ESPON

EUROPEAN UNION

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Inspire Policy Making with Territorial Evidence

Country fiche

Territorial patterns and relations in Hungary

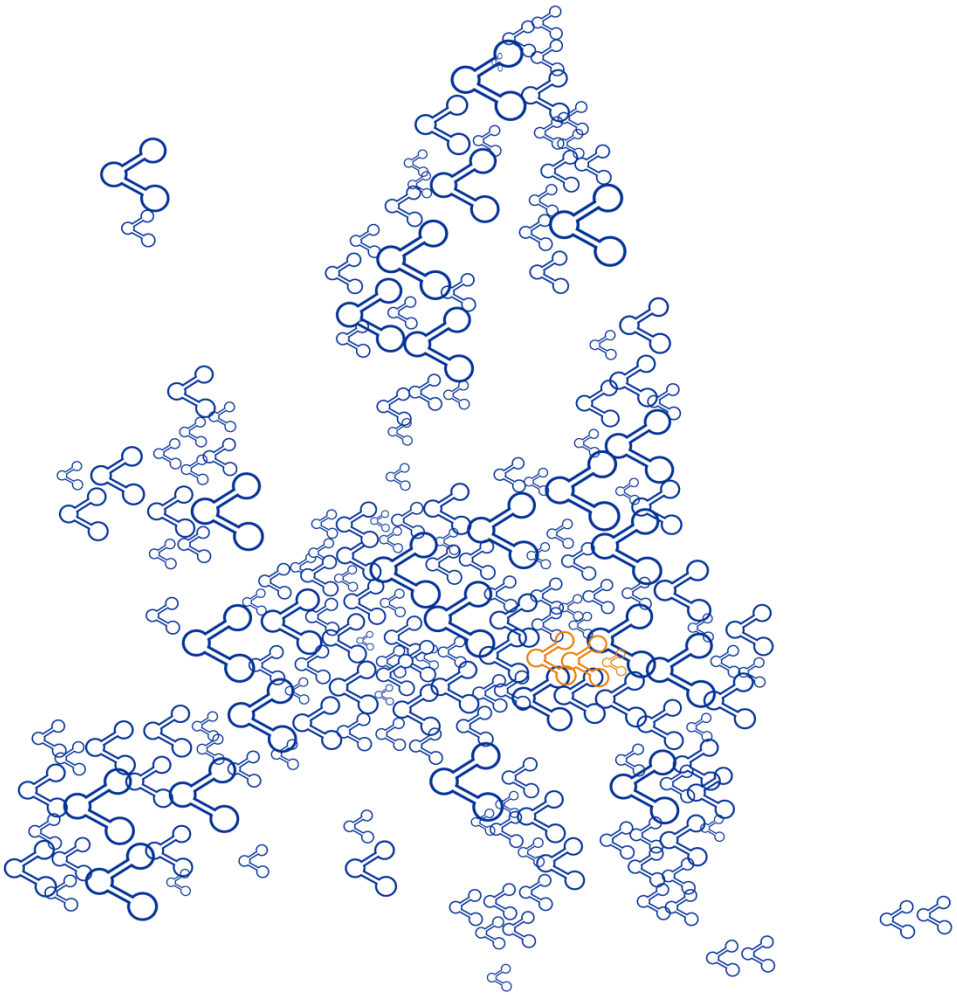
Smarter Europe

Greener Europe

More connected Europe

More social Europe

Europe closer to citizens



Interactive version:

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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)

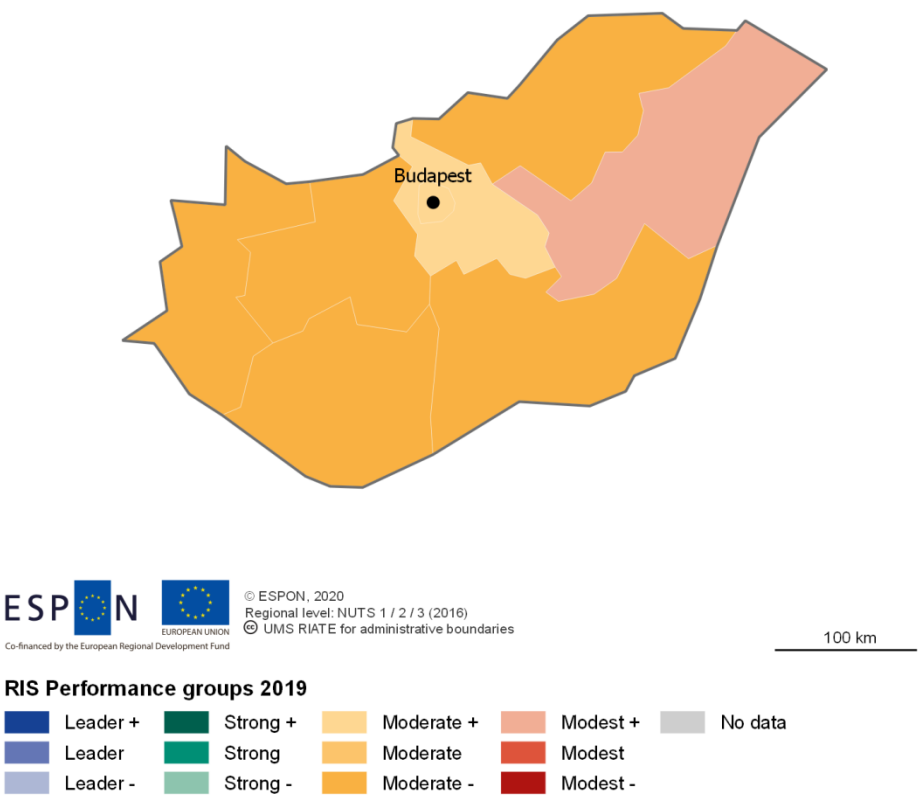
Foreign Direct Investment inflows from extra-European sources (2003-2015)

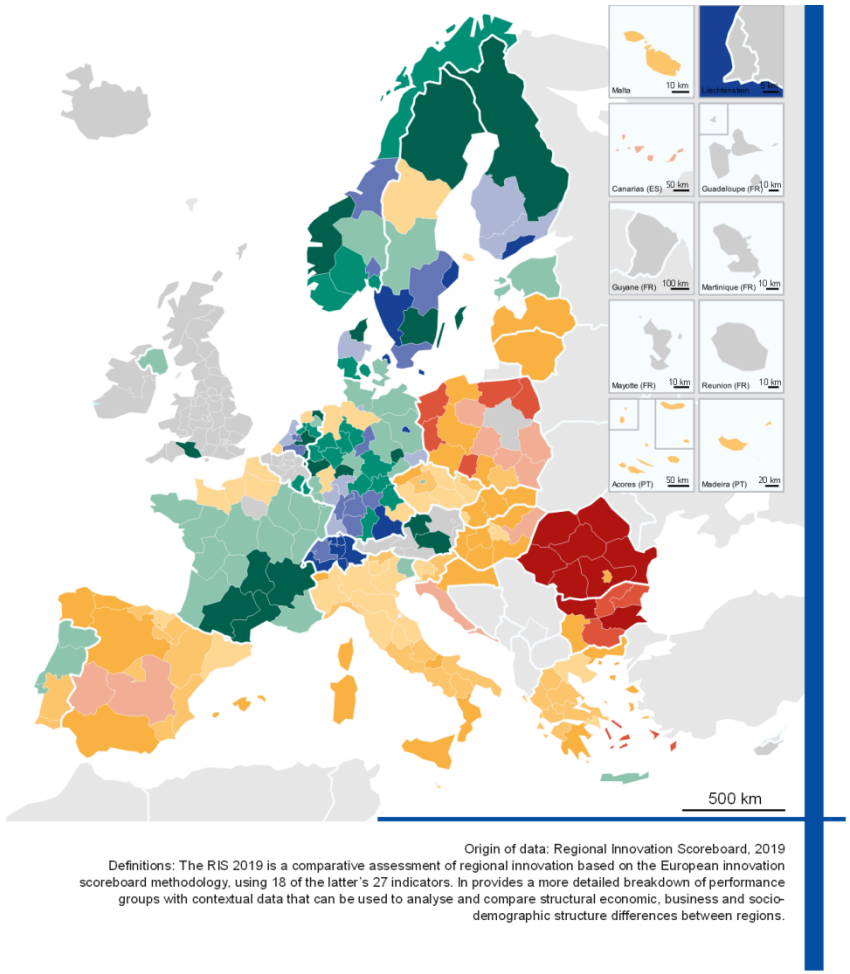
Regional patterns of 4.0 technological transformation

Number of robot per employee in carrier industrial sectors (2008-2016)

Degree of regional specialisation in manufacturing technology sectors (2019)

Regional Innovation Scoreboard (2019)



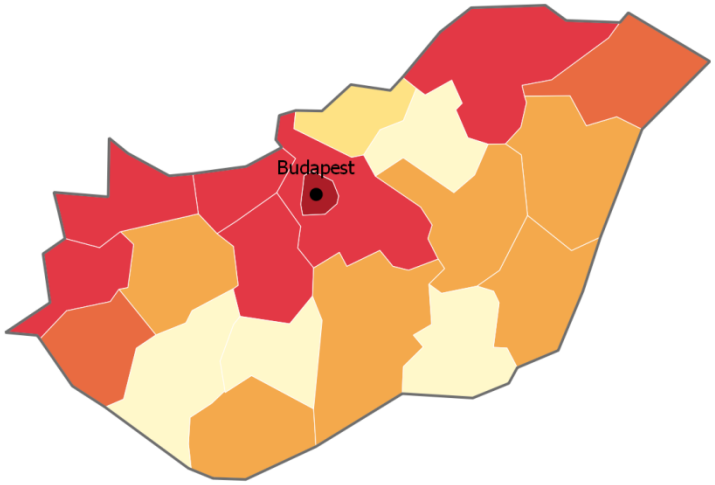


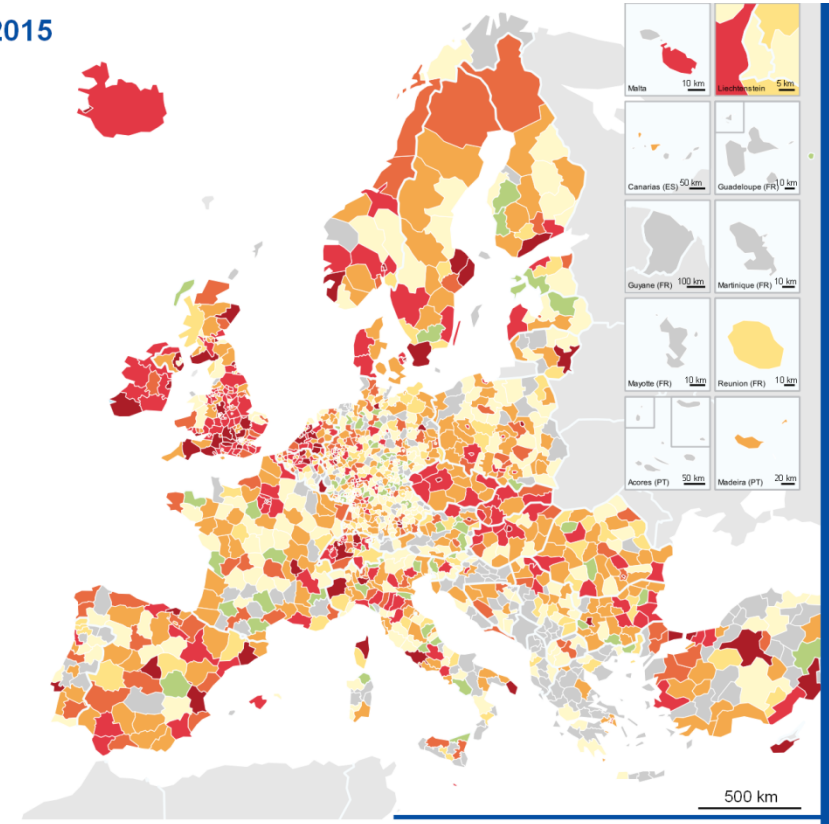
Hungary as a largely moderate innovator

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.

Most Hungarian regions fall into the moderate innovators performance group. Exception is Észak-Alföld (modest+ innovator), which increased its innovation performance over time, showing relative strengths in non R&D innovation expenditures and lifelong learning. Zooming into Central Hungary, both the Pest county and Budapest are classified as moderate+. Pest's innovation performance increased (strengths in employment in high and medium high technology manufacturing and knowledge intensive services, when compared to the EU), while Budapest's decreased over the last period (relative weakness in R&D expenditures in public sector and trademark applications compared to the EU average).

Extra-European FDI inflows by sector across European regions 2003-2015





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Regional level: NUTS 3 (2016)

100 km

Value of extra-European FDI inflows to European regions in 2003-2015 (in million euro, 2015 value)

- < 50
- 50 - 100
- 100 - 500
- 500 - 1,000
- 1,000 - 5,000
- > 5,000
- Absence of information on deal value
- No Extra-European FDI inflows

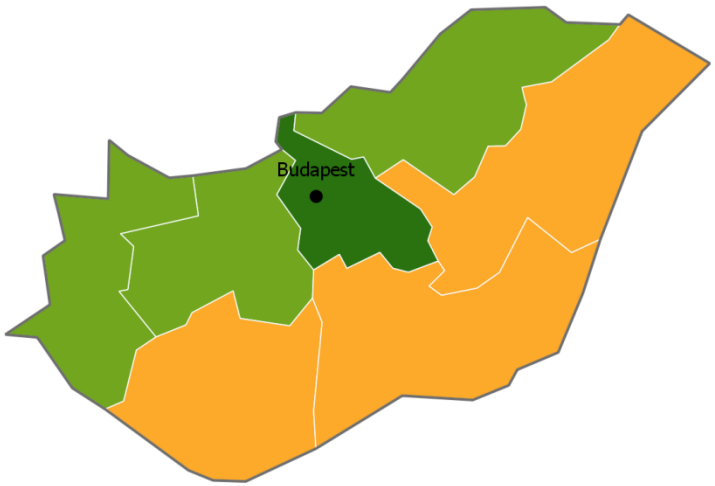
Source: The World in Europe, global FDI flows towards Europe, 2017
Origine of data: Copenhagen Economics based on BvD's Zephyr and the Financial Times databases, 2016

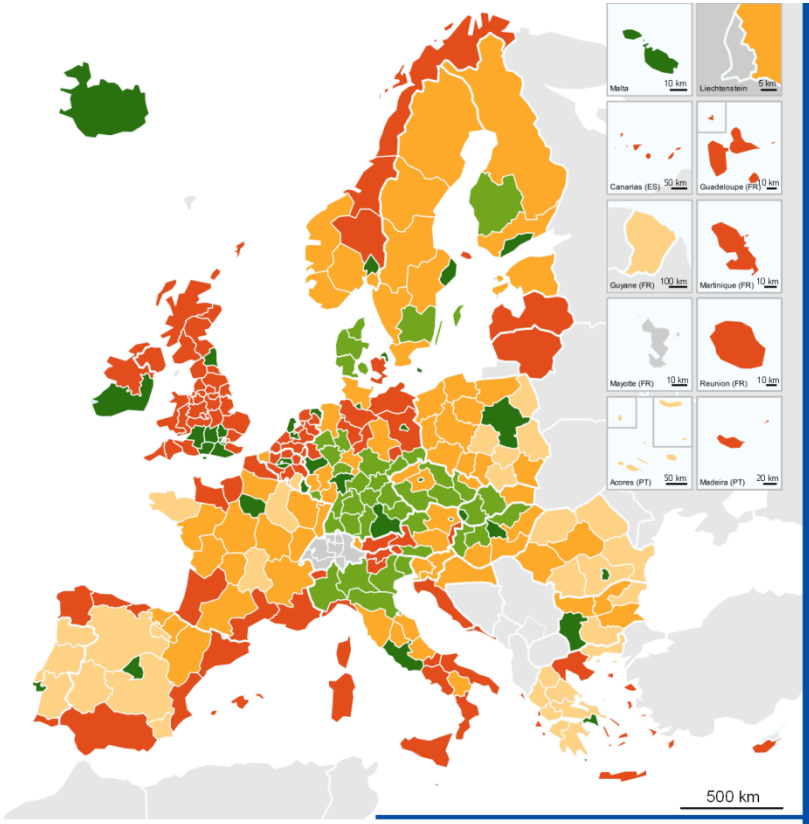
Urban and intermediate areas in Hungary attracting more FDI

Foreign Direct Investments (FDI) show the attractiveness and competitiveness of EU regions to foreign investors. Three different measures are used for FDI flows, i.e. non-European firms, the value into a region of FDI inflows and the number of FDI projects, all as a share of the total firms, total FDI in Europe and the total number of FDI projects, respectively. Urban, capital and developed regions have overall a high share, attracting about 72% of the total FDI flows into Europe, while rural regions only 5%-6%. Greater Amsterdam, Camden and London city, Madrid, Hauts-de-Seine, Luxembourg and Paris have the highest FDI inflows. Low FDI flows are observed in the Baltic States, large parts of France, Germany and Poland.

Being a gateway to the Central and Southeast Europe, Hungary shows a diverse picture in Extra European FDI inflows by sector across European regions. Budapest capital region shows a high value of extra-European FDI inflows. The capital city attracts a large number of non-European firms among the total number of firms in the region, which also survive in the long run. Similar high values are to be observed around intermediate regions along most of Hungary's border regions with Austria and Slovakia, with the exception of the Nógrád county, which has a more rural profile. The lowest values of extra-European FDI inflows are to be observed in Somogy, Tolna and Csongrád counties.

Regional patterns of 4.0 technological transformation (2019)





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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

Regional patterns of 4.0 technological transformation

- Servitisation
- Industry 4.0
- Digitalisation of traditional services
- Robotisation of traditional manufacturing
- Niches of robotisation
- No data

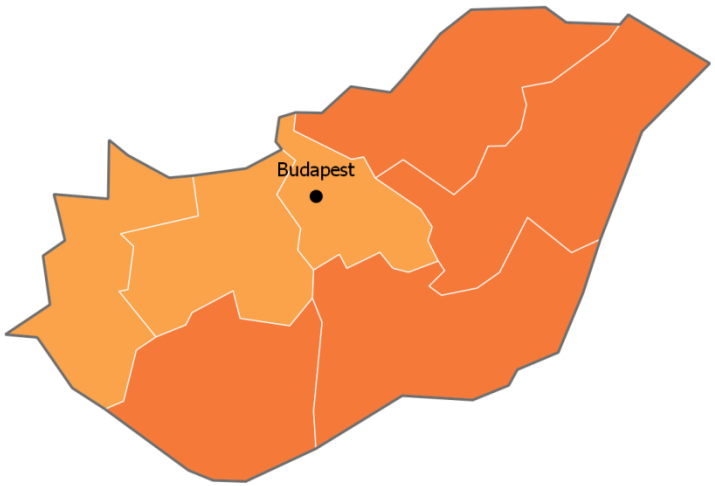
Source: ESPON T4, 2020
Origin of data: Eurostat, 2019

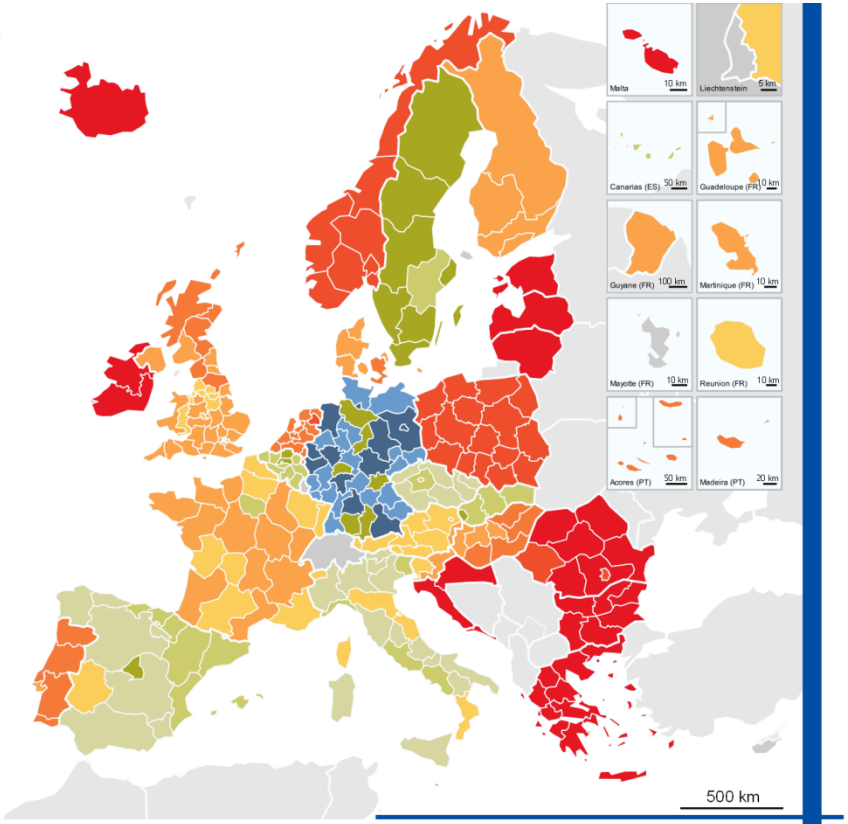
Hungary largely specialises in the robotisation of traditional manufacturing

Five clusters identify regions with specific patterns of technological transformation. Servitisation (specialisation in new technologies and industrial sectors undergoing changes in industrial production and society) found mainly in large urban areas. Industry 4.0 (specialisation in creative manufacturing), located mainly in southern Germany and Northern Italy. Digitalisation of traditional service (specialisation in digitalising traditional services), as in Baltic regions, most of the Netherlands. Robotisation of traditional manufacturing, (adoption of 4.0 technologies) seen in France and Poland. Lastly, niches in robotisation (technological transformation only due to industrial niche adopters, found e.g. in Eastern countries and Greece.

Hungary's patterns of technological transformation are characterised by three of the five identified clusters. Large areas of south and south east of Hungary specialise in robotisation of traditional manufacturing, registering a high adoption of robots in traditional and less technology intensive industries and a contained adoption of industry 4.0 technologies. The region around Hungary's capital, the large urban area of Budapest, belongs to the servitisation cluster, with specialisation in highly adopting technology and carrier services. The regions of Nyugat-Dunántúl, Közép-Dunántúl and Észak-Magyarország, represented by the industry 4.0 cluster, have a high adoption of industrial robots mainly in patenting technology.

Number of robots per employee in carrier industrial sectors (2008-2016)





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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

Number of robots per employee in carrier industrial sectors, w.r.t. the European average

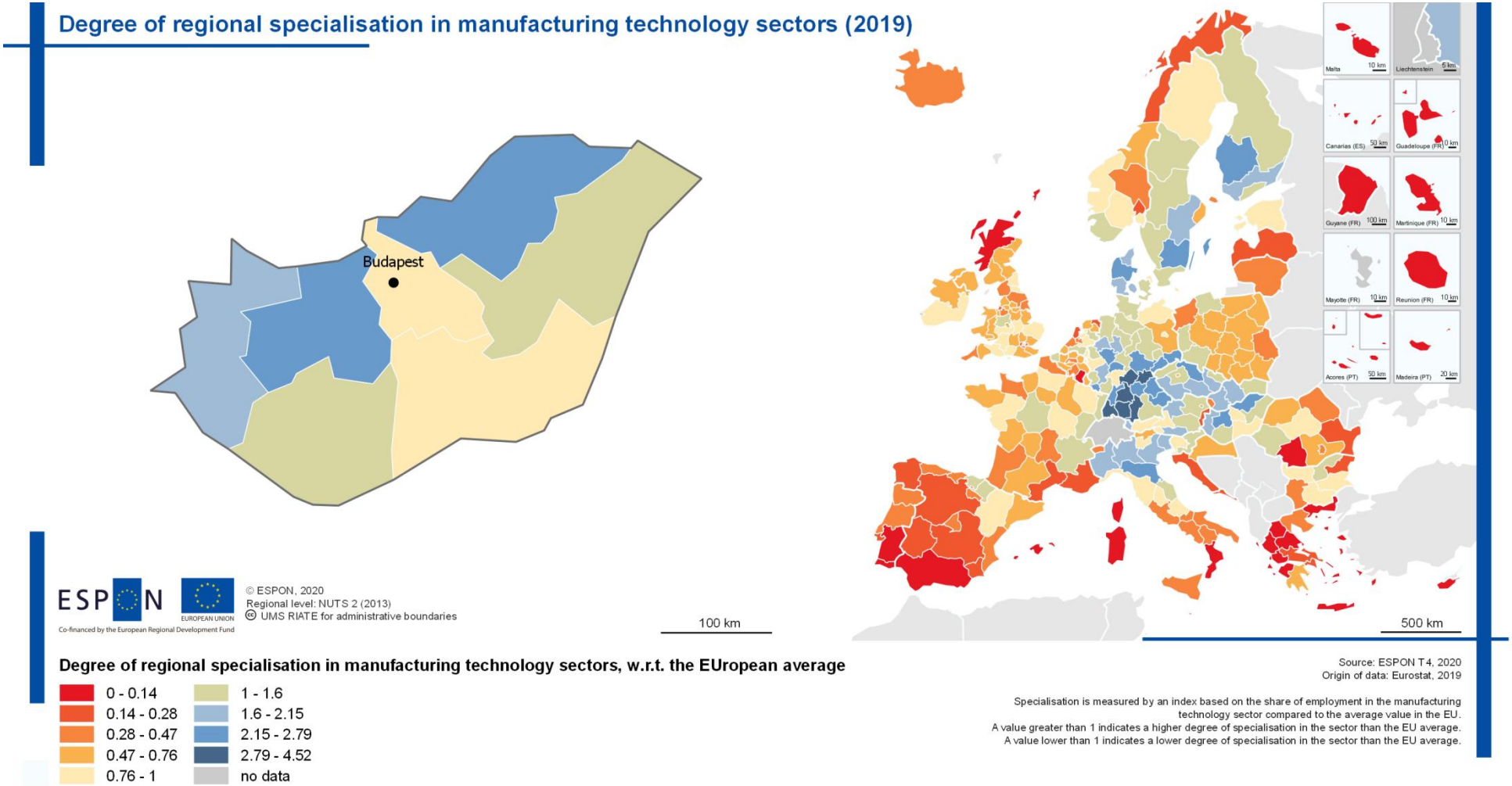
- 0 - 0.106
- 0.106 - 0.304
- 0.304 - 0.521
- 0.521 - 0.726
- 0.726 - 1
- 1 - 1.322
- 1.322 - 1.803
- 1.803 - 2.539
- 2.539 - 3.612
- 3.612 - 5.717
- no data

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

Hungary has highest adoption of robots in the county's main industrial areas

The number of industrial robots per employee in 'carrier' manufacturing sectors, as manufacturing of wood and paper, of electrical equipment and transport equipment, is one way of showing the adoption intensity of 4.0 technologies. The intensity of industrial robot adoption overall varies across countries and sectors in the EU, in 2008-2016. A remarkable presence is to be found in Germany and Sweden. A stronger specialisation in these sectors or the presence of multinationals operating in these sectors, as e.g. in Belgium and Slovakia respectively, resulted in a positive increase of robot adoption. On the contrary, low numbers of robot adoption is to be observed in the Baltic states, Romania, Croatia, Bulgaria, Greece, and largely in Poland.

During 2008-2016, Hungary has had a relatively low robot adoption in the carrier industrial sectors, when compared to the EU average. A highest adoption of robots per employee are to be observed in the in Közép-Magyarország and regions of Közép-Dunántúl and Észak-Magyarország. This can be due to the industrial profiles of the regions, especially around the industrial areas of Győr and Tatabánya. Lower numbers of robots per employee are observed in the southern and eastern regions of the country, which are characterised by a less industrial profile and a more rural and agricultural character or focus on other types of sectors.



Regional specialisation in Hungary's industrial regions

The technology sectors are among those sectors that have a high digitalisation level, high digital intensity and a high patent intensity in 4.0 technologies. Technology sectors are for instance, manufacturing of computer, electronic and optical products and manufacturing of machinery and equipment. The regional specialisation in technology manufacturing sectors varies across the EU. When compared to the EU average, lower regional specialisation in these sectors is seen in regions of the south of the EU, as well as Scotland and South West Romania. Higher regional specialisation is seen rather in central and eastern Europe, e.g. southern Germany, Czech Republic, regions in Denmark, Sweden and Finland, as well as northern Italy.

Hungary has in most of its regions a high regional specialisation in manufacturing sectors. This is most visible in the regions of Közép-Dunántúl and Észak-Magyarország, especially around the industrial areas of Győr, Tatabánya and Miskolc. Exceptions are Közép-Magyarország region, where Budapest is located, which is mainly focused on service provision, and the Dél-Alföld region, mainly due to its low industrial profile. The rural regions of Dél-Dunántúl and Észak-Alföld show a slightly higher regional specialisation in technology manufacturing sectors than the average in the EU.

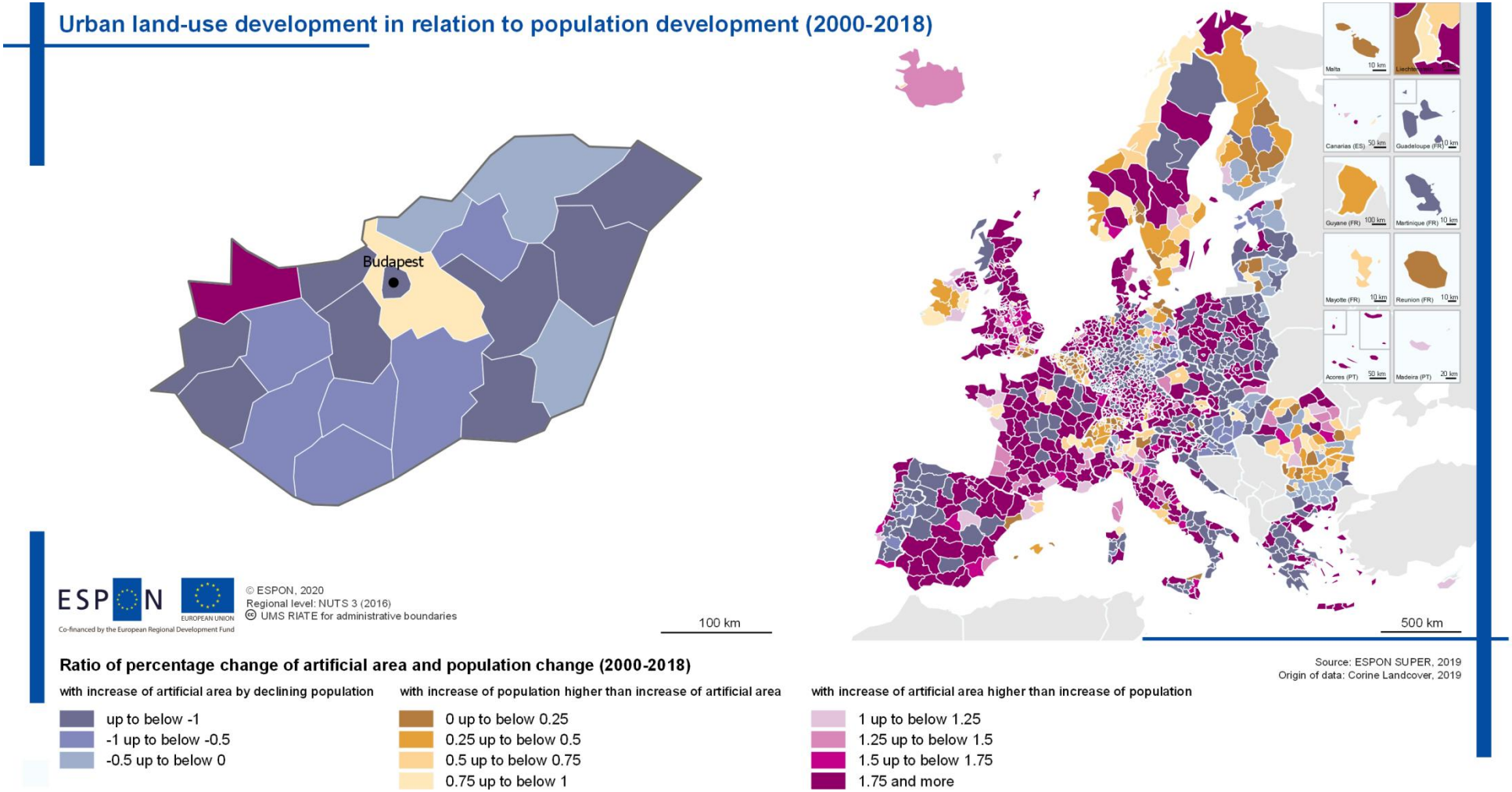
Greener Europe

Urban land-use development in relation to population development (2000-2018)

Coverage of potential Green Infrastructure (2012)

Aggregated potential impact of climate change

Installed capacity and potential of wind power (2016)

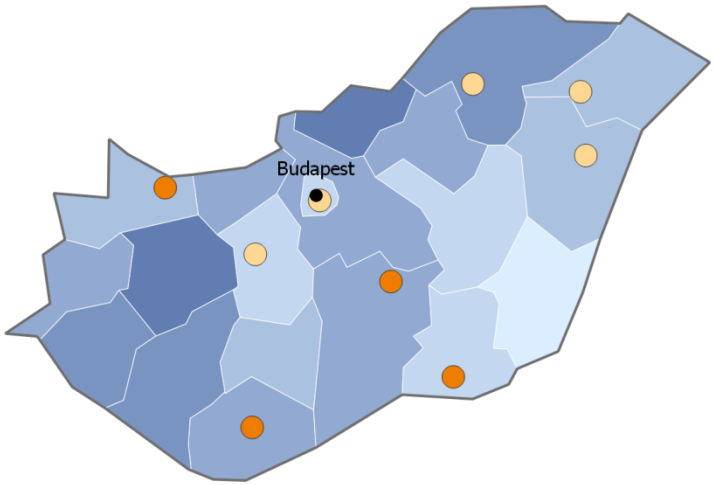


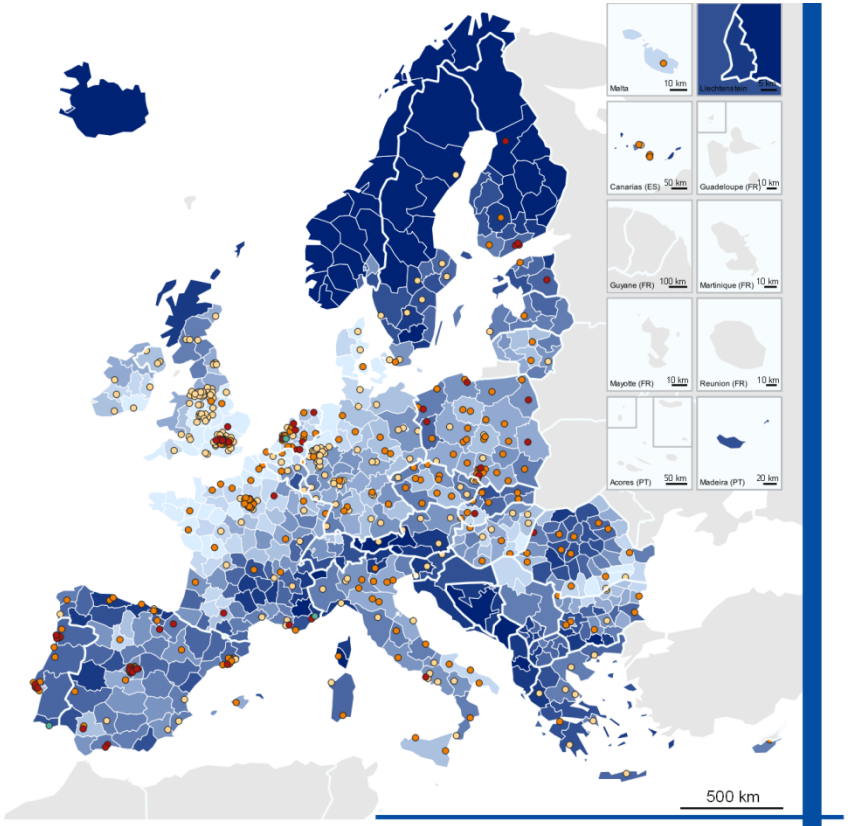
Soil artificialisation in Hungary increases despite decreasing population

Land artificialisation is commonly considered a necessity to accommodate the development of new activities and infrastructures as population grows. A European comparison of both dynamics (artificialisation vs. demography) shows that the correlation is not systematic. This map distinguishes regions with a rather frugal profile in shades of yellow where the increase in population has been accompanied with a moderate land artificialisation, from regions with more consumptive profiles that artificialized land at a faster pace than their population growth (purple shades) or that continued to artificialize land despite a population decline.

In Hungary, most of the counties experienced a population decline during the 2000-2018 period accompanied with a persistent land artificialisation process, sometime at a high pace, e.g. in Budapest, Fejér county, the whole Észak-Alföld region or the southern part of Nyugat-Dunántúl region. Only two counties have seen their population growing during the period: Pest county where artificialisation remained moderate compared to population change and Győr-Moson-Sopron county where artificialisation continued almost twice as fast as population growth (ratio = 1.84). This highlights the need to reuse building and optimise infrastructures whatever the demographic context.

Coverage of potential Green Infrastructure (2012)





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Regional level: NUTS 3 (2016)
UMS RIATE for administrative boundaries

100 km

Regional coverage of potential GI network

- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 70
- 70 - 80
- 80 - 90
- 90 - 100

Change of green areas within cities, 2006 - 2012*

- increase
- stable
- slight decrease
- strong decrease

Origin of data: NUTS2/3 (2013)

Definitions: CLC 2012, Copernicus HRL Impervious 2012, OSM 2017, Natura 2000 (EEA 2012), Emerald Network 2012, HNVF (EEA 2015), Ecosystem types map (ETC-SIA 2015)

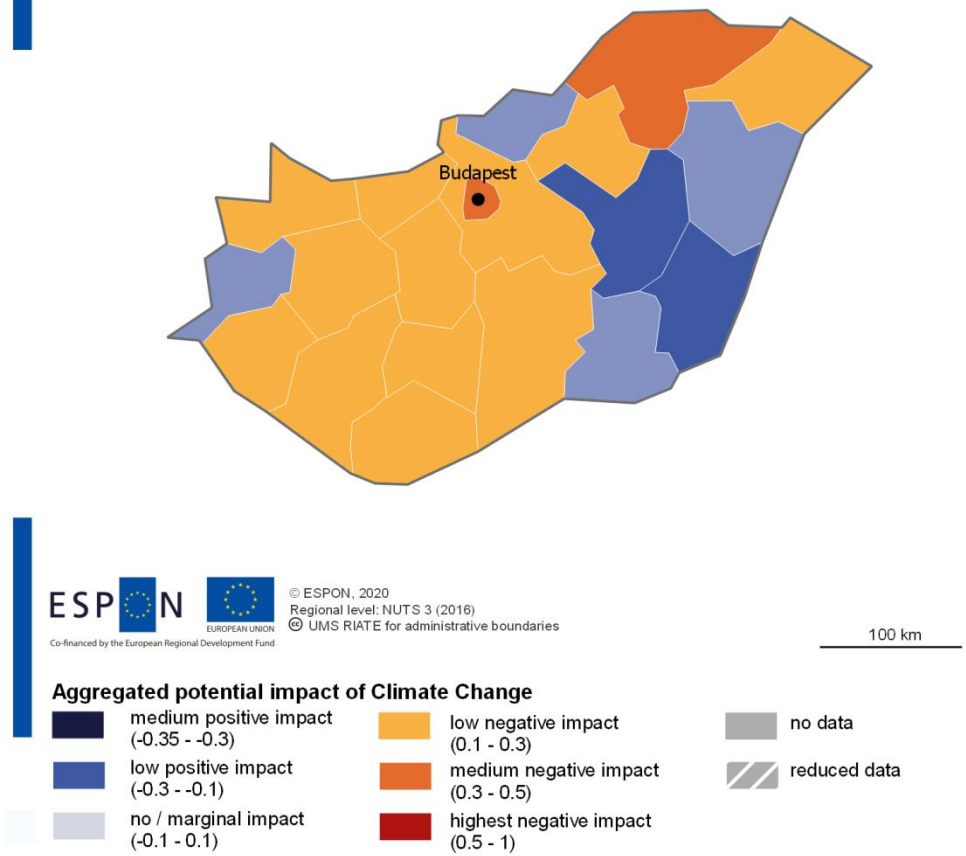
* Change values are recorded by comparing datasets from the Urban Atlas, version 2006 and 2012. Cities without symbols are not included in the two datasets

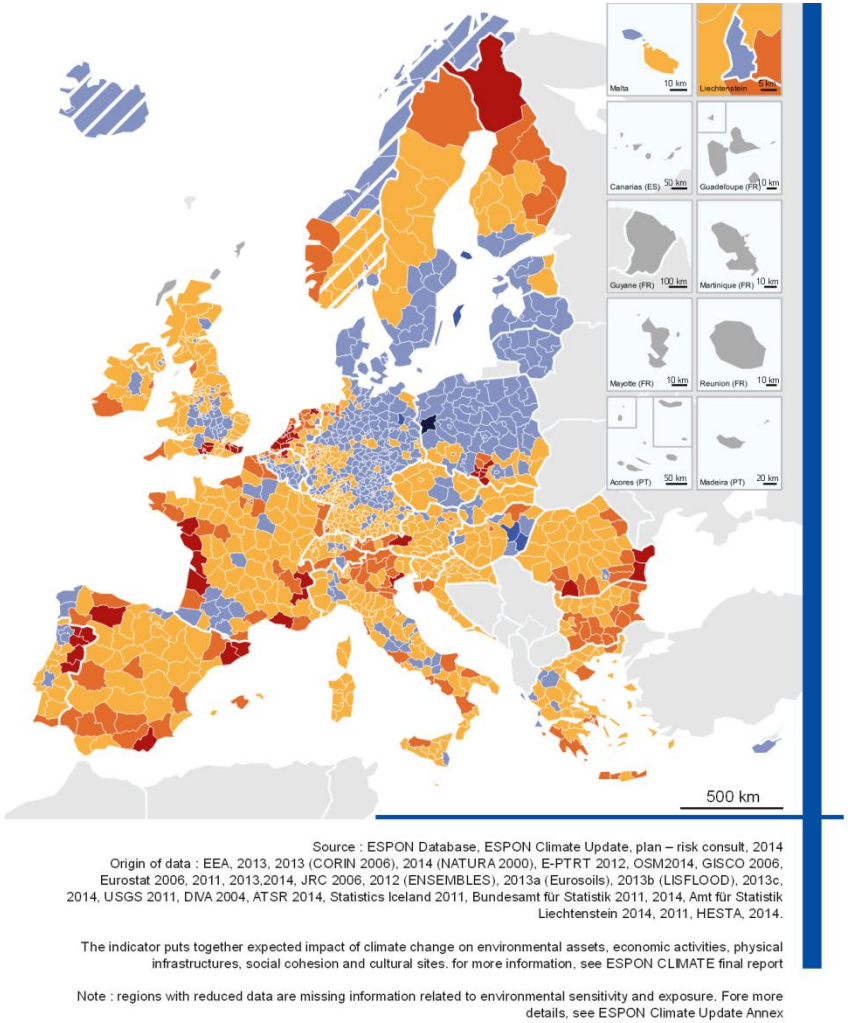
Green areas in Hungary's urban centres has remained stable and low accessible

Evolutions in proportions of green and blue areas between 2006 and 2012 have been calculated for 524 European "core cities" based on Urban Atlas data. On average, green and blue areas cover about two thirds of the area in European core cities. In a majority of cities, this proportion is decreasing slightly between 2012 and 2016. Significant decreases tend to be found in eastern and southern European countries. This is mainly a result of urbanisation and/or of the development of tourism. Green infrastructures cover a low proportion of the area in an area running from western France and Cornwall to Denmark. They are the highest in northern Scandinavia and the Western Balkans.

At urban scale in Hungary, the coverage of green areas was overall rather stable between 2006-2012. These regard the capital region of Budapest, and big urban centres such as Miskolc and Debrecen. A few urban areas experience a slight decrease of green areas between 2006-2012, such as Győr, Pécs and Szeged. No increase in coverage of green areas in cities is observed between 2006-2012 across the country. At landscape level, the coverage of GI tend to be higher (about 40%-60%) in the western and northern part of the country, and lower in the eastern part. This pattern reflects the relative coverage of forests and marchlands, the distribution of agricultural areas as well as the population density and infrastructure development.

Aggregated potential impact of climate change



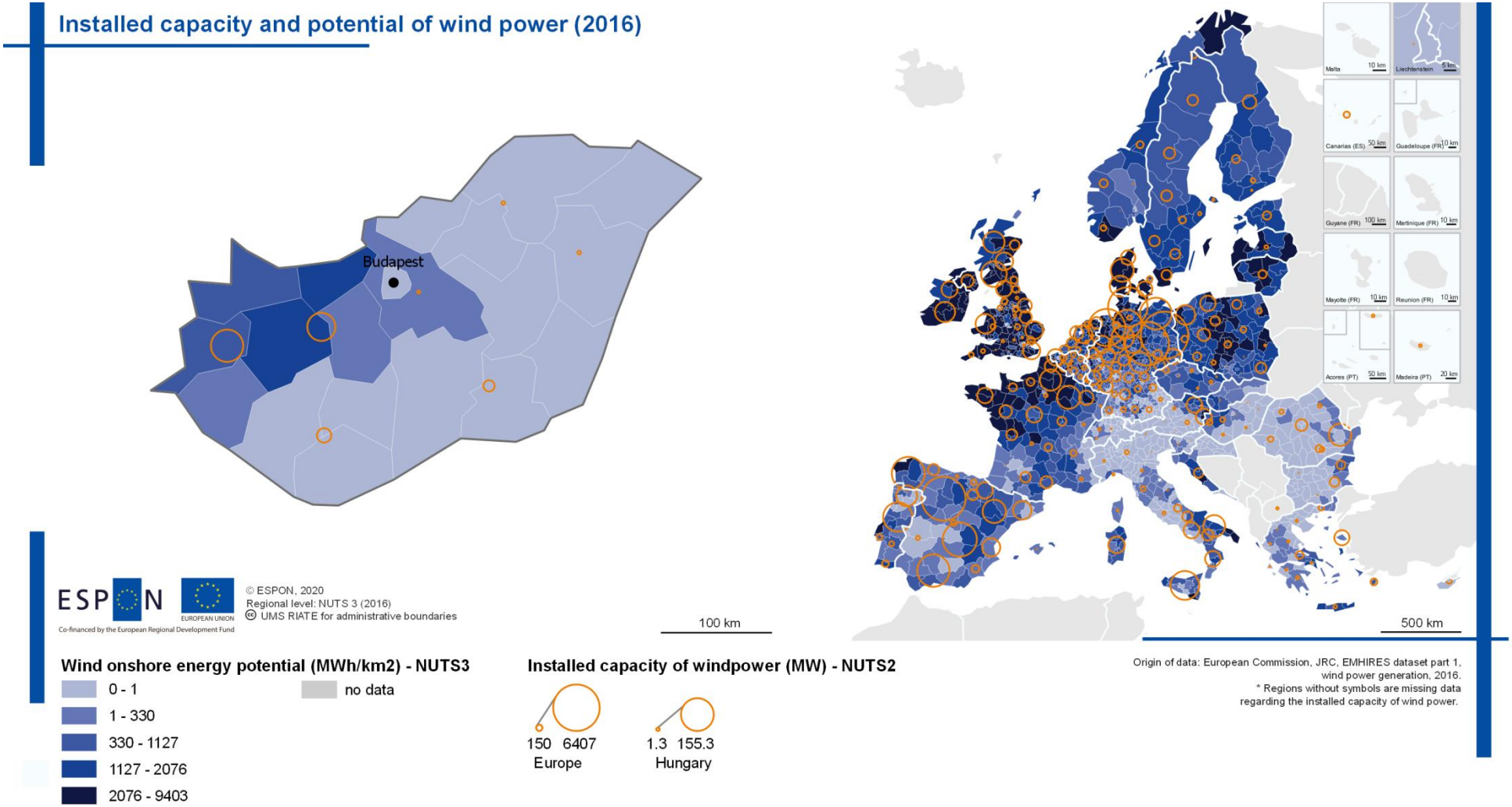


Diverse climate change impact in Hungarian regions

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 German and in most of Poland.

In Hungary, climate change is expected to have the highest impact in the two regions: Borsod-Abaúj-Zemplén county, in north east of Hungary, in relation to higher exposure to river flooding and a high combined "physical", "economic" and "cultural" sensitivity; and Budapest in relation to a high "economic" sensitivity. The central and western part of the country are also quite exposed to climate change. Exceptions are the Vas county and Hungary's south-eastern regions for which climate change may have positive "social" and "cultural" impacts triggered by an expected reduction of drought risk as a result of climate change.

Installed capacity and potential of wind power (2016)



Onshore wind energy installed capacity mostly corresponding with regional wind potential in Hungary

Regions with the highest potential for wind power production are concentrated in Western Europe, close to the English Channel, Irish Sea and North Sea. However, large potentials can also be found in areas around the Baltic Sea, and in large parts of Poland. The wind energy production potential is furthermore significant throughout the territory, as illustrated by the spatial distribution that have installed wind power production facilities. Their development has been particularly important in Germany (capacity of 61.4 GW in 2019), Spain (25.8 GW), the UK (23.5 GW) and France (16.7 GW). In Poland, it is only 5.9 GW, despite the major identified potentials. the highest share of electric production coming from wind power is observed in Denmark.

The regional patterns of wind power renewable energy depend on the climatic and geographical differences. Hungary is largely still dependent on fossil fuel, however, there is potential for onshore wind energy. Most is to be found in north-west regions, while lower potential for onshore wind power can be found in southern and eastern regions. Installed capacities match with the potential: high production capacities are recorded in the Közép-Dunántúl and Nyugat-Dunántúl regions. There are still untapped potential though in Komárom-Esztergom county and Pest county.

More connected Europe

Accessibility potential by rail (2030)

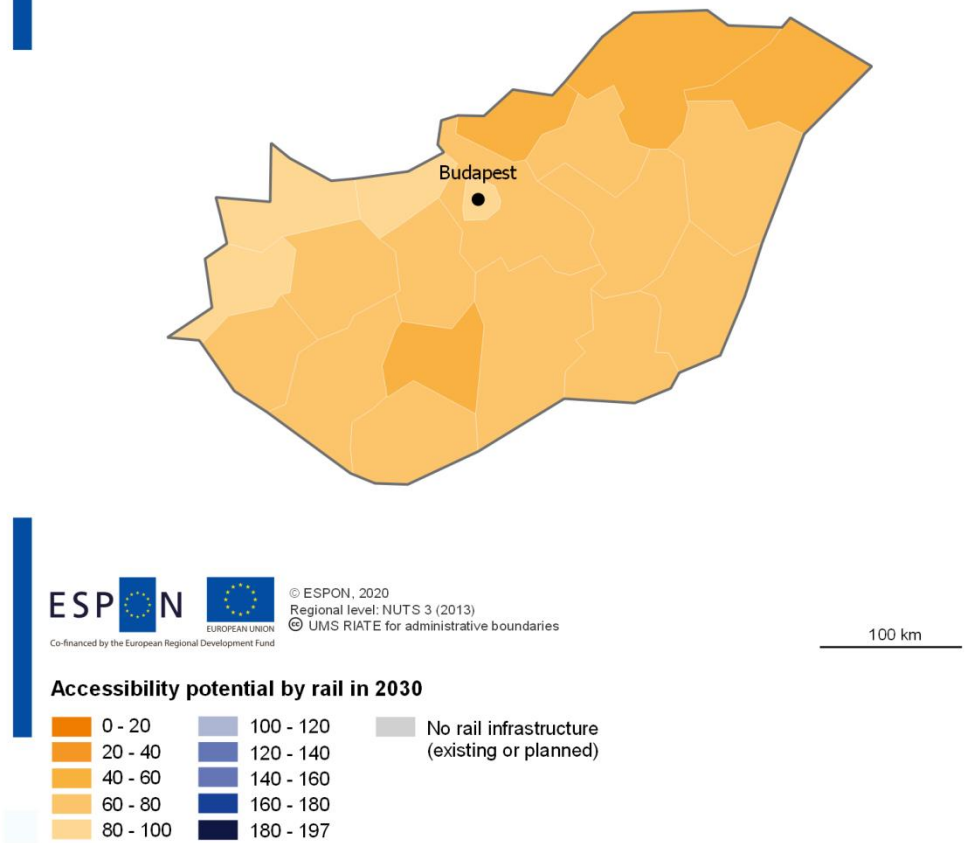
Accessibility potential by road (2030)

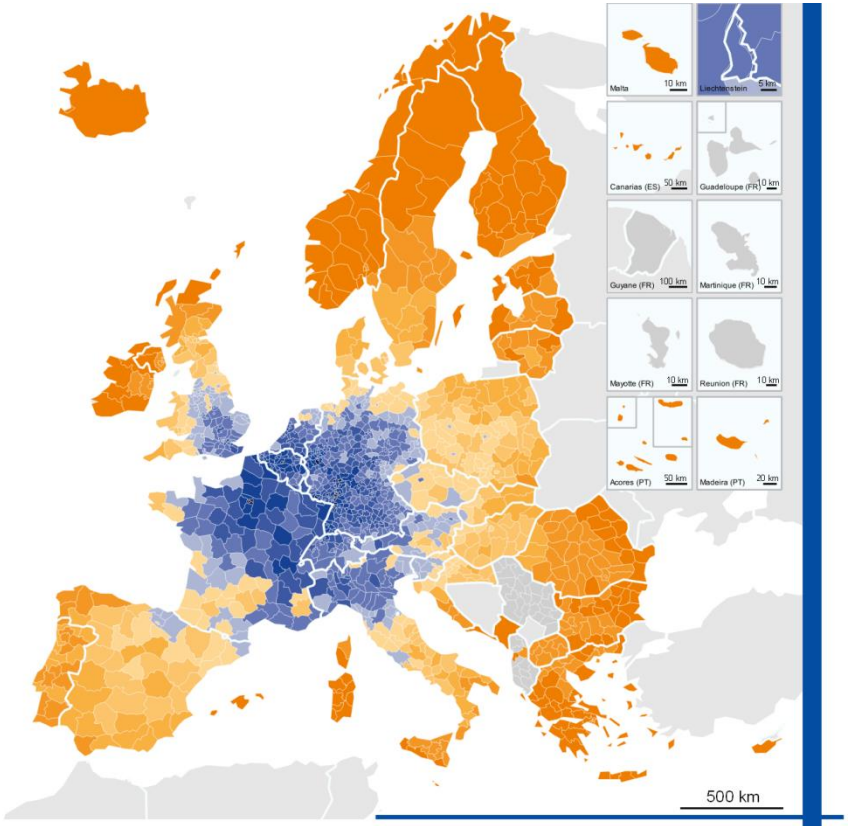
Broadband access (2018)

Regional share of population using e-banking services (2008-2016)

Access to cities in Europe

Accessibility potential by rail (in 2030)





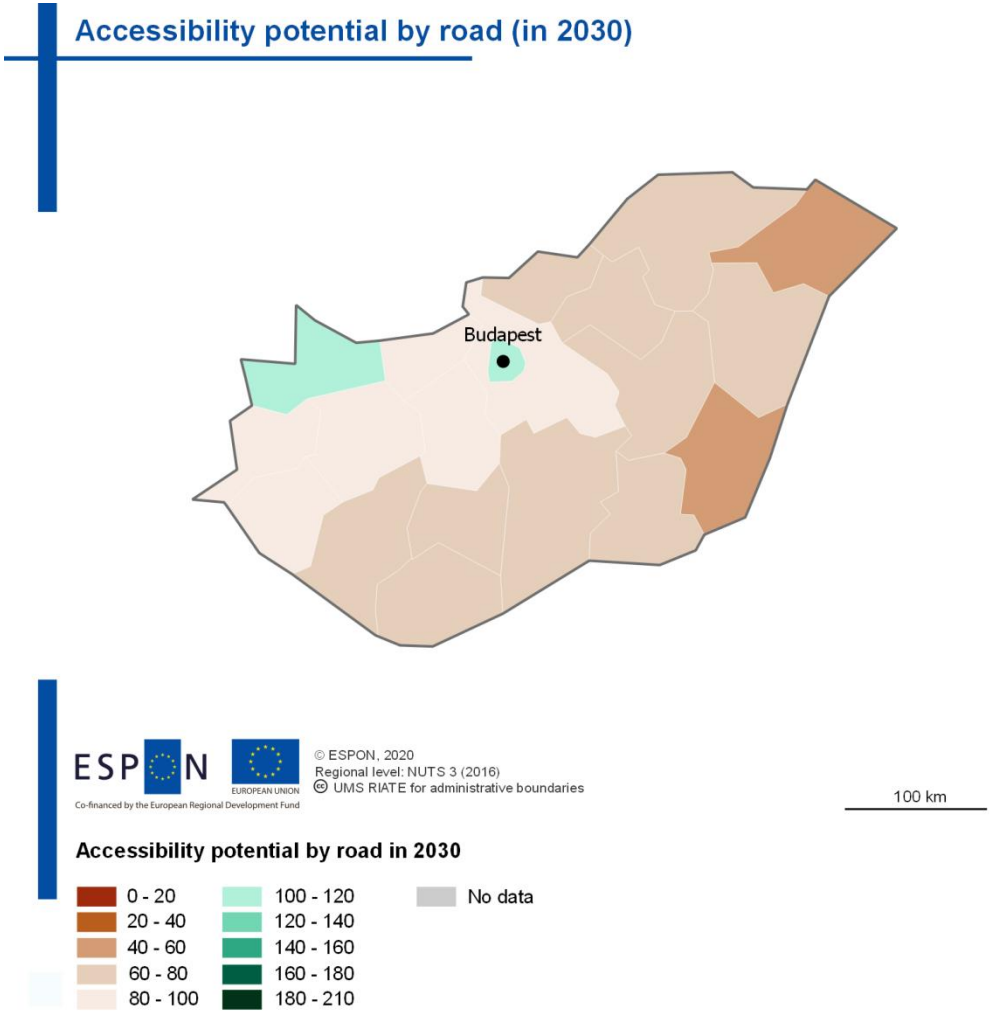
Source: Spiekermann and Wegener Urban and Regional research (S&W), ACC SCEN, 2017
Origin of data: S&W Accessibility Model, 2016 RRG GIS Database, 2014

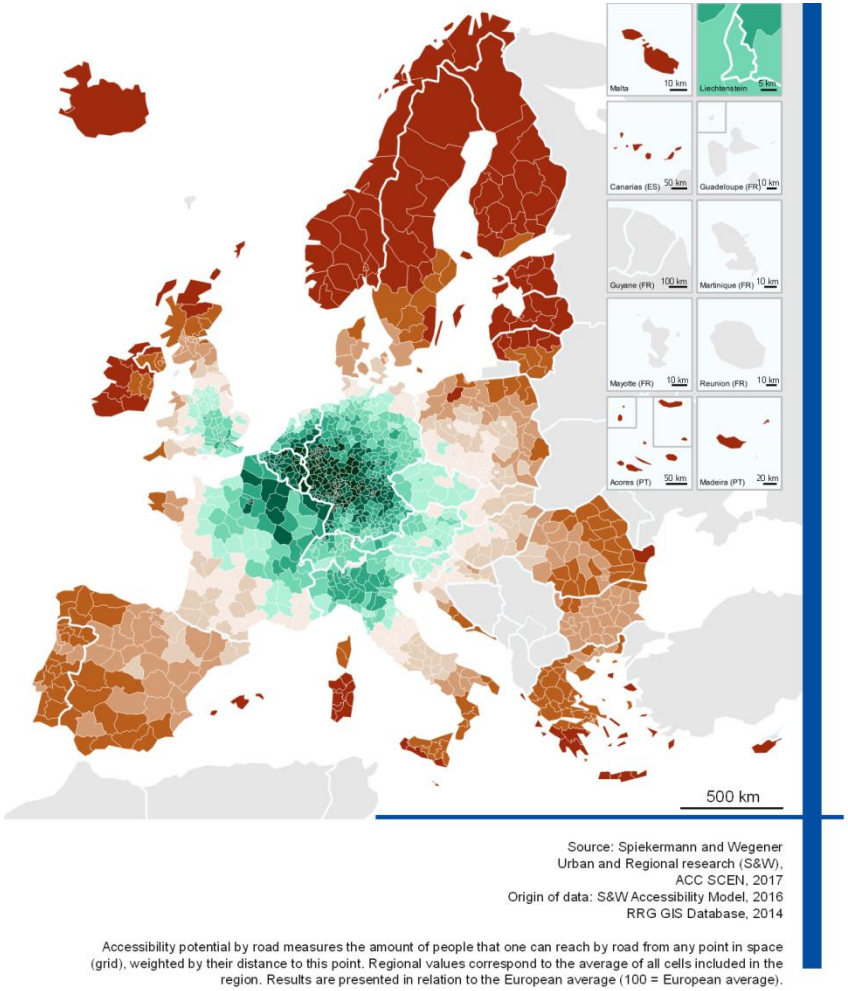
Accessibility potential by rail measures the amount of people that one can reach by rail from any point in space (grid), weighted by their distance to this point. Regional values correspond to the average of all cells included in the region. Results are presented in relation to the European average (100 = European average). Values are also calculated for regions that at the moment don't have railways, but have plans on developing this kind of infrastructure. Calculations for the accessibility potential rely on an expected and realistic time table for the development of the TEN-T.

Lower than EU average is the accessibility potential by rail in Hungary

European rail accessibility is highest in a European core area which includes most of England, France and Germany, the Benelux countries and Switzerland, northern Italy and Austria. The construction of new rail lines, or improvement of existing ones, tend to improve the quality of connections within this core areas or linking it to more peripheral regions. They seldom connect peripheral region. As a result, contrasts of potential accessibility between the European core area and the rest of Europe are not expected to be attenuated in the next 10 years. High quality railway connections between Spanish metropolises do not significantly impact accessibility measures, as demographic mass of connected metropolitan areas is comparatively smaller.

The accessibility potential by rail in Hungary is largely lower than the European average. All regions in the country are characterised by very low accessibility potential, also when compared to its neighbouring southern and west borders. Although the accessibility potential may increase in the future, it will not manage to surpass the potential of the core of Europe, which has the highest accessibility potential. More accessibility potential in Hungary is to be seen around urban areas and across the Hungarian-Austrian borders, instead of rural areas.

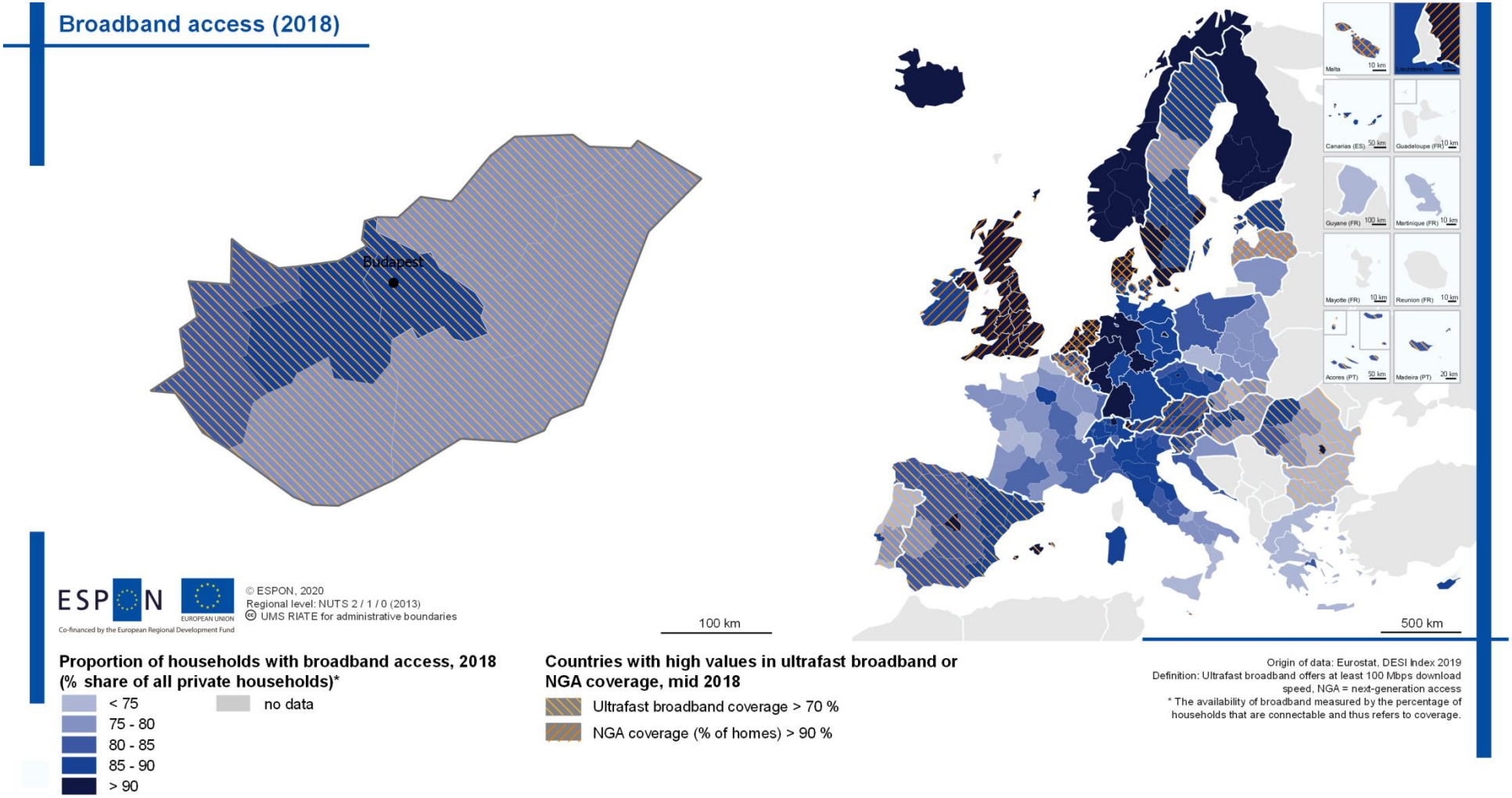




Accessibility potential by road (2030)

European road accessibility is highest in a European core area centred around western German states of North Rhine-Westphalia and Rhineland-Palatinate. The construction of new major roads, or improvement of existing ones, tend to improve the quality of connections within this core area and to link it to more peripheral regions. They seldom connect peripheral region. As a result, contrasts of potential accessibility between the European core area and the rest of Europe are not expected to be attenuated in the next 10 years. The issue for peripheral regions is not necessarily to get closer to EU average in terms of accessibility, but to ensure that they have the road infrastructure needed for their economic development.

The road accessibility potential in Hungary is low in most of its regions. Exceptions are the capital region of Budapest and in the county of Győr-Moson-Sopron which are close to the ESPON average and better connected to the EU core. The lowest accessibility potential is to be observed in the eastern regions of the country and most of its rural areas.

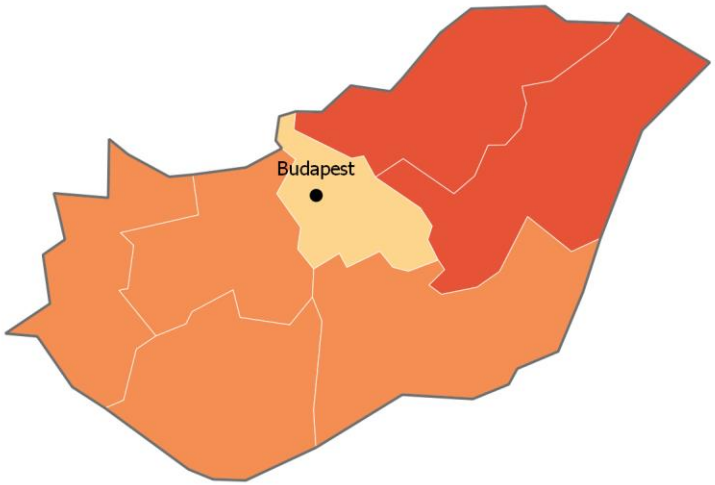


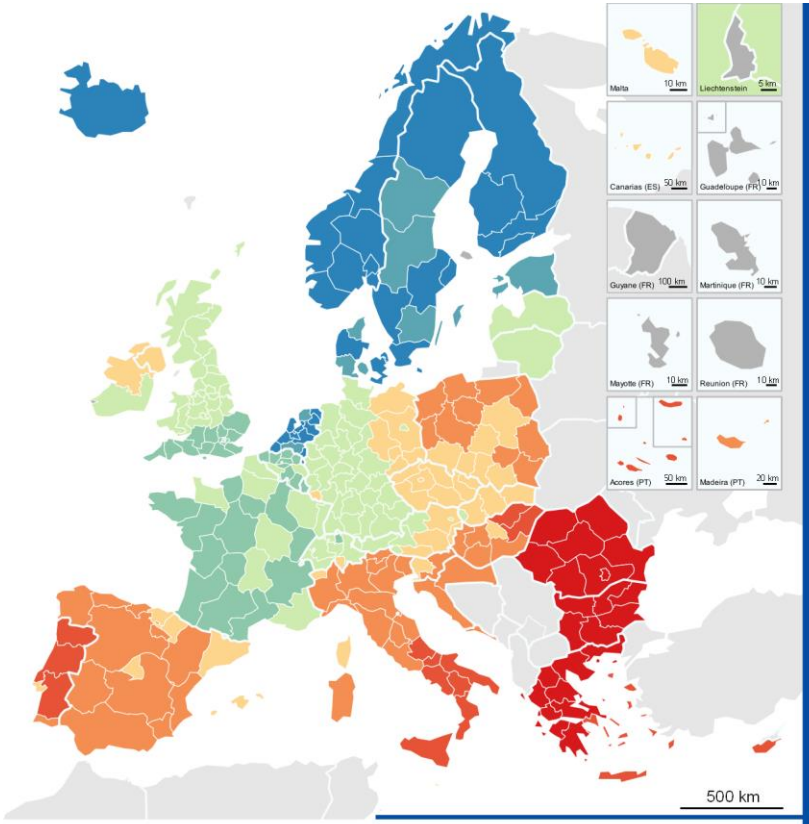
High broadband coverage and east-west divide within Hungary in households having high broadband access

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.

Hungary has more than 70% of high ultrafast broadband coverage throughout the country. There is however an east-west divide in the country to be observed as regards the proportion of households with broadband access. Higher proportion of households with broadband access are to be found in Közép-Magyarország and Közép-Dunántúl, (85%-90% of households with access). This is followed by the region of Nyugat-Dunántúl in the west, with 80%-85% of the households having access. In other regions households' accessibility to broadband is rather low **(**75-80%)

Population using e-banking services (2008-2016)





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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

Share of population using e-banking service
(weighted to the European average, 1 = European average)

- 0.00 - 0.25
- 0.25 - 0.50
- 0.50 - 0.75
- 0.75 - 1.00
- 1.00 - 1.25
- 1.25 - 1.50
- 1.50 - 1.75
- 1.75 - 2.05
- No data

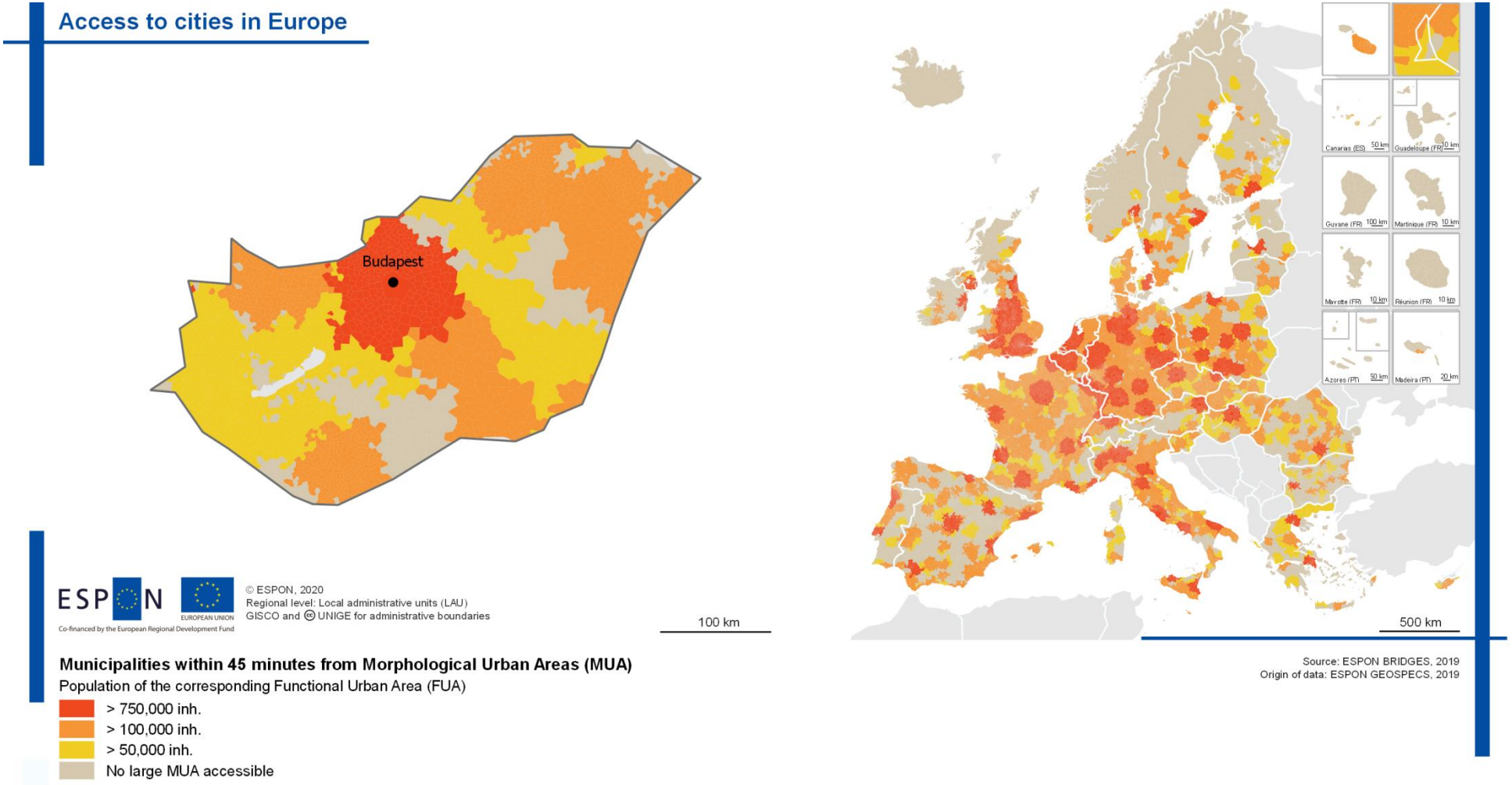
Source: ESPON T4
Origin of data: Eurostat, 2019

Population using e-banking services in Hungary below ESPON average

The regional share of the population that use e-banking services is one way to see in how far industry 4.0 technologies have been adopted by the society. The map shows a north-south and east-west divide in Europe when it comes to people using e-banking services. All regions in Norway, Sweden, Finland and Estonia, as well as regions in Denmark and the Netherlands, show a share of population using e-banking services that is way higher than the ESPON average. Similarly, most of France and the UK have also higher share than the ESPON average. The situation is different in the east of Europe, where Romania and Bulgaria have among the lowest population shares using e-banking when compared to ESPON average. Low are the shares also in the EU south.

The population using e-banking services in Hungary is overall below the ESPON average. The region of Pest and Hungary's capital are closest to the ESPON average. For the rest, an east-west divide is to be observed within the country. The regions in the west and south of Hungary are well below the ESPON average, but still closest to it, when compared to Hungary's eastern regions in which the population share that uses e-banking services lies between 25-50% of the EU average.

Access to cities in Europe



The region around Budapest has the highest access to cities in Hungary

Interacting with a city has a major impact on individual employment opportunities, access to services and local development opportunities. 45 minutes is a proxy for a maximum tolerated daily mobility distance. The map shows municipalities within 45 minutes of the city centres ('Morphological Urban Areas') of functional labour market areas of respectively 750,000 inhabitants ('metropolitan areas'), 100,000 inhabitants ('large cities') and 50,000 inhabitants ('smaller cities'). Large parts of England (UK) are associated to metropolitan dynamics. Areas beyond the influence of even smaller cities are found in the European margins (Nordic and Baltic States, Romania, Bulgaria and Greece, Iberian Peninsula), and in the Alps and Massif Central.

The zoom-in on Hungary first reflects a high rate of urban primacy, as Budapest has a much higher population than all other cities. There is therefore a strong contrast between municipalities within daily mobility reach of Budapest and the rest of the national territory, which is structured around Miskolc, Debrecen, Szeged, Pécs and Győr structure the urban landscape. These cities of relatively similar size are well-distributed across the country. Interstitial spaces with more limited access to urban endowment can be identified between the influence areas of these cities.

More social Europe

Population development (2014-2030)

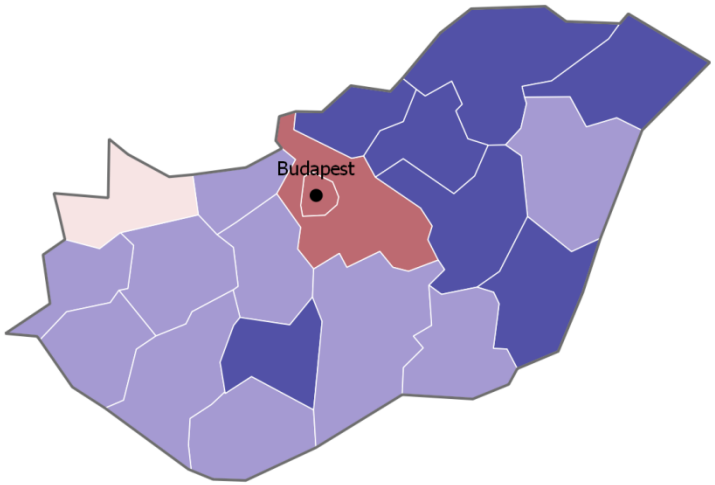
Evolution of youth employment resilience related to EU average (2012-2016)

A fragmented Europe? An interregional comparison of income

Young people Not in Education, Employment or Training (2016)

Out-Migration and Higher Education (2014)

Population development 2014 - 2030



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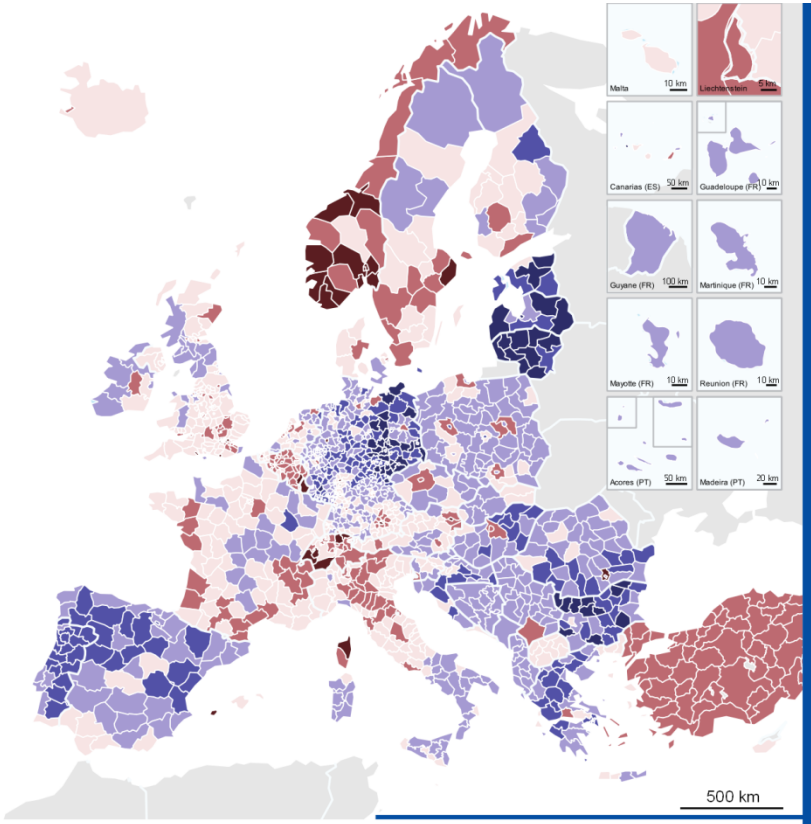
EUROPEAN UNION

Regional level: NUTS 3 (2013)
UMS RIATE for administrative boundaries

100 km

Relative population development (%)

- -50 - -20
- -20 - -10
- -10 - 0
- 0 - 10
- 10 - 20
- 20 - 50



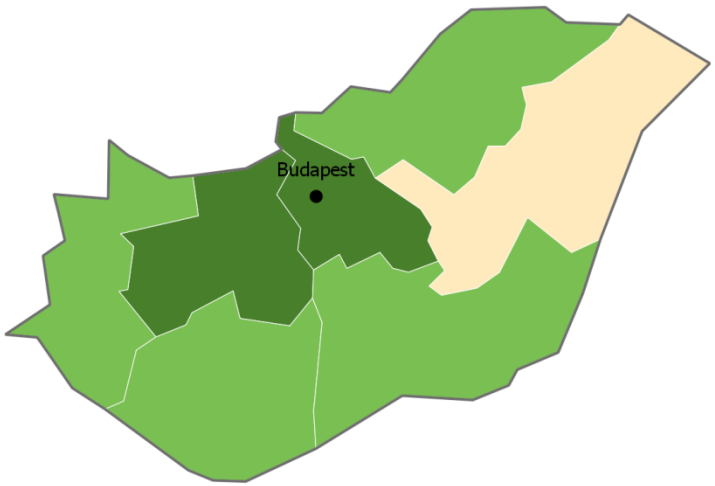
Source: Spiekermann and Wegener Urban Regional Research (S&W), Territorial Futures, 2017
Origin of data: Eurostat (online data code: demo_r_gind3; proj_13rpms3), 2014 & 2030

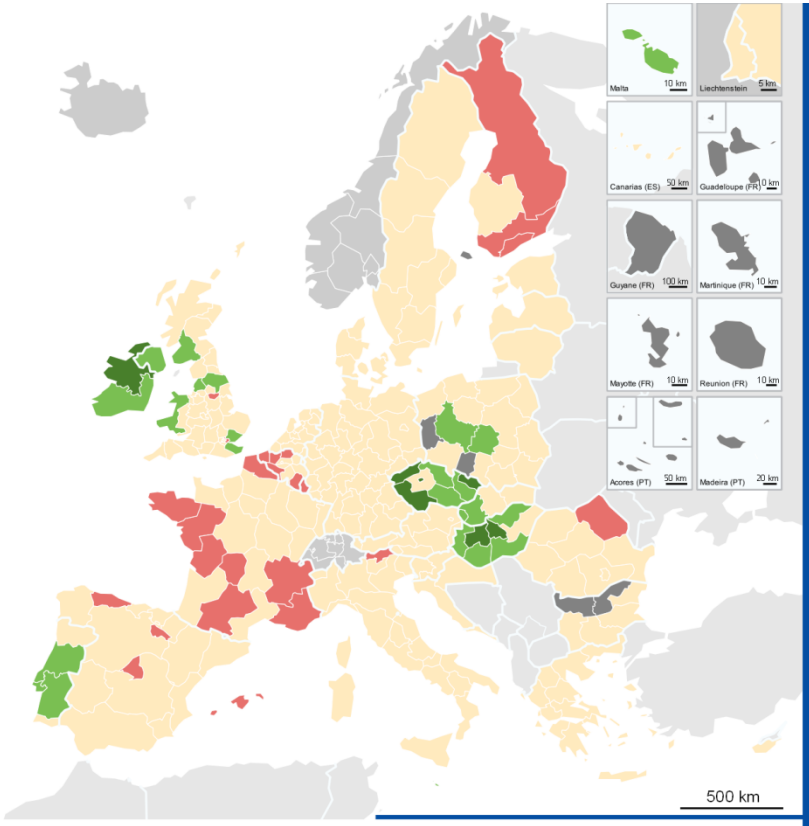
Population expected to decline in most regions in Hungary by 2030

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.

The population development in Hungary shows a diverse picture. The only regions in which the population is expected to increase is Budapest and the Pest county. A low increase is also to be observed in the county of Győr-Moson-Sopron. In all the other regions of the country the population development is expected to decline to different extents. Particularly regions in the north-east, the county of Jász-Nagykun-Szolnok and Békés, as well as the county of Tolna are to decline of about 10%-20% by 2030.

Evolution of the performance in integrating young people in the labour market (2012-2016)





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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

Evolution of performance

- Downgrade (one level)
- No change (same level)
- Upgrade (one level)
- High upgrade (two levels)
- No data
- Not in EU

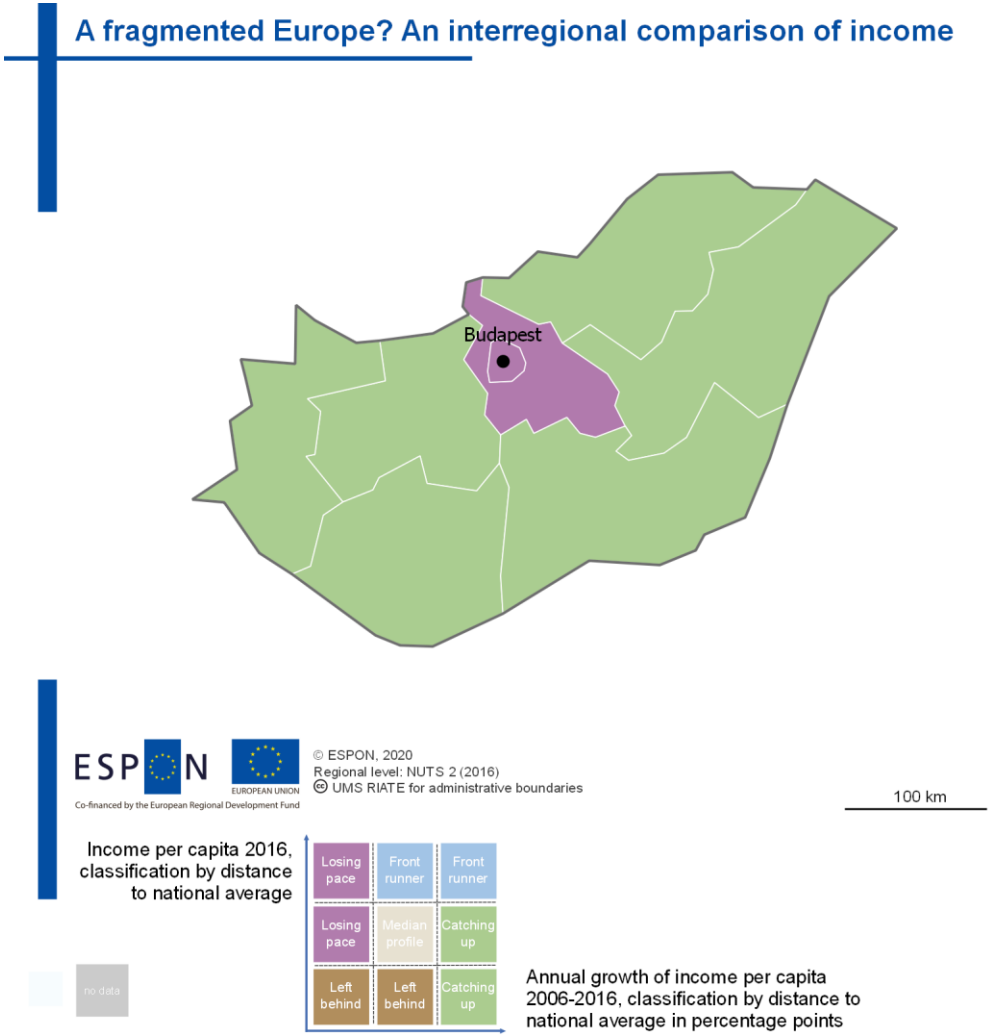
Source: ICON-INSTITUT, own elaboration
Origine of data: Eurostat

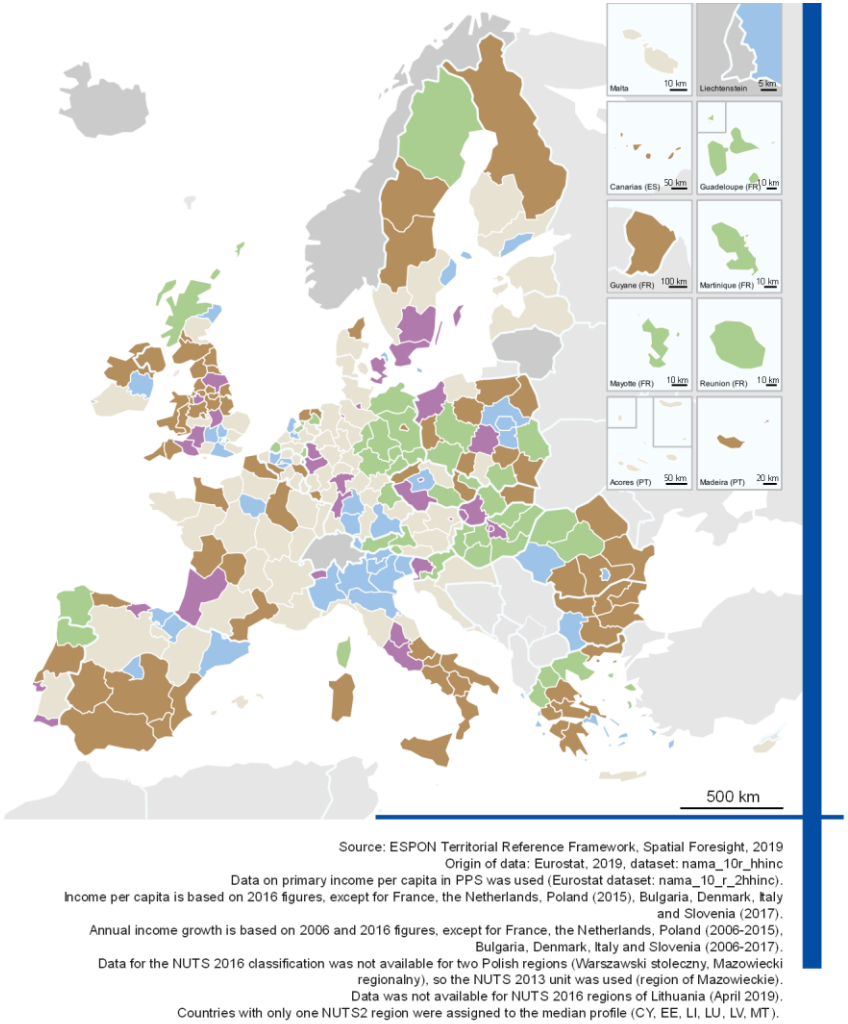
Most regions in Hungary show an upgrade in their evolution of performance

Regions have been classified in different categories depending on their capacity to integrate young people in the labour market in 2012 and 2016, looking at youth unemployment, youth not in employment, education and training, youth participation in the labour force, educational levels of employed youth and overall economic performance. The map shows changes of the regional classification between the two years. Most EU regions have remained in the same category. Some regions in France, Spain, Romania, Belgium, Finland and Luxembourg were downgraded. Regions that were upgraded two levels are in the central and Eastern Europe, mainly in regions of Czech Republic, Slovakia, Hungary, Poland, as well as in Portugal, Ireland and parts of the UK.

In 2012, the performance indicator on the capacity to integrate young people in the labour market were very low in Hungary compared to EU average. However, most Hungarian regions have seen a relative improvement of their situation between 2012 and 2016. Two level upgrades are found only around Budapest (Közép-Magyarország) and in neighbouring Közép-Dunántúl, this way they belong to the group of middle performance regions. Other western and southern regions have been upgraded one level, so the majority of regions now belong to the low category. Only the classification of the region of Észak-Alföld has remained unchanged.

A fragmented Europe? An interregional comparison of income





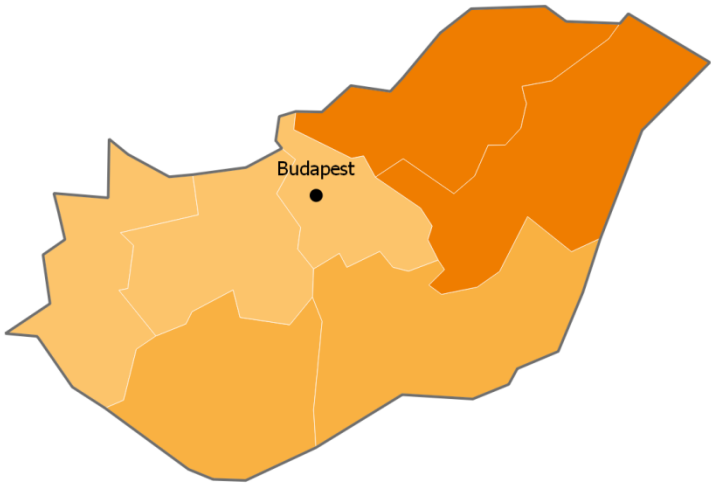
Source: ESPON Territorial Reference Framework, Spatial Foresight, 2019
Origin of data: Eurostat, 2019, dataset: nama_10r_hhinc
Data on primary income per capita in PPS was used (Eurostat dataset: nama_10_r_2hhinc).
Income per capita is based on 2016 figures, except for France, the Netherlands, Poland (2015), Bulgaria, Denmark, Italy and Slovenia (2017).
Annual income growth is based on 2006 and 2016 figures, except for France, the Netherlands, Poland (2006-2015), Bulgaria, Denmark, Italy and Slovenia (2006-2017).
Data for the NUTS 2016 classification was not available for two Polish regions (Warszawski stoleczny, Mazowiecki regionalny), so the NUTS 2013 unit was used (region of Mazowieckie).
Data was not available for NUTS 2016 regions of Lithuania (April 2019).
Countries with only one NUTS2 region were assigned to the median profile (CY, EE, LI, LU, LV, MT).

A reduction of interregional income disparities

Fragmentation is a key challenge in Europe today. A starting point to understand the drivers towards fragmentation and depict the population's well-being, is looking into trends in primary income per capita at national level. Different national profiles stand out. Some countries are becoming more fragmented with a large number of lower income regions being "left-behind", e.g. in Spain, Italy, the UK, Romania and Bulgaria. A second category appears to be less fragmented with several regions "catching-up" with others, e.g. in Hungary or Germany. Other countries have more diversified regional pathways, depending on each regions' economic resilience during the crisis, e.g. Poland, the Netherlands, Sweden.

Unlike most countries in Europe, Hungary has seen a clear reduction in interregional disparities of income between 2006 and 2016. Most regions with relatively lower average income in Hungary are gradually catching up, while the most affluent regions of the country (Pest and Budapest) are rather losing pace (with low to medium growth of average income per capita. Hungary is one of the exception in the more "fragmented" European picture conveyed by the map).

Young people Not in Education, Employment or Training (NEET)



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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

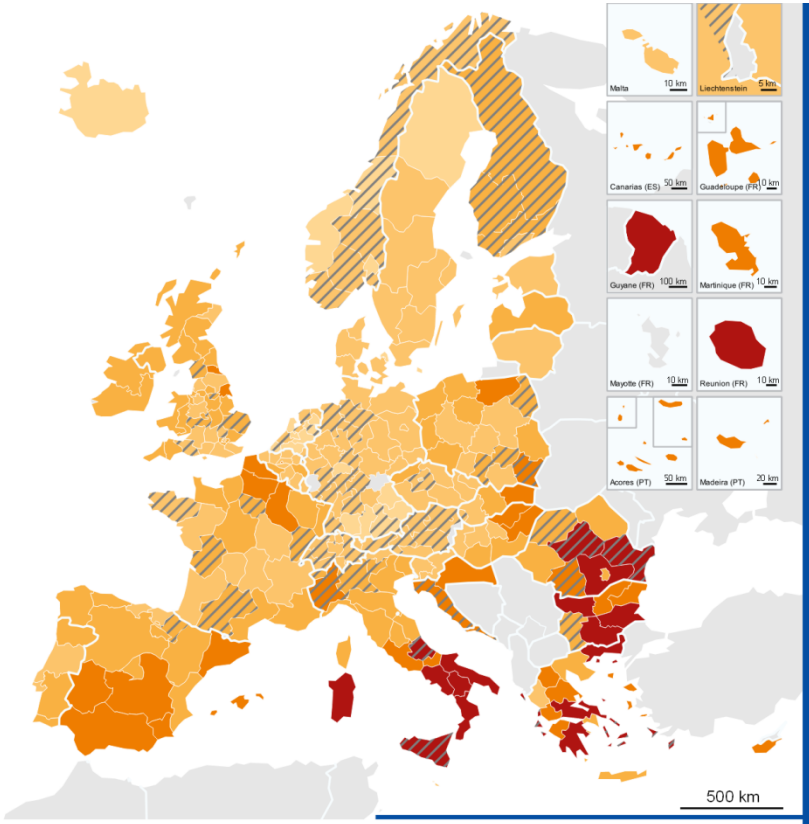
NEET rates (%) 2016

- 20 - 33
- 15 - 20
- 10 - 15
- 5 - 10
- 2 - 5

Increase of NEET rates, 2012 - 2016*

no data

* For Liechtenstein, Guadeloupe (FR), Guyane (FR), Martinique (FR), Réunion (FR), values for 2012 are missing.



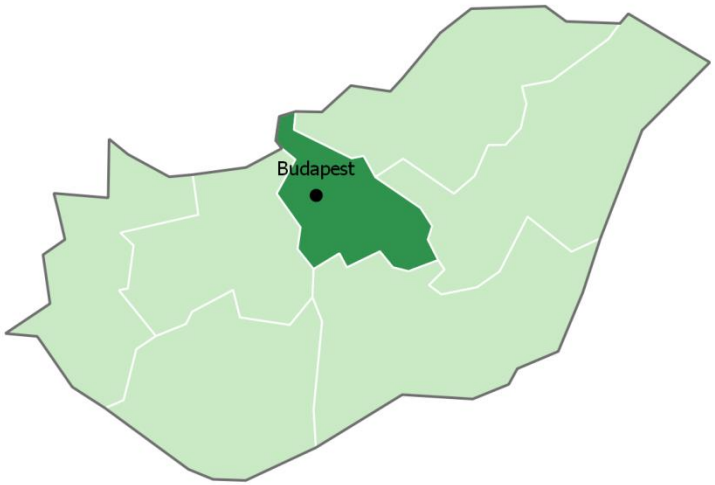
Source: ESPON YUTRENDS, 2019
Origin of data: Eurostat, 2019

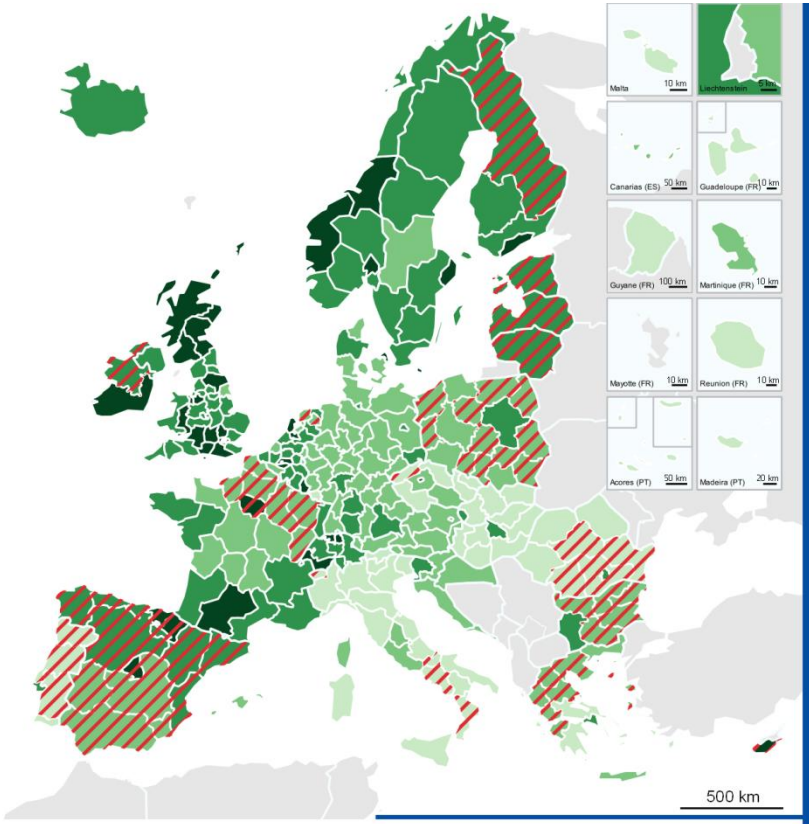
Moderate rates of young people Not in Education, Employment or Training of Hungarian regions

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 rates of people Not in Education, Employment or Training in Hungary have not increased during 2012-2016. Overall, Hungary shows low to moderate rates regarding people NEET. The highest rates, i.e. between 15% and 20% are to be found in the east of Hungary and more specifically in the regions of Észak-Magyarország and Észak-Alföld. Further high rates (about 10%-20%) are located in the south of the country, while the lowest rates are located in the central north and north west regions of the country, including Hungary's capital, Budapest.

Out-Migration and Higher Education (2014)





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Regional level: NUTS 2 (2013)
UMS RIATE for administrative boundaries

100 km

Out-Migration and Higher Education (2014)

Higher Education (% of total population)
- 0 - 10
- 10 - 20
- 20 -30
- 30 -40
- > 40

Net Migration
- Sending regions

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

Hungarian regions have low percentage of population with higher education, except Közép-Magyarország

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.

The percentage of the total population in higher education in Hungarian regions is relatively low. Közép-Magyarország stands out with the highest percentage of total population with higher education in Hungary, namely 35.3 %. All other regions of the country have about 10%-20% of the total population with higher education. This pattern reflects the strong core-periphery structure of the country with regard to the development of the knowledge economy.

Europe closer to citizens

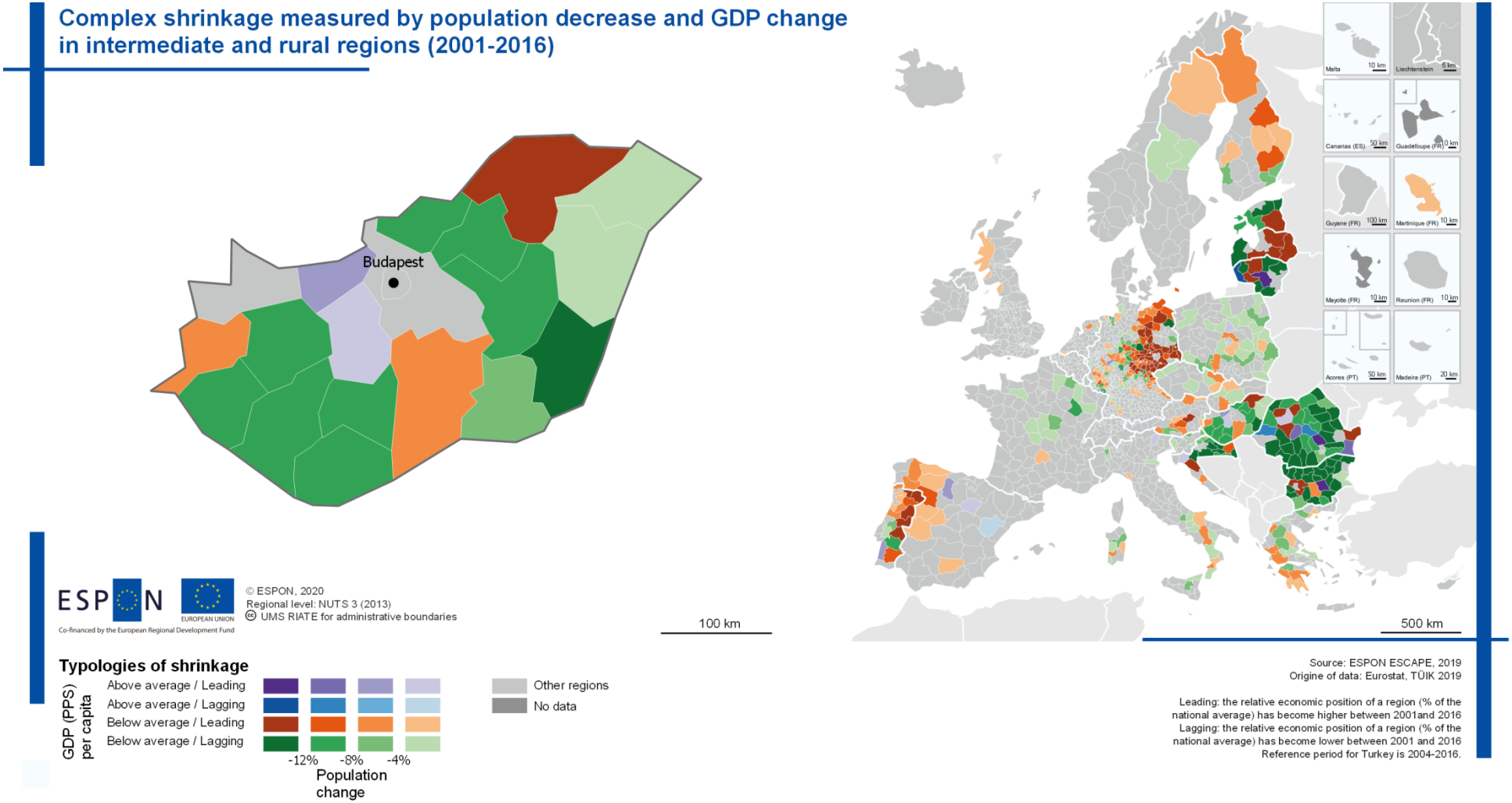
Complex shrinkage measured by population decrease and GDP change in intermediate and rural regions (2001-2016)

Inner peripherality by main driver

Areas of risk to become inner peripheries in future

Thematic fields covered by crossborder public services (2018)

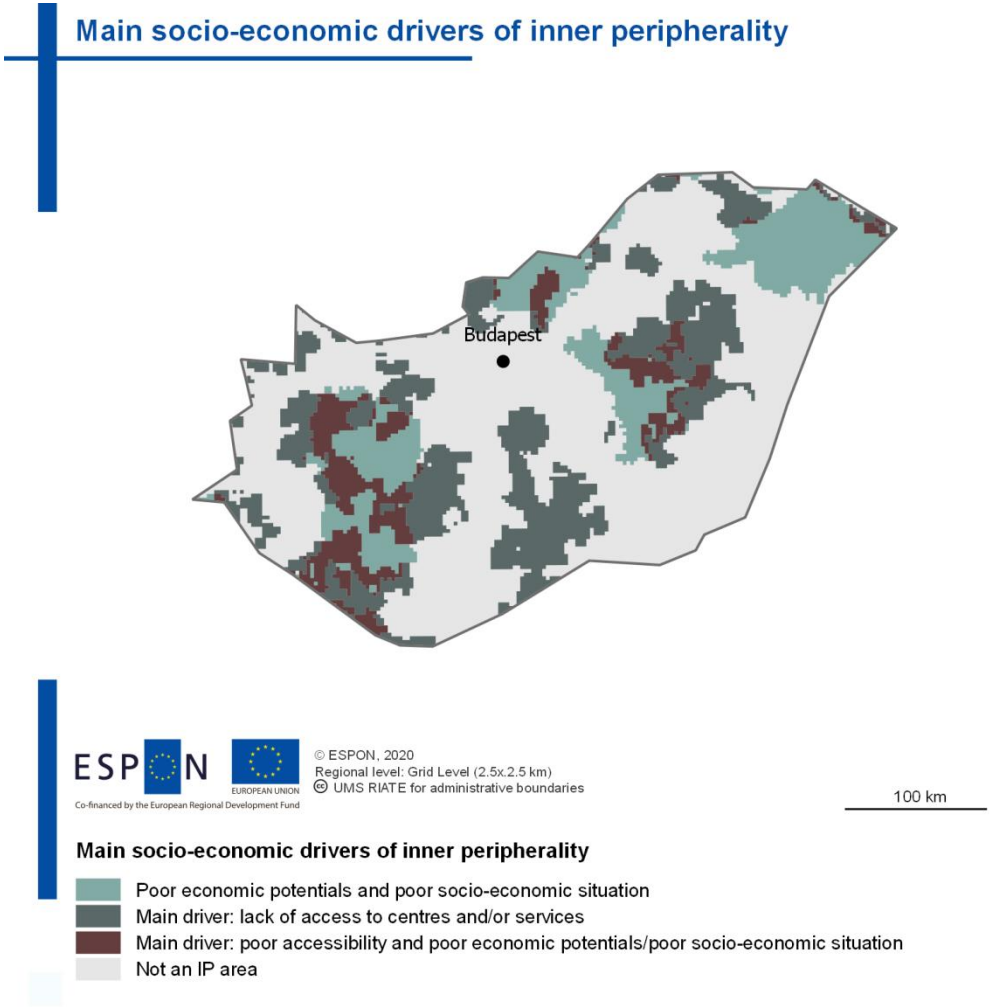
Complex shrinkage measured by population decrease and GDP change in intermediate and rural regions (2001-2016)

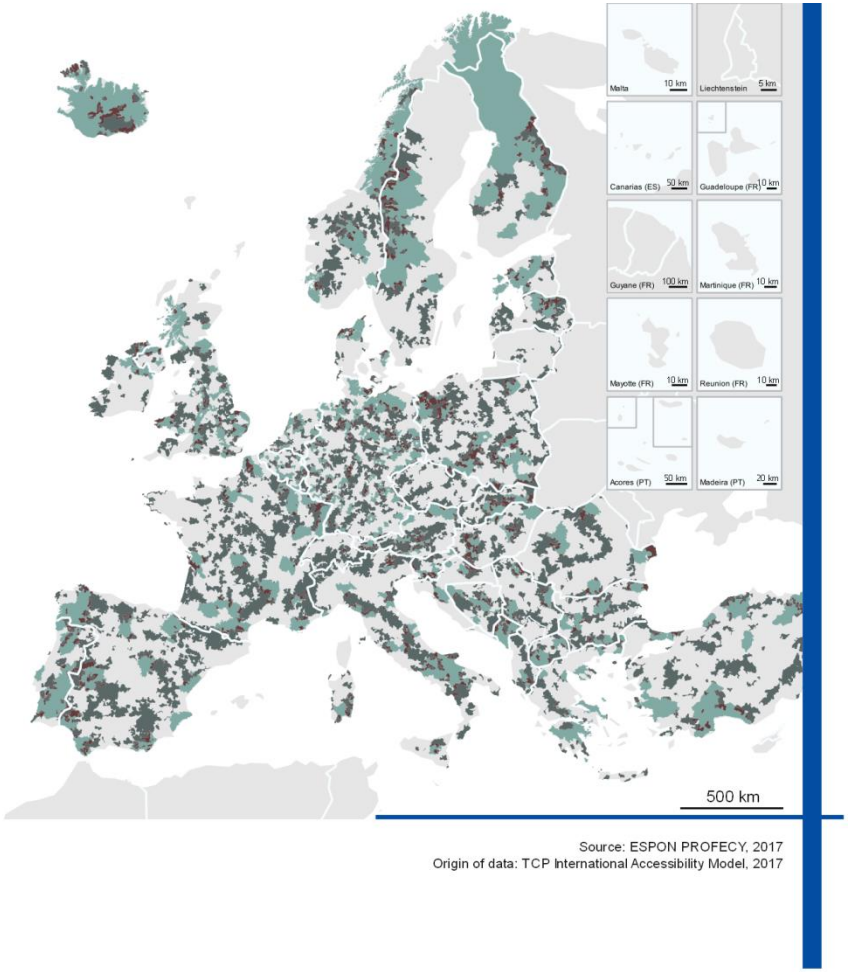


Most regions in Hungary are lagging

Combining demographic and economic analysis allows to grasp the complexity of shrinkage processes in rural and intermediate regions. In this map, regions are identified as economically "leading" or "lagging", above or below the national average by comparing the evolution of their economic position in the national context between 2001 and 2016. Depopulating regions have generally below-average GDP levels. However, many experience above-average GDP growth, especially in East Germany, Baltic States and Portugal. Depopulating regions with above average GDP levels can only be found in Lithuania, Romania, Bulgaria, Hungary and Spain showing the limited correlation between economic trends and demographic change in these countries.

In Hungary, most depopulating counties are "lagging" regions with below average GDP per capita, with two types of exceptions. Two depopulating counties have above-average GDP levels in 2016 (i.e leading regions): Fejér and Komárom-Esztergom, west of the Budapest. Three depopulating counties (Borsod-Abaúj-Zemplén, Bács-Kiskun and Vas) have seen their relative economic situation improve between 2001 and 2016 (i.e. catching up).



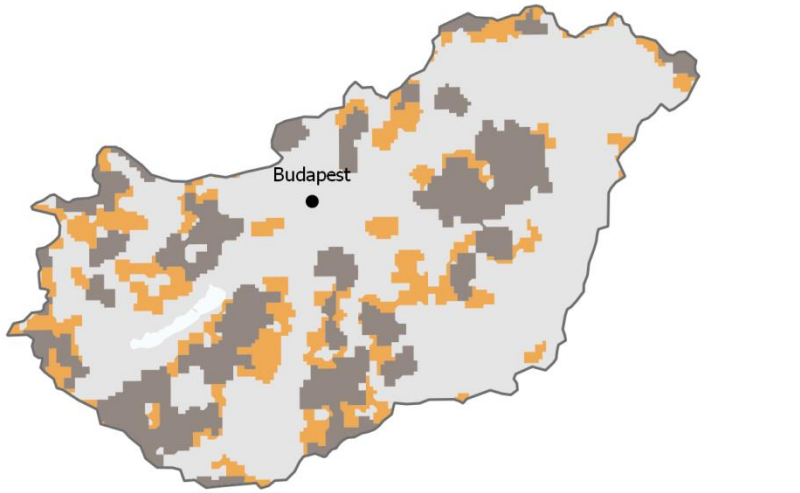


Inner peripheries along non-urban areas in Hungary

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.

A large part of Hungary can be identified as “inner periphery”. The key driver for that is mainly lack of access to centres and / or services which is depicted mostly along the Danube river south from Budapest and the middle section of Tisza river (rural areas around inner border between counties). Another driver is the poor economic potentials and poor socio-economic situation located among others in the north east part of the country (Szabolcs-Szatmár-Bereg, Jász-Nagykun-Szolnok, Nógrád counties) and in the west (Veszprém, Somogy counties). Inner peripherality culminates in areas where both factors are combined: mostly along external borders (with Croatia and Ukraine) and interregional borders.

Areas at-risk to become inner peripheries in the future (2017)



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Grid cells: 2.5 x 2.5 km
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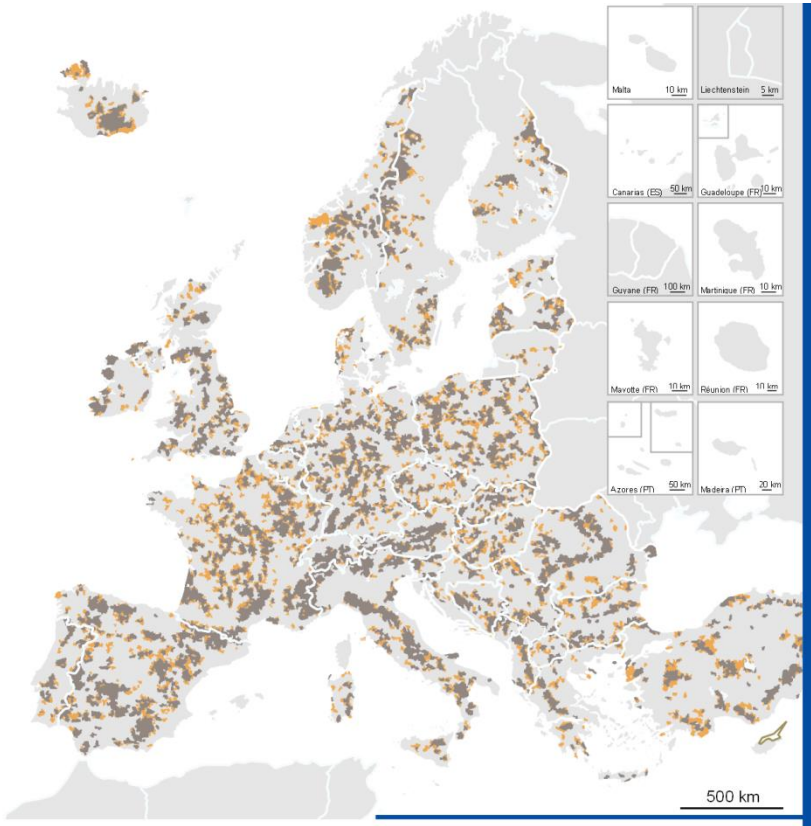
Inner peripheries and areas at-risk to become inner peripheries according to their limited access to Services of General Interests

- Inner peripheries
- Areas at-risk to become inner peripheries



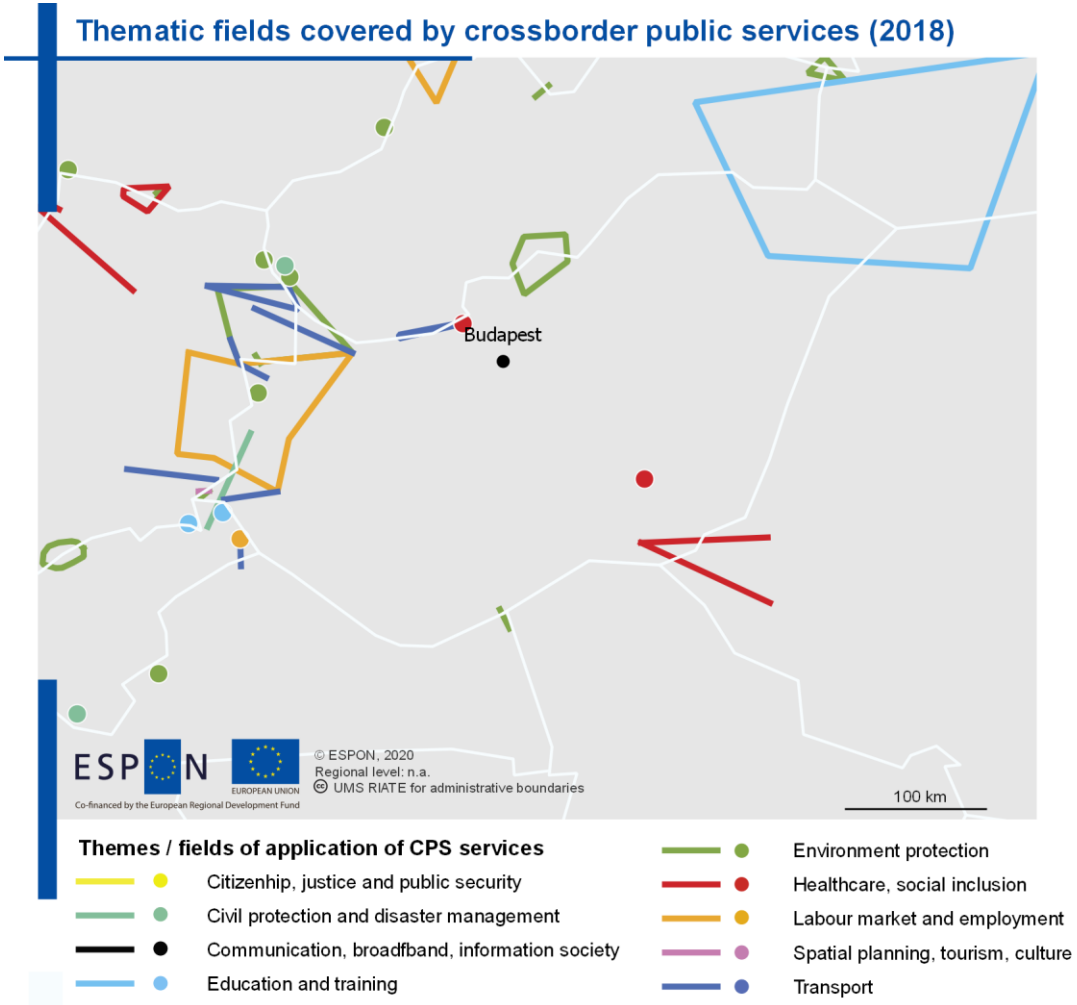
Source: ESPON PROFECY
Origine of data: TCP International, Accessibility model, 2017

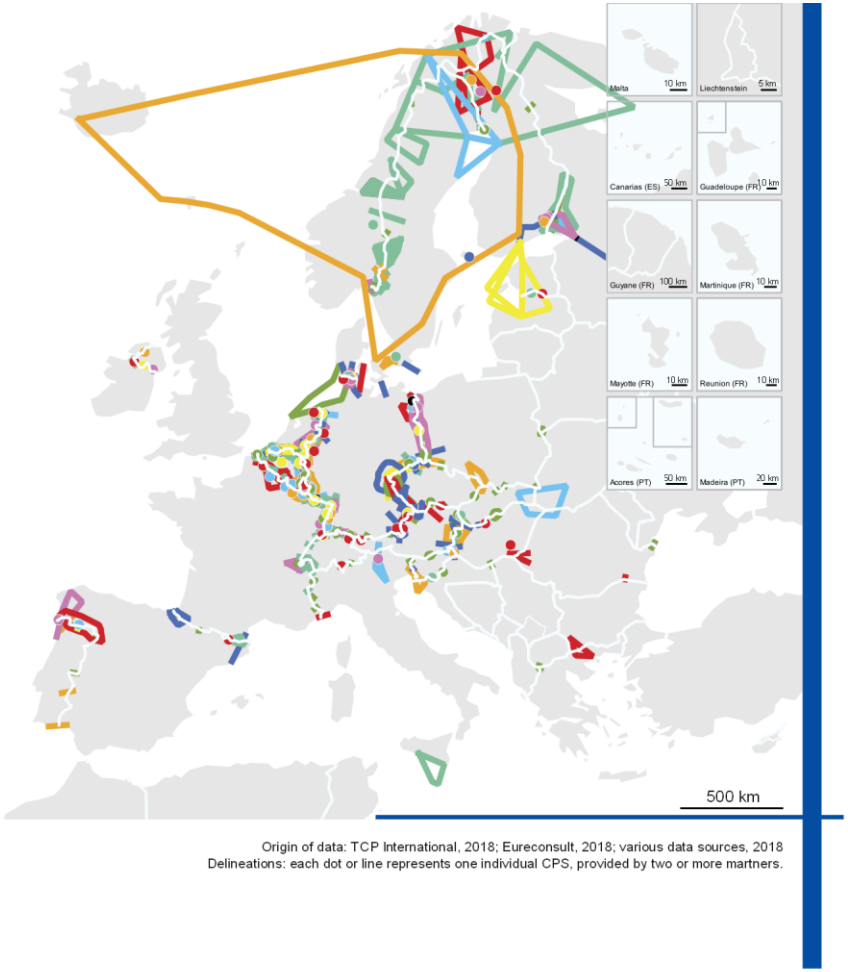
Areas at-risk are those having poor access to three or four SGI, but were not considered as inner periphery.

Areas of risk to become inner peripheries scattered across Hungary

Inner peripherality in Europe represents regions that, among others, lack access to a number of different services of general interest (SGI), such as schools, medical doctors, or railway stations. Besides regions that are already inner peripheries in Europe, there are a number of regions at risk of becoming an inner periphery in the future. These are regions that have restricted access to three out of nine types of SGI and may rely on one single facility for each service type. Hence, if one of these facilities is no longer operational or adequate, the region would be classified as inner periphery. Those areas are scattered all across every country around identified IP areas. Capital regions seem to have the least risk.

Several regions in Hungary are considered at risk of becoming an inner periphery in the future. These regards areas that may lack access to a number of SGI in the future, despite a fair access to them today. These areas are located in rural Hungary, around existing IP areas, and especially along county borders, which highlights the need for cooperation between counties to provide fair and efficient access to services.





Most fields covered by CPS located in Hungary's western borders

Crossborder Public Services 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 crossborder tradition.

There are several fields of Cross-border Public Services that take place across Hungary borders, most located in Hungary's west borders mainly with Austria. The theme that is most prominent is transport as well as the labour market flows, which are especially visible in the border of Hungary with Austria and Slovakia. Environmental protection is also a theme covered by cross-border public services between Hungary and Slovakia, as well as Austria and Croatia. Healthcare and social inclusion is another topic of cross-border public services between Hungary and Romania, as is also education and training at Hungary's east borders with Slovakia, Romania and Ukraine (European exchange school alliance).

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