

Country fiche

Territorial patterns and relations in Slovenia

Smarter Europe

Greener Europe

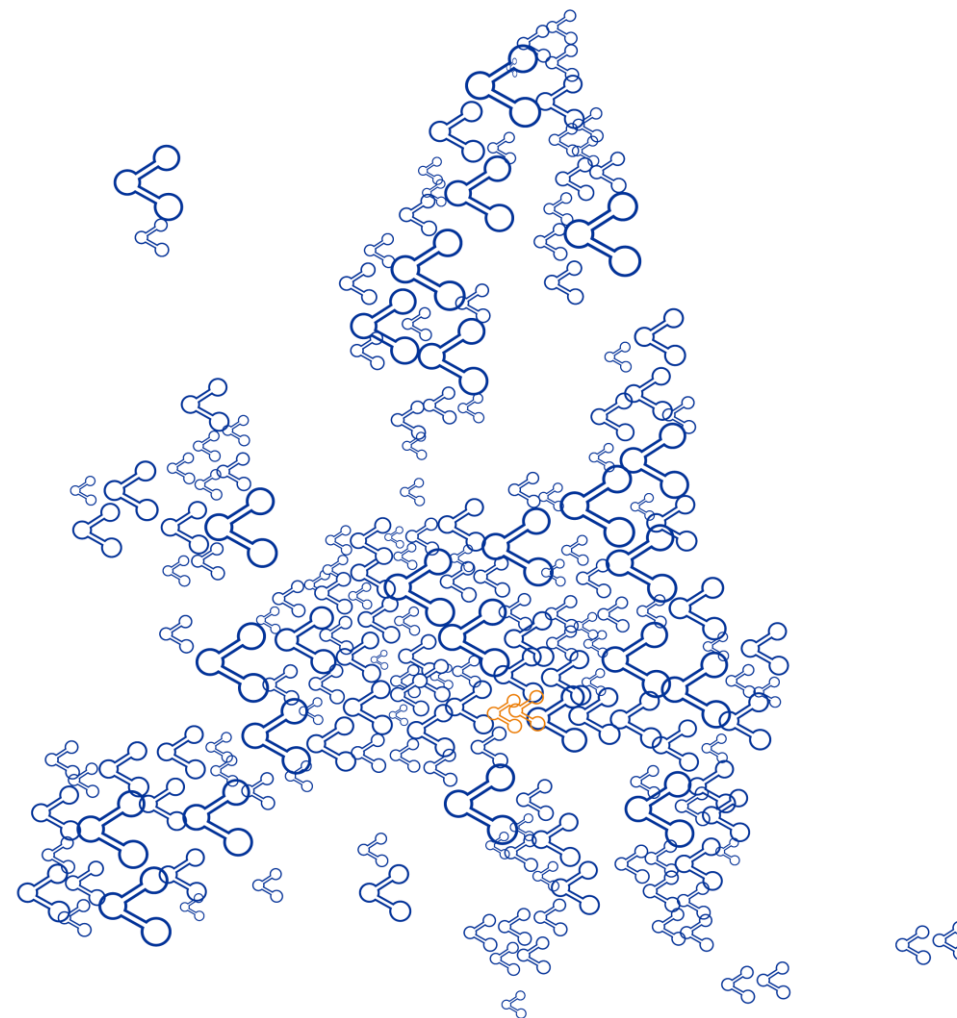
More connected Europe

More social Europe

Europe closer to citizens

Interactive version:

www.espon.eu/participate/espon-your-country/slovenia



Introductory remarks

The content of the following overview is a summary of research results from different thematic applied research projects under the ESPON 2020 programme. As a consequence, most indicators and analyses are not based on most recent data but represent the data availability at the time when the research was undertaken. Only in a few cases, for some rather basic indicators that could easily be reproduced, more up-to-date information was used.

It is therefore important to note that this overview is mainly a collection of available findings with different time stamps and not an up-to-date, comprehensive analysis. Its main goal is to showcase the wide range of ESPON research and, by zooming-in on a specific country, to raise interest for the scientific results at a more national and even regional scale.



Smarter Europe

Regional Innovation Scoreboard (2019)

R&D expenditure (2014)

Tech and knowledge workers (2014)

Types of competitive knowledge economy

Intensity of 4.0 patents (2010 -2015)

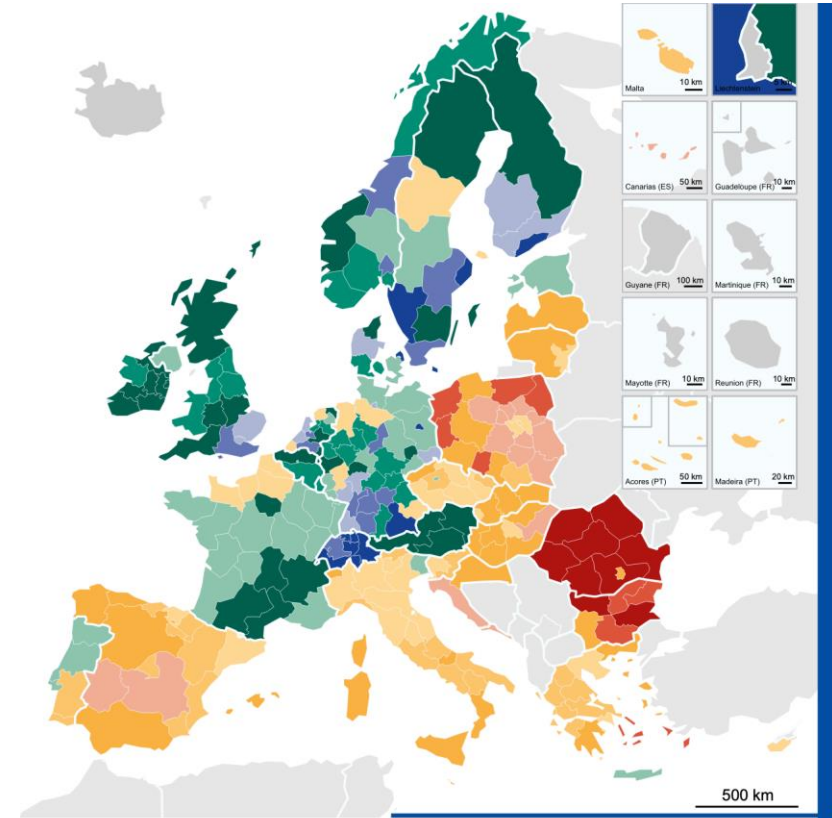
Regional Innovation Scoreboard (2019)



ESPON  © ESPON, 2020
 Regional level: NUTS 1/2 (2016)
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

50 km

RIS Performance groups 2019



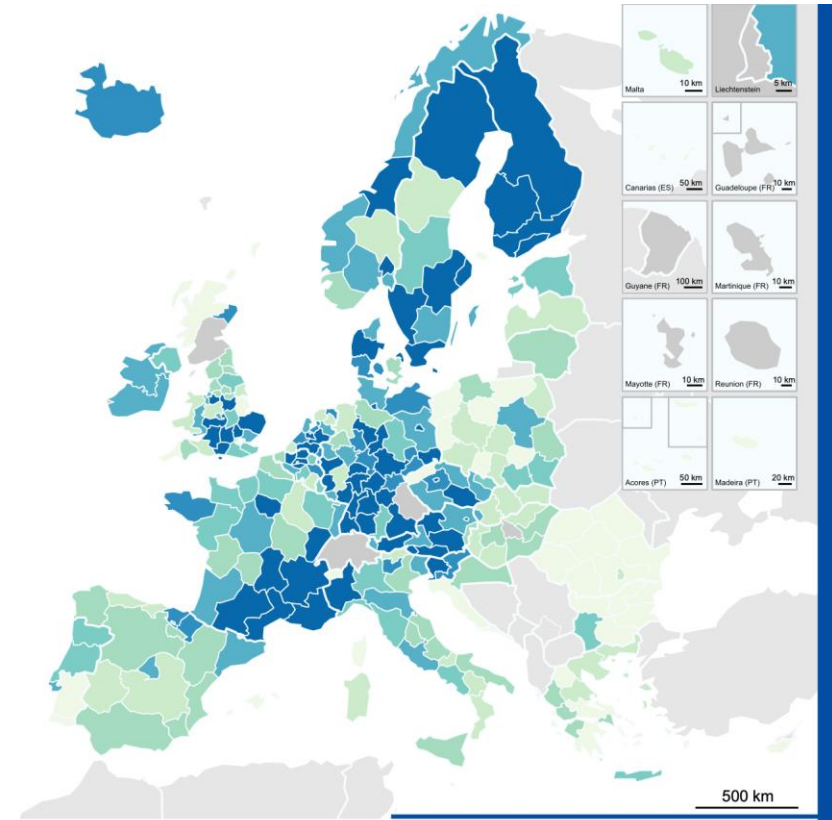
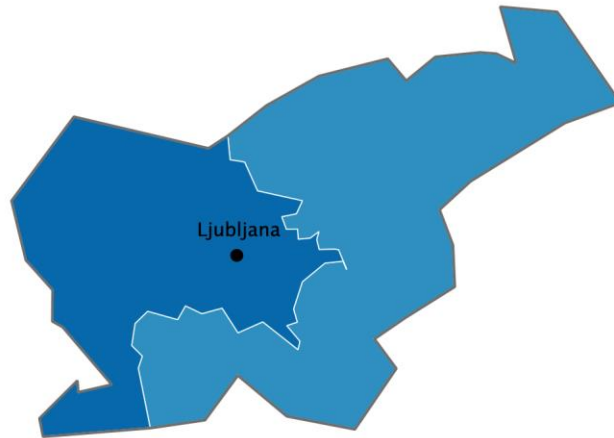
Origin of data: Regional Innovation Scoreboard, 2019
 Definitions: The RIS 2019 is a comparative assessment of regional innovation based on the European innovation scoreboard methodology, using 18 of the latter's 27 indicators. It provides a more detailed breakdown of performance groups with contextual data that can be used to analyse and compare structural economic, business and socio-demographic structure differences between regions.



Moderate innovation performance in Slovenia comparable to most advanced regions of Central Europe

Innovation performance is measured by the European Commission on the basis of the unweighted average of 17 indicators reflecting human resources, research systems, R&D expenditure, innovation in SMEs, cooperation, patents and sales of innovative products. Based on their scores, EU regions fall into four performance groups: innovation leaders, strong innovators, moderate innovators and modest innovators, with three subgroups. At the European level, one observes a concentration of high performances in a European core area running from South-East England to Switzerland, southern Germany, including the southern part of Saxony on the border to the Czech Republic. Values are also high in a number of northern European regions with large cities.

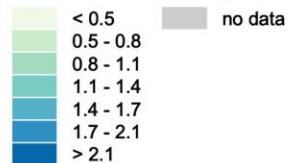
Slovenia has an overall “moderate” innovation profile, similar to other regions in Central Europe (e.g. in the Czech Republic) and Northern Italy. Having more universities and research centres concentrated in Ljubljana, Western Slovenia has a slightly more developed innovation profile (“Moderate +”) compared to Eastern Slovenia (“Moderate”). This is reflected inter alia in higher scores for tertiary education attainment and participation to lifelong learning. Eastern Slovenia scores better on industrial innovative capacities compared to Western Slovenia and many other regions in Europe due to high levels of patent applications relative to its GDP.

R&D Expenditure (2014)



ESPON   © ESPON, 2020
 Regional level: NUTS 2 (2016), NUTS2 (2013) for FR and IE
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

R&D Expenditure as percentage of GDP, 2014



Source: Spatial Foresight, 2020
 Origin of data: Eurostat, online code: rd_e_gerdreg, extracted on 10.07.2020

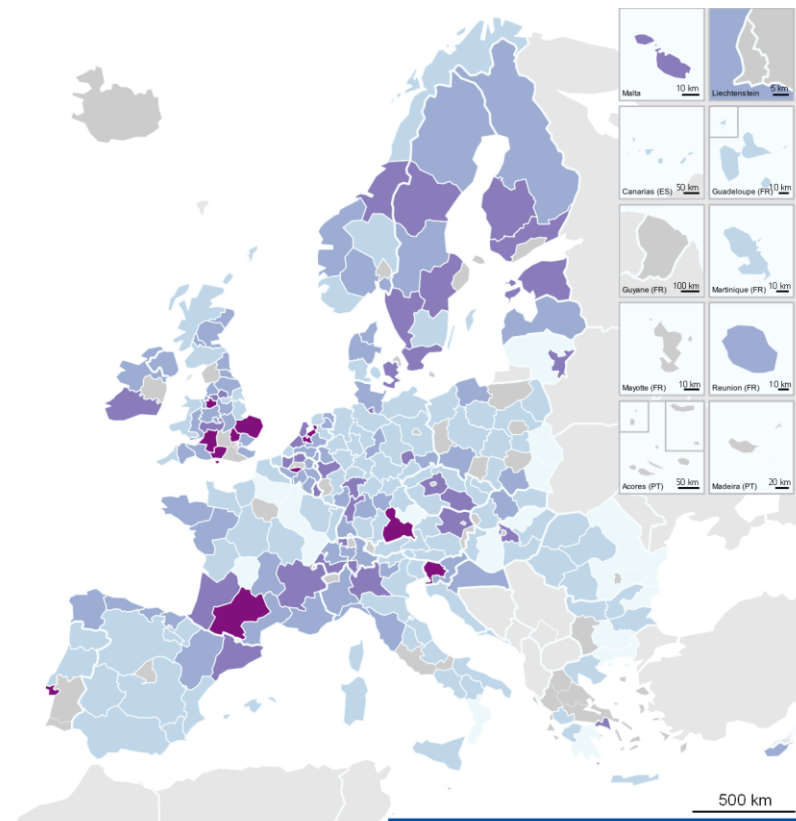
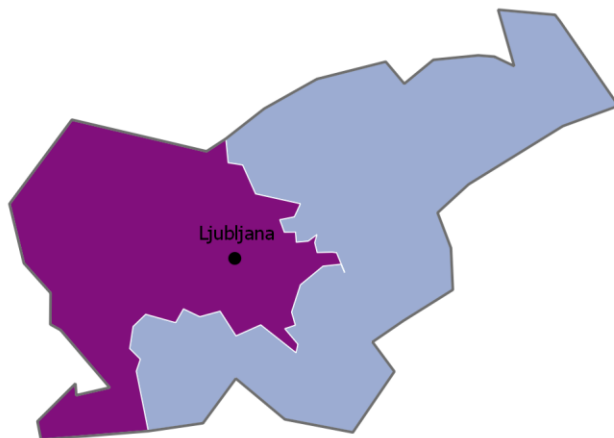
Values for Germany, Greece, Ireland, France, Austria, Finland and Sweden from 2013.

High shares of R&D expenditures, particularly in Western Slovenia

Investments in research and development aim to stimulate innovation and productivity growth and therewith stimulate competitive levels in Europe. The Europe 2020 strategy encouraged EU Member States to attain a 3% R&D expenditure level as percentage of GDP. In 2018 this level was reached by Denmark, Germany, Sweden and Austria. Regional data illustrates that R&D expenditures are particularly high in capital cities and regions with innovative industries, e.g. the car industry in Southern Germany or southern France. High shares of R&D expenditures in Finland and northern Sweden are mainly driven by the government sector.

R&D expenditure levels in Slovenian regions belong to the highest in Europe. In 2014, 2.7% of the GDP of Western Slovenia was invested in research and development. R&D expenditures were 1.94% of the GDP in Eastern Slovenia. Relatively higher R&D expenditures in Western Slovenia result from higher public expenditures and expenditures in sector of higher education. The share of R&D expenditures by business enterprises was the same in both regions, namely 1.83%.

Tech- and Knowledge-Workers, 2014

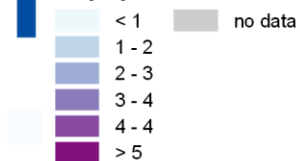


ESPON   © ESPON, 2020
Regional level: NUTS 2 (2016)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

50 km

500 km

Employment in Knowledge-intensive sectors, 2014 (% of total employees)



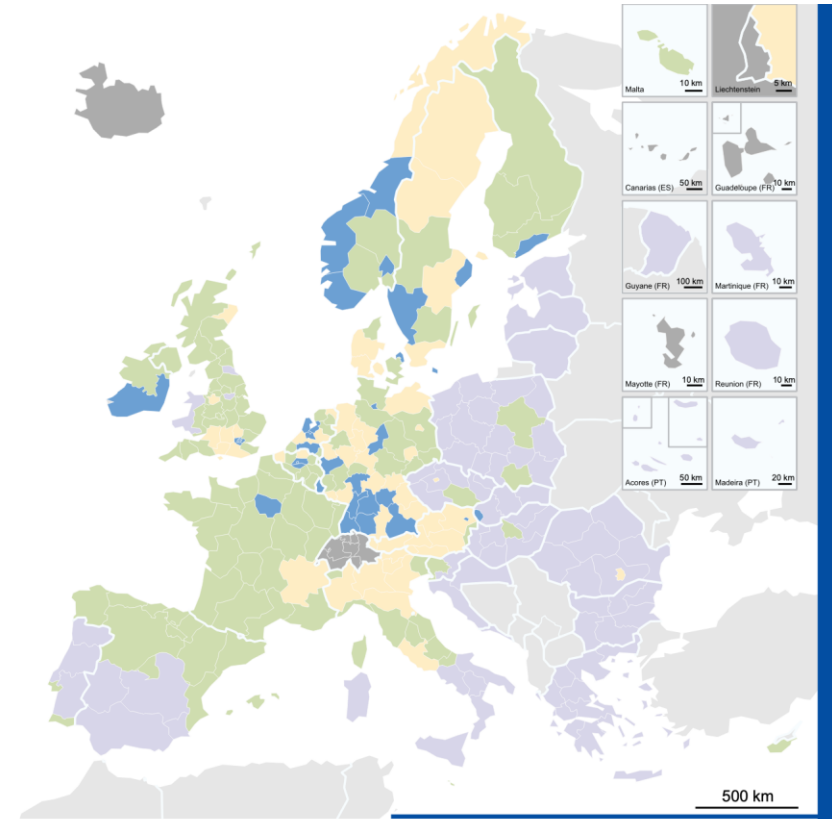
Source: Spatial Foresight, 2020
Origin of data: Eurostat, online data code: htec_emp_reg2, accessed, 10.07.2020
Values for BG32, FRY2, NL34, RO22, RO42 from 2015, values for BG31 an UKM6 for 2013.

High shares of tech and knowledge workers in Slovenia

The share of tech and knowledge workers as part of the total labour force illustrates the importance of the knowledge intensive sectors in a region's economy. High shares of tech and knowledge workers indicates a region's adaptive capacity towards industry 4.0, a new industrial age which is based on automated production processes and robotics. In 2014, the share of tech and knowledge workers was particularly high in Europe's capital regions as well as other regions with large metropolitan areas in Germany and the Nordic countries. The share of tech and knowledge workers was lowest in Greece, rural regions in southern Italy, inland Spain and Poland.

The share of tech and knowledge workers in Slovenia was higher than in most other regions of Europe. In particularly the share of tech and knowledge workers in Western Slovenia was high. With 7.6% of all employed persons in these sectors, Western Slovenia ranks similar as the regions of Sofia, Paris and Bucharest and ranks only slightly lower than the regions of Stockholm, Zürich and Vienna. 3.6% of all employment in Eastern Slovenia focuses on technology and knowledge sectors which is around the European average.

Types of competitive knowledge economies



ESPON © ESPON, 2020
 Regional level: NUTS 2 (2013)
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

KE Cluster-Analysis (2012-2015)

- Highly competitive and KE-based economy
- Competitive and KE-related economy
- Less competitive with potential in KE economy
- Less competitive with low incidence of KE
- no data

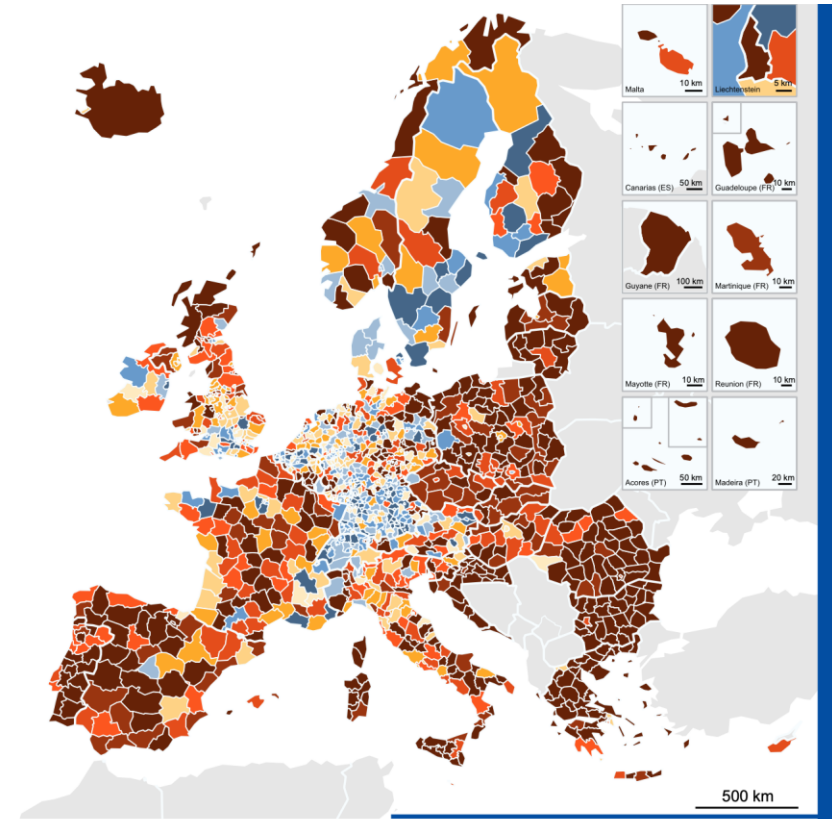
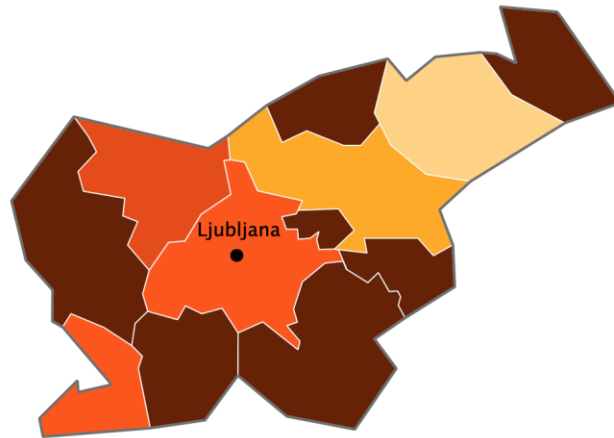
Source: ESPON EMPLOYMENT, 2017
 Origin of data: Eurostat, 2016

Potentials to enhance the knowledge economy in Western Slovenia

The knowledge economy is one of the most dynamic sectors of the European economy and becomes increasingly important due to the 4th industrial revolution. Different policies and strategies, such as regional smart specialisation strategies, aim at enhancing the knowledge economy and stimulate regional levels of competitiveness. Highly competitive and knowledge-based regions are mostly urban areas in northwest Europe, such as southern Germany, Paris, Dublin, as well as the Norwegian and Swedish west coast. The least competitive regions with low potential for the knowledge economy can be found in many eastern European regions as well as in the south of Spain, Portugal, Greece and Italy.

Labour market dynamics, employment rates, the share of youth unemployment and net migrations rates make the Slovenian economy less competitive than regions in north west Europe. Yet, Western Slovenia has favourable conditions to develop a knowledge economy. The share of highly skilled labour in ICT and engineering sectors, the level of R&D expenditures, and the number of patent applications are generally higher in Western Slovenia than in Eastern Slovenia. More favourable condition in Western Slovenia derives among others from higher population densities and more knowledge institutes in Ljubljana.

Intensity of 4.0 patents (per 1,000 inhabitants)

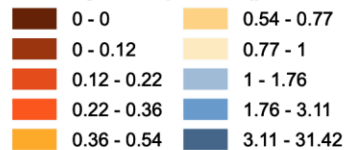


ESPON
 EUROPEAN UNION
 © ESPON, 2020
 Regional level: NUTS 3 (2013)
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

50 km

500 km

Intensity of 4.0 patents (per 1,000 inhabitants) w.r.t. European average, 2010-2015



Source: ESPON T4, 2020
 Origin of data: OECD-REGPAT, ORBIT, EUROSTAT, 2019

Fewer 4.0 patent application in Slovenia than in Europe on average

Industry 4.0 focuses on automated production and manufacturing processes by applying and developing technological and ICT solutions. In support of this 4th industrial revolution new products and processes are invented across Europe, however not in every place to the same extent. Patents for robotics or technological transformation illustrate the development towards industry 4.0. Most 4.0 patents were submitted in Swiss, southern German, Flemish, southern Swedish, southern English, and Finnish regions, as well as in the capital regions Paris, Madrid and Vienna. Their share of 4.0 patents application was higher than the European average. No 4.0 patent applications were recorded in many southern and eastern European regions between 2010 and 2015.

In all regions of Slovenia fewer patents, relevant for the 4th industrial revolution, were submitted compared to Europe on average. As such Slovenian regions are performing similarly than many neighbouring regions and many other regions in southern and eastern Europe. 4.0 patents were only submitted in five regions between 2010 and 2015. Most patents were submitted in the Podravska region, most likely from larger firms and the University in Maribor. The share of 4.0 patents per 1,000 inhabitants in this region is only slightly lower than the European average. As such the region compares to the region of Pest in Hungary, Barcelona, Spain and several regions along the Atlantic coast in France.



Greener Europe

Road Transport Sector, final energy consumption (2012)

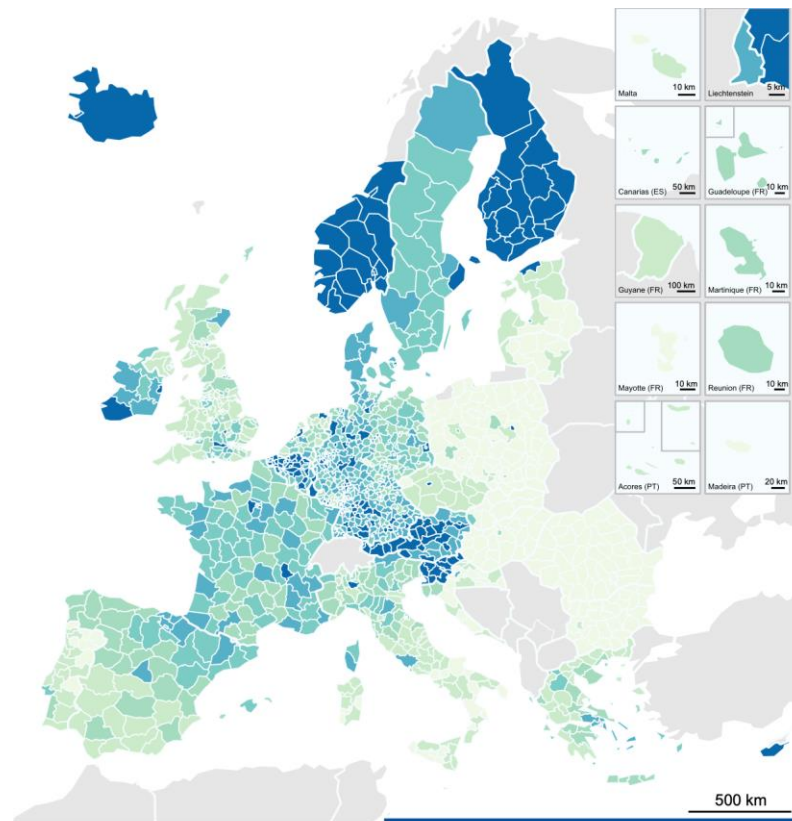
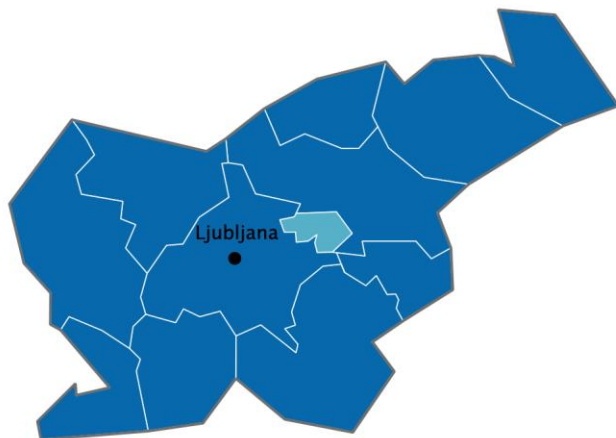
Spatial distribution of Green infrastructure (2012)

Development of Artificial area (2000 - 2018)

Aggregated potential impact of climate change

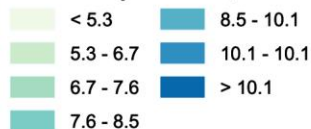
Employment in circular Business models

Road transport sector, final energy consumption, 2012 (MWh/cap)



ESPON   © ESPON, 2020
Regional level: NUTS 3 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Road transport sector, final energy consumption, 2012 (MWh/cap)



50 km

500 km

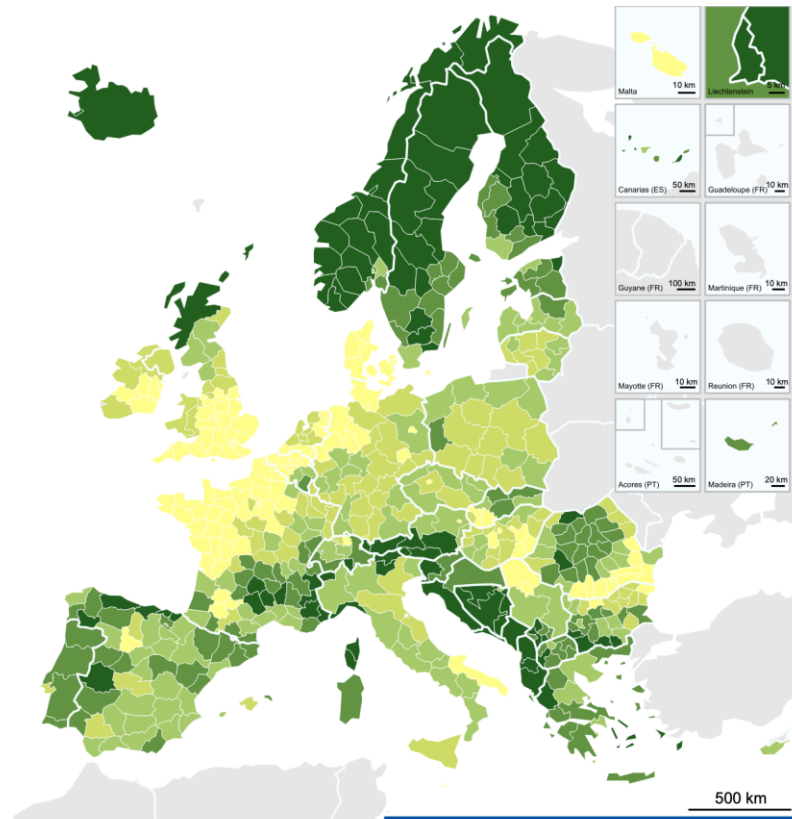
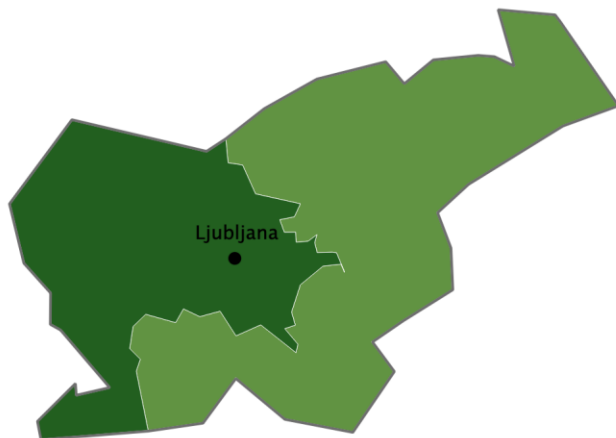
Source: ESPON LOCATE, 2017
Origin of data: Eurostat 2016, own calculations

High energy consumption of road transport in Slovenia

Road transport is among the main energy consumers in the transport sector. It includes passenger transport by car or bus and transport of goods by trucks. Hence, regional variations of energy consumption follow population, GDP and employment patterns. The energy consumption of road transport is particularly high in Nordic regions as well as in regions in Central Europe. In addition, areas of fuel tourism can be observed. Energy consumption of road transport is considerably lower in most eastern European countries as well some regions in Portugal and southern Italy.

Energy consumption of road transport in Slovenia is higher than in most regions in Europe. In 2012 about 45% of the total energy consumption was used by the road transport sector in Slovenia. In the EU, the share of road transport in the total energy consumption was only higher in Luxembourg (58%). In Slovenia, the energy consumption of road transport is lowest in Zasavska region.

Spatial distribution of potential GI network at landscape level

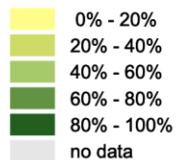


ESPON   © ESPON, 2020
Regional level: NUTS 2 / 3 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

50 km

500 km

Coverage percentage of NUTS2/3



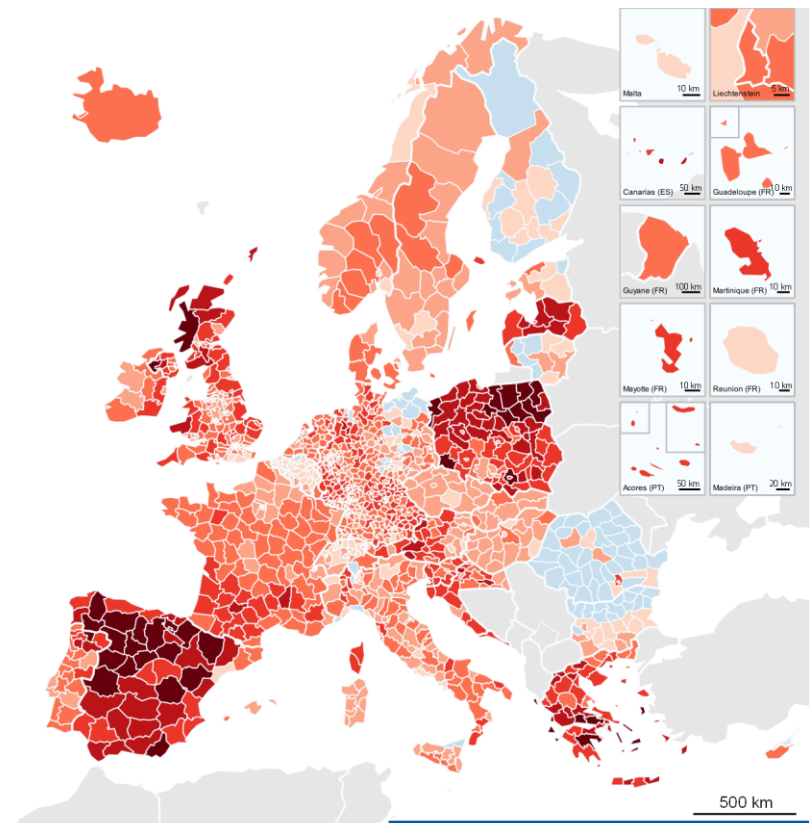
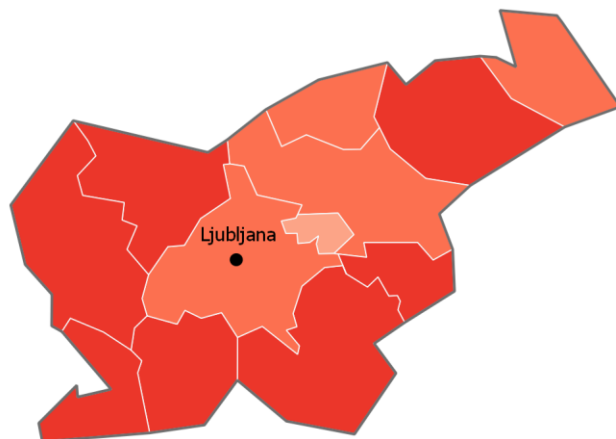
Source: ESPON GRETA, 2019
Origin of data: CLC 2012, Copernicus HRL Impervious 2012, OSM 2017, Natura 2000 (EEA, 2012), Emerald Network 2012, HNVF (EEA 2015), Ecosystem types map (ETC-SIA 2015)

High potential for green infrastructures in Slovenian regions

Green infrastructures are important connectors for ecosystems by linking natural areas. The potential of green infrastructure depends on the population density, infrastructure development, climate and topographic conditions, and the availability and use of agricultural areas. Hence, the highest potential for green infrastructure in Europe can be observed in the regions with low population density, like in the Nordic countries, or in mountainous regions, like in Alpine regions or in the Balkans. Many of these areas consist of forests, grasslands or (unutilised) crop lands whether or not classified as protected area.

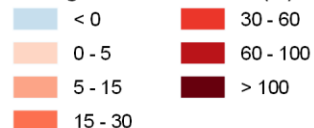
More than half of Slovenia's territory has a potential for green infrastructures. This makes the country among the European areas with highest potential for green infrastructure. The potential for green infrastructure is highest in Western Slovenia which includes Slovenia's most mountainous areas. The potential for green infrastructure in Eastern Slovenia is slightly lower, partly due to more agricultural activities in the flatter areas of the Pomurje and Podravska regions between the Mura and Drava rivers.

Development of artificial area (2000-2018)



ESPON   © ESPON, 2020
Regional level: NUTS 3 (2016)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Change of artificial area (%)



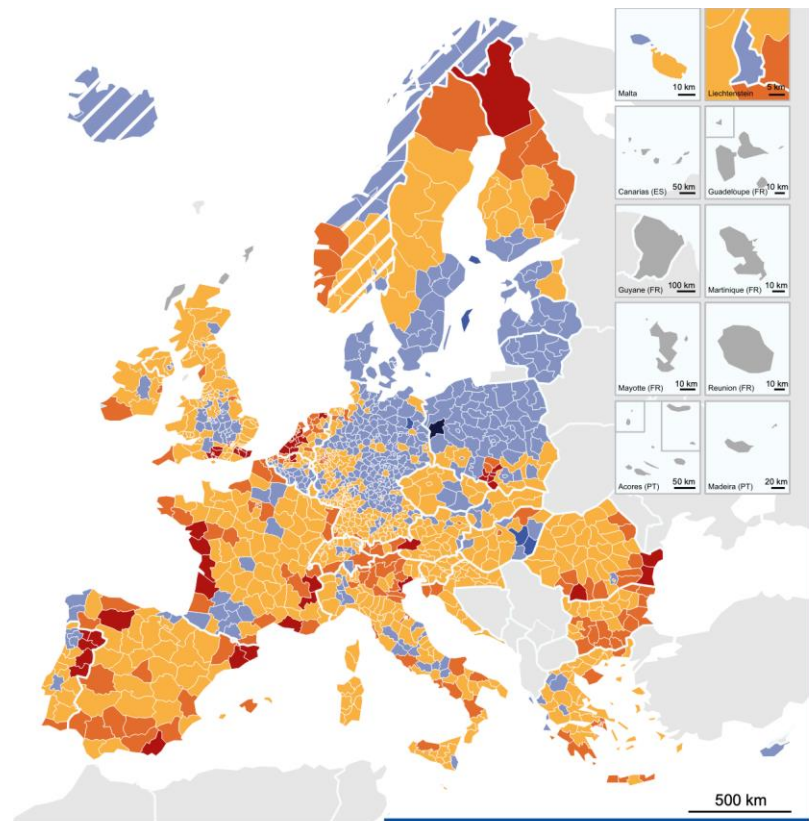
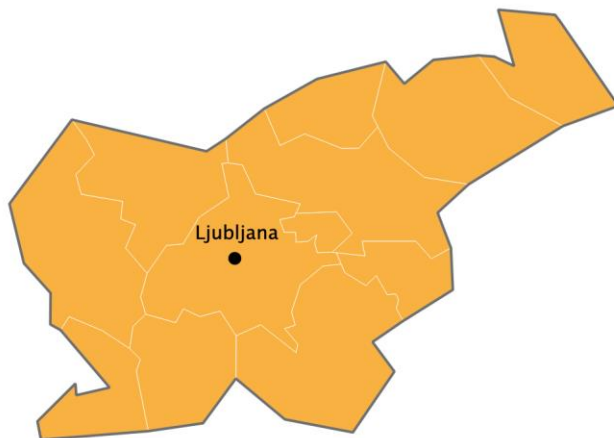
Source: ESPON SUPER (2019)
Origine of data: Corine Landcover, 2019
Data for Turkey: 2000-2012

Increasing impact of human activities in Slovenian border regions

Changing shares of artificial areas illustrates the impact of human activities on the land, namely for housing, industries, infrastructures, and recreation (urban green areas). Between 2000 and 2018 the share of artificial area increased in northern Poland, central Latvia, Spain, Scotland and Tirol in Austria. In most of these regions agricultural land was turned into urban use. The reasons for low or negative changes of artificial areas are diverse. The relative coverage of artificial areas hardly changed in some of Europe's main urban areas where the levels of artificial area were already high, e.g. in Antwerp, Ljubljana, Genova and Paris. The impact of human activities in Romania, northern Bulgaria, eastern Germany and eastern Finland was low due to decreasing economic activities.

The development of artificial land in Slovenia between 2000 and 2018 illustrates increasing economic development outside the main urban areas. Artificial land use increased most along Slovenia's borders, particularly in the south-eastern statistical region along the Croatian border, mostly as result of new road infrastructures. Artificial land-use increased least in Zasavska. Here the share of artificial land-use was already higher than elsewhere in the country (highly industrialised region) and the region faced an important emigration during the last two decades.

Aggregated potential impact of climate change











ESPON   © ESPON, 2020
Regional level: NUTS 3 (2016)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

50 km

500 km

Aggregate potential impact of Climate Change

	medium positive impact (-0.35 - -0.3)		low negative impact (0.1 - 0.3)		no data
	low positive impact (-0.3 - -0.1)		medium negative impact (0.3 - 0.5)		reduced data
	no / marginal impact (-0.1 - 0.1)		highest negative impact (0.5 - 1)		

Source : ESPON Database, ESPON Climate Update, plan – risk consult, 2014
Origin of data : EEA, 2013, 2013 (CORIN 2006), 2014 (NATURA 2000), E-PTRT 2012, OSM2014, GISCO 2006, Eurostat 2006, 2011, 2013,2014, JRC 2006, 2012 (ENSEMBLES), 2013a (Eurosoils), 2013b (LISFLOOD), 2013c, 2014, USGS 2011, DIVA 2004, ATSR 2014, Statistics Iceland 2011, Bundesamt für Statistik 2011, 2014, Amt für Statistik Liechtenstein 2014, 2011, HESTA, 2014.

The indicator puts together expected impact of climate change on environmental assets, economic activities, physical infrastructures, social cohesion and cultural sites. for more information, see ESPON CLIMATE final report

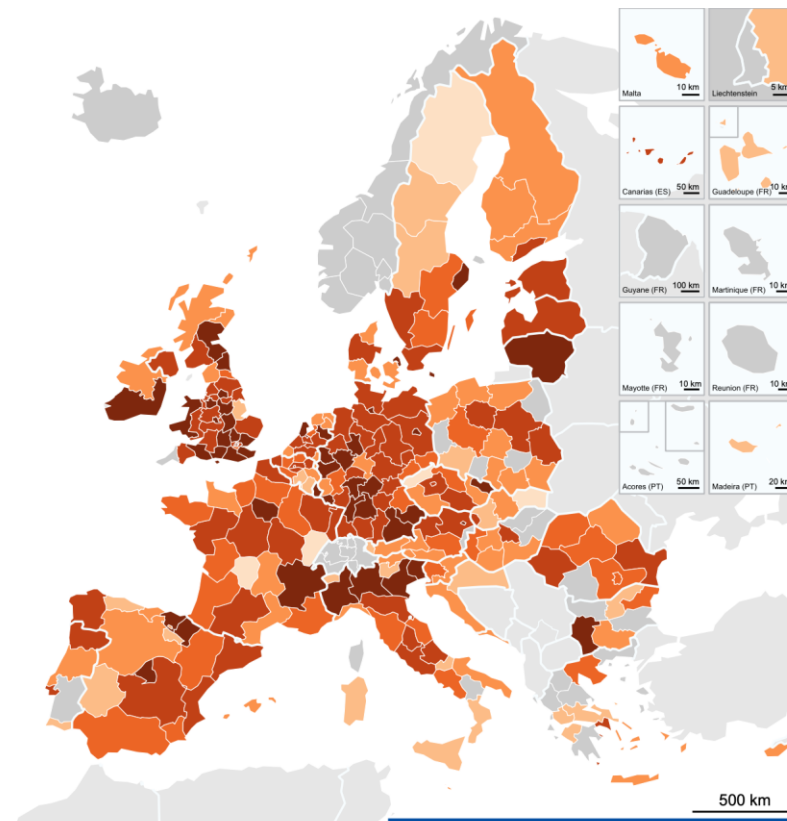
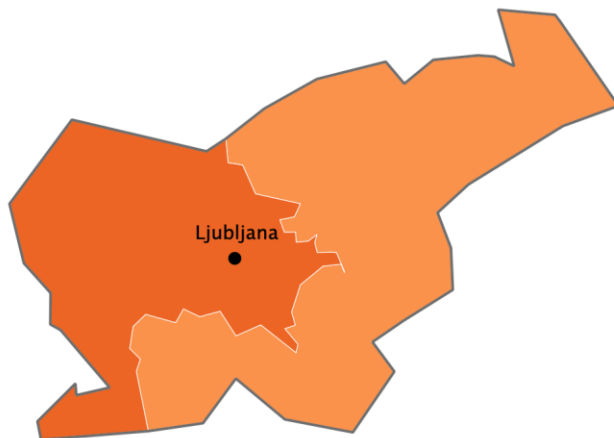
Note : regions with reduced data are missing information related to environmental sensitivity and exposure. For more details, see ESPON Climate Update Annex

Climate change impacts Slovenia's territories locally

Aggregated potential impact of climate change brings together environmental, physical, social, cultural and economic expected consequences of future climate disruption based on combined measures of regional “sensitivity” and “exposure”. Important factors for the potential impact of climate change are high slopes (e.g. in mountainous regions), exposure to soil erosion (e.g. in river deltas or along coasts) and large protected areas, flood and drought risks. Regions that are the most exposed are primary close to a coastline or to a major river (e.g. Rhone, Po), southern Europe and in the inland to the north and east of Scandinavia. Exposure is more limited around the southern part of the Baltic Sea, in Eastern Germany and in most of Poland.

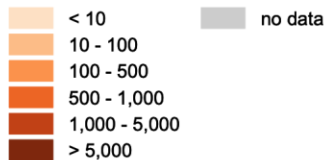
At a European scale climate change has a relatively low aggregated negative impact on Slovenian regions. However, Slovenia's diverse landscapes imply various impacts of climate change. Current projections foresee more extreme weather conditions in Slovenia. Areas with least precipitation may experience drought more often. Snowfall decreases in the Alpine regions. Riverbeds may see more variation in water levels, e.g. less melting water throughout the year and high levels earlier in the season and increased risk of floods from heavy rainfall. Each of these examples impact economic activities such as agriculture and tourism and demands for specific responses at local level.

Employment in Circular Business Models



ESPON   © ESPON, 2020
Regional level: NUTS 2 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Number of employees in latest available year



Source: ESPON CIRCTER, 2018
Origin of data: Orbis, Bureau van Dijk, accessed 2018, calculated by Prognos AG

Employment in Circular Business Models concentrates in urban area and industrial clusters

Circular Business Models facilitate the uptake of circular processes through innovative services and new forms of consumption by connecting businesses to businesses, businesses to consumers, and consumers to consumers. Circular Business Models help thus to close the loop of economic value chains. Agglomeration and proximity factors determine to a large extent the presence of Circular Business Models. Hence, many models and employees in these models can be found in urban areas or highly populated regions such as northern Italy, southern England or Madrid as well as in Lithuania. Likewise, high employment in Circular Business Models can be found in industrial regions for example in Germany and northern Spain.

Various examples of Circular Business Models have been found in Slovenia. Most models refer to processes linking businesses, e.g. processes that aim to reduce consumption by introducing reuse systems or pay-per-services schemes, models that focus on extending product lifetimes and increase resource values. These models benefit from proximity between businesses and proximity to knowledge centres. Hence, each of these models are more frequently observed in Western Slovenia including Ljubljana and the industrial cluster at Koper harbour. National and local strategies encourage the development of more Circular Business Models throughout the country, as illustrated by the national circular economy roadmap and the Maribor circular economy strategy.



More connected Europe

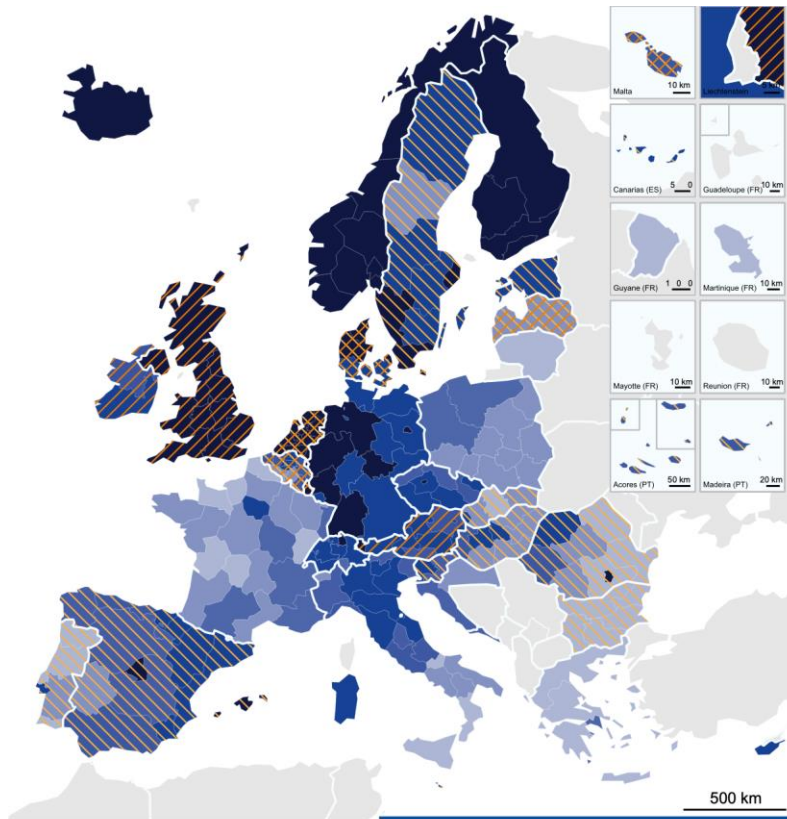
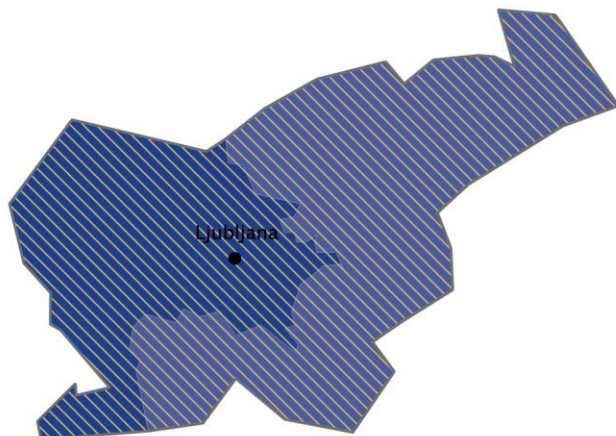
Broadband access (2018)

European transport hubs (ports and airports)

Development of transalpine traffic flows

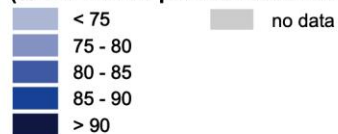
Gross weight of goods handled (2005-2015)

Broadband access (2018)

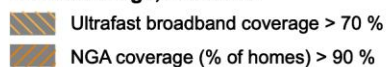


ESPON   © ESPON, 2020
Regional level: NUTS 2 / 1 / 0 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Proportion of households with broadband access, 2018 (% share of all private households)*



Countries with high values in ultrafast broadband or NGA coverage, mid 2018



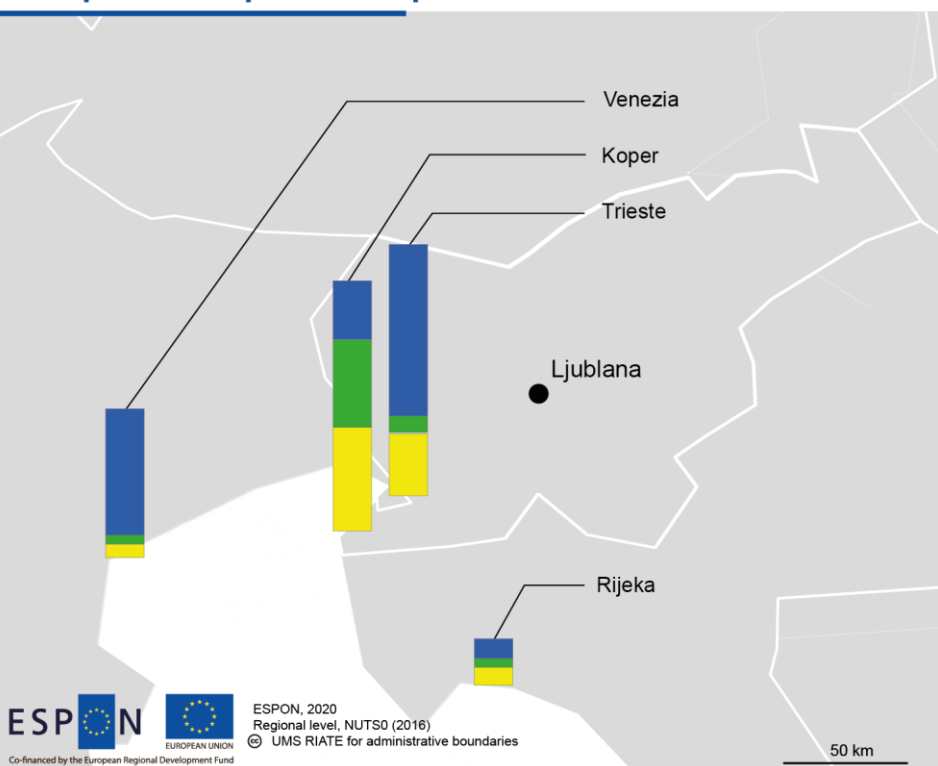
Origin of data: Eurostat, DESI Index 2019
Definition: Ultrafast broadband offers at least 100 Mbps download speed, NGA = next-generation access
* The availability of broadband measured by the percentage of households that are connectable and thus refers to coverage.

Slovenia has higher broadband access than European average

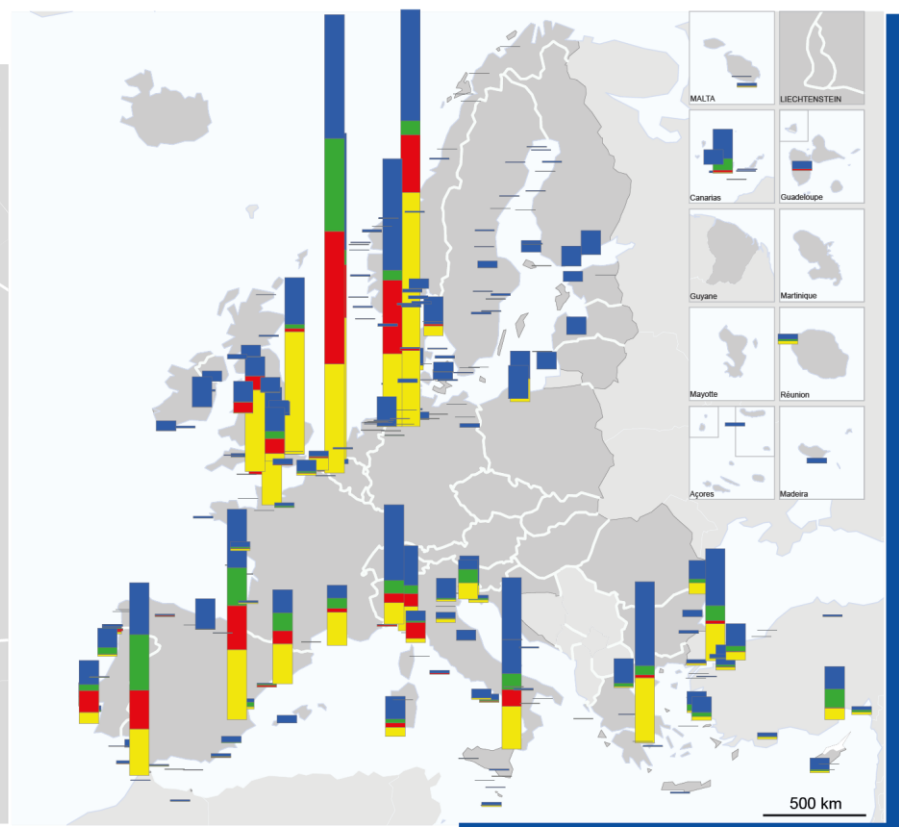
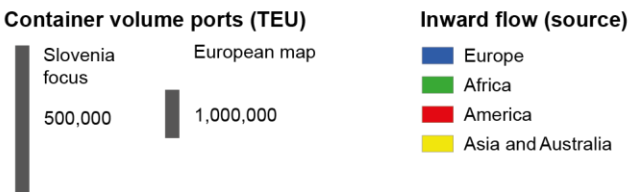
The Nordic states, the United Kingdom and Western Germany register the highest values in terms of households with basic broadband access. Most regions have more than 75% of households with at least 30 Mbps broadband access, therefore missing the EU 2020 target of 100% coverage. Regions in the core of Europe are close to ensuring 100% 30 Mbps broadband access, while those in southern Europe can cover between 75% and 85% of households, or even less. Even though eastern European countries lag behind in terms of broadband access, with values below 75%, they show high internet performance, having good next-generation access broadband coverage and, in some cases, high scores with regard to access to ultrafast broadband.

In Slovenia, the vast majority of households has access to broadband, with a slightly higher rate in the Western region (90 %) than in the Eastern region (84 %). Slovenia is also among the few countries that have above 70% of households covered by ultrafast broadband in 2018, together with e.g. Spain, the Netherlands or Hungary.

European transport hubs: ports



ESPON, 2020
Regional level, NUTS0 (2016)
© UMS RIATE for administrative boundaries



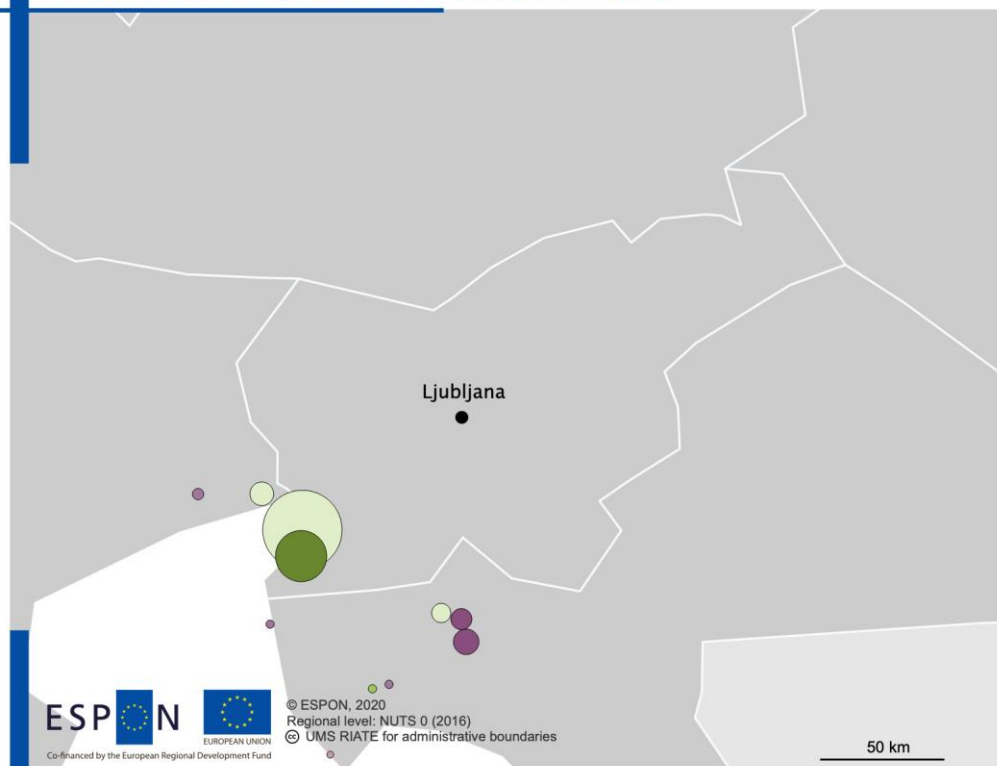
Source: ESPON EGTC, Territorial Futures, 2017
Origin of data: Eurostat, 2015

Port of Koper the intercontinental container hub of the northern Adriatic

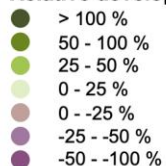
In a globalised world, ports are important focal points of trade. Ports act as hubs to import and export goods and products from around the globe. Maritime transport accounts for more than 85% of global trade in terms of volume and more than 70% in terms of value and an increasing share of products are transported in containers. Europe's main transport hubs for containers are situated around the North Sea, notably Rotterdam, Antwerp, Hamburg and Bremerhaven. Hubs can also be found in the Mediterranean for example Valencia, Gioia Tauro in southern Italy and the port of Piraeus, Athens. Most containers arrive from Asia and Australia. Smaller ports receive also large shares of containers from elsewhere in Europe.

The port of Koper, located in Slovenia is one of the main maritime transport hubs in the Adriatic Sea. The maritime throughput of the port was 22,792,646 tonnes in 2019 of which 41% in containers. Containers had diverse origins. A large share of the containers came from Asia and Australia and Africa. Koper's location along the Baltic-Mediterranean and Mediterranean European core transport networks facilitates the transportation of these products to other places in Europe. Compared to other main ports in the northern Adriatic the Port of Koper has a more intercontinental orientation. In addition, the port focuses more on container shipping. The total volumes handled are higher in Trieste, but the container volumes of Trieste and Koper are similar.

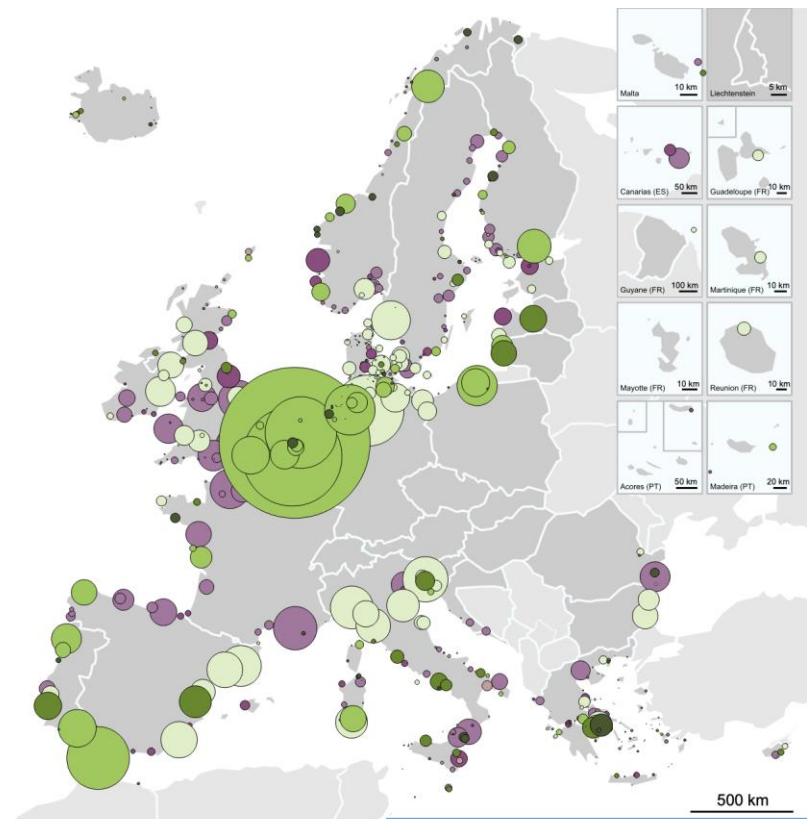
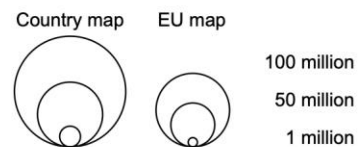
Gross weight of goods handled (2005 - 2015)



Relative development 2005 - 2015



Freight volume 2015, tons



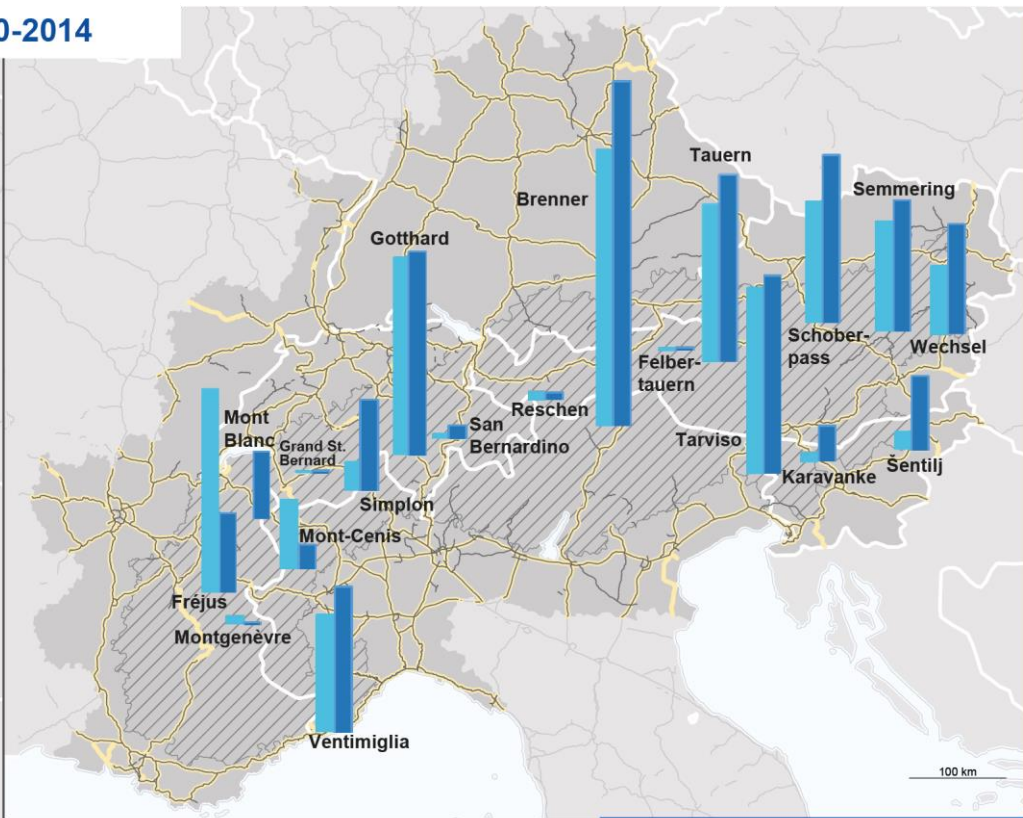
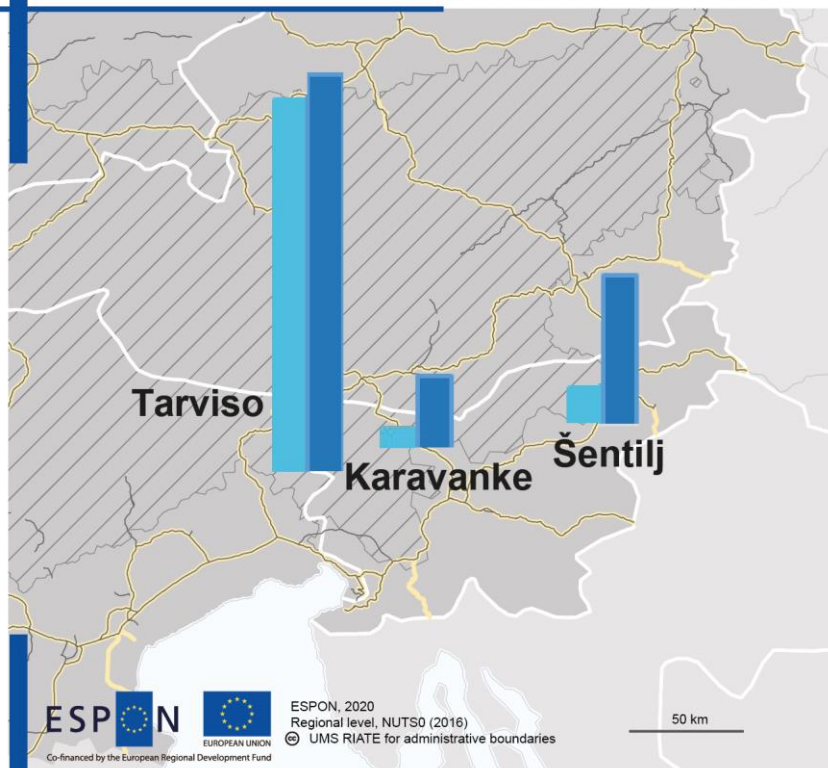
Source: Spiekermann and Wegener Urban and Regional Research (S&W), Accessibility by the sea, 2017
Origin of data: Eurostat (online data code: mar_go_aa), 2006 & 2015

Increasing flows of goods through ports impact traffic flows in the hinterland

Maritime ports are important transport and trading hubs in a globalised world and can be found along all European coastal areas. Most freight is transported in major ports along the North Sea and the Channel. The other sea basins are less dominated by few large ports but see a large number of ports in close distance to one another. The development of freight transport in Europe's maritime ports is rather diverse. Only extremes can be observed, including the large growth in the ports of Athens and several smaller ports along the Atlantic coast. Many of the ports that grew between 2005 and 2015 are in close proximity from ports with decreased freight volumes, suggesting increasing competition.

Main freight ports along the north Adriatic handle increasing volumes of goods. In particular the port of Koper saw an increase of goods handled between 2005 and 2015, the volume of freight increased less in the ports of Trieste and Rijeka. Increased freight volumes in the ports have their impact on the hinterland as well. The hinterlands of the Koper, Trieste and Rijeka ports cross Slovenia along the Mediterranean and Baltic-Mediterranean core transport corridors. Increased freight volumes in the ports impact among others traffic flows in Slovenia. In particular traffic around Koper, Ljubljana and Alpine crossings like Karavanke and Sentilj are affected by increased freight transport leading to congestion and environmental damage.

Development of transalpine freight traffic flows 2000-2014



Total freight transport crossing the Alps (in Mio t*)



Source: FAU & Eurac research, Alps2050, 2018
Origin of data: AlpInfo 2014
Eurogeographics for cities and roads

*Karavanke and Šentilj: only roads and referring to DRI Investment Management Ltd., Ministry of Infrastructure of the Republic of Slovenia

Increasing amounts of goods cross the Slovene Alpine areas

Despite its geography, the Alps are a major European crossroad for freight transport. Five out of the nine core European transport corridors cross the Alps link cities and industrial centres through tunnels and over passes. Main Alpine crossing points are the Brenner, Trarviso, Tauern, Gotthard and Ventimiglia. Freight crosses the Alps at these points via rail and road. Between 2000 and 2014 the total volume of goods transported increased, particularly at crossings between Slovenia and Austria (Karavanke, Šentilj/Spielfeld) as well as at the Brenner pass. A large increase in volume transported at the Mont Blanc crossing and a decrease at the Fréjus crossing result from accidents and constructions in the period reviewed. This highlights the vulnerability of these crossings for good accessibility and connectivity.

Between 2000 and 2014 the volume of freight transported at Karavanke and Šentilj/Spielfeld increased relatively more than at other Alpine crossing points although the total volume of freight traffic remains relatively low. In 2014 about 10 million tonnes of goods crossed the Alps at Šentilj/Spielfeld and about 4 million tonnes crossed at Karavanke. This includes domestic, import, export and transit traffic. This illustrates the increasing importance of these crossing points for trade along the Mediterranean and Baltic- Mediterranean core transport corridors. At the same time increased freight transport causes congestion, contributes to environmental damage and demands for improved infrastructures. Challenges which are shared with other Alpine regions.



More social Europe

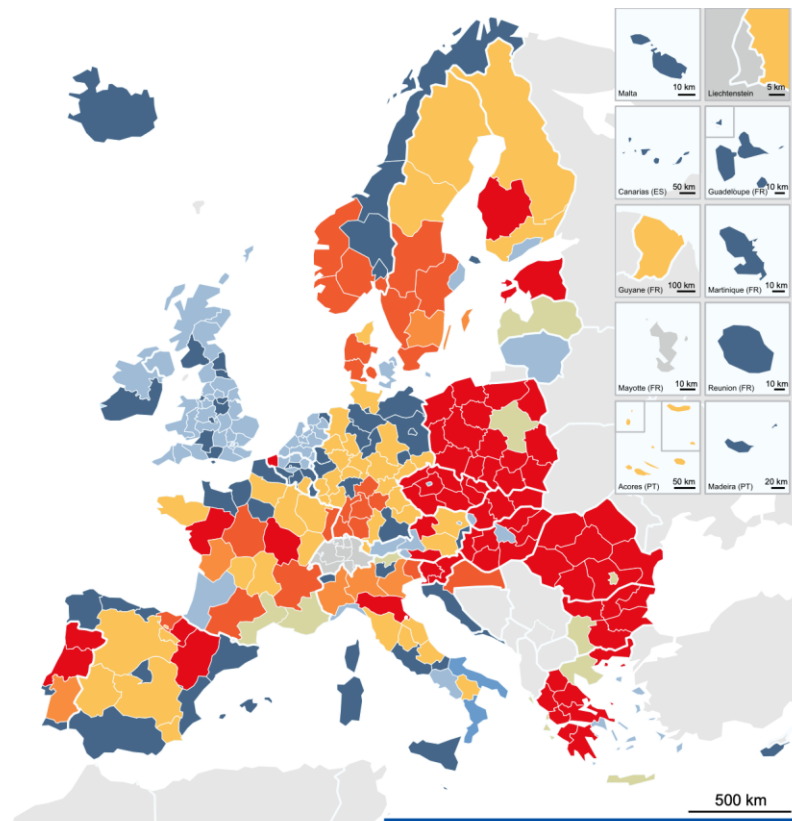
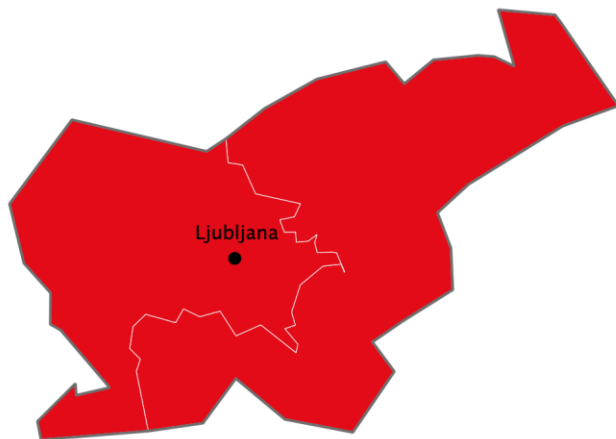
Regional job creation and job displacement by skill level
2013-2018

Out-Migration and Higher Education (2014)

Population development (2014-2030)

People not in Education, Employment or Training (2016)

Regional job creation and job displacement skill level (2013 - 2018)












ESPON   © ESPON, 2020
Regional level: NUTS 2 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

50 km

500 km

Source: ESPON T4, 2020
Origin of data: Eurostat, IFR, 2019

Legend

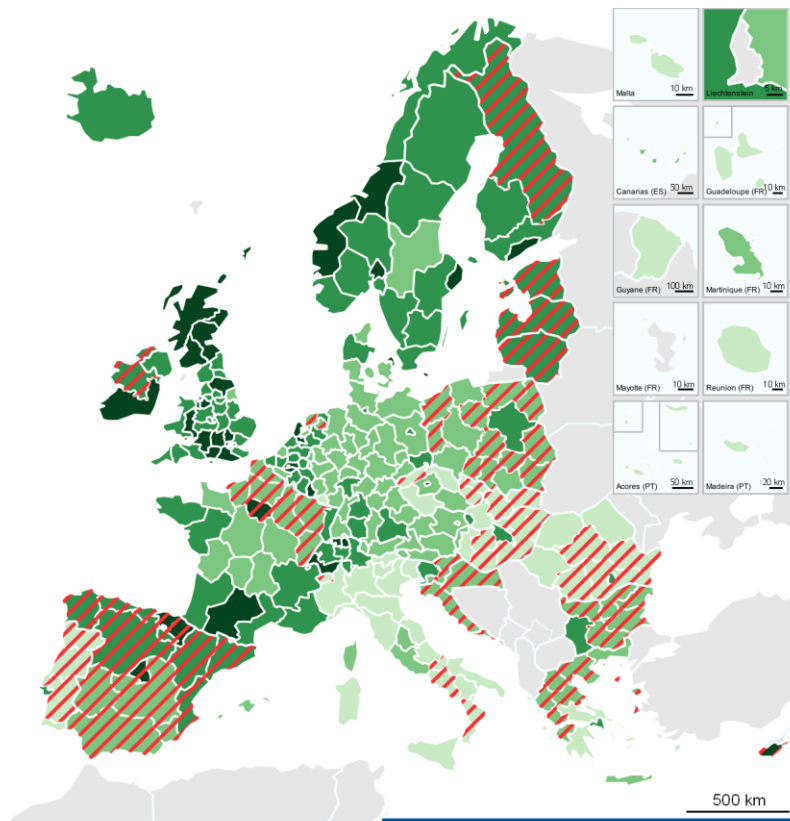
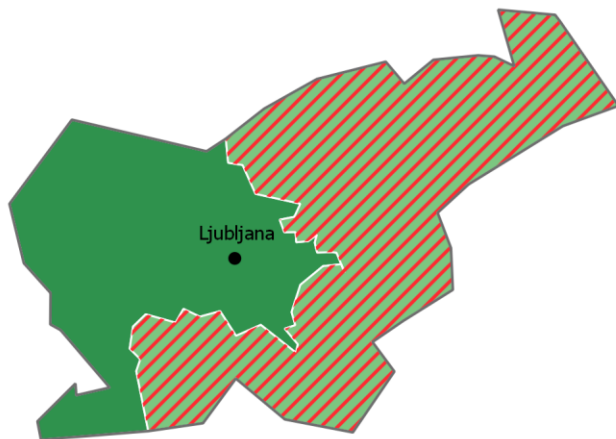
- | | | | |
|---|--|---|----------------------------------|
|  | Displacement of manual and cognitive jobs |  | Deskilling (gig-jobs creation) |
|  | Displacement of cognitive jobs (deskilling) |  | Upskilling (elite jobs creation) |
|  | Displacement of manual jobs |  | High polarisation |
|  | Moderate displacement of manual and cognitive jobs |  | No data |
|  | Moderate polarisation | | |

Displacement of jobs in the manufacturing industry

Economic growth is increasingly dependent on automated and technology driven production processes and services. This industrial revolution impacts Europe's labour markets that focus on services and manufacturing. The 4th industrial revolution leads in the service industry to a focus on unskilled jobs or on the creation of high skilled and specialised jobs. In most regions with predominant employment in the service sector it leads to a polarisation. The 4th industrial revolution impacts labour markets with predominant employment in manufacturing by displacement of jobs, mostly in Eastern European regions, as well as in Estonia, parts of Greece, Spain and Portugal. Other regions may experience rather displacement of manual (routine-based labour) or cognitive (non-routine-based labour) jobs.

Increasing automatization of production processes and the use of technological solutions causes job losses in the Slovenian manufacturing industry. Both manual (routine-based) as well as cognitive jobs (non-routine-based labour) disappear as result of further technological developments in the industry. Similar trends can be observed in most other parts of eastern Europe. In neighbouring regions, Continental Croatia and Friuli-Venezia Giulia, mostly cognitive jobs are displaced, implying deskilling of the labour force in manufacturing sectors. Many regions in Northern and Western Europe with a predominant manufacturing labour market see rather a moderate displacement of jobs or only a displacement of manual jobs.

Out-Migration and Higher Education, 2014



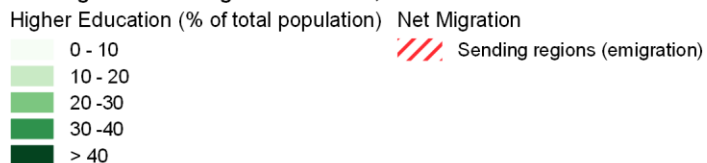
ESPON   © ESPON, 2020
Regional level: NUTS 2 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

50 km

500 km

Source: IRS Milano, IES Brighton, IRS Erkner (2017)
Origin of data: Eurostat, 2016

Out-Migration and Higher Education, 2014

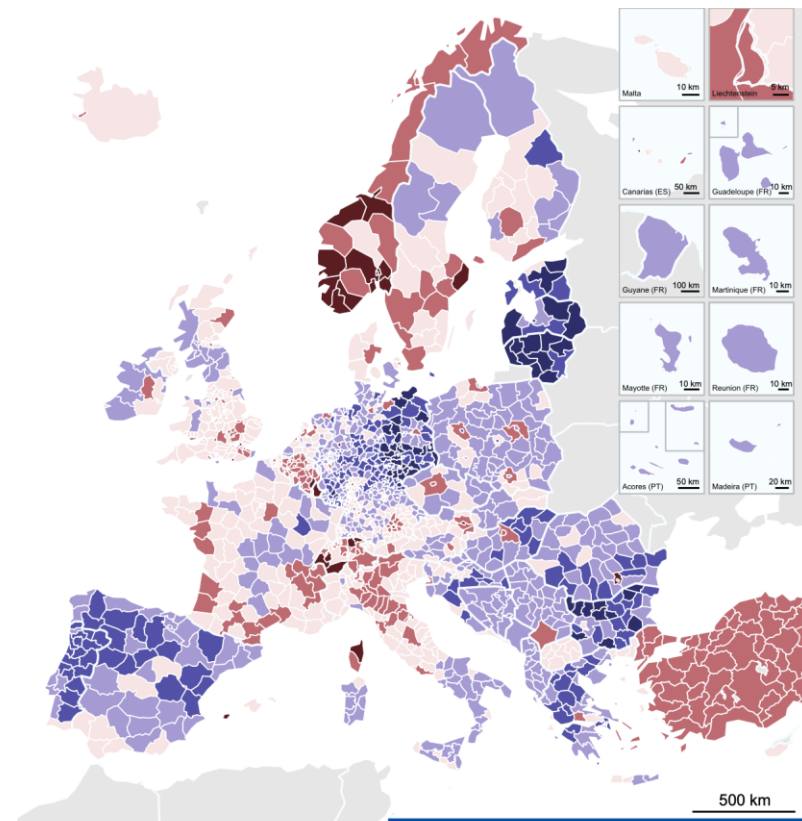
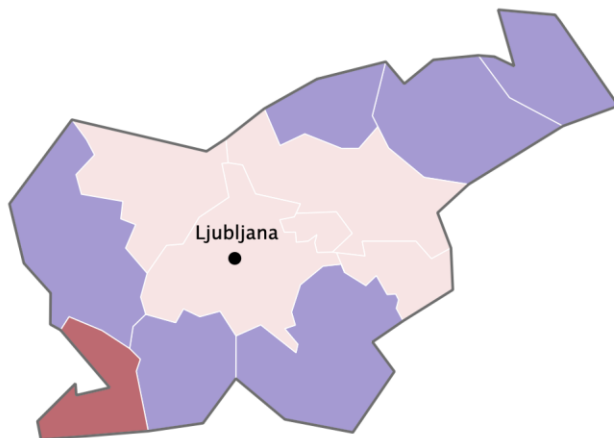


Differentiation between East and West Slovenia

A combined view of higher education levels in European regions and regions with out-migration illustrates a risk of brain-drain. Brain-drain occurs when high skilled, often young people, leave an area to seek better opportunities elsewhere. In 2014, most Eastern European regions as well as Portugal and Spain had a negative migration balance and were thus sending regions. Only some capital regions or larger urban regions had a positive migration balance including Sofia, Budapest and Warsaw. Sending regions that have a high share of population with higher education degrees risk most brain-drain effects, such as Northern Spain and Madrid, Cyprus, and the Baltic States. In other sending regions, this effect may already be in place.

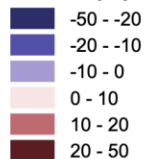
A differentiation between Eastern and Western Slovenia can be observed regarding shares of high educated people in the population and migration. Western Slovenia has generally higher shares of population with higher education degrees and has a positive migration balance. More people are leaving Eastern Slovenia than settle there. This difference may suggest higher attractiveness of the capital region to attract highly skilled labour and new firms. Increasing flows to capital regions can be observed in other parts of Europe as well. On the contrary, Eastern Slovenia risks of brain-drain. In particular rural regions experience out-migration and have moderate level of higher education attainment. University towns such as Maribor may be less impacted.

Population development (2014 - 2030)



ESPON   © ESPON, 2020
Regional level: NUTS 3 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Relative population development (%)



50 km

500 km

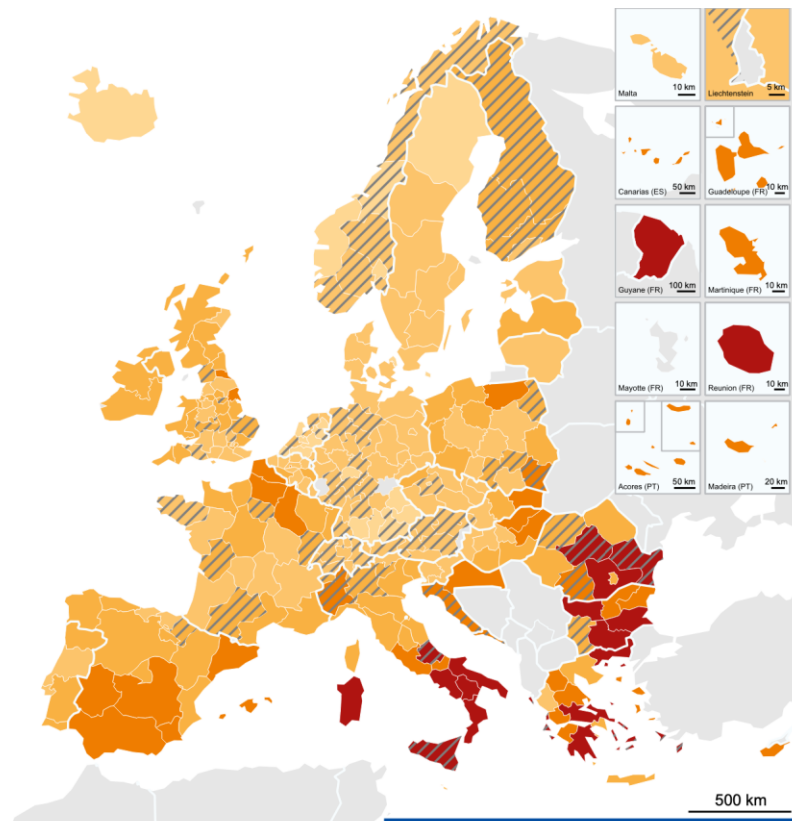
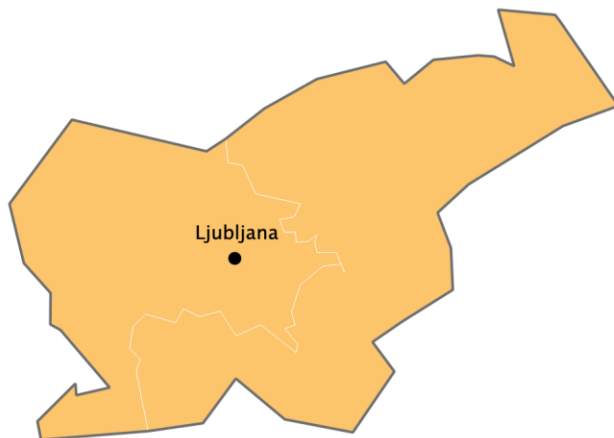
Source: Spiekermann and Wegener Urban Regional Research (S&W), Territorial Futures, 2017
Origin of data: Eurostat (online data code: demo_r_gind3; pro_13prms3), 2014 & 2030

Increasing population imbalances across Slovenia

Population developments in the coming years indicate changing needs for infrastructures, public services, housing etc. Hence, they are important indications for evidence-based policymaking. Though the assumptions used for modelling need to be considered although main patterns may remain. Europe's population structures become more diverse. Population will most decline in regions along Europe's external borders and in central Germany. Highest population growth is foreseen in wealthy regions, such as Switzerland, Luxembourg and Norway. Also, large parts of Sweden, Belgium and Northern Italy are expected to grow as well as Europe's capital regions, even in countries where most other regions are facing population decline. The latter suggest further urbanisation in Europe.

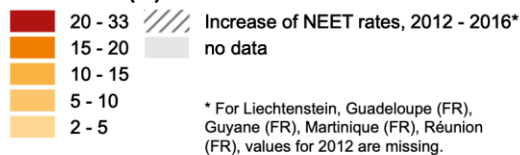
2014 population projections for 2030 suggest an increase of population in the Coastal-Karst region as well as in Osrednjeslovenska and surrounding regions. Population decline is expected in the more rural regions in the south and north east as well as in the Severna primorska region. This population projection illustrates increasing flows to coastal regions, a tendency that can be observed in other European countries as well, most notably in France. It also illustrates increasing suburbanisation in the Osrednjeslovenska region and along main transport axis, from Austria until Zagreb. In total Slovenia's is expected to slightly grow until 2030, unlike the populations of most other countries in the Western Balkans as neighbouring regions.

People not in Education, Employment or Training (NEET)



ESPON   © ESPON, 2020
Regional level: NUTS 2 (2013)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

NEET rates (%) 2016



Source: ESPON YUTRENDS, 2019
Origin of data: Eurostat, 2019

Moderate shares of NEETs in Slovenia

High shares of population aged 15-24 that are not in employment, not in education or follow any training (NEETs) illustrate a mismatch between education and labour markets or a lack of job opportunities in general. The share of NEETs is particularly high in regions in Romania, Bulgaria, Greece and southern Italy. Also high shares of NEETs can be observed in Northern France, Southern Spain and Croatia. In only few of these regions the number of NEETs increased between 2012-2016, notably in Romanian and Italian regions. The number of NEETs increased rather in regions with fewer NEETs, notably in Northern and Western European countries, such as Austria, Finland, Norway, Switzerland, Germany, England and the Netherlands.

The share of NEETs in Slovenian regions is moderate. In 2016, the share of NEETs aged 15-25 was 7.3% in Western Slovenia and 8.7 in Eastern Slovenia. The share of NEETs declined in Eastern Slovenia and remained stable in Western Slovenia between 2012 and 2016. Therewith score Slovenian regions better than many other European regions. Contrary to Slovenia many Southern and Eastern European regions had higher shares of NEETs in 2016 and many Northern and Western European regions even had an increase of NEETs. Slovenian regions have comparable developments of NEETs as other Central European regions, mainly in Hungary, Czechia, Poland and Eastern Germany.



Europe closer to citizens

Thematic fields covered by crossborder public services (2018)

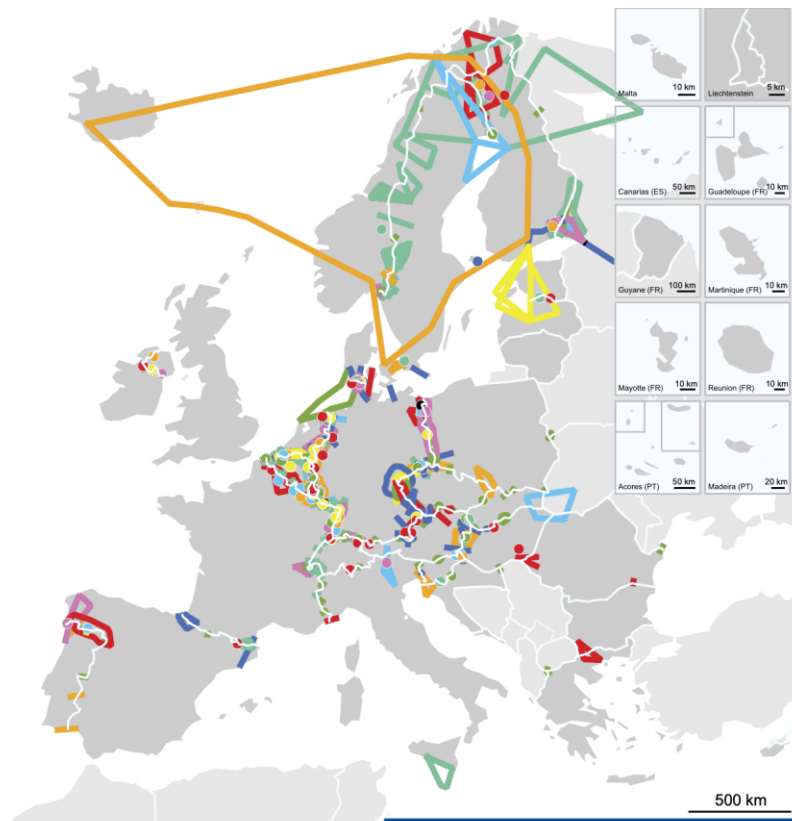
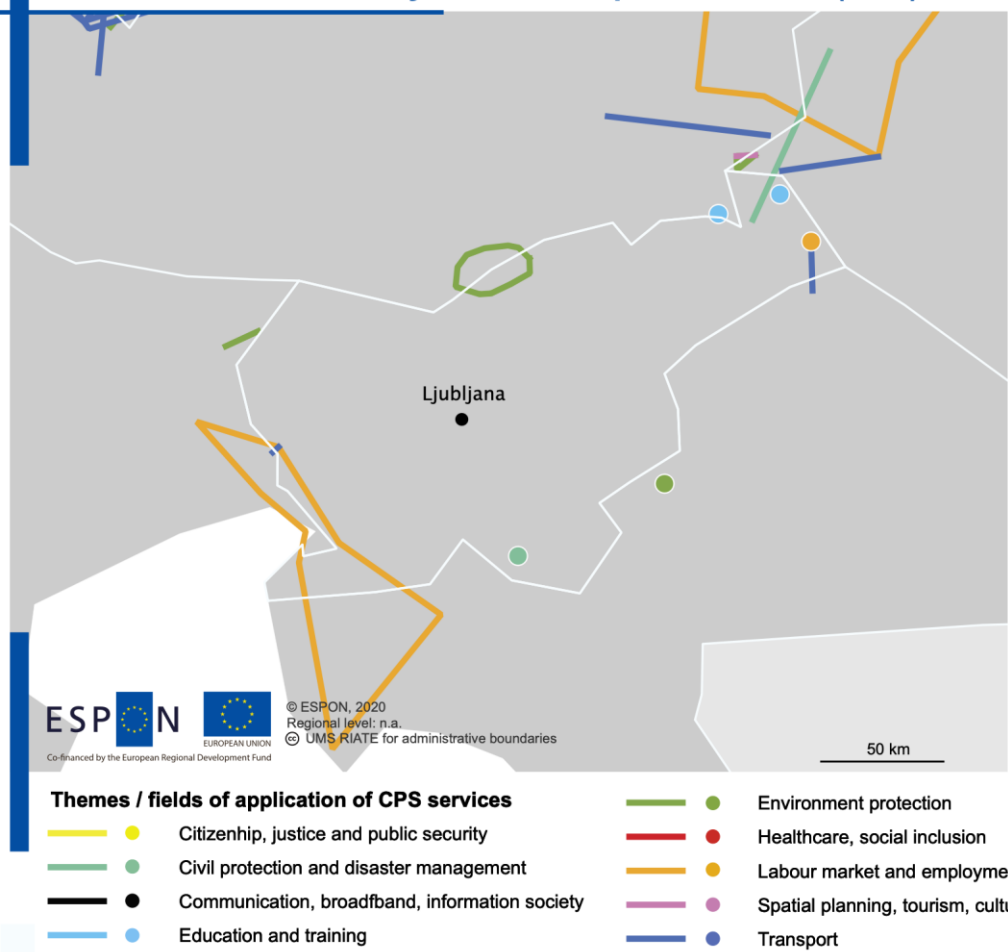
European quality of government index (2017)

Main socio economic drivers of inner peripherality

Foundations of wellbeing index (2016)

Status and evolution of eGovernment interactions (2014-2019)

Thematic fields covered by crossborder public services (2018)



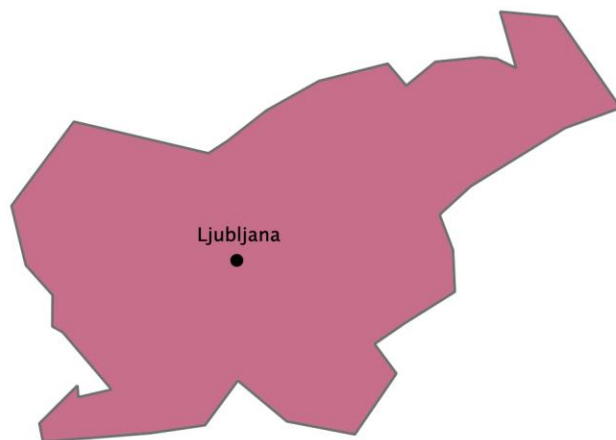
Origin of data: TCP International, 2018; Eureconsult, 2018; various data sources, 2018
Delineations: each dot or line represents one individual CPS, provided by two or more partners.

Several cross-border public services across Slovenia's borders

Cross-border Public Services (CPS) allow to address joint problems or development potentials of border regions and to overcome border obstacles in the provision of public services. CPS are found all over Europe, but they are spread in a rather imbalanced way with more CPS provided at borders of "old" EU15 Member States and between Nordic countries. Most CPS deal with one of the following three policy fields: (1) environmental protection, (2) civil protection and disaster management and (3) transport. Highly integrated solutions are found in regions with a long-lasting cross-border tradition.

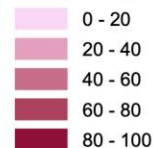
11 examples of cross-border public services can be observed across Slovenia's borders. This includes two CPS in the field of transport, two in the field of education and training, two in the field of labour market, three in the field of environmental protection, and two in the field of civil protection. A relatively higher number of CPS is found in the Pomurje region, one of the case study regions for this explorative ESPON research. The case study illustrated possibilities to raise awareness on CPS and their potential benefits. CPS are among others relevant options to maintain high quality services in areas that face population decline. More CPS may be present along other parts of Slovenia that was not identified in the research as not all stakeholders are aware of the specific character of their service provision.

European quality of government index (2017)

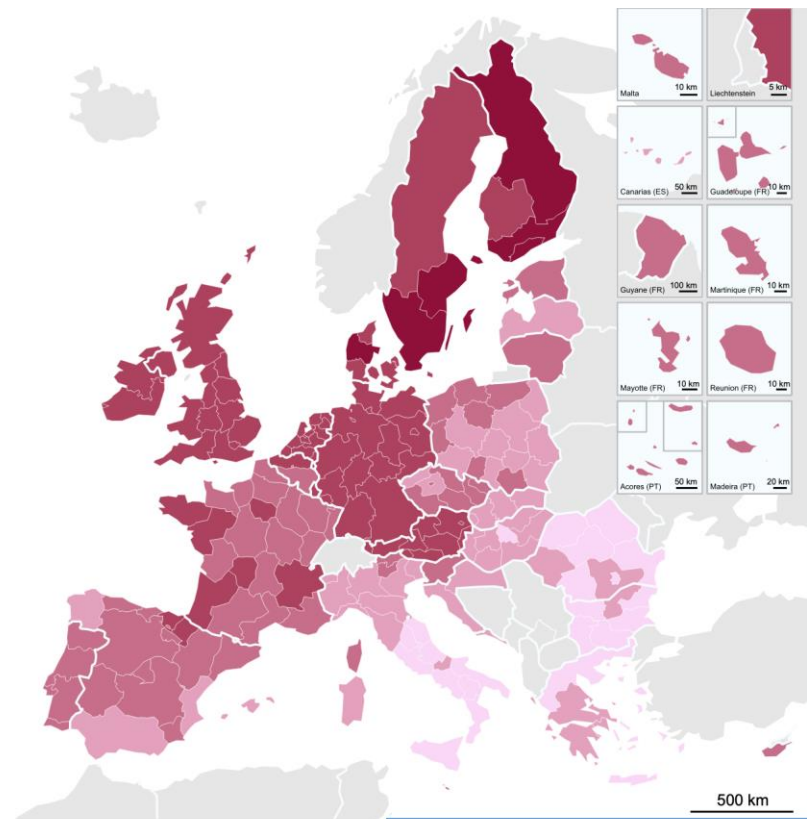


ESPON   © ESPON, 2020
 Regional level: NUTS 2, 1, 0 (2013)
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

European quality of government index



50 km



500 km

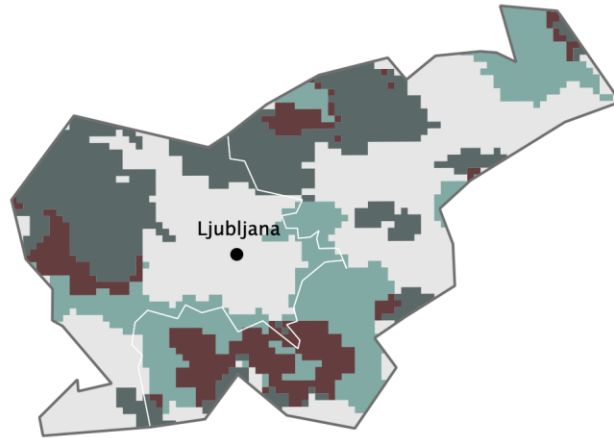
Source: ESPON EGTC
 Origin of data: The Quality of Government Institute, 2017

European average level of quality of government but decreasing

The European Quality of Government index depicts citizens' perceptions of public authorities and institutions. The index assumes a qualitative government as being impartial, efficient and without corruption. A qualitative government may stimulate socio-economic development and respondent adequately to new challenges or events. In 2017, regions in northern and western Europe have highest levels of quality of government, particularly Finnish Danish and Dutch regions. Regions in central Europe, Portugal and Spain have moderate quality of government. South-eastern European countries have lowest levels of quality of government, particularly in Bulgaria, Romania and southern Italy.





Quality of Government in Slovenia scores around the European average. In 2017 Slovenia received a score of 43 on a scale from 0 for the worst performing European region and 100 for the best performing European region. As such Slovenia has a score that is comparable to Lithuania, several Polish and Spanish regions as well as Trento and Bolzano in Italy. Between 2010, 2013 and 2017 the score of Slovenia slightly decreased. In 2010 Slovenia score 57 so just above the European average and in 2013 Slovenia scored 48 just below the European average.

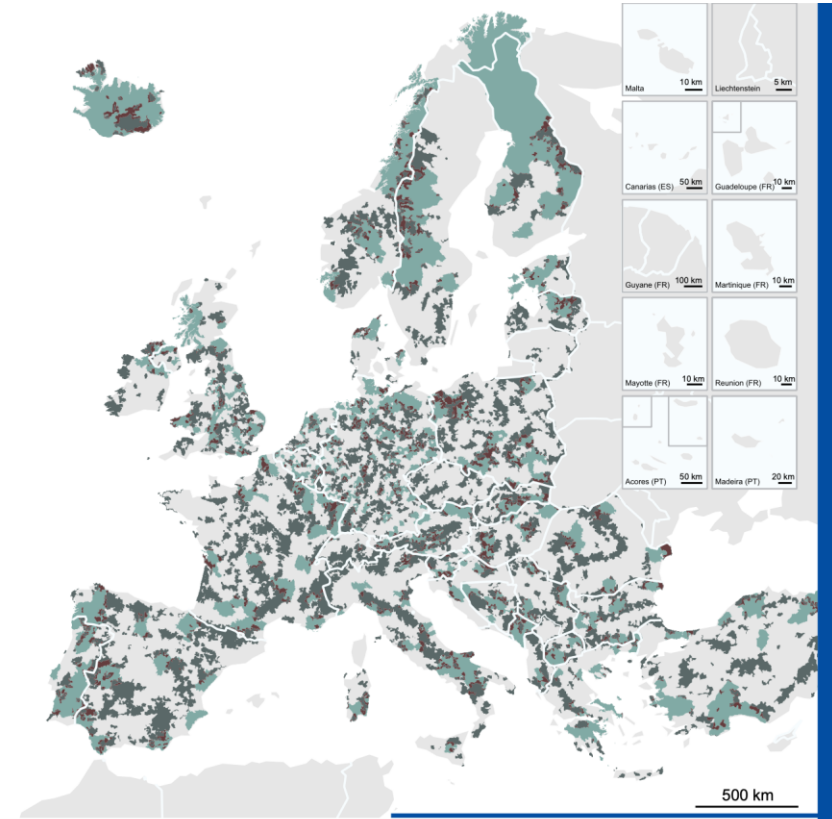
Main socio-economic drivers of inner peripherality



ESPON   © ESPON, 2020
 Regional level: Grid level (2.5x2.5 km)
 © UMS RIATE for administrative boundaries
 Co-financed by the European Regional Development Fund

Main socio-economic drivers of inner peripherality

-  Poor economic potentials and poor socio-economic situation
-  Main driver: lack of access to centres and/or services
-  Main driver: poor accessibility and poor economic potentials/poor socio-economic situation
-  no data



Source: ESPON PROFECY, 2017
 Origin of data: TCP International Accessibility Model, 2017

Inner peripheries in Slovenia's alpine and rural areas

Inner peripheries are places with lower accessibility to services of general interest or lower connectivity to core areas of population, economic activities and jobs. They have generally lower levels of development and quality of life than their neighbouring regions and can be found all across Europe. Their nature is however very different. Poor socio-economic perspectives, lack of access to regional centres or services, or a combination of these two elements are among the key socio-economic drivers for inner periphery. Inner peripheries with poor socio-economic perspectives can mainly be found in place with a shrinking population or with a stagnating economy (e.g. rural or mountainous regions), but in close proximity to urban centres.

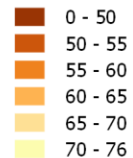
Large parts of Slovenia can be considered as inner periphery. Mountainous areas in the north and rural areas in the south and eastern parts of the country have generally lower levels of accessibility to services and less connectivity to urban centres. Although population densities are low in these areas changing contextual factors (economic or population decline) as well as a change in service provision can impair the living conditions. Mountain areas mainly have a low accessibility to public services and rural areas have poor socio-economic perspectives mainly due to low connectivity to urban centres. A combination of both factors can be found in areas with low population densities and high shares of natural areas.

Foundation of well-being (2016)

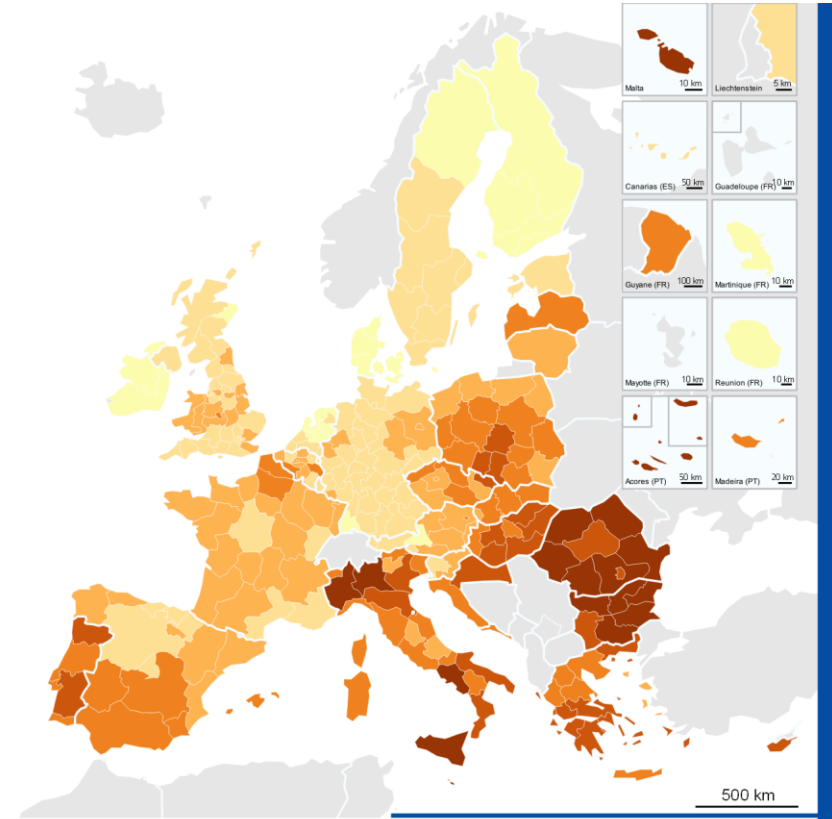


ESPON   © ESPON, <year>
Regional level: NUTS 0 (2016)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

European social progress index: component "foundation of well-being" (2016)



50 km



Regional level NUTS 2 (2010)

Source: ESPON EGTC

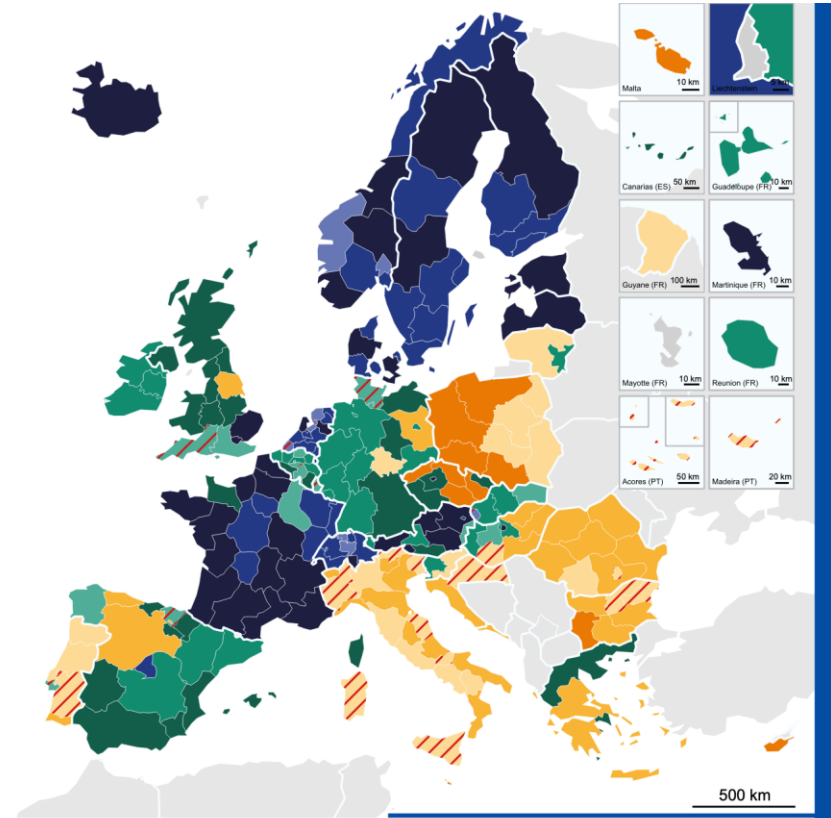
Origine of data: DG REGIO, EU Social Progress Index (2016)

Adequate foundations for wellbeing in Slovenia

Foundations for well-being are one of the building blocks that define Europe's social progress. Together with basic human needs and opportunities for personal rights, personal freedom and choice, tolerance and inclusion, and access to advanced education, foundations of well-being measure social progress in European regions complementing traditional economic progress indicators. Foundations of well-being focus on basic knowledge, access to information and communication, health and wellness and environmental quality. Lowest levels of foundations of well-being are found in Bulgaria, Croatia, Eastern Romania, Southern Italy, and Eastern Hungary. This is followed by other regions in Italy, Greece, Slovakia, Czech Republic, Poland, Latvia, Cyprus and Portugal.

Slovenian regions have better foundations of wellbeing than most other European regions. Western Slovenia ranks 45th among 272 European regions and Eastern Slovenia ranks 129th. Western Slovenia performs particularly well on the access to basic knowledge and ranks 14th in Europe. At the same time, it scores just below the European average regarding health and wellness and scores around the European average on access to information and communication and environmental quality, mainly due to low scores on air quality. The latter point is better in Eastern Slovenia which ranks among the European average. It also performs better than Western Slovenia on access to information and communication as it ranks above European average.

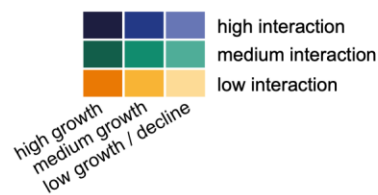
Status and evolution of eGovernment interactions (2014 - 2019)



ESPON   © ESPON, 2020
Regional level: NUTS 1/2 (2016)
© UMS RIATE for administrative boundaries
Co-financed by the European Regional Development Fund

Share of people who have interacted with public authorities online (2019) and change (2014-2019)

decline (2014-2019)



50 km

500 km

Source: ESPON EGTC, 2019
Origin of data: Eurostat, 2020

Level of eGovernment interactions lower in eastern Slovenia

Digitalisation of public administration and public services allows for more reliable and mutual interactions with citizens. One can observe substantial disparities in the uptake of eGovernment tools depending on the level of the regional offer (number of services with digital interfaces) and of the regional demand (educational and social capacities to make use of these tools). Western European countries display higher levels of eGovernment interaction, with peak values in Nordic countries, France, Switzerland and Austria. Central and Eastern European countries have lower levels of interactions, but some regions are catching up, for instance in Romania, Poland and Greece.

The level of interaction between public authorities and citizens differs in Slovenia. In Eastern Slovenia the level of interaction is lower and growing less than in Western Slovenia. Different urbanisation levels and population density can partly explain these differences. In Europe, most public digital services are provided at local levels. Urban or larger regions have generally most capacities to offer digital services. Higher population densities and more cities in Western Slovenia can thus imply higher supply levels of digital services by public authorities result in higher levels of interaction. Higher levels of interaction in capital regions can also be observed elsewhere in Europe e.g. in Spain, Portugal, Greece, Hungary and Slovakia.

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg

Phone: +352 20 600 280

Email: info@espon.eu

www.espon.eu

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

Disclaimer:

The content of this publication does not necessarily reflect the opinion of the ESPON 2020 Monitoring Committee.

July 2020