# Background factsheet to issue paper 2: Enhancing resilience of regions against emerging challenges

February 2023

**Group of high-level specialists on the future of Cohesion Policy**

The European Commission, the Directorate-General Regional and Urban Policy (lead) and the Directorate-General Employment, Social Affairs and Inclusion (associated) have set up a Reflection Group on the future of Cohesion Policy. The group includes high-level members from academia and practice and in 2023 will meet nine times to reflect on current and future needs and the functioning of Cohesion Policy.

The group will offer conclusions and recommendations that will feed the reflection process on Cohesion Policy post-2027 including through the 9th Cohesion Report in 2024 and the mid-term review of Cohesion Policy programmes in 2025.

**Disclaimer**

This paper is an independent input to the reflection paper. The opinions expressed in this paper are the sole responsibility of the authors and do not represent the official position of the European Commission.

**Contact**

EUROPEAN COMMISSION
Directorate-General Regional and Urban Policy
Unit B.1 — Policy Development and Economic Analysis

E-mail: REGIO-FUTURE-COHESION-POLICY@ec.europa.eu
European Commission
B-1049 Brussels

Background Factsheets:

# Enhancing resilience of regions against emerging challenges

## 1    The climate and green transition

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal seeks to transform the EU into a modern, resource-efficient and competitive economy, ensuring net zero emissions of greenhouse gases by 2050, economic growth decoupled from resource use, while leaving no person and no place behind. Reaching these goals of a carbon-neutral and circular economy will boost employment in sectors such as renewable energy, recycling, design, renovation and ecosystem services, but may adversely affect sectors that need to reduce their emissions and the regions in which they are located. Regions are unequally prepared to face these transitions, and the economic and social impact will differ from one region to another (maps 1).

The map suggests potential regional disparities that emerge from implementing the green transition. The map is based on two indicators: green readiness and growth potential.

**Green readiness** is a composite index based on 4 indicators: number of road vehicles per capita, CO2 intensity (CO2 emissions per unit GDP), greenhouse gas intensity (sum of all greenhouse gasses per unit GDP), and the burdensome cost of housing (Percentage of people living in a dwelling where housing costs are a financial burden)

**Growth potential** is assessed using 5 components (1 indicator and 4 indexes): highly skilled employment, institutional quality, accessibility to transport infrastructure, investment, and innovation.

The map concludes that urbanized, knowledge-intensive services regions demonstrate the highest level of readiness. Overall, the green transition is likely to consolidate current regional disparities across Europe as regions most ready for climate neutrality are those with the highest level of economic development.

Map 1  Green transition: stringest deviations in grwith potential

Green readiness against general growth potential, EU NUTS-2 regions

■ Low green readiness &
low growth potential

■ High green readiness &
high growth potential
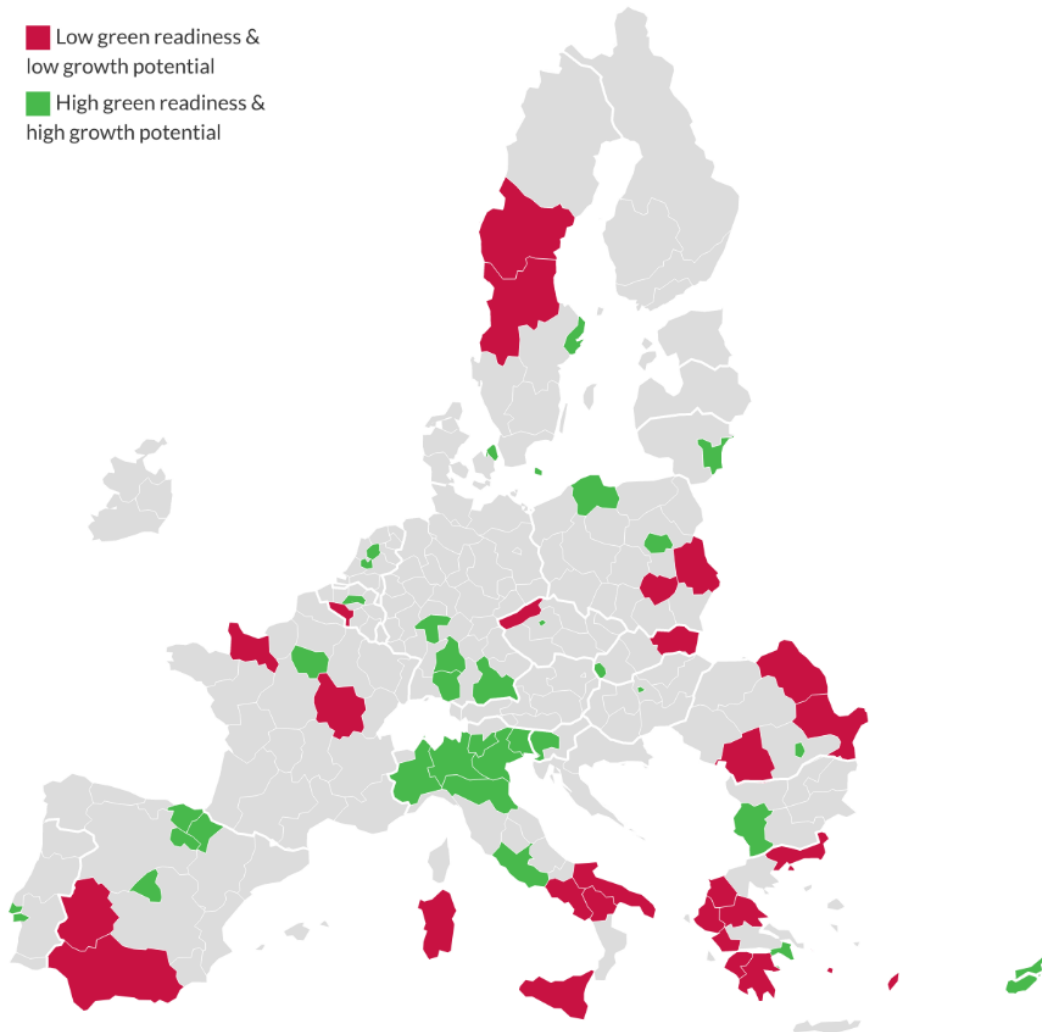
*This figure shows regions with low (high) potential for economic growth further lowered (increased) by the green transition in red (green).*

Map: wiiw and Bertelsmann Stiftung • Source: Own calculations

**Bertelsmann**Stiftung

# 2    The digital transition

The digital transition is moving forward at different speeds across Europe. Its completion will require expanding very-high-speed internet access, boosting digital skills and investing in IT equipment.

Map 2  Population living in areas with average tested broadband speed of at least 200 Mbps, 2020
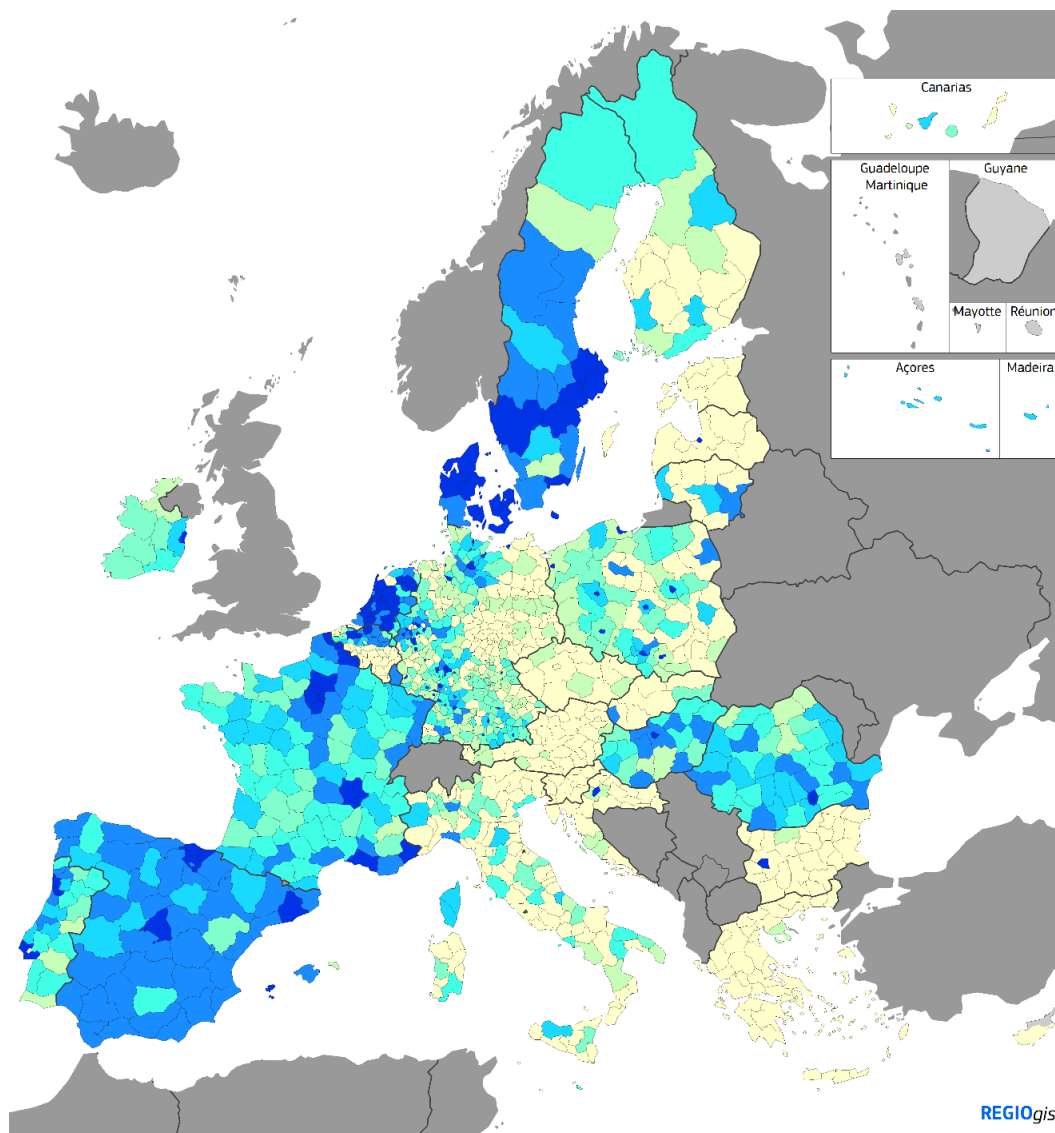


**Population living in areas with average tested broadband speed of at least 100 Mbps, 2020**

% of total population

| | |
|---|---|
| 0 - 5 | 45 - 60 |
| 5 - 15 | 60 - 85 |
| 15 - 30 | 85 - 100 |
| 30 - 45 | no data |
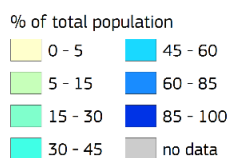
Population living in Local Administrative Units where the average speed of the fastest type of broadband (fixed or mobile) is at least 100 Mbps.
Source: REGIO-GIS and JRC based on Ookla for Good (TM) data.

0          500 km

© EuroGeographics Association for the administrative boundaries

In an increasingly digital economy, access to high-capacity telecommunication networks is a key factor of competitiveness and of the development potential of EU regions. Basic broadband access is almost universal in the EU, but there are significant disparities (map 2): the highly developed regions are in most cases already well endowed, but there are still serious gaps in many of the less developed ones. There is also a significant divide in broadband connection speeds between cities and rural areas: very-high-speed connections are only available to two out of three city residents and one out of six rural residents. Unless corrected, this difference in broadband connection can further increase territorial disparities in economic growth and levels of prosperity.

In 2010, the EU set a target of having "*access to 30 Mbps or above by all citizens and at least 50% of households with a connection over 100 Mbps*" by 20202. A connection speed of 30 Mbps is sufficient for one household member to carry out typical household online activities, including teleworking and online learning. However, the required speed increases if multiple users are engaged in activities simultaneously.

## 3    The research and innovation divide

Innovation is an important driver of long-run productivity growth and, as such, is a key factor in supporting the competitiveness of firms. However, concern has risen about a growing research and innovation divide, linked to geographical concentration of the most innovative firms and research centres, both within Member States and across the EU. Although concentration can result in positive externalities of research and innovation, the core areas are very often located in more developed regions, so widening geographic disparities. This research and innovation divide may be further fuelled by the ongoing process of digitalisation.
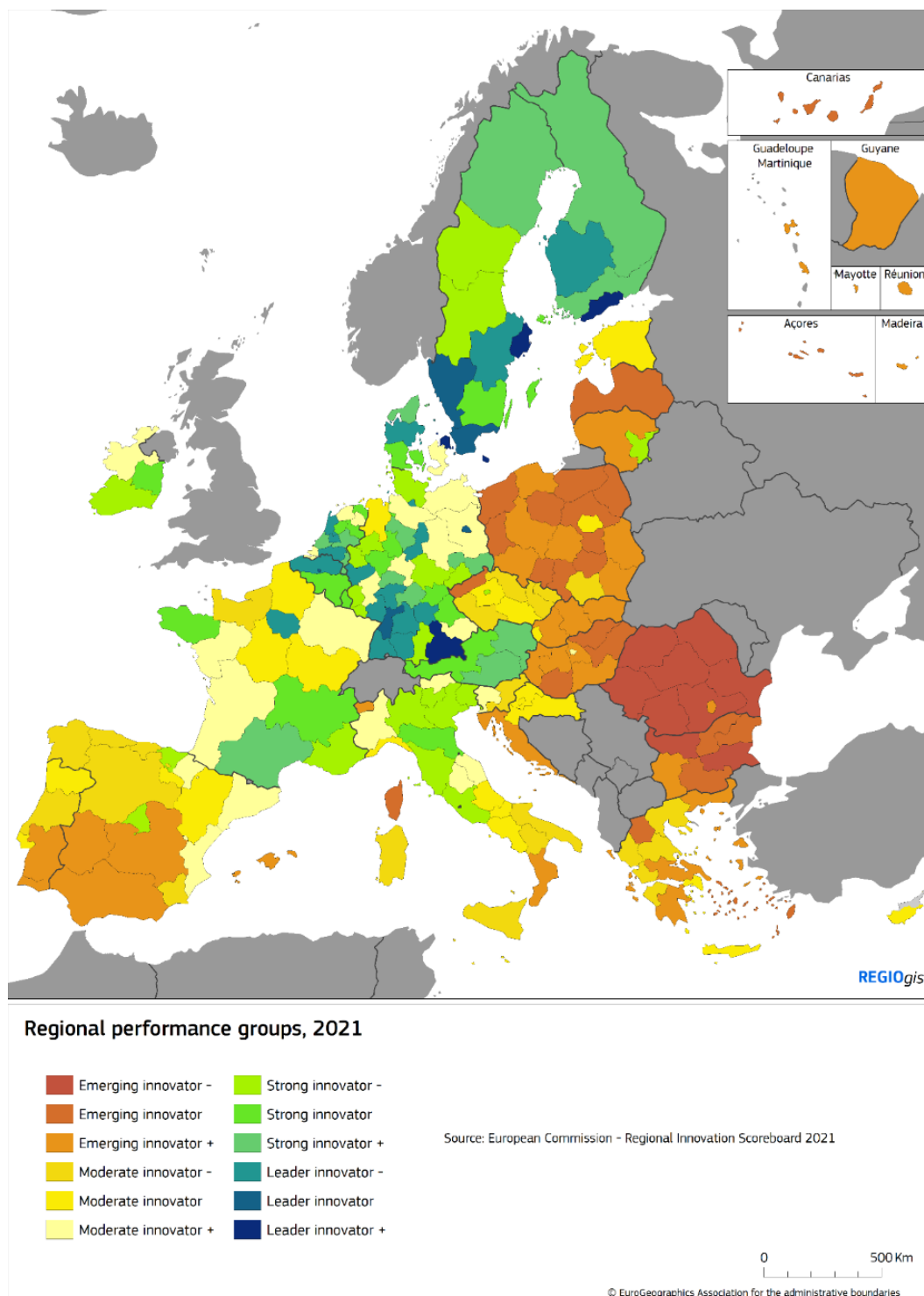
Measuring innovation is challenging. The most common indicators used as proxies to measure innovation are the number of patent applications – which relates mainly to technological innovation in industry, therefore only a part of innovation (figure 1). The degree of concentration suggests a regional innovation divide between the most advanced Member States and regions and the others, as well as between metropolitan regions (in particular the metro capital regions) and the non-metro regions.

Figure 1        Patent applications to the European Patent Office by type of region, 2016-2017



Source: OECD REGPAT, DG REGIO calculations.
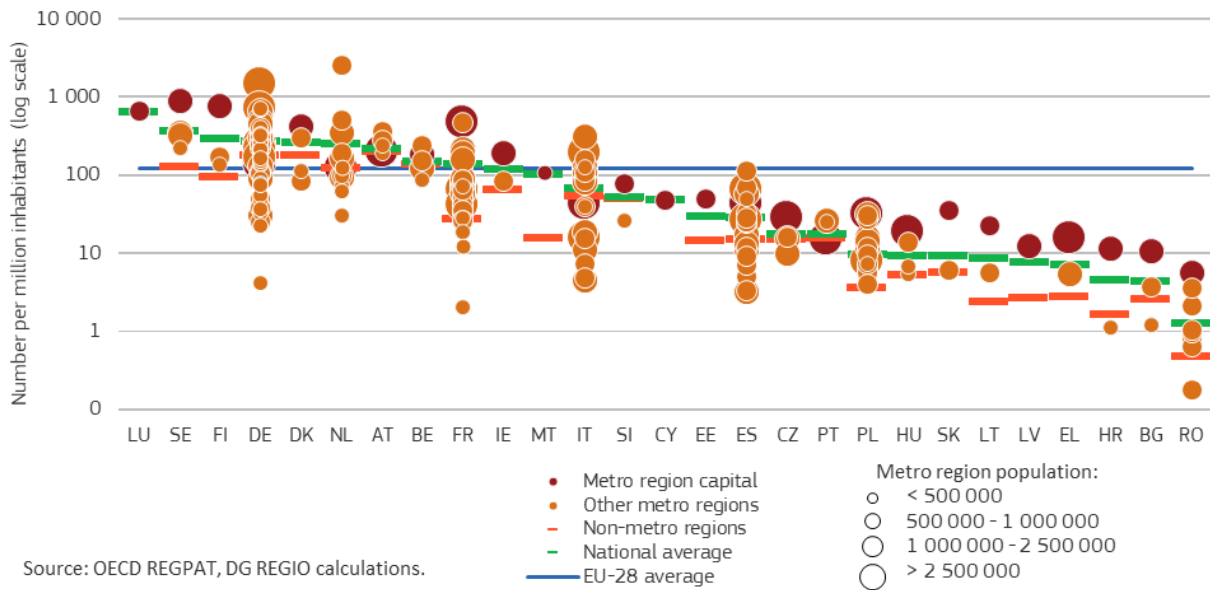
The Regional Innovation Scoreboard 2021 (map 3) highlights the key role innovation plays in regional development. This Scoreboard assesses the innovation performance of regions on the basis of a sub-set of the indicators included in the European Innovation Scoreboard. In 2021, it covers 215 regions in the EU25, plus 30 regions in Norway, Serbia, Switzerland and the UK. The most innovative regions in the EU by this measure are Oberbayern (Germany), Hovedstaden (Denmark), Etelä-Suomi (Finland) and Stockholm (Sweden). Despite some regional variation within countries, the ranking of regions largely matches that of Member States, suggesting that indicator values at the regional level are affected by national characteristics. Most regional 'innovation leaders' are in Member States which are also identified as 'innovation leaders' or as 'strong innovators', and almost all of the regional 'moderate 'and 'modest' innovators are in Member States categorised in the same way. However, regional 'pockets of excellence' are evident in some 'moderate innovator' Member States, including capital city regions in Czechia, Spain, and Lithuania as well as País Vasco in Spain, while some regions in 'strong innovation' Member States lag behind.

Map 3  Regional performance groups, 2021



Regional performance groups, 2021

| | |
|---|---|
| Emerging innovator - | Strong innovator - |
| Emerging innovator | Strong innovator |
| Emerging innovator + | Strong innovator + |
| Moderate innovator - | Leader innovator - |
| Moderate innovator | Leader innovator |
| Moderate innovator + | Leader innovator + |

Source: European Commission – Regional Innovation Scoreboard 2021

© EuroGeographics Association for the administrative boundaries

The lack of or decline of regional innovation in less developed and transition regions will make it more difficult to sustain high growth rates or escape from a development trap. In general, regions that were in a development trap in 15 years or more during this period (henceforth called 'development-trapped' regions) are concentrated in southern EU Member States (especially in Greece and Italy) or are rural or old industrial regions in France. Some of the regions, however, are also

located in many of the north-western Member States. Development traps thus affect regions at different levels of initial development.

Map 4  Number of years in a development trap during 2001-2019 by level of region GDP per head in 2000
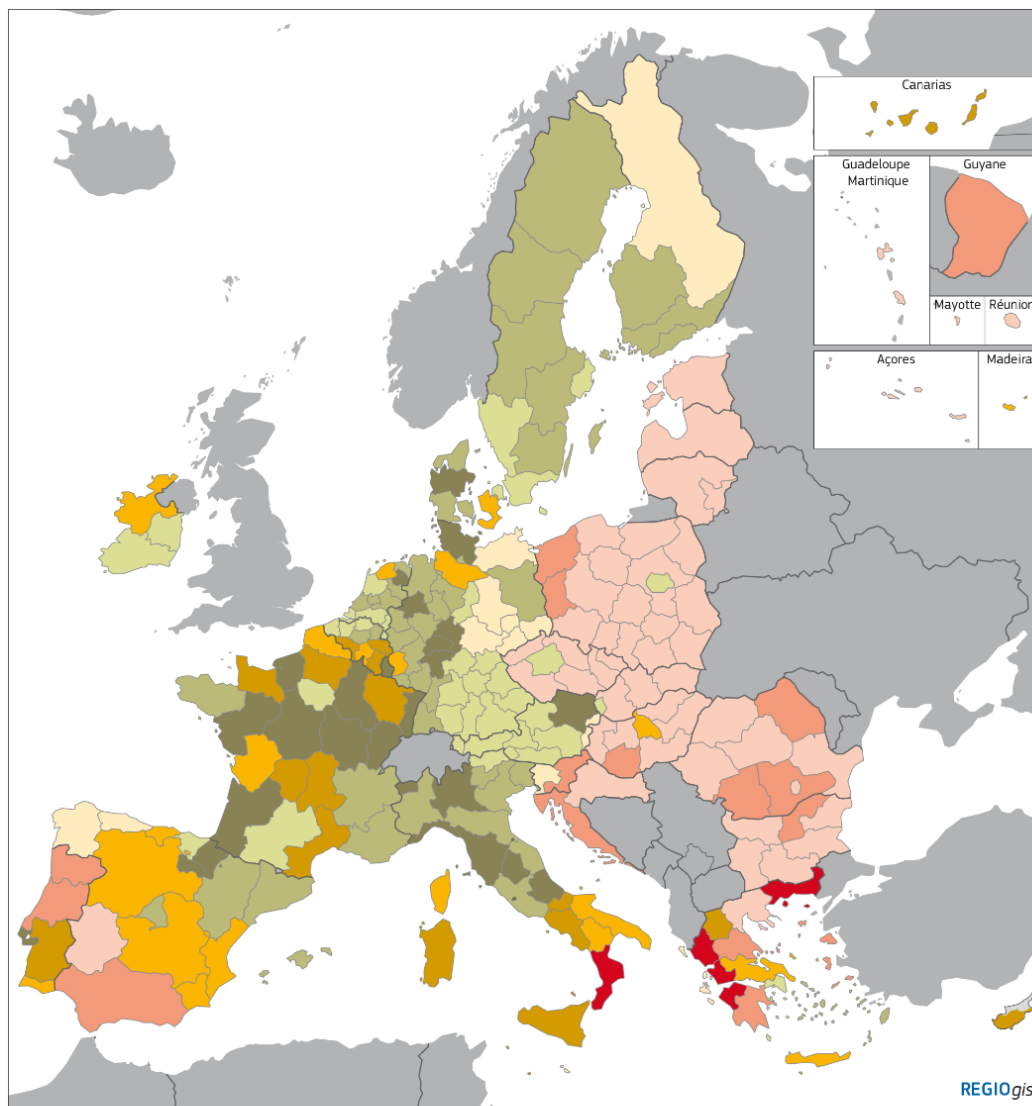


**Map 2.6 Number of years in a development trap during 2001–2019 by level of regional GDP per head in 2000**

GDP/head (index EU-27=100) vs. years

- < 75%, 0 – 9 years
- 75 – 100%, 0 – 9 years
- > 100%, 0 – 9 years
- < 75%, 10 – 14 years
- 75 – 100%, 10 – 14 years
- > 100%, 10 – 14 years
- < 75%, 15 – 19 years
- 75 – 100%, 15 – 19 years
- > 100%, 15 – 19 years

Six capital regions have been merged with the surrounding regions to limit distortions in the GDP per head values.
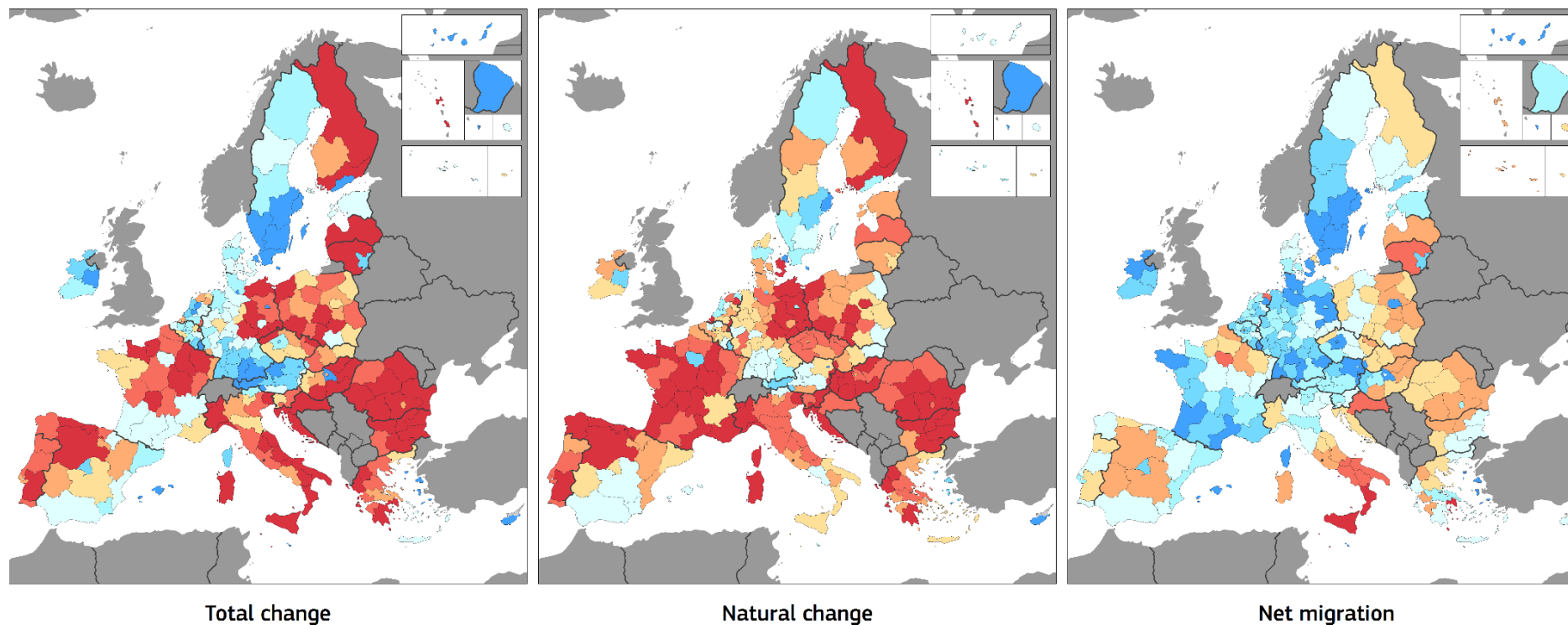Source: DG REGIO calculations based on JRC and Eurostat data.

0          500 km

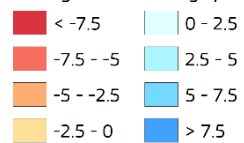© EuroGeographics Association for the administrative boundaries

## 4 Demographic change

Demographic change, notably ageing, will affect all regions, but rural regions first. Over the next decade, population aged 65 and above is projected to grow by more than 25% in one out of five regions. The working age population is projected to shrink by more than 10% in one out of four regions. The population below 20 is projected to shrink by more than 10% in one out of three regions. Overall, the share of population living in a shrinking region is projected to increase from 34% to 51% between 2020 and 2040. Rural regions are especially affected as they are already shrinking. These trends may affect growth potential, skills development and access to services.

Map 5 Change in population aged 25-64, 2015-2020



**Total change**

**Natural change**

**Net migration**

Average annual change per 1000 residents

- < -7.5
- -7.5 - -5
- -5 - -2.5
- -2.5 - 0
- 0 - 2.5
- 2.5 - 5
- 5 - 7.5
- > 7.5

Arithmetic average of the yearly rates
Source: DG REGIO calculations
based on Eurostat data (demo_r_d2jan)

DE: 2015-2017

DE: 2015-2017

0    1 000 km

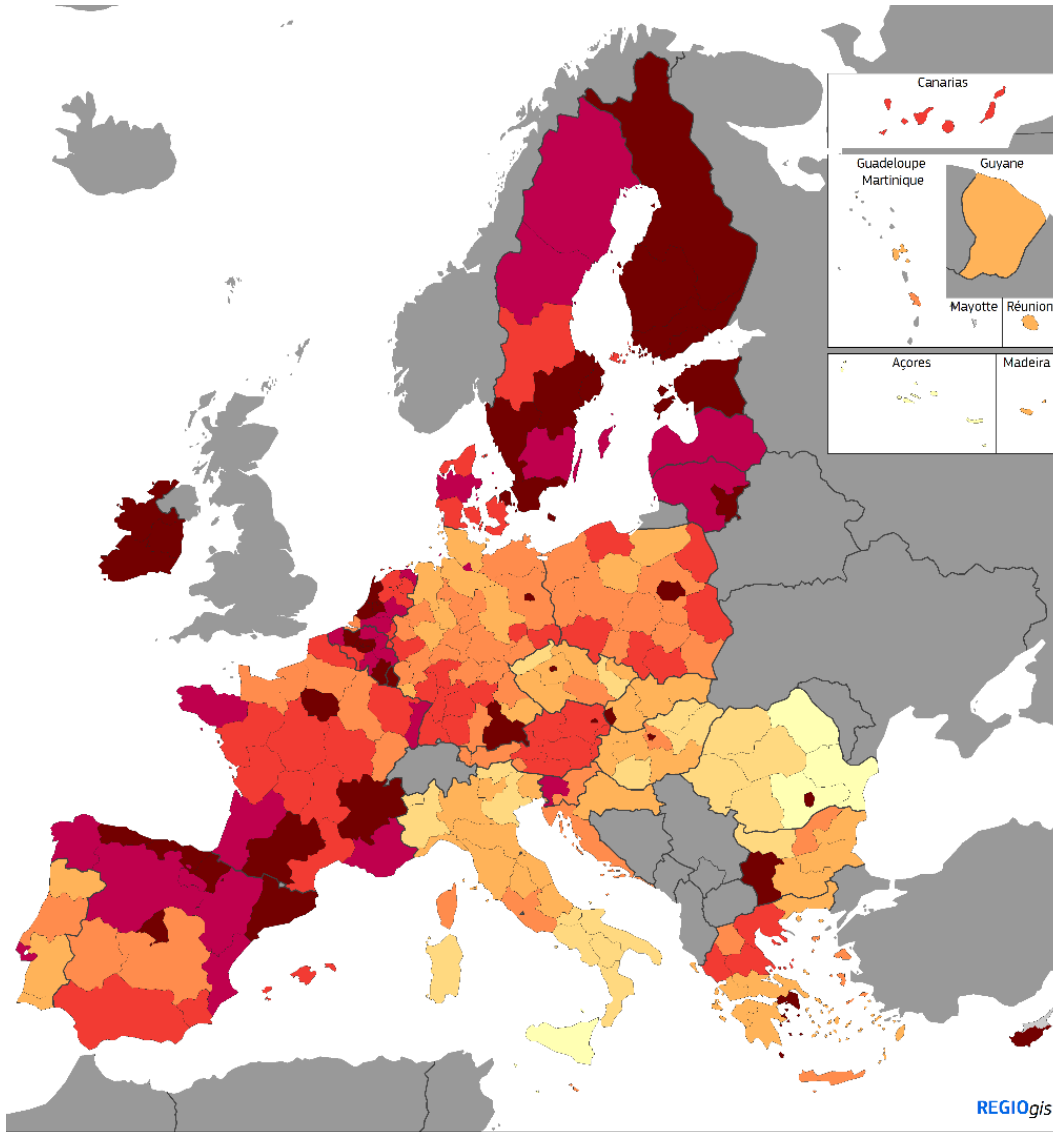© EuroGeographics Association for the administrative boundaries

# 5    Skills gap

A well educated workforce is key to economic development and prosperity. The share of those aged 25–64 with tertiary education, however, varies markedly across regions (map 7). Capital city regions tend to have a more highly educated population than others. There are also strong regional disparities as regards the participation of adults aged 25–64 in education and training, and early leavers (aged 18-24) from education or training.

As regards digital skills, the newly agreed target at the EU level is that by 2025 at least 70% of those aged 16–74 should have at least basic digital skills. In 2019, the proportion was only 56%. Only in more developed Member States (66%) was the proportion close to the target, whereas it was well below in moderately developed (49%) and less developed Member States (42%).

Map 6  Population aged 25-64 with tertiar education, 2019



**Population aged 25-64 with tertiary education, 2019**

% of total population aged 25-64

- < 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- > 40
- no data

EU-27 = 31.6
ISCED level 5 and 6
Source: Eurostat (edat_lfse_04)

0            500 Km

© EuroGeographics Association for the administrative boundaries