



EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

Country fiche

# Territorial patterns and relations in Spain

Smarter Europe

Greener Europe

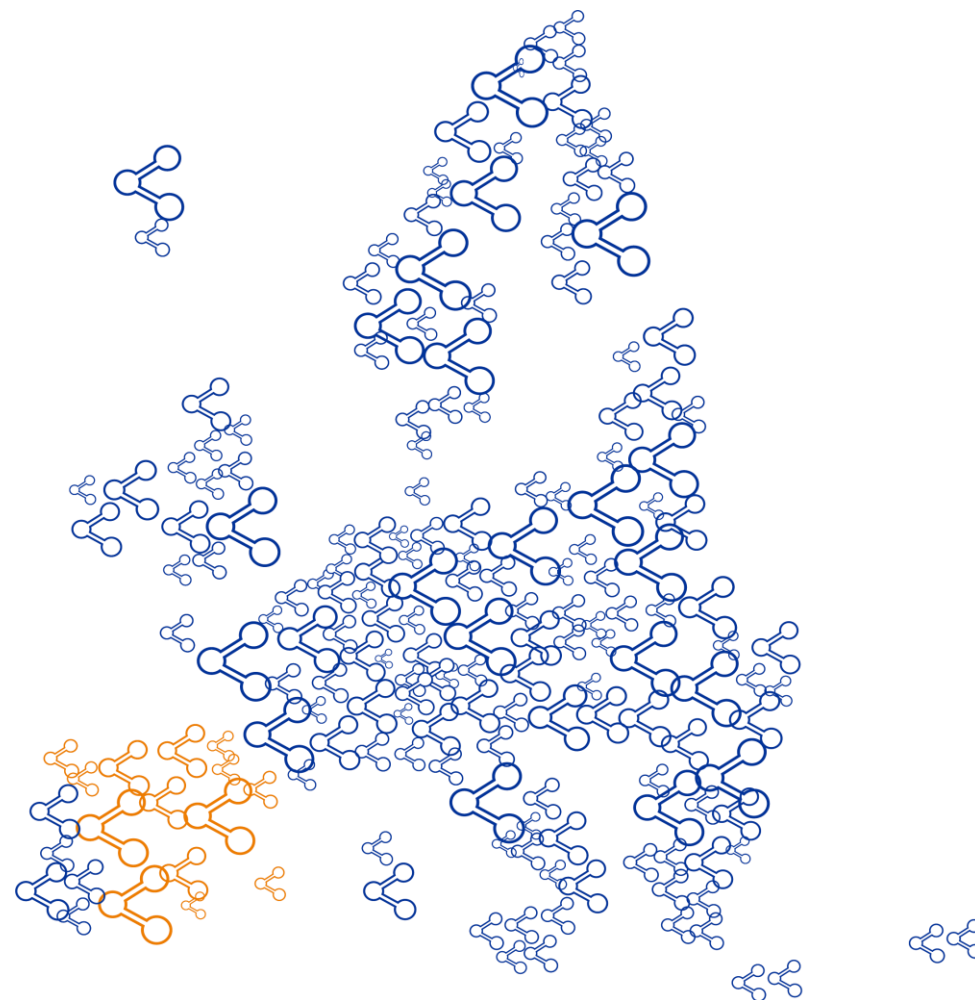
More connected Europe

More social Europe

Europe closer to citizens

Interactive version:

[www.espon.eu/participate/espon-your-country/spain](http://www.espon.eu/participate/espon-your-country/spain)



### **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 Performance (2019)

Dominant types of enterprises (2014)

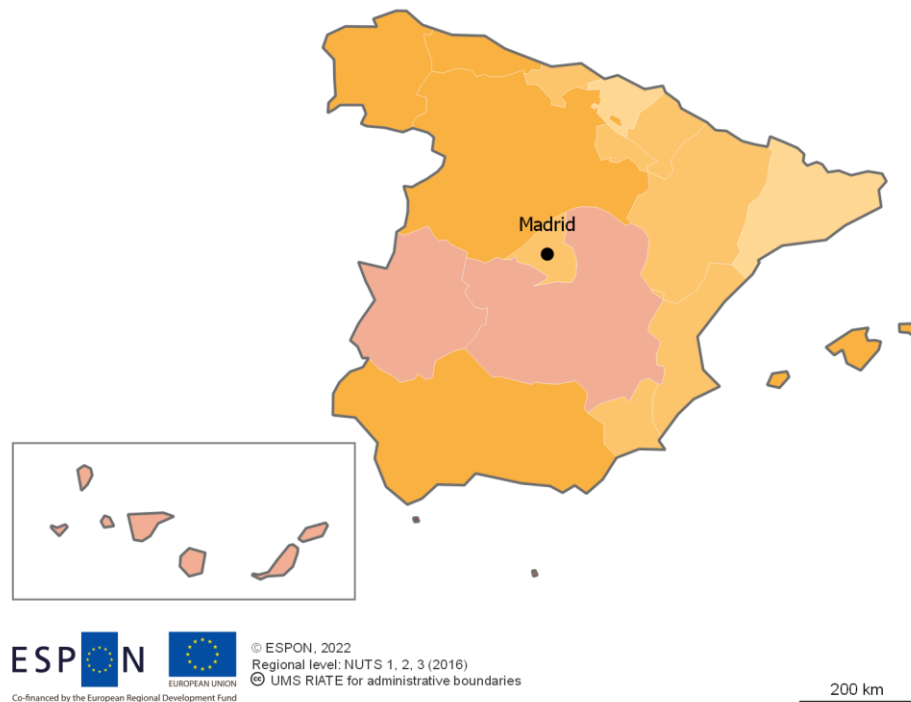
Development of employment in micro-enterprises (2008-2014)

Employment in micro-enterprises (2014)

Gross Domestic Product per capita (2015-2030)

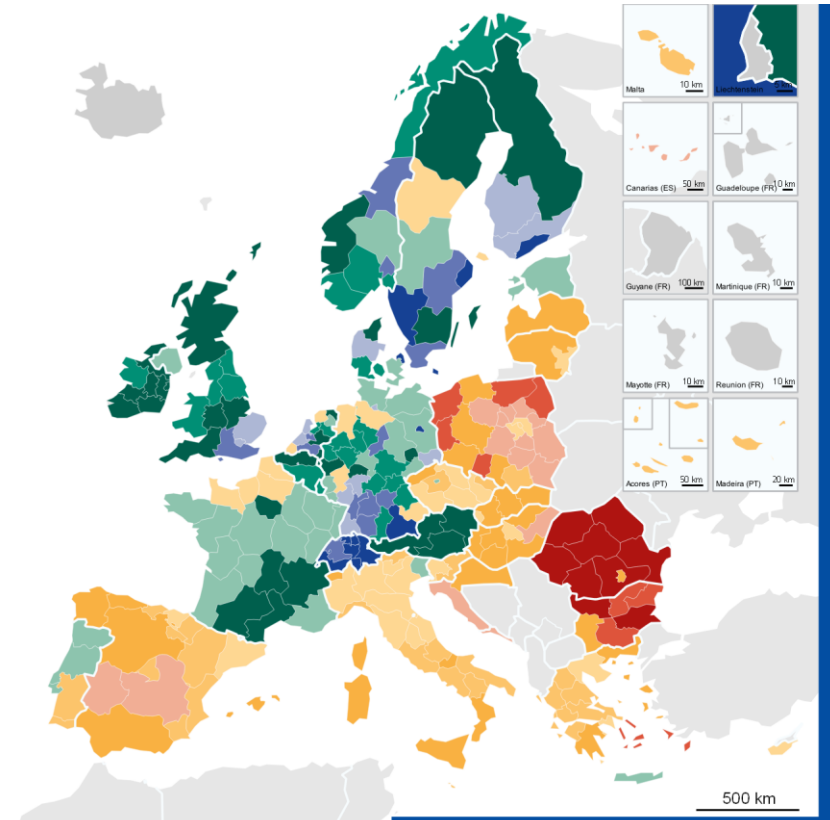
Employment in technology and knowledge-intensive sectors (2014)

## Regional innovation performance (2019)



### RIS Performance groups (2019)

Leader +	Strong +	Moderate +	Modest +	No data
Leader	Strong	Moderate	Modest	
Leader -	Strong -	Moderate -	Modest -	

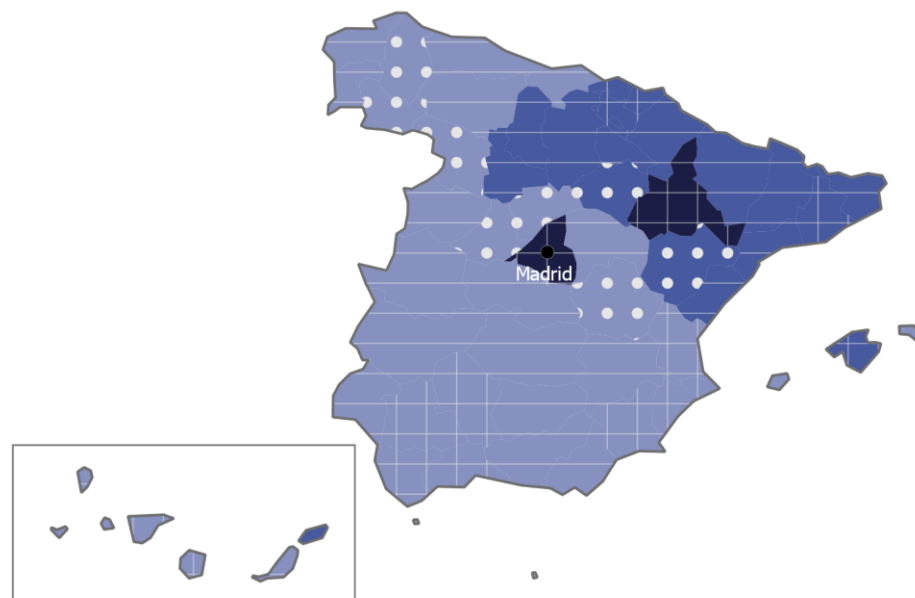


## Spanish regions: innovators associated with industrialised regions

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.

In Spain, all regions perform below the EU average. The best performing regions are historically industrialised regions: Catalonia and Basque Country (moderate +), with relatively higher scores for the following indicators: population with tertiary education, scientific co-publication, R&D expenditure in the business sector and employment in medium-high-tech manufacturing & knowledge-intensive services. Disparities are substantial between regions: Basque Country index is 79.8% of EU average while the Canary Islands index is 46.1.

## Dominant types of enterprises (2014)



ESPON  
Co-financed by the European Regional Development Fund

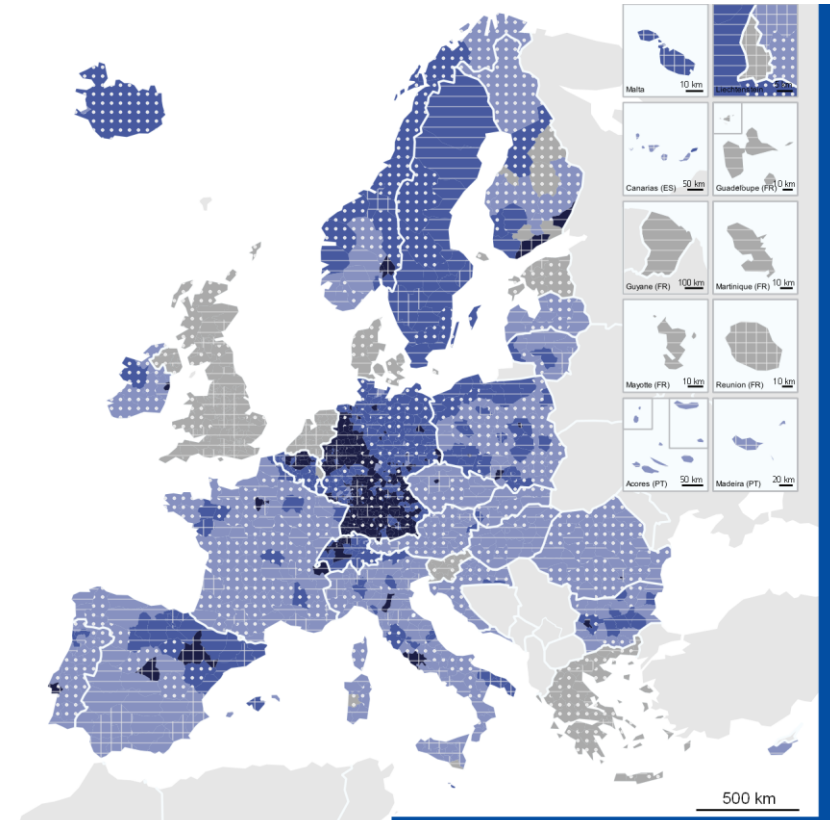
© ESPON, 2022  
Regional level: NUTS 3 (2016)  
© UMS RIATE for administrative boundaries

### Employment by size of enterprises

- Type 1: above-average share of employment in large enterprises (250+)
- Type 2: above-average share of employment in SME (10-249)
- Type 3: above-average share of employment in microenterprises (1-9)
- no data

### Urban-rural typology

- Predominantly urban
- Intermediate
- Predominantly rural



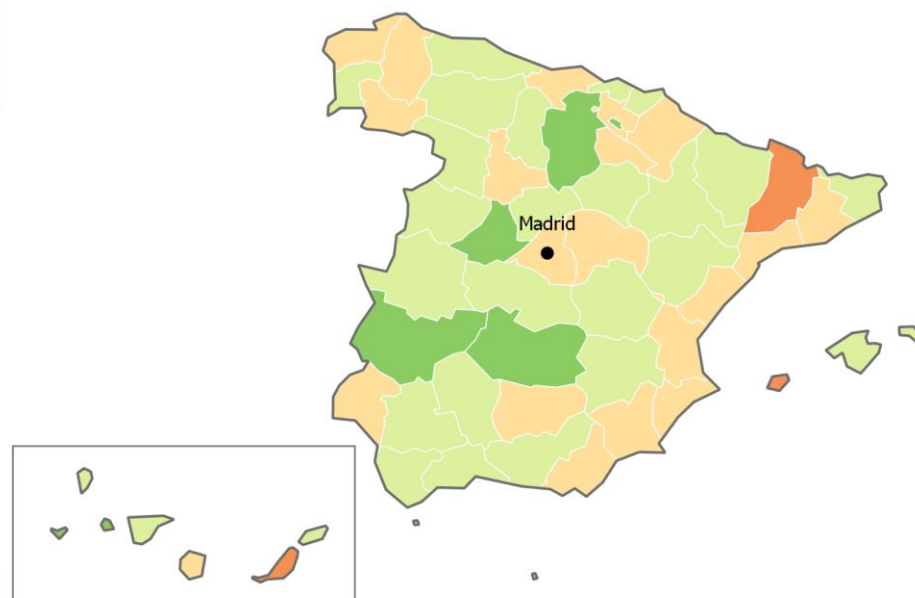
Origin of data: Eurostat Business Demography, Structural Business Statistics, Statistics Austria national SBS, Eurostat urban-rural typology.

## Above EU average employment in micro-enterprises, except in north-eastern Spain

Regions with an above average share of employment in large enterprises are predominantly urban. In these regions, one can also observe a positive development of employment in SMEs. Capital city regions and regions in southern and western Germany belong to this type. Regions with an above-average share of employment in SMEs are found in northern and central European regions with diverse sectoral specialisation in the knowledge economy and ICT as well as regions in northern Poland, central Bulgaria, north-eastern Spain and parts of Italy. Regions with thriving micro-enterprises are found all over Europe, with sectoral foci in services, tourism or knowledge economy and ICT.

In Spain, most regions have employment in micro-enterprises above EU average. Above average employment in large enterprises is found in the capital region as well as in the province of Zaragoza. This province has large firms in the automotive, chemical, food processing and logistics sectors, particularly concentrated in the Ebro Valley. Above average shares of employment in SMEs are found in north-eastern provinces in Catalonia, Navarre, Basque Country, Aragón and three provinces in Castilla y León (Burgos, Palencia, Valladolid). It corresponds to communities with highest GDP per inhabitant.

## Development of employment in micro-enterprises (2008-2014)

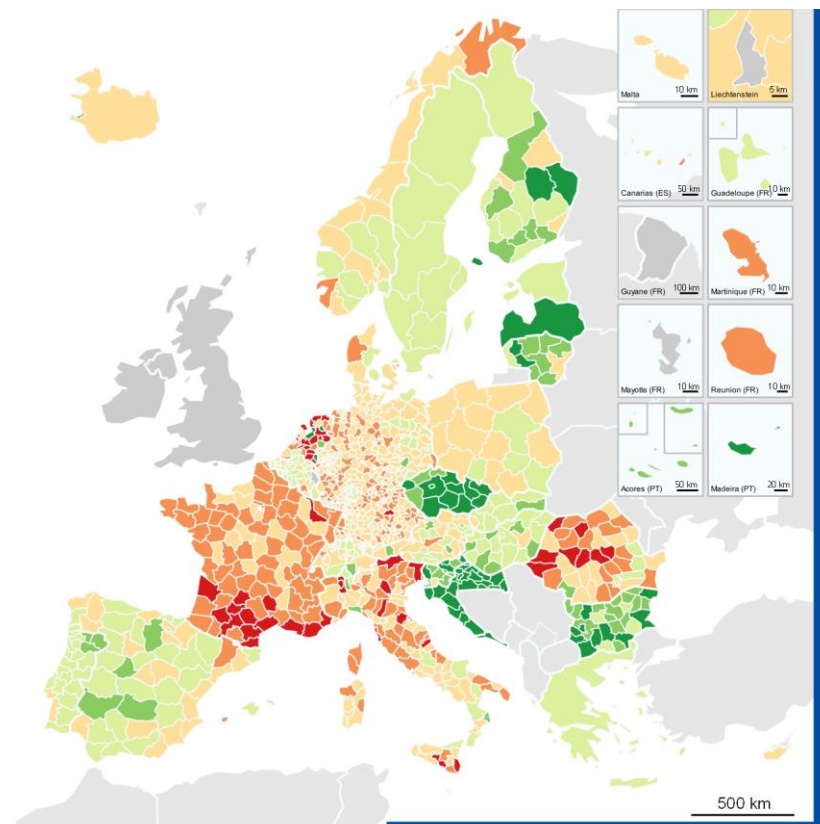


ESPON  
Co-financed by the European Regional Development Fund

### Change in the share of persons employed in micro-enterprises (1 to 9 employees) in %



Notes:  
-Data for FI, SI corresponds to 2008-2010  
-Data for DK, FR, MT corresponds to 2008-2013  
-Data for DE corresponds to 2008-2015  
-Data for CZ, EE, LU corresponds to 2010-2014  
-Data for CH, HR, LT corresponds to 2011-2014  
-Data for EE, LV, MT, PL, SE relate to NUTS2  
-Data for EL calculated from SBS data, split up of size group 0-9 in 0 and 1-9 using de results of the IME-GSEVEE study (survey of 1.006 Greek SMEs, July 2017)



Source: ESPON SME (2017)  
Origine de data: Eurostat Business demography, Statistics Austria national SBS, Statistics Belgium Demografie Ondernemingen, ORBIS, Beschäftigtenstatistik Bundesagentur, national SBS, Statistics Finland national BD, Insee, Direction des statistiques démographiques et sociales (DSDS), Financial Agency, Central Statistics Office (CSO) national BD, Statistics Iceland national BD, Amt für Statistik Fürstentum Liechtenstein - Beschäftigungsstatistik, Statistics Norway national BD, Central Statistical Office Poland national BD, Statistics Portugal Integrated Business Accounts System, National Statistics Institute Romania national SBS, Statistics Sweden Business Register, Bundesamt für Statistik Schweiz, Small Enterprises' Institute of the Hellenic Confederation of Professionals, Craftsmen and Merchants (IME GSEVEE)

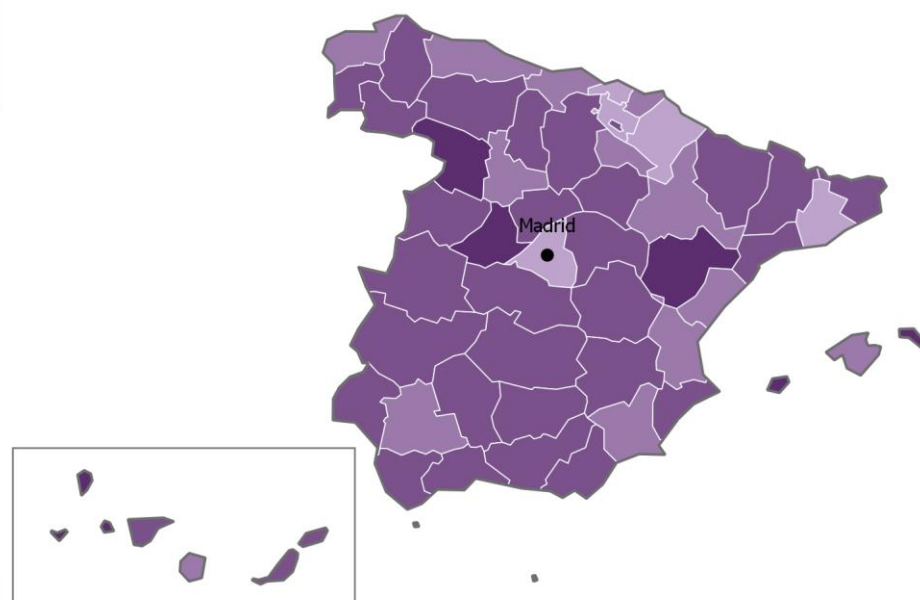
## Contrasted trends in the relative weight of micro-enterprises in the Spanish economy

The importance of micro-enterprises has increased from 2008 to 2014. In certain countries, this has been a result of the economic crisis and of the rise of small businesses in several sub-sectors of the service industry. The relative development of employment in micro-enterprises is recorded (by decreasing development pace) in the Czech Republic, Croatia, Bulgaria, Finland, Latvia, Estonia and most of Lithuania, as well as in the south of the EU, particularly in Portugal, Spain and Greece. Countries in the Central and Northwest Europe, as Austria, Italy, Germany, the Netherlands, France and Luxembourg show the opposite trend, with decreasing shares of people employed in micro-enterprises.

Regional trends when it comes to employment in micro-enterprises are contrasted. Most of the provinces on the Mediterranean coast, the Basque Country and Galicia and Madrid have experienced a moderate decline in the share of people employed in micro-enterprises, while most provinces in the centre of the country have experienced a slight increase. In these less densely populated parts of Spain, the set of micro-enterprises has withstood the economic crisis better than small and medium-sized enterprises.



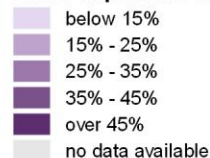
## Employment in micro-enterprises (2014)



ESPON  
Co-financed by the European Regional Development Fund

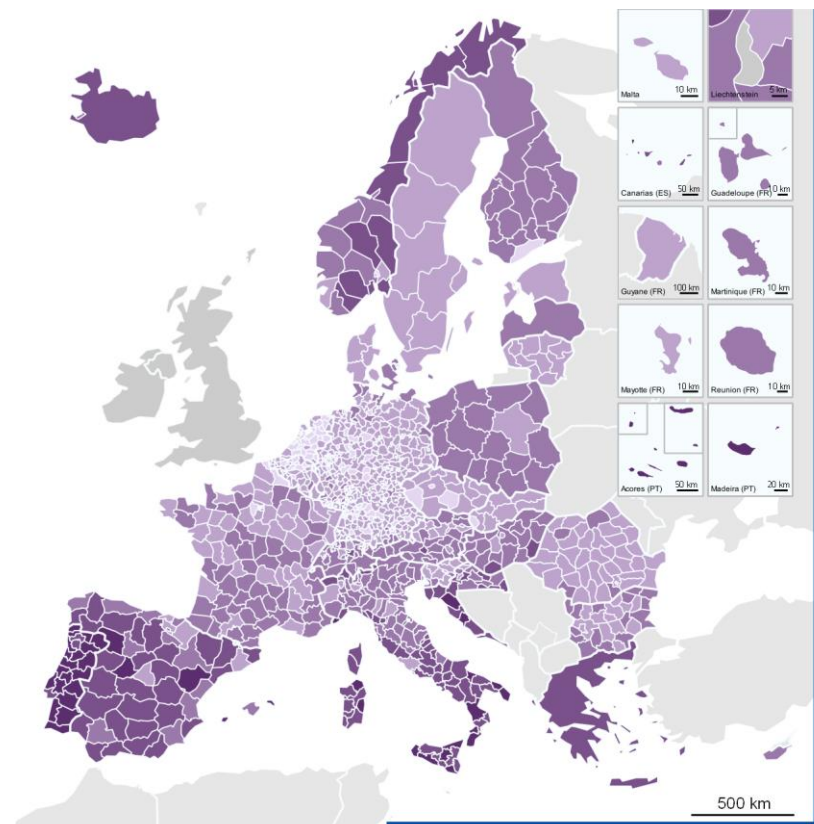
© ESPON, 2022  
Regional level: NUTS 0, 1, 2, 3 (2013)  
© UMS RIATE for administrative boundaries

### Share of persons employed in enterprises with 1 to 9 employees



Notes

- Data for FI, SI correspond to 2010
- Data for DK, FR, MT correspond to 2013
- Data for DE correspond to 2015
- Data for EE, LV, MT, PL, SE correspond to NUTS2
- Data for EL calculated from SBS Data, split up of size group 0-9 in 0 and 1-9 using the results of IME - GSEVEE study (survey of 1.006 Greek SME, July 2017)



Source: ESPON SME, 2017

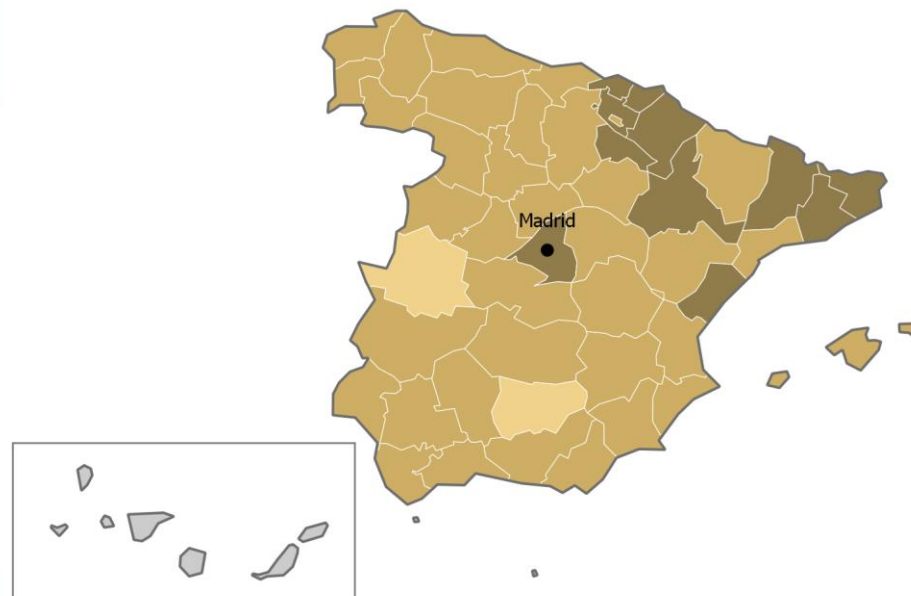
Origin of data: Eurostat Business demography, Statistics Austria national SBS, Statistics Belgium Demografie Ondernemingen, ORBIS, Beschäftigtenstatistik Bundesagentur, national SBS, Statistics Finland national BD, Insee, Direction des statistiques démographiques et sociales (DSDS), Financial Agency, Central Statistics Office (CSO) national BD, Statistics Iceland national BD, Amt für Statistik Fürstentum Liechtenstein - Beschäftigungsstatistik, Statistics Norway national BD, Central Statistical Office Poland national BD, Statistics Portugal Integrated Business Accounts System, National Statistics Institute Romania national SBS, Statistics Sweden Business Register, Bundesamt für Statistik Schweiz, Small Enterprises' Institute of the Hellenic Confederation of Professionals, Craftsmen and Merchants (IME GSEVEE)

## High shares of employment in micro-enterprises, notably in some rural regions and islands

Enterprises with 1 to 9 employees represent many start-ups as well as innovative companies. Micro-enterprises are thus important contributors to making an economy dynamic. The share of persons employed in micro-enterprises was particularly high in Portugal, southern Italy and several regions in Spain and Croatia. In general, the share of micro-enterprises was higher in rural areas. In Portuguese rural areas 60% of employed persons worked in micro enterprises in 2014. The share of persons employed in micro-enterprises was considerably lower in urban regions, notably in Denmark and the Netherlands, where about 10% of the employed persons worked in micro-enterprises in 2014.

In Spain, the share of employment in micro-enterprises is generally high with the exception of Madrid (16%), Barcelona (24%), Navarre (24%), and Basque Country (22%). Some small rural provinces stand out with values above 45%: Zamora, Ávila and Teruel. The Canary Islands (and especially La Palma) have high shares of employment in micro-enterprises (50-60%), which is related to the importance of both the tourism and retail sectors on Spanish islands.

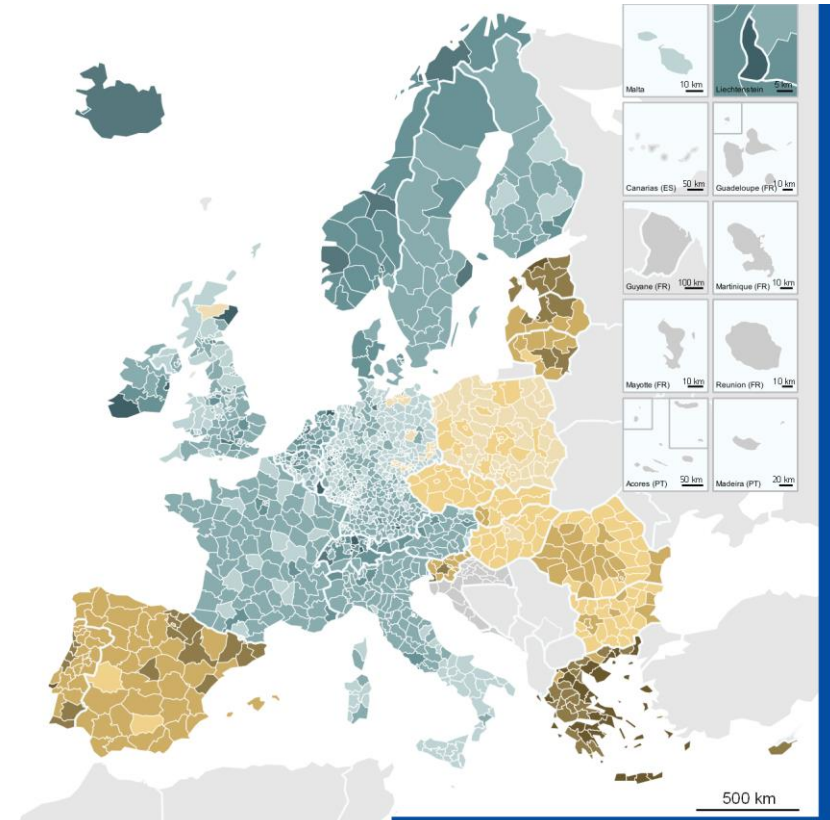
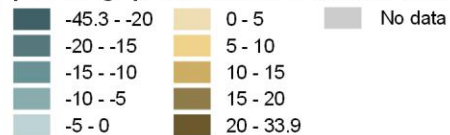
## Gross Domestic Product per capita (2015-2030)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 3 (2006)  
© UMS RIATE for administrative boundaries

**Gross Domestic Product in Purchasing Power Standard:  
percentage points difference between 2015 and 2030 in relation to the EU average**



Source: Spiekermann and Wegener Urban and Regional Research (S&W), Territorial Futures, 2017  
Origin of data: ESPON ET2050, 2015

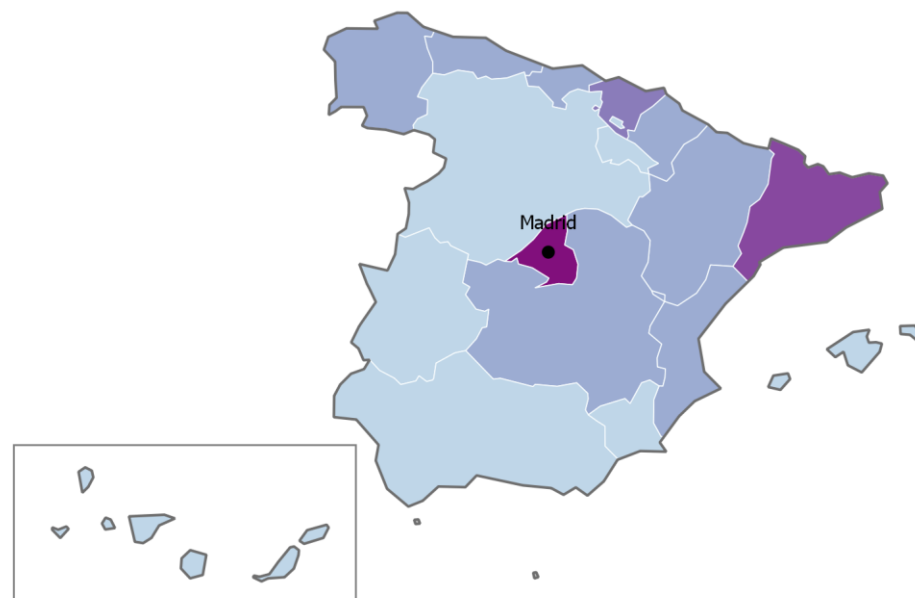
## Spanish catching-up process expected to be more vigorous in industrialised regions

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 words, these regions are expected to “catch-up” relatively to EU average. However, as a result of a modelling exercise, such a prognosis on socio-economic development has to be handled with care.

In Spain, the catching-up process is expected to be more vigorous (increase above 20 p.p. compared to EU average) in provinces of Catalonia (all except Tarragona), Basque Country, Navarre, Zaragoza and Madrid. In other words, the productive and industrialised regions of Spain could experience a quicker recovery. The more rural and less densely populated provinces are expected to grow at a slower pace. This will deepen economic disparities between territories (e.g. provinces of Cáceres and Jaén, between 0 and 5 p.p. difference).



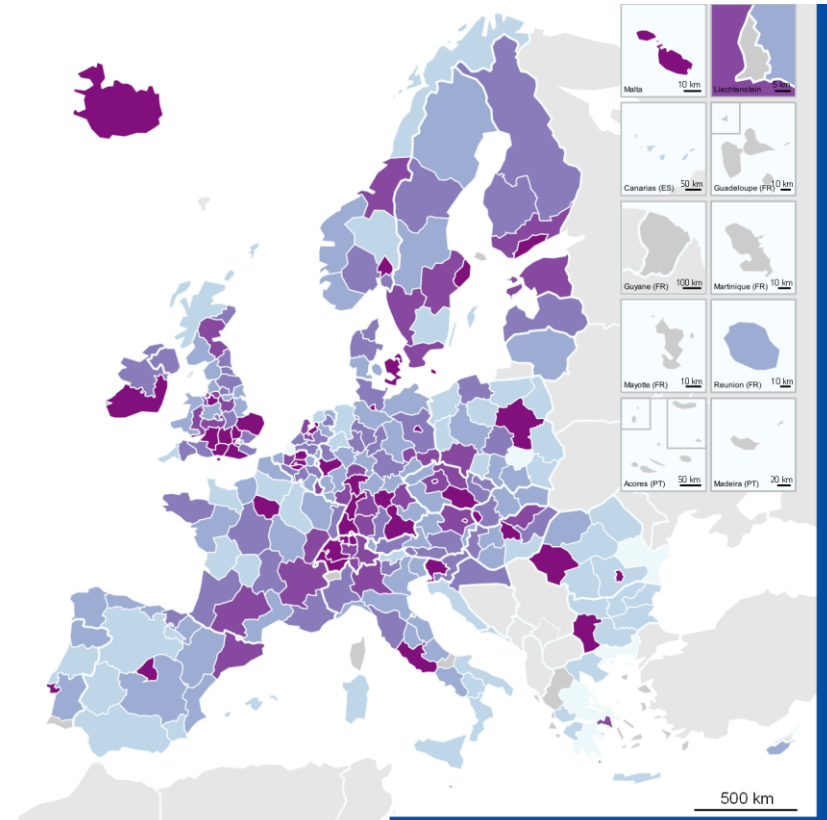
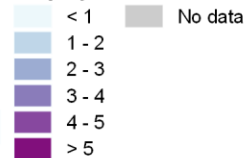
## Employment in technology and knowledge-intensive sectors (2014)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 2 (2013)  
UMS RIATE for administrative boundaries

### Employment in technology and knowledge-intensive sectors



Source: ESPON EMPLOY (2017)  
Origin of data: Eurostat (2016), htec\_emp\_reg2

## Madrid, Catalonia and Basque Country leading in tech and knowledge-intensive employment

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

In Spain, the highest shares of tech and knowledge workers are found in regions with extensive metropolitan areas: Madrid (8.2%), Catalonia (4.9%) and Basque Country (3.6%). These regions are better prepared to lead the development and receive investments in cutting-edge industrial sectors than other Spanish regions.



## **Greener Europe**

Aggregated potential impact of climate change

Potential of Green Infrastructure networks to deliver ecosystem services (2012)

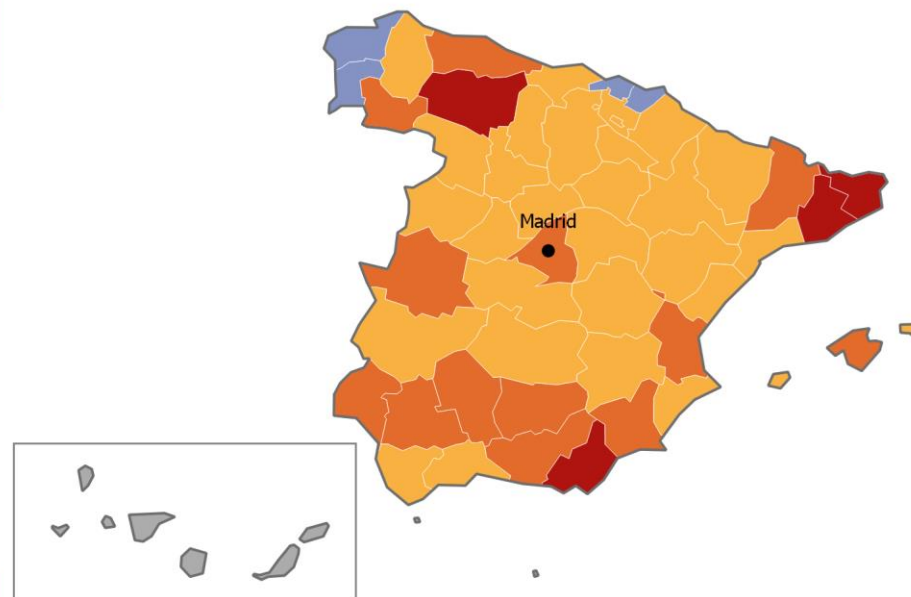
Installed capacity and potential of wind power (2016)

Installed capacity and potential of solar power (2016)

Employment in enterprises operating a Circular Business Model (2018)

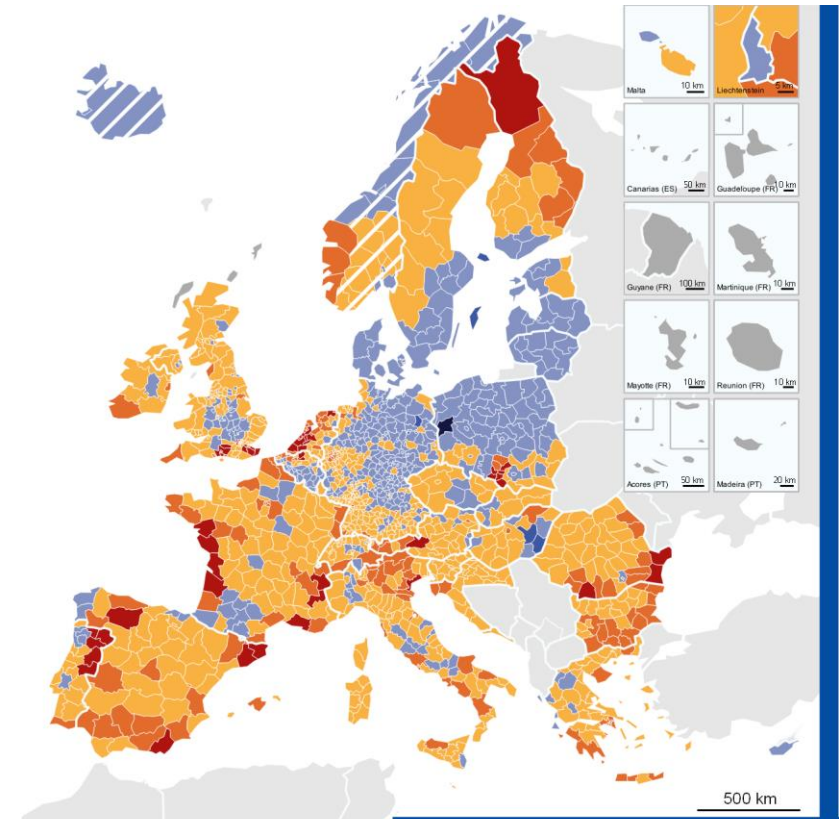
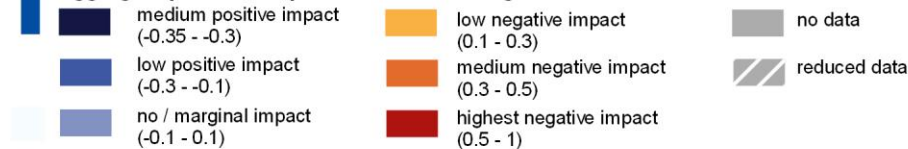
Total waste per capita (2014)

## Aggregated potential impact of climate change



**ESPON**   © ESPON, 2022  
 Regional level: NUTS 3 (2016)  
 UMS RIATE for administrative boundaries  
 Co-financed by the European Regional Development Fund

### Aggregate potential impact of Climate Change



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

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

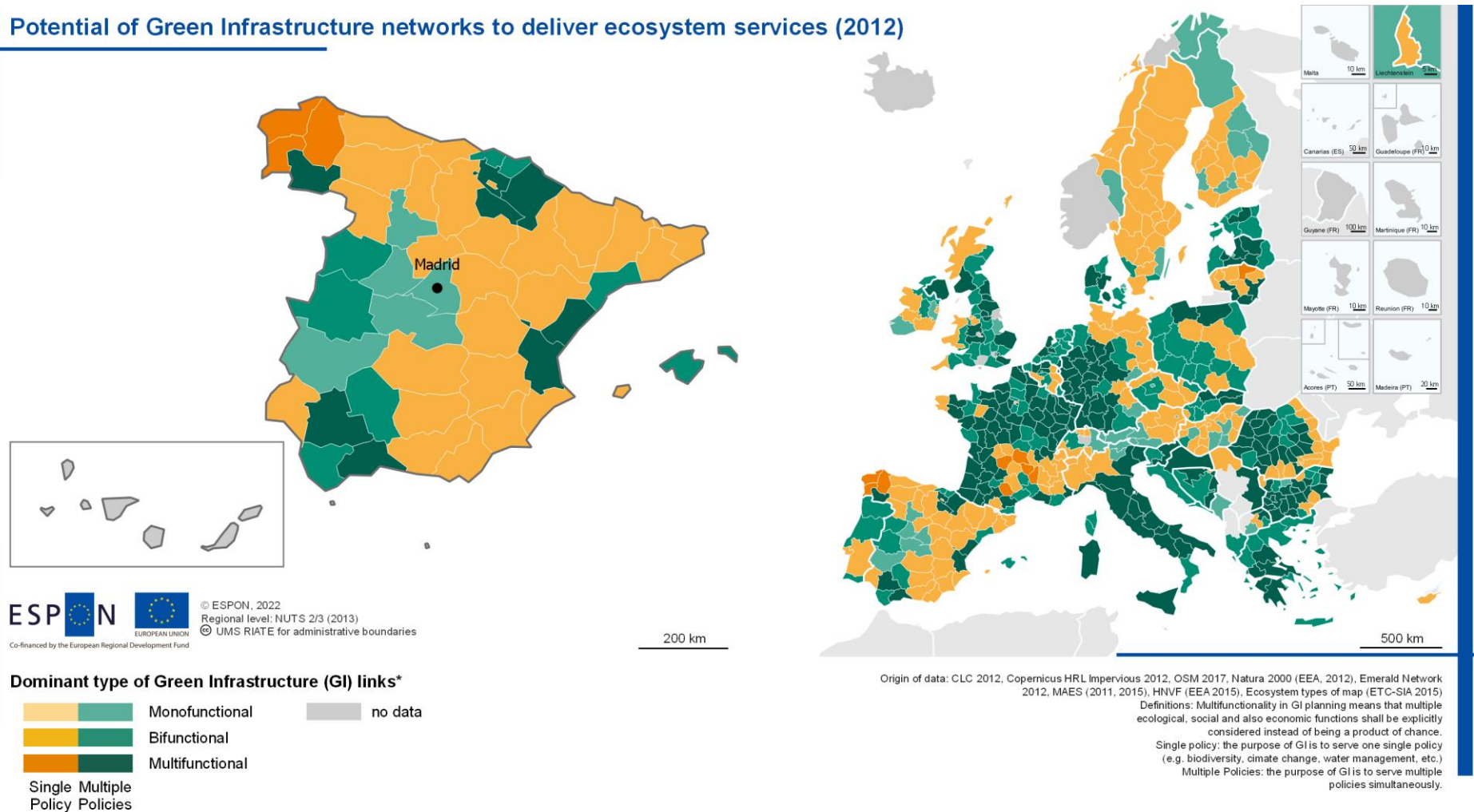
Note : regions with reduced data are missing information related to environmental sensitivity and exposure. For more details, see ESPON Climate Update Annex

## General low negative impact, increasing to medium-highest in Spain periphery

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. Northern, southern and south-eastern European regions are projected to be confronted to higher impacts than central European regions. This reflects the magnitude of expected changes in climatic patterns (precipitation, temperatures, extremes events). High impacts are otherwise expected in highly urbanised regions (sensitivity of physical assets) and in coastal regions (flooding due to sea-level rise).

In Spain, climate change is expected to have an overall negative impact. Four provinces stand out in the category “highest negative impact”. This is due to the cumulation of several factors: environmental and social impact in León, economic and social impact in Barcelona, mostly economic impact in Girona and Almería. At the other end of the spectrum, positive and negative impacts are expected to neutralise themselves in western Galicia (A Coruña, Pontevedra) and in the Basque Country (Gipuzkoa and Vizcaya). These provinces can expect positive impacts due to a decrease in the amount of precipitation, in the annual number of heavy rainfall days and of frost days that currently affect infrastructure and heritage sites negatively.

## Potential of Green Infrastructure networks to deliver ecosystem services (2012)



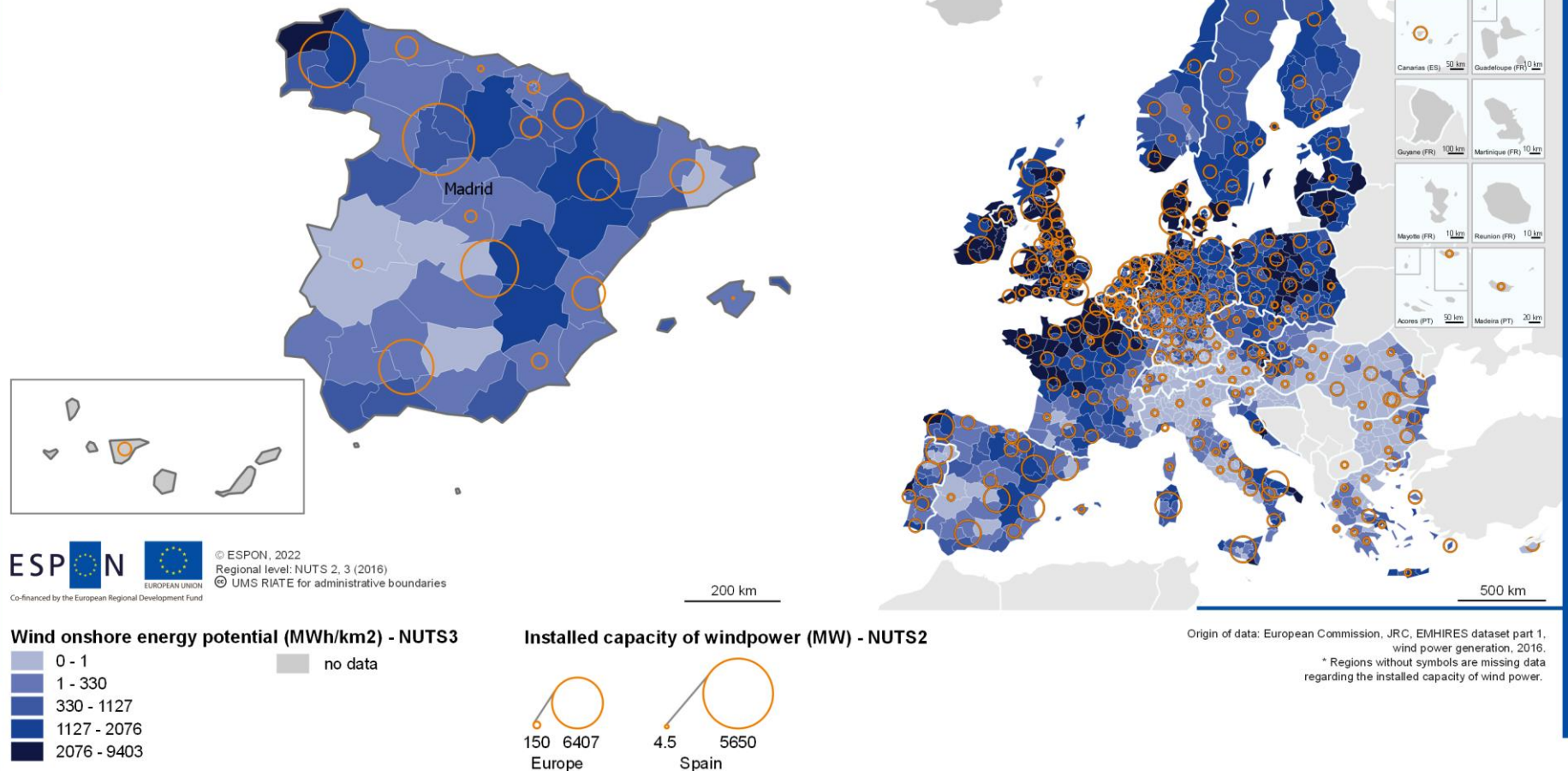
## Limited synergies between ecosystem services provided by green infrastructures

Green Infrastructure (GI) can be defined as a strategically planned network of natural and semi-natural areas whose environmental features deliver a wide range of ecosystem services (ES). 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 ecosystem services, making it mono-, bi or multi-functional. The number of services delivered simultaneously by GI and the number of policies benefiting from it are considerably higher in Central European regions, as compared to north-eastern and south-eastern regions. ES provided by GI in most Italian regions, central Germany and northern France are serving multiple objectives.

In Spain, focusing on provinces, GI networks tend to be bi-functional and serve a single policy in the majority of provinces (24 provinces out of 48 provinces with data) meaning that they provide on average two types of ecosystem services and contribute mostly to no more than one policy. Only a few regions feature multifunctional GI networks serving multiple policies: Navarre, La Rioja, Álava, Castellón, Valencia, Málaga, Sevilla and Orense. Mono-functionality and/or low synergies between policies in other regions call for increasing cross-sectoral cooperation.



## Installed capacity and potential of wind power (2016)



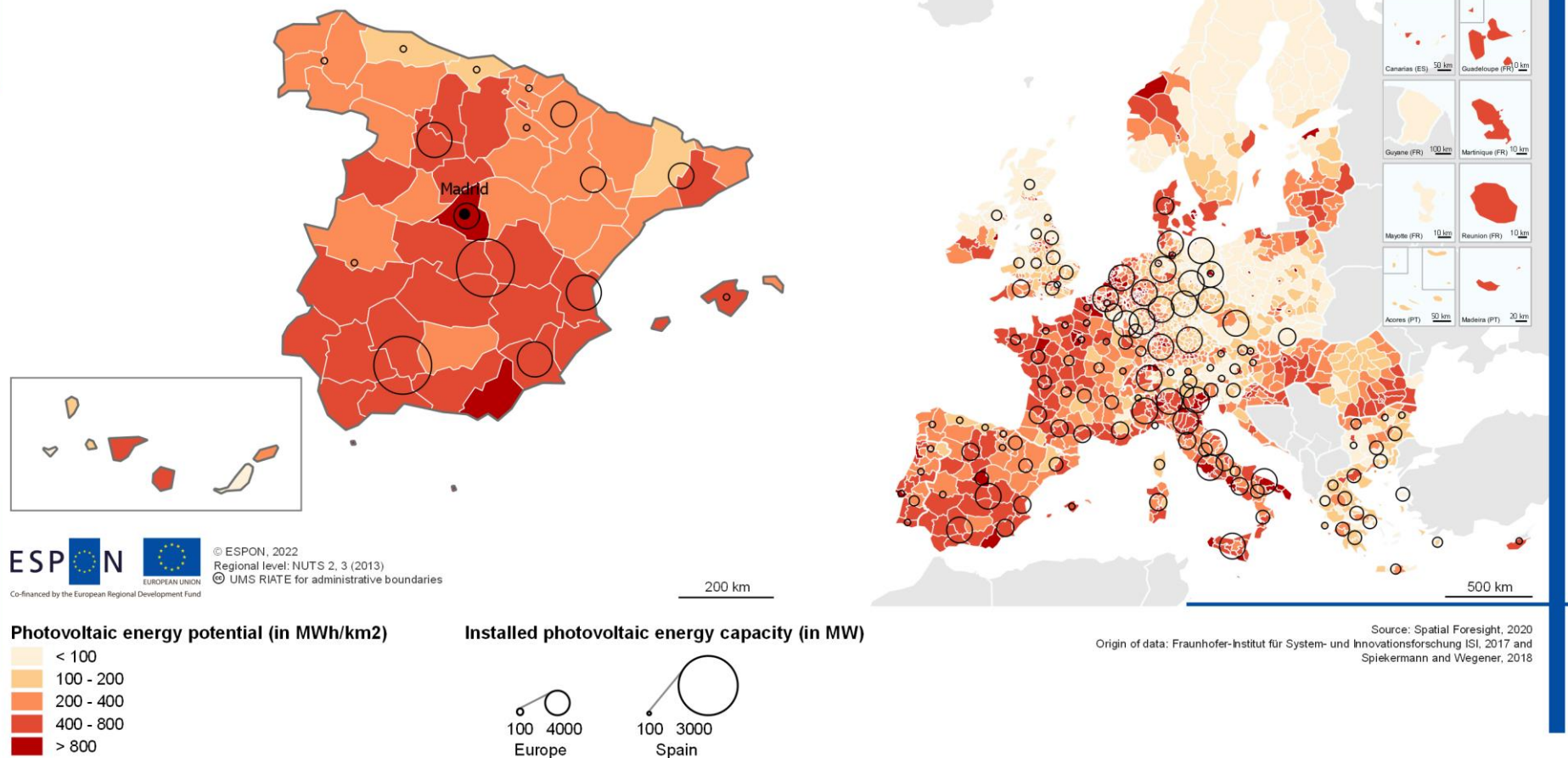
## Wind energy potential highest in Galicia and eastern highlands

Regions with the highest potential for wind power production are concentrated in western Europe, close to the English Channel, Irish Sea and North Sea. Large potentials can also be found in areas around the Baltic Sea, and in large parts of Poland. However, the distribution of wind power facilities shows that wind energy production can be developed throughout the whole territory. Regions with highest installed capacity in Europe are found in Germany and Spain: Brandenburg (6,407.5 MW), Castilla y León (5,620.9 MW), Saxony-Anhalt (5,565.2 MW), Schleswig-Holstein (4,660.2 MW) and Weser-Ems (4,187.9 MW).

In Spain, wind onshore energy potential is particularly high in Galicia (A Coruña 2,162 MWh/km²; Lugo 1,133; Pontevedra 798; Orense 438). This region's current electric production capacity totals 3,404 MW. High potentials are also found in eastern Spain highlands, i.e. Zaragoza, Teruel, Cuenca and Albacete (all between 1,100 and 1,600 MWh/km²). Installed capacity largely reflects the surface of the NUTS2 regions, except for Extremadura where production potential is notably low.



## Installed capacity and potential of solar power (2016)

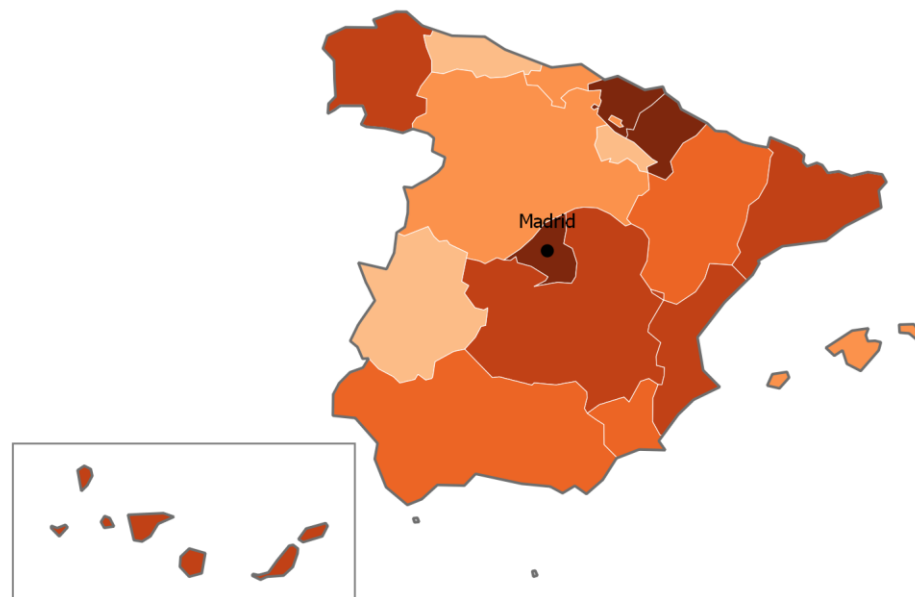


## Southern Spain: one of the hotspots of solar energy potential and capacity

Solar photovoltaic (PV) energy is a key energy source for southern European countries with long and intense sunshine exposure. Photovoltaic energy potential reflects both these climatic conditions (e.g. number of full load hours) and the more or less favourable administrative and legal context for new installation. Therefore, highest potential for solar energy production are identified in coastal regions in the Mediterranean basin (Italy, France and Spain), on the Atlantic coast (France, Portugal) and in the North Sea (Denmark, the Netherlands).

In Spain, high potentials are found in almost all provinces south of the line from Salamanca to Valencia. The high potentials of some provinces are linked to their particularly good administrative and legal contexts, e.g. Madrid and Almeria where solar energy potential is estimated to be above 800 MWh/km². Installed capacity is higher in the southern part of the country. Potential is notably diverse within the Canary Islands (Gran Canaria 589 MWh/km² vs. El Hierro 74 MWh/km²). The largest production capacities are recorded in the southern largest autonomous communities: Castilla-La Mancha and Andalusia.

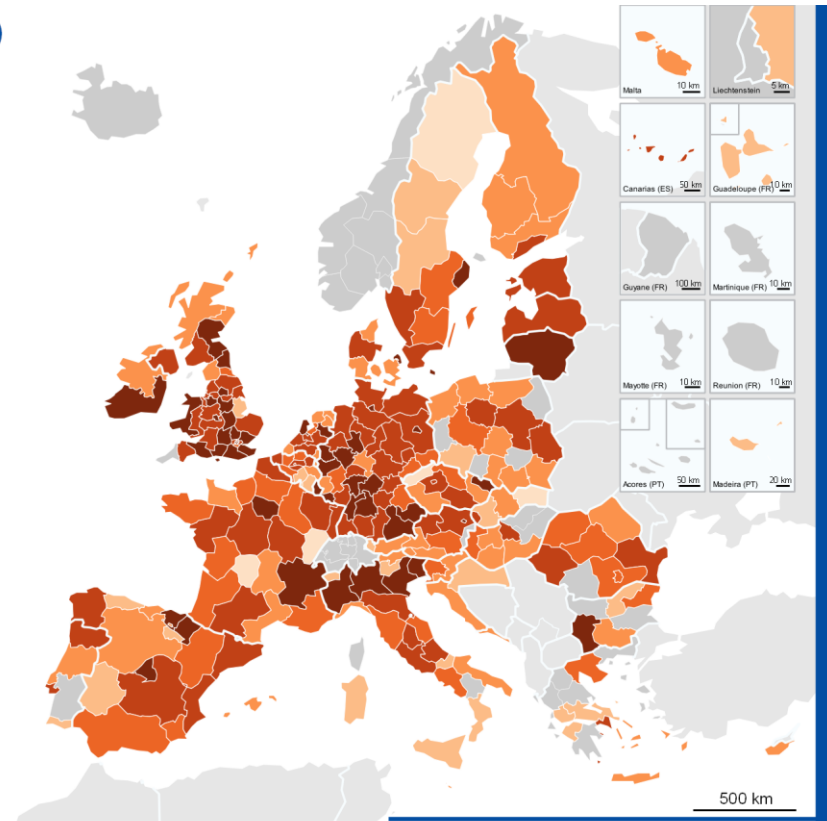
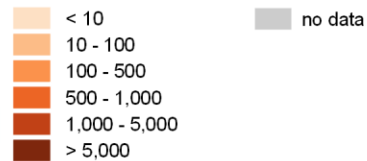
## Employment in enterprises operating a Circular Business Model (2018)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 2 (2013)  
© UMS RIATE for administrative boundaries

Number of employees in latest available year (as of 2018)



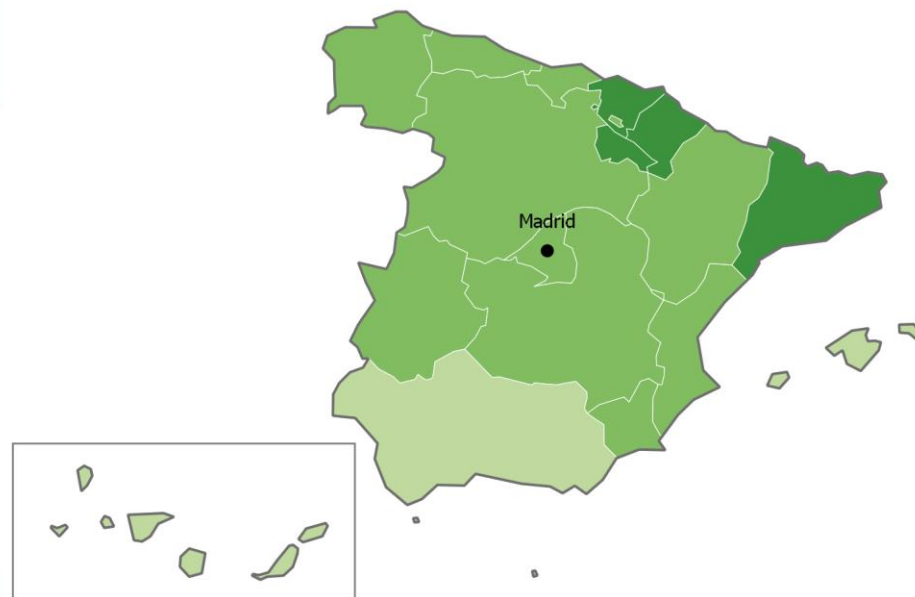
Source: ESPON CIRCTER, 2018  
Origin of data: Orbis, Bureau van Dijk, accessed 2018, calculated by Prognos AG

## Circular economy flourishing in Madrid, Navarre and the Basque Country

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

In Spain, circular economy flourishes in different contexts. High values observed in the capital region (Madrid) are linked to large overall volume of the economy. However, values in other major economic regions such as Catalonia, Castilla-La Mancha, Galicia or Valencia are much lower. In the Basque Country, networks of dynamic small and medium size social enterprises can explain high number of employees in enterprises operating a CBM in Vizcaya and Gipuzkoa.

## Total waste per capita (2014)

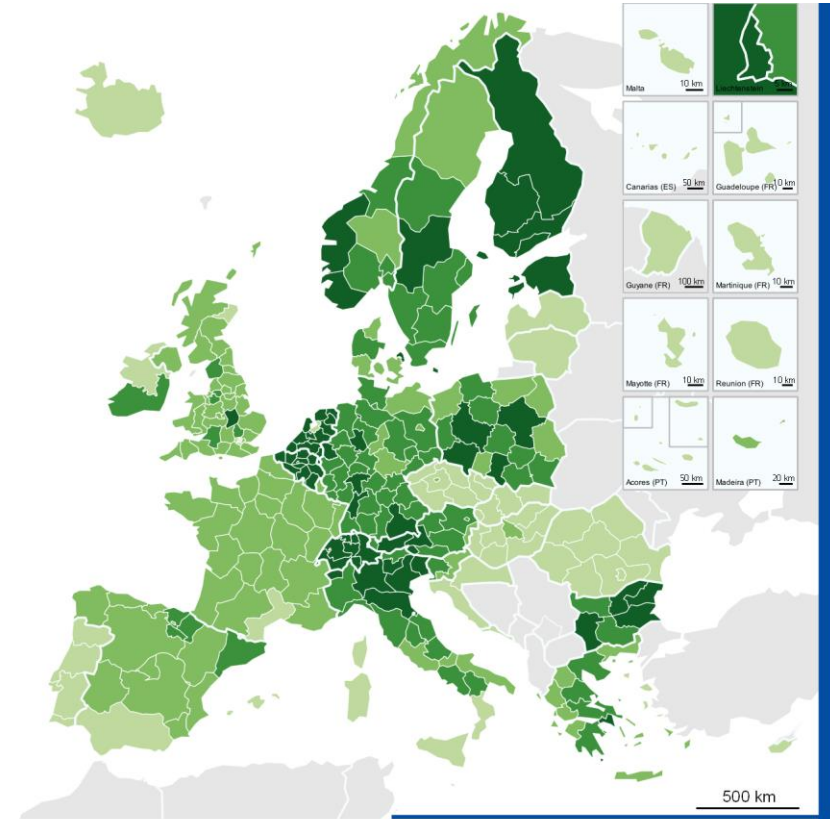


ESPON   © ESPON, 2022  
Regional level: NUTS 2 (2013)  
© UMS RIATE for administrative boundaries  
Co-financed by the European Regional Development Fund

### Total waste in kg per capita (2014)



200 km



Source: CIRCTER, 2018  
Origin of data: Eurostat, CIRCTER, 2018

500 km

## More waste in developed and industrial regions

The share of waste produced per inhabitant in Europe provides an indication on the challenges and opportunities for the transition towards a circular economy. However, one shall keep in mind that data origins and collections methods differ largely by country. Per capita, more waste is generated in Europe's most developed and/or industrial regions in 2014, among which regions in the Netherlands, Belgium, Switzerland, Finland, northern Italy, Poland, and Norway.

In Spain, waste generated per capita is slightly below the EU average (1,700 kg). Waste generation follows a north-south gradient. High values are found in the industrial north (Catalonia and Basque Country) where more than 1,700 kg of waste is generated per inhabitant. Lower values are found in the south (Andalusia) where less than 1,300 kg of waste is generated per inhabitant. In spite of similarly low values in the Balears and the Canary Islands, waste treatment is an acute environmental issue, since almost all waste must be treated locally.



## **More connected Europe**

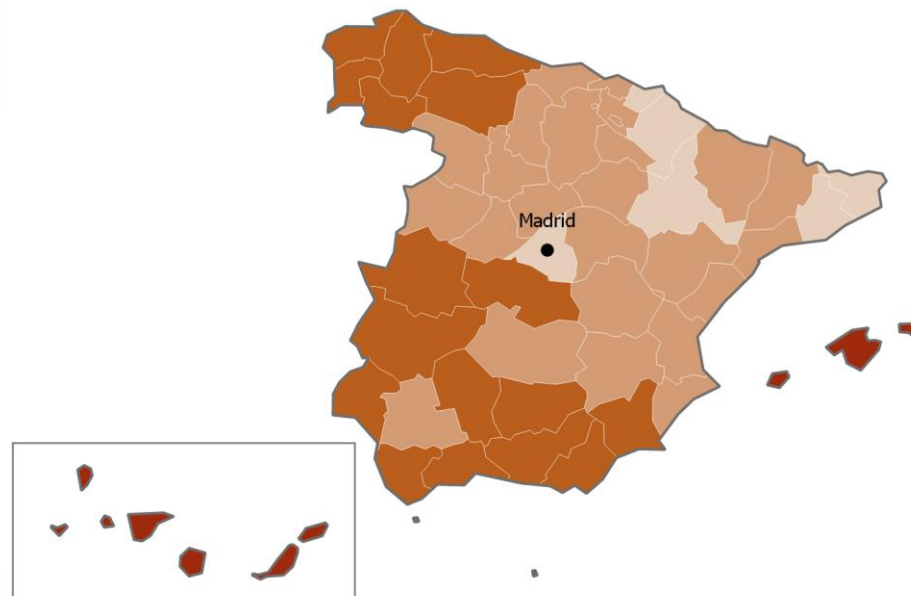
Accessibility potential by road (in 2030)

Accessibility potential by rail (in 2030)

Broadband access (2018)



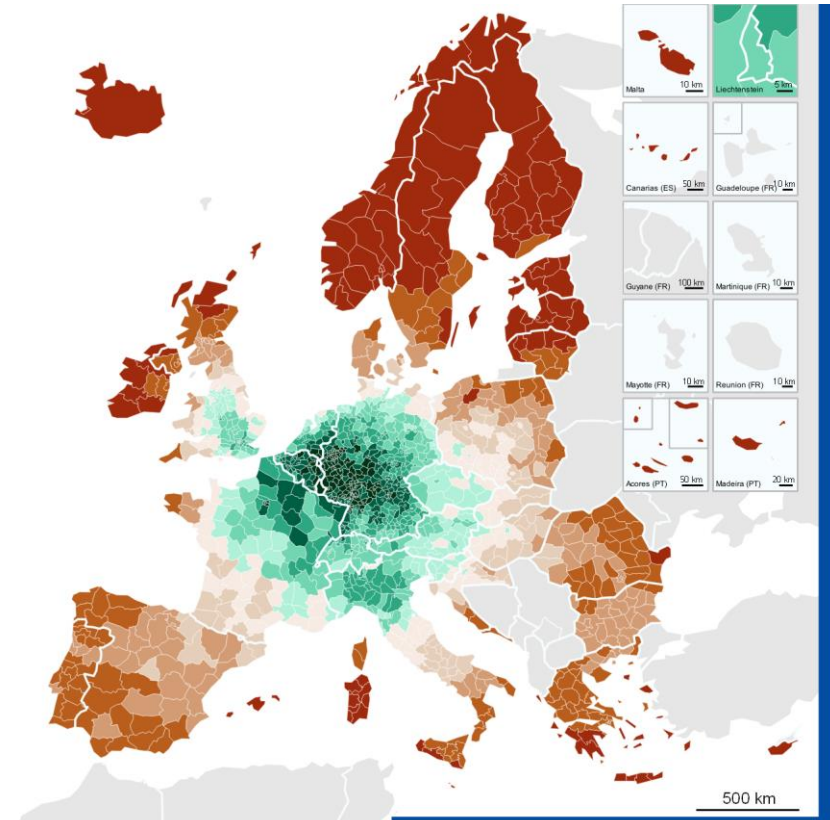
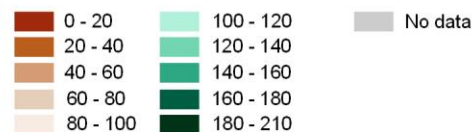
## Accessibility potential by road (in 2030)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 0 (2016)  
© UMS RIATE for administrative boundaries

### Accessibility potential by road in 2030



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

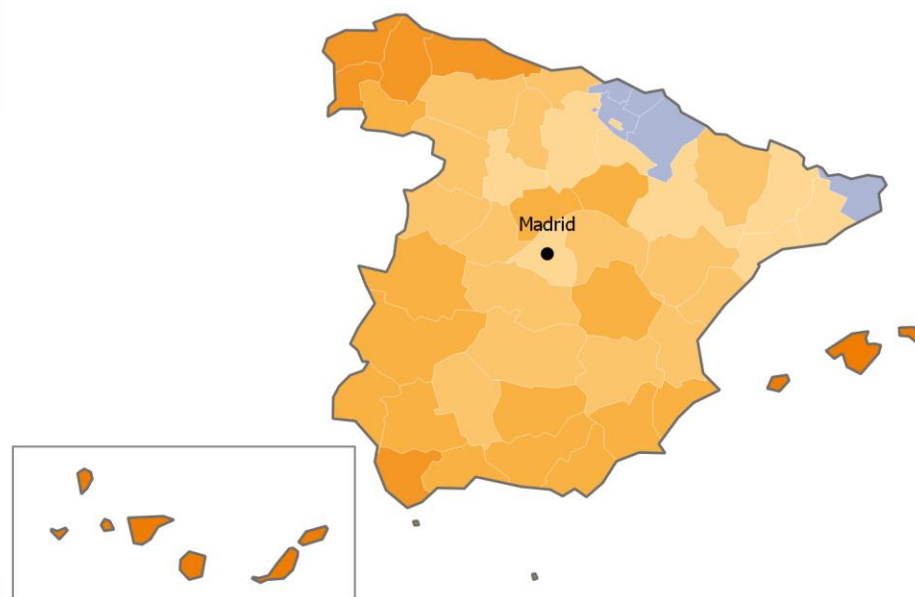
## Spain as a European periphery, Madrid standing out

Accessibility potential reflects the relative number of people that one can reach from any place using the road transport network. It is used as a proxy to market accessibility. At European level, a concentric core-periphery pattern can be observed, with densely populated areas of Europe including Belgium, southern Netherlands, eastern France and western Germany having almost twice the European average of accessibility potential. The next outer ring, consisting of Switzerland, western Austria, south-eastern England and northern Italy, still displays accessibility potential by road above the European average. Accessibility potential by road decreases toward the outer edges of the continent (in Scandinavia, Ireland and Mediterranean islands).

Spain is at an outer margin of the European system of roads and metropolitan regions. As a result, reaching European markets by road is more difficult from Spain than from e.g. Germany. Western Spain (Galicia) as well as southern Spain (Extremadura, Andalusia) have lower than average accessibility potentials. One exception is Madrid, whose own population explains the relatively higher accessibility potential compared to other Spanish regions.



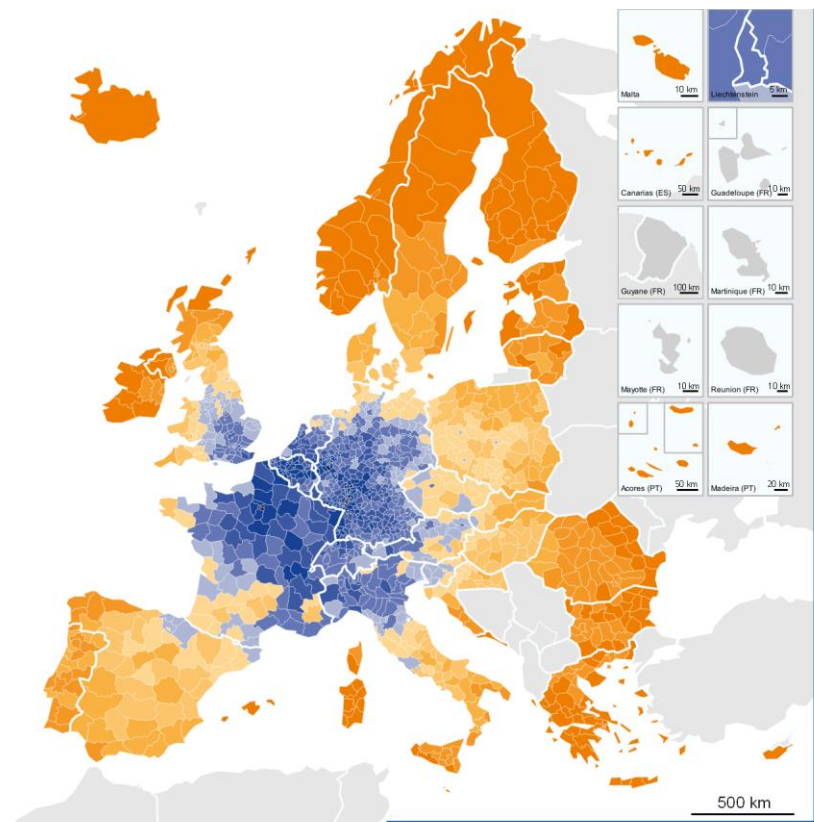
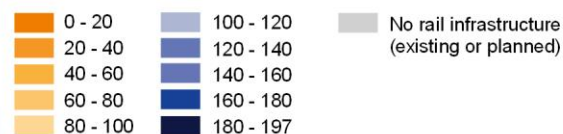
## Accessibility potential by rail (in 2030)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 3 (2013)  
© UMS RIATE for administrative boundaries

### 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

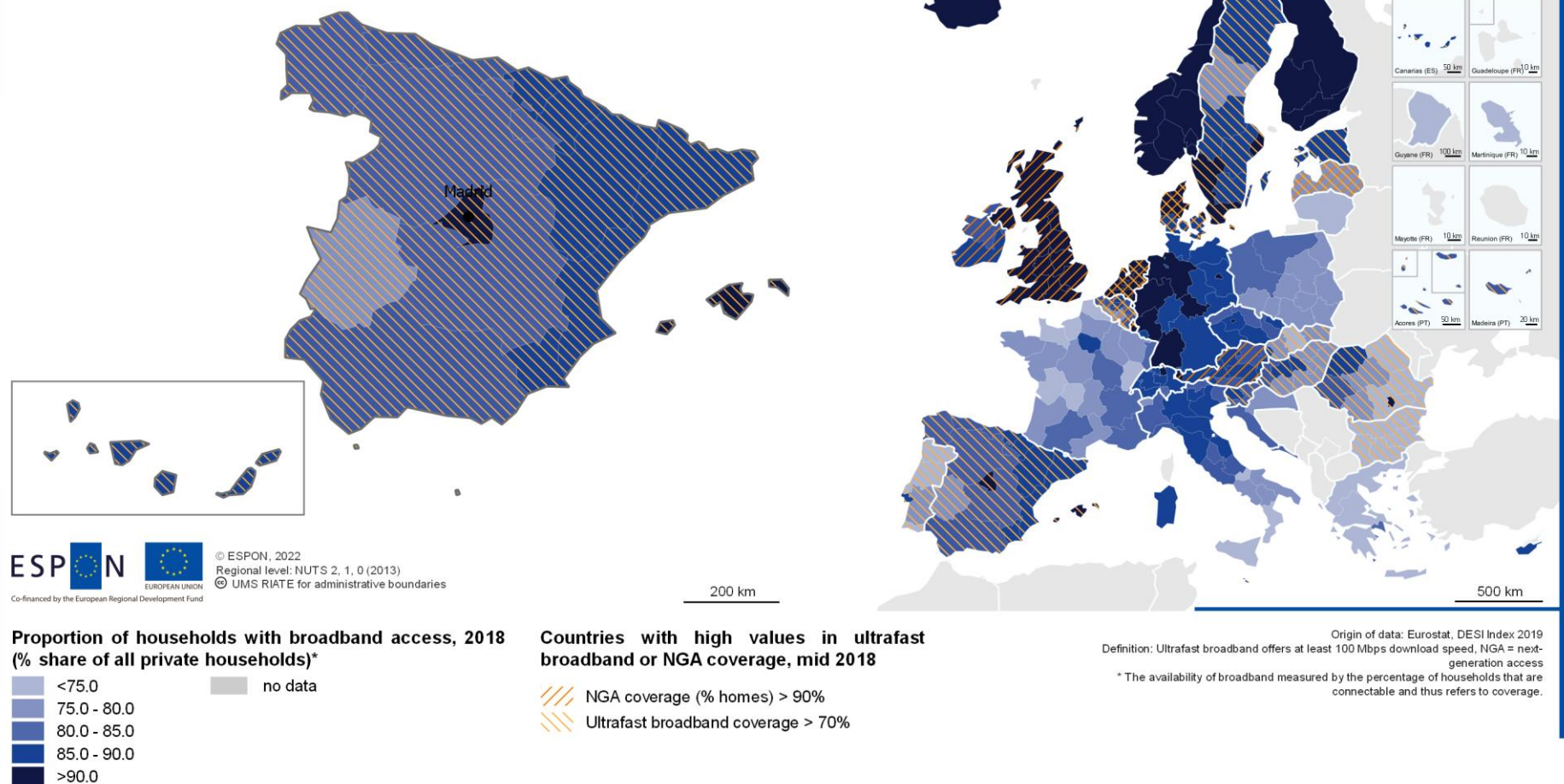
Accessibility potential by rail measures the amount of people that one can reach by rail from any point in space (grid), weighted by their distance to this point. Regional values correspond to the average of all cells included in the region. Results are presented in relation to the European average (100 = 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.

## Below European average accessibility potential by rail, except for few border regions

Accessibility potential by rail follows the same core-periphery pattern and paints a similar picture with that of the road, however above average accessibility extends further from the core. Within the core areas, top accessibility is concentrated along high-speed rail links, that connect densely populated urban areas. Belgium, the Netherlands, Luxembourg, Switzerland, England, France, Germany and northern Italy all have accessibility potential by rail above the European average. At the opposite end are Scandinavia, the Baltic States, eastern regions of Romania and Bulgaria, and Greece.

In Spain, accessibility potential by rail is below the European average, except for Girona, Navarre, and the Basque Country. Other high values (relative to the Spanish average) are found in the northern part of the country where good access to large cities is possible by train. Potential accessibility is especially weak in peripheral regions of Galicia, Asturias and Cádiz in the continental part, as well as in the Balearic Islands and Canary Islands due their disconnection from the European rail system.

## Broadband access (2018)



## Households in rural and sparsely populated areas are left behind by the digital transition

With technology impacting increasingly larger parts of economy and society, broadband access is becoming a critical infrastructure. For households, high-speed internet affects lifestyle and entertainment choices and enables enriched non-traditional education, improved public services and safety, as well as access to the global labour market through teleworking. The proportion of households with broadband access peaks (above 90%) in Belgium, Finland, the UK, Denmark, and western Germany. Lowest access is found in Lithuania, eastern Romania, Greece, southern Italy, northern Portugal and rural region in France.

In Spain, Madrid and the Balearic Islands have very high broadband access (>90% of all private households). Otherwise, the level of broadband access is higher in eastern regions than in western regions. Access to broadband is especially low in Extremadura (78% of households in 2018). This reflects the difficulties for telecommunication companies to provide access to all rural settlements, especially the most remote ones.



## **More social Europe**

Population development (2014-2030)

Structural typology on demographic shrinkage (2001-2016)

Future demographic trends in shrinking rural regions (2017-2032)

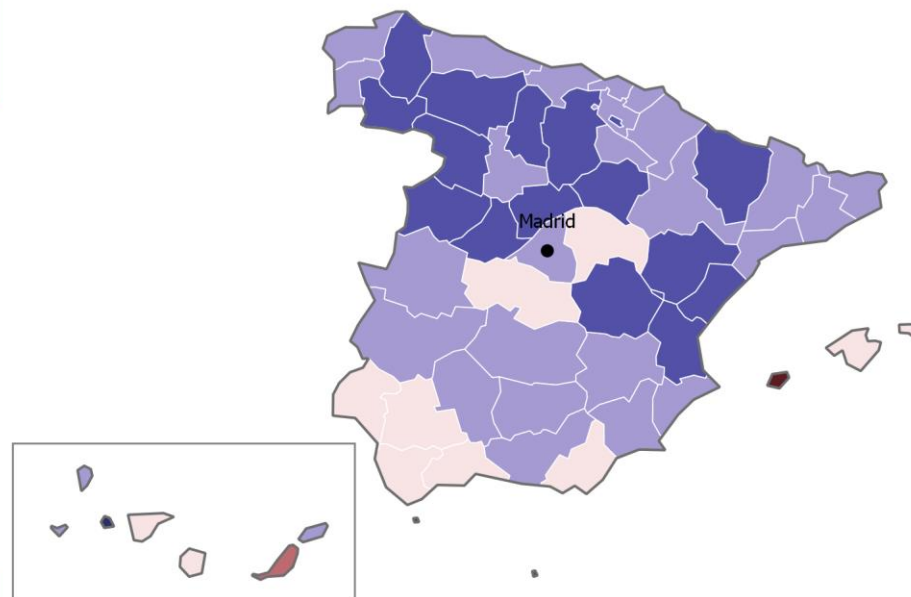
Sparsely populated areas and areas at risk of becoming sparsely populated (2001-2011)

At-risk-of-poverty rate (2015)

Youth unemployment rate (2016)

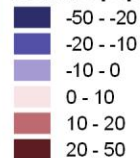
Net migration (2014)

## Population development (2014-2030)

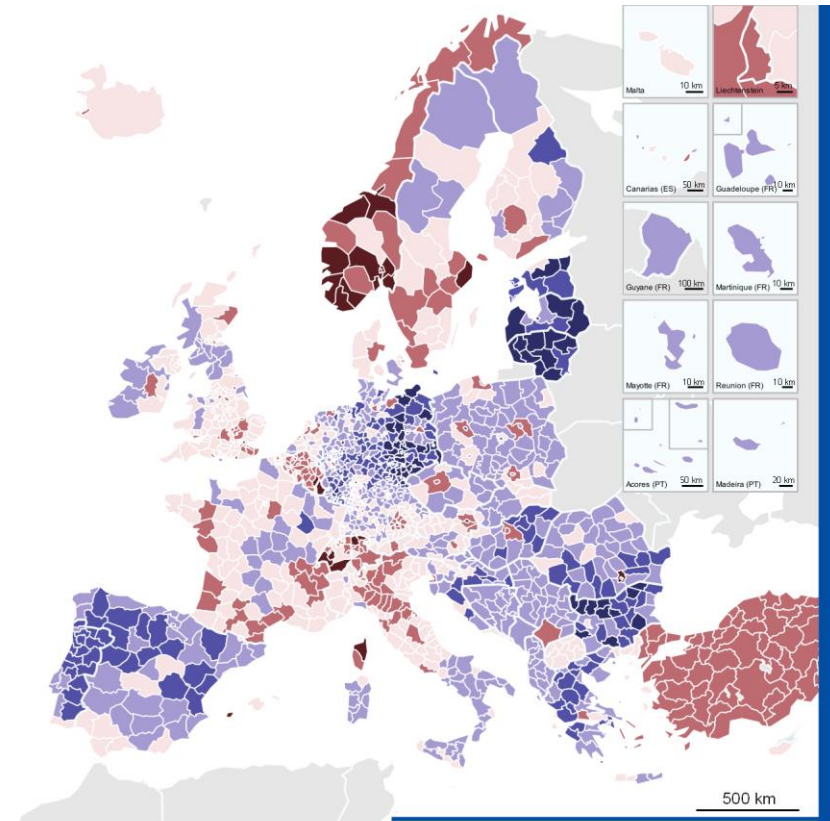


ESPON   © ESPON, 2022  
Regional level: NUTS 3 (2013)  
© UMS RIATE for administrative boundaries  
Co-financed by the European Regional Development Fund

### Relative population development forecast 2014-2030 (%)



200 km



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

500 km

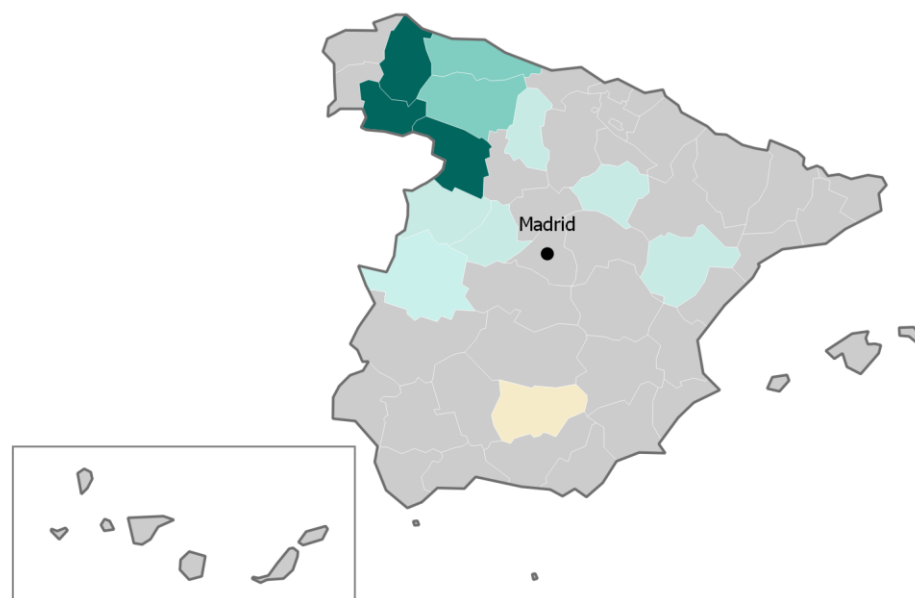
## Spain expected to experience population decline

Future population patterns in Europe are expected to be diverse. Between 2014-2030, a relatively high population growth is expected in western and northern Europe as well as in and around the main urban centres in eastern European countries. Peaks of population increase are expected in metropolitan areas especially in Nordic countries, north-western Europe, central Europe and around the Alps. Conversely, highest population losses are expected in rural regions in eastern Germany, Baltic States, northern Spain, southern Italy, Hungary, southern Romania, and northern Bulgaria. Increasing rural-urban disparities are expected.

In Spain, demographic models indicate that the country's total population is expected to decline. The regions most affected by this decrease are to the north of the line between Valencia and Salamanca. Some regions that are boosted by migration from large cities or other countries are expected to experience a slight increase. Urban deconcentration and international migration appear as the two main factors of population growth. The situation is particularly disparate in the Canary Islands: the largest and most urbanised islands (Fuerteventura, Gran Canaria, Tenerife) are expected to maintain their population while the other, smaller islands (El Hierro, La Gomera, La Palma, Lanzarote) are expected to experience population losses.



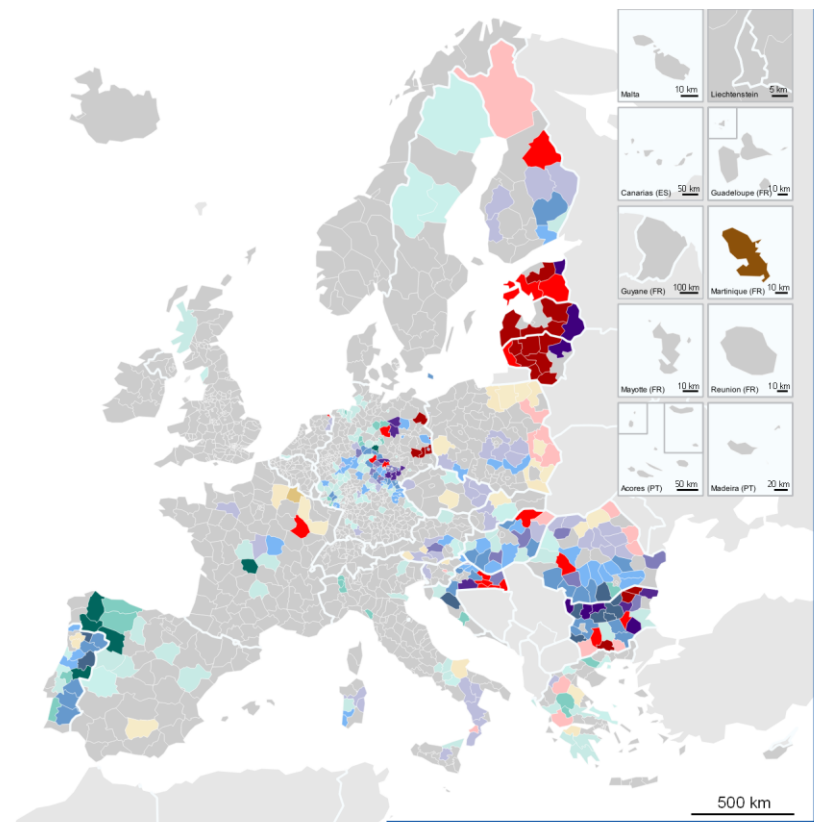
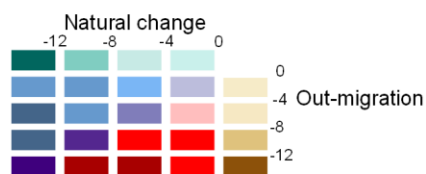
## Structural typology of demographic shrinkage (2001-2016)



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

### Structural demographic shrinkage in shrinking NUTS3 regions in 2001-2016

Non-shrinking regions



Source: ESPON ESCAPE  
Origine of data: Eurostat, Nordregio, 2020

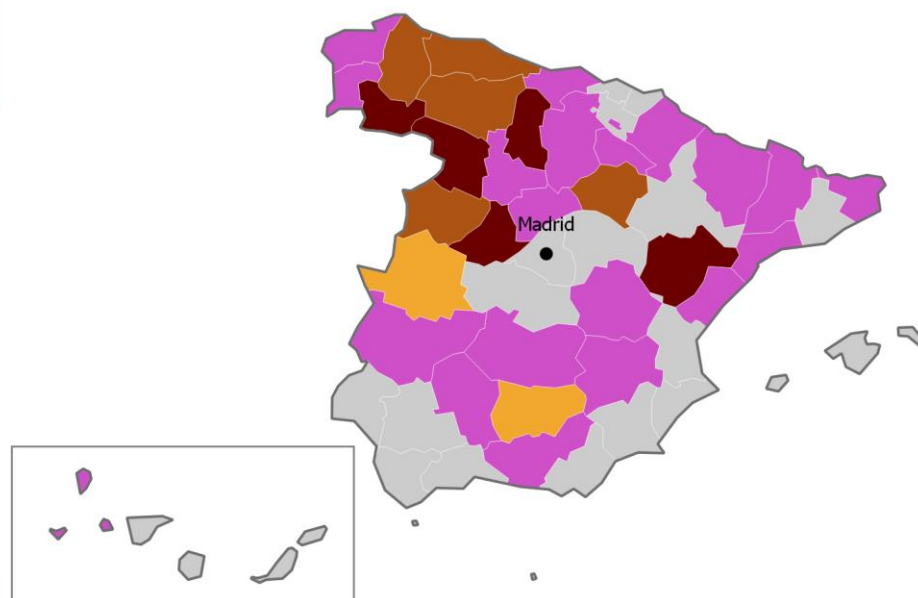
## Depopulation mainly due to negative natural change

Demographic shrinkage can result from natural change (mortality > natality) and/or net out-migration. Depopulation in central Germany, central France, Hungary, southern Romania and northern Bulgaria is mainly due to natural change, while in the Baltic countries, eastern part of Poland and Germany and continental Croatia, depopulation is mainly related to out-migration. Some areas are strongly affected by both factors: areas suffering from both important negative natural population change and important out-migration (<-12% for each of the two indicators) are found in five European countries: in parts of Bulgaria, (eastern) Germany, Latvia, Lithuania, and Romania.

In Spain at province level, population losses are to a large extent caused by natural decline. This natural decline exceeded -12% between 2001 and 2016 in the provinces of Lugo, Orense and Zamora. The only province where out-migration explains population decline is Jaén. In this province, natural change during the same period was positive.



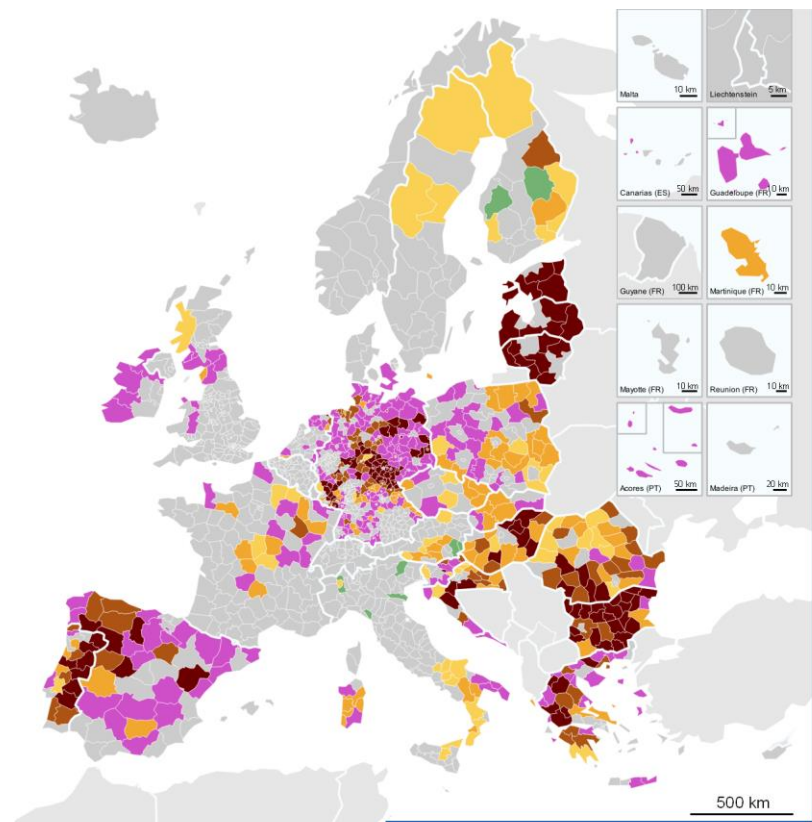
## Future demographic trends in shrinking rural regions (2017-2032)



ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 3 (2016)  
© UMS RIATE for administrative boundaries

### Future demographic trends in shrinking intermediate and rural regions (2017-2032)\*



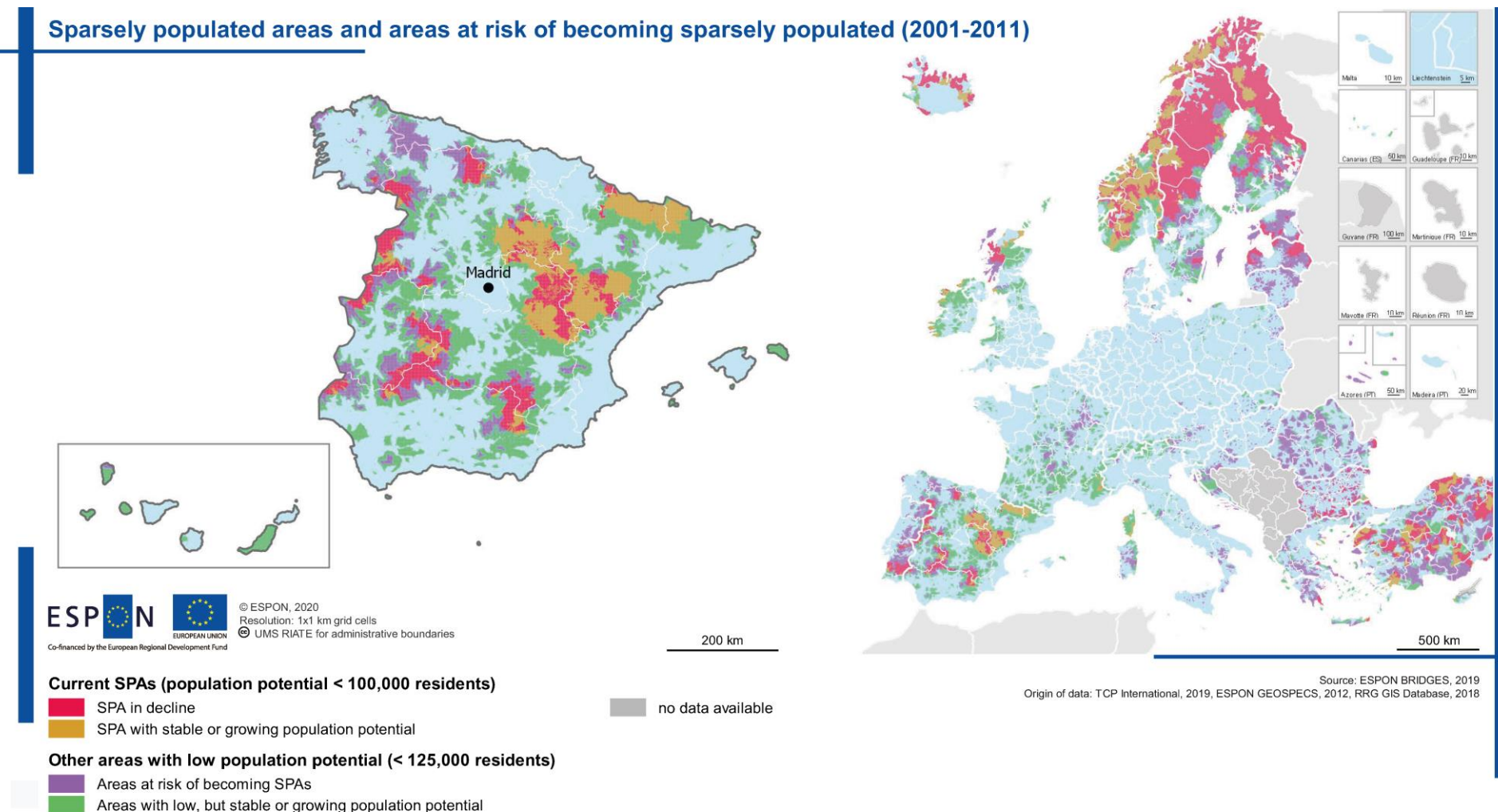
Source: ESPON ESCAPE, 2020  
Origine of data: Eurostat, Nordregio, 2020  
\* based on the regions identified as shrinking rural regions in the structural typology of simple shrinkage.  
\*\* rural regions with population increase in 2001-2016 and expected population decrease in 2017-2032.

## Almost all non-urban regions expected to experience population decline

Rural population decline is a steady trend in the EU. Most rural regions identified as shrinking between 2001-2016 are expected to keep the trend in 2017-2032, i.e. 371 out of 379. Only eight regions of three countries (Austria, Finland, Italy) are expected to reverse the trend and increase their population. In addition, 229 rural regions are considered "at-risk of shrinking" (i.e. regions that gained population in 2001-2016 but will likely lose population in 2017-2032). These can mostly be found in eastern Germany, western Poland, Ireland, Spain, and Greece. In total, 127 rural regions will likely lose over 12% of their population in 2017-2032, mostly in the Baltic States, Bulgaria, Eastern Germany, and Portugal.

In Spain, demographic polarisation is a matter of great concern, which is expected to amplify. Regions identified as "shrinking rural and intermediate" in the period 2001-2016 are all expected to continue to lose population between 2017 and 2032. 22 additional provinces are identified as being "at-risk-of-shrinking between 2017 and 2032. Adaptation strategies at different levels will be needed for these territories to cope with population decline.

## Sparsely populated areas and areas at risk of becoming sparsely populated (2001-2011)

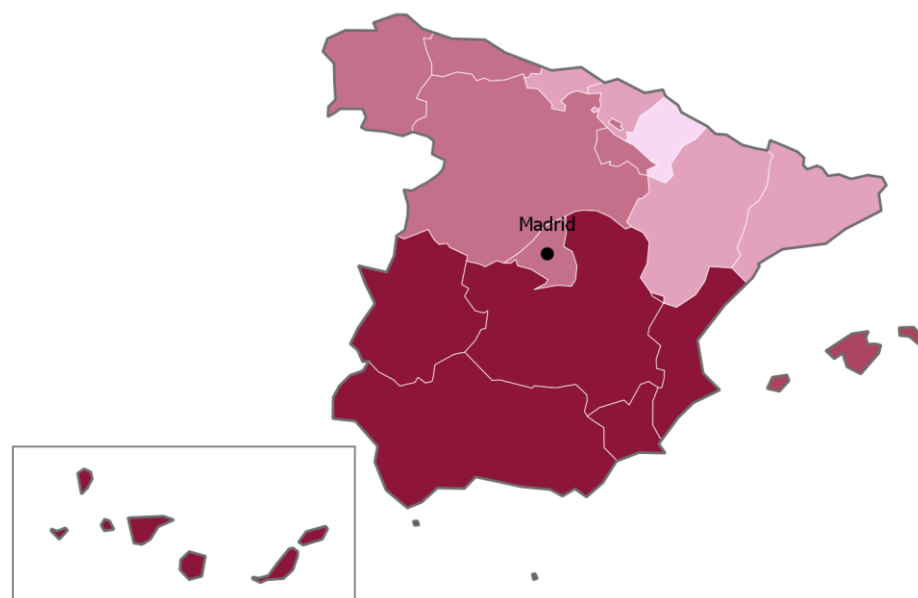


## SPAs found at the peripheries of Spanish autonomous communities

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.

In Spain, half of the territory is considered either sparsely populated or at risk of becoming sparsely populated. SPAs in decline are found in highlands or mountainous areas that locally cumulate low densities and limited accessibility. These are located in the peripheries of some autonomous communities: northern part of the provinces of Sevilla and Córdoba in Andalusia, Badajoz in Extremadura, in between Cuenca, Teruel and Guadalajara and all along the border with Portugal. Specific attention should be given to areas at-risk of becoming SPAs (that cumulate low and declining population potential). One of these areas can be identified between Galicia and Asturias.

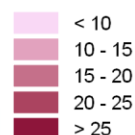
## At-risk-of-poverty rate (2015)



**ESPON**    
 Co-financed by the European Regional Development Fund

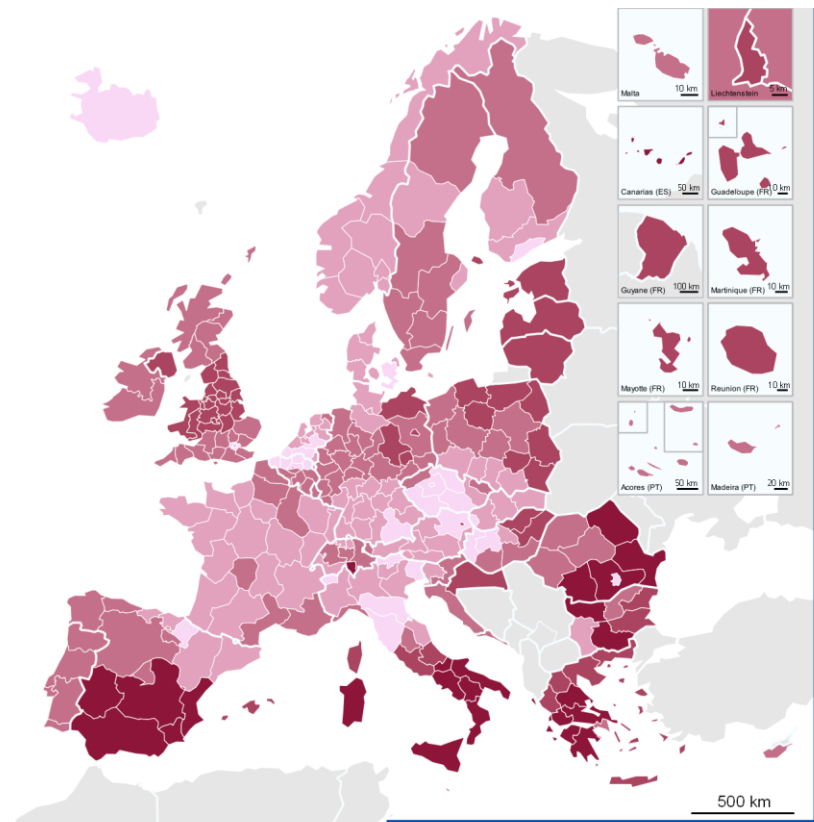
© ESPON, 2022  
 Regional level: NUTS 2 (2013)  
 © UMS RIATE for administrative boundaries

### At-risk-of-poverty\* rate (%), 2015



\* Refers to individuals with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income.

200 km



Source: Spatial Foresight, 2020  
 Origin of data: ESPON Database II, 2020 id: 329

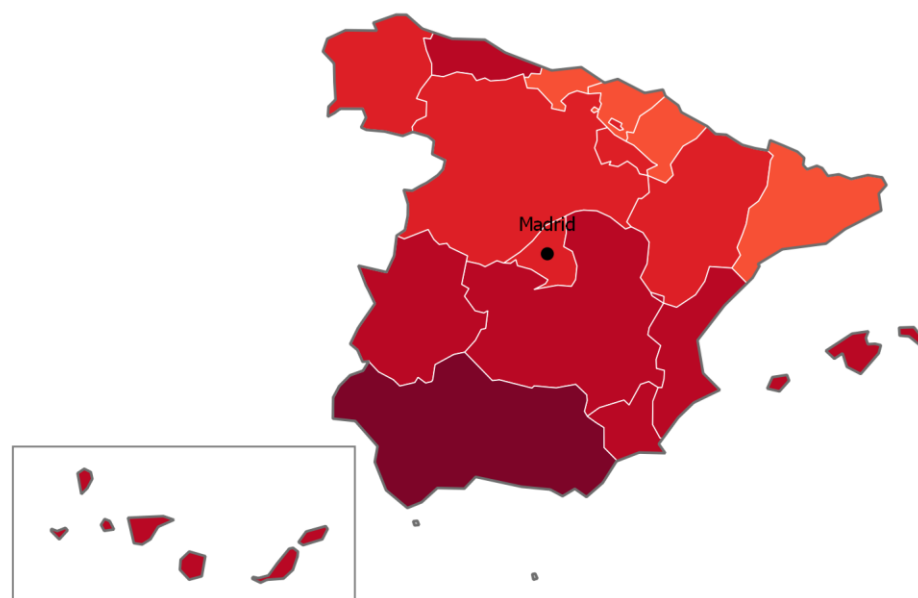
500 km

## Higher at-risk-of-poverty rates in southern Spain

The at-risk-of-poverty rate refers to the share of the population with a disposable income below 60% of the national median disposable income after social transfers. The indicator therefore doesn't measure absolute poverty, but the importance of lower income in the national distribution of income. The highest at-risk-of-poverty rates can be found in southern and eastern Europe. Large regional disparities can be observed within countries such as Spain and Italy, with substantially higher at-risk-of-poverty rates found in the southern regions. All the regions in the Nordic countries have at-risk-of-poverty rates below the EU average.

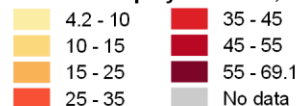
In Spain, large economic disparities can be observed between regions. Southern and outermost regions record substantially higher at-risk-of-poverty rates than northern regions. This reflects the fact that northern regions of Spain are both richer (in terms of average income) and less unequal (in terms of income distribution) than southern regions. Highest at-risk-of-poverty rates are found in Ceuta (38.2% in 2018), Extremadura (37.6%), the Canary Islands (32.1%) and Andalusia (32.0%).

## Youth unemployment rate (2016)

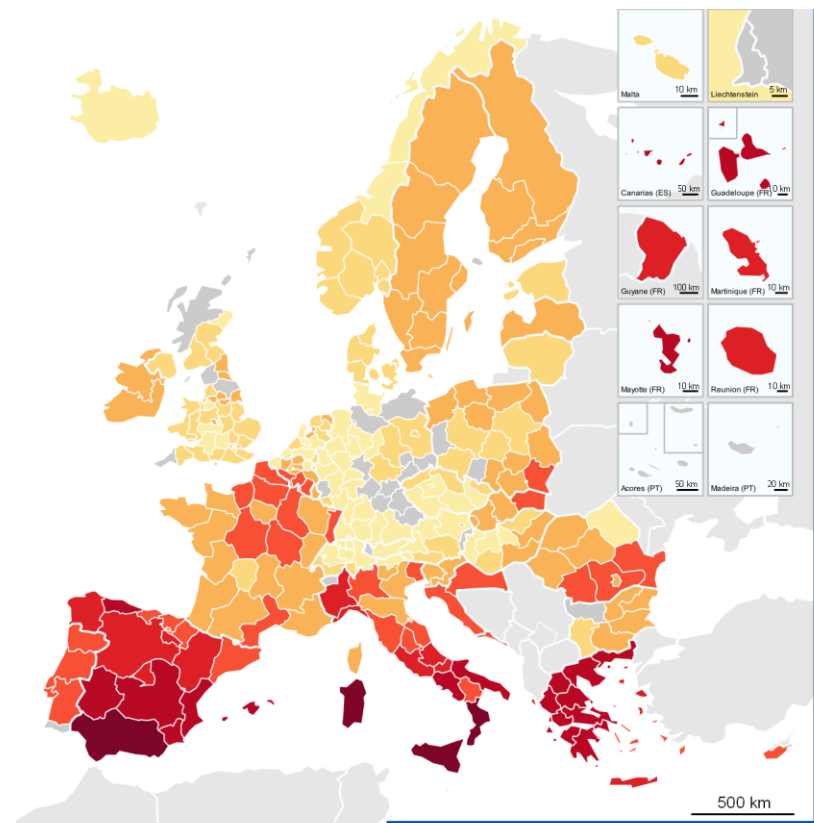


ESPON  © ESPON, 2022  
Regional level: NUTS 2 (2013)  
Co-financed by the European Regional Development Fund  © UMS RIATE for administrative boundaries

### Youth unemployment rate, 15-24 years old (2016)



200 km



Source: ICON-INSTITUT  
Origine of data: Eurostat

500 km

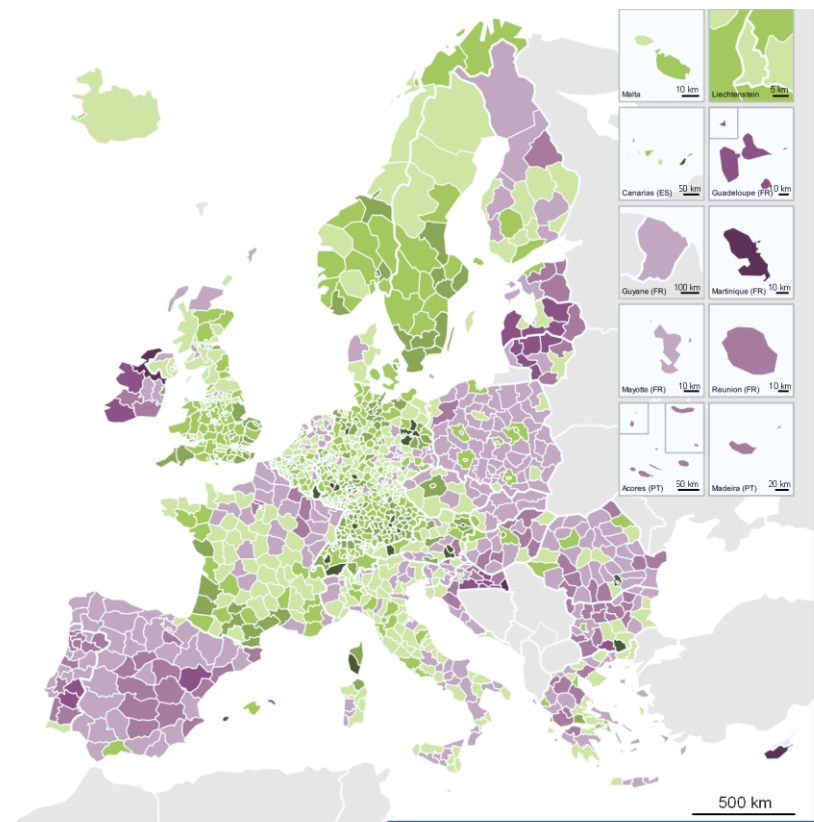
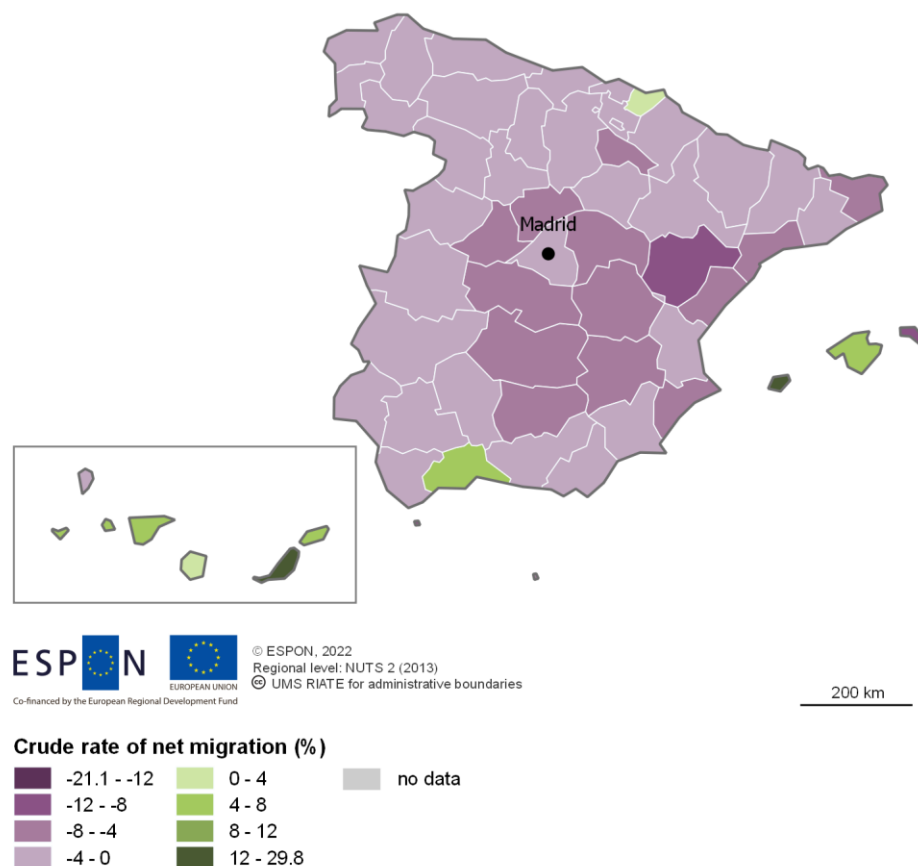
## Southern Spain more affected by youth unemployment on average

Levels of youth unemployment rates reflect both the capacity of the economy to welcome newcomers (with or without diploma) and the intensity of the economic crisis that followed the 2008 financial crisis. Highest rates of youth unemployment are recorded in Mediterranean Europe (Spain, Italy, Greece, Croatia) as well as in groups of regions that have seen their industrial economic basis weaken during the last decade (southern Romania, except Budapest, northern France, except Ile de France, Subcarpathia in Poland, Eastern Slovakia. Lowest rates are found in Germany, the Netherlands, Switzerland, Austria and Czech Republic.

In Spain, youth unemployment rates follow a north-south gradient, where northern regions perform better than southern regions. Andalusia is particularly affected by high youth unemployment (57.9%). This pattern reflects the relative weakness southern regions' economies, which are unable to absorb newcomers on the labour market. An exception in the north is Asturias, which has a higher youth unemployment rate than its neighbours (47.9%).



## Net migration (2014)



Source: Spiekermann & Wegener Urban and Regional Research (S&W), Territorial Futures, 2017.  
Origine of data: Eurostat (code:demo\_r\_gind\_3), 2014

## Negative net migration rates recorded in most provinces

Migration plays an important role in the population dynamics of cities and regions in Europe. At European level, an east-west and core-periphery divide is visible. A positive migration balance is seen in the north-west Europe, Sweden and Norway, south of Finland, most of Germany and north of Italy, as well most of the UK and south of France. This is mostly visible around urban areas in these territories. Negative migration balances are observed across the Mediterranean, e.g. in Portugal, Spain, south of Italy, Greece and Cyprus. They are found in eastern parts of Europe, Ireland, and north France. These negative balances are particularly strong in predominantly rural regions.

In 2014, Spain has recorded overall negative net migration rates at regional level. This is the result of out-migration from Spain to foreign countries following the 2008 economic and financial crisis. Rural and sparsely populated provinces around capital region and south-eastern of the country as well as some provinces on the Mediterranean coast have been particularly affected. Conversely, the Balearic and Canary Islands, as well as Gipuzkoa and Málaga can boast positive net in-migration.





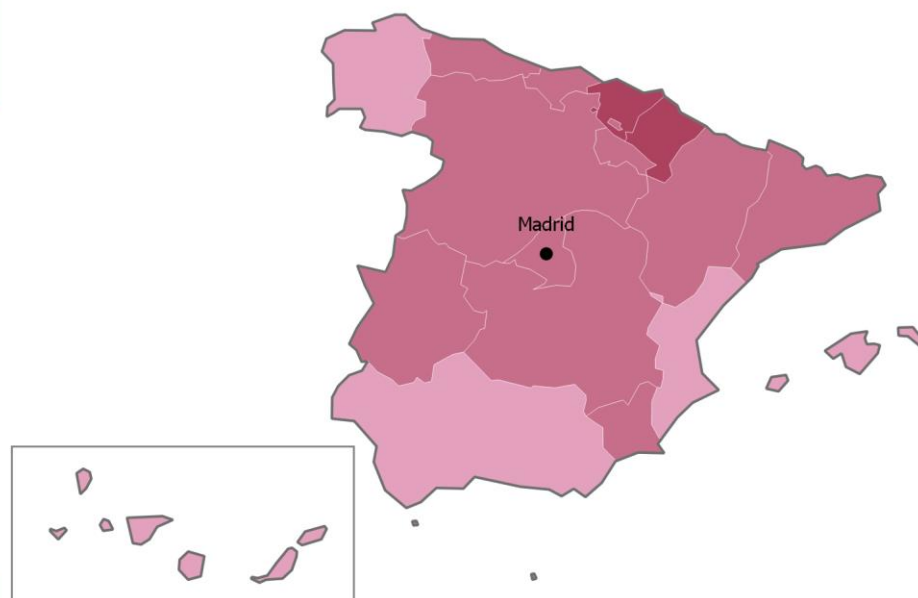
## **Europe closer to citizens**

European Quality of Government Index (2017)

Status and evolution of eGovernment interactions (2014-2019)

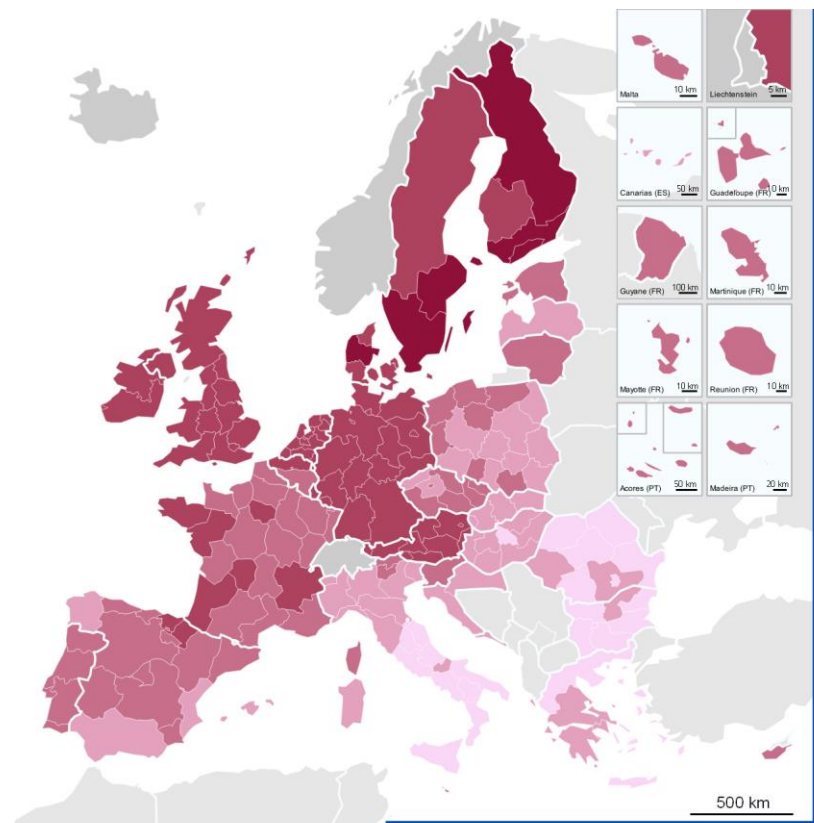
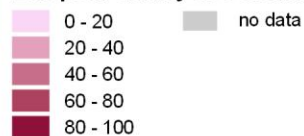
Inner Peripheries according to poor access to Services of General Interest (2017)

## European Quality of Government Index (2017)



**ESPON**  © ESPON, 2022  
 Regional level: NUTS 2, 1, 0 (2013)  
 UMS RIATE for administrative boundaries  
 Co-financed by the European Regional Development Fund

### European Quality of Government Index (2017)



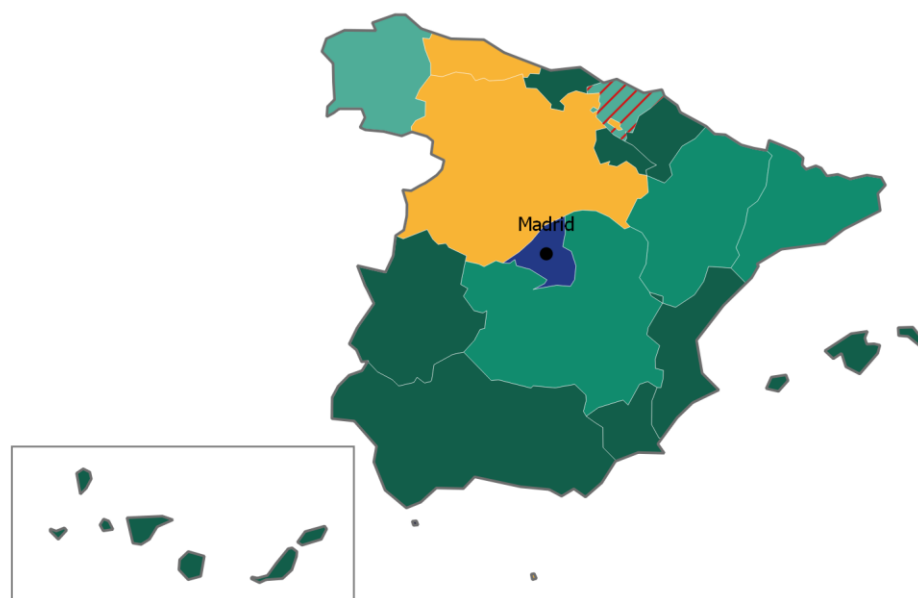
Source: ESPON EGTC  
 Origine of data: The Quality of Government Institute, 2017

## Moderate lack of confidence in government and public services

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

In Spain, the perception of quality of government is close to the European average (scores between 40 and 60) in most regions. Scores are better in two provinces of the Basque Country (Gipuzkoa and Vizcaya). Conversely, scores are lower in Galicia, Valencia, Andalusia, the Balearic Islands and the Canary Islands. In these regions, a significant part of respondents do not trust the government's capacity to allocate resources impartially and to provide good quality of public services.

## Status and evolution of eGovernment interactions (2014-2019)

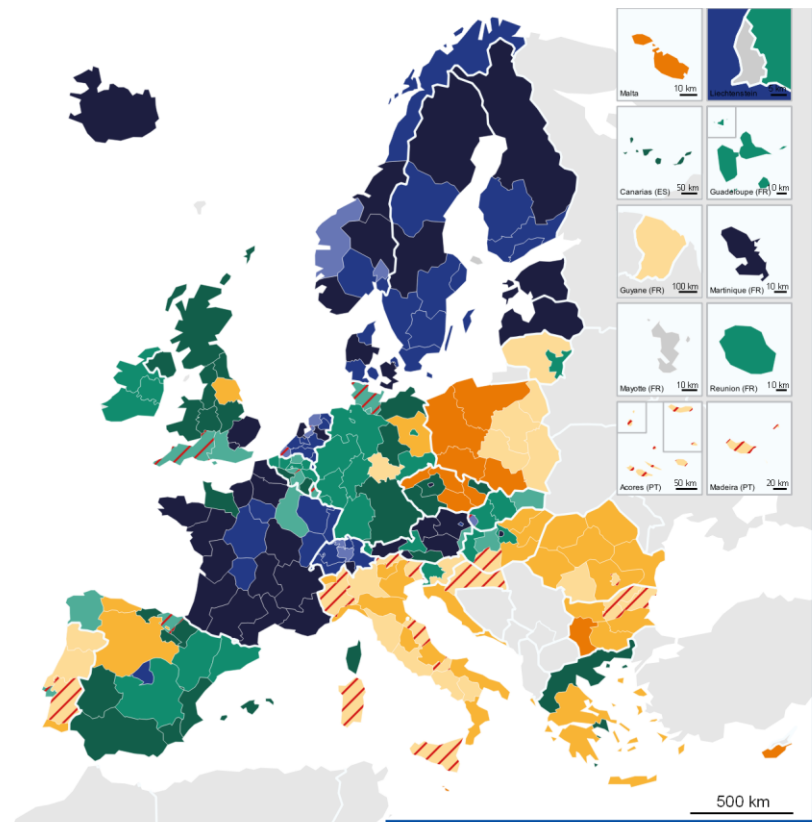
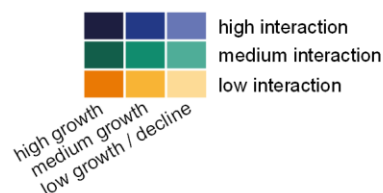


ESPON  
Co-financed by the European Regional Development Fund

© ESPON, 2022  
Regional level: NUTS 2, 1 (2016)  
© UMS RIATE for administrative boundaries

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

decline (2014-2019)



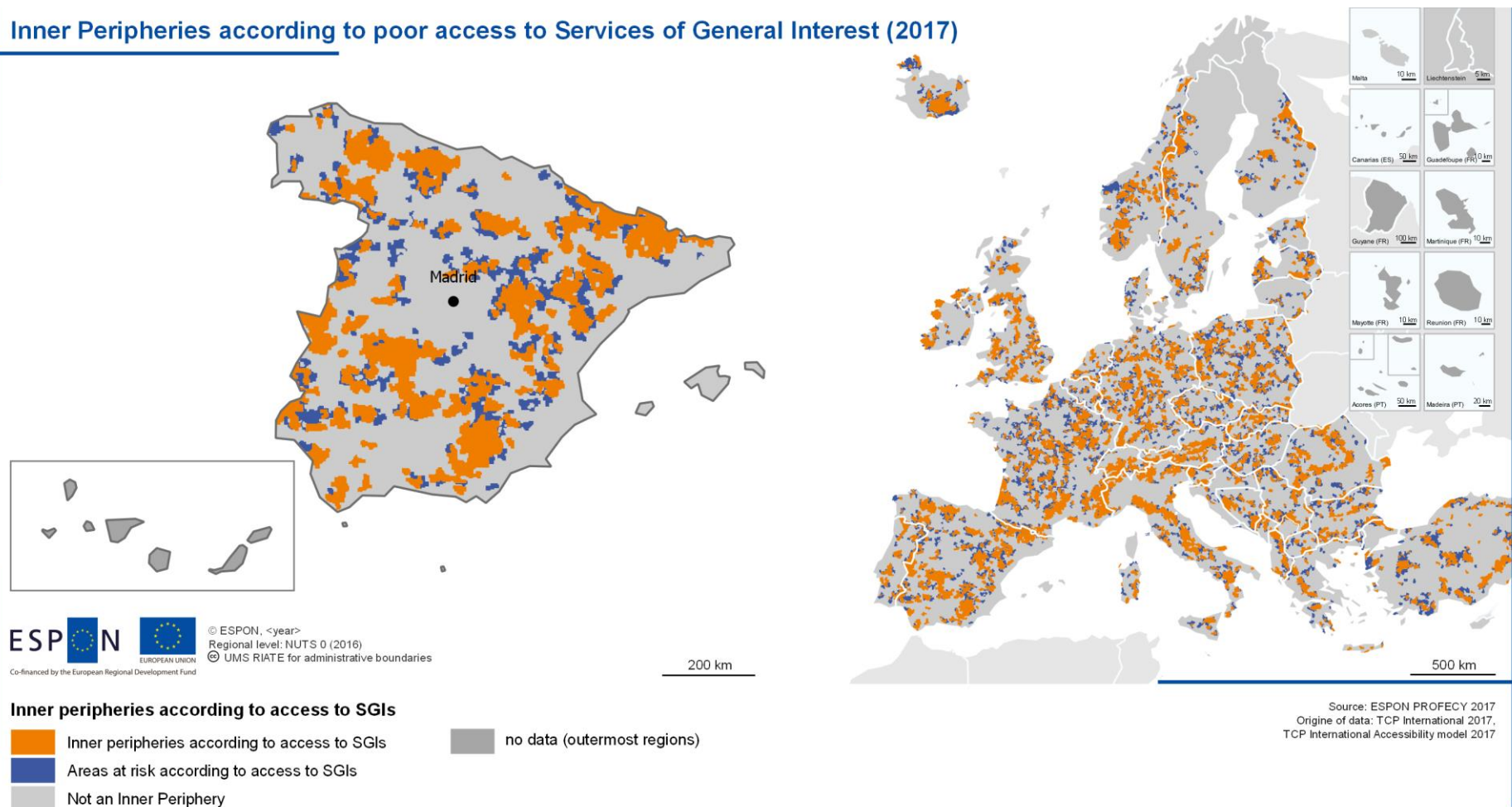
Source: ESPON EGTC, 2019  
Origin of data: Eurostat, 2020

## Increasing regional levels of online interaction with 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 services). 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.

In Spain, observed level of online interaction with public authorities is average in most regions. However, several regions have experienced some degree of catching up between 2014 and 2019. Low interaction is still found in the north-western part of the country (Castilla y León, Asturias), but the moderate growth observed over the period 2014-2019 is encouraging. The province of Madrid is the only province to display a high level of online interaction with public authorities.

## Inner Peripheries according to poor access to Services of General Interest (2017)



## Pockets of low accessibility to SGIs across the whole country

An adequate access to main Services of General Interests (SGIs) reflects the level of provision and the degree of connectedness of territories. Easy and cheap access to many different types of services ensures higher quality of life, provides choice opportunities for the resident population 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.

Inner peripheries cover a significant part of the Spanish territory outside of the main agglomerations. Smaller patches of “inner peripherality” are scattered throughout rural mainland Spain. Larger continuous inner peripheries can be found in the most sparsely populated parts of the country, often stretching across several regions. This map shows that Spanish rural areas are diverse, especially with respect to levels of access to services.



## ESPON EGTC

4 rue Erasme, L-1468 Luxembourg

Phone: +352 20 600 280

Email: [info@espon.eu](mailto:info@espon.eu)

[www.espon.eu](http://www.espon.eu)

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

### Disclaimer:

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

ISBN: 978-2-919816-49-1

March 2022