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Inspire Policy Making with Territorial Evidence

Territorial fiche

Territorial patterns and relations in Switzerland

Economy

Accessibility

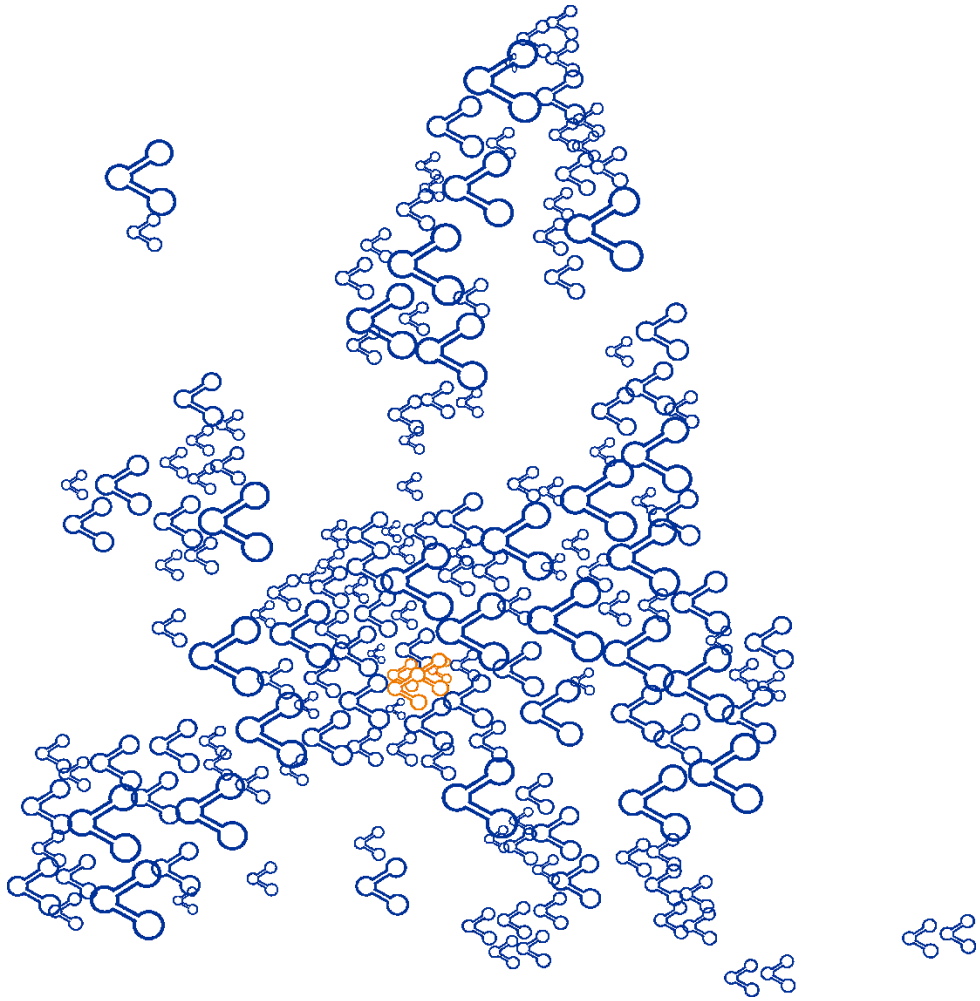
Environment

Demography

Urbanisation

Interactive version:

http://www.espon.eu/switzerland



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. Its main goal is to showcase the wide range of ESPON research and, by zooming-in on a specific country, raise interest for the scientific results at a national and regional scale.

The indicators and analyses in this document represent the data availability at the time when the research was undertaken and are not based on the most recent data. 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.

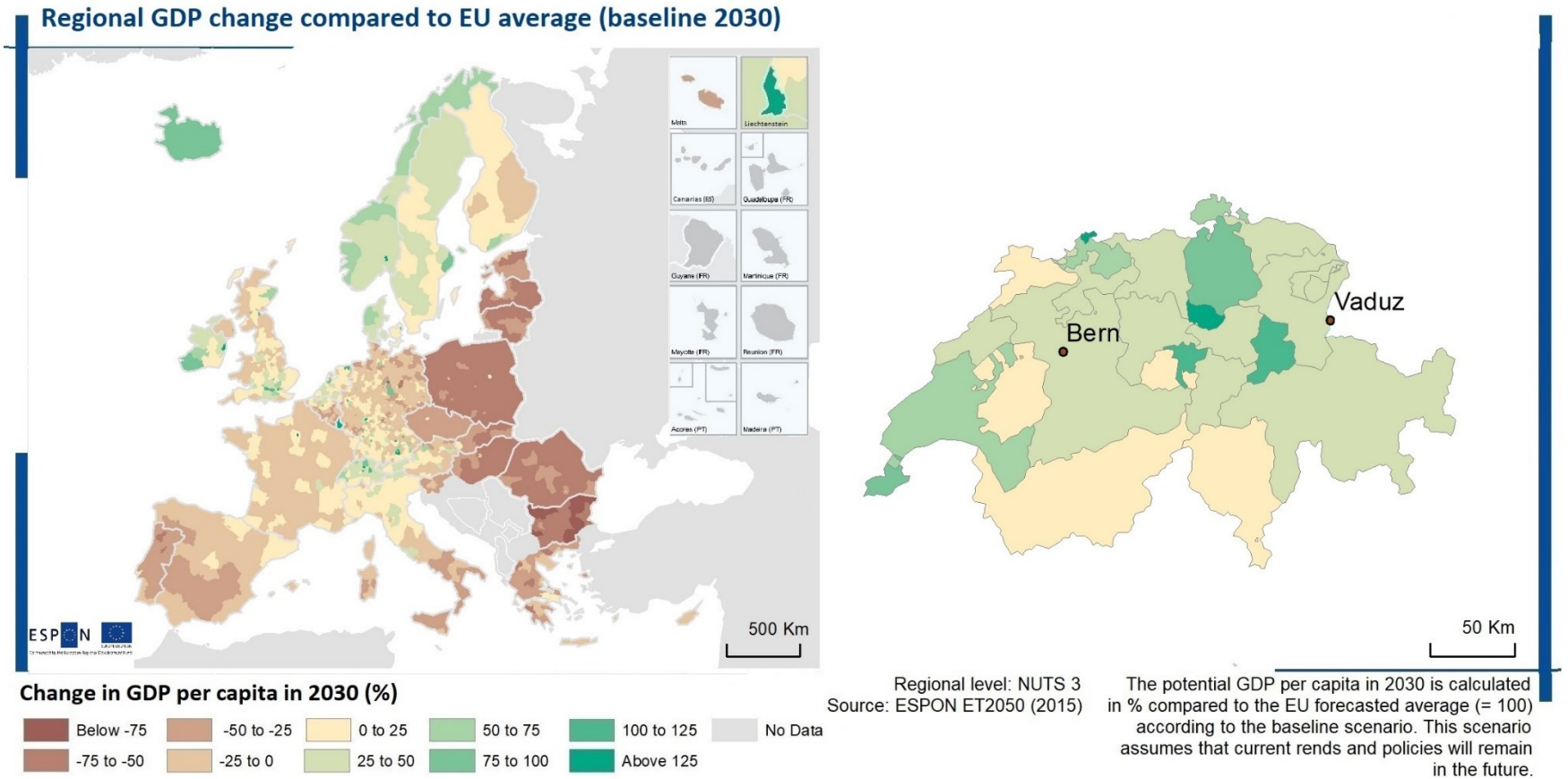
Economy

Potential change in GDP per capita

Unemployment

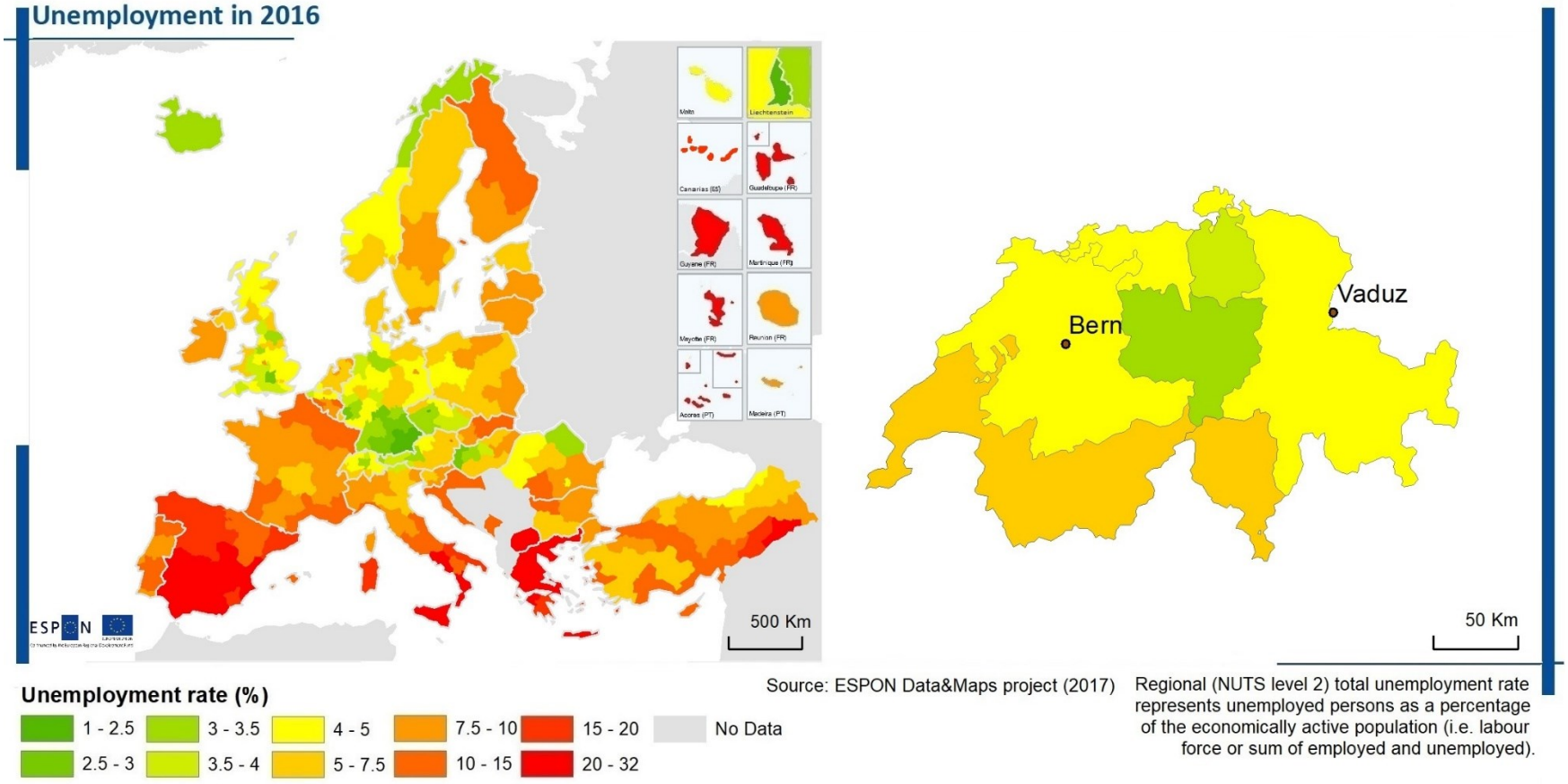
Climate change impact on tourism

Switzerland is regarded economically as one of the most successful countries in Europe. This is apparent on the maps of the projected potential GDP per capita in 2030 and the unemployment rate of 2016. Nevertheless, the positive economic situation in Switzerland will face challenges in the future. For example, climate change will have a significant impact on the winter tourism of the mountainous regions.



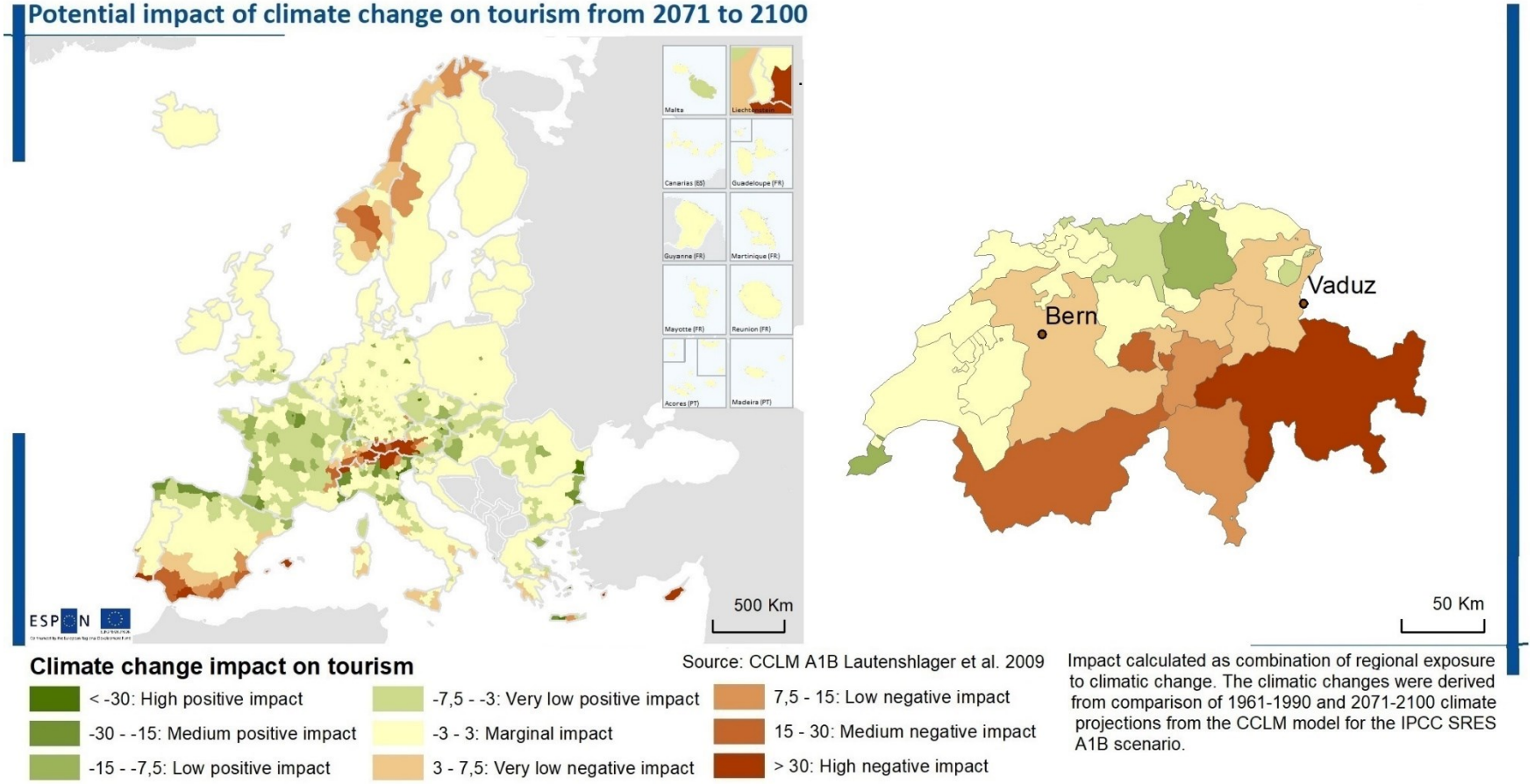
Based on contemporary observations, Europe's future socio-economic development will still show certain asymmetries. The existing imbalances are expected to be reinforced by capital intensive economic growth. This is partly linked to the importance of the financial industry in generating economic growth, and partly to technological progress changing labour market needs. This finally leads to disparities of available household incomes. In Europe, the gaps between north and south and also between and within countries are widening. These discrepancies are expected to persist in the coming decennium, since higher growth rates translate slowly into higher absolute GDP per capita levels, which are needed for convergence.

The Swiss economy is one of the most prosperous and developed in the world, and this is expected to last into the coming decennium. The per capita GDP growth rates of every canton are expected to stay above the EU average. Unemployment and inflation are particularly low. According to the OECD (2018), Swiss metropolitan areas account for more than a third of national GDP. In terms of GDP per capita, Geneva, Zürich and Basel are among the richest 10% of all cantons. Competitive taxes, a skilled labour force, an open economy and stability have helped Switzerland attract and build some of the largest transnational companies. The Swiss economy is characterized by a diverse economic structure. The share value added of the industrial sector is about 26 %, the share of the service sector about 73 %.



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 Swiss unemployment rate fell to 4.4% on average in 2019 according to the ILO definition. However, the south-western parts of Switzerland still show relatively high rates of unemployment varying between 5 and 7.5%. According to a recent OECD report, metropolitan areas in Switzerland (Geneva, Zurich, Basel) account for 28% of the national employment. Switzerland has a stable and well-functioning economy and offers many services through government agencies to assist people in finding new jobs, and temporary jobs are offered to skilled people who are unemployed. Advanced training is paid for, if required, for future employment and a variety of internships are offered to unemployed graduates.



Research shows that climate change might lead to a gradual shift of summer tourist destinations further north and regions higher up the mountains, affecting the current preferences of sun and beach lovers from western and northern Europe. Mountainous parts of France, Italy and Spain could become more popular because of their relative coolness. However, summer and winter seasons combined, Norway, the Mediterranean region and the Alps will experience the most negative impact. For Norway, this is mainly due to heavy rainfall and flooding while the Mediterranean will face excessive temperatures in the summer. Winter tourism in the Alps will most likely suffer due to the reduced number of snowy days.

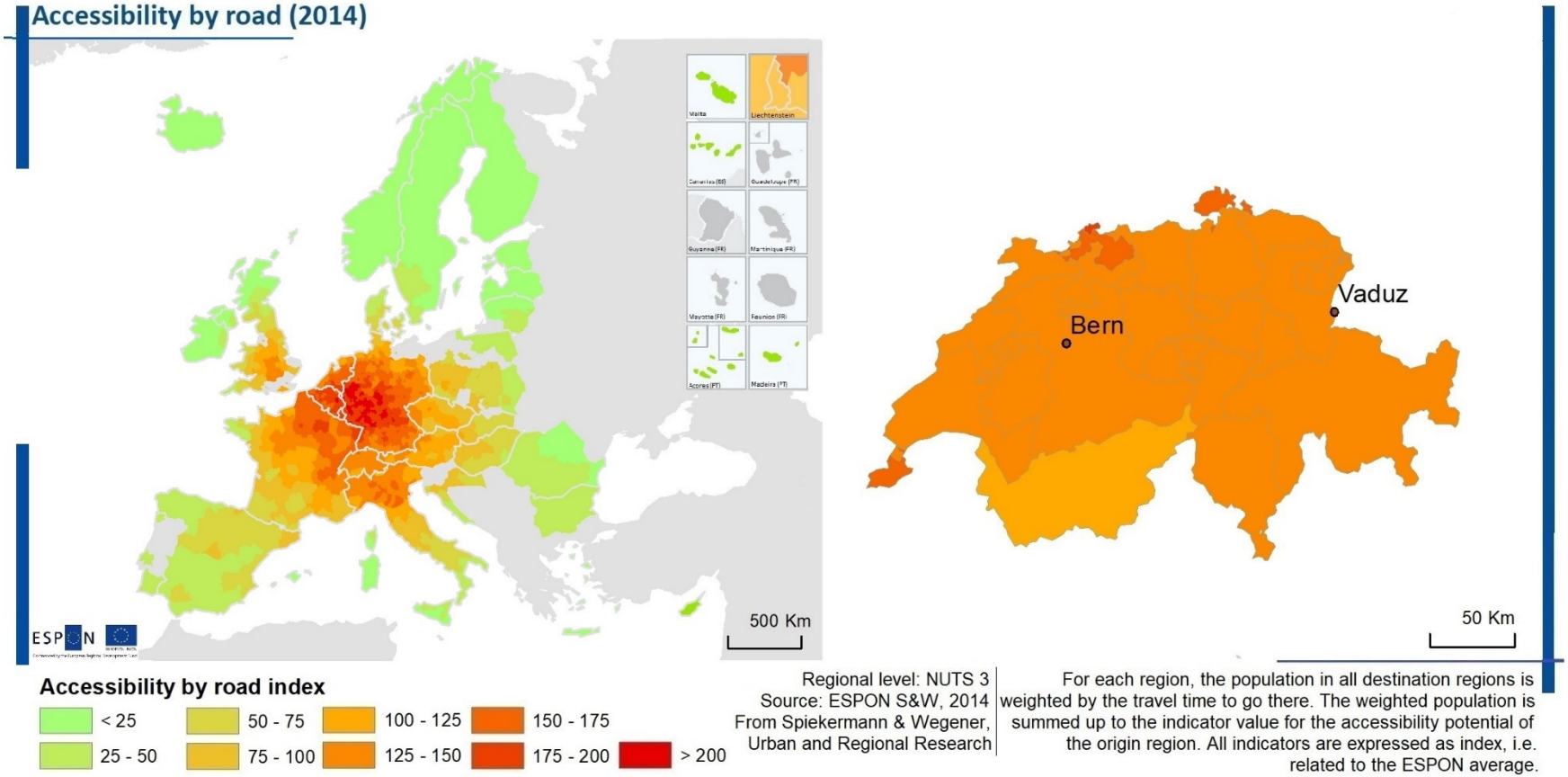
For Swiss alpine summer tourism, the increase in mean temperature and the number of summer days are expected to have a positive effect due to the cooler temperatures of summer resorts. This is counteracted by the negative impact on alpine winter tourism. A decreasing attractiveness of snow sport activities due to warmer winters with less snow is expected to have a tremendously negative impact. Rural tourism in lower mountain areas will benefit in summer through an increasing attractiveness especially of the lake regions. City tourism is expected to increase due to a prolonged season. At the same time, buildings and infrastructure will be more sensitive to extreme weather events like flash floods and river floods.

Accessibility

Accessibility by road

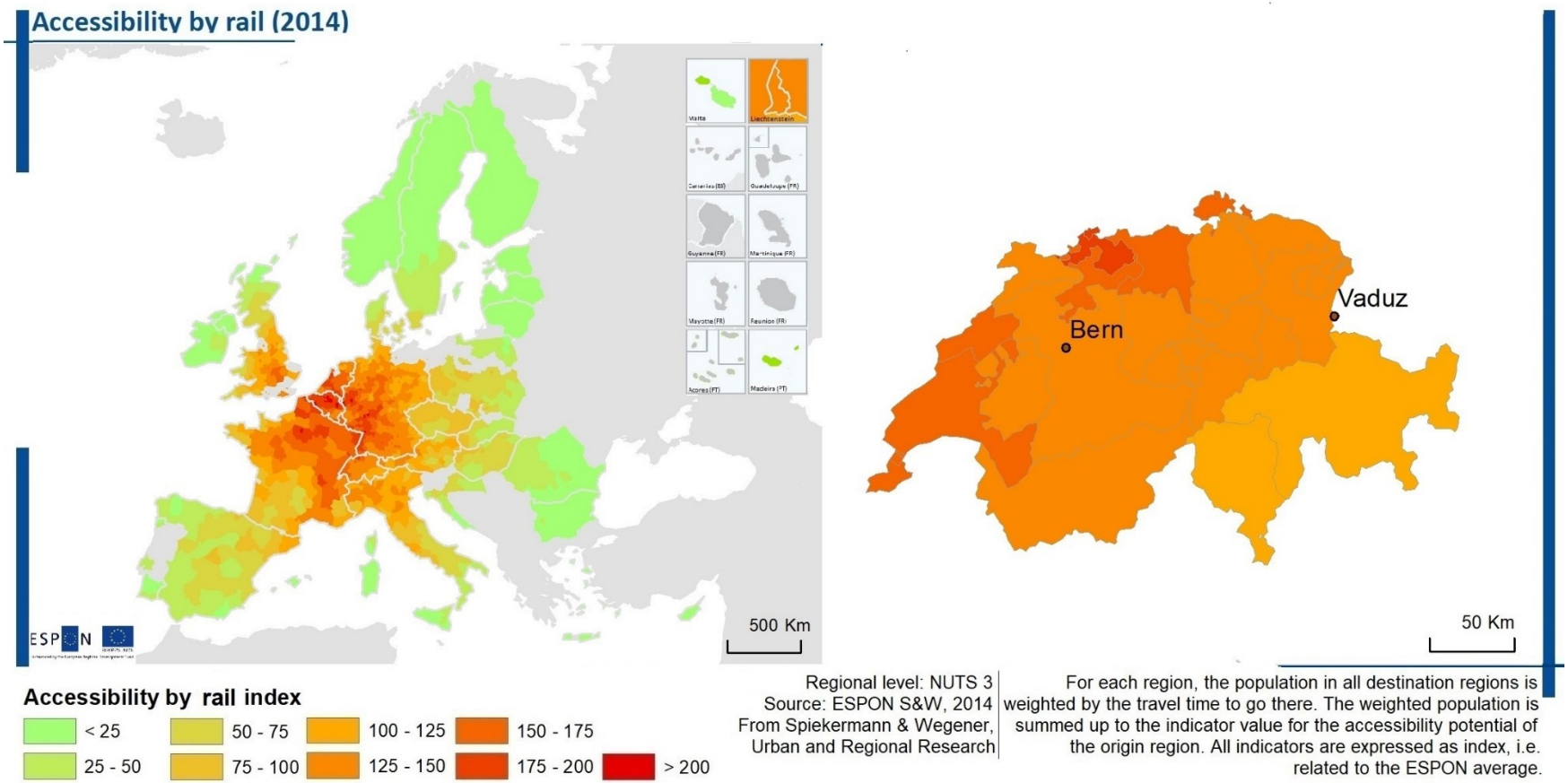
Accessibility by rail

Despite its partly mountainous topography, Switzerland is located in the economic center of Europe stretching from the Belgian and Dutch Lowlands through the Rhine valley to the north of Italy. Thanks to this geographical location and its good transport infrastructure, Switzerland is highly accessible by road and train compared to the rest of Europe. While the accessibility is high in general terms, there are still regional differences. Accessibility by rail, and public transport in general, is lower in the more mountainous areas. Accessibility by train is rather high along the borders to France and Germany, around Geneva and Basel. The connection with the north of Italy has significantly improved in the last years because of the new Gotthard base tunnel through the Alps that went into service in 2016.



Accessibility describes how easily regions in Europe – in terms of travel time in relation to population – can be accessed from other regions in Europe. The highest level of accessibility in absolute terms is reached in the economic centre of Europe: regions stretching from the south-east of England to the north of Italy through the Rhine valley. In all of these regions, the combination of well-developed road infrastructure, i.e. mainly dense motorway networks, as well as a high concentration of population leads to these favourable index values. Conversely, the lowest accessible regions can be found in Scandinavia, the Baltics, Scotland and Ireland. Coastal regions and islands in southern Europe also rank low regarding accessibility.

These maps are the result of a pan-European analysis of accessibility and thus cannot deliver a detailed accessibility picture at the national scale. With its dense transport infrastructure including 1859 km of national main highways, Switzerland shows a generally high accessibility by road index all over the country, with highest values at the western tip (Genève) and along the northern border (Basel, Schaffhausen). The Alps are not necessarily less accessible than the population centres of Switzerland, but again, this has mainly to do with the large (European) scope of the analysis.



As regions with top railway accessibility form corridors along high-speed rail links, Germany, West Germany and France stand out even better than in the previous map. Especially prevalent are the European core areas and corridors in France towards the Atlantic and via Lyon to the Mediterranean regions or in Germany towards Hannover and Stuttgart. Conversely, lowest accessibility by rail is found in the far northern regions, the eastern regions in Bulgaria and Romania, and Greece. Looking at the differences between regions, there is a clear dominance of urban areas, followed by rural and mountainous regions.

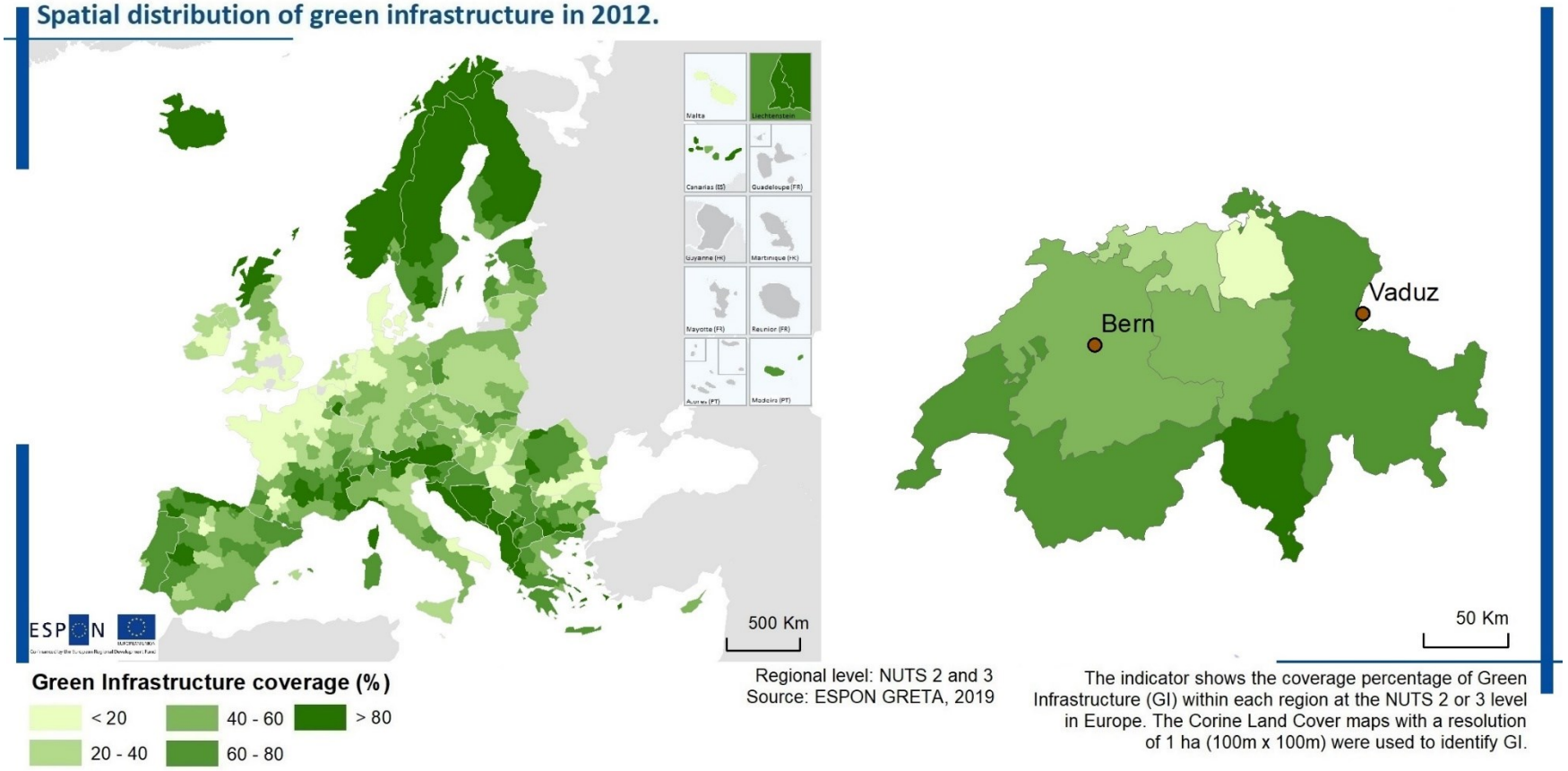
With its 5200 km of railway tracks, Switzerland shows an accessibility level by rail above the European average. Differences between regions in Switzerland are a bit more pronounced than in the previous map: accessibility is rather high towards France in the southwest and Germany in the northwest but decreases towards the southeast. The gradient thus reflects the topographic situation: much of the southern and eastern parts of Switzerland consist of sparsely populated mountain areas, which means less population potential, less rail infrastructure and longer travel times.

Environment

Spatial distribution of Green infrastructure

Climate change impact on soil carbon content

The two environmental maps in this section depict the current distribution of green areas and the potential impact of climate change on the soil carbon content around the end of the 21st century. Switzerland, compared to other regions in Europe, is characterised by a well-developed distribution of large green infrastructures. However, the challenges brought about by climate change remain important to consider. Due to its comparatively southern location, Switzerland will be confronted with changing weather patterns such as a higher seasonal variability of precipitation and increasing temperatures. These changes are predicted to have a negative impact on the capacity of the vegetation to store organic carbon in the soil.



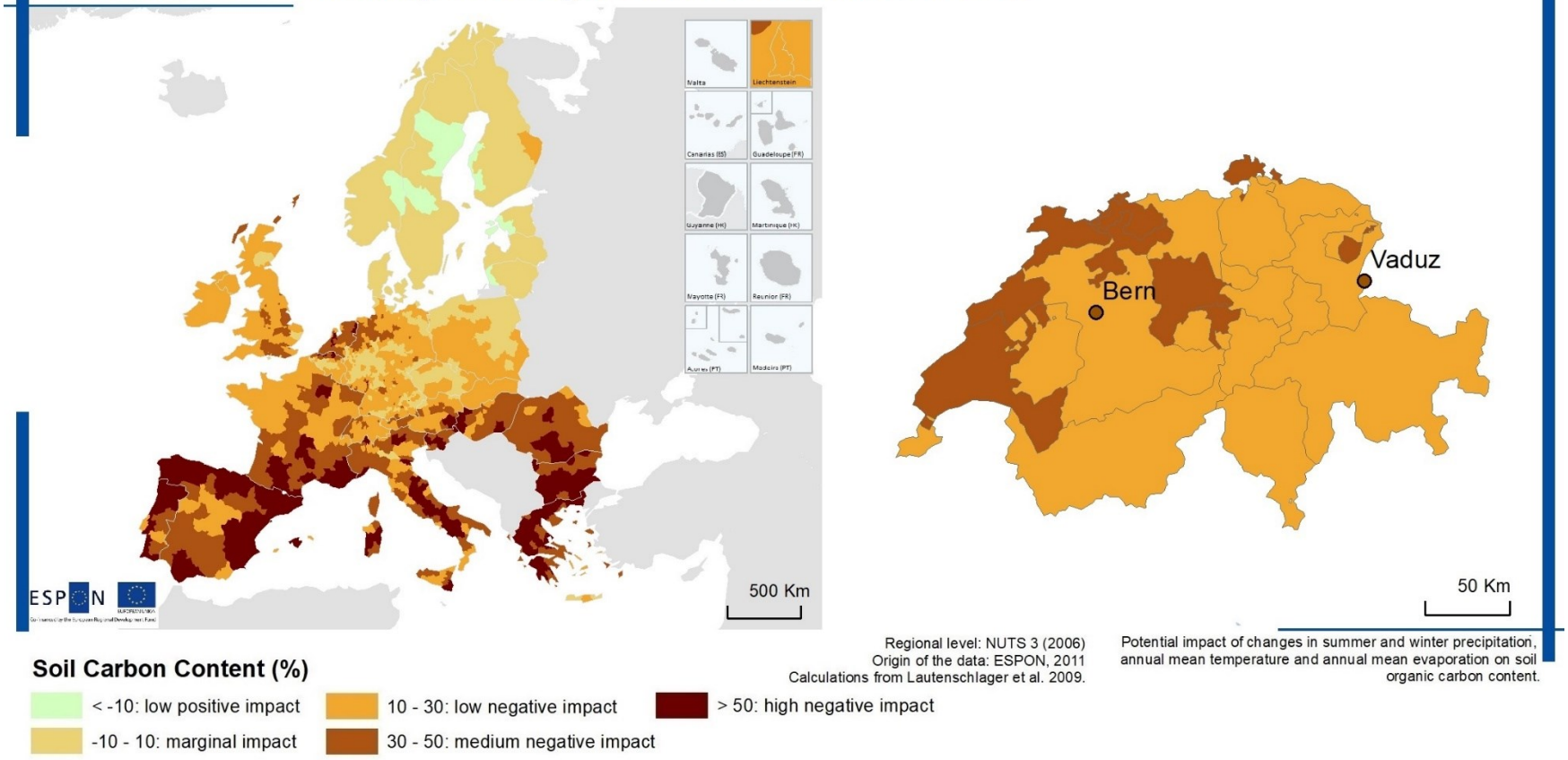
Regional level: NUTS 2 and 3
Source: ESPON GRETA, 2019

The indicator shows the coverage percentage of Green Infrastructure (GI) within each region at the NUTS 2 or 3 level in Europe. The Corine Land Cover maps with a resolution of 1 ha (100m x 100m) were used to identify GI.

The spatial distribution of green infrastructure was calculated using maps with an accuracy of 1 hectare. This pattern clearly reflects population density, infrastructure development, climatic and topographic conditions, as well as the distribution of agricultural areas in the EU territory. The coverage of green infrastructure is lower for the regions in north-western France and Germany, south-eastern UK and Ireland, and Denmark. It is higher for Nordic countries, the Balkan countries along the Adriatic Sea and the eastern Alpine region.

Despite high urban densities outside the alpine zone and well equipped with infrastructure, Switzerland scores well in comparison to other European countries when it comes to green infrastructure coverage. The national government has included strategies and policies for green infrastructure in the Swiss Biodiversity Strategy (2017). The action plan consists of promoting biodiversity directly, building bridges between federal biodiversity policy and other policy areas and raise awareness among decision makers and the public. The cantonal public authorities, together with environmental organisations (e.g. Pro Natura), are responsible for implementing the national policies.

Potential impact of climate change on soil organic carbon content from 2071 to 2100



Soil organic carbon is accumulated through vegetation and is regarded as an important mitigating process for climate change. The rate of storage is, however, dependent on climatic factors. This map depicts the relative impact of climate change on the soil organic carbon based on the forecasted changes in precipitation and temperature. The predicted erratic precipitation and higher temperatures combined with the dense drainage infrastructures will reduce the soil moisture and storage capacity. Hence, climate change is expected to have an overall negative impact on soil carbon, especially in the Mediterranean regions, the Balkans and the Belgian and Dutch Lowlands.

Switzerland, located at the edge of the Mediterranean regions, will also endure a negative impact in that sense. The calculations made for these maps are mainly based on forecasted climatic changes and the existing land use. Changes will of course also be driven by land management practices and land use change. Preserving the existing carbon stocks in soil, and especially the large stocks in peat and other soils with a high content of organic carbon, are the most effective methods to enhance carbon storage in soil. Reducing the drainage of rainwater and safeguarding the existing vegetation and wetlands will also have a positive influence on soil organic carbon accumulation.

Demography

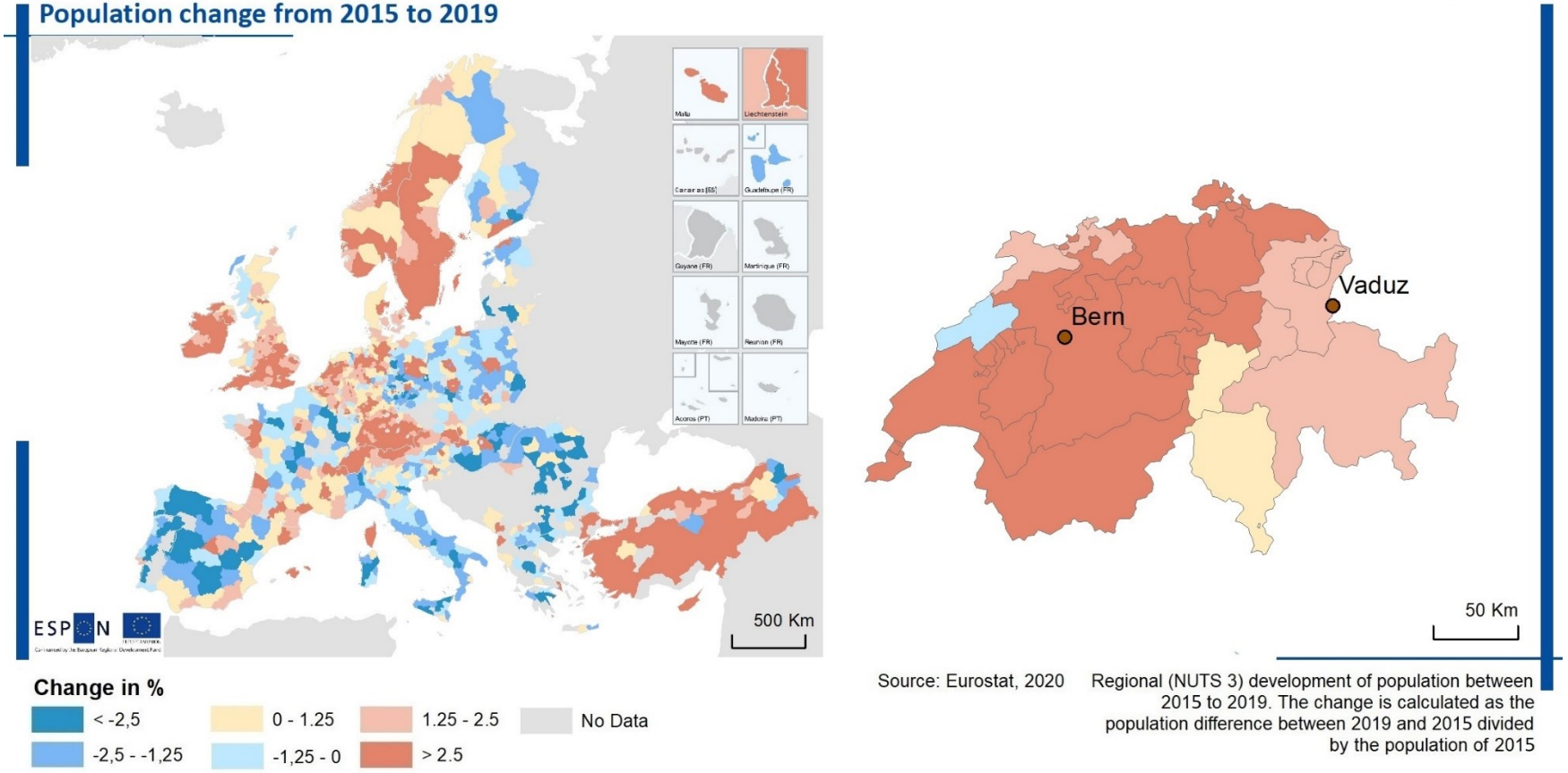
Demographic change

Ageing index

Higher education

People at risk of poverty

Like most European regions that are doing well economically, Switzerland is characterized by an increasing and ageing population, although at a lower rate than other regions of Europe. The low fertility rate of the country implies that this population increase is mainly due to immigration. Switzerland has a particularly high rate of highly educated young workers and 25% of its population are foreigners. Most of Switzerland has a percentage of its population at risk of poverty ranging from 15 to 23%. The Cantons of Neuchâtel and Ticino are confronted with very specific challenges. The Canton of Neuchâtel shows a decreasing population between 2015 and 2019 and the Canton of Ticino is facing a more significantly ageing population and a relatively high portion of its population at risk of poverty and social exclusion (>20 %).

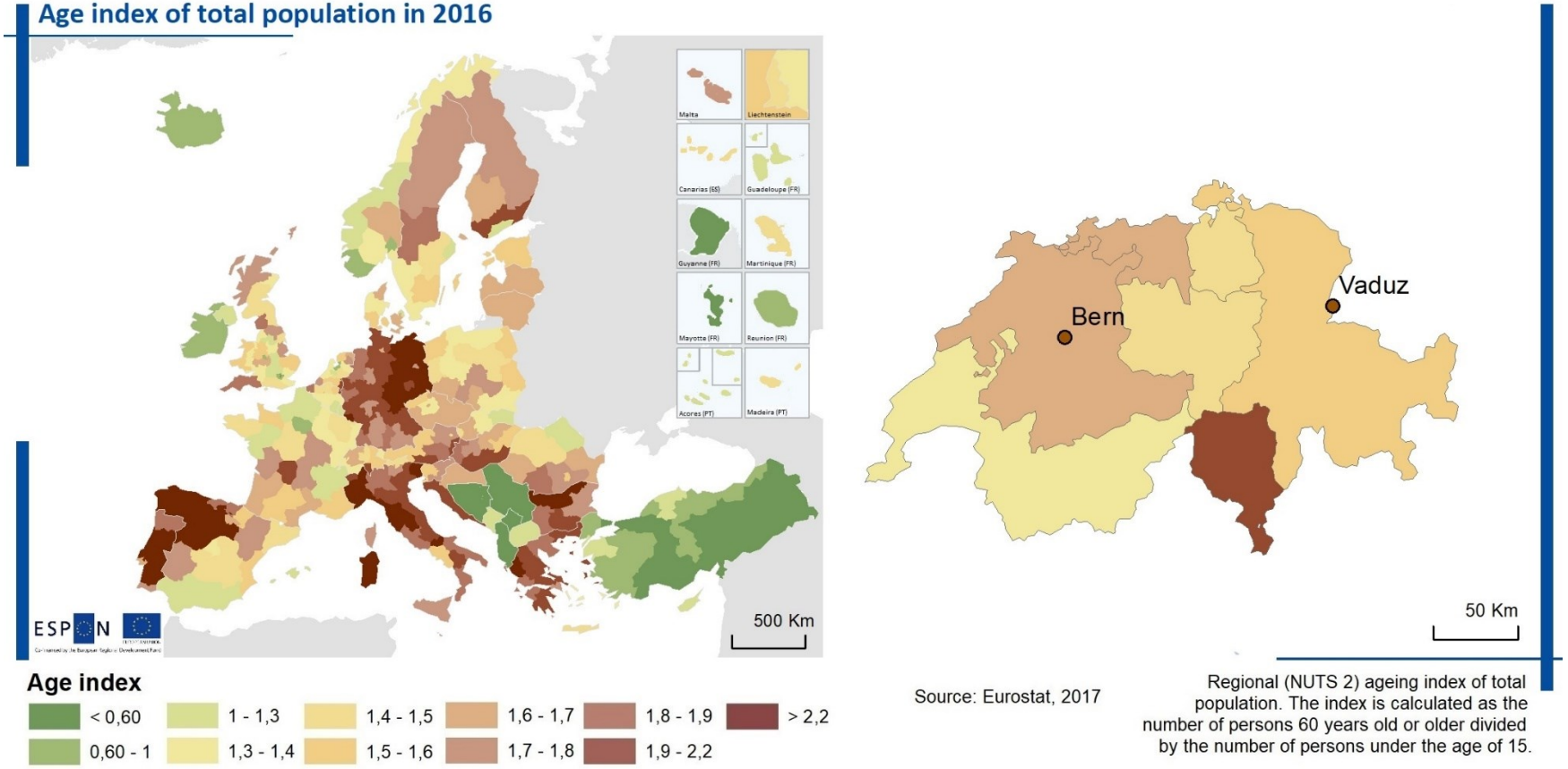


Source: Eurostat, 2020

Regional (NUTS 3) development of population between 2015 to 2019. The change is calculated as the population difference between 2019 and 2015 divided by the population of 2015

Despite the lack of data for some of the NUTS regions, a few trends can be observed. Large portions of Eastern Europe, Italy, Spain and France have a decreasing population. For the latter two, however, a population increase can be observed in urban areas such as Madrid, Barcelona, Bordeaux, Nantes or Paris. Other regions such as the Lowlands, western Germany, the UK and Ireland are also characterised by an increasing population. These trends are significantly influenced by the job opportunities and the economic situation of the regions.

In Switzerland, many regions showed substantial population growth rates over the last years. The Canton of Neuchâtel is an exception with a negative population growth rate of -0,27% between 2015 and 2019. The Canton is situated on the western border of the country, rather far away from the main Swiss growth centres, and the industrial sector is of considerable importance for its economy. Moreover, the Canton traditionally experienced an above-average immigration, but as total immigration to Switzerland has dropped significantly since 2017, this did also negatively affect population growth in Neuchâtel during the last years.

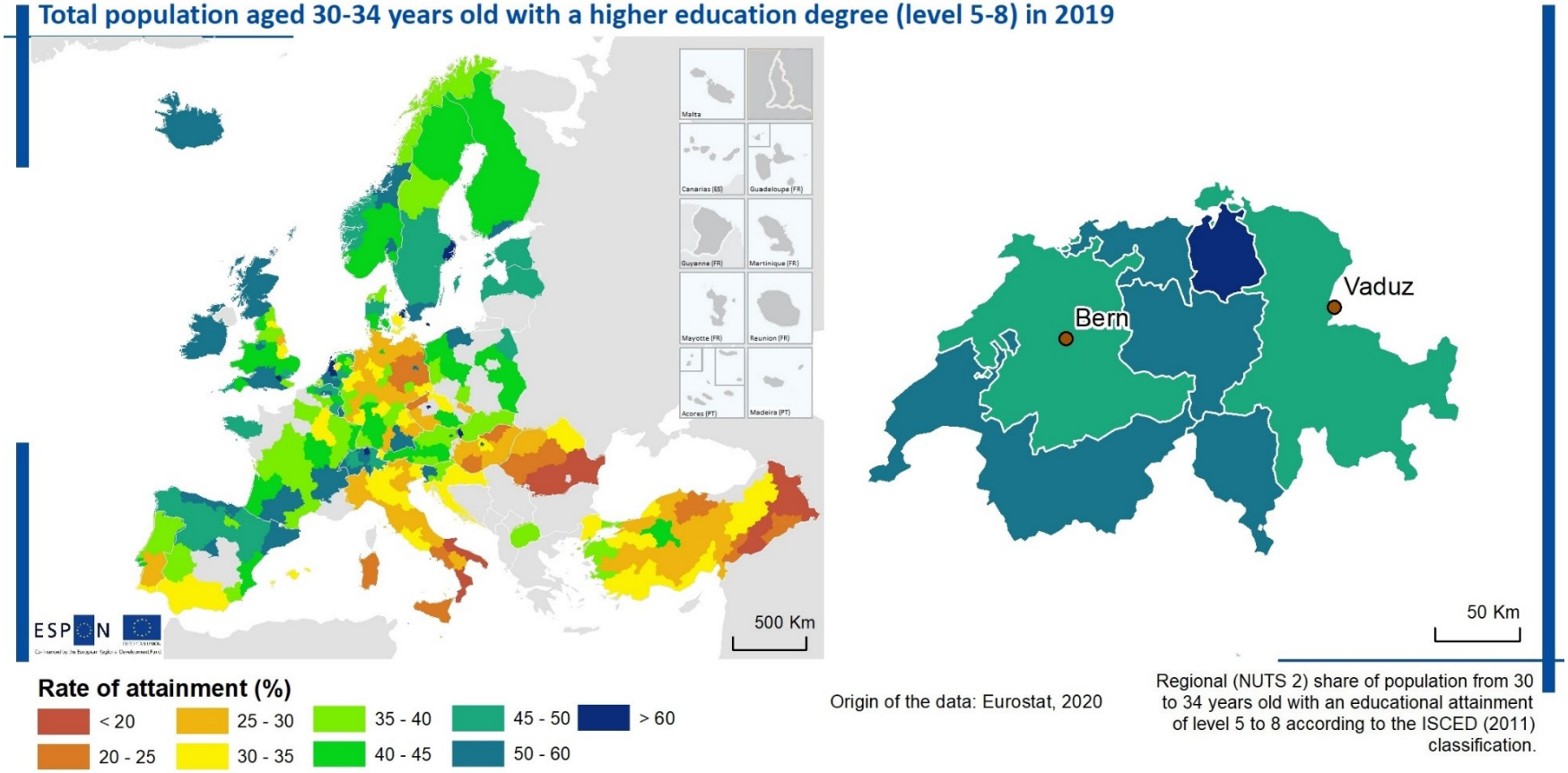


Source: Eurostat, 2017

Regional (NUTS 2) ageing index of total population. The index is calculated as the number of persons 60 years old or older divided by the number of persons under the age of 15.

The age index is calculated by dividing the number of people more than 59 years old by the number of children under the age of 15. The overall age index in Europe clearly depicts an ageing population. The decreasing fertility rates in Europe are a major factor influencing that trend, such as in Germany where the fertility rate is particularly low. Some regions have a particularly high age index such as Italy, Greece, Portugal and Spain due to the increased emigration of the younger generations to other more economically promising regions since the economic crisis of 2008.

Switzerland has a lower age index than Germany and Italy ranging from 1,3 to 2,1. The region of Ticino is a retirement magnet for many elderly Swiss people and has a significantly higher age index of 2,1. Moreover, Ticino holds one of the highest life expectancies of Europe. The region is also known for its commuter workforce from Italy who form almost one fifth of the total workforce. The young Italian commuting workers are paid lower wages than locals, which represents an interesting asset in labour cost but can, on the other hand, contribute to the lower portion of youngsters officially living in the region.



There is a greater share of people with higher education qualifications in northern Spain, Ireland, Scotland, western Norway and Switzerland. And metropolitan areas in Europe generally have a higher share than their respective surrounding areas. Southern Spain, Italy, a significant part of Germany and countries in Eastern Europe have distinctly lower shares. While a large portion of the higher-educated population of Southern Spain and Italy has emigrated to other regions of Europe for job opportunities after the financial crisis, the countries of Eastern Europe tend to have lower participation in higher education. Germany, on the other hand, has developed a labour market that attracts workers with a lower education attainment level.

More than 50% of the Swiss population between 30-34 years has a higher education degree. With a total spending on education of 5.7% of its GDP (2017), the standards are extremely high. Switzerland benefits from the very high quality of its primary schools and of its student-centred education system. Research institutions like ETH Zurich or Lausanne and many Universities have a global reputation. Nevertheless, Swiss education is largely decentralised with each canton having its own standards, which can be detrimental to families moving from one canton to another.
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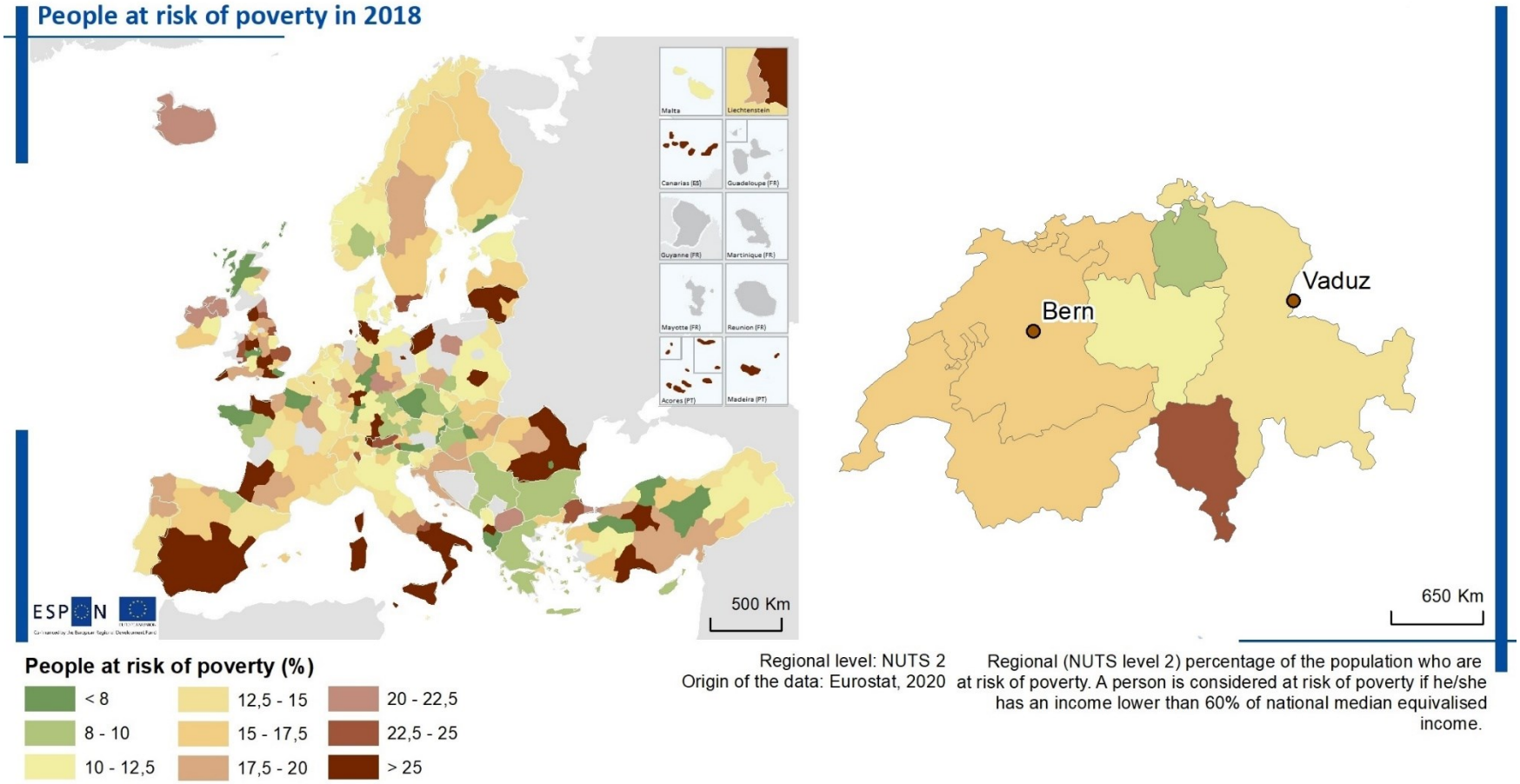


As the data is normalized for each country individually, inequalities are reported relatively to each country's income level. Specific regions at the European scale with higher percentages are nonetheless noticeable. Regions in the Mediterranean countries, as well as parts of Romania and England generally have the highest rates of people at risk of poverty. Several regions of Germany with high percentages can also be identified. While numerous factors influence per capita income, high rates of lower incomes are generally associated with high percentages of unemployment.

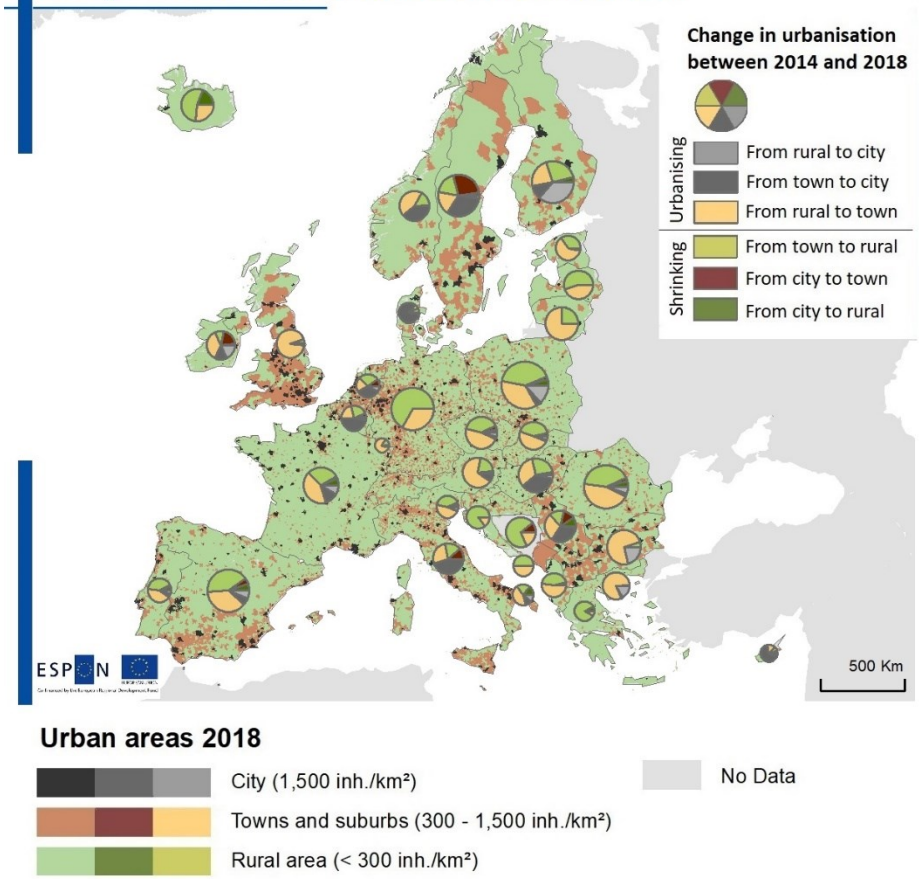
The economy in Switzerland is among the world's most stable, and in terms of Human Development Index ranks in the top five. Switzerland shows a lower percentage of people at risk of poverty than the UK and Germany, but a higher percentage than Finland and Norway. In Switzerland, regions with small, local, labour markets tend to have limited access to labour markets in general. These regoions are potentially more exposed to increasing risks of poverty. The analysis shows some higher risk of poverty for the Ticino region. However, this region also has a high error margin in particular due to the sample size, which limits the analysis.

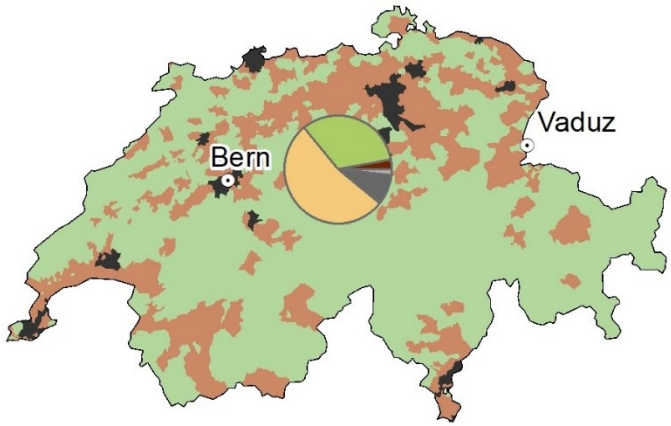
Urbanisation

Change in degree of urbanisation

Based on the changes in population density, various urbanisation trends in Europe can be observed. A noticeable trend in some parts of Europe is an increasing population density in certain rural areas. By reaching a density of 300 inhabitants per square kilometre, the character of those areas is shifting towards suburban or even town-like. In Switzerland, a similar trend can be observed between 2014 and 2018: approximately 643 km² of former “rural” area have shifted to suburban or town-like densities.

Change in urbanisation between 2014 and 2018





This dataset contains the difference in degree of urbanisation between 2014 and 2018. The classification is based on a population distribution grid with raster cells of 1 km² that classifies local administrative units into three categories: rural areas (< 300 inh./km²), town and suburbs (300 - 1,500 inh./km²) and cities (1,500 inh./km²).

Local level: LAU2 boundaries
Source: Eurostat, 2018

The data used for these maps are derived from the Geographic Information System of the Commission (GISCO). This classification is based on population density rather than building density. The differences between 2014 and 2018 give a good visual impression of population movements. For instance, a large portion of former rural areas in Europe have shifted towards suburban or town-level densities. This increase results from the tendency of the population to spread over large surfaces, “filling up” rural areas. A higher-level densification process can be observed especially in the Lowlands, Norway, Sweden, Finland, Italy and Hungary, with large areas shifting from suburban and town-densities towards city-densities.

This map was processed based on changes of population densities. Most of those areas in Switzerland that changed category between 2014 and 2018 are former rural areas that are now classified as towns or suburbs due to a population densification process. Suburbanisation was an important process in Switzerland in the last decades. Consequently, densification of the already built urban environment became a key element of Swiss spatial development policy and stricter zoning regulations were introduced in 2014.

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