

## ESPON TARGETED ANALYSIS

# TEVI 2050

## Territorial Scenarios for the Danube and Adriatic Ionian Macro-regions

Final Report, PART III \_ Possible territorial scenarios for the EU-  
SAIR // 11 April 2022

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the EUSAIR 11 April 2022

### **Disclaimer**

This document is a final report.

The information contained herein is subject to change and does not  
commit the ESPON EGTC and the countries participating in the  
ESPON 2020 Cooperation Programme.

The final version of the report will be published as soon as approved.

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## Abbreviations

EGTC	European Groupings of Territorial Cooperation
EU	European Union
EUSAIR	European Union Strategy for the Adriatic Ionian Region
EUSDR	European Union Strategy for the Danube Region
GDP	Gross Domestic Product
PA	Priority Area
R&D	Research and Development
SME	Small and Medium-sized Enterprise

# 1 Introduction

The ESPON project Territorial Scenarios for the Danube and the Adriatic Ionian macro-regions 2050 (TEVI 2050) belongs to Specific Objective 2 of the ESPON Programme. The project aims to 'develop territorial scenarios for the European Union Strategy for the Danube Region and European Union Strategy for the Adriatic Ionian Region as the means to enhance the territorial dimension of the respective EU Strategies and to embed the territorial evidence in policymaking at relevant levels of the countries involved in their implementation' (ESPON EGTC, 2020).

## 1.1 Introduction to the study

As stated in the Terms of Reference, the objectives of the project are (ESPON EGTC, 2020):

- Identification of the main processes, factors, obstacles and drivers that will shape the territorial development and spatial integration of the Danube Region and the Adriatic and Ionian Region in 2050. The common challenges identified in the strategic documents for each macro-region (e.g. demography, energy issues, mobility, connectivity, digitalization, innovation and climate change) shall be taken into consideration.
- Identification of synergies and conflicts between the above-mentioned factors, obstacles and drivers (in particular, from the perspective of the key policy processes).
- Formulation of baseline territorial development scenarios for the Danube Region and for the Adriatic and Ionian Region for 2050.
- Production of alternative territorial development scenarios for the Danube Region and for the Adriatic and Ionian Region through a participatory dialogue with the steering committee and possibly involving other stakeholders.
- Development of policy recommendations on possible policy pathways i.e. policy actions requiring joint attention of the European Union Strategy for the Danube Region (EUSDR) and the European Union Strategy for the Adriatic Ionian Region (EUSAIR) governance bodies and other levels of governance in the respective EU macro-regions in order to steer the development towards the chosen scenarios. In this case, soft cooperation and multi-level governance actions shall be taken into consideration.

## 1.2 Introduction to Part III

What can be possible futures for the EUSAIR? How can the different territories of the EUSAIR develop by 2050, based on different scenario assumptions? How would these futures differ from today and what can be possible policy recommendations for more informed policy making in the years to come?

Part III of the ESPON TEVI 2050 final report is dedicated to the EUSAIR macro-regional strategy findings. The aim of the report is to present in a single document the path from the present to the development of the different futures and scenarios of the Adriatic Ionian Region. The report starts with a short overview of key findings relevant for the EUSAIR (Chapter 2). Chapter 3 gives a first aggregated picture of the Adriatic Ionian Region today to set the scene for the development of the different scenarios. Chapter 4 presents the baseline scenario developed for the EUSAIR, which is based on the same assumptions as for the EUSDR. The baseline scenario shows what is possible to happen if there are no changes. Chapter 5 presents the first alternative territorial scenario for the Adriatic Ionian region, which is based on the same assumptions as for the Danube region. Chapter 6 gives the concluding reflections of this scenario, presenting its foundations and overall territorial implications. Chapter 7 presents the alternative territorial scenario for the EUSAIR, based on EUSAIR specific assumptions. This is followed by chapter 8, which gives some concluding reflections of this scenario, presenting its foundations and overall territorial implications. The report concludes with chapter 9 which presents conclusions and policy recommendations. The report has taken the COVID-19 pandemic and the war in Ukraine as important changes into account, to the extent that they do not shape the core of the scenarios and neither alter the results of the co-creation process carried out during the project.

### 1.3 How to read the scenarios

**Baseline scenario:** The baseline scenario, or 'business as usual scenario' presents the future of the Adriatic Ionian Region if no major changes happen, i.e. if things continue as today. It is based on four key assumptions for the future, following the trend selection carried out in the desk study and the co-creation process of the project. The scenario also provides the territorial implication, i.e., what territories in the region will be affected by what factors.

**Alternative territorial scenarios.** The alternative territorial scenarios take the trends to a more extreme version, also giving the territorial implications, i.e., what territories in the region will be affected by what. A few things need to be taken into account when reading the alternative territorial scenarios:

- The green parts at the beginning of the scenario give the theoretical basis for the scenarios, explaining what lies behind each story.
- A short paragraph in *italics* at the end of every thematic focus for each scenario is pinpointing the territorial implications of each focus. This is complemented by an alternative map per scenario to support the key messages and complete the story visually.
- The 'terristories' grey boxes in the alternative scenarios are imaginary stories of the future, to make the storyline more imaginative, creative and vivid.
- The scenarios are written looking back from the future, i.e. as if today were the year 2050. Hence present and past are used where relevant.

All scenarios are built along the desk research and the thorough co-creation process that took place throughout the project and guided the focus of the scenarios. The methodology of how the two scenarios were developed are described in more detail in Part I of the final report, as well as in Scientific Annexes 1, 2 and 3 of the final report.



## 2 Key findings on EUSAIR

What are possible future paths for the Adriatic Ionian Region? ESPON TEVI 2050 has looked into several territorial scenarios to explore different future pathways for the Region. Taking a glimpse first at the present, expected trends, developments and challenges, the project has used a thorough co-creation approach to develop a baseline and two alternative territorial scenarios. These are followed by policy recommendations on possible future actions. The following bullet points give the key findings of the ESPON TEVI 2050 project.

- **A mantra: Scenarios are not future predictions.** Scenarios are a useful tool for preparing for the future and showing how things may develop by looking at different interrelations of trends. Scenarios do not make predictions or accurate prognosis. They allow glimpses into the future, by considering how different trends or developments may interact, by looking at how different factors may change and how these changes may affect other factors. They can inform policy makers through more focused thinking about the future and improved understanding of the present, by providing different possible pathways for developing desirable futures and avoiding future dystopias.
- **A glimpse at the Adriatic Ionian Region today.** The Region is a large transnational area with unique natural and cultural characteristics, with long historical heritage. Socio-economic disparities, territorial fragmentation, a lack of connectivity and climate change challenge the region. The region is not leading in innovation, there is low R&D spending, while digital connectivity is low with visible urban-rural divides. Although the blue economy offers many opportunities in the region, there are outdated technologies and fishing is small scale. Mobility and connectivity are important with challenges in the road and energy networks. Lastly, sustainable development is key to preserve the natural habitat in the region, as challenges remain in the land marine environment.
- **Baseline scenario: what happens with no new changes in the Adriatic Ionian Region by 2050.** The baseline scenario has looked at four key assumptions: territories in sustainable transition, depopulation, a digital divide and incomplete EU integration. The baseline scenario shows that sustainable development, blue growth and enhanced connectivity will be partial. An incomplete transition to a sustainable economy means that not all territories meet the objectives of the European Green Deal. In the Adriatic Ionian macro-region this implies enhanced biodiversity loss challenging the region's ecosystems, a shift in key transport hubs, as the transition to a sustainable economy and stricter rules encourage sustainable transport, the end of mass tourism, as more sustainable tourism is introduced, and insufficient capacity for the rural economy due to depopulation and a lack of public services. The transition to a sustainable economy, population changes and a digital divide, as well as earlier experience with clean energy for EU islands, provide positive perspectives for a few territories in the Adriatic Ionian macro-region. These are mainly territories that reap benefits from technological breakthroughs. By 2050, these territorial differences are even more pronounced due to different levels of European integration for countries in the macro-region. EU Member States must contribute to achieving European policy objectives.
- **Alternative scenario: flourishing in green and social wellbeing.** By 2050 the Adriatic Ionian Region has taken a leap to achieve a better quality of life. This is ecological, i.e. in good environmental conditions, and social, i.e. with trust in government and personal relations. The scenario is highly driven by the EU taking a new global role and increasing the quality of life of its citizens. The EU strategic autonomy goal gradually transformed it into a global player, leading in sustainability and ensuring quality of life. Digitalisation enables more citizen participation in decision making and safeguarding European values. The transition towards a better quality of life by investing more in environmental and social enablers has affected people's lives to a great extent. It has influenced the way people work and the economy, adjusted technological infrastructure, affected transport and improved health. At the same time, the EU's strong regulatory presence and new global role has led to more solidarity and integration across the territories and their people improving prosperity and wellbeing. People work less and value their free time more, industries become greener, society and businesses reap the benefits of digitalisation, sharing cultures thrive, alternative energy sources reduce carbon emissions, tourism and agriculture becomes more responsible and people improve their quality of life
- **Alternative scenario: restoring nature for a revived ecosystem.** Several natural hazards have challenged the Adriatic Ionian region and its pristine biodiversity. This highlighted that climate

change is an eminent threat and people need to seriously do something about it. In combination with the 'new normal of work' with remote working and 'work from anywhere', especially after the COVID-19 pandemic, settlement patterns change. The transition towards a clean natural habitat by giving back to nature and adapting work and employment affect people's lives greatly. This has influenced the environment, the way people work and the economy, adjusted technological infrastructure, affected transport and improved health. At the same time, the strong commitment of people and especially youth, as well as technological progress have helped achieve prosperity and a clean ecosystem which is crucial for the wellbeing of future generations. Large parts of unpopulated territories are given back to nature to build green and blue infrastructure, the new geography of work has supported brain gain in the region, while greener, more social, more circular and sustainable SMEs have established a brand for the region, the sea has become the key transport mode and people enjoy 'slow living', as they have shifted towards green growth and less intense economic development, creating their own Adriatic Ionian way of life.

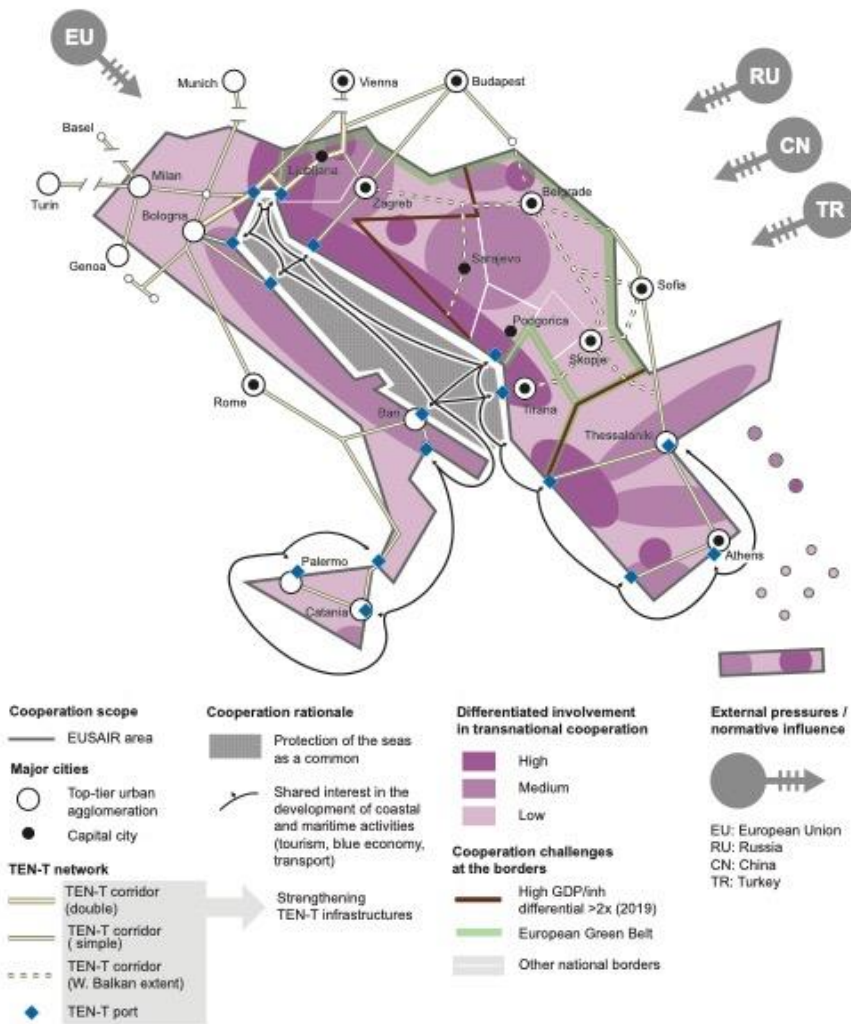
- **Pointers for the future.** Regardless which scenario seems more desirable or likely, issues such as demographic decline and ageing, climate change, biodiversity loss, digitalisation, increasing energy demand and growing global tensions will need to be addressed in the region. Potential policy recommendations concern pointers for a territorial vision of demographic change, a spatial plan for green and blue transitions, a macro-regional biodiversity plan, a taxation agreement for the digital workforce, as well as a masterplan for future-wise tourism. At a macro-regional level, policy pointers regard the launch of future-oriented debates, thinking on macro-regional plans and strategies, and transnational bodies and agreements. Last but not least, ESPON could focus on building repositories of national and regional plans and strategies, supporting the development of macro-regional masterplans and sector strategies while strengthening continuous macro-regional monitoring.

### 3 Setting the scene

Understanding the present, current territorial development with its challenges and opportunities is useful when discussing and developing baseline and alternative territorial scenarios, as it helps to have a reference when it comes discussing the future. This section sets the scene by taking key topics identified in the terms of reference as the most relevant ones for the future. The topics for EUSDR are digitalisation, migration and demographic change and climate change and sustainable development. The topics for EUSAIR are blue economy and innovation, mobility and connectivity as well as the Green Deal and sustainable development. The chapter (and the project) do not take stock of every possible development, challenge or characteristic, neither focus on any changes deriving from the COVID-19 post-pandemic reality. This chapter aims to give an overview and first basic elements on the present situation.

The Adriatic and Ionian region is a large transnational area with more than 70 million inhabitants, home to several capital and top-tier urban agglomerations with unique natural and cultural characteristics (Interreg ADRION, 2015). The common denominator for cooperation in the region is the Adriatic Ionian Sea as a common, bringing its own challenges and potential (Map 3-1). The following present an aggregated picture, there are however, considerable differences between the regions and places in the area.

**Map 3-1 The EUSAIR Mapshot**



Source: ESPON TEVI 2050, 2022

The Adriatic and Ionian region has spatial and socio-economic disparities, territorial fragmentation and lack of connectivity. Emigration, international actors' involvement, in particular China's investments through the Belt and Road Initiative, governance and societal challenges, interrupted transport connections in the Western Balkans and climate change effects, are a few examples of existing challenges in the region. At the same time, potential is seen in the rich biodiversity of the region, renewable energy potential, a rich cultural heritage, tourism and blue growth (SITA-SOGES et al., 2020). Furthermore, an important element to consider is EU enlargement and Western Balkan integration. Addressing underlying structural issues and achieving better territorial governance will be vital to fulfil the enlargement priorities and increase potential (Western Balkan Network on Territorial Governance, 2018).

The economic situation differs significantly across the macro-region. As shown in the map below, GDP values are strong in Northern Italy and Slovenian regions (Map 3-1). The picture is similar for capital cities compared to their surroundings. GDP appears lower in Western Balkans regions, but this should increase (ESPON, 2020b).

Zooming into the three key topics from the terms of reference, the following points give a first background.

**Blue economy and innovation – not an innovation leader, but benefitting from blue growth.** The region is not leading in innovation, digitalisation and internationalisation, but rather SMEs are the backbone of the economy in the macro-region. Wholesale, retail and manufacturing are the key business sectors. Slovenia, Italy and Greece have the highest R&D spending but no country in the macro-region is close to the 3% of GDP spending on R&D set by the EU. Slovenia and Serbia have the highest share of enterprises that provide ICT training for their staff, with the lowest being North Macedonia. Digital connectivity is another important element, affecting people and businesses. About 78% of households have access to broadband, with the Western Balkans taking big leaps towards digitalisation. The urban-rural divide for internet access is visible throughout the region and particularly strong in Greece. Digital transformation remains a challenge for SMEs and businesses, resulting in further internationalisation challenges. (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020)

Blue growth offers opportunities for the Adriatic Ionian macro-region, especially the development of coastal and maritime activities (Map 3-1). Blue growth covers issues such as blue technology, fisheries and aquaculture as well as maritime and marine governance and services. In the Adriatic Ionian macro-region, marine technology and blue bio-technology can develop further, especially in the non-EU countries, and could have competitive advantages compared to other regions. A challenge here is the outdated technology that hampers the blue economy. In this case, clusters are important for further development. Fishing is small scale in the region. Aquaculture is another important sector, especially for Italy, Croatia and Greece. Sustainable fishing is vital, not only to preserve the fishing population and sustain biodiversity but also to provide income for local communities. Lastly, maritime and marine governance highlights the importance of cooperation and coordinated activities. (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020)

**Mobility and connectivity – Land and sea coming together.** Connectivity and transport also require cooperation with land and sea interactions playing an important role (Map 3-1). Maritime transport and port infrastructure play a key role, in both local traffic, as well as in tourism, as the latter heavily depend on ports, cruise ships, yachting, as well as seaplanes transport networks where applicable. Ports are often also entry points for organised crime, such as drug trafficking and other illegal goods, elevating the importance of security. Road and rail networks face challenges particularly in the Western Balkans (Map 3-1). However, freight and passenger traffic by rail decrease. Air transport seems to be important, given the lack of road and rail infrastructure in the area. (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020)

Connectivity also regards the energy networks, with the energy markets being fragmented. Nevertheless, there are efforts to diversify the energy sources in the macro-region, such as the East-Med energy cooperation schemes, which at the same time may pose their own challenges. Implementation of the green deal, decarbonisation and carbon neutrality, put regions highly reliable on fossil fuels at risk, and these are the majority of regions in the area.

**Green deal and sustainable development.** The Adriatic Ionian macro-region has very rich biodiversity, with many areas being protected under the Natura 2000 framework and European Green Belts. Nevertheless, this rich biodiversity is challenged by climate change and is vulnerable to natural hazards such as earthquakes, floods, wildfires, storms, droughts, etc. The region also has extensive forests but these are challenged by excessive forestry and wildfires. Air pollution is another big challenge in the region as a result of CO<sub>2</sub> emissions. In addition, most of the countries in the macro-region have functioning coal plants with

coal and also wood being the main heating sources. Coastal and soil erosion add to environmental challenges in the region, often leading to floods. Marine resources are also challenged, mainly through the over-exploitation of fisheries, while water contamination and marine litter worsen the situation. Tourism can be environmentally negative. (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020)

Taking the above into account, the Green Deal will boost more sustainable solutions, with further opportunities for more environmentally friendly, carbon neutral solutions. To address the existing disparities, stronger cohesion and integration is necessary through cooperation across places, policy sectors and society. Already today, though, there is good cooperation in the Adriatic Ionian macro-region, mainly between EU member states, with the most along the coastal part and the north part of the region. There are challenges across borders, particularly for integration and cohesion in the region (Map 3-1), with EU enlargement and Western Balkan integration remaining important. However, global powers such as Russia, Turkey and China seem to play a role in the region's development (Map 3-1). In addition, the outbreak of the war in Ukraine in early 2022 reflects possible geopolitical risks in the region, subject to different power games along the different countries of the Adriatic-Ionian macro-region.

### Concluding points

Summing up, a digital divide, especially between urban and rural regions remains further challenging the development of sustainable blue economy opportunities, but more R&D spending could counter this. A more sustainable approach to development seems necessary as extreme weather events and high CO<sub>2</sub> emissions challenge the region. Implementation of the Green Deal will challenge fossil fuel dependent regions with transition towards cleaner energy solutions. Renewable energy, such as hydropower, solar power, wave energy, green hydrogen production, the circular economy and environmentally friendly aquaculture are important steps to counterbalance this. When it comes to mobility, the question remains how sustainable can this be in the future. The analysis shows that air transport prevails which will be challenging, taking into account future environmental actions on carbon neutrality as air transport has the highest carbon footprint. For tourism, the cruise industry has increased and seeks more facilities.

There is growing environmental awareness and a circular economy, maritime shipping and connectivity, population decline, ageing, over-tourism, as well as more specific trends, not limited to the Western Balkans, such as unemployment and high public debt, underperforming institutions, ethnocentrism and contested statehood, outdated educational systems and global trends, such as internet penetration and urbanisation (European Union Institute for Security Studies, 2018). To address these disparities, stronger cohesion and integration is necessary with cooperation across places, policy sectors and society.

## 3.1 What is in it for cooperation?

### Existing cooperation in the Adriatic Ionian macro-region to address challenges and tap potential.

The Adriatic Ionian macro-region is home to several cooperation frameworks. These range from Interreg transnational programmes, such as the Interreg ADRION Transnational Programme to Interreg cross-border cooperation programmes between EU member states and Interreg IPA programmes. Other cooperation structures play an important role, such as European Groupings of Territorial Cooperation (EGTCs), the Adriatic Ionian Initiative and Euroregions. These also serve as examples of EU integration for non-EU member states. EUSAIR is a platform that can help address challenges in the macro-region through cooperation.

**EUSAIR is an important element in the region.** Macro-regional strategies are coordination and cooperation frameworks that implement shared priorities through processes and projects. Macro-regional strategies require cooperation across national and regional borders, operating along soft borders at transnational level. EUSAIR is a flexible cooperation framework with its own priorities to address challenges and untap potential in the macro-region. Cooperation is key. EUSAIR, through its four pillars (sustainable tourism, environmental quality, connecting the region and blue growth) and 10 topics aims to promote economic and social prosperity in the region, as well as increase its attractiveness, competitiveness and connectivity<sup>1</sup>. These pillars and topics include themes such as the rehabilitation of cultural heritage and cultural tourism under sustainable tourism as well as maritime and intermodal transport under connecting the regions.

<sup>1</sup> <https://www.adriatic-ionian.eu/about-eusair/>

**EUSAIR supporting territorial development and European integration.** Cooperation under EUSAIR has contributed to increasing sustainable governance in coastal areas (Council of the European Union, 2019). EUSAIR supports EU integration and contributes to the EU enlargement as it includes both EU and non-EU members, participating on an equal footing. Five members are non-EU member states so EUSAIR contributes to *acquis communautaire* and the administrative capacity of these countries, supporting multi-level governance and promoting the involvement of diverse players in policy making (European Commission, 2021e). Non-EU countries gain recognition through coordinating with other organisations, countries and initiatives. They can also capitalise on cooperation results and projects and improve their capacity. This approach will be enhanced in future (Council of the European Union, 2019).

**Challenges still remain.** Despite the progress and the increased cooperation that contributes to territorial development, further cooperation potential as well as challenges exist. These mainly regard existing divides particularly between EU and non-EU countries and between East and West, as well as the persistent importance of borders in the two macro-regions. Governance plays a key role in enabling cooperation and opening up new opportunities. In addition, although the involvement of civil society has increased over time, it should be further encouraged (European Commission, 2020f). The co-creation process of the project has identified the following points, which have played a key role in the scenario development:

- The development and extent of EU integration and EU enlargement are important for both macro-regions. Macro-regional strategies play a major role in contributing to further EU integration and facilitate cooperation between EU member states and other countries, specifically to help prepare accessing countries for EU membership. The influence of external powers adds a new dimension to the EU enlargement process, as well as to the continued integration of existing EU member states. The outcome of the integration process remains very relevant for development. In that respect, stronger links and cooperation are key.
- Sustainable development is another important element for both macro-regions. Action plans in both already focus on the topic, though more actions are necessary in light of climate change challenges.
- Sustainable development with links to blue growth and sustainable tourism are highly important for the Adriatic Ionian macro-region. With the sea being the common denominator for cooperation and the rich natural habitat in the region, exploring the opportunities in this field are necessary. Tourism is highly dependent on the natural endowments of the area and contributes to local economies.
- The valorisation of cultural heritage and cultural diversity in both macro-regions is important and is incorporated in the priorities and objectives of the two macro-regional strategies. Both macro-regions are multicultural and actions under sustainable tourism and natural heritage can contribute to a better quality of life. This cultural diversity can be an asset for local and regional development, as well as a challenge to integration.
- There are still physical and mental borders in both areas, hampering further integration. Together with external influences and cross-border obstacles, more cooperation needs to be considered.

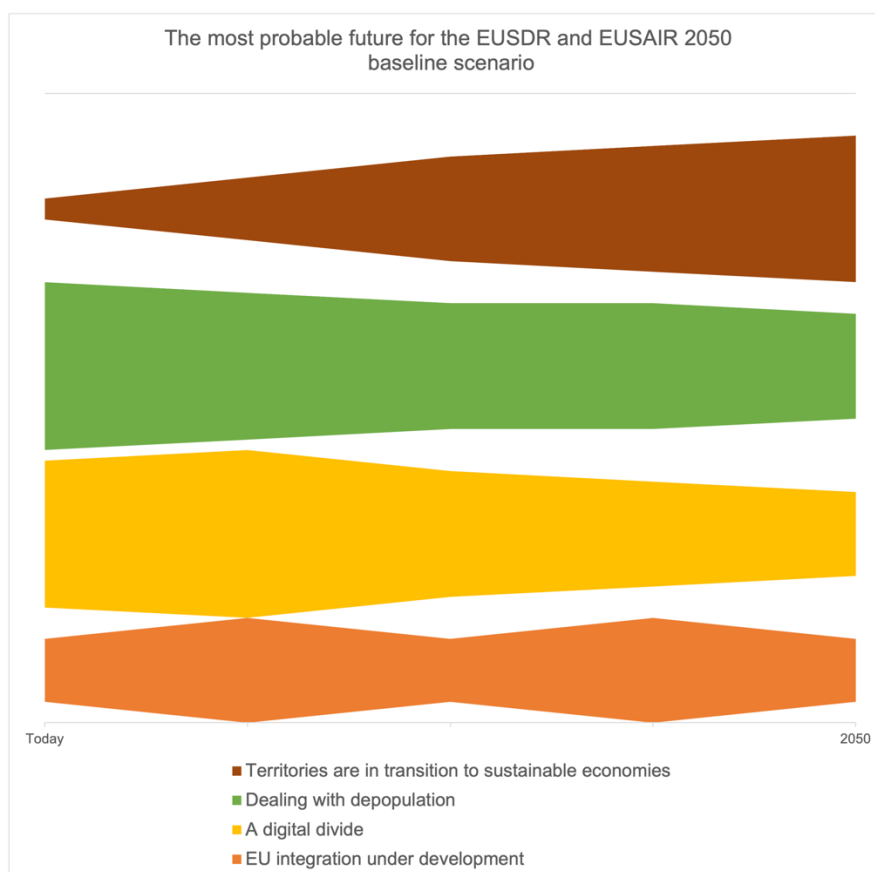


## 4 EUSAIR baseline scenario

A territorial baseline scenario describes a 'business as usual' future for the Adriatic Ionian macro-region. The scenario builds on trends that will most likely define territorial development in the Danube macro-region. More information on the development of the baseline scenario can be found in Part I of the final report, as well as in Annex 2 of the Scientific Annexes of the final report.

The following assumptions shape the baseline scenario, as shown in the Figure below.

**Figure 4-1 EUSDR and EUSAIR baseline scenario assumptions**



Source: authors' own

- Territories are in transition to sustainable economies.** The trend analysis shows close relationships between economic and environmental trends. Many economic trends are driving or hampering factors for environmental trends and vice-versa. Objectives for the European Green Deal have similar links between environmental and economic aspects. The trend analysis however shows challenges to achieving objectives of the European Green Deal. Ongoing pollution for example affects fresh air, clean water, healthy soil and biodiversity. Also, the reliance on fossil fuel and importance of this industry for employment hampers cutting CO<sub>2</sub> emissions. At the same time, the bioeconomy demands high quality resources and net-zero societies need 100% renewable energy production. By 2050, the Danube and Adriatic Ionian regions are thus in transition to sustainable economies. The transition to sustainable economies starts slowly in the 2020s, and the green transition is not fully implemented by 2050 (Figure 4-1).
- Dealing with depopulation.** Societal trends highlight a continuation of existing ageing and migration tendencies in the Danube and Adriatic Ionian macro-regions. Ageing is mainly driven by natural forces and economic prosperity as well as by a brain drain. Migration is driven by economic opportunities elsewhere, predominantly in capital cities or beyond the two macro-regions. Economic trends, such as the local economy or bioeconomy, as well as technological trends, such as digitalisation, provide opportunities for rural places to deal with depopulation. However, these trends remain incomplete by 2050

and thus cannot fully address the negative effects of migration and ageing. As a result, societal trends accelerate depopulation by 2050. Depopulation seems to be a continuing challenge highlighting that ageing and outmigration lead to even more uneven development (Figure 4-1).

- **A digital divide.** The trend analysis highlights the uncertainty of technological trends and their possible regional applicability in societies up to 2050. Technological breakthroughs advance transitions to sustainable economies, making production and consumption more resource efficient. As such more investments in skills and infrastructure are likely. In these places, technological advancements are part of a positive feedback loop. At the same time, a lack of infrastructure, skilled labour, and cautious attitudes to digital solutions and robotisation slow the adoption of technological breakthroughs in societies. This applies particularly to depopulated areas. As a result, the macro-regions have a digital divide by 2050, where a few places reap the benefits of technological breakthroughs due to adequate infrastructure and a well-trained labour force. The picture improves slightly after the 2030s, with policies driving digital transformation in the regions, but inequalities remain, though to a lesser extent (Figure 4-1).
- **EU integration under development.** Economic advancement as well as increasing interconnectedness and territorial cooperation facilitate European integration in the Danube and Adriatic Ionian macro-regions. This implies the accession of countries to the European Free Trade Area, the EU, Schengen Area and Eurozone. The level of integration is however very different for each country due to volatile hampering factors. For example, building institutional capacity and diffusing powers to lower administrative levels or to non-state actors is a bumpy road. Such aspects require long-term approaches but are often interrupted by political, economic and societal changes. As a result, EU integration continues to develop in 2050. This is a path that changes over the years, with ups and downs, with countries being in favour of EU integration or not, also largely influenced by external factors and pressure from external forces, beyond the EU (Figure 4-1).

Territorial consequences as well as different topics, as formulated in the Terms of Reference, differentiate the narratives of the baseline scenario. The narrative is accompanied by a creative alternative map, depicting key features of possibilities for 2050.

## 4.1 The Adriatic Ionian macro-region by 2050

Territorial characteristics of the Adriatic Ionian Region are key to determining possible futures for it in 2050. In particular driving and hampering factors for key trends play out differently by territory type, such as landscape, settlement patterns, population characteristics or economic profiles. Key territorial characteristics were discussed during a Steering Committee meeting in July 2021. Applying such features to the baseline assumptions outlined above and considering the three focus topics - Green Deal and sustainable development, mobility and connectivity, blue economy and innovation - guide a possible territorial future for the Adriatic Ionian macro-region by 2050.

In short, the Adriatic Ionian macro-region is polarised by 2050. It contains places that adapted early to measures in line with the European Green Deal, transformed their economy and society and reaped the benefits of blue technological advances (green circles in Map 4-1). At the same, hampering factors hinder many territories to fully contribute to the objectives of the Green Deal. An incomplete transition to a sustainable economy, depopulation, a digital divide and incomplete EU integration result in great disparities in the Adriatic Ionian Region by 2050.

Natural, tourism and rural areas as well as transport hubs are the most challenged in the baseline scenario. Applying the baseline scenario assumptions, introduced above, shows that natural land and maritime areas face a loss of biodiversity and suffer from the effects of climate change. Tourism areas are challenged by reduced travel opportunities, the effects of climate change and reduced attractiveness as result of lower environmental quality. Rural areas are challenged by biodiversity loss affecting agriculture, population decline limiting human capital and a lack of accessibility. Transport hubs, particularly in EU countries are challenged by the need to shift to (costly) sustainable transport solutions. Only territories with sufficient clean energy that adopt clean technologies and reap the benefits from digitalisation early on, including technological newcomers, will thrive in this scenario. The following paragraphs detail the territorial consequences of the baseline scenario.



### Map 4-1 The 'business as usual' future for the EUSAIR in 2050 – Baseline scenario



Source: ESPON TEVI 2050, 2022

In more detail, an incomplete transition to a sustainable economy implies that not all territories are living up to the objectives of the European Green Deal. In the Adriatic Ionian macro-region this implies biodiversity loss, different transport hubs and the end of mass tourism (Map 4-1).

**Biodiversity loss.** By 2050, key driving factors for biodiversity, such as climate change and pollution have intensified due to an incomplete transition to sustainable economies and failing to achieve European Green Deal objectives. Industry, transport, and energy production remain contributors to greenhouse gas emissions and pollution. As such they continue to threaten environmental quality including plant and animal lives. In addition, the effects of climate change are not mitigated. Instead, continued emissions of greenhouse gasses accelerate the frequency of droughts and wildfires as well as heavy rainfall and floods. In addition, sea levels rise more than the projected 60 cm in the Adriatic and northern Aegean Seas and 70 cm in the Ionian and Mediterranean Sea during the 21<sup>st</sup> century (EEA, 2021). This implies more treats to coastal areas on the Ionian Sea and to a slightly lesser degree on the Adriatic and northern Aegean Seas. Although the consequences of an incomplete transition to a sustainable economy are felt across Europe, specific territories in the Adriatic Ionian macro-region are hit worse than others.

Biodiversity loss is most evident in territories vulnerable to climate change. In the macro-region, coastal areas and islands are particularly vulnerable, including the Venetian lagoon and Istria (BBSR & ESPON, 2020) as well as Albanian coastal regions (Zoï Environment Network, 2012). In addition, mountain regions are very vulnerable, for example South Tirol in Italy and the Dinaric Alps in Croatia, Bosnia-Herzegovina and Montenegro (BBSR & ESPON, 2020).

Natural as well as tourism and agriculture areas experience most biodiversity loss;

- Biodiversity loss limits ecosystem performance in natural areas. Examples of natural areas also vulnerable to climate change include South Tirol in Italy, Croatian coastal regions and islands, Montenegro, Albania, and Epirus in Greece (BBSR & ESPON, 2020).
- Tourism destination areas lose part of their attractiveness due to biodiversity loss. Particularly, since increasing number of tourists destinations promote sustainable tourism by 2050. Examples of tourism areas also vulnerable to climate change are Veneto Puglia and South Tirol in Italy, Croatian coastal regions, Lake Ohrid in North Macedonia, as well as the Ionian islands, Crete, and South Aegean islands in Greece.

- Agriculture, particularly aquaculture, requires high ecosystem performance to thrive. Increasing water temperatures, pollution and other factors contributing to a biodiversity loss decrease ecosystem performance levels. Examples of areas with high shares of aquaculture the Ionian Islands, Central Greece and the Aegean Islands in Greece, along the coasts of the Italian Veneto and Marche regions as well as around Taranto in Puglia (European Commission, DG MARE, 2021). In addition, aquaculture in Slovenia, Albania and Croatia is rapidly developing (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020).

On the other hand, territories with severely reduced populations (see also below) may see more nature development and rewilding. Until 2050, population decline may reach a threshold that makes economic functions impossible to sustain in some places, including agriculture, maintenance of renewable energy sources, or tourism attractions. The outmigration of people from these places would lead to rewilding, which in its turn may stimulate biodiversity.

**A shift among key transport hubs.** By 2050, transportation hubs have changed location in the Adriatic Ionian macro-region. The transition to sustainable economies and stricter rules to encourage sustainable transport makes intra-European transport more costly. Particularly marine shipping is subject to severe changes (European Commission, 2021i). Shipping companies either need to pay off their carbon emissions or invest in new technologies to reduce the use of fossil fuels, for instance hydrogen power or wind power or alternate maritime power. Such investments make maritime shipping more costly.

Cargo ports in EU Member States that particularly function as transit port to other European destination are most affected by the transition to sustainable economies and stricter rules to encourage sustainable transport. In the Adriatic Ionian macro-region this concerns particularly the ports of Piraeus, Patras and Thessaloniki in Greece, and ports of Gioia Tauro, Ancona and Venice in Italy. These ports in EU countries have relatively large cargo flows from and to Europe (Böhme, Holstein, Wergles, Uljed, Biosca, Nogera, Guevara, Kruljac, Spiekermann, Klaus, Kluge, Lina, Sessa, Enei, & Faberi, 2017). Ports in Croatia and Slovenia are less affected as the share of intra EU cargo flows is smaller compared to the other ports. Ports in countries in transition to becoming EU Member States can profit from lower standards for sustainable transport and take over roles of other ports to becoming hubs for intra-European maritime cargo flows. As a result, turnover of cargo in the ports of Durrës, Albania and Dar, Montenegro is higher by 2050. These ports take over some of the cargo transport from EU ports in the area. Moreover, by 2050 they are well connected to the European transport network and operating as intermodal ports. Both ports are well-connected by road and rail to Greece and Serbia.

**End of mass tourism.** By 2050, the transition to sustainable economies leaves its mark on the tourism sector. Particularly, the thrive for sustainable transport defines the amount of tourism in many places by 2050. High speed rail is the preferred mode of transport for most tourists from central and western Europe. High speed rail provides a relatively sustainable opportunity to travel fast over large distances. Moreover, the adoption of new technologies or carbon offsetting or capturing for cruises and air transport make flying expensive for most tourists. Most tourists visit thus places that are well connected to Europe's high speed rail network by 2050. Other places lose their competitive advantage to attract mass tourism and may increasingly compete with each other for tourists willing to travel for higher costs or taking more time to reach their final destination.

Territories highly dependent on tourism, by looking at, the number of nights spent by total area of the region, are most affected by the end of mass tourism. Regions along the northern Adriatic coast in Italy, Slovenia and Croatia are among the regions with highest tourist densities in Europe, this includes cities such as Venice, Rimini, Athens, and Dubrovnik as well as regions such as Istria in Croatia, around the Garda Lake in Italy, Lake Ohrid in North Macedonia, and Greek islands, for example Crete, the Ionian islands and South Aegean islands. Only destinations that are well connected through sustainable transport options or that manage to make a transition to sustainable tourism, may still be attractive tourism regions by 2050. The other destinations lose their competitive advantage and may need to seek other economic specialisations to compensate for the loss of mass tourism.

By 2050, northern and western parts of the Adriatic Ionian macro-region are best connected Europe's high speed rail network. The European transport network for 2050 depicts high speed connections serving Venice, Trieste and Ljubljana as well as Foggia and Bari in Italy via Rome (DG MOVE, 2020). By 2050 these places are thus most interesting for tourists. High speed connections are also envisaged in Greece, but they only connect to the rest of Europe via conventional rail, following the assumptions, these places are thus not interesting for mass tourism by 2050. Rail improvements and development is envisaged throughout the

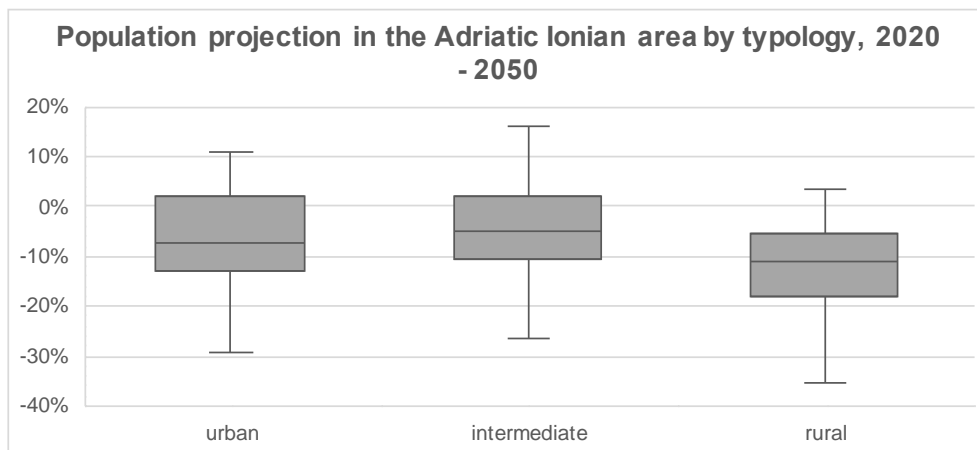
Western Balkan. However, by 2050 this will only consist of conventional lines. Therefore, reaching these places via rail will be too long for most tourists. Hence, sustainable transport makes Greek and Western Balkan tourism destinations vulnerable to the end of mass tourism. Similarly, developments to making shipping more sustainable limits the number of tourists. To emit less greenhouse gasses or to be able to use alternative fuels, such as hydrogen or electric engines ships and cruises are smaller, and tickets are most costly by 2050.

Moreover, enhanced climate change as result of incomplete transitions to sustainable economies limits possibilities for coastal tourism. By 2050 coastal regions suffer from beach erosion by sea level rise and weather instability (ECORYS, S.PRO, & MRAG, 2016). Coastal regions offer thus less opportunities for tourism then today.

**Insufficient capacities for rural economy.** Tourism offers rural communities an opportunity to develop even without mass tourism (Bock & Krysztofowicz, 2021). However, by 2050 depopulation hinders the utilising this opportunity as well as other economic opportunities of rural places, including agriculture.

By 2050, most territories in the Adriatic Ionian macro-region are declining in population, posing thus a treat for the tourism industry. This applies particularly to rural areas as areas with low population densities are particularly challenged by this enhanced population decline. Also, about 70% of the intermediate regions and urban regions shrink in number of population by 2050 (Figure 4-2). Shrinking cities include for example Dubrovnik, Split, Maribor, Thessaloniki, and Bari. By 2050, they lack a critical mass and sufficient labour to economic activities, including sufficient labour for agriculture and tourism (OECD/EC-JRC, 2021).

**Figure 4-2 Population projections 2020-2050 in the Adriatic Ionian area by typology**



Source: own elaboration based on Eurostat 2020 population projections

Areas with low accessibility to public services, including culture, as well as areas with low digital connectivity experience population decline most negatively and have fewest capacities to sustain rural economies.

A lack of accessibility to public services in rural places describes a negative spiral leading to empty places. A decreasing accessibility to public services and better economic opportunities elsewhere are one of the key driving factors for people to leave these places (Noguera, Mar Ortega-Reig, Hector del Alcazar, Copus Andres, Francesco Mantino, & Barbara Forcina, 2017). At the same time, a declining population decreases the critical mass to sustain public services for health care, education, culture and leisure (OECD/EC-JRC, 2021). By 2050 such empty places can be found across the Adriatic Ionian macro-region, particularly inland mountain regions in central Italy, southern Slovenia, border regions in Serbia and Albania and Greek regions in the Pindus Mountain range. To give just two examples 91% of the Greek regions of Evrytania in the Pindus Mountains and 89% of Dibër county in Albania lack sufficient access to public services (Noguera et al., 2017).

Digital solutions provide opportunities to overcome challenges of population decline, such as digital health care and education as well as robotics for agriculture (Territorial Agenda, 2020). However, the digital divide under this scenario hampers the use of digital solutions, meaning:

- Public authorities favour trusted providers for digital connectivity. Universal solutions to provide satellite internet as developed by Elon Musk’s Starlink or by the Chinese government are available

by 2050 but mostly used by private persons. Public authorities prefer other providers for public services which requires infrastructure.

- Digital solutions are available in areas with the necessary infrastructure. A lack of income as a result of population decline hampers investments in digital connectivity by local authorities. In this case, population decline slows technological advances in regional and local economies (European Commission Directorate General for Research and Innovation, 2012).

Territories with low rural broadband coverage thus have more difficulties to provide public services by 2050. Regions in Bosnia Herzegovina have the lowest coverage of broadband internet (Tech4i2, Time.lex, & Jurjevic, 2019). In addition, rural regions in Croatia (e.g. Slavonia) and inland regions in Greece such as Thessaly and Western Greece as well as border regions with Bulgaria have the lowest share of next generation internet access (BBSR & ESPON, 2020).

**Islands of innovation.** The transition to a sustainable economy, population changes and a digital divide, as well as earlier experience with EU smart islands clean energy, provide positive perspectives for a few territories in the Adriatic Ionian macro-region. These are particularly territories that reap benefits from technological breakthroughs. The application of technological breakthroughs is a driving factor for sustainable economies, such as a net-zero society, blue biotechnology, and sustainable transport. In addition, they help with the adoption of clean energies and mitigate negative effects of climate change. Such positive perspectives make these places attractive for people from places with less positive perspectives, for example the places previously described that deal with biodiversity loss, reduced tourism incomes, population loss and a lack of service provision. As such negative impacts of depopulation are mitigated in these places by 2050.

Early adopters of 4.0 technologies are most visible as islands innovation. The 4th industrial revolution leads to fusions of technologies and the lines between physical, digital and biological systems becoming blurred, transforming the labour market significantly. Moreover, concentration of new technical solutions rapidly rolled out across the world increasingly create 'winner takes all' economies. This gives an additional relevance to regions and urban agglomerations in economic transition (Territorial Agenda, 2020). Veneto, Emilia-Romagna, and Puglia in Italy, as well as Athens and Crete in Greece, eastern Slovenia and continental Croatia are among the regions that have the capacity to leapfrog on technological breakthroughs (BBSR & ESPON, 2020). Creative capacities and low entry barriers for new technological development facilitates the uptake of new solutions in these regions without full application of preceding technological transformations.

Energy security largely defines the speed of adoption of new technologies and possibilities to apply them in societies. Globally energy demand increases by 30% until 2040 (National Intelligence council, 2021). Digitalisation is one of the key drivers for increased energy demand (Fehér & Méré, 2019). By 2050, the transition to sustainable economies implies using all potential for renewable energy, notably solar and wind energy. Puglia, Croatian coastal regions, Crete, Athens, and southern Aegean have highest potential for wind power. Regions along the Sava and Po rivers as well as Croatian coastal regions have highest potential for solar power (ESPON, 2018c). Exploiting this potential counterbalances a loss of energy and electricity production from phasing out fossil fuels plants and offers sufficient energy to facilitate blue innovations in these territories. In addition, these regions benefit from marine renewable energy activities including floating offshore wind, wave and tidal energy and floating solar photovoltaic energy contribute to meeting the energy demand by 2050 (European Commission, 2021i). The end of mass tourism in some of these places (see above) supports the development of renewable energy. Previously, the development of wind and solar power might have been hampered to maintain general attractiveness of places for tourism. A decreased importance of tourism in many places of the Adriatic Ionian macro-region enables the development and exploitation of the renewable energy potential.

**Partial development to sustainable development blue growth and enhanced connectivity.** Comparing the above sketched territorial implications of applying assumptions for a possible future in the Adriatic Ionian macro-region with the today's situation as described in Chapter 3 illustrates predominantly negative outlooks for the three key topics from the terms of reference (Table 4-1). Only few positive outlooks for sustainable development and blue economy and innovation are depicted in the scenario:

- Enhanced biodiversity losses challenge sustainable development and achieving objectives of the European Green Deal and hinders advancing blue biotechnology
- Shifting transportation hubs limits achieving sustainable development throughout the region and mobility and connectivity.

- An end of mass tourism contributes to better air qualities and reduces stress on biodiversity and waste recycling hence it supports the European Green Deal and sustainable development. At the same time, it reduces mobility and decreases the demand for connectivity.
- A lack of human resources and investment capacities in rural areas decreases their potential for innovation and critical mass for mobility and connectivity.
- Islands of innovation develop new solutions for the blue economy and as such support sustainable development.

**Table 4-1 Territorial consequences impact opportunities of today’s key topics in the Adriatic Ionian macro-region**

	Sustainable development and Green Deal	Blue economy and innovation	Mobility and connectivity
Biodiversity loss			
Shifting transport hubs			
End of mass tourism			
Insufficient capacities for rural economies			
Islands of innovation			

Source: authors' own

By 2050, these territorial differences are even more pronounced due to different levels of European integration. EU Member States must contribute to achieving European policy objectives such as in the European Green Deal, Social Pillar, and EU Digital Strategy. In addition, cross-border cooperation and personal movement is easier between EU Member States in Schengen. EU accession states have similar obligations but often less capacity to deliver results. At the same time, they are more susceptible to the influence of foreign powers, who have different socio-economic and environmental objectives. By 2050, the Adriatic Ionian macro-region includes more EU Member States than today. However, the different pace of EU accession has widened the gaps to achieving European Green Deal, Digital Strategy and Social Pillar objectives and thus accelerated gaps in sustainable development, the blue economy and innovation, and mobility and connectivity.

## 4.2 Conclusions

The territorial baseline depicts predominantly negative territorial developments for the Adriatic Ionian macro-regions. Natural, tourism and agricultural areas face more negative challenges as a result of climate change, biodiversity loss, increased transportation costs and depopulation.

The benefits of technological advances and digitalisation are likely to be concentrated in a few territories. This includes territories that started investing and adopting clean and green technology early as well as territories with creative capacity and low barriers to apply new technologies. These territories can leapfrog and are depicted as technological newcomers in map 4-1.

At the same time, the common baseline assumptions – territories in transition to sustainable economies, dealing with depopulation, a digital divide and incomplete EU integration– have different territorial consequences in the Adriatic Ionian macro-region. In the Adriatic Ionian macro-region challenges for transportation hubs become noticeable. EU legislation in line with Green Deal objectives make transportation costlier affecting particularly maritime transport hubs as well as transport hubs relying on road and air transport. Also, the negative effects on tourism areas are visible in the Adriatic Ionian macro-region. Effects of climate change such as rising sea levels pose additional challenges in the Adriatic Ionian macro-region due to the importance of coastal tourism. Also, the distance of key tourism areas from main population centres makes tourism destinations more reliant on air transport. The shift to sustainable economies makes this more costly, reducing the opportunities of many territories, particularly islands, to welcome large amounts of tourists. At



the same time, the end of mass tourism may unleash the exploitation of renewable energy potentials in the Adriatic Ionian macro-region. As the tourism sector loses economic importance by 2050, affecting the most tourism-economically dependent regions, players in the renewable energy sector may more frequently use the opportunities to develop solar and wind parks in areas close to areas that were visited by many tourists before the transition to sustainable economies.

Overall, the baseline scenario depicts increasing challenges for many territories in the Adriatic Ionian macro-region. Only a few territories will thrive as islands of innovation. An incomplete transition to a sustainable economy indicates great disparities between territories.

## 5 Flourishing in green and social wellbeing

**For the *summum bonum*<sup>2</sup>: Getting a good life.** By 2050 the Adriatic Ionian Region and its citizens have taken a big leap towards achieving the 'greatest good', i.e., a better quality of life. The COVID-19 pandemic of the early 2020's was a trigger for increasing the importance of wellbeing. Restrictions and social distancing measures greatly affected social life, contacts and the mental health of citizens, which directly affects their personal wellbeing. Citizens have realised that it is not only economic progress that brings joy. In fact, in addition to economic factors like income or wealth, other factors, such as personal relations, improved social life and contacts have been proven pivotal for a good quality of life (Hanell, 2018; Kahneman & Krueger, 2006). Beyond that, the pandemic also highlighted more than ever the link of good environmental conditions, good governance and good health with the quality of life. During the lockdowns of the early 2020s, CO<sub>2</sub> emissions reduced to decade-long lows (Tollefson, 2021), improving air and noise quality, while some first seeds of nature revival in many places were sowed (Barbiroglio, 2020). In addition, public trust, e.g. trust in services, in the legal system etc., has been boosted since the 2020s, building a new paradigm for governments which have won trust over the pandemic crisis years, as an important wellbeing component (OECD, 2021b, 2021a). The war in Ukraine also highlighted the need for trust in democratic governments. These triggers made it clear that green environments and flourishing ecology, as well as institutional trust and thriving communities are important enablers for a good life (ESPON, 2020a). By 2050, prosperity in the Adriatic Ionian Region is not only defined by good material conditions, education, economic and physical safety, employment and job satisfaction, but also health, leisure and social interactions, a good living environment and good governance (Hanell, 2018), as people start to value their personal lives more.

**In strategic autonomy: EU as a global player.** By 2050 the EU has become more strategically autonomous, which has greatly influenced the integration of its territories and macro-regions, by also becoming more resilient. The COVID-19 pandemic exposed several vulnerabilities, dependencies and gradual disempowerment across Europe and its neighbourhood. To counter that, the EU has aimed at more resilience, where mutual interdependencies are well managed and there is relative power across the EU (Joint Research Centre, 2021b). Critical dependencies such as increased competition in geopolitics, digital technology, economic dependence on foreign powers, the green and digital transitions, polarisation due to populism and climate change consequences that need coordinated action have prompted a more active role for the EU in the world (Joint Research Centre, 2021b). Although the idea initially focused on security and defence, over the years, strategic autonomy evolved towards further policies. As a result, by 2050, the EU has become more proactive, being true to its interest and values, and has taken a leading role in geopolitics, the environment and society. This strategic autonomy over the decades has been step for the EU project, evolving from an economic and social union to a 'governance of governance'. This has not only had implications for EU member states, but particularly for EU enlargement, with the latter becoming a key influence and priority tool in its wider territory. Enlargement countries have mainly become EU member states. Through its strategic autonomy, the EU has become a strong regulatory player functioning as a large umbrella organisation, safeguarding its sustainability rules and social charter through legislation. At the same time, this overarching autonomy of the EU strengthened the subsidiarity principle in member states and allowed the EU to have more global influence.

**Fit for digital transformations.** Discussions in the 2020s initiated the digital transformation across the EU. This is transforming people's lives, bringing people closer together no matter where they are located, as was proved during the COVID-19 pandemic, enabling people to organise themselves, interact, work and reach out in a fast, easy and economical way. The EU digital compass of the 2020s launched four key aspects for digital transformation, which have evolved by 2050 and peaked in the Adriatic Ionian Region. Increased digital skills, more secure and sustainable digital infrastructure, the transformation of businesses and public services now highlight the digital profile of the macro-region (European Commission, 2021c). In addition, the digital agenda for the Western Balkans has been a cornerstone for a gradual digital revolution with better broadband connectivity, increased cybersecurity and industry digitalisation, a stronger digital economy and society as well as research and innovation (European Commission, 2018). These developments have

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<sup>2</sup> Summum bonum: latin for the greatest good.

fostered new opportunities in the region, not only in connectivity and business, but especially in developing an open and democratic society, green solutions and personal interactions, which were necessary for the wellbeing of Adriatic Ionian Region citizens.

*The transition towards a better quality of life by investing more in environmental and social enablers has affected people's lives to a great extent. It has influenced the way people work, the economy, technological infrastructure, transport and health. At the same time, with support from the EU's strong regulatory presence and new global role, it enabled more solidarity and integration across the territories and their people which played a role in their prosperity and wellbeing.*

**Green is the colour of wellbeing.** By 2050 the Adriatic Ionian Region has invested in improving ecological enablers in its territories. As good environmental conditions are closely connected to better health, not only being closer to nature, but also living in healthy environments are recognised as key prerequisites for a better quality of life (ESPON, 2020a). Possible enablers are green infrastructure and protected areas that are available and maintained, i.e. access to green places rich in biodiversity and nature increase opportunities for relaxation, health, sport and leisure. At the same time, good air and water quality, little soil contamination, reduced CO<sub>2</sub> emissions and decarbonisation of the economy, all contribute to reducing climate change risks and make territories more resilient and more sustainable (ESPON, 2020a).

*Places with ecological enablers, such as green infrastructure and protected areas, are those where green wellbeing can flourish. This is, for instance to be seen in the regions of Central Macedonia, East Macedonia and Thrace, Epirus and West Greece in Greece, in most regions of Slovenia, as well as in Adriatic Croatia. (ESPON, 2020a). Furthermore, places with protected areas or large natural parks, such as Sutjeska national park in Bosnia and Herzegovina, Northern Velebit national park in Croatia, Durmitor national park in Montenegro, Tara National park in Serbia and Triglav national park in Slovenia (Adriatic Your Regional Destination Specialist, n.d.), as well as Lake Prespa national park and Zakynthos marine park in Greece, are some examples of places that by 2050 thrive in ecological wellbeing. (Map 5-1)*

**Achieving the Green Deal 2.0.** Climate change has been the greatest long-term challenge of recent decades. Nevertheless, a good environment and connection to nature would not have been possible without the EU Green Deal 2.0. Implementing the Green Deal has transformed the Adriatic Ionian Region, taking it to the next level, where a net-zero society has been largely achieved across Europe. CO<sub>2</sub> emissions have been reduced and most of the Green Deal goals achieved which have improved the quality of life for citizens over the years as have actions for fresh air, clean water, healthy soil, biodiversity, healthy and affordable food. With better public transport, renovated and energy efficient buildings, cleaner energy, long lasting products and circular economy approaches (European Commission, 2019b) the Green Deal has been an overarching umbrella for the Adriatic Ionian Region to achieve a better ecological status and gradually become a net-zero society. This has not only affected EU member states, but also those who were non-EU members at the beginning of the policy, such as the Balkan states. More specifically, dedicated policies for them supported their green transition with measures on decarbonisation focusing on energy, mobility, climate, the circular economy, depollution, sustainable food systems and biodiversity protection. The efforts have largely paid off with many places showing an improvement by 2050 (European Commission, 2020c).

*An improvement in CO<sub>2</sub> emissions per capita has resulted from the climate neutrality policy. This is particularly to be seen in the regions of Western Greece and the Peloponnese in Greece, in Puglia, Molise and Sicily in Italy, as well as most parts of Croatia and Slovenia (European Committee of the Regions, 2019). In addition, regions that were formerly 'coal regions', such as Western Macedonia in Greece, and the regions of Tuzla, Srednjobosanski, Zenicko-Dobojski, Ugljevik, Gacko in Bosnia Herzegovian, Bitola and Kicevo in North Macedonia, Pljevlja in Montenegro and Kostolac, Kolubara, Obrenovac and Pomoravlje in Serbia have been fully transformed by 2050. (European Commission, n.d.-a, n.d.-c)*

**Prosperity as a matter of trust.** The years before the 2020s were marked by discourse around 'places that don't matter' and the 'geography of discontent', which referred to regions with persistent poverty, economic decay, lack of opportunities and decline (Dijkstra, Poelman, & Rodríguez-Pose, 2018; Rodríguez-Pose, 2020). These brought an avalanche of developments especially a rise in populism across Europe and a fall in trust of governance, services and institutions. This phenomenon started to reverse following the COVID-19 pandemic. In fact, the quick and remarkable response of governments to the pandemic has been a lesson for reinforcing democracy and hence increasing trust in governance, services and institutions (OECD, 2021b). More than 50% of people trusted their government in 2020 (OECD, 2021b), this gradually increased by 2050 with stronger environmental and social policies, as well as more citizen participation in decision



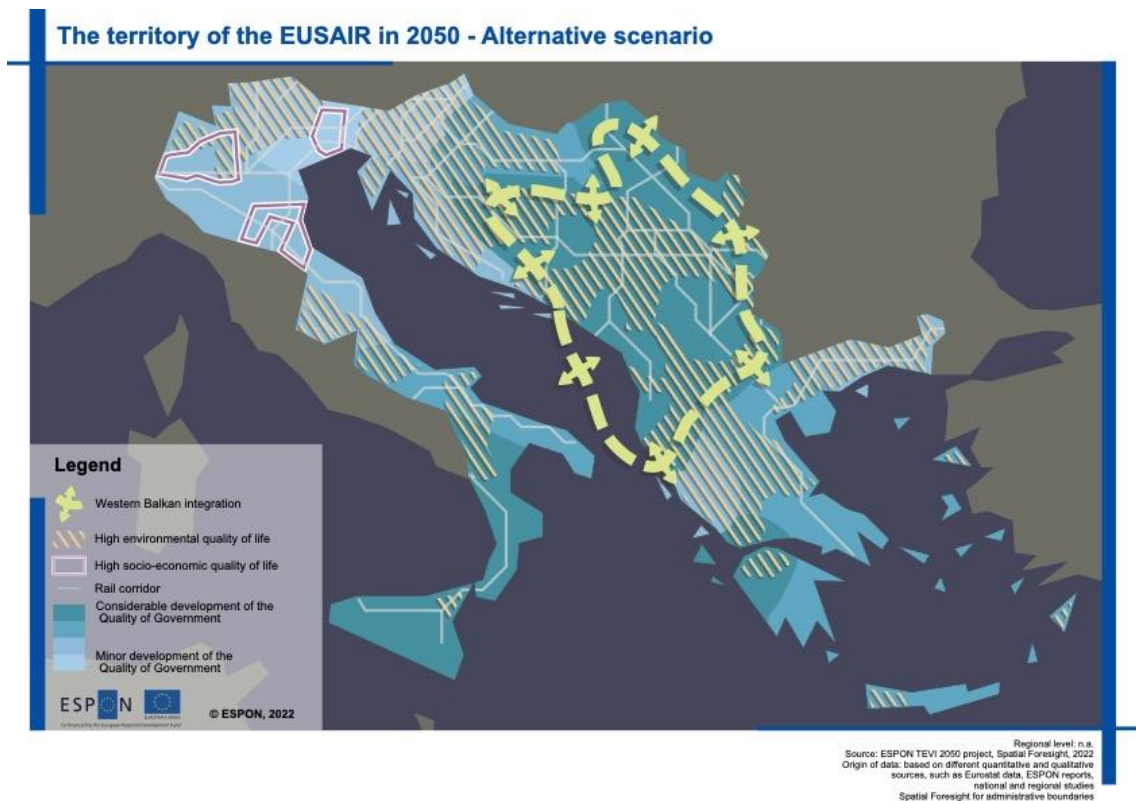
making, especially where trust in government was low or challenged earlier. This shift has improved the social wellbeing of citizens which is affected by interpersonal and institutional trust.

*Regions where the quality of governance was low have shown substantial leaps in increasing trust and governance quality by 2050. These have been for example the region of Calabria in Italy, the Ionian islands and Western Greece regions in Greece, as well as regions in Albania, Serbia, Bosnia-Herzegovina and North Macedonia. (Charron, Lapuente, & Bauhr, 2021)*

**Economy: Is this the end of GDP?** Wellbeing is not always linked to GDP indicators, as the latter often fail to show what brings people joy. There were discussions about going beyond GDP before the 2020's. Nevertheless, the increased focus on ecological and social wellbeing in the Adriatic Ionian Region by 2050 has gradually restructured the economic measurement of GDP to encompass other aspects of peoples' wellbeing. Elements covering environmental and social dimensions have been necessary particularly redefining prosperity by embracing social fairness. This means paying particular attention to leaving 'no one behind', building resilient societies, as well as decoupling prosperity from natural resource use, supporting a fair green transition and exploitation of natural resources. Talks about 'beyond GDP' were often linked to 'de-growth'. This meant reducing production and consumption and understanding environmental issues as ethical issues involving social transformation. In the Adriatic Ionian region, efforts have been made towards more sustainability and social fairness for increased wellbeing by 2050.

*Regions which were characterised earlier as 'left behind' opposing EU integration, such as most regions of eastern Italy and central Greece have leapt towards increased trust and stronger social wellbeing (Dijkstra et al., 2018). In addition, places investing in ecological enablers, such as most regions of Slovenia, Croatia, most parts of Albania, North Macedonia and Serbia, the regions of Western Macedonia, Epirus, Western Greece and East Macedonia in Greece will be the first regions getting a better quality of life due to their improved ecological status (ESPON, 2020a).*

### Map 5-1 Flourishing in green and social wellbeing – Adriatic Ionian Region 2050



Source: ESPON TEVI 2050, 2022

**E-services and e-governance bring people together.** The digital transformations across the Adriatic Ionian Region increased the use of digital e-services. This is not only reflected in people's lives when it comes to the way people work or shop but has also contributed to greater citizen engagement in decision making.

Online platforms allow citizens to participate in online assemblies, i.e. the virtual version of the citizens assemblies that was existing in some countries already decades ago, discussing regulations, important matters and plans for their territories among others. In addition, digital government services have also increased by 2050, facilitating interaction with public authorities. With future generations becoming digital nomads, public policies need to keep up and ensure their engagement. Such digital participation has brought governance close to citizens, involving the co-creation of public services and redesigning them for citizens' needs. Greater inclusion has also brought stronger social cohesion, ensuring services for people, designed by citizens.

*When it comes to online citizen participation, certainly digital connectivity plays an important role. Although this trend is widely expanding to most households, places that have high household digital connectivity seem to have the seen elements to be the frontrunners and advance. This transition has been first in urban areas, followed then by rural areas, which transitioned slowly over the years. In addition, the mobile revolution that took place during the 2030s reshaped connectivity especially in less accessible territories and rural areas, bridging any former digital divide. Slovenia had the seeds to lead in that direction, while most regions in Croatia, Serbia and Bosnia Herzegovina southern Italy and most regions in Greece had to initially take greater efforts to eventually take big leaps towards higher digital connectivity and invest more in digital infrastructure, as well as mobile broadband connectivity. (Eurostat, 2020) (Map 5-1)*

**Our work: digitalisation and automation.** The digital revolution of recent decades with 'fit for the digital age' policies and increased digital connectivity across the Adriatic Ionian Region has also largely transformed the way people work. It has created many new jobs, as in the 2010s, where in one decade more than 2 million jobs were created in the EU (European Commission, 2019a). Although new technologies may make some jobs obsolete, especially artisan jobs that have been sacrificed in the name of robotisation, it has also improved the quality of existing jobs and created new ones. Particularly very standard and predictable jobs can be automated. At the same time, digital technologies have changed what and how people work, adapting to new methods (Joint Research Centre, 2019). All these bring substantial market changes across the regions. Of course, social support is necessary to manage labour market transitions, especially through education and well-designed policies. (European Commission, 2019a) Such developments may also create new types of job, such as 'explainers', i.e. workers interpreting Artificial Intelligence system outcomes or 'ethicists', i.e. setting guidelines and making sure they are followed so Artificial Intelligence systems are accountable (Joint Research Centre, 2019) that require rather analytical and critical thinking. These developments have improved peoples' lives in the long run, as it made people focus on more important and personally gratifying tasks. In an indirect way, digitalising work has given people the flexibility to take more control of their lives.

*Regions with high employment in manufacturing will have to adjust and change their profiles and ways of working by 2050, such as central and east regions of North Macedonia, most parts of Veneto and Marche regions in Italy, as well as the regions of Attica and Central Macedonia in Greece. (ESPON, 2018a)*

*Regions with high employment in industry will be first that need to adapt to the new trends and developments. This is particularly relevant for Ascoli Piceno and Vicenza provinces in Italy, the east region in North Macedonia, the counties of Medimurje and Varazdin in Croatia, Carinthia region in Slovenia, Zenica Doboje canton in Bosnia-Herzegovina, as well as Moravica, Zlatibor, Jablanica, Pcinja and Pirot, among other regions in Serbia. (BBSR & ESPON, 2020)*

*Regions that already during the 2010s were implementing industry 4.0, such as the regions of Friuli Venezia, Veneto and Emilia Romagna in Italy, as well regions that were robotising traditional manufacturing like Marche, Abruzzo and Basilicata in Italy, all of Slovenia and continental Croatia were already a step ahead in adapting to the new developments, while other regions needed extra efforts to adjust.*

**Jobs go where skills are.** Digital and non-cognitive skills are important for digital-related jobs. Digital literacy is a prerequisite for employment in highly skilled jobs and positions with more responsibilities and more tasks (Joint Research Centre, 2019). The skills demand has increased by 2050, transforming the nature of work and making it more specialised. Non-cognitive skills, such as people skills, emotional intelligence and social interaction (Joint Research Centre, 2019) have also expanded over the decades, highlighting their importance for people-to-people work relations. Workers who fail to adjust or lack these skills may risk having less well-paying employment chances.

*Although it is difficult to pinpoint places where people have high cognitive skills, places where citizens regularly used the internet earlier than 2030, indicate high digital skills and possible attraction poles for*

*employment in related fields. For instance, in Greece, south Italy, north Croatia and used to seldomly use the internet, while in the north of Italy, northern Serbia and North Macedonia very low share of population has not used the internet. (BBSR & ESPON, 2020)*

**How do we work? New rules to count.** The increasing focus on wellbeing and increasing digitalisation has provoked a change in peoples' attitudes towards work. By 2050, citizens of the Adriatic Ionian Region talk about the 'end of ambition', where employees quit their jobs for better or less stressful ones, or for working environments where their efforts seem more appreciated. Job productivity has been increasing for a long time, unlike wages which have remained stable (Malone, 2022). The previous working culture of 'Thank God Its Friday' that caused burnouts, extra pressure and depression has seen large scale resignations (Malone, 2022). The pandemic of the early 2020s made people realise the importance of free time and changed presumptions that their jobs are the most important things in their lives (Malone, 2022). This not only affected workers on the lower rungs of the ladder, but also elite lawyers, finance CEOs, or high ranking executives who quit their jobs to spend more time with their families or take up new adventures (Gelles, 2022). In addition, the COVID-19 pandemic accelerated 'working from home', which increased up to 60% in spring 2020, a trend that stayed and increased to 2050, as employees choose to work nearly half from home as it increases their happiness and productivity (The Economist, 2021c). Being busy is no longer trendy and employers strive for less working hours and less demanding schedules. Putting workers' wellbeing first, companies have gradually adjusted to offering meditation and therapy sessions. In addition, making business calls illegal after working hours has only been the beginning of this new shift. This is also supported by the Millennial generation employees who, especially after the pandemic, started valuing their free time and wellbeing more, abandoning cushy and stable jobs to start new businesses, requesting more flexible timing, or experimenting with new professions (Roose, 2021).

*These developments have particularly affected regions with a large share of employment in services already in 2020s which then gradually moved towards adjusted working styles. These are mainly urban areas across the Adriatic Ionian Region, such as Beograd, Ljubljana, Thessaloniki, Athens, most parts of northeast Italy, Tirana and most parts of Montenegro. (BBSR & ESPON, 2020)*

*In addition, by 2050, citizens moved from urban areas to nearby small and medium-sized cities or rural areas to benefit from a better quality of life, this has affected urban settlements, small and medium-sized cities and rural areas all over the Adriatic Ionian Region.*

**Greening and digitalising industry.** With the increase in automation and in the importance of peoples' free time industry could not remain unaffected. Digitalisation has sparked a boom of e-commerce and online warehouses, which increased even more after the COVID-19 pandemic. Online shopping has become more tailored and personalised, while online retailer warehouses quickly and efficiently accommodate any shopping need (European Commission, 2019a). This has had direct implications on smaller bricks-and-mortar retailers and local shops, as they had to adjust to these new developments or close. Digital platforms have allowed consumers to buy things faster and easier and have them delivered. At the same time by 2050, technology serves the sustainability values of people in the Adriatic Ionian Region. Greening production through circular economy practices and improved better waste management have become the norm. Certainly green-washing is unavoidable, putting at risk all the environmental efforts that have been taken place so far. For this, Pigouvian taxes<sup>3</sup> have been applied to avoid tricking the system.

*Internet use for purchases is a good indication of places that lead the shift towards e-commerce and online shopping. This can relate to both purchasing and selling goods or services. For regions already used to purchasing online from the 2010s, the shift has been easy by 2050, e.g. regions in Slovenia, north of Greece, Serbia and north Italy. At the same time, regions with low internet sales were mainly in parts of Serbia, Italy and Croatia. Parts of Greece and Serbia could leapfrog by 2050 with adequate policies. (BBSR & ESPON, 2020)*

## **Territory: Upskilling for a European industry – Vojvodina 2050**

<sup>3</sup> Taxes on a market transaction that creates a negative externality, or an additional cost, borne by individuals not directly involved in the transaction.

Vojvodina had reached its limits in work-intensive growth. Policymakers have realised the need for a shift - from quantitative growth and economic figures to smart, inclusive and sustainable growth and social fabric. More attention is now paid on the new engines of industrial growth: the people and the improvement of their skills and well-being. In order to gain a new impetus middle-sized towns have been developed in a comprehensive way. A more polycentric network of industry has been formulating involving cities such as Subotica or Sombor. These urban centres now have the potentials and the economic will to shift to a knowledge-intensive industry. Gradual shift has occurred: instead of just waiting for FDI for assembly plants complex actions are taken to support upskilling to reach a European-level smarter industry.

**Share, repair and care.** This shift towards more sustainability is not only reflected in the way businesses operate, but also in the way people behave. People's mindset in the Adriatic Ionian Region has gradually shifted towards abandoning the linear economic system of 'take-make-waste' towards a more circular approach of reuse-recycle-repair. This has been supported by stronger policies but also by citizens themselves, who have seen the benefits of the circular economy over time. In addition, increased digitalisation has allowed people to organise themselves in online platforms for car, tool and expertise sharing. Exchanging, particularly at neighbourhood and local level has led to a more mindful use of resources and a stronger community feeling among citizens.

*The use of collaborative economy platforms where people can organise themselves is an indication of a sharing economy. Regions already aware of such platforms in the 2010s could already move to a more sharing economy. In the Adriatic Ionian Region, only Croatia, Italy and Greece were aware. (European Commission DG COMM, 2016)*

**Carbon neutrality: zero emissions possible.** External factors, such as increased tensions in the neighbourhood of the Adriatic Ionian Region in 2022 has rung the alarm bell for the need for a new, more efficient and less dependent energy system. Having the Green Deal as an overall policy compass and building on the EU's strategic economy, resulted in the EU leading the way towards carbon neutrality, the new 'REPowerEU' plan of the 2020s has borne fruit (European Commission, 2022). The long-lasting dependency of the EU on Russian oil and gas has been replaced with a rapid transition towards clean energy and less coal dependency. Uncertainties posed by fluctuating and high energy prices during the 2020s spurred the green transition. The EU has revived its gas storage policy through infrastructure and phased out its dependence on fossil fuels, in most cases before 2030 (European Commission, 2022). By diversifying gas supplies and reducing this dependence it was possible to realise the Green Deal goals faster. At the same time, strategic autonomy allowed the EU to easily diversify its gas supplies and accelerate hydrogen power. Increased investments in renewable energies were also put in place during the 2030s, further diversifying energy sources. (European Commission, 2022)

The Adriatic Ionian Region was generally energy and fuel poor, especially in the Balkan region in the 2000s, limiting economic potential. At the same time, the region was largely dependent on gas and fossil fuels, with Slovenia, Serbia, Bosnia and Herzegovina, Montenegro and Greece leading in low-quality lignite resources. Implementation of the Green Deal by 2050 has reduced these to a large extent. In addition, hydropower plants in Balkan countries, also used to play an important role up to 2030, when they slowly started becoming smaller. (European Parliament, Policy Department B Structural and Cohesion Policies, 2015). On the other hand, the region has been redeemed with renewable energy resources, such as geothermal, hydro, biomass, solar and wind, which even during the 2020s were higher than the EU average, while efforts through the Eastern Med energy cooperation schemes have become fruitful.

*Regions with high dependence on coal such as Kozani in Western Macedonia in Greece, in Monfalcone in Friuli Venezia, Fusina in Veneto and South Brindisi in Puglia in Italy, Sostanj in Slovenia, Plomin in Croatia, the Kolubara mining basin in Serbia and others, as well as key hydropower plants places, such as in Serbia and Croatia first faced green transition challenges during the 2020s-2030s.*

*At the same time, renewable energy potential has been high in the region and places that have capitalised over the years on renewable energy laid the first pioneering steppingstones already by 2030. Regions, for instance, that had a high potential of onshore wind energy generation could leapfrog by 2050. These are Puglia in mainland Italy, Ragusa in Sicily, Sibenik-Knin County in Croatia, the North Aegean, Attica and Crete regions in Greece, which already in 2020s had the highest potential (ESPON, 2018c). Wind parks in Raska district and South Banat district in Serbia and Mozura in Montenegro, as well as in the south of Bosnia and Herzegovina and from Kumanovo to Kriva Palanka in North Macedonia have taken small steps by 2050 (Western Balkans Investment Framework, 2019), while more efforts were needed for Slovenia. The same holds for regions with solar power potential, such as in most parts of Italy, e.g. Friuli Venezia, Veneto, Sicily,*



*Puglia, as well as Central Macedonia in Greece and most regions of Croatia, with smaller steps seen in Slano in Montenegro and Karbinici in North Macedonia and Vau I Dejes in Albania with less potential in Slovenia (Balkan Green Energy News, 2021; Bellini, 2021; ESPON, 2018).*

**Logistics: it's a long way.** The new shopping habits of people linked mainly to online shopping and on demand services has resulted in a need for more and better-connected logistics services. However, the scarcity of resources and increase in energy prices, accompanied by a higher environmental consciousness has made logistics services even more expensive by 2050. Production remains global and with the strategic role of the EU expanding, such globalisation increases. Although there are sharing and repairing elements in small urban and rural areas, larger metropolitan areas are substantially dependent on online shopping. Interregional freight transport connections and key transport hubs remain important for logistics. Technological advancements have increased the use of cleaner energy in transport, reducing costs and environmental footprint.

**Rail is back on track.** A key characteristic for mobility in the Adriatic Ionian Region by 2050 has been the shift towards more sustainable transport and less carbon emissions. The Green Deal has encouraged green mobility. An efficient and interconnected multimodal transport system has been gradually implemented, while affordable and high-speed rail networks are on track (European Commission, 2020a). Further to that, night trains have been in fashion again, reducing unproductive travel time and flights which have the highest share of carbon emissions. Rail freight traffic has also doubled, while high speed rail traffic has tripled and the TEN-T has been largely electrified and expanded towards the Western Balkans (European Commission, 2020a). Stricter pollution standards and stronger regulations defend sustainability.

**Bespoke multimodality.** Transport in the different regions of the Adriatic Ionian Region has gradually turned into 'mobility as a service', with bespoke and tailored mobility designed for citizens. This is particularly relevant in urban areas, where the demand for innovative mobility solutions is high. Here, digitalisation facilitates these services. Increasing multi-modality in urban centres as well as good quality and green public transport, increases its use. Furthermore, collective transport, walking and cycling infrastructure, as well as car-sharing and other micro-mobility forms (European Commission, 2020a), reduce the need for car use with the attendant congestion, air pollution and noise which hamper people's wellbeing.

*Connectivity infrastructure plays a key role in logistics and travel. EU infrastructure projects such as the TEN-T network. Also, projects funded by external powers, such as the One Belt One Road initiative already completed by 2030 have played a key role in the improved connectivity in the area. Nevertheless, with the stronger autonomous role of the EU over the years, the influence of other powers has been reduced with the EU taking a more leading role in its territory and neighbourhood.*

*The TEN-T Core and Comprehensive network have been expanded in the Adriatic Ionian Region, including infrastructure in the Western Balkans. Most of the planned One Belt One Road projects also concluded by 2030, especially rail infrastructure in the Western Balkans, such as in Serbia, Montenegro and Albania, as well as key port infrastructure in Piraeus in Greece. (Map 5-1)*

*Large rail, road and river intermodal terminals across the Danube region are increasingly important for logistics services also in the Adriatic Ionian area. These include Beograd, Pancevo and Novi Sad in Serbia, Bar in Montenegro, Banja Luka, Sarajevo and Tuzla in Bosnia Herzegovina, Ljubljana and Celje in Slovenia, as well as Ploce, Split and Rijeka in Croatia. Port terminals play an important role for shipping, especially Trieste, Venice and Ravenna (Italy), Koper (Slovenia), Piraeus and Thessaloniki (Greece), Vlores and Durres (Albania).*

#### **Territory: The 5-minute city: Ljubljana 2050**

While the COVID-19 pandemic brought the transition to digital and the final blending between work and leisure it simultaneously also incited the resurrection of the personal contacts. From the growing awareness about the dangers of excessive screen time and socially damaging effects of ever more pervasive digital social networks the 'back to people' movement was born. It has been compared to the environment movement and dubbed also 'The New Humanism'. In Ljubljana, like in most cities and smaller towns, the movement offered an umbrella term for a variety of civil society organization from the fields such as culture, elderly and immigrant care, youth and homeless organizations, but also local businesses and the creative sector, working to bring people together. Focusing on the role and functions of public space by 2040 it facilitated the transformation of the city into a network of 5-minute neighbourhoods, in which all basic and social needs could be fulfilled within a 5-minute walk. It turned out that more frequent personal contacts contributed not only to better quality of life, but also to more effective tackling the effects of climate change.

**Tourism – travel responsibly.** The steady green and digital transitions have also affected the tourism industry in the region. The quality of life is closely tied with leisure activities and holidays. In addition, being closer to nature increases wellbeing. Hence, by 2050, less crowded rural destinations, national parks and nature-related places, even close to cities have been key destinations for people in the Adriatic Ionian Region (European Commission, 2021g). The COVID-19 pandemic raised the importance of domestic tourism and closer destinations do not require flights or long drives. This has increased the bonding people feel with their tourism destinations, exploring their natural and cultural heritage without being part of harmful mass tourism (European Commission, 2021g). Sustainability has also affected tourism services, namely accommodation and catering with eco-hotels, less use of plastics, recycling and vegan meals in many tourism hotspots. This increases respect towards the territories and local communities. (European Commission, 2021g) Digitalisation has also improved services.

*Regions whose employment largely depends on tourism that have been resilient after the COVID-19 pandemic implemented dedicated policies or focused their Regional Innovations Strategies on tourism. These were pioneers of 'getting back to normal' and also invested in sustainable tourism. Such regions include Central Macedonia, Crete, Thessaly, Epirus, and all Greek islands, Veneto in Italy and parts of Slovenia, while more risk is seen in Adriatic Croatia and the region of Basilicata, where tourism is key to employment, but no Regional Innovation Strategy provides any support. (European Commission, 2021g)*

**From Farm to Fork.** Good quality food, sustainable production, reduced loss and waste prevention, all contribute indirectly to people's wellbeing in the Adriatic Ionian Region. In this case, the strong focus on sustainability and Green Deal implementation has supported sustainable food systems and their links to healthy people and the planet (European Commission, 2020d). The stronger autonomous role of the EU has enabled more resilient food systems within the EU and also reduced global dependencies. The Adriatic Ionian Region, with large agricultural areas has pioneered the field. Following the Farm to Fork policy, by 2050 food chains have zero environmental footprint, there is high food security and food is affordable and fair (European Commission, 2020d). Certainly, technological developments in agriculture have further supported these goals, making the Adriatic Ionian Region a frontrunner in their application. Smart farming, using special sensors, cloud computing, precision agriculture, automation, new breeding technologies, and crops resistant to climate change are all part of agriculture practices by 2050.

Technology has led to more controlled environment 'indoor' farms by 2050. These contribute to food security, are locally sourced, independent from weather conditions and able to produce all year long. Farmers are more technology developers, using automation and artificial intelligence to run farms (Joint Research Centre, 2021a). Urban farming has also gained importance over the decades, as small-scale farming has proven to reduce stress and increase a community feeling. Urban farming combines social care with the urban environment. More specifically, social care farming involves sustainable approaches to farming and eco-services with meaningful manual labour as therapy (Joint Research Centre, 2021a). The approach increases group work, empathy and communication skills, while the combination of being in nature and increased social responsibility contributes to peoples' wellbeing. For people in urban areas, urban farming combines an urban lifestyle with their agricultural interests. In accordance with the Green Deal and a focus on wellbeing, more and more people in urban areas have increased the sustainability of cities and now contribute to food production (Joint Research Centre, 2021a). This makes places and people even more self-sustained, while bio-production is promoted as much as possible.

*Although all territories are affected by the transition in the agricultural practices by 2050, they mainly affect places with agricultural land and rural areas. Areas with extensive and intensive use of arable land have been primarily affected by the changes in the agricultural practices. These include most regions in northern Italy, especially Lombardia and Veneto, most parts of Croatia, south and west of Albania, most of North Macedonia and north Serbia as well as Thessaly, Central Macedonia, East Macedonia and Thrace in Greece. Places with high innovation and R&D are also important to developing the relevant technologies and those with know-how can transmit smart farming ideas to rural areas. (EEA, 2017; Grid Arendal, 2015)*

**Living the good life.** The challenges that Europe faced during the 2020s made people in the Adriatic Ionian Region realise that their wellbeing and happiness is of utmost importance. Hence, the focus on environmental and social quality of life by implementing policies such as the Green Deal along with strong trust in governance and EU institutions has been pivotal. This approach follows the Aristotelian 'eudaimonia', 'good spirit', where people's happiness is the highest good and achieved only after major effort. In the Adriatic Ionian Region, people are finding good life purposes in good environmental and social conditions.

**Living well with our neighbours: Together we stand, divided we fall.** The third decade of the 20<sup>th</sup> century saw not only a pandemic but also with a war at the eastern border of the Adriatic Ionian Region. Those challenges have been acknowledged and the strategic autonomous role of the EU increased by 2050, reducing such challenges. The key message has been that cooperation, integration and solidarity are key for the wellbeing of people in the Adriatic Ionian Region and their neighbours. Over the years, the integration of countries from the Western Balkans has taken shape, as well as stronger cooperation with Ukraine and neighbours. Stronger together has been a motto for territories in the Adriatic Ionian Region and integration has been a beacon for future policy developments. The more strategic role of the EU has allowed it to become more extrovert and play a more global role, at the same time strengthening subsidiarity within member states. Hand in hand with the Global Gateway initiative, the EU is now a key player in big infrastructure projects across its neighbourhood and around the world, supporting physical and digital infrastructure projects, spreading democratic values and good governance, speeding up sustainable development around the world, focusing on security and health (European Commission, 2021a).

**From the macro-regional, to a European culture.** In its new global profile, the EU has focused on ensuring and promoting core European values. These shape both old and new members of the union. Citizen exchanges through different platforms, with more interactions and engagement has increased trust in the EU. This has helped further develop, cultivate and share EU values, also creating an overall EU culture and citizenship. The EUSAIR has been a microcosm of the development of such a common culture. Core values such as human dignity, democracy, freedom, equality, rule of law and respect for human rights have been foundations for the European way of life and incorporated in the Adriatic Ionian Region citizens' way of life.

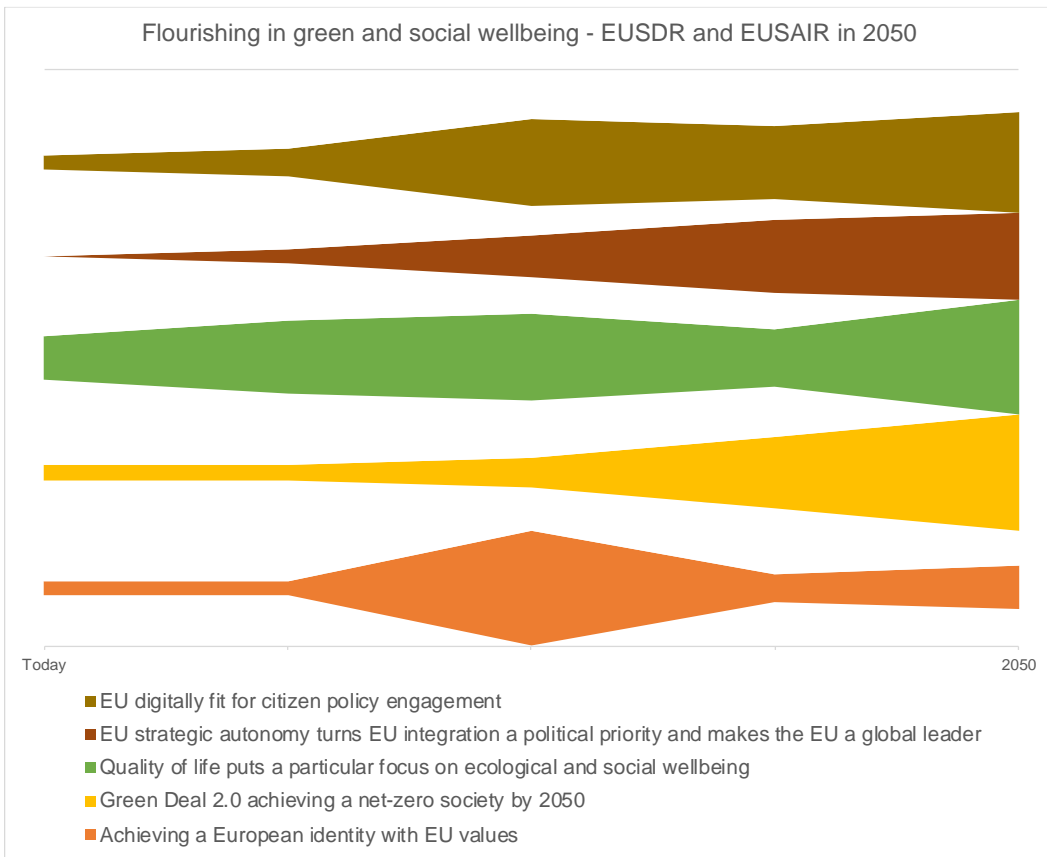
## 6 Concluding reflections

What can we draw from the alternative territorial scenario ‘Flourishing in green and social wellbeing’? The alternative territorial scenario has capitalised on the work carried out through the desk research and the co-creation process to develop the core foundations upon it has been developed. Those core foundations of the scenario have been the basis for the further development of the scenario and unfolding the key storylines and elements, as well as identifying their territorial implications. The following sections present first shortly those core foundations of the scenario. Second, they show the links of the key foundations to the storylines and elements of the scenarios, as well as overall territorial implications the scenario has.

### 6.1 What are the foundations of the scenario?

The alternative territorial scenario ‘Flourishing in green and social wellbeing’ is a highly policy driven scenario, focusing on the green, digital and just transitions and their possible implications. The scenario has been built along five core foundations, as shown in the figure below.

**Figure 6-1 Flourishing in green and social wellbeing foundations – EUSDR and EUSAIR in 2050**



Source: authors' own

By 2050, the citizens of the Adriatic Ionian Region have taken big leaps to achieve a better quality of life. By 2050, quality of life puts a particular focus on ecological and social wellbeing, as good environmental conditions, being close to nature, living in healthy environments are parts of a good life. Furthermore, the social sphere also plays a key role, as by 2050, prosperity is also a matter of trust in government and services. This development starts slowly in the 2020s and increase steadily, with the adoption of increased policy measures around green and social elements.

In addition, the new role of the EU which capitalises in its strategic economy, making the EU a global grand chessboard player, and the EU integration a political priority. By 2050 the EU has become more strategic autonomous, a development that has largely influenced the integration of its territories and macro-regions,



by becoming more self-ruled and more resilient. Through its strategic autonomy, the EU has become a strong regulatory player in the EU functioning as a large umbrella organisation, safeguarding its sustainability rules and social charter through its legislation. At the same time, this overarching autonomy of the EU strengthened the subsidiarity principle of the member states and allowed the EU to play a more global influence role. This development started very slowly in the 2020 and very slowly increased over the years by 2050, as such developments need substantial time to take shape (Figure 6-1).

To this increased trust has also contributed the digital revolution that has taken place by 2050, with the EU and its citizens becoming digitally fit have increased not only digital infrastructures and digital literacy in the region, but have also been enablers for developing an open and democratic societies, that bring and organises people together. This development took small steps in the 2020s until almost the 2030s, but with technological advancements being unavoidable in the future, it substantially increased by 2050.

Furthermore, additional efforts have been put to implement the EU Green Deal Moving towards a Green Deal 2.0, i.e. taking the policy a step further helped to achieve a better ecological status, not only for the EU member states, but also expanded to the non-EU member states. The process has started gradually in the 2020s, influenced by external developments and energy crises, to then take up over the decades (Figure 6-1).

All these developments, the increased citizen engagement in decision making, the new EU global role and the increased importance to wellbeing have all been brought together to gradually develop a European common culture, with strong core values, such as human dignity, democracy, freedom, equality, rule of law, respect to the human rights have been the foundations for the European way of life. This is something that started very slowly over the 2030s to further increase, especially driven by external factors, to then stabilise over time (Figure 6-1).

All in all, these developments show the directions that different developments have taken in this scenario, influenced by the choices people have done. For the project, this guidance and direction has been given through the participatory approach. All these, play, however, differently in the different territories.

## 6.2 What are the territorial implications of the scenario foundations?

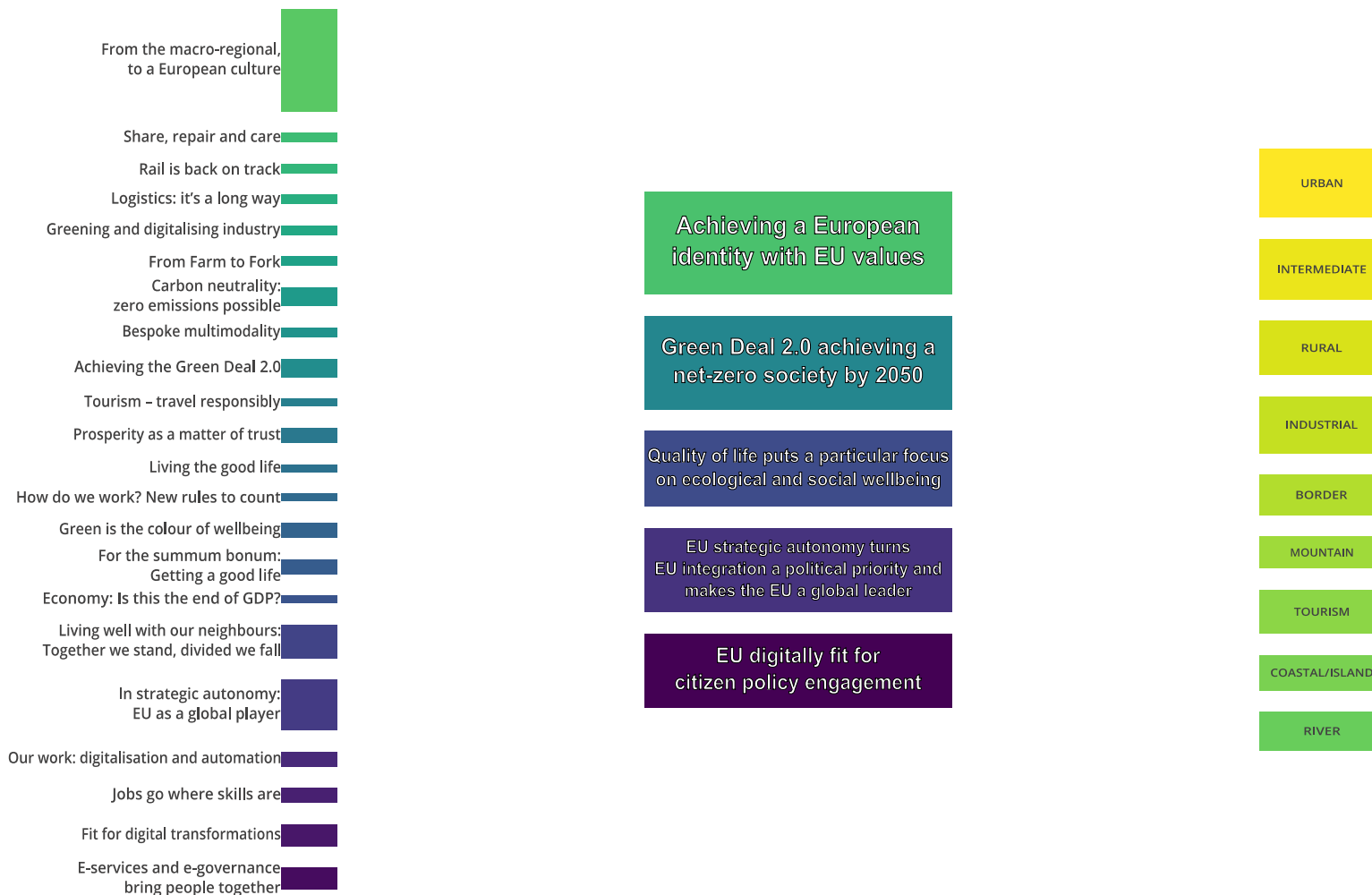
The scenario foundations summarise the different elements that build the whole scenario storyline. This is graphically shown in Figure 6-2 below. The Figure shows how thematically linked the story is with the core elements that have shaped the development of the scenario. In addition, the figure synthesises what types of territories are most affected by the scenario. Although more specific territorial implications are given in the scenario stories, the figure below gives an overview glimpse of types of territories most affected. Certainly, such big changes have implications on all territories. Nevertheless, mountain, coastal and river areas are primarily affected by the shift to quality of life, as they provide ecological enablers. In addition, industrial areas are highly affected by the digital transition, affecting the way industries are organised, with green and digital approaches being implemented, as well as transport and logistics. Urban and rural areas are largely affected by most developments and especially as drivers for the green transition and higher quality of life. This is particularly linked to the increase in social wellbeing and the increased digital citizen participation, which has been higher in cities. Same holds for the intermediate areas. Rural areas play a key role when it comes to Green Deal achievements and quality of life, especially by being green hotspots. All territories, are differently affected by the Green Deal developments, as urban, intermediate and rural areas notice reduced pollution over the decades, industrial areas transform their model, while mountain, river, coastal areas improve the environmental condition of their habitat.

Besides highlighting territorial implications of the alternative territorial scenario, Figure 6-2 pinpoints at the complexity that territorial scenarios deal with. The elements that constitute the scenario are highly linked not only, in one way or the other, to each other, but also to the core foundations of the scenario, building a coherent and solid story. At the same time, they influence different territories to different extends, counting on the specific details of each scenario element. The territorial implications also depend on the sensitivity and resilience capacity of different regions to adapt to changes and transitions. The figure does not aim to detail every possible territorial implication, but rather to reduce complexity and emphasise that interdependencies of territories are unavoidable.

The figure was constructed taking into consideration that all drivers have at least one component, that each driver has different effect intensities on each of the type of territories, and finally that each component has a

different importance (proportion) inside each driver (i.e. the height of the components). The territorial effect intensity was calculated based on the particular weight that each driver was considered to have on each type of territory and the importance of the component for each driver. The different heights of the drivers (middle) are a result of the sum of their intensity for all territories. On the right side, the intensity of each component is translated to each territory based on the basic calculation of driver intensity x component importance (the latter which sum up to 100% for each driver). As a result, the height of each type of territory is proportional to the intensity of the effects of all drivers together. This means that at a general level all types of territories are impacted, however, the intensity of the effects differ significantly for each driver based on the effects of their components.

**Figure 6-2 What territories are affected by the ‘Flourishing in green and social wellbeing’ alternative scenario?**



Source: authors' own

## 7 Restoring nature for a revived ecosystem

**Giving back to mother nature.** By 2050 the Adriatic Ionian Region has taken big moves towards restoring its rich nature leading to a revived and clean ecosystem. Citizens in the Adriatic Ionian Region have decided to restore and 'give back' to nature large parts of their territories to mitigate climate change effects. Numerous devastating natural hazards in the past decades, as well as the challenges of biodiversity loss highlighted the need to mitigating the negative effects of climate change and take serious actions to address them. The region has been severely hit by droughts, floods, forest fires, earthquakes, landslides and even volcanic eruptions over many decades. In addition, overexploitation of resources, climate change, pollution, changes in the land and sea use and invasive alien species have harmed the region's biodiversity (COM(2020) 380 final, 2020). Biodiversity loss has even been characterised as a more devastating threat than climate change (IPBES, 2019). All these risks, emphasise that nature is pivotal for healthy and resilient societies. The COVID-19 pandemic of the early 2020s made the need to protect and restore nature even more urgent, as it raised more awareness about the links between human and ecosystem health. In addition, nature restoration was not only essential for the health and wellbeing of people, but also for the post-pandemic economic recovery. In fact, natural capital investment including the restoration of carbon rich habitats has been one of the most important fiscal recovery policies (COM(2020) 380 final, 2020). What is more, nature and biodiversity are also critical for sustainable food systems, while its loss may threaten food security and nutrition. The food crisis created by the war in Ukraine in the early 2020s, with key product scarcity and high prices, pointed out the need to become self-sustained and less globally dependent. Therefore, by 2050 nature restoration has become a key priority for the Adriatic Ionian Region. Strong policies and commitment from the EU and at macro-regional level include the EU Green Deal, the overarching policy for sustainability relevant for both EU and non-EU member states in the Adriatic Ionian region. The biodiversity policy has been a beacon for this direction.

**The new geography of work: from anywhere.** Besides underlining the importance of nature for the overall good and the wellbeing of people, the COVID-19 pandemic also influenced the geography of work. Lock-downs and restrictions encouraged home office practices which became routine. Remote work has given people the flexibility to choose 'where and when' they work, while hybrid work models have also been implemented in many businesses in the region, allowing workers to share their work time between office and home, or any other place and replacing over time physical interpersonal interaction. The trend of digital nomads, which started in the 2010s, has become mainstream in the Adriatic Ionian Region, beyond the younger generation. People have the freedom to travel and work at the same time. This new geography of work has increased job satisfaction, happiness and productivity (The Economist, 2021b, 2021c). Remote working has mainly affected white-collar workers and has been taken up extensively in the Adriatic Ionian Region with an increase in highly skilled and educated people. The demands for more 'work from home' have increased over the decades, with more than 54% of the workforce already in the 2020s looking for more opportunities to work from home (World Economic Forum, 2020). This shift would not have been possible without innovation, technological advances, digitalisation and increasing broadband access which allowed working from anywhere. Therefore, even if the COVID-19 pandemic triggered some decentralisation from big urban centres to smaller cities or even rural areas, remote working has still been possible. The deep technological integration that took place in the area by 2050 has not only triggered a change in workplaces, but also supported the modernisation of work and businesses in general.

**Youth saving the world: the earth becomes their throne.** The environment in the Adriatic Ionian Region was at a crucial stage with sea pollution, sea level rise, river pollution, forest fires, droughts and floods putting additional pressure on natural areas in the region. In 2020, for the first time, climate change ranked as the first and most serious problem the world faces, with one in five Europeans supporting this view (European Commission, 2021h). Immediate and drastic action had to be taken to preserve the pristine ecosystems that form the cultural and natural heritage of the region. This has not only been supported by stricter global actions, such as the United Nations Sustainable Development Goals that pushed for climate action, life on land and in water and more sustainable communities (United Nations, n.d.), but particularly by youth environmental activism. Realising that resources are not eternal, and nature is at stake, youth environmental activism, awareness and knowledge of environmental issues have increased substantially by 2050. The spark for this was the 2019 'Fridays for Future' school movement, which spread across Europe and created a strong citizen movement that provoked people, especially the young, to increase awareness in people. At the same time, COVID-19 with discussions around 'new normals' and the development of a new social

contract putting the environment first have transformed people's perception of nature and life. They have shifted their mindset towards more sustainable development and launched a societal transformation reconsidering their production and consumption habits (Büchs & Koch, 2019; Sandberg et al., 2019) which support de-growth, i.e. decoupling growth from resource use.

*The transition towards a clean natural habitat by giving back to nature and adapting work to that cause affected people's lives greatly. It has influenced the environment, the way people work and the economy, adjusted technological infrastructure, affected transport and improved health. At the same time, the strong commitment of citizens and especially young people, as well as technological progress, led to a conscious shift to achieve prosperity with a clean ecosystem, which is crucial for the wellbeing of future generations.*

**Our time is running out: Climate changed.** The Anthropocene era is the latest epoch and the only one where a single species is responsible for consequences that radically affect the environment. Increased growth, overproduction and overconsumption, overexploitation of natural resources, pollution and high energy demands were just a few factors that have driven this era. Humans have collectively failed to engage with nature in a sustainable way and their demands exceed what nature can supply, endangering the prosperity of current and future generations (Dasgupta, 2021). Extreme phenomena such as floods, forest fires and droughts were more frequent in the Adriatic Ionian macro-region up to 2030. The earth temperature has risen more than 1.5 °C (IPCC, 2021) in recent decades, increasing such phenomena. Human influence has increased the temperature in the atmosphere, sea and land, intensifying the global water cycle, precipitation and heatwaves, with changes that are irreversible and unprecedented in the last 2000 years (IPCC, 2021).

*Regions more at risk of climate change would be the first to shift to sustainable approaches. Examples are most regions in the Adriatic Ionian Region, with the highest impact in the region of Venice and Province of Cosenza in Italy, Istria in Croatia (BBSR & ESPON, 2020), as well as regions in Albania. Another indication for environmental pressures is greenhouse gas emissions in the Western Balkans, which is highest in Serbia, Bosnia and Herzegovina, Croatia and North Macedonia, mainly due to energy, agriculture and industrial processes (ENVSEC & UNEP, 2012).*

**Biodiversity at a loss: Sending an SOS to the world.** The Adriatic Ionian Region has rich land and marine biodiversity. It has a lot of freshwater from multiple rivers and is home to more than 7,000 species, including endemic, unique, rare and endangered species (WWF, 2015). Nevertheless, sea level rise, recurrent droughts, forest fires, floods, saltwater intrusion, species invasion and increased sea temperatures challenge its ecosystems. Projections from the 2010s indicated an expected sea level rise of 7 to 12 cm by 2050 (WWF, 2015). Furthermore, the Adriatic Ionian Sea is vulnerable to pollution, especially nutrients from agriculture and municipal waste, but also from oil spills which occurred regularly and created big concerns (WWF, 2015). Human economic activities have also put additional stress on the marine environment, with pollution, particularly plastic litter, micro-plastics, underwater noise, chemicals and nutrients destroying natural habitats, and causing flooding and erosion (European Commission, 2021b). Other activities, such as overfishing and intensive aquaculture, mass tourism, industrial waste, as well as deforestation added and caused dramatic effects on the ecosystem (WWF, 2015). In addition, unsustainable infrastructure in some parts of the region, such as the Vjosa river in Albania. This had eight hydro-powerplants and discussions from the 2010s involved the construction of an airport and tourist resort where the river discharges, before it was turned into a national park in the 2040s (Vukaj, 2021). A shift in the way people think and act has been necessary (Dasgupta, 2021) to protect nature.

*Biodiversity is most at risk in regions facing multiple natural hazards, such as forest fires in Vlore, Gjirokaster, Kukes in Albania, the Pelagonia region in North Macedonia, the Bor region in Serbia and the Dalmatia-Dubrovnik region in Croatia, as well as a sea level rise affecting most regions on the coast (ENVSEC & UNEP, 2012).*

*In addition, places which are home to biodiversity ecosystems, such as wetlands, are very vulnerable and need to take big leaps for their preservation, such as the Lagune Venezia, wetlands in the Veneto region in Italy, Secovelske Soline in Slovenia, Vransko lake and Neretva River Delta in Croatia, Prespa lakes on the borders of Albania, Greece and North Macedonia, the Karavasta Lagoon ecosystem in Albania, Pestorsko polje and Vlasina in Serbia, Ulcinj Salina in Montenegro and Kerkini, Doirani, Volvi Lakes, the Axios, Loudias, Aliakmon Rivers and Amvrakikos Gulf in Greece (RAMSAR, 2021).*

**No appetite for destruction.** All these challenges have made clear that a shift in the way people think and act has been necessary (Dasgupta, 2021) to protect nature. With human beings responsible for most of these environmental changes, a mentality change is needed to initiate immediate action. On the one hand,

stricter EU regulations, adjusted to the needs of each member, such as the biodiversity strategy, more Ramsar and Natura 2000 regions, etc. have followed across the Adriatic Ionian macro-region. This approach has gradually helped revive nature, reversing the decline in pollinators, reducing the use of pesticides, increasing reforestation, and improving agriculture (COM(2020) 380 final, 2020), together with clean and renewable energy, the end of the coal industry, better waste management and ecosystems services. More citizen activism, particularly among young people, towards more sustainable solutions and environmental protection has also played a role. Especially in the aftermath of the COVID-19 pandemic, social responsibility increased, as people realised the imminent threat of climate change and started going beyond individualism, taking more conscious actions to protect the macro-region's ecosystem. Discussions that started in the early 2020s about 'new normals' and a new social contract on terms and values that matter for people (Madgavkar, Tilman, Smit, & Manyika, 2020), have taken over by young people, organising protests, setting new standards and changing mindsets. Following this, Adriatic Ionian macro-region citizens decided to give back to nature to eventually achieve the co-existence of humans and nature in the region.

*Young people have been key drivers for change in the region, organising themselves in protests and demonstrations across the Adriatic Ionian Region. Places with many young people in the 2020s, have been for citizen engagement, these include all regions of Albania, Montenegro and North Macedonia, followed by central and western Serbia, the east of Croatia, East Macedonia and Thrace, Western Greece and the islands of South Aegean and Crete (Eurostat, 2021).*

**Restoring nature: more than green and blue infrastructure.** By 2050, the Adriatic Ionian Region has followed and to a large extent achieved the ambitious goals set by the European Commission, both in older EU members, as well as those who integrated later. In the 2020s biodiversity in Europe was in decline, despite large Natura 2000 areas and several conservation efforts. By 2050, the Adriatic Ionian Region was close to increasing its land and sea protected area to 30% (COM(2020) 380 final, 2020) and even go beyond that, putting a particular effort on forests and other carbon rich ecosystems like peatlands and grasslands. For this, the Region decided to capitalise on its rich natural habitat and invested in green infrastructure. Green infrastructure is the 'strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wider range of ecosystem services' (ESPON, 2019). Green infrastructure can include green and blue spaces, so land and aquatic ecosystems. Building ecological networks of natural areas and connecting them through green and blue corridors increase ecosystem services (ESPON, 2019). Wide Trans-European Nature Networks have been built by 2050, covering large parts of the Adriatic Ionian Region, enlarging protected areas and connecting natural with semi-natural places (European Environment Agency, 2022). This includes rivers to restrict and in some cases ban dams or unsustainable infrastructure.

Nevertheless, the Adriatic Ionian Region has decided to go a step beyond in this process. The Region has for decades suffered population decline, with more shrinking regions. Although some of the shrinking regions managed to stabilise, especially after the influx of Ukrainian and North Africa refugees, many did not adjust to smart shrinking practices and became desolated. At the same time, rural areas that followed a vision between 2020 and 2035, become more prosperous, connected, resilient and hence stronger. Others lacking services, social innovation, economic diversification, climate change resilience and sustainable food production, as well as digital and physical connectivity (European Commission, 2021d) started declining. As a result, these areas were also gradually given back to nature, in a process that needs time even beyond 2050 to fully revert to natural areas.

The restoration of nature has not only contributed to enlarging the land and aquatic ecosystems in the Adriatic Ionian Region, but also to rewild its fauna in a natural approach, allowing nature to heal on its own (European Environment Agency, 2022). To accommodate such changes and particularly in the areas which were previously inhabited, citizens have decided to move to larger urban areas, smaller urban settlements, or rural areas next to the ecosystems to allow nature to restore, but increasing urban sprawl over the years.

*Large green areas protected by Natura 2000, nature reserves, national parks, habitat/species management areas, protected landscapes and protected areas defined by national regulations were also territories where biodiversity was at risk and more action needed to take place. These are found all across the region and more specifically in the province of Belluno in Italy, Gorizia and South East region and Littoral-Inner Carniola region in Slovenia, the counties of Primorje-Gorski Kotar, Lika-Senj, Zadar and Sibenik-Knin in Croatia, the regions of Kilkis and Thessaloniki in Greece, the Kukes region in Albania, Polog region in North Macedonia and Pirot region in Serbia (BBSR & ESPON, 2020) (Map 7-1)*



*In addition, places with regional coverage of potential green infrastructure like Gorizia region in Slovenia, most of the Adriatic Croatia, Bolzano and Trento in Italy, most parts of Montenegro, the north and east of Bosnia and Herzegovina, the southwestern region in North Macedonia and Epirus, South Aegean islands and Cyclades regions in Greece have the potential to further expand green infrastructure. (BBSR & ESPON, 2020)*

*Those areas had the potential to expand as protected areas and give back to nature.*

*Shrinking areas in the region, which failed to adapt to smart shrinking or develop a vision, were gradually left to nature. Land abandonment was happening already in the 2020, in parts of central Italy, the north of Croatia and east of Slovenia and large parts of eastern, central and southern Greece and its islands (European Parliament, 2020).*

*Large rewilding areas in Croatia and Italy have also gradually become home to more species, with other territories following.*

*Last but not least, urban areas, especially capital and small to medium-sized cities in the region have become poles of attraction for many people as a result of nature restoration in the Adriatic Ionian Region.*

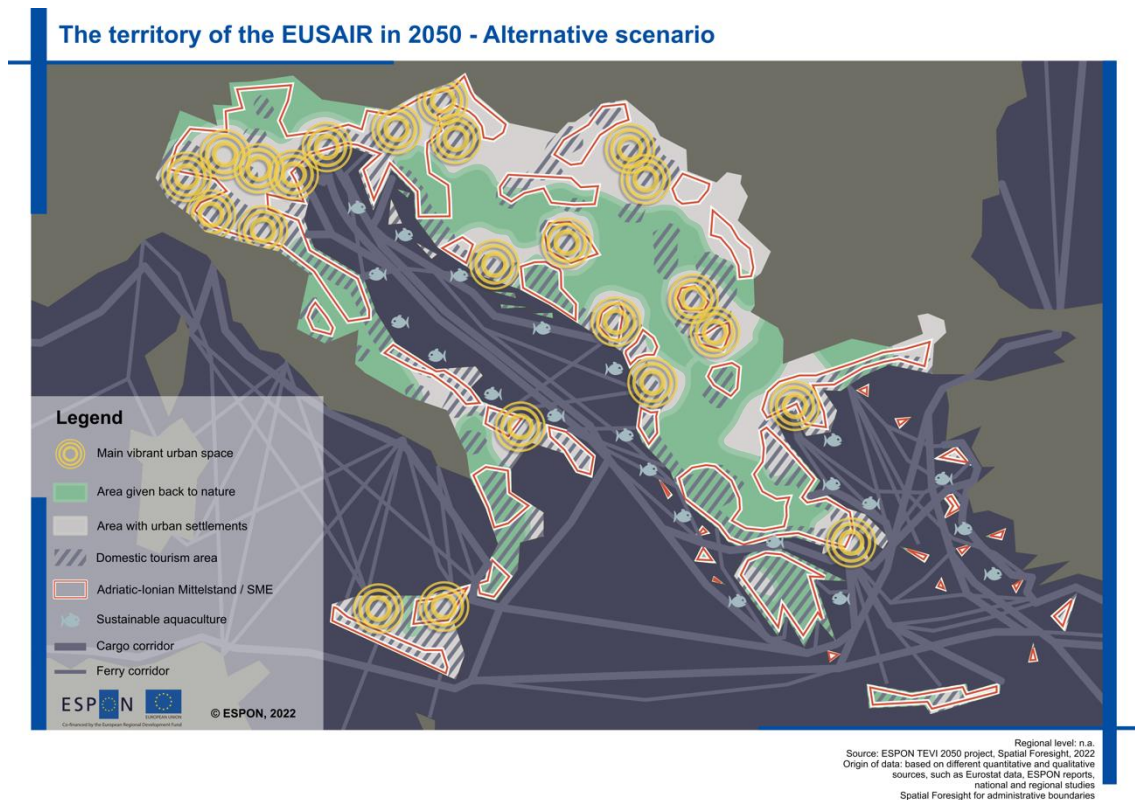
#### **Territory: Green Heart of Europe - Balkan Nature Park 2050**

By 2050 protected natural areas in the Balkan countries, stretching from Slovenia to Greece, have expanded into one vast continuous cross-border natural area, covering a major part of the Balkan part of the macro-region. Ecosystems in this protected area have recovered along with their normal functions, which in the Anthropocene era are called ecosystem services. The need to coordinate management of natural risks, such as floods and wildfires, has gradually spilled over to other fields, leading to joint governance of protected areas. With depopulation and migration to larger urban centres, living in harmony with nature became just as much a need as a deliberate policy. As this area of cooperation was not associated with significant political sensitivities, it gradually became popular with politicians in all countries exploiting the potential of pragmatic cooperation. Ecotourism became a means to sustainably manage the Balkan Nature Park and enhance the quality of life in rural areas. Hiking, wildlife watching, enjoying the habitats and clean waters in the area as well as visiting rural communities increased. In 2050 ecotourism surpassed 5% of GDP in all the Balkan countries. It attracted visitors from Central and Northern Europe as well as from Turkey and Russia.

#### **Territory: Blue corridor – Croatia, Montenegro, Albania and Greece 2050**

The coast of Croatia, Montenegro, Albania and Greece is connected by the 'blue corridor', a European investment that merges green infrastructure along the Adriatic-Ionian coast with road transportation. The corridor, defined by the high-speed road along with a dense green belt of high Mediterranean macchia on both sides has become a landmark for connectivity and integration within the region and within the European Union. The north of Europe has fast access to the nature tourism sites of the Balkans, while people in the region commute long distances freely and efficiently, exchanging goods and economic activities on a daily basis. A dense network of green bridges ensures habitat continuities on both sides of the corridor, safeguarding wildlife and ecosystems. The bridges include pathways connecting communities that cooperate to maintain the natural ecosystems and enhance the area for carbon sequestration. The 'blue corridor' has become a ground-breaking case for social innovation with cross-border cooperation extending across four countries. Communities along the corridor participate actively in the co-governance of this regional forest/shrubland ecosystem, protecting inland territories and forests of the Balkans from droughts and floods.

## Map 7-1 Restoring nature for a revived ecosystem – Adriatic Ionian Region 2050



Source: ESPON TEVI 2050, 2022

**New employment mode: Brain gain – keeping the brains in.** The new nature of work has also played a role in supporting the restoration of nature. More and more office workers have shifted to a hybrid and flexible model of working, involving working from home with limited office attendance, flexible hours and for multiple companies. This enabled diversified employment, as citizens were not restricted to working for companies in the Region but could choose their employer. At the same time, this allowed the Region’s diaspora, which had been working abroad for years to return to the Adriatic Ionian Region and work remotely from there. Certainly, increased digital connectivity and digitalisation, which by 2050 had in most regions and especially in urban areas increased, have played a key role in this development and in reducing the need for physical presence at work. The long brain drain of highly skilled and well-educated young people has been gradually reversed. This was a first indication that the economy in the region was reviving and becoming attractive. In addition, this brain gain has attracted global companies, such as digital behemoths, international consultancies and global players to invest in the region’s people. As a result, people specialised in digital skills, data analysis, artificial intelligence, high-performance computing and other IT professions (Joint Research Centre, 2019), as well as environmentalists, agricultural technologists, analysts and consultants could work from home for their international employers.

This new shift in working environment has also been the trigger for new professions by 2050. These related to the creator economy, such as social media manager, influencer, or podcast and YouTube video producer (Joint Research Centre, 2019; The Economist, 2021a). This has allowed a more ‘place-based’ approach, people could stay at home and work for different companies from all over the world. In addition to these professions, nature restoration ones increased up by 2050, including field or restoration ecologists, park naturalists, marine biologists, environmental protection consultants and natural resource managers (Saint Leo University, 2021).

*The new employment mode has brought people back to home in the Adriatic Ionian Region. this has concentrated the majority of youth in urban areas, where ‘things happen’. Therefore, capital cities and other larger or smaller and medium sized cities have been key poles to attract young employees. (Map 7-1)*

*In addition, some regions that had a large share in employment in services in the 2020s gradually moved towards changing and adjusting their working styles. These are mainly urban areas across the Adriatic Ionian*



*Region, such as Beograd, Ljubljana, as well as Thessaloniki and Athens, as well as Kalamata and Nafplion in Greece, most parts of northeast Italy, Tirana and most parts of Montenegro. (BBSR & ESPON, 2020)*

*Another indicator to show where people have returned would be to look at remittances sent during the 2010s to show the flows of people who had left to work abroad. Dubrovnik in Croatia, Tirana in Albania and west Serbia were among the first places to experience brain gain.*

*Certainly, good internet connectivity is important for people to work from home as well as to experiment with the new creative economy-related professions. Places that have high household digital connectivity seem to have been the frontrunners. This transition was first in urban areas, followed by rural areas, which transitioned slowly over the years. In addition, the mobile revolution of the 2030s reshaped connectivity especially in less accessible territories and rural areas, bridging any former digital divide. Slovenia could lead in that direction, while most regions in Croatia, Serbia and Bosnia Herzegovina southern Italy and Greece had to initially make greater efforts and invest more in digital infrastructure, as well as mobile broadband for their big leaps to higher digital connectivity. (Eurostat, 2020)*

### **Terristory: Balkan's digital brain is back – EUSAIR 2050**

The countries of the Western Balkans have recently entered the EU. During the transitory phase, most skilled labour from this region emigrated to EU-countries and the Far East, where they were employed in high-tech industries and gained digital knowledge. The Balkan region now has an ever-growing number of digital nomads, who bring a culture of remote working and cultural cohesion to the region. On entering the EU, the Balkan region experienced a wave of returning digitally skilled people, which capitalised on large investments in high-tech and blue / green technology in many large urban areas, with a focus on Belgrade. In 2050 Belgrade has become a new, fresh, authentic Silicon Valley, bridging investments from the EU with a new class of creative workforce from the Balkans.

**Restored innovation: blue, eco, circular and social.** With global technological advances and considering the special needs of the Adriatic Ionian Region, innovation in the region has also been adjusted. By 2050 the region has invested in blue innovation. Marine and maritime research and innovation has used big data, artificial intelligence, advanced modelling and other technologies to enable traditional sectors, like fisheries and aquaculture, to improve sustainability. In addition early adopters of blue biotechnology, bio-technology, offshore renewable energies developed further (European Commission, 2021b) (Map 7-1). Blue innovation not only covers sustainable fishing and aquaculture, as well as data collection but also energy and shipping. This transforms the region into a European Union blue innovation champion. In addition to blue innovation, eco-innovation has added an ecological touch to support the green and circular economies. Among the eco-innovation activities are eco-innovation patents, eco-industry exports, early stage investments and others (European Commission, n.d.-b) related to building up research on new production methods or new waste management solutions.

The circular economy has also been vital in this green transition. In particular Western Balkan countries have taken big leaps towards adopting circular economy practices and reorganising waste management. Overcoming the dramatic events on the Drina River in eastern Serbia, where floating landfill, including plastic bottles, refrigerators, barrels and other waste floating in the river, clogged the river and put the ecosystem at risk (The Balkan Forum, 2021). By 2050, circular economy demands have been matched, stronger regulation has been proposed and responsibility increased, while circular economy and waste management facilities have expanded (The Balkan Forum, 2021). Circular economy innovations have also been crucial to test and develop initiatives for sorting waste, composting and developing new skills, such as repairing (ESPON, 2020c). This shift has allowed the region to use innovation for environmental protection.

Last but not least, social innovation also developed in the Region by 2050, especially in smaller urban and rural areas, where social enterprises support the integration of vulnerable groups, particularly those who moved from shrinking areas. They also experiment and test new ideas for products which improve the well-being of people and communities (European Commission, 2020e).

*Regions where 'innovation was happening' already from the 2020s could adjust their practices to the new developments. Frontrunners would be regions of northern Italy, Friuli Venezia, Veneto and Trento Autonomous Province, but also the regions Zahodna and Vzhodna in Slovenia, Pannonian in Croatia, Central Macedonia, Epirus, Thessalia, Crete and Western Greece in Greece, Bosnia and Herzegovina, Sumadija and Western Serbia, southern and East Serbia as well as Vojvodina in Serbia which emerged as strong innovators by 2050 (European Commission, 2021f).*

*Places across the Adriatic Ionian Region that made steps towards innovation in the circular economy have also been a step beyond others in this transition. Examples are the Gorizia region in Slovenia, while first steps had also been made by Western Greece, Athens, Central Macedonia and Crete in Greece, the north-east and south of Italy and the east of Croatia (ESPON, 2020c)*

*Circular economy facilities have been necessary and in need of improvement in all Western Balkan countries, especially Smiljevici and Ramici, near Sarajevo and Banja Luka in Bosnia and Herzegovina, in Albania, where recycled waste was 18% of the total waste, in Montenegro with 10%, Serbia with 3% of municipal waste being recycled and North Macedonia with only 0.7% (The Balkan Forum, 2021).*

**New employment mode 2: Shaping the Adriatic Ionian ‘Mittelstand’<sup>4</sup>.** Although younger, high skilled and well-educated people either returned or moved to larger urban areas while working for big companies abroad, another big part of the population mainly involved in the artisan, creative, or low-carbon economy and agricultural jobs migrated from shrinking, rural or other small towns to their closest major settlements in the Adriatic Ionian Region. This gradual concentration of people in urban and smaller urban areas has by 2050 further increased the critical mass of these places. With the manufacturing sector supporting the shift towards the circular economy and repairing culture, the number of SMEs in smaller places has gradually increased, employing a large number of people. Such enterprises differentiate focus on manufacturing, on the creative economy or the low-carbon intensive economy (ESPON, 2018b). The widespread use of technology by 2050 has improved manufacturing, with additive manufacturing and 3D printing offering more flexibility and opportunities. The emerging ‘Mittelstand’ by 2050 has established a well-pronounced Adriatic Ionian brand all over Europe, making products of the Region famous and re-industrialisation possible.

*Places with many SMEs are the most influenced by the changes. Examples are all main urban centres in Serbia, North Macedonia, Albania, Bosnia and Herzegovina and Montenegro, as well as in the north of Italy, most parts of Slovenia, north east of Croatia, as well as urban centres in Greece (ESPON, 2018b). (Map 7-1)*

*Manufacturing and craft skills are necessary for a sustainable repairing economy, as such skills form the basis for repairing or recreating parts. Places with a high share of employment in manufacturing had an easy transition towards a repairing culture in the circular economy. Regions with high employment in manufacturing are smaller cities, rather than larger capital or metropolitan areas.*

*Last but not least, small and medium-sized cities all across the region also have a critical mass to develop SMEs.*

**The limits of growth.** Nature restoration in the Adriatic Ionian Region has brought tectonic shifts in the economy. First and foremost, people have shifted their mindsets towards a more sustainable and ecological way of living and a new concept of decoupling growth from resource use. This has contributed a global shift towards ‘slowbalisation’ (The Economist, 2019b), which has influenced the way people think about growth and prosperity. Particularly after the pandemic and the war in Ukraine in the early 2020s, companies lost their trust that strong global economic ties bring stability, so they started reorganising their supply chains (Wong & Swanson, 2022). With logistics prices soaring, inflation increasing, global tensions becoming more frequent and global competition increasing, companies focused on specific economic blocs with distinct markets and labour, shortening their supply chains (The Economist, 2019a; Wong & Swanson, 2022). With the Adriatic Ionian Region shifting towards de-growth and changing its traditional economic profile, it became less dependent on global markets, more introvert and autarkic, influencing its GDP. The economic focus by 2050 has not been on traditional economic markets, but a shift to the green economy, i.e. to activities that reduce pollution and environmental degradation, while preserving natural resources (European Commission, Research and Innovation, 2016).

**Green lifestyles green industries.** The new economic model of de-growth that gradually grew in the Adriatic Ionian Region by 2050, has been accompanied by less production and consumption to ensure a wise use of resources and tackle overexploitation, pollution and waste. This change in lifestyles has also been followed by the market. Although large industries in the region have reduced, the remainder gradually transformed to eco-industries adjusting to the new market needs supporting sustainability. Industries have turned

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<sup>4</sup> Commonly referred to as a group of stable, resilient small enterprises.

environmental challenges into opportunities for growth, as Europe already had the comparative advantage of shifting towards greener lifestyles (European Commission, Research and Innovation, 2016). Citizens have adopted those lifestyles and developed a market around sustainability, especially for food and energy, with increasing demand for local food and renewables (European Commission, Research and Innovation, 2016). By 2050, green growth is limited to renewables and environmentally friendly products, but includes a wider range of technologies including ICT, long-term sustainable products, lower raw material and energy costs, recycling, reusing and sharing (European Commission, Research and Innovation, 2016). Already in the 2010s where traditional economic markets stagnated or slowed down, eco-industries grew by 15% annually, out-performing average market and employment growth (European Commission, Research and Innovation, 2016). The green transition has been reflected in growth, shifting from quantity to quality, resource efficiency and better quality of life.

*GDP can be a first indicator to see how far this greener transition has influenced the economy. Regions that had low GDP in the 2020s such as most regions in the Western Balkan countries, Croatia, southern Italy and Eastern Slovenia could see an increased performance if they adapted to greener practices. Similarly, regions with high GDP, could see it decreasing or increasing depending on their adaptation, including areas in northern Italy, like South Tyrol and Trento, as well as Gorizia in Slovenia. (BBSR & ESPON, 2020)*

*Regions with a strong industrial profile and high share of employment in industry will be first that should adapt to the new trends and developments. This is particularly relevant for Ascoli Piceno and Vicenza provinces in Italy, the east region in North Macedonia, the counties of Medimurje and Varazdin in Croatia, the Carinthia region in Slovenia, Zenica Dobož canton in Bosnia-Herzegovina, as well as Moravica, Zlatibor, Jablanica, Pcinja and Pirot, among other regions in Serbia. (BBSR & ESPON, 2020)*

**Educating the new mind(set)s.** Education plays a key role by 2050 in cultivating people's mindsets and increasing awareness and knowledge of environmental matters. The educated younger generation has had the role of making things change in the region. Nevertheless, education also remains important for employment opportunities in the region, as continuous upskilling is necessary to cope with technological advances and concepts that can address environmental challenges. Although the education levels have been high in the region, more focus on cognitive and non-cognitive skills is needed (Joint Research Centre, 2019), not only for white collar jobs, but also for more specialised and up-to-date manufacturing jobs, which require specific training and education.

*Education plays an important role in increasing awareness and also supporting the continuous upskilling of people. Hence education is not only necessary for overall sustainability, but also for the adaptation of people to the needs this shift brings. Youth not in education or employment show an indication of this. Regions in Slovenia and the north of Italy had the highest shares. Most regions across the Adriatic and Ionian Region, had a substantial increase in educated people by 2050, as data from 2020 pointed out that people not in education or employment decreased, as in North Macedonia, the south east and north of Serbia, central and north east Croatia, the south and north east of Greece, as well as the south of Italy (BBSR & ESPON, 2020).*

**Energy: consume responsibly.** By 2050, renewable energy resources have gained ground. This has not only been influenced by the societal and economic shift towards greener solutions and sustainability, but also by shifting global energy demands and crises, with the most important being the energy crisis following the war in Ukraine in the early 2020s. Therefore, by 2050, the Adriatic Ionian Region has capitalised on its renewable energy potential. Although until the 2030s, renewable energy sources in the countries in the Adriatic Ionian Region used combustible sources, like biomass and municipal waste and especially hydro-power, the largest focus by 2050 has been on wind and solar power (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020). This is due to the high potential for these in the Region as well as the non-environmentally friendly construction of hydroplants, which are responsible for ecosystem pollution and nature alteration. Already in the 2010s, solar and wind energy production were the fastest growing renewables in the Region, with solar booming in Croatia (+3800%), Greece (+2425%), North Macedonia (+2200%) and Italy (+1178) and wind increasing in Croatia (+766%), Greece (+103%) and Italy (+94%) (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020).

Solar panels have been installed on buildings, as well as larger areas, profiting from abundant sunlight. This has resulted in a more decentralised pattern of energy consumption and production, taking a 'prosumer' direction, where energy consumers are also energy producers, who give any energy surplus to the community, leading to a 'democratisation of energy' to manage energy demands (Joint Research Centre, 2019). With the benefits of the Green Deal and the New European Bauhaus by 2050, carbon neutrality and more

sustainably heated buildings have been developed, while also respecting the natural environment and landscapes.

*Regions with high dependence on coal such as Kozani in Western Macedonia and Magalopoli in the Peloponnese in Greece, Monfalcone in Friuli Venezia, Fusina in Veneto and South Brindisi in Puglia in Italy, Sostanj in Slovenia, Plomin in Croatia, the Kolubara mining basin in Serbia, as well as key hydropower places, such as in Serbia and Croatia faced green transition challenges during the 2020s-2030s.*

*At the same time, renewable energy potential has been high in the region and places that have capitalised on renewable energy laid the first steppingstones already by 2030. Regions, for instance, with a high potential for onshore wind electricity generation could leapfrog by 2050. These are the regions of Puglia, Ragusa in Sicily, Sibenik-Knin County in Croatia, the North Aegean, Attica, Central Greece, Evoia and Crete regions in Greece, (ESPON, 2018c), while wind parks in Raska and South Banat districts in Serbia and Mozura in Montenegro, as well as the south of Bosnia and Herzegovina and from Kumanovo to Kriva Palanka in North Macedonia have taken small steps by 2050 (Western Balkans Investment Framework, 2019). More efforts were needed in Slovenia. Regions with solar power potential included most parts of Italy, e.g. Friuli Venezia, Veneto, Sicily and Puglia regions, as well as Central Macedonia in Greece and most regions in Croatia, with smaller steps in the regions of Slano in Montenegro, Karbinici in North Macedonia and Vau I Dejes in Albania with less potential in Slovenia (European Commission, 2020a).*

### **Territory: Energy Islands – Croatian Islands 2050**

Energy cooperatives, whose principal purpose is to deliver electrical power to people in its service area, took off in the Adriatic Ionian region after 2025, driving the energy transition to renewables as well as reinforcing local communities and regional economies. Energy cooperatives contributed to local wealth building in Croatian islands, lowering the dependence on traditional tourism while facilitating the transition to ecotourism. Most of the members invested in energy cooperatives primarily for environmental motives, but the cooperatives also provided a safe haven in times of rising energy prices. This benefits the local economy and democratises energy supply. In 2050 fierce debates continue about the use of land for solar power plants, and about conflicts and synergies of ecotourism and living with nature.

**A new age for transport: it has always been the sea.** The Adriatic Ionian Sea has for years served as a key transport means for the area, for both trade and people transport. Already data from 2018 point out that more than 730 million tonnes of goods were carried by sea, making a 18% of the total in the EU, while about 200 millions of passengers moved in the Region by sea, being over 40% of the total registered in the EU (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020). Piraeus is the major port in the Adriatic Ionian Region, which is home to 352 ports just on the Adriatic. Short sea shipping has remained responsible for the transport of goods to 2050, with more than 350 million tonnes transported within the Mediterranean and Italy being the major short shipping country with more than 70% of the total (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020). Shipping has adopted measures to turn greener and more sustainable, for energy usage and waste management. By 2050, green shipping has become the key transport means connecting the region. Large ships and containers connect the main points, but hydroplanes also are more important and more sustainable. These are suitable for shorter trips connecting smaller islands and coastal regions. At the same time, port cities increase in importance and new infrastructure connects the ports with key urban areas.

**On the road.** The shift to greener and sustainable approaches in support of nature restoration has largely reduced the use of air transport, with people using it considerably less than in the 2010s. There were further changes in land transport and infrastructure. Roads and railways have been barriers to nature networks and the movement of species. The latest infrastructure in the Region following the One Belt One Road initiative have been crucial for ecosystems in the Region. As a result, the road network has been reduced significantly, keeping only core road networks connecting the remaining settlements with each other and with the key ports in the region. Further investments have taken a more responsible, economically sustainable approach. Already studies in the 2020s pointed out that infrastructure compatible with decarbonisation should have a similar cost to more polluting alternatives ([European Commission Joint Research Centre, 2020](#)). The maintenance of infrastructure ensures a good use of resources and value for money investments.

**Urban mobility to share.** Although digital connectivity has greatly reduced the need for physical meetings, mobility in the larger and smaller urban centres is mainly by public transport, which has also become more sustainable, using clean energy. The sharing culture has also prevailed in urban areas, with car-sharing becoming more widespread and online platforms coordinating citizens in the region. This approach has



helped reduce traffic congestion as well as air and noise pollution, especially in large urban centres, such as Attica which had the highest car density in the whole Region (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020). In smaller urban areas people use alternative transport, such as bikes, for short distances.

*Marine freight transport has been high in the Adriatic Ionian Region, increasing in intensity by 2050 as the sea has become the key means of transport. Particularly flows from Italian ports, such as Venice, Ravenna and Trieste as well as Koper in Slovenia, together with Piraeus and Thessaloniki in Greece show the importance of goods transport across the Adriatic Ionian Region. (Eurostat, 2017) (Map 7-1)*

*At the same time, ferry routes with short distance connections have also increased in importance, sometimes supplemented by hydroplanes. Such routes connect many small ports across the Croatian coastline, Ancona with Split, Zadar and the Croatian islands, Ancona and Igoumenitsa, Brindisi with Igoumenitsa and Patras, Bari with Tirana and Bar, as well as many ferry connections between Athens and Thessaloniki with Greek islands (ESPON, 2017).*

*By 2050, green port cities have become more important, especially sustainable ports. Examples are Venice, Trieste, Koper, Bar, Durres, Corfu, Patras and Thessaloniki, as well as Bari, Ravenna, Ancona, Split, Dubrovnik, Zadar, Ploce and Rijeka, which from the 2020s already took steps in that direction (SITA-SOGES & Osservatorio Balcani Caucaso Transeuropa, 2020).*

*The road network has also gradually improved, without harming the natural balance and serving only key connections. Italy has the most mature network in the area, which has been improved from Bologna to Taranto to connect the coastline. Further investments have been Bar-Boljare in Montenegro, constructions that took place in Croatia, the corridors X and XI in Serbia, the Coast-Kosovo link and the coastal highway linking Croatia, Bosnia and Montenegro as well as maintenance for the key road network in Greece. While some of the connections have been funded by China and international institutions, after 2030 large infrastructure projects have reduced mainly due to increased EU integration. (European Parliament, Policy Department B Structural and Cohesion Policies, 2015)*

*Most urban areas, in particular the larger capital and metropolitan areas in the region, have gradually adjusted their public transport to be more sustainable and increased infrastructure for bike lanes and electric car charging stations.*

**It's the end of (mass) tourism as we know it.** The focus on biodiversity and environmental protection has helped to keep the pristine environment of the Adriatic Ionian macro-region intact to a large extent. Together with the behavioural choices of people and adequate policy making, sustainable tourism has grown. People have changed their travel habits and adjusted to more environmentally friendly choices (European Commission Joint Research Centre, 2020). As infrastructure has reduced, people chose nearby tourism destinations and products. Technology is used where possible to adjust tourism products to the new needs, offering virtual tours to replace long distance travel in the region. These shifts have transformed mass tourism, which for years increased environmental pressure in the region, particularly cruise tourism. By 2050 the tourism product is smaller, more sustainable, more conscious and more affordable. This means both ways to travel, but also the sustainable use of resources in tourism spots. The trend of domestic or nearby tourism has continued to 2050 (European Commission, 2021g). Urban tourism is also gaining ground, the high urban migration by 2050 has created a critical mass which attracts tourists. Still tourism remains an important income source for citizens in the region, adjusting to the new reality of nature preservation.

*Regions in the Adriatic Ionian Region which were traditionally key tourism hotspots have reduced the environmental pressure from mass tourism by adopting sustainable tourism. Regions where tourist arrivals are inextricably linked to employment, such as Adriatic Croatia, Veneto and Friuli Venezia Region in Italy, east of Slovenia, Central Macedonia, Epirus, Thessalia, the Peloponnese, the Ionian islands, Crete and most islands in the Aegean in Greece, the coastal regions of Albania, like Vlore and Gjirokaster, were among the first to adapt to new practices (European Commission, 2021g). In addition, domestic tourism and nearby tourism benefit places with nature by 2050, such as the Autonomous Province of Trento, Veneto in Italy, the Gorizia region, parts of north Croatia, Thessaly and parts of northern Greece. (European Commission, 2021g)*

*Urban areas have also seen more tourist arrivals, which has been visible in most capitals, as well as in smaller urban areas all across the Adriatic Ionian Region.*

*Last but not least, places along the coast which were largely dependent on cruise tourism, have also been influenced, as cruise tourism has decreased significantly by 2050. Such places include Venice in Italy, Dubrovnik in Croatia, Corfu and Santorini in Greece, Kotor in Montenegro and Saranda and Vlores in Albania.*

#### **Territory: Cross border eco-friendly luxury tourism – Dubrovnik - Trebinje - Herceg Novi 2050**

By the end of 2050 cross-border city areas of Dubrovnik - Trebinje - Herceg Novi have transformed into an eco-friendly luxury tourism hotspot in the Adriatic Ionian macro-region. Urbanisation has moderately increased, but the carbon footprint reduced together with mass tourism. Transport in and between cities is all by electric vehicles, and it has become a leading region for solar energy which powers the tourism industry. Cultural and historical sites are digitalised and offered on the virtual tourism market, contributing to reducing mass tourism in the region. Expensive tailor-made on-site tourism products are complimented with 3D virtual tour guides - historic people accompanying a 3D projection of the site's stories. Large cruise ships are banned, and only medium-sized and small hydrogen powered ships are allowed for this luxury tourism experience.

**Agriculture: bio, organic, sustainable and regenerative.** The increased occurrence of natural hazards, as well as continuously increasing demand has made food production more difficult and more expensive (European Commission Joint Research Centre, 2020). This has been exacerbated by other, external crises, such as the food and energy crises due to the war in Ukraine in the early 2020s, which intensified interdependencies and highlighted the importance of self-sustenance. The Adriatic Ionian Region has a rich climate allowing a large variety of products to be cultivated. A sustainable food system is needed to ensure food security and safety, respecting the environment. By 2050, food is considered a common and not a consumer good. In addition to strong policies across the EU, such as the Farm to Fork policy, increased focus has been put on food manufacturers for better product information, certification and labelling including transparency on sustainability. Furthermore, most vulnerable actors in the sector have been supported, such as small-scale and vulnerable players. Last but not least, sustainable consumer choices have been supported, helping citizens to make good food choices. (European Commission, 2020g)

The profile of farmers has also shifted to sustainability, paying particular attention to nature protection and restoration. By 2050, agriculture and aquaculture across the Region are no longer harmful for the environment, but have adopted technology and turned towards more bio and organic production (Map 7-1). Acknowledging a lack of resources and the environmental challenges posed by agriculture, farmers have emphasised environmental protection over agricultural production and profit (Joint Research Centre, 2021a). Adjusting to consumer choices, which have become more conscious, 'regenerative farmers' have experimented with new farming methods and focused on sustainable intensification, agroecology and organic agriculture to make the food system greener (Joint Research Centre, 2021a). They also support communities and farmer associations to maintain sustainability goals, as well as broadening their skills and knowledge. Such a community feeling in agriculture has also grown in urban, semi-urban and rural areas, where people grow food for their own consumption to keep a healthy diet (Joint Research Centre, 2021a). Home gardening and access to easy-to-use technology made self-provision easier. The food network is small, supporting themselves and their families or neighbours (Joint Research Centre, 2021a).

*Although all territories are affected by the transition in agricultural practices by 2050, they mainly concern places with agricultural land and rural areas. Areas with extensive and intensive use of arable land has been primarily affected by the changes including most regions in northern Italy, such as Lombardia and Veneto, most parts of Croatia, south and west of Albania, most of North Macedonia and the north of Serbia as well as Thessaly, Central Macedonia and East Macedonia and Thrace, Peloponnese and Crete in Greece. Places with high innovation and R&D are also important to develop relevant technology as are those with know-how to transmit smart farming to rural areas. (EEA, 2017; Grid Arendal, 2015)*

**In slow living.** The shift towards nature restoration and increased nature protection has not only affected the economy and businesses, energy production and work. It has first and foremost affected people's lives. Citizens in the Adriatic Ionian Region have chosen 'slow living' where they put nature protection over individualism. Young people in particular have come to play a role, as they led the environmental movements and increased awareness across the Region. By 2050 'giving back to nature' is well embedded in people's everyday lives. More and more people have started growing their own small urban gardens including on roofs, conserving and reusing water, reducing their paper needs, planting more trees, investing in zero-emission equipment, composting at home, recycling, using less power and sustainable transport, buying from ethical companies, reduced consumerism, banned plastic usage, stopped using chemicals, inspired other people to do the same and tried to reconnect with nature (Getz, 2021; Keetley, 2021). Laying the



foundations for a new 'social contract', citizens of the Adriatic Ionian Region have led by example towards a sustainable economy. This has improved the environmental situation in the region, restored large parts of nature and helped land and aquatic ecosystems, increased ecosystem services and in the long run improved people's physical and mental health.

**The new Adriatic Ionian way of life.** Citizen participation in the Adriatic Ionian Region has been crucial to restore nature in the area. Big and influential social movements have triggered product supply and demand, the bioeconomy transformation and new social lives. In particular community led groups, driven mainly by young people, encouraged the shift and the emergence of the new economic model. In awareness campaigns, protests and petitions people have shown they have the power to adjust their lives for a greater good. This ecological awakening has created a new Adriatic Ionian way of life, where people have realised how much they rely on nature and how much they need more connection to it (The Economist Intelligence Unit, 2021). Being close to mother earth is important for different cultures, as well as for a symbiosis between nature and humans (The Economist Intelligence Unit, 2021). For people in the Adriatic Ionian Region, preserving natural habitats means preserving their values and culture and by 2050 building a stronger macro-regional cultural heritage. People have changed their mindsets for the common good, which has supported decision makers to shape policies that correspond to these values and support this transition (Joint Research Centre, 2021c).

*Cultural heritage, both tangible and intangible has been particularly important in the Adriatic Ionian Region, with regions in south Italy, Croatia, east of Slovenia and west and north east part of Greece allocating resources for related projects (ESPON, 2021).*

**Integration relationship: make love, not war.** Environmental protection knows no borders. This has prompted stronger cooperation and integration in the Adriatic Ionian Region. In fact, cooperation and integration have been a must. Over the decades, non-EU members of the Region have joined the EU family, after stronger integration efforts. The support and rebranding of EUSAIR, the macro-regional strategy towards integration of the Adriatic Ionian Region, has been pivotal to the inclusion and integration of the non-EU member states. Over the decades, horizontal cooperation through EUSAIR, the regional identity built across countries that left aside earlier divides and conflicts, along with understanding the common needs and inclusive approach, have contributed to a stronger and faster integration (European Commission, 2021e). This integration has happened by 2050 gradually and to different degrees. The starting point has been nature restoration and protection of the natural habitat in the Region. This commitment has increased credibility and mutual trust, initiating a more dynamic process for integration of non-EU member states in EUSAIR (European Commission, 2020b).

## 8 Concluding reflections

What can we draw from the alternative territorial scenario ‘Restoring nature for a revived ecosystem’? The alternative territorial scenario has capitalised on the work carried out through the desk research and the co-creation process to develop the core foundations upon it has been developed. Those core foundations of the scenario have been the basis for the further development of the scenario and unfolding the key storylines and elements, as well as identifying their territorial implications. The following sections present first shortly those core foundations of the scenario. Second, they show the links of the key foundations to the storylines and elements of the scenarios, as well as overall territorial implications the scenario has.

### 8.1 What are the foundations of the scenario?

The alternative territorial scenario ‘Restoring nature for a revived ecosystem’ has been built along five core foundations, as shown in the figure below.

**Figure 8-1 Restoring nature for a revived ecosystem foundations – EUSAIR in 2050**



Source: authors' own

Restoring nature for a revived ecosystem has shown that people in the Adriatic Ionian Region have sparked a movement towards taking extremely radical decisions to address the most long-term challenge of our times, climate change. By 2050, the Adriatic Ionian Region has taken big moves towards restoring its rich nature for a revived and clean ecosystem. The citizens in the Adriatic Ionian Region have decided to restore and ‘give back’ to nature large parts of their territories to mitigate climate change effects. The increasing risk of loss of biodiversity, increased efforts towards preserving the ecosystem in the Adriatic Ionian Region and led to both changes in living settlements, as well as in increasing awareness to people. This change has been slow and gradual, with first steps and thoughts about it taken in 2020s, to then increase close to 2040s and 2050s (Figure 8-1).

In combination with ‘giving back to nature’, where large territories were abandoned, the new geography of work has also brought new developments in the Adriatic Ionian Region, showing a high increase until the 2030s, mainly due to the COVID-19 pandemic aftermath, until it reached a steady level by 2050. This has changed the living settlements in the region, concentrating people to large urban vibrant centres gradually

until 2050. Secondly, this shift in geography of work has concentrated people also in smaller urban areas where an 'Adriatic Ionian 'Mittlestand', i.e. a strong small and medium-sized enterprises presence has been developed. This gradual concentration of people in the urban and smaller urban areas has by 2050 increased further the critical mass of these places.

The deep technological integration that took place in the area by 2050 has not only triggered a change in the workplace, but also supported the modernisation and advancement of work and industries in general. Together with the greener approaches in place, innovation has also been revised, towards being blue, eco, social and circular. In particular blue innovation in the region has been vital, having a gradual progress and development by 2050. Restoring nature and changing mentalities towards environmental protection has also changed the transport in the region. The sea has for years served as a key transport means, however, by 2050 the sector has been greened and increased further in importance. Such development started slowly over the 2030s to increase gradually by 2050 (Figure 8-1).

The future of the Adriatic Ionian Region underlines that environmental protection knows no borders. This has urged for stronger cooperation and integration in the Adriatic Ionian Region. In fact, cooperation and integration have been rather a must. Over the decades, non-EU members of the Adriatic Ionian Region have joined the EU family, as stronger integration efforts were put in place. A process, which had a number of ups and downs, mainly as a result of external power shifts, however, by 2050 when the ideas about restoring nature have matured, it also increased (Figure 8-1).

All in all, these developments show the directions that different developments have taken in this scenario, influenced by the choices people have done. For the project, this guidance and direction has been given through the participatory approach. All these play, however, differently in the different territories.

## 8.2 What are the territorial implications of the scenario foundations?

The scenario foundations summarise the different elements that build the whole scenario storyline. This is graphically shown in Figure 8-2 below. The Figure shows how thematically linked the story is with the core elements that have shaped the development of the scenario. In addition, the figure synthesises what types of territories are most affected by the scenario. Although more specific territorial implications are given in the scenario stories, the figure below gives an overview glimpse of types of territories most affected. Certainly, such big changes have implications on all territories. Nevertheless, rural, border and urban areas are highly affected by the changes in the living settlements due to the giving back to nature decision. In addition, industrial, coastal, river and urban areas are highly affected by blue innovation changes. The new geography of work and its sub-elements influence highly the urban, industrial and intermediate areas and to a lesser extent mountain, river and coastal regions, as workers concentrate mainly in urban and industrial areas, while SMEs presence increases in smaller urban areas. Green shipping is highly relevant for tourism and coastal areas and islands, as it has become by 2050 the keyway to travel. All types of regions are largely affected and to a different extent by the increasing EU integration and particularly border regions in the area.

Besides highlighting territorial implications of the alternative territorial scenario, Figure 8-2 pinpoints at the complexity that territorial scenarios deal with. The elements that constitute the scenario are highly linked not only, in one way or the other, to each other, but also to the core foundations of the scenario, building a coherent and solid story. At the same time, they influence different territories to different extends, counting on the specific details of each scenario element. The territorial implications also depend on the sensitivity and resilience capacity of different regions to adapt to changes and transitions. The figure does not aim to detail every possible territorial implication, but rather to reduce complexity and emphasise that interdependencies of territories are unavoidable.

The figure was constructed taking into consideration that all drivers have at least one component, that each driver has different effect intensities on each of the type of territories, and finally that each component has a different importance (proportion) inside each driver (i.e. the height of the components). The territorial effect intensity was calculated based on the particular weight that each driver was considered to have on each type of territory and the importance of the component for each driver. The different heights of the drivers (middle) are a result of the sum of their intensity for all territories. On the right side, the intensity of each component is translated to each territory based on the basic calculation of driver intensity x component importance (the latter which sum up to 100% for each driver). As a result, the height of each type of territory is proportional to the intensity of the effects of all drivers together. This means that at a general level all types

of territories are impacted, however, the intensity of the effects differ significantly for each driver based on the effects of their components.

**Figure 8-2 What territories are affected by the ‘Restoring nature for a revived ecosystem’ alternative scenario?**



Source: authors' own

## 9 Conclusions & recommendations

The following sections present policy recommendations deriving from the project. Section 9.1 focuses on policy recommendations for the EUSAIR, while the section 9.2 provides cross-cutting recommendations at other levels.

### 9.1 Conclusions and recommendations for the EUSAIR

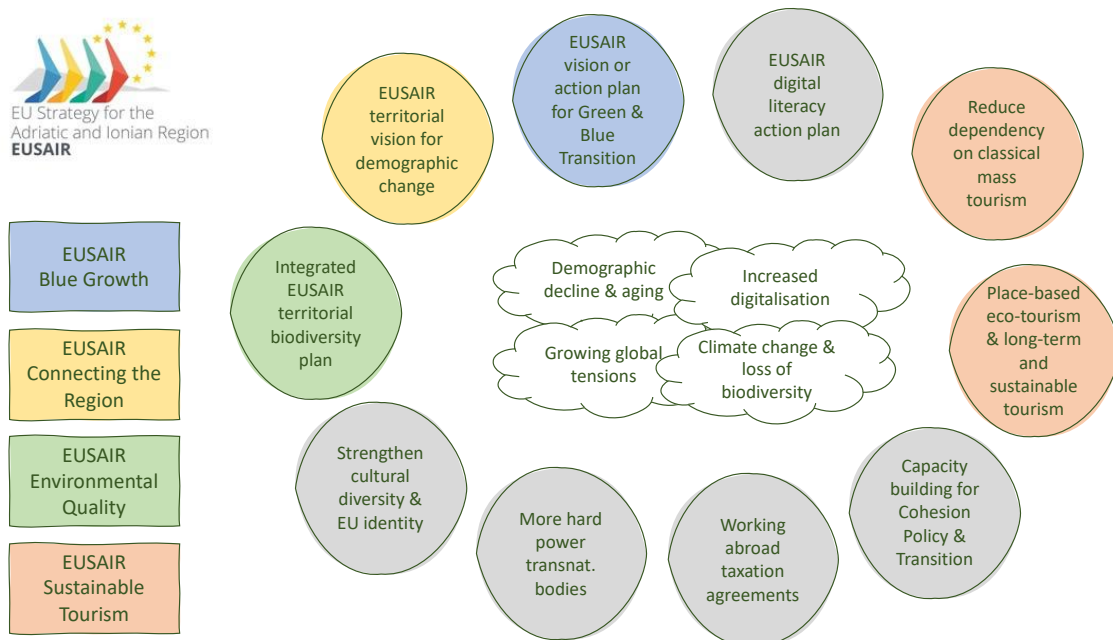
The three scenarios for EUSAIR point at overarching challenges and potential to be addressed.

Regardless of which scenario seems more desirable or likely, issues such as demographic decline and ageing, climate change, biodiversity loss, digitalisation, increasing energy demand and growing global tensions need to be addressed in the region.

These factors lead to different strands of policy recommendations. Each could be linked to the four EUSAIR pillars. Developing policy recommendations means shifting from a general discussion of possible futures to defined ideas about a desirable future. What outlooks of the scenarios do we want to avoid and what would we like to see in future? This means policy recommendations are subjective and a matter of (personal) choice. The following provides a teaser for possible policy recommendations, based on a co-creation workshop with the Steering Group. The recommendations do not necessarily represent the opinion of the Steering Group or its members.

At a general level, 10 policy fields can be developed from a synthesis of the scenarios (see figure). These include a macro-regional action plan for green and blue transitions, new tourism concepts and macro-regional biodiversity plans as well as new transnational bodies and tax agreements. The vast spectrum shows the diversity of possible policy recommendations which can derive from the scenario work, as well as the variation in levels of detail.

Figure 9-1 Possible fields for policy recommendations



Source: authors' own

Taking the discussion one step further, we would like to highlight five potential policy recommendations in more detail.

#### EUSAIR Territorial vision for demographic change



<b>Idea</b>	Demographic change is a major challenge for social and economic territorial development in the next decades. This includes migration, ageing, shrinkage, etc. leading to more territorial imbalances with difficulties for some places to access services of general interest and avoid a vicious circle of economic and demographic decline. These issues are relevant at all geographical and administrative levels, from local to European.
<b>Rationale</b>	Many parts of the Adriatic-Ionian region already experience demographic decline or are expected to face it in the near future. At the same time other parts have population growth. This leads to increasing imbalances, which can be either met with a 'laissez-faire-approach' or addressed in a strategic and forward-looking manner, reconsidering future settlement patterns in the region. Due to high levels of mutual interdependencies and connected issues, e.g. related to the future provision of services of general interest and tourism, it is best to address this issue at transnational level.
<b>Concrete actions</b>	Concrete actions should build on what already exists in the region including what is already done under EUSAIR, and take this one step further. This may include: <ul style="list-style-type: none"> <li>• A macro-regional vision addressing how the region's settlements and land use should look in the light of demographic change.</li> <li>• A broad participative process involving players from all parts of the macro-region and all types of places and societal groups to develop the vision.</li> <li>• Linking the vision to national and regional spatial planning documents.</li> <li>• Supporting the visioning process with ESPON territorial quality of life workshops.</li> </ul>
<b>Players</b>	Pillar 2 'Connecting the Region', national planning authorities, regional and local planning representatives, civil society players, academia, private sector representatives, regional networks, and ESPON.
<b>Time line</b>	This is a long-winded and complicated process which should start soon. It could involve Interreg and ESPON studies during the 2021-27 period to prepare the ground and engage stakeholders. As of 2028, development of the shared vision could start.
<b>Expected effects</b>	This will lead to better preparedness and a guided approach to handling demographic change in the region and prevent increasing risks of geographies of discontent where places and their inhabitants do not see positive future prospects.
<b>EUSAIR link</b>	This is an overarching task for EUSAIR, which is linked most closely to Pillar 2 'Connecting the Region'.

### EUSAIR spatial action plan for green and blue transitions

<b>Idea</b>	The green and blue transitions are essential for Europe to meet the challenges of climate change and biodiversity loss. As economies and societies are highly interdependent, a successful transition cannot only rely on the individual strategies of cities, regions or countries, but requires an overarching framework as well.
<b>Rationale</b>	Many countries in the Adriatic-Ionian region are already working on the green and blue transitions, but at different speeds and levels of effort. Building on these efforts and bringing them together in a macro-regional spatial action plan has considerable potential for accelerating the transition in a just and fair way, as well as strengthening green and blue growth.
<b>Concrete actions</b>	Concrete actions should build on what already exists in the region including what is already done under EUSAIR and take this one step further. This may include: <ul style="list-style-type: none"> <li>• Collecting existing or planned national and regional green and blue transition strategies and practices in the Adriatic-Ionian region.</li> <li>• A participatory process to develop a joint action plan for blue and green transitions, based on existing strategies and practices sharing costs of the transition.</li> </ul>

- Pilot actions which illustrate the importance of cross-border and transnational cooperation for a successful transition.

<b>Players</b>	Pillar 1 'Blue growth', national and regional authorities in charge of green and blue transitions, cross-border structures, research and civil society players, industries affected by green transition practices, regional networks and ESPON.
<b>Time line</b>	This is a long-winded and complicated process which should start soon. Possibly with some Interreg and ESPON studies during the 2021-27 programme period to collect existing strategies and practices, prepare the ground and engage stakeholders. Development of the joint action plan could start in 2026, while concrete pilot actions could start in 2028, i.e. in the next programme period. Where possible pilot actions could also start earlier, making use of NextGeneration EU or Just Transition Fund resources.
<b>Expected effects</b>	This will lead to more strategic, coordinated and planned green and blue transitions, exploiting synergies between places to be both more efficient and effective. As the green and blue transitions do not recognise physical borders, the synergies to this direction will also enhance cooperation and integration in the region.
<b>EUSAIR link</b>	This links strongly with EUSAIR Pillar 1 'Blue growth'.

### EUSAIR biodiversity plan

<b>Idea</b>	Biodiversity loss poses a substantial challenge to the future delivery of ecosystem services and the well-being of multiple species. In line with the European Green Deal, ensuring 'no net loss' of ecosystem services and biodiversity might change the focus of thinking on regional development potential and land use in the coming decades.
<b>Rationale</b>	The Adriatic-Ionian region is rich in biodiversity which is important beyond the borders of individual countries. Ensuring its longevity and mutual interdependence between places and their eco-systems is important. The scenario work has also shown that addressing demographic decline could give more room to flourishing fauna and flora. Finding joint solutions for resilient ecosystems and biodiversity protection will be more effective and efficient than pursuing unconnected national and regional efforts.
<b>Concrete actions</b>	Concrete actions should build on what already exists in the region including what is already done under EUSAIR, and take this one step further. This may include: <ul style="list-style-type: none"> <li>• Collecting existing or planned national and regional biodiversity plans or strategies in the context of the EU Biodiversity Strategy.</li> <li>• Developing a joint biodiversity plan based on these plans, also considering possible changes in settlement patterns due to demographic decline.</li> <li>• A future vision for EUSAIR linked to environmental protection plans.</li> </ul>
<b>Players</b>	EUSAIR Pillar 3 'Environmental Quality' in cooperation with ministries and regional authorities for the environment, DG Environment, the European Environmental Agency, the LIFE programme, ESPON and civil society organisations and environmental networks.
<b>Time line</b>	This could start with some Interreg and ESPON studies during the 2021-27 programme period collecting existing biodiversity plans and strategies, preparing the ground and engaging stakeholders. Actual development of the macro-regional biodiversity plan could start by involving all stakeholders in the region as of 2026.
<b>Expected effects</b>	This will lead to more effective and efficient policies to fight biodiversity loss in the Adriatic-Ionian region and help ensure a good environmental and ecological status of the terrestrial and marine environment. It will also boost implementation of the EU Biodiversity Strategy.
<b>EUSAIR link</b>	This links strongly with EUSAIR Pillar 3 'Environmental Quality'.

### EUSAIR taxation agreement for the digital workforce

<b>Idea</b>	The digitalisation of our economies and societies offers increasing possibilities for people to work remotely. This can take very different formats. Some people stay
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where they are and work for employers in one or several locations. Others move between locations more frequently and work temporarily away from their usual offices. Digital nomads are examples of this. While such solutions are becoming more frequent and popular, they pose considerable challenges in terms of labour laws, taxation and social security payments.

<b>Rationale</b>	Many places in the Adriatic-Ionian region see increasing numbers of digital nomads and people mixing work with holidays, also called workcation. Other places in the region have great potential to broaden their economic base with 'long-term tourism' offers. A proactive approach to overcoming the legal challenges for digital nomads and their like would help boost these developments. While this could be done at EU level, joining forces at macro-regional level can be a first step, especially to ensure that non-EU member states are also addressed.
<b>Concrete actions</b>	Concrete actions should build on what already exists in the region including what is already done under EUSAIR, and take this one step further. This may include: <ul style="list-style-type: none"> <li>• A template for bilateral taxation agreements allowing people to work for 50-100 days from another destination in EUSAIR.</li> <li>• Negotiation of an agreement between EUSAIR countries, to allow people to temporarily work from different locations in the region.</li> <li>• Negotiation of such an agreement with other EU &amp; EFTA countries, to allow people from other EU &amp; EFTA countries to temporarily work from locations in the Adriatic-Ionian region.</li> </ul>
<b>Players</b>	This is a task mainly for ministries of finance and labour in the various countries and DG ECFIN. However, EUSAIR players could stimulate such discussions and offer a platform linking these taxation issues to local and regional development potential.
<b>Time line</b>	Discussions on possible solutions could start in 2023.
<b>Expected effects</b>	This will offer new development and tourism potential for places in the Adriatic-Ionian region and also strengthen European integration.
<b>EUSAIR link</b>	It is an overarching task for EUSAIR, which is closest linked to Pillar 2 'Connecting the Region' and Pillar 4 'Sustainable tourism'.

### EUSAIR masterplan for future-wise tourism

<b>Idea</b>	Many tourism initiatives aim at reducing the negative effects of travel, accommodation, catering and leisure activities on the environment. Tourism has to become more responsible and respectful of the territory and local communities. Decarbonising tourism is an objective of many new strategies and actions. Sustainable tourism goes beyond green and environmentally friendly offers at destinations. It requires rethinking entire value chains in the tourism sector, linking tourism with local development issues. It also has to cover the full travel experience, from a tourist leaving home to re-entering it after the trip. This means it also needs to address place dependency on tourism and alternative tourism concepts such as long-term tourism.
<b>Rationale</b>	Tourism is an important economic sector in large parts of the Adriatic-Ionian region. To ensure that a shift towards sustainable and carbon neutral tourism does not harm destinations on the region, new tourism concepts have to be elaborated. This includes keeping higher shares of tourism value chains at destinations, as well as reducing dependency on 'classical mass tourism' and promoting place-based tourism. Tourist destinations are both competitors and mutually interdependent. So, an EUSAIR masterplan for future-wise tourism could make the Adriatic-Ionian region a frontrunner in future-wise and carbon neutral tourism.
<b>Concrete actions</b>	Concrete actions should build on what already exists in the region including what is already done under EUSAIR, and take this one step further. This may include: <ul style="list-style-type: none"> <li>• New concepts on how destinations can reduce their dependency on conventional mass tourism and keep a higher share of the tourism value chain in the region.</li> <li>• New sustainable tourism concepts and offers including long-term tourism, workcation, place-based eco-tourism, sustainable travel, etc.</li> </ul>

- Large participatory processes involving players from different destinations, including players not directly linked to tourism and embedding new tourism strategies in wider spatial strategies or visions for an area.

<b>Players</b>	EUSAIR Pillar 4 'Sustainable tourism', national and regional tourism authorities, destination management organisations, and tourism associations.
<b>Time line</b>	This could start with Interreg projects and large stakeholder events during the 2021-27 programme period to discuss future perspectives of the tourism sector and features to be addressed in a masterplan. As of 2026, development of a macro-regional tourism masterplan could aim for first investments funded in the 2028+ programme period. Pilot actions could start earlier, making use of NextGeneration EU resources.
<b>Expected effects</b>	This will lead to a complete transition of the tourism sector in the Adriatic-Ionian region and ensure that the tourism industry is maintained but shifted towards carbon-neutral and future-wise approaches.
<b>EUSAIR link</b>	This links strongly with EUSAIR Pillar 4 'Sustainable tourism'.

## 9.2 Cross-cutting recommendations

The scenario work for the Danube and Adriatic-Ionian macro-regions points also at conclusions and recommendations going beyond individual strategies while recognising territorial overlaps. The scenarios highlight that many future development issues require a wider geographical context than the nation state. This leads to discussions about shared strategies, masterplans or action plans for issues which are addressed more effectively or efficiently at transnational level. It also leads to considerations concerning macro-regional or transnational bodies to drive such processes beyond single projects.

### 9.2.1 Cooperation between macro-regional strategies

Many of the points identified in the scenarios might be relevant for all macro-regional strategies and thus relevant for the European Commission or for coordination between macro-regional strategies.

**Drive future-oriented debates.** Managing the challenges and transitions ahead also requires moving societal discourses and finding answers beyond the current framing of local and regional development. Examples for this include moving debates on:

- Internalising external costs across sectors to achieve Green Deal objectives.
- Quality of life and beyond GDP, including testing alternatives in macro-regional strategies.
- An improved EU data eco-system, including data security, privacy, data governance, blockchain technology, digital hazard resilience etc.
- Citizen engagement in governance processes and macro-regional cooperation.

**Think macro-regional sector plans and strategies.** Given the spatial interdependencies new formats are needed for macro-regional strategies, plans or roadmaps for particular sectors. Examples include considering macro-regional plans and strategies for:

- green, digital and just transitions
- biodiversity
- carbon-neutral long-distance mobility.
- changing settlement patterns in times of demographic decline and ageing.

**Consider transnational bodies and agreements.** In many cases plans and strategies will not be sufficient to move forward. Binding agreements between countries will be needed, and in some cases even transnational bodies to ensure longer term continuity. Examples for this include:

- multinational agreements on taxing digital nomads, workcation and the like.
- multinational agreements reducing border obstacles, between EU member states and especially between EU and non-EU member states.
- establishing transnational bodies to monitor (and reduce) border obstacles.

These are just a few examples for actions which go beyond the scope of individual macro-regional strategies.

### 9.2.2 ESPON

ESPON is highly committed to supporting macro-regional strategies and could consider actions to further support the work with territorial evidence:

- **Build repositories of national and regional plans and strategies** for spatial development to connect the dots and combine them in joint macro-regional plans or strategies. This could cover green and digital transition strategies, biodiversity strategies or spatial development plans.
- **Support macro-regional masterplans and sector strategies**, which help coordinate sector policies with wider territorial implications. This could include thematic studies providing territorial evidence or targeted cross-analysis of sector policies in the macro-region countries, as well as opening up project data . Possible topics are green and digital transitions, green and blue growth, demographic change, biodiversity, tourism and quality of life.
- **Strengthen continuous macro-regional monitoring** related to spatial inequalities, quality of life or cross-border obstacles. This could be an opportunity to establish databases or evidence for the Western Balkans part of both macro-regions.

These are just a few examples of actions which go beyond the scope of individual macro-regional strategies.

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