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Inspire Policy Making with Territorial Evidence

Country fiche

Territorial patterns and relations in Bulgaria

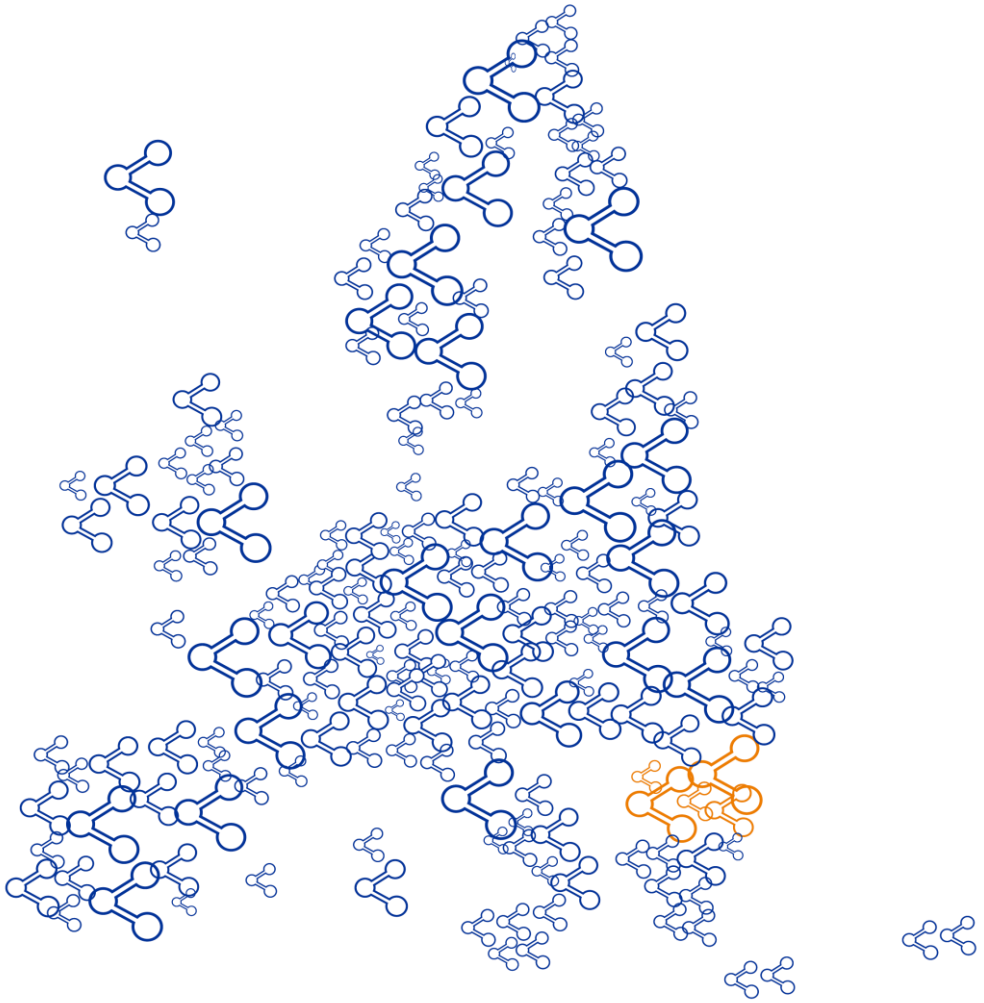
Smarter Europe

Greener Europe

More connected Europe

More social Europe

Europe closer to citizens



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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.

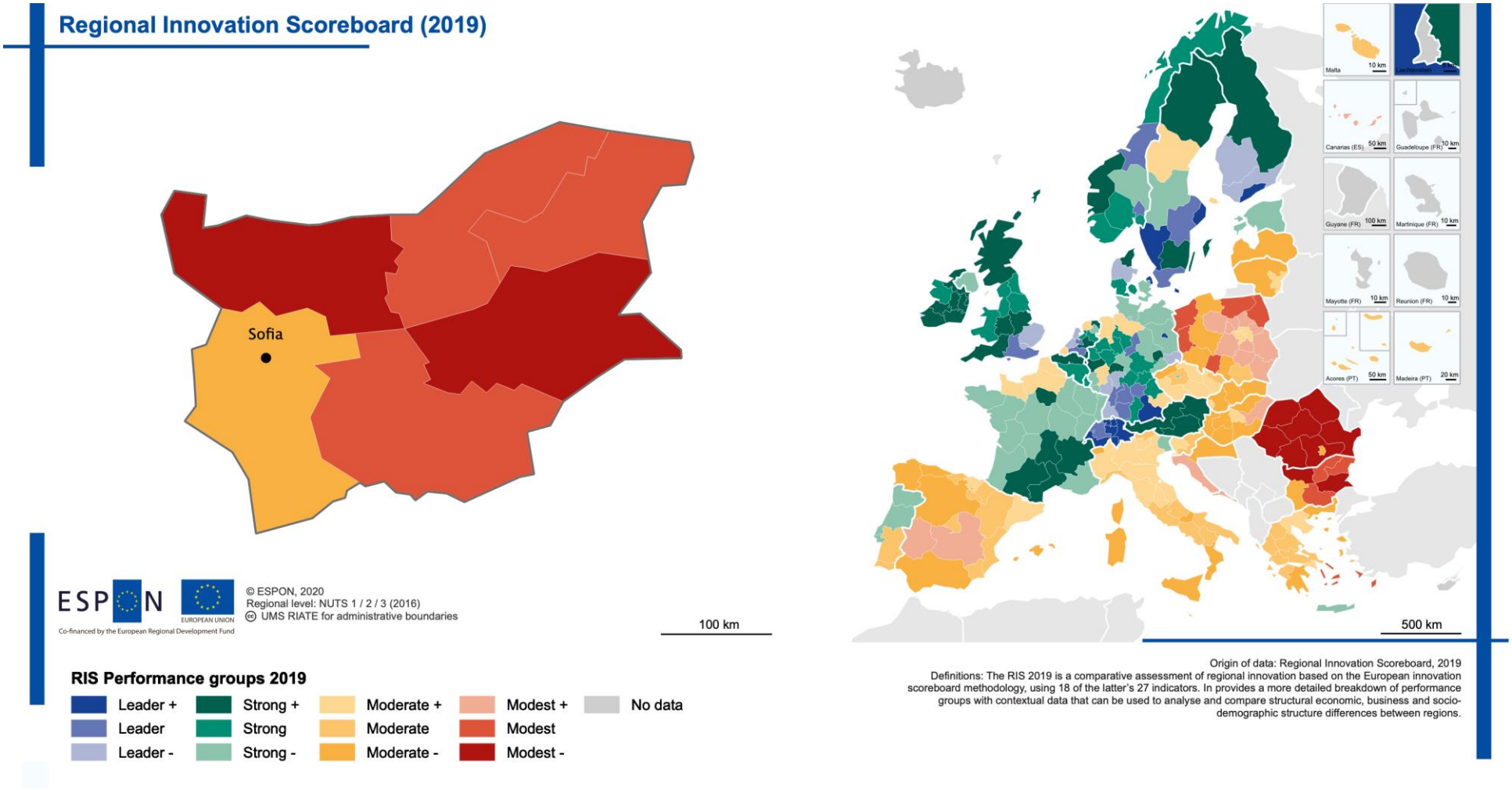
Smarter Europe

Regional Innovation Scoreboard (2019)

Regional SME Typology: combination of SME performance and sectoral focus

Regional patterns of 4.0 technological transformation (2019)

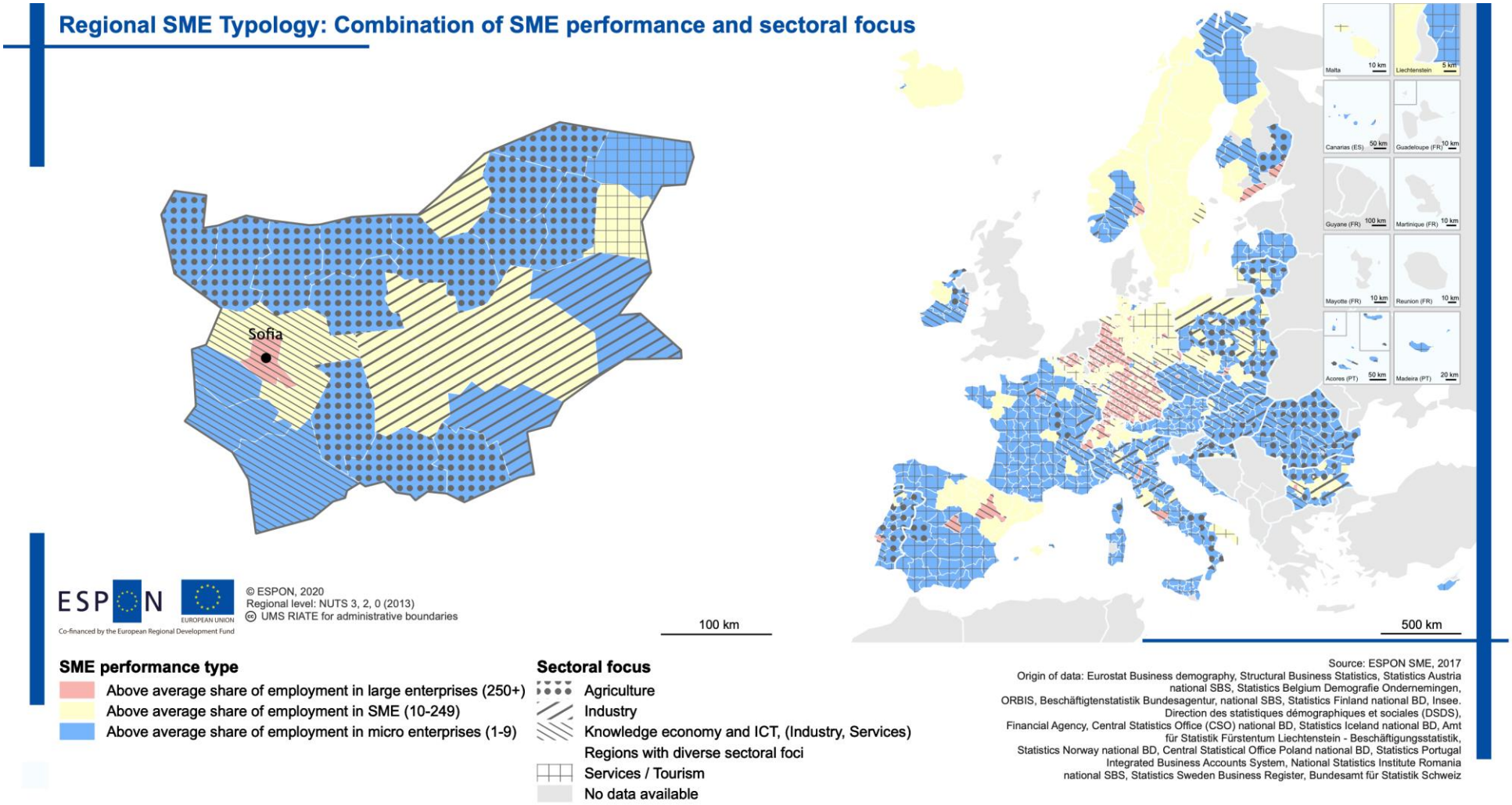
R&D expenditure (2014)



Yugozapaden, Bulgaria's best innovation performer, loses importance in a European context

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.

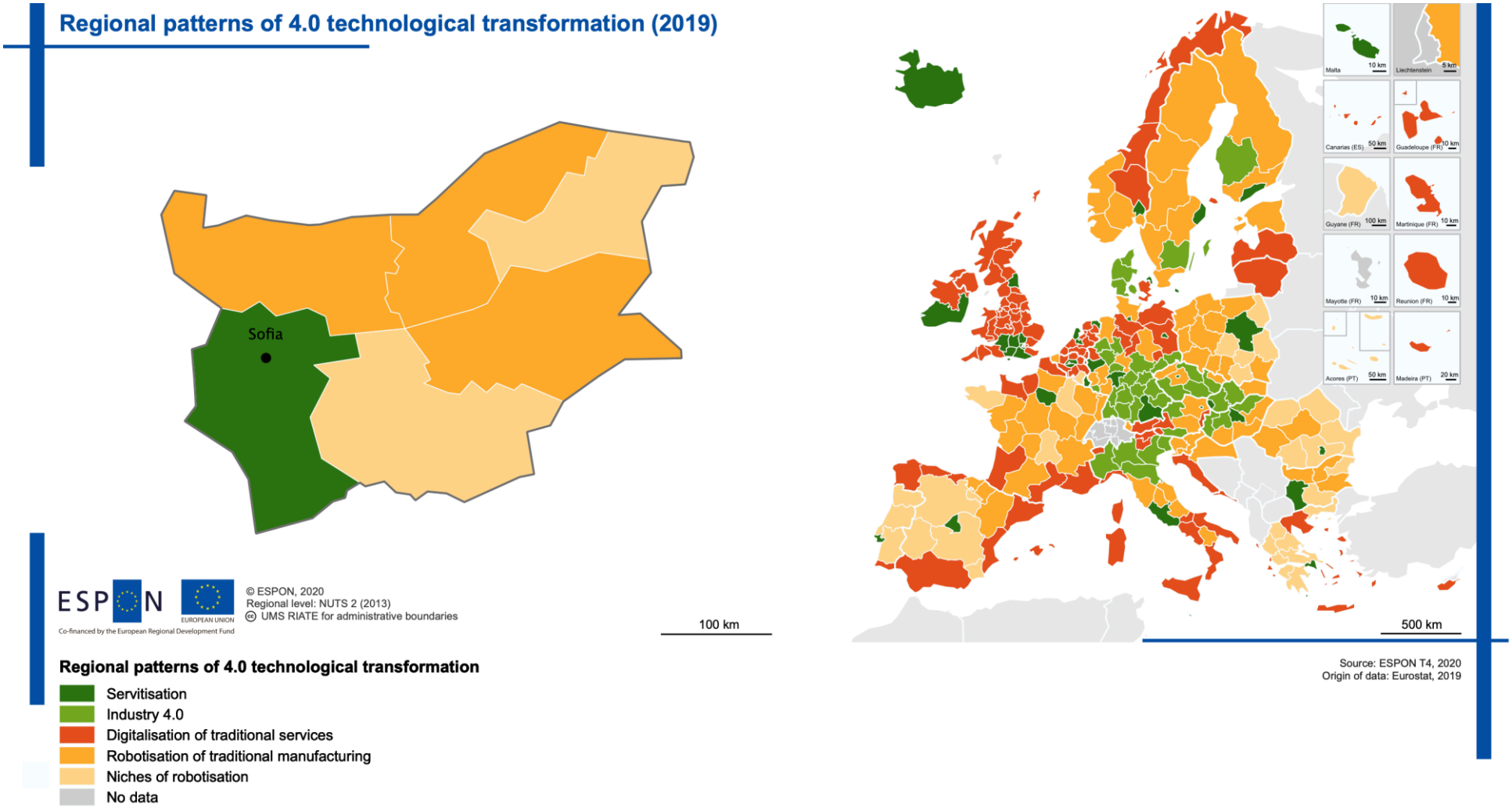
5 out of 6 Bulgarian regions have a modest innovation profile. Severozapaden and Yugoiztochen saw a decrease in their relative performance in the last 10 years. The region of Yugozapaden (including Sofia) has a moderate innovation profile with a negative outlook. As such, the innovation profile of the capital region is similar to that of several other southern and eastern European capital regions. However, many regions have some strong points on which to capitalise. These are design applications for Severen tsentralen, Severoiztochen and Yuzhen tsentralen; trademark applications for Yugozapaden and Yuzhen tsentralen; non-R&D innovation expenditures for Severoiztochen.



Medium sized industrial enterprises along the A1 transport axis, micro enterprises along the borders

Small and medium-sized enterprises (SMEs) represent 99% of all businesses in Europe and are important for ensuring economic growth, innovation, job creation and social integration. SMEs include medium-sized, small and microenterprises. The share of employment in mico-enterprises is particularly high in most southern and eastern European regions as well as in some Nordic regions. The sectoral focus in these regions is rather diverse. In many eastern and rural regions most micro-enterprises are in agriculture. In Austria, Latvia, Spain and France most micro-enterprises provide services or relate to tourism. Small and medium-sized industrial enterprises are more represented in Northern Poland and Central Bulgaria than in other European regions.

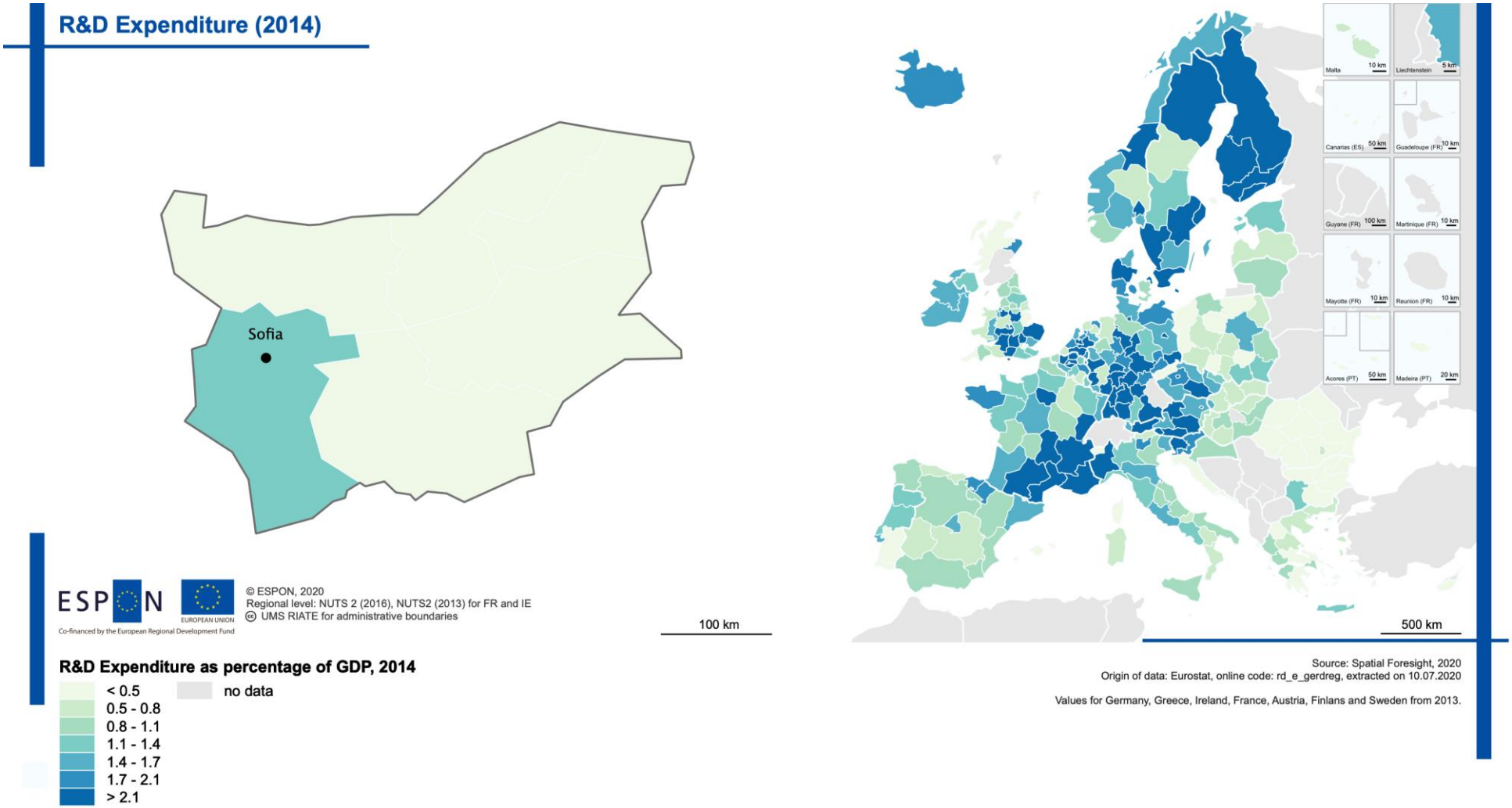
When considering the share of employment in SMEs and main sectoral focus of these enterprises at the level of districts, a wide range of regional profiles emerges. The share of medium and small-sized enterprises is higher than the EU-average in most regions in central Bulgaria, e.g. in districts including large cities such as Sofia, Burgas, Varna and Plovdiv. SMEs seem to favour areas with higher population densities. The share of micro-enterprises is higher the rest of the country. The sectoral focus of enterprises in these regions varies: industry around Rouse, tourism around Varna, knowledge economy and ICT in Yugozapaden, agriculture along the northern and southern borders.



Yugozapaden's service industry well advanced in technological transformation

Five clusters identify regions with specific patterns of technological transformation. Servitisation (basically, adding services to the production and commercialisation of commodities) 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, Greece.

Technological transformation in favour of industry 4.0 differs between the capital region and other regions. Like many other capital regions, Yugozapaden has mainly a service-oriented industry which is favourable to the development of servitisation. In the other regions, manufacturing industries are relatively more important. In these regions, the transition to industry 4.0 mostly involves applying new technological solutions or automated production processes. In Yuzhen tsentralen and Severoiztochen, this occurs mostly in specific sectors. Similar differentiation between the capital region and other regions can be observed in Romania and Poland. Other European countries tend to have a greater number of service industry centres.



Low levels of R&D expenditures in most Bulgarian regions

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.

Investments in R&D as percentage of GDP are relatively low in Bulgarian regions. Investment levels in Yugoiztochen, Sevren tsentralen and in Yuzhen tsentralen are among the 10 lowest investment levels in Europe. They are comparable to investment levels in Romanian, Polish, Greece and Portuguese regions. Investment levels in Yugozapaden are higher. In 2014 1.14 % of the regional GDP was invested in R&D. Enterprises are the main investors in R&D in all Bulgarian regions. They contribute to 66% of all R&D investments in Bulgaria. The government is the second most important investor in R&D, followed by higher education institutions and research organisations.

Greener Europe

Energy intensity of the economy (2005-2014)

Potential Green infrastructure networks (2012)

Coverage of potential Green Infrastructure and change in urban green areas (2012)

Residential building, final energy consumption for space heating, hot water and cooling (2012)

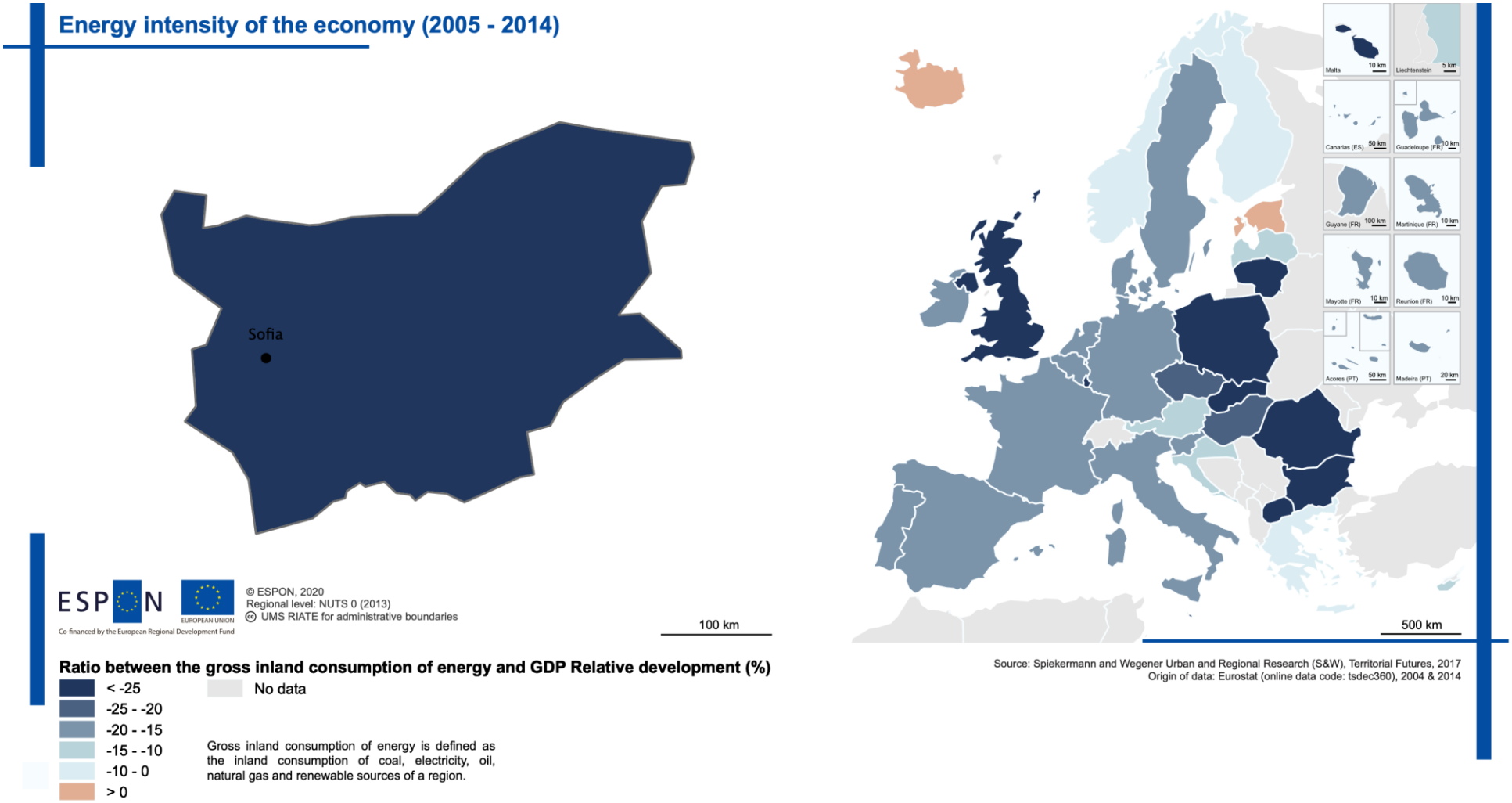
Residential sector, final electricity consumption for appliances and lighting (2012)

Residential building, share of renewable energy carriers, heating and DHW excl. electricity (2012)

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

Aggregated potential impact of climate change

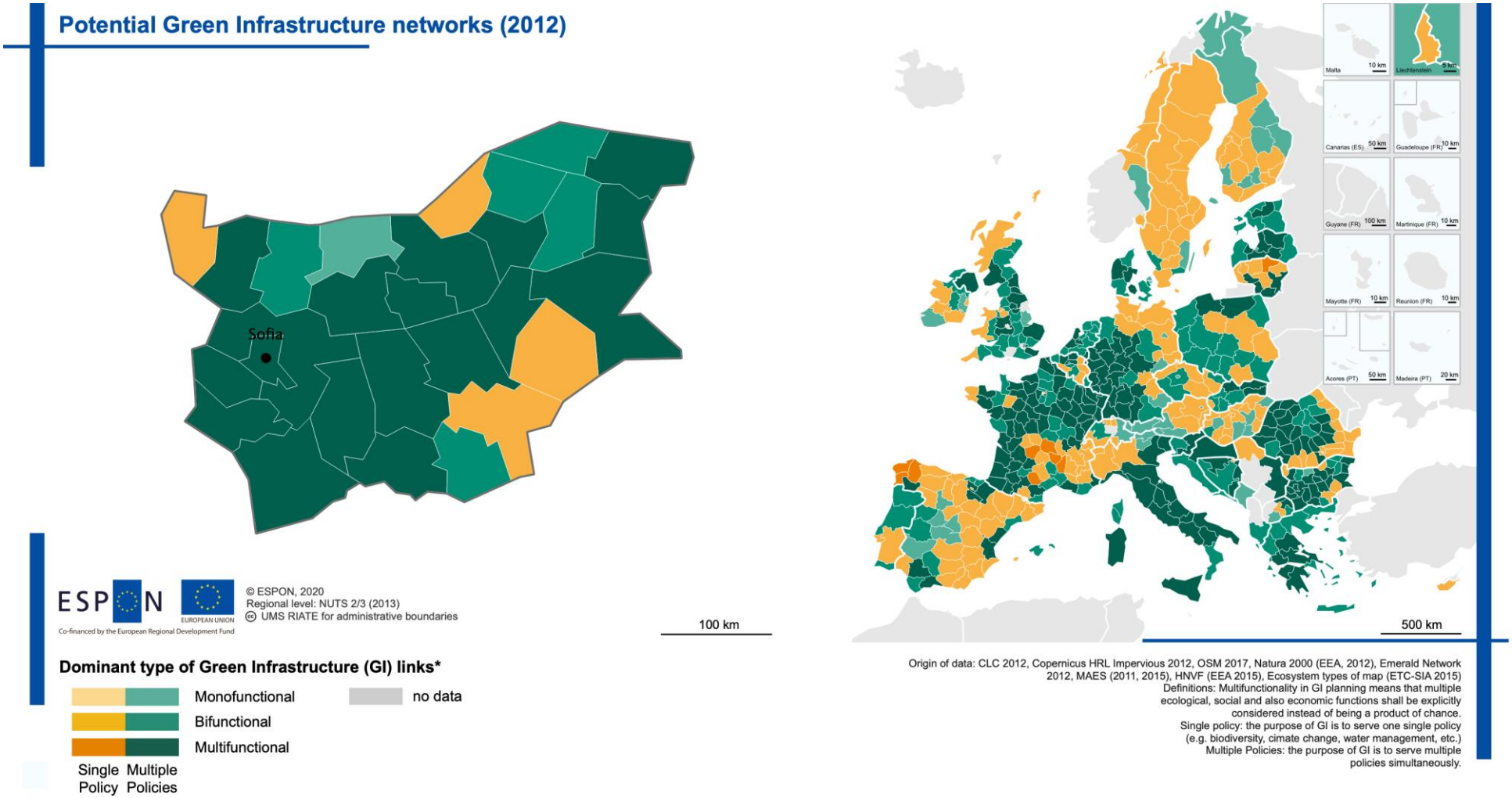
Energy intensity of the economy (2005 - 2014)



Decreasing energy intensity levels compared to economic output between 2015 and 2014

Energy intensity is one of the indicators to measure the energy needs of an economy. It measures a countries consumption of coal, electricity, oil and natural gas relative to its GDP. The evolution of energy intensity is often used to illustrate energy efficiency although other factors may play a role as well including general economic development, economic specialization, general living standards or even weather conditions. Between 2005 and 2014, the energy intensity of European economies decreased in almost all countries except in Iceland and Estonia. Energy consumption relative to a countries GDP decreased most in Bulgaria, Romania, Slovakia, Poland, Lithuania, Malta and the United Kingdom.

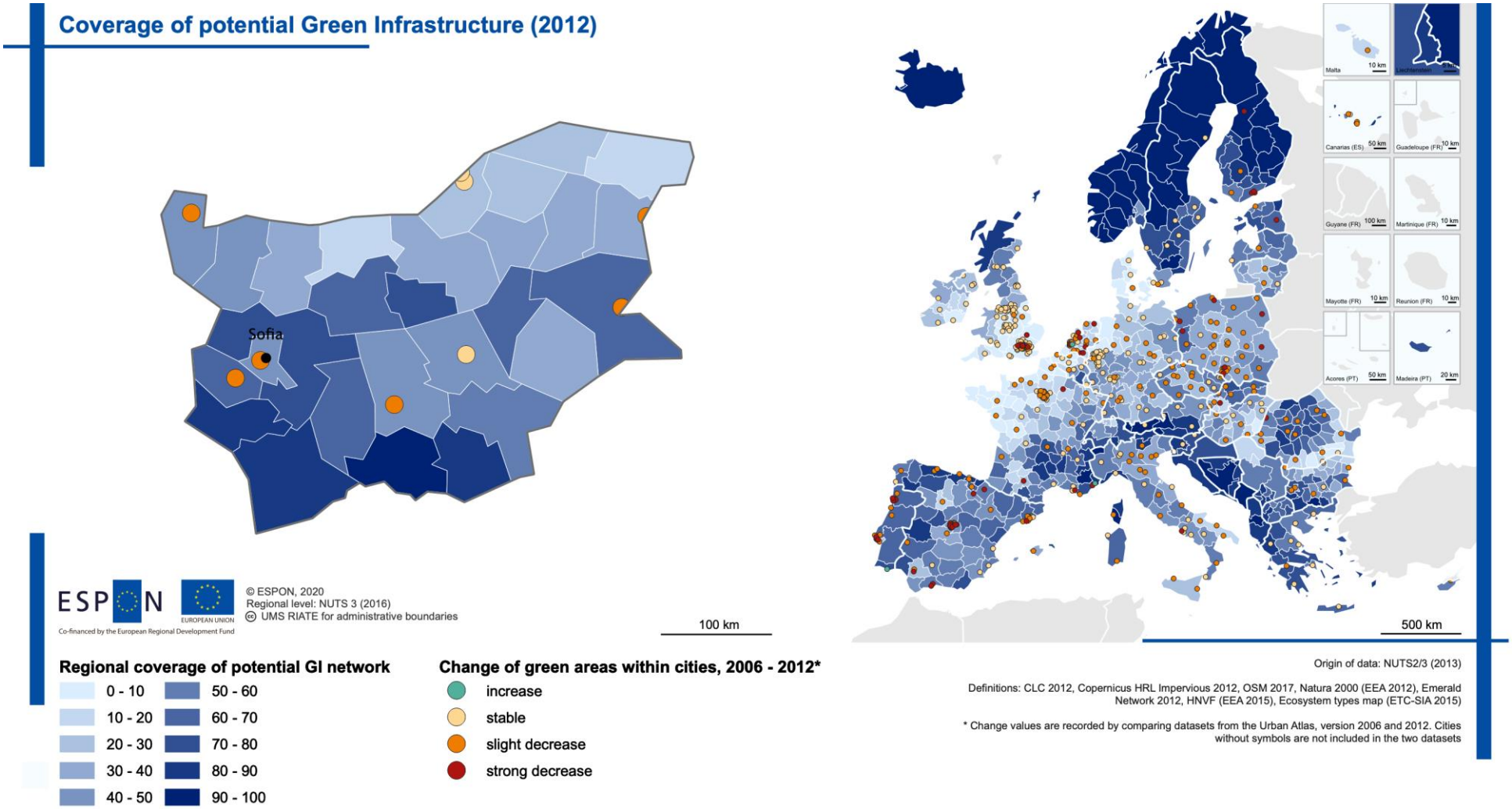
Bulgaria had one of the highest energy intensity levels in the EU in 2014, using about than 450 kg of oil equivalent per 1,000 EUR of GDP against 120 kg of oil equivalent per 1,000 EUR of GDP in the EU28 as a whole. Yet, energy intensity largely decreased since 2005, with more than 25%. This is partly due to high growth of GDP in between 2005 and 2014 and greater efficiency in final energy consumption.



Green infrastructures serving multiple purposes

Green Infrastructure (GI) can be defined as a strategically planned network of natural and semi-natural areas whose environmental features are designed and managed to deliver a wide range of ecosystem services in both rural and urban areas. GI development can be a component of different policies i.e. Biodiversity, Climate Change and Disaster Risk Reduction and Water Management. It can also provide one or more environmental services, making it mono- bi or multi-functional. At the European level, GI tend to contribute to a single policy in many mountainous and less populated regions (e.g. western Alps, Iberian mountain regions, Massif Central). However, observed patterns are complex, as a wide range of factors intervene.

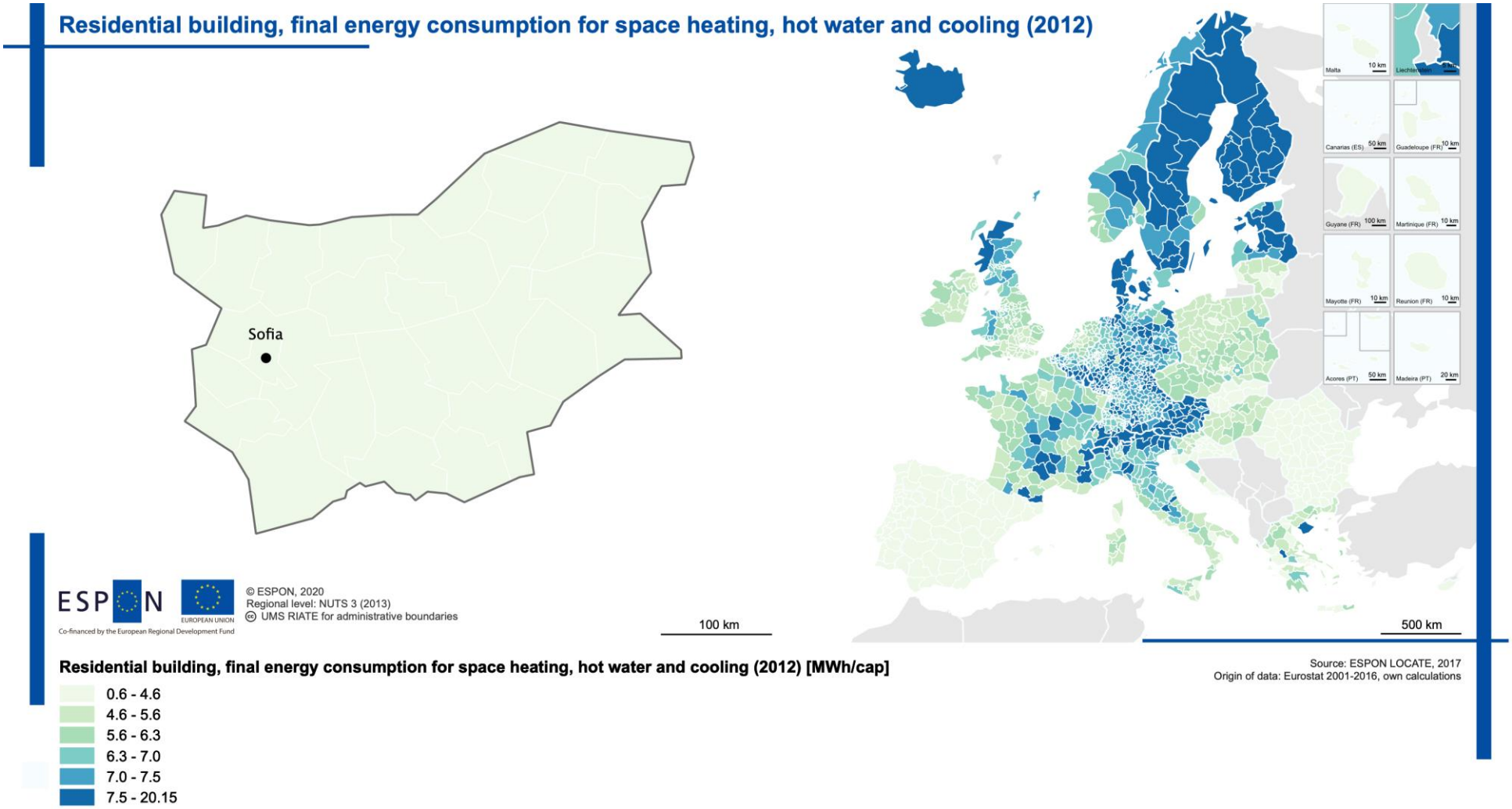
Green infrastructures in Bulgaria serve multiple purposes. Green infrastructure relates among others to land use and spatial development; transportation; water management; agriculture, forestry and fisheries; climate change mitigation/adaptation; environmental protection; disaster prevention; energy; health; and rural development. No specific national policy or strategy for green infrastructure exists in Bulgaria. The plural character of GI is rather supported through a variety of policy documents, among which the National Development Programme Bulgaria 2020 and Bulgarian biodiversity act as well as several European programmes and funds.



Highest potential for green infrastructure in the southern mountainous districts

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.

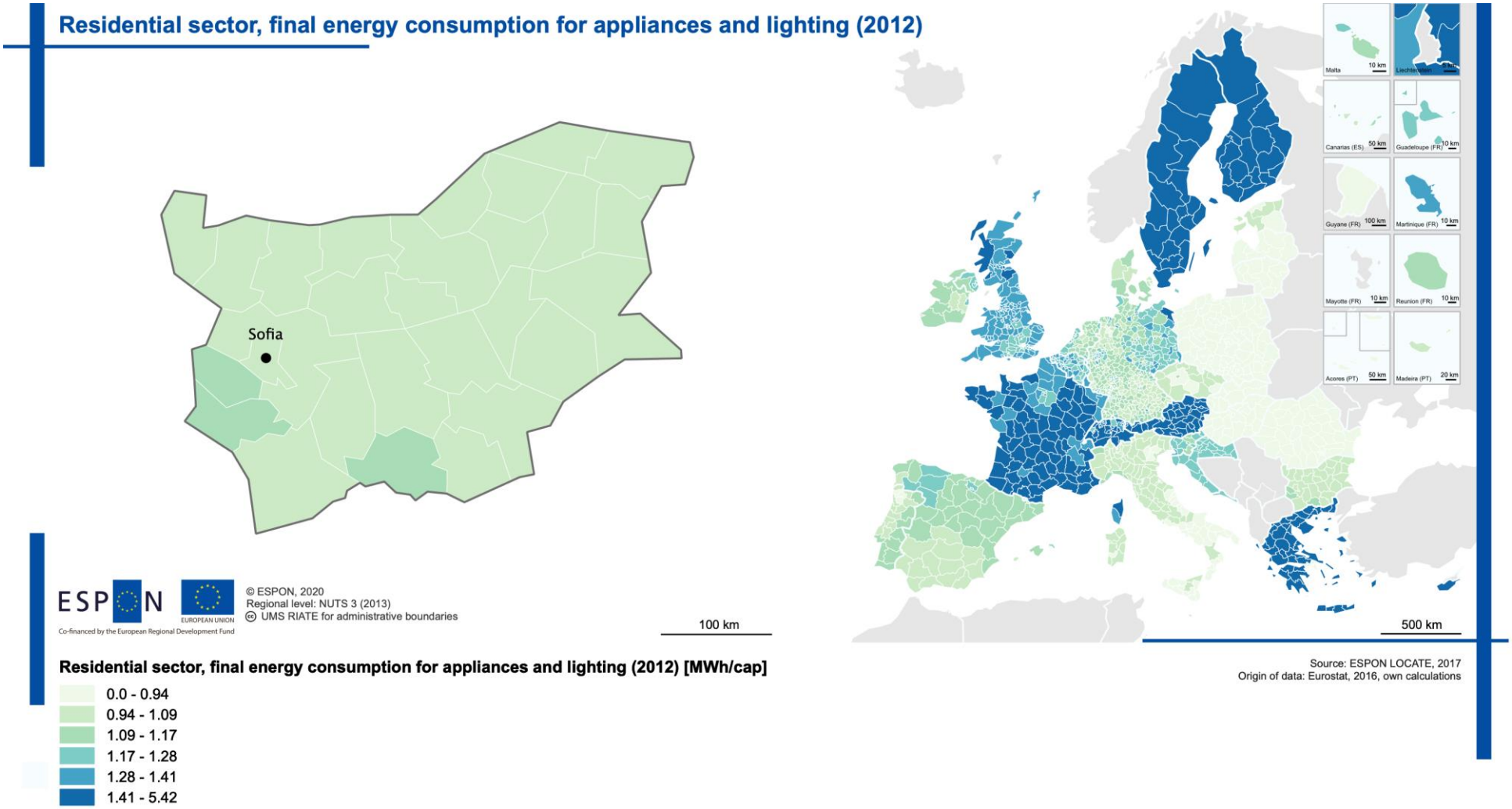
The potential for green infrastructure network is different in northern and southern districts. Developing and maintaining green infrastructure comes at a lower cost in southern districts, mainly due to a higher density of national and regional natural parks. Northern districts have fewer natural protected areas that are on average of smaller size than protected areas in southern regions, partly due to more developed agricultural activities. Green spaces in Bulgarian cities have slightly decreased, as in the majority of European cities. The only city in which the extent of green spaces has been stable between 2006 and 2012 is Stara Zagora.



Low levels of energy consumption in Bulgarian residential buildings

In EU households, heating and hot water accounted for about 79% of total final energy use (192.5 Mtoe) in 2016. Final energy consumption for cooling is still limited compared to energy use for heating. However, it increases as summers become hotter. Several EU policies and strategies encourage energy efficiency measures for residential buildings. In 2012, final energy consumption of residential buildings was particularly high in central and northern European regions and mountainous areas with rather cold climate conditions. Lower wealth and relatively more developed district heating systems contribute to explain the lower energy consumption levels observed in eastern European regions.

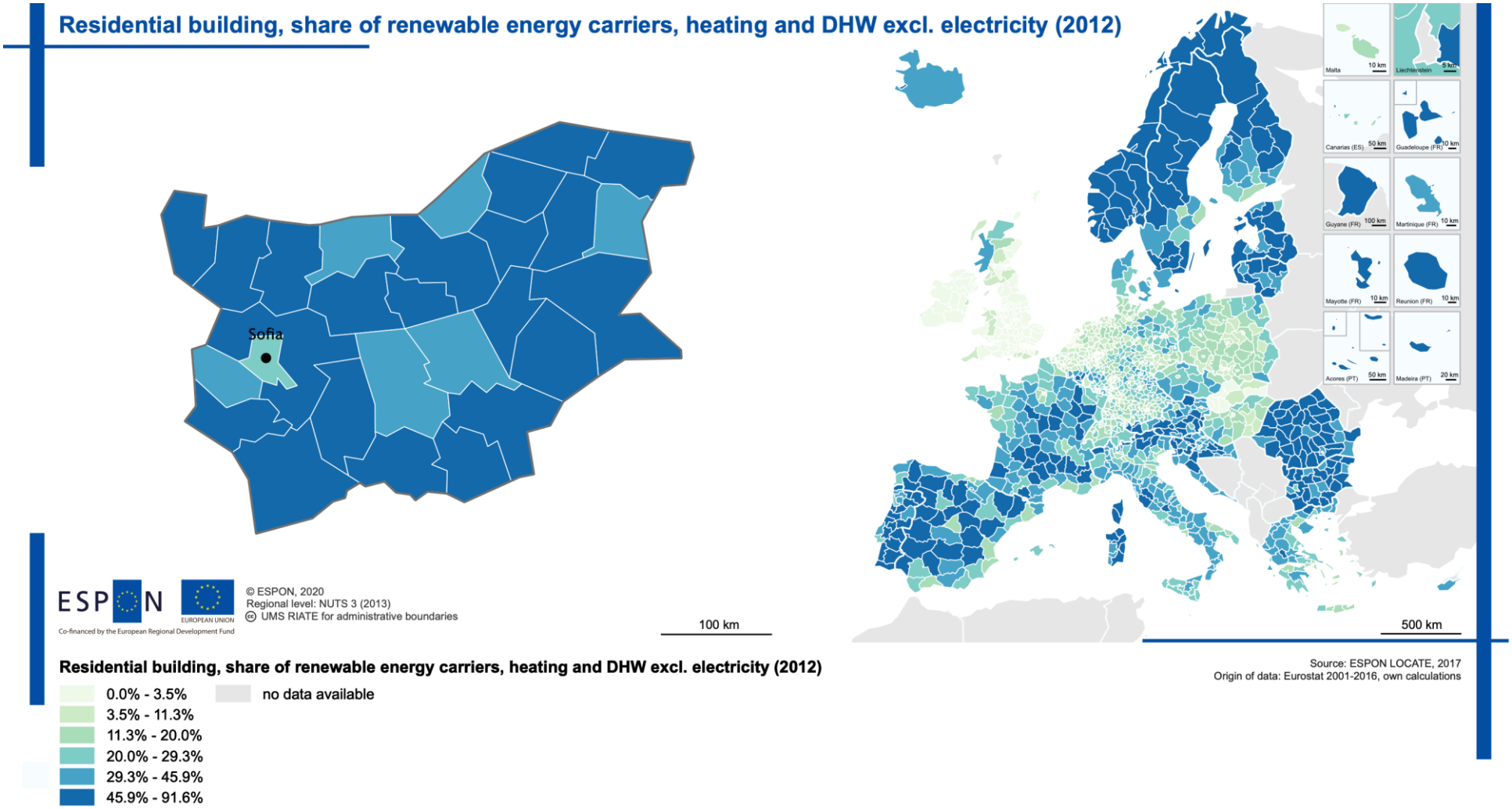
Energy consumption levels for heating, hot water and cooling in Bulgarian regions in 2012 was lower than in most other European regions. Regions with similar levels of consumption are mainly found in Spain, Portugal, Slovakia Latvia and outermost parts France. In Bulgaria, in urban settlements, a large share of houses are heated or cooled with electricity, rather than fossil fuels. This lowers the volume of energy consumption level expressed in MWh. Small differences in energy consumption levels can be observed between districts. Energy consumption per capita is lowest in Plovdiv (2.64 MWh/cap) and is highest in Pernik (3.96 MWh/cap).



Moderate electricity consumption for home appliances in Bulgaria

Electricity consumption of the residential sector includes household appliances such as washing machines, refrigerators, lighting or cooking. Such electricity use in households is especially high in Swedish, French, Austrian and Cypriot regions. The annual electricity consumption in Sweden is above 3,000 kWh per capita in many regions whereas in many eastern European and southern Italian regions the use of electricity is lower than 1,000 kWh per capita.

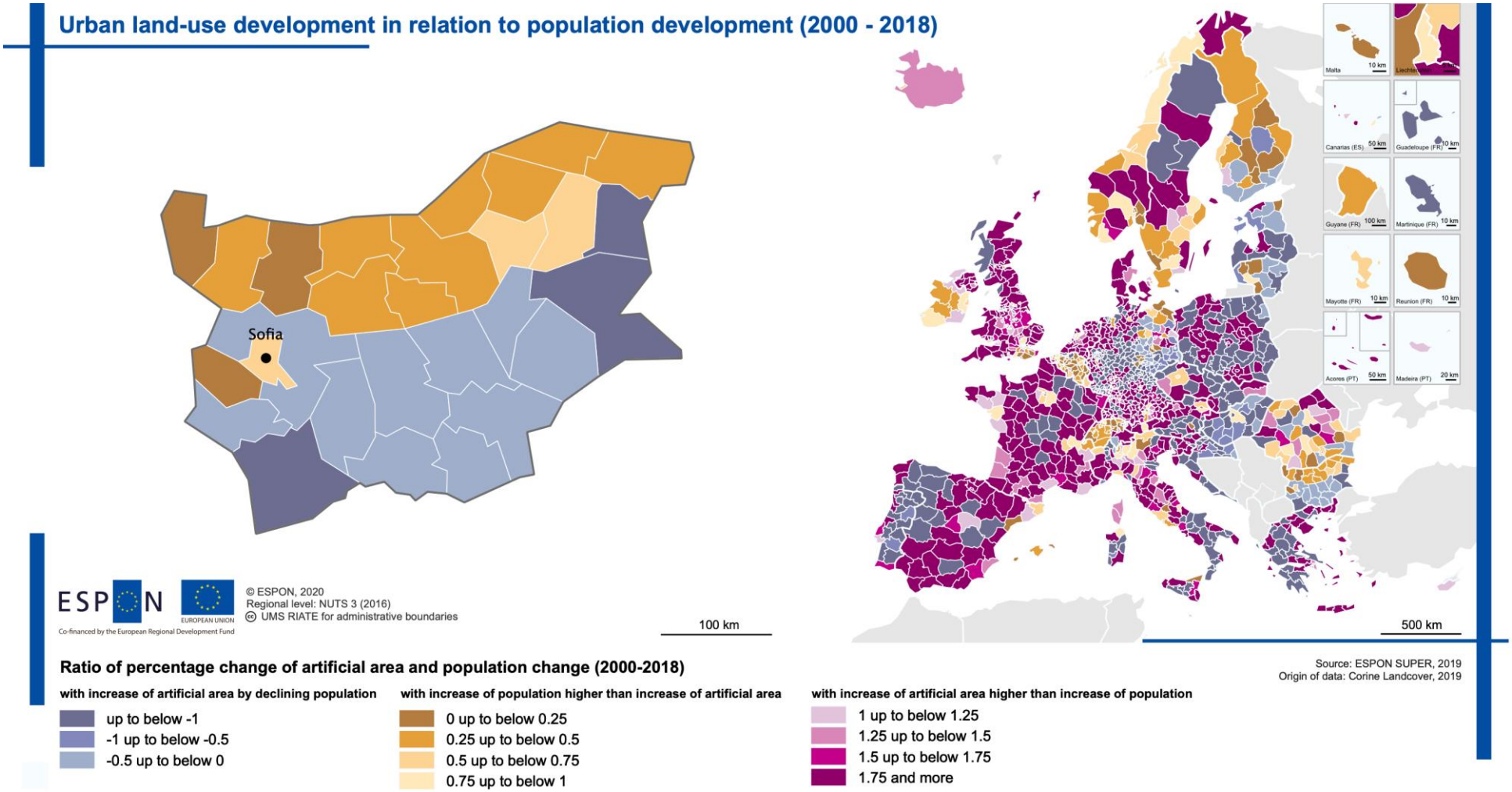
Households in Bulgarian regions used below EU-average amounts of electricity per inhabitant for household appliances and lightning. High shares of non-electric cooking (gas, wood) and relatively lower ownership of electric appliances may explain these differences. Final electricity consumption for washing machines, refrigerators, lighting or cooking is similar to many Italian, Czech, Spanish, Estonian, Irish, German and Dutch regions. Small regional differences can be observed in Bulgaria. In 2012, Electricity use for appliances and lightning is lowest in the districts of Montana (1.009 MWh/cap) and Lovech (1.01 MWh/cap) and is highest in Kyustendil (1,106 MWh/cap) and Pernik (1,095 MWh/cap).



Use of biomass stimulates high shares of renewable energy use in residential buildings

A variety of energy sources heat Europe's residential buildings, including gas, oil, coal, electricity, and heating systems e.g. district heating. The share of residential buildings that are provided with renewable energy is particularly high in Baltic regions as well as in Romanian and Bulgarian regions. High shares of renewable energy use in these countries derives from long traditions of using biomass for heating and domestic hot water production. In the Nordic countries, as well as in Spain, Portugal and Austria, the use electricity and heat is relatively high. Electricity in these countries mainly comes from renewable energy sources. The share of renewable energy in the Netherlands and UK is lower due to the widespread use of natural gas.

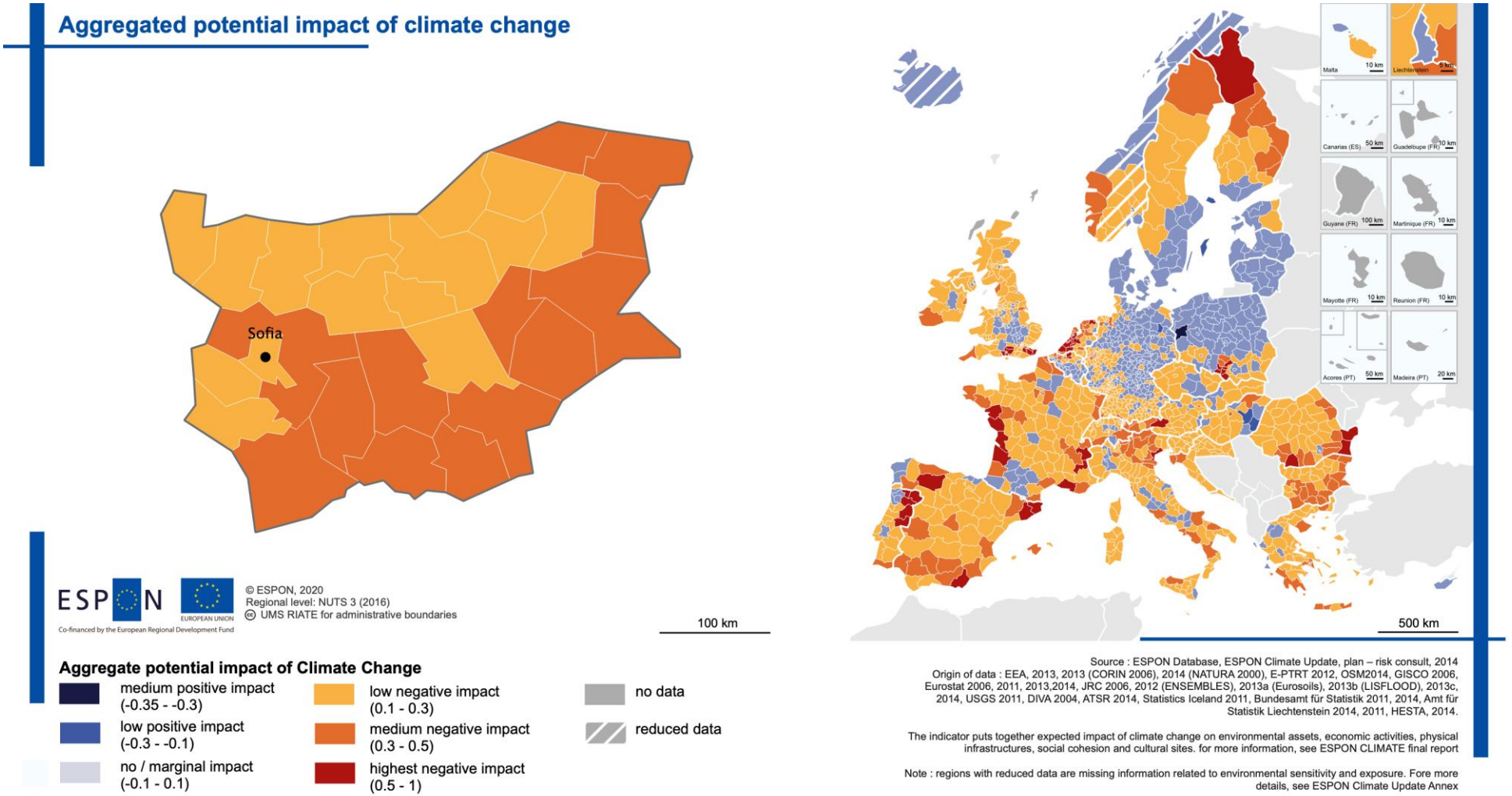
Bulgarian regions were among Europe's regions with highest share of renewable energy use for heating of residential buildings. In 2012, 34.78% of energy consumption in residential buildings was from renewable sources. Higher rates could only be found in the Baltic States, Romania, Slovenia and Croatia. Mostly biomass (e.g. wood) was used as renewable energy source. Its greater availability in rural areas explains partly higher shares of renewable energy carriers in these regions. In addition, the share electricity (39.13%) and heat (13.04%) is high in Bulgaria. These sources can be of renewable nature, including hydroelectricity, solar and wind power and offer thus possibilities to further increase the share renewables energy for residential buildings.



Increasing urban land-use in southern regions despite population decline

Urban fabric can be measured in relation to the population growth in the period 2000-2018. Different degrees of urbanisation can be observed across Europe. Increase of the urban fabric area has been higher than the increase of population in most of France, Spain, the UK, as well as Sweden and Finland. Along the east part of the EU, from the Baltic States, along Poland, central Europe to Greece, the increase in urban fabric occurred, despite a decrease in population. In some areas the increase of population has been higher than the increase of the urban areas. This is to be seen for example in Ireland, most of Finland, in Norway, parts of Germany and Belgium, as well as large parts of Romania and Bulgaria.

The population has been declining in all Bulgarian regions between 2000 and 2018, except in Sofia. In northern regions this decline coincided with a decrease of urban land-use. In southern regions urban land-use still increased between 2000 and 2018 in spite of the population decline. This may among others result from a decreasing size of households (increasing number of single households and single parents) as well as increasing land-use for infrastructure and utilities. Similar tendencies of increasing urban land-use in spite of population decline can also be observed in other European regions, mainly rural regions in southern and eastern European countries, France and Germany.



Highest negative impact of climate change in mountain and coastal 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 Germany and in most of Poland.

Climate change has a potential negative impact on all Bulgarian regions. Regions in the more mountainous southern parts of the country as well as coastal regions are particularly exposed to such negative impacts. Mountain areas may experience more frequent landslides and greater soil erosion as a result of heavy rainfall. They may also experience fewer days of snow coverage in the winter. Coastal areas are particularly vulnerable to storm surges. Silistra obslast is mostly affected due to an increased risk of flooding from the Danube. Throughout the country reduced precipitation will increases the risk of wildfires.

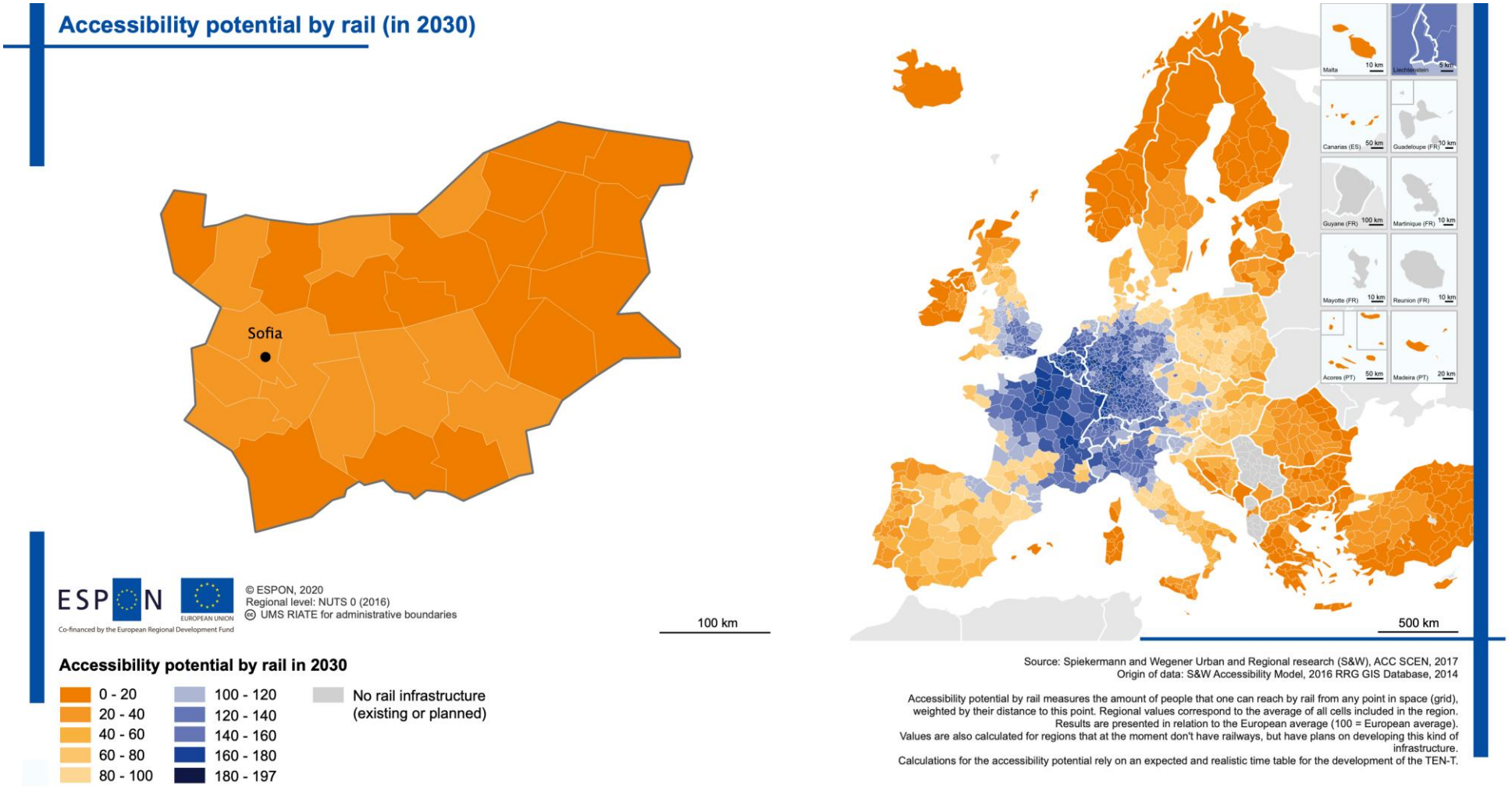
More connected Europe

Accessibility potential by rail (2030)

Accessibility potential by road (2030)

Broadband access (2018)

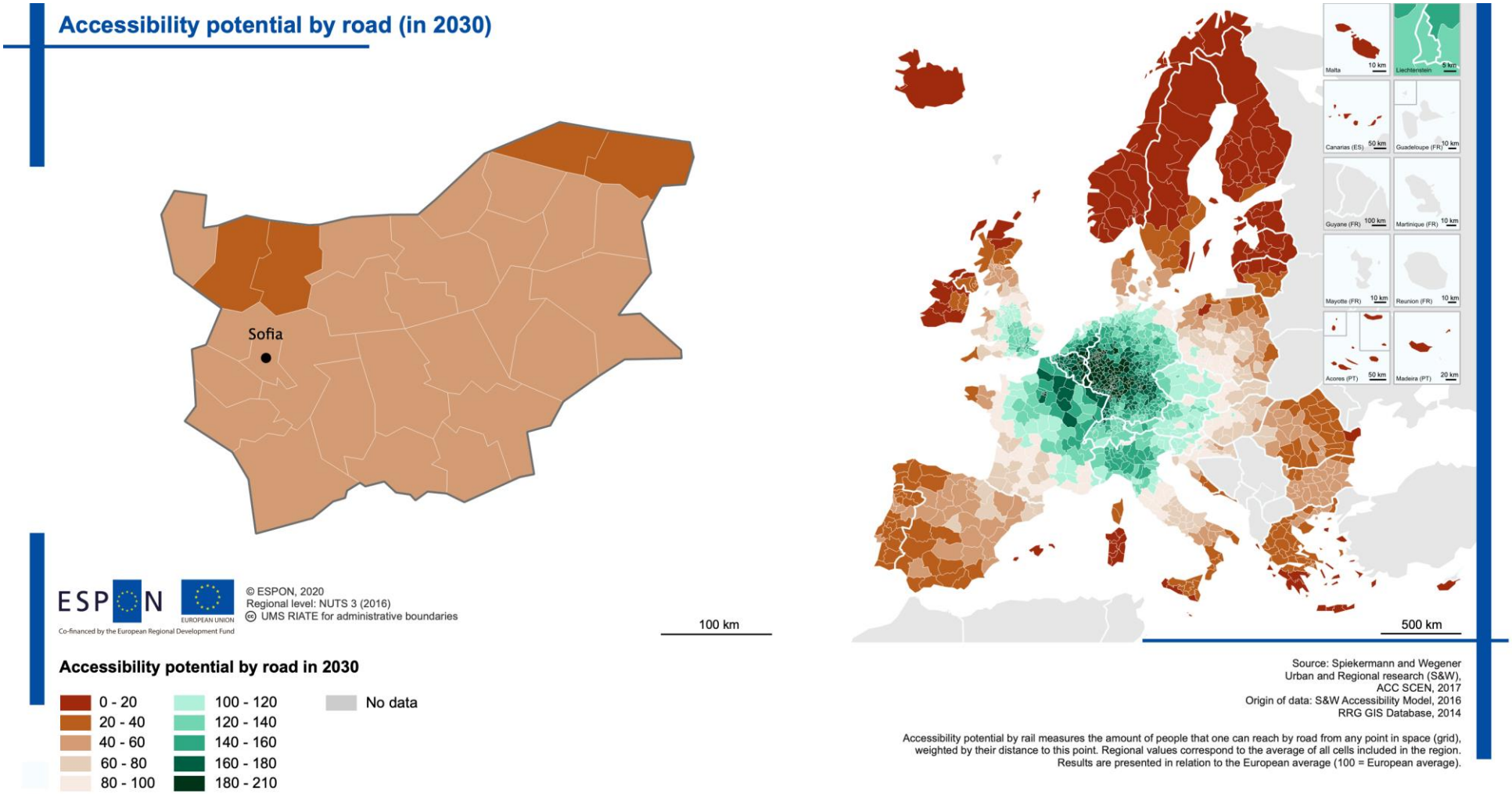
Status and evolution of eGovernment interactions (2014-2019)



Accessibility by rail is expected to remain lower than on average in EU in 2030 despite TEN-T investments

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.

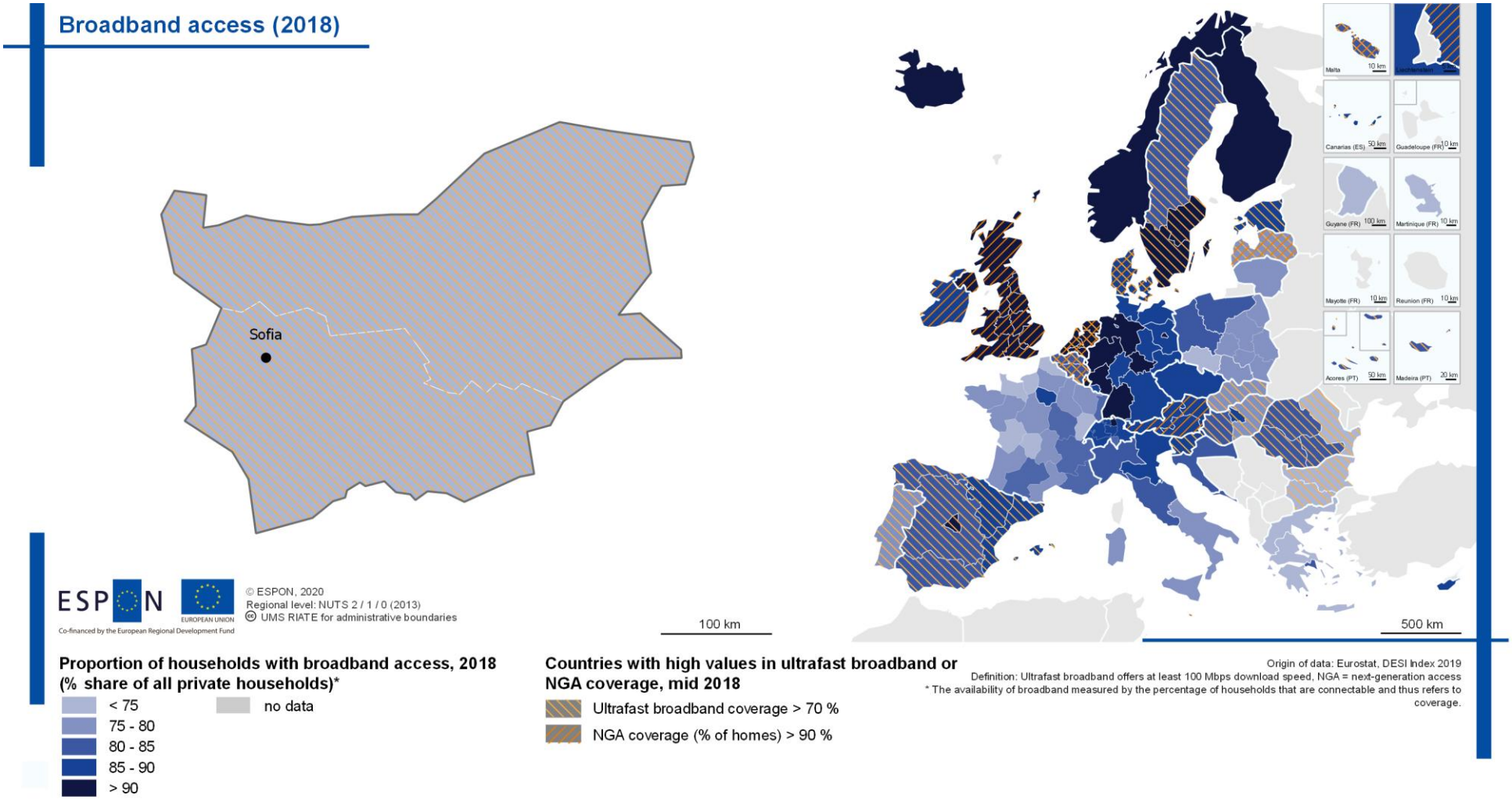
The expected accessibility by rail in 2030 of Bulgarian regions is among the lowest in Europe. This is partly a result of its position on the margins of the continent: all other marginal countries are expected to have an accessibility potential below the European average. However, the accessibility is particularly low in rural regions and regions located further away from railways listed in the TEN-T. These regions will not benefit from the upgrades of Bulgaria's main railway lines foreseen in the comprehensive framework for a trans-European transport network (TEN-T). One may also note that no new rail connections or upgrades to high speed railways are foreseen in Bulgaria, contrary to some other European countries.



Accessibility by road is expected to remain lower than on average in EU in 2030 despite TEN-T investments

European road accessibility is highest in a European core area centered 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.

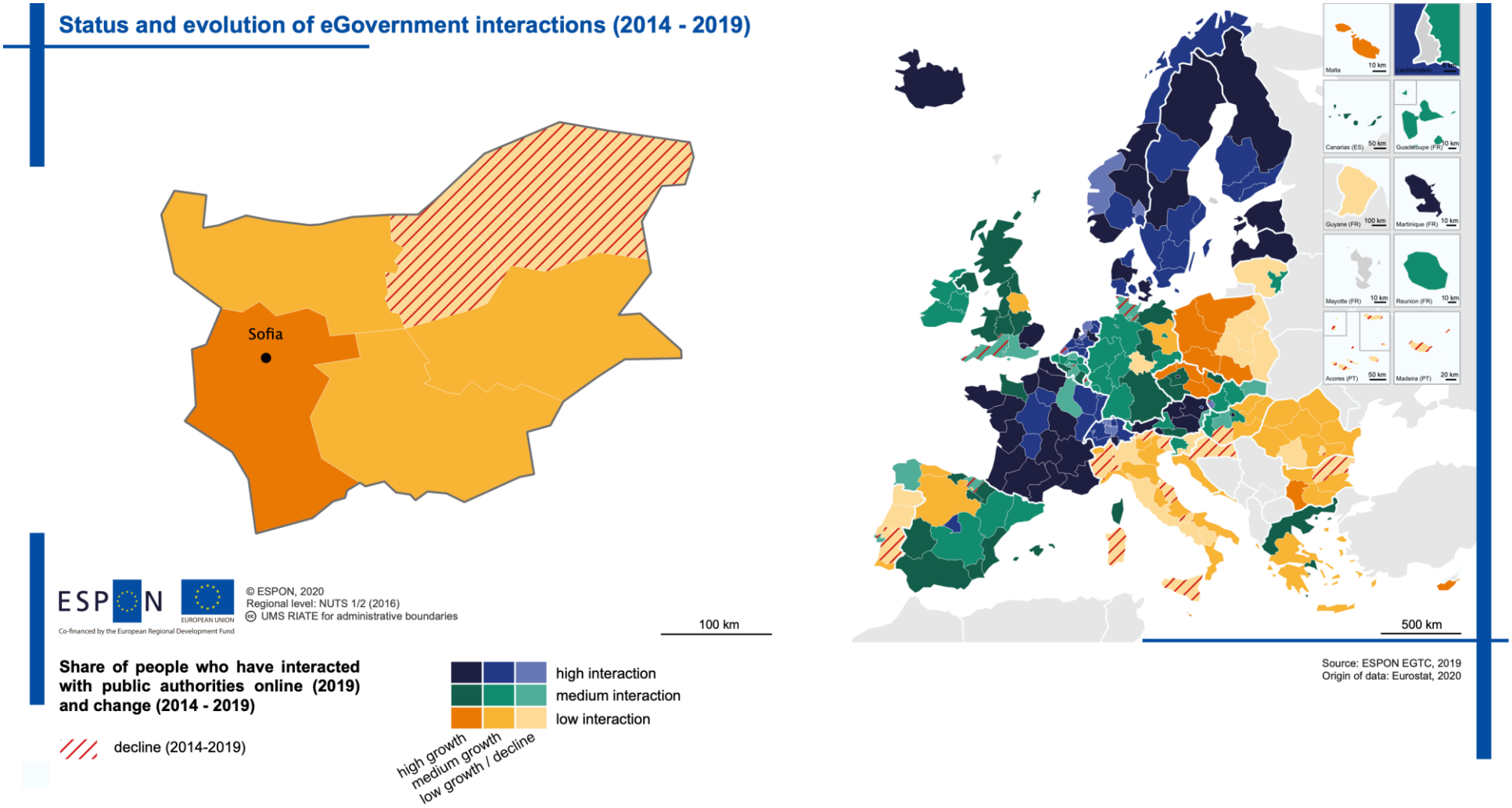
Expected accessibility potential by road in Bulgarian regions in 2030 is lower than the European average. It is comparable to many Spanish, Serbian, Polish and Romanian regions as well as to region on Denmark's Jutland. Regions bordering Romania have the lowest accessibility. This results from relatively high expected population decline and from longer distance to main road networks included in the trans-European transport network (TEN-T). It is foreseen to upgrade many north-south road connections in Bulgaria, as well as to create a few new connections. One example is the connection between Sofia and Varna via Veliko Tarnovo. These developments contribute to increasing accessibility by road in Bulgarian regions.



Well coverage of next generation access broadband across Bulgaria

The Nordic states, the United Kingdom and Western Germany register the highest shares 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.

Households in Bulgaria have generally good access to fast internet. Next generation broadband coverage is particularly good. 70% of households have access to internet with at least 30 Mbps download speed. On the contrary, the coverage of regular broadband access is relatively low. This may be the result of recent improvements in broadband accessibility, making it possible to install the latest technology. Similar tendencies can be observed in other southern and eastern European regions as well, for example in Portugal, large parts of Romania and in Slovakia.



Potential regional disparities on the level of interaction between citizens and public authorities

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 level 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.

Citizens in Bulgarian regions have less frequent digital interactions with public authorities than elsewhere in Europe. Levels of such interaction are comparable to those observed in Romanian, Polish, Italian and Croatian regions as well as in parts of Spain, Greece and Portugal. They differ between regions. Digital interactions are increasing in most regions, and particularly in Yugozapaden. In Severoiztochen, Severen tsentralen the level of interaction is however decreasing. This may further differentiate these regions from regions in Norther and Western Europe where larger share of the population already interacts digitally with public authorities and where the level of interaction increases.

More social Europe

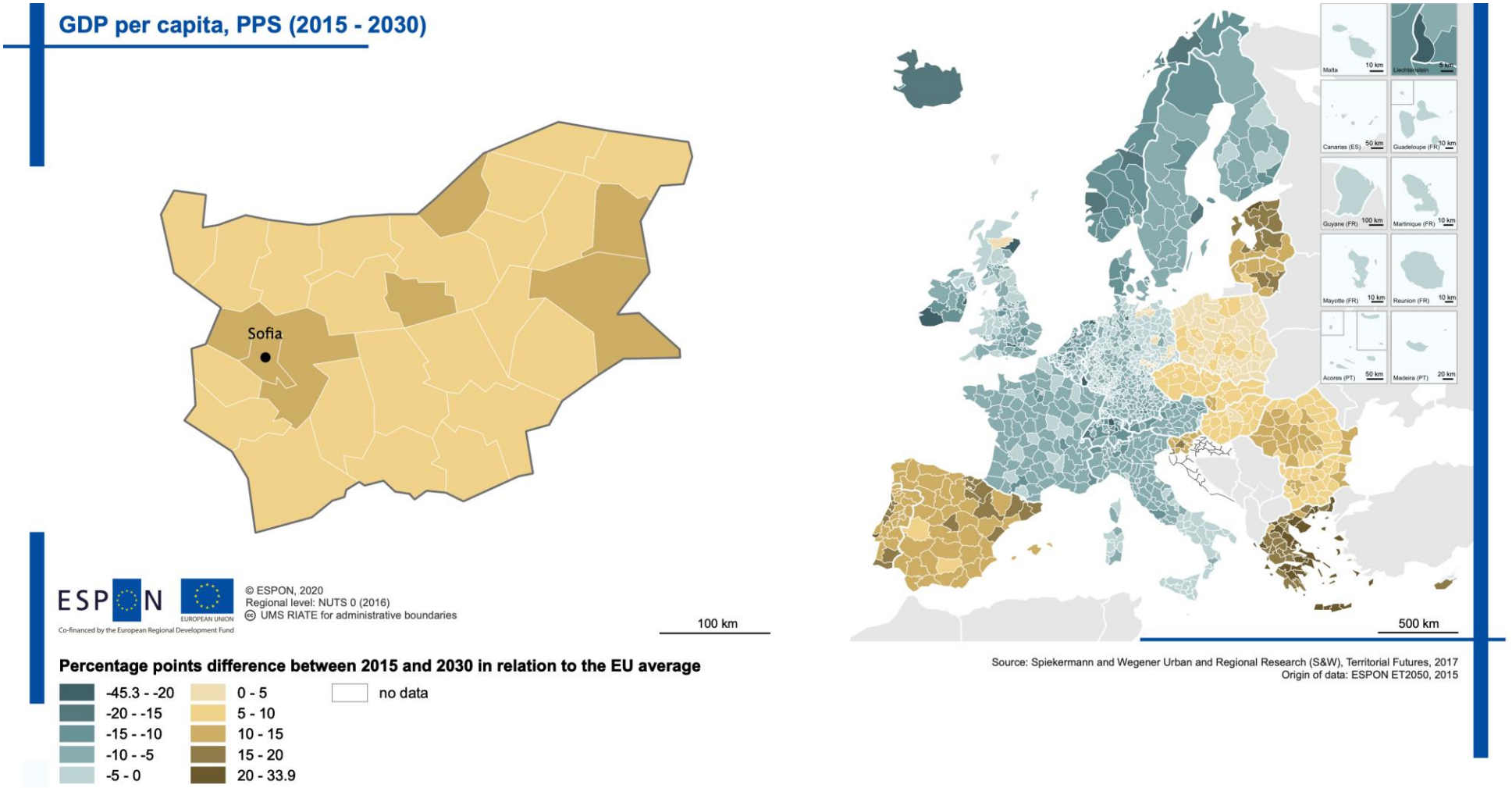
GDP per capita in PPS (2015-2030)

People not in Education, Employment or Training (2016)

A fragmented Europe? An interregional comparison of income

Sparsely populated areas and areas at risk of becoming sparsely populated

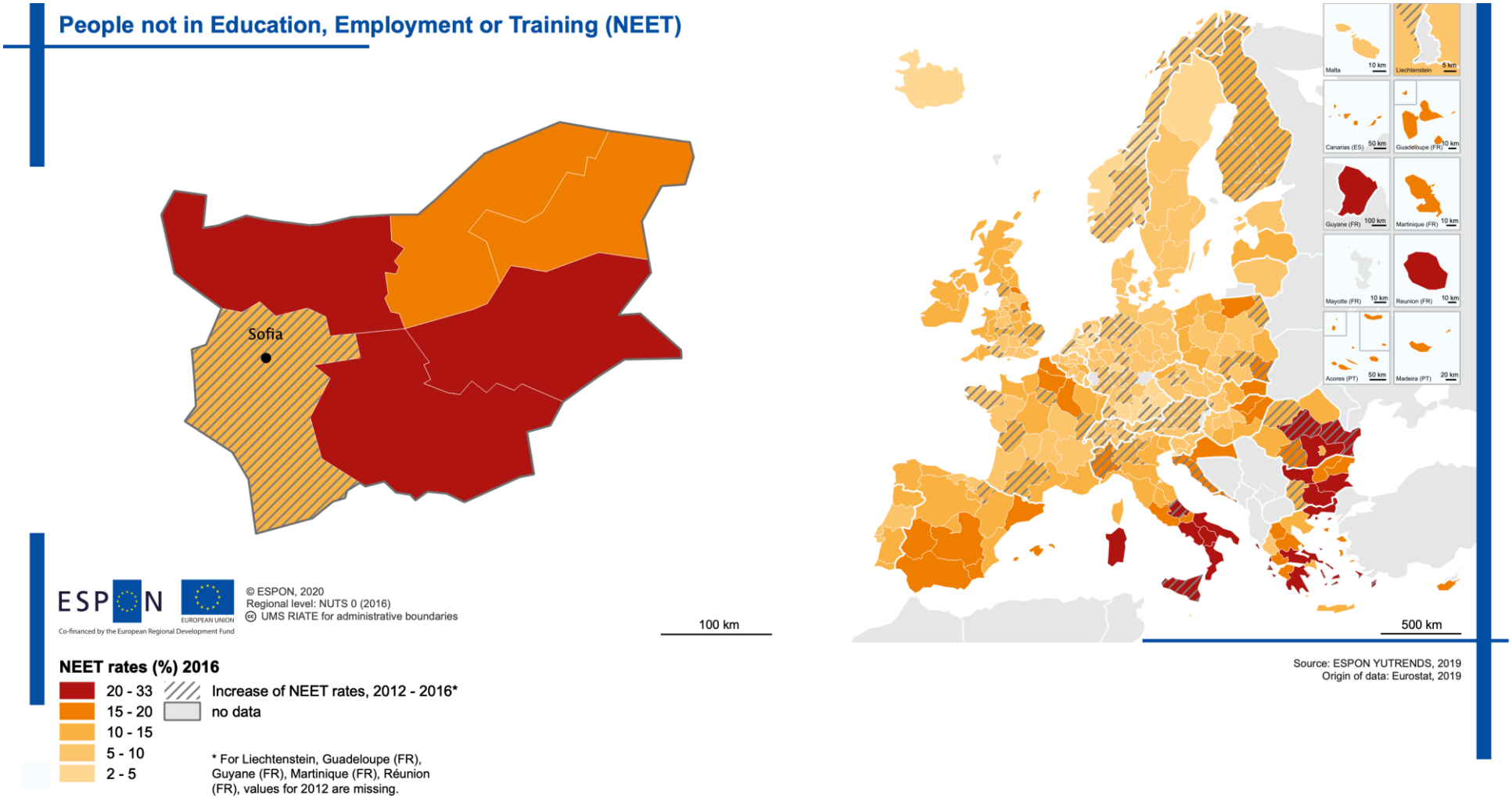
Inner peripherality by main driver



GDP growth in Bulgarian regions higher than European average

Based on observed trends of circular economy, sharing economy, ecological awareness, as well as increasing public debts and changing roles of corporate and public players, GDP development forecast between 2015 and 2030 shows that least developed regions in Europe (eastern European countries), as well as regions that suffered most from the crisis (in Greece, Spain and the Baltic states) are predicted to see their GDP per capita grow faster than the EU average. In other term, these regions are expected to catch up. However, any prognosis on socio-economic development has to be handled with care.

Like many eastern and southern European regions, Bulgarian regions are expected to increase their GDP per capita relative the EU average until 2030. Bulgarian regional GDPs are expected to grow on average 10% more than the EU average. Currently wealthier regions in northern and western Europe are foreseen to experience growth below the EU average. It remains to be checked whether this reduces the GDP gap in terms euros per inhabitants, as the starting points are so different. Expected GDP growth is particularly high in Bulgarian urban areas. This would imply that disparities within Bulgaria increase.

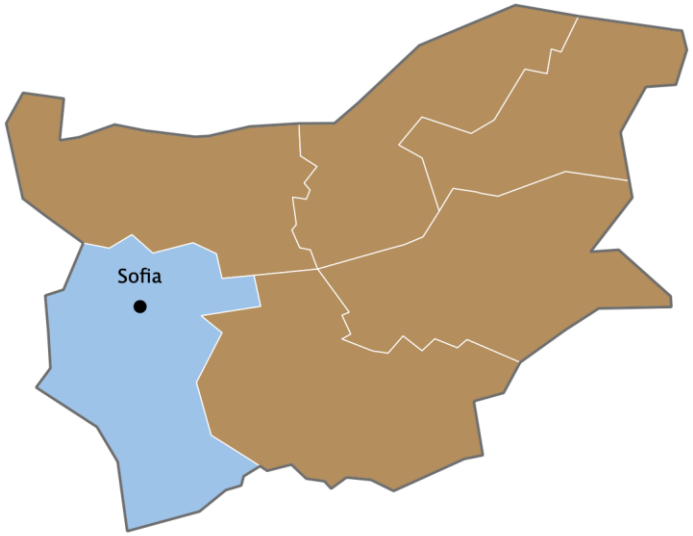


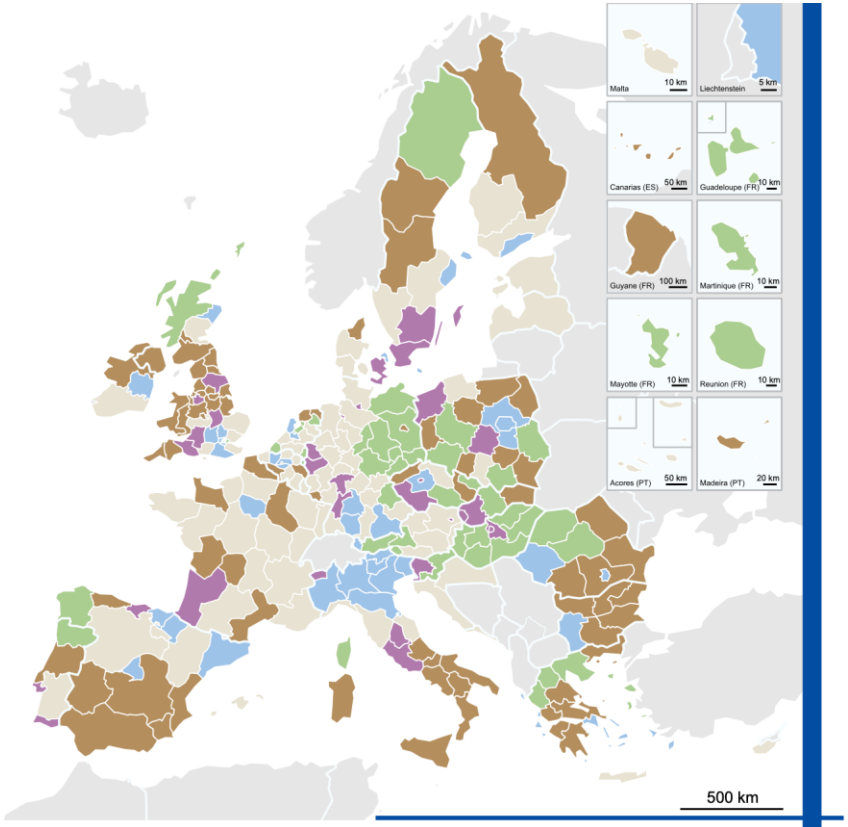
High levels of NEETs in most Bulgarian regions

Young people who are “Not in Education, Employment, or Training” (NEETs) are a category facing specific challenges in many European regions. A significant problem with NEETs is that they are not a homogeneous group and are often difficult to identify and engage with. Regions in the south and east of Europe registered the highest NEET rates in 2016, with the highest values in Bulgaria, southern Italy and Romania. Between 2012 and 2016, proportions of NEETs have increased in many parts of Europe, including regions with low rates in e.g. Germany and Norway and also some of the regions with the highest rates in Europe (e.g. Sicily, parts of Romania).

Bulgarian regions belong to a group of European regions with highest shares of NEETs in 2016. The share of NEETs was particularly high in the south-eastern and north-western regions. The share of NEETs in these regions is comparable with the shares observed in some Romanian, Greek and southern Italian regions. The share of NEETs is lower in Yugozapaden. However, in this region, the number of NEETs increased between 2012 and 2016. These figures reflect the limited capacity of Bulgarian labour markets to integrate young people.

A fragmented Europe? An interregional comparison of income





ESPON
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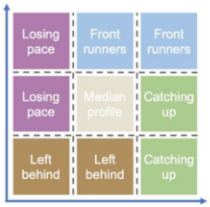
Regional level: NUTS 2 (2016)
UMS RIATE for administrative boundaries

100 km

Income per capita 2016, classification by distance to national average



no data

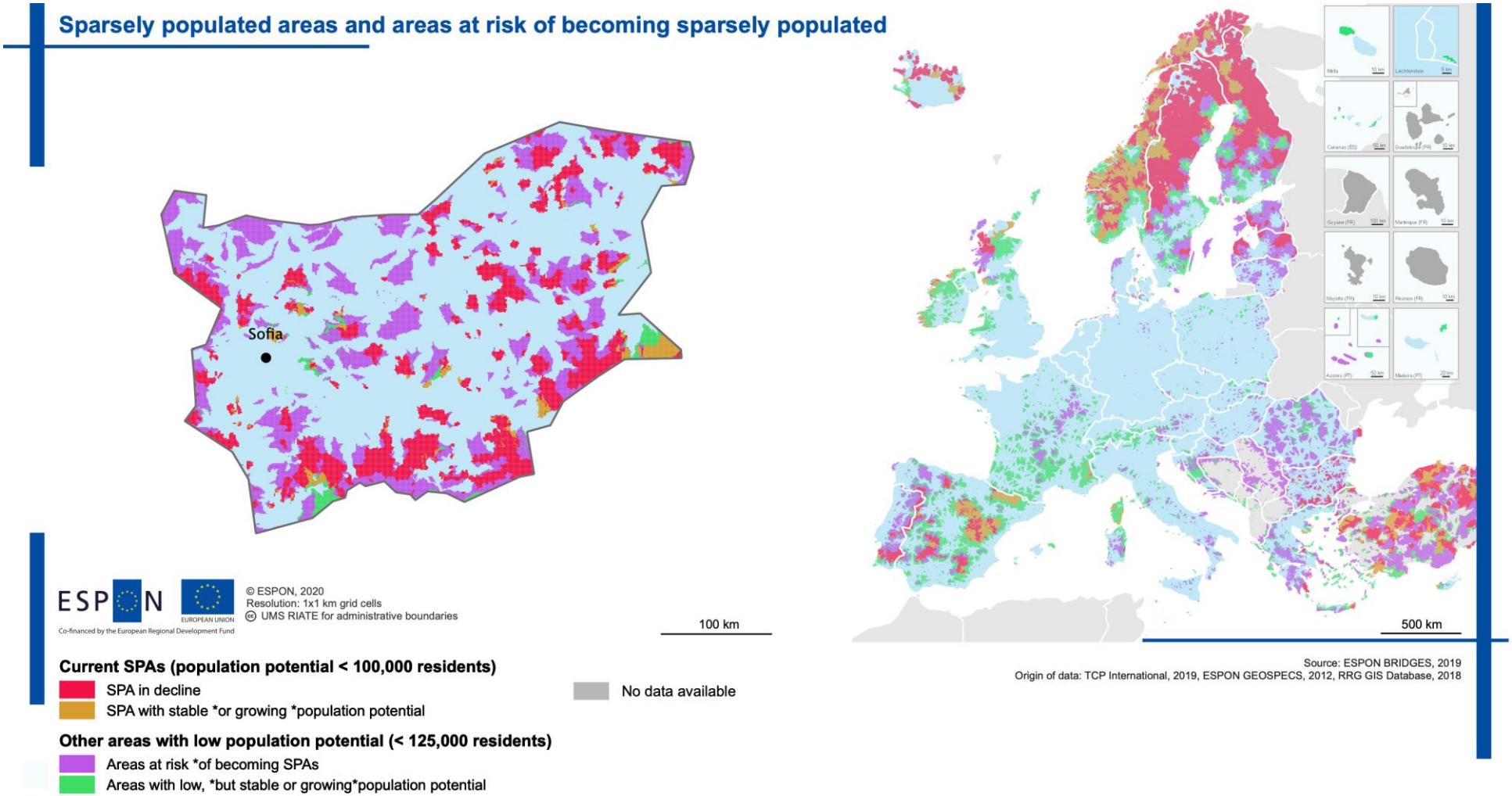
Annual growth of income per capita 2006-2016, classification by distance to national average in percentage points

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).

Growing disparities on income levels between Bulgarian regions

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.

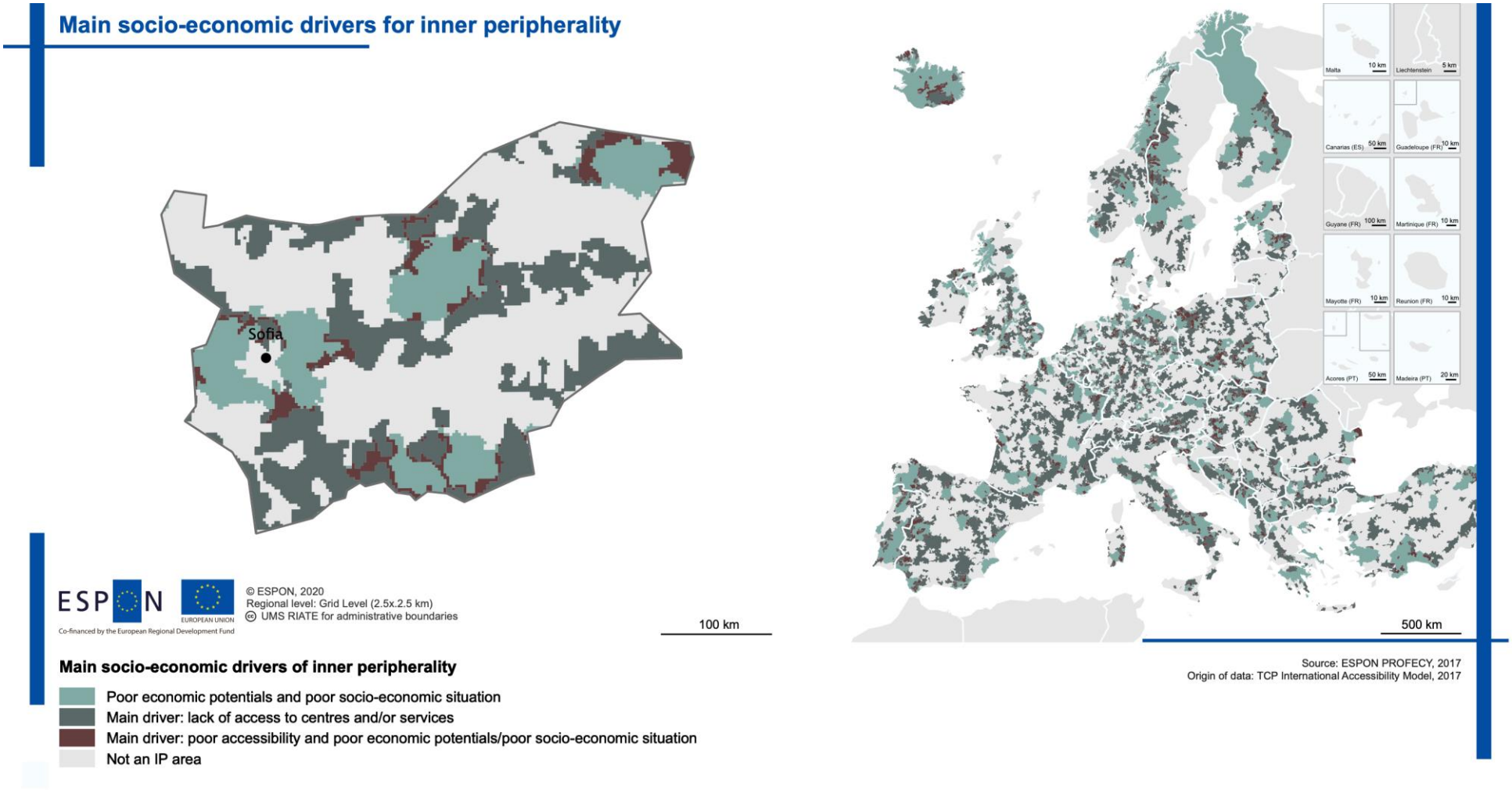
Bulgaria is of the countries in Europe depicting with the highest levels of fragmentation. Yugozapaden is the only region classified as a front-runner. All other regions belong the the category of "left behind regions". The disparity between the capital region and the rest of the country is therefore higher than in any other European country. Between 2006 and 2016, income levels have also growth more in Yugozapaden than in other regions. Decreases of income levels between 2006 and 2016 are observed in a number of regions. Regional disparities are therefore increasing in Bulgaria.



Large shares of Bulgaria can be considered as sparsely populated or are at risk of becoming sparsely populated

Sparsely populated areas (SPAs) are delineated on the basis of population potentials, i.e. the number of persons that can be reached within a maximum generally accepted daily commuting or mobility area from each point in space. SPAs cover 24.7% of the ESPON space and 3.7% of its population. These are found mostly in Nordic and Baltic countries, and in large patches in Spain, Turkey and Bulgaria. Areas with low and declining population potential are at risk of becoming SPAs. Such areas are identified in Romania, Bulgaria, Greece and Portugal and well as in France. The demographic evolution of these areas will be closely watched in the coming years.

Bulgaria is one of the few European countries with extensive sparsely populated areas. These areas are mostly located around the borders and mountainous areas in the centre of the country. On top of that many areas are at risk of becoming sparsely populated. These are areas with a population potential below 125,000 which has been declining in the last decades. Hence if current trends continue these areas may become sparsely populated areas. Areas at risk are often adjacent to current sparsely populated areas and can be found in rural areas in the north of the country. The risk is that they fall below critical levels of population, and that services of general interest disappear. Depopulation may then become a self-reinforcing process.



Main determinants defining inner peripheries differ in Bulgaria

Around 45% of the ESPON territory represents inner peripheries, of which two thirds due to one delineation only, and one third due to two or more delineations. IP areas with a lack of access (to centres or services) as key driver account for some 45% of all IP areas (or 20% of entire ESPON space). The main driver in most Scandinavian and Icelandic IP areas is not a lack of access, but their poor economic and demographic basis, (lack of demand). Similar cases are found in East Germany, Baltic States, Turkey, southern Italy, Portugal, parts of Spain, Scotland and parts of eastern Europe. IP areas triggered both by poor access and poor economy and demography (approx. 9.4% of all IP areas) are scattered around Europe in small patches.

The main drivers that define inner peripheries in Bulgaria are diverse. In the low populated mountain areas, limited access to regional centres is the main determinant for inner peripherality. A combination of poor accessibility, socio-economic situation and economic potential is key determinant for inner peripherality in mountainous or rural regions. A poor socio-economic situation or economic potential creates situations of inner peripherality in rural areas that are closer to cities, e.g. around Sofia and Veliko Tarnovo. Fewer inner peripheries are found in Severozapaden, along the A1 motorway axis from Plovdiv to Burgas and in Severoiztochen.

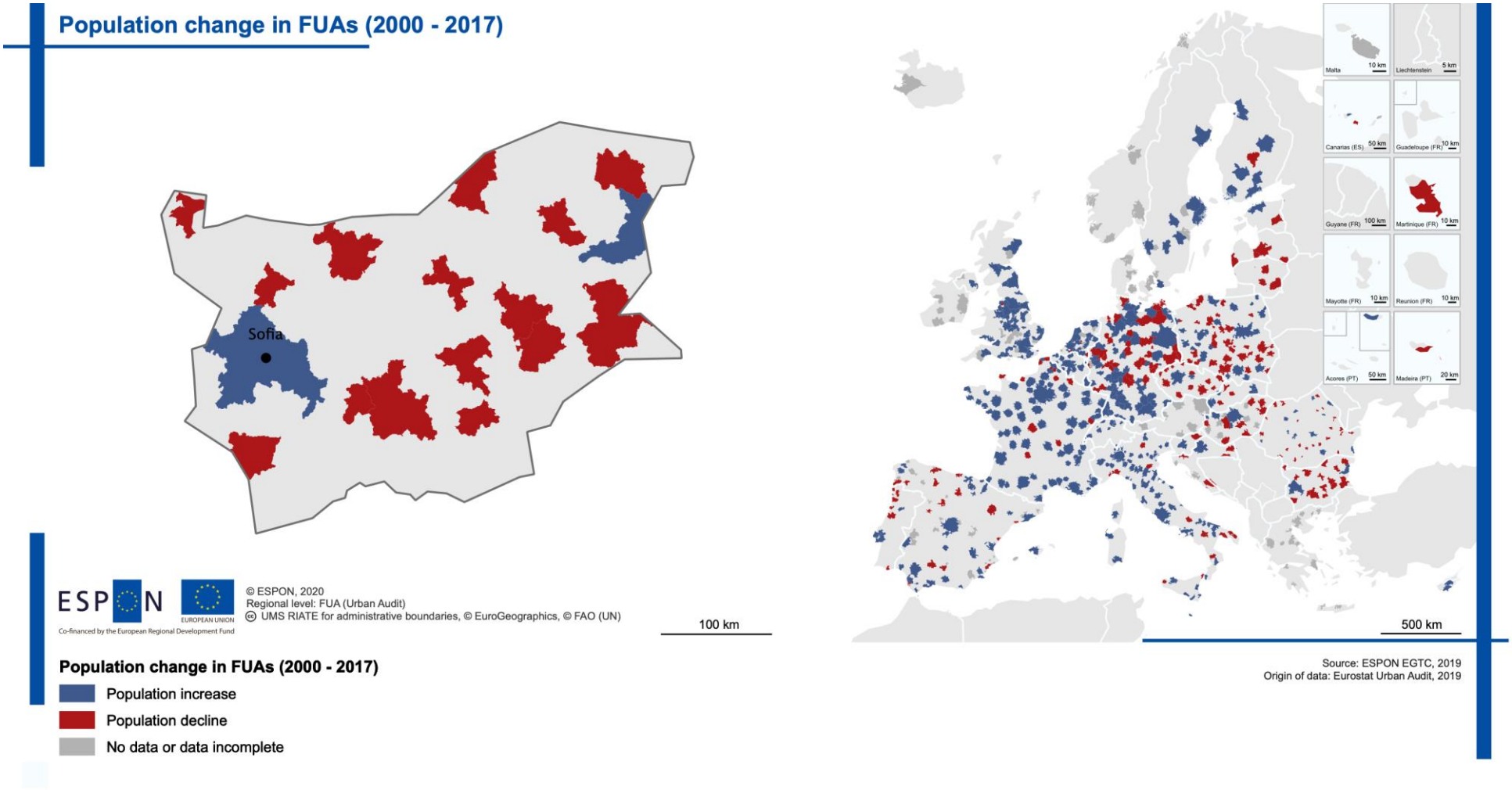
Europe closer to citizens

Population change in Functional Urban Areas (2000-2017)

Tentative GDP-related cohesion effects of European disintegration (2030)

Average regional GDP growth rate in the “Enabling Cooperation“

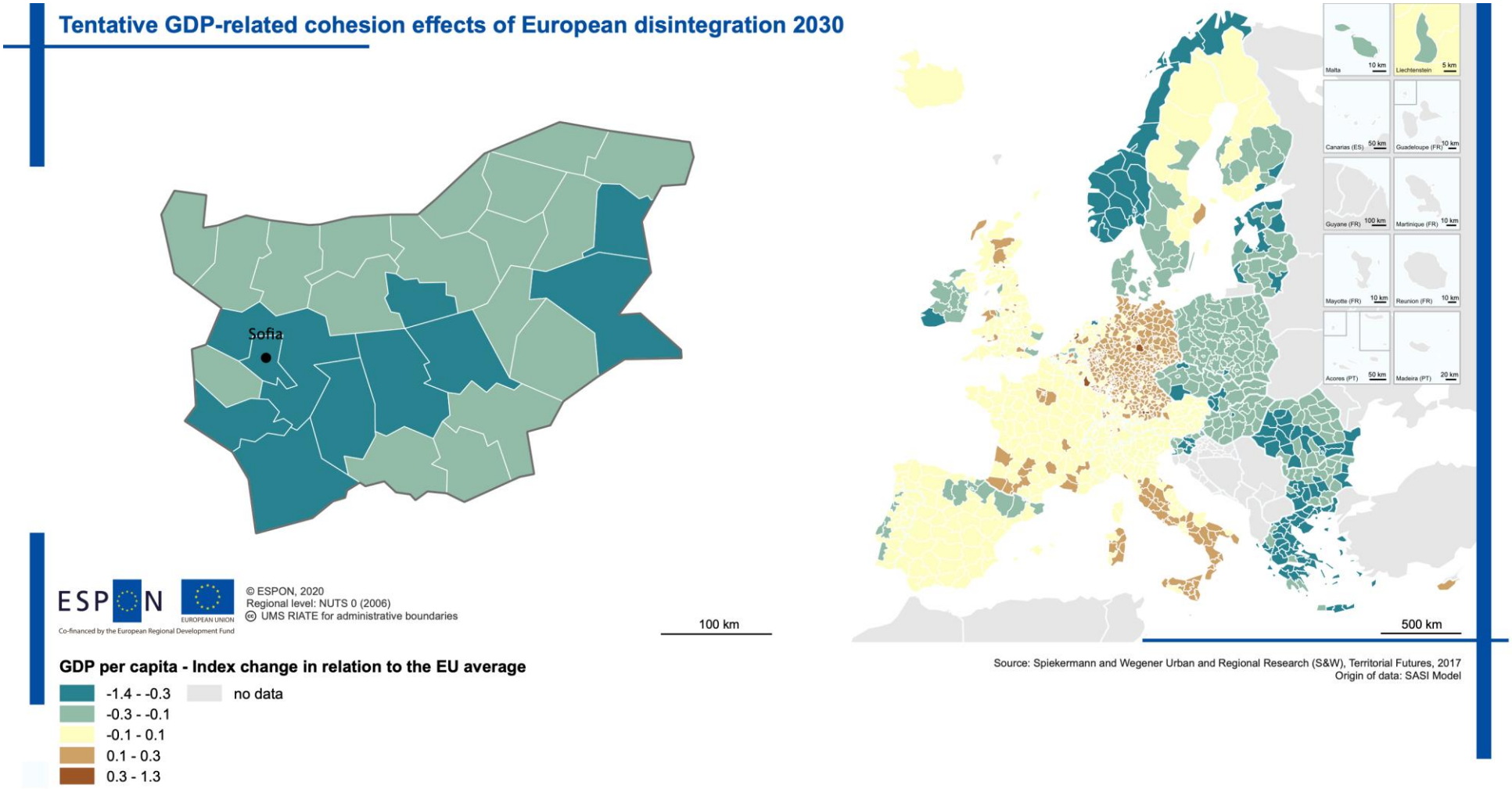
Inner Peripheries according to poor access to services of general interest



Population of major urban areas decreasing, except Sofia and Varna

A functional urban area is a geographic entity consisting of one or more core cities and the surrounding commuter belt with which it has strong ties. The term can be used interchangeably with that of metropolitan area. According to TERCET, a FUA consists of a city (more than 50,000 inhabitants) and its commuting zone whose labour market is highly integrated with the city. In some places, FUA can overlap and delineation evolve in time. The map reflects the latest delineation of FUAs which is based on the census commuting data from 2011 and onwards). Population ageing and the migration of the young and well educated could lead to long-term decline and shrinkage in their origin regions, especially in central and eastern Europe.

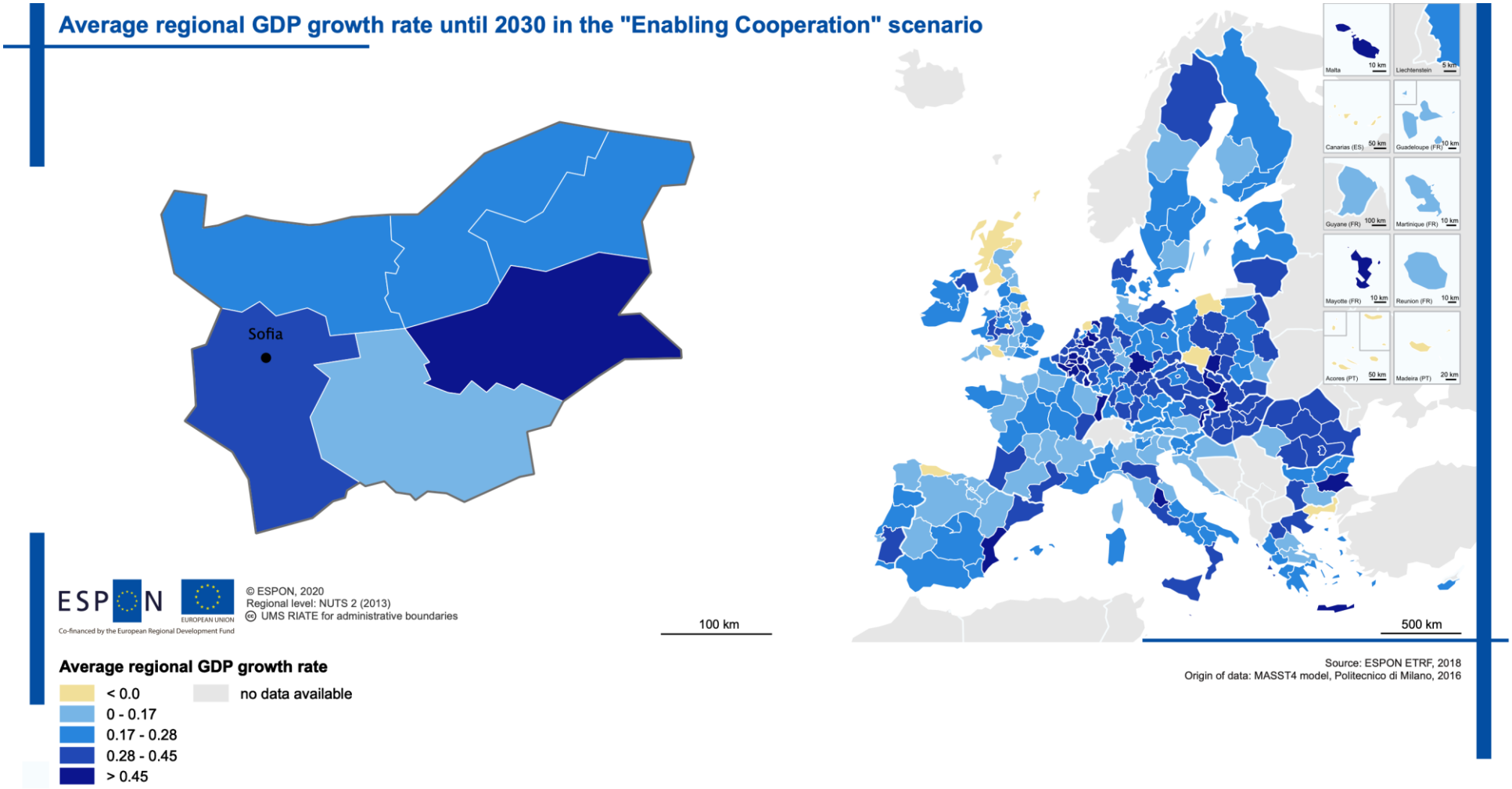
Between 2000 and 2017, population declined in all Bulgarian functional urban areas except Varna and Sofia. A similar trend can be observed in many other former Eastern European countries. In Croatia, Hungary and Czechia only the capital city and the second most important city gain population, while other urban areas lose population. This reflects an overall population decline. It does not necessarily mean that concentration of population in urban areas is decreasing, as population losses tend to be higher in rural areas. Demographic trends also reflect increasing disparities between first-tier metropolitan areas and the rest of the country.



Closing borders alters Bulgaria's trends to catching up with European GDP levels

Effects of a hypothetical disintegration of the European Union and European Economic Area on GDP per capita have been modelled in this map. Such disintegration would for example lead to increasing waiting times at borders and limit potentials for political and cultural integration. The impacts of disintegration on territorial cohesion would be negative as many of current lagging regions would face stronger reduction of GDP (compared to the European average). On the contrary, some of Europe's economically stronger regions could benefit of such a situation (e.g. in most of Germany, around Paris). More surprisingly, the Italian Mezzogiorno and Cyprus would also benefit.

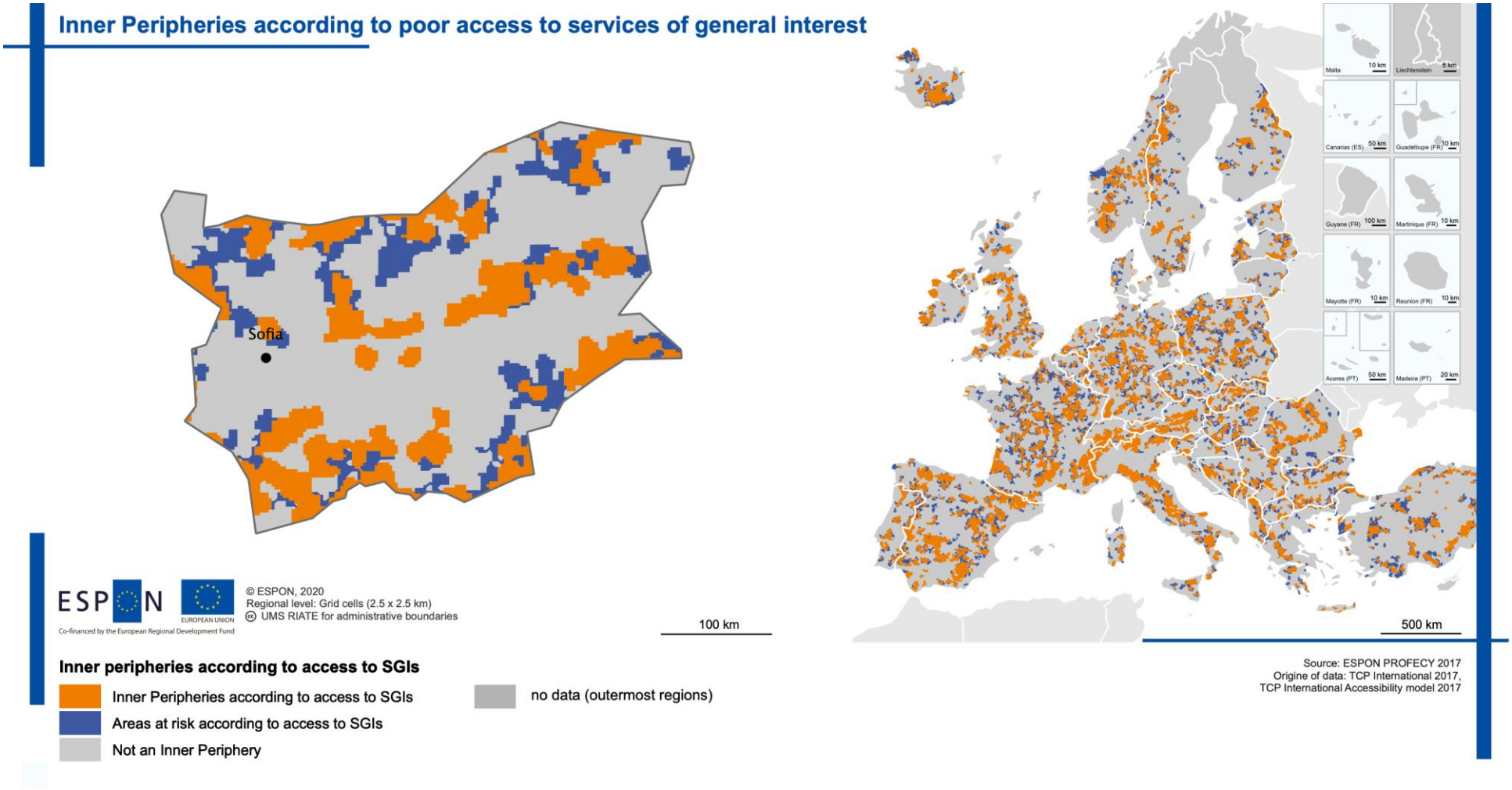
European disintegration would affect Bulgarian regions negatively. If all European internal and external borders are closed, decline of GDP per capita is expected to be particularly high in Bulgaria. Regions specialised in manufacturing production and coastal tourism face a particularly strong decline in GDP. Considering the comparably low levels of GDP in Bulgaria, this decline may have particularly severe social consequences. The possible effects of European disintegration in Bulgaria are comparable to the effects foreseen in Romania and Greece.



Enhanced trade opportunities stimulating GDP growth in Bulgarian regions

This map models effects of a scenario with more intensive co-development projects in neighbouring countries as well as better coordinated migration, trade and foreign policies and improvement of the quality of government. Improving these cooperation aspects is expected to increase Europe's GDP by 0.2% per year until 2030. The projection foresees GDP growth in most of Europe's regions. Growth is concentrated outside of first-tier metropolitan regions, in areas that would particularly benefit from the removal of barriers for cooperation and trade. Examples of such regions are Alsace in France, Umbria in Italy, Valencia in Spain, Alentejo in Portugal, Yugoiztochen in Bulgaria, Crete in Greece.

Bulgarian regions are expected to benefit from enhanced European cooperation that encourages trade flows and quality of governance. The model foresees a particularly important growth of GDP in the Yugoiztochen region. This region would benefit from the combined effects of improved governance, closer relations to other European regions and better access to markets. This would stimulate economic activities and create new opportunities to export good, e.g. via Burgas harbour. Other regions also benefit in this scenario but to a lesser extent. As in a number of other European countries, positive effects are concentrated in some parts of the country. These are seldom the capital regions.



Rural regions in northern Bulgaria at risk of becoming an inner periphery due to low levels of SGI

An adequate provision and access to main SGIs not only constitute an indicator of the degree of connectedness of territories, but easy and cheap access to many different types of services ensures higher quality of life, provides choice opportunities for the resident population (if two or more facilities for each kind of service are within reach) and thus contributes to keep population and jobs within the area. IP areas and areas “at risk to become IP” reflect intranational disparities in access to SGIs. These can thus be found in all ESPON countries, with the exception of Cyprus and Malta. These are mostly observed in rural areas and are specifically prevalent in mountain ranges, islands and northern peripheral areas.

Areas with poor access to services of general interest can mainly be found in Bulgaria’s mountainous areas and in rural communities in the north. However, the population of these areas is very limited. Areas that are of risk of becoming inner peripheries pose more challenges. These areas host for example one service of a specific kind, e.g. one school in a village. Ending service provision, closing the school due to lack of children or any other reason, implies that the remaining users of the service have to travel further or seek other possibilities and thus maintain the level of quality of life. Areas at risk of becoming an inner periphery due to low levels of service provision can mainly be found in rural regions in northern Bulgaria.

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