in the border region as they had a lot of joint projects with Slovenian chambers. The Zala County Chamber has a Hungarian-Slovenian Committee as well.

On the Slovenian side the University of Maribor has the largest influence on the local economy. The university has wide range of faculties, e.g. agriculture, arts, chemistry, engineering, medicine, health science, energy technology, education. Research and innovation activity is supported by the University's Technology Innovation Centre, which enables efficient central infrastructural support to scientific research and innovation processes and the technological transfer of knowledge to the environment. Beside the Technology Innovation Centre a Digital Innovation Hub<sup>15</sup> operates at the University of Maribor. Digital Innovation Hub at the University of Maribor is a regional network hub of research, industry and business support organizations, utilizing state of the art infrastructure, in order to bring the digital revolution in Slovenia by offering cutting-edge digital technology innovations and services to the manufacturing industry.

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<sup>13</sup> Source: <https://www.am-lab.hu/en/index.php>

<sup>14</sup> Source: <https://zalazone.hu/>

<sup>15</sup> Source: <https://www.um.si/en/research/DIH%20UM/Pages/DIH%20UM.aspx>

Beside the large state-owned university further private owned organisations, as DOBA Faculty of Applied Business and Social Studies and Alma Mater Europaea – European Centre Maribor operate in the city.

Beside universities in Pomurje and Podravje technology parks (located in Maribor and Murska Sobota) are the engines of innovation and economic development. These institutions with their incubator function support the establishment of enterprises and ensure cooperation with universities.

Styrian Technology Park (STP)<sup>16</sup> in Maribor is the most significant one. With its business development services, it represents an example for other industrial parks and zones. STP acts as a Digital Innovation Hub with the following main competences: micro and nano electronics, smart system integration, Internet of Things, location-based technologies, data mining and internet services.

In Murska Sobota the Pomurska Technology Park provides services for local enterprises. Within the Technology Park the Digital Innovation Hub for Smart Manufacturing serves the developments of enterprises. In Murska Sobota in the framework of the IT Cluster the DIH AGRIFOOD – Digital Innovation Hub for Agriculture and Food Production operates, which brings together Slovenian and European research and development expertise in the field of agriculture and food production. The network provides with the latest knowledge on digitalization of this industry (“Smart Agriculture”).<sup>17</sup>

General experience of economic development is that more and more enterprises have innovation activity and improve their processes, services or products, but usually the larger companies have more human and financial resources to introduce new approaches, procedures compared to SMEs. Therefore, the consultation activity and information provision for SMEs and newly funded companies remains crucial in the future.

The conditions of research and innovation-oriented cross-border cooperation of universities, research institutions, technology parks, and innovation hubs are present in the border region. Institutions with common research activities and counselling services are able to support the development of companies operating in key sectors of border area.

### **5.3. SMEs**

In the examined period (2014-2018) the number of enterprises has grown on both on NUTS 3 level and in the border region as a whole. The growth of number of active enterprises and the growth of employed persons was higher in the Hungarian counties than in Slovenian regions by 2018.

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<sup>16</sup> Source: <https://www.stp.si/>

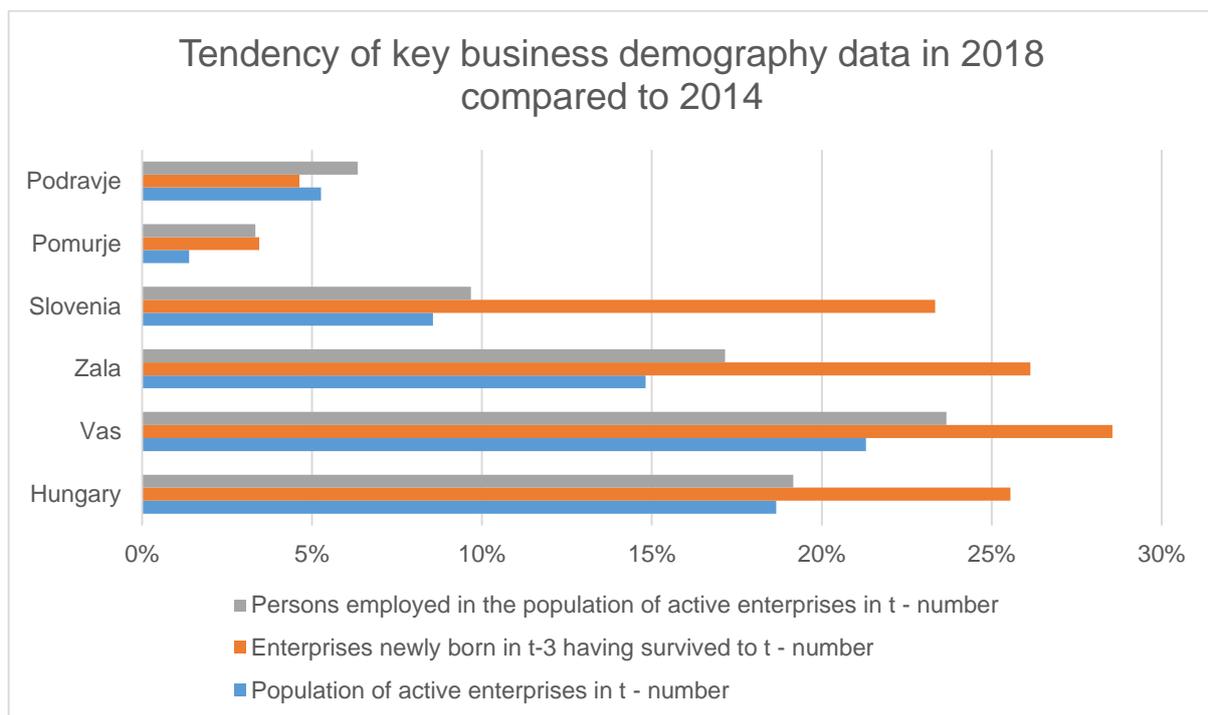
<sup>17</sup> Source: <https://itc-cluster.com/dih-agrifood/>

	Population of active enterprises in t - pcs		Enterprises newly born in t-3 having survived to t - pcs		Persons employed in the population of active enterprises in t - pcs	
	2014	2018	2014	2018	2014	2018
<b>Hungary</b>	630,767	748,442	32,539	40,855	2,798,969	3,335,427
<b>Vas</b>	14,353	17,411	676	869	63,267	78,242
<b>Zala</b>	17,072	19,601	746	941	63,208	74,051
<b>Slovenia</b>	160,340	174,068	9,495	11,711	557,235	611,129
<b>Pomurje</b>	5,945	6,027	348	360	20,027	20,694
<b>Podravje</b>	21,625	22,763	1,405	1,470	80,909	86,041

5. Table: Main data of business demography 2014 and 2018.

Source: own edition based on SiStat Database and EUROSTAT statistics<sup>18</sup>

The growth of number of enterprises and employed persons exceeded the national average only in Vas county. The survival rate of the third year after foundation (Enterprises newly born in t-3 having survived to t – number) also significantly improved on the Hungarian side. On the Slovenian side of the border region increase was almost the same of growth of number of enterprises and employed persons.



15. Figure: Tendency of key business demography data in 2018 compared to 2014.

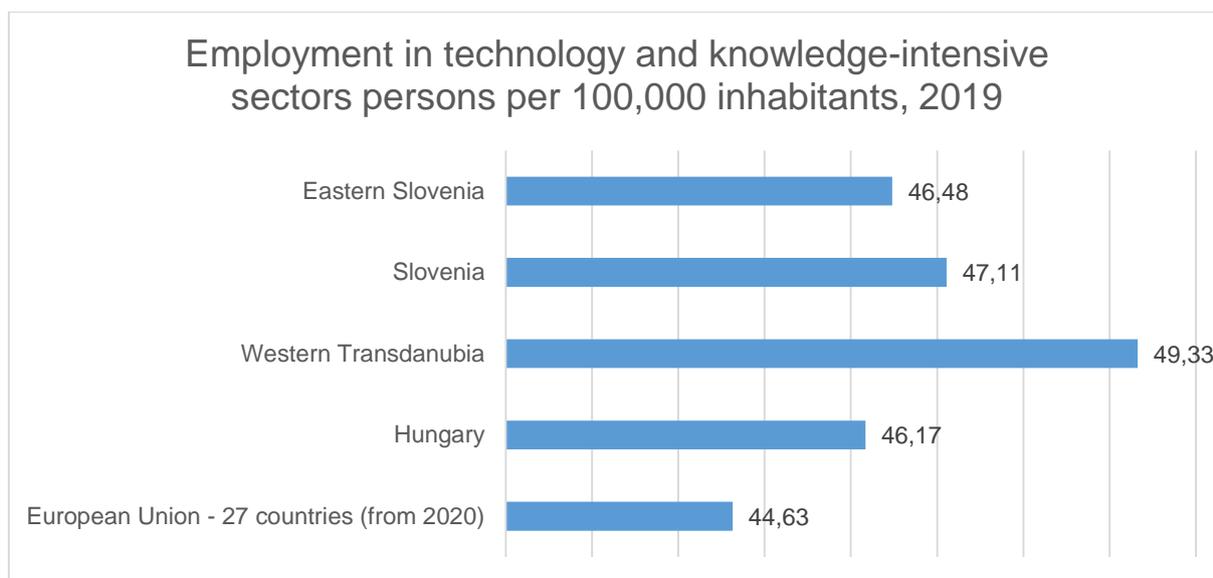
Source: own edition based on SiStat Database and EUROSTAT statistics<sup>19</sup>

<sup>18</sup> Source: [https://ec.europa.eu/eurostat/databrowser/view/BD\\_SIZE\\_R3\\_custom\\_655987/default/table?lang=en;](https://ec.europa.eu/eurostat/databrowser/view/BD_SIZE_R3_custom_655987/default/table?lang=en;)

<sup>19</sup> Source: [https://pxweb.stat.si/SiStatData/pxweb/sl/Data/-/1418403S.px/table/tableViewLayout2/;](https://pxweb.stat.si/SiStatData/pxweb/sl/Data/-/1418403S.px/table/tableViewLayout2/)  
[https://ec.europa.eu/eurostat/databrowser/view/BD\\_SIZE\\_R3\\_custom\\_655987/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/BD_SIZE_R3_custom_655987/default/table?lang=en)

The statistical data doesn't show the effect of the COVID-19 pandemic. Restrictions for operation of enterprises don't serve the growth of these figures, however even in some sectors, as commerce via internet and package delivery, are among the winners of the pandemic.

The rate of employment in technology and knowledge-intensive sectors is slightly higher in the border region than in EU27.



16. Figure: Tendency of key business demography data in 2018 compared to 2014.

Source: own edition based on SiStat Database and EUROSTAT statistics<sup>20</sup>

Both in Western Transdanubia and Eastern Slovenia, agriculture has a greater weight in employment than in the EU-27, or nationally. In the two border regions, industry has almost the same weight, which is above the national average. In Eastern Slovenia, the share of people employed in trade, transport, accommodation and hospitality is slightly lower than the EU-27 average, Western Transdanubia and the Slovenian average. The proportion of people employed in the professional, scientific and technical fields in the two border regions lags behind the EU-27 value and the national average. In Eastern Slovenia, the proportion of people employed in Arts, entertainment and recreation, and other services is lower.

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<sup>20</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/HTEC\\_EMP\\_REG2\\_custom\\_594741/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/HTEC_EMP_REG2_custom_594741/default/table?lang=en)

	EU - 27 (from 2020)	Hungary	Western Transdanubia	Slovenia	Eastern Slovenia
<b>Agriculture, forestry and fishing</b>	4,1%	4,7%	5,0%	3,7%	5,0%
<b>Industry (except construction)</b>	18,3%	24,6%	33,5%	28,4%	33,0%
<b>Construction</b>	6,8%	7,7%	8,6%	5,8%	6,1%
<b>Wholesale and retail trade, transport, accommodation and food service activities</b>	24,0%	23,6%	24,6%	22,5%	20,8%
<b>Information and communication</b>	3,1%	2,9%	1,6%	3,4%	2,3%
<b>Financial and insurance activities</b>	2,7%	1,7%	1,2%	2,6%	2,0%
<b>Real estate activities</b>	0,7%	0,5%	0,0%	0,3%	0,2%
<b>Professional, scientific and technical activities; administrative and support service activities</b>	9,6%	6,8%	4,3%	7,3%	5,8%
<b>Public administration, defence, education, human health and social work activities</b>	24,8%	23,6%	16,7%	21,5%	21,4%
<b>Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies</b>	5,2%	4,0%	4,1%	3,9%	2,7%
<b>No response</b>	0,7%	0,0%	0,0%	0,5%	0,5%

6. Table Rate of employment by economic activity (NACE Rev. 2) (%), 2019.

Source: own edition based on EUROSTAT statistics.<sup>21</sup>

In the Hungarian border area, the rate of main sectors based on number of employed persons within the industry and services is very similar in Vas and Zala county according to the data of Eurostat. Even though, there exist few differences:

- The industry is more dominated in Vas county (42% of total employee) than in Zala (28%).
- In Zala county the accommodation and food service activities are dominant based on spas and tourism at the Lake Balaton (7% compared to 5% in Vas).
- In professional, scientific and technical activities; administrative and support service activities there is a larger proportion of employment in Zala than in Vas county. (17% compared to 10% in Vas)
- At the same time, despite intensive trade relations at the national level, the number of business relations between businesses operating along the border is low.

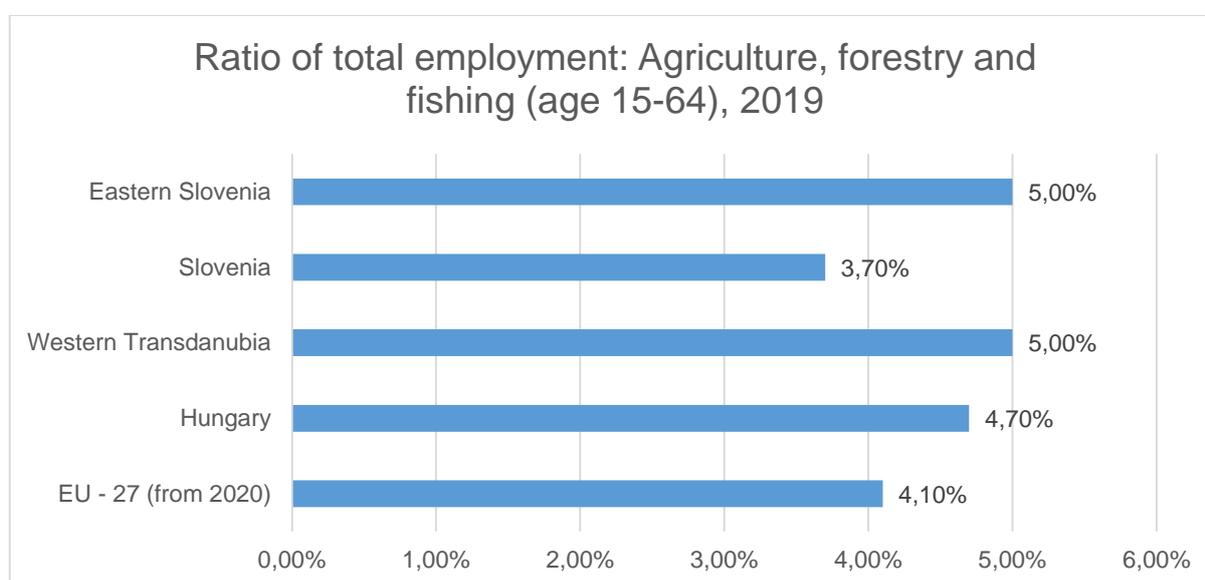
<sup>21</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/BD\\_ENACE2\\_R3\\_custom\\_656022/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/BD_ENACE2_R3_custom_656022/default/table?lang=en)

## 5.4. Agriculture/food production

The two most important agricultural areas in Slovenia are Pomurje and Podravje. 81% of the total area of Pomurje is agricultural land, while in the Podravje region of the same use is only 70%. In Hungary, the counties of Zala and Vas have a smaller weight in agriculture compared to Podravje.

In both Eastern Slovenia and Western Transdanubia the share of people employed in agriculture was 5% in 2019. In Eastern Slovenia, the value was 35% higher than the national average. Within Western Transdanubia the high share of agricultural employees is mostly due to Győr-Moson-Sopron county, which is out of the programme area.



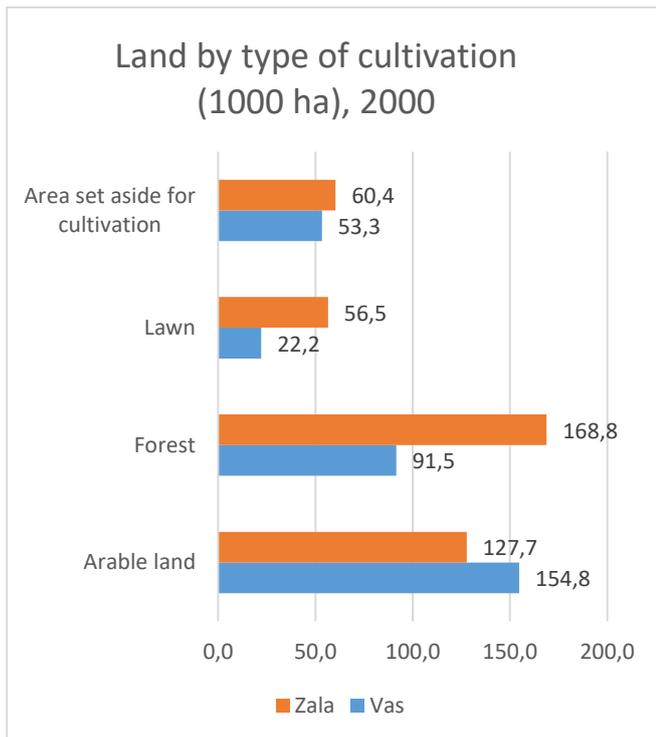
17. Figure: Ratio of total employment: Agriculture, forestry and fishing (age 15-64), 2019.

Source: own edition based on EUROSTAT statistics.

Based on the landscape and the quality of the arable land, the following land use patterns characterise the border area:

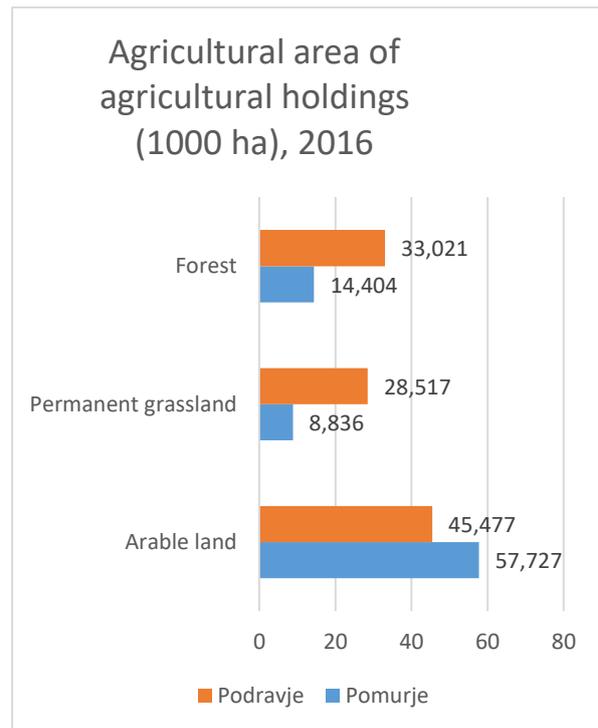
- Cereal production is more significant in Vas County and Pomurje region;
- The grassland area is the most significant in Zala county and Podravje region;
- Afforestation is the most significant in Podravje and Zala county.

In case of the land use for agricultural purpose the latest available data for each relevant county is introduced on Figures 18 and 19.



18. Figure: Land by type of cultivation (1000 ha) 2000.

Source: own edition based on HCSO



19. Figure: Agricultural area of agricultural holdings (1000 ha), 2016.

Source: own edition based on SORS

The immediate vicinity of the border area, especially the Órség, is characterised by a high proportion of grasslands, which gives space for animal husbandry. Livestock breeding is dominant in Slovenian areas, especially in Podravje, but there is a larger cattle herd in the sample farms of the Órség National Park and the Association of Slovenes in Hungary also.

Fruit production is still present in the border area, so viticulture and winemaking are dominant on the Slovenian side. The area has several typical products, such as pumpkin seed oil, walnut oil, forest berries, or apples. Milk production, vegetable and fruit production offer the opportunity to produce small-scale food, which has a tradition in the area. On the Hungarian side, for example, the local product trademark system launched under the coordination of the Órség National Park, which has been extended at national level, serves to improve quality. Within the border area, the sale of local products in neighbouring areas should be encouraged in local markets or small shops, the legal barriers to which should be removed.

In the Pomurje region, the following products are dominant, with yields significantly higher than the Slovenian average: oats, potatoes, pumpkins for oil, rape and turnip rape, apples from intensive orchards. Another dominant product of the region is cereals and maize, tomatoes.

In the Podravje region, according to the type of farming, especially grazed livestock farms predominate, followed by farms engaged in special crop production, mixed crop production and mixed livestock production. Major products of the Podravje region: triticale, oats, rye and maslin, potatoes, grasses (including mixtures), grass – clover mixtures, permanent grassland, including common grassland, grapes. The Podravje region still has a high proportion of grazing

livestock, specialized crops, mixed farms (livestock and crops) and viticulture and winemaking.<sup>22</sup>

Due to climate change, an increase in drier, rainless periods is a problem in Slovenian areas. Thus, to avoid drought, solving irrigation is a priority.

The number of agricultural holdings with organic farming is increasing in Pomurje. In 2000 there were 23 agricultural holdings with organic farming, in 2010 there were 40, and in 2019 93, which represents 3.2% of all agricultural holdings with organic farming in Slovenia. There are more and more organic farmers in Hungarian areas as well, but there is still room for development in this area.<sup>23</sup>

Agricultural land is typically fragmented, with many smallholders. For example, in Podravje and Pomurje counties, the proportion of land cultivated by landowners between 0 and 5 ha is 61%. Improving cultivation efficiency requires farmers to work together, which is the case in border areas.

In Slovenia, family farms, infrastructure and knowledge for agriculture and local industry have been better preserved. There are also smaller farms in Hungary, but the farm of the Órség National Park and the Slovenian Model Farm operating in Felsőszölnök are dominant in animal husbandry. The latter tries to create a local food vertical from agricultural production to hospitality.

The border area is characterized by high forest cover: forestry provides an excellent raw material for the local wood and furniture industry, and wood waste could be used locally as a valuable fuel. Forests offer opportunity for hunting and game management as well – as potential for income generation.

Agricultural activity should seek to strengthen sustainable farming practices, such as expanding the number of organic farms, producing safe food and short supply chains, disseminating innovative solutions such as precision production, and responding to the challenges of climate change.

## **5.5. Industry and services**

In Vas county automotive industry is dominant, with a number of foreign-owned medium and large companies are present that have made significant investments in the recent period. Such significant companies are in Szombathely: TDK Hungary Components Llc., Ivy Technology AMS Hungary Llc., BPW-Hungária Llc., Aptiv Services Hungary Llc., Schaeffler Savaria Llc. and Opel Szentgotthárd Llc. in Szentgotthárd. Close to the Slovenian border, ADA Hungaria Furniture factory operates in Körmend.

In Vas county many of those living along the Slovenian border work in Austria and in the Szentgotthárd Industrial Park, but in addition to public services, agriculture, forestry and small-scale food processing are dominant in the employment of local residents.

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<sup>22</sup> Source: Regionalni Razvojni Program Podravja 2021–2027, (2020)

<sup>23</sup> Source: Regionalni Razvojni Program Regije Pomurje Za Obdobje 2021–2027 – STRATEŠKI DEL (2020)

Zala county has a similar economic structure to Vas county, with the difference that there are fewer people employed in industry. The larger companies are the followings: Flex, GE Hungary, MOL, ADA Nova, Schneider Electric. Along the Slovenian border, the number of people employed in forestry and agriculture is even more significant. A number of logistics centres have been built along the M7 motorway, taking advantage of the favourable transport conditions.

Due to the higher wages in Slovenia, the commuters from Hungary move rather to work in the Slovenian settlements, mainly the construction industry offers job opportunities. The commuters typically go to Hungarian-speaking settlements to work, but German is the common language of communication along the border.

Murska Sobota, Gornja Radgona, Lendava and Ljutomer are the key employment centres in Pomurje region. Agriculture and food processing are the dominant employment sectors in the county in connection with its landscape. Significant employment sectors are also metal and chemical industries. The dominating enterprises are MOL Slovenija, Carthago, Pomgrad, and Elrad International.

Further innovative companies in Pomurje are Ocean Orchids with its large orchid plant for mainly export; Roto Group produces plastic materials for several sectors; Blazic produces ABS edge-banding tapes for furniture; Lust with geothermal green houses for growing tomatoes all year long and Reflex with glass recycling.

Podravje is economically more developed than Pomurje. The dominant industries of Podravje are production of metal products, machinery and equipment, motor vehicles, trailers and semi-trailers, textiles, chemicals, non-metal mineral products, foodstuffs, paper and paper products, rubber and plastic products, and in the repair and fitting of machinery and equipment and the treatment and processing of wood. Maribor and Ptuj are the main industrial centres in Podravje region. In Podravje region Databox can be mentioned as an example for innovative enterprise: this company pulls all data into one place, so the managers of enterprises can track performance and discover insights in real-time.

The service sector mainly means the local economy, so its market opportunity depends on the level of the local economy and income. Tourism is more significant in Zala county, but it also plays a significant role in the employment in the areas along the border.

The successful development both of large and small-medium sized companies is also in the interest of the region. It must be strived for the continuous development of the enterprises operating in the region through innovation and technological consulting, to improve their efficiency and the quality of their products and services. In addition, business development must take into account natural and landscape values, strive to utilize existing, even disused, facilities, reduce pollution, waste, recycle waste, decrease energy consumption, and increase the use renewable energy sources. The success of these issues is in the common interest of businesses or economic development organisations on both sides of the border.

## 5.6. Conclusion

The performance of the economy increased in the second half of the last decade (years of 2010), but the effects of the pandemic caused a slight decline. The Slovenian side is more economically developed than the Hungarian border region. At the same time, the economic development of the Hungarian counties is closer to the national average than the Slovenian regions. Slovenia's overall innovation performance is higher of Hungary.

Vas and Podravje counties are the more industrialized areas. In Zala county tourism, forestry and wood industry are more important, while in Pomurje county agriculture is dominant. In Podravje county, animal husbandry and viticulture are also more significant than in the other counties. Efforts should be made to further develop the local, small-scale food industry and to encourage sales in local markets.

As needs, economic development shall be built on the universities, R&D institutions and technology labs of the region. Efforts should be made to maximise product, service and process development, especially for SMEs, using local knowledge. Local knowledge must be put at the service of the region's economic interests and social and environmental challenges: this way the key players of the border region will work together to reduce the negative effects of climate change and demography tendencies, such as managing drought in crop production or aging, and introducing ecologically sustainable tourism solutions. Cross-border cooperation between SMEs is weak and there is a need to encourage business links between businesses. There are also limitations to building business relationships resulting from a lack of communication and information. The promotion of environmental sustainability must also be kept in mind in the process of developing economic cooperation.

## 6. Tourism

### 6.1. Tourist turnover in the border region

The main indicators of the tourism trends in the cross-border region are presented in Table 7 below.

Due to the COVID-19 pandemic data of 2020 does not show a realistic picture, therefore comparisons should be made with 2019 or in some cases in 2018. Also, for the year 2020 data for Hungary is incomplete, as data exist only for commercial accommodation, while business related other accommodation has not been collected for that year, albeit that category is crucial for the rural areas near the border.

According to the latest territorial data available from the statistical databases of both countries, in the Slovenian-Hungarian programme area, more than 2.3 million tourists spent closely 7.3 million overnight stays in 2019. Comparing this data with the year of 2014 – the beginning of the current programming period – the growth in a number of tourists is more than 40%, while in tourism overnights nearly 20%.

*For Slovenian part*, of the programme area, we can see, from collected data, that Pomurje is still a stronger tourism player (comparing to the previous period) than Podravje. Podravje has been generally more oriented towards foreign tourists, while Pomurje hosted more domestic visitors. The year 2020 brought a change: the foreign and domestic tourists were nearly equal in Podravje.

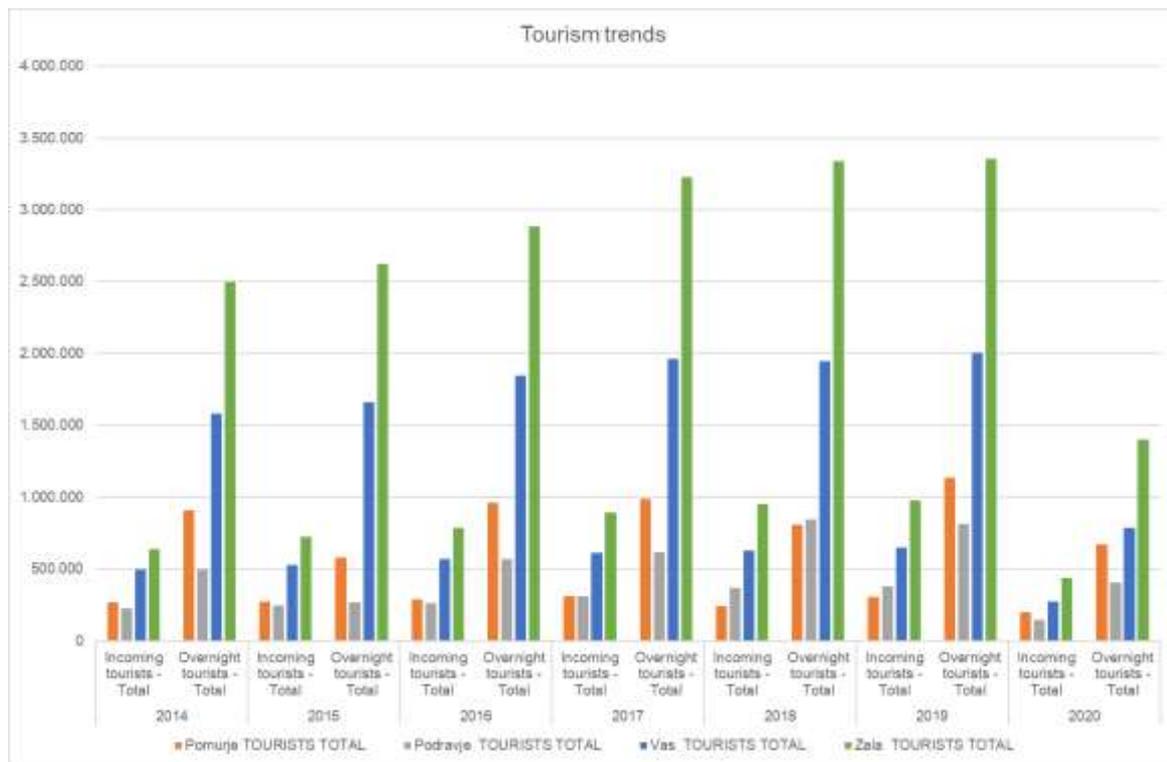
*For the Hungarian part*, of the programme area, we can see, from collected data, that Zala county is still a stronger tourism player (comparing to the previous period) than Vas county. Both counties are generally more oriented towards domestic tourists. The year 2020 brought a change: the domestic tourists were far stronger, than foreigners, but for both counties, we don't have the business related accommodations.

From tourism trends we can see that the growth of incoming guests is higher than those of overnights, meaning shorter stays. The length of stays was at the Hungarian and Slovenian national averages of (Hungary: 5,45; Slovenia: 2,9 days) in 2019. In 2019 Pomurje region realised 6,81% of the Slovenian overnights, while Podravje 5,16%. On the Hungarian side Vas was representing 6,35%, and Zala 10,64% of the national total overnights. Thus *Zala is a major player in tourism on the Hungarian national level*, providing the highest share of incoming/overnight tourists in the Slovenia-Hungary programme area. (Figure 21).

		2014		2015		2016		2017		2018		2019		2020	
		Incoming tourists - Total	Overnight tourists - Total	Incoming tourists - Total	Overnight tourists - Total	Incoming tourists - Total	Overnight tourists -Total	Incoming tourists - Total	Overnight tourists -Total	Incoming tourists - Total	Overnight tourists -Total	Incoming tourists - Total	Overnight tourists -Total	Incoming tourists - Total	Overnight tourists - Total
<b>Slovenia</b>	<b>TOURISTS TOTAL</b>	3.901.563	10.738.766	4.373.878	11.653.764	4.834.071	12.647.876	5.503.284	14.208.545	5.933.266	15.694.705	6.229.573	15.775.331	3.065.085	9.204.374
<b>Pomurje</b>	<b>TOURISTS TOTAL</b>	265.165	909.079	274.202	581.243	289.823	959.620	307.539	986.316	338.050	1.070.269	345.826	1.074.556	200.571	668.334
	<b>DOMESTIC TOURISTS</b>	165.474	539.410	173.158	101.552	166.225	556.884	182.796	554.875	194.788	590.768	198.704	587.008	166.981	562.831
	<b>FOREIGN TOURISTS</b>	99.691	369.669	101.044	366.443	109.884	402.736	124.743	431.441	143.262	479.501	147.122	487.548	33.590	105.503
<b>Podravje</b>	<b>TOURISTS TOTAL</b>	223.867	494.985	247.587	269.969	260.721	568.464	307.658	615.440	367.675	843.339	376.283	813.323	145.436	403.410
	<b>DOMESTIC TOURISTS</b>	69.939	270.933	74.798	40.466	74.560	285.464	93.691	308.406	87.086	221.429	86.156	212.450	74.192	201.247
	<b>FOREIGN TOURISTS</b>	153.928	135.735	32.643	10.066	32.333	136.717	36.516	145.931	280.589	621.911	290.127	600.873	71.244	202.163
<b>Slovenian programme area total</b>	<b>TOURISTS TOTAL</b>	489.032	1.404.064	521.789	851.212	550.544	1.528.084	615.197	1.601.756	705.725	1.913.608	722.109	1.887.879	346.007	1.071.744
	<b>DOMESTIC TOURISTS</b>	235.413	810.343	247.956	142.018	240.785	842.348	276.487	863.281	281.874	812.197	284.860	799.458	241.173	764.078
	<b>FOREIGN TOURISTS</b>	253.619	505.404	133.687	376.509	142.217	539.453	161.259	577.372	423.851	1.101.412	437.249	1.088.421	104.834	307.666
<b>Hungary</b>	<b>TOURISTS TOTAL</b>	9.640.000	24.434.000	10.403.000	25.888.000	11.117.000	27.629.000	11.884.000	29.769.000	12.548.000	31.011.000	12.920.000	31.538.000		
<b>Vas</b>	<b>TOURISTS TOTAL</b>	497.328	1.582.588	528.849	1.660.286	571.264	1.843.492	612.032	1.961.123	625.745	1.946.240	650.310	2.002.237	275.038	785.111
	<b>DOMESTIC TOURISTS</b>	256.010	738.806	285.124	796.607	305.043	879.886	334.675	952.270	350.443	991.667	367.842	1.010.316	199.971	543.041
	<b>FOREIGN TOURISTS</b>	241.318	843.782	243.725	863.679	266.221	963.606	277.357	1.008.853	275.302	954.573	282.468	991.921	75.067	242.070
<b>Zala</b>	<b>TOURISTS TOTAL</b>	636.447	2.496.480	723.705	2.623.898	788.923	2.882.850	893.677	3.227.463	951.562	3.338.935	978.067	3.356.690	438.921	1.401.680
	<b>DOMESTIC TOURISTS</b>	430.767	1.386.420	506.067	1.537.843	549.770	1.739.772	609.542	1.910.681	650.444	1.997.695	675.347	2.035.141	376.529	1.131.543
	<b>FOREIGN TOURISTS</b>	205.680	1.110.060	217.638	1.086.055	239.153	1.143.078	284.135	1.316.782	301.118	1.341.240	302.720	1.321.549	62.392	270.137
<b>Hungarian programme area total</b>	<b>TOURISTS TOTAL</b>	1.133.775	4.079.068	1.252.554	4.284.184	1.360.187	4.726.342	1.505.709	5.188.586	1.577.307	5.285.175	1.628.377	5.358.927	713.959	2.186.791
	<b>DOMESTIC TOURISTS</b>	686.777	2.125.226	791.191	2.334.450	854.813	2.619.658	944.217	2.862.951	1.000.887	2.989.362	1.043.189	3.045.457	576.500	1.674.584
	<b>FOREIGN TOURISTS</b>	446.998	1.953.842	461.363	1.949.734	505.374	2.106.684	561.492	2.325.635	576.420	2.295.813	585.188	2.313.470	137.459	512.207
<b>Programme area total</b>	<b>TOURISTS TOTAL</b>	1.622.807	5.483.132	1.774.343	5.135.396	1.910.731	6.254.426	2.120.906	6.790.342	2.283.032	7.198.783	2.350.486	7.246.806	1.059.966	3.258.535
	<b>DOMESTIC TOURISTS</b>	922.190	2.935.569	1.039.147	2.476.468	1.095.598	3.462.006	1.220.704	3.726.232	1.282.761	3.801.559	1.328.049	3.844.915	817.673	2.438.662
	<b>FOREIGN TOURISTS</b>	700.617	2.459.246	595.050	2.326.243	647.591	2.646.137	722.751	2.903.007	1.000.271	3.397.225	1.022.437	3.401.891	242.293	819.873

7. Table: Main data of tourist turnover.

Source: own edition based on the statistics of SORS and HCSO online database.

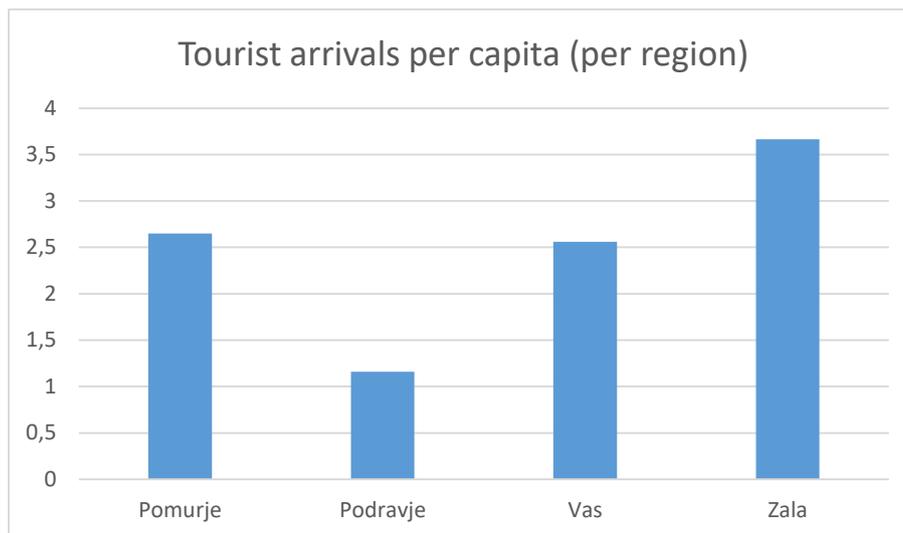


20. Figure: Tourism trends of incoming tourists – Total, overnight tourists – Total.

Source: own edition based on the statistics of SORS and HCSO online database.

Tourism trends of overnight stay from 2016 till 2019 are the highest in both countries. Zala county had the highest share of tourist overnight stays. According to the absolute data, the weight of the Hungarian side in the border region's tourism is larger. According to relative data, Zala has still the highest number of tourist arrivals per capita (3,7), followed by Pomurje (2,7), Vas (2,6) and Podravje (1,2).

As a conclusion we can present, that tourism is growing in both countries compared to the year 2014.



21. Figure: Share of the overnight stays. Source: own edition based on the statistics of SORS and HCSO online database.

The most frequented tourism area of the border region is Zala county: almost 978,067 tourists spent there 3,356,690 overnights in 2019 in public or private accommodations. The county's weight in the tourism performance of Hungary is among the largest, with 7,5% from the national tourist arrivals and 10,4% from national overnight stays (2nd most visited Hungarian county), mainly due to its very popular spa resorts (e.g. Hévíz, Zalakaros, Zalaszentgrót and Lenti) and the beaches at the lake Balaton (only smaller part of the Lake is in the programme area). The town of Hévíz with its internationally famous thermal lake, near Lake Balaton, is the best-known hot (33 °C) medicinal water lake in Europe. It is also the second most visited destination in Hungary after Budapest (with more than 1 million overnight stays per year).

In Vas County, 650,310 tourists spent 2,002,237 nights in 2019 at all the possible accommodations. The weight of the county's tourism in the national tourism performance is around 5% regarding tourist arrivals and 6,3% regarding the tourist overnight stays. The proportion of foreigner tourist turnover is higher in Vas (43% from arrivals and nearly 50% from overnights) than in Zala (31% of arrivals and 39% of overnights). This is due to the closeness of the Austrian border and the availability of some spa resorts (e.g. the traditional ones as Bük, Sárvár and the newcomers: Celldömök, Körmend and Szentgotthárd) that are popular especially among foreign visitors.

In the Slovenian border region, in the Pomurje region 345,826 tourists spent 1.074,556 nights in 2019 in all possible accommodations. The weight of the country's tourism in the national tourism performance is around 7% for overnight stays and 5,5 % for tourism arrivals. The credit for Prekmurje popularity goes to its healing water springs (spas Moravske Toplice, Radenci, Banovci and Lendava), the unspoiled nature of Mura river, a largest baroque castle in Slovenia and culturally and linguistically extremely rich landscape.

In Podravje region 376,283 tourists spent 813,323 nights in 2019 in all possible accommodations. The weight of the county's tourism in the national tourism performance is around 6% of tourism arrivals and 5%. *The proportion of foreign tourists (77,1% incoming, 73% overnight)* is the highest in the territorial area. The reason lies in the fact that Maribor is the second-largest city in Slovenia and economic, administrative, educational and cultural centre

of eastern Slovenia. Ptuj is another important tourism centre, one of Slovenia's oldest cities with a unique cultural heritage. Also, Pohorje, a 1543 meters high natural oasis is one of the most important Slovenian winter and summer tourism centres.

Tourism demand is very concentrated on both sides of the border region: there are several well-known and famous destinations with a great tourist turnover, while the majority of rural areas are less visited by tourists.

- In Zala County the territorial concentration of tourist turnover and overnight stays is among the highest, due to the attractiveness of Hévíz, Zalakaros, Keszthely and Lenti (Hévíz alone has an almost half proportion from all the overnight stays of the county).
- The territorial concentration of the tourist turnover is extremely high in Vas County as well: Bük and Sárvár, Szentgotthárd and Szombathely register more overnight stays recorded in the county.
- The largest number of tourist arrivals in Pomurje municipalities in 2019 was recorded in the municipality of Moravske Toplice (53%), followed by other spa municipalities: Radenci (14%), Lendava (13%) and Veržej (9%). In 2019 these municipalities generated 83.2% of tourist arrivals, while the other 23 Pomurje municipalities generated 16.8%. Municipality Moravske Toplice was the only municipality from Pomurje that ranked among the ten most popular touristic municipalities in the country in 2019. 87.7% of all tourist overnight stays in Pomurje were realized in health resort municipalities.<sup>24</sup>
- The statistical picture of Podravje shows that arrivals and overnight stays of tourists in 2019 are recorded in the following municipalities: Maribor, Ptuj, Hoče-Slivnica, Slovenska Bistrica, Šentilj, Hajdina, Kungota, Selnica ob Dravi, Videm, Ormož, Pesnica, Benedikt, Miklavž na Dravskem polju, Rače–Fram, Cerkevjak, Cirkulane. There was a total of 368,382 tourists in these 17 municipalities and 798,418 overnight stays. Only 4 municipalities in the Podravje region (Maribor, Ptuj, Hoče-Slivnica and Slovenska Bistrica) record 90% of all arrivals and overnight stays.<sup>25</sup>

If the aggregated data of the Slovenian-Hungarian border region is examined, the territorial concentration of tourism is also visible: Hévíz realizes the majority of all the overnight stays of the cross-border region, followed by Moravske Toplice, Bük-Kőszeg, Sárvár and Maribor.

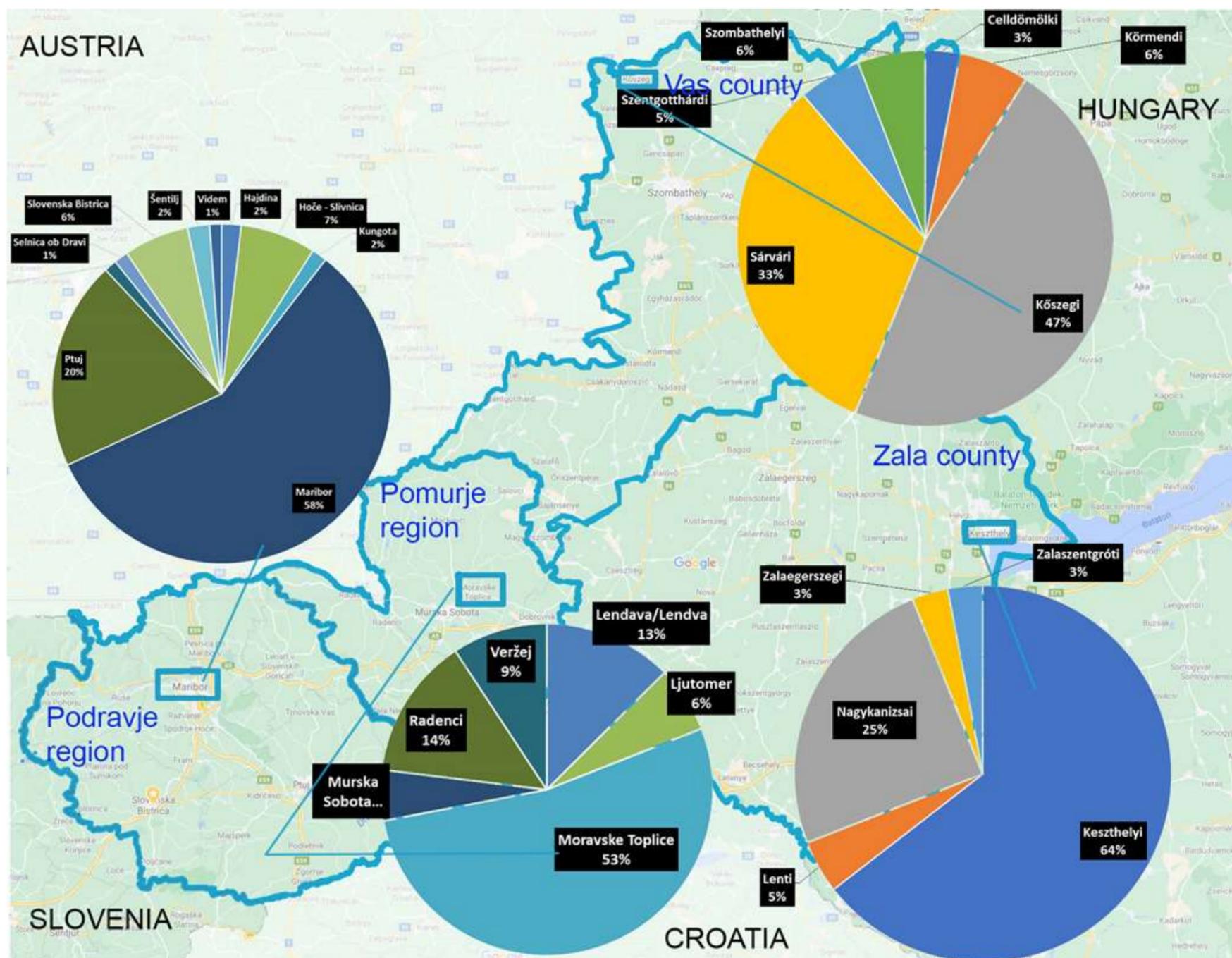
The tourism trend that a lot of tourists are coming into the cross-border region from Middle Europe (Germany, Austria, Poland, Italy, Croatia, Czech Republic) will be affected because of the COVID-19 pandemic and health politics of border countries. The region Pomurje and Zala county are the most resilient in this sense since they have a relatively high share of domestic visitors.

On Figure 22 shares of overnight stays by the municipalities/districts in the programme area are visible for the year 2019. The highest share of the overnight stays has Keszthely (64%) district from Zala County. The second share (of region/county total) of overnight stays has Maribor with 58%.

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<sup>24</sup> Source: Regionalni Razvojni Program Regije Pomurje Za Obdobje 2021–2027 – STRATEŠKI DEL (2020)

<sup>25</sup> Source: Regionalni Razvojni Program Podravja 2021–2027, (2020)



22. Figure: Share of the overnight stays by the municipalities/districts in the regions/counties.<sup>26</sup>

Source: own edition based on the statistics of SORS and HCSO online database.

<sup>26</sup> 1% is an indicator of the share of overnights in the municipality (SI), to show it on the graph.

## 6.2. Tourism supply in the border region

The tourism supply of the Slovenian-Hungarian border region is, first of all, natural value-based: the main tourism products are built on different natural values and resources. Thus “slower” tourism close to nature is dominant, completing this offer with cultural heritage elements. As it has been already highlighted, the border region is characterised by duality: it is basically a rural area with smaller and more hidden values, while there are some significant (– country- / Europe/World-wide famous –) sites attracting a large number of visitors also in national comparison.

Cross-border cooperation has its solid base rooted in the similar endowments of the two sides of the border; the main characteristics of tourism are similar but there are complementary elements as well:

- The tourism offer is first of all natural-value based: health, eco and active, rural tourism and wine tourism play the most important roles in the tourist turnover of throughout the whole programme area.
- The natural values – common rivers (Mura, Kerka) and natural protected areas – connect the two sides of the border region physically. The Órség-Raab-Goričko areas form the Trilateral Nature Park, which is unique in Europe, containing Hungarian, Austrian and Slovenian tri-national nature reserve areas as well. Mura valley is part of the unique future UNESCO 5 country Transboundary Biosphere Reserve Mura-Drava-Danube. Natural Parks on both sides of the border protect the valuable flora and fauna, which are presented to visitors through some educational paths and visitor centres, providing the favourable basis for the development of eco-tourism.

The natural conditions, the topography of the regions provide a great opportunity for different forms of active tourism (hikers, bikers), the EuroVelo route is a common element of the touristic offer. Part of the Iron Curtain Trail crosses this area stretching from the Barents Sea to the Black Sea. Drava Bike is already an established bicycle tourism product. The route takes place mostly in the Podravje region and goes to the confluence of the Drava and Mura rivers. A planned long distance cycling route along Mura-Drava-Danube in TBR MDD also crosses this area.

In the previous financial period, a lot of activities were implemented in the 5 country Transboundary Biosphere Reserve Mura-Drava-Danube (TBR MDD). The area has a potential for tourism development. Some of the activities in this sector were already implemented as EU projects, some of the activities were financed from other sources. TBR MDD promotes biosphere reserve and its endangered species on the riverine Mura, Drava, Danube. TBR MDD includes Pomurje, Podravje regions and Zala county. TBR MDD is UNESCO natural heritage untouched riverine landscapes of the first world 5-country Biosphere Reserve Mura Drava Danube.

Some must-see attractions of the transboundary biosphere reserve Mura-Drava-Danube, can be accessible in the programme area. The most attractive places, visible in the Figure 23 are from Ship Mill Mureck, Ferry on Mura River Krog, Expano Pavillion, Island of love, River School Velika Polana, Vinarium tower, Forest railway Lenti, Lenti Thermal Spa, Buffalo reserve and

water mill in Szécsisziget, Lookout tower and unique cycling experience in the area of Bázakerettye.



23. Figure: Main attractions of the transboundary biosphere reserve Mura-Drava-Danube.

Source: own source.

Besides the Europe-wide famous health resorts (realizing the biggest proportion of the total overnight stays recorded in the region), the Balaton part of the lake in Zala county is a unique summer holiday element of the Hungarian border region's offer, while Pohorje ski resort invites tourist, especially in winter time. Wine tourism is well developed in the Podravje part.

Some remarkable cultural heritage sites and traditions can be found in the border region as well:

- The historical past connects the two sides of the border as well: the historical ethnic region, the Vendvidék and Muravidék (Slovensko Porabje and Prekmurje) includes Slovenian and Hungarian regions.
- Living traditions of the smaller villages provide an insight into the everyday life of the countryside, thus rural tourism has a great potential in the small village areas. Several monuments of the bigger historical cities preserve the memory of the region's rich historical past.
- Several thematic routes have been already established on both sides of the border, especially in the Slovenian regions, where closely 30 hiking/cycling theme trails can be found connecting the natural and cultural sites (e.g. culinary route, wild garlic trail, sweet trail and wineries trail). The connection of these routes across the border, however, is still unsolved.

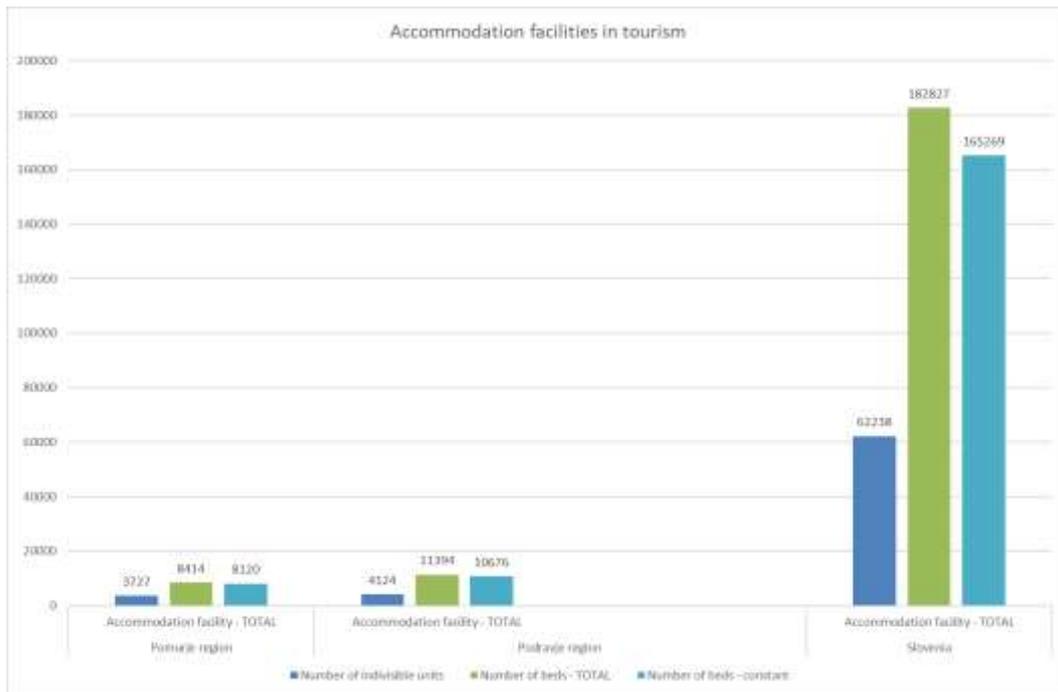


24. Figure: Type of tourism activities in the programme area.

Source: own source.

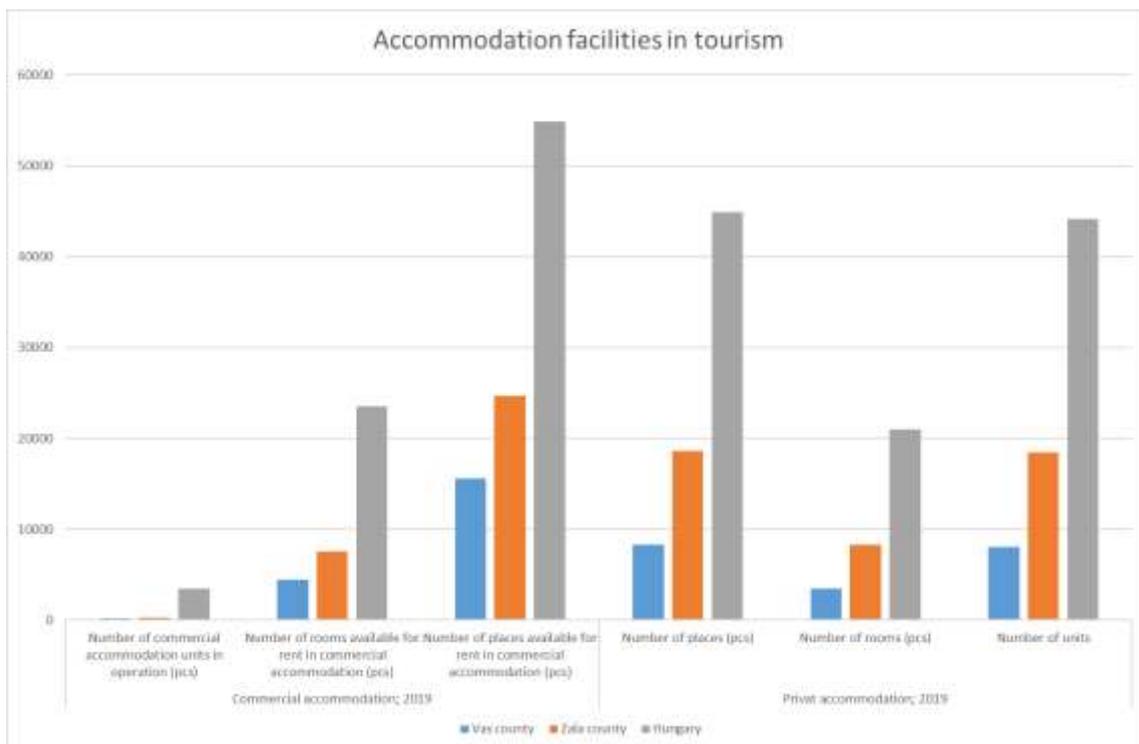
### 6.3. Tourism infrastructure in the border region

According to the HCSO and SORS statistics, all in all, the share of accommodation facilities available is much higher than in the previous financial period. The average bed capacity compared to the Slovenian national level in 2019 was 11% in the border area. It is lower than on the Hungarian side, where the border region is provided 22% of Hungarian total accommodation facilities in 2019. It shows that the Hungarian part of the border area is a major tourism player in national terms. In the Slovenian part of the border accommodation facilities operate with smaller capacities than on the Hungarian side (Figures 25, 26).



25. Figure: Tourism accommodation facility in Slovenia.

Source: own edition based on the statistics of SORS and HCSO online database.



26. Figure: Tourism accommodation facility in Hungary.

Source: own edition based on the statistics of SORS and HCSO online database.

## 6.4. Conclusions

Tourism plays a very important role in the economy in the border region. The great potential and the similarities of the tourism sector on the two sides of the border provide good opportunities to align them into cross-border tourism products towards regional tourism destinations.

Except for health resorts, tourism (lakes, rivers, forest, vineyards) is seasonal and stronger in outdoor activities.

Most of the tourism values are located in the border region. The lack of sustainable mobility connections makes the creation and sales of tourism packages are very hard. The effective cooperation between the actors of the touristic sector in the area is an issue as well. The collaboration in the joint destination of some tourist attractions opened many possibilities also for cross-border thematic products connected to outdoor activities, raising the tourism accommodations, and improving the infrastructure of the region. It can be seen, that it is important to strengthen the cooperation between the actors of tourism sector and developing common marketing activities.

Cross-border collaboration should be facilitated in order to create joint tourism products and services. Thematic tourism products should be in line with **sustainable tourism that is responsible to the environment and local inhabitants**. In order to avoid massive and harmful tourism **the relevant infrastructure and services** must be provided, especially in terms of sustainable mobility, **the carrying capacity of the environment** should be taken into account and **the concept of visitor management** should be applied. When measuring the rate of tourism development, the indicators should be carefully chosen and should be following the concept of regenerative tourism. The appropriate indicator would be e.g. the area of the renatured area, number of people reached through communication (participating persons, schools, institutions), number of visitors that have contributed to nature conservations, in some form of volunteering, or the revenue managed to obtain for nature conservation. The indicator of increased overnight stays is not a meaningful indicator of green tourism anymore, the opposite. Special attention should be paid to the conflicts of use in this sensitive environment (specific tourist activities, vehicles, roads). The tourism should be seen as the connecting element of the existing features in the area. Capacity building for local stakeholders should be provided to cohabit with them in a way that the identity of this area is not endangered but enhanced. With the thoughtful and innovative approach such kind of tourism can lead the way to green and inclusive transition.

## 7. Environmental issues and nature protection

The environment is a highlighted area of support and cooperation in the EU policies in the 2021-2027 programming period. In order to achieve European Green Deal and the EU 2021-2027 goals numerous national/regional programmes and funds are dedicated to environmental protection, renewable energy use and sustainable growth. Border areas have to take into account the possibilities how to jointly address borderless environment issues and find joint solutions based on their geographical closeness, through cross-border cooperation.

### 7.1. Nature protection

The Programme area is rich in environmental resources and natural values including diverse flora and fauna resulting in rich biodiversity to be protected. Biodiversity is the easiest to maintain with the nature kind development, with the aim to keep the natural balance. That means to emphasises the mutually balanced relationship and influences organisms with each other and with their lifecycle. The main cause of the biodiversity threat is the problematic human intervention. Habitat types and interconnections are one of the key area for biodiversity and landscape diversity conservations and are often vulnerable.

In Slovenia, protected natural areas cover 12,5 % of the country surface and include one national park, three regional parks and 73 landscape parks. Moreover, 37% (7,683 km<sup>2</sup>) of the country's territory is protected under NATURA 2000, which is the highest percentage of national territory of all EU Member States.

- In Pomurje, 46% of the region's territory (596,9 km<sup>2</sup>) is under Natura 2000. It covers the main protected territory of the Slovenian part of the Programme area, the picturesque Goričko Landscape Protection Park with a centre in the Grad castle. 96% of its territory is under Natura 2000 protection. The whole valley part of the pristine Mura river is under Natura protection as well.
- In Podravje 28% of the region's territory (611.5 km<sup>2</sup>) in under Natura 2000. It covers the protected areas along Drava valley, mountain massif of Pohorje and Boč – Donačka mountain Nature park. In the urban environment the protected Lake of Maribor provides a series of ecosystem services for Maribor inhabitants and its visitors.

A review of the state of the natural and semi-natural habitats has shown that those habitat types are most at risk in the Slovenian part of programme area:

- Flowing waters and associated wetlands (Mura, Drava)
- Dry grasslands (Goričko) <sup>27</sup>.

The total Natura 2000 coverage amount to 21% of the territory of Hungary. In Hungary 10 national parks and several national landscape parks ensure the protection of the main natural values. Within the Programme area, Vas county contains 71, Zala county 79 protected areas

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<sup>27</sup> Source: [https://www.arso.gov.si/narava/poro%C4%8Dila%20in%20publikacije/biotska\\_raznovrstnost2.pdf](https://www.arso.gov.si/narava/poro%C4%8Dila%20in%20publikacije/biotska_raznovrstnost2.pdf).

out of the total 1195 local protected areas of the country. Three national parks cover partly the territory of the Programme area:

- In Vas county, the Órség National Park and Fertő-Hanság National Park (only a very small part of it is located in the Vas county) cover the main protected areas, besides numerous landscape parks and local protected areas. Natura 2000 covers 21% of the territory. The total territory of the Órség National Park is under Natura 2000 protection due to its special birdlife.
- In Zala county, the Balaton Uplands National Park with a territory of 57 ha is the most important protected area. Kis-Balaton is also protected by the international Ramsar Convention, serving the protection of wetland habitats and having tourism potential. However, only small western part of the Balaton is located in Zala county. The valley of the Mura River is a valuable habitat as well. The county has 258 settlements, out of which 42 has protected area on its territory. Natura 2000 covers 22% of the territory.



27. Figure: Natura 2000 in programme area

Source: Own analysis based on available data

The map of Figure 27 shows the Natura 2000 areas in all the programme regions.

The important part of natural protection is also the future 5-country Transboundary UNESCO Biosphere Reserve Mura-Drava-Danube, which combines the cluster of thirteen protected areas along the Mura-Drava-Danube region and jointly manages the shared river ecosystem

in a sustainable manner while boosting economic growth and development in the region (Figure 28). The Biosphere Reserve in the programme area stretches along the Mura river, covering significant territories in Pomurje and Zala county.

### 5-country Biosphere Reserve Mura-Drava-Danube (TBR MDD)\*



28. Figure: Transboundary UNESCO Biosphere Reserve.

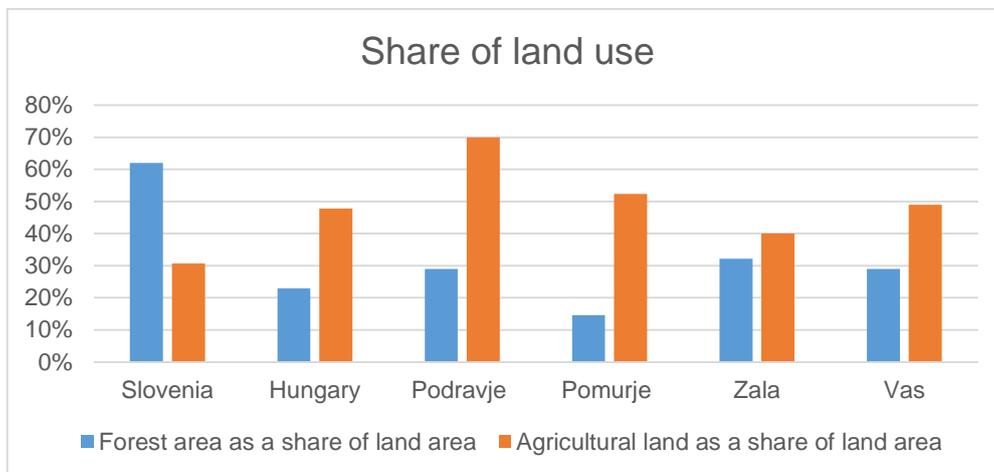
Source: Own source

The important natural protected area in the Programme area is the trilateral Goricko–Őrség–Raab Nature Park, which forms a border region unique in Europe: the cooperation of three nature parks covering in total 105,200 ha territory of protected areas in Austria, Hungary and Slovenia. The Memorandum of Understanding of Partnership between all three Parks was signed in 2006. Since that time different cooperation projects have been implemented (e.g. within the framework of the Central Europe Programme, previous cross-border Interreg Programme), the trilateral park is also a part of the European Greenbelt initiative (an eco-tourism thematic route along with the former Iron curtain).

The importance of both protected areas is in their transnational character and the impact in terms of ecosystem services and climate mitigation that they offer and that was acknowledged by different countries. In this aspect they can serve as exemplary and a platform for future cooperation when striving towards sustainable development goals in the cross-border area.

Environmental protection is in strong correlation with the different kinds of land use such as agricultural or forestry. Agricultural areas are exceeding the national average in Pomurje and Podravje, but in Zala and Vas, this value lags behind the Hungarian average. At the same time,

the share of forests in Zala and Vas counties is the highest at country level. The share of forests in Podravje in Pomurje is the lowest at the country level.



29. Figure: Share of land use in 2017/2018.

Source: own edition based on KNOEMA, RDP statistics

## 7.2. Environmental situation

Environmental aspects are also influenced by economic activities. Industrial production, growing transport, improving agricultural activities are in negative correlation with the environmental indicators. Therefore, permanent attention should be paid to the quality of air, water and soil. In the following, the detailed analysis will be presented a national scale due to lack of information relevant for the statistical regions.

### 7.2.1. Air quality

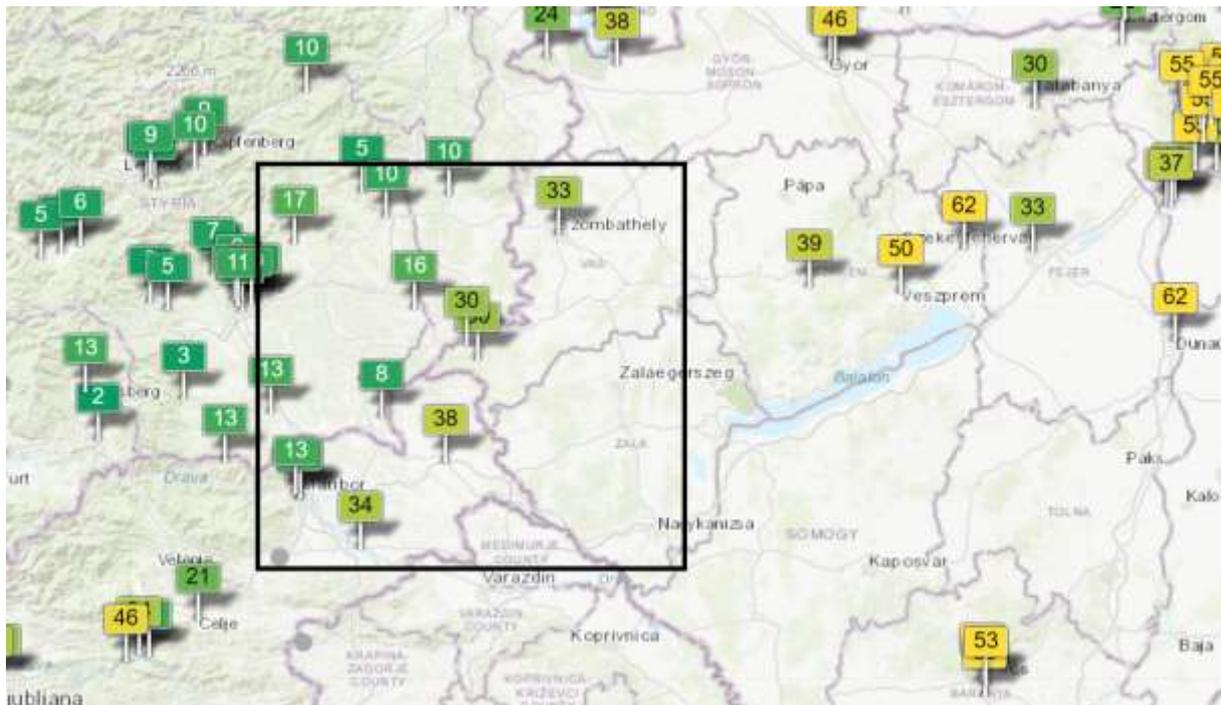
Air quality has deteriorated since the industrial revolution. The main cause of worldwide climate change is anthropogenic greenhouse gas emissions. Negative consequences of health deterioration in form of lung problems became a part of the everyday agenda.

Air quality in Hungary generally corresponds to the EU average, though there are Hungarian settlements where air quality is still not at a 'good' level, and there are significant differences between rural parts and larger cities. Air quality is in a strong correlation with the population's health situation regarding respiratory diseases since fine particle pollution represents the highest risk to public health (in terms of air quality). Hungary has a high level of air pollution, mostly on the eastern part of the country. In Slovenia the issue of air pollution is mainly linked to particles (PM10) and, in the summer, to ozone. According to different analyses the main polluters – sources of PM10 – are transport and roads, especially in urban centres with heavy traffic and in poorly ventilated basins, emissions from heating appliances and industrial sources. The consequences of higher concentration of polluters can be noticed in reduced

crop yields, reduced growth of perennials and production of seeds from annuals, and in poorer growth of forest trees. In Slovenia, the highest share of PM10-producing level represents the use of fuels in households and service sector. The limit values are exceeded mainly in urban areas, but are improving after 2005.

Both, Podravje and Pomurje region are areas with present pollutants and particles, with specific area characterized by PM10 particles around Murska Sobota.

After observing real-time Air Quality Index in the map below we can conclude that all three cities (Szombathely, Murska Sobota and Maribor) have a relatively low values of air pollution, with the Murska Sobota having the highest value of Index in all observed cases.



30. Figure: Air pollution in the programme area - Real-time Air Quality Index (11.4.2021, 23.:40)

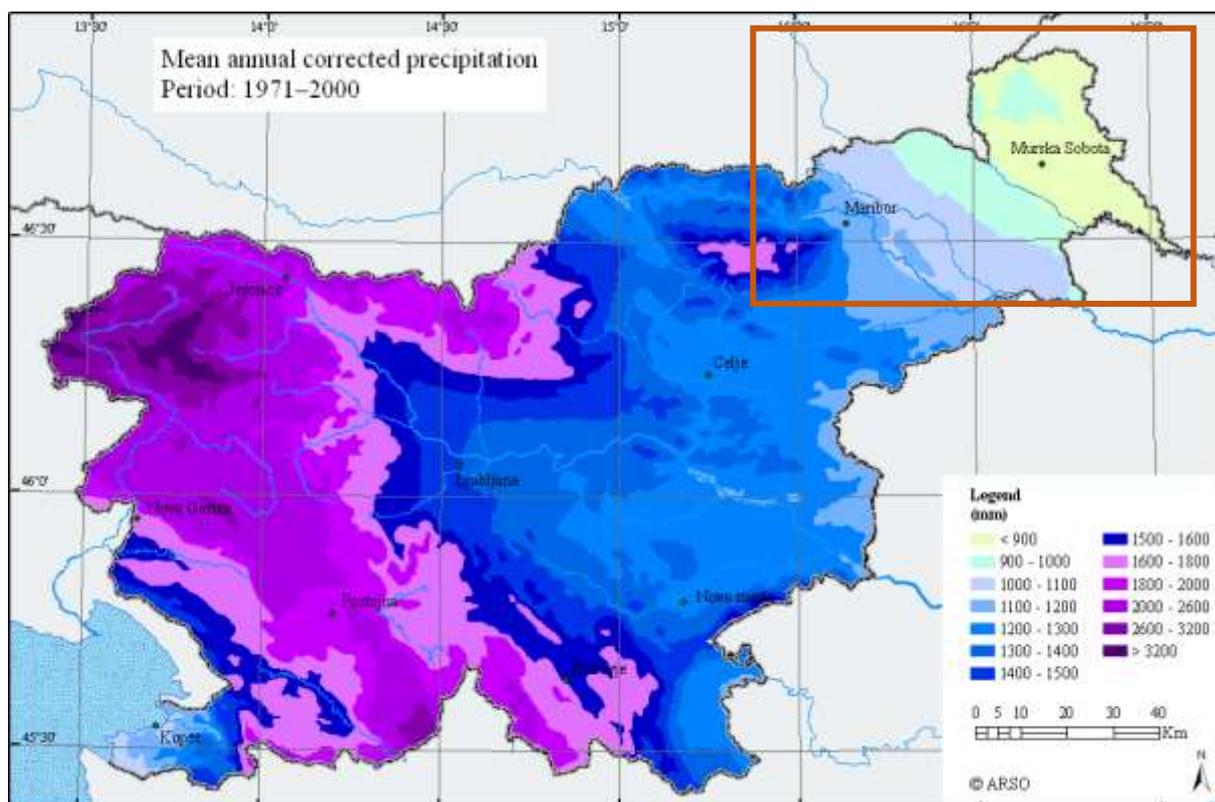
Source: <https://waqi.info/hu/#/c/47.093/15.115/7.3z>

Car is a dominant mode of transport in the cross-border area since there is a lack of sustainable mobility options. Hungary as a country (32% travellers are using train and bus as transport modes) is performing much better in the modal split indicator than Slovenia (13% of travellers are using train and bus as transport modes). At the state level though there is a lack of interest of introducing cross border bus and train options, either between bigger cities at both sides of the border or at a local cross-border level. Therefore, the cross-border programme is a good opportunity to address this issue, especially since the representatives of the regional agencies are interested in addressing this challenge. Improvements in this field would also be beneficial for promoting cycling, which is gaining in popularity and is compatible with rail transport and needs more adjustment at the border crossings. In order to reach sustainable development goals walkability within built environment should be promoted among decision makers, tourists and local population.

## 7.2.2. Water management

In 2000 the European Union adopted the Water Framework Directive with the intent of sustainable use, prevention of deterioration, protection and the improvement of the existing water status, reduction of hazardous substance pollution and provision of sufficient quality surface and groundwater supplies. This directive gives the Member States a legal and professional basis for an integrated approach to water protection and management.

Slovenia is rich in water resources, although they are not spatially uniformly distributed. Water covers about 272 km<sup>2</sup> of Slovenia's territory and most of it is in a good ecological state. Water quality is impacted especially by agriculture, so great attention is paid to agro-environmental measures. In comparison to the previous period, significant improvements have been carried out in the field of water management. In recent years, numerous municipal treatment facilities have been constructed, and some are still being built. More than half of the population's wastewater is treated in municipal or communal facilities.

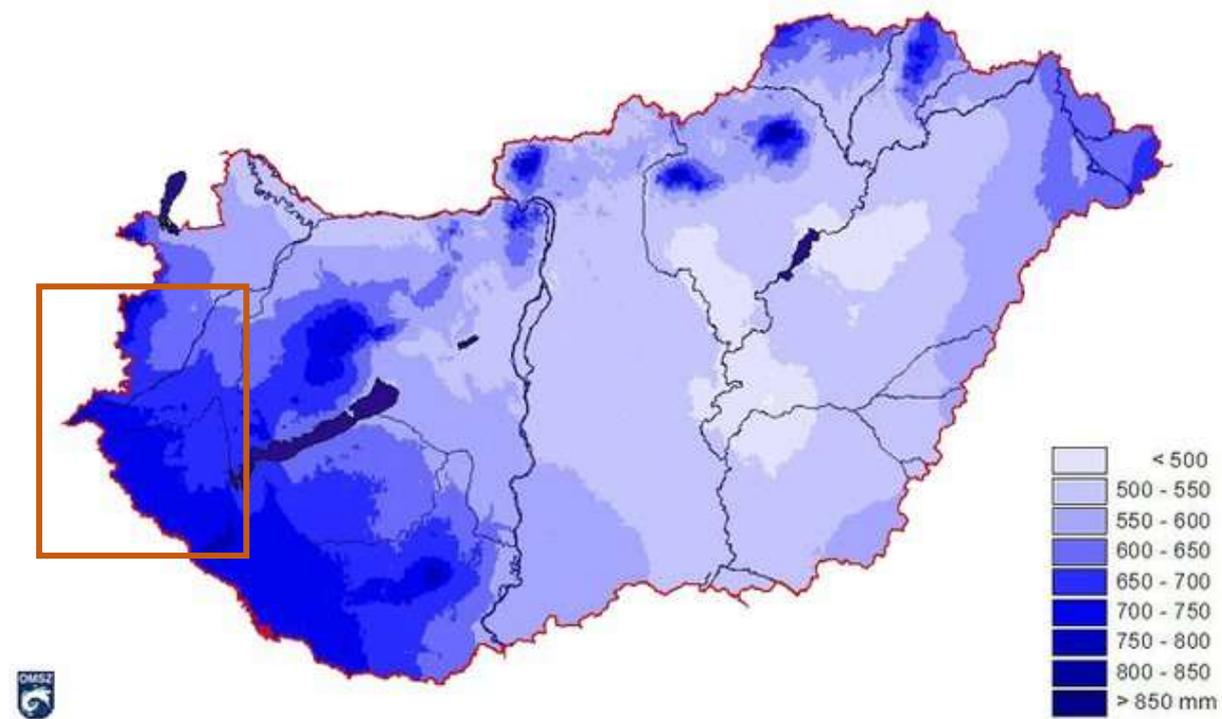


31. Figure: Mean annual precipitation in Slovenia

Source: <http://www.meteo.si/met/en/climate/maps/>

As we can see the average annual rainfall in Slovenia is decreasing from the West to the East and it drops from more than 3000mm to less than 900. The climate changes from sub-Mediterranean to subcontinental.

On the Hungarian side, Zala and Vas are getting similar quantity of rainfall as Pomurje and Podravje but relatively more than the rest of the Hungary as climate getting more continental towards the east.



32. Figure: Mean annual precipitation in Hungary

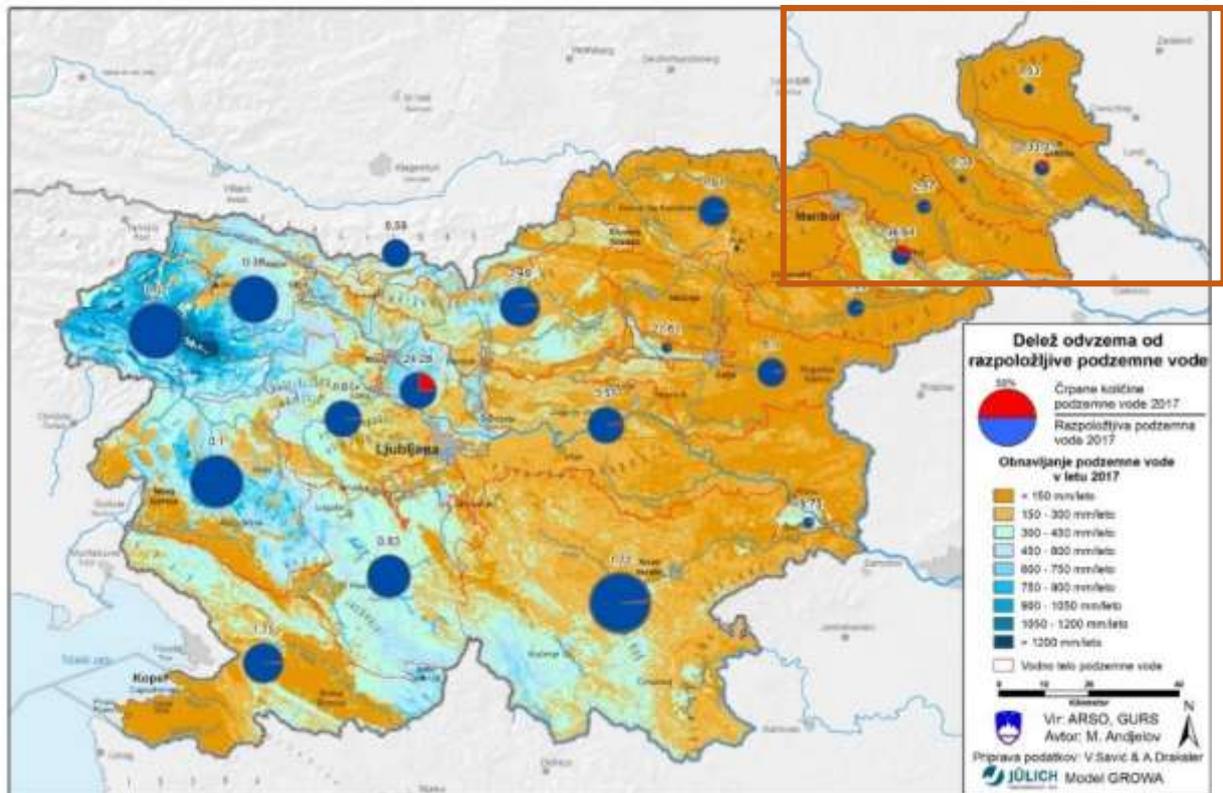
Source: [https://www.met.hu/en/eghajlat/magyarorszag\\_eghajlata/altalanos\\_eghajlati\\_jellemzes/csapadek/](https://www.met.hu/en/eghajlat/magyarorszag_eghajlata/altalanos_eghajlati_jellemzes/csapadek/)

This is probably also one of the reasons why in the Slovenian-Hungarian border region, the water quality status of cross-border watercourses in Hungary are very favourable in terms of water chemistry. In the assessment according to the criteria of the Water Framework Directive, the physicochemical variables showed 'Good' status for Kebele stream and Lendava, and 'Excellent' for Kerka stream and Mura river.

At the same time, it must be said that during the assessment of the biological elements, all the mentioned watercourses can be said to be of medium status, so the ecological status of our watercourses could be improved in terms of the studied groups of organisms (especially macroscopic invertebrates and coating algae). (Source: Western Transdanubia Water Directorate)

In terms of water supply Hungary strongly depends on river outflow from other countries: 95% of the surface waters are of foreign origin. One of the serious consequences of the climate change in the country is that less water is available for an increased water demand, especially for irrigation. From a strategic point of view impacts of climate are an additional negative element added to the already existing problem of water shortage. The total water abstraction in Hungary at present is about 6,000 million m<sup>3</sup>/year, thereof 75% for industrial use - cooling water. For the remaining part, the public is the major user with 40%, industry takes a little more than one quarter and agriculture uses the rest. 75% of the total abstraction (except for cooling water) is from groundwater. Besides the traditional dominance of groundwater in drinking water

supply (94%), abstraction of groundwater for industry and for irrigation has been gradually increasing, and nowadays it exceeds the amount used from surface water (Somlyódy, Simonffy, 2004). This new situation may lead to non-sustainable exploitation.



33. Figure: Share of abstraction from available ground water (groundwater recharge – blue (high) to orange shades (low), circles – abstracted groundwater relative to available groundwater)

Source: *Important water management issues in the Danube and Adriatic Sea water areas (Ministry for environment and spatial planning, 2020)*

As a result of low precipitation, the groundwater recharge in Pomurje and Podravje is among the weakest in Slovenia (as seen from the figure Share of abstraction from available ground water) that is why the share of abstraction from available groundwater relative to available groundwater (red part of the circle) is relatively high in these two regions. Besides, relatively large amount of water is used for irrigation as this is agriculturally intensive area. Because of all of this factors, water bodies in the north-eastern part of Slovenia are the most polluted, namely in aquifers with predominantly inter granular porosity. In 2018, poor chemical status was found for the Savinjska, Drava and Mura basins. (Regional development program Podravje 2021-2027, draft). The Mura has the worst ecological status among bigger Slovenian rivers.



34. Figure: Number and share of surface water bodies by river basins in at least good (red colour) or moderate or worse (blue colour).

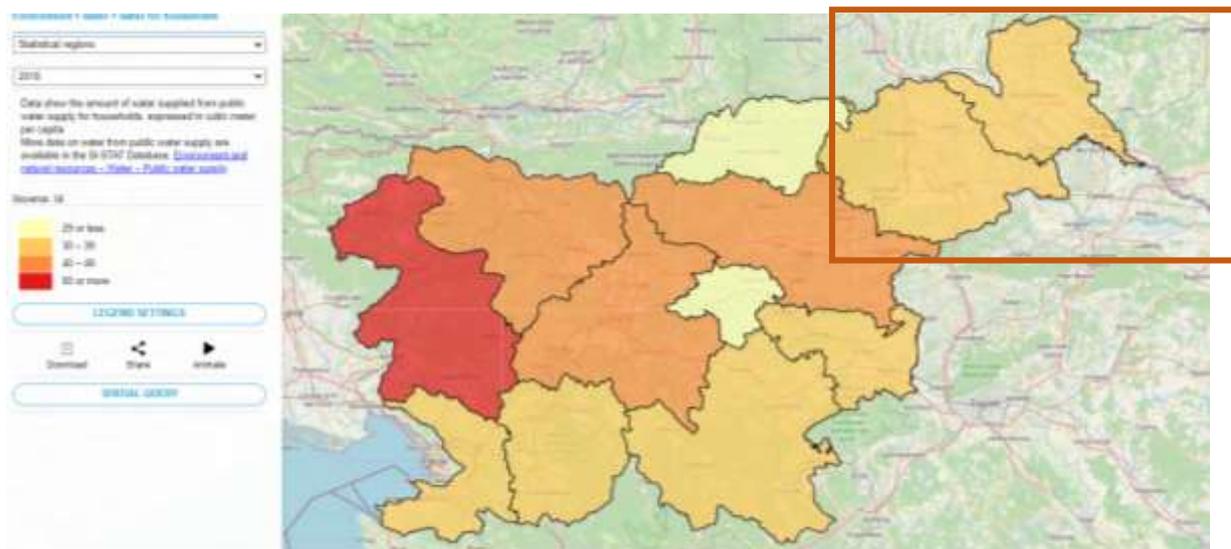
Source: *Important water management issues in the Danube and Adriatic Sea water areas (Ministry for environment and spatial planning, 2020)*

In 2019, 170 million m<sup>3</sup> of water was abstracted in Slovenia, which is 0.4% less than in the previous year; 166 million m<sup>3</sup> of water were abstracted from groundwater, of which 55.2 million m<sup>3</sup> of water were abstracted from springs. Four million cubic metres of water were abstracted from surface water, which is three times more than in the previous year.

According to the Slovenian Water Agency, this is the result of larger investment in municipal drinking water infrastructure, which, stimulated by the cohesion funds, enabled investment in upgrading water treatment plants and the preparation of drinking water from surface water sources. Households consumed almost the same amount of water from the public water supply as in 2018; business entities consumed more. Pomurje region wants to build more network of municipal drinking water besides municipal wastewater treatment networks<sup>28</sup>.

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<sup>28</sup> Source: <https://old.delo.si/novice/slovenija/klofuta-podravskim-nacrtom-za-ureditev-pitne-vode-in-odplak.html>).



35. Figure: Water supply in Slovenia.

Source: SORS Slovenia: <https://gis.stat.si/#lang=en>

The amount of water from public water supply for households Podravje and Pomurje are not the lowest regarding other Slovenian regions, but both regions need more construction for municipal water plumbing to be built.

*The common specificity of this area are the geothermal waters.*

Hungary is well known for its richness in thermal waters. A large part of them is recognised as world-famous mineral and thermal waters with a favourable composition and therefore are under protection. The Western Transdanubian Region is one of the most popular health tourism destination of the country due to its rich thermal water resources. The most well-known area is the lake of Hévíz, with a significant healing effect, providing traditional medical and healing wellness treatments. Further thermal spas and wellness facilities are available, among others, in Zalakaros, Sárvár, Bük and Lenti. Geothermal energy is used also for heating in spa facilities.

In Pomurje and Podravje geothermal energy is used primarily for heating and bathing. There are six thermal spas and health resorts, and an additional four recreation centres (three of them as part of hotels) where swimming pools are directly or indirectly heated by geothermal energy. The main thermal spas are located in Moravske Toplice, Murska Sobota, Banovci and Ptuj.

Overexploitation of thermal waters was recognised in the last years therefore more sustainable ways of using them are being promoted. Besides, the tourism is trying to move the main focus from the spas to other attractions in the rural areas.

### 7.2.3. Environmental disaster management

Disaster management is organised in the two countries differently. In Slovenia it is organised as Civil protection (with firefighter associations, formed by local centres), such organisations

operate in Podravje and Pomurje. In Hungary it is coordinated by the county-level disaster management directorates, that are subordinated to the National Directorate General for Disaster Management (NDGDM) of the Ministry of Interior. Its main activities are updating the current civil protection duty system, monitoring a public alarm system for industrial plants, use education to build a culture of safety and resilience, to manage information for a better public awareness and strengthening the effectiveness of international urban search and rescue assistance.<sup>29</sup> These county directorates are responsible for firefighting as well, however besides professional firefighting commands in some smaller towns municipal firefighting commands or firefighting associations operate as well. The countries formed The Hungarian–Slovenian Permanent Joint Committee on Disaster Management which held meetings, where they discuss common issues.

Disaster management (civil protection) in Slovenia is organised as an integrated system, which includes various parties: rescue units and services (professional and voluntary, civil protection), humanitarian organisations, research institutions, other organisations and governmental administrative bodies. The unified system is based on humanitarian principles and in line with international standards.<sup>30</sup>

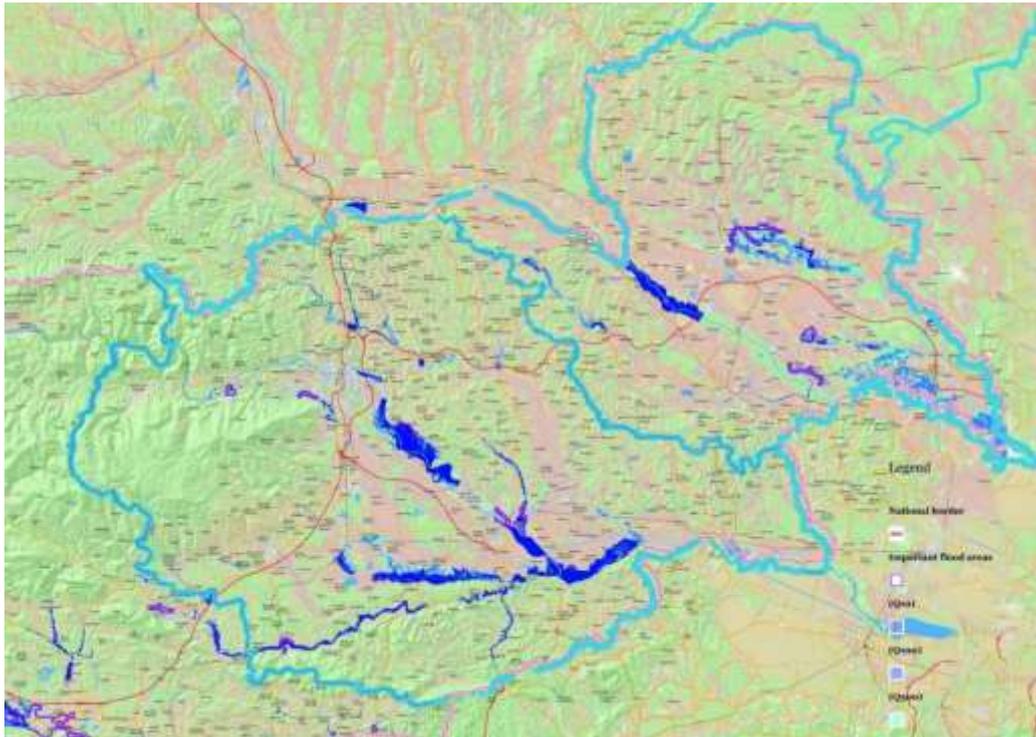
One of the significant natural disasters is catastrophic flooding for Slovenia part of programme region. Flooding in Slovenia is frequent, but because of the past spatial planning failures also an issue for settlements in a flooding area. This remains relevant also for Podravje and Pomurje regions considering Drava and Mura river.

In the Hungarian border region, the Rába and Mura areas are most often endangered by floods. In the case of other smaller watercourses, the flood risk was reduced by the construction of storm reservoirs.

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<sup>29</sup> Source: <https://www.preventionweb.net/organizations/1357>

<sup>30</sup> Source: [https://ec.europa.eu/echo/what/civil-protection/disaster-management/slovenia\\_en](https://ec.europa.eu/echo/what/civil-protection/disaster-management/slovenia_en)

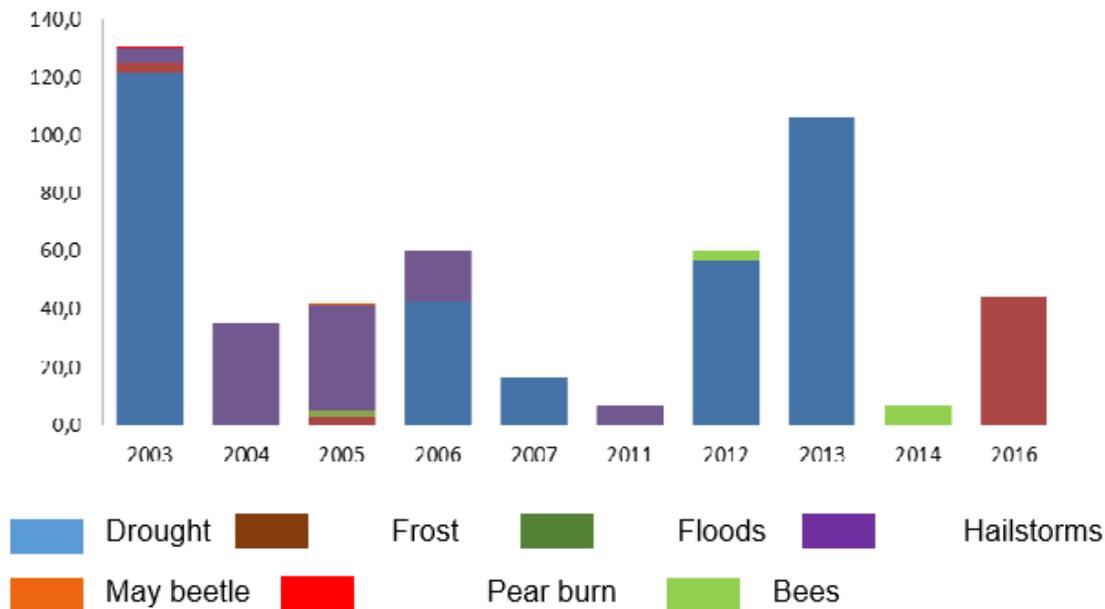


36. Figure: Flooding areas in Pomurje and Podravje

Source: Own analysis based on EAS.

In Slovenia disaster management of the environmental issues in agriculture sector is carried out by farmers itself with preventive measures as an investment in farm development. For that, the farmers in Podravje and Pomurje region implemented hail net protection on the vineyards or orchards. In the case of weather provision for hail, the Slovenian army establishes air defence against hail. As a curative measure, we can state the financial help of insurance companies and state help, which is provided to harmed farmers. In the Figure 37 below in the graph is visible which natural hazards are causing the troubles and in what financial damage.

There is also a national hail damage reduction system with a soil generator in Hungary, which was established to reduce hail damage in agricultural areas. On the Hungarian side of the border, the orchards are most at risk from hail damage and frost due to today's changeable weather.



37. Figure: The amount of damage (in mio €) in some natural disasters from 2003 till 2016, that damaged the agriculture sector.

Source: MKGP, Natural disasters that affected agricultural production between 2003 and 2017.

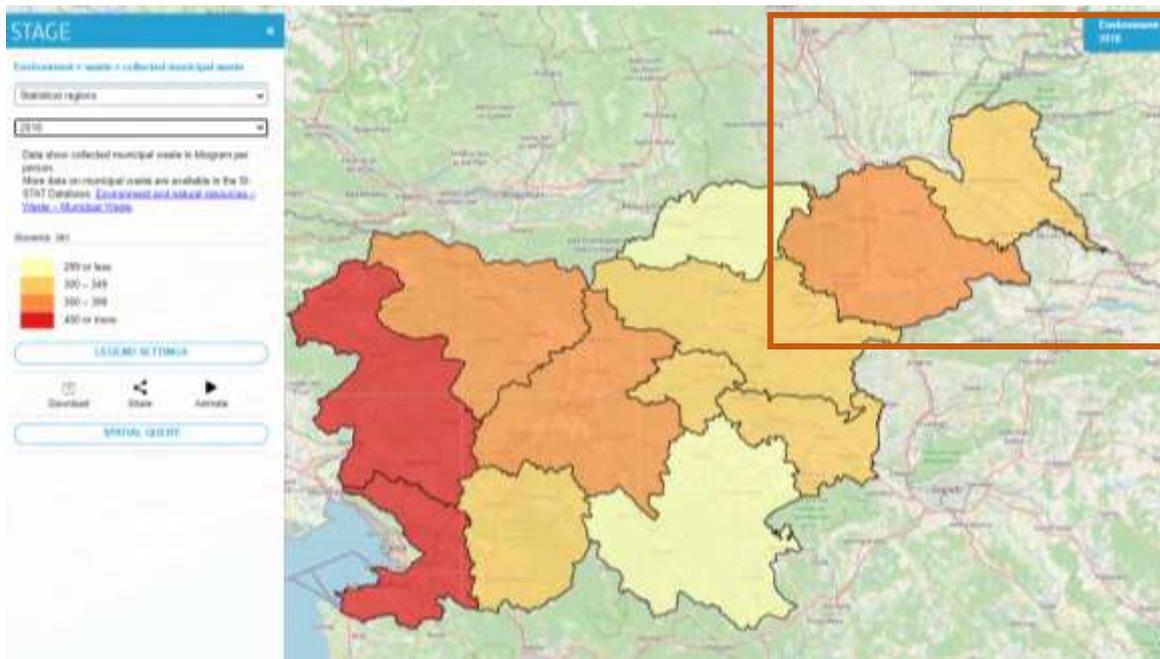
In Hungary between 2009-2014 in average 2000 hectares/year were hit by forest fires, the other abiotic damages (drought, water, frost, snow, wind) affected more than 5,000 hectares, while the insects caused the death of 200 hectares per year. Forest damage mitigation payments have only been paid on ad hoc basis so far, from national sources, and only the greatest forest holders have thought of prevention. Drought has been very frequent in the past decade, which was an additional factor to increase the risk of fire. For fire prevention the following measures can be applied: creation and maintenance of fire break in the medium and high fire frequency areas, controlled elimination (chipping) of thin precommercial cleaning material (wood remaining from cleaning), creation of water source in coherent forest area of at least 100 hectares; establishment of forest fire information and warning boards, information points, target group specific awareness material about forest fires.

In Hungary, in case of a damage as a result of natural disaster the owners usually get help in a form of non-refundable support (flat rate, area based, depending on the different protection methods). In case they take part in a monitoring system, the scope of help is based on conditions defined in the relevant contracts. The amount of support depends on the loss that applicant applies and it varies between 400 and 2 365 Euro/ha from National Rural programme.<sup>31</sup>

<sup>31</sup> Source: <https://enrd.ec.europa.eu/sites/default/files/fms/pdf/BA7A2748-FBA5-23D9-8FC1-A61716C5AD57.pdf>

## 7.2.4. Waste management

Almost 8.4 million tons of waste was generated in Slovenia in 2018, of which 59% was construction and demolition waste. Municipal waste accounted for 1,025,000 tons (or 12% of total waste generated in Slovenia); 71% of it was collected separately. The waste generated in Slovenia is increasing from previous site analysis made in 2014. In 2014 Slovenia generated a million tons of waste. In 2018, a resident of Slovenia generated on average 495 kg of municipal waste, which is 17 kg more than in 2017. More municipal waste was generated in western Slovenia (532 kg per capita) than in eastern Slovenia (462 kg per capita)<sup>32</sup>.



38. Figure: Waste management in Slovenia in 2018.

Source: SORS Slovenia: <https://gis.stat.si/#lang=en>

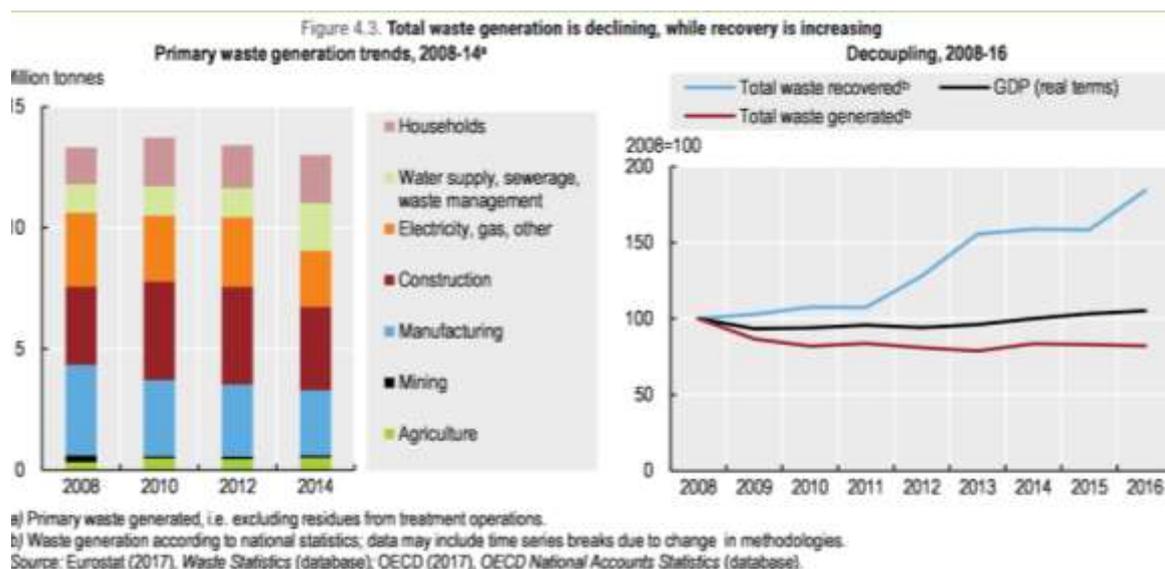
In 2018 in the Podravje region 351 kg of waste was collected per person, while in the Pomurje region a bit less, namely 334 kg per person. Both regions are in the higher middle class of collecting and generating municipal waste.

Hungary generated about 16 million tonnes of waste in 2014. As in many countries, construction and demolition (C&D) waste constituted the largest share. In recent years, Hungary has achieved decoupling between GDP growth and municipal waste generation (Figure 39). In 2014 it generated 3.8 million tonnes of municipal solid waste (MSW), 73% of

<sup>32</sup> Source: <https://www.stat.si/StatWeb/en/news/Index/8419>.

which originated from households. From 2008 to 2015, total waste generation decreased by 17% while GDP increased by 3%, which is a significant achievement.<sup>33</sup>

Hungary has improved its waste and material management by increasing recycling and recovery. In Hungary, if the increasing rate for recycling of the last 5 years can be maintained, the recycling rate would reach 47% in 2020, which is slightly under the 50% target set in the EU legislation for 2020. The latest data is available from 2017. However, its efforts to foster the transition to a circular economy have so far been limited.



39. Figure: Waste management in Hungary.

Source: <https://www.oecd-ilibrary.org/sites/9789264298613-11-en/index.html?itemId=/content/component/9789264298613-11-en>

Waste management system in Hungary is currently undergoing a vast restructuring. Waste management has been centralised to the National Coordination of Waste Management and Asset Management Plc and it is a national competence.

Comparing Slovenia's and Hungary's waste management, it is clear that the share of treatment-types is similar: landfill and deposit treatment is the major way of waste management, even if it shows a decreasing trend in both countries. Slovenia is stronger in recycling rate 58% and Hungary is weaker at rate 35% compared to rate of EU 46%<sup>34</sup>. Recycling rates indicate the percentage of municipal waste generated that is recycled, composted and anaerobically digested, and might also include that prepared for reuse. Hungary has much higher rate of waste originated from households, 73% in 2014 and in Slovenia 12% in 2018.

<sup>33</sup> Source: <https://www.oecd-ilibrary.org/sites/9789264298613-11-en/index.html?itemId=/content/component/9789264298613-11-en>

<sup>34</sup> Source: <https://www.eea.europa.eu/data-and-maps/indicators/waste-recycling-1/assessment-1>

In the programme area although the amount of industrial waste is decreasing, the share of solid municipal waste is growing due to the changes in consumer habits and a growing standard of living. Municipal waste collection is available in almost all settlements except for some farms or resorts. Nevertheless, Regional development program for Podravje indicates that waste is one of the last addressed areas of environmental protection in the region. The visions of all four regions/counties in the programme area is to adopt Zero waste approach, an ethical, economic, efficient and visionary goal that leads society to change lifestyles and habits and to mimic sustainable natural cycles, where all waste materials are a raw material for someone else. The most desirable treatment of waste is waste prevention. Common European legislation defines it as measures that reduce the amount of waste, harmful effects or the content of hazardous substances in materials and products. Such measure includes, for example, restricting the use of plastic bags or bottles, reducing used packaging and selling unpackaged products, promoting the use of washable nappies, composting at home, green procurement in public administration and business, redesigning recyclable products etc. Zero waste concept can be applied in any domain, from business, tourism, public administration, building, consumer habits etc therefore it can also be addressed at any administrative level. With soft measures such as education, awareness raising and sharing good practice it can be tackled effectively in cross-border programme.

#### **7.2.5. Energy**

Regional energy cooperation is a vital element of Hungary's energy market and energy security policy. Hungary, sharing borders with seven countries, is well placed to improve regional energy security by catalysing the development of closely integrated regional markets for electricity and natural gas. The Hungarian energy supply is around 58% import dependent (based on 2018 data) <sup>35</sup>.

Hungary's National Energy Strategy to 2030 is a major step in formulating a long-term vision for the sector. Its main objective is to ensure a sustainable and secure energy sector while supporting the competitiveness of the economy. Mindful of high energy costs and their impact on family incomes, the government initiated a policy of mandatory price cuts to reduce household energy bills. While the short-term impact has been a reduction in energy bills, in the long term, this policy may damage national competitiveness. Renewable energy production has increased significantly in the last decade but growth in the sector has then slowed down. Recent reforms and the introduction of a new support system for electricity from renewable sources could stop this slowdown. On the other hand, measures that limit wind power developments are likely to have a negative impact on the sector.

The Hungarian energy supply contains mainly fossil resources (natural gas, oil, coal), reaching 73% of the total amount of supply, followed by nuclear energy (17%) and biofuels and waste (10%).

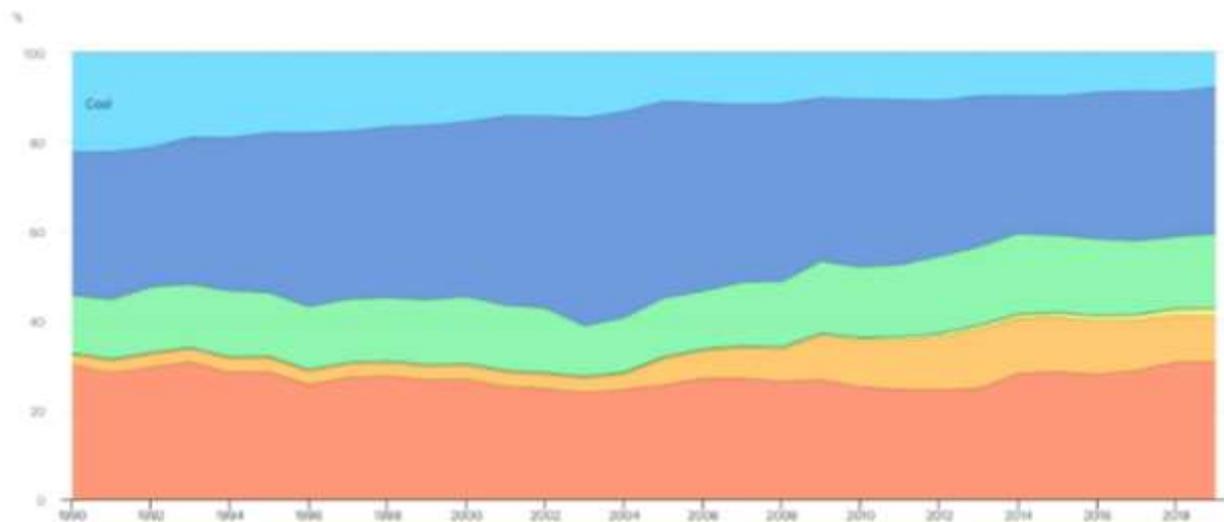
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<sup>35</sup> Source: <https://www-pub.iaea.org/MTCD/publications/PDF/cnpp2019/countryprofiles/Hungary/Hungary.htm>

In 2015, 10.5% of the gross Hungarian electricity production came from renewables, 52% of that amount was from biomass, 22% was from wind, 7% was from hydro energy and 3% was from solar<sup>36</sup>.

Greenhouse gas emissions have declined as the economy has become less carbon-intensive. Nonetheless, the country could adopt more ambitious targets for emission reductions.

Energy security has been strengthened and there have been a number of large investments in oil, electricity and natural gas infrastructure. Further investments are expected, notably the construction of two new nuclear power generating units<sup>37</sup>.



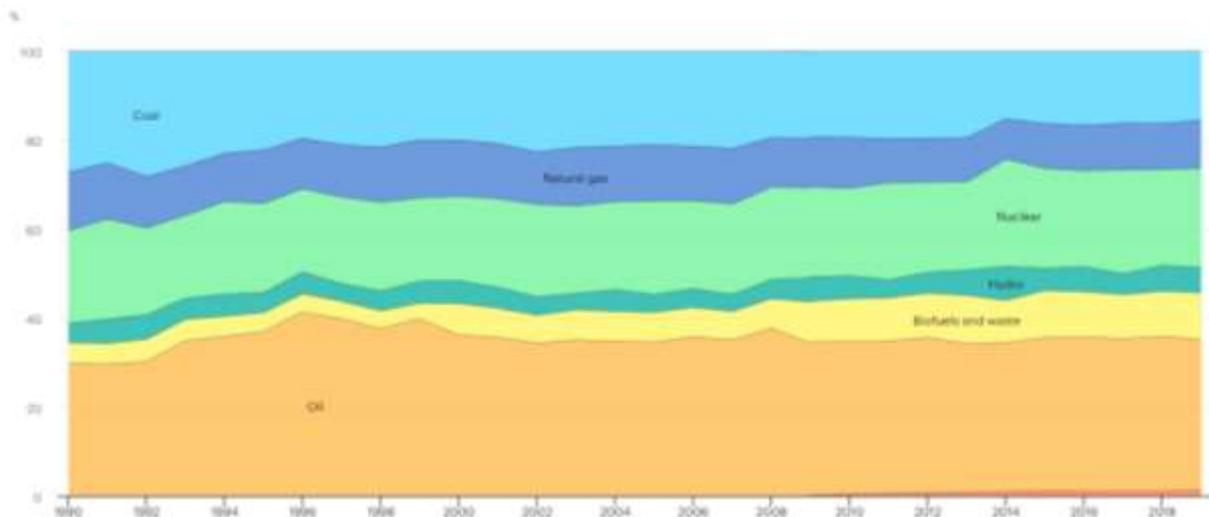
40. Figure: Total energy supply in Hungary, by source, 1990-2019 (light blue – coal, dark blue - natural gas, green – nuclear, yellow – wind, solar, etc, orange – biofuels and waste, red – oil)

Source: <https://www.iea.org/countries/hungary>

Slovenia has put in place a National Renewable Action Plan to 2020, which targeted a 25% share of energy generation from renewable sources in gross final energy consumption and 39% of electricity demand met by electricity generated from renewable energy sources. By statistic (SORS) on March 2021 Slovenia is 51.5 % energy depended (import of liquid and gas fuels) and uses 21,97% of energy from renewable sources in gross final energy consumption. The share of renewable sources didn't reach the target from plan till 2020. National Energy and Climate Plan was adopted in 2019 which sets out energy-climate policy objective and measure and policy promoters for the period up to 2030. Overall greenhouse gas emissions should be reduced by 36%, energy efficiency should be improved by at least 35% and share of renewables should achieve 27%. (Report on the energy sector in Slovenia for 2019).

<sup>36</sup> Source: [http://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_ui011b.html](http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_ui011b.html)

<sup>37</sup> Source: <https://www.iea.org/countries/hungary>.



41. Figure: Total energy supply in Slovenia, by source, 1990-2019 (light blue – coal, dark blue - natural gas, green – nuclear, yellow – wind, solar, etc, orange – biofuels and waste, red – oil)

Source: <https://www.iea.org/countries/slovenia>

Slovenian energy supply contains fossil resources (coal, natural gas), reaching 60% of the total amount of supply, followed by nuclear energy (22%), biofuels and waste (11%) and hydropower (6%)<sup>38</sup>.

Compared to Hungarian supply composition the Slovenian energy supply from hydropower is considerable. This means that power generated from hydropower plants accounts for 95% of the inland-generated power of renewable sources. Other types of renewable energy plants, like waste and biogas power plants increased but in small amount.

The company Dravske elektrarne Maribor (DEM) is the largest energy producer in the Podravje region. DEM is the owner of eight large and two small hydropower plants on the Drava River, one small hydropower plant on the Mura River (four large and three small hydropower plants are located in the Podravje region) and four solar power plants. DEM plans to build a 440 MW Kozjak pumped storage hydropower plant installed power.

Wood biomass is a local resource in all Slovenian regions and therefore great emphasis is placed on the use of wood as a heat source. Promoting wood biomass throughout its entire value chain thus has a positive impact on the Podravje regional economy.

Regarding future trends and strategies, it is worth to consider that due to climate change, water supply and the dynamics of the water flows are going to change as well. This can result in higher energy production generated from hydropower at winter time but very poor supply in summer periods. With measures in the field of energy rehabilitation of housing Slovenia could achieve up to 30% of the total energy savings in buildings.

Large transboundary geothermal sandy aquifers which are widely utilized by both countries for balneological and direct heat purposes exist in the Slovenian-Hungarian border region. In

<sup>38</sup> Source: <https://www.iea.org/data-and-statistics?country=SLOVENIA&fuel=Energy%20supply&indicator=TPESbySource>

Northeastern Slovenia the total direct heat use was 382 TJ in 2010, while in Southwest Hungary it was 648 TJ, including utilization from basement reservoirs (Nádor et al, 2012). During the last 18 years the direct use showed only slight and changing increase and recently just a stagnant state. Overexploitation of geothermal resources in some localities is one of the problems, plus some occasional technical difficulties, and weak incentives for efficient use of the resources. Lately, efforts are put also in promotion of more sustainable exploitation by applying new reinjection wells in the future (Rajver et al, 2019).

According to the share of renewable energy in consumption, it is clear that mainly in Hungary, but also in Slovenia and in the whole EU as well, the share of biofuels among the renewable energies, is more than significant with a ratio of about 50-60%. Hungary lacks hydropower in comparison to Slovenia or the European average.

In the previous programming period cooperation in the field of environmental protection, energy efficiency and renewable energy was enhanced through the Green Line project. In the Green Reg project the level of competences of employees in development and support institutions in the cross-border region in the field of understanding and implementation of concepts and values of sustainable development was raised. Consultation with key stakeholders has shown that in the next financial perspective active approaches are needed to develop public awareness of the importance of building renovation, energy efficiency, waste separation and the use of renewable resources. One of the focus group should be young people and good practices that already exist in the area must be promoted (biogas power plants, aquaponic etc.)

Concerning energy aspect regional developments programmes of the concerned regions are mainly underlining decentralising energy systems using renewable sources, in particular solar, biomass and geothermal energy, and energy efficiency measures (energy efficiency rehabilitation of buildings, smart grids etc). In addition, limiting dispersed settlement pattern, promoting urban renewal and improving sustainable mobility as a direction towards energy efficiency is emphasized.

### **7.3. Circular economy**

A supportive environment designed to provide knowledge and information in the field of circular economy models will play a key role in the implementation of the ambitious plans for the transition to a circular economy as set out in new Circular Economy Action Plan (2020). It is one of the main building blocks of the European New Deal and is a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss. The new action plan announces initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible.

In Slovenia, the Roadmap towards the Circular Economy was adopted in 2018 by Ministry of Environment and Spatial planning. It sets the path for Slovenia to become a circular economy front runner in the region.<sup>39</sup> Designed through an inclusive, multistakeholder approach, it

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<sup>39</sup> Source: <https://circulareconomy.europa.eu/platform/en/strategies/roadmap-towards-circular-economy-slovenia>

identifies four priority sectors, give recommendations to the government and identifies best practices. The Roadmap introduces the Circular Triangle, a model which unites three inseparable elements – Circular Economy (business models), Circular Change (government policies) and Circular Culture (citizens), three interdependent aspects that are at the core systemic change from a linear to a circular economy in Slovenia.

In Hungary, there is no strategy on circular economy at the state level yet. Since the country is poor in raw materials, sustainable material management will probably become an important issue in the future.

The regional authorities of the four region/counties of the programme area are underlining the need for higher share of recyclability of waste to ensure utilization and use of material as secondary raw materials from the local environment and reduction of energy intensity in the production, service, tourism and housing sector. There is a growing need for faster integration of drinking water that is used for production purposes into circular economy.

In addition to raising material and energy productivity, this also requires a change in consumer habits and current life patterns. Changes can be achieved through additional education and awareness and the connecting of all stakeholders in society, and especially by promoting innovation, invention and new creative solutions in the economy.

The programme area is especially suitable for applying the concept of circular economy because of its rural character with and availability of good quality local products and protected green areas on one hand and its “urban hinterland” that can provide the users, promotion and support for this products and circular economy concepts on the other.

## 7.4. Conclusions

The cooperation area has extensive green territories with **significant natural values and high rate of biodiversity** (based on large proportion of protected areas). This provides a good basis for promoting a sustainable lifestyle in the area where the consumerism and individualism had not yet overshadowed community spirit and close ties with nature that the locals there have and cherish.

Located relatively far away from the main population and industry centres the air quality is not the most burning issue. However, the most problematic are PM particles in urban areas, especially in Murska Sobota. Car as dominant mode of transport and the use of fuels in households and services are the main reasons for this.

On the other side, **water management** is a quite a big challenge in the programme area. Low precipitation means low rate of recharging capabilities of ground water and surface water. In the combination with an intensive agriculture in Slovenian part and global warming impact the water pollution is quite severe in this area. In Hungarian part the quality of surface water is better than in Slovenia. Special attention must be paid to geothermal waters that represent valuable renewable source on both sides of the programme area, but in order to keep it, their use must become sustainable. Cross-border activities in terms of awareness raising, water management and policy measures could provide basis for efficient and sustainable water management in this sensitive area.

The situation of **energy supply and consumption** is similar to the countries' levels but in the national climate strategies both countries are committed to energy efficiency and producing energy from renewable sources. Both countries failed to achieve targeted share of renewable energy production. In energy sector more investments in the renewable sector should be made, to connect the waste management as a circular economy or geothermal energy as a renewable source in the whole programme area. With awareness raising at the level of households even with limited financial resources changes in people's habits can be achieved. Lack of cross-border sustainable mobility options was recognised. Dealing with this issue would benefit to many other areas, namely environment, tourism, social cohesion and accessibility.

At cross-border level the **protection of environmental values** (natural/nature parks, rivers, thermal waters) can be fostered via cross-border cooperation. One of the options is to preserve the existing flora and fauna, while another one is to improve services with environmental interest, which are connected to different sectors like tourism, transport, local handmade products etc. This method would help not only to preserve the natural values, but also to enhance the economic performance of the regions. With better spatial planning of urban areas and rural landscape much more nature values could be preserved in the future. Climate change will have significant impact, especially in Podravje and Pomurje regions, because of shortage of water supply, the involvement of spatial planning will need to have a significant role in the next few years. The disaster management should be focused on the effective preventive measures in all sectors, but especially in the agriculture sector, in the future. Disaster management is organized on the national level, so it is important that countries keep on the collaboration in The Hungarian–Slovenian Permanent Joint Committee on Disaster Management.

Dealing with **waste** is another issue to tackle in Slovenia-Hungary Cross-border programme. It is a one of the suitable fields where principles of circular economy can be applied and can build on existing practices. There is a potential in a recovery of waste into eco-fuels. In the previous programming period, the EU project URBAN SOIL 4 FOOD was implemented in Podravje for example: in Maribor biological waste processed into fertile soils for local community. In Maribor the WCYCLE institute was established for ensuring the management of resource / raw material flows in the local and regional area and operates mainly at the basic research and development level. The **concept of circular economy** should be introduced to all aspect of human activities and should be reflected in business models, government policies and circular culture (citizens), three interdependent aspects that are at the core systemic change from a linear to a circular economy. Strategy for circular economy of the cross-border area should be elaborated with a view that its application can generate numerous green working places and improve quality of living and attractiveness of this environment. In order to achieve the ambitious plans for the transition to a circular economy as set out in new Circular Economy Action Plan (2020), a supportive environment to provide knowledge and information in the field of circular economy models could be designed within the cross-border programme.

## 8. Connectivity

### 8.1. Digital connectivity

In terms of digital connectivity and digitization the situation may be analysed through the data on internet access and internet use which is available on NUTS 2 and national level (Table 8). As the data show the programme area has slight lags behind the respective national averages, also – while from the number of individuals who have never used the internet, which is at the same level in both countries – Hungary is generally behind Slovenia both on country and regional level. In terms of tendencies, internet access and internet use are improving, while the number of individuals not using the internet is in decrease.

Indicator	Slovenia	Eastern Slovenia	Hungary	Western Transdanubia
<b>Households with access to internet (%)</b>	90	89	88	86
<b>Individuals who have never used the internet (%)</b>	17	20	17	18
<b>Individuals who ordered goods or services over the internet for private use (%)</b>	63	61	60	60

8. Table: Regional ICT statistics indicators for the programme area.

Source: Eurostat <https://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database> (05.02.2021).

Table 9 summarizes the countries' scores on the Digital Economy and Society Index (DESI) 2020 on the Digital Scoreboard of the European Commission.

Where:

- The Connectivity dimension measures the deployment of broadband infrastructure and its quality.
- The Human Capital dimension measures the skills needed to take advantage of the possibilities offered by digital technology.
- The Use of Internet Services dimension accounts for a variety of online activities, such as the consumption of online content (videos, music, games, etc.) video calls as well as online shopping and banking.
- The Integration of Digital Technology dimension measures the digitisation of businesses and e-commerce. By adopting digital technologies, businesses can enhance efficiency, reduce costs and better engage customers and business partners. Furthermore, the Internet as a sales outlet offers access to wider markets and potential for growth.
- The Digital Public Services dimension measures the digitisation of public services, focusing on eGovernment and eHealth. Modernisation and digitisation of public

services can lead to efficiency gains for the public administration, citizens and businesses alike.

DESI composite index 2020	European Union	Hungary	Slovenia
<b>Connectivity</b>	21.5	14.9	12.6
<b>Human Capital</b>	12.3	10.5	12.1
<b>Use of Internet</b>	8.7	8.38	7.76
<b>Integration of Digital Technology</b>	8.27	5.06	8.19
<b>Digital Public Services</b>	10.8	8.67	10.6

9. Table: The DESI composite index in the analysed countries.

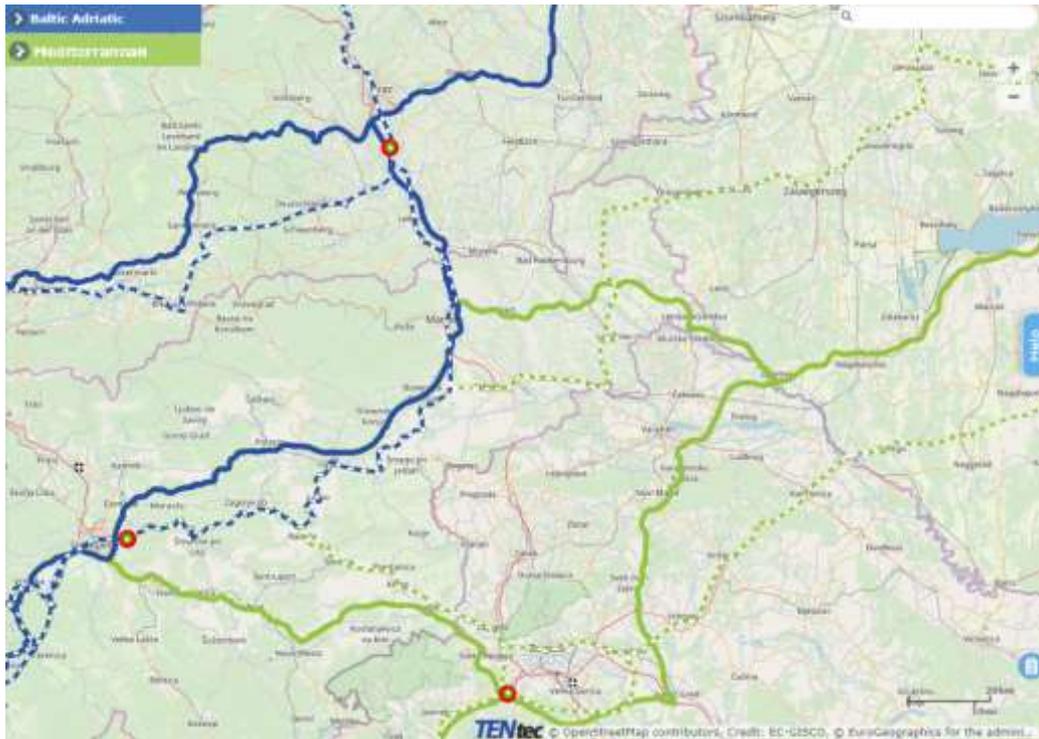
Source: <https://digital-agenda-data.eu/datasets/desi/visualizations> (05.02.2021).

As it can be seen from the DESI figures Slovenia is slightly below the EU average, while Hungary has the 8<sup>th</sup> lowest position. Concerning time series since 2015 the EU and Slovenia figures are generally improving, however since 2015 in case of Hungary there have been some swinging figures, e.g. in human capital and integration of digital technology which is decreasing since 2018.

In terms of digital public services, Hungary significantly lags behind the EU level, however tendencies are improving. Share of e-Government users has been risen from 45% (2018) to 55% (2020), although the country still ranks 24<sup>th</sup> in the EU. Significant improvement took place in online service completion and digital public services for businesses. However, in terms of access to public data Hungary's performance is very poor (32%) (EC, 2020a). Regarding Slovenia e-Government users and online services, the completion is better than in Hungary, just like access to open data, which is even beyond the EU average (75%) (EC, 2020b).

## 8.2. Public roads

The border region – although being a very short border section – is an important gateway from public roads point of view as well. The motorway branch of the Mediterranean corridor (Lyon–Trieste–Koper–Ljubljana–Budapest–Ukraine – former corridor V) crosses the region at the border crossing Pince/Tornyiszentmiklós. From the Slovenian side motorway A5 between Maribor and Pince has been completed in 2008. At Maribor A5 joins A1 towards Ljubljana and Graz (Austria). The Graz–Maribor–Ljubljana link is part of the Baltic-Adriatic TEN-T corridor (Figure 42), while the Maribor–Gruškovje(–Zagreb–Belgrade–Niš–Thessaloniki) connection (A4, E59) is one of the branches of former corridor X, which is an important north-south internal axis of Podravje, also an important linkage from Austria and Germany towards the Adriatic coast, therefore suffering from severe congestions during summer holiday season. In general, we can state the Slovenian side of the border area is very well connected, both to the core area of Central Europe and the Balkans/East Mediterranean as well.



42. Figure: TEN-T corridors in the border area.

Source: <https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html> (08.02.2021).

On the Hungarian side the region of Western Transdanubia bears the best figures in terms of public road density in the country (KSH, 2018). Motorway M70 between Tornyiszentmiklós and Letenye has been completed in 2019 to full motorway profile, while from Letenye the motorway M7 connects the border area with Budapest. Regarding north-south connections, on the Hungarian side the northern (Szombathely through M86 towards Győr and Budapest) and the southern parts (M70-M7) of the border area are well connected, while its middle part lacks efficient connections. In the middle part of the border area on the Hungarian side several speedway development projects are under way<sup>40</sup>:

- Speedway M76 is currently being built between M7 and Keszthely, and should reach Zalaegerszeg;
- Speedway M86 between Szombathely and Körmend, which is the border area's main north-south axis, is currently in design phase;
- For M87 between Szombathely and Kőszeg feasibility study has been prepared, technical plans due in 2021;
- M80 between Körmend and Rábafüzes (towards Graz) is currently under construction and should be ready in 2021 (Nyugat, 2020).
- Preparation of the M9 speedway, which includes the Zalaegerszeg–Nagykanizsa connection as well, is also ongoing.

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<sup>40</sup> Source: <https://nif.hu/projektek/> (08.02.2021).



43. Figure: Speedway development projects under way in Zala county, 2021.

Source: NIF Zrt. <https://nif.hu/projektek/2020/08/m76-autout-zalaegerszeg-kormend-kozotti-2x2-savos-szakasz-tanulmanytervenek-kornyezetvedelmi-hatastanulmanyanak-kht-elkeszitesi/> (08.02.2021).



44. Figure: Speedway development projects under way in Vas county, 2021

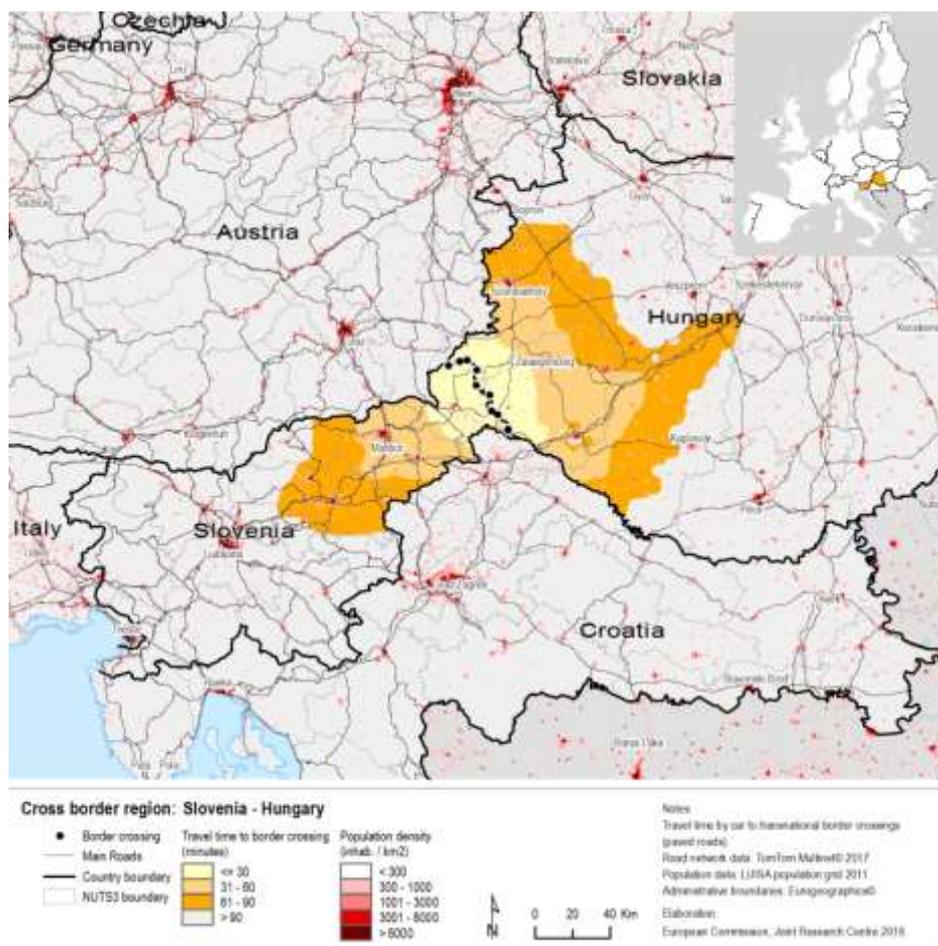
Source: NIF Zrt. <https://nif.hu/projektek/2020/07/m86-autout-kormend-m80-szombathely-zanat-kelet-m86-kozotti-szakasz-elokeszitesi/> and <https://nif.hu/projektek/2020/07/87-sz-fout-szombathely-es-kozseg-kozotti-kozuti-kapcsolat-fejlesztesenek-elokeszitesi/> (08.02.2021).

Speedway development projects on the Hungarian side aim at establishment of a better connection between major towns and cities with the Budapest-centred motorway network and

Austria. On the other hand, particularly in the Hungary-Slovenia context, some capacity bottlenecks will remain in the public road network, in particular on main road no. 86 (Rédics–Zalalövő–Körmend) where average daily traffic volume (ADT) varies between 5000-8000 vehicle units. The Dolga vas/Rédics border crossing has a transnational importance, as it carries a significant volume of freight transit between Austria/Slovakia and the Adriatic coast (Italy, Slovenia, Croatia). In order to ease the bottleneck, on the Slovenian side the speedway H7 has been constructed as a connection to A5, however a similar infrastructure on the Hungarian side is missing.

The road network of Podravje is better than that of Pomurje. The accessibility of the rural areas in the inner parts of the regions needs to be further developed in order to ensure the better interconnectivity of the smaller villages.

Concerning cross-border traffic, border crossings are accessible within half an hour in whole Pomurje and about nearly half of Zala county. Also, more remote urban centres (Maribor, Szombathely and Zalaegerszeg) are within the 60-minute accessibility range (Kavalov et al, 2019 – Figure 45). This is due to a high density of border crossings (11 on the 102 km long border section), that have been especially developed after entry of Hungary and Slovenia into the Schengen zone, when traffic has become barrier-free.



45. Figure: Accessibility of border crossings in the Slovenia-Hungary border area.

Source: Kavalov et al (2019; 68).

As since accession to the Schengen zone no border control has been applied prior to the COVID-19 pandemic, several new border crossings have been established on local or non-classified roads, often by means of EU funding through cross-border cooperation programmes. Due to the lack of border crossing procedures cross-border traffic may be estimated through traffic frequency (ADT) figures of the road sections leading to the border crossing point. Border traffic data is shown on Table 10.

Border crossing point	ADT measured on the Hungarian side	Open under COVID-19 pandemic
<b>Felsőszölnök–Martinje</b>	496	
<b>Kétvölgy–Čepinci</b>	389	+
<b>Bajánsenye–Hodoš</b>	328	+
<b>Kercaszomor–Domanjševci</b>	51	
<b>Magyarszombatfa–Prosenjakovci</b>	344	
<b>Nemesnép–Kobilje</b>	97	
<b>Bödeháza–Žitkovci</b>	152	
<b>Rédics–Genterovci</b>	299	
<b>Rédics–Dolga vas</b>	7 699	+
<b>Tornyiszentmiklós–Pince (75333-443)</b>	538	+
<b>Tornyiszentmiklós–Pince (M70-A5)</b>	10 016	+

10. Table: Border crossing points between Slovenia and Hungary.

Source: own edition based on <https://www.utinform.hu/hataratkelok/>, [kira.gov.hu](http://kira.gov.hu) and [http://www.police.hu/hu/hirek-es-informaciok/hatarinfo?field\\_hat\\_rszakasz\\_value=szlov%C3%A9n+hat%C3%A1rszakasz](http://www.police.hu/hu/hirek-es-informaciok/hatarinfo?field_hat_rszakasz_value=szlov%C3%A9n+hat%C3%A1rszakasz) (05.02.2021).

In terms of scheduled coach service, on both sides of the border coach service is provided in order to access micro regional and regional centres, or reaching national capitals. Local bus transport systems operate in main cities (Nagykanizsa, Szombathely, Zalaegerszeg), also in some smaller towns (Keszthely, Körmend, Lenti) in Hungary<sup>41</sup>. The majority of towns and rural areas can be reached by bus in Slovenia. Bus connections are frequent and available to distant locations throughout the country.

Concerning cross-border connections, currently no service is available between Hungary and Slovenia. Only international low-cost bus operator Flixbus provides some connections between Croatia and Austria/Germany, in a reduced level due to the pandemic situation, that stops in Maribor. Eurolines used to have connections between Budapest and Ljubljana, through Maribor, but due to the pandemic services have been cancelled. For facilitation of cross-border cooperation restoration of previously existing connections would be essential.

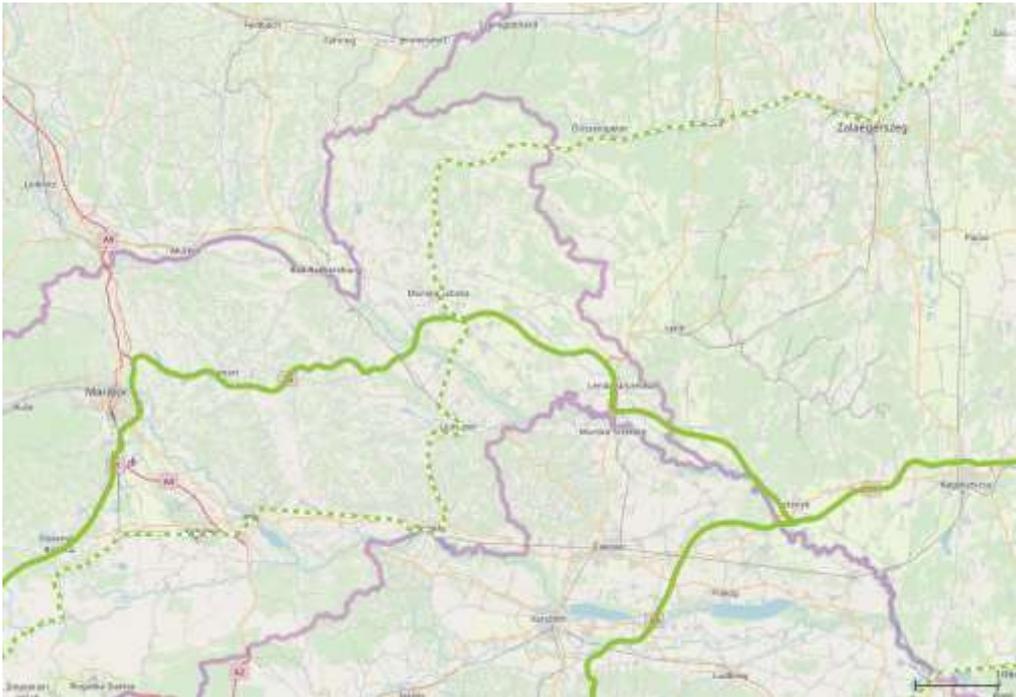
<sup>41</sup> Source: <https://www.volanbusz.hu/hu/menetrendek/helyi-jaratok> (08.05.2021).

### 8.3. Railway infrastructure

Hungary is among countries with the densest railway network in Europe, while Slovenia is ranked 10<sup>th</sup> in railway network density in the EU (UNECE, 2018). This difference is existing on the border regions as well, measuring network density on NUTS 2 level (Eurostat, 2017). Despite these relatively favourable macro data, population of the border region is having very limited access to cross-border rail services, with very low frequency, unfavourable journey time, which is valid for both sides of the border (Poelman, Ackermans, 2017).

The short border section is the crossing point of the main branch of the Mediterranean corridor (Lyon–Trieste–Koper–Ljubljana–Budapest–Ukraine – former corridor V) of the TEN-T core network, at Bajánsenye–Hodoš (Figure 46). The connection between the two countries has been established in 2001, electrified in 2010.

Railway infrastructure in both countries is concentrated in the state capitals. The railway lines connecting the Budapest and the major cities (Keszthely, Nagykanizsa, Szombathely, Zalaegerszeg) on the Hungarian side are all electrified. Out of the internal north-south axes on the Hungarian side the line 21 between Szombathely and Szentgotthárd is also electrified, however that line leads to Graz (Austria). More important from the point of view of internal cohesion of the Hungarian side is the line 17 (Szombathely–Nagykanizsa), which has been electrified in 2019 between Szombathely and Zalaszentiván, while the Zalaszentiván–Nagykanizsa section is still non-electrified (IHO, 2017). Further non-electrified railway connection is the line 23 (Zalaegerszeg–Lenti–Rédics), which has a relative regional importance, as it connects the county seat with the direct border area, however the line has no continuation to Slovenia. Line of local relevance is the Szombathely–Kőszeg section (line 18). On the Hungarian side there are two operators. The lines north from the Hodoš–Budapest corridor (line 25) are operated by the joint Austrian-Hungarian railway company (GYSEV), while the main corridor and all the lines in Zala are run by Hungarian national railway company (MÁV). Although railway density is relatively high on the Hungarian side, stations are often located far from the centres of the smaller settlements, therefore railway is used dominantly towards the national capitals, as they are less effective on regional and local level. In order to establish a new cross-border connection, plan has been made for the connection Rédics–Lendava.



46. Figure: The Mediterranean TEN-T corridor in the border area.

Source: <https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html> (05.02.2021).

On the Slovenian side the main axis is the Mediterranean corridor, which is composed of the section Hodoš–Ormož–Pragersko (lines 41 and 40). In Pragersko the line joins the Vienna–Graz–Maribor–Celje–Ljubljana line (line 30). Currently the entire section is electrified, as the Ormož–Pragersko section has also been electrified in 2016 (RTVSLO, 2016). There are two further cross-border lines of regional importance towards Croatia (Lendava–Mursko Središče and Ormož–Čakovec). The national rail operator Slovenian Railways (SŽ) runs both passenger and freight service in the border area.

In terms of cross-border traffic currently there is only one daily IC train between Budapest and Ljubljana which crosses the border area. Furthermore, on each workday there are four more connections from Zalaegerszeg to Hodoš, however to reach Murska Sobota, additional transfer is needed. Total journey time to Murska Sobota is beyond one hour. Maribor is accessible with the Budapest–Ljubljana IC train only, with a transfer in Pragersko. Maribor is more efficiently accessible from Szombathely through Graz, however journey times are beyond 4 hours<sup>42</sup>. Although frequency of trains may be considered sufficient, for efficient cross-border mobility direct connections should be established between the regional centres. Changes in the timetables would be crucial to support cross-border passenger traffic and tourism flow.

Beside standard-gauge railways a narrow-gauge service is operating between Lenti and Kistolmács, run by state forestry Zalaerdő Zrt., for tourism purposes.

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<sup>42</sup> Source: [fahrplan.oebb.at](http://fahrplan.oebb.at) (05.02.2021).

## 8.4. Bicycle infrastructure

The border region is crossed by two transcontinental EuroVelo routes:

- EuroVelo 9 (Baltic-Adriatic) crosses the Austria-Slovenia border at Šentilj, passes Maribor and continues towards the Adriatic (Slovenska Bistrica, Celje).
- EuroVelo 13 (Iron Curtain Trail) follows the former border of Hungary and Yugoslavia. In Vas county the route zigzags between Austria and Hungary, then at Felsőszölnök enters Slovenia. The route return to Hungary at Tornyiszentmiklós, then follow the Mura through Letenye and Murakeresztúr (Figure 47).
- EuroVelo 14 (Waters of Central Europe) enters Hungary at Szentgotthárd, then passes Óriszentpéter and Vasvár, then continues along the Balaton towards Budapest.

Beside the mentioned international routes in the past two programming periods several cycling infrastructure development projects were implemented creating a lot of new – often overlapping – routes and tourism products, *inter alia* the following worth mentioning due to cross-border relevance:

- Drava Route: following the Drava river from Maribor to Ptuj, Ormož, then entering Croatia.
- Parallel routes of EuroVelo 13 on the Hungarian side: in the area of Lenti several routes have been developed and signposted, providing alternatives to the route on the Slovenian side, including a new border crossing route at Lendavske Gorice.
- Cycle routes in the Raab-Őrség-Goričko Nature Park, often overlapping with EuroVelo, national and local routes.
- Amazon of Europe bike trail: developed through an Interreg Danube project that – beside signposted route and promotion – will provide bookable stages including accommodation and various supplementary services. This route largely builds on available sections of EV13 and the Drava Route.

It is important to mention that the Interreg V-A Slovenia-Hungary Cooperation Programme promoted the establishment of two new border crossings for cyclists:

- the Lendvadedes-Dedeskecskés–Dolga Vas connection as part of the Iron Curtain Cycling project; and
- the Orfalu–Budinci connection within the Guide2Visit project.



47. Figure: EuroVelo 13 along the border in Slovenia.

Source: ICC (2018; 21).

As most of the programme area is flat and small settlements are dominant that are in easily reachable short distance, cycling is a preferred mean of transport in the area, particularly in Pomurje. Besides longer distance tourism routes, due to EU funding, all major urban areas have been equipped with safe cycling infrastructure that serves commuting and leisure purposes as well. Lower traffic and forest roads offer opportunities for cycling, but for example, there are still further development opportunities, such as the route of the old railway line between Zalaölő and Óriszentpéter.

In the area full of hills, more people can be involved in cycling through the availability and rental of electric bicycles.

## 8.5. Air transport

There are two international airports in the area: in Maribor and Hévíz-Balaton International Airport at Sármellék. The Sármellék airport used to serve seasonal charter flights, between

May and October, from different German airports. Number of passengers peaked in 2014, since then tendencies were decreasing (Table 11). Due to the pandemic services have been stopped in 2020.

The Edvard Rusjan Airport in Maribor has been renovated in 2012, which was followed by opening of several lines to various German cities and charter flights. Scheduled flights have been stopped in August 2018 (Table 11).

Year	Arriving and departing passengers (pax)	
	Hévíz-Balaton (SOB)	Maribor (MBX)
2014	28 588	17 568
2015	15 748	24 886
2016	17 663	8 890
2017	13 229	6 000
2018	11 466	2 435
2019	9 123	--

11. Table: Traffic of international airports in the border region.

Source: own edition based on KSH, [https://en.wikipedia.org/wiki/Maribor\\_Edvard\\_Rusjan\\_Airport](https://en.wikipedia.org/wiki/Maribor_Edvard_Rusjan_Airport) (09.02.2021).

Besides the two international airports there are several smaller airfields in the area (Murska Sobota, Ptuj, Zalaegerszeg-Andráshida) that are used only for sport and leisure purposes.

## 8.6. Water transport

There is no navigable river in the border area. Sport-related (kayak, canoeing) navigation and small boats are used on the Drava, Mura and Kerka rivers.

Water transport is in operation on the Balaton lake, including the two ports in Zala county, Keszthely and Balatongyörök. During summer season besides scheduled cruise trips there are on-demand cruising and sport-related services available as well.

## 8.7. Conclusions

In terms of digital accessibility, the Hungarian side performs somewhat weaker than Slovenia, however tendencies are generally improving.

Although the border section is short, it is relatively well equipped with physical mobility infrastructure. The only cross-border railway line – despite the pandemic – is in operation. Public road infrastructure has undergone significant developments, moreover on the Hungarian side several new projects are under way. Due to Schengen accession several new border crossing points have been opened, that made the border very permeable, however the

pandemic situation made many of them closed last year. Cross-border bus connections are missing, though.

It is worth to stress the importance and favourable conditions of cycling infrastructure that has been developed, both infrastructure and service-wise in the past programming periods, including two new border crossings, however there is a huge untapped potential in cooperation in service provision.

## 9. Social inclusion

### 9.1. Labour market

Employment increased in the years before 2019 both on national level and in the border counties. While in Hungary the employment rate of Vas and Zala counties is higher than the national average, in Slovenia the employment rate of Pomurje and Pomurje remains below the national average. Employment is lower in the Slovenian border region than in the Hungarian territories. It can be seen from the Hungarian data of 2020 that the economic difficulties caused by the COVID 19 pandemic led to a decrease in the number of employees.

	2014	2015	2016	2017	2018	2019	2020
<b>Hungary</b>	54,1	55,9	58	59,3	60,1	60,8	60,2
<b>Vas</b>	58,6	60,6	60,2	61,3	63,4	64,3	62,6
<b>Zala</b>	54,4	55,3	57,5	59,8	60,9	61,5	60,3
<b>Slovenia</b>	57,2	58,2	59,6	62,1	64,5	66	
<b>Pomurje</b>	50,7	50,6	51,3	53,6	55,8	57	
<b>Podravje</b>	54	54,8	55,6	57,6	59,6	61,2	

12. Table: Employment rate age 15-74 (%).

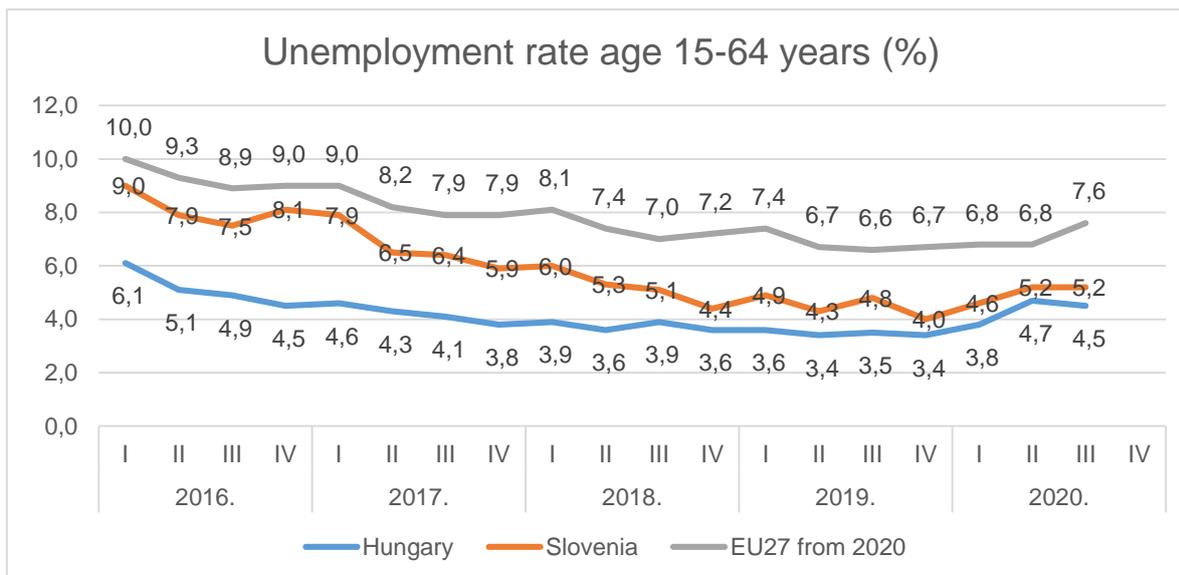
Source: own edition based on HCSO and SORS statistics<sup>43</sup>

As the employment rate improved, the number of unemployed and thus jobseekers decreased. In Hungary, the unemployment rate was record low in 2019, 2.4% in Vas County and 2.1% in Zala County. The low value of the unemployment rate is explained by the fact that jobseekers do not include persons employed by the state and local governments for public purposes. In Hungary, some of the long-term unemployed are offered jobs with state support, such as park care, so that they do not fall out of the world of work completely.

Unemployment has decreased not only in the Hungarian counties along the border, but also in Hungary. This favourable labour market process can be observed in both Slovenia and the EU27. In Slovenia 2019. IV. quarter was the most favourable unemployment rate, 4%. At the same time, it can also be seen that in 2020, as a result of the COVID-19 pandemic, the unemployment rate started to rise again.

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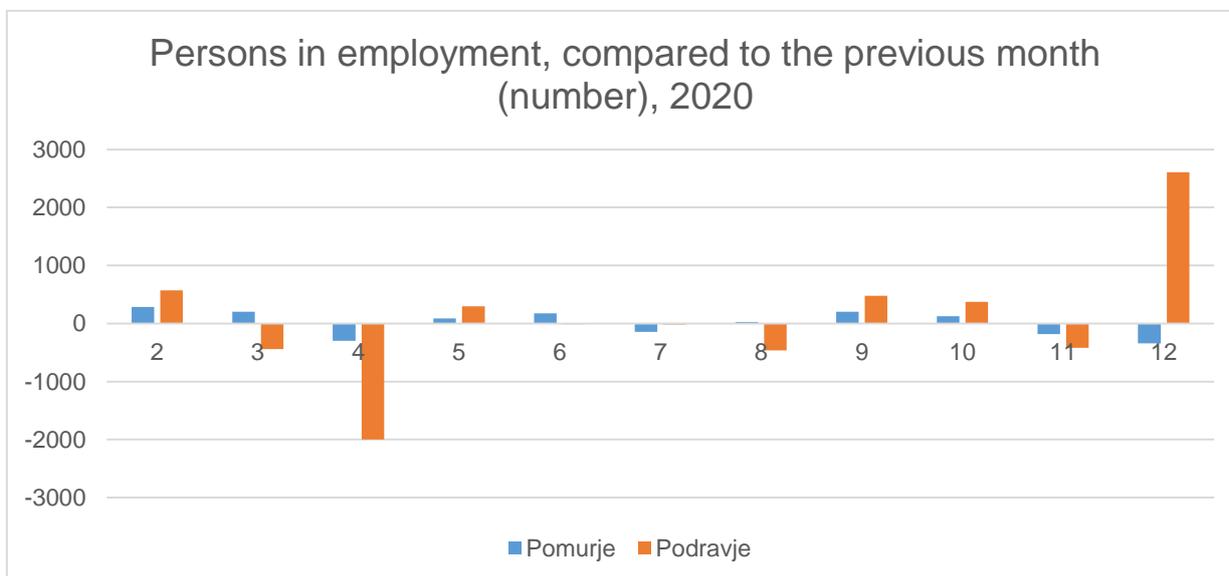
<sup>43</sup> Source: <https://pxweb.stat.si/SiStatData/pxweb/en/Data/-/0772820S.px/table/tableViewLayout2/>;  
[http://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_mef045.html](http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_mef045.html)



48. Figure: Unemployment rate age 15-64 years (%).

Source: own edition based on HCSO statistics<sup>44</sup>

In 2020, the measures ordered as a result of the COVID-19 pandemic and restricting community life and economic activity had a significant impact on employment. In Slovenia, the number of employees decreased in the other months of the year compared to January 2020. Pomurje, where agricultural activities dominate, was also less affected by the pandemic than the more industrialized Podravje region, given its lower population.



49. Figure: Persons in employment, compared to the previous month (number), 2020<sup>45</sup>

Source: own edition based on SORS statistics.<sup>46</sup>

<sup>44</sup> Source: [http://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_int013b.html](http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_int013b.html)

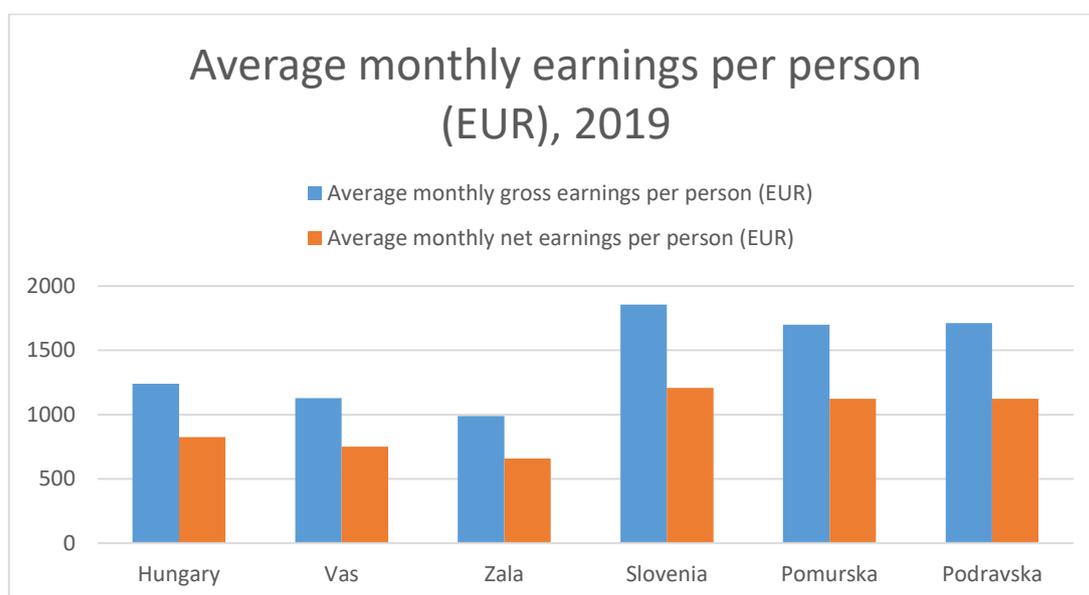
<sup>45</sup> This type of data is only available for Slovenia.

<sup>46</sup> Data only for Slovenian counties is available.

Recreational tourism is present in the employment of the border region; which sector has been most affected by the economic restrictions imposed due to the COVID-19 pandemic. It is recommended to encourage accommodation operators to diversify their business activities and start new businesses. In order to reduce economic risks, the development of accommodation facilities is proposed in the future, which will appear as a complementary activity to the existing main activity of the entrepreneur (e.g. agriculture, food production).

In Slovenia, the average monthly gross and net income is 61% higher than in Hungary. The lowest net income is in Zala County, which is 20% lower than the Hungarian average and 45% lower than in the Slovenian border areas. These income differences cause people living along the border to come to Slovenia from Hungary to work. From Hungary the most workers in a year, 390 people, moved to Slovenia to work in 2017, which by the time of 2019 was reduced by about half to 205 people. About 90% of Hungarians working in Slovenia are men.<sup>47</sup>

There are no significant income differences among Pomurje and Podravje regions, but in the region the income is about 7-8% lower than the Slovenian average.



50. Figure: Average monthly earnings per person (EUR), 2020, 351.17 average exchange rate HUF / EUR.

Source: own edition based on HCSO and SORS statistics.

<sup>47</sup> Source: <https://pxweb.stat.si/SiStatData/pxweb/en/Data/-/0723435S.px/table/tableViewLayout2/>

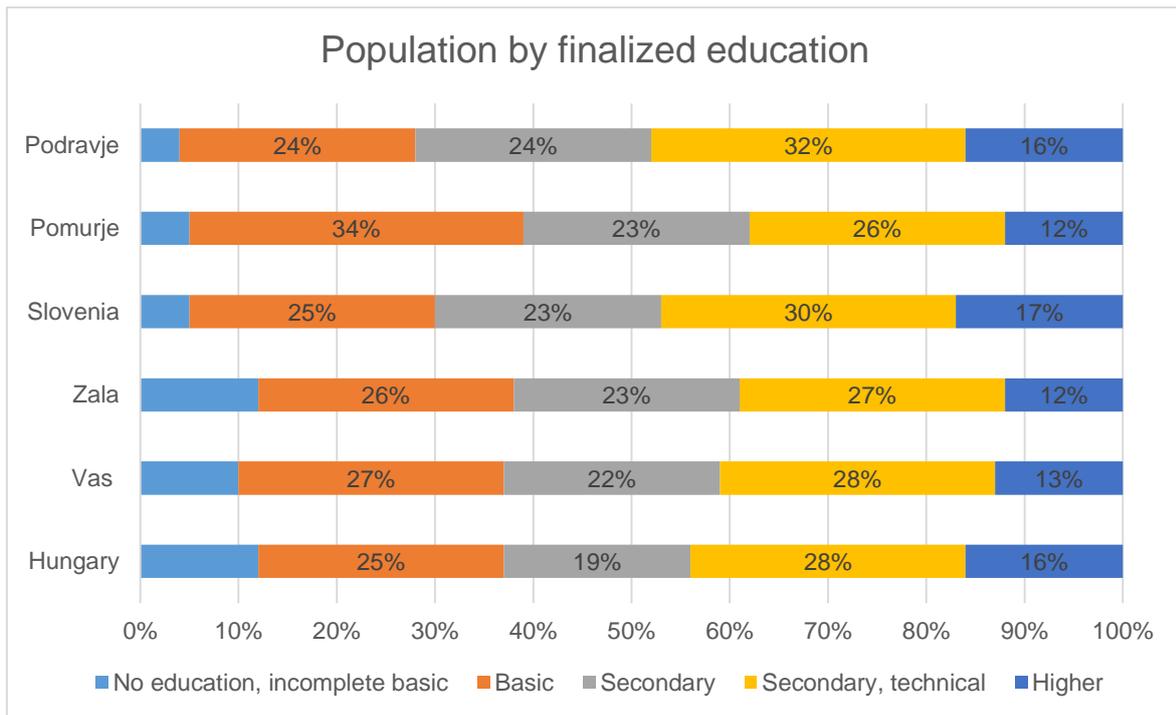
2020	Hungary	Vas	Zala	Slovenia	Pomurje	Podravje
<b>Average monthly gross earnings per person (EUR)</b>	1149	1044	916	1856	1699	1711
<b>Average monthly gross earnings (index, HU and SI=100)</b>	100%	91%	80%	100%	91,53%	92,18%
<b>Average monthly net earnings per person (EUR)</b>	764	695	609	1209	1124	1122
<b>Average monthly net earnings (index, HU and SI=100)</b>	100%	91%	80%	100%	92,97%	92,82%

13. Table: Average monthly earnings per person (EUR), 2020, 351.17 average exchange rate HUF / EUR.

Source: own edition based on HCSO and SORS statistics.

## 9.2. Education and training

The composition of the population by educational level differs in the region: the level of education is higher in Podravje than in the other parts of the examined border region, the proportion of people with a higher educational degree exceeds those recorded in Pomurje, Vas or Zala (the figures of these latter three counties are below the national averages as well).



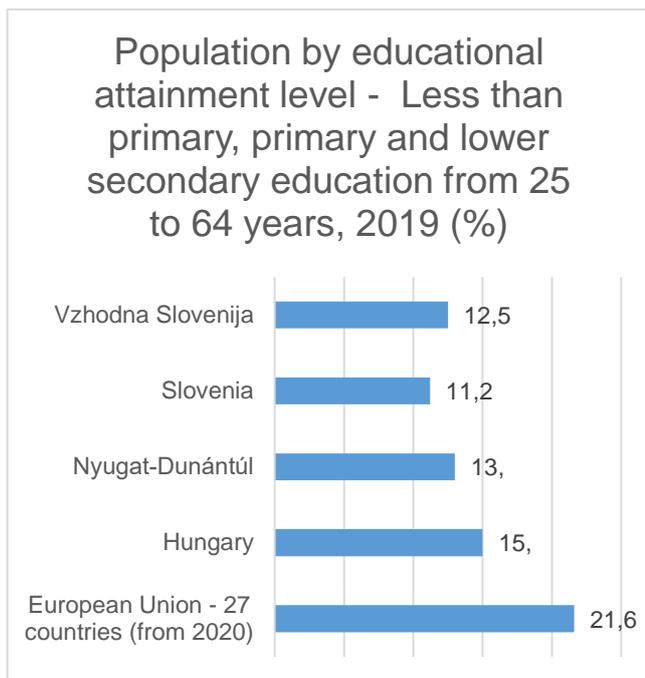
51. Figure: Population by education in 2011.

Source: own edition based on HCSO and SORS, Eurostat statistics<sup>48</sup>

Within the population, the border region has a lower proportion of the low-educated population than the EU-27. In Western Transdanubia, the proportion of the population with a low level of education within the population aged 25-64 is half % higher (13%) than in Slovenian territories. The population with a higher level of education than the EU average is a reliable workforce for the economy and innovation.

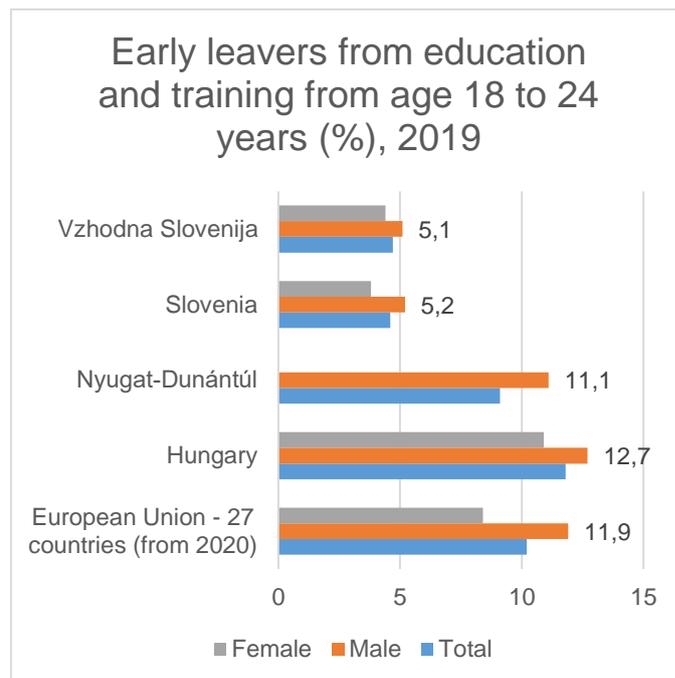
<sup>48</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/EDUC\\_REGIND\\_custom\\_594674/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/EDUC_REGIND_custom_594674/default/table?lang=en)



52. Figure: Population by educational attainment – less than primary, primary and lower secondary education from 25-64 year, 2019 (%).

Source: own edition based on Eurostat statistics<sup>49</sup>



53. Figure: Early leavers from education and training from age 18 to 24 years (%), 2019.

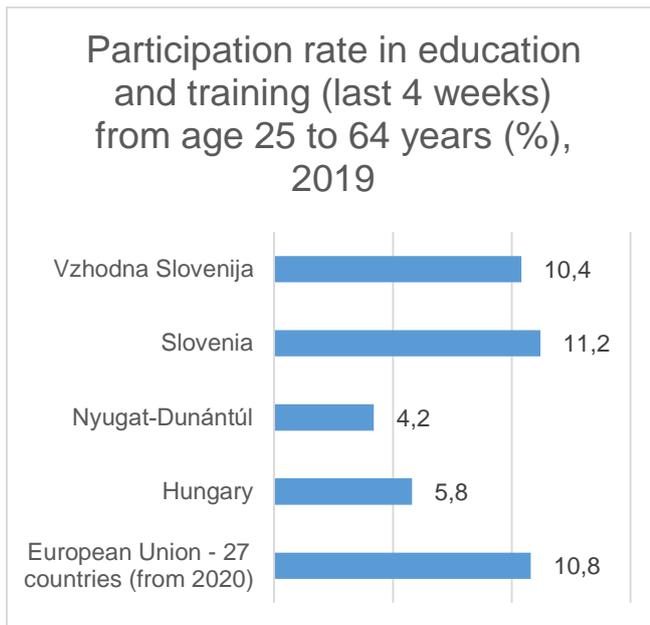
Source: own edition based on Eurostat statistics<sup>50</sup>; Data of female is not available in Nyugat-Dunántúl.

One of the major reasons for low educational attainment is early school leaving. In Hungary and the border region, the rate of early school leaving is close to the EU27 average, while in the Slovenian areas it is around 5%, which is less than half of value of the Western Transdanubia region. Male have a higher proportion among the early school leavers than the female. Hungarian secondary schools can learn from Slovenia on good practices and experiences in the treatment and prevention of early school leaving.

<sup>49</sup> Source:

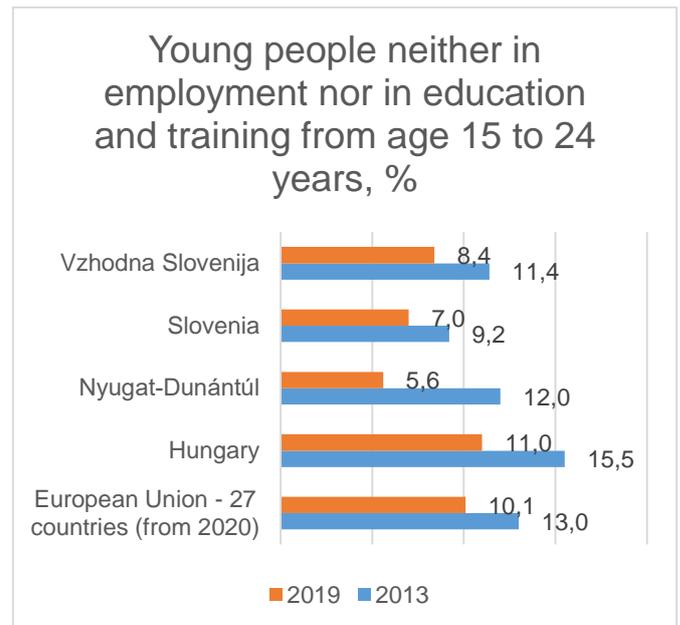
[https://ec.europa.eu/eurostat/databrowser/view/EDAT\\_LFSE\\_33\\_custom\\_594669/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/EDAT_LFSE_33_custom_594669/default/table?lang=en)

<sup>50</sup> Source: [https://ec.europa.eu/eurostat/databrowser/view/edat\\_lfse\\_16/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_16/default/table?lang=en)



54. Figure: Participation rate in education and training (last 4 weeks) from age 25 to 64 years (%), 2019.

Source: own edition based on Eurostat statistics<sup>51</sup>



55. Figure: Young people neither in employment nor in education and training from age 15 to 24 years, %.

Source: own edition based on Eurostat statistics<sup>52</sup>

Those with lower levels of education are more likely to become unemployed. In the case of young people between the ages of 15 and 24, the proportion of those who were neither educated nor employed decreased by 2019, which is related to the economic recovery. The involvement of young people in education or employment was the most favourable in Western Transdanubia, 3% points better than in Eastern Slovenia.

		Hungary	Vas	Zala	Slovenia	Pomurje	Podravje
Number of children in kindergartens (by pre-school provider)	0-3 year, nursery	45,889	961	1,091			
	3-6 year	330,539	7,965	7,807	87,708	3,985	12,584
Number of pupils		720,329	17,127	18,361	190,156	9,064	27,010
Number of upper secondary school pupils (by residence)			10,287	10,183	72,738	3,705	10,609
Number of tertiary students (by residence)		186,797	3,897	4,299	76,728	3,265	9,898
Tertiary students (per 1,000 population)		19	15	16	37	29	30

14. Table: Key data of people involved in education, 2019.

Source: on own edition based on HCSO and SORS statistics<sup>53</sup>

<sup>51</sup> Source: [https://ec.europa.eu/eurostat/databrowser/view/trng\\_lfse\\_04/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/trng_lfse_04/default/table?lang=en)

<sup>52</sup> Source:

[https://ec.europa.eu/eurostat/databrowser/view/EDAT\\_LFSE\\_22\\_custom\\_594662/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/EDAT_LFSE_22_custom_594662/default/table?lang=en)

<sup>53</sup> Source: <https://www.stat.si/obcine/en/Region/GroupedAll/1> and <https://www.stat.si/obcine/en/Region/GroupedAll/2>

In primary education, there is typically no cross-border attendance, however there are exceptions. Such is the Slovenian and Hungarian language school in Prosenjakovci (Pártosfalva), where children from the Óriszentpéter area also attend. In primary school education, there is a need to exchange experiences and teaching methods. On the Hungarian side, it is especially important to improve the quality of education, as more modern or foreign-language education can be a significant attraction for the settlement of intellectuals, higher educated people.

Schools and kindergartens have a major role in environmental education and raising awareness of sustainability values. The valuable natural environment is suitable for kindergartens and schools to try out various alternative, outdoor teaching methods. In addition to sustainability, digitalization is a defining trend today, which can be prepared for in primary school with electronic and robotics experiential education programs.

The exchange of experiences of secondary schools are also relevant in order to get to know each other's methods of vocational education.

The proportion of students in higher education is much higher in Slovenian areas than in Hungarian counties, but in both cases the value of the border region is lower than the national average. The higher education institutions are presented under the chapter R&D, the cooperation in training programme or development of curriculum can be the task of future projects.

In adult and higher education, cross-border learning, which has language barriers, can be a realistic goal. Trainings and educational programmes in Hungarian, Slovenian, English and German can attract students from both sides of the border.

There may be a need to provide a place for a company / institutional internship in a neighbouring country for students in vocational training and higher education (e.g. teacher training in Hungarian). The obstacles of cooperation in practical trainings of vocational education must be handled by the cooperation of interested schools and national level institutions dealing with the regulations.

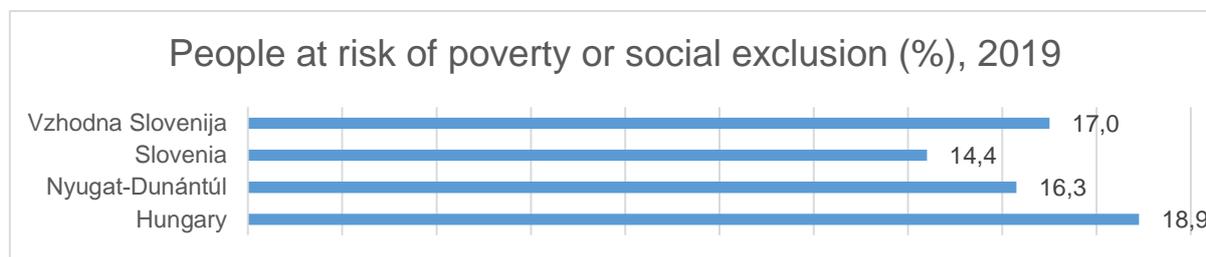
Lifelong learning is a realistic expectation for the continuous updating of skills and professional knowledge and for the continuous adaptation to economic, social and environmental changes.

High-quality education plays a major role in retaining and attracting the population, which requires the development of school and non-formal education systems. For cross-border cooperation, it is important to know each other's language and a common language of communication, German or English. Language learning should be encouraged at school age.

### **9.3. Socioeconomic integration of marginalised groups, social care**

The rate of people at risk of poverty or social exclusion is almost similar in the Hungarian and Slovenian border area. While in the eastern part of Slovenia the poverty risk rate is higher than the national average, in Hungary the border region is in better situation compared to the national value.

The unemployed people, people with low education and without professions, low educated and pensioners with low pension salary belong to the group of people at risk of poverty.



56. Figure: People at risk of poverty or social exclusion (%), 2019.

Source: own edition based on Eurostat statistics<sup>54</sup>

In addition to those with low incomes, it is difficult to provide social services due to the low population density in the immediate vicinity of the border and the sparsely populated areas due to the peculiarities of the settlement structure. In sparsely populated areas, it is more difficult to organize social care.

Due to the aging population in the border area, the care of the elderly is a priority. In Hungary, home care service is relatively well organized, and additionally in villages of less than 500 people village caretakers with cars also participate in the home care service. MOTIVAGE project is being implemented under the coordination of the Muraba EGTC, primarily for the purpose of exchanging experiences and mutual learning. In the future, not only expanding care capacity (increasing the number of social care providers) but also improving the efficiency of services through modern digital solutions will be a challenge. For example, the use of modern IT solutions and applications for the health and property safety of the elderly. There is a need to train participants in social care, as the neighbouring country Austria also has a significant labour-absorbing effect in the social and health spheres.

At the same time, there is a growing demand for new capacities in residential nursing homes, the development and operation of which is also a challenge. The public sector should primarily help those on low incomes, but market-based solutions also have a role in elderly care.

In the course of social care, providers also have to deal with mental problems related to loneliness and confinement, which problems intensify during the COVID-19 pandemic.

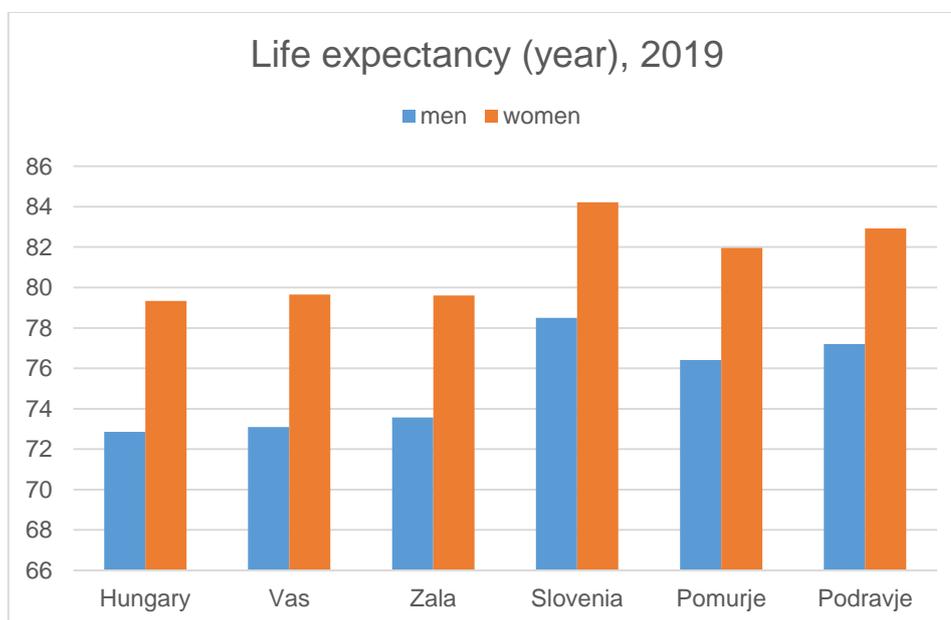
#### 9.4. Health care

Health status also determines quality of life and employment opportunities. The development of good health is significantly influenced by lifestyle, but it is also affected by the quality of the health care system.

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<sup>54</sup> Source: [https://ec.europa.eu/eurostat/databrowser/view/ilc\\_peps11/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/ilc_peps11/default/table?lang=en)

The life expectancy is generally higher in Slovenia, both on country level and in the border region. Both in the Hungarian and Slovenian part of the Programme area women live longer than men.



57. Figure: Life expectancy 2019.

Source: own edition based on HCSO, SiStat<sup>55</sup>

The level of health expenditure as a share of GDP also differs in the two countries. In Slovenia, 8.3% of GDP was spent on health expenditures in 2018, while in Hungary only 6.6%.

There are three levels of health care services: primary care is available through family doctor services in all settlements. In Hungary, the organization of primary care and weekend duty is the responsibility of local governments. Second level, specialist care is usually available in district cities, while active hospital beds are only available in larger cities. In Hungary, in recent years, active care, such as surgical intervention sites, has been concentrated in county ranked towns (Szombathely, Zalaegerszeg, Nagykanizsa), while in smaller towns emergency care, special treatment, care for chronic patients or rehabilitation places have been established. Hospitals and specialist clinics are maintained by the state.

In Vas county, the Markusovszky University Teaching Hospital in Szombathely is the dominant facility, with branches in Celldömölk, Körmend, Kőszeg, Szentgotthárd and Intaháza. There is an independent hospital unit in Sárvár. There are hospitals in Zalaegerszeg, Nagykanizsa and Keszthely in Zala county. In Hévíz, linked to spa services, the rheumatology and rehabilitation hospital receive patients.

<sup>55</sup> Source: [http://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_wdsd008.html](http://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_wdsd008.html); <https://pxweb.stat.si/SiStatData/pxweb/en/Data/-/05L4010S.px>

In Podravje, two hospitals, Maribor University Medical Center and Jože Potrč General Hospital of Ptuj, serve patients, while in Pomurje, Murska Sobota General Hospital and Ormož Psychiatric Hospital provide healing activities.

Outstanding death cause in Hungary and Western Transdanubia is connected to the circulatory system. Neoplasms and malignant neoplasms are the leading causes of death in both, Slovenia and Hungary. Respiratory and digestive system diseases are also decisive in the order of causes of death. There are also significant death figures caused by external circumstances, which include suicide falls and accidents. The aging of society is accompanied by an increase in the number of age-related diseases.

In healthcare, the use of cross-border services is not typical, but if administrative procedure were simpler, the use of health care services from the cross-border area could increase.

The health system has been under particular pressure from the COVID 19 pandemic, which each country has tried to address within its own borders. It is not ruled out that pandemics are expected in the future that could test the health care system. Therefore, it is important to have a well-prepared health emergency and intensive care system in the region. Sharing experience in pandemic management can also bring results in the future. But experience has shown that one of the most important is the population with a strong immune system.

Therefore healthy living and health care are becoming increasingly important in people's lives. In order to improve the efficiency of the health care system, it is necessary to develop and implement modern diagnostic, treatment, rehabilitation, prevention and monitoring procedures. Health-related development needs can also create new jobs in the region in cooperation with companies, universities and research institutions.

## **9.5. Conclusion**

The employment situation gradually improved in the second half of the last decade (years of 2010) on both the Hungarian and Slovenian sides. However, the effects of the COVID-19 pandemic have slightly increased the number of job seekers. In general, the most difficult employment situation is for those with a low level of education or other disadvantages in the labour market (e.g. the disabled, the elderly, the addicted), most of whom are long-term unemployed. Mutual employment along the border is not typical, due to higher wages, workers from the Hungarian side move to Slovenia to work. Lack of common language skills is a barrier to cross-border employment.

The population of the border area is better educated than the EU average, but those without a profession are in the most difficult position in terms of employment. There are still many opportunities for cooperation in the field of training, for the time being in some cases Hungarian students go to Slovenian bilingual primary schools. On the Hungarian side, a need arose that a high-quality primary or grammar school education could have a significant population-retaining and attractive force among the highly qualified population. Among the challenges in education, the possibility of exchanging experiences between institutions should be sought, even for new forms of education, e.g. by introducing learning in nature. In the case of common

language skills, joint vocational training, adult education trainings or practical / company trainings in the neighbouring country can be implemented in the border area.

University education is present on both sides of the border in the larger cities (there is a serious multidisciplinary university in Maribor), but there are still untapped opportunities for learning collaboration.

From a social point of view, the biggest problem is aging and the loneliness of the elderly in low-population villages. The social welfare system is under increasing pressure due to the aging population and the emigration of young people. It means a clear need for common development of social care system, especially at the rarely populated villages along the border.

In healthcare, the use of cross-border services is not very common, the administrative barriers to this need to be removed. In both social care and health care, it is recommended to introduce modern technical solutions offered by the digital acquis and improving the efficiency of care. The COVID-19 pandemic also pointed out how important prevention and health maintenance are, so following a healthy lifestyle will become more and more popular: such as more frequent movements, trainings, healthy food consumption, conscious nutrition, etc.

## 10. Cultural heritage and relations

In terms of UNESCO-protected world cultural heritage, the border area is included in the Intangible Cultural Heritage of Humanity item “Door-to-door rounds of Kurenti” (inscribed in 2017), which is a tradition of the area in Ptuj, celebrated in the carnival period. Being a living tradition, there are many Kurenti associations in the area, moreover it is included in education of kindergartens and elementary schools.<sup>56</sup> On the tentative list of UNESCO World Heritage since 2017 the Balaton Uplands Cultural Landscape is included, which covers the north coast of the Lake Balaton, including the Lake Hévíz, the Festetics Castle of Keszthely with its park, the historic building of the Georgikon Farm<sup>57</sup> that are located in Zala county, being also among the most significant tourism magnets of the Hungarian side. The Hungarian side of the border area is rich in traditional rural heritage buildings – most well-known are the objects in Göcsej and the Őrség – which is also included in the tentative list since 2017.<sup>58</sup>

Beyond world heritage items it is worth to point out the nationally and regionally significant heritage elements, which are bases of the border area’s image and important foundation of the tourism attractions. The most important sites in regional breakdown:

- Podravje: the City of Maribor (including natural, built and sacral heritage), Ptuj (the oldest town of Slovenia), the Ormož castle, winemaking tradition concentrated in Jeruzalem and its surroundings;
- Pomurje: the historic centres of Murska Sobota and Lendava, Grad na Goričkem (the largest baroque castle in Slovenia), the Romanesque rotunda in Selo, pottering culture of Dobrovnik and Ljutomer, wine making in the area of Lendava, the numerous lakes in the region;
- Vas county: the urban centres of Szombathely, Szentgotthárd, Körmend (castle), the Őrség area (Őriszentpéter and the surrounding villages), the Ják Church, pottering culture of Magyarszombatfa;
- Zala county: rural architecture of Göcsej, the Hetés ethnographic area, rural churches and belfries, the bunker of Lovászi, natural and industrial heritage in the area of Bázakerettye, the Kis-Balaton reserve, the numerous lakes in the county.

As horizontal element of both natural and cultural heritage the spa culture should be particularly mentioned, showcased by the numerous spa facilities (e.g. Bük, Hévíz, Lendava, Lenti, Moravske Toplice, Radenci, Sárvár, Zalakaros).

An in-depth analysis of heritage elements and their accessibility, connectivity through thematic routes was provided by the Iron Curtain Cycling project.<sup>59</sup>

In cultural relations minorities play a key role. Hungarian minority is concentrated in Pomurje, while Slovene minority (Pomurje Slovenes) live in the area of Szentgotthárd (Monošter). The region has a significant Roma minority as well.

Most important institutions of Hungarian cultural life are the Hungarian National Cultural Institute in Lendava, which is home to several civil organisations being active in cultural life.

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<sup>56</sup> <https://ich.unesco.org/en/RL/door-to-door-rounds-of-kurenti-01278> (02.04.2021)

<sup>57</sup> <https://whc.unesco.org/en/tentativelists/6269/> (02.04.2021)

<sup>58</sup> <https://whc.unesco.org/en/tentativelists/6264/> (02.04.2021)

<sup>59</sup> <http://www.icc.zala.hu/en> (02.04.2021)

The Pomurje Hungarian Radio (MMR) is part of the Slovenian national broadcaster; however, its reception area includes the Hungarian side of the programme area as well. In fact, it has become a cross-border regional radio station. In Lendava also Hungarian public school institutions are operating.

Slovene cultural institutions in Hungary are concentrated in the area of Szentgotthárd, where the Association of Slovenes of Hungary is operating. This organisation has ten cultural artist groups, regularly organising various cultural events, art workshops for adults and children (painting, sculpturing), publishing volumes and offering language courses also for the non-Slovenian local population. Szentgotthárd is also the seat of the Slovene-language Radio Monošter. The Republic of Slovenia has general consulate in Szentgotthárd, also Hungary has a general consulate in Lendava. The Slovene minority self-government is seated in Felsőszölnök. It maintains two public primary schools, in Felsőszölnök and Apátistvánfalva.

## 11. Territorial governance

### 11.1. National structures

European integration process has been a key facilitator of developing capacities of project generation, preparation and implementation in the border area. In Slovenia there is no politically elected regional government. According to the law of regional development on NUTS 3 level (statistical regions) the community of local governments sets up regional development councils. Besides the council, local governments may set up regional development agencies as well. In Podravje the Maribor Regional Development Agency is operating. In Pomurje several smaller regional development organisations exist, forming a regional development partnership: Development Centre Murska Sobota, Sinergija Development Agency (Moravske Toplice), PORA Development Agency Gornja Radgona, Prleška Development Agency (Ljutomer) and Tourism and Development Institute Lendava.<sup>60</sup>

In Hungary the 1996: XXI. Act on Regional Development and Spatial Planning defines the basic framework of regional development, including role, responsibilities and the relevant development documents on various levels. On subnational level the law defines the county governments as coordinators of regional development, which are responsible for their own development concept and participation in the development of the national documents as well. The public administration reform since 2011 has generally changed responsibilities in public service provision, strengthening the role of the state, through its various administrative bodies and agencies (governmental offices, agencies for education and health service etc.). In spite of the significant downsizing at county administrations, they are key players in promotion, project generation and implementation. Beside the counties, local governments – in particular those with significant administrative capacities (district centre towns) – are further key players, also being active in cross-border cooperation.

In terms of NUTS 2 structure, in Slovenia both statistical regions (NUTS 3) belong to the region of Eastern Slovenia. In Hungary, also, both counties are part of Western Transdanubia as NUTS 2 region.

Out of the tools of integrated territorial development, Integrated Territorial Investment (ITI) is not applied neither in Slovenia, nor in Hungary. Concerning the tool Community-based Local Development (CLLD) in both countries in the rural areas local action groups (LAGs) within the LEADER programme have been set up. In the 2014-2020 period from the Hungarian side altogether 12 LAGs are operating (7 in Zala and 5 in Vas), thereof three are adjacent with the border area (Őrség Without Borders, Lenti Civic Association, Zala Green Heart)<sup>61</sup>. Most of the urban centres, such as Celldömölk, Hévíz, Keszthely, Körmend, Kőszeg, Nagykanizsa, Sárvár, Szombathely and Zalaegerszeg are not included in rural LAGs, but are beneficiaries of urban CLLD schemes. Both rural and urban CLLDs have set up their LAGs and working bodies. In Slovenia in the programme area altogether 11 LAGs are operating: 8 in Podravje and 3 in

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<sup>60</sup> Source: <http://pomurjeregion.si/regional-development-partnership/> (18.02.2021).

<sup>61</sup> Source: <https://umvp.kormany.hu/umvp-hacs-illeteksegiteruletei>, <http://gis.lechnerkozpont.hu/leader/> (18.02.2021).

Pomurje, thereof two are adjacent with the border (LAS Goričko and LAS Pri dobrih ljudeh (“at the good people”) – Cunder, Bedrač, 2018).

## 11.2. Cross-border governance

On macro-regional level of cross-border governance coordination mechanism of the EUSDR should be mentioned. Both Slovenia and Hungary play an active role in coordination of priority axes:

- Hungary is responsible for coordination of PA 2 (sustainable energy), PA 4 (water quality) and PA 5 (environmental risks);
- Slovenia is coordinator for PA 10 (Institutional Capacity & Cooperation).

All four PAs are highly relevant for the border area. For the new programming period a new EUSDR Action Plan has been published by the European Commission. The Action Plan is to be embedded into various EU programmes (Interreg and mainstream).

The Slovenia-Hungary border region is involved in altogether three European Groupings of Territorial Cooperation (EGTC). Out of these structures the most important one from the programme area’s point of view is the Muraba EGTC. The organisation was set up in 2017, for the sake of strengthening cooperation across the border, promotion of the rights of national minorities in the territories of mixed ethnic population (Pomurje and Porabje). Its founding members are the Town of Szentgotthárd, the Municipality of Lendava, the National Slovene Self-Government from Hungary, and the Mura Region Hungarian Self-Government Community from Slovenia.<sup>62</sup>

Another EGTC with Slovenian membership is the Pannon EGTC, initially established by Hungarian and Slovenian institutions in 2010, later in 2017 enlarged with Croatian members. Currently it counts 66 members, including three local governments from Slovenia (Lendava, Moravske Toplice and Ptuj). Its headquarter is located in Pécs, Hungary (outside the programme area). The Mura EGTC is a small, yet very active partnership, composed of 13 local governments from Zala county, but it has no members from Slovenia, only Croatia.

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<sup>62</sup> Source: <https://egtc.kormany.hu/egtc-in-hungary> (23.02.2021) and MURABA (2017).

## 12. SWOT

### PO1 – Smarter Europe

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Continuous economic development;</li> <li>- More favourable labour market situation than 6 years earlier;</li> <li>- Agricultural area, traditions of agriculture, forestry, local product producing;</li> <li>- Presence of technology lab;</li> <li>- University, research institutions and private sector located in bigger cities that can be part of the just and green transition;</li> <li>- Geothermal energy and mineral springs used in agriculture and tourism.</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>- Poor accessibility in terms of access to services and jobs and in terms of public transport between the villages and cities;</li> <li>- Few innovative SMEs in the border area;</li> <li>- Despite the potential, there are untapped R&amp;D and innovation links in the border region;</li> <li>- Partner countries below EU average in terms of digital economy and society indicators.</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Organic agriculture and food production;</li> <li>- Circular economy;</li> <li>- Innovative digital solutions in the area of health, social, learning and mobility services;</li> <li>- Unlocked potentials in development of digital services in various sectors.</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Economic and population decline.</li> </ul>

### PO2 – Greener Europe

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Area with high nature value, rich biodiversity and significant share of protected areas;</li> <li>- Rich cultural heritage and natural values mean a good basis for the sustainable tourism;</li> <li>- Geothermal energy and mineral springs used in agriculture and tourism.</li> </ul>	<p><b>WEAKNESSES</b></p>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Integrated management of biosphere reserves and protected areas.</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Groundwater pollution and lack of water supply (drinking water as a result of low precipitation and intensive agriculture);</li> <li>- Vulnerable to climate change.</li> </ul>

PO3 – More connected Europe

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Favourable location from transnational transport accessibility point of view (Mediterranean corridor);</li> <li>- High density of border crossings;</li> <li>- Availability of various bicycle infrastructure (EuroVelo and local routes).</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>- Limited access to railway services in the border area despite the availability of cross-border infrastructure axes;</li> <li>- Poor accessibility in terms of public transport between the villages and cities and lack of cross-border public bus connection.</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Upgrading internal transport linkages on both sides of the border may result better connectivity;</li> <li>- Existing airports may boost visits to major tourism magnets that may spill over to lesser-known destinations as well.</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Due to high density of transnational transport infrastructure in the border area the region may suffer from “tunnel effect”.</li> </ul>

PO4 – More Social Europe

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Population retention despite natural loss;</li> <li>- More favourable labour market situation than 6 years earlier;</li> <li>- Rich cultural heritage and natural values mean a good basis for the sustainable tourism;</li> <li>- Geothermal energy and mineral springs used in tourism.</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>- Ageing society and depopulation;</li> <li>- Poor accessibility in terms of access to services and jobs;</li> <li>- There are few cross-border links in the field of education;</li> <li>- There are few specialists in the field of social care;</li> <li>- Lack of cooperation in health care;</li> <li>- Partner countries below EU average in terms of digital economy and society indicators.</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Sustainable tourism;</li> <li>- Innovative digital solutions in the area of health, social, learning and mobility services (connected region).</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Economic and population decline;</li> <li>- The aging of the population is a serious burden on the social welfare system;</li> <li>- Decline of international tourism as a result of COVID-19.</li> </ul>

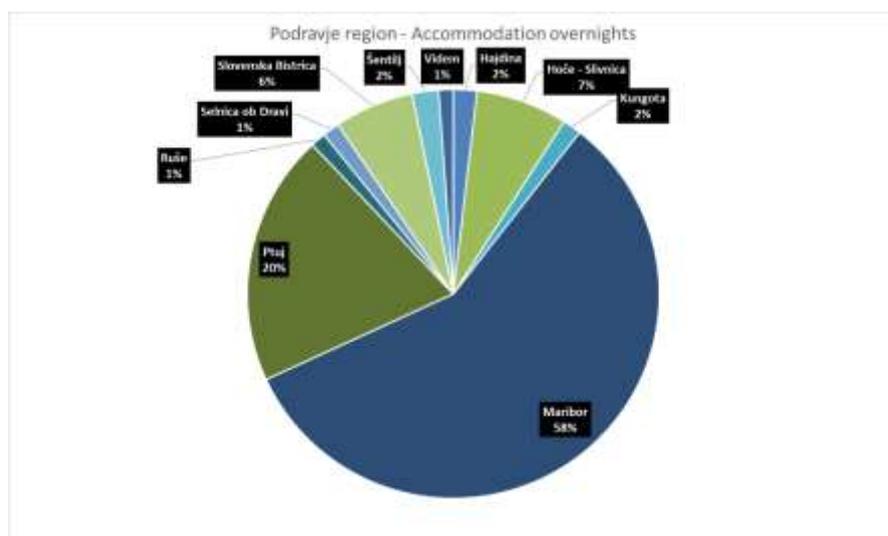
Interreg Specific Objective and PO5 - Closer to citizens

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>- Excellent political and cultural relations between the partner countries;</li> <li>- Different experiences in territorial governance structures.</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>- National level differences between the countries: Different institutional organisation and responsibilities, different ownership structure, different aspirations of Slovenia and Hungary;</li> <li>- Cross-border barriers (legal, administrative, infrastructure);</li> <li>- Language as a main obstacle for development (historically Iron curtain).</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- More active EGTCs may enhance benefits and visibility of cooperation among the local population.</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Lack of capacities in terms of potential partner organisations;</li> <li>- Due to minority-oriented nature of cultural cooperation, depopulation in the border area may lead to weakening of interest and capacities for cooperation.</li> </ul>

## 13. Annexes

### 13.1. Detailed charts – share of overnight stays of municipalities/districts within the regions/counties

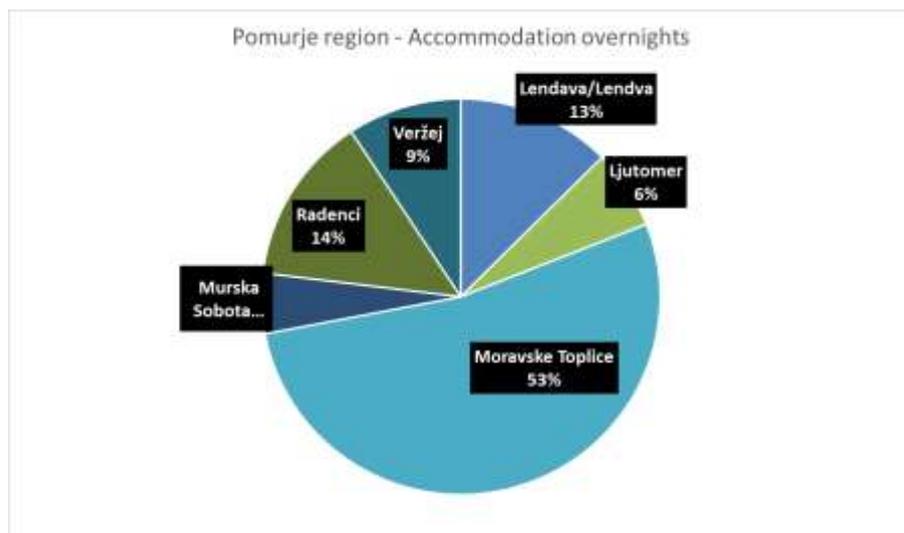
The highest share of overnight accommodations has Maribor municipality with 58%.



58. Figure: Share of the overnight stays by the municipalities in Podravje region

Source: own edition based on the statistics of SORS online database.

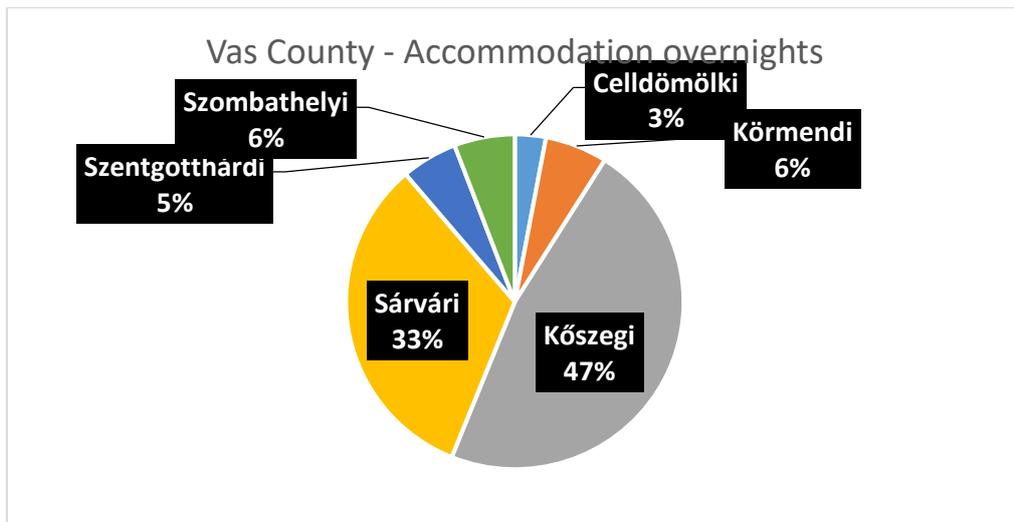
In Pomurje region has the highest share Moravske Toplice municipality with 53%.



59. Figure: Share of the overnight stays by the municipalities in Pomurje region

Source: own edition based on the statistics of SORS online database.

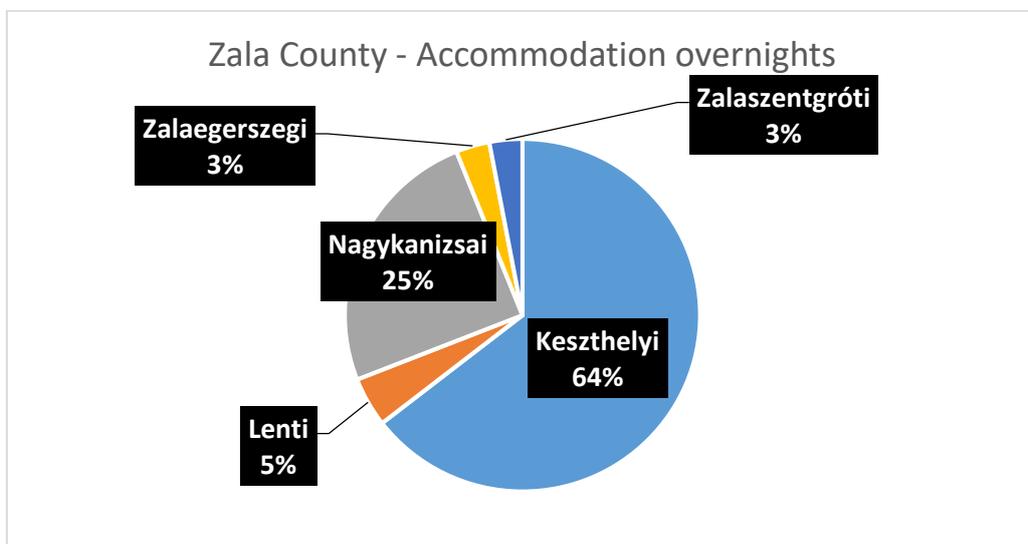
Kőszegi district (with Bük) has the highest share with 47%. in Vas County.



60. Figure: Share of the overnight stays by the districts in Vas County.

Source: own edition based on the statistics of HCSO online database.

Keszthelyi district includes Hévíz, having the highest share with 64%. in Zala County.



61. Figure: Share of the overnight stays by the districts in Zala County.

Source: own edition based on the statistics of HCSO online database

## 13.2. List of interviewed persons

### Slovenia:

- Litrop, Jasmina, Head of the Joint Secretariat Slovenia-Hungary, Government Office of the Republic of Slovenia for Development and European Cohesion Policy, European Territorial Cooperation and Financial Mechanism Office, Cross-border Programmes Management Division.
- Kaligarič Simona, Institute of Republic of Slovenia for Nature Conservation, Regional unit Maribor
- Krisch Mojca, Government Office of the Republic of Slovenia for Development and European Cohesion Policy, European Territorial Cooperation and Financial Mechanism Office, International Affairs and National Authorities Division, Monitoring Committee;
- Rener Tanja, Deputy Head of the Managing Authority, Deputy Chairperson of the Monitoring Committee;
- Rozman Uroš, director of Maribor Regional Development Agency;
- Skalič Aleš, Murska Sobota Development Centre.

### Hungary:

- Erdős Krisztina, Széchenyi Programme Office, Central Coordination;
- Kárpáti Veronika, Zala County Government;
- Kovács Andrea, Association of Slovenes in Hungary;
- Kovács Károly, Lenti and Area Public Nonprofit Ltd.
- Neuvirthné Bilics Anikó, Vas County Government;
- Szentirmai István, Órség National Park.

### 13.3. List of relevant strategic documents

For Slovenia:

Thematic area	Title of document	Validity period
Smart	National program of promoting development and use of artificial intelligence (draft)	2020–2025
	Research and Innovation Strategy	2011–2020
	Digital Slovenija 2020 - Information development strategy	2016–2020
	Smart Specialisation Strategy	2014-2020
Social	Active Aging Strategy	2018
	National Programme for Youth	2013
	National Social Assistance Programme	2013–2020
	Vocational Rehabilitation and Employment of Disabled Persons Act	2004–
	National Housing Programme	2015–2025
	National Programme of Sport of the Republic of Slovenia	2014–2023
Green	Biodiversity Conservation Strategy of Slovenia	2002–
	National Energy and Climate Plan	2020–2030
	Energy efficiency action plan	2017–2020
	Long-term climate strategy (draft)	2020–2050
Connected	Transport Development Strategy	2017–2030
Integrated	Sustainable Development Strategy for Slovenian Tourism	2017–2021
	Slovenia's Development Strategy	2017–2030
	Vision of Slovenia	2017–2050
	Rural Development Programme	2014–2020
	Strategy of the cultural heritage	2020-2023

For Hungary:

Thematic area	Title of document	Validity period
Smart	Strategy for strengthening Hungarian micro, small and medium-sized enterprises	2019–2030
	Digital Welfare Capital Program	2015–
	National Research and Development and Innovation Strategy	2013–2020
	Digital Agro-Strategy	2019–2022
	National Smart Specialisation Strategy	2014–2020
Social	Science Policy Strategy	2014–2020
	Public education development strategy	2014–2020
Green	The Second Climate Change Strategy of Hungary (NCCS-2)	2014–2025
	National Energy Strategy	2010–2030
	National Sustainable Development Framework Strategy	2014–2020
	National Strategy for the Conservation of Biodiversity	2015–2020

	National Landscape Strategy	2017–2026
	National Forest Strategy	2016–2030
	National Waste Management Strategy (updated strategy under development)	2012–2015
Connected	National Transport Infrastructure Development Strategy	2014–2020
Integrated	Regional Development Policy in Hungary	2014–2020
	Rural Development Strategy	2014–2020
	County Development Concepts	2014–2030
	Urban Development Concepts	2014–2020

## References

- Cunder T., Bedrač M. (2018): Ključna primerjava: LEADER in LEADER/CLLD v Sloveniji. [http://drustvo-podezelje.si/images/drustvo/aktualno/2018/Posvet\\_LAS\\_v\\_Lenartu/prezentacije/Primerjava\\_LEADER\\_in\\_CLLD\\_Lenart\\_Cunder\\_in\\_Bedrac\\_KIS.pdf](http://drustvo-podezelje.si/images/drustvo/aktualno/2018/Posvet_LAS_v_Lenartu/prezentacije/Primerjava_LEADER_in_CLLD_Lenart_Cunder_in_Bedrac_KIS.pdf) (18.02.2021).
- EC (2020a): Digital Economy and Society Index (DESI) 2020 Hungary. [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=66917](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66917) (05.02.2021)
- EC (2020b): Digital Economy and Society Index (DESI) 2020 Slovenia. [https://ec.europa.eu/newsroom/dae/document.cfm?doc\\_id=66929](https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=66929) (05.02.2021)
- Eurostat (2017): Railway lines density (km/1000 km<sup>2</sup>), by NUTS 2 regions. [https://ec.europa.eu/eurostat/statistics-explained/images/b/bd/Map\\_2\\_Railway\\_lines\\_density\\_by\\_NUTS\\_2\\_regions%2C\\_July\\_2017.PNG](https://ec.europa.eu/eurostat/statistics-explained/images/b/bd/Map_2_Railway_lines_density_by_NUTS_2_regions%2C_July_2017.PNG) (30.01.2020).
- ICC (2018): Iron Curtain Cycling. Kerékpáros tematikus utak kialakítása a határmenti régióban. Interreg Szlovénia-Magyarország.
- IHO (2017): Lefújták a 17-es alsó részének villamosítását. <https://web.archive.org/web/20171224220555/http://iho.hu/hir/lefujtak-a-17-es-also-reszenek-villamositasat-171205> (05.02.2021).
- Kavalov B., Kučas A., Batista e. Silva F., Kompil M., Aurambout J-P., Lavallo C. (2019): JRC Technical Reports – A Drive Time-Based Definition of Cross-border Regions and Analysis of Population Trends. <https://publications.jrc.ec.europa.eu/repository/handle/JRC116859> (03.02.2020).
- KSH [Central Statistical Office] (2018): Tér-kép, 2017. Központi Statisztikai Hivatal. [http://www.ksh.hu/docs/hun/xftp/idoszaki/pdf/ter\\_kep\\_2017.pdf](http://www.ksh.hu/docs/hun/xftp/idoszaki/pdf/ter_kep_2017.pdf) (08.02.2021).
- MURABA (2017): MURABA European Grouping of Territorial Cooperation Limited – Statutes. <https://muraba.hu/wp-content/uploads/2020/04/MURABA-EGTC-Statues-EN.pdf> (23.02.2021).
- Ministrstvo za kmetijstvo, gozdarstvo in prehrano (2017) Naravne nesreče, ki so prizadele kmetijsko proizvodnjo med leti 2003 in 2017, KGZS MARIBOR.
- Nádor, A., Lapanje, A., Toth, G., Rman, N., Szocs, T., Prestor, J., Uhrin, A., Rrajver, D., Fodor, L., Murati, J., Szekely, E. (2012): Transboundary geothermal resources of the Mura-Zala basin: a need for joint thermal aquifer management of Slovenia and Hungary. Geologija 55/2: 209-224. <http://www.geologija-revija.si/dokument.aspx?id=1159> (11.03.2021)
- National Development 2030 (2014): Parliament Resolution No. 1/2014. (I. 3.) OGY – National Development 2030 - National Development and Territorial Development Concept. [https://regionalispolitika.kormany.hu/download/b/c9/e0000/OFTK\\_vegleges\\_EN.pdf](https://regionalispolitika.kormany.hu/download/b/c9/e0000/OFTK_vegleges_EN.pdf) (01.03.2021).

Nyugat (2020): Hatvan százalékban kész az M8-as Kőrmend és Rábafüzes közti szakasza. [https://www.nyugat.hu/cikk/60\\_szazalekos\\_a\\_keszultsege\\_az\\_m8\\_as\\_kormend\\_es](https://www.nyugat.hu/cikk/60_szazalekos_a_keszultsege_az_m8_as_kormend_es) (08.05.2021).

Poelman H., Ackermans L. (2017): Passenger rail accessibility in Europe's border areas. Working Papers WP 11/2017, European Commission.

Rajver, D., Lapanje, A., Rman, N., Prestor, J. (2019): Geothermal Energy Use, Country Update for Slovenia. European Geothermal Congress 2019, Den Haag, The Netherlands, 11 – 14 June 2019. <http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/CUR-26-Slovenia.pdf> (11 .03.2021)

Regionalni Razvojni Program Podravja 2021–2027 (2020). <http://socialnaekonomija.si/wp-content/uploads/Osutek-RRP-Podravje-2021-2027-26.01.2021.pdf> (01.03.2021.)

Regionalni Razvojni Program Regije Pomurje Za Obdobje 2021–2027 – strateški del (2020)

RTVSLO (2016): Sedem let in skoraj pol milijarde evrov – proga Pragersko-Hodoš le končana. <https://www.rtv slo.si/gospodarstvo/sedem-let-in-skoraj-pol-milijarde-evrov-proga-pragersko-hodos-le-koncana/395351> (05.02.2021)

Somlyódy L., Simonffy Z. (2004): Water in Hungary: with Tradition and Unique Problems to the EU. Begegnungen

Schriftenreihe des Europa Institutes Budapest, Band 25:127–145.

SPRS (2020): SPRS Strategija prostorskega razvoja Slovenije 2050 (draft version). Republika Slovenija Ministrarstvo za okolje in prostor. [https://www.gov.si/assets/ministrstva/MOP/Dokumenti/Prostorski-razvoj/SPRS/SPRS-2050\\_gradivo-za-javno-razpravo.pdf](https://www.gov.si/assets/ministrstva/MOP/Dokumenti/Prostorski-razvoj/SPRS/SPRS-2050_gradivo-za-javno-razpravo.pdf) (1.03.2021)

UNECE (2018): Railway density. <https://w3.unece.org/PXWeb/en/CountryRanking?IndicatorCode=47> (05.02.2021).

## List of tables

1. Table: Main spatial indicators. ....	6
2. Table: Main demography indicators. ....	10
3. Table: GDP data, 2013 and 2018. ....	22
4. Table: 10 most valuable export products in relation to Slovenia and Hungary, 2019.....	23
5. Table: Main data of business demography 2014 and 2018.....	28
6. Table Rate of employment by economic activity (NACE Rev. 2) (%), 2019.....	30
7. Table: Main data of tourist turnover. ....	37
8. Table: Regional ICT statistics indicators for the programme area. ....	68
9. Table: The DESI composite index in the analysed countries. ....	69
10. Table: Border crossing points between Slovenia and Hungary. ....	73
11. Table: Traffic of international airports in the border region. ....	78
12. Table: Employment rate age 15-74 (%). ....	80
13. Table: Average monthly earnings per person (EUR), 2020, 351.17 average exchange rate HUF / EUR. ....	83
14. Table: Key data of people involved in education, 2019. ....	86

## List of figures

1. Figure Programme area.....	7
2. Figure: Change of population compared to previous year / 1000 persons between 2013 and 2020. ....	11
3. Figure: Causes of population change / 1000 persons between 2013 and 2019. ....	11
4. Figure: Life expectancy (year) between 2012 and 2019. ....	12
5. Figure: Population by age groups in 2020. ....	13
6. Figure: Programme area with the main cities and topography data. ....	15
7. Figure: Integration of polycentric urban system, traffic infrastructure in green infrastructure in concept spatial development of Slovenia. ....	16
8. Figure: Pomurje, Murska Sobota wider area.....	17
9. Figure: Podravje, Maribor wider city area. ....	18
10. Figure: International connections.....	19
11. Figure: Functional territories. ....	20
12. Figure: City network.....	21
13. Figure: Intramural R&D expenditure (Euro per inhabitant), 2018. ....	24
14. Figure: Total R&D personnel and reasearchers (FTE), 2018. ....	25
15. Figure: Tendency of key business demography data in 2018 compared to 2014.....	28
16. Figure: Tendency of key business demography data in 2018 compared to 2014.....	29
17. Figure: Ratio of total employment: Agriculture, forestry and fishing (age 15-64), 2019. ..	31
18. Figure: Land by type of cultivation (1000 ha) 2000. ....	32
19. Figure: Agricultural area of agricultural holdings (1000 ha),2016. ....	32
20. Figure: Tourism trends of incoming tourists – Total, overnight tourists – Total.....	38
21. Figure: Share of the overnight stays. Source: own edition based on the statistics of SORS and HCSO online database.....	39
22. Figure: Share of the overnight stays by the municipalities/districts in the regions/counties. ....	41
23. Figure: Main attractions of the transboundary biosphere reserve Mura-Drava-Danube. .	43
24. Figure: Type of tourism activities in the programme area.....	44
25. Figure: Tourism accommodation facility in Slovenia. ....	45
26. Figure: Tourism accommodation facility in Hungary.....	45
27. Figure: Natura 2000 in programme area.....	48
28. Figure: Transboundary UNESCO Biosphere Reserve. ....	49
29. Figure: Share of land use in 2017/2018. ....	50
30. Figure: Air pollution in the programme area - Real-time Air Quality Index (11.4.2021, 23.:40).....	51
31. Figure: Mean annual precipitation in Slovenia .....	52
32. Figure: Mean annual precipitation in Hungary.....	53
33. Figure: Share of abstraction from available ground water (groundwater recharge – blue (high) to orange shades (low), circles – abstracted groundwater relative to available groundwater).....	54
34. Figure: Number and share of surface water bodies by river basins in at least good (red colour) or moderate or worse (blue colour). ....	55
35. Figure: Water supply in Slovenia. ....	56
36. Figure: Flooding areas in Pomurje and Podravje .....	58

37. Figure: The amount of damage (in mio €) in some natural disasters from 2003 till 2016, that damaged the agriculture sector. ....	59
38. Figure: Waste management in Slovenia in 2018.....	60
39. Figure: Waste management in Hungary. ....	61
40. Figure: Total energy supply in Hungary, by source, 1990-2019 (light blue – coal, dark blue - natural gas, green – nuclear, yellow – wind, solar, etc, orange – biofuels and waste, red – oil) .....	63
41. Figure: Total energy supply in Slovenia, by source, 1990-2019 (light blue – coal, dark blue - natural gas, green – nuclear, yellow – wind, solar, etc, orange – biofuels and waste, red – oil) .....	64
42. Figure: TEN-T corridors in the border area. ....	70
43. Figure: Speedway development projects under way in Zala county, 2021. ....	71
44. Figure: Speedway development projects under way in Vas county, 2021 .....	71
45. Figure: Accessibility of border crossings in the Slovenia-Hungary border area. ....	72
46. Figure: The Mediterranean TEN-T corridor in the border area. ....	75
47. Figure: EuroVelo 13 along the border in Slovenia. ....	77
48. Figure: Unemployment rate age 15-64 years (%). ....	81
49. Figure: Persons in employment, compared to the previous month (number), 2020.....	81
50. Figure: Average monthly earnings per person (EUR), 2020, 351.17 average exchange rate HUF / EUR. ....	82
51. Figure: Population by education in 2011.....	84
52. Figure: Population by educational attainment – less than primary, primary and lower secondary education from 25-64 year, 2019 (%). ....	85
53. Figure: Early leavers from education and training from age 18 to 24 years (%), 2019. ...	85
54. Figure: Participation rate in education and training (last 4 weeks) from age 25 to 64 years (%), 2019.....	86
55. Figure: Young people neither in employment nor in education and training from age 15 to 24 years, %. ....	86
56. Figure: People at risk of poverty or social exclusion (%), 2019. ....	88
57. Figure: Life expectancy 2019.....	89
58. Figure: Share of the overnight stays by the municipalities in Podravje region.....	99
59. Figure: Share of the overnight stays by the municipalities in Pomurje region.....	99
60. Figure: Share of the overnight stays by the districts in Vas County.....	100
61. Figure: Share of the overnight stays by the districts in Zala County.....	100