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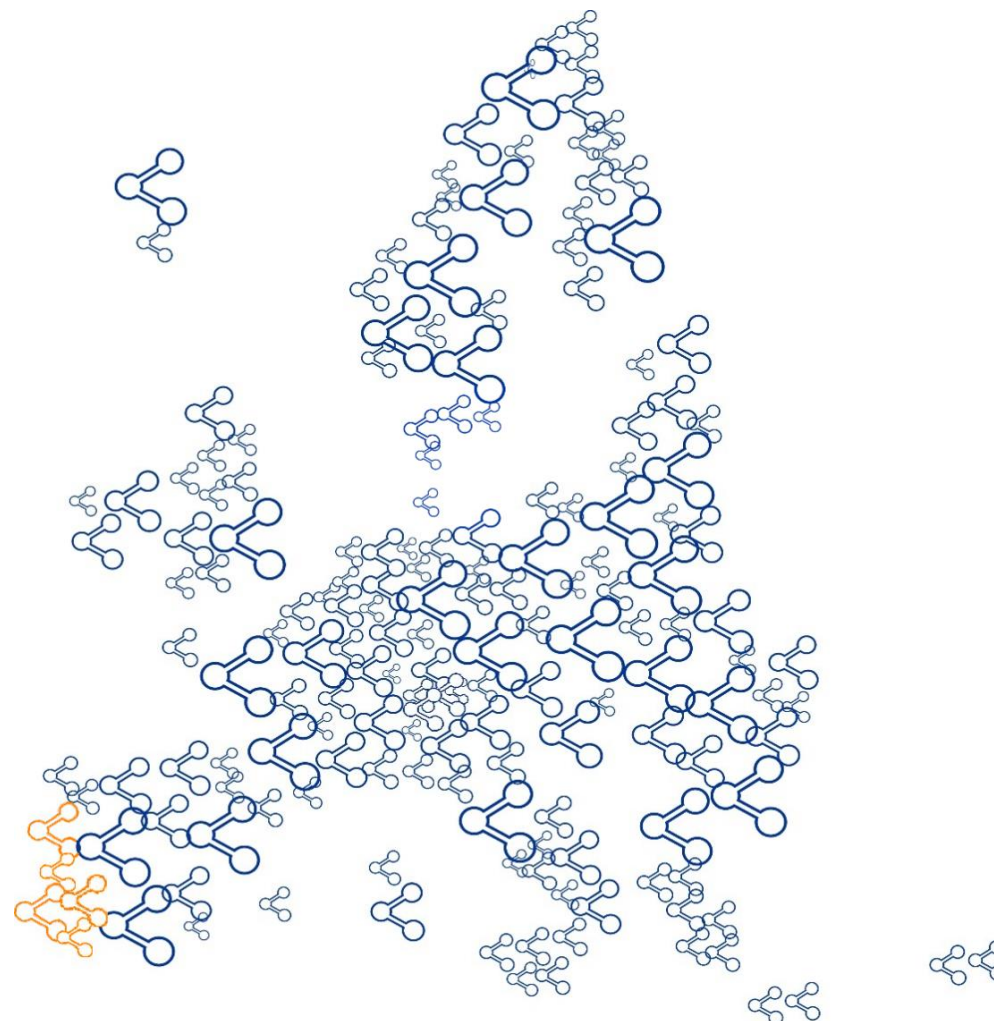
Inspire Policy Making with Territorial Evidence

Territorial fiche

Territorial patterns and relations in Portugal

- Economy
- Accessibility and transport
- Environment
- Energy
- Social
- Public Services
- Urbanisation

Interactive version: www.espon.eu/portugal



Introductory remarks

The territorial fiches are part of the ESPON Transnational Outreach (TNO) programme of 2020 and 2021. The purpose of the fiches is to present the relevant ESPON territorial evidence gathered since 2002 for each of the European Union Member States.

The content of the following overview is a summary of research results from different thematic applied research projects under the ESPON 2020 programme. Consequently, 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 highlight the wide range of ESPON research and, by zooming-in on a specific country, to raise interest for the scientific results at a national and even regional scale.



Economy

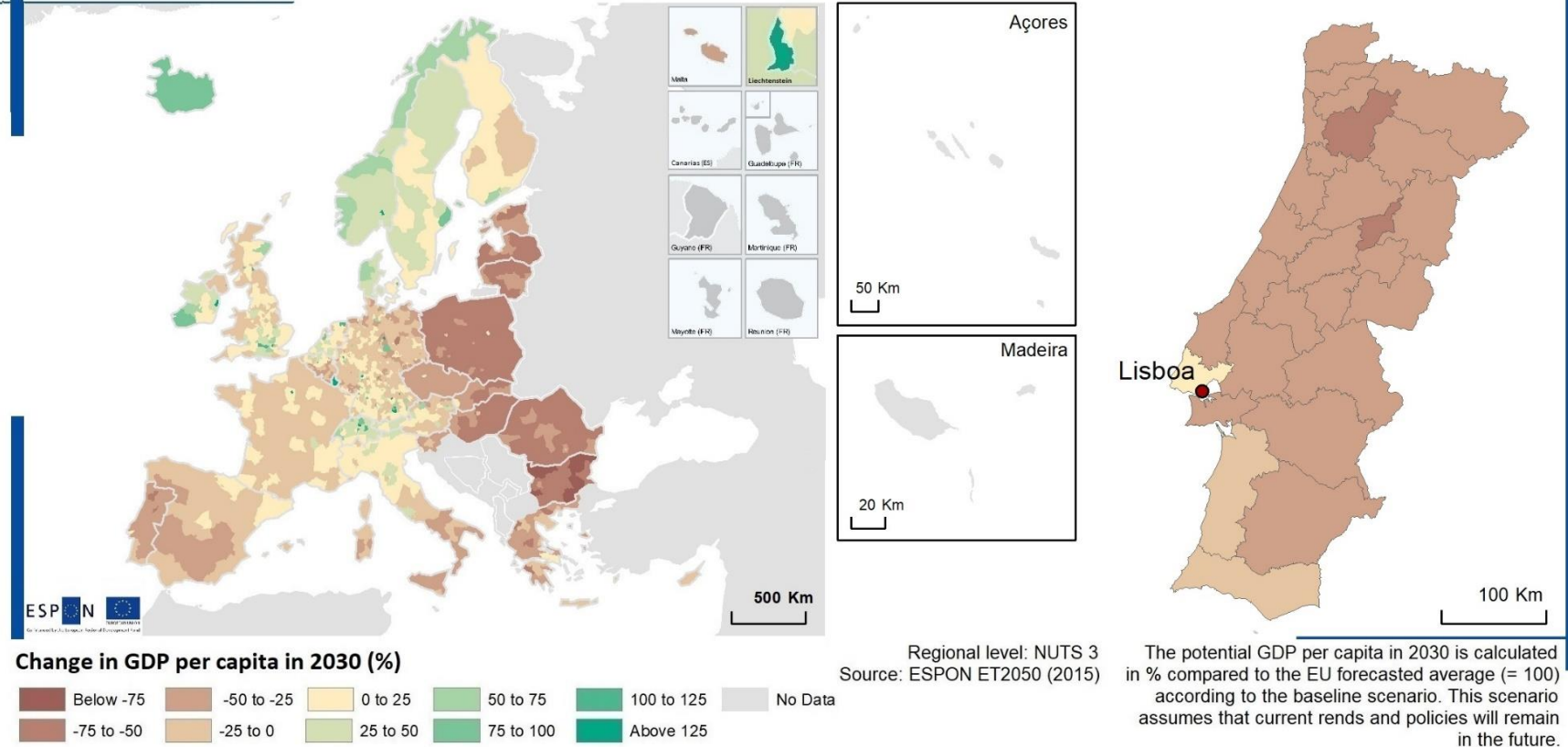
Potential GDP per capita

Unemployment

Economic fragmentation

Slower growth of GDP per capita is expected in the eastern part and the south-western part of the EU, including Portugal. More disparities in GDP per capita within countries is also expected, as is the case in Portugal, however with more positive outlook for the Lisbon metropolitan area. In 2016, higher unemployment rates were recorded in the southern EU regions than in the north and the core of EU.

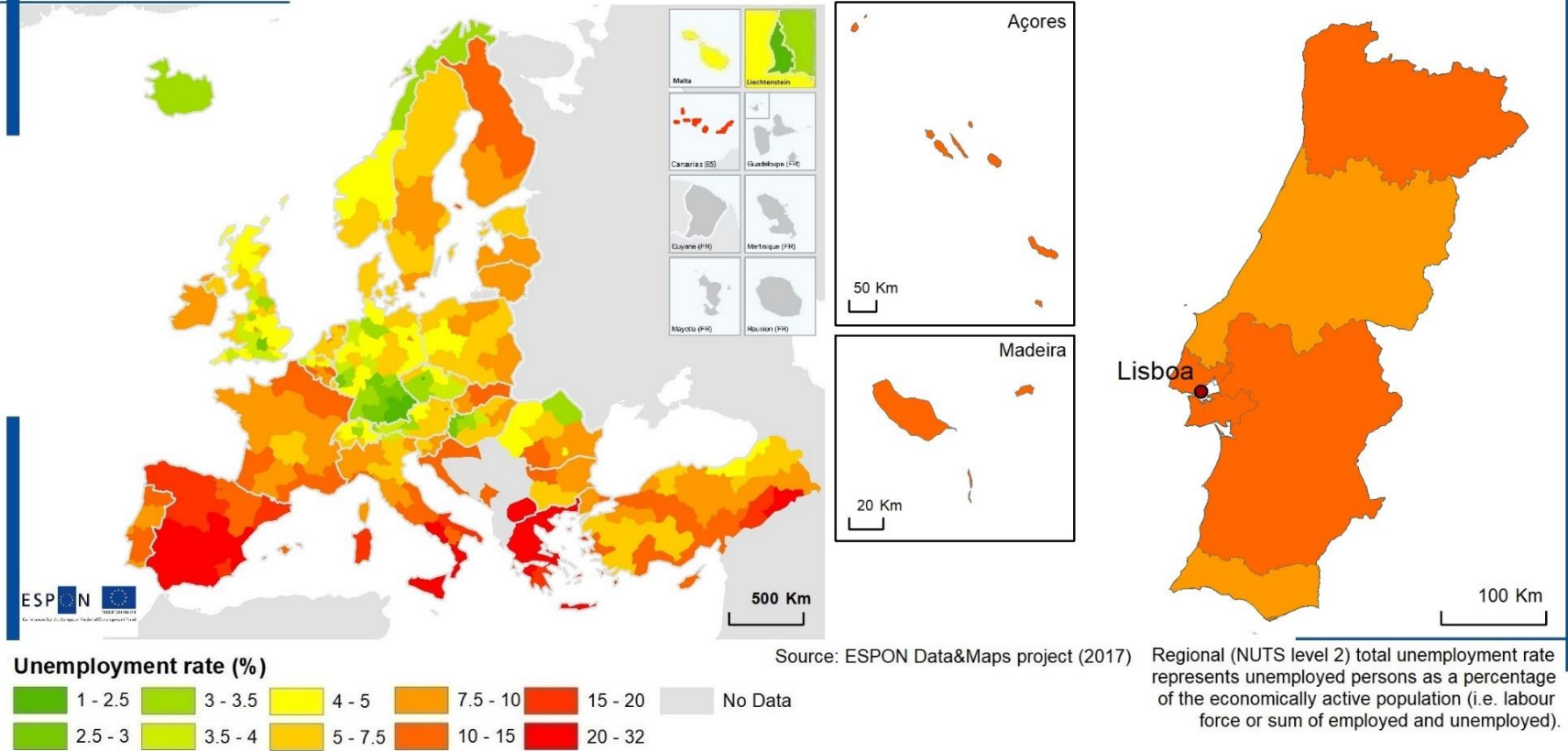
Regional GDP change compared to EU average (baseline 2030)





According to the ESPON project ET 2050 (*ET2050 Territorial Scenarios and Visions for Europe*, 2014), which forecasts GDP changes in the future based on different scenarios, the European map of the baseline scenario shows a great deal of variety. In 2010 the EU as a whole contributed to about 28% of the world GDP while it is expected to represent up to 17% maximum in 2050. As the map shows slower growth is expected in the eastern part of the EU as well as in the south-western part, including Portugal.

More disparities in GDP within countries are expected, according to the ET 2050 project. This can be seen, to some degree, in the map of Portugal. Grande Lisboa (NUTS region of 2010 on the map) has a more positive outlook than other regions, notably in the north. Portugal is, however, among the countries in Europe with lowest regional disparities. Among the reasons for slow growth in Portugal is low productivity according to the ET 2050 project.

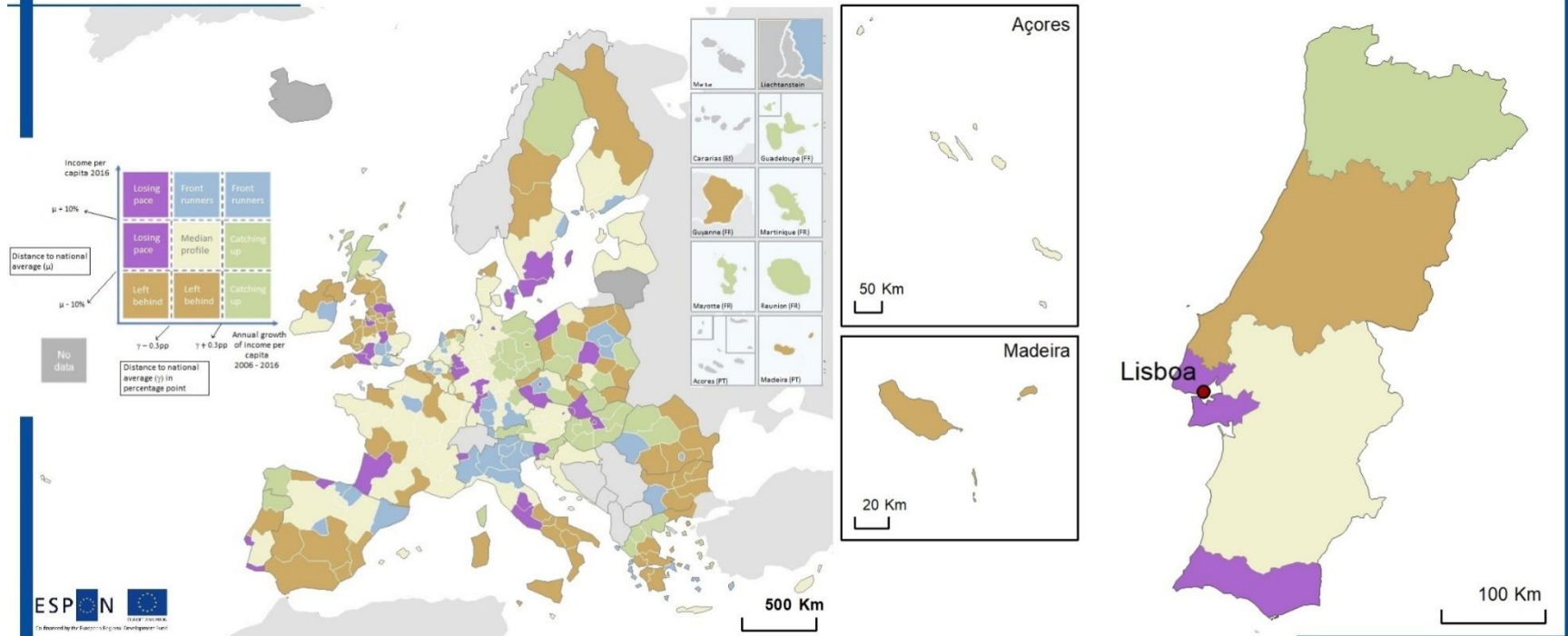
Unemployment in 2016



 Southern Europe suffers from higher rates of unemployment than the central and northern areas. Spain, southern Italy, Greece, and Croatia have some of the highest unemployment rates at 20-32%. These countries were generally hit harder by the financial crisis of 2008. Many regions in Germany, Luxembourg, the Czech Republic, Austria, Norway, north-eastern Romania, and the UK have very low unemployment rates.

 The map for Portugal shows relatively high unemployment rates but not many regional differences. The rates were, however, somewhat lower in the Centro region (where the economy is rather diversified and rich in renewable resources) and the Algarve (which has large seasonal differences in unemployment due to tourism) than in the other NUTS 2 regions of the country.

Interregional comparison of income evolution between 2006 and 2016



Regional level: NUTS 2
 Source: ESPON Territorial Reference Framework Spatial Foresight, 2019
 Origin of the data: Eurostat, 2019

Regional income-based typology. The typology of incomes is built on two dimensions:
 (1) the level of income per inhabitant compared to national average in 2016;
 (2) the growth of income per inhabitant between 2006 and 2016 compared to national average.
 The aim of the indicator is to identify the relative position of regions in comparison with their national context.

This map derives from the ESPON project Territorial Reference Framework for Europe (ETRF) whose objective was to develop a territorial reference framework for the EU to inform and guide, with relevant territorial evidence and policy insights, the intergovernmental process in preparing a new Territorial Agenda for Europe post-2020. The map shows a complex picture and compares the value of each region to its respective national average. The box in the upper left corner shows a classification of regions into nine different categories across two axes. According to this classification, regions with medium-high levels of income but low-income growth are found all over Europe, especially in areas around capital cities. Some of these might be at risk of “losing pace” in the end.

The Lisbon metropolitan area and the Algarve are among the European regions that are not considered as being able to sustain relatively high income per capita and could, therefore, be at risk of losing pace. Norte falls into the category of regions that are “catching up” with higher than average income growth. Centro is at risk of being left behind because of low personal income combined with slow growth. The Alentejo region falls into the category of “median profile” which is representative of the country.



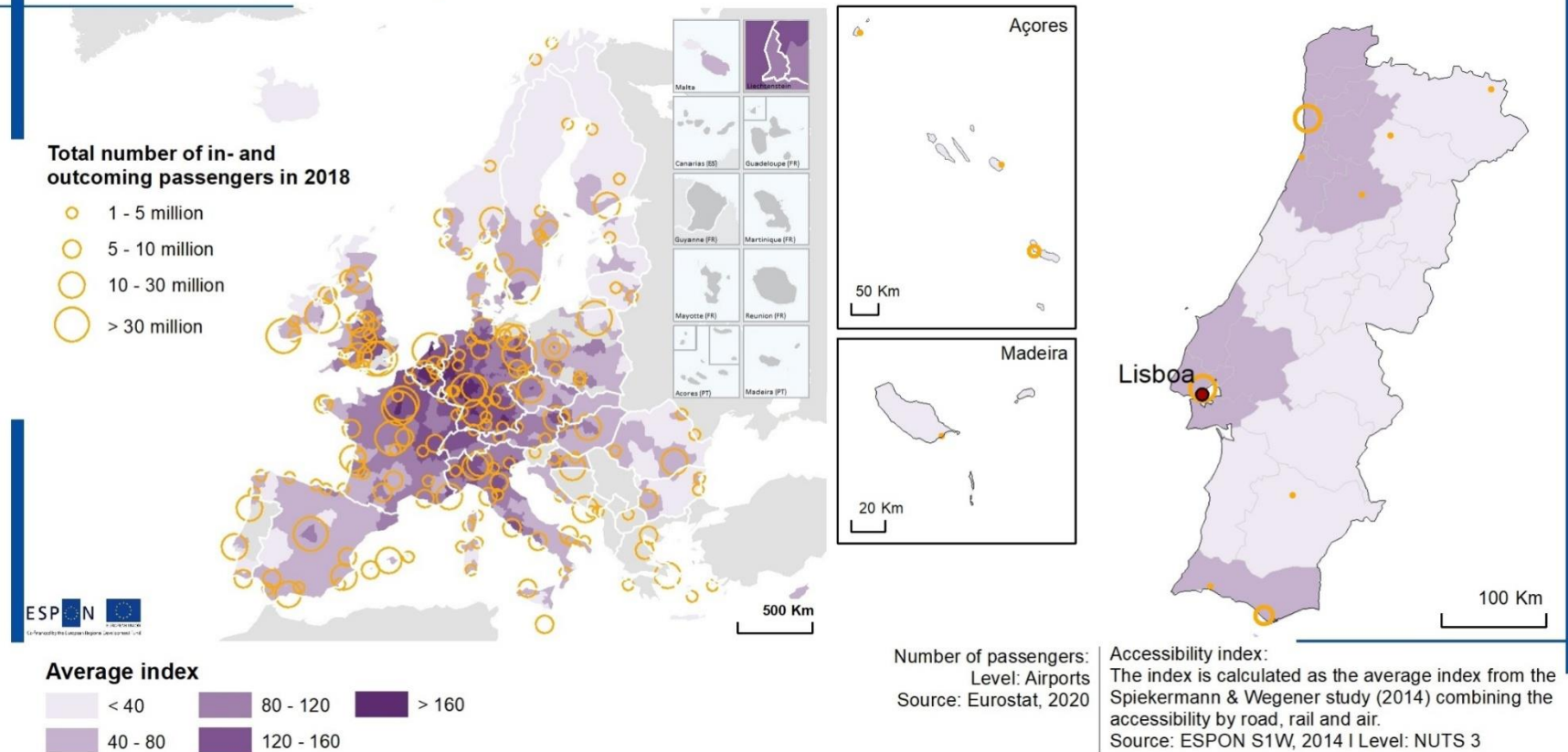
Accessibility and transport

Global accessibility

Broadband access and high-speed internet

Accessibility is highest in the core of Europe and gradually becomes lower towards its edges. In Portugal, accessibility is highest in and around regions with airports with the highest number of passengers, i.e. Lisbon, Porto and Faro. Over 70% of households in Portugal have access to a fast broadband connection. The Lisbon metropolitan area has the highest rate of broadband connection while the lowest rate is in the Alentejo.

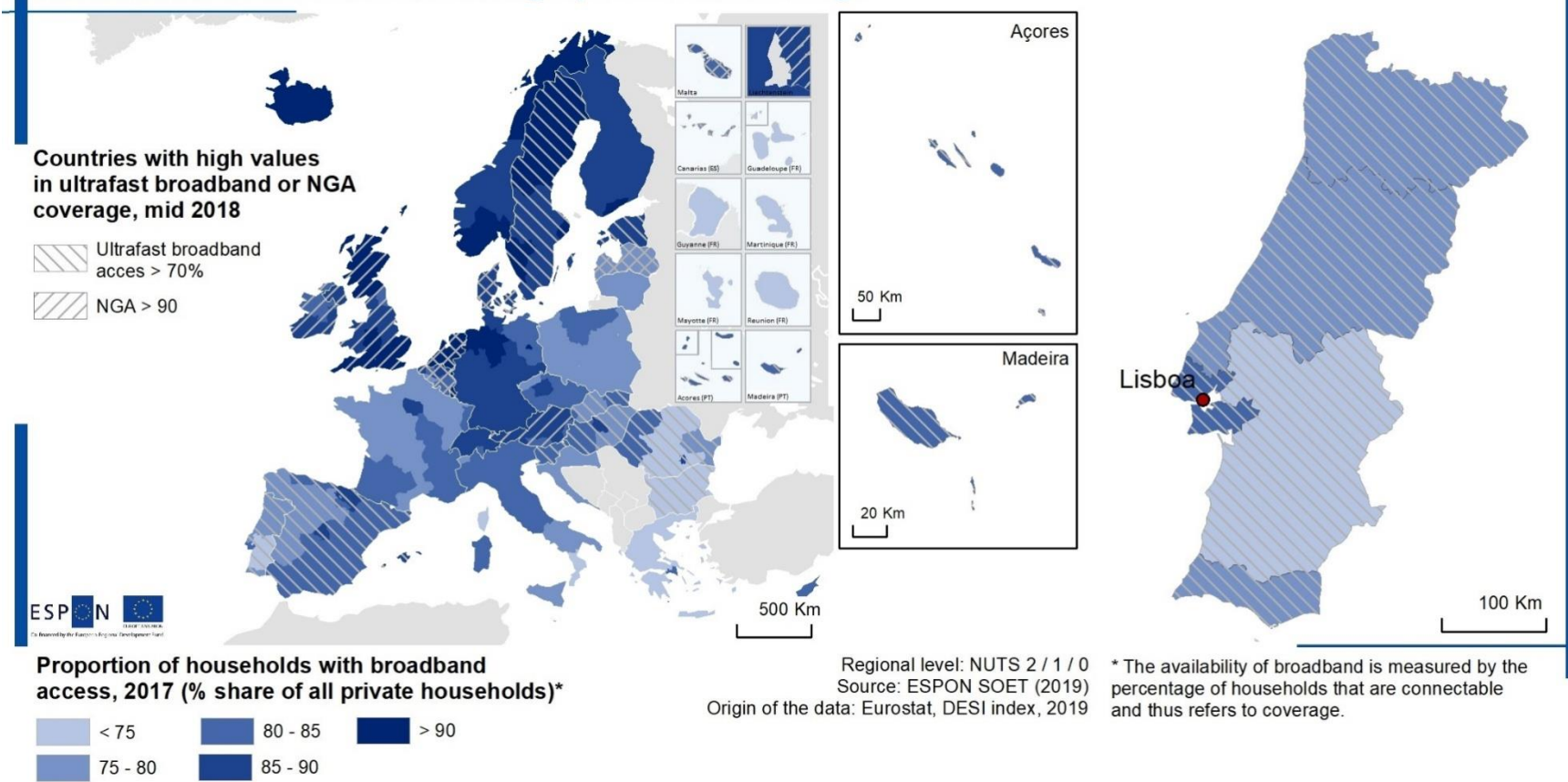
Global accessibility and main airports



ESPN has, in several projects, mapped accessibility, which is a key theme in polycentric development. The map above shows an example of calculated accessibility and number of incoming and outgoing passengers in the ESPON area. The accessibility index is based on the assumption that the attraction of a destination increases with size and declines with distance, travel time, or cost. Population represents destination size. Thus, potential accessibility to population is seen as an indicator for the size of market areas for suppliers of goods and services. Not surprisingly, accessibility indicators are highest in the core of Europe and gradually become lower towards its edges.

Portugal has a particular location in Europe and depends on its relationship with the Spanish transport infrastructure to reach the rest of Europe on land. The location is, however, an advantage regarding sea transport in and out of Europe. The accessibility index is calculated as being highest in and around the regions with the busiest airports, i.e. Lisbon, Porto and Faro. The accessibility index in other regions of the country falls into the low category, like many regions in northern Scandinavia and regions and countries on the eastern and southern edges of the ESPON area.

Broadband access in households and high speed internet coverage



According to the project State of the European Territory (ESPON SOET), the core of Europe, south-western France, the Nordic states and the UK show highest values of computer use and households with basic broadband access. Most regions have over 75% of households with ultra-fast broadband access. The study found gaps of digital connectivity between urban and rural areas. The scale of the map does not portray this but shows that the sparsely Nordic countries are have among the highest rates of broadband access.

In Portugal, over 70% of households have potential access to a fast broadband connection. Again, the Lisbon metropolitan area had the highest recorded number of households with broadband access. The lowest number is observed in the Alentejo. Broadband development has been fast in Portugal since a national broadband strategy was adopted in 2012 with specific objectives for 2020.



Environment

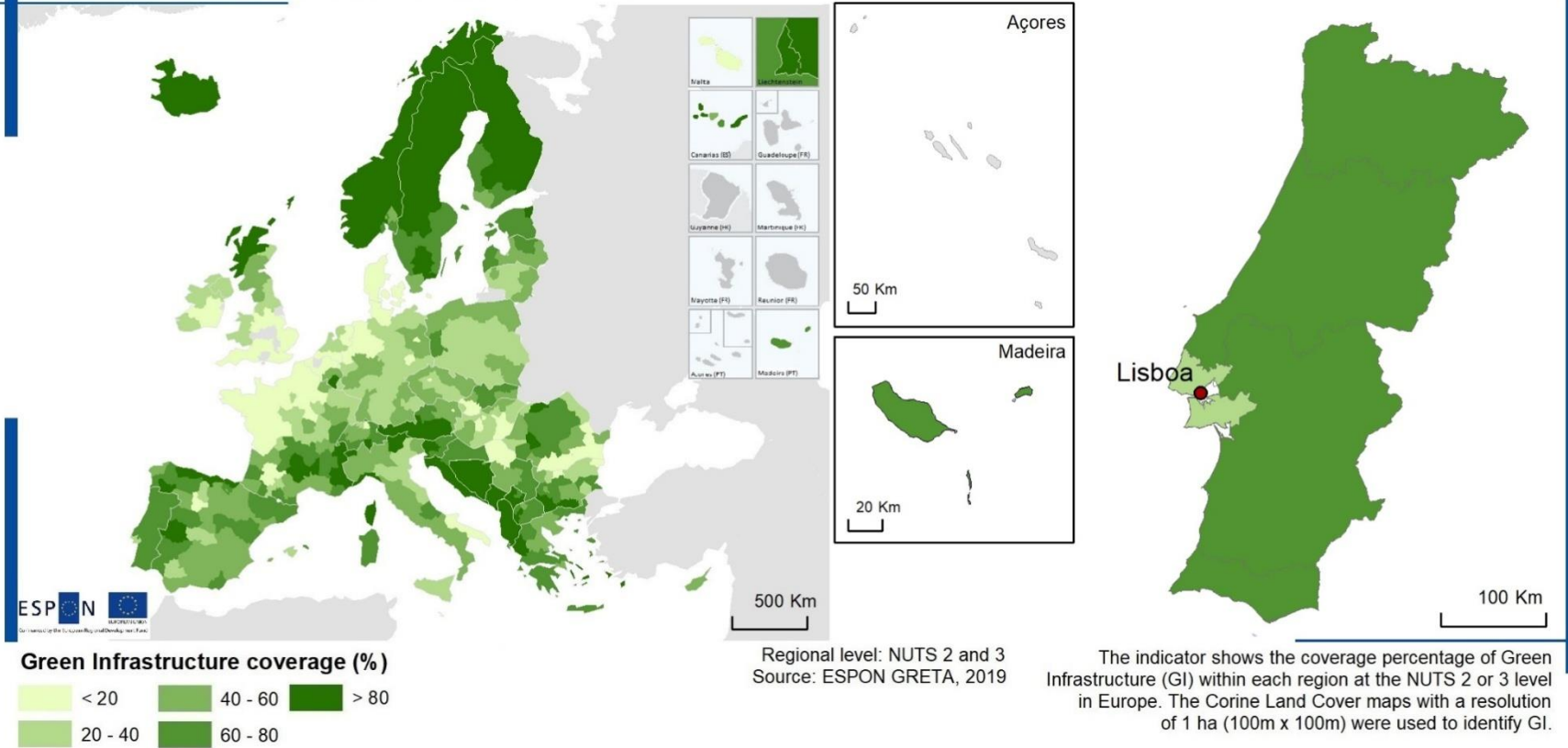
Spatial distribution of Green infrastructure


Domestic material consumption


Overall adaptive capacity to climate change

Green infrastructure coverage in Portugal largely falls into the second highest category in Europe with 60-80% coverage while the Lisbon area has 20-40% coverage. Domestic material consumption in Portugal (how much of the materials consumed originate within the boundaries of regions), is lowest in the Lisbon metropolitan area, Madeira and Norte. Most domestic material consumption is observed in the Alentejo. Adaptive capacity to climate change is higher in northern Europe than in southern regions, including Portugal.

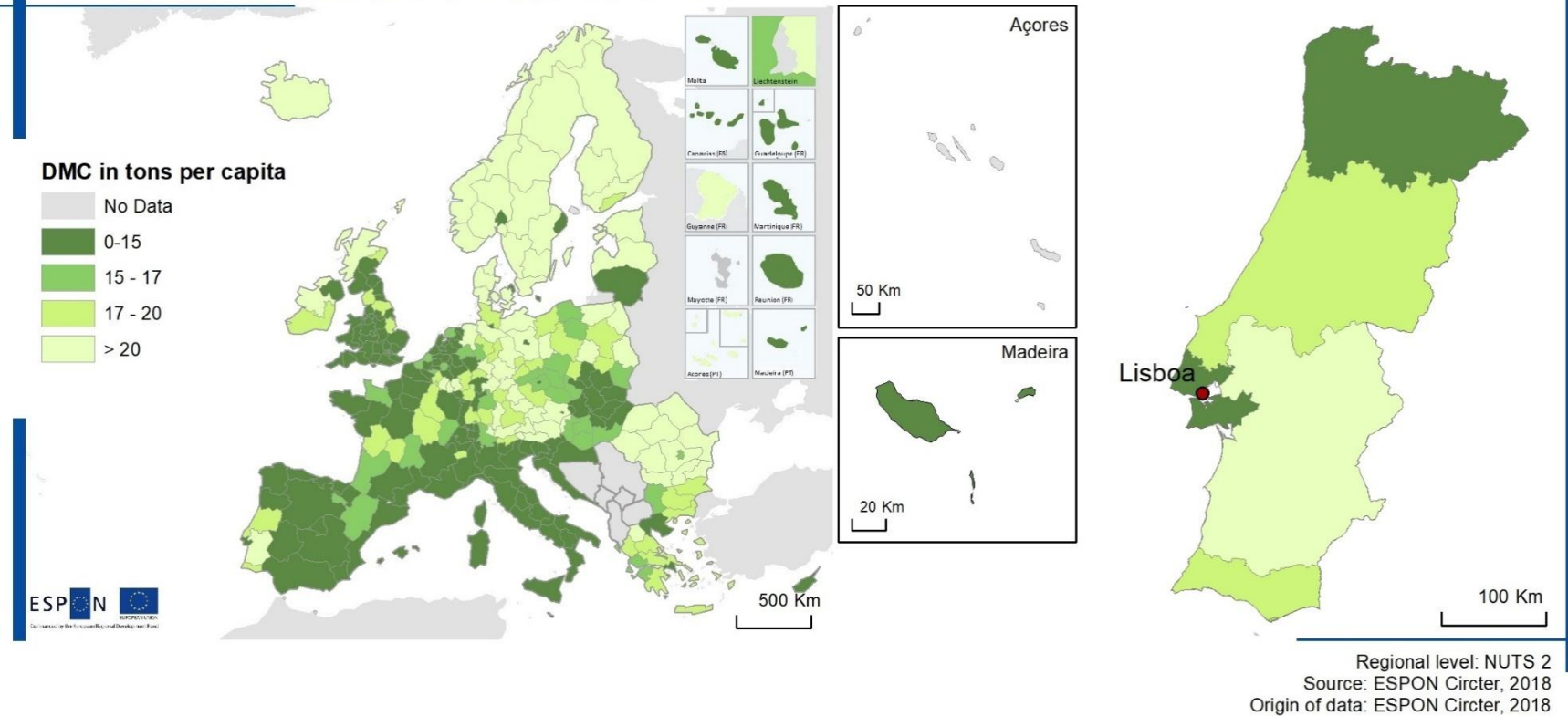
Spatial distribution of green infrastructure in 2012.





 The ESPON GRETA project focused on green infrastructure, which the European Commission has defined as a “strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services (ES). It incorporates green spaces (or blue if aquatic ecosystems are concerned) and other physical features in terrestrial (including coastal) and marine areas. On land, GI is present in rural and urban settings according to the project. The map shows the highest coverage of GI in the northern and southern parts of the ESPON area.

 In Portugal, the green infrastructure coverage falls into the second highest category with 60-80% coverage while the Lisbon area has a lower coverage than other regions at 20-40%. According to the GRETA study, the city council has put a programme into action that defines a strategy for biodiversity in Lisbon for 2010-2020. The strategy includes a Local Action Plan with clear actions and approaches to reach its goals. The European Commission distinguished Lisbon as the European Green Capital 2020, the first time that a city in Southern Europe has received such an award.

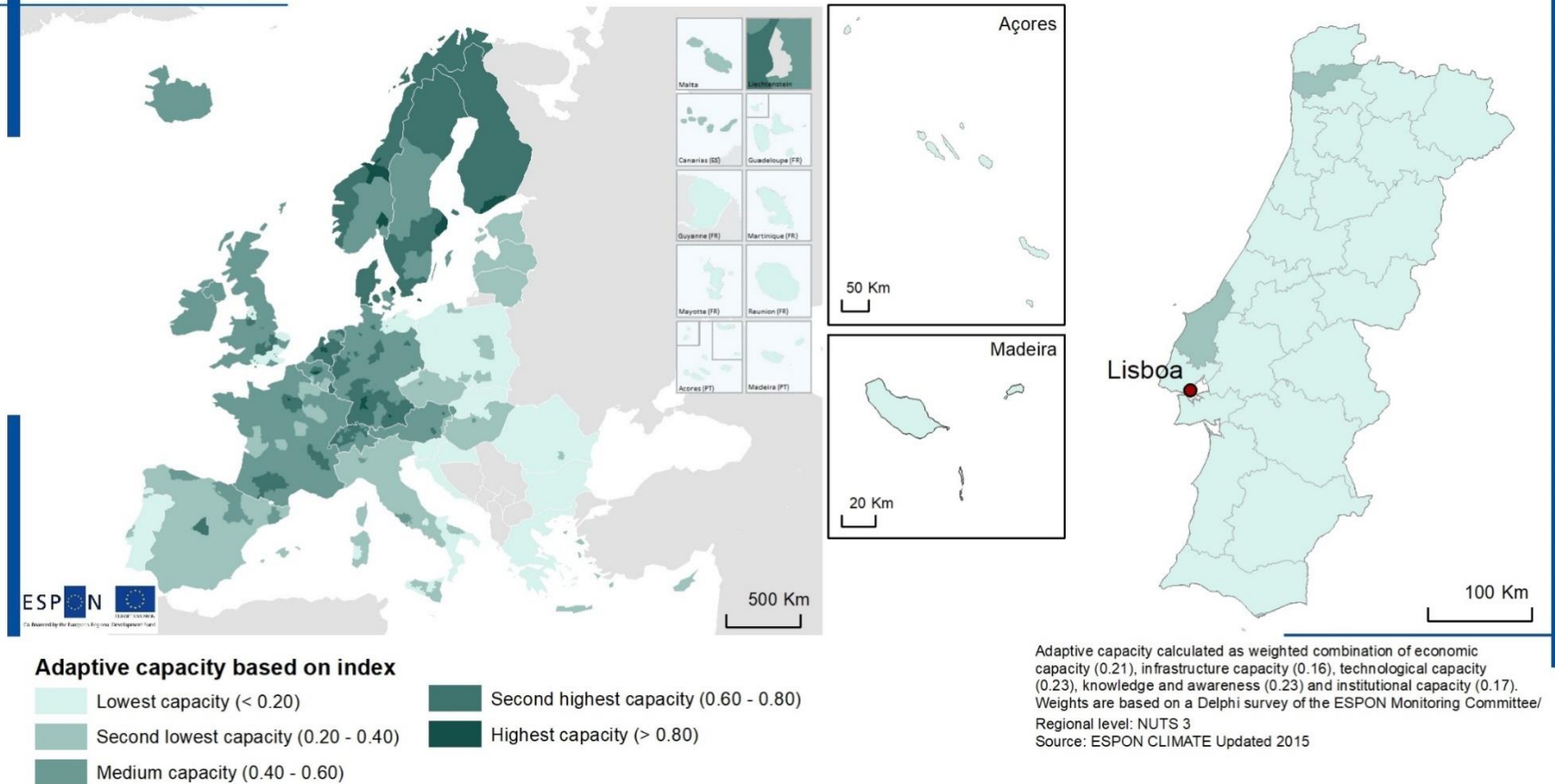
Domestic Material Consumption (DMC) per capita in 2014





 The ESPON CIRCTER project focused on conditions to improve the circular economy needed to replace the linear economy in order to reduce the impact of anthropic activities on global ecosystems. A circular economy significantly reduces material throughputs and increases material efficiency over the long run. The map shows that the domestic material consumption per capita (DMC) is highest in northern ESPON areas and less in countries and regions in central and south-western Europe. The indicator refers to what proportion of the materials consumed originate within the boundaries of regions in question.

 In Portugal, the domestic material consumption is lowest in the Lisbon metropolitan area, Madeira and Norte, followed by the Centro region and the Algarve. Most domestic material consumption is observed in the Alentejo region. High DMC per capita values can be explained by strong forestry and extractive sectors and/or by intense agriculture activities. Material resource use is also strongly influenced by population density. In less densely populated regions, the necessary materials for buildings or infrastructure are distributed among significantly fewer people, so that material consumption per capita increases.

Adaptive capacity to climate change



 ESPON CLIMATE developed a vulnerability assessment methodology for climate change and applied it to NUTS 3 regions in order to create an evidence base for response to climate change. The map shows an index for adaptive capacity to climate change. The capacity is calculated as a weighted combination of economic, infrastructural, technological, knowledge, awareness and institutional capacities.

 It was observed that Portuguese regions are among the European regions that have low adaptive capacity against climate change. Regions around the Mediterranean appear to score low on average, but scores in terms of awareness are notable. In fact, many Mediterranean regions were found to have high vulnerability to and a high impact of climate change.



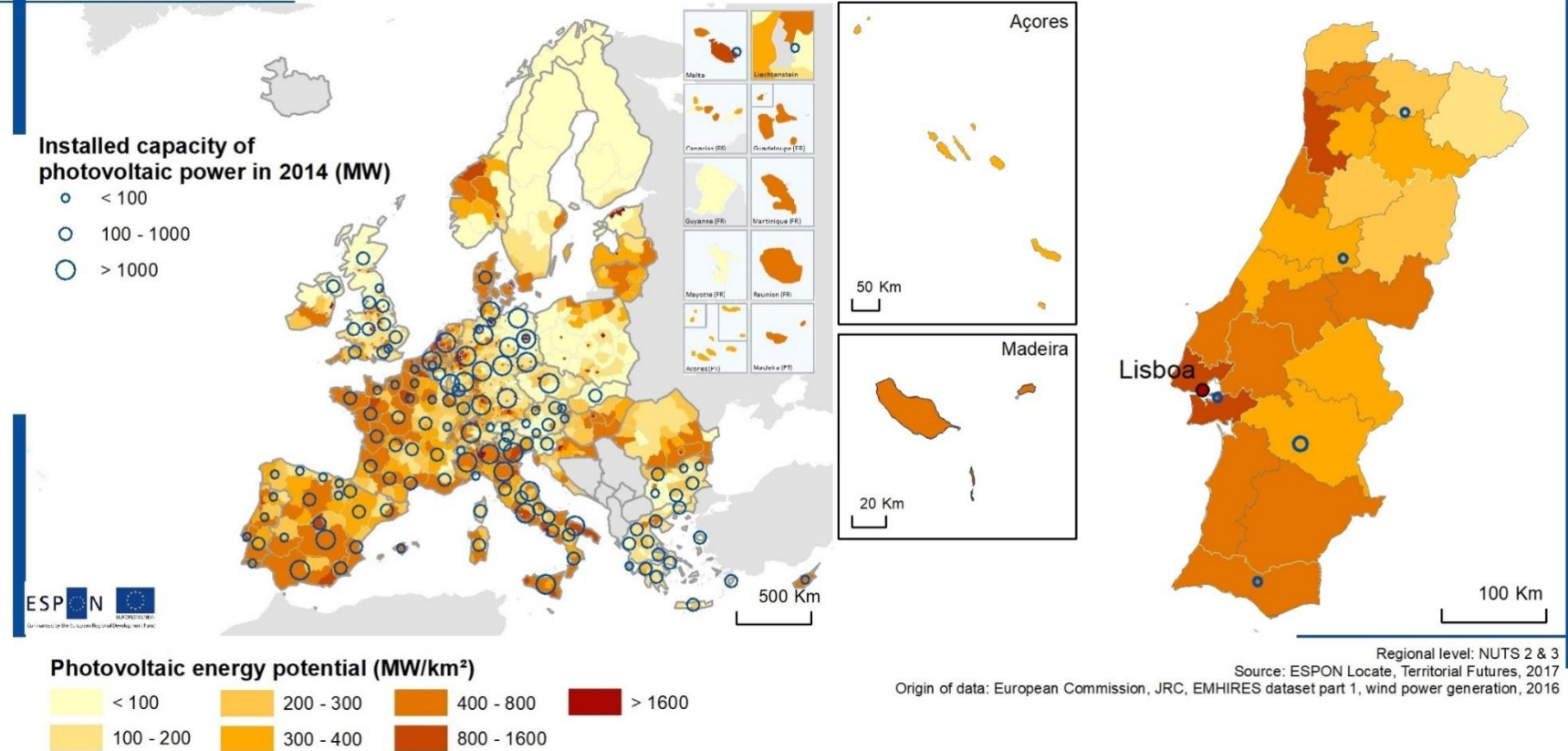
Energy

Installed capacity of solar power and potential

Installed capacity of wind power and potential

Solar energy potential is generally highest in south-western Europe, however in many areas with high potential there is less installed capacity than would be expected. Portugal is one of the countries with high potential in this regard. The Lisbon metropolitan area and Porto Metropolitan Area have the highest potential. However, there was limited installed capacity in Portugal in general in 2014. The best potential for wind power on Portuguese land exists in Oeste and the Algarve but less favourable conditions exist in the northern areas.

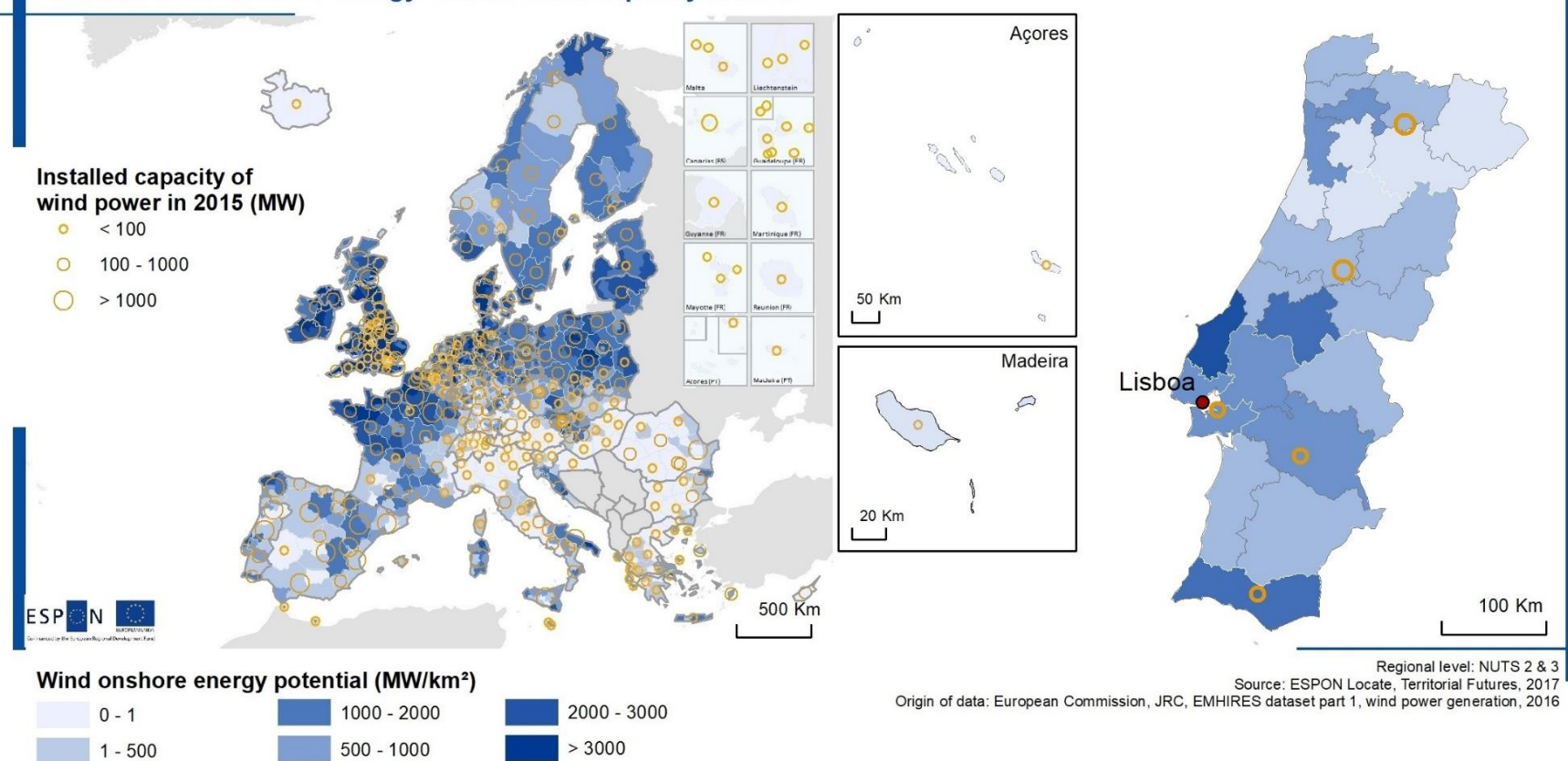
Potential photovoltaic energy and installed capacity in 2014



The ESPON LOCATE project studied the territorial dimension of transition to a low-carbon economy. It conducted the analysis at a NUTS 3 level. Solar energy potential is generally highest in south-western Europe. However, there are also regions outside that area with high potential. Areas with low solar energy harvest (less than 900 full load hours) were excluded from the potential. In the eastern part of Europe, installed photovoltaic power was generally much less and it is apparent that in many areas with high potential there was little or no installed capacity.

Portugal is among the countries with the highest potential in solar power, although there are some regional differences. The Lisbon metropolitan area along with the Porto metropolitan area has the highest potential. The least potential is in Terras de Trás-os-Montes. However, there was an overall limited installed capacity in Portugal in 2014. The highest concentration of photovoltaic panels was in Alentejo Central.

Potential wind onshore energy and installed capacity in 2015



This map also derives from ESPON LOCATE project and it shows onshore potential for wind energy and installed capacity in 2015. Regions around the North and Baltic Seas, northern France, Germany, Netherlands, Denmark, UK, Poland, the Baltic countries and southern Scandinavia have high potential compared to other regions. However, installed capacity was not necessarily the highest in these regions in 2015. It is interesting that there is much installed capacity in countries such as Romania, Bulgaria and Hungary despite their relatively low potential.

Regional differences in wind onshore potential exist in Portugal. The best potential exists in Oeste and the Algarve but less in the Aveiro region, Viseu Dão Lafões, Douro and Terras de Trás-os-Montes. In 2015 installed wind power capacity was highest in the Alto Tâmega and Coimbra regions. Installed capacity was also considerable in the Lisbon metropolitan area, Alentejo Central and the Algarve.



Social

Population change

Net migration

Age index

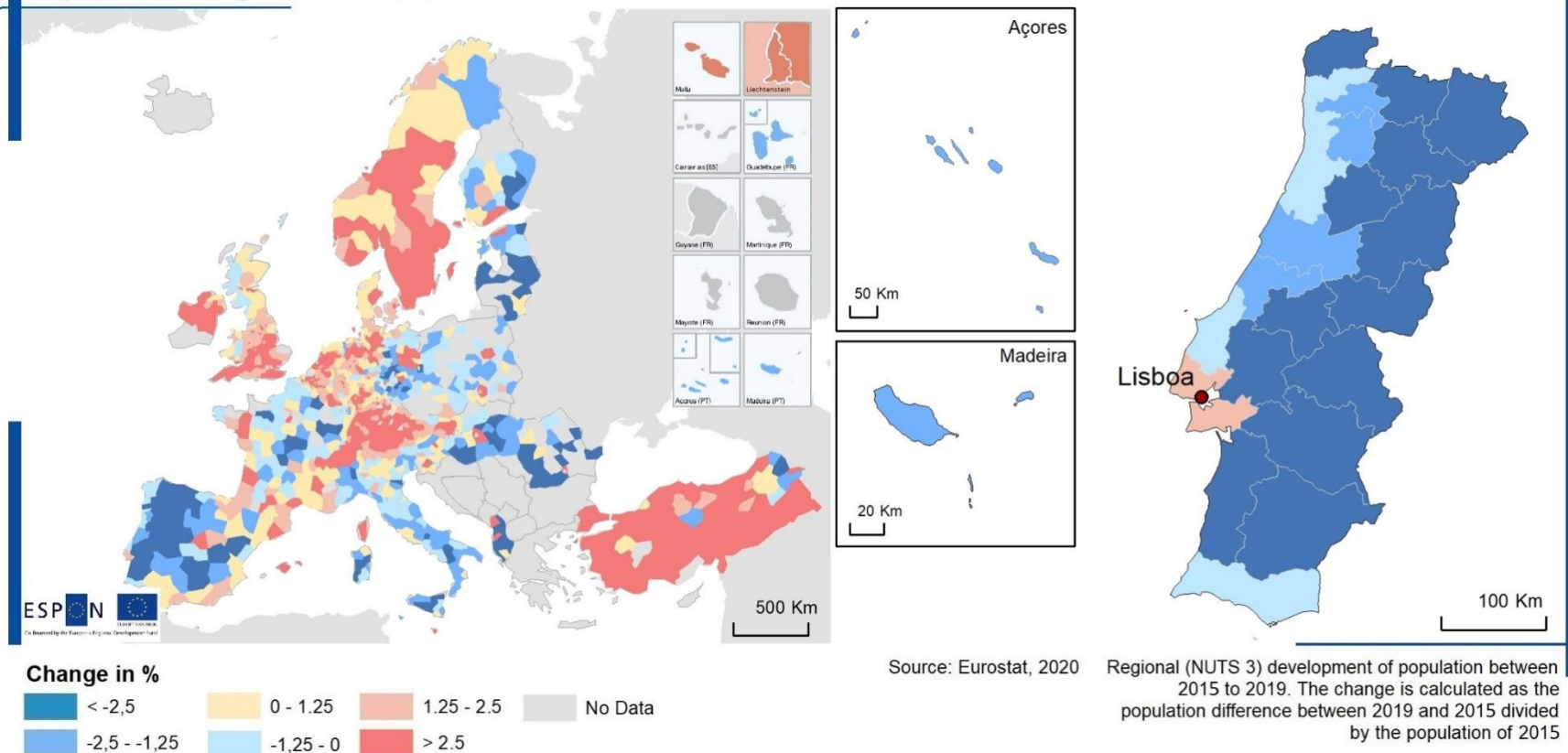
High education degree amongst 30-34 years old

People at risk of poverty and social exclusion

Housing cost burden

Considerable social differences can be observed in Portugal. Population decrease was observed in all regions except in the Lisbon metropolitan area from 2015-2019. There was more out-migration in the northern regions during the period of 2011-2015 than in the southern part. Conversely, the Lisbon metropolitan area experienced net in-migration. Age index (ratio of 60 and older divided by younger than 15) is high all regions except in Madeira and the Lisbon area. Education levels are highest in the Lisbon area. The rate of population at risk of poverty is highest in the Algarve and Madeira. The share of the population with housing cost overburden is relatively low across the country.

Population change from 2015 to 2019

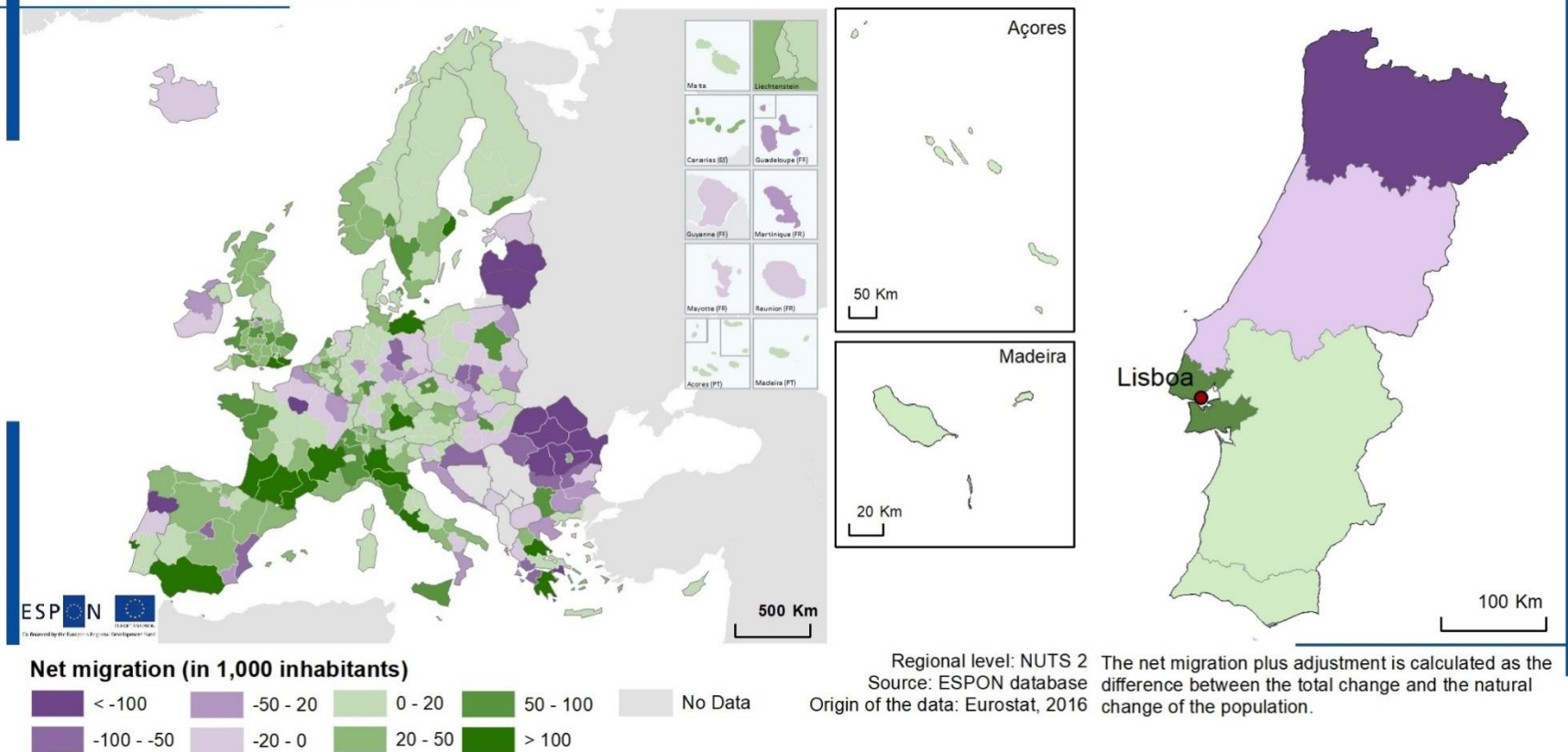


Many ESPON projects analyse demographic conditions. The map above shows population change at the NUTS 3 level between 2015 and 2019. It is interesting to see a population decrease in the eastern, southern and western countries and regions. Population growth is observed in the central and northern areas. The map reflects very different demographic conditions as regards to fertility and migration patterns.



The map of Portugal shows most population decrease in the eastern and more rural regions and, in fact, population has decreased in all regions except in the Lisbon metropolitan area. Fertility rates have been low (under 2.1) since 1981. In fact, there has been natural population decline since 2008.

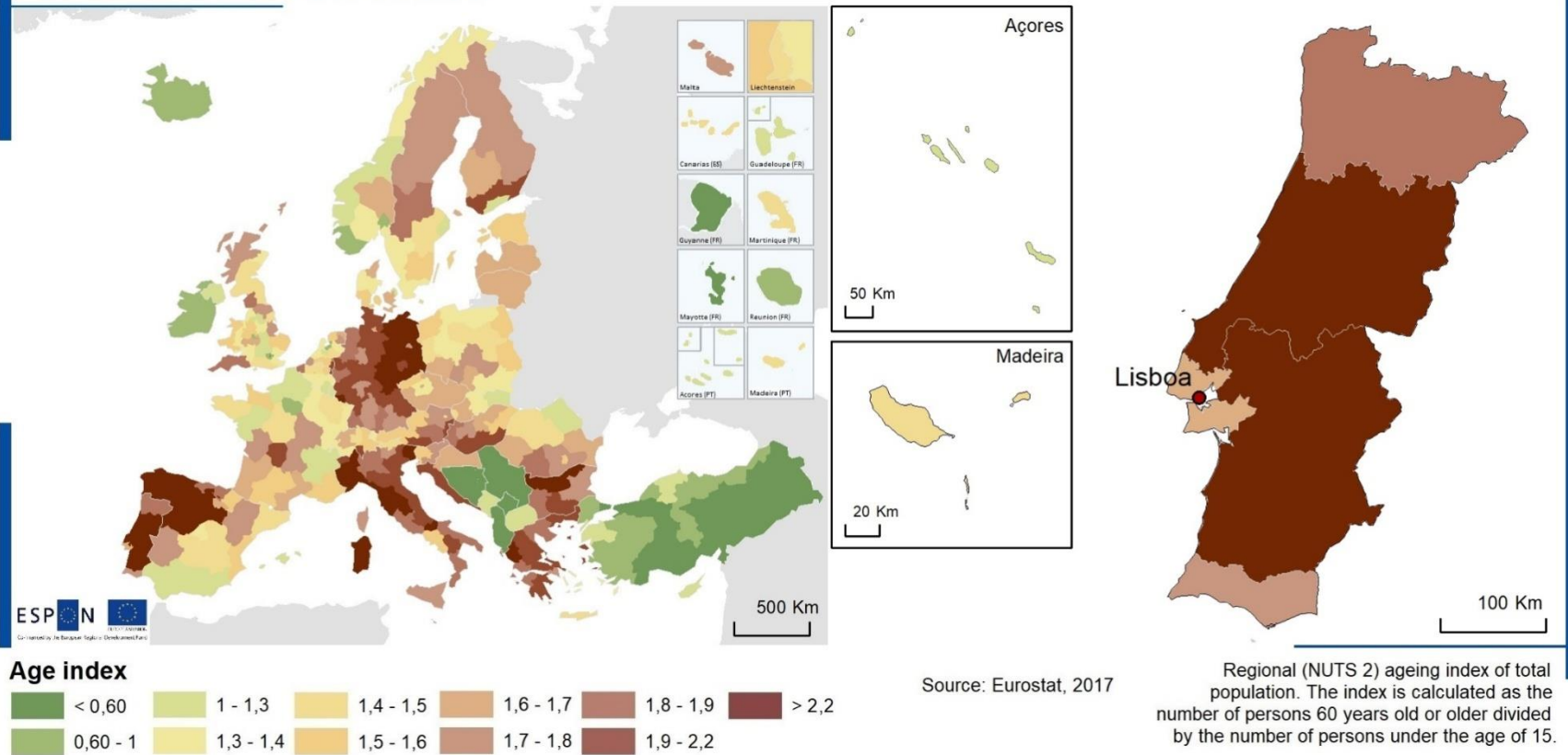
Net migration between 2011 and 2015



The map above shows net migration of regions in Europe at the NUTS 2 level with great variation between regions. The northern and western parts of Europe are showing a somewhat more positive development in this regard than the south-eastern part. This thus reflects migration from the eastern part of Europe towards the western part, due to the free flow of labour within the EU.

In Portugal the northern regions experienced out-migration during this period while the southern part of the country and the Lisbon metropolitan area are the most attractive, having an in-migration of over 100 per 1,000 inhabitants during the period of 2011-2015. The Alentejo and the Algarve had in-migration of 0-20 per 1,000 inhabitants. In the former, this may be due to agricultural activities and in the latter triggered by tourist flow. Migration to urban areas is a general trend in the country as was reflected in the previous map.

Age index of total population in 2016

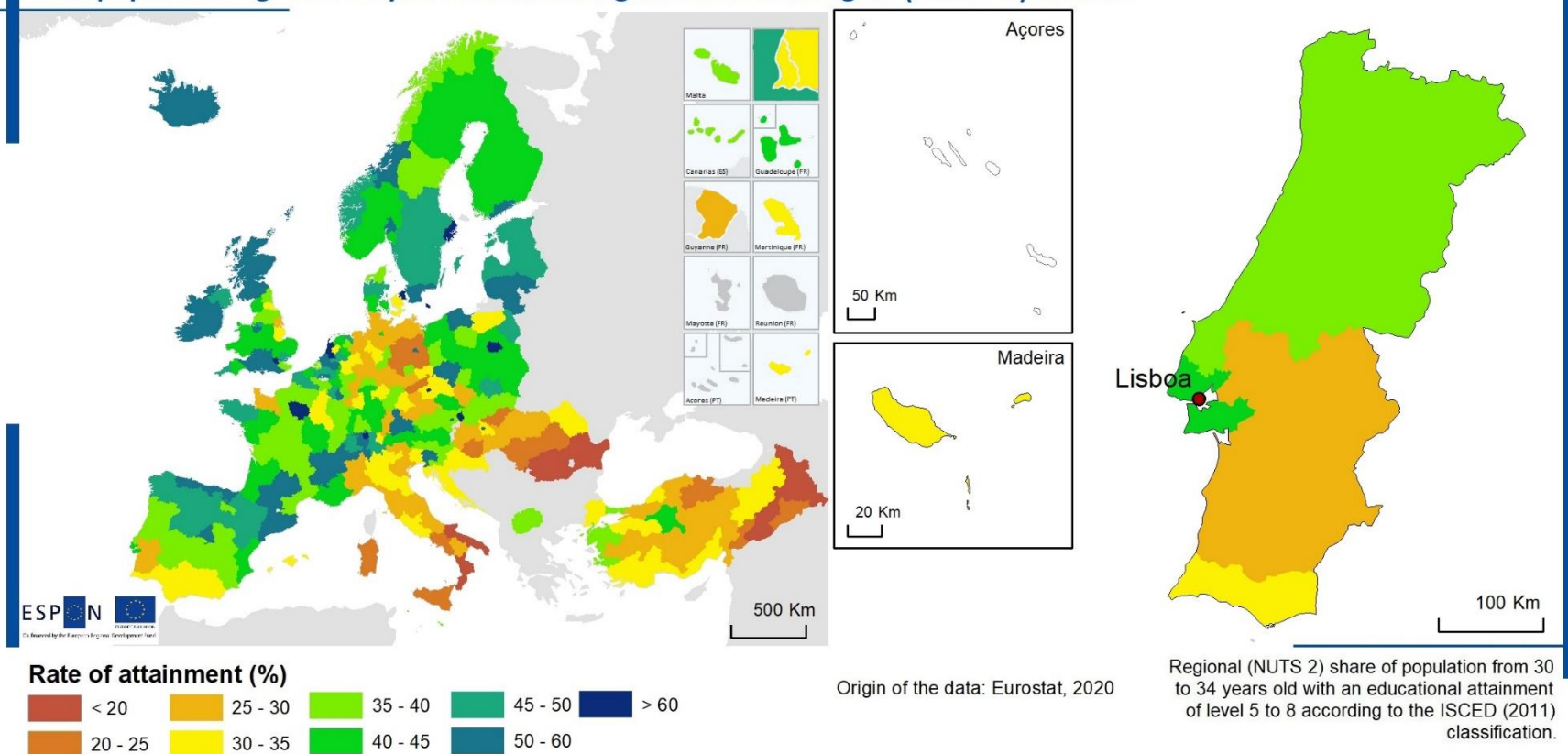


An age index of the population in the ESPON area is a measurement which gives an indication about the development of the population. The index is calculated as the number of persons 60 years and older divided by the number of children under 15 years. Therefore, the higher the index, the higher number of older people in relation to children. The map shows a rather high index in central Europe and in the southern countries and regions, including Portugal. A lower index is observed in north-western Europe, the Balkan countries, and Turkey.



Within Portugal, the age index is generally quite high, reflecting low fertility rates and increasing life expectancy, which have been previously discussed. The age index is above 2.2 in both Centro and the Alentejo. Migration patterns probably further increase these regional differences as younger people (and women) tend to move towards urban areas seeking amenities, more diverse jobs, and economic opportunities, for example. NUTS 2 classification of the map, however, does not reliably show these rural-urban differences.

Total population aged 30-34 years old with a higher education degree (level 5-8) in 2019

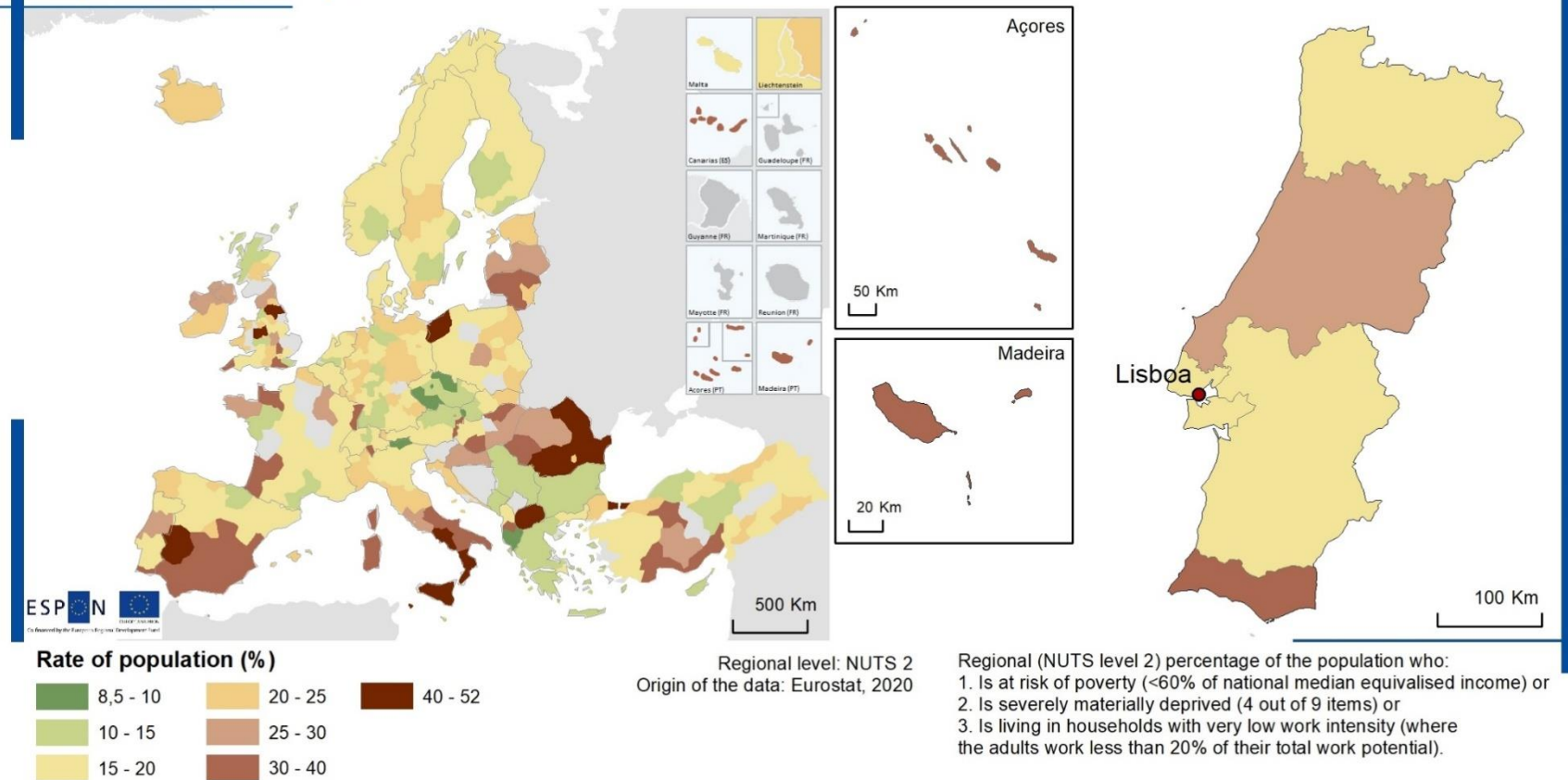



Higher education levels are observed in northern parts and towards the south-western part of the ESPON area. Lower education levels are recorded in Poland, Italy, Romania, and Turkey, for example. The map shows the NUTS 2 level and thus finer geographical details are somewhat missing.




Within Portugal, on a NUTS 2 level, we can see that education levels are highest in the Lisbon metropolitan area (40-45% with a higher education degree). Relatively high education levels among younger persons in the capital area co-occurs with positive migration patterns and a lower age index, reflecting more favourable demographic (and economic) conditions in the area than in other parts of the country. Norte and Centro have a 35-40% education rate and the levels are lower in the South: 25-30% in the Alentejo and 30-35% in the Algarve.

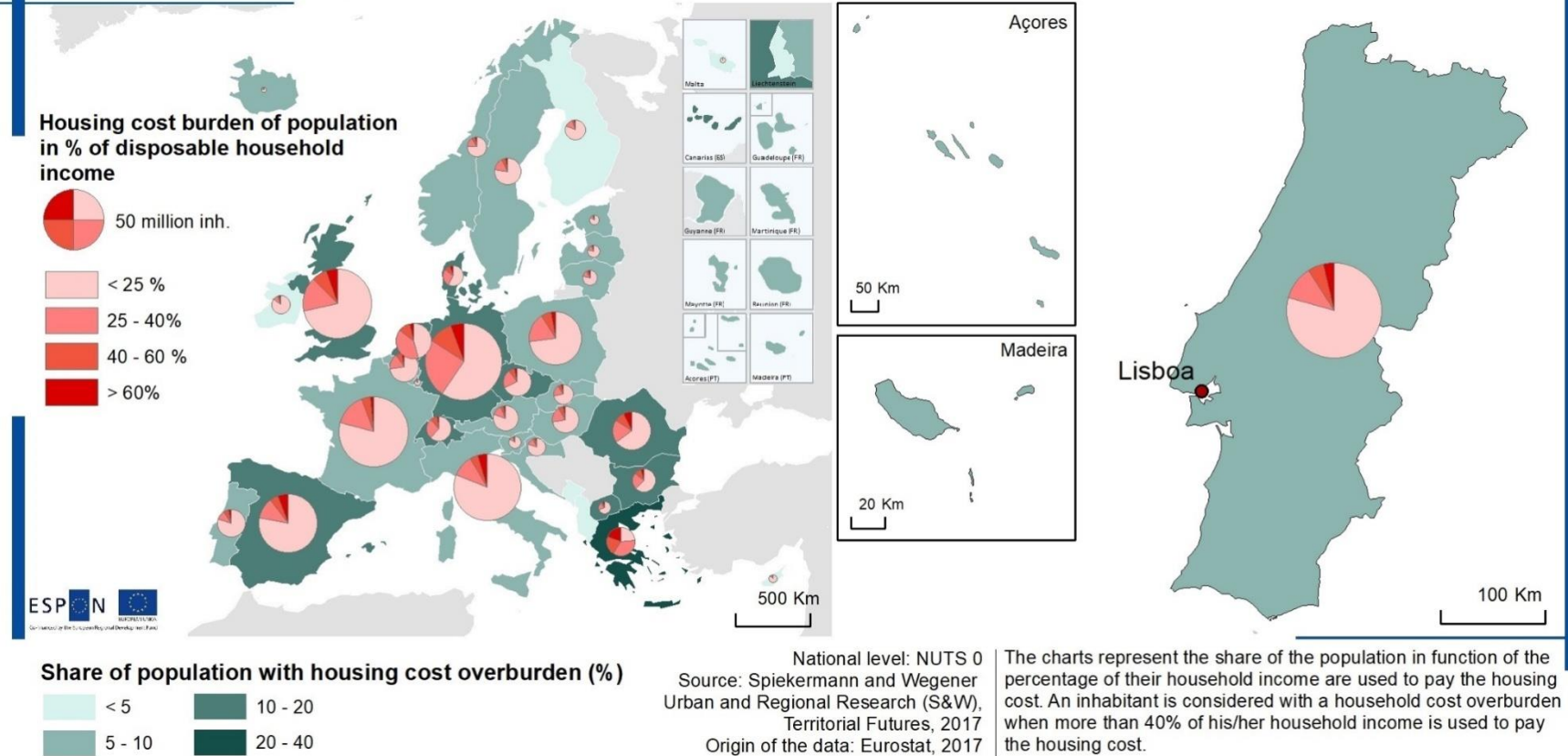
People at risk of poverty and social exclusion in 2017



 Europe 2020 promotes social inclusion, especially through the reduction of poverty. The indicator shows rate of persons at risk of poverty, i.e. when disposable income is below 60% of the national median or are the persons are materially deprived (e.g. cannot afford to pay rent or utility bills, heat their homes, to face unexpected expenses, eat meat, fish or a protein equivalent every second day, a week holiday away from home, a car, a washing machine, a colour TV, or a telephone). This also refers to people in households with low work intensity.

 In Portugal, the rate of population at risk of poverty is highest in the Algarve and Madeira (30-40%), followed by Centro (25-30%). In the other NUTS 2 regions of the country the rate is 15-20%. Urban-rural differences, other than for the capital region vs. other regions cannot be distinguished on the map but risk of poverty in the EU has been found to be higher in rural areas.

Housing cost burden of population in 2015



Housing cost overburden is considered to occur when over 40% of household income is used to pay for housing related costs. In the project ESPON Territorial Futures, for which the map above was produced, it was pointed out that criteria such as unemployment and lower income can result in overburdening of housing costs. The map indicates that housing cost is relatively high in countries including Greece, Spain, Germany, the UK, Bulgaria, and Romania.



In Portugal, the share of population with housing cost overburden is relatively low: 5-10% according to the analysis. Over 75% of households spend less than 25% of their disposable income in housing. According to data from Statistics Portugal, the median burden of housing expenses is higher in the Lisbon metropolitan area and in the Algarve. This cost generally weighs most on the poorer regions and section of the population.



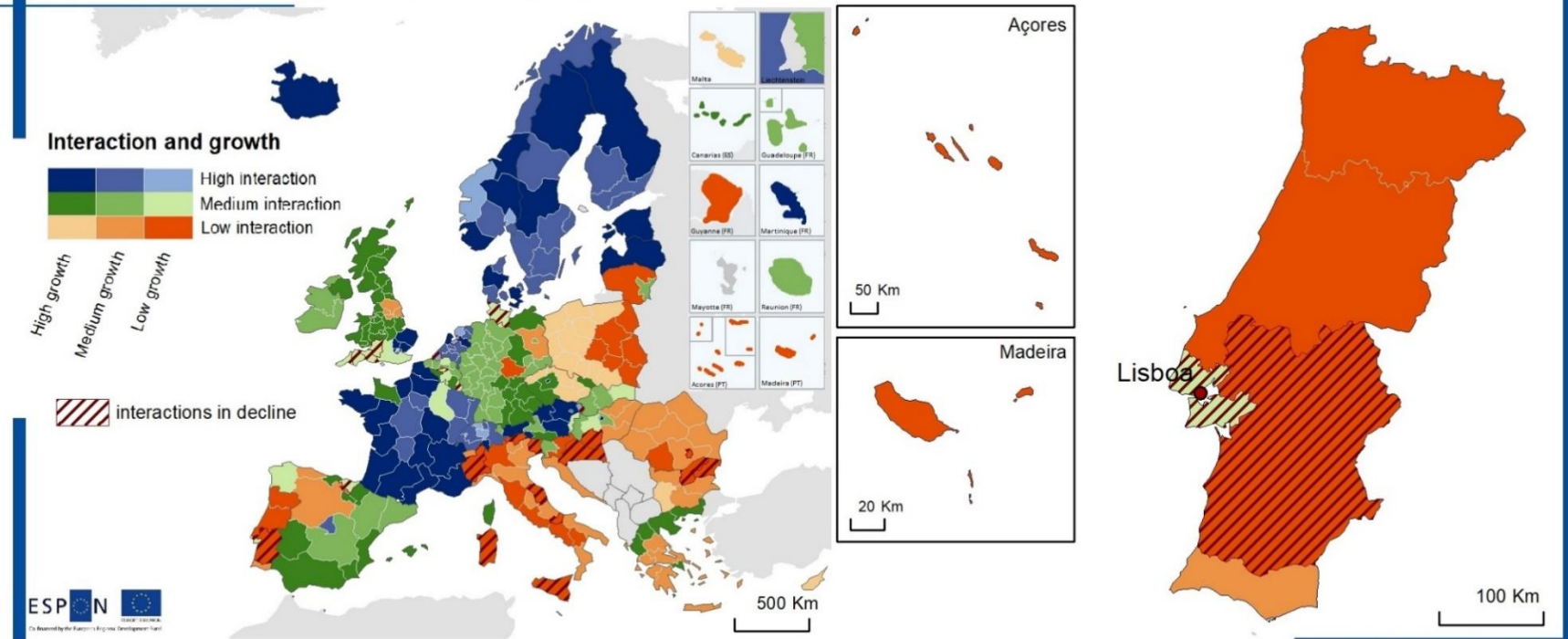
Public services

eGovernment interactions

European quality of government index

In Portugal there is low interaction and slow growth of eGovernment action in all regions, except in the Lisbon metropolitan area where there is low interaction combined with decline. The NUTS 2 regions of Portugal show a moderate quality of government index and there are no regional differences observed.

Regional typology of eGovernment interactions



The map depicts the share of people who have interacted with public authorities online in 2019 and the annual change, 2014 - 2019. Regions filled with lines had a negative growth between 2014 and 2019. Regional level: NUTS 1 / 2. Source: ESPON EGTC, 2019. Origin of the data : Eurostat, 2020

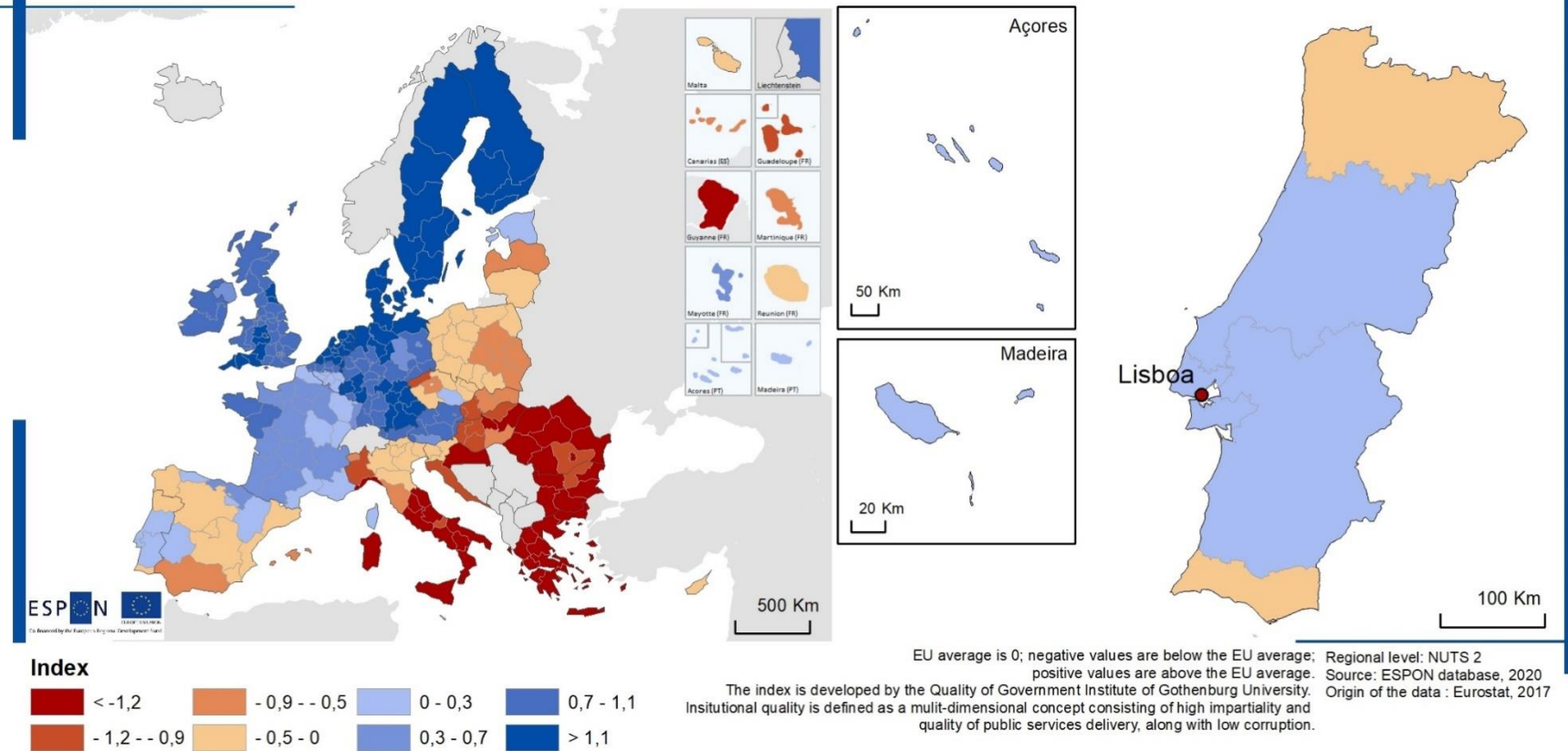


The map above from the ESPON database shows a rather complex picture of regional typology or classification of e-government interactions (share of people who have interacted with public authorities). Blue colours show high interaction, green shows medium, and red low interaction. The Nordic countries and the central/western areas of the ESPON area have the highest interaction combined with the highest growth. Low interaction and slow growth are generally recorded in the southern and eastern parts of Europe.



In Portugal there is, according to this analysis, both low interaction and slow growth in all regions, except in the Lisbon metropolitan area where there is low interaction and growth is actually in decline. In Portugal the implementation of the Strategy for Digital Transformation in Public Administration and concomitant measures are already underway.

European quality of government index



Originating from the ESPON database, this map shows an index of quality of government for NUTS 2 regions in Europe. The index was developed by the Quality of Government Institute of Gothenburg University and is defined as a multi-dimensional concept consisting of high impartiality, quality of public service services and low corruption. The map shows higher index in the northern and central parts of Europe but lower scores in the southern and eastern parts. Data is regrettably missing for several countries and regions.



The NUTS 2 regions of Portugal show a moderate index and there are not many regional differences observed. The index is considerably higher in Portuguese regions than in other southern regions of Europe such as in Italy and Greece, probably reflecting the political traditions prevailing in these regions.

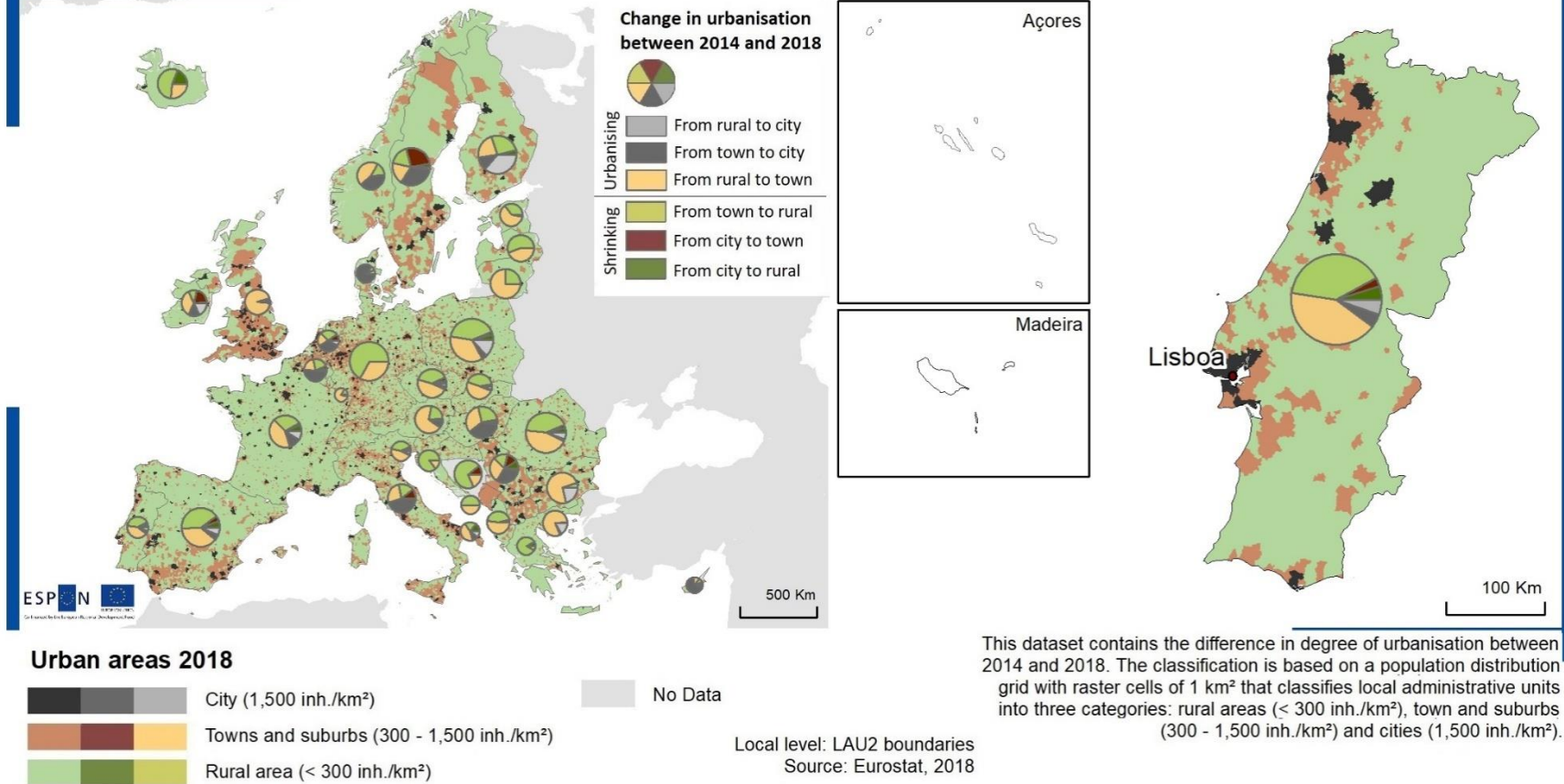


Urbanisation

Change in urbanisation

An interesting combination of urbanisation development is the most common in Portugal according to a recent ESPON project. This is shrinking of urban areas (from town to rural) and the other main development is the opposite (from rural to town).

Change in urbanisation between 2014 and 2018



The map shows the change of urbanisation during the period 2014-2018 and urban areas in 2018 on a local level, i.e. LAU 2 (e.g. regions composed of regional associations of municipalities or similar). The scale of the map is not large enough to observe details in each country. The picture is actually very complex, but it is interesting that in many countries, especially in central and Eastern Europe, there appears to be considerable shrinking of smaller urban areas (from town to rural). The other large development is in the opposite direction (from rural to town).

In Portugal, two types of development are the most common (from town to rural and from rural to town) but we have to assume that regional differences are quite large in this regard. However, the map, as it is constructed, does not show this. The third most common development is from city to town around the larger cities most likely counter-urbanisation where people move to smaller urban centres relatively close to cities.

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Disclaimer:

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