

Sustainable **S**mart **S**pecialisation for the **R**e-opening
of **I**ndustrial **S**ites in the **D**anube Region (RIS4Danu)

Results regional analysis: Podravje Maribor

September 08, 2023

Dr. Simon Baumgartinger-Seiringer

The Team behind the analysis



**Univ.-Prof.
Michaela Trippi**



**Balazs Pager,
Postdoctoral researcher**



**Veronika Desch
Student Assistant**

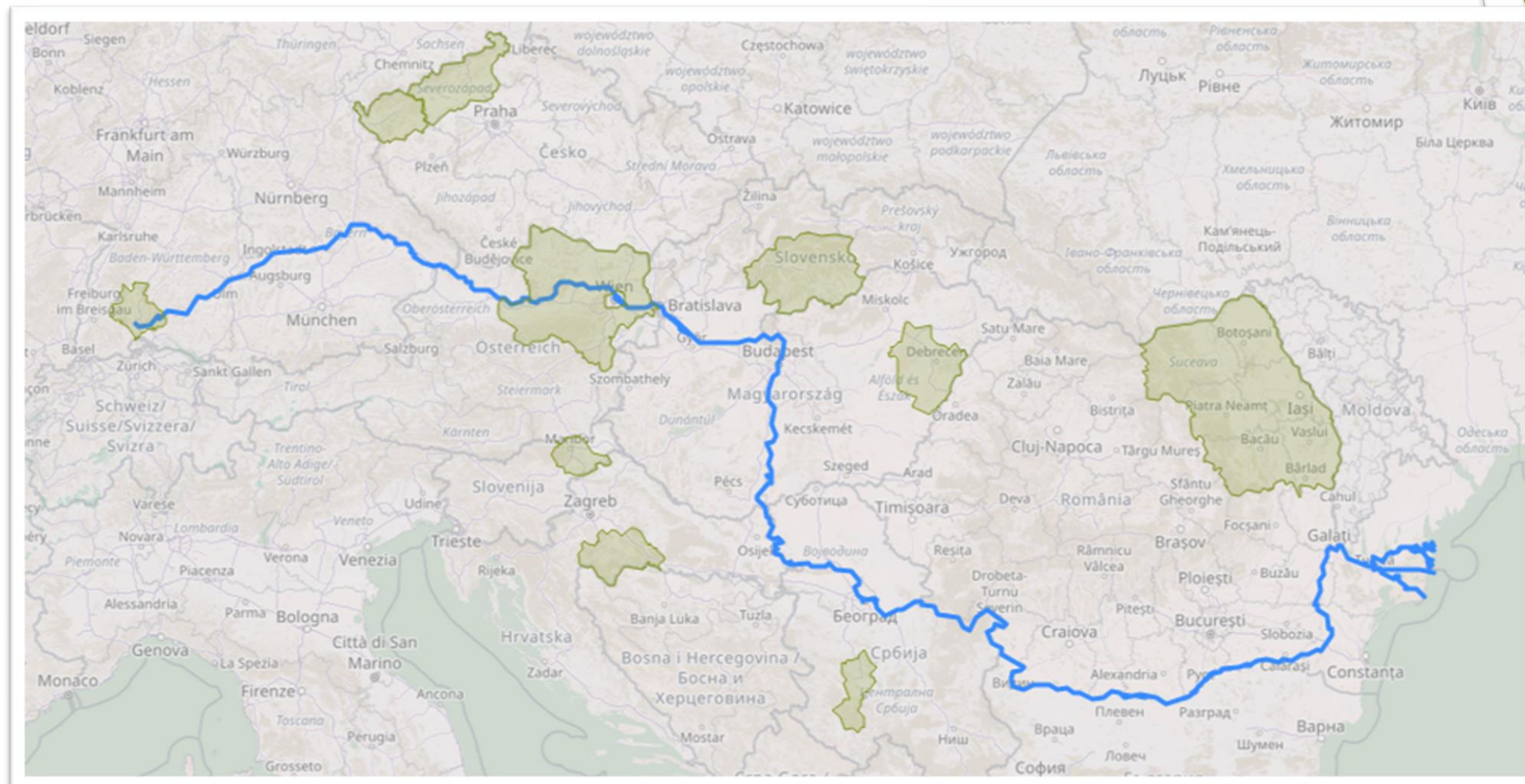


**Simon Baumgartinger,
Postdoctoral researcher**



Funded by the
European Union

RIS4Danu: Setting the scene



Source: RIS4Danu Website



Funded by the
European Union

Disclaimers

- ▶ Challenges are big & beyond the reopening of this single site --> **pragmatic, positive vision for a sustainable future**
- ▶ We are not going to present roadmaps or solutions, but **potential starting points for an Open Entrepreneurial Discovery Process**
- ▶ RIS4Danu: **2 years, 10 regions**



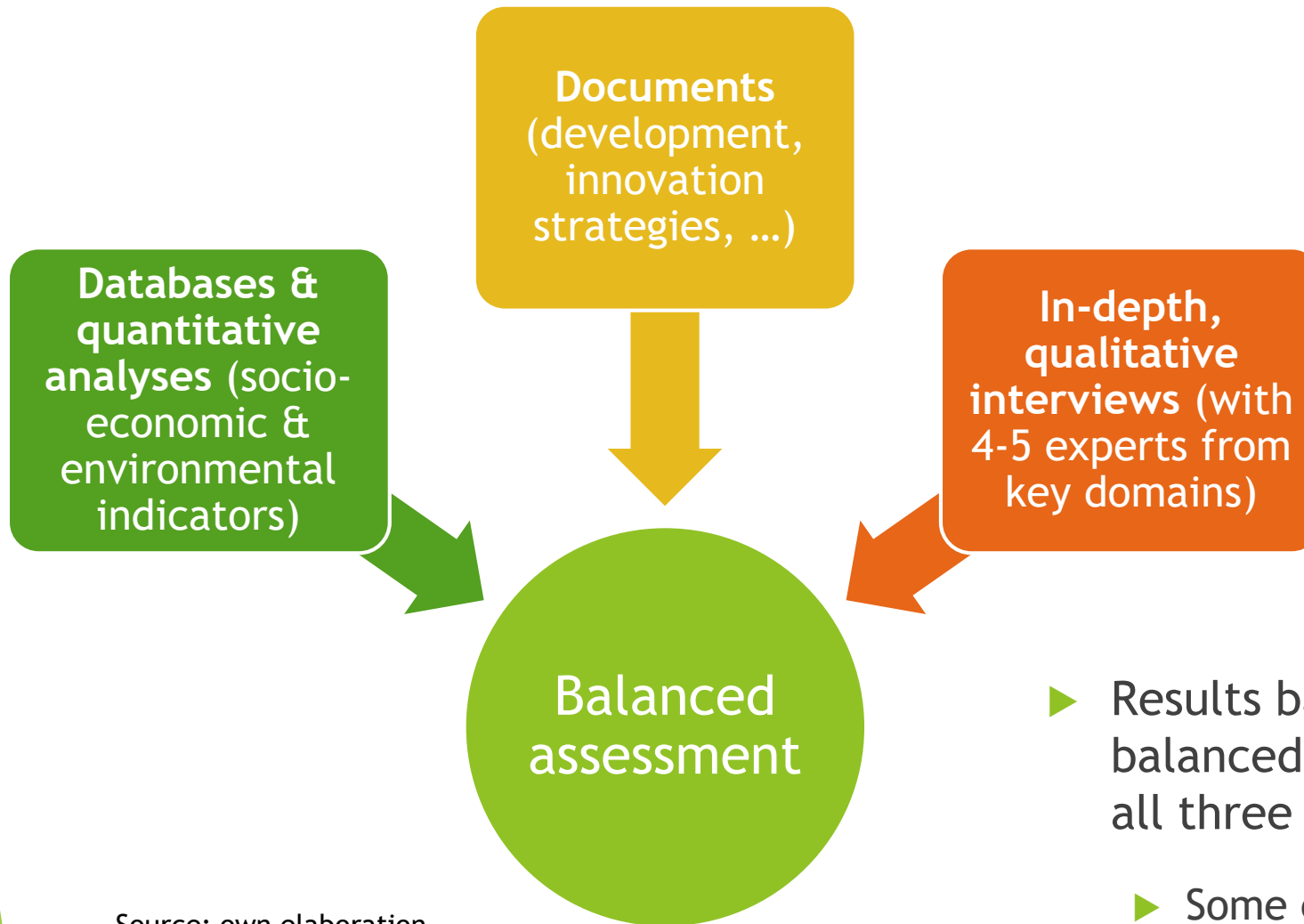
Regional analysis: Podravje region

Content of Analysis

- I. Methods
- II. General regional conditions & innovation strategies
- III. Regional Assets
- IV. Regional Challenges
- V. Conclusion



Methods



- ▶ Results based on a balanced assessment of all three sources
- ▶ Some caveats

Source: own elaboration

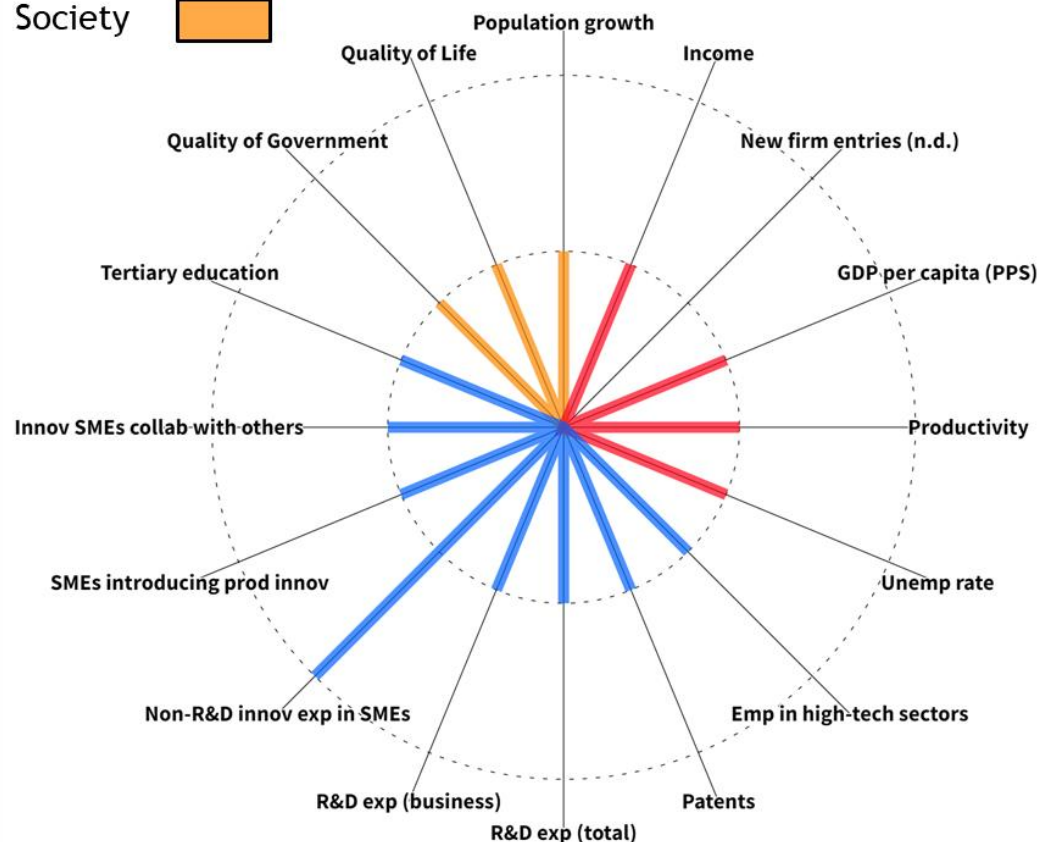


Funded by the
European Union

Vzhodna Slovenija NUTS-2 region

Legend:

Economy
R&D&I
Society



Source: RIS4DANU team's edition from the data of Eurostat, Regional Innovation Scoreboard, Quality of Governance Index and ESPON Quality of Life project

▪ **Reg Inno Scoreboard (2021): Moderate innovator -**

Top 3 industrial activities (% of the total workforce, 2019):

- Specialised construction activities (7.88%)
- Manufacture of fabricated metal products (7.47%)
- Manufacture of motor vehicles, trailers and semi-trailers (3.95%)

Top 3 most dynamic industrial activities* (growth rate of the workforce in the period 2014-2019):

- Manufacture of motor vehicles, trailers and semi-trailers (+50.3%)
- Manufacture of basic metals(+45.2%)
- Repair and installation of machinery and equipment(+25.8%)

*Only those activities have been included in which at least 1.5% of the total number of persons employed has been working



Funded by the
European Union

Documents: Key transformative fields

Regional development programme of the development region Maribor-Podravje 2021-2027 (2021)

Sustainable chemical and food processing activity with an emphasis on self-sufficiency and safe food



Green technologies and sustainable materials, secondary raw materials from various waste

Sustainable tourism and rural development



Health and active aging in the light of demographic changes and improving the well-being of the population

Documents: Key transformative fields

10 recently defined priority areas for regional development by RRA

1. C16 – Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials
2. C17 – Manufacture of paper and paper products
3. C21 - Manufacture of basic pharmaceutical products and pharmaceutical preparations
4. C26 – Manufacture of computer, electronic and optical products
5. C27 – Manufacture of electrical equipment
6. C28 – Manufacture of machinery and equipment n.e.c.
7. C33 – Repair and installation of machinery and equipment
8. I55 – Accommodation -Hospitality accommodation activities.
9. J62 – Computer programming, consultancy and related activities
10. M71 – Architectural and engineering activities, technical testing and analysis

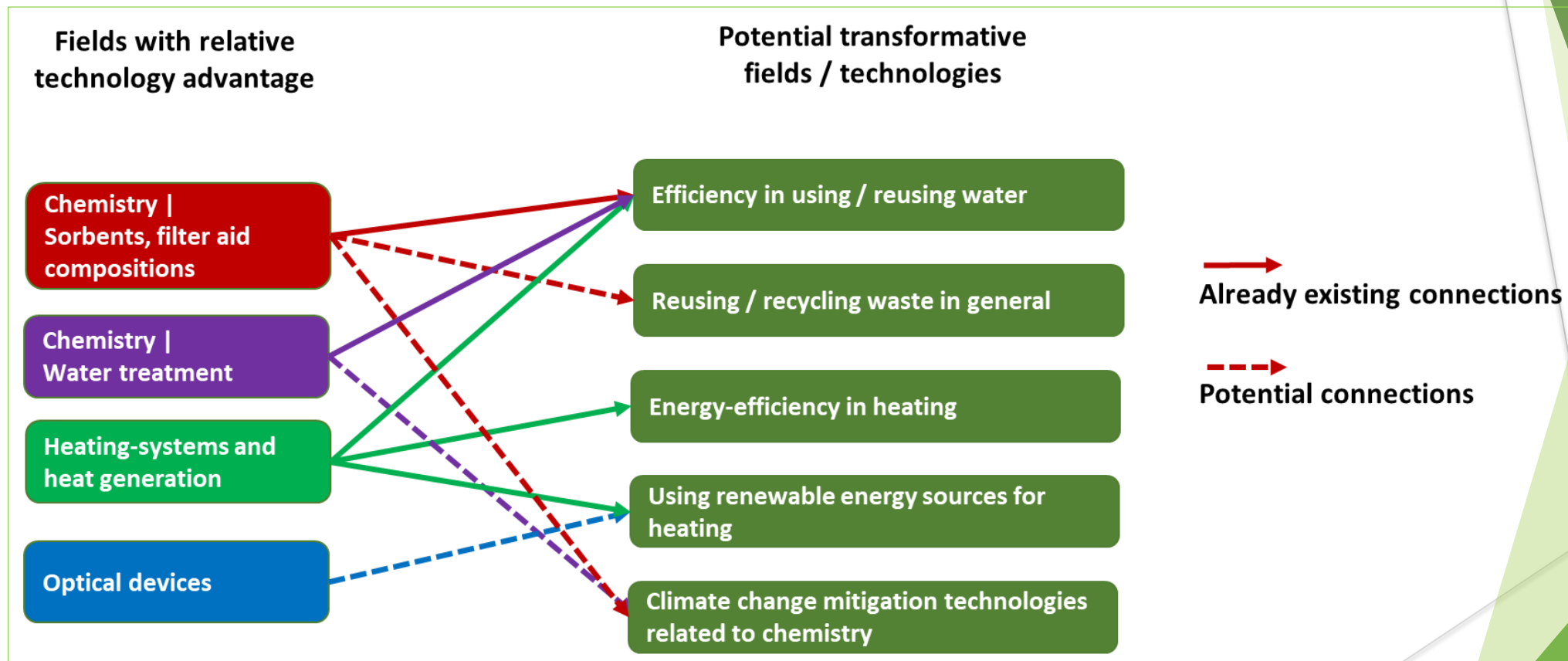


Funded by the
European Union

Assets



University and R&D activity



Note: Relative technology advantage means that a given technology field, in relative terms, is more frequently applied in patents of the region than in overall patents of Slovenia



Funded by the European Union

Momentum to reform traditional economic activity in two transformative directions

CIRCULAR ECONOMY

“Our region is also now one of the pilot regions for circular economy. So, we have also in the past the Institute for Circular Economy that is now part of our regional world (...). We have a lot of projects that are helping our companies to be more green and more circular. And I think in terms of Slovenia, we are one of the best regions. (...) And now we are also thinking what should be the next step in the region (...) to also make companies make this change in the mind.”

Interview with regional experts

SUSTAINABLE CONSTRUCTION

“One key future topic is probably the sustainable construction topic. Because this is another cluster which is present in in Maribor. (...) It was also one of the strong cross-border cooperation points where many projects and activities were developed there. In the sense of zero energy houses, passive houses and so on. Quite many activities, trainings were provided on this level. And it's quite an interesting topic also for the near future process because it's very connected with the challenge of energy consumption.”

Interview with regional experts



Funded by the
European Union

Tourism & Cultural Industries: Conditions to (further) develop alternative activity

“A country with the highest plant and animal biodiversity rate, (...) rich and diverse cultural heritage and (...) cultural offer from exhibitions to concerts and festivals. Such wealth represents a great potential for the development of high-quality eco-tourism.”

Slovenia's Smart Specialisation strategy

*“In Maribor, we had a lot of industry, but everything gone in the nineties and till now we don't have nothing to show. If you come here we can show you **no museum of that kind of era, nothing**. And I think this is also an opportunity maybe for MTT, so a part of it could be preserved. **The identity of our city from among 1900 to 1990. These 90 years industry past to be maybe more presented.** I think this could be in MTT, not everything but one part”*

Interview with expert

“A district that is alternative [...] you have to somehow preserve and make this combination of culture, life, smart city opportunities and a combination between young and old [...]. Very exciting to integrate all of that and have a qualitative district.”

Interview with expert

*“Our region is very interesting because we have so many opportunities. **We have wine. We are green. We have many tourisms.** [...] cycling, hiking, biking and so on. It's not in the sense of mass tourism. [...] This is maybe the future.”*

Interview with expert



Funded by the European Union

A fertile ground for transformative activity

A high quality of life for all

	Inclusive, healthy, safe and responsible society	Highly productive economy that creates added value for all	Learning for and through life	Well-preserved natural environment	High level of cooperation, competence and governance efficiency
Goal 1: Healthy and active life	•		•	•	
Goal 2: Knowledge and skills for a high quality of life and work	•	•	•		
Goal 3: Decent life for all	•				•
Goal 4: Culture and language as main factors of national identity	•		•		
Goal 5: Economic stability		•			•
Goal 6: Competitive and socially responsible entrepreneurial and research sector		•	•		•
Goal 7: Inclusive labour market and high-quality jobs	•	•	•		
Goal 8: Low-carbon circular economy	•	•	•	•	
Goal 9: Sustainable natural resource management	•	•		•	
Goal 10: Trustworthy legal system	•	•			•
Goal 11: Safe and globally responsible Slovenia	•	•		•	•
Goal 12: Effective governance and high-quality public service		•	•		•

“The paradox of global social progress is becoming increasingly significant, as it brings new opportunities and increased development potentials but simultaneously also constitutes a threat and creates numerous challenges. This raises questions about the future of education, work, the social order, the relationship between the citizen and the state, the response to demographic changes and climate change, and the ensuring of social equality and justice. In such circumstances, the strengthening of the entire society’s ability to respond to challenges is crucial.”

Key passage in Slovenian Development Strategy 2030, p.5

“So this is an issue [sustainability] which everybody sees is there, but nobody knows exactly how to make next steps. We are very good in preparing the strategies and the strategical documents, but implementation...”

Interview with expert

Source: Slovenia’s development goals - Slovenian Development Strategy 2030

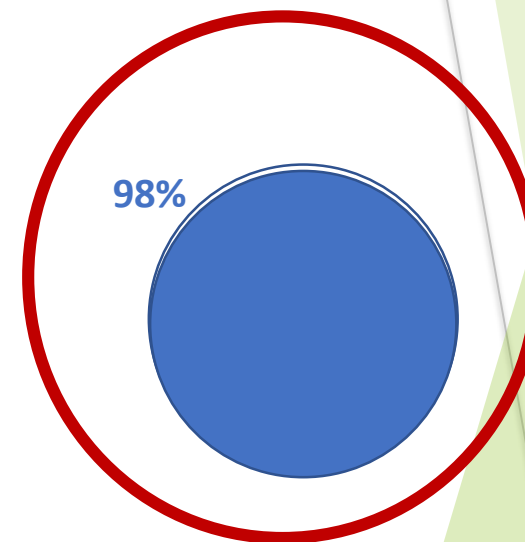
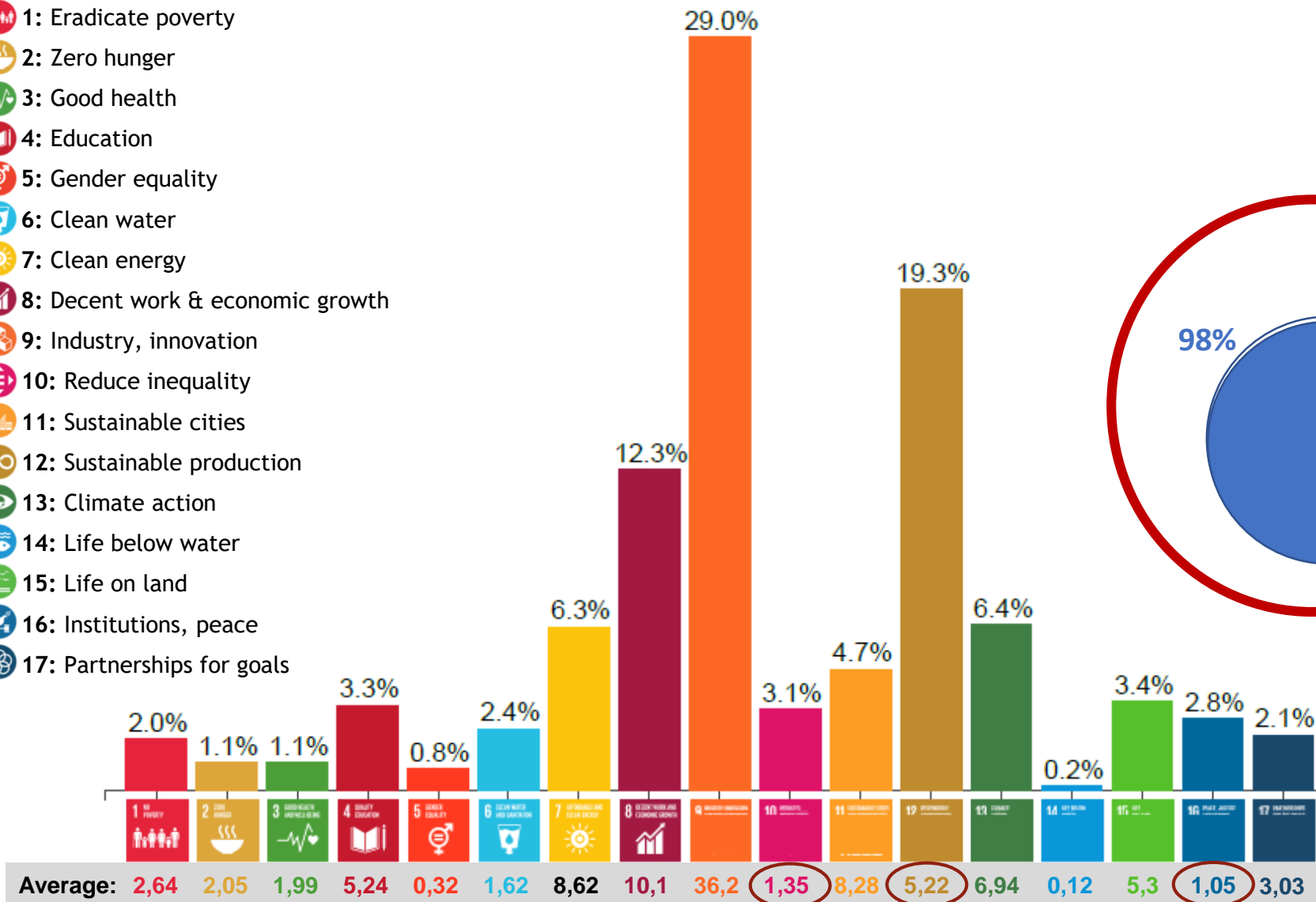


Funded by the European Union

SDG Mapping: Podravaska-Maribor

-  1: Eradicate poverty
-  2: Zero hunger
-  3: Good health
-  4: Education
-  5: Gender equality
-  6: Clean water
-  7: Clean energy
-  8: Decent work & economic growth
-  9: Industry, innovation
-  10: Reduce inequality
-  11: Sustainable cities
-  12: Sustainable production
-  13: Climate action
-  14: Life below water
-  15: Life on land
-  16: Institutions, peace
-  17: Partnerships for goals

Documents: 4*
Pages: 208
Hits: 1.225
Hits/Pages: 5,98



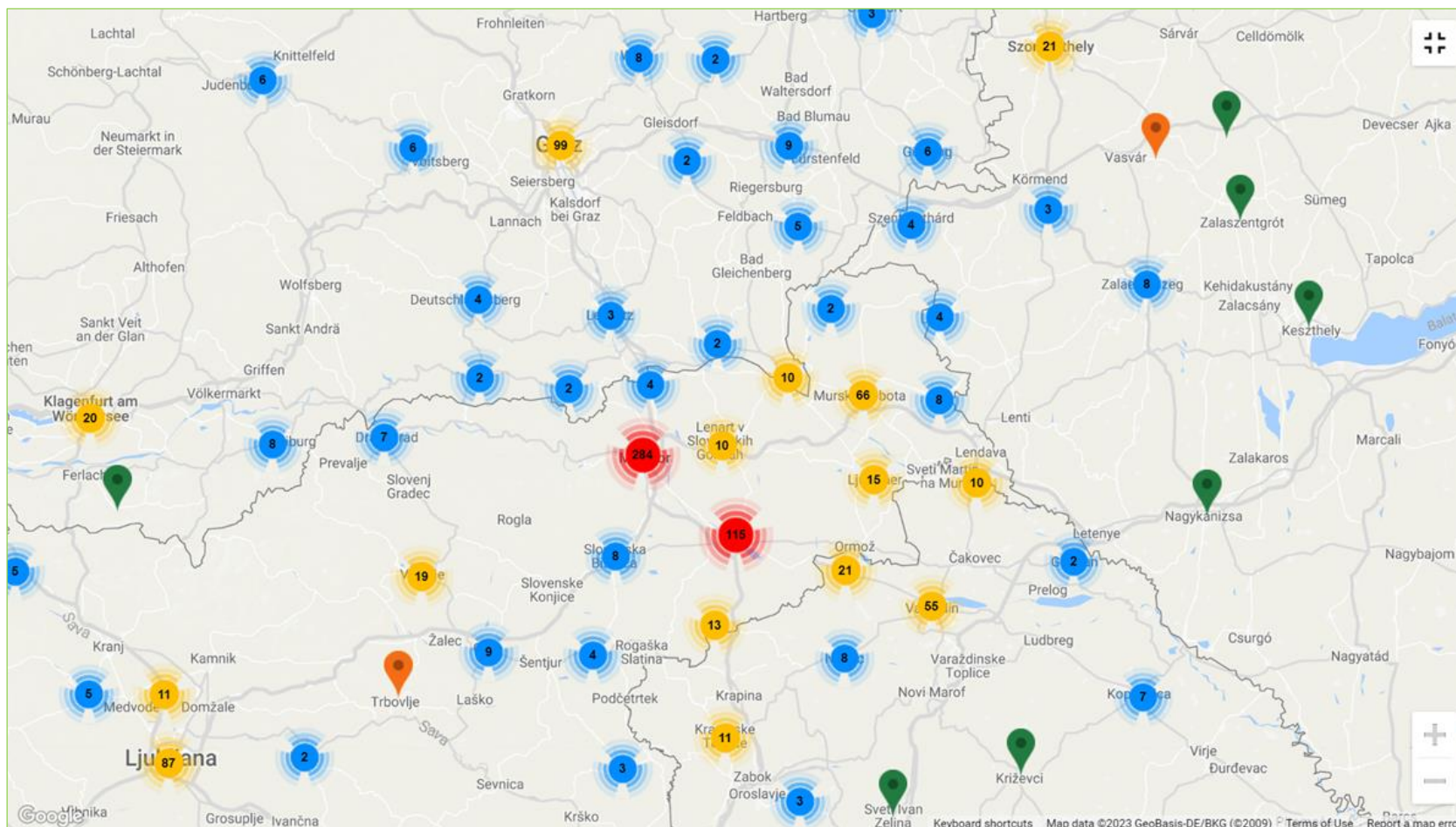
- *Slovenian Development Strategy 2030
- Slovenian Industrial Strategy 2021-2030
 - RIS3 Slovenia 2015
- Strategy for the Transition to Circular Economy in the Municipality of Maribor

<https://knowsdgs.jrc.ec.europa.eu/sdgmapper>



Funded by the
European Union

Double-edged sword of inter-regional (cross-border) relations: the bright side

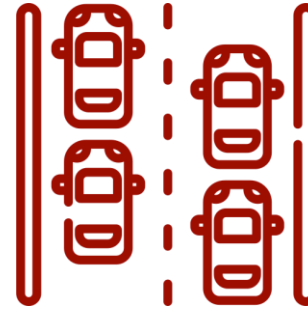
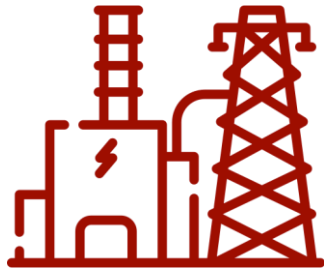


Note: The partners of all cross-border programmes located in Podravje region, locations with highest numbers: Maribor - 284, Ptuj - 115, Graz (A) - 99, Ljubljana - 87, Murska Sobota - 66, Varazdin (HR) - 55

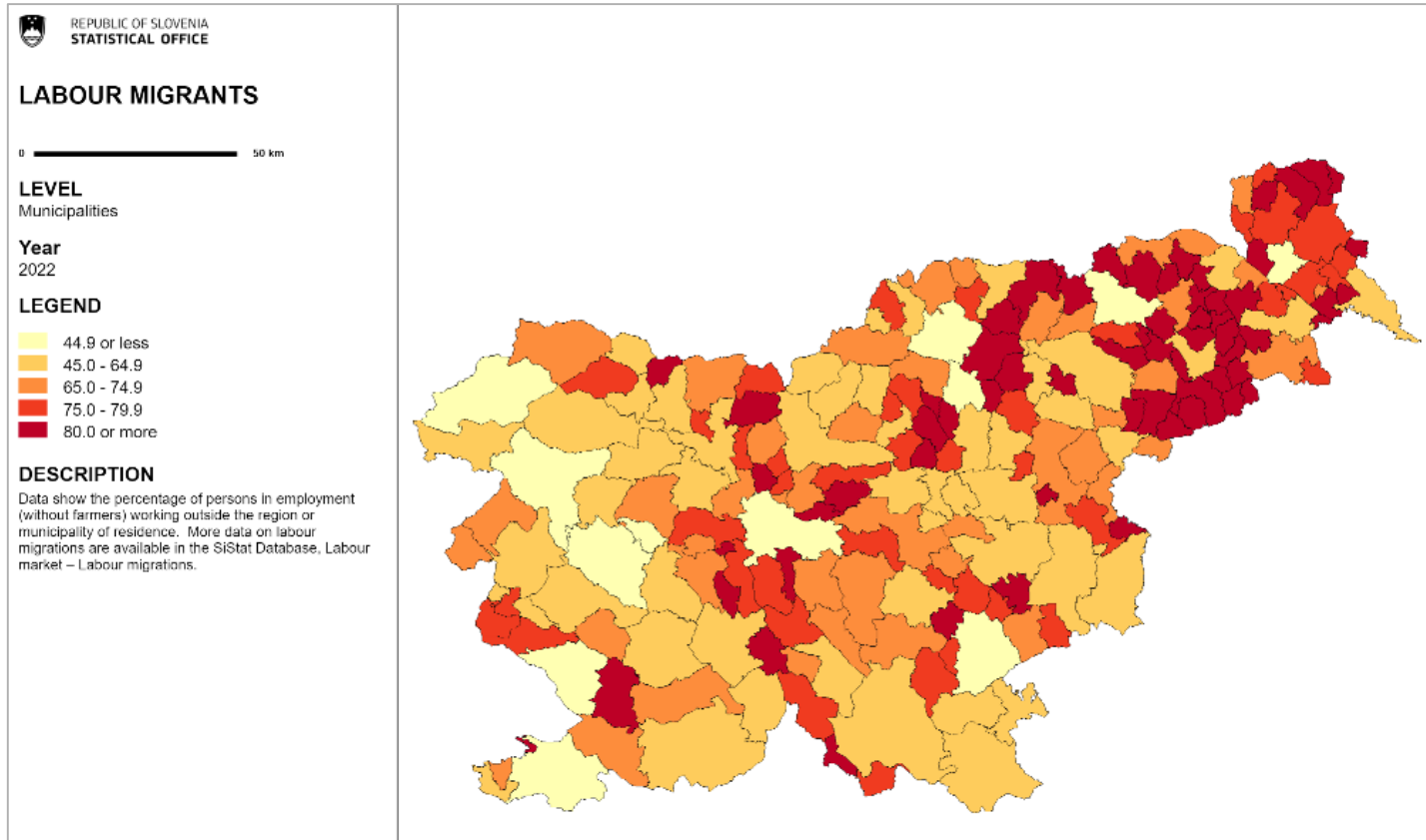


Funded by the
European Union

Challenges



Double-edged sword of inter-regional (cross-border) relations: the dark side



People who work outside their residence municipality

Note: Labour migration in the Slovenian municipalities (the northeastern part of Slovenia is highly affected by labour migration - in many regions the number is higher than 80%

Source: Statistical Office of the Republic of Slovenia

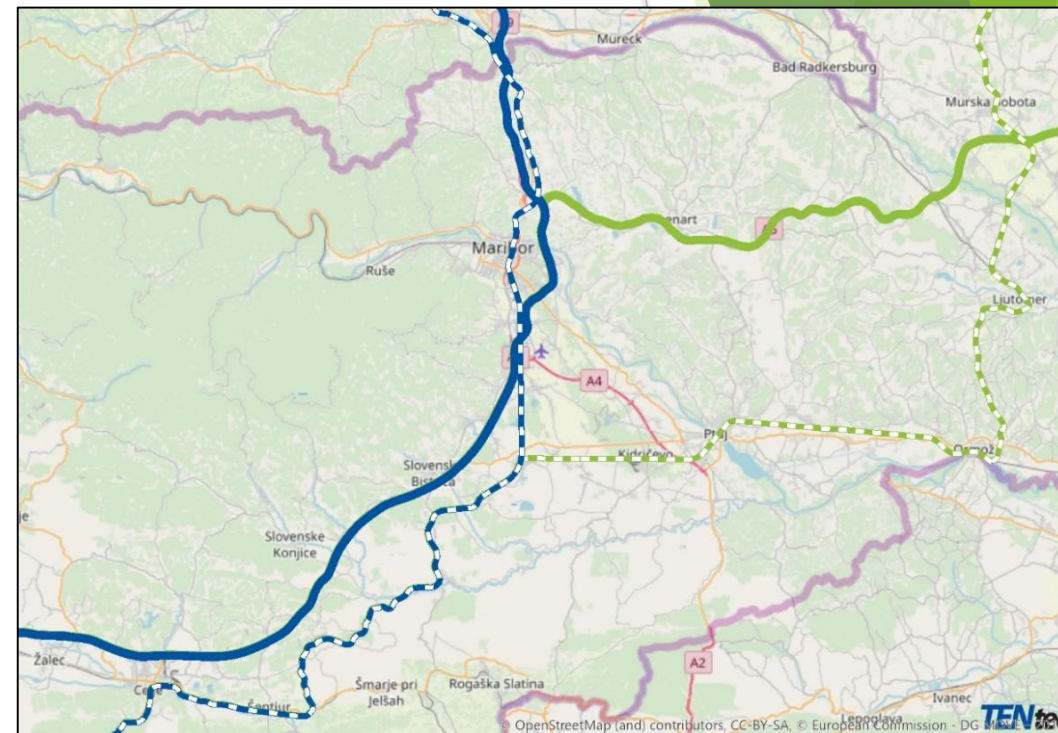


Funded by the
European Union

Traffic & transport

Podravje region	2017	2021
Mode of transport - TOTAL	100.00%	100.00%
Passenger car - total	85.25%	85.06%
Bus - total	5.16%	3.57%
Cycling	1.24%	1.11%
Walking, running	3.07%	2.19%
Other (taxi, train, motorcycle)	5.28%	8.06%

Source: Modal Split, The Statistical Office of the Republic of Slovenia

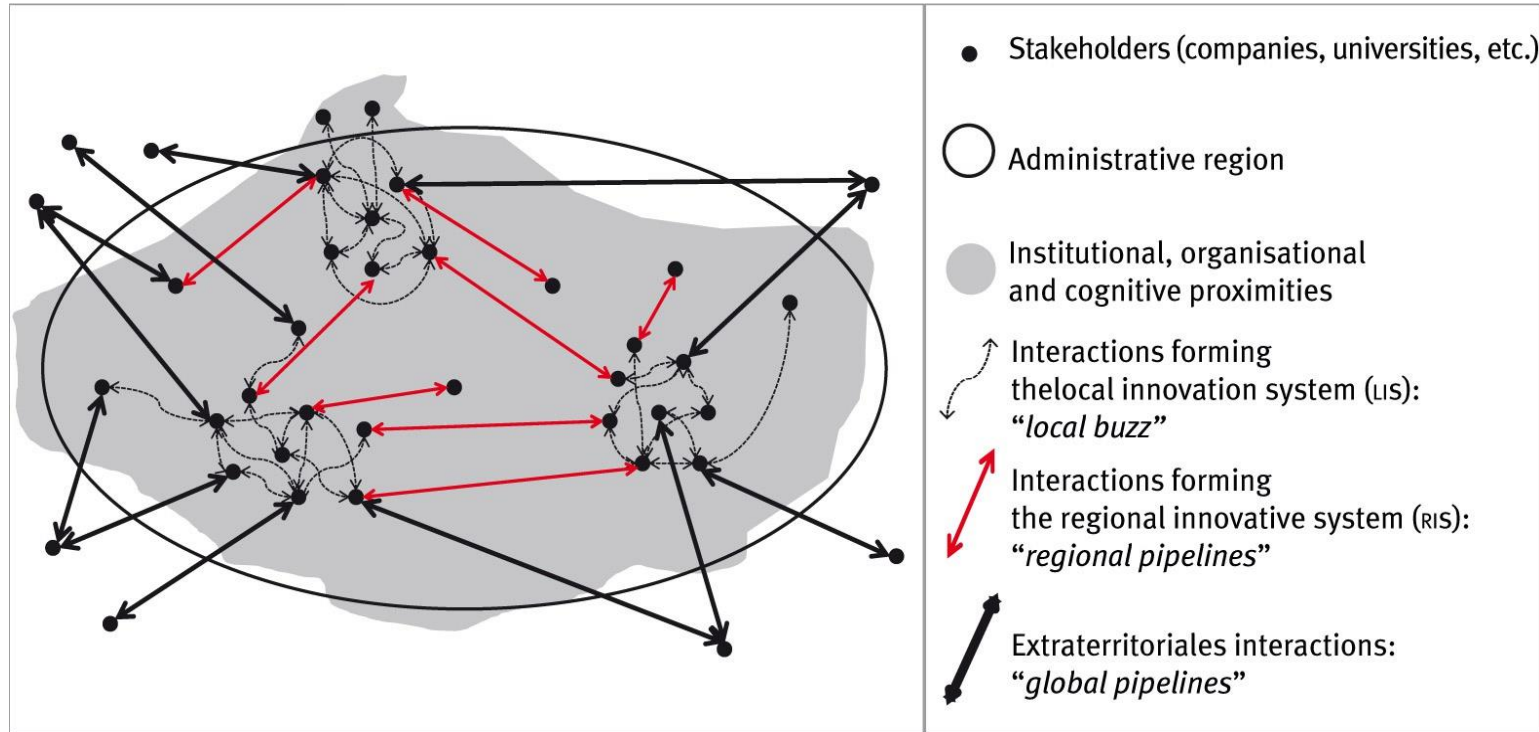


Source: <https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html>



Funded by the
European Union

Lack of critical mass and fragmentation



Issues in Podravje

- Lack of high-tech departments
- Branch plants

- Fragmentation in support organisations
- Missing cooperation on local level

- Missing systemic cooperation
- Fragmentation between municipalities

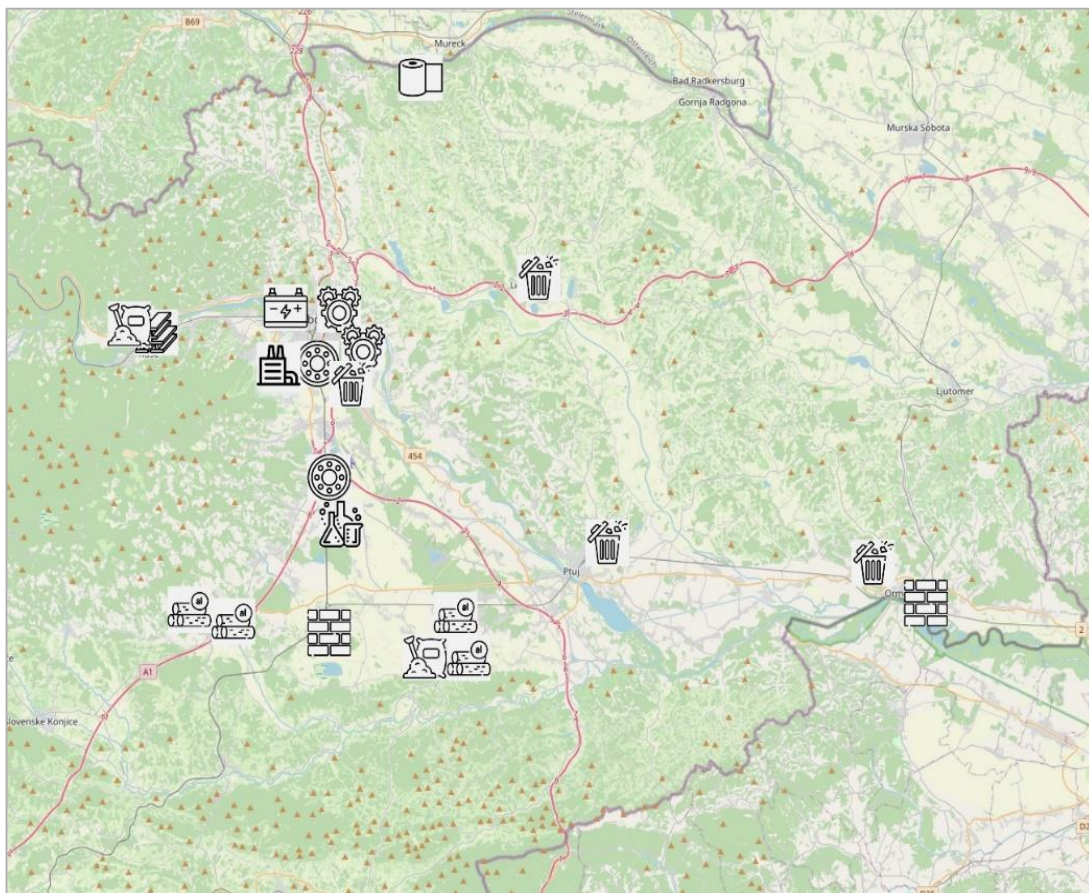
- Low position in Global Value Chains
- Outmigration of young & talented

Stylized depiction of a Regional Innovation System. Source: Wilmotte & Halleux, 2018



Funded by the
European Union

Energy-intensive industrial structure and its challenges



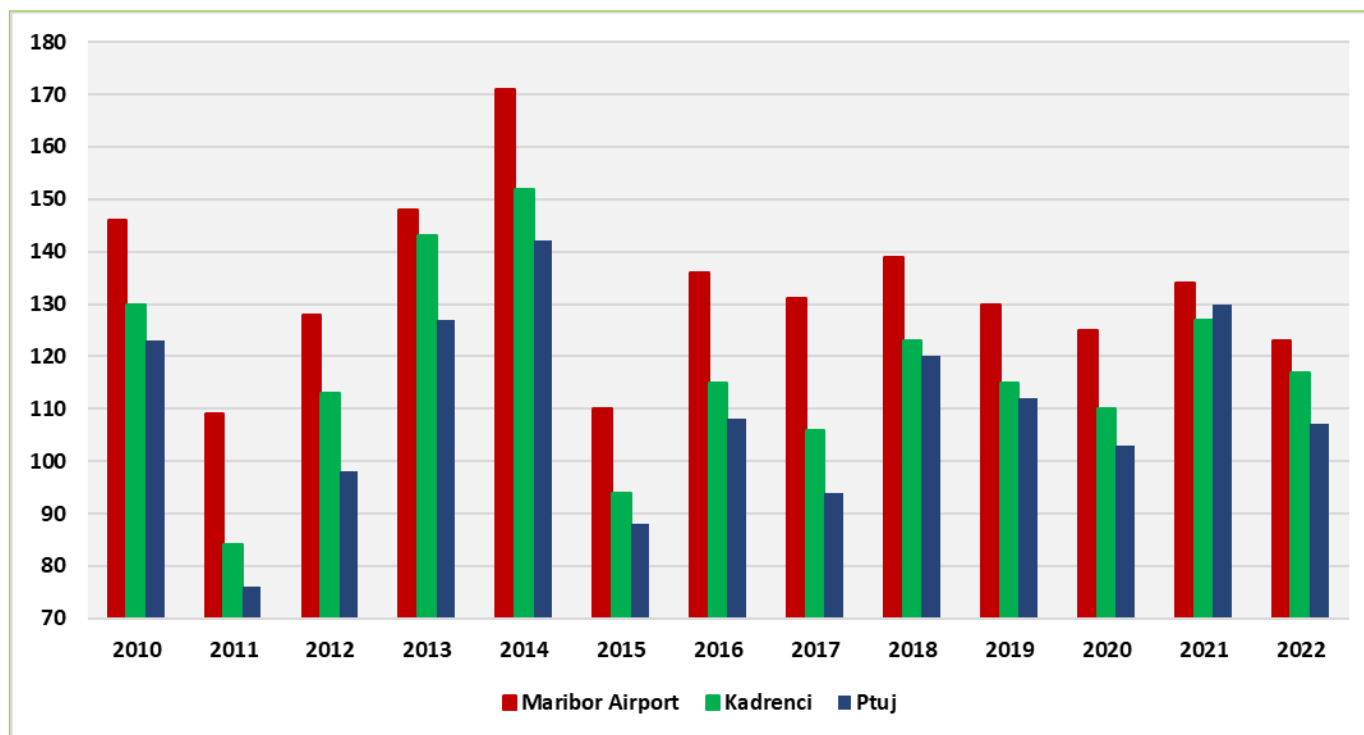
Source: Energy and Industry Geography Lab by JRC; Marked industrial activities: iron and steel production; production of brick and clay; chemical products; manufacturing of paper; aluminium production; machinery; production of vehicle components; production of batteries; treatment of waste

Indicator	Ranking of Podravje region	Value of the Podravje region	National average
The technical potential of electricity generation per land area by small hydropower (<10MW)	2 nd / 12 Slovenian regions	0.088	0.057
Potential for electricity generation by land area of solar photovoltaics	1 st / 12 Slovenian regions	194.55	107.04
Primary energy potential per land area of biodegradable wastes and biogas - projection for the year 2030	11 th / 12 Slovenian regions	0.58	0.87
Primary energy potential per land area of biofuels from agricultural products - projection for the year 2030	3 rd / 12 Slovenian regions	0.12	0.09
Primary energy potential per land area of forestry products and forestry residues - projection for the year 2030	2 nd / 12 Slovenian regions	0.49	0.18
Primary energy potential per land area of geothermal heating - projection for the year 2030	1 st / 12 Slovenian regions	0.06	0.01

The ranking of Podravje region in terms of the potential in certain renewable energy sources, in GWh/km², 2018 - solar PV in MWh/km²

Source: The dataset of the ESPON "Locate" project

Manifestations of climate change: vulnerability to droughts



The number of days with precipitation above 0.1 mm at different meteorological stations from the Podravje region (2010-2022)
Source: Environment Agency of the Republic of Slovenia

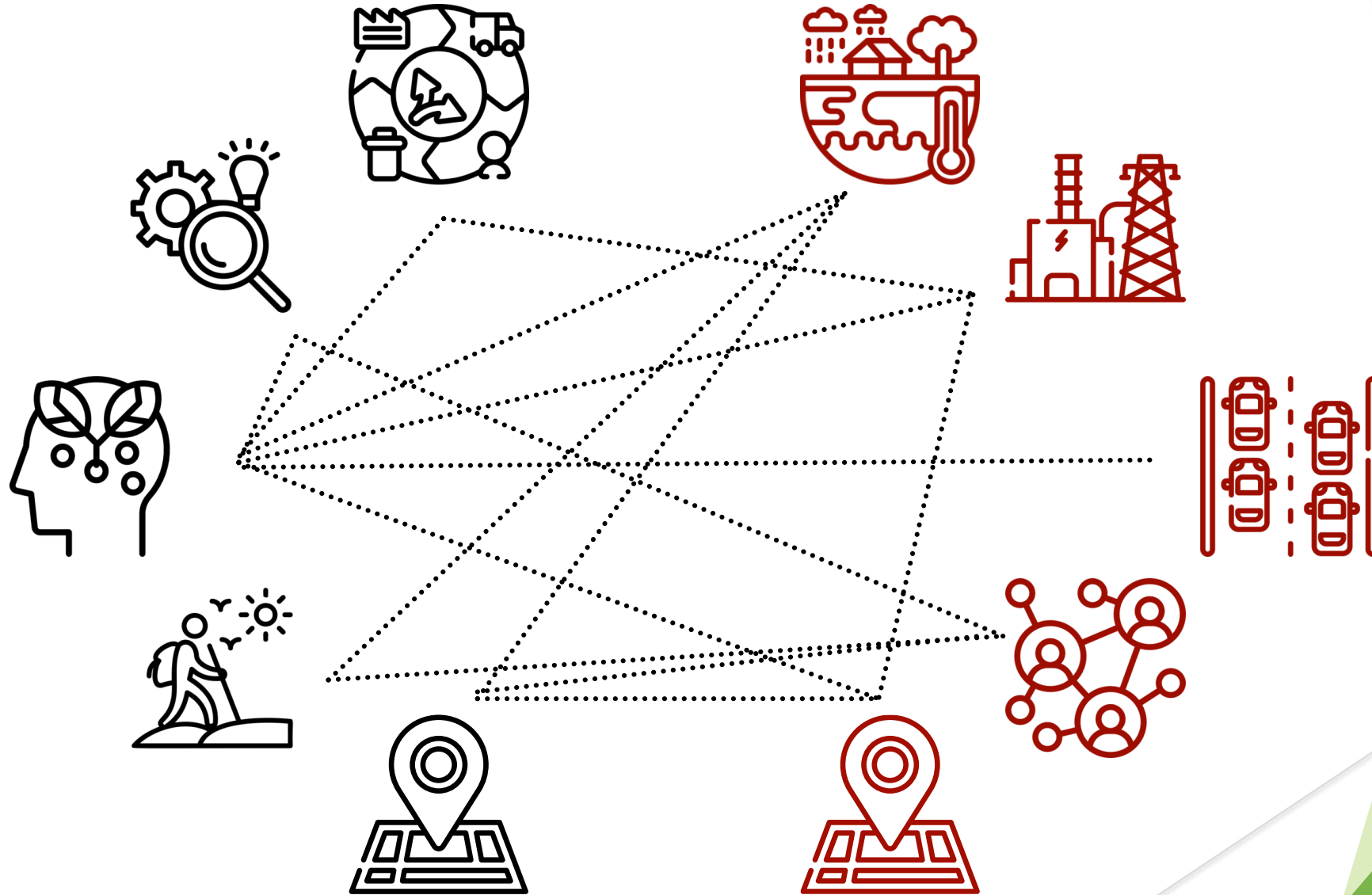
“In summary, it can be concluded that the local manifestation of climate change (the increasing average temperature and the duration of irradiation, the frequency of extreme weather events and meanwhile, the decreasing amount of precipitation) might have a significant influence on (the agricultural production of) the region.”

Conclusion of analysis of climate change manifestations in Podravje

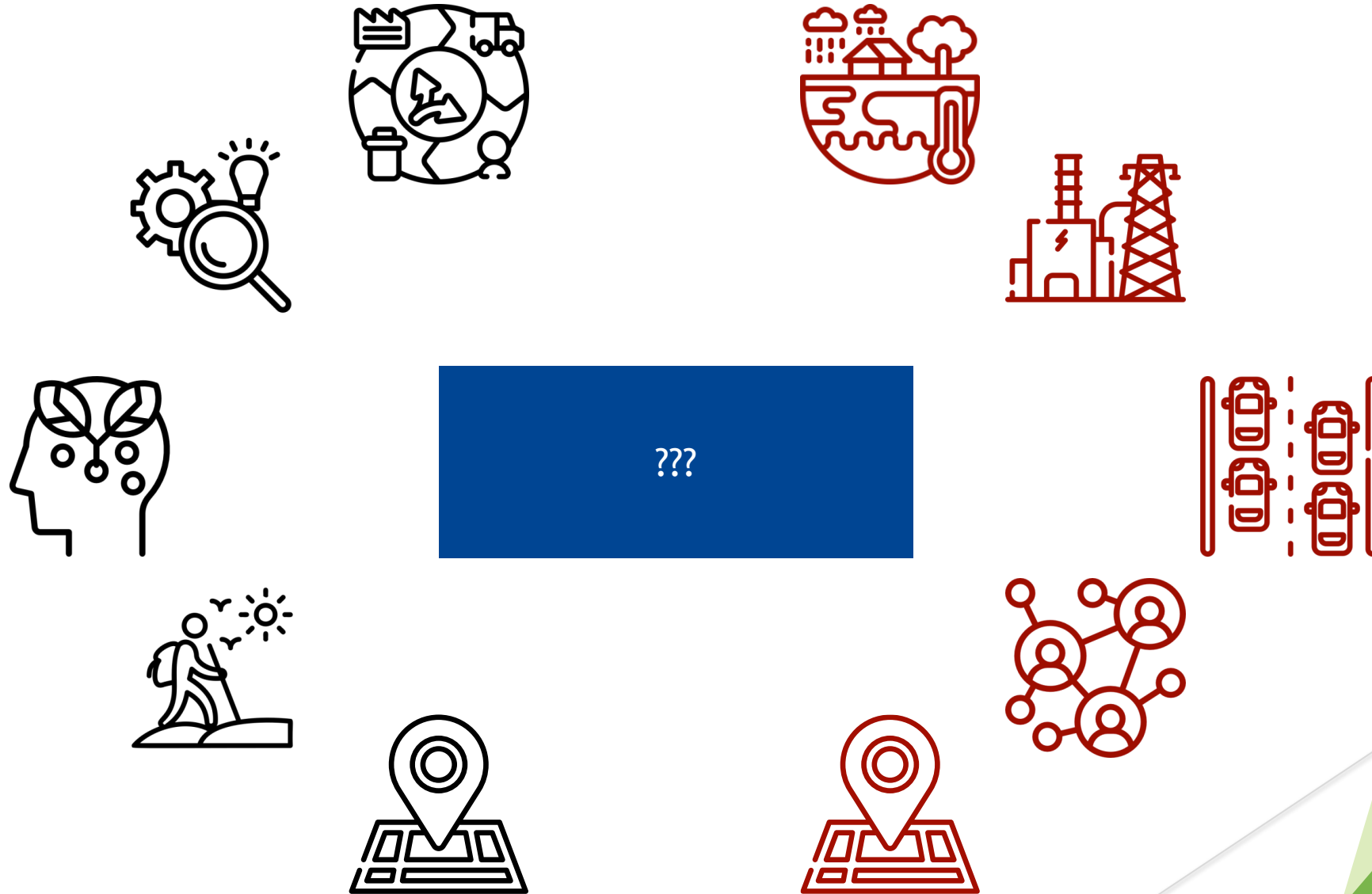


Funded by the European Union

Conclusion



Conclusion



References

- ▶ CORDIS - EU research projects under Horizon 2020 (2014-2020)
- ▶ Diemer, A., Iammarino, S., Rodríguez-Pose, A. & Storper, M. (2022): The Regional Development Trap in Europe, Economic Geography, DOI: 10.1080/00130095.2022.2080655
- ▶ ESPON Locate project: <https://www.espon.eu/low-carbon-economy>
- ▶ European Commission (2014): National/regional innovation strategies for smart specialisation (RIAS3). Brussels.
- ▶ European Commission (2021): Regional Innovation Scoreboard 2021. Available online: https://research-and-innovation.ec.europa.eu/statistics/performance-indicators/regional-innovation-scoreboard_en
- ▶ Eurostat: Regional statistics by NUTS classification
- ▶ Flaticon: Premium account (simon.baumgartinger-seiringer@univie.ac.at)
- ▶ JRC. 2022. SDG Mapper. Map the SDGs in any document and explore the Goals and targets in real-time. Available online: <https://knowsdgs.jrc.ec.europa.eu/sdgmapper>
- ▶ Keep.eu: Interreg projects' database of the European Commission (<https://keep.eu/>)
- ▶ Michaela Trippel, Simon-Baumgartinger-Seiringer, Veronika Desch, Sebastian Fastenrath & Balasz Pager (2022): Outline of S4 Methodology, Available online: https://ris4danu.eu/wp-content/uploads/2022/10/D3.1_Outline-of-S4-Methodology_V1.0.pdf
- ▶ OECD REGPAT Database (Spring 2022 version): <https://www.oecd.org/sti/inno/intellectual-property-statistics-and-analysis.htm#ip-data>
- ▶ Schot J. & E.W. Steinmüller (2018): Three frames for innovation policy: R&D, systems of innovation and transformative change, Research Policy, DOI: [10.1016/j.respol.2018.08.011](https://doi.org/10.1016/j.respol.2018.08.011)
- ▶ The RIS4DANU Project Website, Available online: <https://ris4danu.eu/>
- ▶ Termeer, C. & Dewulf, A. (2019): A small wins framework to overcome the evaluation paradox of governing wicked problems, Policy and Society, DOI: 10.1080/14494035.2018.1497933
- ▶ Trinomics et al. 2020. Study on energy prices, costs and their impact on industry and households. Final report. European Commission
- ▶ Wilmotte, P-F. W. & Halleux, J-M. (2018): The spatial structure of regional innovation system: What about the impact of geographic proximity within Walloon competitiveness clusters?, L'Espace géographique. Available online: https://www.cairn-int.info/article-E_EG_471_0051--the-spatial-structure-of-regional.htm

