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GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA



TERRITORIAL ANALYSIS

for the **ROMANIA -
BULGARIA**
**CROSS - BORDER
REGION**



Interreg



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Interreg Romania-Bulgaria
Programme 2021-2027



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ABBREVIATIONS

CBC	Cross-Border Cooperation
CLLD	Community-Led Local Development
CO	Carbon monoxide
CO ₂	Carbon dioxide
DESI	Digital Economy and Society Index
EEA	European Environmental Agency
EG.	Exempli gratia
EGTC	European Grouping of Territorial Cooperation
ERDF	European Regional Development Fund
ESI Funds	European Structural and Investment Funds
ESPON	European Spatial Planning Observation Network
EU	European Union
EUR	Euro
Gbps	Gigabits per second
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GISCO	Geographic Information System of the Commission
HA	Hectare
ICPDR	International Commission for the Protection of the Danube River
ICT	Information and communication technology
IDA	Inter-community Development Association
IGN-F	Institut National de l'Information Géographique et Forestière
INS	National Institute for Statistics - Romania
IP	Inner peripheries
IPCC	Intergovernmental Panel on Climate Change
ITI	Integrated Territorial Investments
JRC	Joint Research Centre
KM	Kilometre
LAG	Local Action Group
LAU	Local Administrative Units
LEADER	Liaison Entre Actions pour le Développement de l'Economie Rurale - Links between the rural economy and development actions



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Mbps	Megabits per second
Mm	Millimetres
NGA	Next Generation Access
NGO	Non-governmental organization
NIS	National Statistical Institute - Bulgaria
NO ₂	Nitrogen dioxide
NUTS	Nomenclature of territorial units for statistics
OP	Operational Programme
PM ₁₀ , PM _{2.5}	Particulate Matter 10,2,5
RCP	Representative Concentration Pathways
RRG	Büro für Raumforschung, Raumplanung und Geoinformation
SDI	Sensitivity to Desertification Index
SLR	Sea Level Rise
SO ₂	Sulphur dioxide
SUD	Sustainable Urban Development
TEN-T	Trans-European Transport Network
UN	United Nations
UNECE	United Nations Economic Commission for Europe
WWTF	Waste Water Treatment Plants



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1. INTRODUCTION

The present Territorial Analysis is part of the contract for drafting the Interreg Romania-Bulgaria Programme 2021-2027, which will be funded by the EU, from the European Regional Development Fund-ERDF. The elaboration of the Programme will be done in accordance with the regulatory framework for the programming process that is set out in the EC legislative package for the programming period 2021-2027.

The territorial analysis represents the first step in designing the Programme, and it had as a starting point the current programme (2014-2020) - Interreg V-A Romania-Bulgaria Programme. The territorial analysis of the Romanian-Bulgarian cross-border area focuses on the challenges, needs, resources and common priorities (including economic, social and territorial disparities, investment complementarity, macro-regional strategies etc.) of the territories in the eligible area of the programme. It highlights the strengths, weaknesses, opportunities and threats of the border region, looking at the internal and external factors that influence the programme area and identifying trends and potentials, thus supporting the choice of an appropriate development and territorial cooperation strategy. The territorial analysis approaches the cross-border development, looking at:

- what are the common challenges, needs, resources and priorities that would benefit from joint actions?
- which European goals are relevant for the programme area and would benefit from joint actions?
- what are the areas for development where Interreg would add value?

Given the importance and relevance of the analysis for supporting the programming process, as well as national, regional and local policy processes, strategies and project design and implementation, a highly participative approach was adopted, that helped identify needs, challenges and potential and which provided in-depth knowledge on specific issues.

1.1. STRUCTURE OF THE DOCUMENT

The analysis is structured on three main sections and 11 chapters, including the current introductory chapter. These sections group the results of the thematic analysis, on the one hand, and those of the stakeholders' consultation and the conclusions and recommendations, on the other.

Each chapter is developed in dependence of the available data and information, ensuring, on the one hand, comparability with the previous analysis, allowing to assess the progress of the territory, and, on the other hand, updating the analysis according to the current trends and priorities (e.g. in terms of innovation, smart specialisation, governance, sustainability etc.). In order to ensure alignment with the policy objectives of the post-2020 Cohesion Policy from the



initial stages of developing the future Romania-Bulgaria Interreg Programme, the chapters of the Thematic analysis follow the structure of the proposed Policy Objectives¹.

The main fields analysed, each distributed to a dedicated chapter, include:

- Economic development
- Environment
- Climate change
- Physical and digital connectivity
- Demographic change
- Human capital and community development
- Governance

The methodological approach allowed to investigate, for each of the chapters:

CHALLENGES | Main issues and challenges for the area were identified, for each of the chapters, considering also link with challenges tackled in relevant European strategic documents.

NEEDS | Each chapter describes the needs related to the identified challenges, as resulted from document analysis, desk research, as well as stakeholder consultations.

PROBLEM TREE | The “problem tree” method was used to synthetize and prioritise needs and challenges for each chapter of the analysis. All problems and causes were listed and organised, in order to highlight the causal or interdependence relationships between them and to identify root-causes and intervention needs.

The concluding section includes a chapter dedicated to the territorial diagnosis, including an integrated SWOT analysis, and a chapter dedicated to the proposed programme strategic guidelines for the future Romania-Bulgaria Interreg Programme.

SWOT ANALYSIS | Was used to aggregate the information from desk research, interviews and case studies and summarizes the strengths, weaknesses, opportunities and threats regarding the development in the Programme area. The SWOT analysis was organised corresponding to the analysis sections and chapters in the Table of Contents.

¹ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, and the European Maritime and Fisheries Fund and financial rules for those and for the Asylum and Migration Fund, the Internal Security Fund and the Border Management and Visa Instrument



1.2. EU LEVEL VISION AND STRATEGIC FRAMEWORK

The following documents set the framework for the Interreg Romania-Bulgaria Programme 2021-2027. The future programme is being developed in accordance with the regulatory framework for the programming process, set out in the EC legislative package for the programming period 2021-2027, and taking into account all relevant documents expressing the EU vision on territorial cooperation and the development of the Romania-Bulgaria cross-border territory.

1.2.1. EUROPEAN LEGISLATIVE FRAMEWORK

The proposal for a **REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, and the European Maritime and Fisheries Fund and financial rules for those and for the Asylum and Migration Fund, the Internal Security Fund and the Border Management and Visa Instrument (CPR)**, May 2019, is the general regulation guiding the operation of funds in the 2021-2027 period and sets the strategic approach and policy objectives in this sense. The eleven thematic objectives used in 2014-2020 have been simplified to five clear policy objectives (POs) for the post-2020 programming period:

- 1. A smarter Europe - innovative and smart economic transformation;**
- 2. A greener, low-carbon Europe;**
- 3. A more connected Europe - mobility and regional ICT connectivity;**
- 4. A more social Europe - implementing the European Pillar of Social Rights;**
- 5. Europe closer to citizens - sustainable and integrated development of urban, rural and coastal areas through local initiatives.**

Each policy objective is detailed by several specific objectives (SOs), as follows:

- 1) A smarter Europe - innovative and smart economic transformation
 - SO1.1. Enhancing research and innovation capacities and the uptake of advanced technologies
 - SO1.2. Reaping the benefits of digitisation for citizens, companies and governments
 - SO1.3. Enhancing growth and competitiveness of SMEs
 - SO1.4. Developing skills for smart specialisation, industrial transition and entrepreneurship
- 2) A greener, low-carbon Europe
 - SO2.1. Promoting energy efficiency measures
 - SO2.2. Promoting renewable energy
 - SO2.3. Developing smart energy systems, grids and storage at local level
 - SO2.4. Promoting climate change adaptation, risk prevention and disaster resilience
 - SO2.5. Promoting sustainable water management
 - SO2.6. Promoting the transition to a circular economy
 - SO2.7. Enhancing biodiversity, green infrastructure in the urban environment, and reducing pollution
- 3) A more connected Europe - mobility and regional ICT connectivity
 - SO3.1. Enhancing digital connectivity



- SO3.2. Developing a sustainable, climate resilient, intelligent, secure and intermodal TEN-T
 - SO3.3. Developing sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to TEN-T and cross-border mobility
 - SO3.4. Promoting sustainable multimodal urban mobility
- 4) A more social Europe - implementing the European Pillar of Social Rights
- SO4.1. Enhancing the effectiveness of labour markets and access to quality employment through developing social innovation and infrastructure
 - SO4.2. Improving access to inclusive and quality services in education, training and lifelong learning through developing infrastructure
 - SO4.3. Increasing the socio-economic integration of marginalised communities, migrants and disadvantaged groups, through integrated measures including housing and social services
 - SO4.4. Ensuring equal access to health care through developing infrastructure, including primary care
- 5) Europe closer to citizens - sustainable and integrated development of urban, rural and coastal areas through local initiatives
- Fostering the integrated social, economic and environmental development, cultural heritage and security in urban areas

As the European territorial cooperation (Interreg) is supported by the ERDF, programmes corresponding to this goal, including the future Interreg-Romania-Bulgaria, have to contribute to the abovementioned policy objectives, in a mix according to the territorial specificities of their eligible areas.

According to the CPR, due to the specificities of each Fund, specific rules applicable to each Fund and to the European territorial cooperation goal (Interreg) under the ERDF should be laid down in separate Regulations ('Fund-specific Regulations') to complement the provisions of this Regulation. **The REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments** sets the framework for the programming of the future Interreg Romania-Bulgaria. According to the Regulation, "the 2021-2027 period will seek to further strengthen cooperation. This will be done through the following measures in particular:

1. Adapting the architecture of Interreg programmes to take better account of functional areas. Cross-border programmes will be better streamlined in order to concentrate resources on land borders where there is a high degree of cross-border interaction. Maritime cooperation will be reinforced by combining the cross-border and transnational dimension of working across sea basins in new maritime programmes.

2. Embedding cross-border cooperation into recent policy work outlined in the Commission Communication 'Boosting Growth and Cohesion in EU Border Regions'¹⁴ ('Border Regions Communication'). Focusing programmes on actions that are of direct interest to people and businesses located in border regions.



3. Strengthening the transnational and maritime cooperation Interreg programmes that cover the same functional areas as the existing macro-regional strategies (MRS). Increasing the alignment between funding and MRS priorities.

4. Reinforcing interregional cooperation for innovation as outlined in the Commission Communication 'Strengthening Innovation in Europe's regions - Strategies for resilient, inclusive and sustainable growth'. This will be done by proposing a new interregional instrument aimed at helping those involved in smart specialisation strategies (S3) to cluster together, in order to scale up innovation and bring innovative products and processes to the European market.

5. The CPR and ERDF regulations will further encourage and support stronger coordination between Interreg programmes and Investment of Jobs and growth programmes. This will be done by ensuring cooperation actions are well represented in the priorities funded under those programmes.”

Considering the specific features of Interreg programmes, two-Interreg specific objectives are set out:

6. **A better Interreg governance** - aiming at strengthening institutional capacity, enhancing legal and administrative cooperation, in particular where linked to implementation of the Border Regions Communication, intensify cooperation between citizens and institutions and the development and coordination of macro-regional and sea-basin strategies. This objective can be supported by the following actions:

- enhancing the institutional capacity of public authorities, in particular those mandated to manage a specific territory, and of stakeholders;
- enhancing efficient public administration by promoting legal and administrative cooperation and cooperation between citizens and institutions, in particular, with a view to resolving legal and other obstacles in border regions;
- enhancing institutional capacity of public authorities and stakeholders to implement macro-regional strategies and sea-basin strategies.

7. **A safer and more secure Europe** - addressing specific external cooperation issues such as safety, security, border crossing management and migration.

In addition to the specific objectives for the ERDF presented above, the ERDF and, where applicable, the external financing instruments of the Union may also contribute to several Interreg - specific objectives under PO 4:

- enhancing the effectiveness of labour markets and improving access to quality employment across borders;
- improving access to and the quality of education, training and lifelong learning across borders with a view to increasing the educational attainment and skills levels thereof as to be recognised across borders;
- enhancing the equal and timely access to quality, sustainable and affordable healthcare services across borders;
- improving accessibility, effectiveness and resilience of healthcare systems and long-term care services across borders;
- promoting social inclusion and tackling poverty, including by enhancing equal opportunities and combating discrimination across borders.



The Regulation also sets the rules for thematic concentration, that should be considered in the design of the programme²:

- At least 60% of the ERDF and, where applicable, of the external financing instruments of the Union allocated under priorities other than for technical assistance to each Interreg programme under components 1, 2 and 3, shall be allocated on a maximum of three of the policy objectives set out in Article [4(1)] of Regulation (EU) [new CPR].
- An additional 15% of the ERDF and, where applicable, of the external financing instruments of the Union allocations under priorities other than for technical assistance to each Interreg programme under components 1, 2 and 3, shall be allocated on the Interreg-specific objective of 'a better Interreg governance' or on the external Interreg-specific objective of 'a safer and more secure Europe'.

Last but not least, the CPR mentions the need to consider the European Semester's Country-Specific Recommendations (CSRs) in programming at least on two occasions: at the beginning of the programming and during the mid-term review. The specific recommendations for Romania and Bulgaria regarding cross-border cooperation will be synthesized in the next chapter.

1.2.2. EU COUNTRY-SPECIFIC RECOMMENDATIONS (THE EUROPEAN SEMESTER)

The country report for Romania³ highlights the main issues and developmental problems the country is facing:

- Romania's economic growth model, based on consumer spending, affects the country's ability to reach EU living standards in a sustainable way.
- Despite the substantial slowdown in 2018, growth remains robust.
- The labour market is under increasing stress.
- The public deficit has been increasing, driven mostly by spending on wages and tax cuts.
- Financial sector stability has been put under strain.
- Public and private investment in infrastructure, education, healthcare, social inclusion and innovation would improve productivity and long-term growth.
- Romania performs poorly on most of the indicators of the Social Scoreboard supporting the European Pillar of Social Rights.

Some of the key policy challenges identified relate to:

- Romania's current account deficit has been widening and its composition raises concerns.
- Rising labour costs may hurt Romania's ability to compete internationally.
- Risks to the financial sector have substantially increased.

² The REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments, published in May, 2018

³ Country Report Romania 2019 Including an In-Depth Review on the prevention and correction of macroeconomic imbalances, accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN CENTRAL BANK AND THE EUROGROUP 2019 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011



- The business environment and investment decisions are being hurt by unpredictable policymaking.

Other key structural issues analysed, which point to particular challenges for Romania's economy, include:

- Labour and skills supply are not keeping up with the fast-changing needs of the economy.
- Despite recent improvements, poverty and income inequality remain high, and regional disparities are deepening.
- The insufficient capacity of the public administration limits development opportunities.
- The weak performance of the education and training system is not helping Romania to catch up with the EU.
- The healthcare system faces many challenges
- Despite significant public investment after EU accession, physical infrastructure remains underdeveloped.
- Romania's modest performance in research and innovation limits growth prospects.
- The corporate governance of state-owned enterprises is only loosely applied.
- Progress in the fight against corruption has suffered significant setbacks.

Also, according to the report, with regard to the progress towards its national targets under the Europe 2020 strategy, Romania is performing well on employment rates, national greenhouse gas emissions, renewable energy, energy efficiency and tertiary education. **R&D investment** and **early school leaving** remain some distance away from their respective targets.

Specific references to cross-border cooperation include:

- A number of non-cost factors affect Romania's competitiveness negatively. The poor state of road and railway infrastructure affects businesses' effectiveness in moving goods and services across borders limits labour force mobility and aggravates regional disparities.
- The Romanian sections of the core TEN-T Rhine-Danube and Orient-East Mediterranean corridors are still not completed. The missing links (the Sibiu-Pitești motorway and the Brașov-Predeal and Timișoara-Craiova-Calafat rail connections) pose significant obstacles to regional, inter-regional and cross-border mobility. Investments in river navigation and multi-modal transport have been modest, not exploiting the full potential of the country's geographic and economic connections.
- The general condition and reliability of road and rail infrastructure in Romania are poor and its transport networks remain among the least developed in the EU, without tackling geographical obstacles to traffic, such as the Carpathian Mountains and crossing the Danube to Bulgaria. High priority investment needs are identified to develop a sustainable, climate resilient, intelligent, intermodal Trans-European Networks for Transport, including improved access to Trans-European Networks for Transport, national, regional and cross border mobility, and in particular to: develop core and comprehensive Trans-European Networks for Transport road and rail networks, notably links with peripheral regions across the Carpathian Mountains e.g. the north-east and to the Danube Delta, and unlock industrial centres e.g. around Pitești; put the European Railway Traffic Management System into operation on the core rail Trans-European Networks for Transport; implement the adopted traffic safety strategy and carry out road safety measures to reduce the high road accident fatality rate and mitigate environmental damage; improve the navigability of the Danube River in cooperation with



the Danube region Member States; develop core and comprehensive Trans-European Networks for Transport cross-border connections e.g. realising additional transport connections across the Danube, either by constructing new bridges or improving ferry connections.

- Romania is lagging behind regarding measures for tackling climate change adaptation, the rehabilitation of old contaminated sites and the prevention of floods and other natural hazards. Priority investment needs are identified to promote climate change adaptation, risk prevention and disaster resilience, and in particular to implement the risk prevention strategies and address climate change and natural risks (floods, drought, forest fires, landslides, earthquakes), as prioritised nationally and in cross-border and transnational coordination and cooperation.
- Integration in regional gas and electricity markets requires additional investments. In 2017, Romania's electricity interconnectivity level was 7 %, below the 2020 target of 10%. With the finalisation of planned projects of common interest on transmission infrastructure pending, the Romanian electricity system is overall well developed. The timely achievement of pending projects will increase Romania's integration in the regional market and relieve existing congestions in the south-east region while accommodating renewable development in north-east Bulgaria and southeast Romania (the Black Sea Corridor project of common interest). Investments in the gas sector are further needed to enable bi-directional flows, enhance interconnectivity with neighbours and fully exploit the advantage of the Black Sea resources, which would benefit security of supply and competition in the region.
- Romania's expenditure on research and innovation is significantly below the EU average and the country displays a stagnant research and innovation performance and low technological outputs. High priority investment needs are identified to enhance research and innovation capacities and skills and the uptake of advanced technologies, in all Romanian regions, including in the capital region, taking into account the results of the Catching Up Regions Initiative and in particular to reinforce the current research and innovation infrastructures, capacities and skills to ensure participation in Horizon and other EU programmes and initiatives, to integrate international, cross-border networks and transnational clusters and set-up joint research and education programmes and co-financing schemes.

The country report for Bulgaria⁴ highlights that:

- Bulgaria's strong growth momentum and the soundness of government finances offer an opportunity to tackle its remaining structural challenges and raise growth potential.
- Economic growth remains robust and the labour market continues to perform well.
- Despite its relatively good overall economic performance, Bulgaria has been slow to catch up with the rest of the EU.
- Budgetary developments remain positive.

⁴ Country Report Bulgaria 2019 Including an In-Depth Review on the prevention and correction of macroeconomic imbalances, accompanying the document COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN CENTRAL BANK AND THE EUROGROUP 2019 European Semester: Assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011



- Investment in skills, social cohesion, infrastructure, and research and innovation is needed to support competitiveness, productivity and the process of catching up with the rest of the EU.
- Bulgaria faces challenges on a number of indicators of the Social Scoreboard supporting the European Pillar of Social Rights.

Some of the key policy challenges identified relate to:

- The banking sector has been strengthened overall, but some vulnerabilities remain.
- The private sector is reducing its debt, but the level remains high.
- The reform of non-bank supervision has continued. Follow-up measures to the insurance and pension funds reviews are being implemented. Remaining steps include fully implementing an action plan to establish a proper risk-based, forward-looking supervisory process, and adequately following up on outstanding issues highlighted by the non-bank financial sector reviews, including valuation practices and group-level supervision.
- The labour market has improved, supported by economic growth. However, a shrinking working-age population as well as skills shortages and skills gaps continue to be of concern.

Other key structural issues analysed, which point to particular challenges for Bulgaria's economy, include:

- The social protection system is insufficient to tackle the significant social issues.
- The education system is being modernised at all levels, but significant challenges remain.
- Many Bulgarians still face significant obstacles in accessing healthcare.
- Public administration reform continues to be slow and is yielding insufficient improvements while the business environment remains weak.
- The fight against corruption remains a challenge.
- State-owned enterprises suffer from weak corporate governance.

Regarding progress towards its national targets under the Europe 2020 strategy, Bulgaria is expected to achieve its target for reducing greenhouse gas emissions and increasing the share of renewable energy. It has taken measures to improve energy efficiency, but **energy consumption remained above the indicative national targets**. Bulgaria has made progress on **employment, early school leaving and tertiary education rates**, but has yet to meet its targets. The situation has worsened regarding **poverty reduction**. There was no progress towards the **R&D intensity target**.

Specific references to cross-border cooperation include:

- The coverage and quality of transport infrastructure have improved but remain below the EU average. Key connections are still underdeveloped, especially in the North and between Northern and Southern regions. The low quality of road and rail connections, including trans-European transport core network, results in long travel times, poor transport safety and low connectivity across regions in Bulgaria and with the neighbouring countries. A modern, operational infrastructure allowing for intermodal transport connections is lacking, which also causes regional disparities. Inland navigability suffers from bottlenecks and cross-border connectivity between Bulgaria and Romania across the Danube River is a challenge due to the low number of bridges that have been built or modernised.



- Bulgaria is among the countries with the lowest perceived quality of transport infrastructure. To improve road infrastructure, intelligent transport systems need to be developed, encompassing cross-border data, road charging/e-toll schemes, safety and parking facilities. Along the core rail network, there are compliance issues with train lengths, operating speeds and the European Rail Traffic Management System standards.
- The north of Bulgaria has underdeveloped and outdated cross-border connections with Romania and there is a lack of intermodal terminals in key cities like Ruse and Varna. There is a need to address the existing regional disparities by completing the planned motorway and rail network, improving travel time and safety and reducing CO2 emissions in the north.
- The Trans-European Transport Network corridor in Bulgaria is still incomplete for rail and road especially in North Bulgaria. For rail there is a need for further development and road sections require Intelligent Transport System improvement. High priority investment needs have therefore been identified to develop a sustainable, climate resilient, intelligent, secure and intermodal Trans-European Transport Network, and in particular to develop railways and roads on the core and comprehensive Trans-European Transport Network networks including cross-border sections to address bottlenecks and missing links of the Trans-European Transport Network, to connect with neighbouring networks, and also bringing national sections of the network to meet EU standards.
- Rail connections to comprehensive network lines and development of intermodal terminals with road and rail links to the Trans-European Transport Network core network are essential for safer passenger and cargo transport with reduced emissions and pollution. High priority investment needs have therefore been identified to develop sustainable, climate resilient, intelligent and intermodal national, regional and local mobility, including improved access to Trans-European Transport Network and cross-border mobility, and in particular to improve cross-border connectivity by realising additional transport connections across the Danube, either by constructing new bridges or improving ferry connections.
- The single market for services is performing relatively well, with a few exceptions hampering competition. The new Law on Private Security Activities introduces complex authorisation and reporting requirements and an even more burdensome regime for temporary cross-border service providers.
- Bulgaria's response-focused emergency management system lacks investments in risk prevention, air quality and habitat restoration despite its vulnerability to climate change effects. Cross-border and transnational cooperation can be reinforced, allowing to address issues at sea basin level including through coordinated and cooperative actions across borders in the Black Sea area.

Hence, the main cooperation fields for the Romania-Bulgaria cross-border area according to the EU country-specific recommendations focus on the fields of **transport (road, railway), research, innovation and education/ skills, climate change adaptation, risk prevention and disaster resilience, including emergency response and renewable energy.**

The subsequent specific recommendations⁵ of the Council to Bulgaria and Romania have been announced by the European Commission in the framework of the spring package of the European

⁵ COUNCIL RECOMMENDATION on the 2020 National Reform Programme of Romania and delivering a Council opinion on the 2020 Convergence Programme of Romania, published in May 2020 and COUNCIL RECOMMENDATION on the 2020 National Reform Programme of Bulgaria and delivering a Council opinion on the 2020 Convergence Programme of Bulgaria, published in May 2020.



Semester 2020, on May 20. Both country reports are mainly focusing on addressing the socio-economic impacts of the COVID-19 pandemic and facilitating the economic recovery while the recommendations adopted by the Council on 9 July 2019 remain pertinent and will continue to be monitored. In their beginning, the reports emphasize the adoption on 20 March 2019 of the *Communication on the activation of the general escape clause of the Stability and Growth Pact*, which allows a temporary departure from the adjustment path towards the medium-term budgetary objective, provided that this does not endanger fiscal sustainability in the medium term.

However, in relation with the cross-border cooperation, the reports highlights:

- The need for Member States to work together to prepare the measures necessary to get back to a normal functioning of their societies and economies and to sustainable growth, integrating inter alia the green transition and the digital transformation, and drawing all lessons from the crisis;
- The need for crisis preparedness plans in the health sector, which include in particular improved purchasing strategies, diversified supply chains and strategic reserved of essential supplies. In the cross-border region, the usefulness of such plans could be even greater if they could be considered within a framework of cooperation at administrative level, while also involving citizens, civil society actors and institutions, in particular, with a view to resolving legal and other obstacles in border regions;
- The need for targeted policy response since the socio-economic consequences of the pandemic are likely to be unevenly distributed across regions both in Romania and Bulgaria, due to significant investment and labour productivity gaps and different specialisation patterns.

1.2.3. THE EUROPEAN GREEN DEAL

Supported by investments in green technologies, sustainable solutions and new businesses, the Green Deal is the new EU growth strategy. It supports the transition of the EU to a fair and prosperous society that responds to the challenges posed by climate change and environmental degradation, improving the quality of life of current and future generations. Nevertheless, the involvement and commitment of the public and of all stakeholders is crucial to its success.

In order for Europe to become the first climate-neutral continent by 2050, the European Green Deal includes a package of measures that should enable European citizens and businesses to benefit from sustainable green transition. Measures accompanied with an initial roadmap of key policies range from reducing emissions to investing in cutting-edge research and innovation and to preserving Europe's natural environment.

According to the European Green Deal, the major challenges for the next decade, translated into policy areas⁶, consist of:

CLEAN ENERGY | Further decarbonising the energy system is critical to reach climate objectives in 2030 and 2050. The production and use of energy across economic sectors account for more than 75% of the EU's greenhouse gas emissions. Energy efficiency must be prioritised. A power sector must be developed that is based largely on renewable sources, complemented by the rapid phasing out of coal and decarbonising gas. At the same time, the EU's energy supply needs to be secure and affordable for consumers and businesses. For this to happen, it is essential to

⁶ https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#policy-areas



ensure that the European energy market is fully integrated, interconnected and digitalised, while respecting technological neutrality.

SUSTAINABLE INDUSTRY | Achieving the EU's climate and environmental goals requires a new industrial policy based on the circular economy. Thus, the industries must be helped to modernise and exploit opportunities domestically and globally and the decarbonisation and modernisation of energy-intensive industries such as steel and cement is essential. In this case, the Commission presents a "sustainable products policy", which will prioritise reducing and reusing materials before recycling them. Minimum requirements will be set to prevent environmentally harmful products from being placed on the EU market.

BUILDING AND RENOVATING | To address the twin challenge of energy efficiency and affordability, the EU and the Member States should engage in a 'renovation wave' of public and private buildings. While increasing renovation rates is a challenge, renovation lowers energy bills, and can reduce energy poverty. It can also boost the construction sector and is an opportunity to support SMEs and local jobs. The Commission will launch an open platform bringing together the buildings and construction sector, architects and engineers and local authorities to develop innovative financing possibilities, promote energy efficiency investments in buildings and pool renovation efforts into large blocks to benefit from economies of scale.

SUSTAINABLE MOBILITY | Promoting more sustainable means of transport and improving public transport with stricter standards on pollution by cars. To achieve climate neutrality, a 90% reduction in transport emissions is needed by 2050. Achieving sustainable transport means putting users first and providing them with more affordable, accessible, healthier and cleaner alternatives to their current mobility habits. The Commission will adopt a strategy for sustainable and smart mobility in 2020 that will address this challenge and tackle all emission sources.

BIODIVERSITY | The Commission will present a Biodiversity Strategy by March 2020 and will work towards an ambitious new global framework to protect biodiversity at the UN Biodiversity Conference in October 2020. With the farm to fork strategy, the Commission will work to reduce the use of pesticides and fertilisers in agriculture and will prepare a new EU Forest Strategy for planting new trees and restoring damaged or depleted forests. 96% of Europeans think that we have a responsibility to protect nature and 95% of Europeans consider that looking after nature is essential for tackling climate change.

FROM FARM TO FORK | European farmers and fishermen are key to managing the transition. The Farm to Fork Strategy will strengthen their efforts to tackle climate change, protect the environment and preserve biodiversity. The common agricultural and common fisheries policies will remain key tools to support these efforts while ensuring a decent living for farmers, fishermen and their families.

ELIMINATING POLLUTION | To protect Europe's citizens and ecosystems, the EU needs to better monitor, report, prevent and remedy pollution from air, water, soil, and consumer products. To ensure a toxic-free environment, the Commission will present a chemicals strategy for sustainability. This will both help to protect citizens and the environment better against hazardous chemicals and encourage innovation for the development of safe and sustainable alternatives. All parties including industry should work together to combine better health and environmental protection and increased global competitiveness.

In order to implement the Green Deal, a substantial contribution of the EU's budget through all programmes directly relevant to the transition will be ensured, as well as other funds such as the European Regional Development Fund and the European Social Fund Plus. In this context, through the proposed objectives, the Interreg Romania-Bulgaria 2021-2027 will have to contribute to addressing the abovementioned challenges.



1.2.4. CONTRIBUTION TO THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

In September 2015, at the United Nations General Assembly, countries around the world signed up to the 2030 Agenda for Sustainable Development (United Nations 2030 Agenda) and its 17 Sustainable Development Goals (SDGs), agreeing on a concrete “to-do list for people and planet”⁷. The SDGs, together with the Paris Agreement on Climate Change, are the roadmap to a better world and the global framework for international cooperation on sustainable development and its economic, social, environmental and governance dimensions. The EU was one of the leading forces behind the United Nations 2030 Agenda and has fully committed itself to its implementation.

The Reflection Paper Towards a Sustainable Europe by 2030⁸ outlines a number of policy foundations for a sustainable future, encouraging actors in the EU to prioritise the sustainability transition:

- 1) From linear to circular economy - this helps to cut waste and reduce the need for new resources. The transition to a circular economy is considered a huge opportunity to create competitive advantages on a sustainable basis. Applying circular economy principles in all sectors and industries will in the end create jobs and cut greenhouse gas emissions. An objective is also to put in place the world’s first Plastics Strategy.
- 2) Sustainability from farm to fork - continue to protect the environment and improve the quality of food, correct imbalances in the food chain, from agriculture and fishing, to the food and drink industry, transportation, distribution, and consumption. The Commission has proposed a modernised Common Agricultural Policy (CAP), where Member States’ national plans will have to reflect the strong sustainability principles embedded in the CAP objectives.
- 3) Future-proof energy, buildings and mobility - clean energy is key to a sustainable future. We need to produce, store and consume energy in a sustainable way to reduce our environmental impact and protect the health of Europeans.
- 4) Ensuring a socially fair transition - The transition to ecologically sustainable economic growth and competitiveness can only be successful if it is inclusive at the same time. Sustainability change is therefore also about promoting social rights and well-being for all and in turn contributing to social cohesion in the Member States and across the EU.

This Reflection Paper is intended to inform the debate among citizens, stakeholders, governments and institutions and offers a view to inspire the preparation of the future Interreg Romania-Bulgaria Programme.

The 2019 Europe Sustainable Development Report⁹ shows that Romania and Bulgaria are at the bottom of the European ranking (positions 26 - Bulgaria and 27 - Romania, out of 28) regarding the progress in achieving the SDGs. According to the report, Romania is still facing major challenges regarding:

- SDG 1 No poverty
- SDG 4 Quality education

⁷ <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

⁸ https://ec.europa.eu/commission/sites/beta-political/files/rp_sustainable_europe_30-01_en_web.pdf

⁹ <https://www.sdgindex.org/reports/2019-europe-sustainable-development-report/>



- SDG 6 Clean water and sanitation
- **SDG 9 Industry, innovation and infrastructure**
- SDG 11 Sustainable cities and communities
- **SDG 12 Responsible consumption and production**
- SDG 15 Life on land

Bulgaria faces major challenges related to:

- **SDG 9 Industry, innovation and infrastructure**
- **SDG 12 Responsible consumption and production**
- SDG 13 Climate action
- SDG 16 Peace, justice and strong institutions

Nevertheless, the report provides key recommendations that could inspire the strategy of the future Interreg Romania-Bulgaria programme. Some of the key recommendations include:

- The European Green Deal can be the cornerstone for implementing the SDGs in the EU. It must include an EU-wide strategy to (i) fully decarbonise the energy system by 2050; (ii) strengthen the circular economy and achieve greater efficiencies in resource use and far lower waste; and (iii) promote sustainable land-use and food systems by 2050.
- The EU needs to increase public and private investments in sustainable infrastructure, including power and transport. This in turn will require greater financial resources for the EU.
- Europe needs to increase investments in education, job skills, and innovation, with a focus on STEM education at all levels and R&D for sustainable technologies.
- The EU needs to put SDGs at the centre of its diplomacy and development cooperation.

1.2.5. THE REVISED TERRITORIAL AGENDA

The Territorial Agenda¹⁰ is a strategic policy document for Europe, its regions and communities, providing a framework for action towards territorial cohesion and a future for all places in Europe, as well as strategic orientations for territorial development and for strengthening the territorial dimension of policies at all governance levels. The proposed objectives and priorities should hence be considered by the strategy of the future Interreg Romania-Bulgaria programme.

The aim of the Territorial Agenda is to contribute to the sustainable and inclusive development of Europe and to the achievement of the Sustainable Development Goals.

The renewed Territorial Agenda is currently being elaborated and it starts from the premise that Europe consists of different types of places (e.g. capital regions, metropolitan areas, small and medium sized towns, rural areas, inner peripheries, peripheral areas, northernmost areas, sparsely populated areas, islands, coastal areas, mountainous areas or areas in economic transition), that show a great variety of development potential and challenges. From the sub-local to the pan-European level, disparities between places and between people as well as environmental risks and pressures increase.

Key challenges and potential for local and regional development in Europe are linked to increasing imbalances and to the need for a transition to sustainable development, including the

¹⁰ <https://www.territorialagenda.eu/home.html>



reaction to the challenges of climate change. A common feature is the importance of good government and governance. Hence, the renewed Territorial Agenda clustered the main challenges of the European continent in two main categories:

1. The need to act as people and places drift apart - increasing imbalances and inequalities, for example in the fields of:
 - Quality of life
 - Services of general interest
 - Demographic and societal imbalances
 - Digitalisation and the 4th industrial revolution
 - Employment and economy
 - Interdependencies between places
 - Global embeddedness
2. The need to respond to the increasing pressure concerning sustainable development and climate change, for example in the fields of:
 - Climate change
 - Loss of biodiversity and land consumption
 - Healthy quality of air, soil and water
 - Secure, affordable and sustainable energy
 - Just transition
 - Circular regional value chains
 - Natural, landscape and cultural heritage

Two corresponding overarching objectives were defined, a **Just Europe** and a **Green Europe**, broken down into six priorities for the development of the European territory as a whole and all its places:

A JUST EUROPE that offers future perspectives for all places and people

- **BALANCED EUROPE** - Better balanced territorial development utilising Europe's diversity
- **FUNCTIONAL REGIONS** - Local and regional development and less inequalities between places
- **INTEGRATION BEYOND BORDERS** - Living and working across national borders

A GREEN EUROPE that protects our common livelihoods and shapes societal transition processes

- **HEALTHY ENVIRONMENT** - Better ecological livelihoods and climate-neutral towns, cities and regions
- **CIRCULAR ECONOMY** - Strong and sustainable local economies in a globalised world
- **SUSTAINABLE CONNECTIONS** - Sustainable digital and physical connectivity of places



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GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA

1.2.6. EU STRATEGY FOR THE DANUBE REGION

The European Union Strategy for the Danube Region (EUSDR, 2011) is the second macro-regional strategy of the European Union, taking over the cooperation model developed in the EU Strategy for the Baltic Sea in 2009. The purpose of this strategy is to boost the development of the Danube Region, by creating synergies and supporting coordination between the existing policies and initiatives in the region and approaching common challenges in partnership. The territorial scope of EUSDR covers the water basin of the Danube (parts of 9 EU countries: Germany, Austria, Hungary, Czechia, Slovak Republic, Slovenia, Bulgaria, Romania and Croatia and 5 non-EU countries: Serbia, Bosnia and Herzegovina, Montenegro, Ukraine and Moldova), including the entire Romania-Bulgaria cross-border territory.

The Danube region is facing several challenges, including environmental threats, untapped shipping potential and lack of road and rail transport connections, insufficient energy connections, uneven socio-economic development, uncoordinated education, research and innovation systems, shortcomings in safety and security. Better coordination and cooperation between the countries and regions is needed to address these challenges.

Through their integrated approach, EU Macro-regional strategies, such as the EUSDR, encourage targeted solutions to challenges within functional areas, which cannot be solved by a single country, region or municipality. Hence, EUSDR is an important tool on the strategic side for identifying the main objectives of the future Interreg Romania-Bulgaria programme.

Thus, the proposed programme strategy will seek to exploit the numerous potential synergies under the Danube Strategy Action Plan in its current and revised forms. This is currently defined as a “rolling document“, as revisions are foreseen. After eight years of implementation of the EUSDR, new challenges emerged or became more crucial at European level (e.g. digitalisation, ecology, education, transport, climate change, migration), hence the need to revise the Action Plan.

According to the Consolidated Input Document for the Revision of the EUSDR Action Plan, the major challenges for the next decade, or strategic objectives, for the region, are:

COUNTERACTING CLIMATE CHANGE | Measures to slow down warming and for a better adaptation and increased resilience, securing water supply for people and agriculture, coping with increasing and more frequent natural hazards, preserving and restoring biodiversity etc. need transnational and interregional answers and cooperation across the borders in the whole macro region.

STIMULATING SUSTAINABLE DEVELOPMENT | In line with the manifold challenges associated with climate change, all new development in the macro-region should stimulate Sustainable Development. This is a horizontal issue and the ecological footprint of all activities should be considered.

ESTABLISHING AND ENFORCING KNOWLEDGE SOCIETY, STIMULATING THE ECONOMY AND FIGHT POVERTY | It covers a wide range of issues, embracing education (schools, universities, vocational training, smart specialisation, etc.), R&D, lifelong learning, clustering, innovation, incubator and accelerator centres for start-ups and creative industry. Stimulating the Economy also means reduction of administrative burdens, a quick and efficient implementation of funding tools and an appropriate support for cross-border/transnational networks. Strengthening employment markets, for instance by skilling unemployed persons or by implementing labour market re-integration measures, are equally important. Improving the living conditions in the Danube Region of course also includes fighting Poverty.

IMPROVING MOBILITY AND CONNECTIVITY | In the Danube Region infrastructure often is inefficient, desolate and fragmentary. Efficient cross-border connections for environmentally



friendly transport are missing and the present degree of multimodality and interoperability is mainly at substandard levels. This also applies for ICT connectivity, which is, among others, a precondition for advancing digitalization.

ENHANCING DEMOCRACY, SOUND ADMINISTRATION AND STRONG INVOLVEMENT OF CIVIL SOCIETY AND YOUTH | Multi-level governance, strengthening regional and local authorities, participation on planning and decision making, social inclusion and non-discrimination of minorities as well as equal rights and income for men and women, and respect for civil society organisations build the pillars of stable democracies. This also includes a sound and efficient administration and cooperation on the fields of migration, security, prevention of and combat against crime and corruption.

These five strategic objectives of the EUSDR match the principles of the five policy objectives of ERDF and the Interreg-specific objectives mentioned in the previous chapter. Moreover, the revised Action Plan of the EUSDR acknowledges the five policy objectives as equally important for the Danube Region. The four Pillars proposed in the EUSDR to tackle the current challenges of the region also fit to the above-mentioned policy objectives. They express the core fields of action of the Strategy and comprise of 12 thematic areas. These four Pillars are:

- 1) Connecting the Danube Region - smart and sustainable
- 2) Protecting the Environment - clean and green
- 3) Building Prosperity - smart, social and innovative
- 4) Strengthening the Danube Region - effective, sound and safe

The revised EUSDR Action¹¹ Plan includes 85 actions for the development of the Danube region, ranging from mobility to security, focusing on 12 priority areas:

PILLAR 1 - Connecting the Danube Region:

- PA 1a - Waterway Mobility
- PA 1b - Rail-Road-Air Mobility
- PA 2 - Sustainable Energy
- PA 3 - Culture and Tourism, People to People

PILLAR 2 - Protecting the Environment:

- PA 4 - Water Quality
- PA 5 - Environmental Risks
- PA 6 - Biodiversity and Landscapes, Quality of Air and Soils

PILLAR 3 - Building Prosperity:

- PA 7 - Knowledge Society
- PA 8 - Competitiveness of Enterprises
- PA 9 - People and Skills

PILLAR 4 - Strengthening the Danube Region:

- PA 10 - Institutional Capacity and Cooperation

¹¹ Final document, <https://danube-region.eu/wp-content/uploads/2020/04/EUSDR-ACTION-PLAN-SWD202059-final.pdf>



- PA 11 - Security

The Action Plan is based on the contribution of the participant countries via the National Coordinators and includes operational objectives, projects and actions for each priority area (with concrete targets for each priority area). Each priority area is managed by 2 Priority Area Coordinators. Romania and Bulgaria coordinate PA3 together.

Through its actions, the Action Plan aims to maximize the potential of the Danube region, and to develop coordinated policies and actions in the area of the river basin, reinforcing the commitments of the Europe 2020 strategy towards the smart, sustainable and inclusive growth. The joint actions include building networks, mutual learning, striving for harmonization, aligning policies, building capacities, strengthening civil society and voluntary service, and more. Such actions can be realized with little resources, but with great impact on the Danube region.

In line with the goals of the territorial cooperation objective of the EU, the EU Strategy for the Danube Region and its Action Plan focus on enhancing closer cooperation, by encouraging the increase in the level and quality of network activities, strengthening the existing regional and interregional cooperation but also fostering new cooperation¹².

The Programme will consider those actions from the Danube Strategy that also contribute to the specific objectives of the cross-border region. The proposed list of strategic actions will be considered when elaborating the Programme.

1.2.7. EU VISION FOR THE BLACK SEA

The Black Sea became a "direct neighbour" of the European Union in 2007 when Romania and Bulgaria joined the union. Since then, both Romania and Bulgaria have consistently advocated for an increased EU involvement in the Black Sea region. Nowadays, the importance of the region is reflected in several EU policies and instruments targeting the Eastern Neighbourhood, including the Eastern Partnership (2009), the EU Strategy for the Danube Region (2010) and the EU Strategy for Connecting Europe and Asia (2018) while, a EU Strategy for the Black Sea is not yet in place. There are numerous initiatives aiming to define the strategic priorities in the area and to identify areas for enhanced cooperation at sea-basin level and consistent progress has been in this direction. To be noted, a dedicated Programme already exists and shall be continued also in post 2020 (financed via NDICI).

THE BLACK SEA SYNERGY INITIATIVE | The Black Sea Synergy is an EU initiative for regional cooperation with and between the countries surrounding the Black Sea and represents the EU's key regional policy framework for the Black Sea Region.¹³ Initiated in 2007, the Black Sea Synergy synthesizes the EU vision on the cooperation with the Black Sea region countries. The initiative was intended to be a flexible framework designed to ensure a higher coherence and a better orientation to the policies that address the area (Pop & Manoleli, 2007, p. 26) The initiative is complementary to the European Neighbourhood Policy, the Enlargement Policy for Turkey and the Strategic Partnership with the Russian Federation.¹⁴ In the same time, it supports the implementation of the 2016 Global Strategy on EU Foreign and Security Policy¹⁵ and the

¹² <http://www.interreg-danube.eu/about-dtp/eu-strategy-for-the-danube-region>

¹³ The countries covered by the EU's Black Sea Synergy initiative are: Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Romania, the Republic of Moldova, the Russian Federation, Turkey and Ukraine

¹⁴ More details on the registered progress and lessons learned within the Black Sea Synergy Initiative may be accessed at <https://data.consilium.europa.eu/doc/document/ST-7119-2019-INIT/en/pdf>.

¹⁵ <https://europa.eu/globalstrategy/en/global-strategy-foreign-and-security-policy-european-union>



European Neighbourhood Policy, reviewed in 2015.¹⁶ The Global Strategy calls for support for a cooperative regional order to build a more peaceful, stable and favourable regional environment, while consolidating resilience in EU's neighbourhood, both at state and societal level. The European Neighbourhood Policy aims to build more effective partnerships between the EU and its neighbours and it seeks to involve regional actors beyond the neighbourhood in addressing regional challenges.

BLACK SEA CROSS BORDER COOPERATION PROGRAMME | Within the Black Sea Synergy Initiative, the European Commission deems that a very important role in the implementation of its objectives in the Black Sea Region is to be ascribed to the cross border cooperation and to the local and civil society actors. Therefore EU established a Black Sea Cross Border Cooperation Programme under the European Neighbourhood Instrument (ENI). The programme is part of European Union's Cross-Border Cooperation (CBC) and focuses on supporting civil society and local level cooperation in Black Sea coastal areas and facilitates the further development of contacts between towns and communities, universities, cultural operators and civil society organizations, from the Black Sea Region. For 2014-2020 periods, its main objectives and priorities were the following:

1. Promote Business and Entrepreneurship
 - 1.1. Jointly promote business and entrepreneurship in the tourism and culture sectors
 - 1.2. Increase Cross-Border Trade Opportunities and Modernisation in the Agricultural and Connected Sectors
2. Environmental Protection and Reduction of Marine Litter
 - 2.1. Improve Joint Environmental Monitoring
 - 2.2. Promote Common Awareness-Raising and Joint Actions to Reduce River and Marine Litter

ENI CBC receives funding from ENI as well as from the Instrument for Pre-Accession (IPA). The programme has a total EU contribution of 49 mil. Euro (ENI+IPA).

FACILITY FOR BLUE GROWTH | Facility for Blue Growth represents an EU-funded assistance mechanism through which administrations and stakeholders in the region received support to identify common priorities for cooperation at sea basin level, thus laying the foundation of this common agenda. The facility represented a two-year technical assistance project set up by the European Commission in October 2017 in order to promote the development of blue growth and blue economy in the Black Sea basin, in the framework of the European Integrated Maritime Policy (IMP). The mechanism helped the public authorities of coastal countries (Bulgaria, Georgia, Moldova, Romania, the Russian Federation, Turkey and Ukraine) in developing national maritime policies in areas of mutual concern and cooperation on a regional level. It also assisted the private sector by providing all interested parties with updated information on events, news, networking and financing opportunities and by bringing together potential project partners and assisting them in developing and funding projects.

THE COMMON MARITIME AGENDA | As a result of the aforementioned efforts initiated and backed by the European Commission and representing a follow-up to the commitment of the 2018 Burgas Ministerial Declaration "Towards a Common Maritime Agenda for the

¹⁶ Joint Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – Review of the European Neighbourhood Policy (JOIN(2015) 50 final). http://eeas.europa.eu/archives/docs/enp/documents/2015/151118_joint-communication_review-of-the-enp_en.pdf.



Black Sea"¹⁷, ministers from the seven Black Sea countries – Bulgaria, Georgia, the Republic of Moldova, Romania, Russia, Turkey, and Ukraine – endorsed a Common Maritime Agenda for the Black Sea in 2019. This document sets out the following objectives and priorities:

Goal I: Healthy maine and coastal ecosystems

Priority 1: Ensure the protection and sustainability of the marine ecosystem;

Priority 2: Address marine pollution and plastic litter;

Priority 3: Support sustainable fisheries and aquaculture in the Black Sea;

Priority 4: Supporting innovative marine research infrastructures in the Black Sea;

Priority 5: Encourage the production, management and sharing of marine and coastal environmental knowledge for effective environmental monitoring and observation.

Goal II: A competitive, innovative and sustainable blue economy for the Black Sea

Priority 1: Foster innovative business models, stimulate research and innovation, and sustainable growth and up-to-date jobs

Priority 2: Promote transport and digital connectivity of the Black Sea

Priority 3: Promote blue skills and blue careers as an engine for innovation and competitiveness

Goal III: Fostering Investment in the Black Sea blue economy

Priority 1: Improve access to financial resources and promote sustainable investment in the blue economy

Priority 2. Promote maritime entrepreneurship and clusters

Though the adoption of this document, the Black Sea region joined the rest of the sea basins bordering the EU in setting a basin-wide initiative for more, and more sustainable, economic growth. The Common Maritime Agenda allows the littoral countries and the Republic of Moldova to work together, for the first time, in flexible formats, on a voluntary basis, in order to implement joint projects that address the needs and priorities identified for the Black Sea region and to attract and prioritize European funds and investment in a more efficient manner.

1.2.8. BORDER ORIENTATIONS

The Border Orientation Paper for the Romania-Bulgaria cross-border area¹⁸ sets out the key characteristics of the cross-border territory and outlines options and orientations for the programming of the next Interreg programme. The objective of this paper is to serve as a basis

¹⁷ The full text of the Burgas Declaration may be accessed at https://ec.europa.eu/maritimeaffairs/maritimeday/sites/mare-emd/files/burgas-ministerial-declaration_en.pdf.

¹⁸ <http://interregrobg.eu/images/fisiere/Future%20programme/CE%20Orientation%20Paper%20RO-BG.pdf>



for a constructive dialogue both within cross-border regions and with the European Commission for the 2021-2017 Romania-Bulgaria Interreg cross-border cooperation programme.

According to the paper, the main orientations for the cross-border are that should be considered in the next programming period by the two countries are:

1) Territorial dimension

- Explore the possibility of establishing joint territorial instruments adapted to the characteristics of the border region, especially with a view to tackling specific situations such as a joint urban centre (ITI) or a rural region (CLLD) facing similar challenges on both sides of the border.
- Invest in joint coastal management measures along the Black Sea coast.
- Invest further in common historical, natural and cultural heritage products and services, with a strong focus on creating employment for small companies and family businesses.
- Identify projects of a strategic nature which will enhance the implementation of the objectives of the Danube Strategy, possibly in cooperation with neighbouring IPA CBC programmes and certainly in cooperation with national and regional programmes.

2) Growth, competitiveness and connectivity

- Promoting linkages between research institutions and innovative businesses in the cross-border area. These linkages need to be re-enforced through complementary projects financed under the respective national/regional programmes dedicated to innovation in Romania and in Bulgaria. Full complementarity between those programmes and the cross-border cooperation programme need to be ensured.
- Investing directly in small companies in order to maintain employment levels in promising sectors such as agri-food, creative industries and tourism, by ensuring sufficient adaptation to a changing economic environment and to foster possible expansion via cross-border work. SME support via for instance voucher schemes to purchase cross-border business advice through competent and vetted services could be considered. This process could benefit from a cluster approach, with a focus on a few common sectors of activities.
- Supporting necessary technical steps in order to assess the appropriateness of increasing the capacity of existing bridges or of building new ones and support investments in improving the performance of the most frequently used ferry connections.
- Support cooperation between rail transport stakeholders in order to improve the Negru Vodă-Kardam railway connection to obtain better connectivity at low marginal cost and to tackle the operational shortcomings along the two lines using the Friendship and the New Europe Bridges.
- Continue to support in-land navigation and river management authorities, river users, investors and local authorities to better exploit Danube navigation (link to the EUSDR).
- For all transport measures to be financed under the cross-border cooperation programme, strong linkages with the Transport Operational Programmes in both countries should be built in. Local one-sided transport projects with limited cross-border impact should be avoided.
- Investing in increased digitisation of the border region, on the basis of a commonly agreed cross-border strategy and action plan. Focus this investment on improving general conditions for joint e-solutions for instance in education, health care, business support, cultural cooperation.

3) Greener, low carbon economy



- Investing in cross-border small-scale energy production from renewable sources, provided investment and distribution conditions are favourable.
- Invest in joint climate change adaptation and mitigation, with a strong focus on sustainable and eco-friendly measures (such as flood plains and reforestation).
- Consolidate current cooperation on risk prevention and rapid response management. Obstacles linked to the presence of the Danube, as well as to the lack of historical institutional cooperation need to be overcome to achieve a higher degree of protection for the entire border population.
- Support actions to jointly protect nature and biodiversity. Ensure that actions are more strategic in their approach and that awareness of the local population and visitors is raised on some of the specific challenges of the cross-border region when it comes to biodiversity.
- Develop the capacity of environmental authorities and the non-governmental sector to exploit the common natural heritage of the region while respecting environmental standards and securing sustainability. Joint capacity-building measures for environmental authorities should be considered.

4) Employment, education, health and inclusion

- Invest significantly in measures that will increase citizens' knowledge of each other and build trust. This could for instance take the shape of Small Project Funds or microproject schemes across the border area, focused on people-to-people activities.
- Support more extensive and structured language-learning activities as a vector for building trust but also as an employment-boosting factor.
- Invest in joint education schemes in areas where accessibility is not a hindrance or using digitised tools and methods. Supplement this by developing cross-border traineeships or placements and student exchange programmes for young graduates/students.

5) Governance

- Identify precisely key obstacles and unused potential and facilitate the process of finding ways to reduce these obstacles or exploit the potential (e.g. by funding meetings, experts, pilot projects, etc.).
- Explore ways to develop a common vision for the cross-border region, possibly using public participation tools and practices (citizens' consultations, townhall meetings, competitions, etc.).
- Institutionally and financially support the development of cross-border bodies which can play a key role in deepening cooperation both through Interreg (e.g. by managing a Small Projects Fund) and beyond any funding mechanism.
- Explore whether the programme can provide financial and/or technical support to the Inter-Governmental Commissions and their respective working groups, if appropriate.
- Establish (or participate to) a strong coordination mechanism with the authorities managing mainstream programmes in Romania and Bulgaria, in particular the national programmes dealing with transport, environment, regional development, ICT and labour issues.
- Identify the sectors where important cross-border data is missing and support projects that would fill the gap at the latest by 2027 (e.g. in cooperation with national statistical offices, by supporting regional data portals etc.).



Additionally, the border needs study **Collecting solid evidence to assess the needs to be addressed by Interreg cross-border cooperation programmes**¹⁹ collected evidence to assess obstacles and untapped growth potential to be addressed by Interreg cross-border cooperation programmes. The study also represented one of the sources for the Border Orientation Paper. It identifies the main obstacles and potential (needs) for development and growth in cross-border regions. The obstacles covered by the study are socio-economic, physical, cultural and related to normative and institutional barriers. The potential for growth is linked to competitiveness, market integration, the presence of social and human capital, the delivery of public services in urban areas and the management of natural resources. The most relevant needs, i.e. those with a high impact on social, economic and territorial cohesion, should be given priority at territorial level by public interventions.

The most important conclusions resulting from the study, in the current context, are related to the obstacles and the most significant growth potential and prioritises needs in terms of their policy relevance, in the Romanian-Bulgarian cross-border region.

Thus, the obstacles identified in the Romanian-Bulgarian cross-border region are:

- physical obstacles - perceived difficult access
- physical obstacles - the presence of the river
- cultural obstacles - trust

On the other hand, the potentials of the region are:

- competitiveness potential - patent applications
- competitiveness potential - Trademark applications
- competitiveness potential - cultural events
- market integration potential - multimodal accessibility potential
- market integration potential - employment
- market integration potential - index of employment differences
- human and social capital - tertiary education level
- human and social capital - internal trust
- potential for integrated services in cross-border functional urban areas - coupled cities
- potential from natural resources - number of NATURA 2000 areas

¹⁹ https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cross_border/border_regions_fin_al_report.pdf



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1.3. GENERAL DESCRIPTION OF THE ROMANIA-BULGARIA CROSS-BORDER AREA

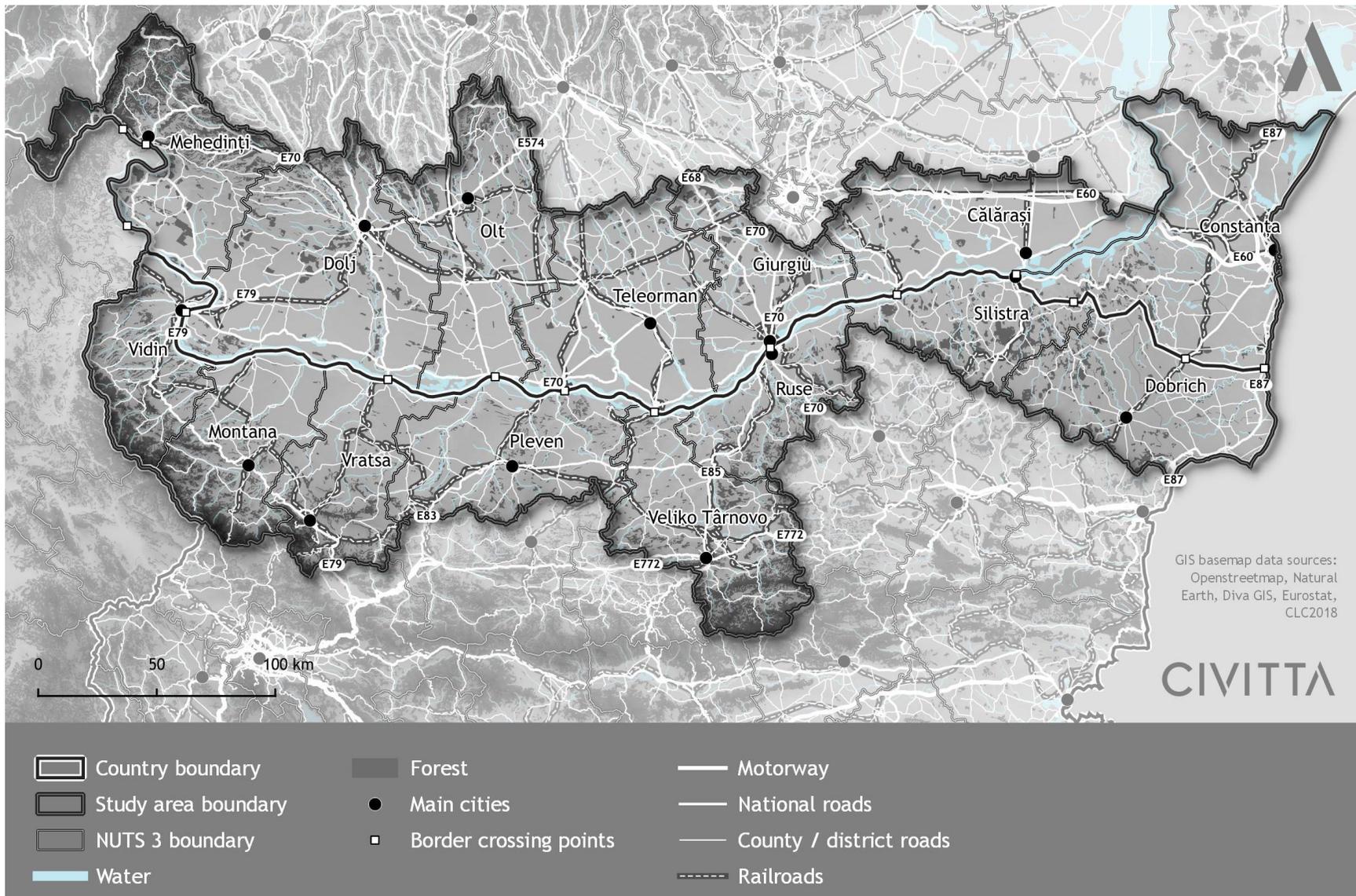
The territorial coverage of the analysis includes the 15 counties and districts that are currently part of the eligible area of Interreg V-A Romania-Bulgaria Programme (2014-2020), namely:

- Romania: Mehedinți, Dolj, Olt, Teleorman, Giurgiu, Călărași and Constanța;
- Bulgaria: Vidin, Vratsa, Montana, Veliko Tarnovo, Pleven, Ruse, Dobrich and Silistra.

The programme area has a total surface of 69 285 km², with 2/3 located in Romania and 1/3 in Bulgaria (based on the current geography of the CBC programme). Its area covers 19.8 % of the total area of the two countries and counts more than 4 million inhabitants.

The border between Romania and Bulgaria accounts for over 630 km, and for its largest part (470 km) it unfolds along the Danube River. Only one district in Bulgaria (Dobrich) and one in Romania (Constanta) are connected by land, the rest being separated by the Danube. The cross-border area is predominantly rural, and large areas of land are used for agriculture. There are also significant surfaces covered by forests and water bodies. The cross-border area also encompasses many natural sites on both sides of the border, with a rich biodiversity (many Natura 2000 and Ramsar sites).

MAP 1 THE ROMANIA - BULGARIA CROSS-BORDER AREA



SECTION 1 - THEMATIC ANALYSIS



2. ECONOMIC DEVELOPMENT²⁰

The Romania-Bulgaria cross-border area is one of the least developed territories in the European Union, considering both the GDP per capita and the regional GDP per inhabitant in % of the EU28 average, as depicted in the table below. According to an EC report from 2017 on lagging regions²¹, all regions which include counties and districts in the Romanian-Bulgarian cross-border area are classified as “low income” regions, therefore included in the lagging regions category.

TABLE 1 TOP 10 POOREST REGIONS IN THE EU

	REGION (NUTS 2) AND COUNTRY	REGIONAL GDP PER INHABITANT (PPS) (EUR)
1.	Severozapaden (Bulgaria) - includes administrative units from the RO-BG CBC area	9,300
2.	Severen tsentralen (Bulgaria) - includes administrative units from the RO-BG CBC area	10,200
3.	Yuzhen tsentralen (Bulgaria)	10,400
4.	Nord-Est (Romania)	11,600
5.	Severoiztochen (Bulgaria) - includes administrative units from the RO-BG CBC area	11,800
6.	Észak-Alföld (Hungary)	12,900
7.	Yugoiztochen (Bulgaria)	13,000
8.	Dél-Dunántúl (Hungary)	13,500
9.	Sud-Vest Oltenia (Romania) - includes administrative units from the RO-BG CBC area	13,600
10.	Észak-Magyarország (Hungary)	13,700

Source: Eurostat, 2017²², Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions

Compared to 2012 (the year when the economies started to rebound after the economic crisis) there are less regions from the Romania-Bulgaria cross-border area included in the top 10 poorest regions in the EU, four compared to six regions, however, there is still a stringent need for measures to stimulate the economic activity at multiple levels, in order to generate multiplication effects and to further enhance the socio-economic development of the area, promoting innovative and smart economic transformation. Key economic development topics, promoted especially under the Smarter Europe and More Social Europe policy objectives of the ERDF, include research and innovation and the uptake of advanced technologies, SMEs’ competitiveness and growth, the qualification and mobility of workers in order to be better equipped for smart specialisation, industrial transition and entrepreneurship.

²⁰ Data was collected from three main sources: National Statistics Institute in Bulgaria (NSI) and Romania (INS) and Eurostat. The general analysis period is 2012-2018, used whenever data was available for both Romania and Bulgaria. Where data was only available in one of the countries, the latest available year was used, which is 2017. In some cases, regional data in Bulgaria was difficult to collect for the entire period (2012-2018) and hence the analysis was adjusted to use the full available dataset in both countries, which is 2013-2017.

²¹ European Commission, 2017. Competitiveness in low-income and low-growth regions https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/lagging_regions%20report_en.pdf

²² Most recent data



2.1. ECONOMIC GROWTH

From a general macroeconomic perspective, the Romania-Bulgaria cross-border area includes some of the least developed NUTS3 counties and districts. However, within the area, there are major socio-economic disparities, that remained constant throughout the analysed period (2012-2017).

Between 2012 and 2017, the Gross Domestic Product had an overall positive evolution at the EU28 level, in Romania and Bulgaria, and in the cross-border area on each side of Danube. Overall, the GDP increased by 33.7% in the cross-border region in 2017 compared to 2012, an increase supported mostly in the Romanian counties, which increased with 39.3%, while the Bulgarian districts increased their GDP by only 18%.

The cross-border area's share in Romania's and Bulgaria's GDP is low and has decreased over the analysed period (2012-2017), showing a limited contribution to the national economies, especially considering the weight of the population and surface of the national total. On the other hand, the low values can indicate that there is an untapped development potential that could be addressed. The Romania cross-border area's share in the Romanian GDP remained constant between 11.2% and 11.6%, with a slight increase in 2012 and 2014, up to 12.1%, accounting 21,630.1 million EUR in 2017. In Bulgaria, the cross-border area ratio increased from 13.1% in 2012 to 13.4% in 2014, then declined down to 12.5% in 2016, and to 12.6% in 2017 for a total of 6,505.6 million EUR.

TABLE 2 GDP AT THE NATIONAL AND REGIONAL LEVEL, 2012-2017, MIL. EUR, %

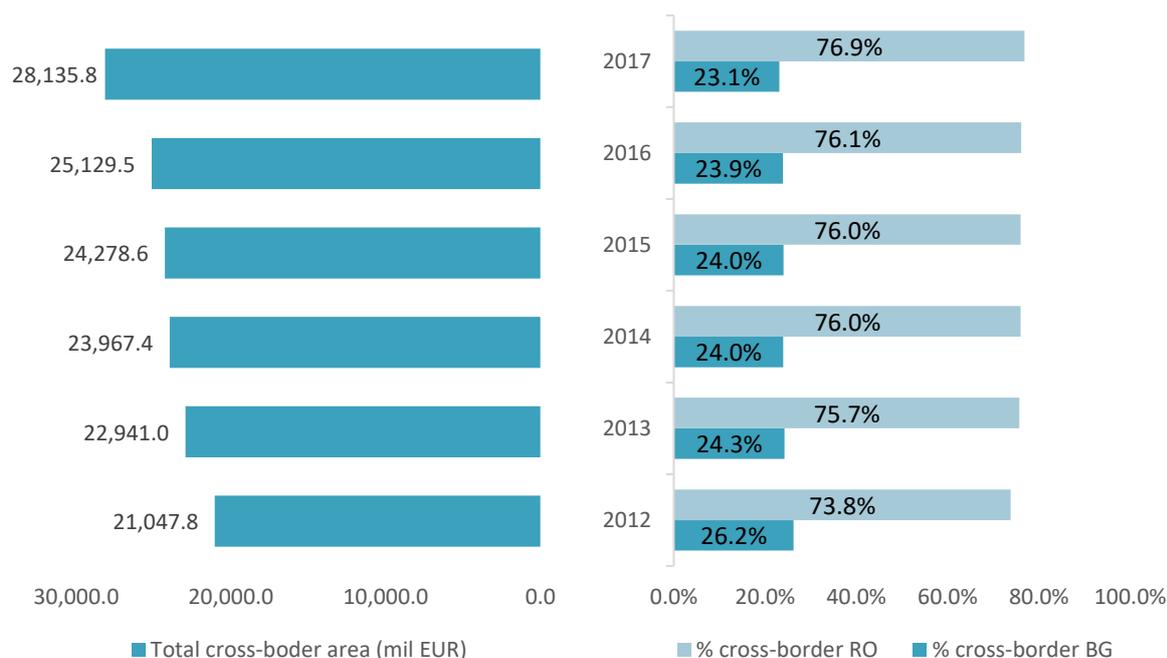
	2012	2013	2014	2015	2016	2017
Bulgaria	41,947.2	41,858.1	42,824.4	45,288.5	48,128.6	51,663.02
Cross-border region BG	5,515.4	5,564.4	5,744.2	5,831.0	6,000.5	6,505.6
% of regions BG	13.1%	13.3%	13.4%	12.9%	12.5%	12.6%
Romania	133,764.5	144,161.0	150,719.1	160,596.1	170,420.2	188,004.5
Cross-border region RO	15,532.4	17,376.6	18,223.2	18,447.6	19,129.0	21,630.1
% of regions RO	11.6%	12.1%	12.1%	11.5%	11.2%	11.5%

Source: Eurostat; Tempo INS; own calculation

In terms of contribution to the GDP of the cross-border area, the Romanian ration remained the highest between 2012 and 2017, increasing from 73.8% in 2012 to 76.9% in 2017, while the Bulgarian one had an opposite tendency, steadily decreasing to 23.1% in 2017, pointing towards major territorial imbalances with the area.



FIGURE 1 EVOLUTION OF GDP IN THE CROSS-BORDER AREA AND CONTRIBUTION OF EACH SIDE, MIL EUR, %, 2012-2017



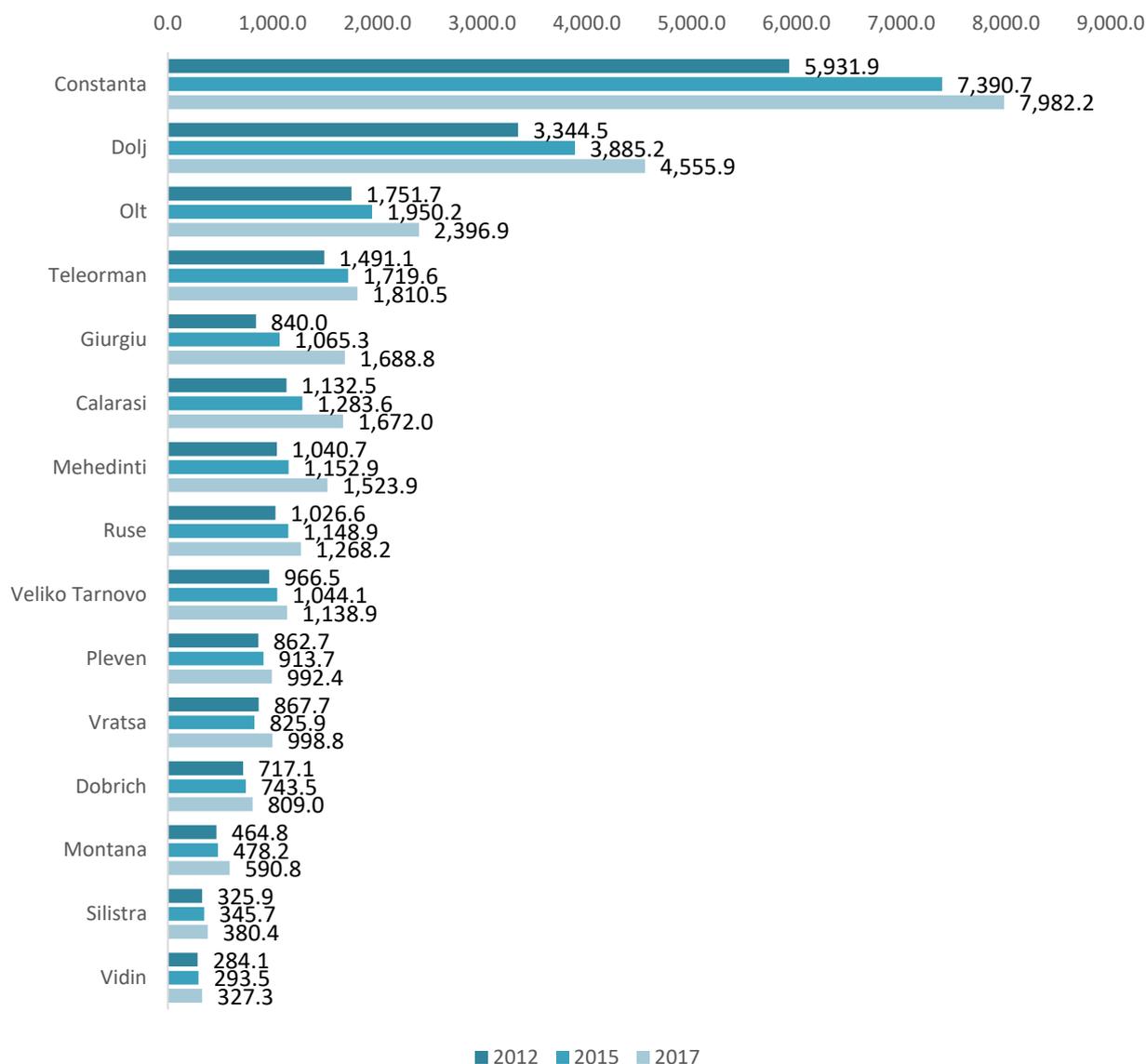
Source: Eurostat;

All counties and districts in the cross-border area had a positive evolution of GDP. In general, the Bulgarian districts had a slower development, the only exceptions being Ruse and Montana (24% and 27% respectively increase), while the Romanian counties saw higher increases, even doubled in some cases, such as Giurgiu.

Overall, Constanta and Dolj contribute to the area's GDP with almost half the GDP of all the other counties and districts in the cross-border area altogether. Within the Bulgarian side, Ruse and Veliko Tarnovo perform better than the rest of the districts, yet worse than all the Romanian counties. They are the only two Bulgarian districts with a GDP higher than 1 billion EUR. Silistra and Vidin maintain a worrying low level of economic development.



FIGURE 2 EVOLUTION OF GDP OF CROSS-BORDER COUNTIES/DISTRICTS, 2012-2017, MIL EUR



Source: Eurostat

An economic divergence can be observed at the cross-border area level when we compared the counties' and districts' GDP to the area average in 2012 and 2017, with the more developed counties and districts improving their relative GDP contribution and the less developed counties and districts declining. The GDP average increased from 1,403.19 mil EUR in 2012 to 1,875.7 mil EUR in 2017. Compared to the cross-border area average GDP, there are three counties, all located on the Romanian side, which have a higher GDP than the average, and even better than compared to the same indicator computed for 2012: Constanta -422.7% in 2012, 425.6% in 2017 (more than four times higher than the area average), Dolj - 238.3% in 2012, 242.9% in 2017 (more than two times higher than the area average) and Olt - 124.8% in 2012, 127.8% in 2017 (more than double the average value at the CBC area level). On the other hand, Vidin and Silistra lowered their relative performance, from 20.2% of the average to 17.4% in the case of Vidin, and from 23.2% to 20.3% in the case of Silistra.



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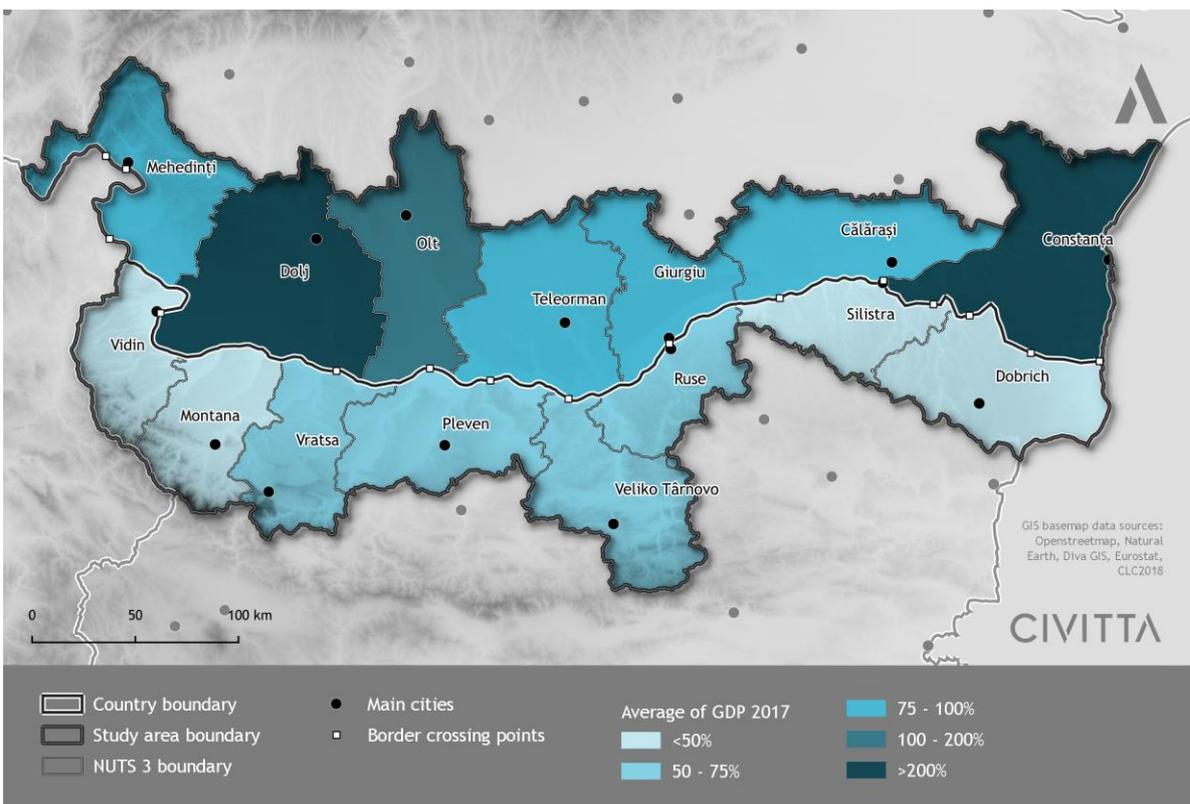
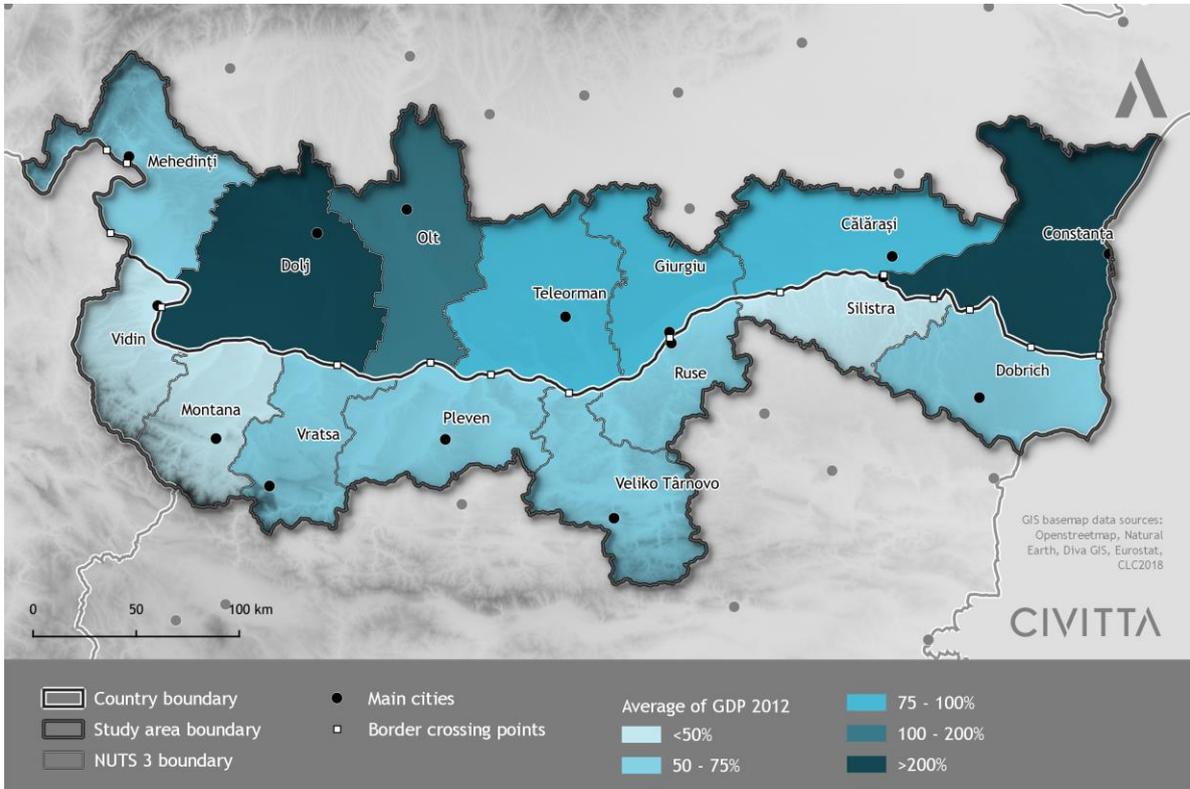


GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA

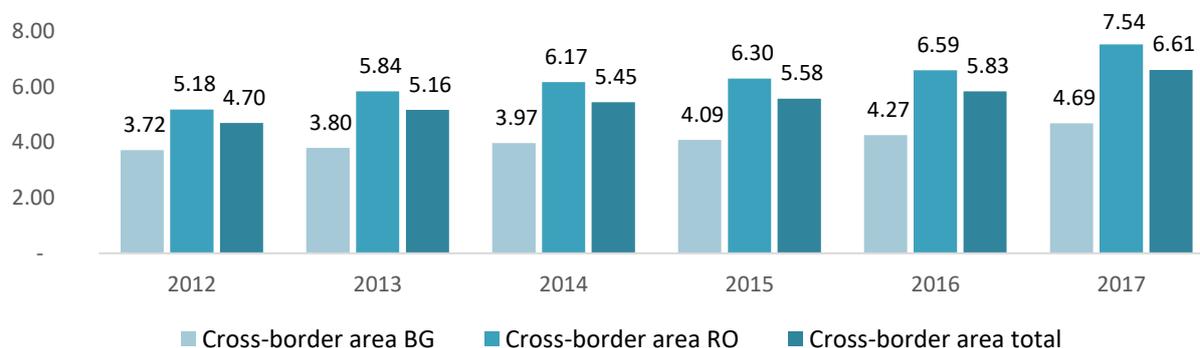
MAP 2 RATIO BETWEEN EACH COUNTY/DISTRICT GDP AND THE CROSS-BORDER AREA AVERAGE OF GDP 2012 (UP) AND 2017 (DOWN)





The analysis of GDP per inhabitant (PPS) reveals a similar situation in terms of economic development - the value of GDP per capita is 6.61 thousand EUR in 2017 at the area level, with 40.7% higher than in 2012. However, compared to the value for EU28, this area still lags behind significantly. Within the area, both in the Romanian and in the Bulgarian side, the GDP per capita increased along the period yet preserving a higher value in the Romanian counties (7.54 th. EUR in 2017, with 45.4% more compared to 2012), compared to the Bulgarian districts (4.69 th. EUR in 2017, with 26.3% more than in 2012).

FIGURE 3 EVOLUTION OF GDP PER INHABITANT (PPS) IN THE CROSS-BORDER AREA AND ON EACH SIDE, `000 EUR



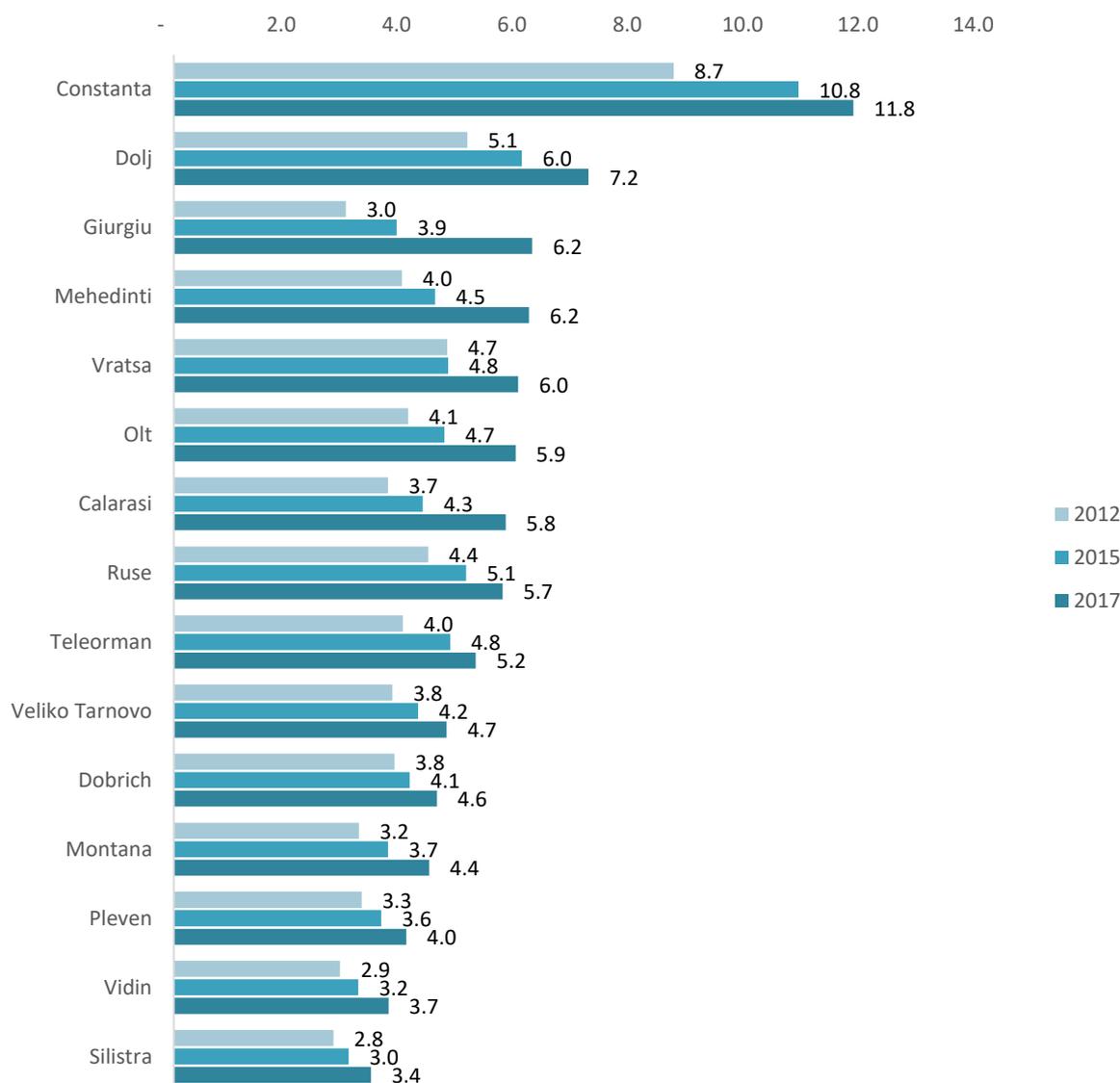
Source: Eurostat, own calculation

At the county/district level, the GDP per inhabitant displays increasing disparities as well, with Constanta having a value almost 4 times higher than Silistra (11.8 th. EUR compared to 3.4 th. EUR in 2017), the least developed district, while also maintaining a considerable difference compared to the second ranked county - Dolj (7.2 th. EUR).

Ruse and Giurgiu, the two counties/districts where there are some commercial relations display similar values of GDP/capita, around 5.7-6.2 th. EUR in 2017. However, while in 2012, Ruse had a higher GDP/capita compared to Giurgiu - 4.4 versus 3.0 th. EUR, in 2017, the situation is reversed, with Giurgiu having superior values of the indicator. At the other end, Constanta and Dobrich, the only two neighbouring areas located at the seaside, see major differences, with the former having a GDP/capita almost three times bigger than the latter.



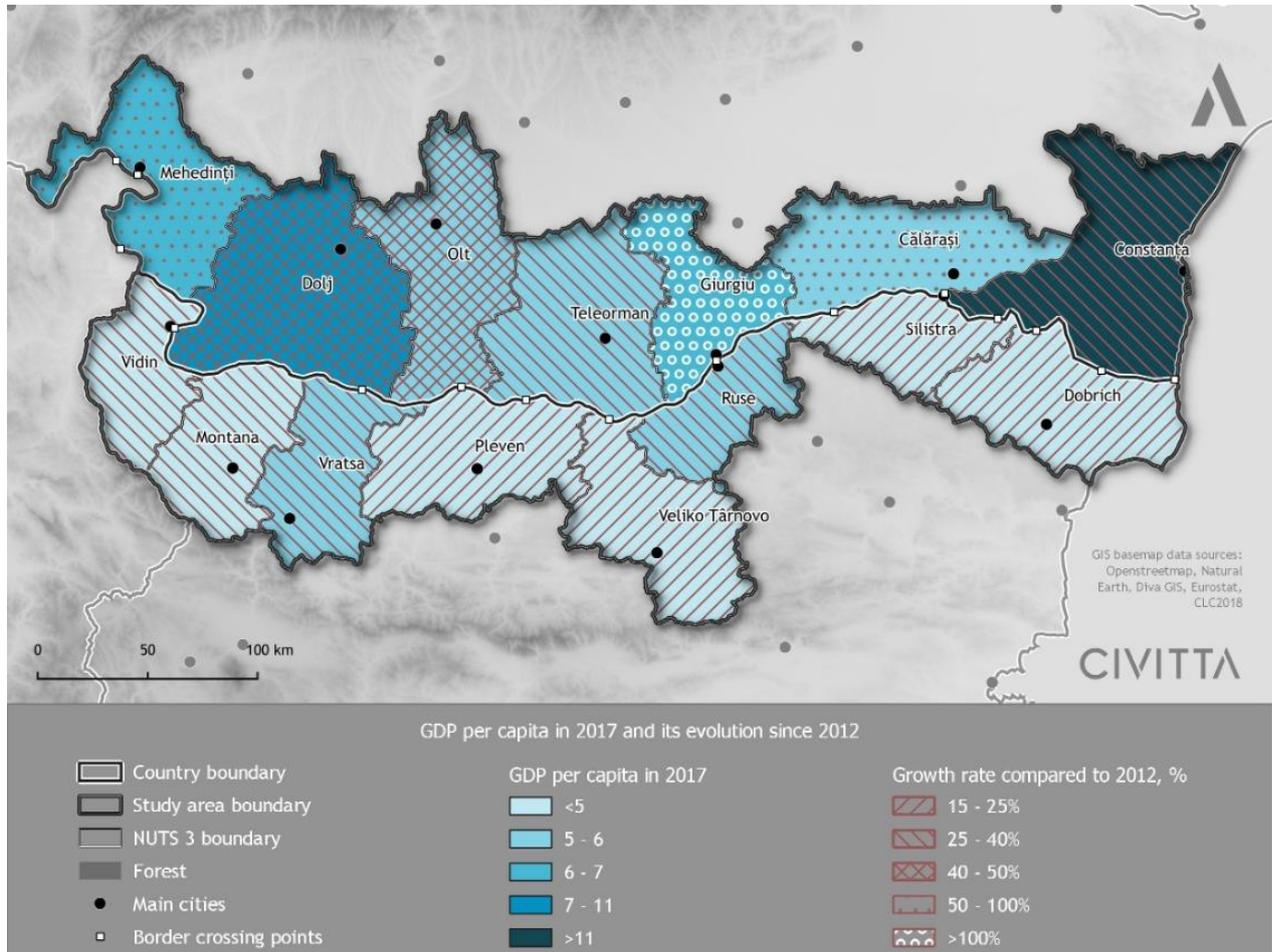
FIGURE 4 EVOLUTION OF GDP PER CAPITA OF CROSS-BORDER COUNTIES/DISTRICTS, 2012-2017, `000 EUR



Source: Eurostat, own calculation



MAP 3 GDP PER CAPITA IN 2017 AND GROWTH RATE COMPARED TO 2012, %



2.2. THE STRUCTURE OF THE ECONOMY

2.2.1. GROSS VALUE ADDED²³

While GDP per economic sectors data is unavailable, a general picture of the structure of the economy is generated through the analysis of Gross Value Added (GVA) on the main economic sectors - Agriculture, Industry, Services, on the Bulgarian side, adding Retail and Construction under Others category in the Romanian side, given the existing data. In addition, this picture is completed using the distribution of employees by economic sector.

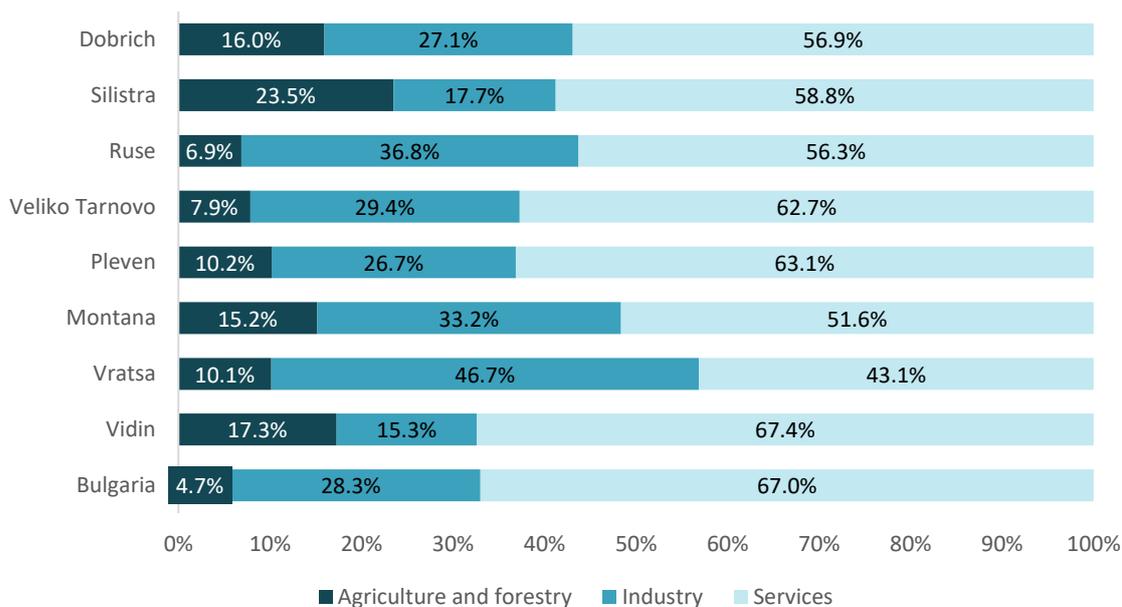
As a general remark, Agriculture is better represented in the cross-border area compared to this sector's contribution to each of the two national economies, reaching 11.4% in Bulgaria in 2016, compared to 4.7% at the national level, and 7.4% in Romania in 2016, compared to 4.5% at the national level. In the case of industry, in the two parts of the cross-border area this sector

²³ The data was available until 2017, but for comparability purposes with the Romanian data (where GVA was only available for 2016), this year was chosen as final year of the analysis on this indicator.



contributes with around 30% in each national economy, more precisely with 31.6% in Bulgaria and 29.7% in Romania. In Silistra and Vidin, GVA produced in Agriculture is higher than in the manufacturing sector, although higher-than-average values are recorded for most districts.

FIGURE 5 GVA PER ECONOMIC SECTORS IN BULGARIAN CROSS-BORDER AREA, %, 2016

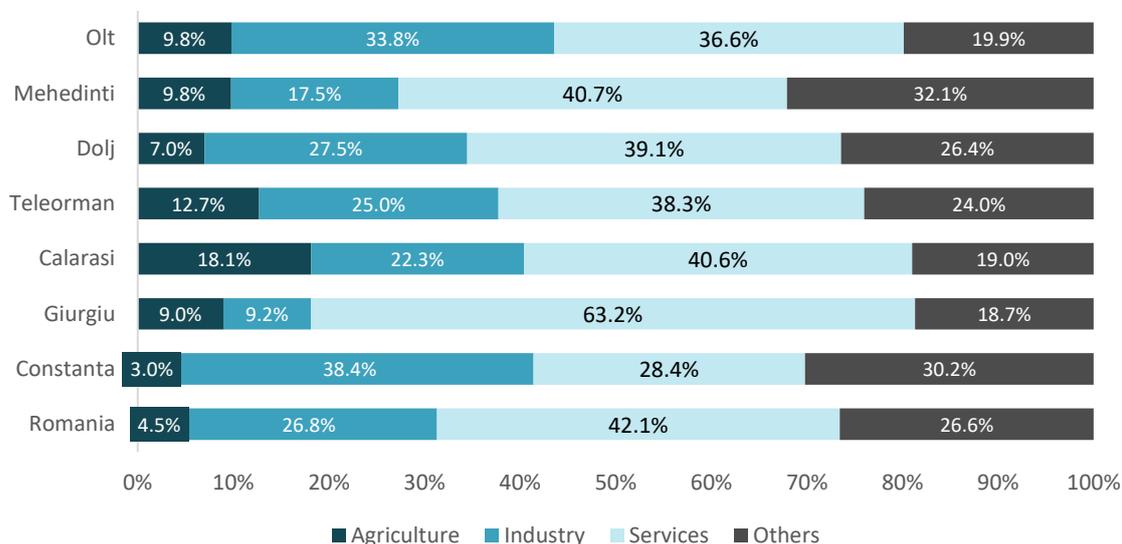


Source: Regions, districts and municipalities in the Republic of Bulgaria, 2016

In Bulgaria, GVA produced in the cross-border area represented 13.1% in 2012 and decreased to 12.5% in 2016. A similar ratio is observed in the Romanian side, decreasing from 11.9% in 2012 to 11.5% in 2016. By economic sector, other differences are noticeable: around 30% of GVA generated in the **Agriculture** sector in Bulgaria is produced in the cross-border area, a ratio that maintained constant throughout the period, while in Romania this sector's share reached 19.7% in 2012 and 18.8% in 2016. In the **Industry** sector, the cross-border area contributes with 14.1% in 2012 and 13.9% in 2016 in Bulgaria, and with around 12.6-8% in Romania. In the **Services** sector, the cross-border area in both Romania and Bulgaria contribute with around 10% to the national economies' services sector.



FIGURE 6 GVA PER ECONOMIC SECTORS IN ROMANIAN CROSS-BORDER AREA, %, 2016



Source: Anuarul statistic national INS, 2016

2.2.2. STRUCTURE OF EMPLOYMENT BY MAIN ECONOMIC SECTORS

Overall, at the cross-border area level, as the chart below indicates, there are almost 1 million employees in 2017, with 1.6% more than in 2012. The Romanian side of the area was responsible for this small increase, where the number of employees grew by 6.6% between 2012 and 2017, reaching 576 thousand in 2017, while in the Bulgarian side of the area, the number decreased constantly, in 2017 having with 5.2% less employees for a total of 383 thousand. Around 40% of the employees from the cross-border area are located in the Bulgarian side.

FIGURE 7 TOTAL NUMBER OF EMPLOYEES IN THE CROSS-BORDER AREA, THOUSAND PERSONS

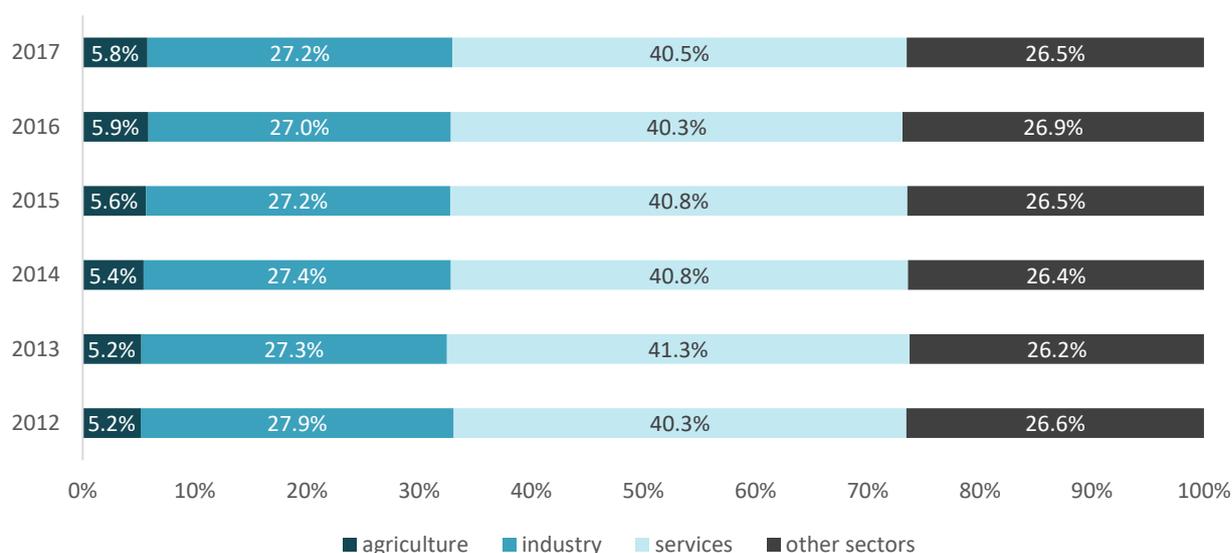


Source: Tempo INS, NSI



Throughout the period, the share of each major economic sector remained relatively constant, with only minor adjustments. In broad lines, agriculture hires the lowest share of employees, however its importance has slightly increased from 5.2% in 2012 to 5.8% in 2017. Compared to the EU28 average of 4.2% (as of 2016), this ratio is higher. The industry gradually reduced its number of employees, yet it remains higher than that of the EU28 average of 15.3% (as of 2016)²⁴. The services sector had a relatively constant share throughout the analysed period and contributes with more than 40% to the total number of employees, while other economic sectors, such as retail and construction, make up around 26-27%.

FIGURE 8 STRUCTURE OF EMPLOYMENT BY MAIN ECONOMIC SECTORS IN THE CROSS-BORDER AREA



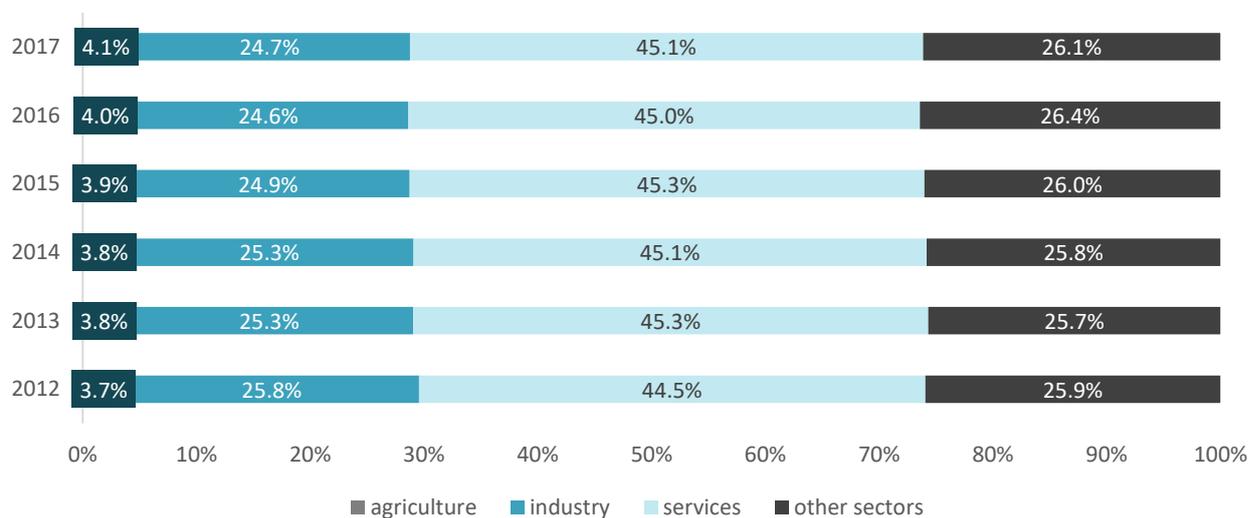
Source: Tempo INS, NSI

Compared to the entire cross-border area, in the Romanian side, the distribution of employment by sectors is overall similar, with agriculture increasing its contribution, despite maintaining a low share, and with industry contributing less than in the case of the entire area and also decreasing. Retail and construction, together with services, employ most of the total number of employees and are on an increasing path.

²⁴ <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20171024-1>



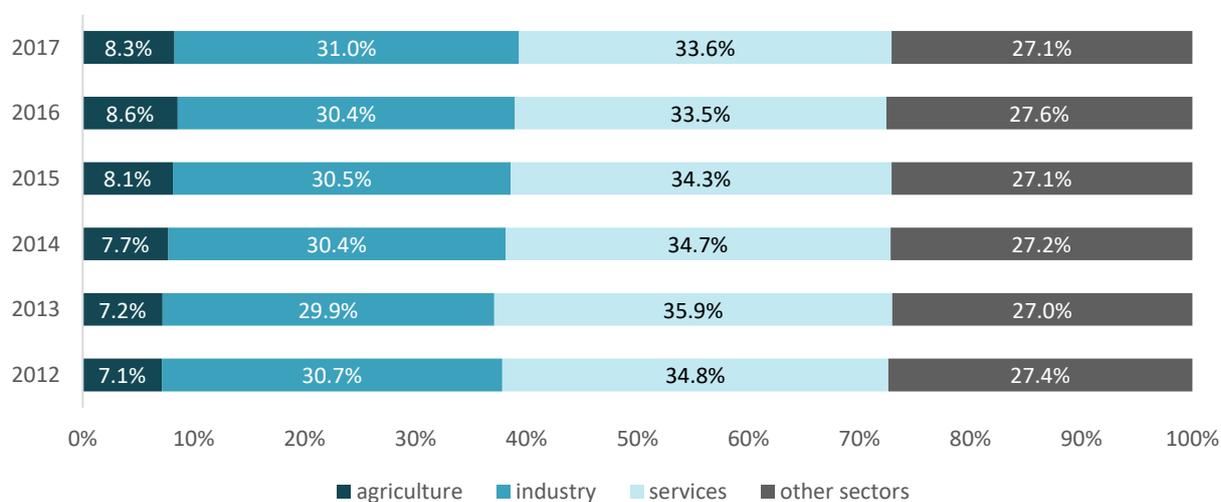
FIGURE 9 STRUCTURE OF EMPLOYMENT BY MAIN ECONOMIC SECTORS IN THE ROMANIAN CROSS-BORDER AREA



Source: Tempo INS

In the Bulgarian cross-border area the services sector has a lower contribution compared to Romania and with the overall cross-border area, yet together with the construction and retail sectors, it still accounts for the largest share of employment. Agriculture share of employment has an increasing rate compared to the cross-border area and with the Romanian side, but also compared to the situation in 2012, indicating a decrease in the sophistication of the economic activity. However, when it comes to industry, the sector is better represented, and on an ascending path, indicating some potential for attracting investments for modernization and innovation.

FIGURE 10 STRUCTURE OF EMPLOYMENT BY MAIN ECONOMIC SECTORS IN THE BULGARIAN CROSS-BORDER AREA

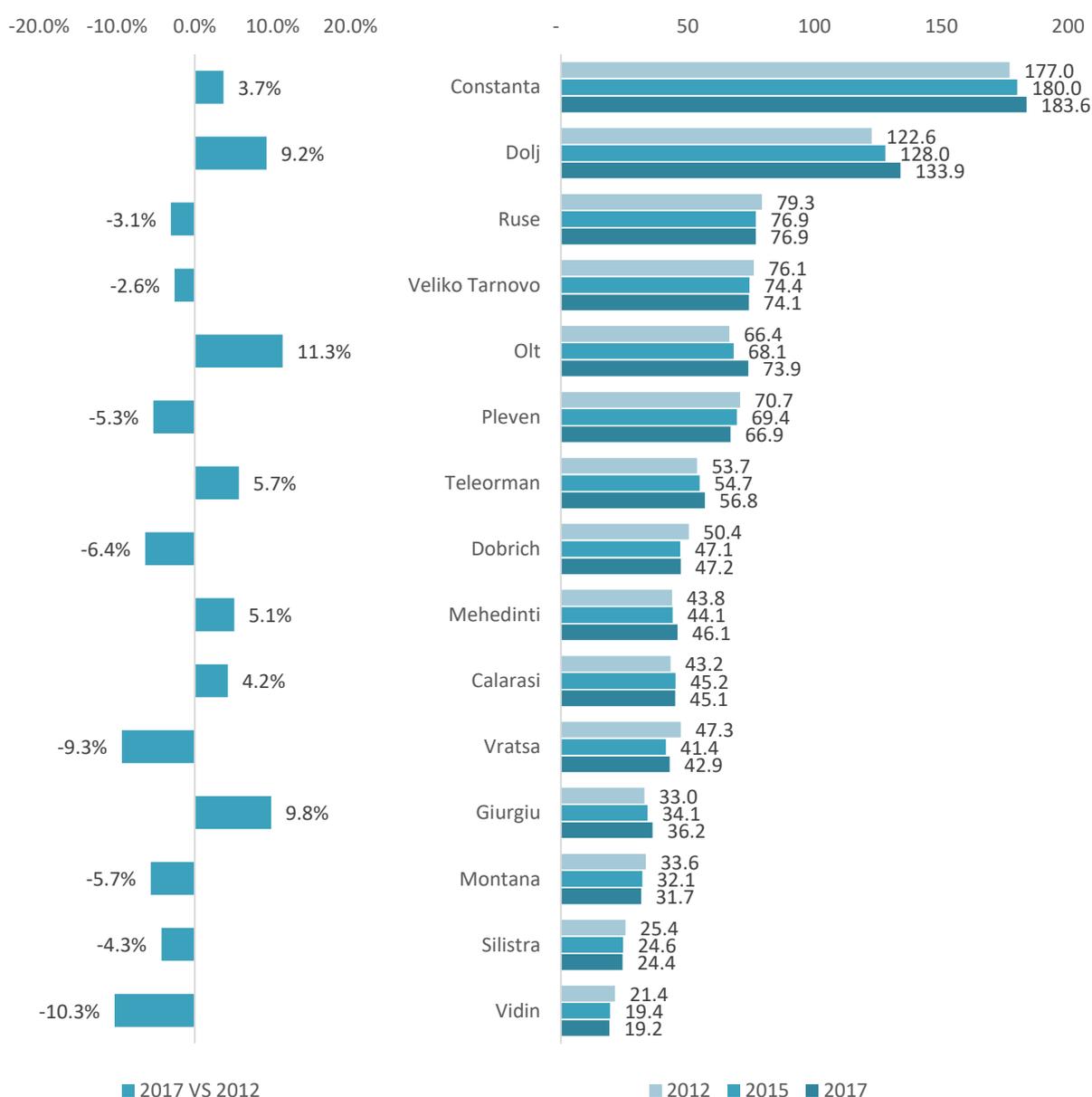


Source: NSI



By county/district, Constanta and Dolj employ the largest number of persons, followed at a relatively large distance by Ruse and Veliko Tarnovo. The lowest number of employees is found in Vidin and Silistra, on the Bulgarian side, where it also decreased, and Giurgiu on the Romanian side, where a small increase in the number of employees can be noticed. What is also important to mention is the fact that in the Romanian counties the number of employees increased in 2017 compared to 2012, while in the Bulgarian ones it mostly decreased. This issue can become a supporting fact for the encouragement of employee mobility and development of skills, in those sectors and specific areas where complementarities are identified.

FIGURE 11 TOTAL EMPLOYMENT BY COUNTY/DISTRICT, THOUSAND PERSONS AND GROWTH RATE

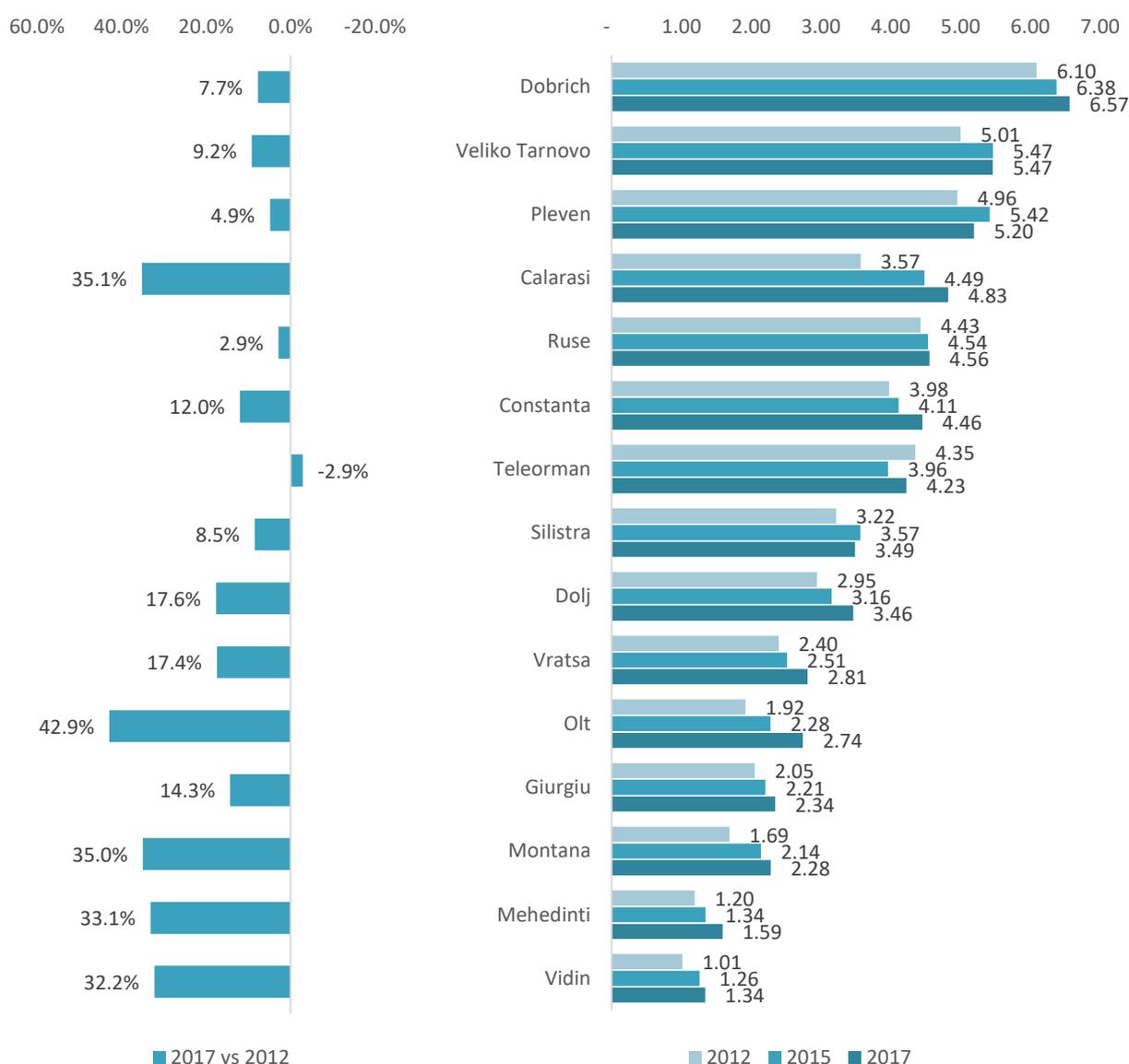


Source: Tempo INS, NSI



As noticed before, Agriculture plays an important role in the employment on the Bulgarian side of the cross-border area, therefore it is not a surprise to observe that the leading counties/districts in this sector are found in Bulgaria. Dobrich, Veliko Tarnovo and Pleven contribute mostly to the employment in Agriculture but, except for Dobrich, the evolution is not positive. On the Romanian side, Călărași saw both the largest increase and the highest number of persons employed in agriculture. For such areas where agriculture is a major employer, joint interventions aiming to modernize and increase the efficiency are sought, especially in the light of the new policy objectives, targeting an economy that does not harm the environment on the one hand, and seeks to increase the innovation capacity of more actors.

FIGURE 12 EMPLOYMENT IN AGRICULTURE BY COUNTY/DISTRICT, THOUSAND PERSONS AND GROWTH RATE

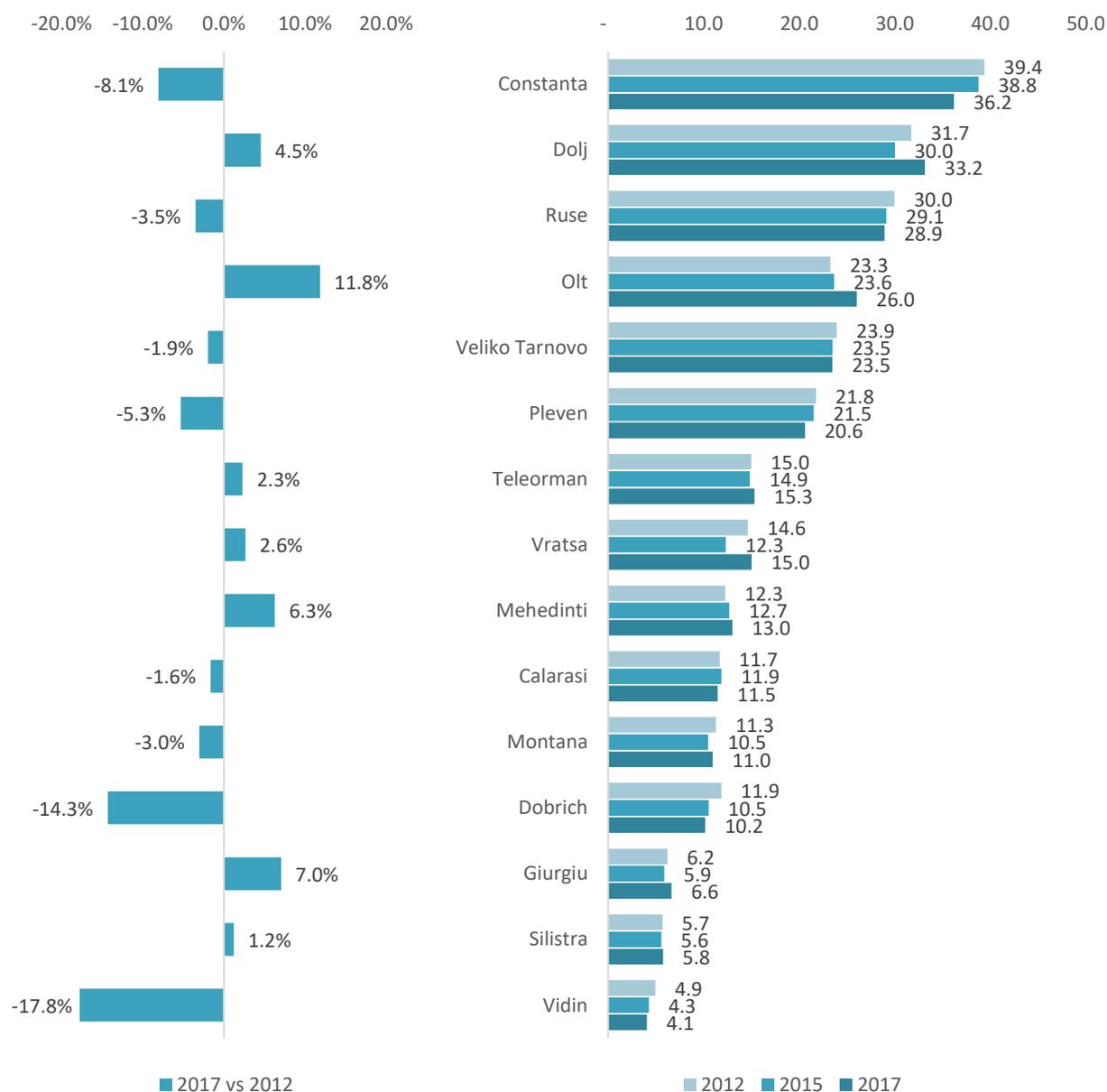


Source: Tempo INS, NSI



Employment in Industry is closely related to electricity production and distribution in both Romania and Bulgaria cross-border area, as it is the case in Dolj and Ruse, or petroleum and chemical industry, in Constanta, Ruse and Olt. In most counties and districts, employment in the industry sector has declined. Ruse has two industrial zones which contain a logistics and a business park, but if we look at its pair city Giurgiu, there are huge differences, pointing towards cross-border cooperation.

FIGURE 13 EMPLOYMENT IN INDUSTRY BY COUNTY/DISTRICT THOUSAND PERSONS AND GROWTH RATE

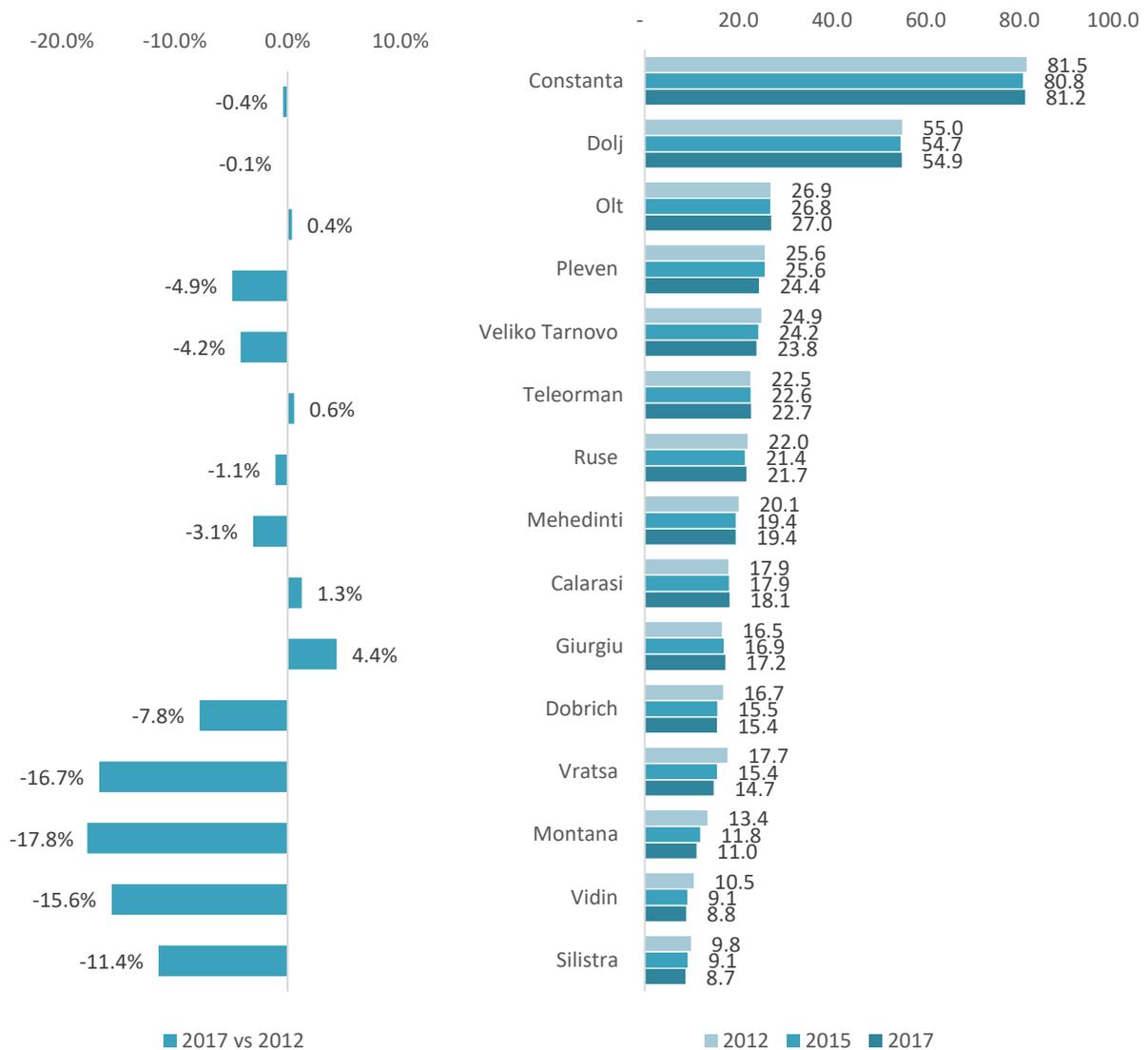


Source: Tempo INS, NSI



The Services sector displays increasing numbers of employees in the Romanian cross-border area, especially triggered by education and health in counties with large cities (such as Constanta and Dolj), in some cases due to IT (Dolj). The concentration of IT&C mostly in Dolj points toward a polarization of high- tech specialization potential which does not lead to a sustainable growth model, nor it contributes to a favourable environment for the knowledge economy.

FIGURE 14 EMPLOYMENT IN SERVICES BY COUNTY/DISTRICT, THOUSAND PERSONS AND GROWTH RATE

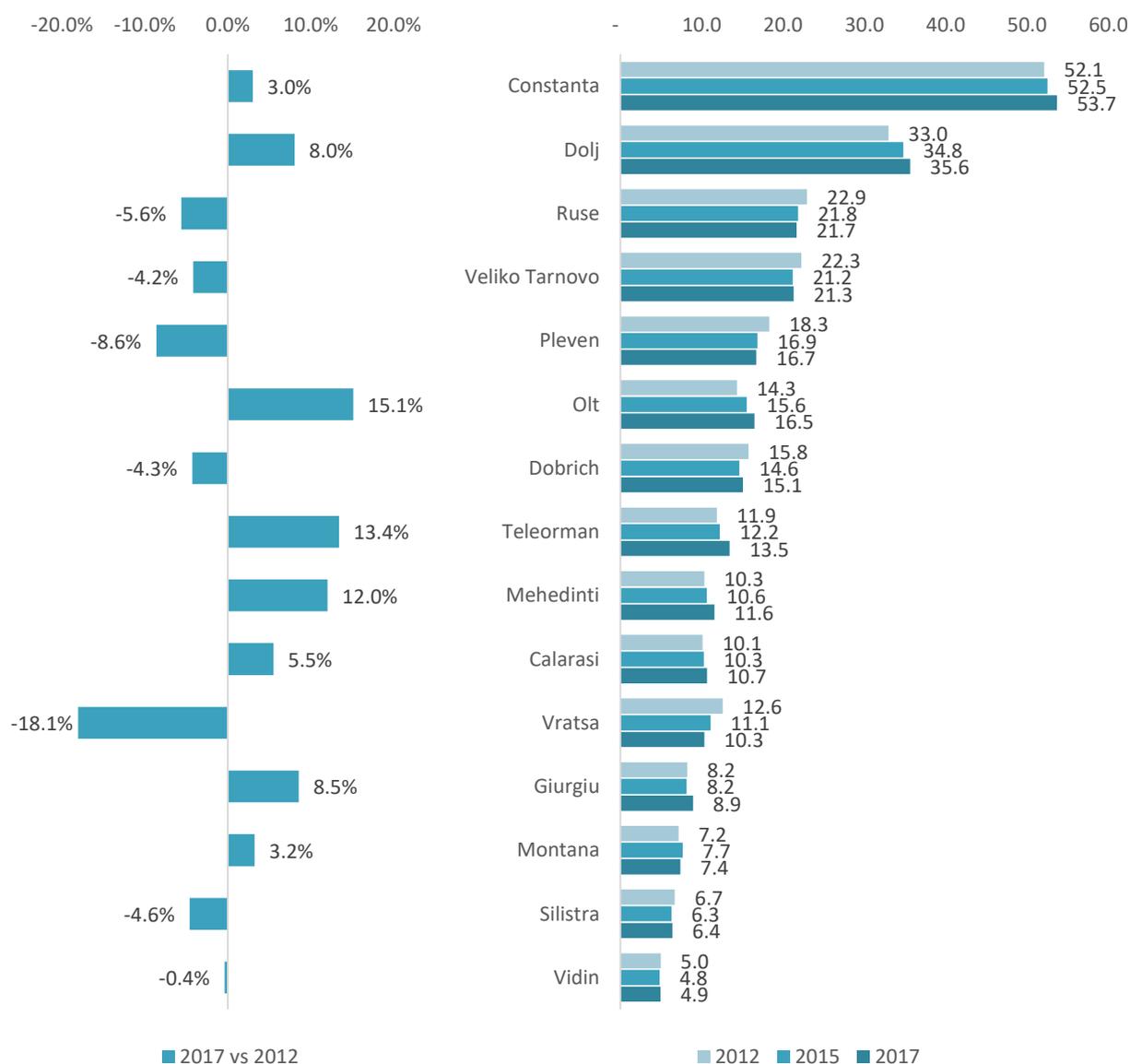


Source: Tempo INS, NSI



Other sectors refer to retail and construction, with increasing figures in terms of employment - the free-trade zone in the cross-border area contributes to employment in retail, but in the same time, retail is favoured in all types of areas as they do not require a major initial investment, nor a significant skillset. The construction sector is better developed in attractive areas, around important cities attractive for incoming population (such as university cities or touristic and/or cultural potential).

FIGURE 15 EMPLOYMENT IN OTHER SECTORS BY COUNTY/DISTRICT, THOUSAND PERSONS AND GROWTH RATE



Source: Tempo INS, NSI



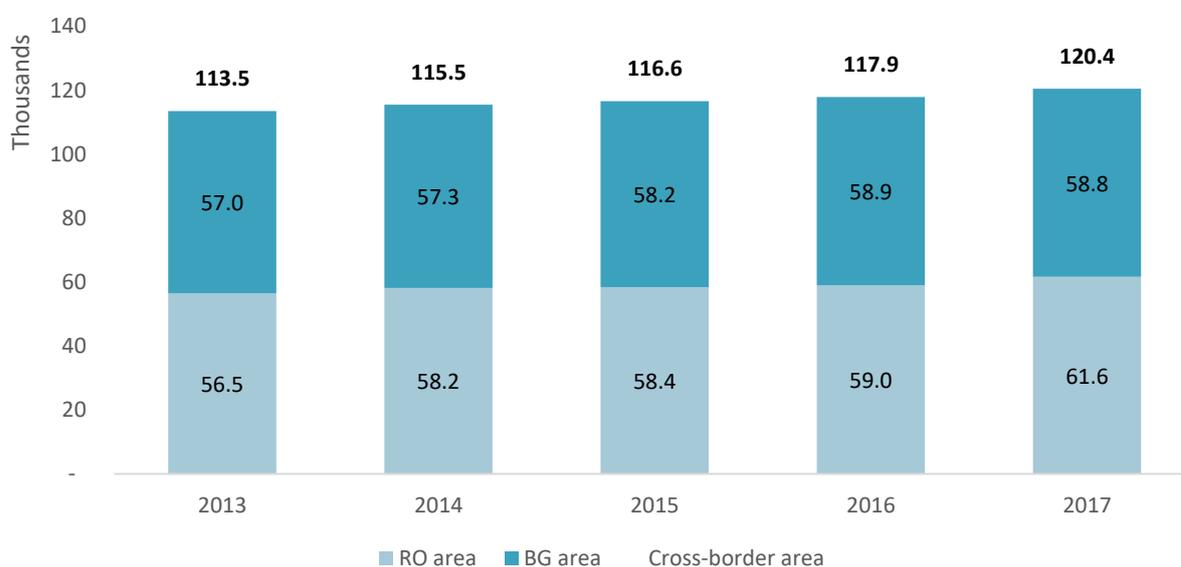
2.2.3. SMEs

Small and Medium-Sized Enterprises (SMEs) development represent a key pillar in fostering a competitive and sustainable socio-economic environment by generating adding value and employment opportunities in all types of regions, given adequate support is granted. In 2018, at the EU28 level, SMEs accounted for 56.8% in value-added generated by the non-financial sector and provided employment to 66.4% of employees. SMEs' growth and development are, nevertheless, contingent upon a few factors, such as an educated workforce, a good quality of governance and accessibility.

In the Romania-Bulgaria cross-border area, SMEs face a series of challenges, such as the migration of highly qualified workforce, lower accessibility or a limited level of coordination between national and regional institutions with respect to innovation and entrepreneurship support.

Since 2013, the number of enterprises has increased in the cross-border area by 6.1%, yet less than the national value in Romania, of 14.2%. There were 120.4 thousand companies in the cross-border area in 2017, of which more than half (51.2%) located in the Romanian side. Overall, the number of enterprises increased more in the Romanian side (9.1%) increase compared to 2013, than in the Bulgarian side (3.2%). The cross-border area represents around 11% of all active companies in Romania, and around 14.5% of the total in Bulgaria. The number of companies increased slowly until 2016, followed by a surge in the Romanian side to reach over 60 thousand companies in 2017. This was due to the first round of implementation of European funded programs targeting entrepreneurship in less developed areas.

FIGURE 16 EVOLUTION OF ACTIVE ENTERPRISES IN THE CROSS-BORDER AREA, 2013-2017*



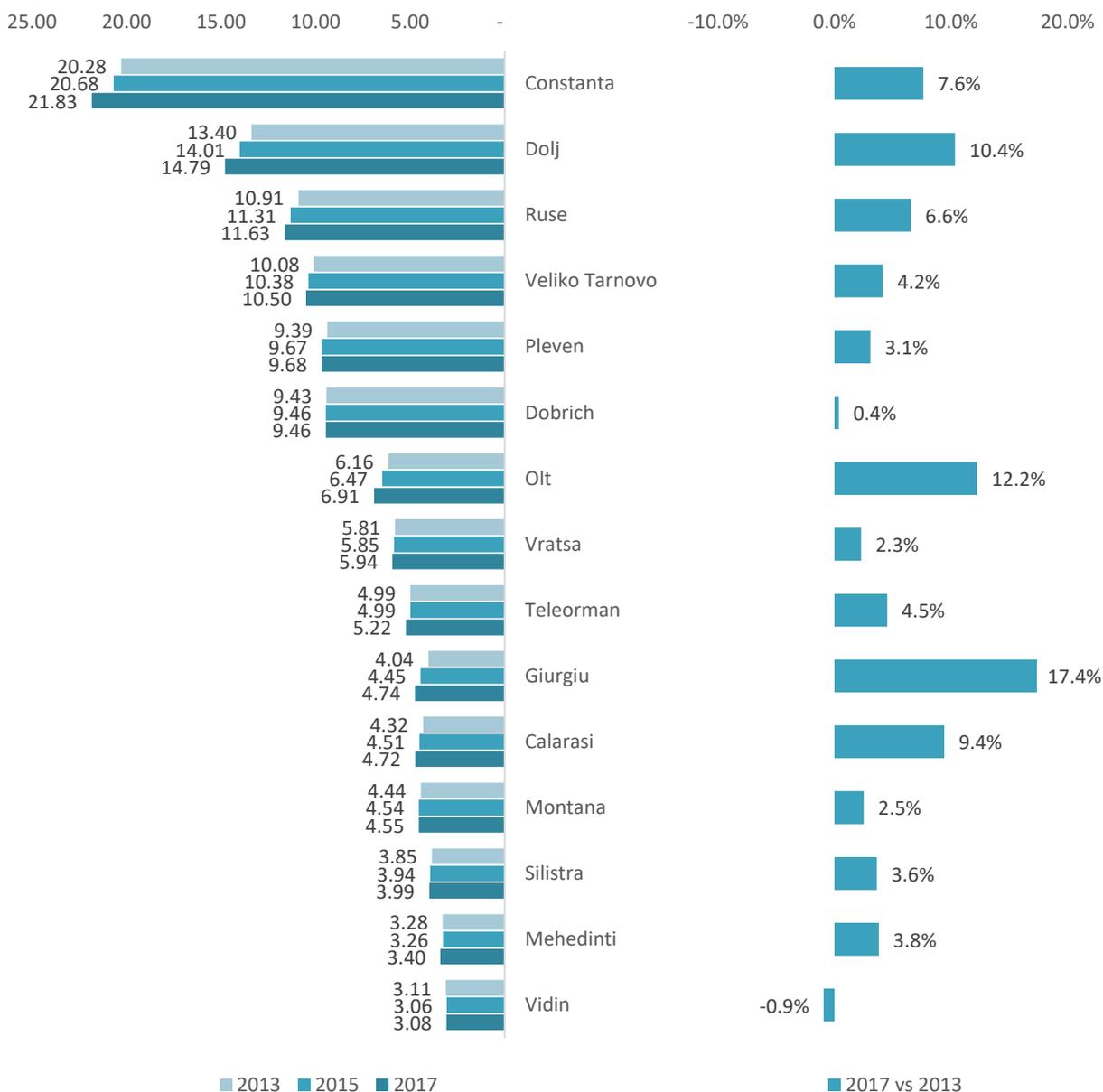
Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation²⁵

²⁵ The data for the Bulgaria area are unavailable for 2012 and 2018



At the county/district level, enterprises tend to be located in the eastern part of the area, especially in the Bulgarian side, or in more developed regions, as it is the case of Dolj, which accommodates a large urban area and economic centre - Craiova. With the exception of Vidin, there has been a positive evolution in the number of enterprises in all counties and districts, most notably in Dolj, Olt and Giurgiu.

FIGURE 17 EVOLUTION OF ACTIVE ENTERPRISES (IN THOUSANDS) BY COUNTY/DISTRICT, 2013-2017



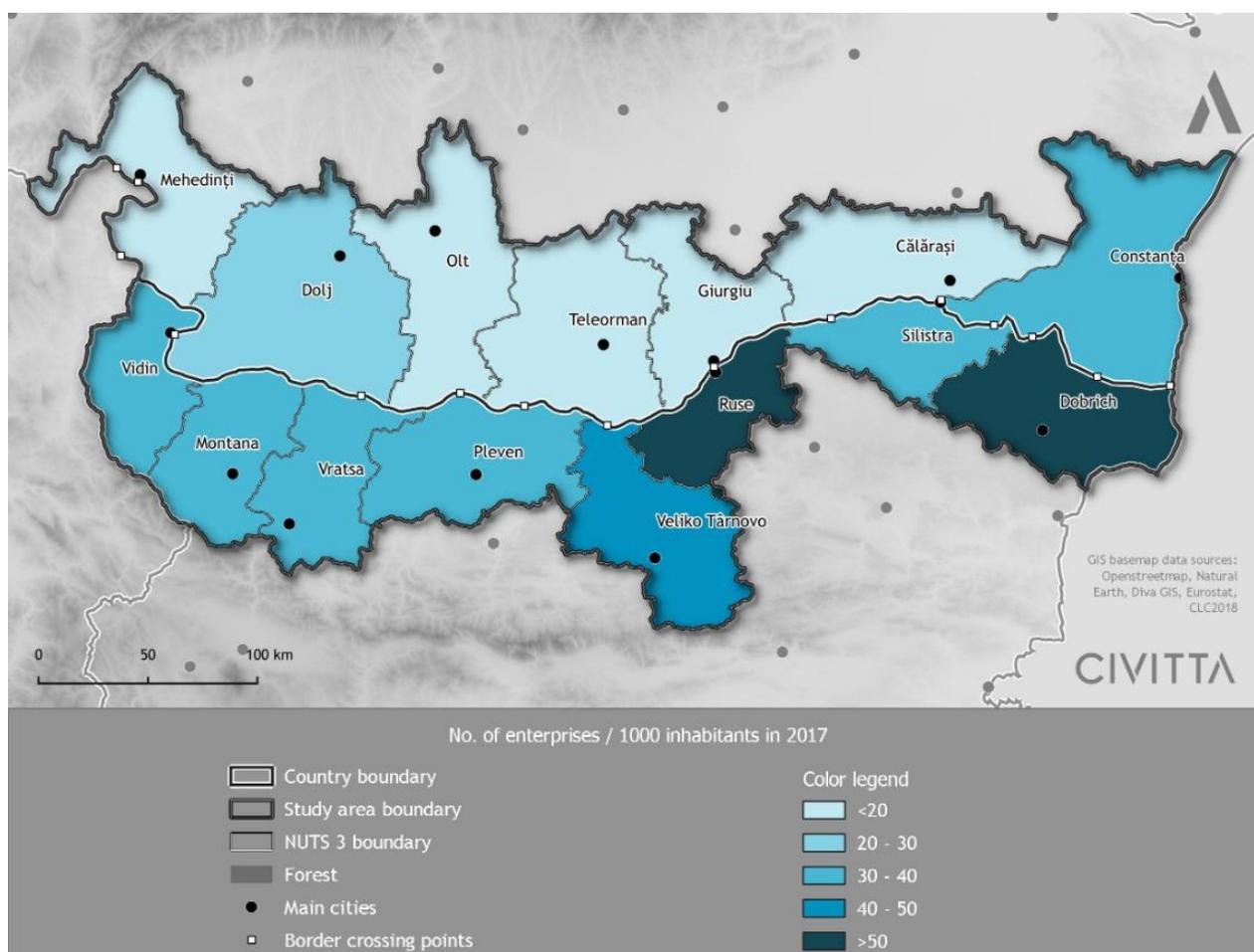
Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation

If we compare the number of active enterprises per 1000 inhabitants, we identify an increase of the indicator between 2013 and 2017, with 28.2 enterprises / 1000 inhabitants in 2017, with 10.2% more in 2013. According to Eurostat, this number is below the EU average of 54 active



enterprises per 1000 inhabitants (as of 2017), however the enterprise birth rate was higher in both Romania and Bulgaria compared to the EU28 average. The issue, however, remains the fact that within one year since their establishment, only 79% enterprises survive in Bulgaria, lower than the EU28 value of 83%, but 46% of them survive for five or more years, more than the EU28 average of almost 44%. The map below shows, from a territorial perspective, how the cross-border area performs. In general, the least developed counties/districts also show a very low economic activity, as it is the case for Teleorman, Olt, Mehedinți and Călărași. But, compared to the GDP evolution for example, in this case the number of enterprises per 1000 inhabitants is larger in the Bulgarian districts. Dobrich and Ruse display the largest value of the indicator, with over 50 enterprises /1000 inhabitants, while Giurgiu had the largest growth (20.8%), yet favoured by the decline in the population figures.

MAP 4 NUMBER OF ENTERPRISES PER 1000 INHABITANTS IN THE CROSS-BORDER AREA, 2017

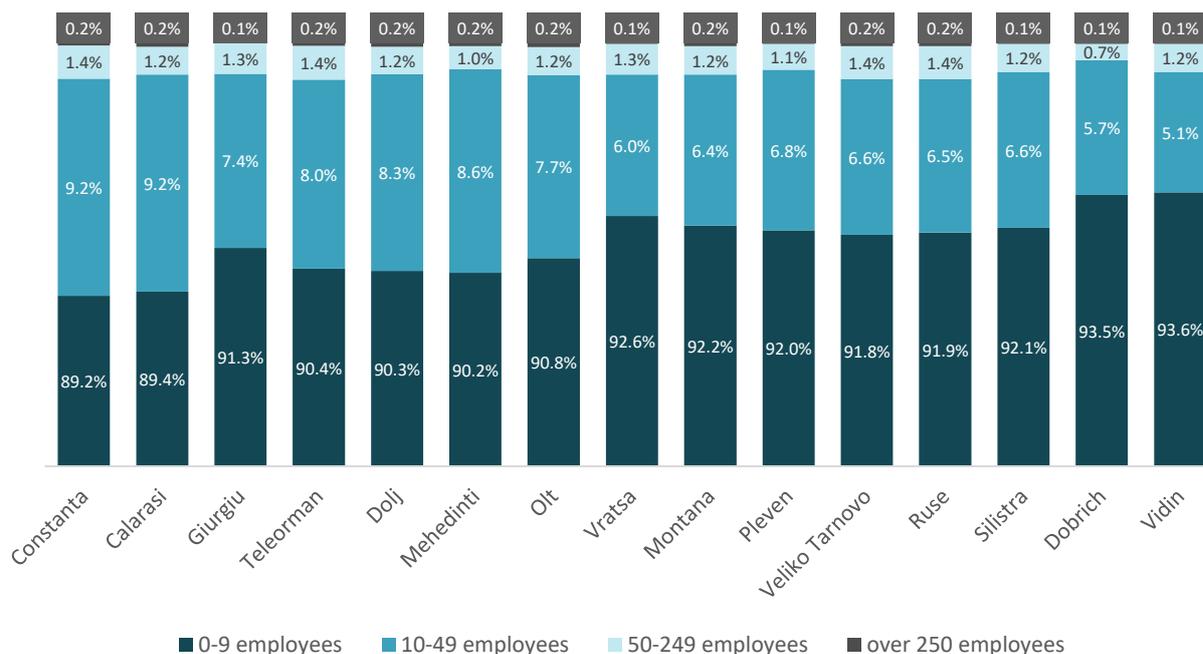


Microenterprises account for the largest share of active enterprises in all counties and districts, similar to the national level situation. Although microenterprises can provide employment opportunities in a large variety of economic sectors and in different types of regions, they still indicate a reduced ability of regional economies to support the growth and development of these types of companies as to become more competitive and resilient. Together with small and



medium-sized enterprises, the class of companies with less than 250 employees represent more than 99% of all active companies in the cross-border area. For example, only 7% of the large companies active in Romania are located in the Romanian cross-border area, while in each county and district, the share of large companies is 0.1-0.2% of the total number of companies.

FIGURE 18 DISTRIBUTION BY SIZE CLASS OF ACTIVE ENTERPRISES, %, 2018



Source: Tempo INS, NSI, own calculation

According to ESPON²⁶ evidence (2017), regions provide both enabling and hindering conditions and opportunities with respect to the growth and development of SMEs. Based on ESPON rural-urban typology, SMEs in the cross-border area face challenges regarding lower accessibility, high dependence on specific sectors, and a relatively immature innovation and entrepreneurship ecosystem in which to thrive. Usually, such peripheral regions depend on neighbouring cities for the provision of general services and face a rather unfavourable legislative and administrative support to maximize the use of EU funding dedicated to SMEs growth. While national policies' role is to ensure the general framework conditions that encourage the demand of goods and services and supply of production factors, regional policies should adopt a more clear role in developing and strengthening effective networks and partnerships among the ecosystem actors (private companies, universities, other support organizations) that would better enhance the ability of SMEs to deliver on the smart specialization objectives and the specific industrial needs within an area.

The map²⁷ below points out to the density of microenterprises that is specific to peripheral regions in general and in most of the cross-border territory. Regarding their growth and ability to become more resilient with respect to economic shocks and the volatility of markets, microenterprises' expansion should be fostered through enhanced business education and more

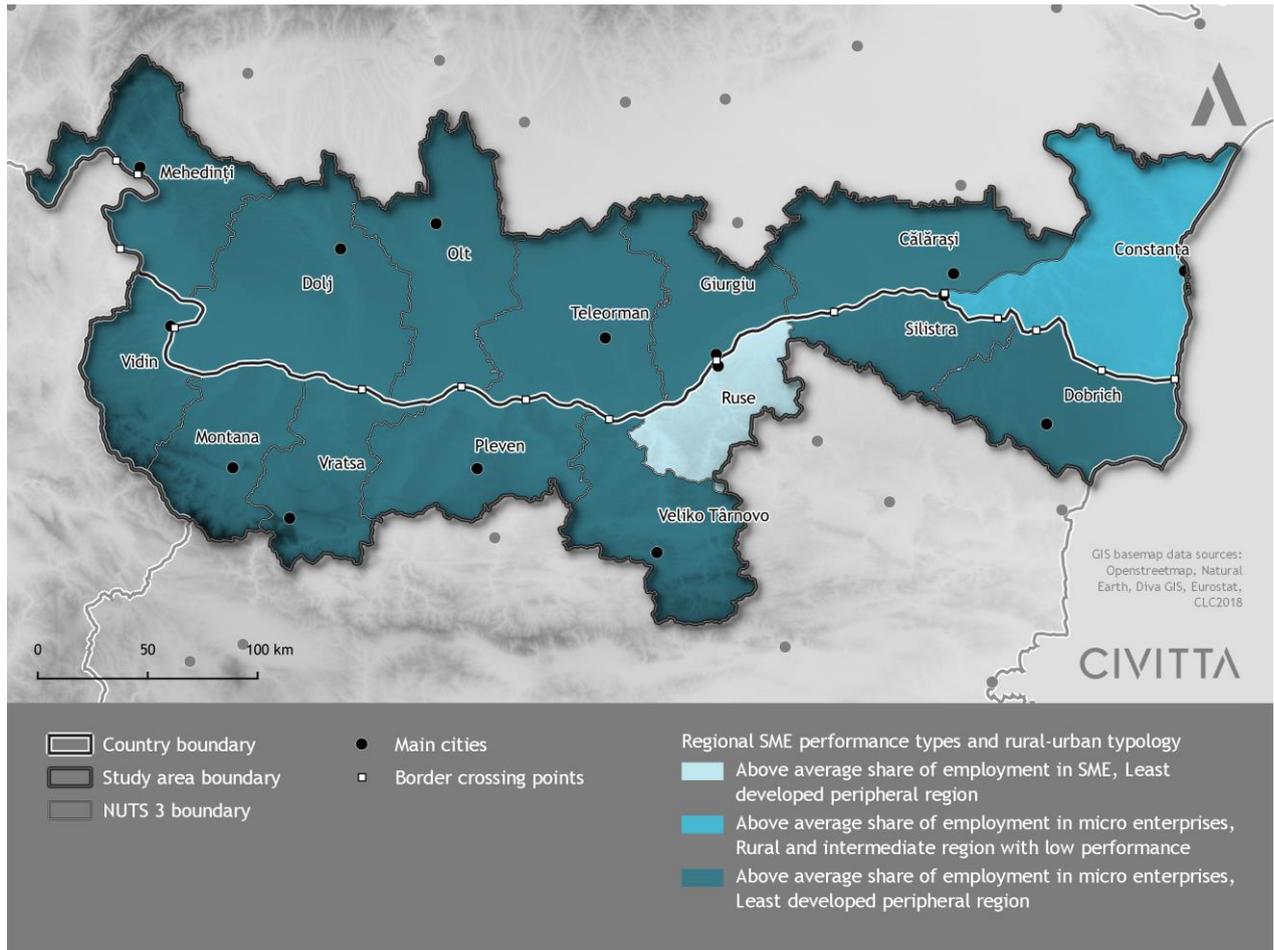
²⁶ ESPON, 2017, *Small and Medium-sized Enterprises in European Cities and Regions*

²⁷ Own design based on ESPON, 2019, *State of the European Territory*, pg. 24



supportive and participatory local and regional governance, especially regarding entrepreneurship support and knowledge. In addition, interventions targeting microenterprises and SMEs should take into account the adult learning agenda, in order to better account for the differences in demand and supply of skills needed in different sectors.

MAP 5 REGIONAL SMALL AND MEDIUM ENTERPRISES PERFORMANCE TYPES AND RURAL-URBAN TYPOLOGY



The average number of employees had an overall positive evolution in the cross-border area, reaching nearly 900 thousand people, a growth of 3.7% between 2012 and 2018 especially driven by the evolution observed in the Romanian cross-border area, which make up for more than half of the value. On each side, the evolution was however divergent: in Romania the average number of employees increased by 8.5%, up to 552.8 thousand people in 2018, while in Bulgaria it decreased by -3.3%, down to 338.1 th. people.



FIGURE 19 EVOLUTION OF AVERAGE NUMBER OF EMPLOYEES, 2012-2018



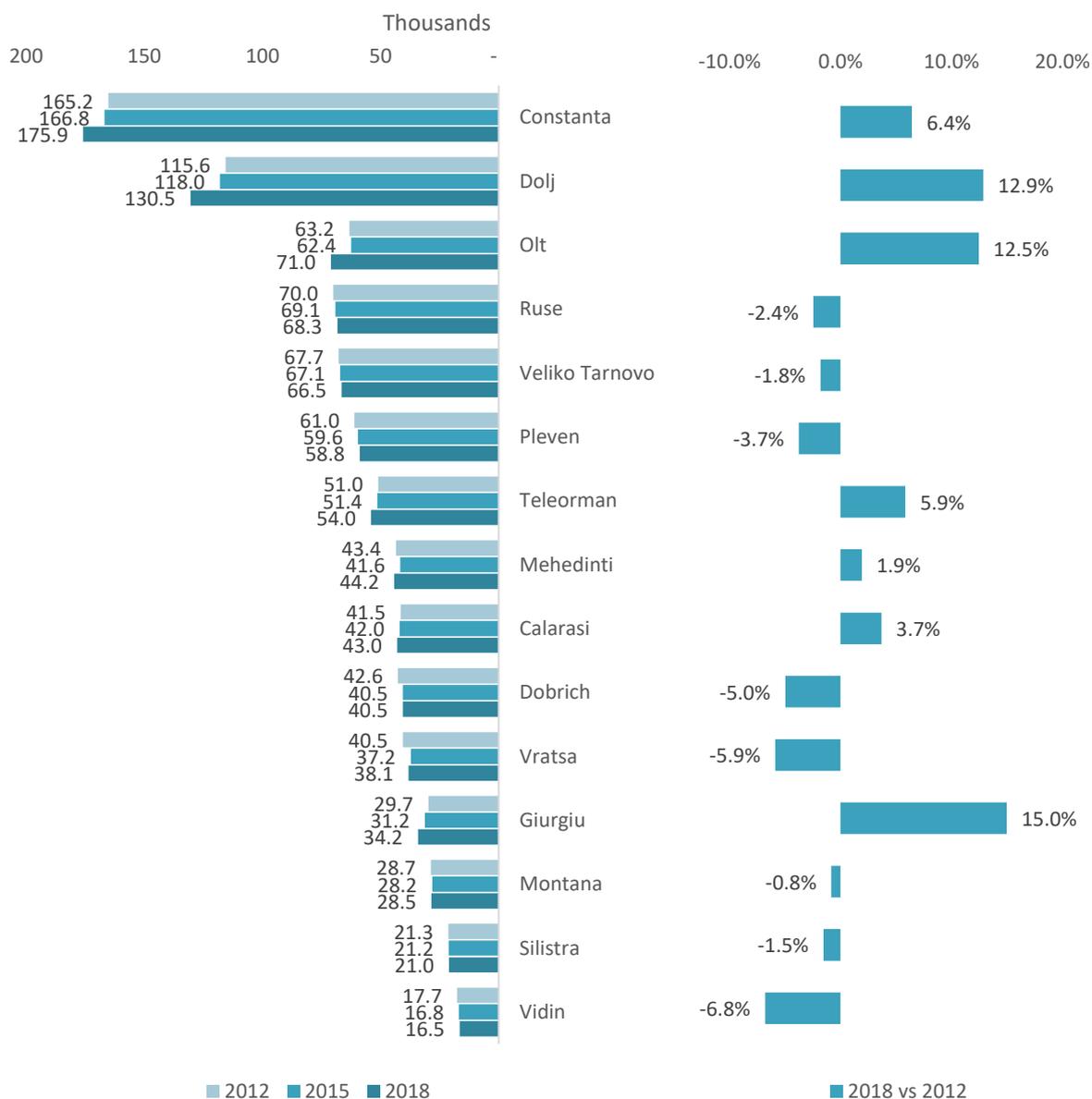
Source: Tempo INS, NSI, own calculation

The largest share of employees is found in Constanta and Dolj, the two counties' average number of employees being nearly equal to the entire cross-border area in Bulgaria in 2018. At the opposite end, Silistra and Vidin, the cross-border areas' least developed districts, only contribute with 11% to the Bulgarian cross-border value and with 4.2% at the entire cross-border area. What is nevertheless worrying is the divergent trend: the areas with an already high number of employees increased its number (such as the top three counties) and those with an already low number of employees, such as Silistra and Vidin decreased their number of employees, pointing towards an issue of (un)attractiveness and increasing polarization in terms of workforce availability.

Despite the low growth rate of average number of employees, the companies located in the cross-border area increased their turnover over the period 2012-2018, by 24.6%, from 34.1 mil. EUR in 2012 to 42.5 mil. EUR in 2018. The evolution was overall constant, with a small downturn in 2016. The Romanian companies generate around 60% of turnover, however the Bulgarian ones had a better positive evolution throughout the period.



FIGURE 20 EVOLUTION OF AVERAGE NUMBER OF EMPLOYEES BY COUNTY/DISTRICT, 2012-2018



Source: Tempo INS, NSI, own calculation

A more detailed picture of employment and activity rates and the subsequent number of persons in each category can be found in Chapter 7, where labour force has a dedicated section.



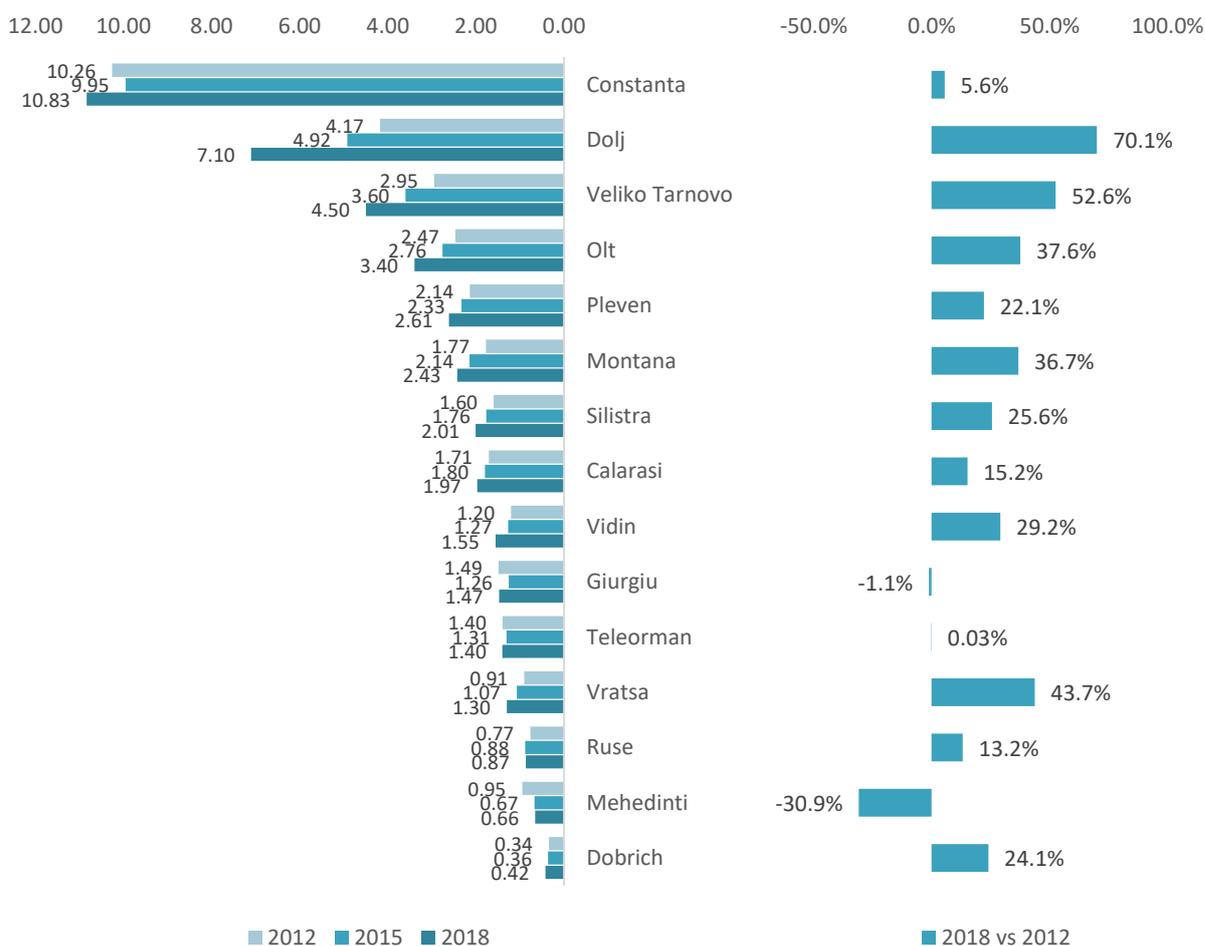
FIGURE 21 EVOLUTION OF TURNOVER, BN. EUR, 2012-2018



Source: Tempo INS, NSI, own calculation

With a few exceptions (Giurgiu and Mehedinți), most counties and districts had a good evolution in terms of turnover, both in Romania and in Bulgaria. Constanta and Dolj have generated constantly a turnover that is larger than the turnover in the whole cross-border area, distinguishing as engines of growth.

FIGURE 22 EVOLUTION OF TURNOVER BY COUNTY/DISTRICT, BN. EUR, 2012-2018



Source: Tempo INS, NSI, own calculation



2.3. TRADE

In general, the economic literature²⁸ indicates that there is a positive correlation between international trade and economic growth. Trade-related data at a territorial level can provide a good indication of its competitiveness and its capacity to be or become a significant player in the global markets. However, in our case, trade data is currently unavailable for the Bulgarian districts, therefore it is difficult to draw significant conclusions for the entire area. In the same time, the analysis looks at general national data for the two economies and in more detail at the structure of imports and exports in the Romanian side of the cross-border area in order to try and build the picture of trade significance and composition.

Overall, at the national level, the trade values for Romania are superior to those in Bulgaria in all years of the analysis (2012-2018). Both imports and exports are almost three times higher in Romania than in Bulgaria: imports reached 82.8 bn. EUR in 2018 in Romania and exports 67.7 bn. EUR, compared to 32.1 bn EUR imports in Bulgaria and 28.6 bn. EUR exports.

FIGURE 23 TRADE IN ROMANIA AND BULGARIA, `000 EUR



Source: Tempo INS, NSI, own calculation

Both countries had a positive evolution of trade, with both imports and exports increasing between 2012 and 2018. However, Romania's trade increased more, with 50% in the case of exports and 51% in the case of imports, while Bulgaria increased its trade value with 26% (imports) and 38% (exports). The rise in imports was driven by stronger domestic demand which, year-on-year, outpaced the evolution of exports, slowed down by the lower economic growth and demand in Europe, the main trade partner.

Both countries have a negative trade balance, with an increasing trade deficit for Romania almost triple to the value in 2013, reaching its highest level after the economic crisis in 2008, while Bulgaria decreased its trade deficit starting with 2014 and until 2017. Given the consumption-driven growth, such a situation weakens the real economic growth, demanding for

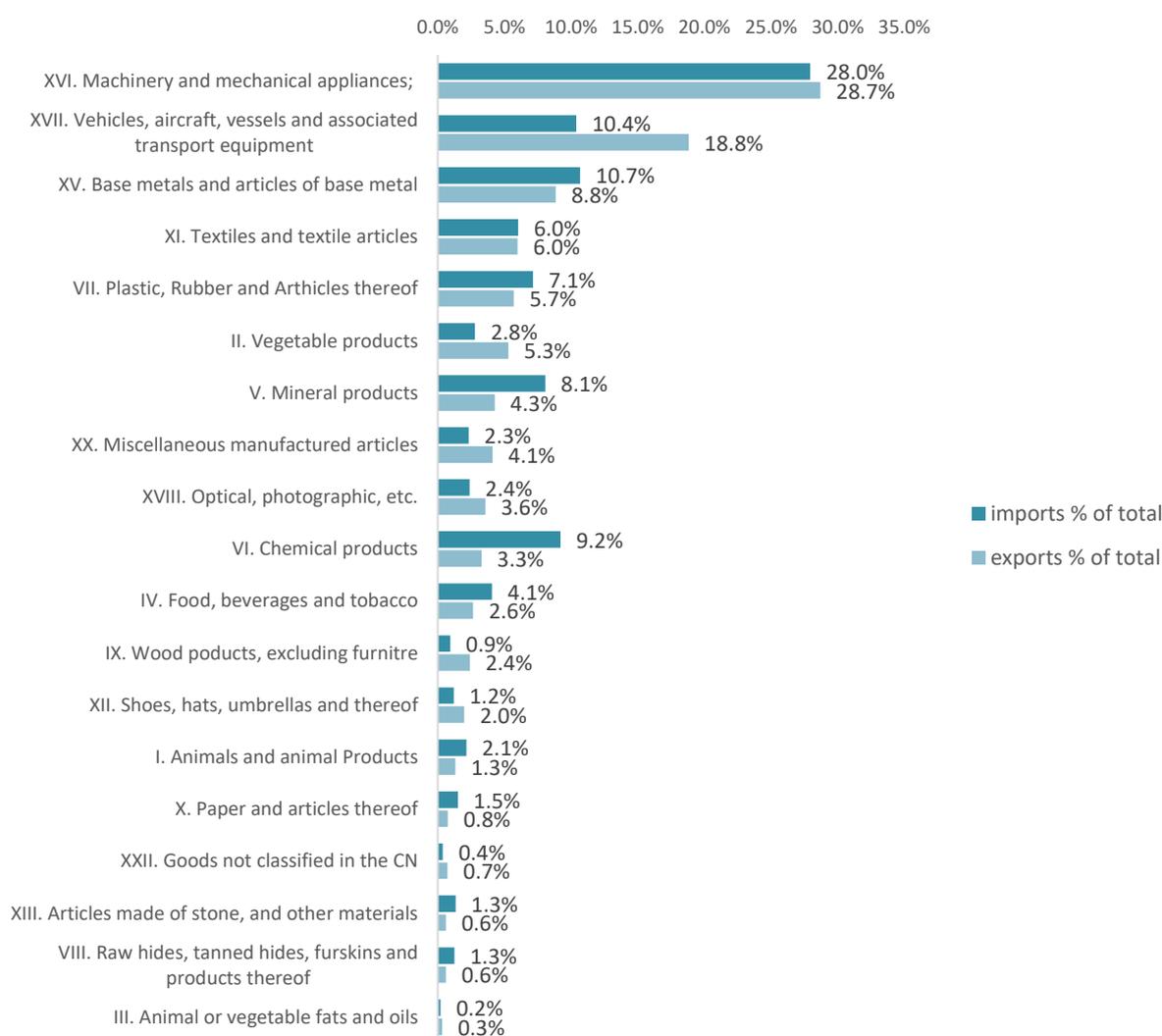
²⁸ <https://www.worldbank.org/en/results/2018/04/03/stronger-open-trade-policies-enables-economic-growth-for-all>



policies that would support Foreign Direct Investment (FDI) inflow, a higher export of services, and a stronger and modernized productive base.

On the main categories of traded products, Romania has a trade deficit, except for Vehicles, aircraft, and vessels²⁹, Optical, photographic equipment³⁰, as well as wood products³¹ and shoes³². While the former indicates a potential area for specialization in high and medium high technological products, the latter support the fact that Romania remains cost competitive in the light industry due to its low wages and low skilled labour force. This situation calls for policies supporting innovation and the upgrade of skills in order for the manufacturing sector to deliver higher quality products, able to compete on the global market.

FIGURE 24 MAIN CATEGORIES OF TRADED PRODUCTS IN ROMANIA, 2018



Source: Tempo INS, NSI, own calculation

²⁹ XVII. Vehicles, aircraft, and vessels and associated transport equipment

³⁰ XVIII. Optical, photographic equipment

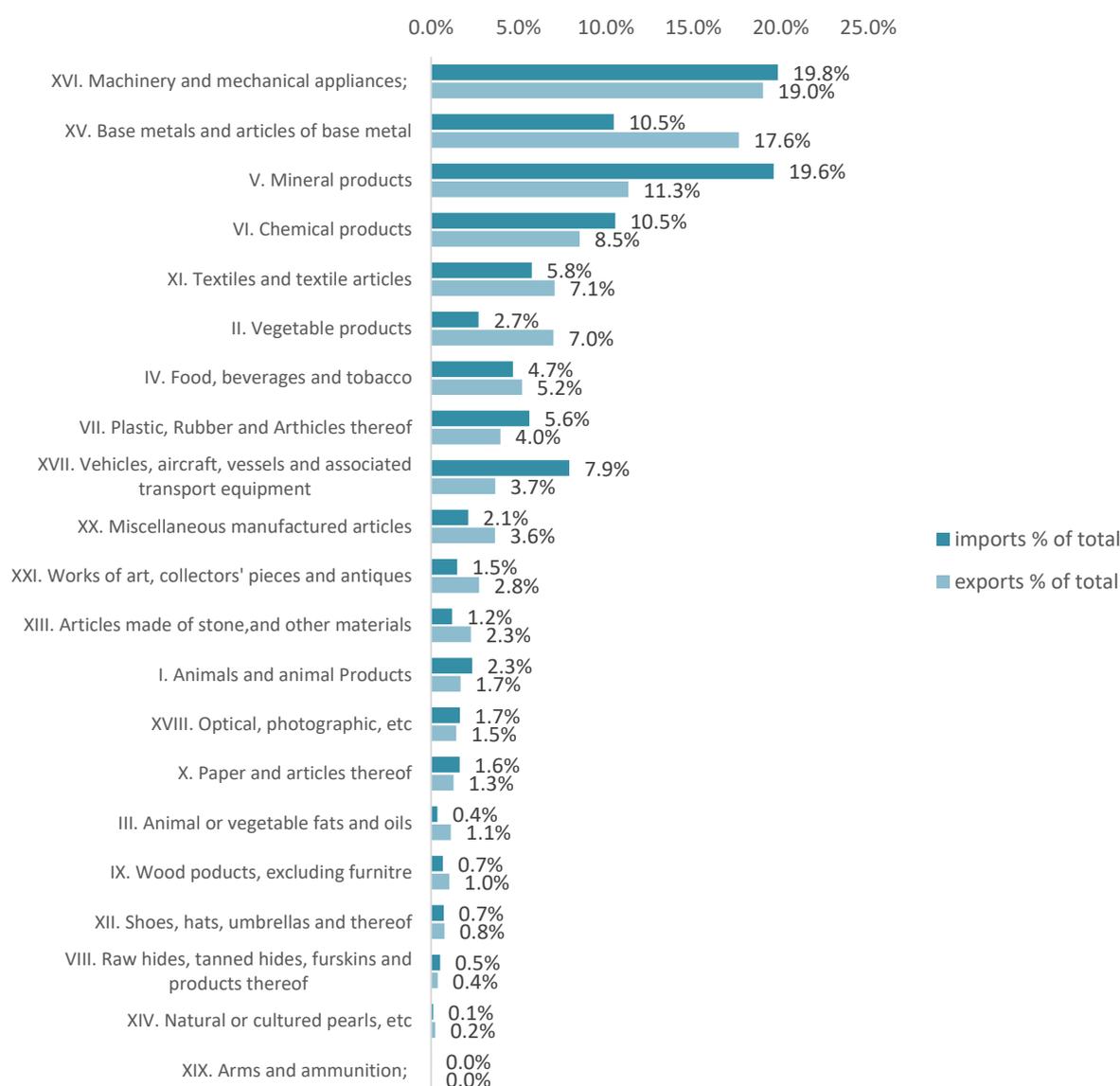
³¹ IX. Wood products, excluding furniture

³² XII. Shoes, hats, umbrellas and thereof



In Bulgaria, the main categories of products where there is a trade surplus are base metals³³ and vegetable products³⁴, indicating in the first case a lack of sophistication and reliance on basic resources, and a potential area for specialization in agriculture, in the second case. Bulgaria is a net importer of machinery and vehicles³⁵, questioning its ability to support an industrial sector that can deliver high value-added products to the European and global markets. New advancements supported by technological discoveries can support even the agriculture sector, to make it more efficient and effective for both workers (income) and employers (profit), as it is the case with precision farming, Internet of Things (IoT), and automatization.

FIGURE 25 MAIN CATEGORIES OF TRADED PRODUCTS IN BULGARIA, 2018



Source: Tempo INS, NSI, own calculation

³³ XV. Base metals and articles of base metals

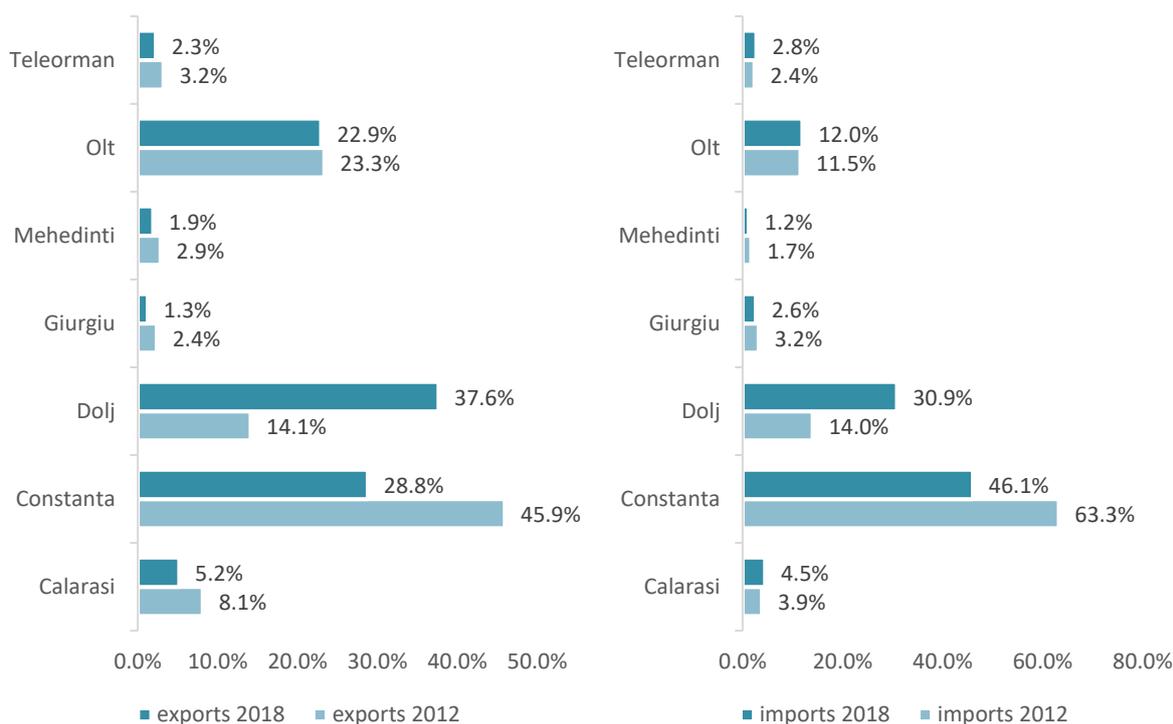
³⁴ II. Vegetable products

³⁵ XVI. Machinery and mechanical appliances



At the county level in the cross-border area, the seven counties accounted for 10% of imports in 2012 and 8.4% in 2018, and for 11.2% of exports in 2012 and 10% in 2018. Constanta, Dolj and Olt are the main importers and exporters at the area level, given their larger markets and more intense economic activity.

FIGURE 26 DISTRIBUTION OF IMPORTS (LEFT) AND EXPORTS (RIGHT) BY CROSS-BORDER COUNTY, 2012 AND 2018



Source: Tempo INS

On most categories of goods, the aggregated trade balance for the Romanian cross-border area indicates that on most categories of goods the counties overall are net importers, with a few exceptions related to the resources and economic activity. Some examples are related to the net exports of vegetable products³⁶, indicating the availability of lands for crops, similar to the cross-border Bulgarian area, suggesting some areas for cooperation. Other examples refer to chemical products³⁷ and base metals³⁸, pointing to the large employers in the area, for example aluminium production in Olt. But the most important category of goods in which the area has a net export is vehicles and vessels³⁹, pointing to the maritime construction sites in Constanta and Giurgiu. On the hand, however, these are isolate examples which create islands of production in the area, while the vast majority of the territory is not able to contribute to international trade, claiming for measures to attract investment and improve its industrial production.

³⁶ Idem 13

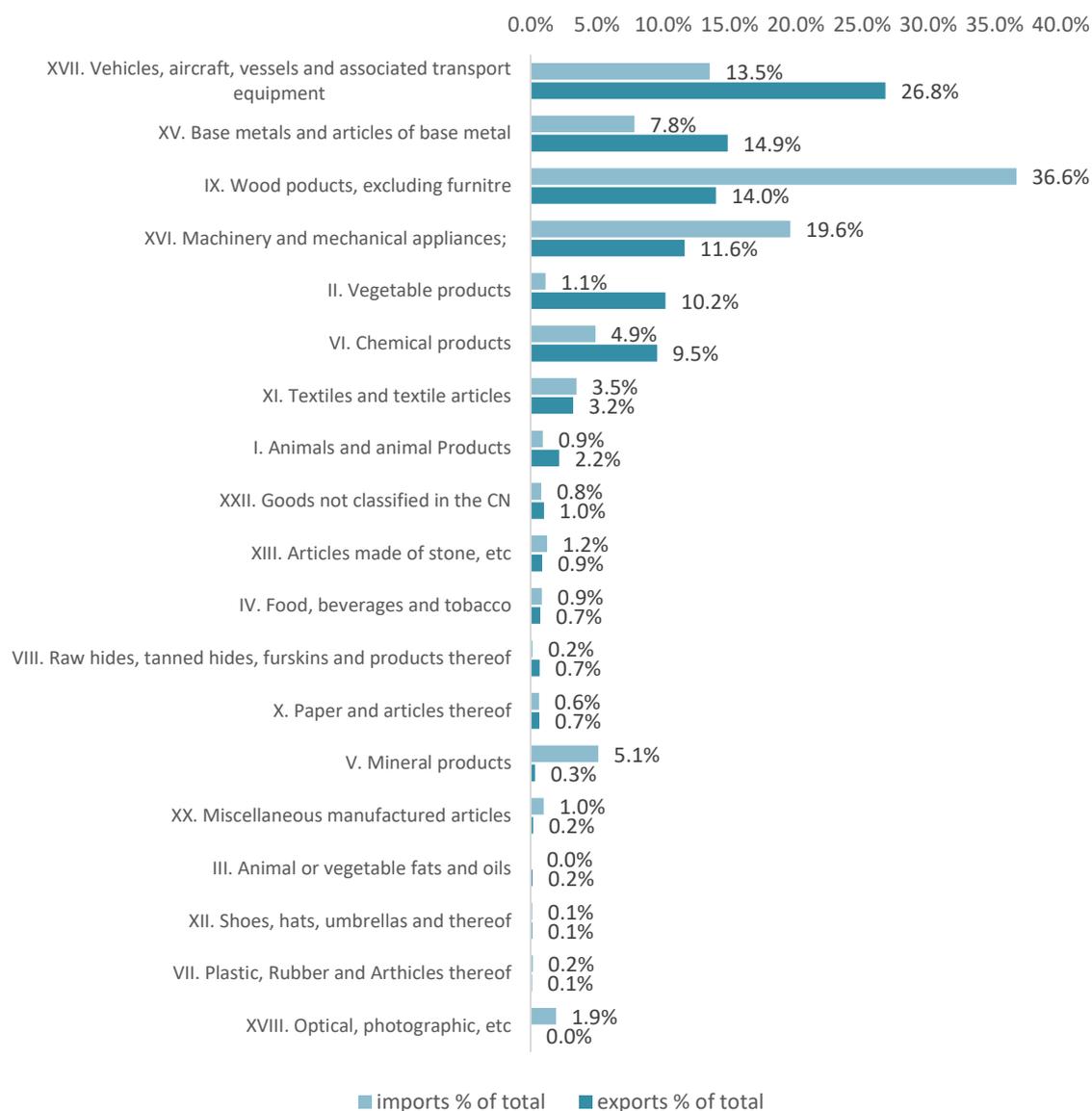
³⁷ VI. Chemical products

³⁸ Idem 12

³⁹ Idem 8



FIGURE 27 MAIN CATEGORIES OF TRADED PRODUCTS IN THE ROMANIAN CROSS-BORDER COUNTIES, 2018



Source: Tempo INS, own calculation

In the case of Bulgarian cross-border area, trade data is currently unavailable, making it difficult to draw significant conclusions for this specific part of the cross-border area. Based on various sources, it can be claimed that the agricultural legacy still creates the conditions for vegetable products exports. For example, a recommendation of Dobrich Development Strategy⁴⁰ was to create a regional stock exchange of grains, to valorise the local production. Other categories of products exported include textiles, products of the food and beverage production industry.

⁴⁰ Dobrich Development Strategy 2014-2020, pag.108



2.4. COMPETITIVENESS

2.4.1. GLOBAL COMPETITIVENESS OF THE NATIONAL ECONOMIES

Competitiveness represents a complex indicator reflecting the quality of certain dimensions that have an impact on the productivity of a national economy and on its ability to compete on the global scale. The *Global Competitiveness Report*⁴¹ issued yearly by the World Economic Forum compares all national economies in terms of competitiveness.

For the 2018-2019 edition⁴², Bulgaria ranks 49th out of 141 countries analysed, advancing from 51st place in the previous edition, while Romania ranks 51st, advancing one position compared to the previous year. Compared to 2012-2013, both countries improved their performance: Bulgaria advanced 13 positions⁴³ and Romania 27 positions⁴⁴. The two countries rank poorly among the EU28 countries for example, but Bulgaria seems to perform better, yet Romania achieved more progress.

The report illustrates that on average, world economies still struggle to find the optimal balance between technology integration and human capital as to ensure competitiveness, equality and sustainability, and are still rebounding after the productivity losses incurred after the economic crisis. Enhancing competitiveness remains key for improving living standards.

The Global Competitiveness Index 4.0 is built based on four major components (enabling environment, human capital, markets, innovation ecosystem), defining the institutions, policies and factors that determine the level of productivity. The framework for computing the GCI 4.0 includes the four key components and the twelve pillars they reunite, as follows⁴⁵:

- Enabling environment: (1) Institutions, (2) Infrastructure, (3) ICT adoption, (4) Macroeconomic stability
- Human capital: (5) Health, (6) Skills
- Markets: (7) Product market, (8) Labour market, (9) Financial system, (10) Market size
- Innovation Ecosystem: (11) Business dynamism, (12) Innovation capability

The two countries share a similar profile with respect to most indicators, with a few notable exceptions: Bulgaria performs better in macroeconomic stability, labour market conditions, financial system and the innovation ecosystem indicators. The cross-border area follows the same path as the national economies, so there are still numerous issues to be solved in the coming period. Despite the differences, both economies need to tackle certain dimensions, where they rank poorer than the overall score, such as health, skills, product market, financial system as well as innovation ecosystem maturity. ICT adoption remains one of the few variables on which both countries position relatively well (rank 32nd and 30th).

⁴¹World Economic Forum, *Global Competitiveness Report 4.0*, 2019.

http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

⁴² Idem 19, pg. 118-119, pg. 478-479

⁴³ World Economic Forum, *Global Competitiveness Report*, 2013, pg. 120-121

http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf

⁴⁴ Idem 21, pg. 302-303

⁴⁵ Idem 21



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FIGURE 28 GCI 4.0 FOR BULGARIA



FIGURE 29 GCI 4.0 FOR ROMANIA



Source: Global Competitiveness Report 4.0, 2019



2.4.2. ECONOMIC ENGINES AND SPECIALIZATION POTENTIAL

Competitiveness can be regarded through the lenses of the potential economic development drivers. Therefore, an analysis of the main economic sectors was conducted, putting each county / district within the national economy's context and ecosystem. In order to identify those sectors that have comparative and competitive advantages in each county of the cross-border area, the performance of each county was analysed using three main tools⁴⁶: the Location Quotient (LQ), the Differential Variation (DV) of employee number and the Shift Share analysis, all based on the number of employees in each county and at the national level. The Location Quotient indicates whether there is a shortage or a surplus of workforce in the analysed economic sectors in each county. The Differential Variation measures whether different sectors evolve faster or slower than the national trend in those sectors. And the Shift Share method is used as a comparative analysis tool to observe the differences in performance between a regional economy and the wider national context, taking into account the effects produced by national, regional and sectoral factors, allowing for the identification of the most and least competitive engines, aiding in defining relevant public policies. For all the three methods, the indicator used was the number of employees in 2012 and 2017, for each county in the cross-border area, and for the two national economies, in 11 main economic sectors. Their aggregation is found in the correspondence table below.

The sectors with a LQ higher than 1 have a comparative advantage, being attractive both for employers and for qualified workforce and service providers. Thus, we can distinguish two categories of sectors that have a specialization potential ($LQ > 1$): the developing sectors, that are also characterized by a more dynamic evolution compared to the national level ($DV > 0$), and the transition sectors, which have a slower evolution, but still concentrate a large share of employees in a particular sector. Although they do not have a high specialization potential ($LQ < 1$), the prospective sectors still have a higher growth than the national trend ($DV > 0$). Finally, the declining sectors indicate a loss of competitiveness, with both a slow evolution and low concentration of employees.

In the Romania-Bulgaria cross-border area, we observe the following:

- Agriculture is a developing sector in three Bulgarian neighbouring districts (Vidin, Vratsa and Montana) and one Romanian county (Călărași). In most counties, however, this sector claims support measures since it has a specialization potential despite its lower growth compared to the national evolution, being a sector in transition in most Bulgarian districts and in Constanta. In Giurgiu, Teleorman and Dolj, Agriculture became less competitive between 2012 and 2017, having a low growth and a low concentration of employees.
- Except for Vratsa, the Manufacturing sector is largely a sector in transition or in decline, claiming for policies supporting the industrial transition, modernization and adaptation to the global demand. There are also territorial differences in the specialization potential between the two sides of the cross-border area: while in Bulgaria this sector has a $LQ > 1$, due to the higher concentration of employees, in Romania the LQ is lower than 1, suggesting that there is lower concentration of employees. However, in Giurgiu, Mehedinți and Olt, the $DV > 0$ there is a need for further attention to the Manufacturing sector, since it increased its workforce along the 2012-2017 period.

⁴⁶ The Location Quotient (LQ) compares the county's concentration of employees in an economic sector to the national concentration of employees in the same sector, indicating the specialization of that economic activity. The Differential Variation (DV) measures the difference between the evolution rate of a sector at the national level and at the regional level.



- In the Services sector, there are only Bulgarian districts in the developing sectors category, for example Veliko Tarnovo in Information and communication, and there are no regions where professional, scientific and technical activities have become developing or prospective sectors (A7). Instead, most counties show a declining trend in their competitiveness in such activities, while in Pleven, Veliko Tarnovo and Ruse, they are in transition, with a higher specialization and a slower growth rate.

TABLE 3 LOCATION QUOTIENT AND DIFFERENTIAL VARIATION ANALYSIS RESULTS FOR CROSS-BORDER COUNTIES AND DISTRICTS, 2012-2017

COMPETITIVE SECTORS			
ECONOMIC SECTOR	Developing sectors (LQ>1, DV>0)		Prospective sectors (LQ<1, DV>0)
A1	Vidin (BG), Vratsa (BG), Montana (BG), Călărași (RO)	High concentration of employees	Mehedinți (RO), Olt (RO)
A2	Vratsa (BG)		Giurgiu (RO), Mehedinți (RO), Olt (RO)
A3	Vratsa (BG), Ruse (BG)		Silistra (BG), Teleorman (RO)
A4	Montana (BG), Veliko Tarnovo (BG), Silistra (BG)		Călărași (RO), Teleorman (RO), Mehedinți (RO), Olt (RO)
A5	Montana (BG)		Giurgiu (RO), Olt (RO)
A6	Veliko Tarnovo (BG)		Montana (BG), Dolj (RO)
A7			
A8	Vratsa (BG), Veliko Tarnovo (BG), Dobrich (BG)		Montana (BG), Giurgiu (RO), Teleorman (RO), Dolj (RO)
A9			Dolj (RO)
A10	Pleven (BG), Ruse (BG)		Constanta (RO)
A11	Montana (BG), Ruse (BG)		Giurgiu (RO), Dolj (RO)
			Low concentration of employees
NONCOMPETITIVE SECTORS			
ECONOMIC SECTOR	Sectors in transition (LQ>1, DV<0)		Declining sectors (LQ<1, DV<0)
A1	Pleven (BG), Veliko Tarnovo (BG), Ruse (BG), Silistra (BG), Dobrich (BG), Constanta (RO)	High concentration of employees	Giurgiu (RO), Teleorman (RO), Dolj (RO)
A2	Montana (BG), Pleven (BG), Veliko Tarnovo (BG), Ruse (BG), Silistra (BG), Dobrich (BG)		Vidin (BG), Constanta (RO), Călărași (RO), Teleorman (RO), Dolj (RO)
A3	Montana (BG), Pleven (BG), Veliko Tarnovo (BG), Dobrich (BG), Constanta (RO)		Vidin (BG), Călărași (RO), Giurgiu (RO), Dolj (RO), Mehedinți (RO), Olt (RO)
A4	Vratsa (BG), Pleven (BG), Dobrich (BG), Constanta (RO)		Vidin (BG), Giurgiu (RO), Dolj (RO)
A5	Vratsa (BG), Pleven (BG), Veliko Tarnovo (BG), Ruse (BG), Silistra (BG), Dobrich (BG), Constanta (RO)		Vidin (BG), Călărași (RO), Giurgiu (RO), Teleorman (RO), Dolj (RO), Mehedinți (RO)
A6	Ruse (BG)		Vidin (BG), Silistra (BG), Dobrich (BG), Constanta (RO), Călărași (RO), Giurgiu (RO), Teleorman (RO), Mehedinți (RO), Olt (RO)
A7	Pleven (BG), Veliko Tarnovo (BG), Ruse (BG)		Vidin (BG), Montana (BG), Silistra (BG), Dobrich (BG), Constanta (RO), Călărași
			Low concentration of employees



COMPETITIVE SECTORS

		(RO), Giurgiu (RO), Teleorman (RO), Dolj (RO), Mehedinți (RO), Olt (RO)
A8	Pleven (BG), Ruse (BG), Constanta (RO)	Vidin (BG), Silistra (BG), Călărași (RO), Mehedinți (RO), Olt (RO)
A9	Pleven (BG), Veliko Tarnovo (BG), Ruse (BG), Dobrich (BG)	Vidin (BG), Montana (BG), Silistra (BG), Constanta (RO), Călărași (RO), Giurgiu (RO), Teleorman (RO), Mehedinți (RO), Olt (RO)
A10	Vidin (BG), Vratsa (BG), Montana (BG), Veliko Tarnovo (BG), Silistra (BG), Dobrich (BG)	Călărași (RO), Giurgiu (RO), Teleorman (RO), Dolj (RO), Mehedinți (RO), Olt (RO)
A11	Vidin (BG), Vratsa (BG), Pleven (BG), Veliko Tarnovo (BG), Dobrich (BG)	Silistra (BG), Constanta (RO), Călărași (RO), Teleorman (RO), Mehedinți (RO), Olt (RO)

The Shift Share analysis takes into account a mix of factors in assessing the performance of different economic sectors, including the growth or decline of employment in the national economy and its effect on employment in specific sectors overall (proportional shift) and the sectoral effect - by comparing the employment growth or decline in a sector at the regional level with the same indicator at the national level (differential shift). As such, by simultaneously analysing the two components, four types of sectors result, depending on their evolution at the regional and national level.

In the case of Agriculture, forestry and fishing, two patterns can be observed: there are three Bulgarian districts (Vidin, Montana and Vratsa) and three Romanian counties (Mehedinți, Olt, Călărași) where this sector is classified as a Winner (faster growth than that of each national economy). The neighbouring counties should be encouraged to further modernize and increase efficiency so that Agriculture becomes a growth engine for the area and a trading partner at the European and global level.



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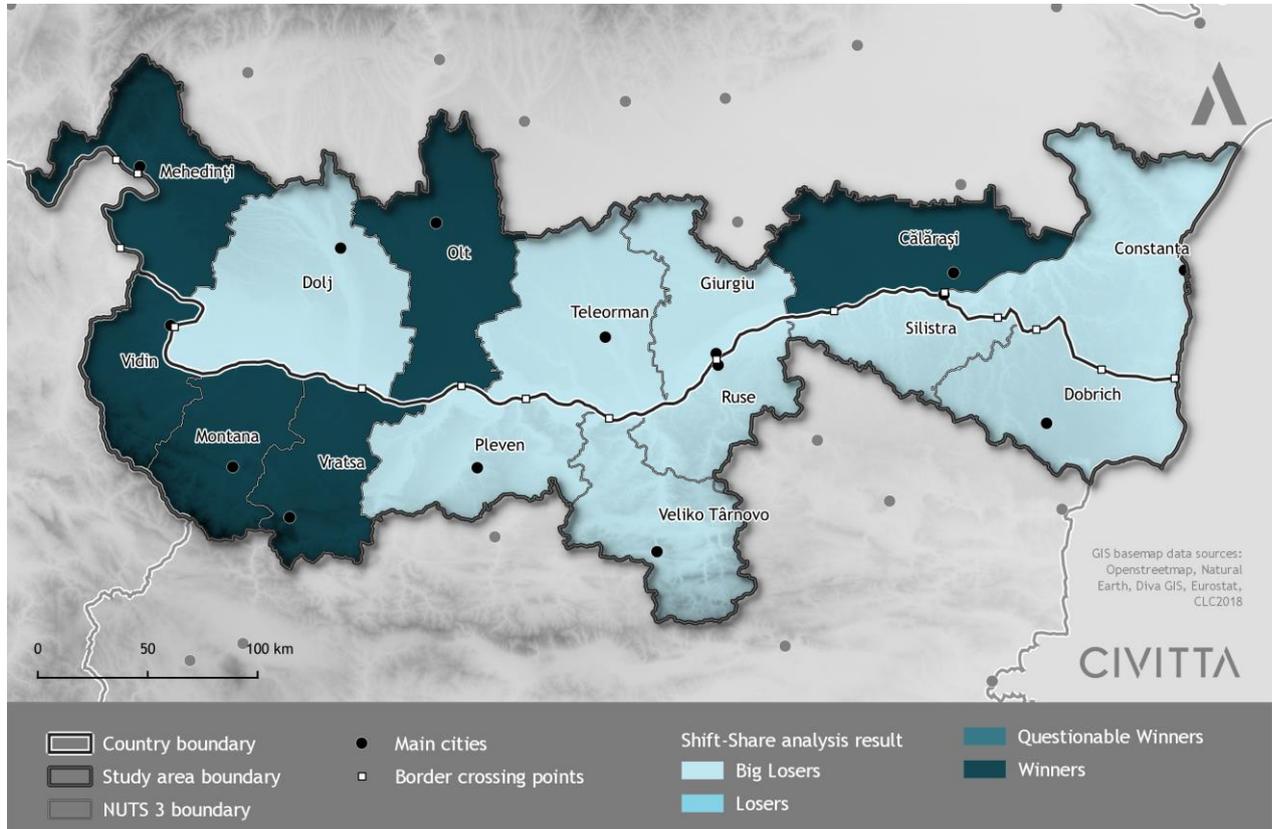


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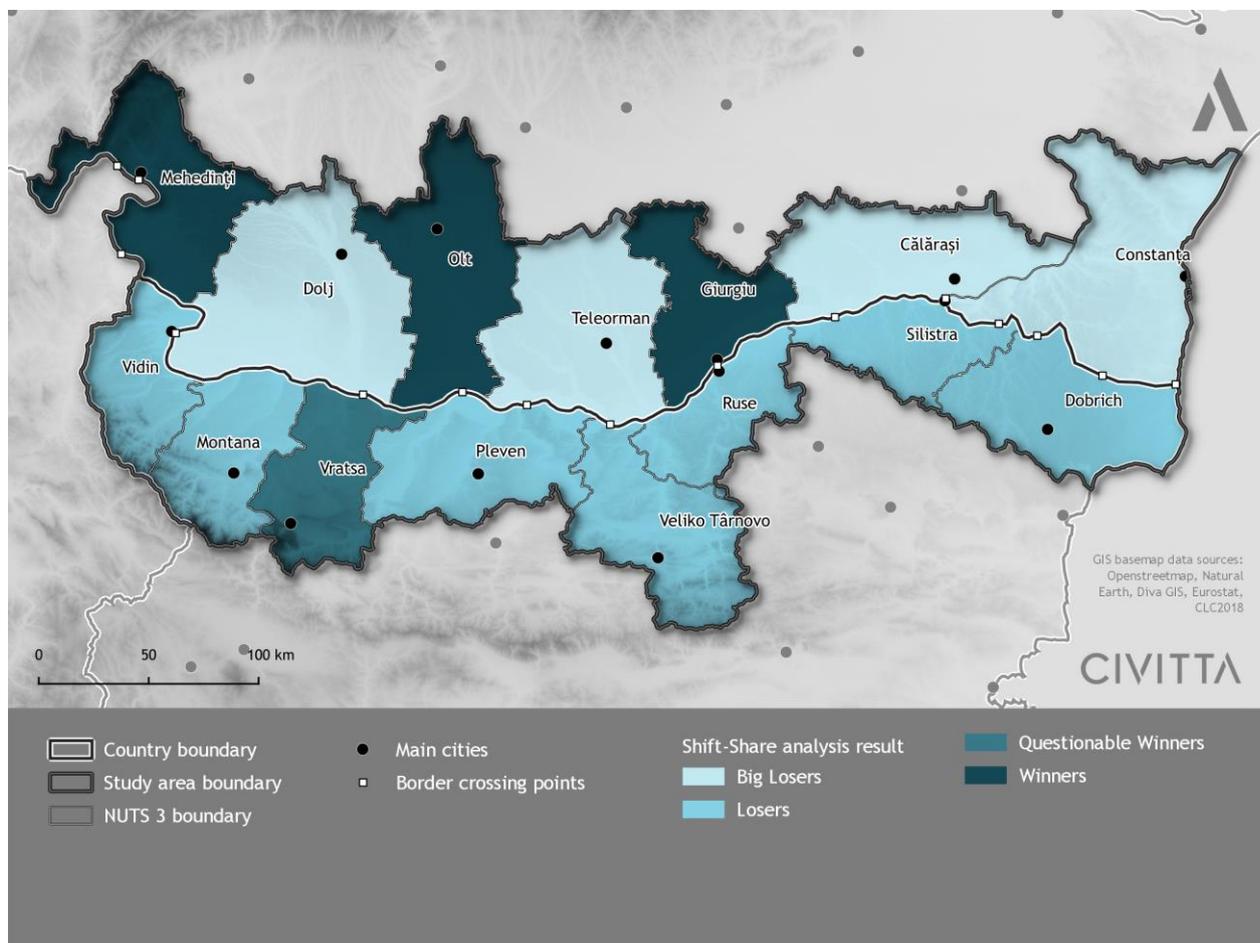
MAP 6 SHIFT SHARE ANALYSIS RESULT FOR THE CROSS-BORDER COUNTIES/DISTRICTS FOR AGRICULTURE, 2012-2017



In the Manufacturing sector, all the four categories of counties are present. Mehedinți, Olt and Giurgiu are included in the Winners category, since their evolution was faster than the one at the national level. In Vratsa, Manufacturing is a Questionable winner, having developed faster at the local level but the overall evolution at the national level was slower between 2012 and 2017. Aside from these more successful cases, the Romanian side of the cross-border area is categorized as a “Big Loser”, having lagged behind despite the positive evolution at the national level. In the Bulgarian side, Manufacturing is a “Loser” sector, having a weak development compared to the already weak national evolution. Therefore, in all regions where there is a specialization potential in this sector, as shown above, industrial modernization and the development of skills is essential to enhance the capacity of the territory to increase its competitiveness.



MAP 7 SHIFT SHARE ANALYSIS RESULT FOR THE CROSS-BORDER COUNTIES/DISTRICTS FOR MANUFACTURING, 2012-2017



The Information and communication sector include knowledge intensive, high tech activities. There are only three counties in the cross-border area for which the analysis yielded net positive results - in these counties, the Information and communication sector developed faster than the national level. In Romania, where the IT&C has developed as a growth engine in many large cities, it is encouraging that Dolj has had a positive evolution, triggered by the university centre that Craiova, its largest city, hosts. In Bulgaria, there are two districts which have potential for development in this sector. Given the intangible capital required to sustain this sector, employee mobility and sharing of best practices can be more easily enforced through territorial cooperation.

The other counties in the cross-border area are Losers, having had a weaker development than the one at the national level, fostered by the limited number of specialized employees.

However, the performance of the Information and communication sector is better than of other Services category, if we look for example at complementary economic sectors, such as Professional, scientific and technical activities. In this case, only Dolj has a Winner status, while all the other counties /districts in the cross-border area had a slower growth compared to the national evolution rate. This picture of the cross-border area that displays a limited performance of the services sector calls for a more attention in terms of better attractiveness for companies



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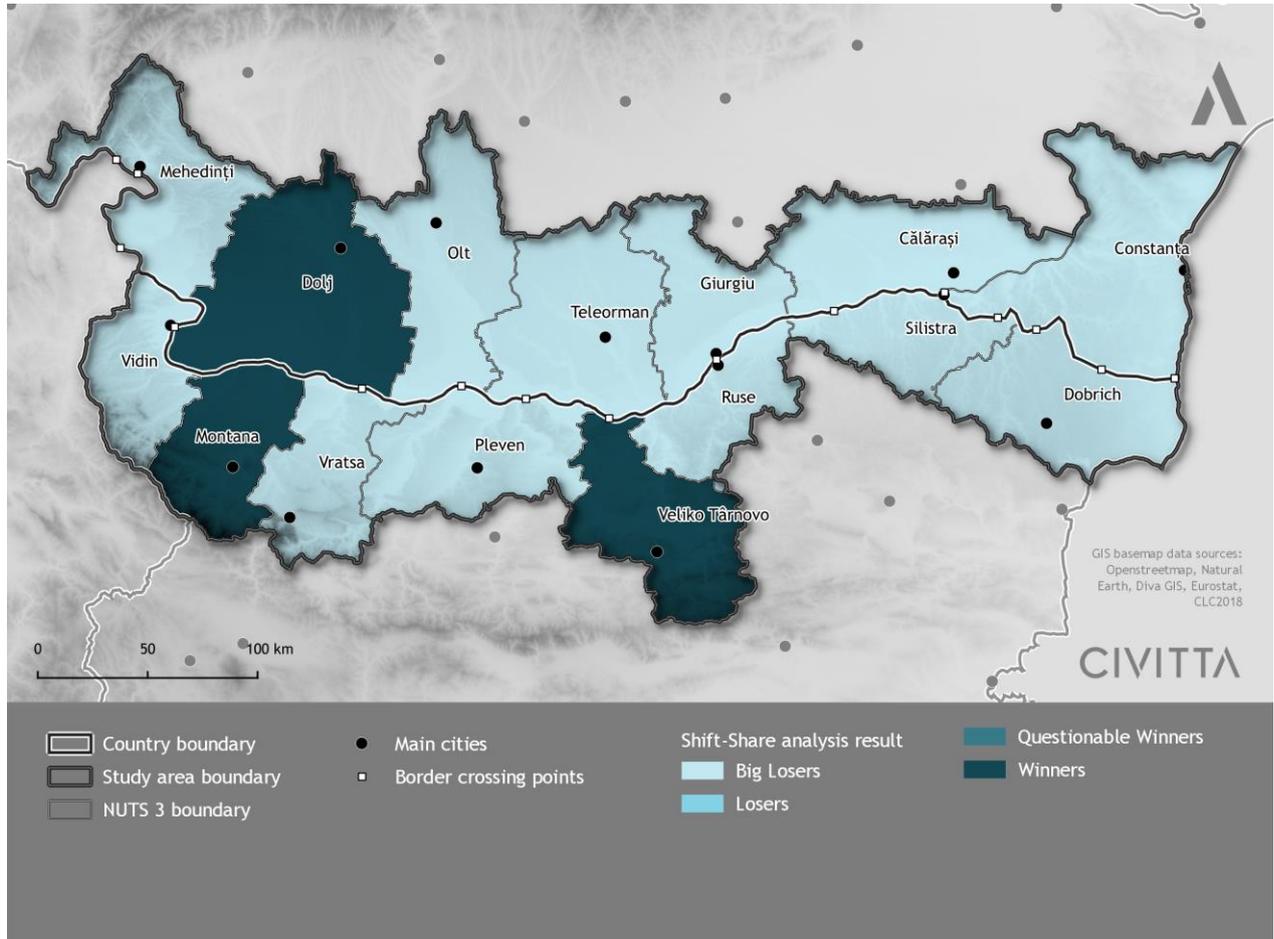
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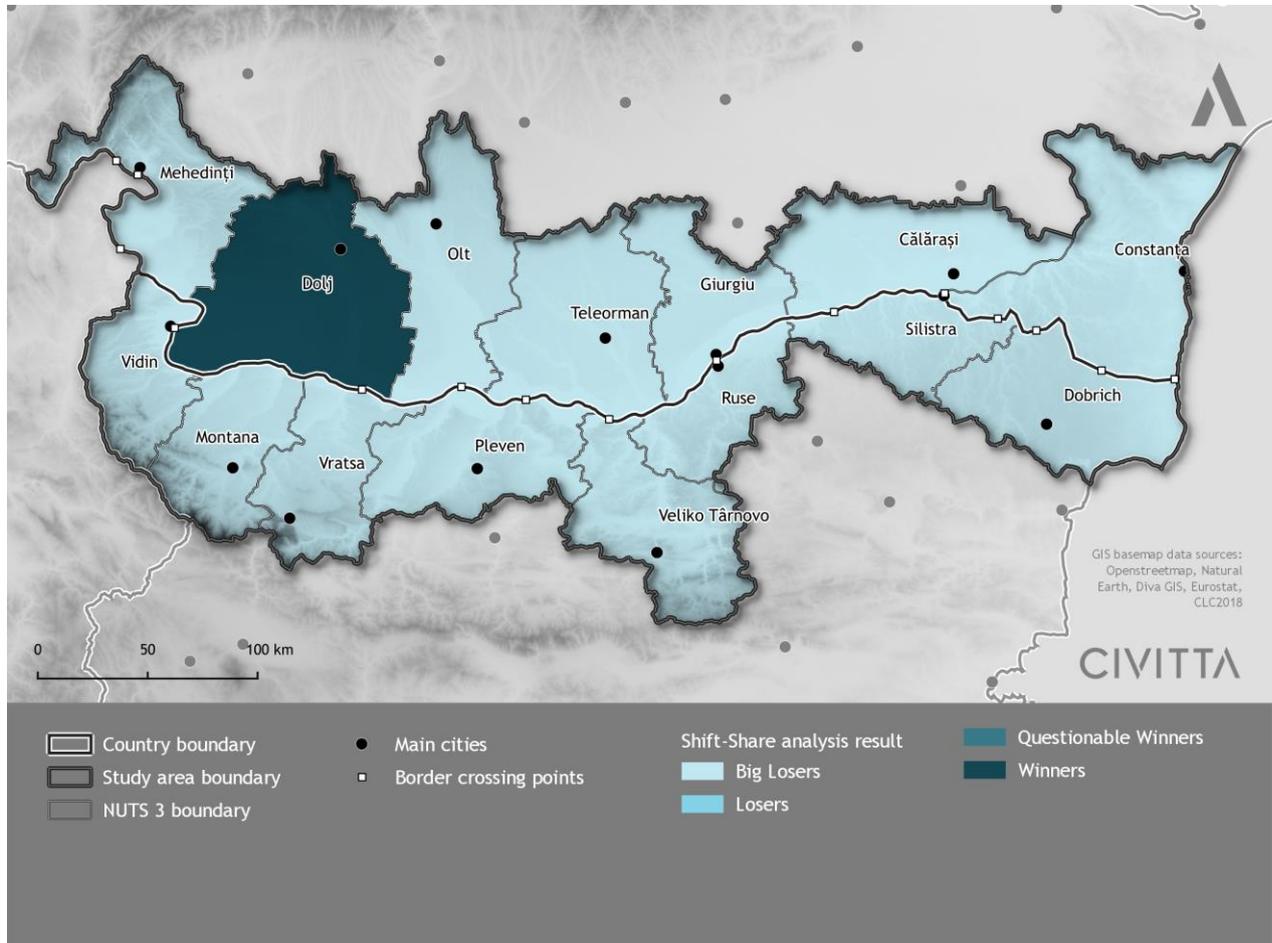
and investors, training, skills and qualification of the workforce, education and entrepreneurship, which can help achieve progress in the field of knowledge intensive services.

MAP 8 SHIFT SHARE ANALYSIS RESULT FOR THE CROSS-BORDER COUNTIES/DISTRICTS FOR INFORMATION AND COMMUNICATION, 2012-2017





MAP 9 SHIFT SHARE ANALYSIS RESULT FOR THE CROSS-BORDER COUNTIES/DISTRICTS FOR PROFESSIONAL ACTIVITIES, 2012-2017



ECONOMIC SECTORS

A1 - A Agriculture, forestry and fishing

A2 - C Manufacturing

A3 - B, D, E Mining and quarrying; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities

A4 - F Construction

A5 - G, H, I Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities

A6 - J Information and communication

A7 - K Financial and insurance activities

A8 - L Real estate activities

A9 - M, N Professional, scientific and technical activities; administrative and support service activities

A10 - O, P, Q Public administration and defence; compulsory social security; education; human health and social work activities

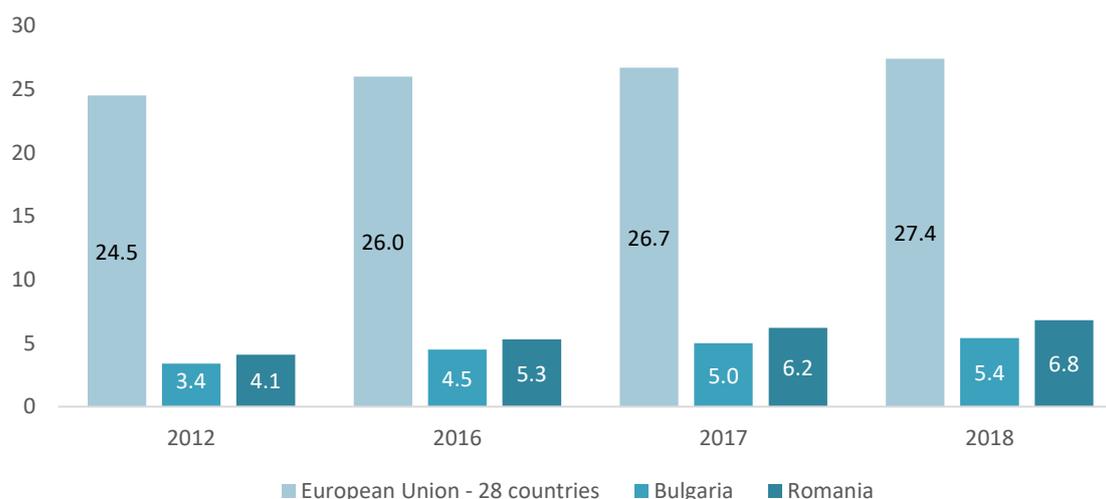
A11 - R, S, T Arts, entertainment and recreation, repair of household goods and other



2.5. WORK PRODUCTIVITY

Work productivity is regarded as one of the main factors determining an economy’s competitiveness and its capacity to foster and support a long-term and sustainable economic development given that human resource is a genuinely territorial resource. Labour cost represents an indicator used to describe the cost competitiveness of an economy - a high competitiveness results when the labour costs do not increase faster than labour productivity on a regular basis. At the EU28 level, labour costs have increased by 11.8% between 2012 and 2018, while in Romania and Bulgaria to a much higher extent, with 65.9% and 58.8% respectively. It is somehow natural to observe such increases in the case of national economies with a very low starting point for calculation, yet if we compare it with the increase in gross wages, for example, we see a stunning difference in the case at least of Romania, where the latter doubled in the same period. Such a situation poses significant difficulties to employers and their ability to retain qualified workforce and still make a profit. However, compared to the EU28 value, the labour cost in the two countries of interest for our analysis is still low. In the same time, with the increasing level of salaries, both countries need to increase their comparative advantages in other fields in order to successfully compete for FDI and gain access to export markets.

FIGURE 30 LABOUR COST, EU28 AND NATIONAL LEVEL, EUR

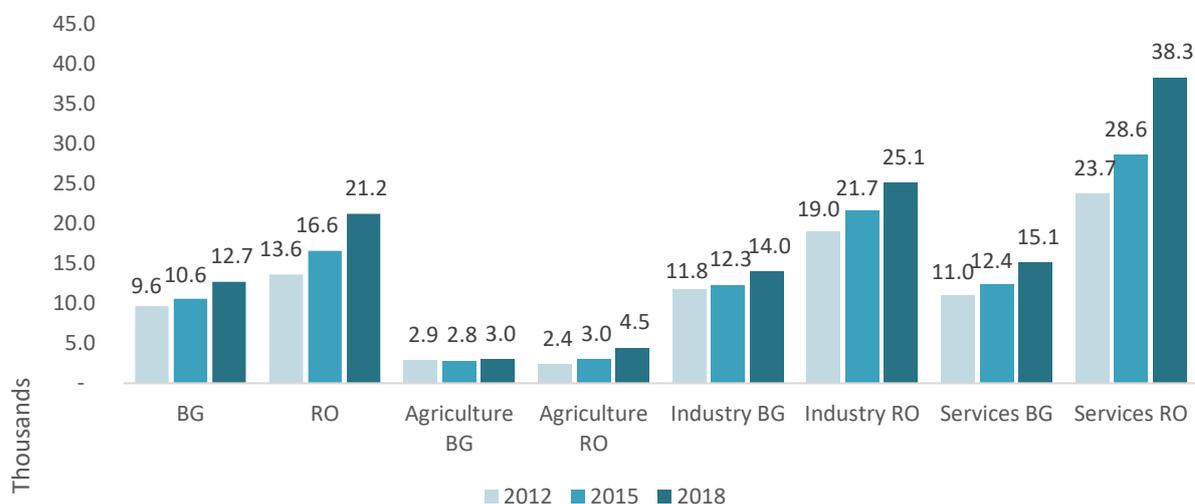


Source: Eurostat, own calculation

Productivity per employee and per hour are a performance indicator for national and regional economies, triggering economic growth when a more effective work is produced by those who are employed. Overall, at the national level, productivity per employee increased by 31.4% in Bulgaria and by 56% in Romania between 2012 and 2018, with specificities at the sectoral level. The most staggering difference is observed in the case of agriculture, where Romania improved its productivity by 88.8%, while Bulgaria managed to become only with 6% more productive. All major sectors obtained increases in productivity, to a larger degree in Romania, and especially in services. Despite the increases, there is still much to be done when it comes to better qualified and skilled workforce, which can further support this positive evolution and take it to the next level of sophistication and efficiency, in line with the current global challenges.



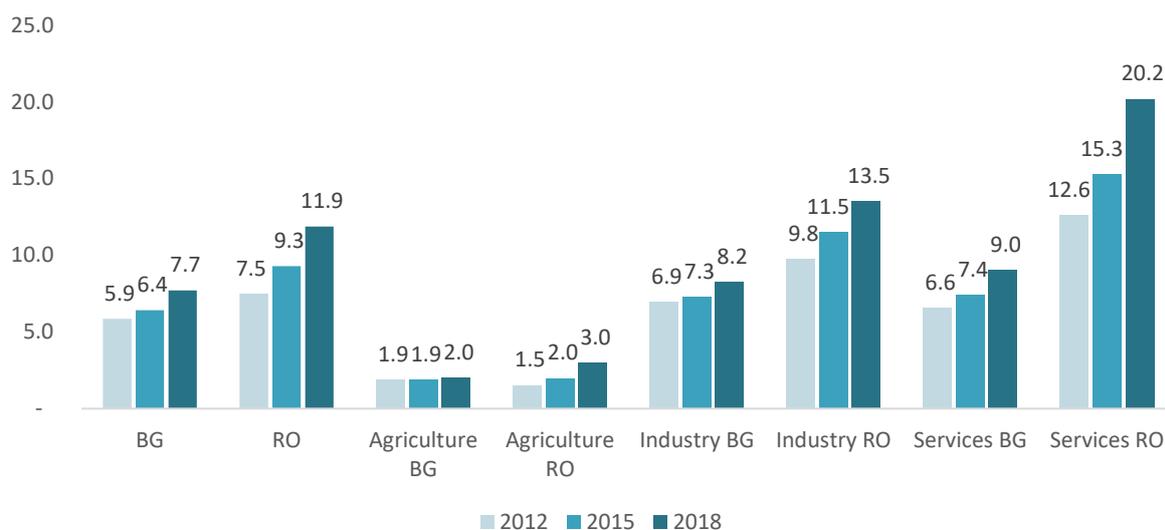
FIGURE 31 EVOLUTION OF PRODUCTIVITY PER EMPLOYEE (GVA/EMPLOYEE), '000 EUR, NATIONAL LEVEL⁴⁷



Source: Tempo INS, NSI, own calculation

A similar situation is observed in the case of productivity per hour, where both economies and their subsequent major sectors improved this indicator. Despite the increases, the industrial sector had the lowest evolution, which calls for more attention since it is in this sector that most tradable goods are produced. Investments in machinery and equipment are still needed to optimize and modernize the production facilities in order to produce in a more efficient and effective manner.

FIGURE 32 EVOLUTION OF PRODUCTIVITY PER HOUR (GVA/HOUR), EUR, NATIONAL LEVEL



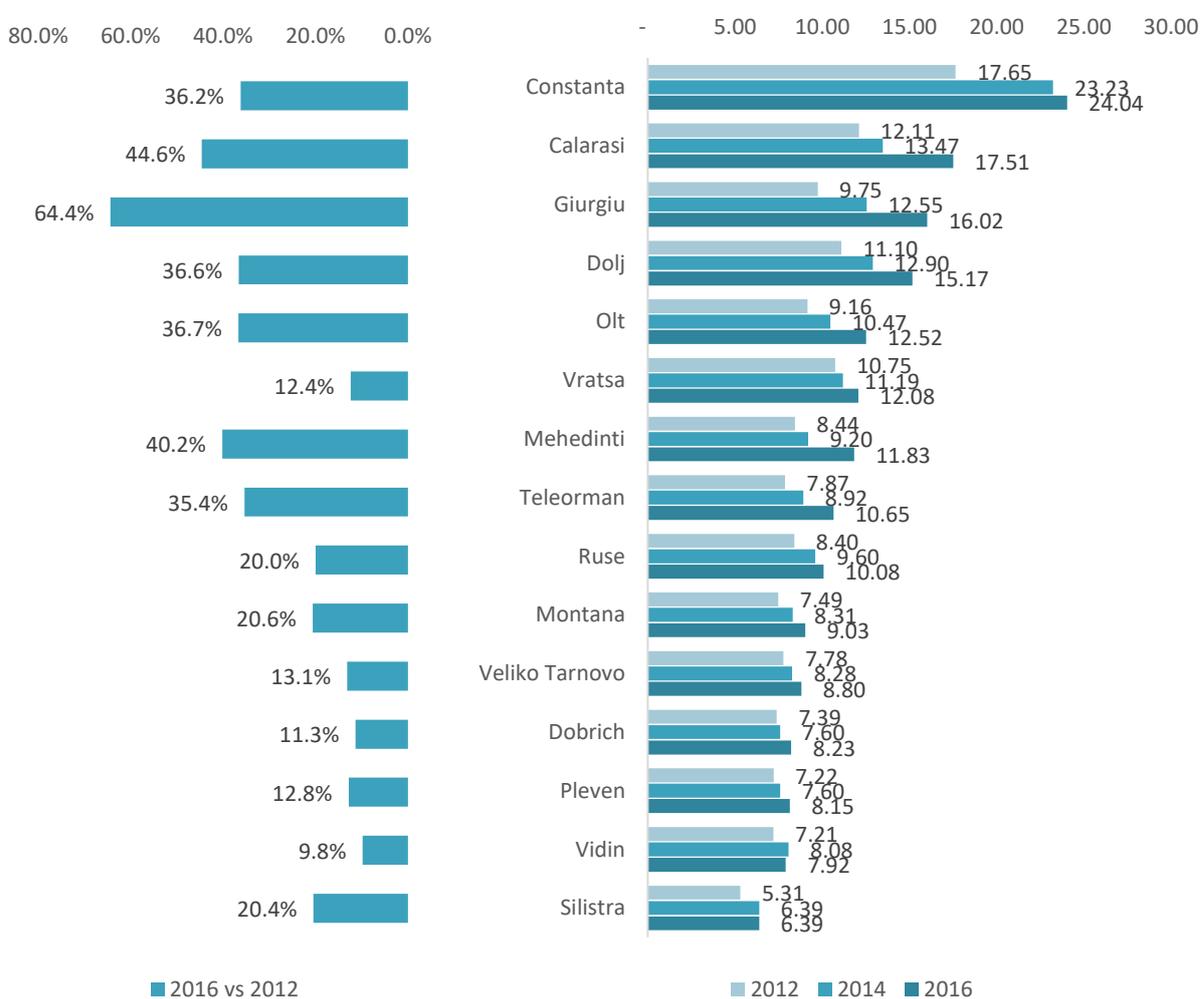
Source: Tempo INS, NSI, own calculation

⁴⁷ The growth rate was computed using the absolute values in Excel; for the chart, absolute values were divided by 1000.



At the cross-border area level, an overall increase of productivity can be observed, except for Vidin and Silistra, the least developed two counties, with the lowest GDP. Constanta leads the ranking, with 24 thousand EUR in GVA per employee, followed by Călărași, Giurgiu and Dolj, with values close to one another, ranging between 17.5 and 15.1 thousand EUR. But if we look at the territorial level, Constanta’s neighbouring district in Bulgaria, Dobrich, has a productivity level of 8.23 thousand EUR/employee, which is three times less. Considerable differences are observed also in the case of Giurgiu and Ruse, despite their more closely developed economic relations. In the industry sector, the differences are even more visible, with Constanta producing 50.8 thousand EUR per employee in 2016 and Dobrich only 15.7 thousand EUR per employee.

FIGURE 33 EVOLUTION OF PRODUCTIVITY PER EMPLOYEE IN THE CROSS-BORDER AREA, ‘000 EUR⁴⁸



Source: Tempo INS, NSI, own calculation

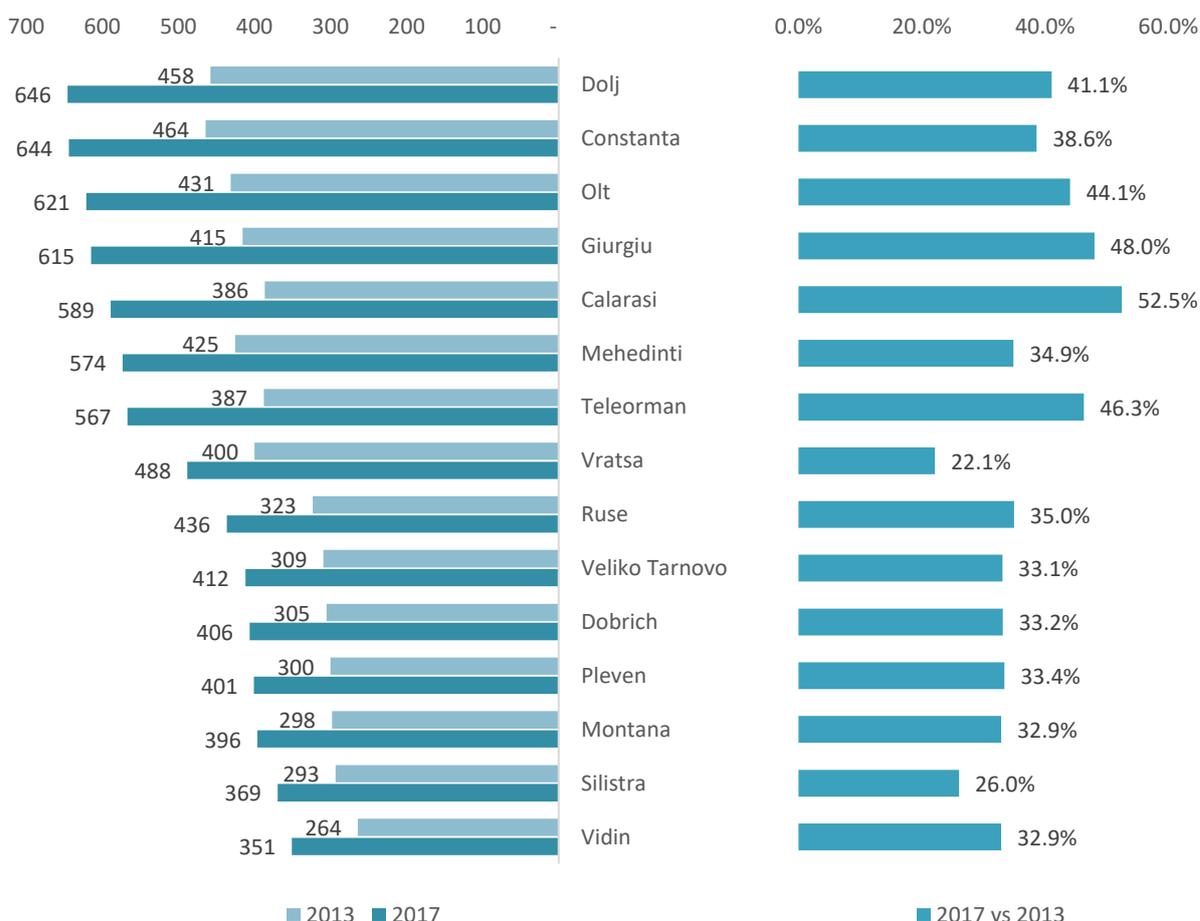
⁴⁸ In order to compute the productivity per employee, the Gross Value Added data at the county/district level was necessary, but it is not yet available in such detail. Therefore, the value for 2016 was chosen in order to be able to provide a more granular analysis.



As mentioned earlier, the evolution of salaries as costs of labour is an important factor of the competitiveness equation, which influences the investment attractiveness. Between 2013 and 2017, gross wages increased by 34% in Bulgaria and 44% in Romania, however there are still differences between the two countries in the absolute values: in 2017, in Bulgaria, the annual average gross wage was 530 EUR, and in Romania 706 EUR. For the same time period, productivity increased less in both countries, with around 34% in Romania and 23% in Bulgaria, suggesting that there are still major challenges to be solved regarding the skills of employees, the technological development in order to produce in more efficient and competitive way.

By county/district, overall, we notice that gross wages are higher in the Romanian side of the cross-border area, and they also incurred the highest increases over time. They are also lower than the national average in both countries, even in Constanta, the most developed county in the area. There are also important differences between neighbouring areas, in line with the overall economic development.

FIGURE 34 TOTAL GROSS WAGES BY COUNTY/DISTRICT AND GROWTH RATE, EUR, %

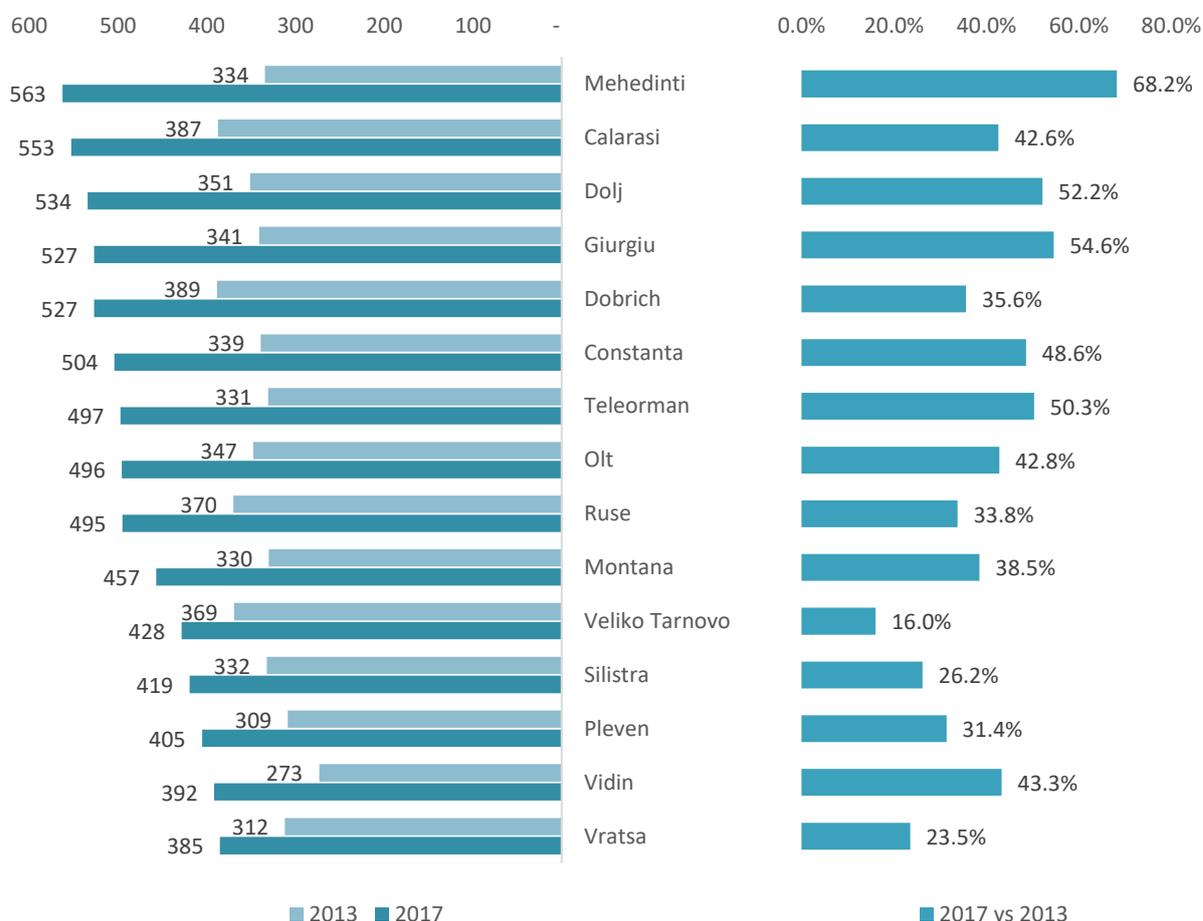


Source: Tempo INS, NSI, own calculation

Despite their important share of employment in agriculture, the wages are still considerably lower in the Bulgarian districts than in the Romanian counties. In 2017, the wages in agriculture are higher compared to the average wage at the county/district level in most Bulgarian districts, except for Vratsa, while in Romania they are lower in all counties.



FIGURE 35 GROSS WAGES IN AGRICULTURE BY COUNTY/DISTRICT AND GROWTH RATE, EUR, %

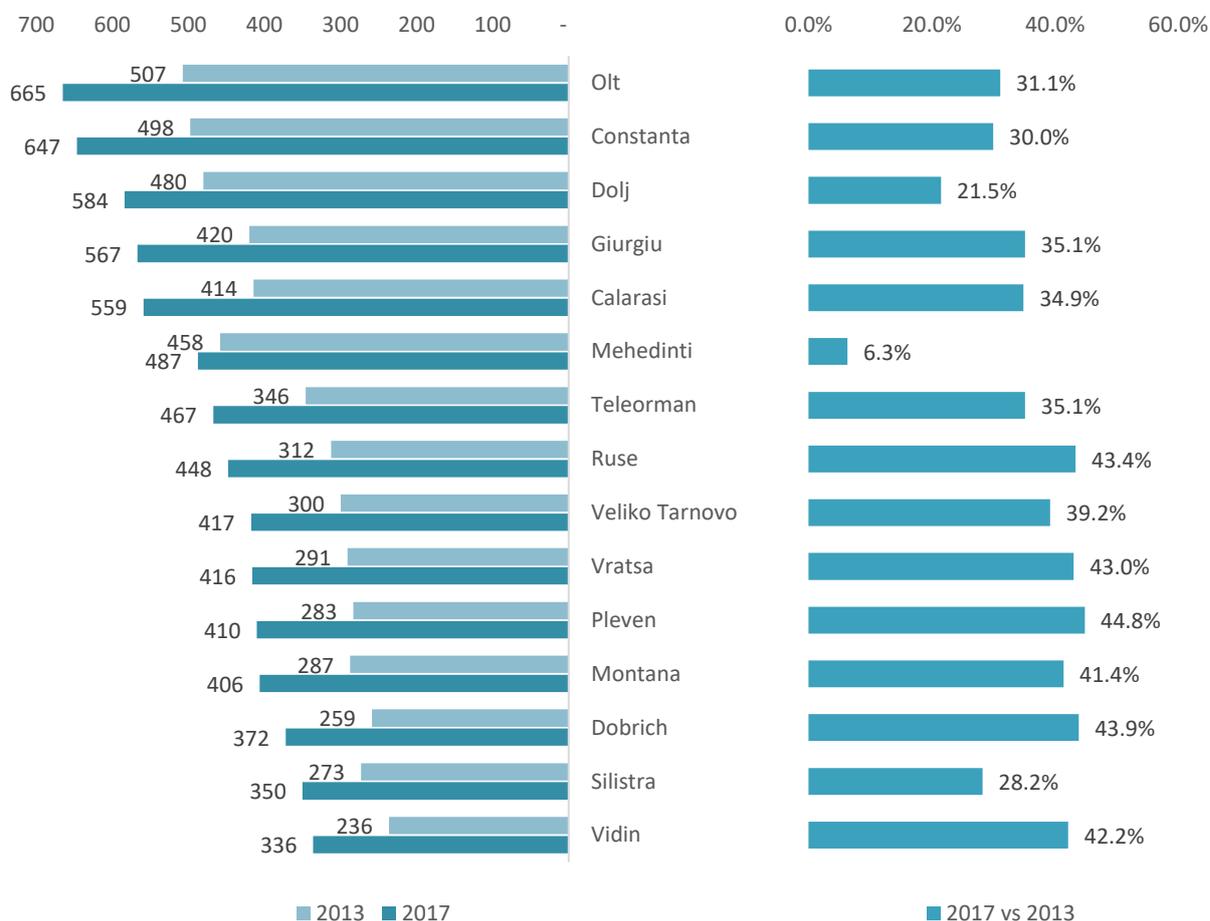


Source: Tempo INS, NSI, own calculation

A similar situation can be observed in the case of industry, where wages are higher in the Romanian side of the cross-border area, in line with the national economy. Olt is the leading county, with 665 EUR on average, especially due to its tradition in electricity production and mining. There are counties and districts where this situation is diverging: the industry salaries are higher than the county/district average in Constanta and Olt in the Romanian side and in Montana, Pleven, Ruse and Veliko Tarnovo in the Bulgarian side.



FIGURE 36 GROSS WAGES IN THE INDUSTRY SECTOR BY COUNTY/DISTRICT AND GROWTH RATE, EUR, %

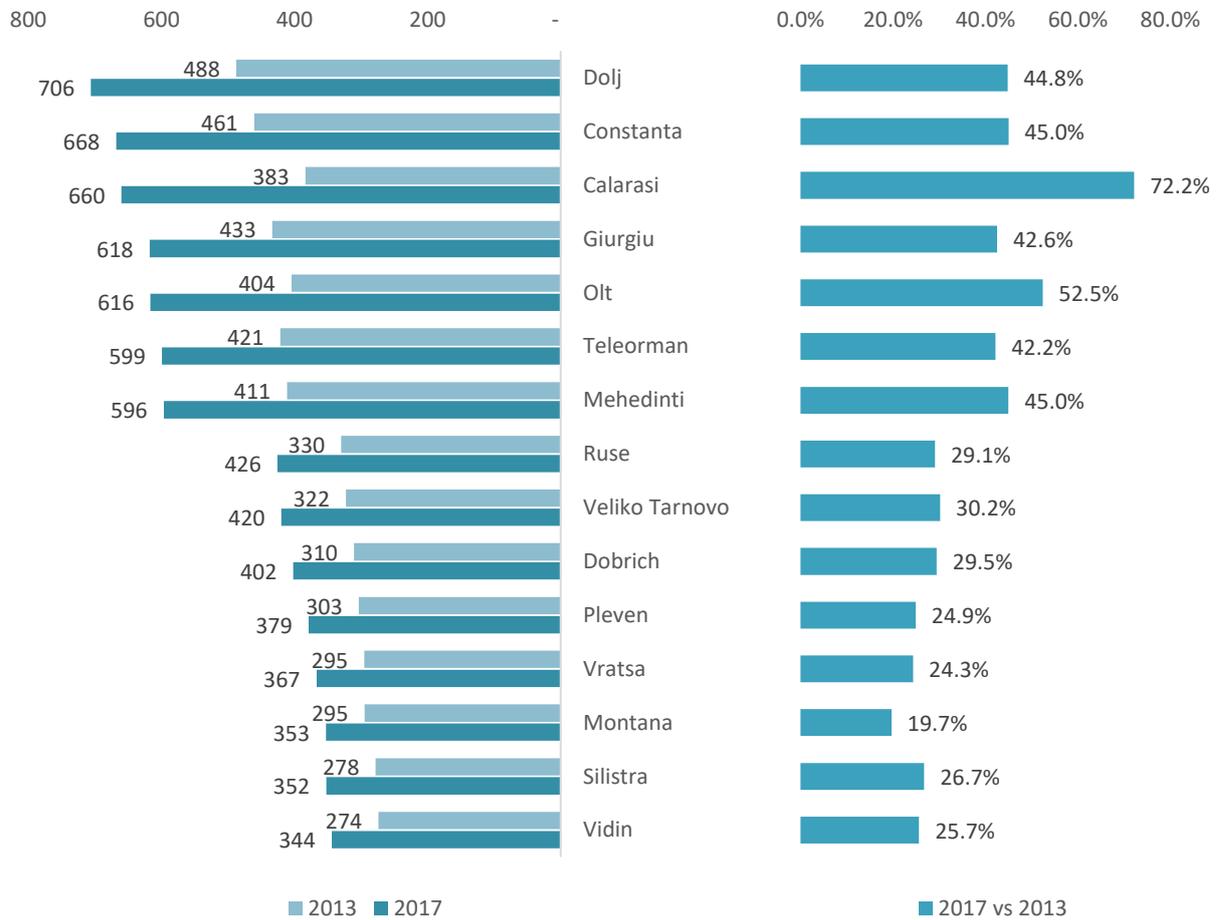


Source: Tempo INS, NSI, own calculation

In the services sector, there are some of the highest salaries in most counties and districts, even bigger than the county/district average, in Călărași, Dolj, Giurgiu, Mehedinți, Teleorman and Veliko Tarnovo. In Bulgaria, the services sector offers however, lower salaries compared to agriculture or industry. In Romania, the opposite is true, with regional specificities based on high share of employment in various services-related sectors (for example, in Constanta education and health, in Dolj IT and auxiliary services, in Călărași public administration).



FIGURE 37 GROSS WAGES IN THE SERVICES SECTOR BY COUNTY/DISTRICT AND GROWTH RATE, EUR, %



Source: Tempo INS, NSI, own calculation



2.6. RESEARCH AND INNOVATION

Research and innovation are a key enabling factor for smart economic growth and sustainable development, impacting both companies and citizens' life through increasing productivity, better quality goods produced and exported, higher revenues and incomes. The capacity of a territory to attract investments and increase the added value of its economy's products and services is closely linked to its capacity to both ensure strong and constant technological transfer or innovation.

Innovation can be fostered through different mechanisms and can take place in many institutional arrangements (private, public, public-private), following different paths, such as existence and funding of fundamental research, or by connecting the fundamental research and the productive sector through applicative research and innovation.

In many cases in Eastern Europe innovation is mainly provided by transfer of knowledge through multinational corporations (MNCs) which conduct research in other more developed centres and then apply it in their productive facilities in Bulgaria and Romania. Such a practice is mainly regarded as a slow knowledge transfer but one which can provide opportunities for entrepreneurs locally. Employees, who are trained by the MNCs come to possess part of the tacit knowledge developed by the large companies, further develop it and can start their own company using the knowledge acquired. Another path is to foster entrepreneurship as to become suppliers for the MNCs, increasing competition at the ecosystem level that grows around the MNC, and further leading to sophistication and innovation in order to deliver higher quality products. Aside from universities and research institutes, large private companies located in these less developed areas act as repositories of knowledge yet to be exploited by talented and qualified human capital that are willing to engage in innovative activities.

According to the Regional Innovation Scoreboard, in 2012⁴⁹, all Bulgarian regions were classified as “modest innovator low”, the lowest performance group of the classification, while in Romania, only Sud-Est (where Constanta is located) was classified as “modest innovator medium”, the second lowest performing group. In 2019, the situation did not change much: in Romania⁵⁰, all regions in which the counties in the cross-border area are located have been included in the “modest innovator low” group, while in Bulgaria⁵¹, Severzapaden belongs to the same group and the other two regions (Severen tsentralen and Severoiztochen) upgraded their performance into the group of “modest innovator medium”.

In addition to the traditional views on the benefits of research and innovation, a recent study⁵² claims that embracing technological transformation can become an opportunity to “leap-frog” in terms of returns and economic development, especially through modernized industrial facilities. Therefore, the cross-border area should improve their technological readiness (along with its labour market conditions) in order to fully capitalize on the unfolding industrial transformation currently taking place.

Overall, the expenditure on R&D activities have increased from 27.6 mil. EUR in 2012 to 54.8 mil. EUR in 2018. In the Romanian side, until 2014 there was a massive decline in the level of

⁴⁹ European Commission, *Regional Innovation Scoreboard*, 2019, pg. 24, <https://op.europa.eu/en/publication-detail/-/publication/aaff75f0-8d26-4503-96a4-a61a7906d133>

⁵⁰ European Commission, *Regional Innovation Scoreboard*, 2019, pg. 29 (document available for download at: <https://ec.europa.eu/docsroom/documents/35937>)

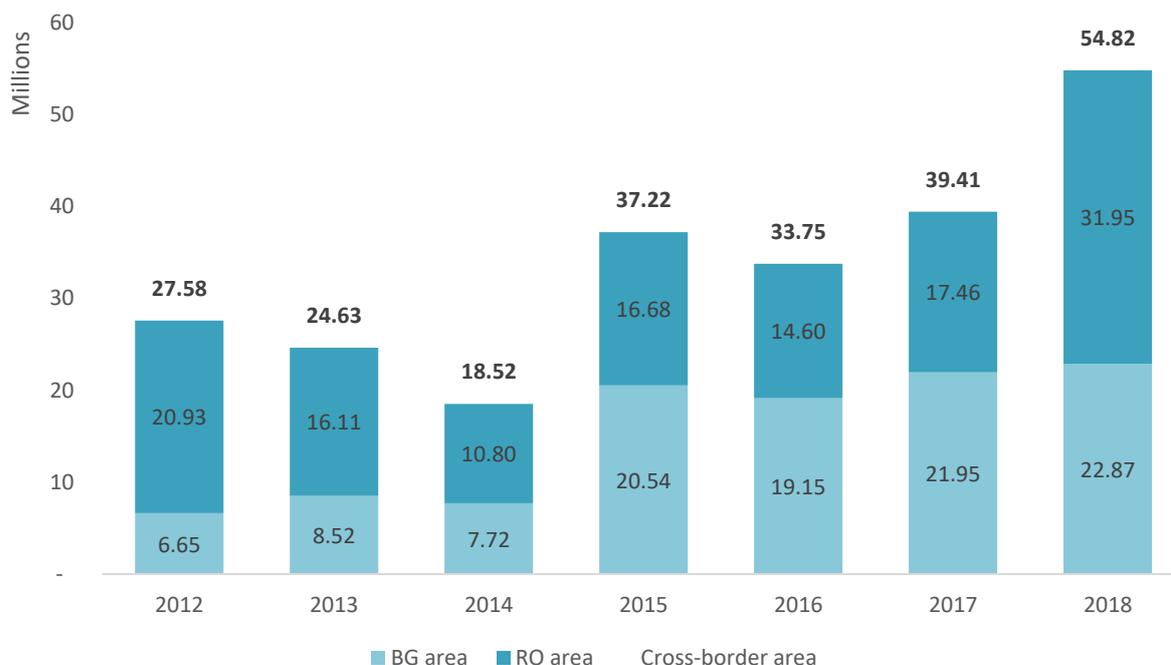
⁵¹ Idem 24, pg. 20 (document available at: <https://ec.europa.eu/docsroom/documents/35921>)

⁵² ESPON, *T4 - Technological Transformation and Transitioning of Regional Economies*, 2019. <https://www.espon.eu/transregecon>



expenditure, from 20.9 mil EUR to 10.8 mil. EUR, followed by small increases gradually, and a surge in 2018, when they nearly doubled, reaching 31.9 mil EUR.

FIGURE 38 EVOLUTION OF EXPENDITURE ON R&D, EUR, 2012-2018

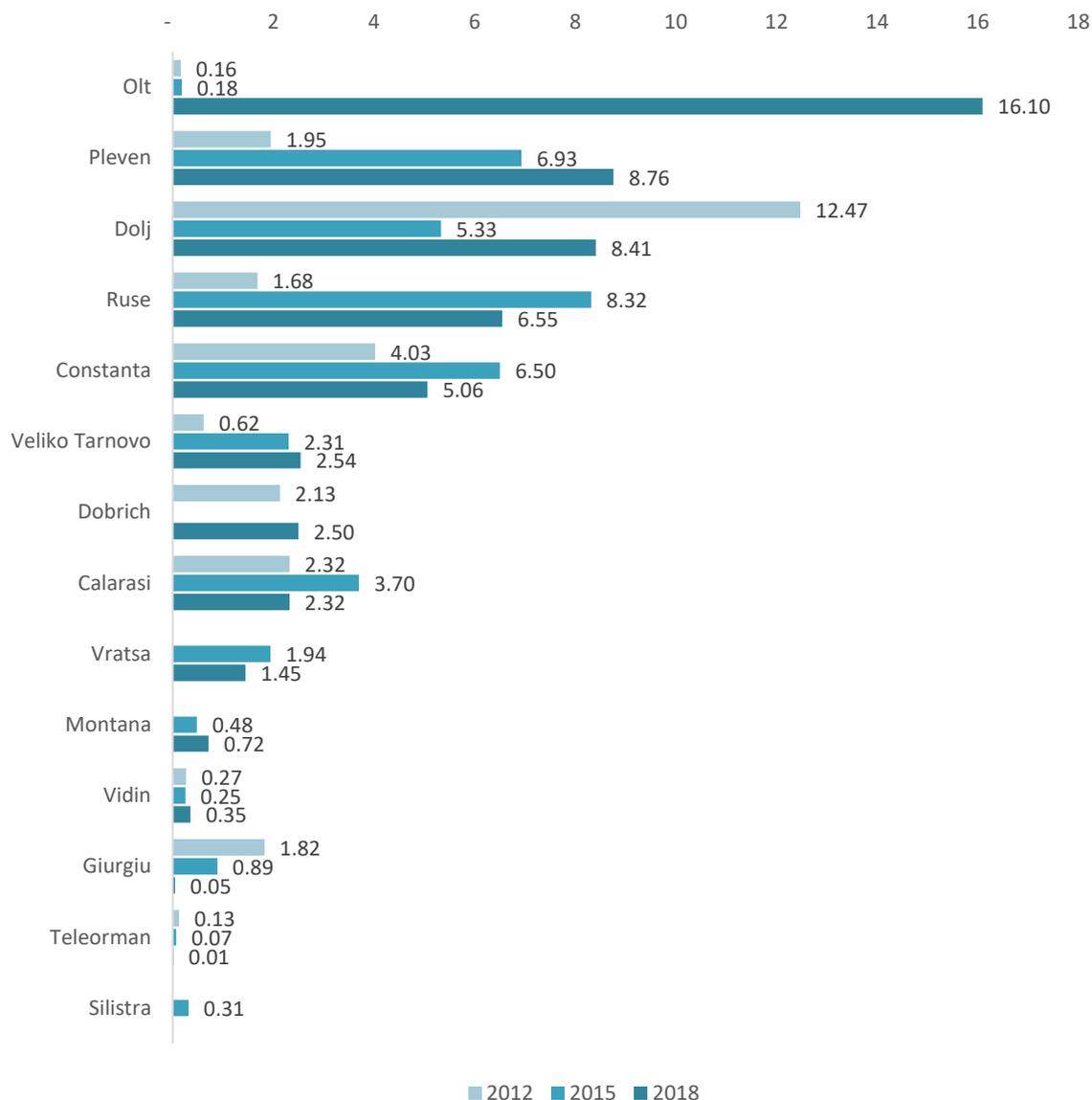


Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation

The counties in the cross-border area display some of the lowest values of expenditure on R&D in Romania, with a few exceptions, such as Olt, Dolj and Constanta, with the latter two having large universities and research institutes within their territory, while in Olt, there is a large manufacturing company investing massively in R&D activities. In Bulgaria, in Pleven there is a medical university, and in Veliko Tarnovo a university centre, which might explain the territorial differences.



FIGURE 39 EVOLUTION OF EXPENDITURE ON R&D BY COUNTRY/DISTRICT (MIL. EUR)

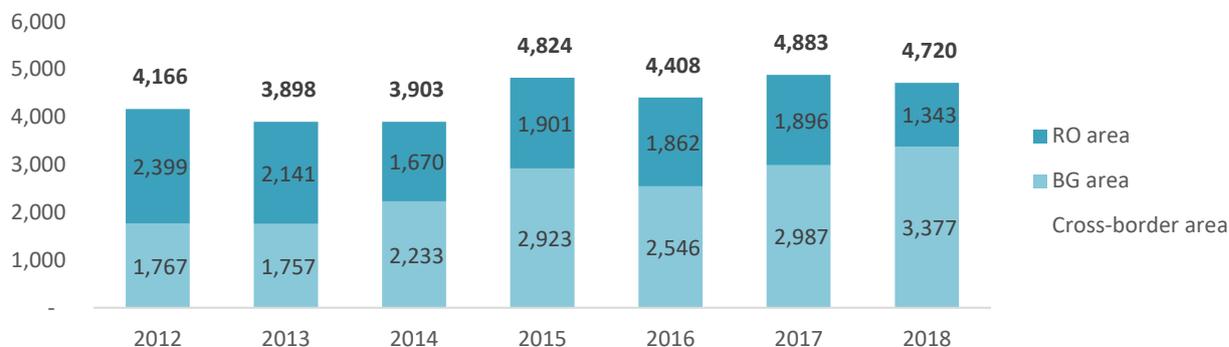


Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation

In the case of staff engaged in R&D activities, the number of persons increased between 2013 and 2015, was reduced one year later and rebounded to reach a peak of 4.883 persons in 2017, slowly declining to 4.720 persons in 2018. Three out of four persons involved in R&D are located in the Romanian cross-border area.



FIGURE 40 EVOLUTION OF STAFF ENGAGED IN R&D, NUMBER OF PERSONS, 2012-2018

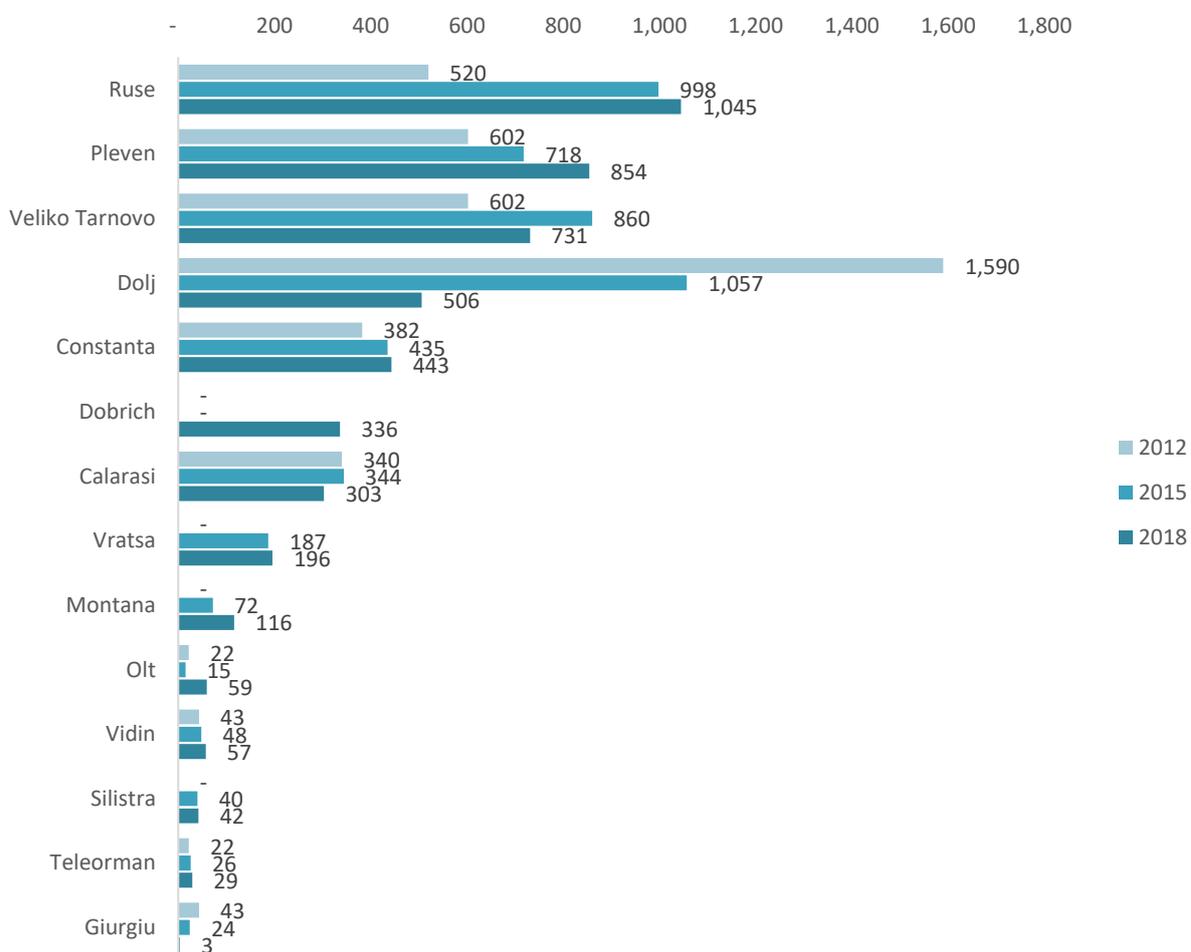


Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation

In 2018, the largest share of staff engaged in R&D activities was found in Ruse, which developed a research and development sector centre within the university and a Centre for European Integration, International Cooperation and Mobility, which among others, acts as a regional centre for mobility of researchers and as a consultative centre for research and technological development. The following counties/districts in the ranking also host universities and research departments, although in some cases their activity has been reduced (such as in Dolj). What is nevertheless worrying is the extremely low number of persons involved in R&D in counties from the second half of the chart - such as Silistra, Teleorman, or Giurgiu.



FIGURE 41 EVOLUTION OF STAFF ENGAGED IN R&D BY COUNTRY/DISTRICT



Source: Tempo INS, Regions, districts and municipalities in the Republic of Bulgaria, 2013-2017, own calculation



2.7. BUSINESS ENVIRONMENT

In the opening of this chapter, a table presenting the poorest regions in the EU28 was introduced, including regions from Romania, Bulgaria and Hungary. In 2017, a report designed by the World Bank Group⁵³ compared business regulation for domestic firms in 22 cities from these three countries with 187 other economies with the purpose to measure and illustrate those aspects that enable or hinder entrepreneurs in starting, operating or expanding a business.

As data on both sides of the cross-border area are insufficient to draw conclusions on the entrepreneurship level at the territorial level, we know that the area concentrates a low number of enterprises out of the total at the national level.

The report covers five main indicators related to local jurisdiction and practice: (1) starting a business, (2) getting electricity, (3) dealing with construction permits, (4) registering property, and (5) enforcing contracts. Among the 22 cities analysed in the report, four of them are of interest for our analysis: Pleven and Ruse from Bulgaria, and Constanta and Craiova for Romania.

With the progress achieved by Romania and Bulgaria after joining the EU in 2007, the access to the common market created massive opportunities for companies for internationalization, while triggered changes in the administrative and institutional levels with an impact on doing business. The rise in incomes and in the overall economic situation creates demand for more sophisticated goods and services, so entrepreneurship represents a priority that should not be overlooked.

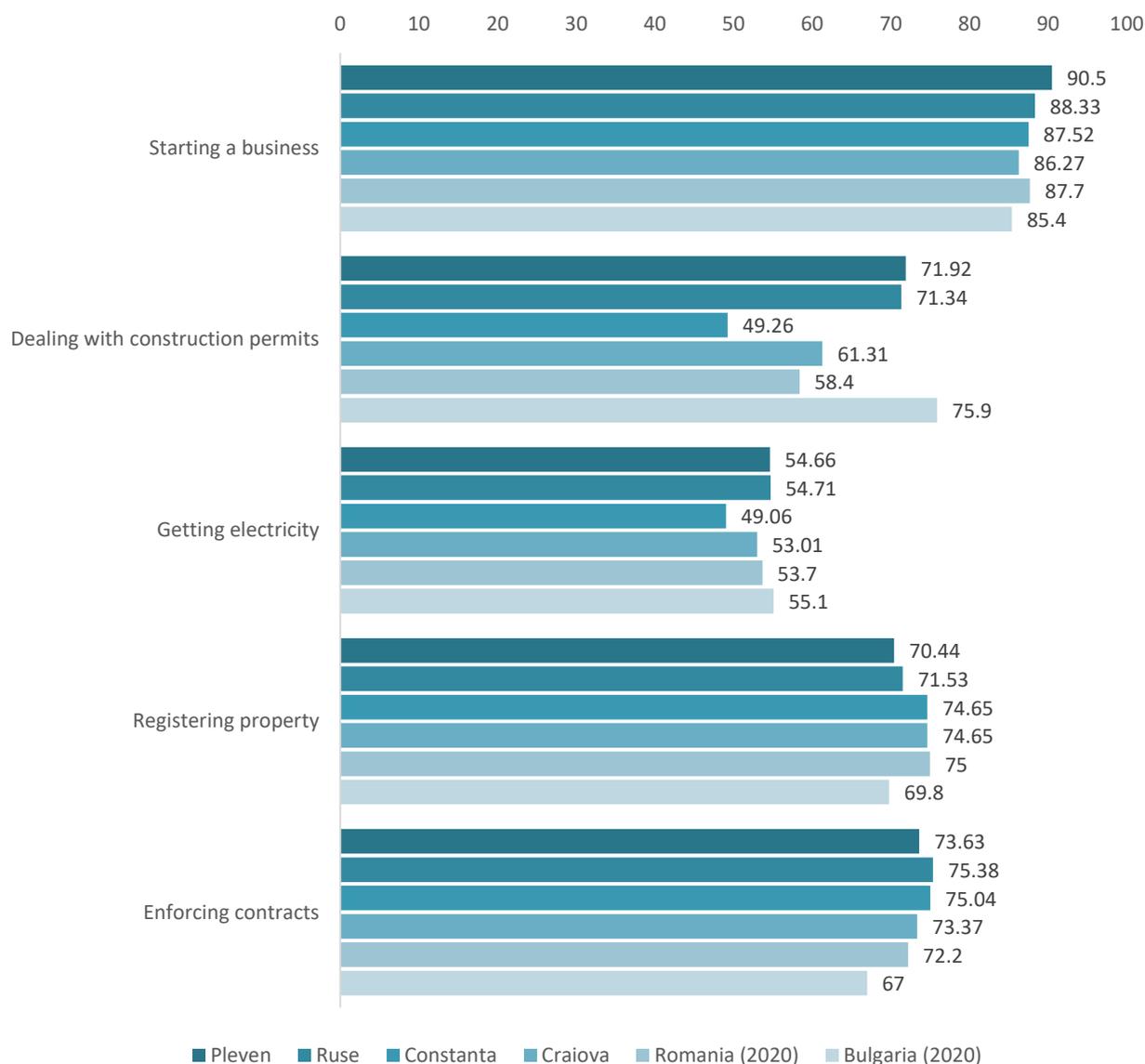
Despite the fact that none of the cities analysed excels in all five indicators measures and that practices differ, sometimes massively, from one city to another and from one country to another, each country has cities that outperform the EU average in at least one area, indicating that there some steps have been taken in encouraging entrepreneurs in starting a business and that a transfer of good practices is desired especially in the territorially close cities in order to replicate what worked well in a certain case.

Among the six cities analysed in Bulgaria, Ruse leads in the areas of registering property and enforcing contracts. In Romania, Craiova stands out for its good practices in construction permitting. For example, in Ruse, new companies need to inform the municipality about the type of activity they would perform. In Craiova, compared to the rest of the country where the normal period is 12 days, it takes 25 days to register a business. Electronic filing of the company registration has been implemented in all cities, however there are big differences - in Bulgaria, nearly three quarters of companies choose this option, while in Romania the percentage is around 1% - only in Constanta 24% of users choose this option.

⁵³ World Bank Group, *Doing Business in the European Union 2017: Bulgaria, Hungary and Romania, 2017*, pg. 5, 14-16, 18-19, 24-30 <https://www.doingbusiness.org/content/dam/doingBusiness/media/Special-Reports/DB17-EU-Report-ENG.PDF>



FIGURE 42 MAIN INDICATORS REGARDING THE EASE OF OPENING A NEW COMPANY IN ROMANIAN AND BULGARIA CITIES, 2017



2.8. TOURISM

Tourism is one of the most important economic fields for the region’s socio-economic development. It has an important role for the region, it provides high externalities for retail, local services and for the improvement of the quality of its resident ‘s life, but in the same, it is very much influenced by the local conditions such as transport, leisure and cultural services. Furthermore, not only direct tourism policies influence the domain, but all the other socio-economic policies have a smaller or bigger impact on its development.

The needs in the sector cover issues such as labour force (skilled workers), infrastructure (qualitative accommodation, enough beds, good road infrastructure) and investments in the



attractiveness of the place. All missing points from the above-mentioned needs undermine the potential of a certain area to become a catalyst in the region.

The cross-border area has a high tourism potential which is insufficiently developed in many of the analysed counties and districts. There is potential to develop all types of tourism, due to both natural and anthropic heritage. There are various tourist attractions for each county/district, as well as different possibilities for tourism development.

TABLE 4 ROMANIA AND BULGARIA KEY TOURISM ASSETS PER COUNTY/DISTRICT

	COUNTY/DISTRICT	KEY TOURISM ASSETS
Romania	Mehedinți	<p>Natural assets - Porțile de Fier Natural Park (Ramsar site), National Park Domogled-Valea Cernei, Carstic complex Ponoarele, Natural Park and Geopark Mehedinți Plateau</p> <p>Cultural assets - Ada Kaleh Fortress, Archaeological Complex Drobeta Turnu-Severin, many churches and monasteries, as well as many castles, palaces, cule etc.</p>
	Dolj	<p>Natural assets - Dăbuleni dunes, Ciuperceni-Desa birds reservation, Ciurumela Tunari -Piscu Vechi forest, some mineral springs and lakes.</p> <p>Cultural assets - churches and monasteries (Mănăstirea Jitianu (1658), Mănăstirea Coșuna (Bucovăț - 1572); Biserica Sf. Nicolae, Bistreț; Mănăstirea Sadova (1663), Biserica Sf. Nicolae (Municipiul Craiova, 1506-1512), Biserica Sf.Voievozi (Almăj,1787-1789), Ansamblul Arhiepiscopiei Craiovei și Mitropoliei Olteniei, 1780, Biserica de lemn Toți Sfinții</p> <p>Dacic fortress Coțofenii din Dos, Archeological site Calopăr-Bâzdana.</p> <p>Palaces, castles, buildings such as Casa Glogoveanu (1802), Casa Băniei (medieval art).</p> <p>Cule - Cula Poenaru (Almăj 1833) Cula Izvoranu-Geblescu (Brabova XVIIIth century); Cula Cernăteștilor, (XVIIIth century, Cernătești).</p>
	Olt	<p>Natural assets - Braniștea Catârilor Natura 200 site, Iris-Malu Roșu- Spa site, Natura 2000, Peony reservation of the Academy, some thermal springs</p> <p>Cultural assets - archaeological sites - Sucidava, Acidava, Archaeological park Gumelnița</p> <p>Monasteries and churches - Strehareț Hermitage (1671), Clocociov Monastery (1645), Călui Monastery</p> <p>Fortresses, museum, memorial houses</p>
	Teleorman	<p>Natural assets - 5 protected areas and 11 Natura 2000 Sites.</p> <p>Cultural assets - Turris fortress ruins, Palaeolithic reservation Ciuperceni, Zimnicea geto-dacic fortress, cule, museum and memorial houses.</p>
	Giurgiu	<p>Natural assets - Natural Park Comana with 3 natural reservations.</p> <p>Cultural assets - 542 historical monuments and 109 sites in the National Archaeological Repository.</p>
	Călărași	<p>Natural assets - 5 protected areas and 13 Natura 200 sites.</p>



	COUNTY/DISTRICT	KEY TOURISM ASSETS
Bulgaria		Cultural assets - Cătlui Historical Monument (1560-1577), Mănăstirea Historical Monument (1648), Archaeological Sites- Păcuiul lui Soare and Durostorum, many architectural buildings.
	Constanța	Natural assets - Techirghiol lake, Hagieni Forest, Agigea Natural Dunes Reservation, Natural Complex Gura Dobrogei, Oltina Lake, Hârșava Channels etc Cultural assets - Histria, Tomis and Callatis Fortresses, Big Mosque in Constanța, Roman Mosaic edifice, many museums 100 km of coast- 13 spas of national importance
	Ruse	Natural assets - many protected areas, natural park Rusesnki Lom, 8 Natura 200 sites, Orlova Chuka Cave Cultural assets - 260 cultural monuments, Archaeological Reservation Rock Churches in Ivanonovo, Cerven Medieval town, many museum and memorial houses
	Silistra	Natural assets - Srebarna Biosphere Reservation, also a RASMSAR site, 14 Natura 2000 sites, Karakuz Natural area Cultural assets - Dorustorum Drastar- Silistra National architectural and architectural reservation, many art, architecture and archaeological sites
	Vidin	Natural assets - 19 Natura 2000 Sites, Belogradchik Rocks, Stone forest on the south of the Danube, Măgura Cave, Rabisha Lake, Chuprene Biosphere Reservation Cultural assets - Vidin-Baba Vidin Fortress, Ancient Ratsiaria, Belogradchik fortress
	Vratsa	Natural assets - 15 Natura 2000 sites, Vrachanski Balkan Natural Park, Shopkata Waterfall, Cultural assets - Vratitsa Medieval Fortress, Ship Museum Radeski, Memorial Complex Botev Path, churches and monasteries
	Montana	Natural assets - Vrachanski Balkan Natural Park, Haiduscki Waterfall, Mramorna Cave, 13 Natura 2000 Sites Cultural assets - 29 natural importance sites, Old town Montanezium, Kaleto Fortress etc
	Pleven	Natural assets - Natural Park Persina, Cernelka Natural Reservation, National Park Kaylaka etc. Cultural assets - Roman town Dumum, Lucernia Bourgon roman fortress, Ukus Roman settlements, wine museum and many other museum, architectural and archaeological sites
Veliko Tarnovo	Natural assets - Hristovski Waterfall, Musinka Cave, Ponorite Geocomplex, Emen Canyon, The Old Oak Reservation Cultural assets - 140 national importance sites, Archaeological Reservation Nicopolis and Istrum, Kykiup old Roman town, Roman Nove town, Tsarevets medieval fortress, Pokrov Bogorodichen Monastery, Arbanassi architectural	



	COUNTY/DISTRICT	KEY TOURISM ASSETS
		reservation - UNESCO Heritage, many other museums, churches and archaeological sites.
	Dobrich	<p>Natural assets - Natural and archaeological reservation Kaliakra, Taukliman (The Birds 'Gulf), Cape Cirakaman, Dalboka- mussel farm, Bolata and Baltata Reservations, Shabla Lake, Durankulak Lake</p> <p>Cultural assets - Cybele Temple, Durankulak Archaeological Park, Shabla Lighthouse, many churches, the Museum Dobrogea and the Sea</p>

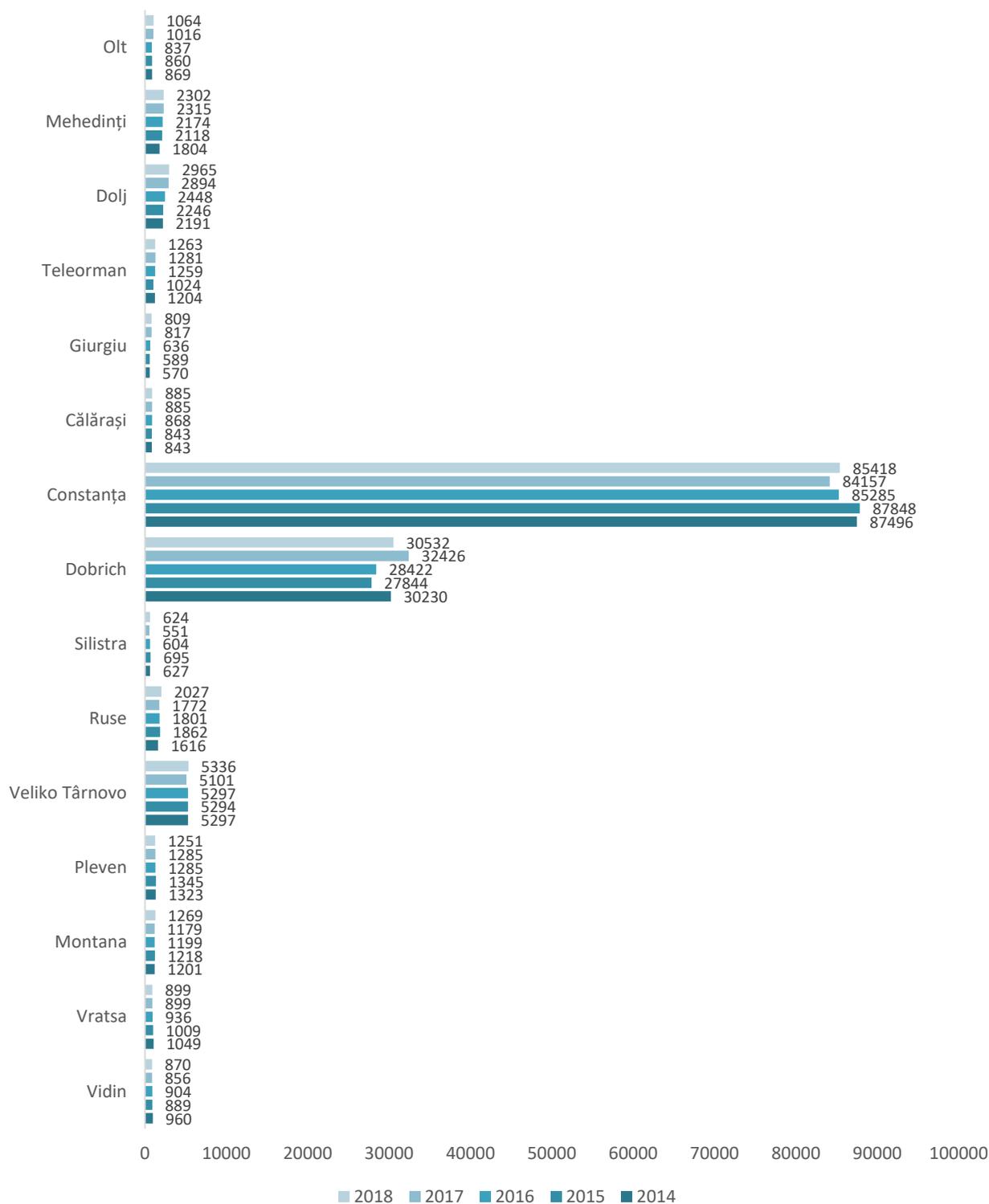
Source: Adaptation after Spatial project, Common Strategy for Sustainable Territorial Development of the cross-border area Romania-Bulgaria

According to the National Tourism Zoning Concept of Bulgaria, 2014, there are three tourism regions: Danube, Stara Planina and Varna (North Black Sea coast) that are part of the programme area and that involve the above-mentioned districts. Danube region is a destination with its own brand for cultural and cruise tourism based on the rich cultural and historical heritage and various urban areas. It is centred also on practicing eco and sports activities along the Danube River. Stara Planina region is a destination with its own brand for mountain, ecological, wine and creative tourism based on traditions in viticulture and wine making. It has an attractive and preserved nature, history, creativity of the society, an architectural environment, a positive attitude towards health tourism, a sense of regional identity and belonging. Varna region (North Black Sea Coast) is perceived as a destination with its own brand for sea recreational tourism, year-round health, cultural and business tourism.

In order to understand the degree to which all these assets count in the overall tourism phenomena, there is need to analyse different tourism indicators and to assess the degree to which the tourism could be developed more in the area.



FIGURE 43 TOURIST ACCOMMODATION CAPACITY BETWEEN 2014-2018 BULGARIA -ROMANIA, NUMBER OF BEDS



Source: National Institute of Statistics

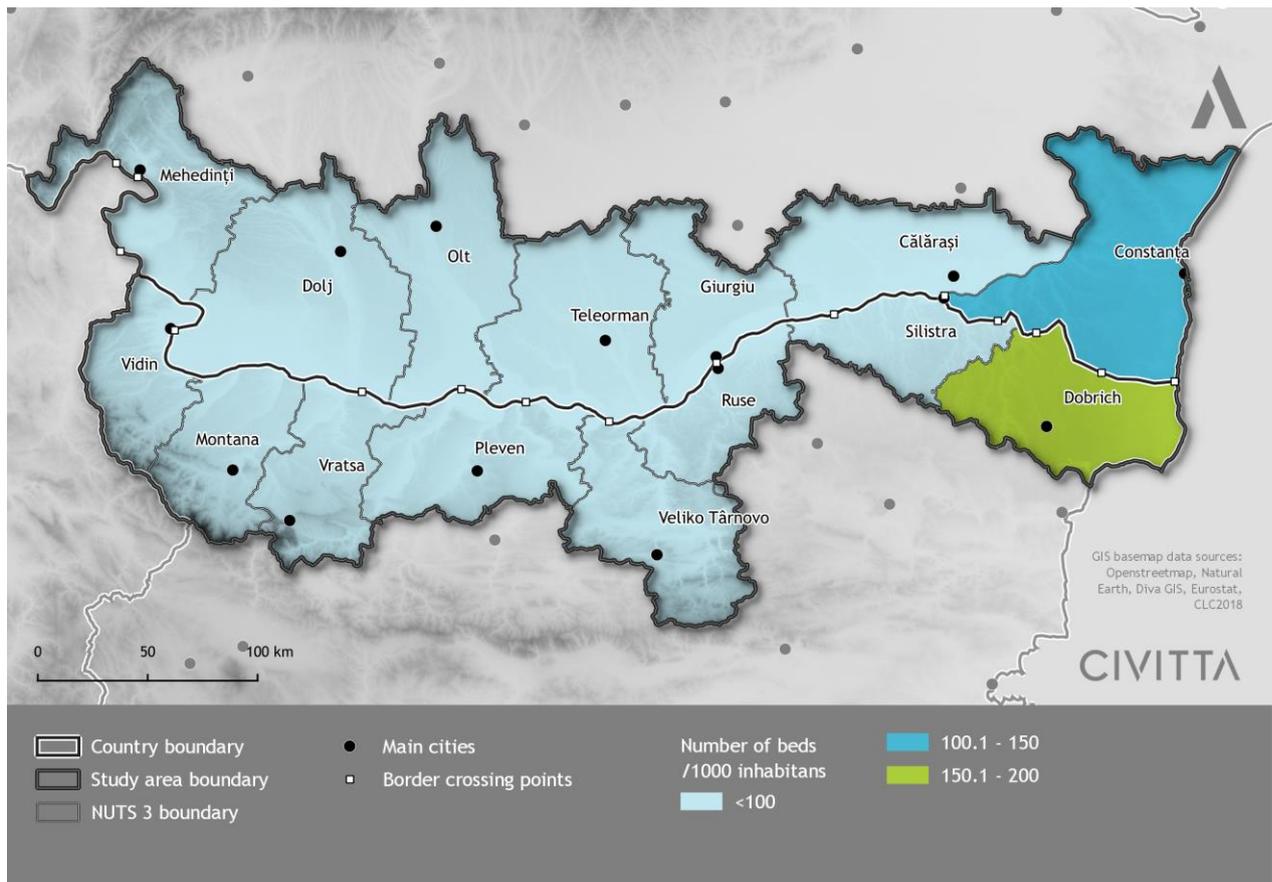


The greatest number of beds can be found on the coast, Constanta and Dobrich, the first one with a decrease in the number of beds in 2017, and a recovery phenomenon in 2018, and Dobrich with a significant increase in 2017 (almost 5000 beds). It can be observed that the two counties/districts mentioned above are polarising the tourist activities, Constanța has 90% of the accommodation capacity for the Romanian area and Dobrich has 71% of the Bulgarian one. Only Veliko Tarnovo touches 12% for Bulgaria on the second place and Dolj (3%) for Romania.

The dynamics of the tourist accommodation capacity is the result of the tourist attractions existing in the area and their marketing. The situation is common to all coastal areas, since in many parts of the world the sea is the most important factor in attracting many tourists during summer season. The polarising areas have many accommodation structures with also, many beds.

On the other side, if we take Teleorman as an example, we can assess that the major accommodation facilities are located mostly in the urban areas; there are only 26 accommodation facilities in the entire county, with an average of 48 beds per facility. In Silistra, the district with the minimum accommodation capacity in the CBC area, 624 beds, there are only 16 accommodation facilities and their number has decreased in comparison to 2014.

MAP 10 SPECIALISATION IN TOURISM SERVICES 2018 - NUMBER OF BEDS/1000 INHABITANTS



Source: National Institutes of Statistics, own calculation

Looking at the specialisation in tourism services - the number of available beds reported to the number of inhabitants, the polarising areas continue to be Dobrich with 175% (very high density of tourism activities) and Constanța with 125% - the highest density of tourism activities in



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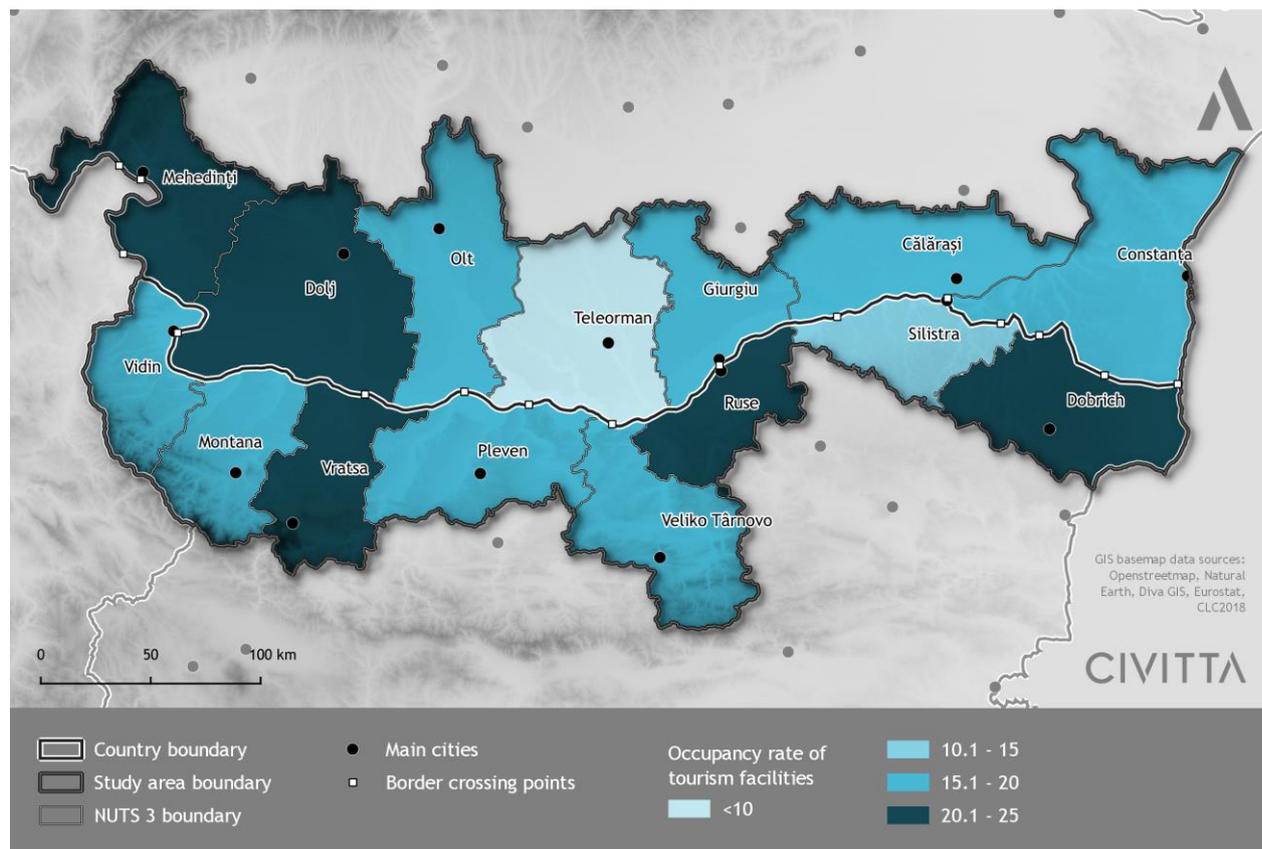
GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA

relation to the population. All the other areas register very low values. The lowest rates are in Olt County, Giurgiu and Călărași. In comparison, their pair-districts on the Bulgarian side of the border have at least twice more beds/ 1000 inhabitants. On the other hand, the insufficient touristic accommodation services could be a starting point for entrepreneurial initiatives in areas with touristic potential.

MAP 11 OCCUPANCY RATE OF TOURISM FACILITIES 2018



Source: National Institutes of Statistics, own calculation

The occupancy rate indicator considers both the accommodation capacity and the number of overnights spent by tourists, also by reporting them to the 365 days of a year.

Values over 20 are registered in Vratsa, Dobrich, Ruse, Dolj and Mehedinți and the lowest value (4) is recorded in Teleorman. The best performing counties are those that spread their activity all over the year. The underperforming counties/districts, such as Teleorman, are not capable of attracting enough tourists, even considering the low number of beds available.

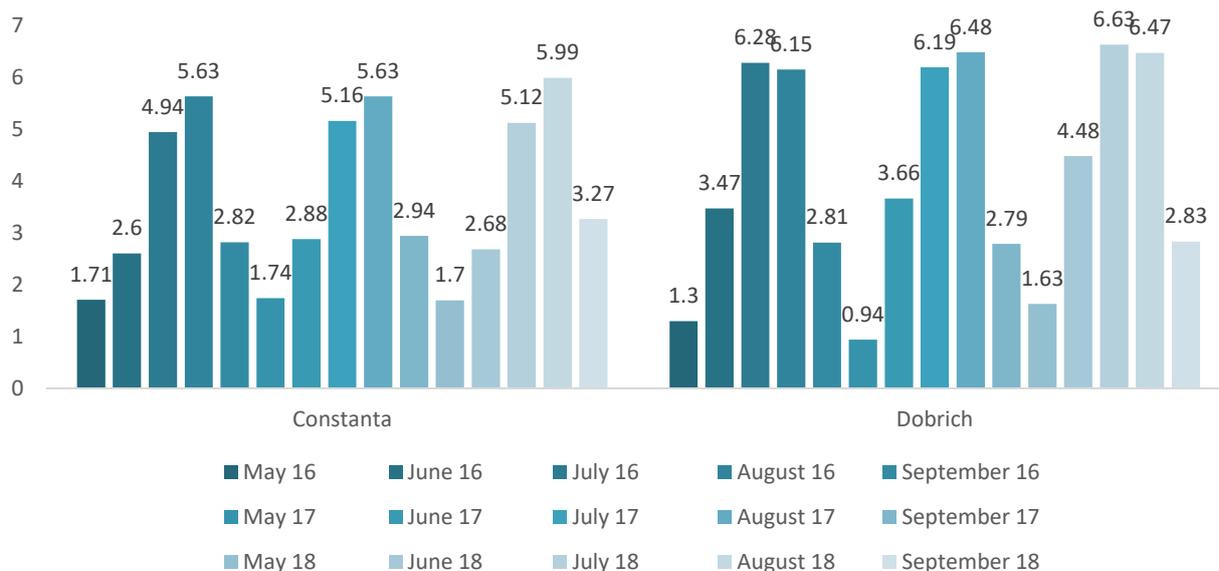
The highest occupancy rates were registered in Mehedinți (24.92), on the Romanian side, and in Ruse (24.82), on the Bulgarian side. Mehedinți is attracting more tourist during the year with its two main urban centres, Drobeta Turnu Severin and Orsova and its protected area Portile de Fier, and Ruse with its natural heritage objectives such as Orlova Chuka Cave and the attractions offered by the city of Ruse, as well as thanks to the business opportunities, which support the development of business tourism.

When analysing Constanta and Dobrich from the point of view of the summer season occupancy rate, we can observe that Constanta manages to score better during the months of May and



September, compared to Dobrich, which ranks better between June and August. Both Constanta and Dobrich have a peak in July/ August. When comparing the evolution, we can notice an increase of the average occupancy rate for both Constanta (3.54 to 3.75) and Dobrich (4.00-4.41) between 2016-2018.

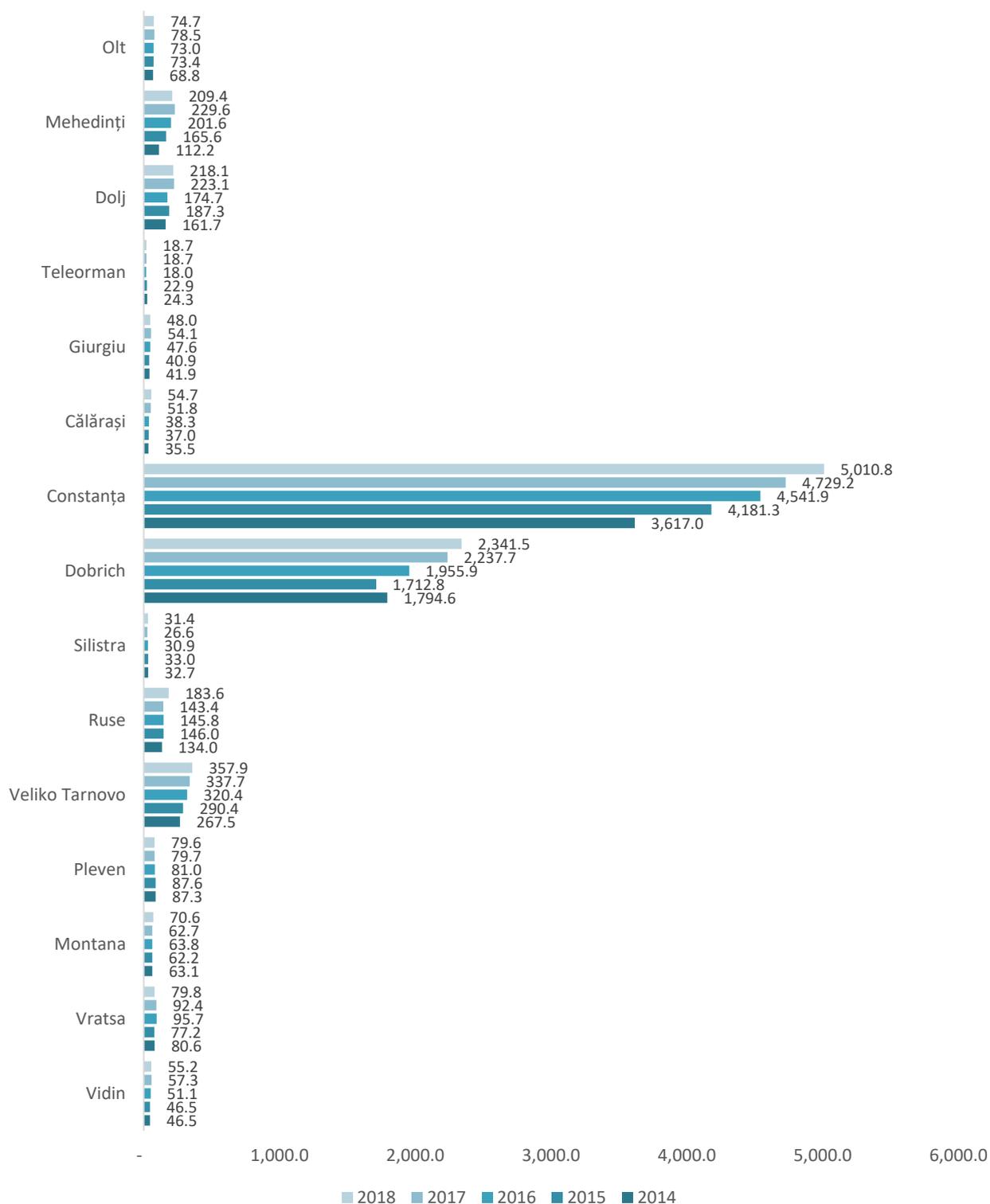
FIGURE 44 SUMMER OCCUPANCY RATE EVOLUTION BETWEEN 2016-218 IN CONSTANTA AND DOBRICH



Source: National Institutes of Statistics, own calculation



FIGURE 45 DYNAMICS OF THE TOTAL OVERNIGHT SPENT BETWEEN 2014-2018, BULGARIA AND ROMANIA (THOUSAND NIGHTS)



Source: National Institutes of Statistics



With regard to the number of overnights, Constanța and Dobrich lead again, with an increase for both counties/districts over the last years. Constanța increased its number with 1,393,786 nights since 2014 and Dobrich with 546,904 nights. The main factors for the increased touristic attractiveness include better marketing, better services and proximity to the seaside.

On the other hand, a constant decrease can be seen in the overnights in Teleorman and Pleven. Silistra registered a significant decrease in 2017 but managed to recover in 2018. In Teleorman and Silistra, the numbers of overnights spent do not overpass 35,000 overnights/year.

TABLE 5 AVERAGE DURATION OF A STAY IN 2018, ROMANIA-BULGARIA AREA, NUMBER OF NIGHTS

COUNTY RO	AVERAGE DURATION OF A STAY	DISTRICT BG	MEDIUM DURATION OF A STAY
Constanța	3.82	Vidin	1.46
Călărași	2.45	Vratsa	2.11
Giurgiu	1.79	Montana	2.02
Teleorman	1.76	Pleven	1.67
Dolj	1.84	Veliko Tarnovo	1.66
Mehedinți	2.13	Ruse	1.72
Olt	2.26	Silistra	1.46
		Dobrich	4.87

Source: National Institutes of Statistics, own calculation

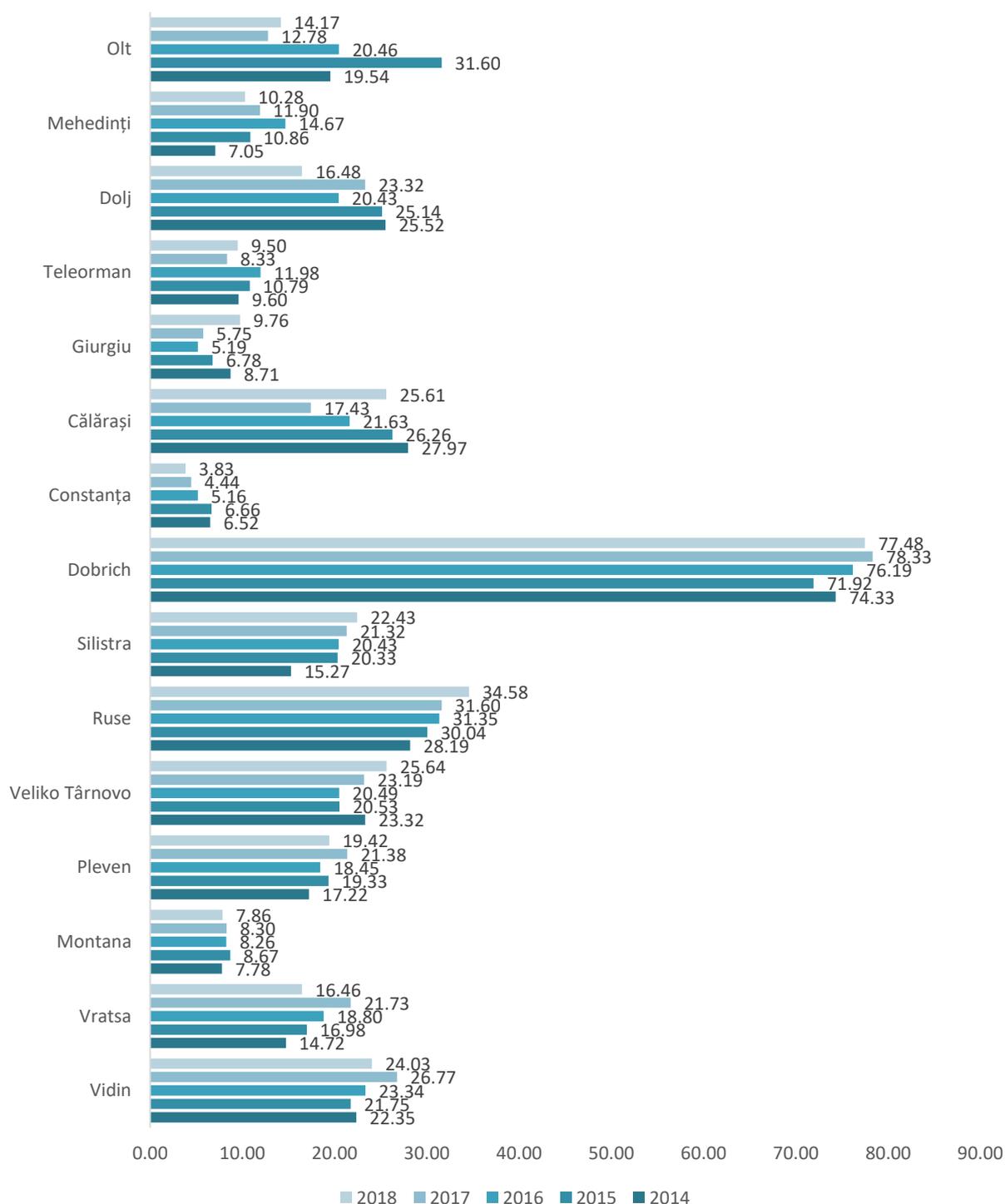
The average length of a stay was analysed in order to understand the type of tourism that is dominant in the area. Dobrich (4.87 nights) and Constanța (3.82) are the leaders, as they promote a tourism suitable for longer stays, focusing on summer vacations and leisure.

The other counties/districts rely more on business or transit tourism, which implies shorter stays, with less overnights. Vidin and Silistra register very short stays, with an average of 1.46, as well as Teleorman on the Romanian side, with 1.76. The rather low average duration of the stay in the Romania-Bulgaria cross-border territory could also be due to the weekend/ city-break type of tourism, favoured by the different touristic attractions in the territory and by the overall fragmented touristic offer, which offers few opportunities for longer stays.

The analysis of the number of foreigners visiting the cross-border area shows that the Bulgarian side leads in terms of overnights spent by foreigners - almost 80% of the tourists coming to Dobrich are foreigners. This is the result of the well-implemented tourism strategy in the previous years (National Strategy for Sustainable Development of Tourism in Bulgaria 2009-2013), competitive prices, but also good services which attract people from abroad. The access is also enabled by the presence of the Varna airport (almost 1.94 million passengers in 2017) at about 50 km.



FIGURE 46 EVOLUTION OF THE NUMBER OF OVERNIGHTS SPENT BY FOREIGNERS 2014-2018, BULGARIA-ROMANIA, % FROM TOTAL NUMBER OF TOURISTS (NUMBER OF NIGHTS)



Source: National Institutes of Statistics



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On the other side, in Constanța only 3.83% of the total number of nights are spent by foreigners. The area focuses more on national tourists, who come mainly for shorter stays, especially due to the good accessibility from the capital city and the municipality of Constanța. The existence of the airport in Constanța (only 127,635 passengers in 2017) could help attracting more foreign tourists, by increasing the number of international flights during the summer season, at affordable prices.

From the territorial and touristic perspective, the Romania-Bulgaria cross-border area is split between the Black Sea coast, with a more developed tourism and the rest of the territory. The Black Sea coast concentrates the highest number of tourists; however, it is mostly attractive during the summer season. During the rest of the year, the statistics show a worrying decrease, indicating a lack of policies for supporting extra-seasonal tourism. In the other counties and districts of the area, there are tourist attractions, but they are not valorised at their real potential and the touristic offer is fragmented. There were initiatives for cross-border cooperation for the marketing of the cross-border attractions, but the lack of connectivity translated into a stagnation of the tourism phenomenon.

2.9. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

The Romania-Bulgaria cross-border region has remained one of the least developed territories in the European Union, the economic performance of the area being well below the EU average. However, the region has experienced a positive GDP growth of 33.7% in 2017 compared to 2012, an increase supported mostly in the Romanian counties.

One of the most visible characteristics of the region is the disproportionate level of economic development between the counties and districts that comprise the area. In terms of economic strength, the Romanian part of the area is considerably ahead the Bulgarian one. The analysis of the GDP in the region shows that the two participating counties Dolj and Constanta are producing more than all the other counties and districts altogether.

The unbalance is even more striking when one compares the counties' and districts' performance to the area average, with the more developed counties and districts improving their relative performance and the less developed counties and districts deteriorating it. Compared to the cross-border area average GDP, there are three counties all located in the Romanian area which perform better than the average. Constanta is the first, with 425.6% in 2017, followed by Dolj and Olt, while Vidin, the lowest performing county, registered only 17.4%.

Thus, in terms of contribution to the GDP of the cross-border area, the Romanian ration significantly exceeds the Bulgarian side. This increased over the years to reach 76.9% in 2017, while the Bulgarian one had an opposite tendency, steadily decreasing to 23.1% in 2017. The numbers point towards major territorial imbalances within the area, leaving place to increase cohesion and reduce the development gap.

The cross-border area share in each nation's GDP is low and has decreased over the period, indicating a limited contribution to the national economies weighted by its territorial size and population, but on the other hand, signalling that there is an untapped potential that could be addressed.

As regards the area's economic structure, there are three main economic sectors - agriculture, industry, services, on the Bulgarian side, adding Retail and Construction under Others category in the Romanian side. Of all these sectors, agriculture is better represented in the cross-border area compared to this sector's contribution to each of the two national economies, reaching 11.4% in Bulgaria in 2016 (4.7% national level) and 7.4% in Romania in 2016 (4.5% national level). Around 30% of GVA generated in the Agriculture sector in Bulgaria is produced in the cross-



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border area, a ratio that maintained constant throughout the period, while in Romania this sector's share decreased with 1 percentage point from 2012, reaching 18.8% in 2016.

Even though there is a general dominance of the Services sector, the cross-border area in both Romania and Bulgaria contribute with around 10% at the national economies' services sector. This is lower than the area's contribution in the Industry sector, where it contributed with 13.9% in 2016 in Bulgaria, and with around 12.6-8% in Romania.

As a key element of growth, the labour market in the region did not experience any significant improvement, with an increase in the number of employees of only 1.6%, in 2017, compared to 2012. As in other topics, the picture of the area is not homogenous, the discrepancy being manifested at this level as well. While in Romania the number of employees grew by 6.6% between 2012 and 2017, in the Bulgarian side of the area, the number decreased constantly, in 2017 having with -5.2% less employees.

Contrary to the general trend, according to which the economically less developed regions, which are also less urbanized, have an important share of the active workforce employed in agricultural sector, in the Romania-Bulgaria cross-border region, agriculture hires the lowest share of employees. The Industry sector gradually reduced its number of employees, while the Services sector contributes with more than a third to the total number of employees. However, agriculture plays an important role in the employment in the Bulgarian side of the cross-border area, as well as one specific county in Romania, Călărași. Therefore, for such areas where agriculture is a major employer, joint interventions aiming to modernize and increase the efficiency are sought, especially in the light of the new policy objectives, targeting an economy that does not harm the environment on the one hand, and seeks to increase the innovation capacity of more actors.

On the opposite side, the Services sector, together with other activities (i.e. retail and construction), employ most of the total number of employees and are on an increasing path. This sector has the highest wages, becoming more attractive for employment. Given also its lower importance in the national economies' services sector, this indicates that the services sector in the region is very labour intensive, with a low added value. Such a model does not lead to a sustainable growth model, nor it contributes to a favourable environment for the knowledge economy.

As regards tourism, the Romania-Bulgaria cross-border area is split between the Black Sea coast, with a more developed tourism and the rest of the territory. The Black Sea coast concentrates the highest number of tourists; however, it is mostly attractive during the summer season. During the rest of the year, the statistics show a worrying decrease, indicating a lack of policies for supporting extra-seasonal tourism. In the other counties and districts of the area, there are tourist attractions, but they are not valorised at their real potential and the touristic offer is fragmented.

From a labour market perspective, there are noticeable differences in labour market performance across the region. The gap is particularly wide between the most developed counties in the region and the least developed. Along with their higher participation rates, Constanta and Dolj employ the largest number of persons, whereas Vidin and Silistra registered a decrease in the last years. This issue can point towards (un)attractiveness and increasing polarization in terms of workforce availability, but in the same time it can be a supporting fact for the encouragement of employee mobility and for the existing human resource capital to be better exploited by increasing skills and competences. This way, people could better use the knowledge-intensive products and services in those sectors and specific areas where complementarities are identified.



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The modest flow of information and knowledge between the two regions of the area is enlarging the differences in research and innovation activities. Therefore, efforts should be made to create functional and efficient communication channels. The increased flow of knowledge and information through transnational channels may generate positive results in terms of strengthening the institutional cooperation and in elaborating governance instruments in order to foster these activities. This is added to the need to develop skills and competences in order to make possible the generation and use of the results of research and innovation activities, and their transfer into economy to tackle societal challenges.

The creation of a stimulating environment for research and innovation activities is dependent on promoting adequate policies which are not in place in many parts of the region. There is also a limited level of coordination between national and regional institutions with respect to innovation and entrepreneurship support in the Romania-Bulgaria cross-border area. These, added to additional labour market problems such as migration of highly qualified workforce and lower accessibility, pose a series of challenges for the SMEs in the region, whose development represent a key pillar in fostering a competitive and sustainable socio-economic environment.

The number of enterprises has increased in the cross-border area by 6.1% since 2013, with the Romanian side witnessing an increase three times higher than the Bulgarian side, yet half less than the national value in Romania. Although the growth rate was low, the companies located in the cross-border area increased their turnover over the period 2012-2018 by 24.6% (from 34.1 mil. EUR in 2012 to 42.5 mil. EUR in 2018). As in other aspects, Constanta and Dolj were the best performers, having generated constantly a turnover that is larger than the turnover in the whole cross-border area, distinguishing as engines of growth.

Microenterprises account for the largest share of active enterprises in all counties and districts, similar to the national level situation. Although microenterprises can provide employment opportunities in a large variety of economic sectors and in different types of regions, they still indicate a reduced ability of regional economies to support the growth and development of these types of companies as to become more competitive and resilient.

On what regards competitiveness, both Romania and Bulgaria experienced quite an improvement over the years, although they still rank poorly among the EU28 countries. For the 2018-2019 edition of the *Global Competitiveness Report* issued yearly by the World Economic Forum, Bulgaria ranks 41st out of 141 countries analysed, while Romania ranks 51st. Compared to 2012-2013, both countries improved their performance: Bulgaria advanced 21 positions and Romania 27 positions. The cross-border area follows the same path as the national economies, so there are still numerous issues to be solved in the coming period: such as skills, product market, financial system as well as innovation ecosystem maturity.

Furthermore, the competitiveness of the region is held back also by the slow productivity growth. Labour costs, in Romania and Bulgaria both, have increased to a very high extent from 2012 to 2018 - 65,9% in Romania and 58.8% respectively, compared to 11.8% EU28 level. Additionally, the gross wages have increased too, in the Romanian counties being considerably higher than in the Bulgarian ones. However, they are also lower than the national average in both countries, even in Constanta, the most developed county in the area. This means we cannot say that their competitiveness is eroded by higher labour costs than the rest of the country. Nevertheless, this situation makes the two regions less attractive for companies, posing significant difficulties to employers and their ability to retain qualified workforce and still make a profit.

Continuing with innovation, the indicators used to establish the Regional Innovation level of EU regions indicate that both sides of the border perform badly. In 2019, the situation did not change much, comparing to 2012: in Romania, all regions in which the counties in the cross-border area are located have been included in the “modest innovator low” group, while in



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Bulgaria, Severzapaden belongs to the same group and the other two regions (Severentsentralen and Severoiztochen) upgraded their performance into the group of “modest innovator medium”.

The counties in the cross-border area have some of the lowest values of expenditure on R&D in Romania, with a few exceptions, such as Olt, Dolj and Constanta, with the latter two having large universities and research institutes within their territory, while in Olt, there is a large manufacturing company investing massively in R&D activities. In Bulgaria, in Pleven there is a medical university, and in Veliko Tarnovo an university centre, which might explain the territorial differences.

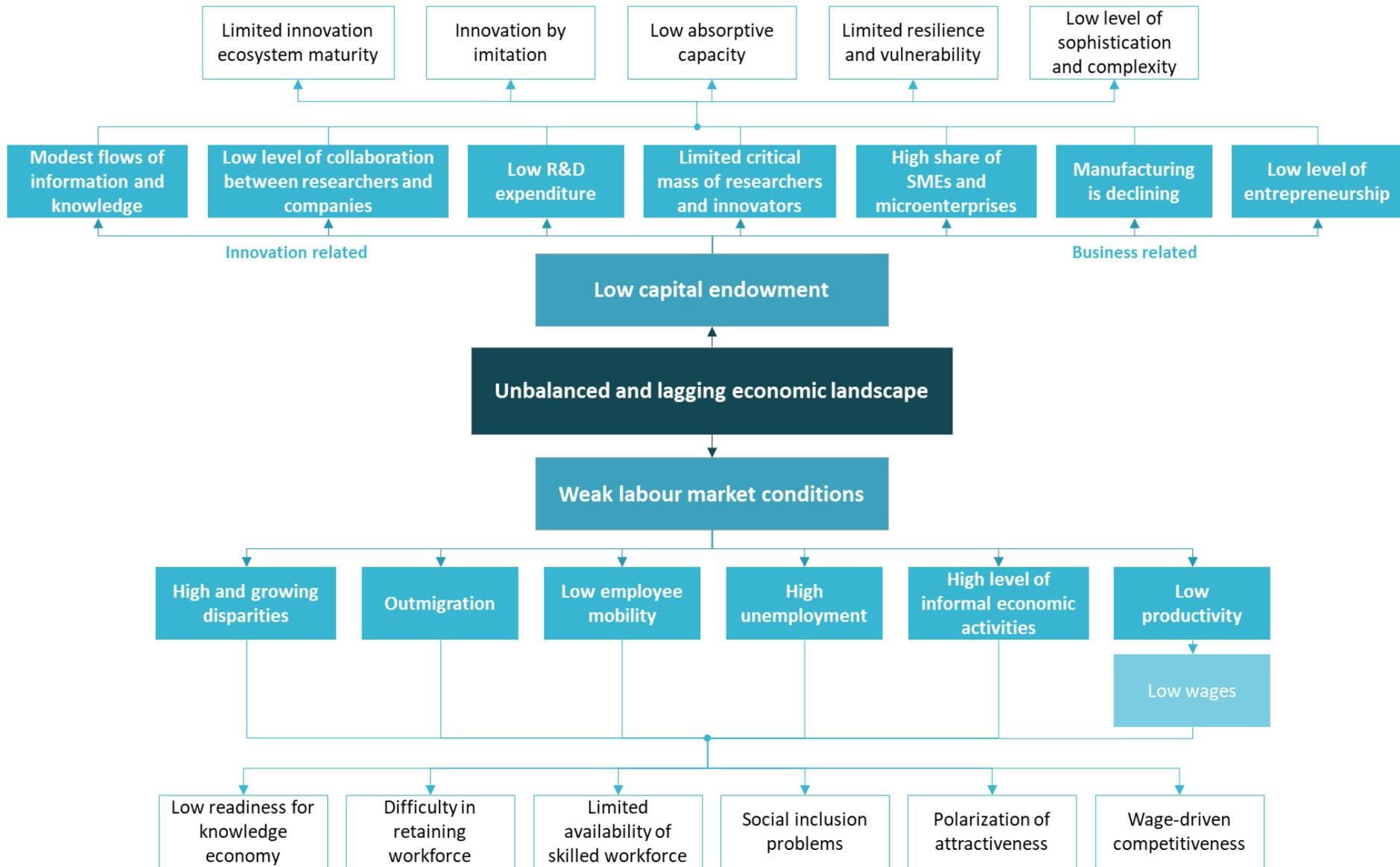
When it comes to the human factor, the same trend applies. The number of persons engaged in R&D activities slowly declined over the period (2012-2018), the Bulgarian side performing better than Romania, in this respect. This shows that a basic condition to further develop the cross-border region's competitiveness and innovation potential is the human resource. Significant measures need to be taken to retain people with education qualifications in science and technology, not to mention the need to increase the public spending in research and innovation in order to support future cross-border cooperation actions and investments.

Brain drain, along with people migration, have been emphasised also during the consultation process with relevant stakeholders, these two being ranked in top five most needs / problems of the cross-border territory that could be addressed by the future Interreg Romania-Bulgaria Programme. But the most important problem indicated by these stakeholders was the low innovation level and lack of framework conditions for innovation (low levels of technology readiness, business sophistication).

Enhancing an innovative and smart economic transformation has been a serious challenge on the territorial agenda of the European Union, especially in the period following the economic and financial crisis. All the indicators available to characterize the innovation level or potential of the cross-border region depict a very challenging situation and the conditions required to strengthen economic development based on innovation do not seem to be in place in the region.

The research and innovation sector are of special importance for the Romania-Bulgaria cross-border region, since it can create the added value needed in order to overcome the relative economic backwardness of the region as a whole. It is a challenge that partner countries must face in the future programming period.

PROBLEM TREE





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3. ENVIRONMENT

3.1. LANDFORMS, CLIMATE AND HYDROGRAPHIC RESOURCES

The main element in the region which shapes the entire analysed territory is the Danube, separating the Romania-Bulgaria cross-border area into two distinctive parts. Between Gura Văii (North of Drobeta Turnu Severin) and Călărași, covering a 566 km long area (the border between Romania and Bulgaria has 470 km in length), the Danube is collecting tributary streams from Bulgaria (Timok, Ogosta, Iskăr, Vit, Iantra) and Romania (Jiu, Olt, Argeș). These tributary streams contribute to the increase of the river flow by approximately 600 m³/s between Defileul Dunării and Oltenița. There are also three important Bulgarian islands in this area: Belene (41.1 km²), Kozlodui (6.1 km²) and Vardim (5.0 km²). The Călărași-Pătlăgeanca Danube segment has a length of 374 km where both riverbanks belong to Romania. Along this section, the Dobrogea Plateau is situated between the Danube valley in the west and the Black Sea in the north and east.

From another perspective, the Danube course in Romania and Bulgaria can be separated in three different sectors. The first one is the Baziaș-Drobeta Turnu-Severin sector, covering 144 km. It starts from the strait Porțile de Fier, on the south-western part of the Carpathians, where the Danube passes through an area with soft rocks and creates a valley that can reach even 5km in width (only Romanian territory). Then the river passes through an area with higher altitudes and harder rocks, by narrowing the valley to a few hundred meters. Following is the Drobeta-Turnu Severin-Călărași sector where the Danube decreases its speed, becomes asymmetrical and enlarges its valley by also forming small islands on both sides. The third sector covers only Romanian territory, from Călărași to Brăila. This is the area in which the Danube splits into two parts which enclose between them a large flood plain that can measure up to 20km in some parts.

Nearly all forms of relief mark the cross-border territory: hills, plateaus, valleys, plains, and floodplains, lakes. Most of the eligible area in Romania is situated in the so-called Romanian Plain. This consists of the plain of Oltenia, the Olt-Argeș Plain, the Bărăgan Plain, the Eastern Plain, and the Danube Valley. The specifics of the area are given by the presence of a high-density river network and its floodplain landscape. In Bulgaria, the landscape is dominated by the Danubian Plain, with the highest point, Tarnov Dyal (502 m), on the Shumen Plateau and an average altitude of 178 m. As a result of the rock weathering processes, the landscape is uneven with fertile alluvial plains along the Danube (Vidinska, Chernopolska, Zlatia, Belenska, Pobrezhie, Aidemirska) and hilly terrain in the remaining area, including the plateaus in the east. The valleys of the rivers Vit and Yantra divide the Danubian Plain into three parts - western, central and eastern. The topography of the plain is characterized by hilly heights and plateaus. Most of the heights and all plateaus are situated in the eastern part.

The climate is temperate continental with very hot summers, small amounts of precipitation, and cold winters marked by irregular intervals with strong snowstorms and frequent warming. Some climate influences can be found in the local context, respectively: the Mediterranean influence in the Mehedinți and Dolj counties, marine influences in Constanta county and Dobrich district, with strong contrasts between winter and summer temperatures. In the south-eastern part of the cross-border territory, some northern influences can be noticed, with cold air moving from northeast to southwest, as well as strong winds that bring very cold winters.

In terms of the Danube river, its hydrographic basin accounts for a total of 805,300km², with 221,700km² being on the Romanian territory (27.5% of the entire basin) and 46,930 km² on the



Bulgarian one (5.8% of the entire basin). The flow capacity of the Danube increases from the source area (1,470m³/s) to the mouth of the river and it has 5,300m³/s when it enters Romania at Baziaş and 6,515m³/s when it enters the Danube Delta.

3.2. NATURAL RESOURCES

The Romanian side of the territory holds several natural resources such as coal, marble, limestone, stone, and siderite. In the present, coal mining is carried out mainly on the surface. However, the process was once carried out in the mining areas of Livezile, Zegujani and Husnicioara. These locations are now in a process of closure. The production output has substantially decreased in the past period.

Stone and sand are produced in the Mala I and Mala II quarries in an integrated system by companies that also provide construction services (important granite reserves are present in the area).

There are underground crude oil reserves in Dolj county at Melinesti, Bradesti, Almaj, Simnicu de Sus, Ghercesti, Pielesti, Cosoveni, Malu Mare and Cârcea, part of them exploited and stored, part of them valorised by oil companies. Crude oil production is also present in the counties of Mehedinţi, Olt, Constanta, and Teleorman.

Bentonite, chrome ore, asbestos, limestone can be found in the Mehedinţi County. Natural gas reserves can be found at Isalnita, Ghercesti, Simnicu de Sus, Pielesti, and Cosoveni.

Mineral springs are present in the Olt county, representing an important factor for the development of tourism in the area. However, they are not valorised at their full potential.

In Bulgaria, there are insignificant sources of crude oil near Shabla (Dobrich district) and Dolni Dubnik (Pleven district). There is a considerable black coalfield near Balchik and Kavarna (6000-7000 kcal/kg) but exploitation is difficult due to its depth (1500-2700 m) and the five different water horizons that exist in the region.

In terms of fossil fuels, in 2009, Melrose Resources S.a.r.l. stopped production at its Galata natural gas field in the Black Sea, as the field had mostly depleted. This field was the only source of natural gas production in Bulgaria. However, Melrose once again began production at two offshore fields in the Black Sea in the latter part of 2009. The two offshore fields are:

- Kaliakra deposit - estimated reserves of 1.4 billion m³
- Kavarna deposit - estimated reserves of 0.7 billion m³.

There is also a gas field with limited potential near Vratsa.

The region is rather rich in minerals. 88% of Bulgaria's gypsum resources are found in Vidin district. High-quality limestone can be found near Ruse and Vratsa. The main fields of kaolin in Bulgaria are situated near the village of Senovo, Ruse district, with one of the biggest quarries and plants of the Balkans producing kaolin, limestone, dolomite, silica sand, fluorspar, and chamotte.

Solvay S.A. was the sole producer of fluorspar in Bulgaria. In January 2016, the company ceased mining at its fluorspar mine in Chiprovtsi because of the depletion of fluorite reserves, low demand, and low fluorspar prices. The activity of the mine will be completely stopped in the future, but the date for complete closure was not provided. When Solvay acquired the mine in 2011, it had the capacity to produce 50,000 metric tons per year of fluorspar (acidspars). Over the last years, the increases in Bulgaria's production of mineral commodities were moderate.



3.3. AGRICULTURAL LAND RESOURCES

Agriculture remains a traditional sector both in Bulgaria and in Romania, directly impacting the socio-economic processes in the two countries. In 2013, 74.18% (5,362,561 ha) of the total area of the cross-border region (7,229,089 ha) was represented by agricultural land. Most of the agricultural area (3,071,699 ha, that is 57.28%) is located on the Romanian side of the cross-border territory, while the rest of 2,290,862 ha is on the Bulgarian side. Compared to the European average (42% of all EU land area is covered by agricultural lands), the CBC area has a higher percentage of agricultural land.

The Romanian border territory is important for the agriculture at national level, representing approximately 28% of the total arable land. The agricultural land on the Romanian Danube border represents 78.12% of the total Romanian land resources. By far, the most agricultural county is Teleorman, with 86% of its land being used for agricultural purposes.

The main cultures are wheat, barley and two-row barley, maize, sunflower, vegetables and fruits. Between the new types of crops in the area, the crop of kiwi in Călărași county should be mentioned.

TABLE 6 LAND USE IN THE COUNTIES OF THE ROMANIAN BORDER, 2014

COUNTY	TOTAL HA	AGRICULTURAL HA	NON-AGRICULTURAL HA	%AGRICULTURE HA	%NON-AGRICULTURE HA
Constanța	707129	558153	148976	78.93	21.07
Călărași	508785	425798	82987	83.69	16.31
Giurgiu	352602	275611	76991	78.16	21.84
Teleorman	578978	497919	81059	86.00	14.00
Dolj	741401	585135	156266	78.92	21.08
Mehedinți	493289	293328	199961	59.46	40.54
Olt	549828	436515	113313	79.39	20.61
Total	3932012	3072459	859553	78.14	27.98

Source: National Statistics Institute, own calculation

The Bulgarian side of the cross-border region represents 52% of all arable lands in Bulgaria. The region is representative for its vineyards, accounting for more than 20% of the total vineyard fields in Bulgaria. The district of Dobrich is occupying the first place in the country in terms of agricultural land with 375,350 ha, out of which more than 88% are used. On the other hand, the district of Vidin ranks second in the country in terms of the amount of non-used agricultural land. The unused agricultural land in the district represents 7.7% of all unused agricultural land in Bulgaria and the highest rate within the district with 21.7%. From the new crops, the crop of goji berry found in Vratsa, Vidin and Veliko Tarnovo should be mentioned.

In terms of comparison between the agricultural sectors in the two countries, the last available comparable data are from 2013 (Table 7). As we can see, the agricultural lands have similar percentages in terms of arable land, most of them with values between 86-97%. The only exceptions are Mehedinți (64.14%) and Veliko Tarnovo (77.45%), which register lower values. Nevertheless, they have wider areas with pasture and meadow or orchards and fruit growing nurseries. In comparison, at the European level, the arable land accounts for the largest share



- 56%, followed by livestock grazing (25%), mixed crops (13.5%) and various permanent crops (5.5%).

TABLE 7 AGRICULTURAL LAND USE STRUCTURE ON THE CROSS-BORDER AREA, 2013

COUNTY/DISTRICT	TOTAL AGRICULTURAL LAND/HA	ARABLE LAND/HA	% FROM THE AGRICULTURAL LAND/HA	PASTURE AND MEADOW/HA	WINERIES AND WINE GROWING AREAS/HA	ORCHARDS AND FRUIT GROWING NURSERIES/HA
Constanta	558,153	484,154	86.74	58,693	11,563	3,794
Călărași	424,883	411,123	96.76	9,448	4,378	232
Dolj	585,135	488,805	83.54	71,455	17,334	785
Giurgiu	275,611	259,119	94.02	12,737	3,677	590
Mehedinți	293,338	188,141	64.14	92,685	5,563	6,990
Olt	435,943	388,603	89.14	32,867	7,484	4,949
Teleorman	498,636	454,603	91.17	36,793	7,267	63
Total Romanian Cross-border area	3,071,699	2,674,548	87.07	314,678	57,266	17,403
Vidin	202,753	184,702	91.10	16,437	1,296	318
Vratsa	242,295	174,562	72.05	66,929	538	266
Montana	271,736	253,882	93.43	16,450	957	447
Pleven	338,311	290,958	86	44,884	1,867	602
Veliko Tarnovo	308,874	239,221	77.45	67,512	1,466	675
Ruse	187,616	171,212	91.26	14,001	683	1,720
Silistra	169,632	146,962	86.64	17,934	946	3,790
Dobrich	369,840	330,598	89.39	37,765	313	1,164
Total Bulgarian cross-border area	2,290,862	1,973,184	86.13	299,367	8,245	10,066
Total cross-border area	5,362,561	4,647,732	86.67	614,045	65,511	27,469
Percentages	100	86.79	-	11.47	1.23	0.51

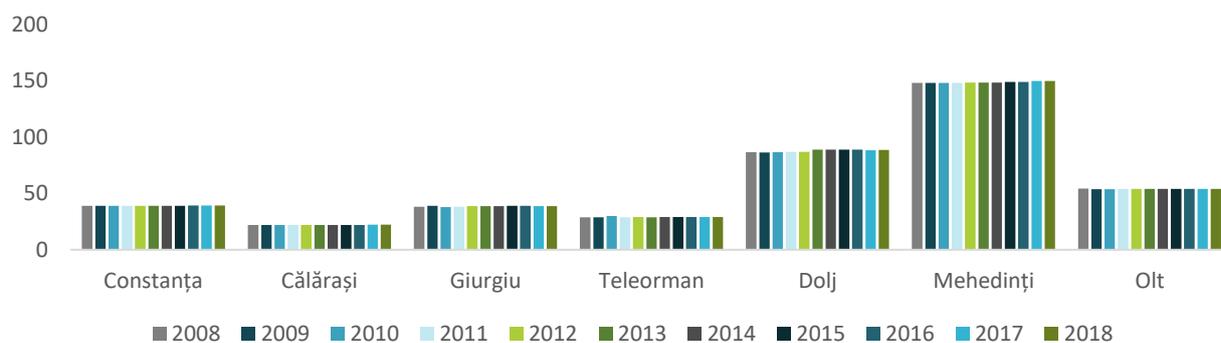
Source: [Spatial, Common Strategy for Sustainable Territorial Development of the Cross-Border Area Romania Bulgaria Project](#)

In terms of forestry, the entire CBC area sums up over 20%, with notable differences between the two countries (Romanian side - 15.97% and the Bulgarian side - 25.84%). We can observe that the forestry areas remain constant over time (Figure 47) or even increase in counties such as Constanța. Even though there is a general decreasing trend at national level, these areas seem to preserve one of their main resources, especially to protect them against landslides and floods. This is the official reported situation which does not take into account the illegal deforestation



that has been discussed both at national and European level (especially for Romania, where the European Commission has sent a letter of formal notice concerning the illegal logging).

FIGURE 47 EVOLUTION OF THE FORESTRY AREAS 2008-2018 IN THE ROMANIAN CROSS-BORDER AREA, THOUSANDS OF HA



Source: National Institute of Statistics

Global Forest Watch has been monitoring forests all over the world. According to their data, between 2001-2018, the tree cover loss was, as follows:

TABLE 8 TREE COVER LOSS IN THE CBC AREA 2010-2018

NO. CRT.	DISTRICT/COUNTY	TREE COVER LOSS 2010-2018 HA	% TREE COVER LOSS
1.	Vidin	2750	2.8
2.	Montana	521	4
3.	Vratsa	2210	2.7
4.	Pleven	2170	5.7
5.	Dobrich	1100	2.1
6.	Veliko Tarnovo	8190	4.9
7.	Ruse	1450	3
8.	Silistra	1380	2.3
9.	Total BG	19771	
10.	Teleorman	916	3.7
11.	Olt	1580	3.2
12.	Călărași	1720	8.7
13.	Giurgiu	807	2.2
14.	Constanța	679	2.5
15.	Dolj	3540	5.3



NO. CRT.	DISTRICT/COUNTY	TREE COVER LOSS 2010-2018 HA	% TREE COVER LOSS
16.	Mehedinți	3130	1.8
17.	Total Ro	12372	
18.	Total CBC	32143	

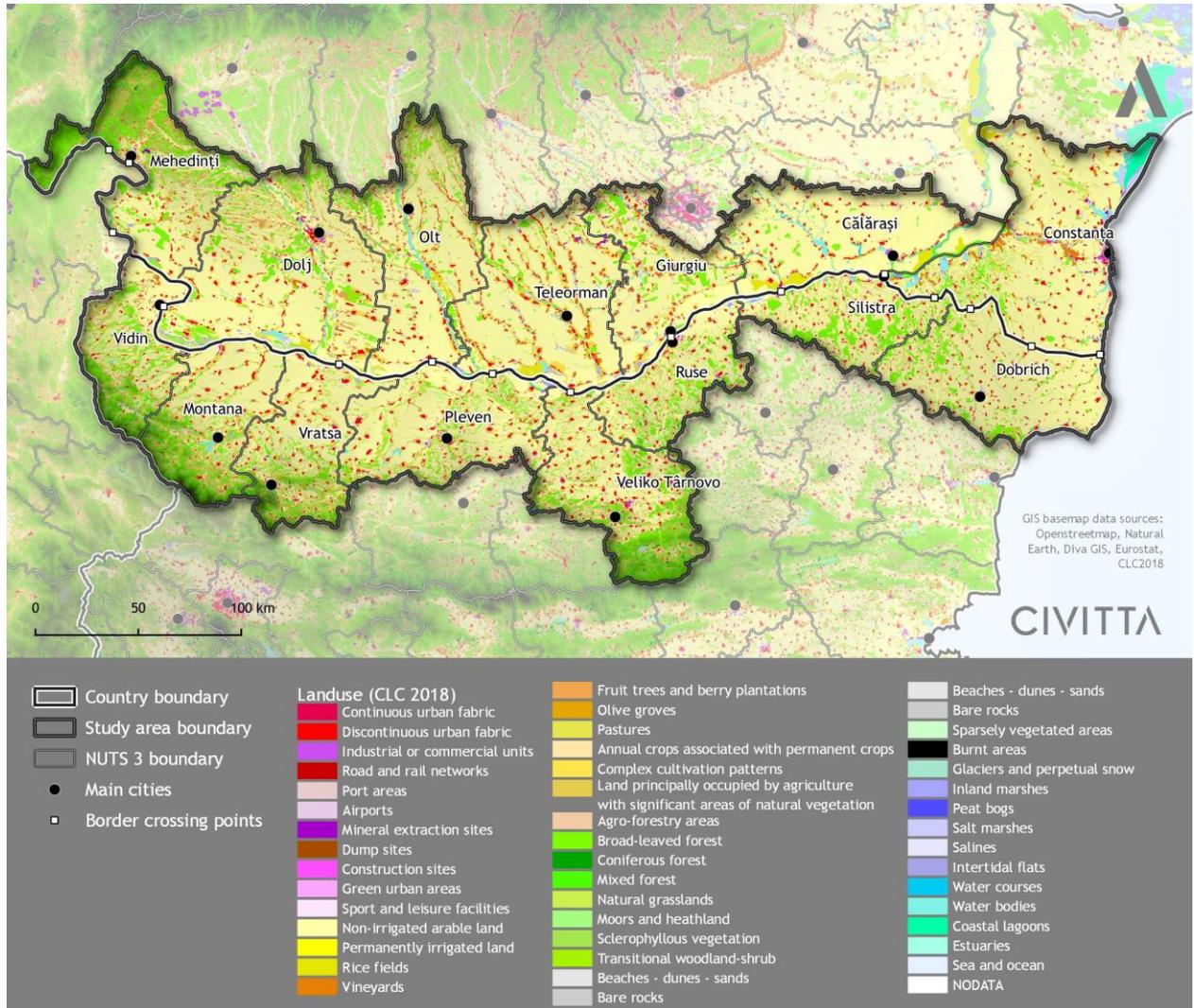
Source: Global Forest Watch

The Global Forest Watch shows that between 2010 -2018, the CBC area has lost almost 32,143 ha of tree cover, 19,771 ha on the Bulgarian side and 12,372 ha on the Romanian one. The counties that lost most of the tree cover surfaces are Călărași (8.7%) and Dolj (5.3%) for Romania and Pleven (5.7%) and Veliko Tarnovo (4.9%) for Bulgaria. At the other end, there is the Mehedinți county with only 1.8% tree cover loss. Nevertheless, it has an important weight in the economy of the tree cover loss of the CBC area (3130 ha).

Deforestation remains an important issue, both at the European and CBC level, but serious measures are being taken in both countries, especially by the Ministry of Environment and specific NGOs (with their public warning role). It cannot be denied that more efforts can be observed in the counties/districts where illegal logging has more serious effects, such as the counties in the northern part of Romania. Nevertheless, it should also be considered that forestry along the Danube has its own major role of protecting, especially against flood, landslides and other natural hazards.



MAP 12 LAND USE IN THE CROSS-BORDER AREA



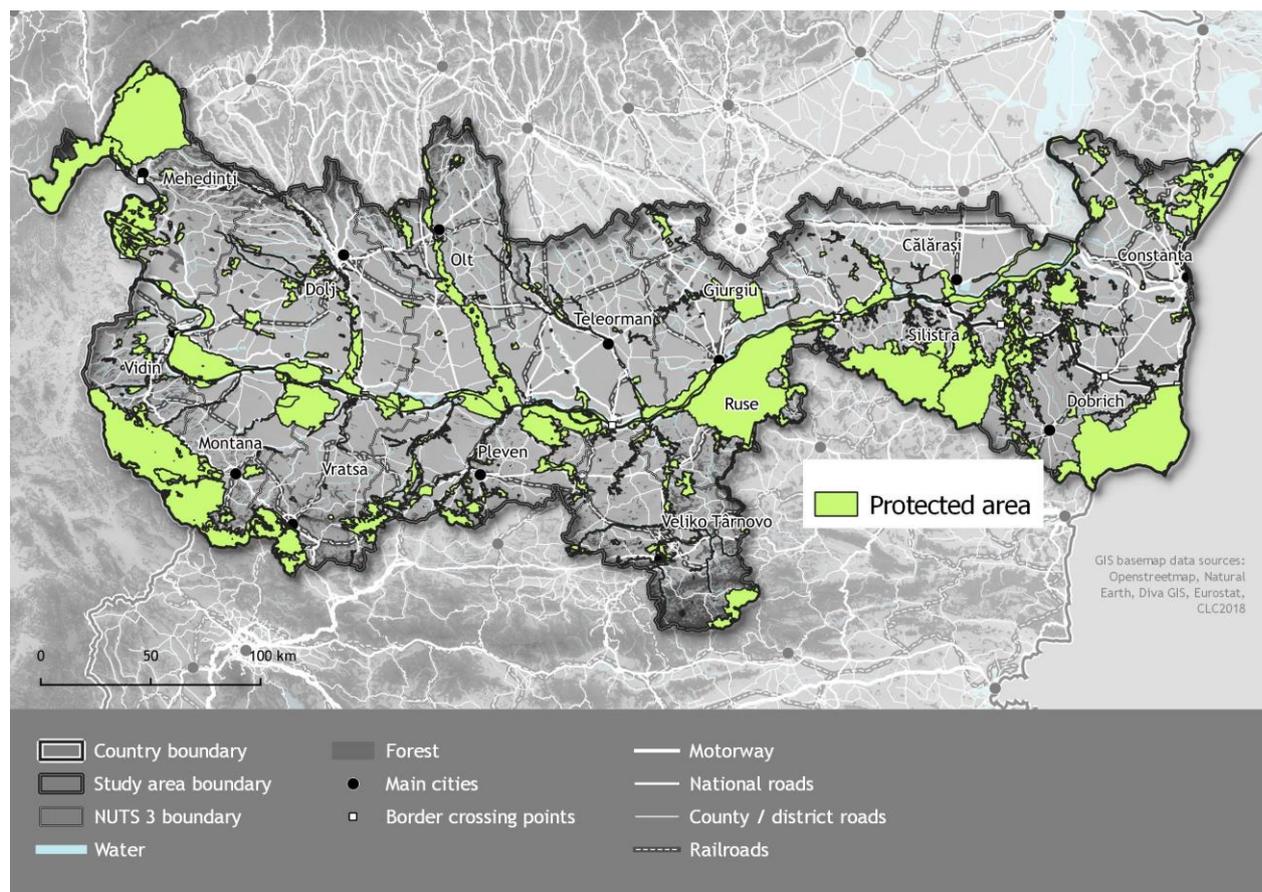
Source: CORINE Land Cover 2018 (CLC 2018)



3.4. PROTECTED AREAS

There are many valuable natural and cultural landscapes on the cross-border region, many of them with exceptional biological diversity. Several natural parks and protected areas can be found along the Danube in the cross-border area (Map 13).

MAP 13 PROTECTED AREAS IN THE CROSS-BORDER AREA



Source: www.protectedplanet.net

The natural areas of national interest are represented on the Romanian side by 3 nature parks - Mehedinți Plateau Geopark, Porțile de Fier Nature Park and Comana Nature Park - covering a total area of 190,548 ha and 1 national park (198,768 ha) - Domogled National Park, Cerna Valley. On the Bulgarian territory there are 4 nature parks (55,700 ha in total) - Vrachanski Balkan Nature Park, considered the second largest in Bulgaria, Persina Nature Park, Rusenski Lom Nature Park (UNESCO site) and Zlatni Pyasatsi Nature Park (Golden Sands Nature Park).

In the studied area, there are three national biosphere reserves. One is on the Romanian border, namely the southern part of the Danube Delta Biosphere Reserve - marine area, covering 32,532 ha. The other two can be found on the Bulgarian territory- Biosphere Reserves at Chuprene and Srebena (Ramsar site), covering a total area of 2,344 ha.

The Romanian side holds 15 Ramsar sites - the Danube Delta (1991, the southern part of the site), Techirghiol Lake (2006), Porțile de Fier Natural Park (2011), Comana Nature Park (2011), etc. On the Bulgarian territory there are 6 Ramsar sites - Persina Nature Park (2000) considered



the largest site in Bulgaria (6,898 ha), Srebarna, Dulankulak Lake, Belene Complex, Ibisha Island and Shabla Lake.

The most important protected areas at NUTS level 3 are:

TABLE 9 MAIN NATIONAL PROTECTED AREAS IN THE CROSS-BORDER AREA

COUNTRY	DISTRICT/COUNTY	NATIONAL PROTECTED AREAS	AREA
Bulgaria	Vidin	Chuprene Forest Reserve	1,439 ha
	Montana	Gornata Koria Reserve	161 ha
		Ibisha Nature Reserve	34 ha
	Vratsa	Vrachanski Balkan Natural Park	28,844 ha
		Vrachanski Reserve	1,453 ha
	Pleven	Milka Reserve	30 ha
		Pepcihcki Blata Nature Reserve	385 ha
	Veliko Tarnovo	Persina Natural Park	21 ha
		Persinski blata	390 ha
		Byala Krava Reserve	93 ha
Savchov Chair Nature Reserve		103 ha	
Ruse	Rusenski Lom	3,260 ha	
Silistra	Srebarna Nature Reserve	1,140 ha	
Dobrich	Baltata Reserve	205,6 ha	
	Kaliakra Reserve	713 ha	
	Zlatni Pyasatsi Natural Park	1,320 ha	
Romania	Mehedinți	Mehedinți Plateau Geopark	106,5 ha
		Domogled Valea - Cernei Natural Park	61,21 ha
		Porțile de Fier Nature Park	115,7 ha
	Teleorman	Suhaia Swamp	1,455 ha
		Ostrovul Mare Nature Reserve	140 ha
	Dolj	Lunca Jiului-Bratovoiești Forest	300 ha
		Natural reservation Zăval	351,3 ha
		Cioace Forest	210 ha
		Radovan Forest	250 ha
	Olt	Valea Oltețului Nature Reserve	900 ha
		Braniștea Catârilor	301,3 ha
		Izbiceni Lake	1,095 ha
		Iris - Malul Roșu	1,380 ha



	Giurgiu	Comana Natural Park	24,963 ha
	Călărași	Călărași Tarn	2877 ha
		Ciocănești Bank	206,7 ha
	Constanța	Grindul Chituc	2300 ha
		Grindul Lupilor	2075 ha
		Corbu - Nuntași - Histria	1610 ha
		Oltina Lake	2290 ha
		Bugeac Lake	1434 ha
		Vama Veche-2 Mai Marine Coastal Aquarium	5000 ha

Source: County Environmental Protection Agencies, 2020

The most important protected areas, which are also considered as important tourist attractions, are the “Rocks of Belogradchik” with its third-century castle, the Magura Cave, the Ledénika Cave and the stone formations of Ritlite. Srebarna Lake is a natural attraction located in the central and eastern side of the Bulgarian territory that is listed as a nature reserve on the list of UNESCO Natural and Cultural World Heritage Sites. For the Romanian territory, the most important protected areas are the Danube Delta Biosphere reserve, which is among the 600 largest wetlands in the world, Comana Park and Portile de Fier Natural Park, which is in the process of becoming the second Biosphere Reserve in Romania.

The Natura 2000 sites are part of the biodiversity importance, an essential pillar for the proper management of the protected ecosystems in the cross-border area. The Natura 2000 ecological network is one of the most ambitious projects promoted by the European Union in the field of environmental protection, aimed at reducing the biodiversity loss and the intelligent social use of ecosystem services in the European space. The fast extension of the Natura 200 network based on scientific arguments often insufficiently substantiated, argued or supported, on the insufficient clarity of the proposed regulations, on the still active debate between the supporters of the significant limitation of human intervention in the Natura 2000 sites and those who advocate for maintaining a level of intervention that allows maintaining the favourable conservation status for the species and habitats for which they were created, as well as the impact on local and regional economies, in particular on private property and economic activities that are based on exploitation and from the initial stage the processing of natural resources has led to numerous environmental conflicts in all European countries.

The main conflicts appear at the local communities level when the authorities are trying to extend the protected areas, when management plans are being implemented, when rehabilitation measures are being implemented, when there are issues concerning the reintroduction of some species, when the management is becoming stronger or when it is encouraging activities to the detriment of others.

Bulgaria and Romania Natura 2000 areas cover a surface of 2,219,092.52 ha (Romania - 46.70%; Bulgaria - 53.29%). The authorities in both countries are planning to increase their number and to extend the protection. Constanța is by far the county with most of the Natura 2000 sites in the area (38), especially due to the large biodiversity in the proximity of the Danube Delta and in the coastal area. The counties/districts with less Natura 2000 sites are Ruse (4 sites), Dolj (7)



and Giurgiu (8 sites). One of the issues in the CBC area, is that most of the NATURA 2000 sites do not have an approved management plan, have issues concerning the custody of the area and also large areas of these Natura 2000 sites have a private ownership, leading to stronger conflicts and issues in implementing the protection measures.

Another issue is connected to the Natura 2000 sites that are close to towns/cities. Some of the negative impacts that might be associated with these are uncontrolled waste deposits, the destruction of the markings, uncontrolled fires, illegal camping, the creation of new access roads, increased erosion and disturbance of the wildlife.

Also, when looking at the issues of this type of protected areas, we must look back at their history. Most of them have been declared starting with 2007, without the consultation of the population or of the local stakeholders. In this way, they have inherited many misunderstandings related to fundamental values, resource depletion, socio-economic imbalances and lack of clear institutional provisions related to property rights. The above-mentioned tensions concerning the use of forest, water, energy and non-renewable resources put pressure on the private owners, which sometimes take extreme measures. With a lack of coherent and operational management plans, the areas cannot function properly.

One of the main complaints coming from the European Union is the deterioration of the Natura 2000 sites due to logging (situation that has worsened during the last years, and according to a communication of the European Parliament from 5th of February 2020, reports of large-scale corruption have been released) and the insufficient designation of Natura 2000 sites for Romania.

TABLE 10 NUMBER OF NATURA 2000 SITES PER DISTRICT/COUNTY

COUNTRY	DISTRICT/COUNTY	NUMBER OF NATURA 2000 SITES
Bulgaria	Vidin	21
	Montana	23
	Vratsa	19
	Pleven	18
	Dobrich	21
	Veliko Tarnovo	24
	Ruse	14
	Silistra	18
Romania	Teleorman	15
	Olt	21
	Călărași	17
	Giurgiu	11
	Constanța	50
	Dolj	14

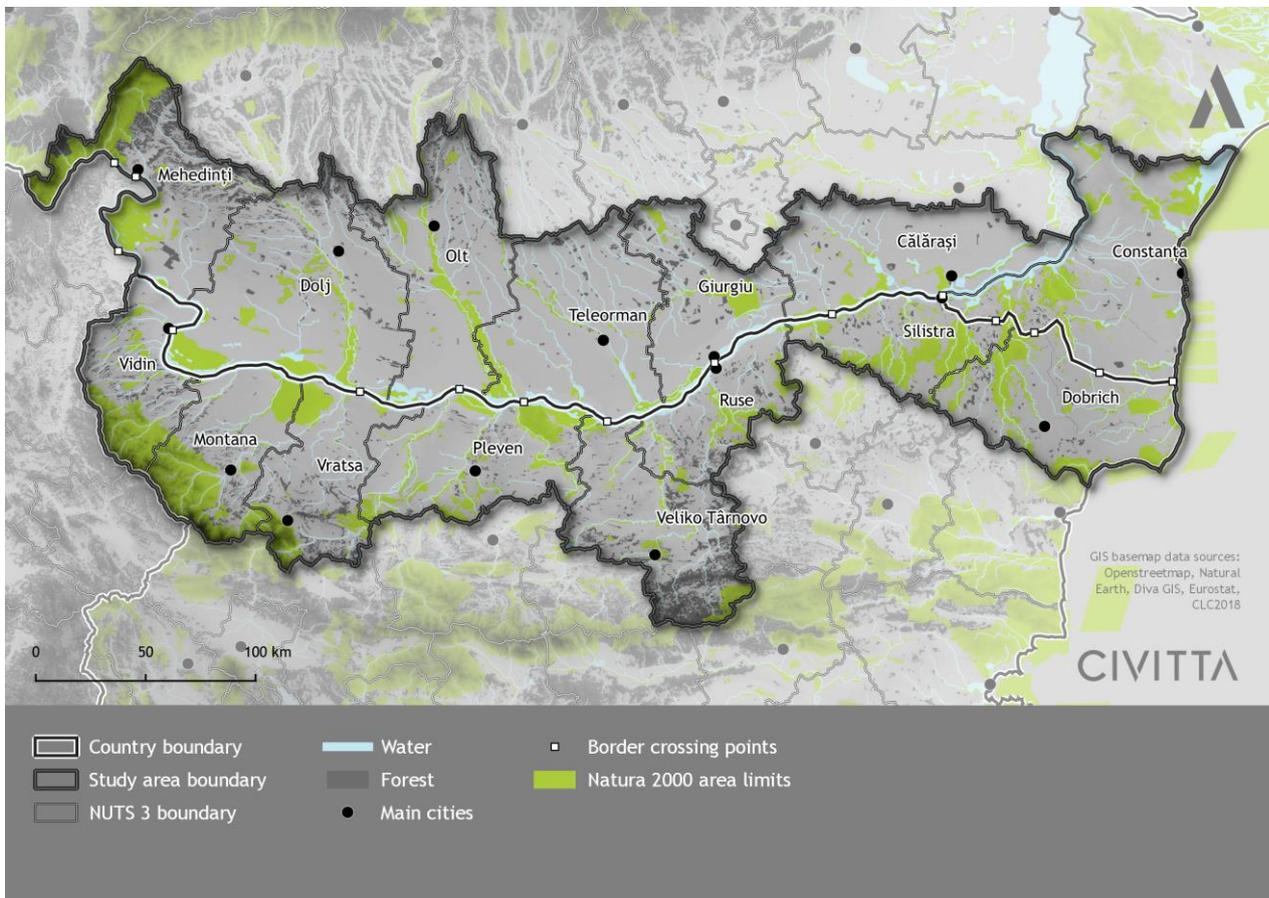


COUNTRY	DISTRICT/COUNTY	NUMBER OF NATURA 2000 SITES
	Mehedinți	20

Source: European Environmental Agency

Specific efforts should be directed towards Natura 2000 sites and the existing conflicts in the areas. The priority should be on designating more Natura 2000 sites, on implementing viable management plans and finding the best way of stopping the logging and destruction phenomena that has been signalled by the European Union as well.

MAP 14 NATURA 2000 AREAS IN THE ROMANIA-BULGARIA CROSS-BORDER AREA



Source: European Environmental Agency



3.5. AIR QUALITY

In Bulgaria, pollution level data regarding air pollutants such as NO₂, CO, SO₂ is available at district level only for 2014. As regards PM₁₀, data is available at the level of 2016-2018⁵⁴. Therefore, in order to present the latest available data, the analysis will refer to both time periods. In the case of Romania, the County Environmental Protection Agencies provide information regarding pollution at county level (the values for the counties in the cross-border area are included in the table below). For all counties, the analysis presents the urban station measurement, in order to have a common and balanced image of the area.

TABLE 11 MAIN POLLUTANTS REGISTERED LEVEL IN ROMANIAN CROSS-BORDER COUNTIES, 2017

COUNTY	NO ₂ ⁵⁵ µG/M ³	CO ⁵⁶ MG/M ³	SO ₂ ⁵⁷ µG/M ³	PM ₁₀ /PM _{2,5} ⁵⁸ µG/M ³
Teleorman	14.09	0.78	7.14	NA/17.66
Olt	18.51	0.13	11.26	32.28/NA
Călăraşi	*	3	11	26/NA
Giurgiu*	13	6	15	NA/NA
Constanţa	23.11	0.1	6.86	NA/NA
Dolj	24	0.28	9	26/NA
Mehedinţi	13.23	0.29	11.36	26.7/16.8
Maximum limit admitted	40	10	125/350**	40/20

Source: Romanian County Environmental Protection Agencies

*For Giurgiu county, the authorities stated that the measurements have not been done according to the 104/2011 law.

**The hourly maximum limit is of 350 µg/m³ which cannot be overpassed for more than 24 times/year and the daily maximum limit of 125 µg/m³ which cannot be overpassed on more than 3 times/year.

According to the data, there are no exceeding limits for the Romanian counties. In the case of Giurgiu, the explanation is that they have not respected the law in terms of procedures for the measurements and therefore the values are not comparable to the other counties. Another issue for the Romanian context is linked to the measurement of PM₁₀ and PM_{2,5} levels. Most of the measurements are not done for the second one, bringing along certain concerns from the European Commission's part, linked to the overpassing of the limits for this indicator. Compared to the situation of big cities in Romania, the indicators show an acceptable level for all pollutants. Nevertheless, this data should be looked at with certain caution, as there is no

⁵⁴ Socio-economic analysis of the Bulgarian regions 2016-2018

⁵⁵ NO₂ - Nitrogen dioxide

⁵⁶ CO - Carbon monoxide

⁵⁷ SO₂ - Sulfur dioxide

⁵⁸ PM₁₀, PM_{2.5} - Particulate Matter 10,2,5



available data for certain ones, especially for PM10 and PM 2.5, which could influence the actual situation in terms of overpassing the maximum limit admitted.

For Bulgaria, in 2014⁵⁹, the highest annual average concentration was registered at Montana - RIEW - 64.09 µg / m³, Vidin AIS - 60.83 µg / m³ for PM10 concentrations. For SO₂ there were no concentrations that overpassed the threshold, as well as for NO₂ and CO. The available data for the CO₂ emissions are presented in the Socio-economic analysis of the Bulgarian Regions 2016 and they are as follows:

TABLE 12 CO₂ EMISSIONS IN BULGARIA IN 2014 (T/SQ.KM)

DISTRICT	CO ₂ EMISSIONS (T/SQ.KM)
Vidin	142.9
Montana	93.8
Vratsa	110.8
Pleven	56.7
Dobrich	6.29
Veliko Tarnovo	131.1
Ruse	208.3
Silistra	15
National Average	314.5

Source: Socio-economic analysis of the Bulgarian Regions 2016

As can be noticed, Dobrich is among the districts with the lowest level of carbon dioxide emissions in the atmosphere. In 2014, harmful emissions were over 50 times lower than the average figures for the country. In Silistra, there are also low values, which can be explained by the low share of industry in the local economy and the low population density. On the other hand, the Ruse district presents a higher number of emissions (208.3 t/sq.km). However, the number is still lower than the national average. All the other districts have medium values compared to the national average.

In the 2016-2018 Socio-economic report of the Bulgarian Regions, there is one mention that relates to the above-mentioned pollutants. Data from the automatic real-time air quality control systems in Ruse and Silistra shows a significant improvement in atmospheric air quality in 2018 compared to 2017. The levels of the major pollutants monitored remain low - sulphur and nitrogen oxides, carbon monoxide, benzene and ozone. As regards PM₁₀, the report provides updated data. However, for some of the monitoring points, there is no precise data available, but it is mentioned if the value is complying with the maximum average annual rate admitted (e.g. Veliko Târnovo, Pleven, Vratsa).

TABLE 13 PM₁₀ AVERAGE ANNUAL CONCENTRATION BY DISTRICT 2018 (µG/M³)

⁵⁹ For the Bulgarian cross-border area, there are no data available at the district level after 2013/2014.



MUNICIPALITIES	PM10 AVERAGE ANNUAL CONCENTRATION ($\mu\text{G}/\text{M}^3$)
Dobrich	25.97
Veliko Târnovo	<40
Silistra	16.7
Ruse	39.1
Montana	44.1
Vidin	51.2
Pleven	>40
Vratsa	>40

Source: Socio-economic analysis of the Bulgarian Regions 2016

The municipalities of Vratsa, Vidin, Montana and Pleven are territorial units with continuous and long-lasting exceedances of PM10 norms. In the municipality of Pleven, an exceedance of the annual target rate for surfactant levels (in the PM10 fraction) was also registered.

In Pleven, the average annual rate for PM10 ($\text{SHG } 40 \mu\text{g} / \text{m}^3$) was also exceeded in 2018. However, compared to the previous 2 years, the average annual concentration of PM10 decreased. Overall, the effect of implementing municipal measures to reduce PM10 levels is limited and unsatisfactory. The contribution of municipal measures to the reduction of fugitive PM10 emissions during the summer season is essential: measures to maintain transport infrastructure and measures to increase and maintain green systems. The planned municipal measures to reduce emissions during the winter season are not effective, as they consist mainly of information campaigns promoting programmes for energy efficiency improvement and the use of environmentally friendly fuels. On the other hand, most of the domestic installations connected to the district heating networks in Pleven and gas supply (also used for heating) are not operational for financial reasons. Incentives are not provided to citizens using green fuels or refurbishing their homes to become more energy efficient.

In the case of Montana, in 2018, the average annual concentration of PM10 was $44.1 \mu\text{g} / \text{m}^3$ - 1.1 times the maximum allowed value. The days with registered exceedance are 112 - about 31% of the total number of samples analysed, most of them in the autumn-winter season, which confirms that the main source of air pollution with PM10 is domestic heating with solid fuel. In recent years, Montana has registered a steady trend of decreasing average annual concentrations of fine particulate matter and polycyclic aromatic hydrocarbons. On the other hand, the evolution of the annual number of exceedances of the daily average concentration of PM10 is unstable, which can be explained by the different weather conditions in the different years and the inefficiency of the measures applied by the municipality concerning solid fuel domestic heating.

The number of days with registered exceedances in the automatic measuring station in Vidin are 120, or about 43% of the total 280 analysed samples. A certain increase in the annual average concentration ($51.2 \mu\text{g} / \text{m}^3$ in 2018) was observed, compared to the previous year ($45.2 \mu\text{g} / \text{m}^3$ in 2017). In 2018 the municipality of Vidin registered a positive trend for reduction of air pollution with fine dust particles, although general levels remain very high. The town of Vidin has not been gasified and the measures from the municipal action plan by 2020 are mainly aimed



at improving the energy efficiency of municipal and private buildings, the use of highly efficient combustion devices and low-emission fuels in the household and public sectors.

The lowest average annual concentration of fine particulate matter up to 10 microns amongst Bulgarian districts was registered in Silistra, namely $16.7 \mu\text{g} / \text{m}^3$. A consistent tendency of air pollution reduction has been observed in Silistra. On the other hand, in the case of Ruse, with an average annual concentration of $39.1 \mu\text{g} / \text{m}^3$ in 2018, it is the first time since 2009 when the registered value is below the maximum allowed. The process of equipping the cities with gas infrastructure to be used both by the public and the residential sectors continues in Ruse and Silistra, and could further contribute to decreasing air pollution.

Overall, air pollution on the Bulgarian side of the cross-border area is mainly due to the burning of solid fuels in the domestic sector and pollution from road transport. The use of damp wood, fossil fuels, and the use of depreciated transport units results in poor atmospheric air quality, especially in adverse weather conditions: fog and lack of wind during the months with negative temperatures. Industrial activity does not lead to serious air pollution, but the main problem remains the emission of smelly organic and inorganic compounds from certain production activities, which cause discomfort for the population of large cities.

If we compare the situation in the Romania-Bulgaria cross-border area to the European values, the concentrations in terms of NO_2 , SO_2 and CO are lower in the two countries compared to other areas in Europe. For example, in countries such as Germany or Italy the concentrations observed at the monitoring stations are overpassing in most of the cases the maximum level admitted.

In the case of PM_{10} and $\text{PM}_{2,5}$, many municipalities in Romania and Bulgaria have started to pay fees for not complying with the limits imposed by the European Commission with regard to pollution.

3.6. NATURAL AND INDUSTRIAL RISKS AREA

3.6.1. FLOODS

The International Commission for the Protection of the Danube River (ICPDR) in the Danube basin located the areas with high potential for flooding.

Natural and anthropogenic causes for flooding are associated with:

- 1) the existence of a topographic variety and the concentration of surfaces permeable to floods;
- 2) insufficient arrangement of the torrent slopes surrounding localities, particularly in the Bulgarian hilly area;
- 3) the sub-sizing of the hydrotechnical network with a regularisation role;
- 4) absence of afforestation works, especially on the Romanian side.

According to the ICPDR, all the localities in the floodplain of the Danube are exposed to the incidence of floods. Outside Danube floodplain, the largest areas affected by flood risk are located in Mehedinți county, due to floods from the river basin Drincea I and Jiu tributaries: Coșuștea, Motru Cotoroia and Raznic. It is followed by areas crossed by Giurgiu river and the



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Neajlov tributaries: Dâmbovnic, Chiricanu and Glavacioc. Casimcea and Urluia in Constanta county also have a torrential flow regime.⁶⁰

In Bulgaria, the flooding risk is present in the river basins of Ogosia and Tsibritsa in Montana and in the river basin of Vit in Pleven. Veliko Tarnovo district includes areas of the Yantro river basin, with its affluent Rositsa.

According to ICDPR, as regards floods with high probability, 65,000 people in Romania could be affected and there is no data for the Bulgarian side; in case of floods with medium probability, 342,000 could be affected on the Romanian side and there is no data for the Bulgarian one and in the case of floods with low probability 1,012,000 person would be affected on the Romanian side and 112,000 on the Bulgarian side. Compared to the other countries that are crossed by the Danube, the Romania-Bulgaria cross-border territory would have a lower number of affected persons in case of floods with high and medium probability, but a higher number of affected persons in the case of low probability floods.

⁶⁰ [Spatial, Common Strategy for Sustainable Territorial Development of the Cross-Border Area Romania Bulgaria Project](#)



MAP 15 FLOODS RISK MAP



Source: ICDPR Data

3.6.2. SEISMIC RISK

The cross-border area is exposed to high seismic risk. The Vrancea epicentre area has a predominant influence over the Romanian territory and is can also be felt in the northern part of the Bulgarian territory (Dobrogea, Veliko Tarnovo and Shabla-Kaliakra Cape).

The Romanian side mainly overlaps the Romanian Plain where the earthquakes are recorded associated with the Intramoesian rift and a secondary rift system. The seismic activity is marked by superficial earthquakes with depths of up to 5 km and normal earthquakes between 5 and 40km deep.

At the same time, the Dobrogea seismogenic area is outlined with moderate activity, polarized by Sfântu Gheorghe rift. In the Bulgarian sector, the Shabla-Cape Kaliakra seismic area belongs to the south of the Moesian Platform. Thus, the Black Sea coast (near Cape Kaliakra) and the Veliko Tarnovo region constitute areas with relatively intense seismic activity.⁶¹

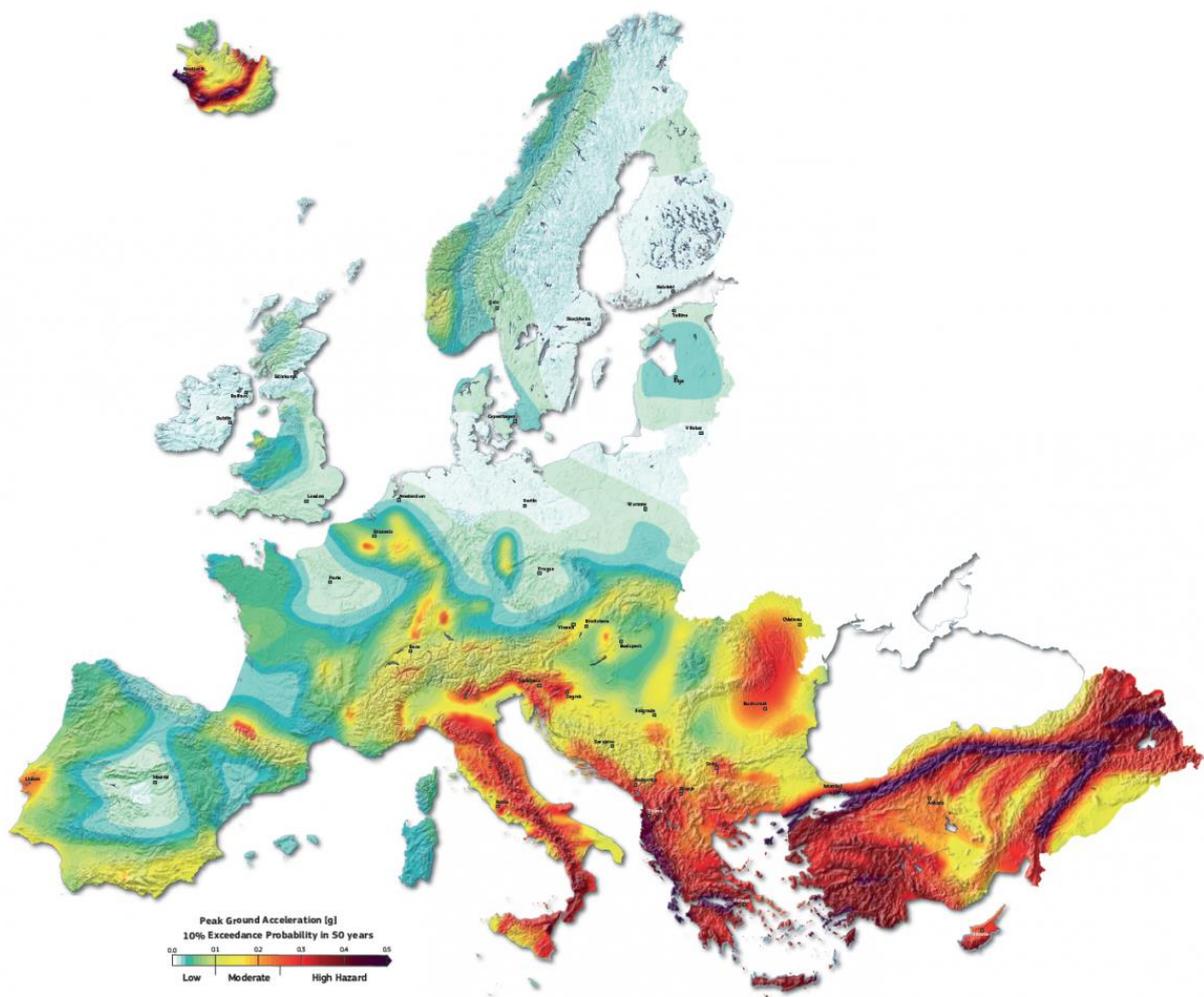
The relative intense seismic activity of the area should be considered when comparing it to the rest of the European Union. Italy, the Balkans, Greece, Bulgaria, Romania and Turkey are among

⁶¹ [Spatial, Common Strategy for Sustainable Territorial Development of the Cross-Border Area Romania Bulgaria Project](#)



the most exposed of the continent regarding seismic risks. The European research project SHARE - Seismic Hazard Harmonization in Europe⁶² shows that in the areas of south-east Europe earthquakes are more likely, and they can cause the greatest damage to society. It shows the areas where there is a 10% or larger probability of experiencing the mapped level of ground shaking within 50 years. The map below shows that the Romania-Bulgaria cross-border area has a lower degree of risk than the southern part of the European continent, but it is more exposed to seismic risk than the central and eastern part of Europe. This should be considered for future policies and when designing big infrastructure projects (e.g. dams, bridges etc.).

MAP 16 SEISMIC RISK IN EUROPE

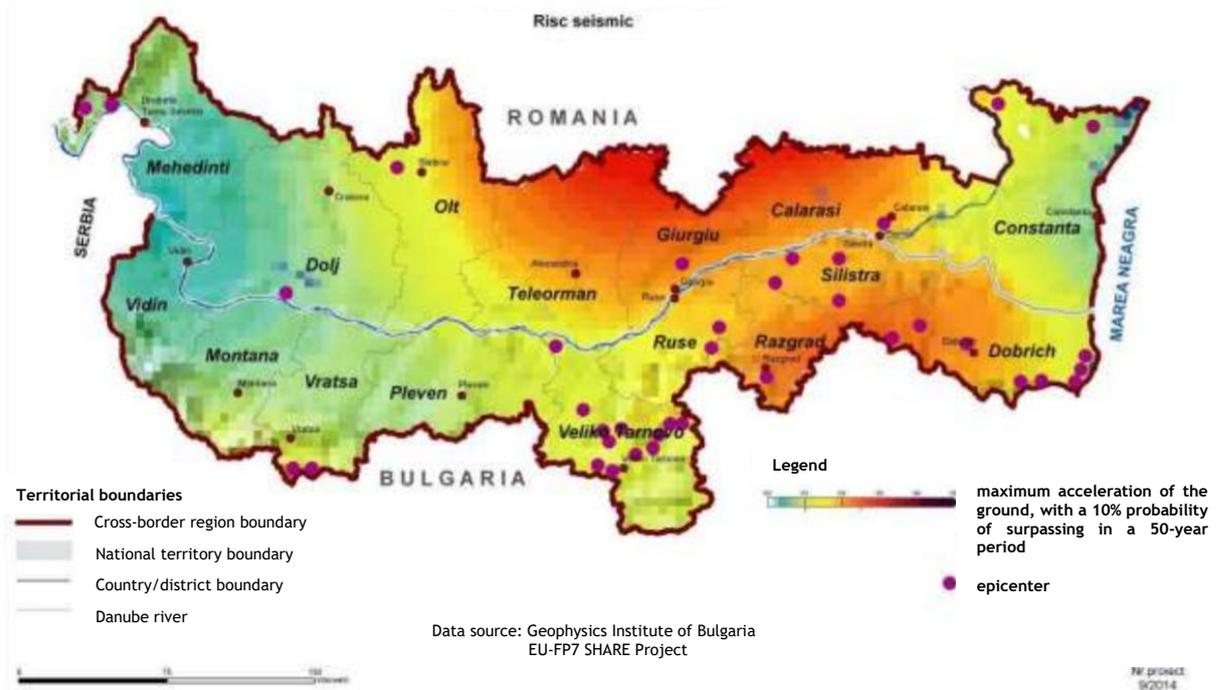


Source: SHARE Project, Seismic Hazard Harmonization in Europe

⁶² <https://cordis.europa.eu/project/id/226967>



MAP 17 SEISMIC RISK AREAS



Source: Analiza și diagnoza situației curente în cadrul ariei transfrontaliere România - Bulgaria (Analysis and diagnosis of current situation in the cross-border area Romania-Bulgaria), INCERC - URBAN Project, Bucharest, 2013

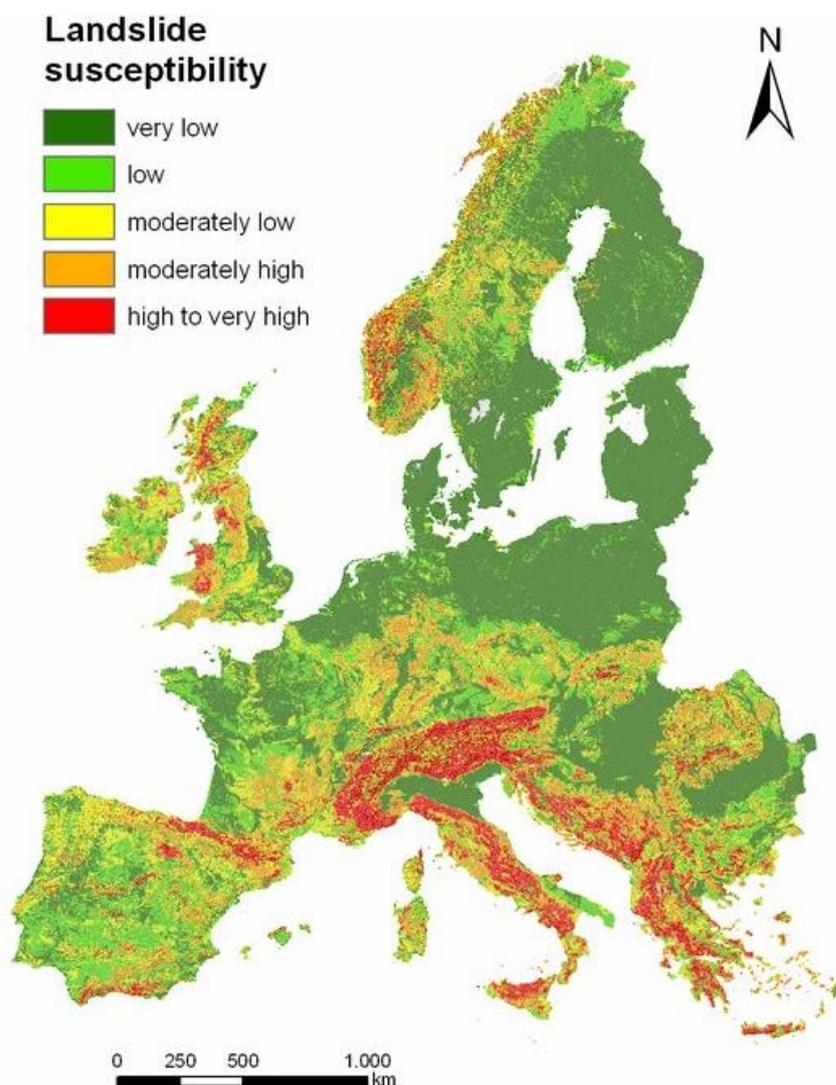
3.6.3. LANDSLIDES

As regards landslides, the Romania-Bulgaria cross-border area has a comparable degree of landslide susceptibility as the southern part of Europe. This aspect should be considered when creating Soil Thematic Strategies that consider inventory, susceptibility, hazard and risk at various scales.

The Romanian counties are as affected and as susceptible to landslides as the Bulgarian districts. Landslides can also affect mine waste tips and tailings dams and landfills, causing fatalities and contaminating soils and surface and ground water. In areas affected by landslides, these are a major source of soil erosion and sediment yield to valleys and rivers, and hence of reservoir silting.



MAP 18 LANDSLIDES SUSCEPTIBILITY IN EUROPE



Source: European Soil Data Center, Joint Researcher Center, European Commission, 2018

The landslide risk is lower on the Romanian border compared to the Bulgarian one where we can find higher altitudes corresponding to the hilly and plateau area.

There are three categories of areas in the Romania-Bulgaria cross-border territory, depending on their exposure to landslides:

- Low risk of landslides - Olt, Teleorman, Giurgiu, Călărași;
- Medium risk of landslides - Mehedinți, Vidin, Montana, Vratsa, Veliko Tarnovo, Ruse and Silistra;
- High risk of landslides - Dolj, Constanța, Pleven and Dobrich.



Some landslides are activated due to the river erosion of the Danube. The Danube crosses 470km from the Bulgarian territory, where numerous landslides were observed, especially in periods with seismic activity. The rivers (Iskar, Vit, Osum, Yantra) fragment the Danube Plain on the south-north direction and create areas where landslides occur.

The Bulgarian sector is in the process of structural lifting, with a maximum (+) 6mm / year, which it also causes destabilization and a series of landslide activations.

MAP 19 LANDSLIDE RISKS



Source: Analiza și diagnoza situației curente în cadrul ariei transfrontaliere România - Bulgaria (Analysis and diagnosis of current situation in the cross-border area Romania-Bulgaria), INCERC - URBAN Project, Bucharest, 2013

3.6.4. Technological RISKS

Most technological risks are established according to the SEVESO Directive⁶³. Based on the provisions of SEVESO Directive, two major industrial infrastructures in the area present a high level of risk - Kzloduy Nuclear Power Plant and Cernavodă Nuclear Power Plant.

Areas exposed to technology risks are in Craiova-Slatina, Giurgiu-Ruse, Silistra-Călărași-Tămădău Mare and Mangalia-Constanța-Năvodari. In the Mangalia-Constanța-Năvodari area there is a significant concentration of technology risk objectives, all related to the harbour activities - 17 objectives, of which 10 are rated as major risk. Also, another concertation of risks is identified in the port area of Giurgiu-Ruse and in the Silistra - Călărași - Lehliu Gară - Tămădău Mare -

⁶³ DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL



Fundulea area. All these areas are developed on former communist industrial sites and use the proximity of the water resource as an asset for their activity.

A special situation is represented by the location of objectives in settlements from areas at risk to floods such as: Bâcu village in Giurgiu county, Isalnița and Podari communes in Dolj county, Kozloduy from Vratsa district, Svishtov locality from Veliko Tarnovo district.

MAP 20 TECHNOLOGICAL RISKS



Source: Analiza și diagnoza situației curente în cadrul ariei transfrontaliere România - Bulgaria (Analysis and diagnosis of current situation in the cross-border area Romania-Bulgaria), INCERC - URBAN Project, Bucharest, 2013

The high density of technological risks areas put a significant pressure especially on the control of the floods and of the protection measures that need to be taken in order to avoid major accidents with serious consequences on the urbanised areas.

According to the projections made by ICDPR (see Chapter 3.6.1.), in the case of high probability floods, 7 of the Seveso sites on the Romanian side of the border would be affected, in case of floods with medium probability, 17 sites in Romania and 3 sites in Bulgaria would be affected and in the case of floods with low probability, 51 sites in Romania and 5 in Bulgaria would be affected. Compared to the other Seveso units that are present in countries that are crossed by the Danube, the Romania-Bulgaria territory would have a lower number of affected sites.



3.7. WASTE MANAGEMENT

Waste management is one of the most important issues in the cross-border area, as well as a key challenge for both countries, despite formal progress due to the adoption of the national waste management plans.

There are various legislative documents, such as Directive 2008/98/EC which was amended in 2018 by Directive (EU) 2018/851, and more ambitious recycling targets were introduced for the period leading up to 2035.

According to the Commission's 'Early Warning Report' (2018), Romania is considered at risk of non-compliance with the 2020 municipal waste recycling target of 50% (compliance standards from the Romania's Accession Treaty). The circular economy remains underdeveloped, although it has potential in this area and The New Action Plan regarding the Circular Economy of the European Commission will have more specific targets and measures concerning the decrease in terms of waste generated quantities and their types

According to Table 10, the largest waste producers in 2017 are Constanța, Ruse and Dolj; they do not compensate by recycling, having a recycling rate under 3% (the target is at least 50%). The highest recycling rate has been registered in Olt county with a 13.79% rate, which is still low considering the European target of 50%. Another identified issue is the fact that many counties/districts do not report any recycling facts, which can become even more dangerous in terms of EU compliance.

A field in which the two countries perform better is the field of plastic recycling, where, in 2017, Bulgaria recycled 65% of its 120 million tonnes of generated plastic and Romania recycled 47% of the 349 million tonnes.

TABLE 14 TOTAL WASTE (TONS) AND DEGREE OF RECYCLING 2017

DISTRICT	TOTAL WASTE 2017	DEGREE OF RECYCLING	COUNTY	TOTAL WASTE 2017	DEGREE OF RECYCLING
Vidin	24147	0.00	Teleorman	72895	5.83
Montana	35265	2.84	Olt	54032	13.79
Vratsa	48364	8.27	Călărași	42122	0.00
Pleven	84632	3.54	Giurgiu	43146	0.00
Dobrich	68499	2.92	Constanța	347717	2.69
Veliko Tarnovo	91073	7.69	Dolj	140021	0.13
Ruse	110989	2.70	Mehedinți	49846	9.04
Silistra	44741	0.00			

Source: National Institutes of Statistics, County Environmental Agencies, own calculation

It is very important to look also at the future requirements coming from the European Commission, especially at the key elements of the revised waste proposal which include:

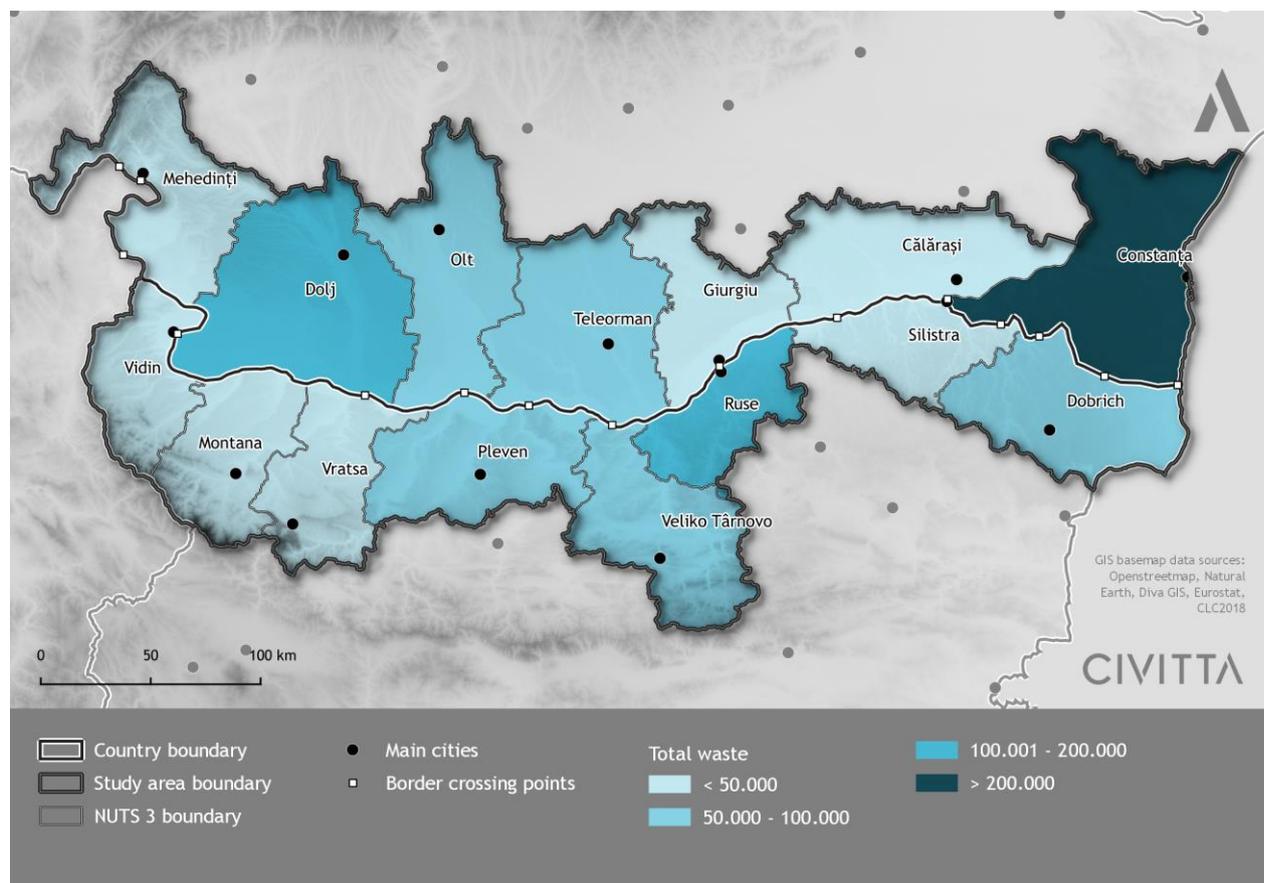
- A common EU target for recycling 65% of municipal waste by 2030;
- A common EU target for recycling 75% of packaging waste by 2030;
- A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030;



- A ban on landfilling of separately collected waste;
- Promotion of economic instruments to discourage landfilling;
- Simplified and improved definitions and harmonised calculation methods for recycling rates throughout the EU;
- Concrete measures to promote re-use and stimulate industrial symbiosis -turning one industry's by-product into another industry's raw material;
- Economic incentives for producers to put greener products on the market and support recovery and recycling schemes (e.g. for packaging, batteries, electric and electronic equipment, vehicles).

All these requirements will put an even higher pressure on the waste issues existing in the two countries and measures have to be taken in this regard.

MAP 21 TOTAL WASTE 2017, TONS



Source: National Institutes of Statistics, County Environmental Agencies



3.8. ENERGY⁶⁴

3.8.1. STRATEGIC CONTEXT

Currently, Romania has an Energy Strategy for 2007-2020, followed by an update in 2016. The need to develop a new Energy Strategy before 2020 is due to the time required to develop and legislate such a document, the new market and technology development situations, as well as the commitments made by Romania as a member of the European Union.

The project of the Energy Strategy drafted in 2016 was based on a modelling study that processed data at the level of 2015 and led to a series of scenarios for the development of the energy field. At the same time, at the level of the Ministry of Energy, a process of updating and completing the project of the Energy Strategy started in 2016 has begun.

The vision of the Romanian Energy Strategy is to increase the energy sector in terms of sustainability. The development of the energy sector is part of the development process of Romania.

Thus, growth means:

- building new capabilities;
- upgrading and modernizing energy production, transport and distribution capacities;
- encouraging the growth of domestic consumption under energy efficiency conditions;
- export.

For Romania, the seven fundamental objectives⁶⁵ of the Energy Strategy are:

1. Increasing Romania's energy contribution to regional and European markets by capitalizing on national primary energy resources. The objective expresses Romania's vision of development in the regional and European context and the desire to be a leading EU player in this field.
2. Romania, regional supplier of energy security. The current international context of energy markets is marked by volatility and uncertainty, and the evolution of technologies can have disruptive effects on energy markets. In this context, there are the premises that, by developing the energy sector, taking into account the availability of resources and the stability given by the maturity of the traditional technologies, Romania can aim to become a regional energy security provider.
3. Competitive energy markets, the basis of a competitive economy. The energy system must operate on the basis of free market mechanisms, the state having the role of developing policies, regulating the field, guaranteeing the stability of the energy system and investor.
4. Clean energy and energy efficiency. In the evolution of the energy sector, Romania will follow the best practices of environmental protection, respecting the national targets assumed as an EU member state. Equally, the development of the energy system will ensure energy efficiency, as defined by EU directives and national law.
5. Modernization of the energy governance system. In a market system, the state has the essential role of arbitrator and regulator of markets. In this respect, a transparent, coherent,

⁶⁴ As data availability at county/ district level is limited, the indicators describing the outlook for both countries will be analysed at national level.

⁶⁵ Ministerul Energiei, 2016. *Strategia energetică a României 2019-2030, cu perspectiva anului 2050*



fair and stable legislative and regulatory framework is needed. As the owner of assets, the state must improve the management of the companies in which it owns stakes. Energy companies with state capital must become more efficient, professionalized and modernized.

6. Ensuring access to electricity and heat for all consumers. The objective is the continuation of the electrification program, as well as the development and profitability of the heating insurance systems.
7. Protecting the vulnerable consumer and reducing energy poverty. Price accessibility is one of the main challenges of the energy system and is a strategic responsibility. The level of social assistance in the field of energy will ensure real protection of vulnerable consumers.

The periodic update of the Strategy takes into account the changes taking place at local, regional, European and global level. The implementation of the Energy Strategy in practice is correlated with the national and international context, both evolving into dynamic interdependence.

The transformation of the economic climate imposes new trends for the development of society and its needs. New technologies and energy products reorient investment choices, confidence in energy processes, as well as the structure of the energy system. The Energy Strategy is based on the development of the competitive markets for electricity, natural gas and other primary resources, which leads to the need for new approaches, as market trends change.

Currently, Bulgaria has an „Energy Strategy of the Republic of Bulgaria till 2020 - For Reliable, Efficient and Cleaner Energy“, aiming to align the development at national level with the European energy policy framework and the global trends in the development of energy technologies. The sustainable energy development is brought to the center of the energy policy and its achievement is bound to long-term quantitative targets⁶⁶ up to 2020:

- 20% reduction of the greenhouse gas emissions as compared to 1990;
- 20% share of RES in the overall energy mix;
- 10% share in the energy for transport;
- 20 % increase of energy efficiency.

The main priorities⁶⁷ in The Energy Strategy can be summarized in the following five directions:

- Maintaining of a safe, stable and reliable energy system;
- The energy sector remains a leading branch of the Bulgarian economy with definite orientation to foreign trade;
- Focus on clean and low-emission energy - nuclear and from renewable sources;
- Balance between quantity, quality and prices of the electric power produced from renewable sources, nuclear energy, coal and natural gas;
- Transparent, efficient and highly professional management of the energy companies.

Achievement of high-technology, secure and reliable energy system based on up-to-date technologies that meet the European criteria, making at the same time the best possible use of the available resources in Bulgaria and protecting the Bulgarian users to the highest degree it is

⁶⁶ Ministry of Economy, Energy and Tourism, 2011. *Energy Strategy of the Republic of Bulgaria till 2020 - For Reliable, Efficient and Cleaner Energy*

⁶⁷ Ministry of Economy, Energy and Tourism, 2011. *Energy Strategy of the Republic of Bulgaria till 2020 - For Reliable, Efficient and Cleaner Energy*



a priority for Bulgaria, which needs new approaches in order to maximize its resources to the highest standards.

3.8.2. ENERGY PRODUCTION

The Romania-Bulgaria cross-border area is important for the production of electricity. Each country has one nuclear power plant located along the Danube. In Romania, the Cernavoda (Constanta county) nuclear power plant, with its two active reactors, produces approximately 20% of the country's electricity, while in Bulgaria, the Kozloduy (Vratsa district) nuclear power plant generates about 35% of Bulgaria's electricity. Further extensions of Cernavoda nuclear power plant are planned and it is estimated that by using nuclear power, Romania is able to reduce its greenhouse gas emissions by over 10 million tonnes each year. Nevertheless, the presence of the nuclear plants implies significant technological risks.

TABLE 15 GROSS ELECTRICITY PRODUCTION (GWH)

	2007	2008	2009	2010	2011
Romania	61 673	64 956	58 014	60 979	62 218
Bulgaria	43 297	45 037	42 964	46 653	50 797

	2012	2013	2014	2015	2016	2017
Romania	54 793	52 368	59 581	58 889	57 978	57 283
Bulgaria	47 059	43 516	47 232	48 840	44 786	44 925

Source: Eurostat

In both Romania and Bulgaria, the electricity production shows a downward trend over the last years and compared to the previous programming period. The effects of the financial and economic crisis were also reflected in energy production, with a major decrease between 2008 and 2009 in both countries. The latest available data shows that, while Bulgaria exceeded the pre-crisis level (but shows a decrease in the latest years), Romania has not yet reached the 2008 values.

TABLE 16 ENERGY DEPENDENCE (%), 2012 - 2017

	2012	2013	2014	2015	2016	2017
Romania						
All products	22.3	18.1	16.4	16.4	21.6	23.1
Bulgaria						
All products	37	38.5	35.3	36.5	38.6	39.5

Source: Eurostat⁶⁸

Romania is one of the most energy-independent countries in the EU, according to Eurostat. Electric power in Romania is dominated by government enterprises, although privately operated coal mines and oil refineries also existed. The country relies on a mix of internal energy sources including gas, coal, hydro, nuclear and renewable sources, and it imports only one-fifth of its

⁶⁸ https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nrg_ind_id&lang=en



gas needs from Russia⁶⁹. However, most production capacities are often not operational, and investments to modernise existing facilities or build new ones have not been sufficient. Hence, the country relies mostly on old and outdated gas and coal-driven plants that will become increasingly more expensive to sustain.

On the other hand, Bulgaria is heavily dependent on imports of natural gas, crude oil and nuclear fuel. In this respect, there have been proposed measures regarding the decrease of energy consumption and resource inefficiency in the fields of industry, transport, services and households. However, it is still a challenge to improve energy efficiency and to optimise the use of resources.

Under the 2016 CEF Energy call, a Project of Common Interest 3.8.1 "Cluster Bulgaria–Romania capacity increase", has been accepted with a maximum EU co-financing of €29.587,500 and supports the construction of an overhead electricity line with a power capacity of 1,500 MW at a voltage of 400 kV. In November 2018 the works of a new 100 km electricity line connecting the Bulgarian cities of Dobrudja and Burgas, supported by the EU's Connecting Europe Facility (CEF) for Energy programme, were started. The new line will reinforce the Bulgarian electricity network and enhance the security of supply to households in the region. This project, once completed, will ultimately reinforce the Bulgarian internal grid, enhance the cross-border transfer capacity between Romania and Bulgaria, and allow the large-scale integration of new renewable energy sources in the Black Sea Corridor.⁷⁰

3.8.3. ENERGY CONSUMPTION

The energy consumption shows a general stagnation trend, with no special developments in any sector. Compared to the previous programming period⁷¹, in both countries the most significant decrease in final energy consumption was experienced in the industrial sector. While in Bulgaria the most significant decreases were registered between 2007-2009, showing the impact of the economic crisis, Romania showed a more irregular pattern, with a post-crisis decline, followed by recovery and a slow decrease since 2012.

TABLE 17 GROSS INLAND CONSUMPTION⁷² OF PRIMARY ENERGY (TONNES OF OIL EQUIVALENT)

	2012	2013	2014	2015	2016
Bulgaria	18 233	16 756	17 744	18 511	18 128
Romania	35 373	32 427	32 157	32 429	32 402

Source: Eurostat

TABLE 18 FINAL ENERGY CONSUMPTION⁷³ BY SECTOR (1000 TONNES OF OIL EQUIVALENT)

⁷² Gross inland consumption is defined as primary production plus imports, recovered products and stock change, less exports and fuel supply to maritime bunkers (for seagoing ships of all flags). It therefore reflects the energy necessary to satisfy inland consumption within the limits of national territory

⁷³ Final energy consumption includes all energy delivered to the final consumer's door (in the industry, transport, households and other sectors) for all energy uses. It excludes deliveries for transformation and/or own use of the energy producing industries, as well as network losses.



	2012	2013	2014	2015	2016	2017
Romania						
Final energy consumption	22 629	21 631	21 470	21 600	21 935	22 860
Industry	6 748	6 272	6 427	6 418	6 263	6 390
Transport	5 314	5 188	5 266	5 337	5 738	6 149
Commercial and public services	1 763	1 784	1 768	1 761	1 806	1 840
Households	8060	7 721	7 409	7 375	7 414	7 679
Bulgaria						
Final energy consumption	9 118	8 670	8 884	9 389	9 517	9 738
Industry	2 581	2 585	2 620	2 713	2 641	2 721
Transport	2 914	2 620	2 916	3 211	3 267	3 325
Commercial and public services	1 069	1 029	991	1 085	1 171	1 199
Households	2 352	2 241	2 164	2 192	2 252	2 318

Source: Eurostat

3.8.4. ENERGY POVERTY

Energy poverty⁷⁴ is a widespread problem across Europe, as between 50 and 125 million people are unable to afford proper indoor thermal comfort. A common European definition does not exist, but many Member States (MS) acknowledge the scale of this socio-economic situation and its negative impact translated into severe health issues and social isolation. Different terms are used to describe affected persons: fuel poor, energy poor, vulnerable energy consumers or, to a larger sense, at-risk-of-poverty or low-income people.

TABLE 19 INABILITY TO KEEP THE HOME ADEQUATELY WARM IN ROMANIA-BULGARIA AREA IN 2014-2018, % OF THE TOTAL POPULATION

COUNTRY	2014	2015	2016	2017	2018
Bulgaria	40.5	39.2	39.2	36.5	33.7
Romania	12.9	13.1	13.8	11.3	9.6
EU	10.3	9.4	8.7	7.8	7.4

⁷¹ Interreg Romania-Bulgaria Programme 2013-2020, Annex 4 -Territorial Analysis of the Romania - Bulgaria Cross-Border Area

⁷² Gross inland consumption is defined as primary production plus imports, recovered products and stock change, less exports and fuel supply to maritime bunkers (for seagoing ships of all flags). It therefore reflects the energy necessary to satisfy inland consumption within the limits of national territory

⁷³ Final energy consumption includes all energy delivered to the final consumer's door (in the industry, transport, households and other sectors) for all energy uses. It excludes deliveries for transformation and/or own use of the energy producing industries, as well as network losses.

⁷⁴ https://ec.europa.eu/energy/content/introduction-5_en



Source: Eurostat

The inability to keep the home adequately warm is quite high both in Romania and Bulgaria, comparing to the other countries from EU. There is also a slight improvement from 2014 to 2018. However, there is clearly a major difference between the average registered in Bulgaria and the average registered in Romania, but these are far from the average imposed by the EU.

One important indicative for energy poverty is the intense and widespread use of wood and coal for heating. This situation can be seen in Romania, as well as in Bulgaria. The statistics are less worrying for Romania, even though these present values greatly below the EU average. However, in Bulgaria the energy poverty is a lot more problematic, as according to EU statistics, in 2018, 33.7% of the countries' population was unable to keep its home adequately warm. One concerning fact is that Bulgaria has one of the lowest energy consumption rates per dwelling in Europe (only 0,77 tonnes of oil equivalent per dwelling, compared to the EU average that is of 1,42 tonnes). Furthermore, the proportion of the income spent by the average Bulgarian household on energy sources is very high (this includes electricity and heating), meaning that despite using less energy for these utilities, the population spends proportionally a higher share of their earnings comparing to other EU member states.

TABLE 20 ENERGY CONSUMPTION PER DWELLING AT NORMAL CLIMATE (TONNES OF OIL EQUIVALENT/DWELLING)

	2012	2013	2014	2015	2016
Romania	1,1	1,08	1,05	1,02	1,01
Bulgaria	0,72	0,75	0,75	0,74	unavailable
EU (27 countries)	1,37	1,43	1,35	1,385	1,39

Source: Eurostat

3.8.5. RENEWABLE ENERGY

Through the Europe 2020 strategy, the European Union committed to a target of reaching 20% of gross final energy consumption from renewable sources by 2020, and at least 27% by 2030. Data shows a significant increase in the percentage of energy produced from renewable sources between 2014-2018 in both Romania and Bulgaria, as well as an advancement towards the European target, with both countries exceeding in 2018 the EU 20% target for 2020, as well as generally meeting the national targets.

TABLE 21 SHARE OF RENEWABLE ENERGY IN GROSS FINAL ENERGY CONSUMPTION IN THE CROSS-BORDER AREA, 2014-2018, %

COUNTRY	2014	2015	2016	2017	2018	TARGET
Bulgaria	18.05	18.261	18.76	18.701	20.528	16
Romania	24.845	24.785	25.032	24.454	23.875	24
EU	17.482	17.849	18.048	18.471	18.881	20

Source: Eurostat



TABLE 22 PRIMARY PRODUCTION OF RENEWABLE ENERGY IN BULGARIA-ROMANIA AREA, 2014-2018, KTOE

	2014	2015	2016	2017	2018
Bulgaria					
Solar Energy	107,7	118,9	119,2	120,6	115,5
Solid biofuels	11,9	13,0	14,0	15,5	110,1
All other renewables	5,3	10,2	16,4	18,6	18,3
Hydro Power	365,2	363,0	358,5	368,1	373,1
Wind Power	111,8	117,4	121,0	122,8	121,1
Romania					
Solar Energy	139,0	170,4	156,5	159,6	152,3
Solid biofuels	39,0	39,7	40,1	39,4	31,6
All other renewables	4,4	5,2	5,6	5,7	6,0
Hydro Power	1.386,6	1.416,8	1.435,0	1.410,6	1.432,8
Wind Power	512,3	564,6	550,9	566,7	570,9

Source: Eurostat

The share of the use of renewable energies is considerably high in both countries. One of the main reasons for this could be that biomass is the main source of renewable energy and is used mainly in the residential sector for heating, cooking and water heating. However, continuous efforts will have to be made in order to increase the use of renewable energies by using modern technologies.

There are also major energy production sites using renewable energy sources in the vicinity of the Romania-Bulgaria cross-border region. The main hydroelectric power station (Iron Gate I and II) along the Danube is located in the cross-border region on the Serbian-Romanian border.

a) Solar energy potential

Analysing the global irradiation and solar electricity potential for both countries, one can notice that the photovoltaic power potential is similar for the Romania and Bulgaria cross-border areas-between 1.600 kWh/m² and 1.700 kWh/m². Also, the Romanian side of the border has the highest global irradiation and solar electricity potential, compared to the rest of the country.



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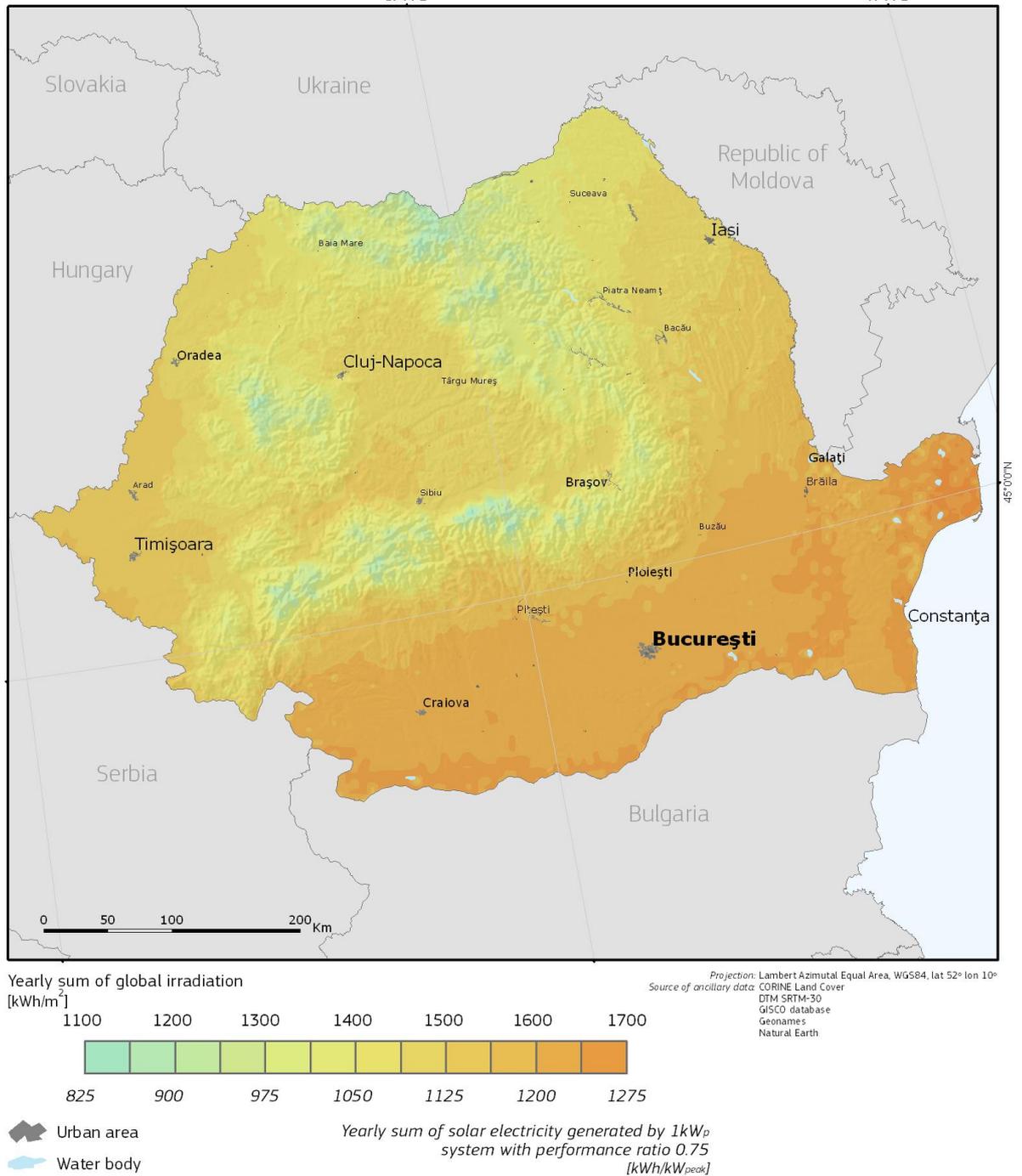


GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA

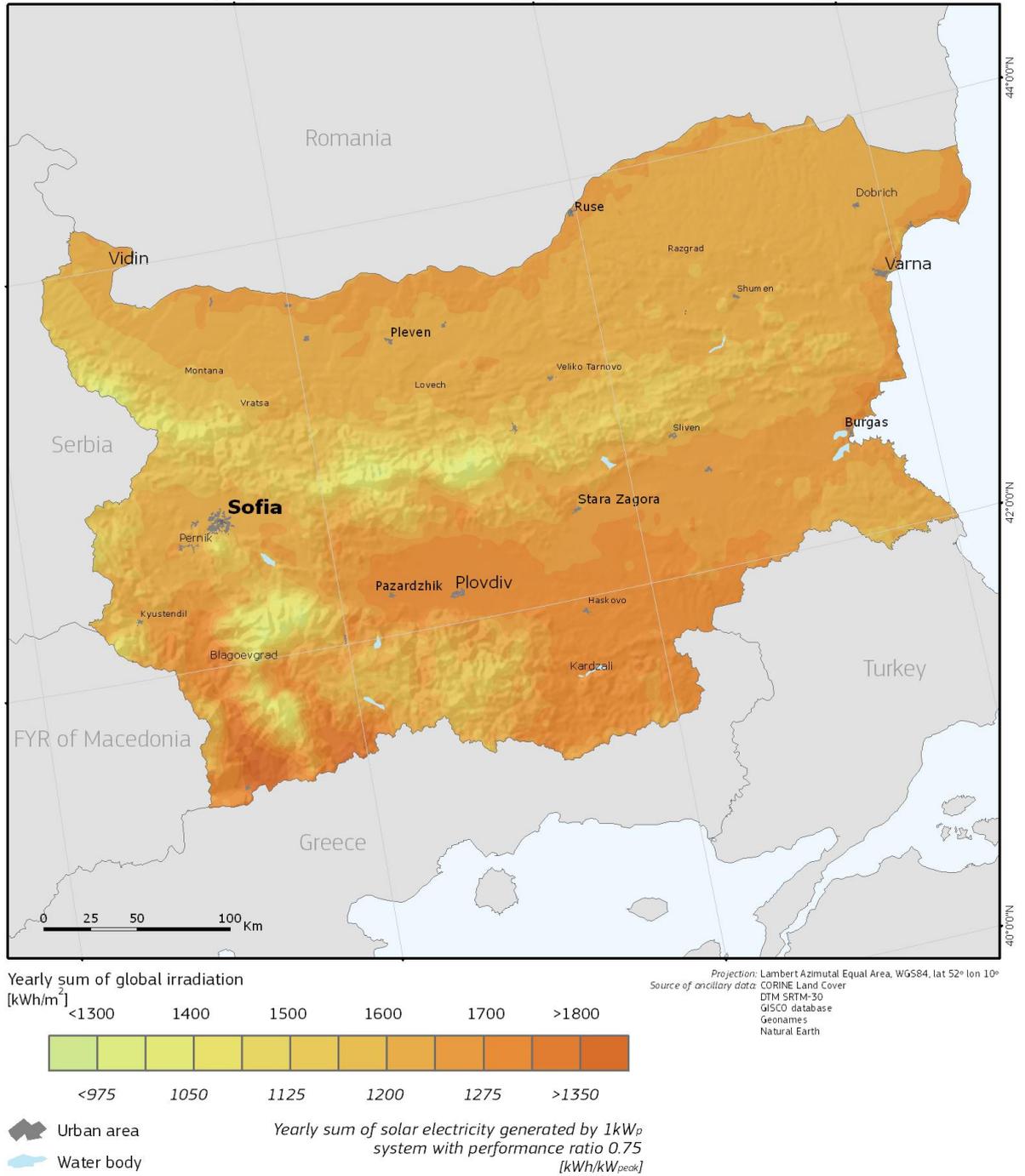
FIGURE 48 GLOBAL IRRADIATION AND SOLAR ELECTRICITY POTENTIAL (OPTIMALLY-INCLINED PHOTOVOLTAIC MODULES), ROMANIA, 2019



Source: Photovoltaic Geographical Information System, European Commission



FIGURE 49 GLOBAL IRRADIATION AND SOLAR ELECTRICITY POTENTIAL (OPTIMALLY-INCLINED PHOTOVOLTAIC MODULES), BULGARIA, 2019



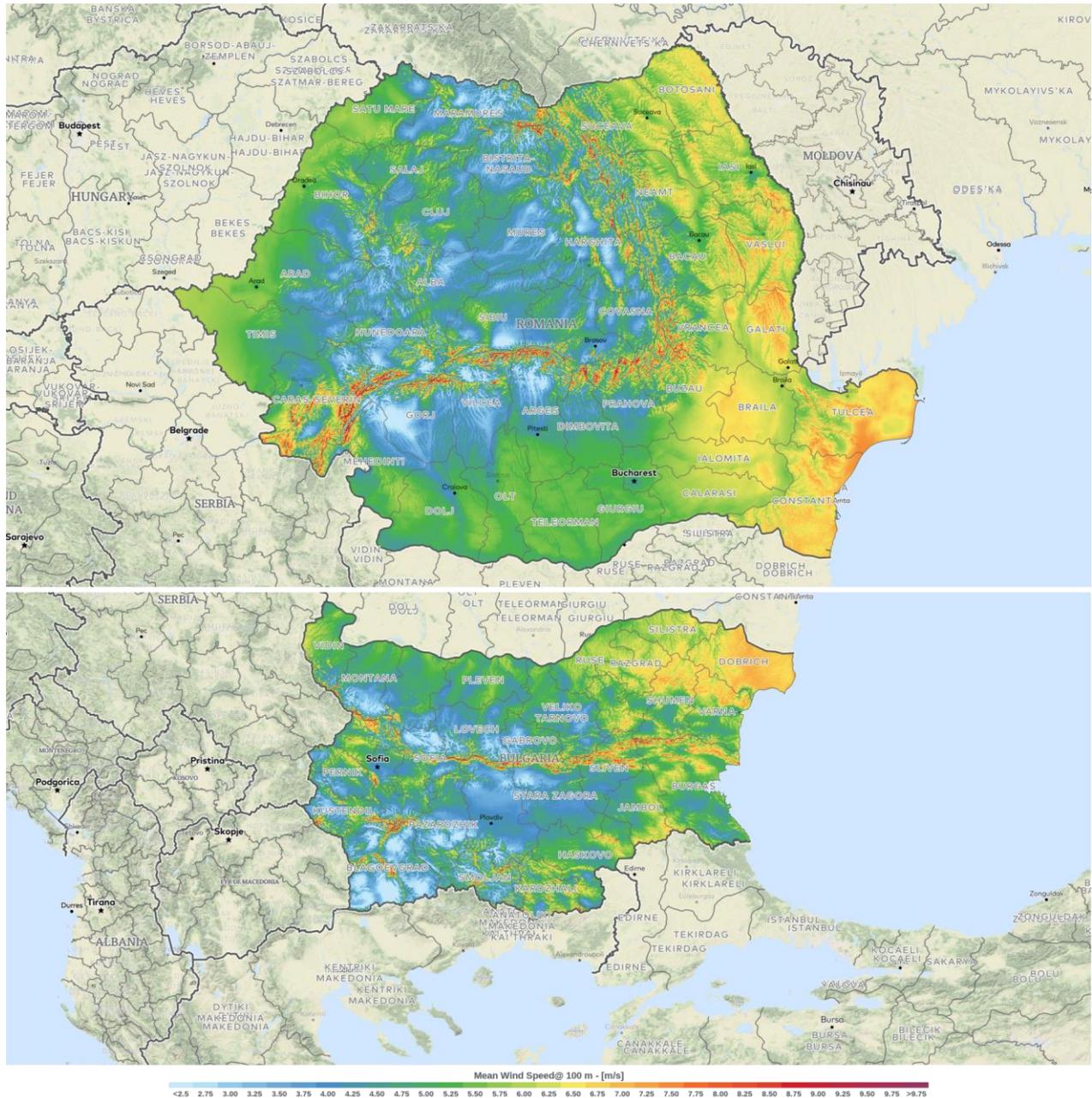
Source: Photovoltaic Geographical Information System, European Commission



b) Wind potential

As regards wind power potential, the potential of the cross-border territory is rather low. The values of wind speed potential in Bulgaria and Romania vary from 4.25 m/s in Dolj, to maximum 7.25 m/s in Constanța. The only areas that exceed 8.5 m/s are located in Constanta county, Vidin, Montana and Veliko Tarnovo districts. Currently, windmills only cover the coastal region of the Black Sea, as outside this area the opportunities are limited and not as efficient, thus not sustainable.

FIGURE 50 MEAN WIND SPEED POTENTIAL, ROMANIA AND BULGARIA, 2019



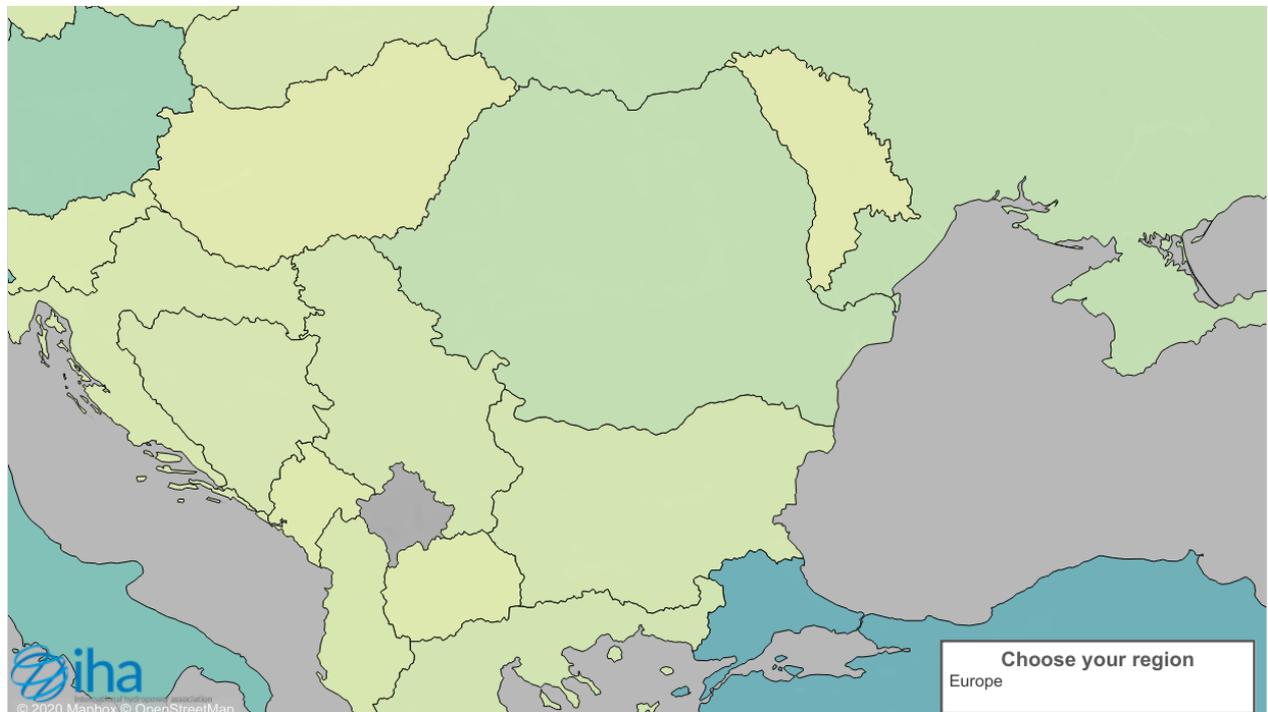
Source: Global Wind Atlas



c) Hydropower

Unrealised potential for economically feasible and environmentally sustainable small and micro hydropower generation exists in the thousands of historic water wheels, mills and weir sites in the EU. Regarding the hydropower potential of the cross-border area, the map below shows that Romania records 6,72 GW (gigawatts), while Bulgaria registers 3,13 GW (almost half compared to Romania). Although values are rather small compared to other EU countries, the development potential exists. Hydropower could be considered for renewable energy production, as it is low-cost and readily available: power flow is controlled through turbines to produce electricity on demand.

FIGURE 51 HYDROPOWER STATISTICS, ROMANIA AND BULGARIA, 2017



Source: International Hydropower Association, Map of World hydropower

d) Biomass

Given the highly agricultural development of the Romania-Bulgaria cross-border area, the use of biomass resulting from the vegetable agricultural wastes could provide for clean energy for the nearby institutions, including schools and kindergartens. A common organic waste use program for both banks of Danube in both Romania and Bulgaria might be a solution for the creation of a couple of strategically placed centres for biogas and energy production, in combination with a constant source for organic fertilizers.



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3.1. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

The entire Romania-Bulgaria cross-border area is facing serious challenges in terms of environment. The most important issue of the territory is the inefficient waste management (low level of waste recycling - much lower than what the European Commission is expecting from the two countries, low efficiency of selective waste collection programmes, overloaded controlled landfills, etc.). In the context of the new European regulation on waste management, it is going to be even harder for the two countries to adapt to the new requirements.

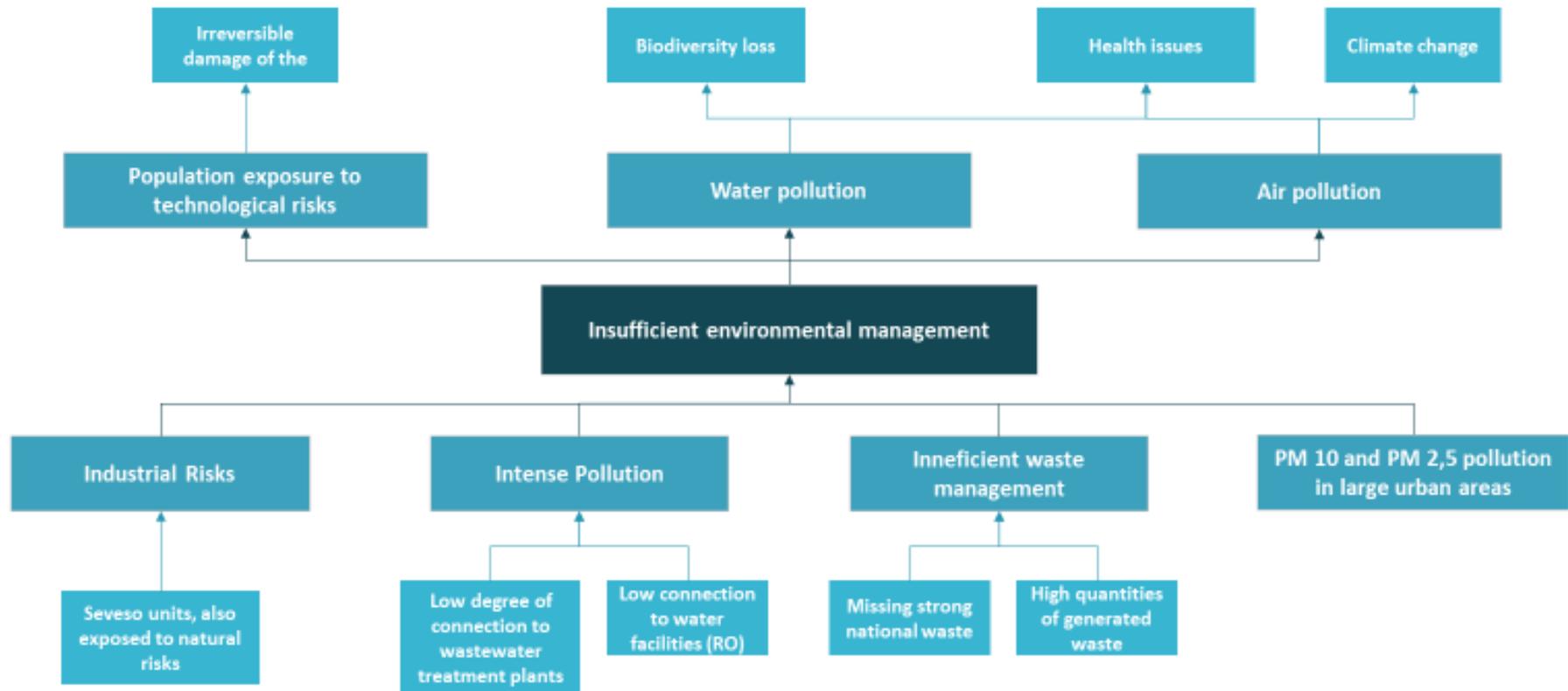
Protected areas, covering an important surface of the area, are exposed to great risks because of illegal logging, tourism, constructions, and illegal hunting. All the protected areas, including Natura 2000 areas, are facing major challenges of natural environment conservation and administrative issues, such as the lack of management plans. Specific efforts should be directed towards Natura 2000 sites and the existing conflicts in the areas, especially on designating more Natura 2000 sites, on implementing viable management plans and finding the best way of stopping the logging and destruction phenomena that has been signalled also by the European Union.

Another issue is the one of the households connected to the water supply systems (see Chapter 7.7) and the need to achieve better living standards, but also a better health of the population and a lower water bodies pollution, due to the effluents that reach the water bodies.

The air pollution issue has to be looked at carefully, and a starting point would be monitoring and ensuring data availability. The current analysis faced the challenge of missing data, which could indicate the lack of monitoring or transparency with regard to air quality issues.

Nevertheless, the Romania- Bulgaria cross-border area can offer a big potential for renewable sources of energy, given its micro-climate and environmental features. This is valid especially for the solar energy and biomass, considering the highly agricultural development of the region. Hydro power seems to have, as well, a great potential.

PROBLEM TREE



4. CLIMATE CHANGE

One of the major global environmental pressures today is represented by climate change, a process heavily stimulated by society's main activities and consumption patterns, correlated with the lack or slow pace of the process of implementing mitigation strategies and policies. It may be considered one of the greatest and most profound challenges humanity has to deal with, as climate change expands its outcomes over the economic, social and environmental components of society.

The negative outcomes of climate change could be more pronounced in vulnerable regions, where economic, social or environmental issues are already present, as in the case of the regions in the proximity of the lower Danube from Romania and Bulgaria, in the cross-border territory. According to CORINE database, 74.18% of this area is covered by agricultural land (Romania - 57.28%), out of which 81.5% is represented by non-irrigated arable land (Romania - 53.87%; Bulgaria - 27.69%). In this context, the evolution of the climate change process and its effects may jeopardise the main economic activity taking place in the region since agricultural activities are extremely vulnerable to climate changes. Taking into consideration the fact that these activities represent the main economic sector and food source, coherent strategies and efficient investments should be implemented for mitigating the potential chain effects generated by crop loss.

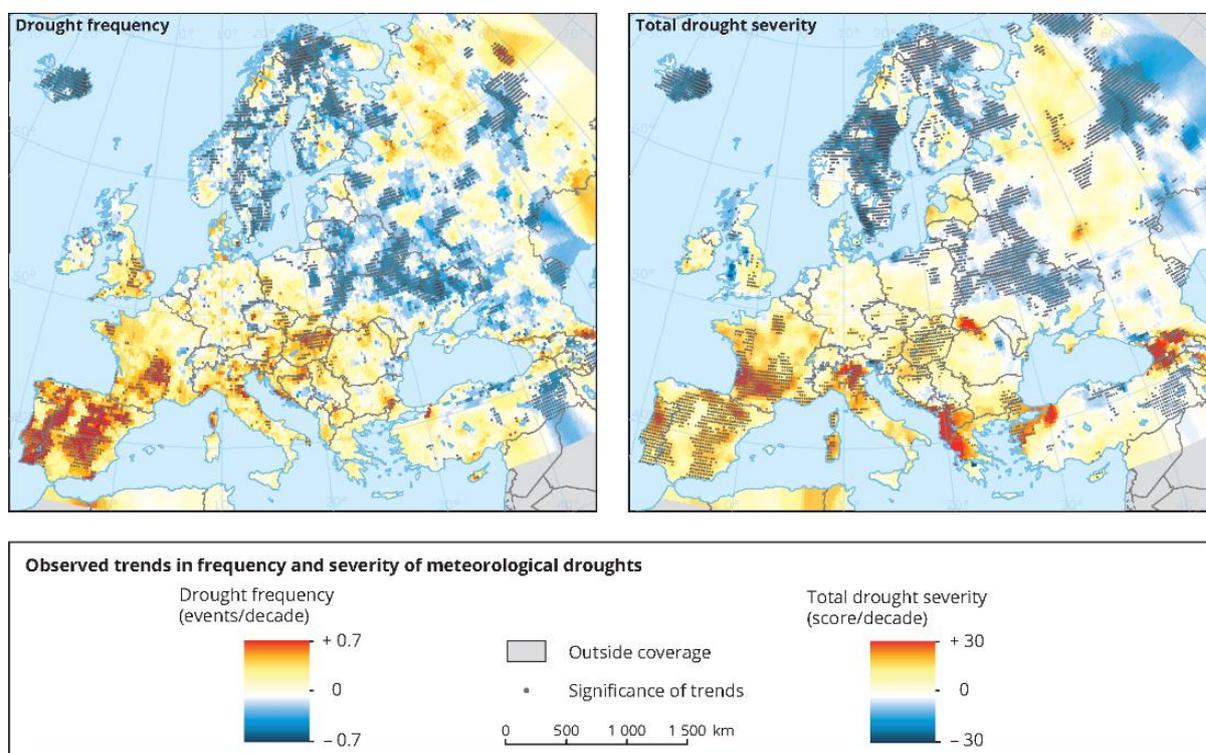
4.1. DROUGHTS

One of the main outcomes of climate change is represented by prolonged periods of meteorological and hydrological droughts and the decrease of soil moisture. Droughts usually occur in areas that are already arid, or which are prone to dryness.

The climate for southern Romania and northern Bulgaria is moderately continental, but this general feature has specific characteristics due to the peculiarities of the landforms, altitudes and atmospheric circulation. According to the existing data, the analysed region is characterized by a slightly higher drought frequency, duration or severity than other parts of the two countries. For the southern part of Romania, the longest meteorological and hydrological droughts occurred between 1980 and 1995 and it is believed that, in the context of global warming, longer drought periods will take place. A similar situation is anticipated for the northern part of Bulgaria, where the frequency of dry years registered in the Danube Plain and the Thracian Lowland increased, while rainy years are not significantly present anymore.



MAP 22 DROUGHT FREQUENCY AND SEVERITY IN EUROPE



Source: EUROPEAN Environmental agency

According to two of the four Representative Concentration Pathways (RCP)⁷⁵ scenarios (RCP4.5⁷⁶ and RCP8.5⁷⁷) developed by the Intergovernmental Panel on Climate Change (IPCC), the Romania-Bulgaria cross-border area will not be bypassed by meteorological droughts in the future. In this context, while droughts are almost a certainty, it is up to policy makers and central governments to develop and implement strategies for mitigation and a series of adaptive measures so that the negative effects could be reduced as much as possible.

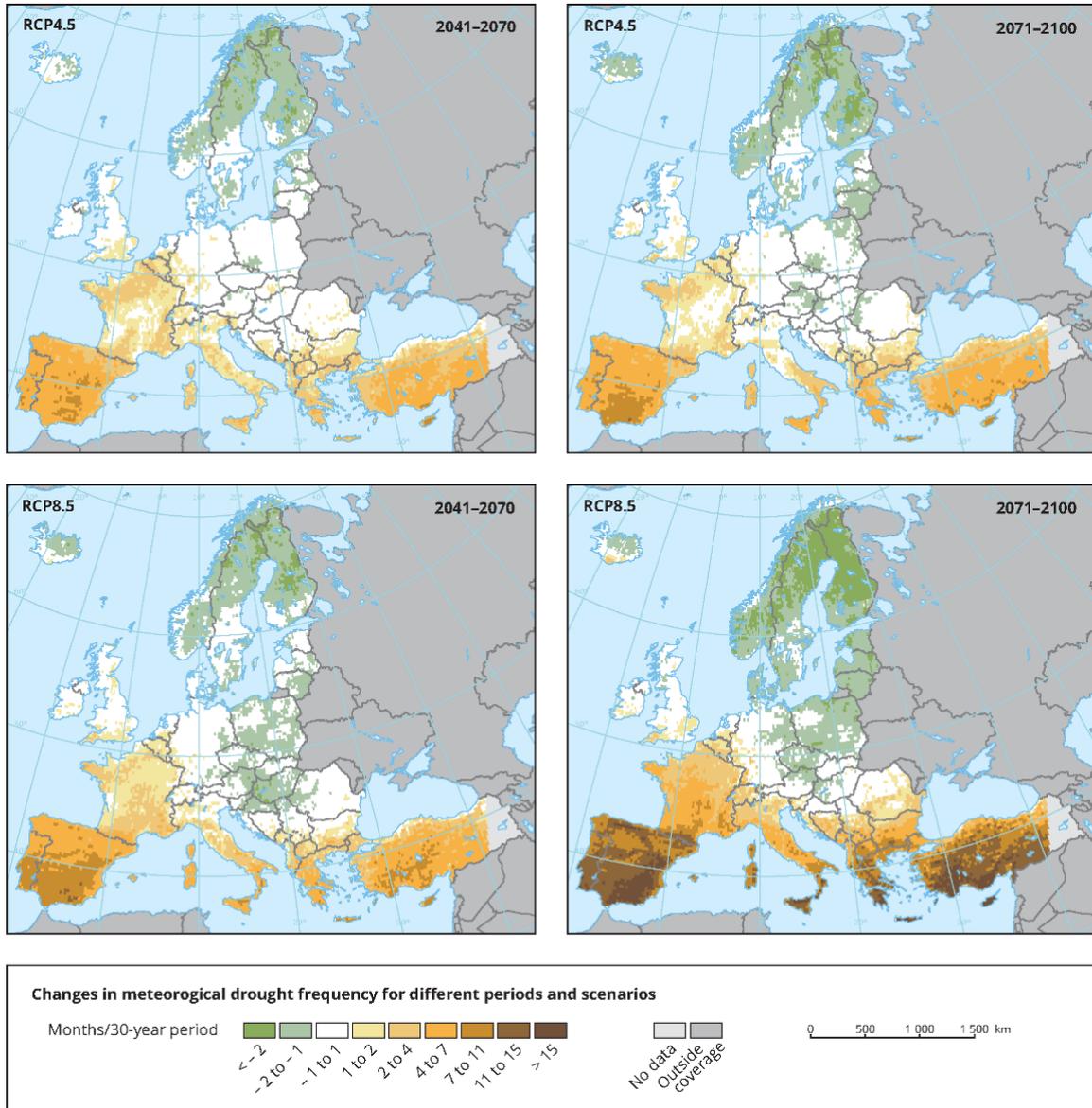
⁷⁵ Scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases (GHGs) and aerosols and chemically active gases, as well as land use/land cover (Moss et al., 2008). The word representative signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. The term pathway emphasizes that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (Moss et al., 2010).

⁷⁶ Two intermediate stabilization pathways in which radiative forcing is stabilized at approximately 4.5 W m⁻² and 6.0 W m⁻² after 2100 (the corresponding ECPs assuming constant concentrations after 2150)

⁷⁷ One high pathway for which radiative forcing reaches greater than 8.5 W m⁻² by 2100 and continues to rise for some amount of time (the corresponding ECP assuming constant emissions after 2100 and constant concentrations after 2250)



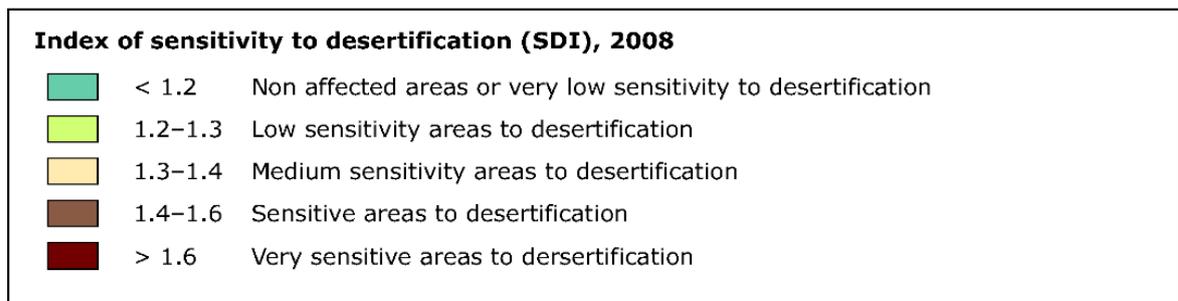
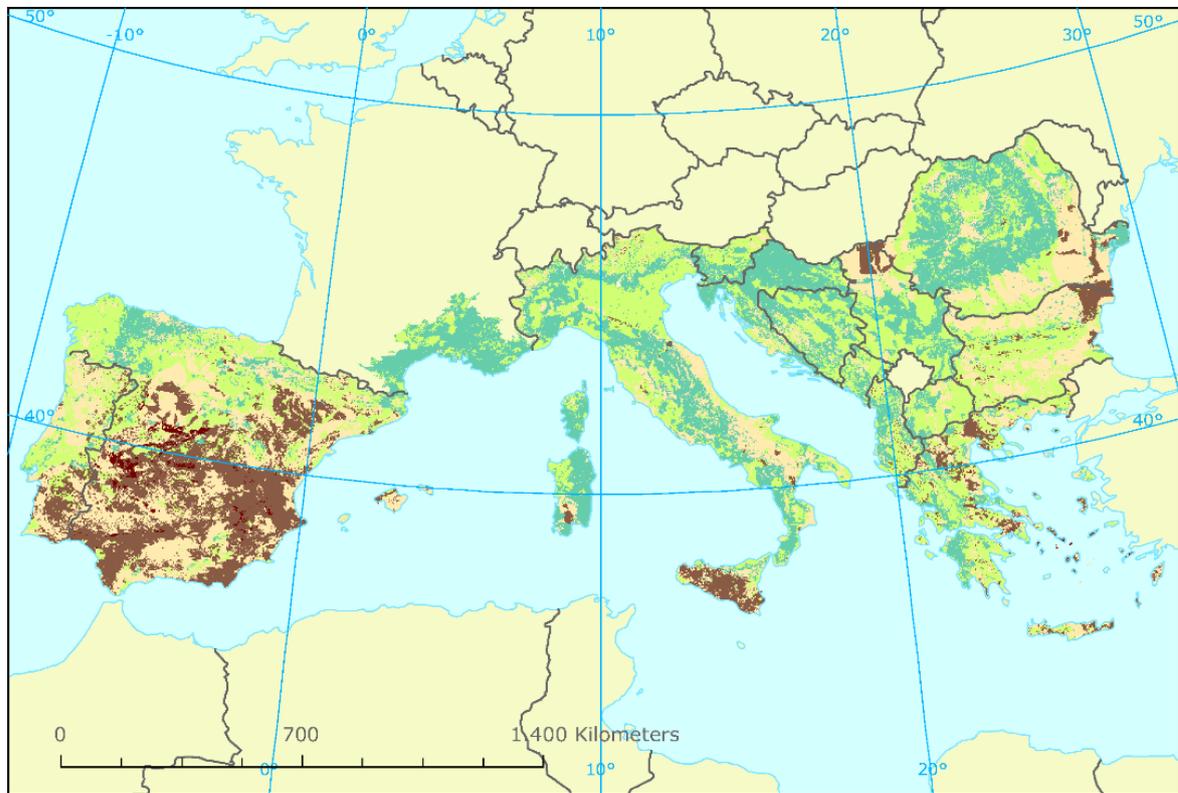
MAP 23 PROJECTED CHANGE IN THE FREQUENCY OF METEOROLOGICAL DROUGHTS



Source: Environmental European Agency



MAP 24 SENSITIVITY TO DESERTIFICATION AND DROUGHT AS DEFINED BY THE SENSITIVITY TO DESERTIFICATION INDEX (SDI)⁷⁸



Source: Environmental European Agency, DISMED project (Desertification Information System for the Mediterranean)

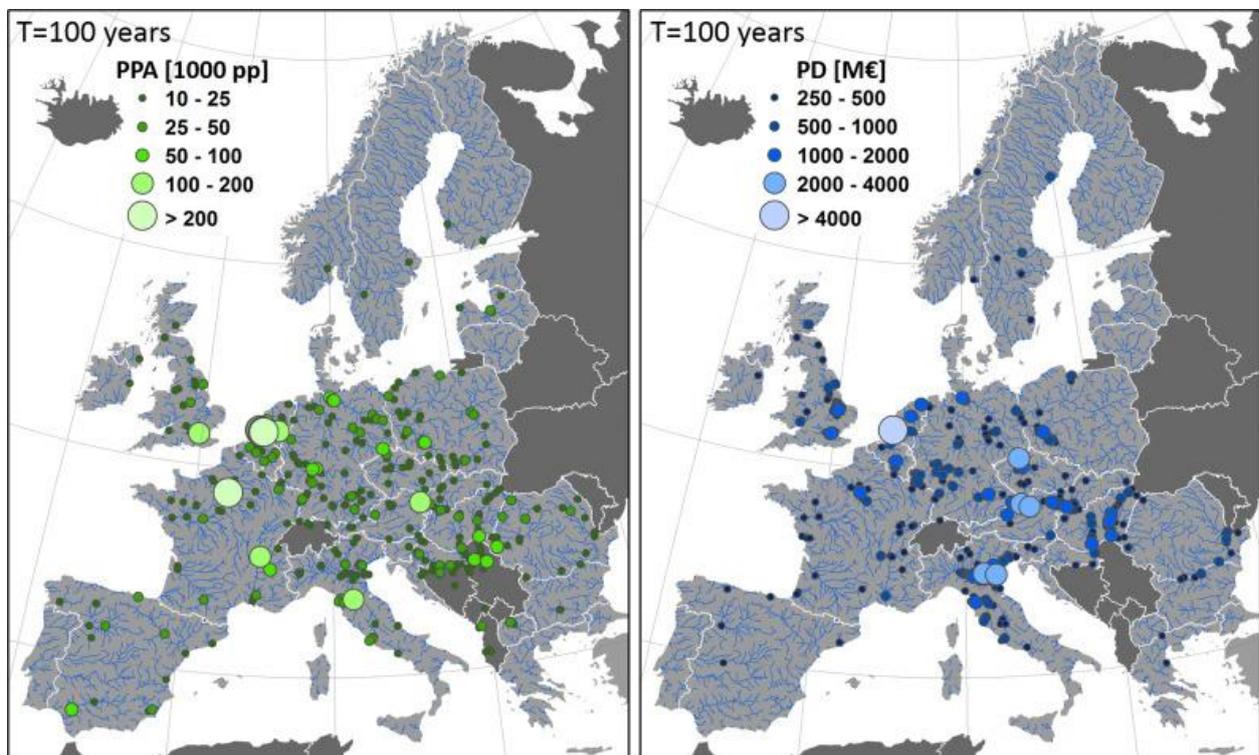
⁷⁸ based on soil quality, climate and vegetation parameters



4.2. FLOODS

Another challenge we are facing today is the fact that higher number of flooding events has been associated with climate changes in recent years⁷⁹. Floods have killed around 2.466 people in Europe since 1980⁸⁰ and according to a study conducted by the Joint Research Center (JRC), under a “high-end“ climate scenario, river floods could directly affect more than half a million people a year by 2050 and nearly one million by 2080, as compared to about 200,000 today. Also, the projected costs for flood induced damages could raise from 5.3 billion EUR today, to 40 billion EUR in 2050 and even 100 billion EUR in 2100.

MAP 25 POTENTIAL POPULATION AFFECTED (LEFT) AND DAMAGE (RIGHT) FOR THE 100-YEARS RETURN PERIOD FLOOD (ASSUMING FAILURE OF FLOOD PROTECTIONS), AGGREGATED FOR THE AOI.^{81,82}



Source: Alfieri, Lorenzo, et al. (2015)

However, flood occurrence for the lower Danube meadow is expected to decrease in the coming years, on account of the lack of precipitations. Even so, since 2000, an agreement has been in place among the governments of Bulgaria, Romania, Ukraine and Moldova - Lower Danube Green Corridor Agreement, establishing the existence of a green corridor along the entire length of the Lower Danube River (~1,000 km) which plays an important role in protecting the adjacent

⁷⁹ https://www.ipcc.ch/site/assets/uploads/2018/03/SREX-Chap3_FINAL-1.pdf

⁸⁰ Petrucci, Olga, et al. "Flood fatalities in Europe, 1980-2018: Variability, features, and lessons to learn." *Water* 11.8 (2019): 1682.

⁸¹ Alfieri, Lorenzo, et al. "Ensemble flood risk assessment in Europe under high end climate scenarios." *Global Environmental Change* 35 (2015): 199-212.

⁸² values below 10,000 persons affected and 250 m€ of damage are not shown



territories in the event of flooding. This corridor is represented by the Danube's floodplain and it required several efforts from the signatory states in order to maintain and conserve the area. Future strategies should consider the Agreement's objectives and try to enhance the conservation status of the Danube's floodplain.

MAP 26 DANUBE'S FLOODPLAIN



Source: <https://climate-adapt.eea.europa.eu/>

At the same time, according to the Water & Wetness Probability Index, there are some areas exposed to flooding events in the Romania-Bulgaria cross-border area. As stated in Chapter 3, Mehedinţi county and Montana and Pleven districts are the most exposed. The interstate cooperation should be enhanced, in order to continue to prevent any unexpected floods and, in the unexpected case of a flooding event, to reduce its negative outcomes.



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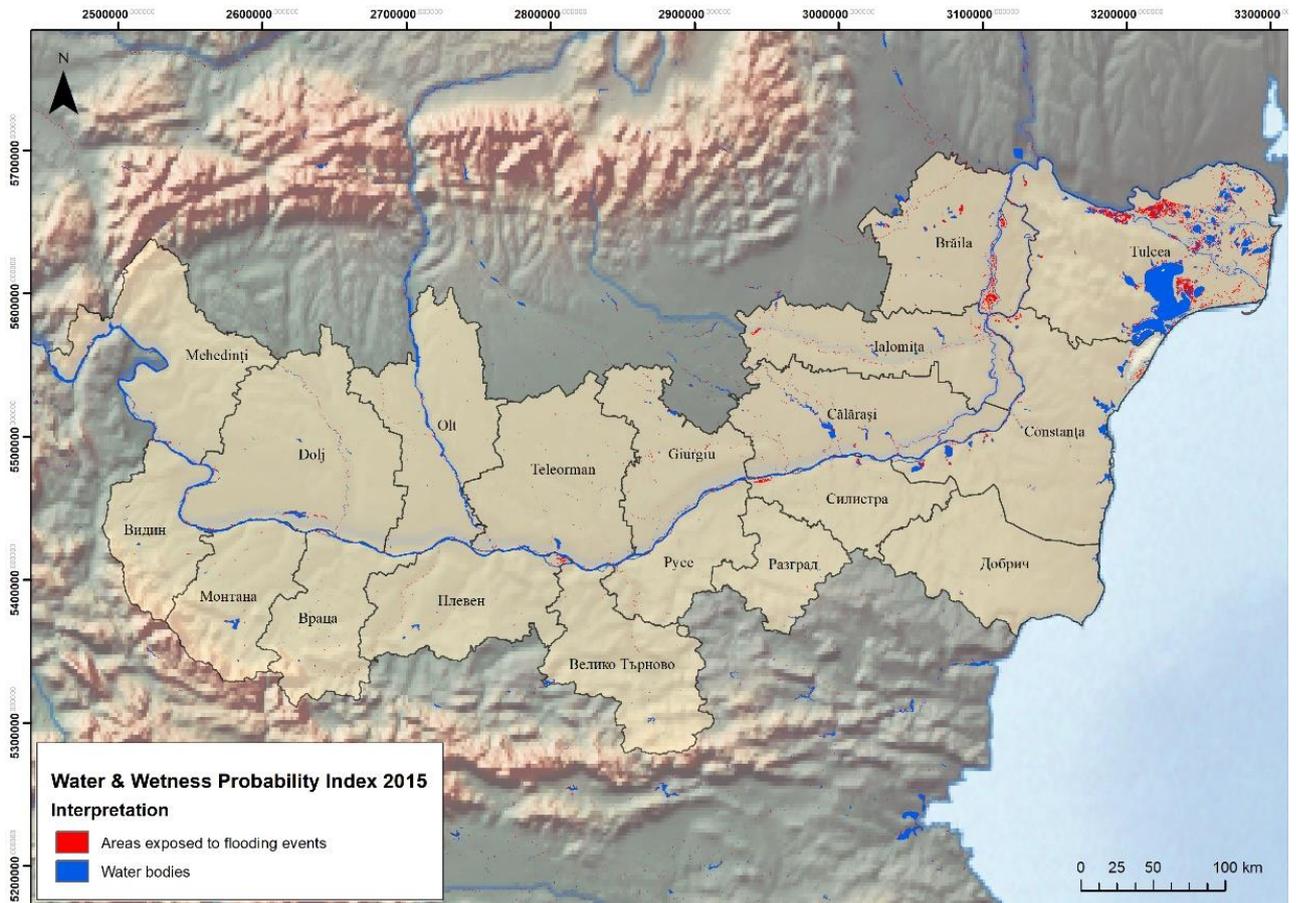


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MAP 27 INTERPRETATION OF THE WATER & WETNESS PROBABILITY INDEX 2015 (REVISED AND MODIFIED - 2019)



Source: <https://land.copernicus.eu/>

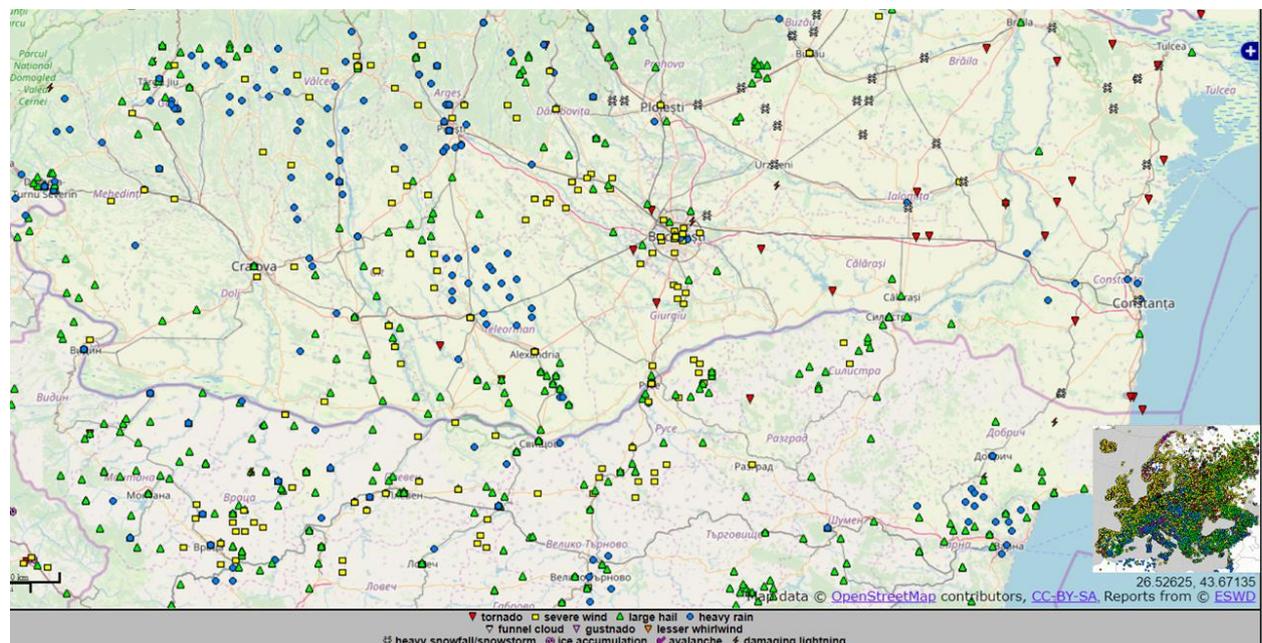


4.3. EXTREME WEATHER

The last two decades have revealed the fact that Europe could encounter meteorological phenomena which were not usual before. For example, in south-eastern Europe, severe weather events are often associated with Mediterranean cyclones. Since 2010, the cross-border area has encountered various extreme weather events, mostly tornadoes, severe winds, large hail and heavy rain. For instance, 205 tornado events have been reported in Romania (129) and Bulgaria (76) in the last decades⁸³ and the number is believed to increase exponentially in the following years. In Romania most tornadoes were registered in the south-eastern part, especially in Constanța county, an area that also has a high population density. In Bulgaria tornadoes are less frequent, and most of them were registered in districts outside the analysed area.

Extreme weather events generate significant material losses because human settlements in general, and the household architecture in particular, are not designed to resist to such phenomena. Thus, there is a need to adapt the planning regulations in order to also include measures and guidelines that specifically tackle the mitigation of extreme weather effects. This is particularly important for vulnerable areas exposed to different natural hazards that could occur at the same time, as it is the case in the cross-border area.

MAP 28 EXTREME WEATHER EVENTS BETWEEN 2010 AND 2020 (REPORT CONFIRMED BY RELIABLE SOURCES AND SCIENTIFIC CASE STUDIES)



Source: European Severe Weather Database

⁸³ Antonescu, Bogdan, et al. "Tornadoes in Europe: Synthesis of the observational datasets." Monthly Weather Review 144.7 (2016): 2445-2480.

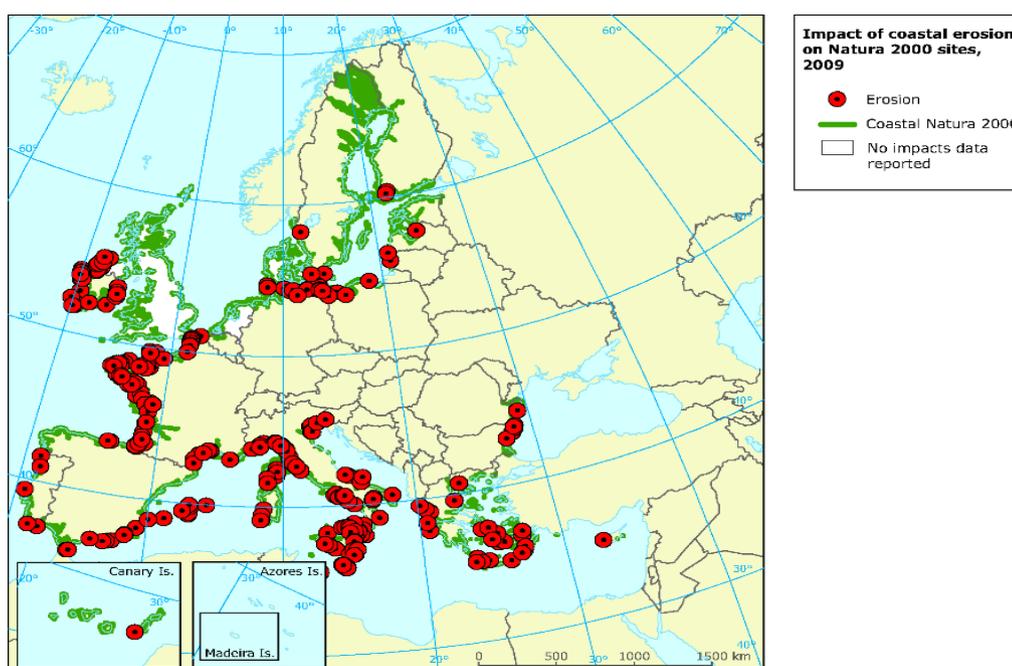


4.4. RISING SEAWATER LEVELS

According to the European Commission, in the last 35 years, the entire shoreline in Europe has retreated between 180 to 300 meters and 80 ha/year of the beach territory has been lost. Coastal erosion is not only expected to threaten the tourism industry in the summer season, but it might also endanger the safety of housing and public welfare. The European Commission underlines the importance of erosion that is expected to become a more and more significant challenge, mainly because of the impacts of climate change and Sea Level Rise (SLR), but also on account of the lack of effective coastal planning regulations (for example, numerous constructions have been built near the shoreline or even on the beach). Erosion, together with storm events and rivers draining in low-lying coastal areas, are important factors triggering coastal flood-risk.

In this context, SLR, although expected to be modest for the Black Sea, could still threaten coastal zones with permanent flooding in the long-term, particularly as tides are non-existent and currents are very weak along the Romanian and Bulgarian coastline. In addition, coastal erosion also represents a threat not only to households or economic activities, but also to the biodiversity conservation policy conducted by the EU. Data regarding the impact of coastal erosion over Natura 2000 sites show that Romanian and Bulgarian shore are exposed to such threats, which, in the context of future sea level rise, may become a more challenging issue to be tackled. A total area of 134,736.12 ha of Natura 2000 sites are exposed to coastal erosion in Constanta (86,466.34 ha) and Dobrich (48,269.78 ha). Therefore, the environmental authorities from both countries, together with the natural sites' managers and local population and businessmen should cooperate in order to mitigate the existing threats.

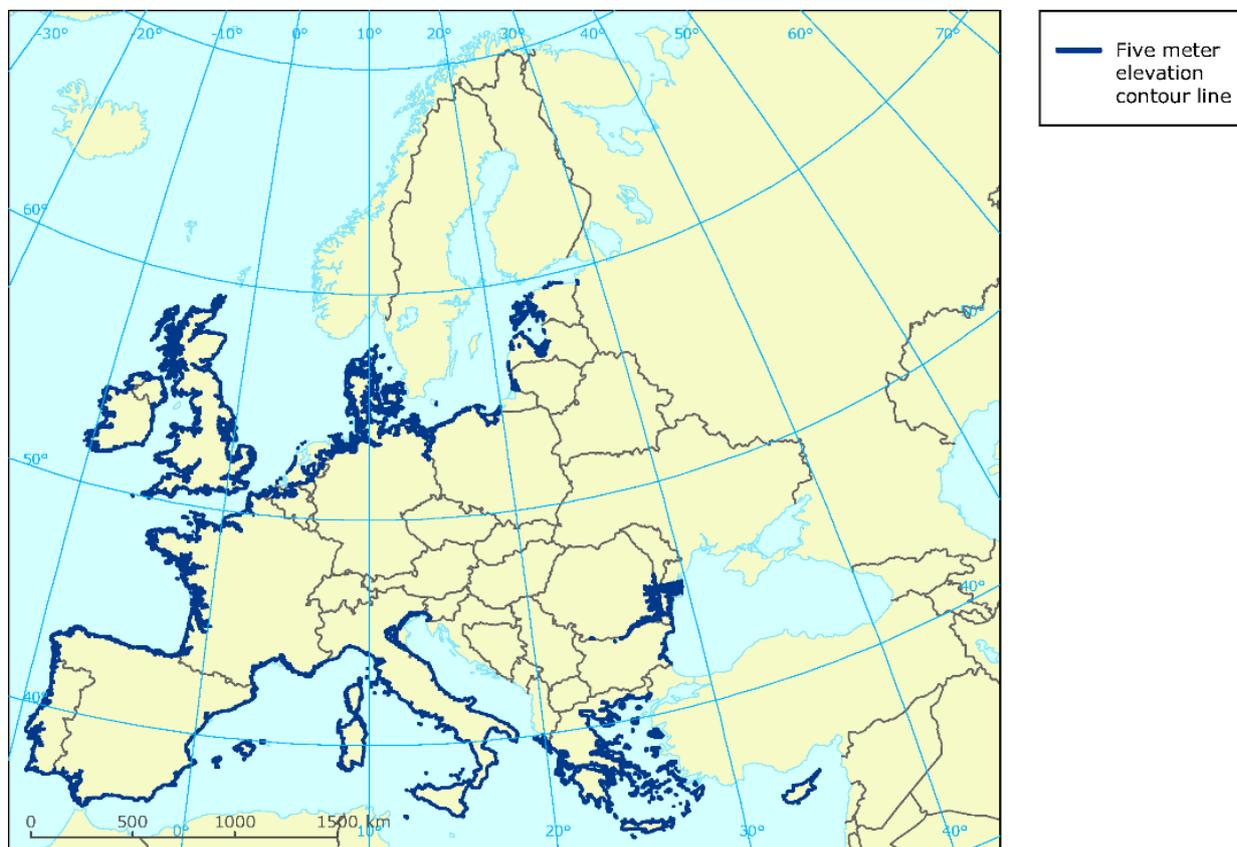
MAP 29 IMPACT OF COASTAL EROSION ON NATURA 2000 SITES, 2009



Source: European Environmental Agency



MAP 30 FIVE METER ELEVATION CONTOUR LINE



Source: European Environmental Agency

4.5. GREENHOUSE GAS EMISSIONS

Another important issue regards the Greenhouse gas (GHG) emissions, which are also deeply related to climate change as they represent the main cause for the climate disturbance recorded in the last century. Macro-economic factors have had the highest influence on changes in greenhouse gas emissions in the EU over the past two decades. However, the technological advances and the increased awareness regarding the negative outcomes of GHG have led to a decrease in the emissions at European level, but in order to achieve the needed reduction of 80-95 per cent by 2050, a more significant impact is required from the implementation of policy recommendations and regulations.

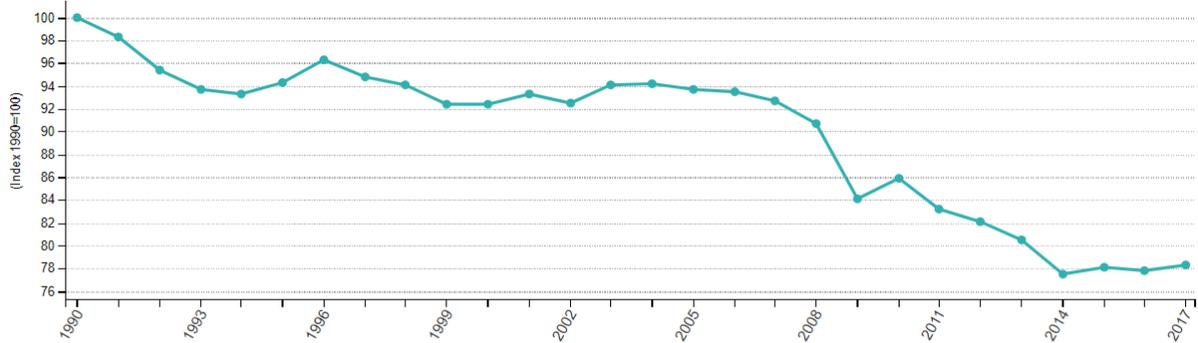
According to the reported data from the European Environmental Agency (EEA), Bulgaria has already achieved its Effort Sharing Targets⁸⁴, while Romania is still a long way from reaching these targets. Both countries have recorded a decrease in carbon dioxide emissions in the last

⁸⁴ The Effort Sharing legislation establishes binding annual greenhouse gas emission targets for Member States for the periods 2013-2020 and 2021-2030.



30 years, especially after the fall of the communist regimes. However, since 2010, the CO₂ emissions trend became positive and it is expected to remain the same in the next 10 years on account of an increase in general economic wellbeing.

FIGURE 52 GREENHOUSE GAS EMISSION TRENDS, EU-28, 1990-2017 (INDEX 1990=100)



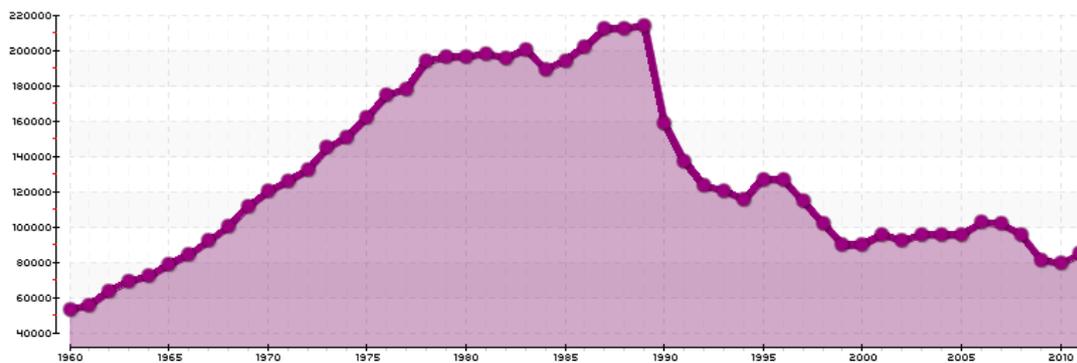
Note: Greenhouse gas emissions (including international aviation, indirect CO₂ and excluding LULUCF)
Source: European Environment Agency (online data code: env_air_gge)

eurostat

Source: Eurostat

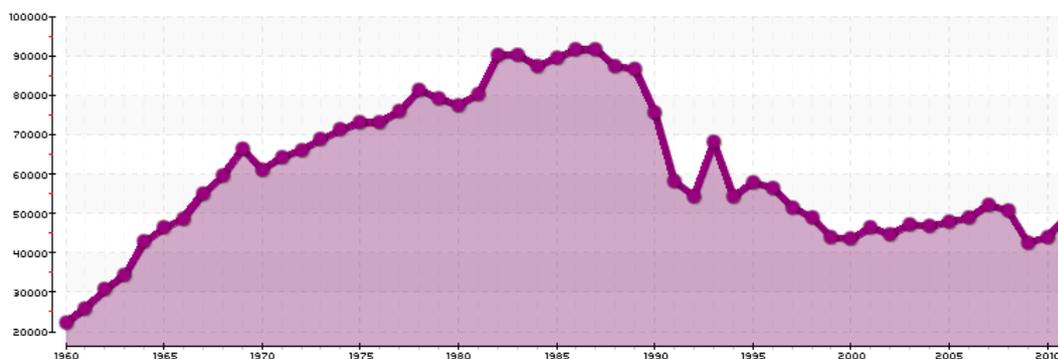
FIGURE 53 CO₂ EMISSIONS DYNAMICS FOR BULGARIA AND ROMANIA SINCE 1960

Romania - CO₂ emissions (kt)





Bulgaria - CO2 emissions (kt)



Source: <https://en.actualitix.com/>

Regarding the Romania-Bulgaria cross-border area, agriculture is the main economic activity taking place in this region, which also has a significant impact on GHG emissions. In 2018, agricultural activities were responsible for 30.6% of Romania's total GHG emissions, with the hotspot region for agricultural activities being in the southern part of the country. For the same year, in Bulgaria, agricultural activities generated around 21.2% of the country's total GHG emissions, and, resembling the case of its neighbouring country, most of the crops are located in the proximity of the Danube.

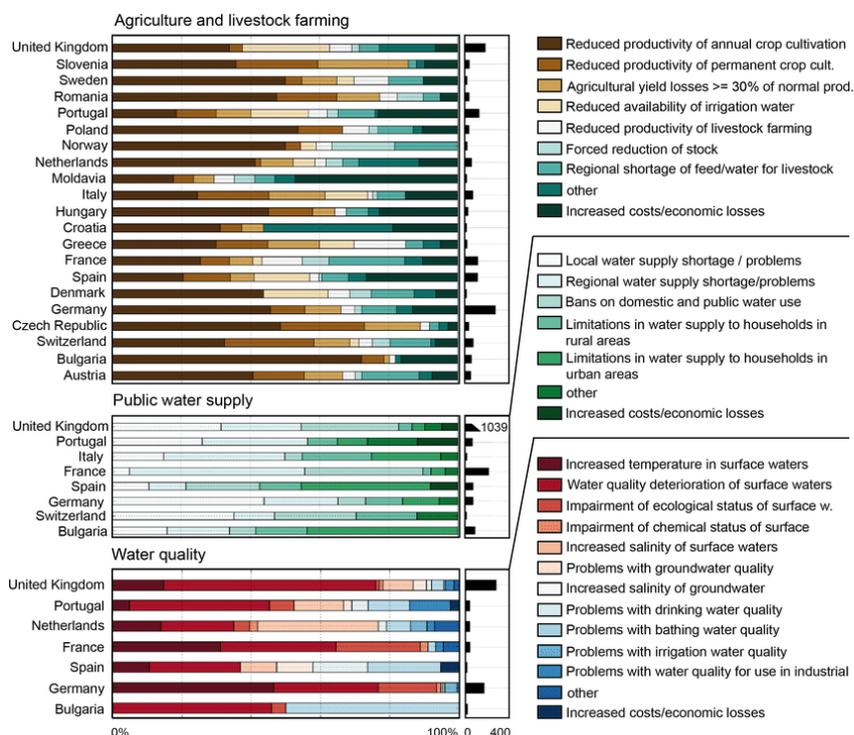
4.6. ECONOMIC, SOCIAL AND ENVIRONMENTAL IMPACT GENERATED BY CLIMATE CHANGE

Regarding the outcomes of climate change, a research study conducted by Stahl et. al⁸⁵ in 2016 emphasized that in the South-Eastern Europe countries, impacts generated by drought (e.g. crop losses, freshwater availability, increase in prices etc.) are extremely complex. Comparing to the European situation, Romania has reported a number of impacts generated by droughts above the European average (155), while Bulgaria indicated a number of impacts below the average (60). Romania has recorded impacts over agriculture and livestock farming (reduced productivity of annual crop cultivation, reduced productivity of permanent crop cultivation, agricultural yield losses $\geq 30\%$ of normal productivity, reduced productivity of livestock farming, forced reduction of stock, regional shortage of feed/water for livestock), while Bulgaria recorded impacts on agriculture and livestock farming (mainly reduced productivity of annual crop cultivation and increased costs/economic losses), public water supply (mainly limitation of water supply to households in urban areas) and water quality (impairment of ecological status of surface water and problems with drinking water quality).

⁸⁵Stahl, Kerstin & Kohn, Irene & Blauhut, Veit & Van Loon, Anne & Melsen, L.A. & Van Lanen, Henny. (2016). Impacts of European drought events.



FIGURE 54 REPORTED IMPACT TYPES IN THREE SELECTED IMPACT CATEGORIES FOR COUNTRIES WITH AVAILABILITY OF >15 REPORTED DROUGHT IMPACTS IN THE SPECIFIC CATEGORY



Source: Stahl et al. 2016

In addition, considering the estimated rainfall patterns for both countries, the South-Eastern region of Romania is the most likely to experience a decrease in precipitations during almost all cold months, the decrease being around -5% by 2071-2100, while for the period 2090-2099, over 90% of the climate models forecast serious droughts during the summer (with negative deviations compared to the period 1980-1990 higher than 20%). Likewise, the Bulgarian situation is quite similar as it forecasts a reduction in precipitations as being highly possible, leading to a significant reduction of the total water reserves in the country. In this regard, projections suggest a decrease in precipitations by approximately 10 percent by 2020, 15 percent by 2050 and up to 30-40 percent by 2080. All districts in the cross-border area will be affected by the phenomenon. Consequently, the necessity to provide protection should be supported by the adaptation and mitigation policies in order to be able to reduce the possible damage costs.

All of these should be considered in the context in which, in the Romanian-Bulgarian cross-border area, all the regions, counties and districts have a very low capacity to adapt to climate changes (they are among the least prepared territories in the eastern and southern part of Europe). The low capacity to adapt to climate changes is influenced by several dimensions such as technology, infrastructure, institutions, economic resources, knowledge and awareness, as well as geographical location (ESPON 2013). At the same time, mitigation capacity is related to the ability to reduce human contribution to climate change. The value of this indicator is also the lowest in the eastern EU regions such as the regions of the Romania-Bulgaria cross-border area. Furthermore, according to the ESPON's territorial observations, the mitigation capacity is also correlated with the vulnerability to fluctuations in energy cost and security. The projected



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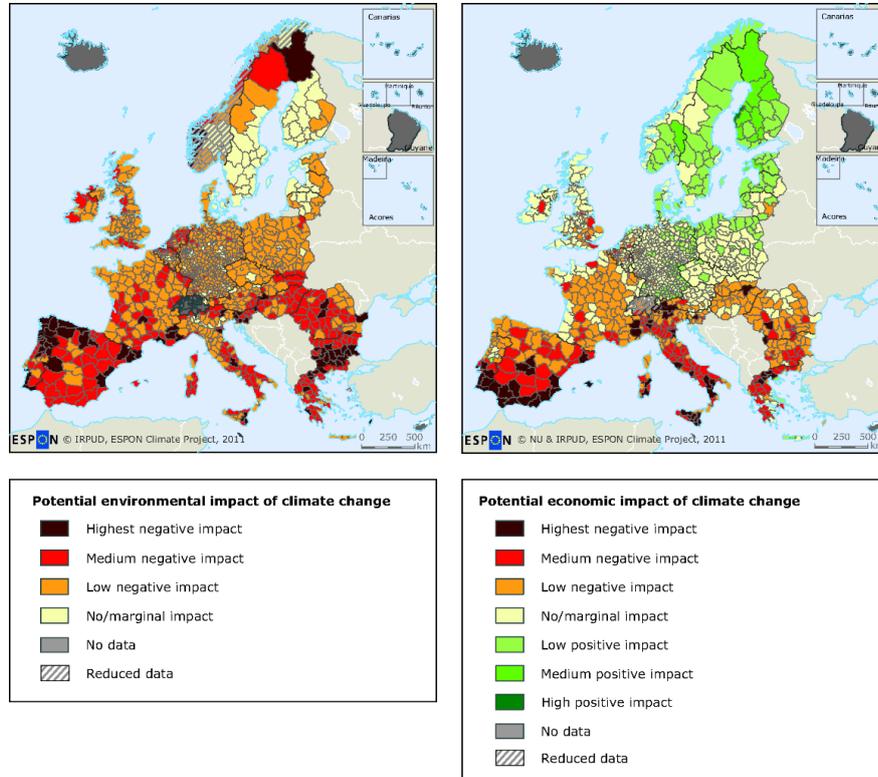
environmental and economic impacts generated by climate changes seem to be harsher in the Romania-Bulgaria cross-border area than in other regions in Europe. From an environmental perspective, the counties and districts of this region will face a medium negative impact, excepting Dolj, Călărași and Constanța from Romania, where the impacts are projected to be low negative, and Silistra from Bulgaria, where the impact is projected to be the highest negative. From an economic perspective, the impact for most of the counties and districts in the region is projected to be rated as low negative, excepting Dolj and Giurgiu from Romania and Ruse from Bulgaria, which are expected to face a medium negative impact, as well as Vidin from Bulgaria, which is expected to face a high negative impact. These projections are established based on how the climate change issue is dealt with by local governing bodies, as well as the existing challenges to climate change mitigation in the region.

At territorial level, taking into consideration the Gross Domestic Product (GDP) in 2016, Constanta and Dolj counties (Romania) are the richest in the cross-border region, at the other end being the districts of Vidin, Montana and Silistra (Bulgaria). In this context, the efforts to address climate change effects should focus more extensively on the underdeveloped counties and districts since their main economic activity is represented by agriculture and climate change negative outcomes may lead to increased poverty in these areas.

Last but not least, regarding biodiversity conservation, the analysed region shelters 253 Natura 2000 sites (Romania - 126; Bulgaria - 127). Climate change effects over the European conservation network may generate unwanted outcomes, such as the spread of invasive alien species or habitat losses. Therefore, climate change mitigation must be set as a main priority in policy making and territorial planning in the next decades.



MAP 31 POTENTIAL ENVIRONMENTAL AND ECONOMIC IMPACT OF CLIMATE CHANGE



Source: ESPON CLMATE Project, 2011

4.7. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

In conclusion, the negative outcomes of climate change are to be greater felt in vulnerable regions, where economic, social and environmental issues are already present. The Romania-Bulgaria cross-border region is facing similar challenges and displays an increase of the average annual temperature by more than 3.6oC on both banks of the Danube. All Romanian counties and Bulgarian districts in the cross-border area are considered to have a high degree of vulnerability to climate change.

For both countries, droughts represent an important issue, but Romania reported a higher number of droughts than Bulgaria in territories from the cross-border area. The droughts will have serious consequences in the agricultural sector, not just for the current period, but also for the next decades. This phenomenon will not have singular effects, but it will also result in a desertification process, with significant impact on the south-western part of Romania and the district of Dobrich in Bulgaria.

Other important aspects of the climate change analysis reveal extreme weather events, such as tornado events (the Romanian side is more exposed, especially Constanța county). Furthermore, erosion, together with storm events and rivers draining in low-lying coastal areas, are and will be furthermore the main factors triggering coastal flood-risk. Coastal erosion also represents a



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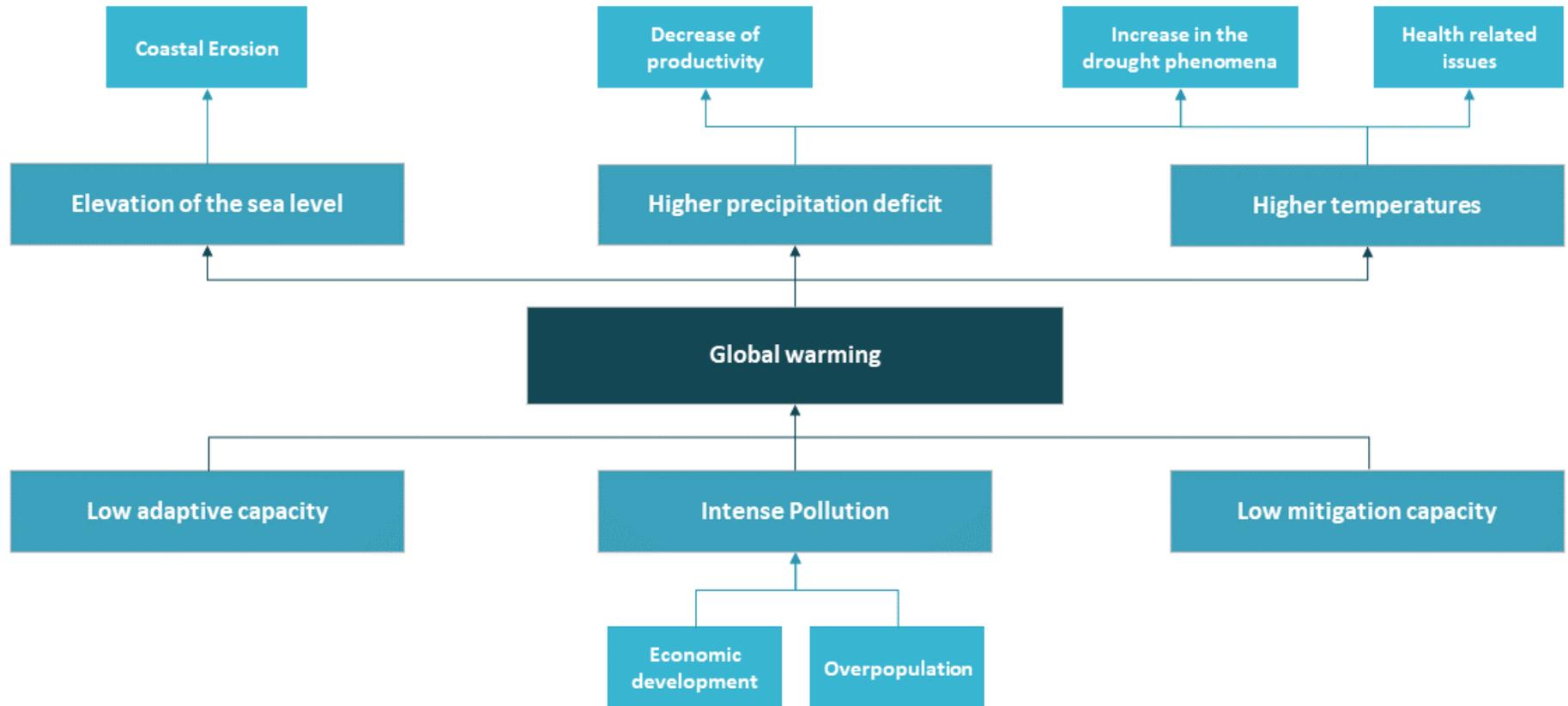
threat not only to households or economic activities, but also to the biodiversity conservation policy promoted at EU level.

Greenhouse gas emissions also have an important role in the enhancement of the climate change phenomenon. There are important steps that have been taken by both countries. They have recorded a decrease in carbon dioxide emissions in the last 30 years and Bulgaria has achieved its Effort Sharing Targets, but Romania is still a long way from reaching these targets. However, the CO₂ emissions trend is positive, and it is expected to remain the same in the next 10 years, on account of an increase of the socio-economic wellbeing.

Considering the way climate change issues are approached by local governing bodies and the existing challenges to climate change mitigation in the region, the projected environmental and economic impacts generated by climate change seem to be harsher in the Romania-Bulgaria cross-border area compared to the national averages. Climate change will have serious effects both on urbanized areas and on the cross-border protected areas network. Therefore, climate change mitigation should be set as a priority in policy making and territorial planning in the area in the next decades.

Recently, a series of initiatives have been adopted and implemented at European level such as: the New European Green Deal, the Proposal on a European 'Climate Law' enshrining the 2050 climate neutrality objective; the proposals for revisions of relevant legislative measures to deliver on the increased climate ambition, following the review of Emissions Trading System Directive; Effort Sharing Regulation; Land use, land use change and forestry Regulation; Energy Efficiency Directive; Renewable Energy Directive; or the CO₂ emissions performance standards for cars and vans. In this context, the New EU Strategy on Adaptation to Climate Change and the funds that will be connected to the New European Green Deal will have an important role in making steps ahead towards counteracting climate change.

PROBLEM TREE





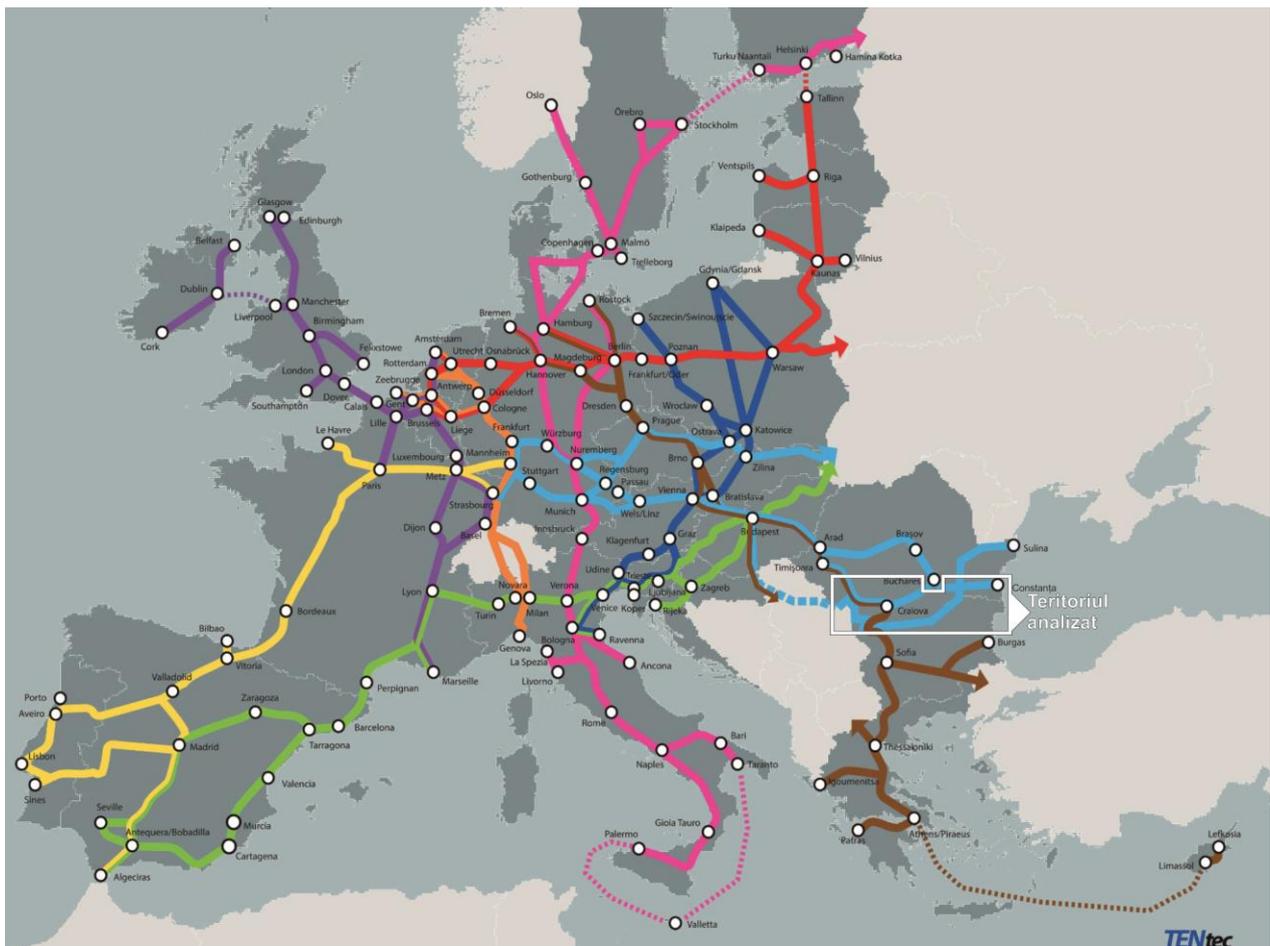
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5. PHYSICAL AND DIGITAL CONNECTIVITY

5.1. TRANSPORT IN THE EUROPEAN TERRITORY

MAP 32 THE MAIN CORRIDORS OF THE TEN-T NETWORK



Source: EC. N.d. Trans-European Transport Network (TEN-T). [online]: https://ec.europa.eu/transport/themes/infrastructure/ten-t_en (last accessed: 23.01.2020)

The Romania-Bulgaria cross-border area is served by two main corridors of the TEN-T network:

- The Orient East-Med corridor links northern Germany (Hamburg-Berlin) to Eastern Europe (Prague-Bratislava, Budapest-Timișoara-Craiova-Sofia) and South Eastern Europe (Thesaloniki and Athens). The corridor is built on multiple road, rail and an inland waterway links. The inland waterway represented by the Elbe river stops after passing Prague.
- The Rhine-Danube corridor is built around Europe's most important Inland waterway linking Central Europe (Frankfurt am Main, Strasburg or Vienna) with Eastern Europe (Bratislava, Budapest, Timișoara, Craiova, Bucharest and Constanța). Together, the



Rhine-Danube and Rhine-Alpine corridors link the Black Sea ports of Constanța and Sulina with the main Nord Sea ports.

Prague, Vienna, Budapest, Arad, Timișoara, Drobeta-Turnu Severin and Craiova are the main nodes of these two corridors. Both corridors (Rhine-Danube and Orient East-Med) could be possible extensions of China's Silk road, ensuring the link between Asian cities, Istanbul and Central Eastern Europe. Both corridors with their rail, road and inland waterway segments are crossing Romania and Bulgaria on the east-west direction.

After the guidelines for the development of the TEN-T network were renewed in 2013, the corridor concept was introduced in order to provide the possibility to prioritize certain links within the TEN-T core network. The north-south axis linking the two countries via Giurgiu - Ruse (part of the Pan European Corridor IX⁸⁶) remained within the TEN-T core network but lost its priority status, as it was not designated a corridor.

MAP 33 IMPLEMENTATION STAGES OF EURO VELO 6 CORRIDOR



Source: eurovelo.com / UMS RIATE for administrative boundaries - ESPON Mapkit

In addition to the TEN-T network the two countries are also crossed by two Euro Velo corridors:

- Eurovelo 13 - The Iron Curtain, starting in northern Finland passing near the Baltic Sea, Germany, Czech Republic, Slovakia-Bratislava, Romania-Drobeta Turnu Severin and ending in Bulgaria at the small Black Sea town of Rezovo.

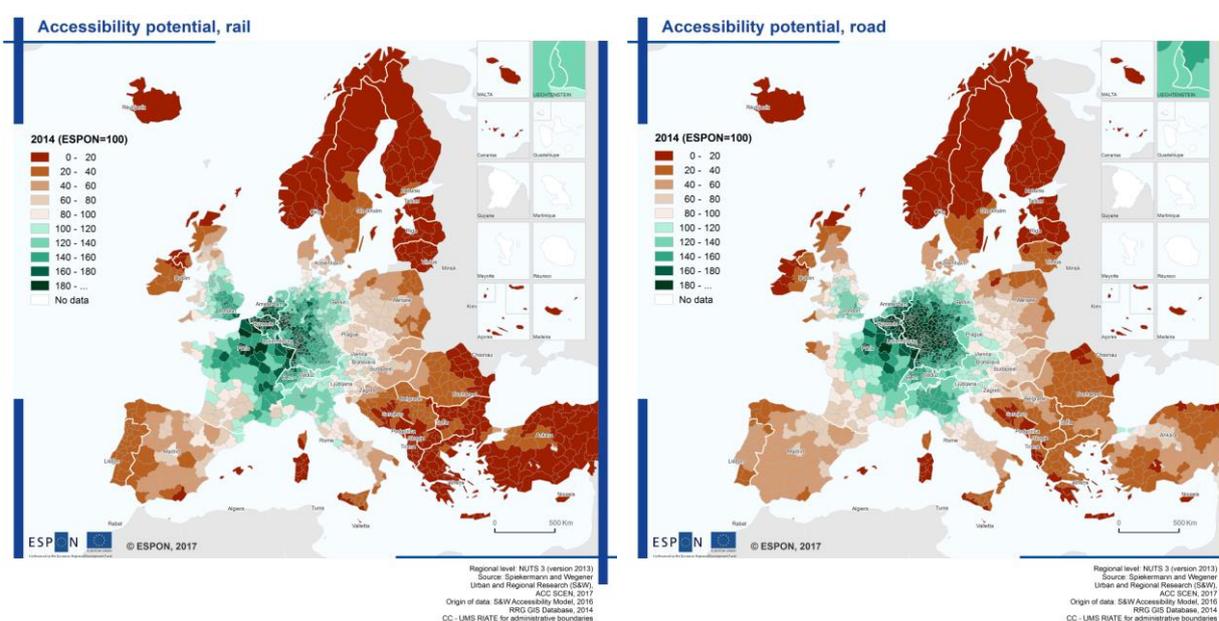
⁸⁶ The Pan European transport corridors have been defined in 1994 and updated in 1997. The Pan European Corridor IX was designed as an important link between Alexandroupolis (GR) - Ruse (BG) - Giurgiu (RO)- Bucharest (RO)-Chișinău (MD)-Kiev (UA)-Moscow (RUS) and Helsinki (FIN).



- Eurovelo 6 - Atlantic-Black Sea, starting from Nantes passing Konstanz and continuing along the Danube up to Constanța at the Black Sea.

The Eurovelo routes have a touristic purpose, hence they do not link large cities but aim for places with important natural or cultural heritage. Unfortunately, none of the Eurovelo corridor segments passing through Romania and Bulgaria are developed or at least signalled. Just Serbia has developed parts of the Eurovelo corridors between Bela Crkva and Zaječar. Most of the Eurovelo 6 route is completed or at least signalled, just the part between Romania and Bulgaria is not developed yet. Therefore, further developing the Eurovelo 6 route within the cross-border region would ensure a complete cycling route of 3,653 km linking important tourist attractions within Europe. This could greatly boost touristic activity, strengthen the local economy while also providing a sustainable transport corridor between settlements along the Danube.

MAP 34 ACCESSIBILITY POTENTIAL BY RAIL AND ROAD (2014)



Source: ESPON, 2017. Scenarios for accessibility by the sea, road, rail, air and multimodal.

The territorial accessibility is to a large extent ensured by the quality and capacity of the transport infrastructure forming the TEN-T Network (core and comprehensive)⁸⁷. As the capacity and quality of road and rail infrastructure is rather low, the potential accessibility by road in the Romania-Bulgaria cross-border region is between 20 and 40% of ESPON average. The case is even worse in terms of potential accessibility by rail where most of Bulgarian districts in the region rank below 20% of ESPON average⁸⁸⁸⁹. Starting from the TEN-T outline for road infrastructure, potential accessibility for 2030 should reach close to 60% of ESPON average in most of Bulgarian districts (except Vratsa and Montana which remain below 60%) while most of Romanian counties will remain under 60%, except for Giurgiu which could improve to 60%.

⁸⁷ In 2016 only 45% of the TEN-T core road network was completed in Romania and 50% in Bulgaria. In terms of conventional rail Romania managed to complete 4% and Bulgaria 11% of the core network.

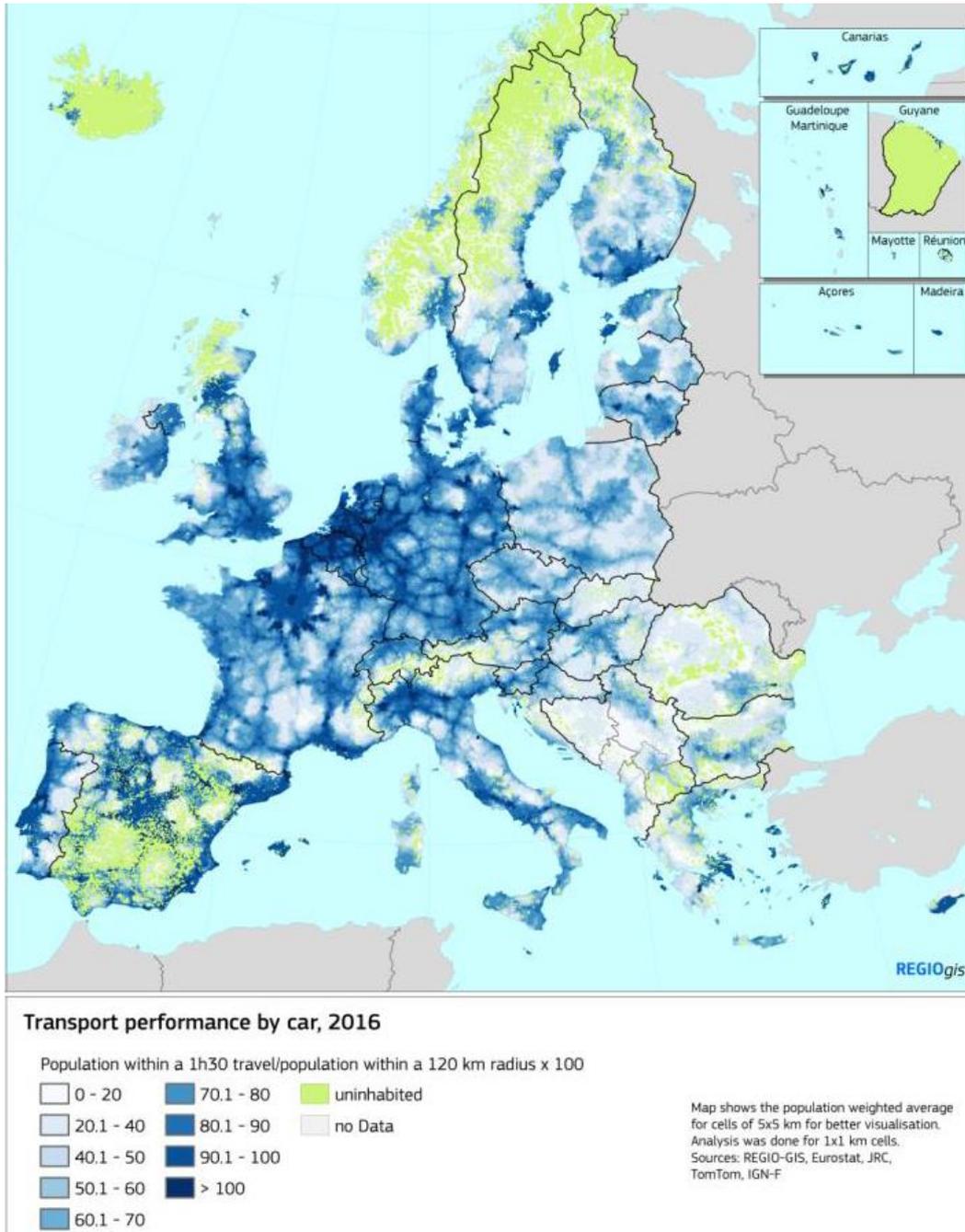
⁸⁸ ESPON average - average value taking into account all states included in the ESPON programme (including Turkey, Norway, Switzerland and other non-EU countries).

⁸⁹ As accessibility is related to the average value it is possible that territories don't change value even if they benefit from investments if the average of ESPON accessibility also increases.



Performance of railways will keep potential accessibility by rail below 40% of ESPON average, while eastern districts or counties like Constanța, Dobrich, Silistra or Razgrad will remain even below 20%. Giurgiu, Ruse, Pleven and Montana might reach close to 40% of ESPON average⁹⁰.

MAP 35 TRANSPORT PERFORMANCE OF THE EU ROAD NETWORK, 2016



Source: JRC

⁹⁰ Potential accessibility calculations for 2014 and scenarios for 2030 have been elaborated within: Scenarios for accessibility by the sea, road, rail, air and multimodal - ESPON 2017.



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Given the actual development of the road and rail infrastructure, it can be observed that their role remains rather local, even national. The actual network manages to link regional urban centres to some extent, but they are disconnected from the rest of the European territory.

At the moment, the main bottle necks in the transport infrastructure links are:

- The Pitești-Sibiu link, part of the A1 motorway - Romania;
- The Sofia - Kalotina link (continued by the A4-A1 motorways in Serbia) and the Sofia-Varna motorway A2;
- Brașov - Sighișoara / Simeria - Radna railways need to be upgraded.

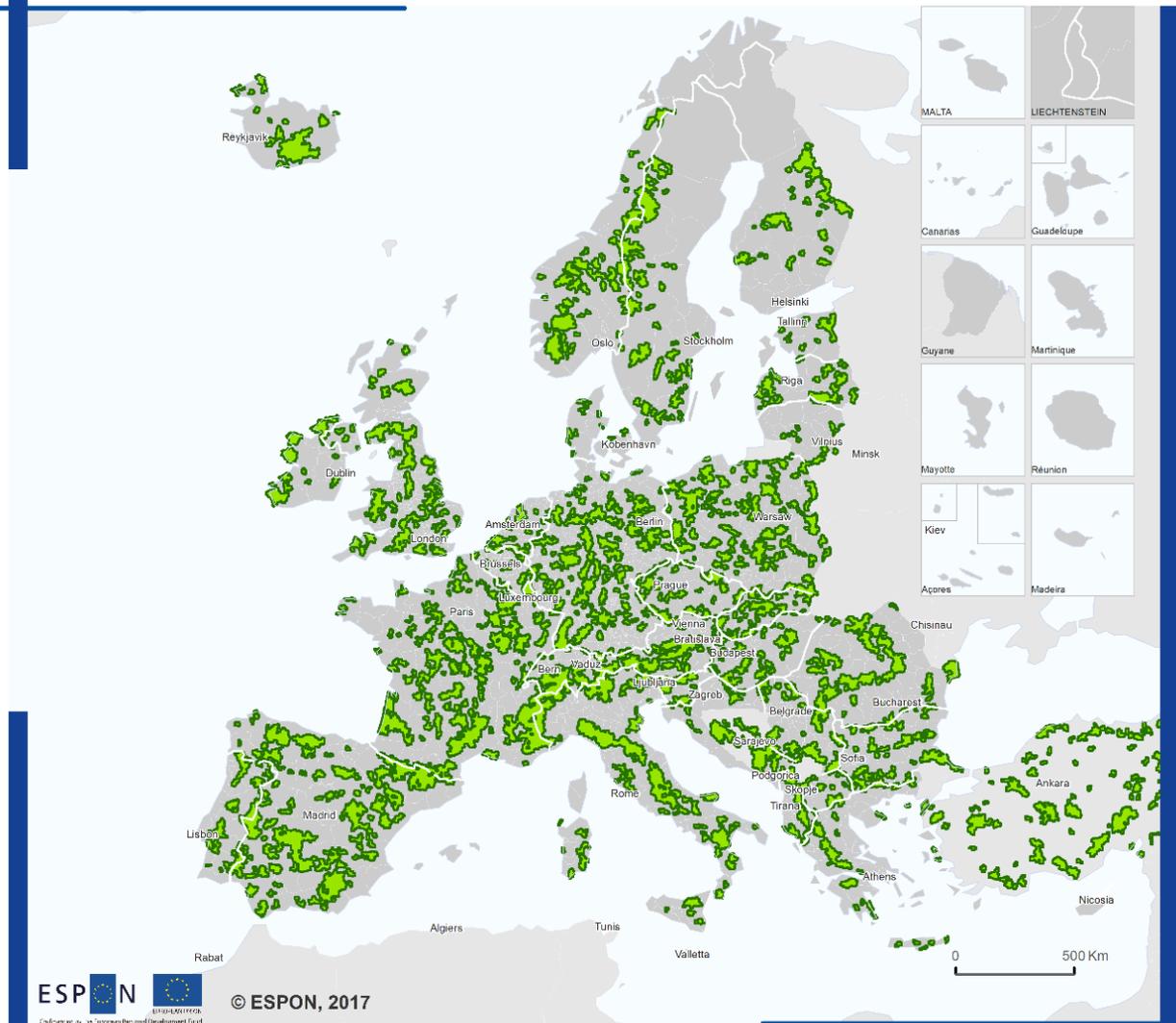
None of those priority links are within the Romania - Bulgaria cross-border area. Both countries are rather developing their east west links. In the case of Bulgaria, the northern part of the country is less developed in terms of road infrastructure, therefore links to Serbia and Greece are more performant and viable than those to Romania. Even if east-west railways (Rhine Danube Corridor) are a priority for Romania, the two-railway links Craiova - Calafat and Bucharest - Giurgiu remain important projects, especially for the cross-border area.



5.2. REGIONAL TRANSPORT NETWORKS

MAP 36 POOR ACCESS TO SERVICES OF GENERAL INTEREST

Delineation 3: Inner Peripheries in Europe (grid level)



ESPON © ESPON, 2017

Delineation 3: Poor access to services-of-general-interest Identification of grid areas as Inner Peripheries

- IP areas in Europe
- non-IP area

Level: grid cells (2.5x2.5 km)
Source: ESPON Profecy
Origin of data: TCP International, 2017;
TCP International Accessibility Model, 2017
CC - Eurostat-GISCO, RRG GIS Database

Note:
Outermost regions excluded from analysis.

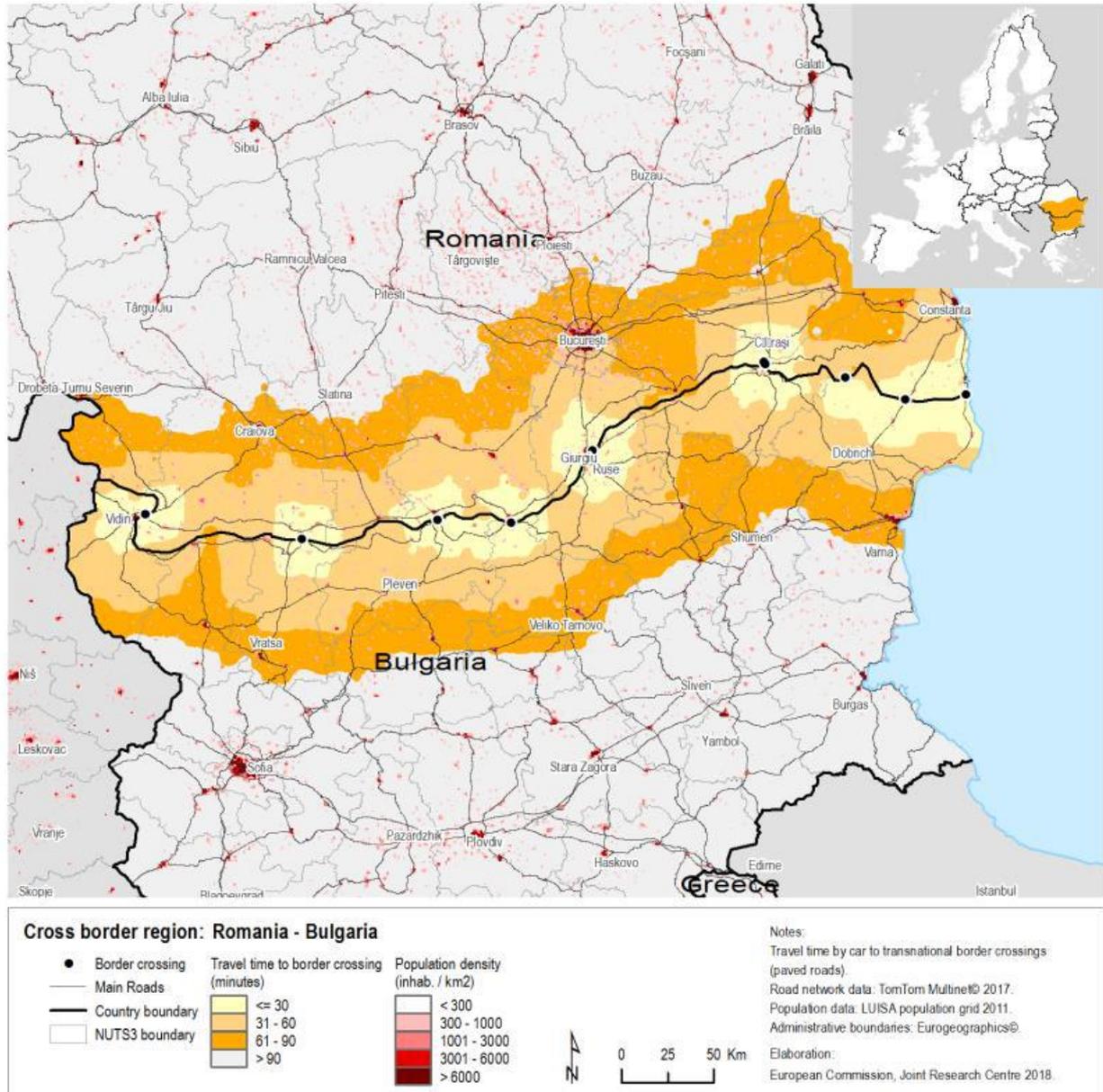
Source: ESPON, 2017. PROFECY - Final Report

Due to a lack of connectivity and a less dens settlement network the territory along the Danube within the cross-border area has poor access to services of general interest. This is why most counties and districts in the analysed territory are considered inner peripheries in terms of accessibility (access to services of general interest and to urban centres). The only exception is the cross-border urban system of Giurgiu and Ruse together with the Black Sea coast. Inner peripheries, as defined by the ESPON PROFECY project, are territories that face certain challenges when it comes to accessibility to basic services that are of general interest. They are



treated as a territorial phenomenon and each of them portrays a unique character, as it is the result of several processes that lead to the specific challenges.

MAP 37 TRAVEL TIME BY CAR TO BORDER CROSSINGS



Source: Border Orientation Paper Romania-Bulgaria

The network of border crossings ensures a maximum of 60 minutes to reach a given crossing anywhere along the Danube. The best conditions in terms of cross-border connectivity can be seen in the eastern part of the regions where the border is land based. The territory between Călărași and Giurgiu (including Oltenița) has the poorest access to border crossings.



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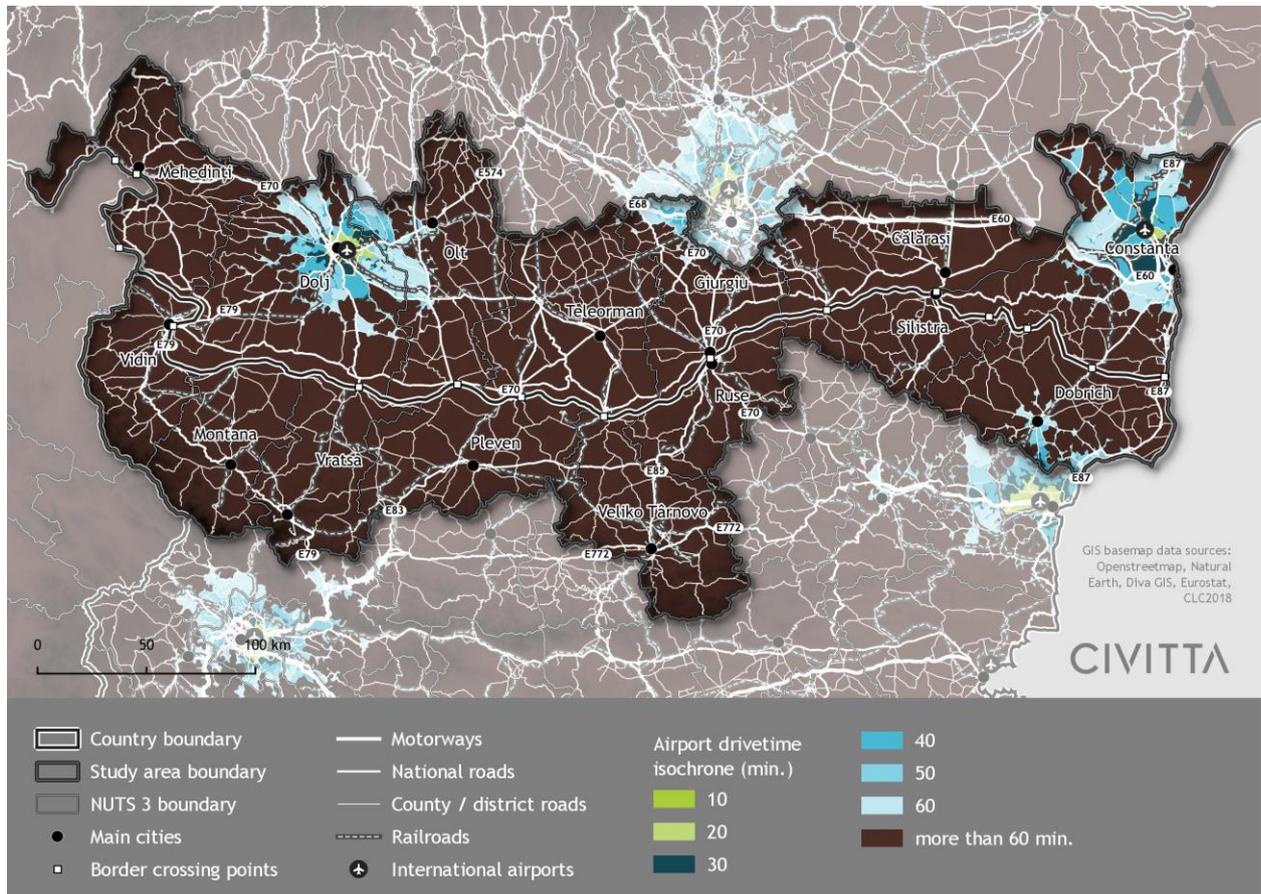
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5.2.1. AIRPORTS

MAP 38 DRIVE TIME ISOCHRONE (60 MIN) FOR AIRPORT IN THE ROMANIA-BULGARIA CROSS-BORDER AREA



Source: Calculations made with Open route service

The Romania-Bulgaria cross-border region includes two international airports, both on the Romanian side: Craiova International Airport and Constanța Mihail Kogălniceanu Airport. The territory is also served by the international airports of Bucharest, Varna and Sofia. Because of its large variety of international flights, Bucharest's international airport has a more extended catchment area which also includes several Bulgarian municipalities (most notably, the city of Ruse). The improvement of rail and road infrastructure between Constanța and Bucharest was one of the reasons for the slow decline of the Mihail Kogălniceanu Airport which now only serves two destinations (Istanbul and London), down from 10 in 2018. Craiova's international airport also has a good position and a stable catchment area serving south western Romania but also some municipalities from the north western part of Bulgaria (most notably Vidin). The catchment area of Bulgarian airports (Sofia and Varna) does not reach Romanian cities. Therefore, the most important airports in the region remain those near Craiova, Bucharest and to a lesser extent Constanța (with fewer flights) or Varna and Sofia which are further away.

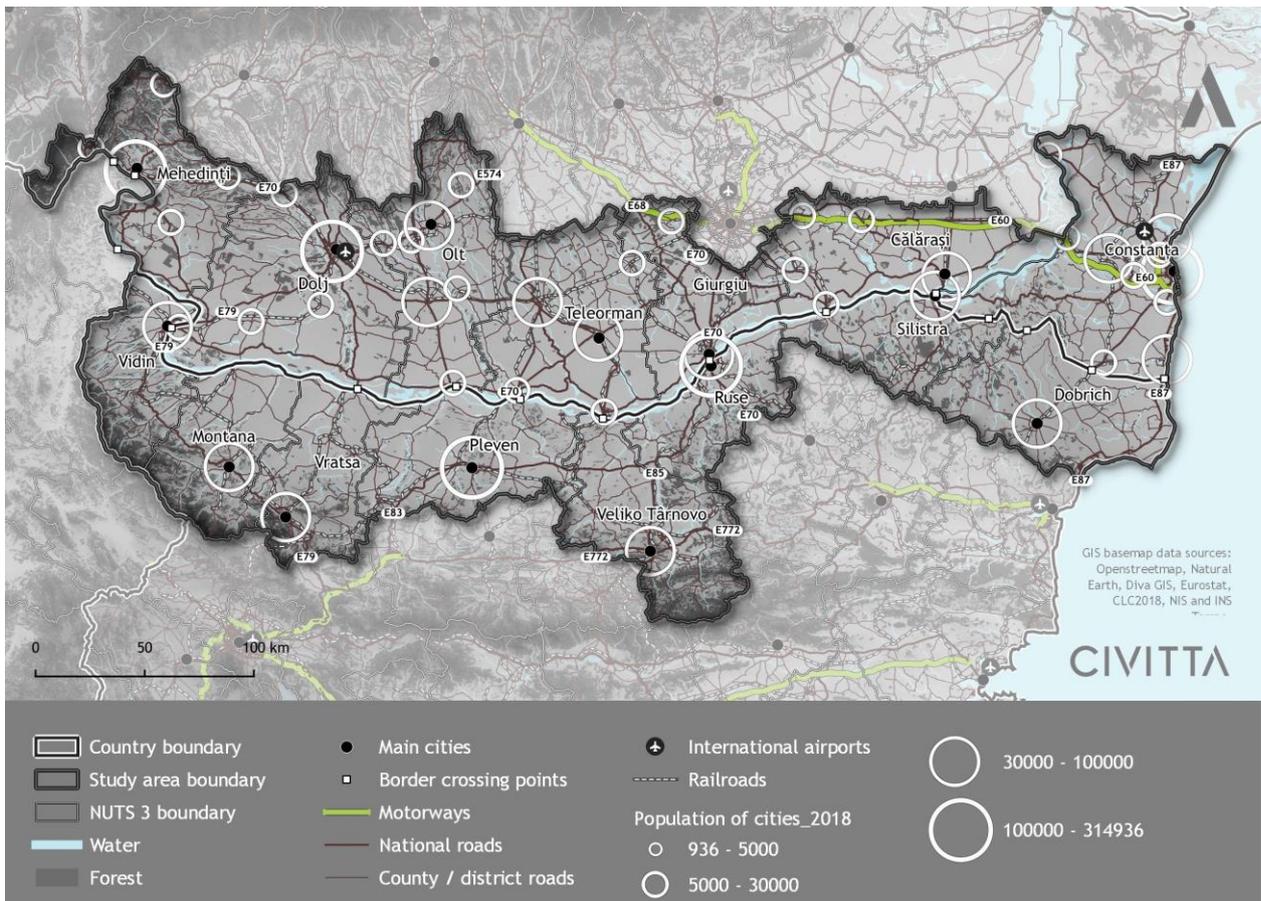


5.2.2. ROADS

a) Role of the road network in relation to the settlement structure

Within the settlement structure of the two countries, the Danube still acts as an important barrier. Therefore, major flows of goods and passengers are following the east-west direction, rather than north-south. The six motorways of Bulgaria link the port cities of Varna and Burgas to Sofia (A2 and A1) and continue to Greece (A3 and A4) or Serbia (A6). A similar settlement structure can be identified in Romania, the actual motorway network links the port of Constanța to Bucharest and continues to Pitești with further links to either Craiova (planned express road) or Sibiu (planned motorway) and Timișoara. There are also existing and planned links from Bucharest to the north (Ploiești and Brașov), but no link towards south, to Giurgiu. After the TEN-T thematic corridors were reviewed in 2013, infrastructure links between the two countries lost their priority status. Thus, the Giurgiu - Bucharest road was not included into a TEN-T core corridor and lost its priority status, thus remaining a simple part of the TEN-T core network.

MAP 39 MAJOR ROAD INFRASTRUCTURE WITHIN THE SETTLEMENT NETWORK



Source: Own representation based on NIS /INS population data

The main road network that facilitates the cross-border regional links between Romania and Bulgaria is presented below:

- E70 (route linking Serbia - Timișoara - Caransebeș - **Drobeta Turnu Severin - Craiova - Alexandria - Bucharest - Giurgiu - Ruse - Razgrad - Shoumen - Varna - Turkey**);



- E85 (route linking Ukraine - Siret - Suceava - Sabaoani - Roman - Bacău - Măreșești - Tișița - Buzău - Urziceni - Bucharest - **Giurgiu - Ruse - Biala - Veliko Tarnovo** - Stara Zagora - Haskovo - Svilengrad - Greece);
- E79 (route linking Hungary - Oradea - Beiuș - Deva - Petroșani - Târgu Jiu - **Craiova - Calafat - Vidin - Vratsa** - Botevgrad - Sofia - Blagoevgrad - Serai);
- E87 (route linking Ukraine - Galați - Tulcea - **Constanța** - Vama Veche - Durankulak - Varna - Burgas - Marinka - Malko Tarnovo - Turkey);
- E675 (route linking Agigea - Negru Vodă - Kardam).

There are no motorways passing the Romania-Bulgaria border. All cross-border links are served by national or at least county roads. Just two crossings between the county of Constanța and the districts of Silistra and Dobrich⁹¹ are served by communal / local roads.

In terms of freight, the main east-west corridors remain valid as they are used to link ports with main cities and nearby industrial sites. According to the UNECE E-road census, the main transport routes passing the Romania-Bulgaria cross-border region are:

- E772 / A2 linking Varna (port) and Sofia
- E70 / A2 linking Varna (port), Giurgiu and Bucharest
- A2 / A1 (E81) / E85 linking Constanța (port) with Bucharest and continuing to either Pitești (major industrial city in Romania) or Giurgiu and further on towards Bulgaria.

Finishing the A4 motorway between Sofia and Nis could strengthen the Varna - Sofia transport corridor and facilitate a better access to Central Europe. The most important border crossing for freight remains the Giurgiu-Ruse bridge, while the Vidin-Calafat bridge and Vama Veche-Durankulak crossing remain secondary links. New bridges over the Danube River could facilitate the north-south traffic and create a strong direct link between the two countries.

The lack of cross-border connectivity in the Romania-Bulgaria cross-border region is mostly related to the lack of border crossings. Various national transport corridors are rerouted to the few border crossings available at the moment as there are just two bridges crossing the Danube within a distance of 470 km⁹² (one at the Giurgiu - Ruse border point and one at the Calafat - Vidin border point). There are various proposals for the construction of additional bridges. The updated version of Bulgaria's National Concept for Spatial Development (2013-2025) proposes possible locations for the construction of new bridges in the area of Oryahovo - Bechet, Nikopol - Turnu Măgurele and Silistra - Călărași while Romania's General Transport Masterplan adds a possible bridge between Turnu Măgurele and Nikopol. In addition, bilateral Memoranda and other intergovernmental agreements on connectivity issues should be taken into consideration.

A new bridge between Călărași and Silistra could reroute some of the north south traffic from Moldova (and even further Ukraine / Russia) through Galați and create a strong direct link with Shumen and Varna. On the other hand, the bridge between Turnu Măgurele and Nikopol could ensure better access to the corridor of the automobile industry within Romania (Pitești - Dacia and Craiova - Ford). The capitals of both Romania and Bulgaria are relatively close to the study area. Bucharest is located at a distance of approximately 75 km from Giurgiu (the closest city to the frontier) and Sofia at a distance of approximately 175 km to Vidin (the closest city to the frontier). It is therefore important to ensure strong links between the analysed territory and the capital cities.

⁹¹ Lipnița and Dobromir

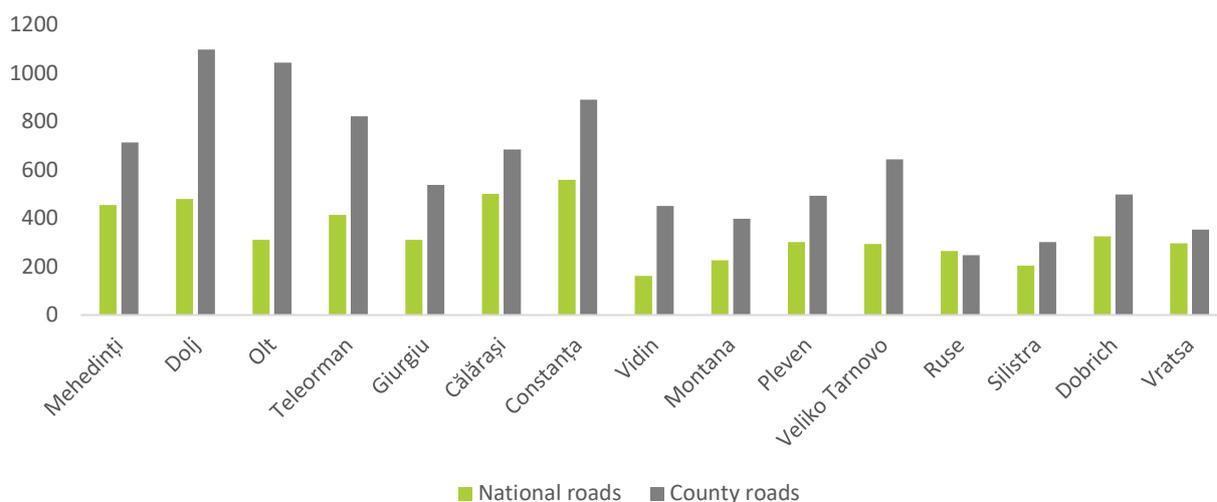
⁹² Border Orientation Paper Romania - Bulgaria



b) Quality and density of roads

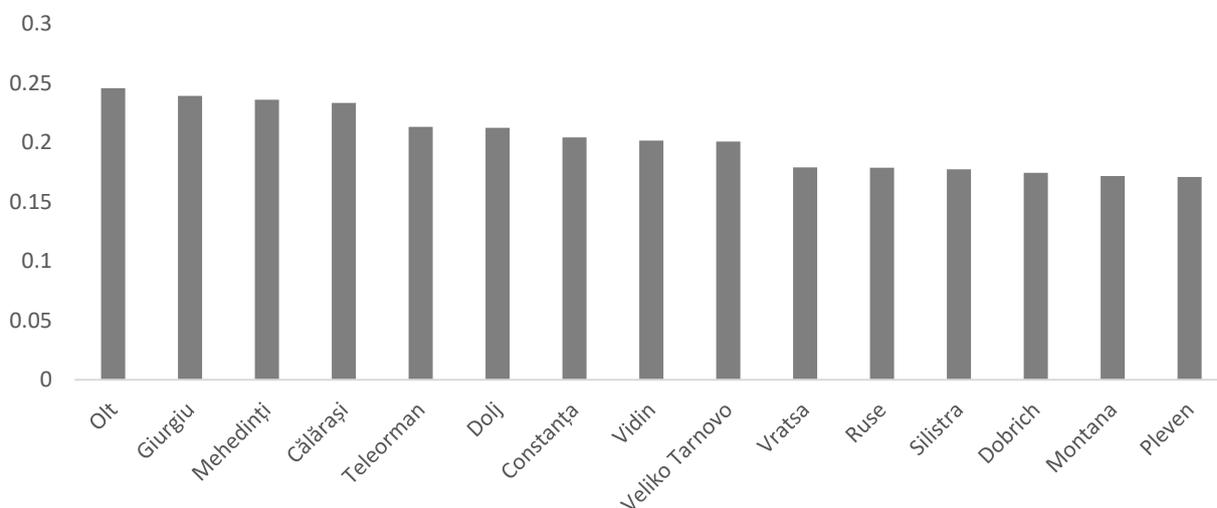
In the cross-border area, the most developed road network is still on the Romanian side. Olt, Dolj and Constanța counties have the longest network of national and county roads. In Bulgaria the longest network of category I, II and III roads⁹³ belongs to Veliko Tarnovo district, a value exceeding only the lowest ranked county from Romania.

FIGURE 55 ROAD LENGTH BY TYPE OF ROAD (NATIONAL AND COUNTY ROADS / RANK I, II AND III)



Source: NIS / INS

FIGURE 56 DENSITY OF ROADS (KM / SQKM)



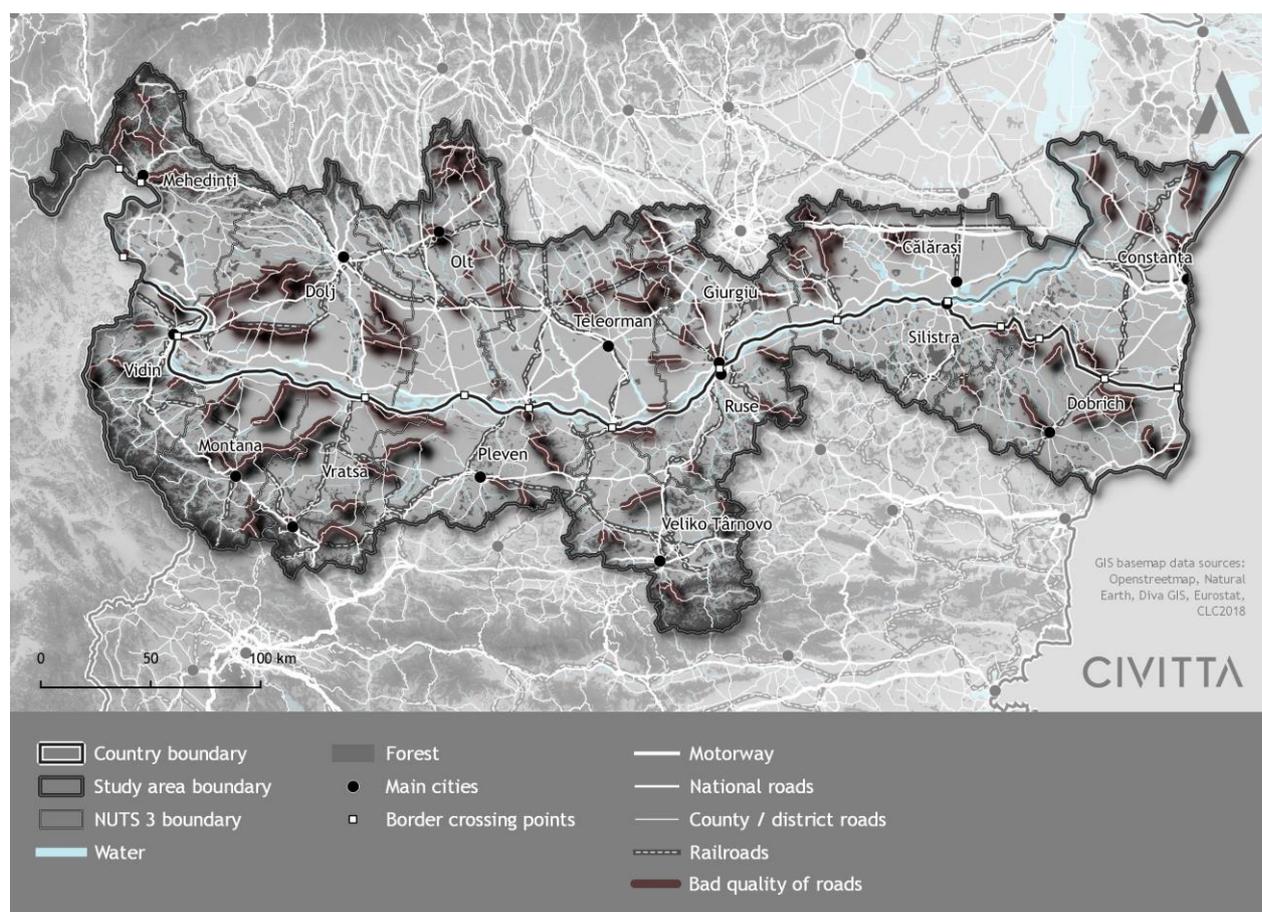
Source: NIS / INS

⁹³ As category, Bulgarian rank I roads are similar to Romanian main national roads, rank II roads are similar to Romanian secondary national roads while rank III are the equivalent of Romanian county roads.



Similar values can be observed when calculating the road density. In general, this is because of a denser settlement network on the Romanian side. Counties like Olt, Giurgiu and Mehedinți have the highest value of roads / square kilometre. The average of 0.2 km of roads per km² of land is much below the European average. Between 2012 and 2018 the road length in the Romania-Bulgaria cross-border region did grow by just 0.6%. The highest growth happened in the district of Montana (5%), followed by Vratsa and Călărași with 2%. In the same period, the road length decreased in Constanța (-3%), Vidin (-1.8%) and Giurgiu (-0.3%).

MAP 40 QUALITY OF ROADS IN THE CROSS-BORDER AREA (BAD QUALITY ROADS)



Source: crowdsourced data obtained via www.roads-bg.eu and www.proinfrastructura.ro

The quality of roads in the cross-border area is rather good, especially when looking at motorways, national roads or important county / district roads. This is the result of continuous investments in the modernisation of national and county / district roads. In 2018 most roads on the Bulgarian part are paved, just in the district of Ruse 2.9% of the total length of roads is still unpaved (2.6% in Vidin, 2.3% in Dobrich, 1% in Vratsa and 0.5% in Veliko Tarnovo). Values are higher on the Romanian counterpart. In the county of Călărași 25% of county roads are still unpaved while in county of Constanța this value reaches up to 11%. With the exception of the county of Giurgiu (5% of length of county roads are still unpaved), other counties don't cross the 2% mark.

There are several secondary roads serving border crossings that would need upgrades like road 101 linking Oryahovo to Montana or national road 11 starting in Oryahovo and continuing along



the Danube till Krushovene. Additionally, important segments form Road II-81 (Montana-Lom), Road II-52 (Vardim-Svishtov-Oresh / Svishtov - Lyubenovo - Nikopol / Ruse - Byala - Mechka - Novgrad - Svishtov - including construction of a new road), Road II-11(Somovit - Cherkovitsa /Vidin - Lom - Kozloduy), Road III-405 (Pavlikeni-Svishtov / Dobromirka-Pavlikeni) and Road II-14 (Vidin- Kula-Vrashka Chuka- Border of the Republic of Serbia) still need to be upgraded. On the Romanian side, DN5B from Giurgiu to Pitești needs to be upgraded along with DJ552 from Cetate to Craiova (near Calafat). Other roads, like DJ402 or segments of DJ 302 are already being upgraded.

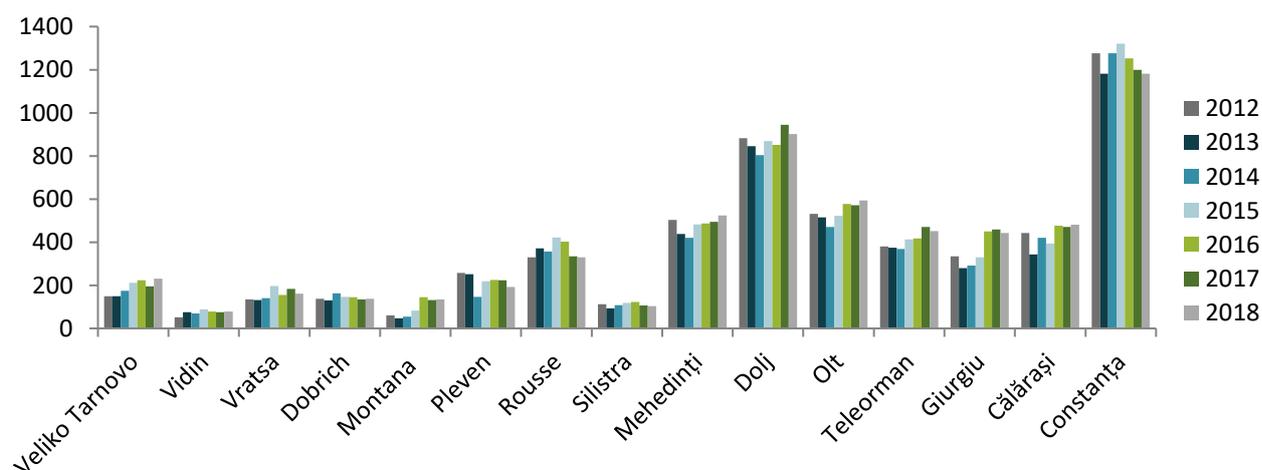
Even if the density and quality of roads may be satisfying, in several districts or counties many cities lack a proper beltway. This forces transit traffic to pass through cities which reduces road safety, quickly degrades road infrastructure and make is difficult develop infrastructure for sustainable urban mobility like cycling lanes. Such issues can be seen especially within cities like: Silistra, Giurgiu, Slatina or Turnu Măgurele.

c) Road safety

Both Romania and Bulgaria have the worst results in EU when it comes to road safety. Latest Eurostat data shows that in 2018 both had more than 80 road fatalities per 1 million inhabitants (Romania 96 / Bulgaria 88) while the EU average lies at 49 fatalities per 1 million inhabitants. The situation is even worse when data is detailed at city level. In 2017 in Romanian cities there have been 105 road fatalities related to 1 million inhabitants⁹⁴ while in Bulgaria there have been less than 51 such incidents. In Bulgaria, pedestrians account for 42% of all seriously injured on urban roads while in Romania the score is even higher, 48%⁹⁵.

In the cross-border region the number of road accidents increased by 6.4% between 2012 and 2018. The highest increase was visible in the Bulgarian districts (10.8%). In the period between 2012-2018 the number of road accidents in the Romanian part increased by 5.1%. On the other hand, the number of reported road accidents is much higher in the Romanian counties compared to the Bulgarian counterpart.

FIGURE 57 NUMBER OF ROAD ACCIDENTS BETWEEN 2012 AND 2018



Source: National Statistical Institute - Bulgaria, National Institute for Statistics - Romania.

⁹⁴ ETSC, 2019. Safer roads, safer cities: how to improve urban road safety in the EU.

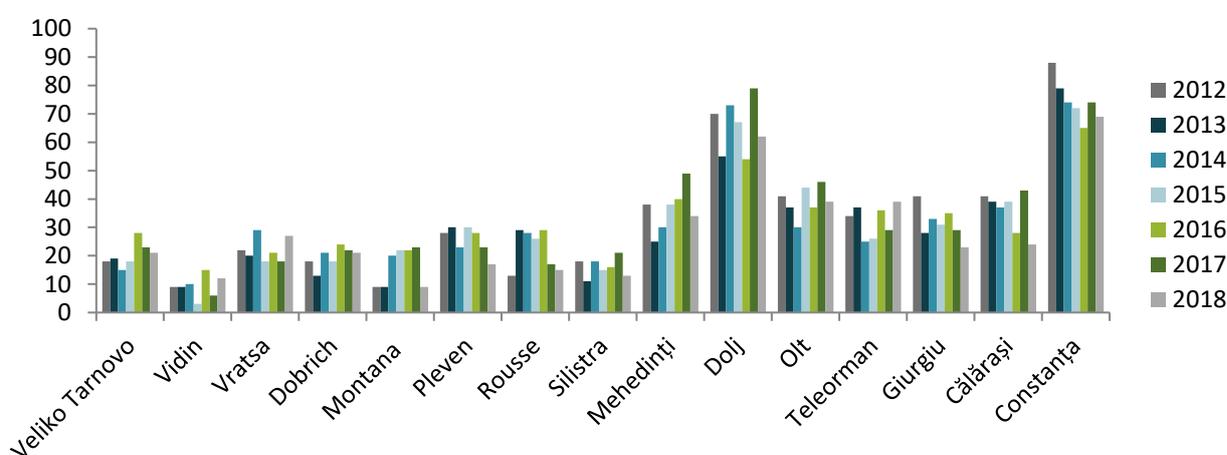
⁹⁵ ETSC, 2019. Safer roads, safer cities: how to improve urban road safety in the EU.



In the Romanian part of the cross-border region, counties registered an increase of road accidents. The only exception is the county of Constanța with a decrease of 7.4% between 2012 and 2018. The strongest increases of road accidents could be seen in counties like Giurgiu (32.3%) and Teleorman (18.7%).

In the Bulgarian study area, in most of the districts there were registered increases in the number of accidents between 2012 and 2018, as follows: in Montana (119.7%), in Veliko Tarnovo (54%), in Vidin (52.9%) and in Vratsa (19.3%). As regards the other counties, the values decreased or remained constant, the most favourable situation being registered in Pleven district (-25.2%).

FIGURE 58 NUMBER OF ROAD FATALITIES BETWEEN 2012 AND 2018



Source: National Statistical Institute - Bulgaria, National Institute for Statistics - Romania

The number of persons deceased from road accidents decreased between 2012 and 2018 (12.9% decrease) in the cross-border region. In the Romanian side, the only exception was the county of Teleorman where this value increased by 14.7%. The other counties registered decreases regarding this indicator, the most representative ones being Giurgiu (43.9%) and Călărași (41.5%).

In the Bulgarian side just two districts saw a decrease in the number of persons deceased from road accidents: Pleven (decrease of 39.3%) and Silistra (decrease of 27.8%). The other counties registered increases, the most representative ones being Vidin (33.3%) and Vratsa (22.7%).

The main issues regarding road safety in the cross-border region are related to:

- A low number of motorways⁹⁶
- Many cities still miss ring roads / bypass roads
- Insufficient traffic calming measures
- Non segregated roads - low protection for cyclists from road traffic.

⁹⁶ As motorways are missing while the quality of national roads is rather good in many cases speed restrictions are not respected.



Taking into account the large gap between Bulgaria and Romania and the rest of EU countries in terms of road safety, measures for improving the current situation should be given a high priority.

5.2.3. RAILWAYS

In both Romania and Bulgaria, the modal split for railway transport of passengers and freight tends to decline between 2012 and 2017. This is mostly related to the still low level of investment in maintaining, modernizing and further developing of the railway network. Continuous investments in the road network, modernisation of national and county / district roads, the development of new motorways and the increase in car ownership resulted in an increase in trips made with passenger cars but also freight transported by road.

TABLE 23 MODAL SPLIT OF PASSENGER TRANSPORT ⁹⁷, %

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Trains										
Bulgaria	4	3.7	3.6	3.5	3.1	2.9	2.6	2.3	2.2	2.1
Romania	7.6	6.5	5.6	5.3	4.6	4.3	4.6	4.6	4.2	4.7
Passenger cars										
Bulgaria	75.1	79.5	80	80.6	82.1	83	82.3	83.1	83.7	84.8
Romania	77.2	80	78	78.5	78.2	78.9	78.5	79.9	80.1	80.3
Motor coaches, buses and trolley buses										
Bulgaria	20.8	16.8	16.4	15.9	14.8	14	15.1	14.6	14.1	13.1
Romania	15.2	13.6	16.3	16.2	17.2	16.8	16.9	15.5	15.7	15

Source: Eurostat

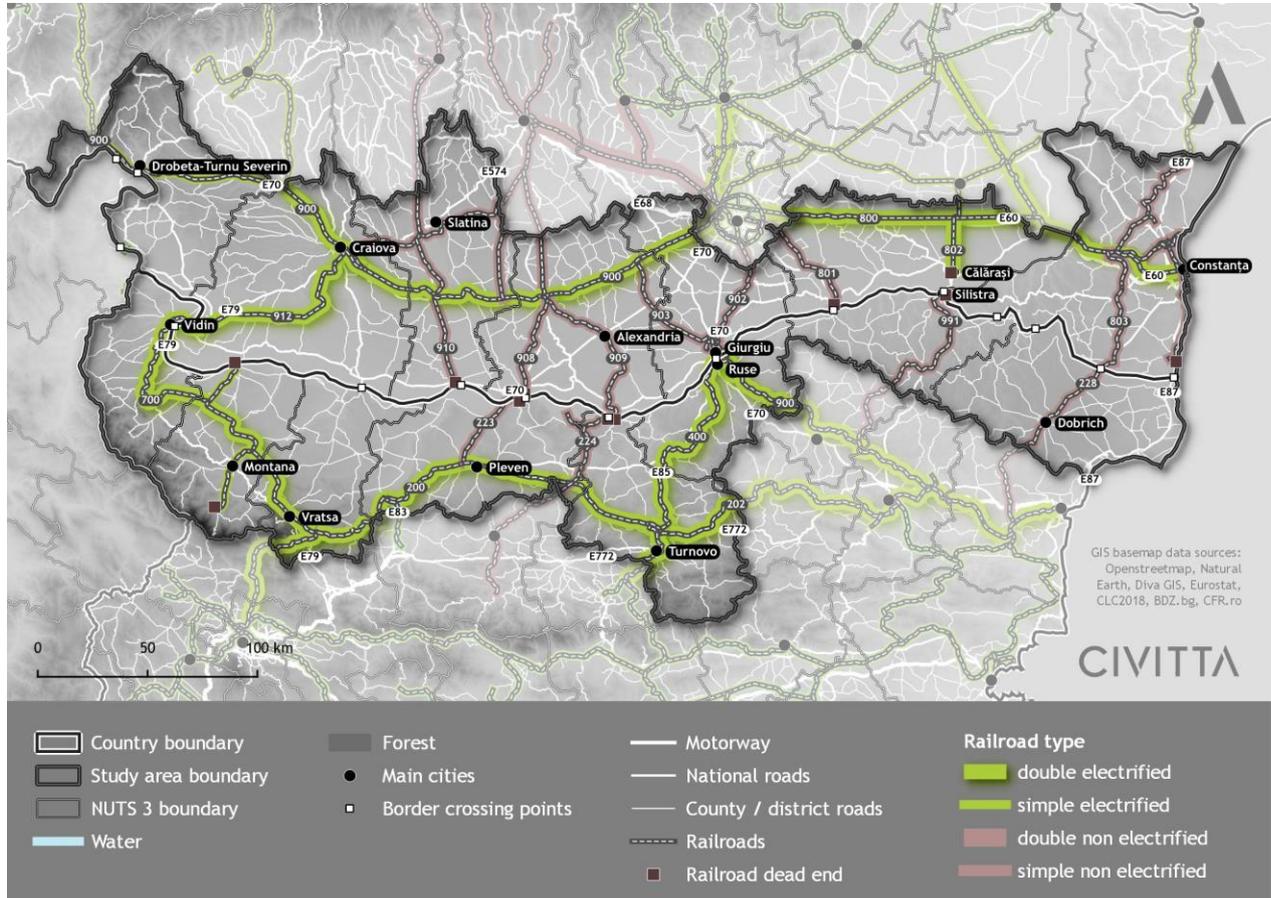
a) The main railway networks

The railway network within the Romania-Bulgaria cross-border region follows similar patterns as the road network. The main lines link the most important cities on an east-west direction, north south links are rather weak. There are multiple railways reaching the border between Romania and Bulgaria, but only three of them cross the border. The other railroads are used mostly to access ports and border cities.

⁹⁷ This indicator is defined as the percentage share of each mode of transport in total inland transport, expressed in passenger-kilometres (pkm). It is based on transport by passenger cars, buses and coaches, and trains. All data should be based on movements on national territory, regardless of the nationality of the vehicle. However, the data collection methodology is not harmonised at the EU level.



MAP 41 RAILROAD NETWORK IN THE ROMANIA-BULGARIA CROSS-BORDER REGIONS



Source: CFR.ro / Bdz.bg

The Romanian part of the cross-border area is served by two major east-west railway lines linking Constanța to Bucharest (line 800⁹⁸) and Bucharest to Craiova and further on to Drobeta-Turnu Severin. All north south railways are secondary lines. There are just 3 lines crossing the Romanian-Bulgarian border:

- Line 803 Medgidia - Negru Vodă - Dobrich (line 228);
- Line 902 Bucharest - Giurgiu - Ruse - Veliko Tarnovo (line 400);
- Line 913 Craiova - Calafat - Vidin - Vratsa - Sofia (strong delays due to the non-electrified segment between Craiova and Calafat).

All 3 lines reaching the border from the Romanian side are simple and not electrified. Moreover, due to the collapsing of the railway bridge at Grădiștea in 2015 the 902 line is not usable at the moment. All trains are rerouted to line 903 passing through Videle (+30 min delays and fewer trains). The main railway line 800 from Bucharest comes close to the Romania-Bulgaria border but stops in Mangalia as there is no line continuing to Varna. Electrifying and extending this line could ensure a strong north south rail link along the Black Sea Coast. Another strong north-south

⁹⁸ The line was recently upgraded and is now one of the few railway lines that support the maximum speed of 160 km/h.



cross-border link could be the line 803 (Romania) continued by line 991 in Bulgaria. This line could facilitate a strong connection between Tulcea with the Danube Delta and Dobrich / Varna. At the moment this link is represented by a single, non-electrified railway line which is used just for freight transport.

The Bulgarian part of the cross-border region is served by a denser network of double electrified railways. This territory is served by 4 important lines connecting Varna to Sofia but also continuing to the important border crossings at Ruse and Vidin. The Romanian part has a denser network of railways, but they are simple and not electrified. The low quality of cross-border railways on the Romanian side is an important impediment for the development of competitive links between main cities on both sides of the border (ex. Craiova - Sofia or Bucharest - Ruse - Sofia / - Ruse - Varna).

b) Cross-border trains

There are just a few cross-border trains linking main cities in Romania and Bulgaria⁹⁹. However, due the poor quality of the rail infrastructure (especially on the Romanian side) the connections can't compete with road traffic. A trip from Craiova to Sofia would take close to 9 hours while the same route usually takes less than 5 hours by car. Similar values are obtained on the Bucharest - Sofia route.

c) Planned projects

According to the transport masterplans of Romania and Bulgaria following railway projects are planned for the cross-border region:

- Modernisation and electrification of the Bucharest - Giurgiu railway (priority project)
- Modernisation of the Bucharest - Craiova - Drobeta Turnu Severin railway;
- Modernisation of the Pitești - Slatina - Craiova railway;
- Modernisation of the Vidin - Sofia railway (part of the Orient East-Med TEN-T corridor);
- Modernisation of the Varna - Gorna Oryahovitsa - Ruse railway;
- Modernisation of the Ruse - Kaspichan railway;
- Modernisation of the Ruse - Stara Zagora railway (part of the TEN-T core network - former corridor IX).

The step by step implementation of these projects would ensure a higher rail connectivity in the cross-border region and facilitate a strong alternative to road transport. The most important railway links are those crossing the border, following a north-south direction: Bucharest - Giurgiu - Ruse - Stara Zagora and Sofia - Vidin - Calafat - Craiova.

5.2.4. WATERWAYS

The Danube has been for a long time, one of Europe's most important inland waterways. The Danube is linking the Black Sea to a large number of harbours in south-eastern and central European countries, with further connections to Western Europe (Germany and Rhine-Main-Danube Canal) and even to the large North Sea ports. Even if the Danube is an important transport corridor it is also Europe's backbone of biodiversity¹⁰⁰.

⁹⁹ IR 1091 / RE 7623 for the Craiova - Calafat - Vidin - Sofia route and IR 1095 / 463 for the Bucharest - Giurgiu - Ruse - Sofia route.

¹⁰⁰ ICPDR, 2010. Danube Watch - Europe's Backbone of Biodiversity.



The canal system backing up the North Sea ports and the Rhine remain Europe’s most performant inland waterways in terms of tons of freight transported per kilometre. The potential of the Danube relies mostly in the number of countries served and the link to the Black Sea and further to the Orient. Unfortunately, the amount of freight carried on various sections of the Danube is still 10 times lower than on Europe’s most performant inland waterways.

MAP 42 TRANSPORT PERFORMANCE OF EU INLAND WATERWAYS



Source: <http://www.inlandnavigation.eu/>

Main issues that reduce the performance of the Danube in terms of waterborne transport are several bottlenecks, the river depth and the capacity of ports (including their hinterland connections). Most critical points in terms of river depth are on the Romania-Bulgaria border, especially in the sections between Turnu Măgurele and Călărași¹⁰¹. In these places due to drought the height of the Danube goes beyond the 2.5m mark.

TABEL 1 MAIN BOTTLENECKS WHICH HINDER NAVIGATION ALONG THE DANUBE IN THE RO-BG CROSS-BORDER AREAS

LOCATION AND LENGTH (KM)			RIGHT BANK / LEFT BANK	NAME OF SECTION OR LOCATION
RIVER-KM (FROM - TO)	LENGTH			
568,20 - 567,80	0.40	BG / RO	Milka Island	
567,00 - 566,70	0.30	BG / RO	Belene Island	
562,00 - 561,50	0.50	BG / RO	Coundur Island	
541,60 - 541,00	0.60	BG / RO	Vardim Island	
538,50 - 537,00	1.50	BG / RO	Giska Island	

¹⁰¹ FairWay Danube, 2019. Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries.



425,90	425,20	0.70	BG / RO	Kosui Island
309,00	308,00	1.00	RO / RO	Cochirleni

Source: FairWay Danube, 2019

The Romania-Bulgaria cross-border area encompasses several ports, all of them developed along the Danube. The most developed Danube ports in terms of freight handled are still on the Romanian part. In terms of capacity, freight handled and hinterland accessibility, the port of Constanța is the most developed port in the region, acting as an essential link between the Danube and the Black Sea. The amount of goods handled since 2012 is on a steady increase, mostly due to the improvement of hinterland connectivity (rail and road). In 2018 the port of Constanța ranked 22nd at EU level in terms of goods transported¹⁰². An important asset of the port of Constanța are his strong hinterland connections (modernized railway and highway), especially the possibility to reach Bucharest within 2 hours. The other Romanian ports along the Danube remain important regional nodes of trade, most of them showing a steady growth in goods loaded and unloaded.

FIGURE 59 MARITIME - GROSS WEIGHT OF GOODS TRANSPORTED TO/FROM MAIN PORTS - ROMANIA

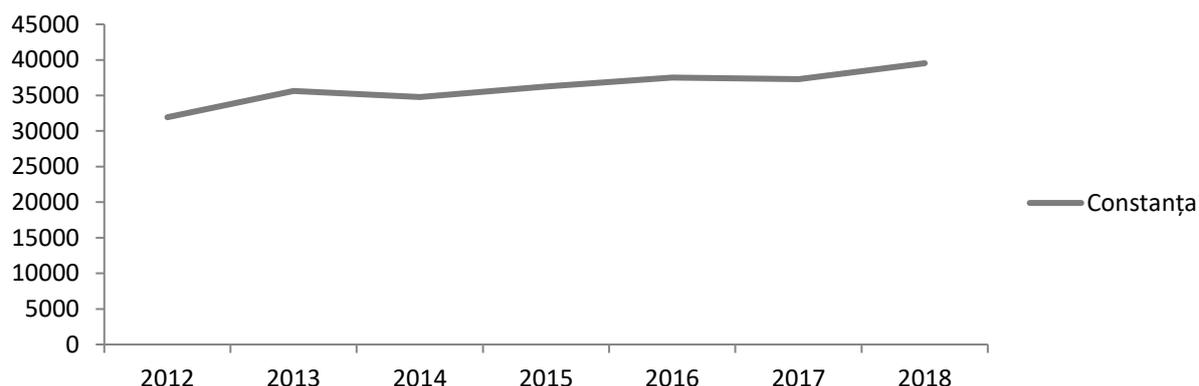
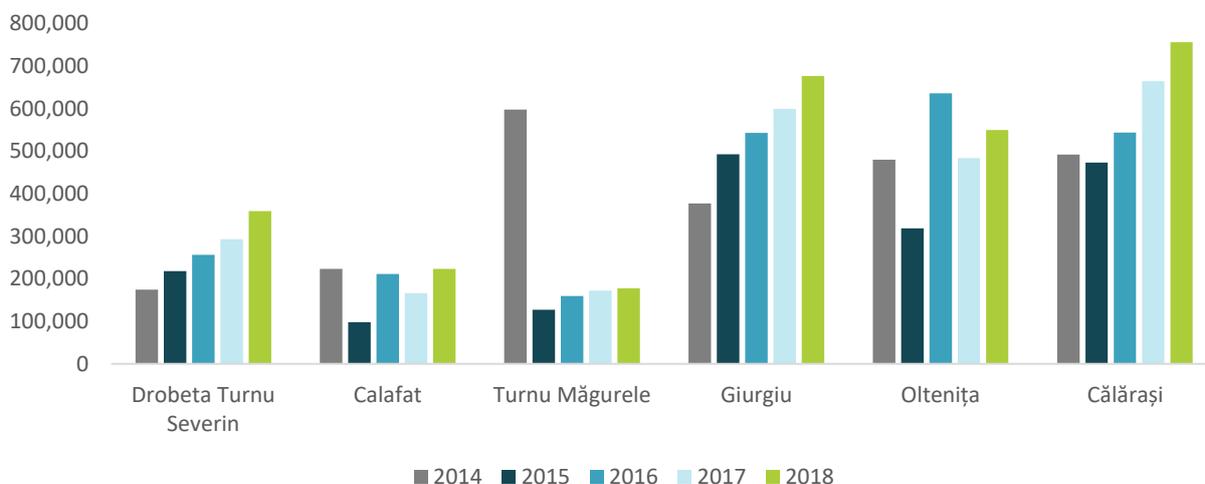


FIGURE 60 INLAND WATERWAYS - GOODS LOADED AND UNLOADED IN PORTS FOR INLAND WATERWAYS TRANSPORT¹⁰³

¹⁰² Eurostat, Gross weight of goods handled in all ports by direction - annual data [mar_go_aa], 2018. <https://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>

¹⁰³ Most recent data on goods loaded and unloaded within Bulgarian inland waterway ports could not be obtained.



Source: Eurostat [iww_go_aport]

The Bulgarian port network is dominated by the ports of Burgas and Varna¹⁰⁴. They are outside of the Romanian - Bulgarian cross-border area and take over most of the freight coming from the Black Sea. Both are linked to the Rhine-Danube corridor and are thus served by highways (A1 and A2). The port of Burgas benefits of good road connections to Sofia while plans for a new highspeed rail linking the two are underway. The largest river port of Bulgaria, developed along the Danube, is the port of Ruse followed by the port of Vidin¹⁰⁵. The port of Vidin, together with the port of Calafat are also linked to the Orient/East - Med TEN-T corridor (road and rail) while the port of Ruse and the port of Giurgiu lie on the Pan European corridor IV (partially overlapping with the TEN-T Core network). The secondary ports on the Bulgarian are either focusing on general cargo or bulk cargo (Lom, Somovit and Oryahovo) or on the transport of passengers and Ro-Ro services (Silistra, Nikopol or Svishtov¹⁰⁶).

According to the Bulgarian Integrated Transport Strategy for the period until 2030, the total number of goods carried through the Danube ports in Bulgaria was 6 mil. tonnes in 2015¹⁰⁷. The number is 2.45 times lower than in 2008, when the transported goods reached their peak, accounting for 15 mil. tonnes.

In spite of these trends, the volumes of goods on the Danube have increased in the last few years. It was predicted that about 62,493 thousand tons will be transported along the Danube in 2020¹⁰⁸. This is mostly related to the fact that most countries within the Danube Basin region increased their GDP in the last years and the upward trend seems to continue. Furthermore,

¹⁰⁴ Varna has an important regional asset as it allows the transfer of Russian wagons without overload by changing the gauge from Russian standard to EU standard (The 2016-2018 Socio-economic report of the Bulgarian Regions).

¹⁰⁵ According to the Danubecomission, they are the only Bulgarian ports along the Danube that can handle containers.

¹⁰⁶ Ports focusing on Ro-Ro services and passenger transport are generally located in places where a bridge over the Danube is missing interrupting important trade routes (ex. Pitești - Turnu Măgurele - Nikopol - Sofia). An exception is the case of Oltenița and Tutrakan where ferry or Ro-Ro services are missing.

¹⁰⁷ Latest data available for Bulgaria.

¹⁰⁸ A. Dávid, E. Madudová, 2019. The Danube river and its importance on the Danube countries in cargo transport.



projects related to dredging and eliminating bottlenecks increase the use of the Danube as a transportation waterway.

Source: Eurostat [mar_go_am_ro]

Ports on both sides lack performant transport infrastructure to serve a larger hinterland. Ports Silistra or Lom lack a road belt which makes it difficult for freight to reach or leave the ports. None of the ports along the Danube in the cross-border areas is served by a motorway (except Constanta), they may be linked to railroads but most of them are degraded.

The Danube remains an important trade route with a large, still unlocked potential. Main challenges in strengthening the role of the Danube remain several points with a low river depth, the capacity of ports and their hinterland connectivity.

5.2.5. INTERMODALITY

The intermodal transport in the Romania-Bulgaria cross-border area is to a large extent associated to the port areas. It has been also analysed within the Intermodal CBC project, funded by the current Interreg Romania-Bulgaria Programme, aiming at better connections between secondary nodes and the TEN-T infrastructure in the cross-border region. The project included an analysis on the current state of the intermodal transport system in the cross-border area, as well as a common strategy for optimizing the capacity of the intermodal nodes located here¹⁰⁹.

According to the strategy, in 2017, there was no concrete, functional intermodal system of transportation in the Romanian–Bulgarian border region. The only identifiable multimodal facility was the one located in the Port of Constanta, Romania. One of the main impediments for having intermodality in the region is the fact that the rail infrastructure associated to the ports is either inoperable or lacks direct connections to the water-based transport infrastructure. This calls for a better optimization of the existing infrastructure, as well as for better hinterland connections for the ports in the study area.

Nevertheless, the location of the two countries, as well as data on the means of transportation being used for freight transport show a high potential for intermodality to be developed in the cross-border region. Such a development is needed as the inland waterways present in the study area are the main transportation way between Eastern and Western Europe, through the TEN-T Rhine-Danube Corridor. In this sense, several cities along the border were identified as key points for the intermodal transportation system of the cross-border region¹¹⁰:

- Romania:
 - Constanța;
 - Calafat and Giurgiu (commercial transport);
 - Corabia, Turnu Măgurele, Oltenița, Călărași (touristic transport);
- Bulgaria: Ruse, Vidin and Gorna Oriahovitsa.

¹⁰⁹ Interreg Romania Bulgaria Programme, ROBG-2 Intermodal CBC. <https://interregrobg.eu/en/15-1-1-010investigation-of-opportunities-for-reducing-the-ten-t-network-use-within-the-cross-border-region-romania-bulgaria-through-optimization-of-the-freight-and-passenger-transport-and-the-development-of-a-joint-mechanism-for-support-of-the-intermod.html>

¹¹⁰ IntermodalCBC, Strategie privind consolidarea rețelei TEN-T prin îmbunătățirea capacității nodurilor intermodale în zona de frontieră România-Bulgaria 2018-2050 (Strategy regarding the consolidation of the TEN-T network by improving the capacity of intermodal nodes in the border region of Romania-Bulgaria 2018-2050).



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The identified key points are also the ones where intermodal terminals or modal transfer points should be implemented. The realisation of the projects is directly linked with the objectives and measures proposed by the strategy, with a timeframe of 32 years (2018-2050)¹¹¹.

5.3. DIGITAL CONNECTIVITY

Both countries lag behind the rest of Europe when looking at the DESI index¹¹². However, their weaknesses are human capital, use of internet services and integration of digital technology and not digital connectivity.

In the last years digital connectivity has slightly improved in both countries, but the EU 2020 targets have not been reached yet. According to the DESI index in mid-2018 more than 92% of Bulgarian and approximately 87% of Romanian homes had access to fixed broadband. Countries like Malta, the Netherlands, Cyprus, France and other 6 EU states already reached the 100% target. Both, Romania and Bulgaria still encounter issues with broadband access in rural areas (approx. 80% coverage). In terms of NGA coverage, both countries had around 75% coverage in 2020. Rural areas however are far behind with just 40% coverage in Romania and 30% in Bulgaria.

Things are slightly different when analysing ultrafast broadband. Here Romania is between the few countries that had over 45% of households with a subscription to ultrafast broadband (over 100Mbps) in mid-2018 while Bulgaria was still struggling at 10%¹¹³.

¹¹¹ IntermodalCBC, Strategie privind consolidarea rețelei TEN-T prin îmbunătățirea capacității nodurilor intermodale în zona de frontieră România-Bulgaria 2018-2050 (Strategy regarding the consolidation of the TEN-T network by improving the capacity of intermodal nodes in the border region of Romania-Bulgaria 2018-2050).

¹¹² The Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness (<https://ec.europa.eu/digital-single-market/en/desi>)

¹¹³ Source: DESI Index, 2019



TABLE 24 DIGITAL CONNECTIVITY TARGETS BULGARIA - ROMANIA - EU

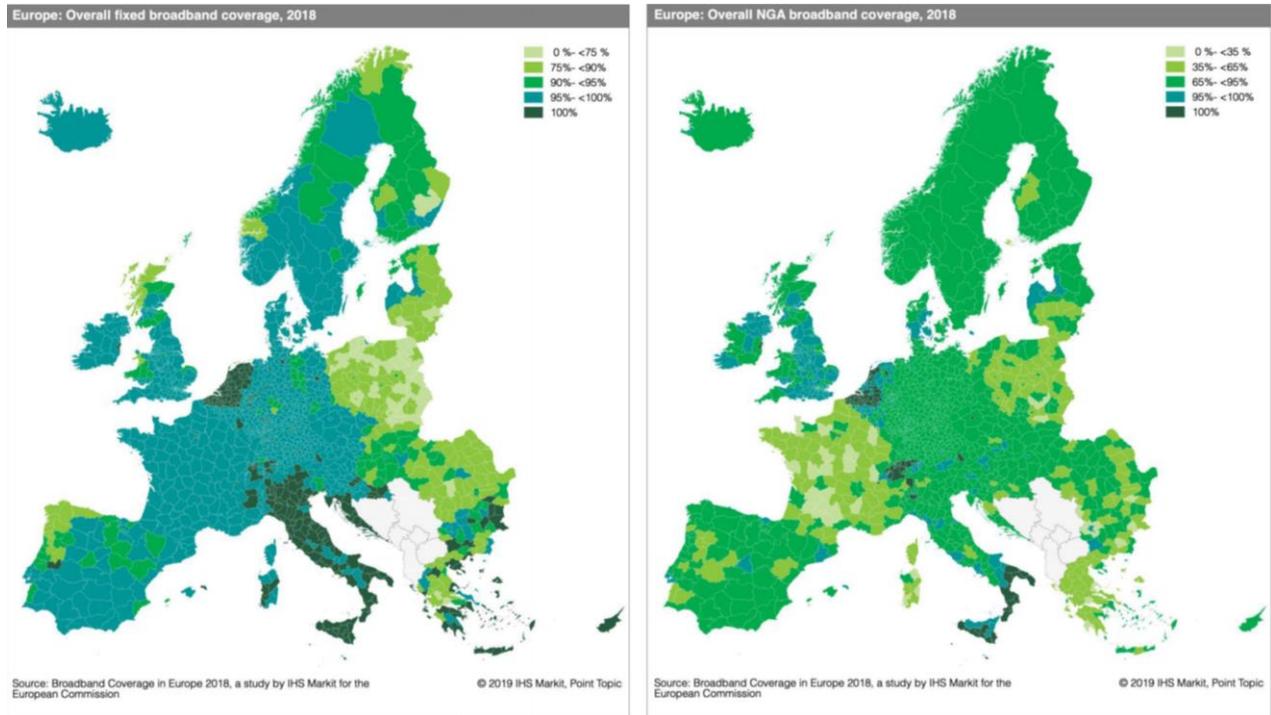
BULGARIA	ROMANIA	EU 2020	EU 2025
100% coverage with 30 Mbps by 2020	100% coverage with 30 Mbps and 80% coverage with over 30 Mbps by	100% coverage with 30 Mbps by 2020	100% coverage to ultrafast 100Mbps broadband upgradeable to 1 Gigabit
50% of households and 80% of businesses subscribing >100 Mbps by 2020	45% household penetration with 100 Mbps by 2020	50% of homes subscribed to ultrafast 100Mbps broadband by 2020.	
		Access to 1 Gbps for all schools, transport hubs and main providers of public services and digitally intensive enterprises	Uninterrupted 5G wireless broadband coverage for all urban areas and major roads and railways

Source: DESI Index, 2019

In the Romania-Bulgaria cross-border area in 2018 fixed broadband coverage varied between 75% and 100%. Romanian counties have a fixed broadband coverage between 75 and 90%. Just the county of Constanța had a coverage between 90 and 95%. In Bulgaria in 2018 all districts had a broadband coverage of over 75%. Just in Vidin, Montana, Vratsa and Dobrich broadband coverage was between 70 and 75% while Silistra already reached the 100% target. In terms of NGA most counties and districts have a coverage between 35 and 65%. Just Vidin and Silistra have a coverage beyond 35%. On the other hand, counties like Dolj, Olt, Constanța and Bulgarian districts like Vratsa, Pleven, Veliko Tarnovo and Ruse provide NGA coverage varying between 65 and 95%.



MAP 43 OVERALL FIXED BROADBAND (LEFT) AND NGA (RIGHT) COVERAGE, 2018



Source: DESI Index, 2019

Progress has been made in the last years in terms of digital connectivity in both Romanian and Bulgarian parts of the cross-border region. While fixed broadband coverage should be still slightly below the 2020 targets, ultrafast broadband, mostly accessible in major cities, is advancing fast. Unfortunately, rural areas, with a low density of population still face issues in terms of broadband coverage. Investments in better, more reliable and faster connectivity would help to attract higher value-added businesses and are a prerequisite for improving the level of digitisation. Both countries are preparing for the launch of 5G. Romania adopted a national 5G strategy while Bulgaria teamed up with Greece and Serbia to develop a 5G cross-border corridor for the testing of autonomous vehicles¹¹⁴. Securing ultra-high-speed connectivity is an important enabler for innovation and the rise of smart cities¹¹⁵ within the region but also for the provision of digital public services.

¹¹⁴ European 5G Observatory.

¹¹⁵ 5G networks support the further development of the Internet of Things (IoT), one of the main enablers of any smart city.



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5.4. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

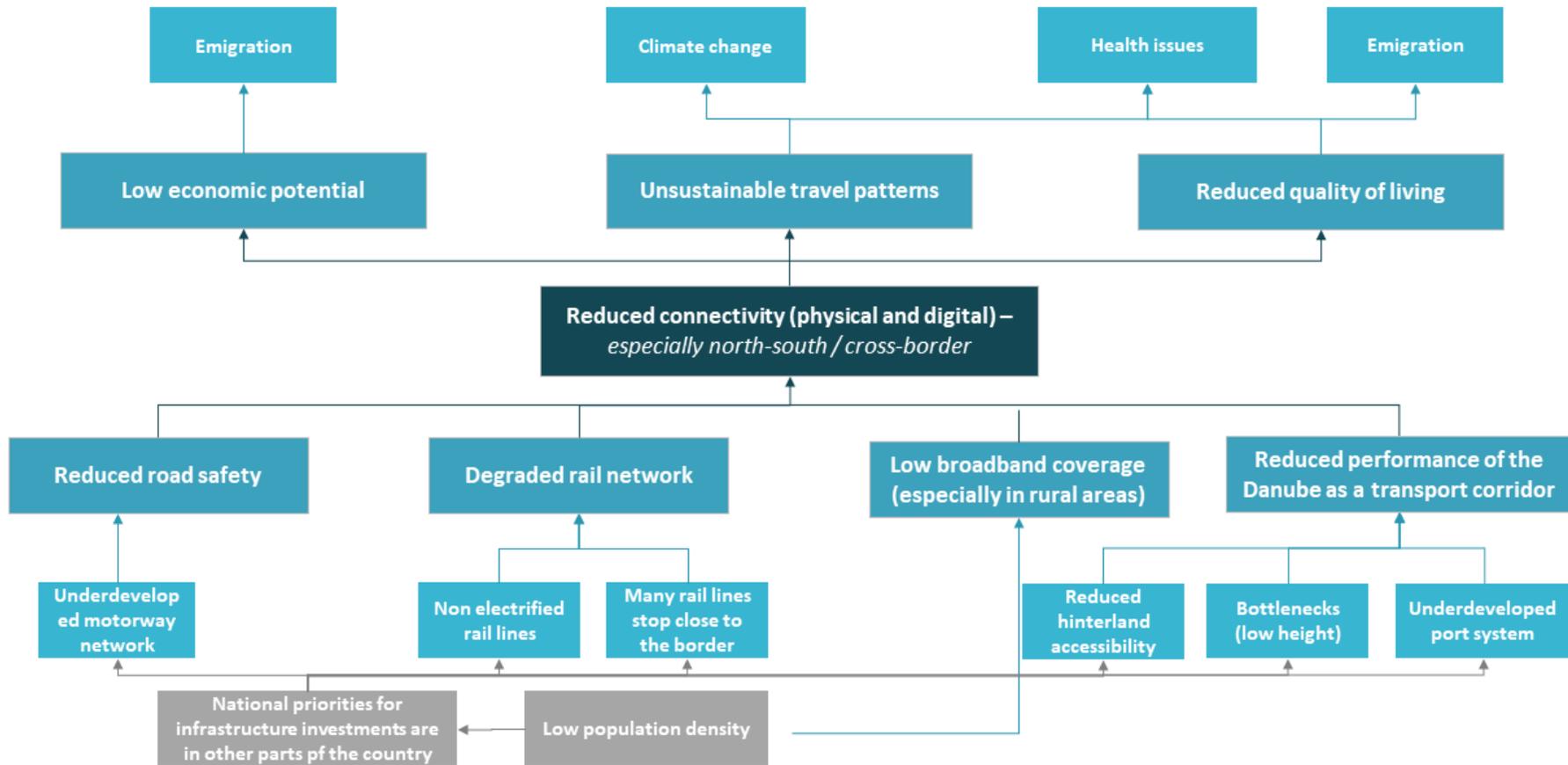
Both sides of the Danube borders are characterized by a strong east - west direction of flows and development of settlements. During the last years, north-south links lost their priority status as investments focused in completing the road and rail segments of the Rhine Danube and Orient East Med corridors. The cross-border territory is therefore still disconnected from the main transport networks of the European Union. The Danube remains the only strong and continuous link to Central Europe. The transport of goods and passengers on the Danube increased and the trend is expected to continue. However, various bottlenecks reduce the transport performance of this corridor. Most of them are on the Romanian-Bulgarian border. High importance should be paid to the Eurovelo 6 cycling route linking Nantes (France) to Constanța which is nearly completed. The only missing link is represented by the Romanian-Bulgarian border.

Within the cross-border territory the quality of roads greatly increased in the last years, but their density is still under the EU average. However, motorways are still missing, the only segment in the cross-border area is the A2 motorway between Constanța and Bucharest. Road infrastructure is still more performant than rail in the cross-border territory. The only highspeed rail (up to 160 km/h) is in Romania, between Constanța and Bucharest. The Bulgarian side is missing highspeed rails but has most of the rail infrastructure electrified. Unfortunately, this is not the case of Romanian railways, where most lines going towards the Danube are dead ends and not electrified.

The “hard border” between the two countries (non-Schengen) and the low amount of border crossings greatly reduce the cooperation possibilities between the two countries. This is valid for long distance freight and passenger transport, but also in the case of twin cities like Giurgiu-Ruse, Calafat-Vidin or Călărași-Silistra where cross-border commuting remains difficult.

In terms of digital connectivity, none of the two countries managed to reach the target of 100% coverage with broadband. Silistra is the only district which managed to reach this target while other districts still remain between 70 and 75% coverage. On the other hand, Romania is between the few countries that had over 45% of households with a subscription to ultrafast broadband (over 100Mbps). Unfortunately, there is still a big gap between urban and rural when it comes to internet speed and coverage.

PROBLEM TREE



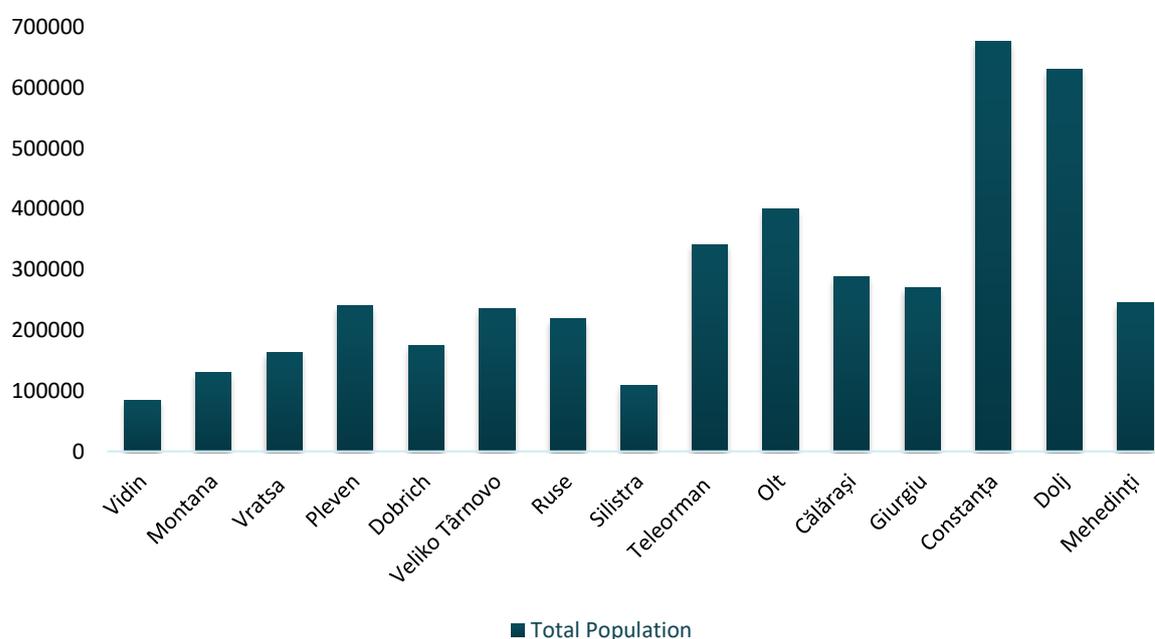
 SOCIAL



6. DEMOGRAPHIC CHANGE

The Romanian-Bulgaria cross-border area counts 4,2 million people (1,35 million in Bulgaria and 2,85 million in Romania) and includes 13,6% young people, 64% adults and 22,4% old people (65+). If we analyse the counties and districts, we can appreciate that the most populated counties are Constanța and Dolj and the least populated are Mehedinți, Giurgiu and Teleorman. On the Bulgarian side, the most populated districts are Pleven, Veliko Tarnovo and Ruse and the least populated is Vidin.

FIGURE 61 TOTAL POPULATION BY COUNTY/DISTRICT 2018



Source: National Statistics Institutes RO/BG

The overall phenomenon of ageing population and migration from poorer areas to wealthier ones is one that is being felt also on the Romanian-Bulgarian cross-border area. Both sides face issues such as depopulation, strong outward migration, ageing, low fertility rates etc. The demographic change analysis is necessary in order to point to the counties/districts that need most of the help in the sector and, to underline the successful ones that could lead the development of the entire cross-border area.

6.1. CHANGING POPULATION/DEPOPULATION OF THE AREA

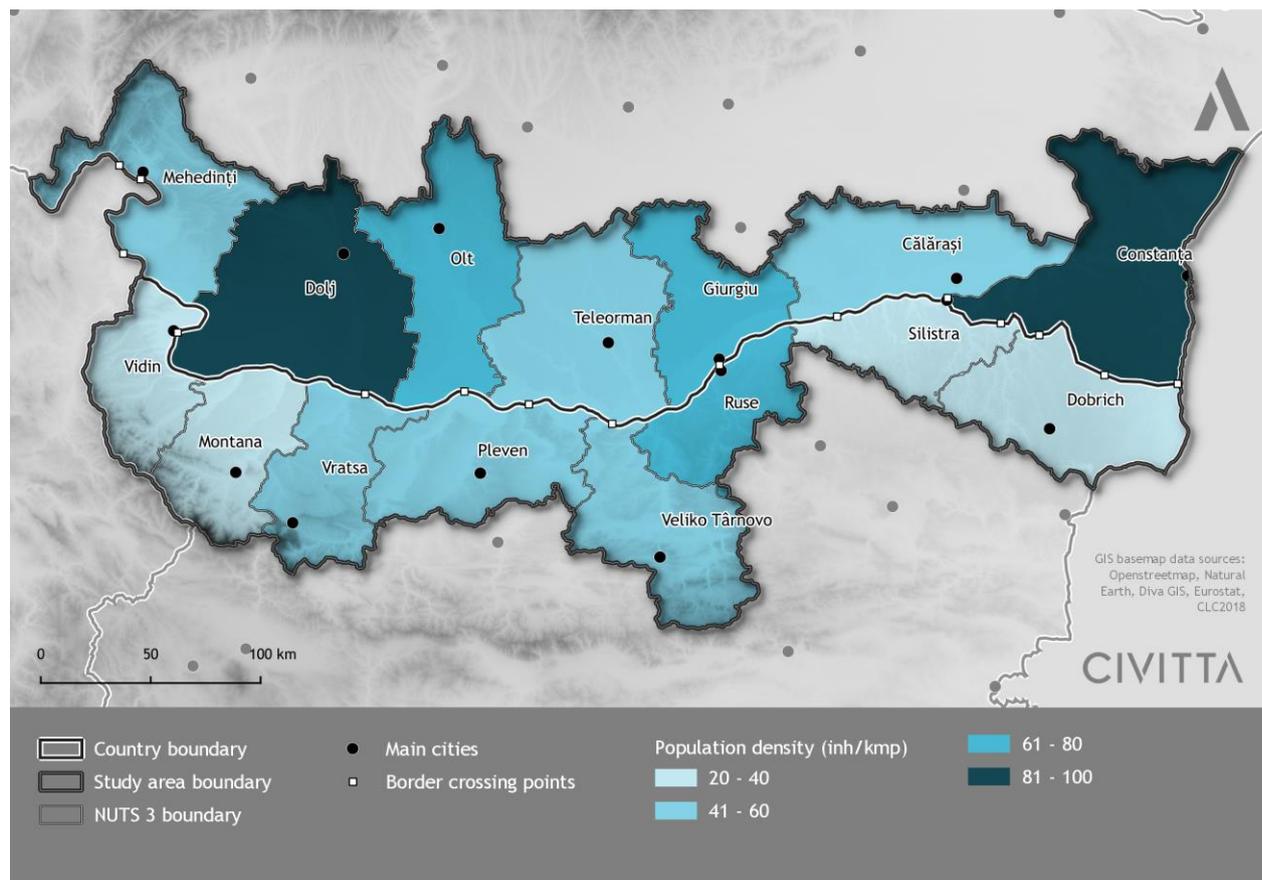
In order to assess the real dimension of the depopulation of the area, it is necessary to analyse first the population density in order to assess the real needs of each county (for Romania)/district (for Bulgaria).

It is evident that the Romanian counties are more densely populated than the ones on the Bulgarian side, mostly in Constanța (95.63 inh/km²) and Dolj (85.12 inh/km²), both having



important major cities, the Municipality of Constanța and the Municipality of Craiova, cities that attract people and represent a development engine from an educational, social and economic point of view. On the Bulgarian side, the maximum density is scored in Ruse (77.96 inh/km²) and there is also a minimum of population density in Vidin with 27.98 inh/km², approximately half of the minimum value registered on the Romanian border (the county of Mehedinți).

MAP 44 POPULATION DENSITY ON THE CROSS-BORDER AREA 2018 (INH/KM²)



Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation

The depopulation effect can be observed from analysing the population decrease rate and by comparing the same indicator both for the urban and the rural level. As far as it can be observed, the most affected district between 2012-2018 is the district of Vidin, with a rate of -13.01%, followed by the district of Montana with a rate of -10.48%. Vidin and Montana are the areas with the highest population decline in Bulgaria and among the highest in Europe, with many areas that are turning into so-called ghost-towns. Also, the population decrease rate for these districts is even higher than the one for 2001-2011. The “best” performing district on the Bulgarian side is the district of Ruse, with a value of -5.62%, half of the value registered in Vidin. Ruse has also the fifth most important city in the country (Ruse) and offers more socio-economic possibilities than the other districts that are being analysed in the study.

On the Romanian side, the county with the highest value of depopulation is the county of Teleorman (-9.68%), a county that fails to offer socio-economic conditions to attract or to make people stay in the county. The depopulation phenomenon is very low in the Constanța county (-



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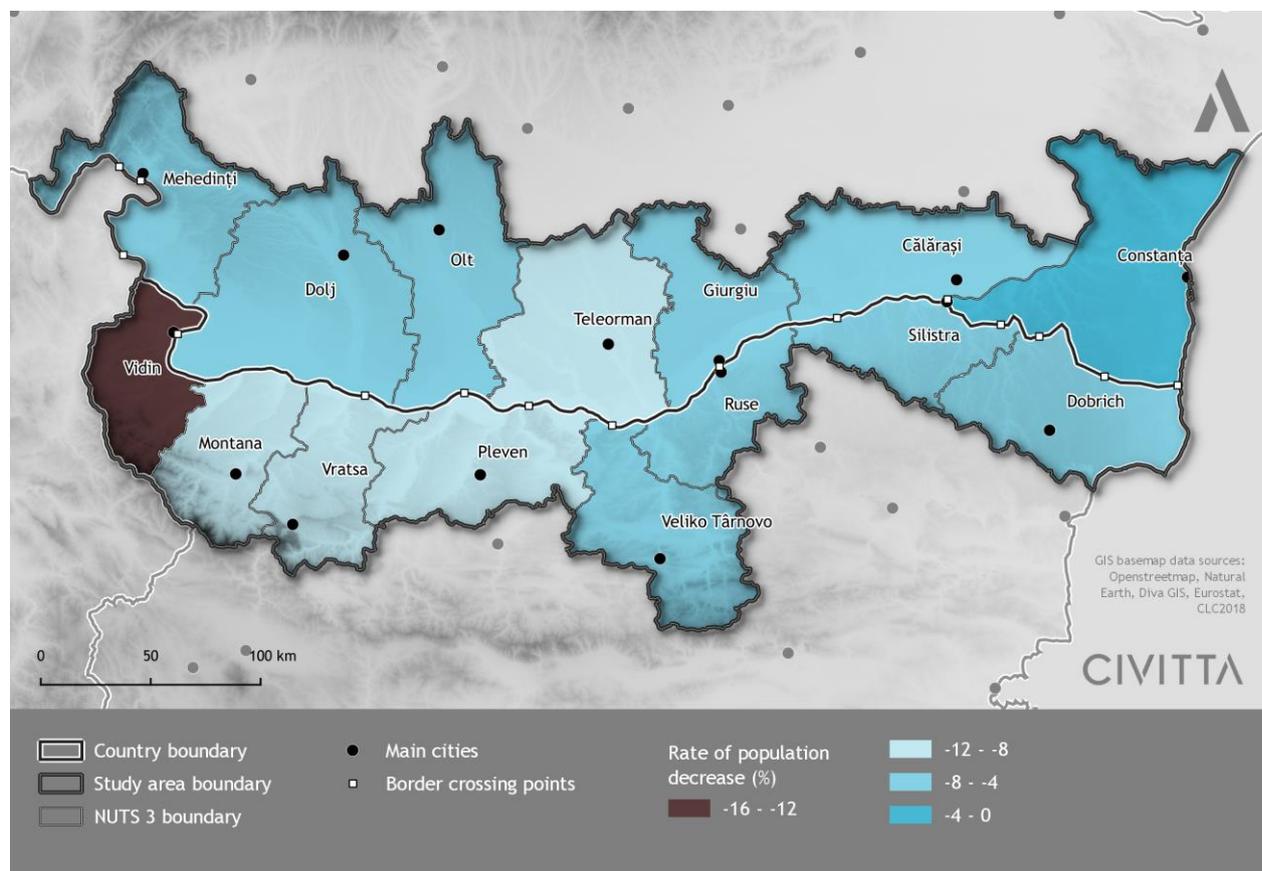
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1.12%) and shows that the policies, the development level and the conditions offered by this county are successful in making people stay or being attracted to move into the area.

MAP 45 RATE OF POPULATION DECREASE 2012-2018 (%)

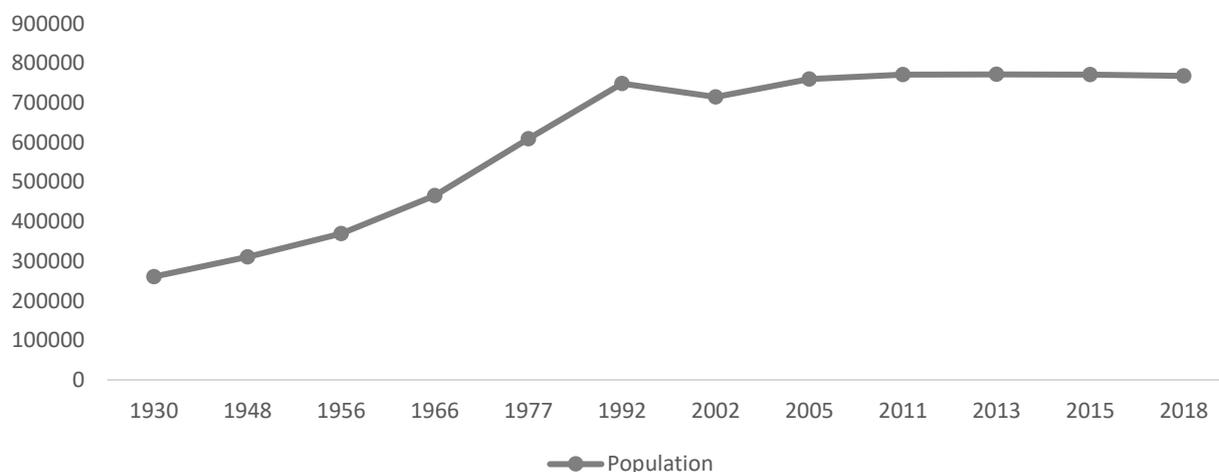


Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation

The analysis needs also a closer attention to the two extreme values in the area, namely Vidin and Constanța, and the best way to analyse their evolution is to look on the population dynamics from before the WWII and 2018 (1930-2018 for Constanța and 1946-2018 for Vidin), also in function of the available data offered by the Statistics Institute of each country. What can be observed is that Constanța's population increased during the last century (Fig. 56), from 261,028 people in 1930 to more than 750,000 in 2018. It is true that the maximum increase in the number of population has been registered especially after the fall of the communism when restrictions for moving from one county to another have been abolished, but ever since the population remained constant and kept the characteristics of a coastal area with high economic possibilities.



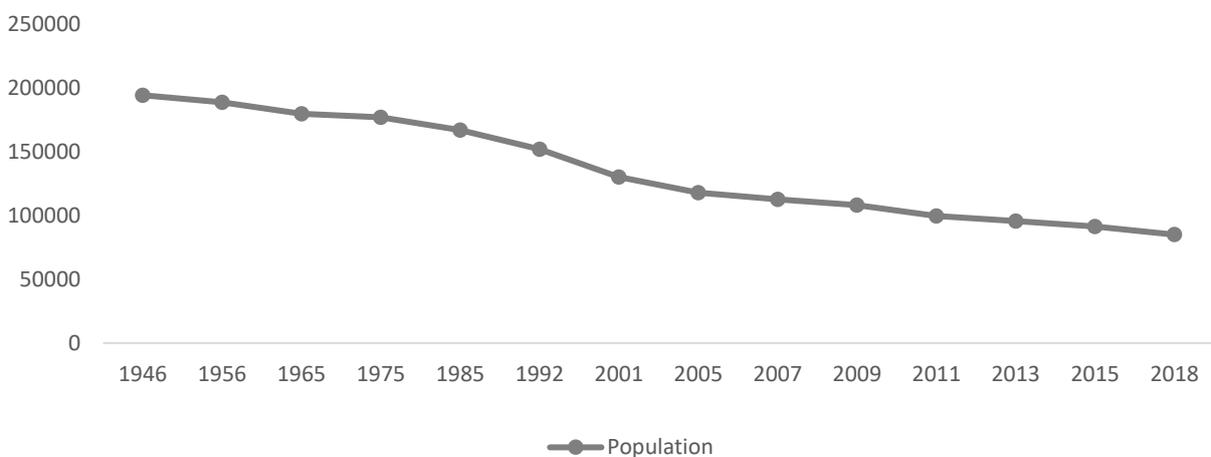
FIGURE 62 CONSTANȚA POPULATION EVOLUTION 1930-2018



Source: The National Institute of Statistics - Romania

In Vidin district, the situation is the opposite (Fig. 57). There has been a constant decrease since 1946 and the district is counting in 2018 half of the population it had 70 years ago (194,007 in 1946 - 84,865 in 2018). With no higher education centres, its weak economy and its high unemployment level, the area does not manage to find the right policies and measures to counteract the phenomenon. Their District Development Strategy 2014-2020 issued in 2013 stated improving the district's economic prospects through stimulating businesses' competitiveness by improving the local infrastructure, boosting innovation activities and public-private partnership by creating a regional R&D centre and encouraging the use of local resources, particularly in the agricultural sector, as well as opening a branch of an university in Vidin, but none of these measures seemed to count in reducing the decrease in terms of population.

FIGURE 63 VIDIN POPULATION EVOLUTION 1946-2018



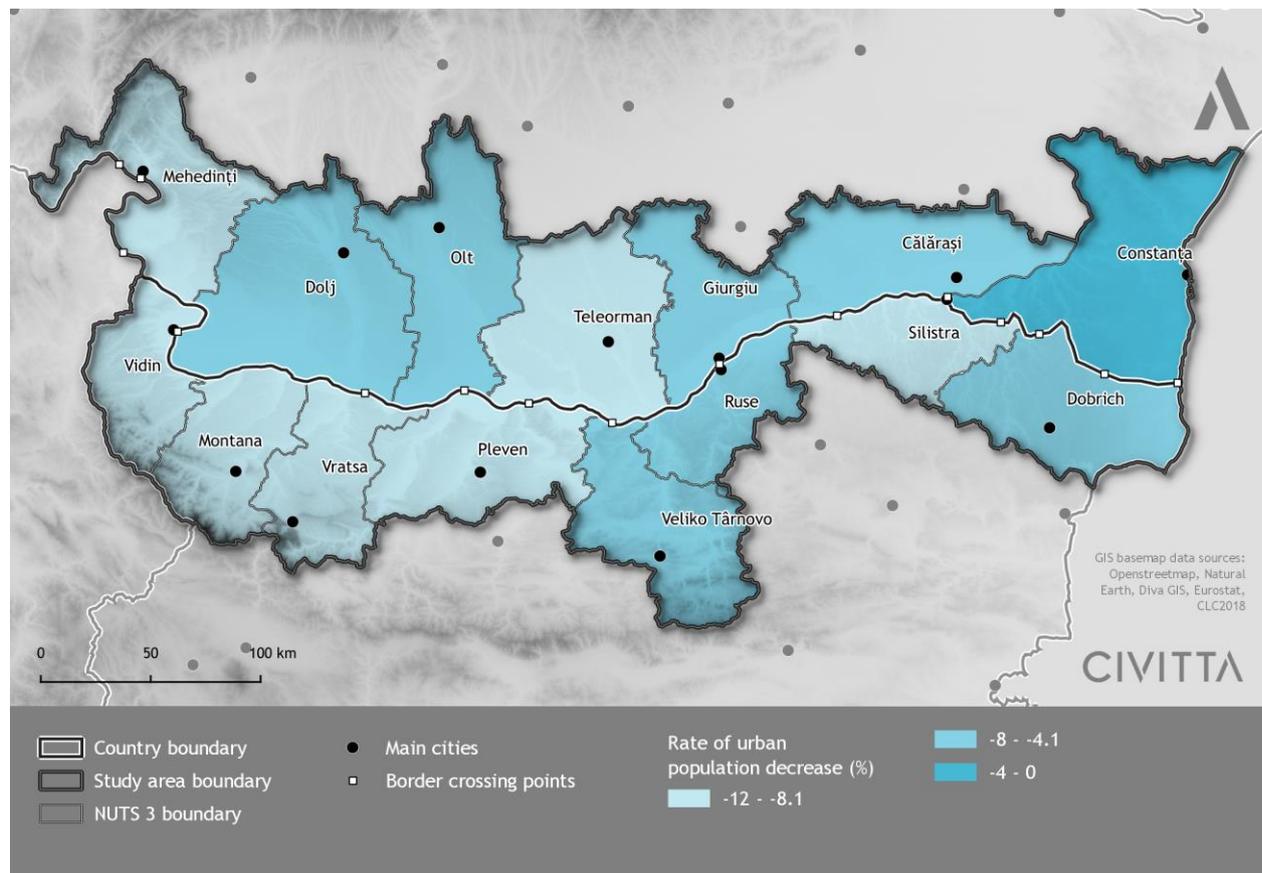
Source: The National Institute of Statistics - Bulgaria



In the analysis of the urban and rural population decrease (Map 40 and Map 41), we can state that the trend is similar to the general county/district one for the urban areas, with higher values in the county of Silistra and Mehedinți. Also, from the analysis of the urban indicator, another conclusion can be drawn, that on the Bulgarian side not even the important cities manage to attract enough people to stop the depopulation phenomenon.

In the analysis of the rural dynamics, all the Bulgarian districts register very high values, with a maximum of -15.19% in Vidin. On the Romanian side, the values are lower, even if the rural depopulation is also quite strong and it can be ranked in the Eastern European demographic tendency. An interesting case is represented by the county of Constanța, where the rural population decrease has a positive value of 2.81%. The fact can be explained especially by the population that moves from the big cities to rural bordering areas but continues to commute daily to the urban areas in the county, especially the Municipality of Constanța and of Mangalia.

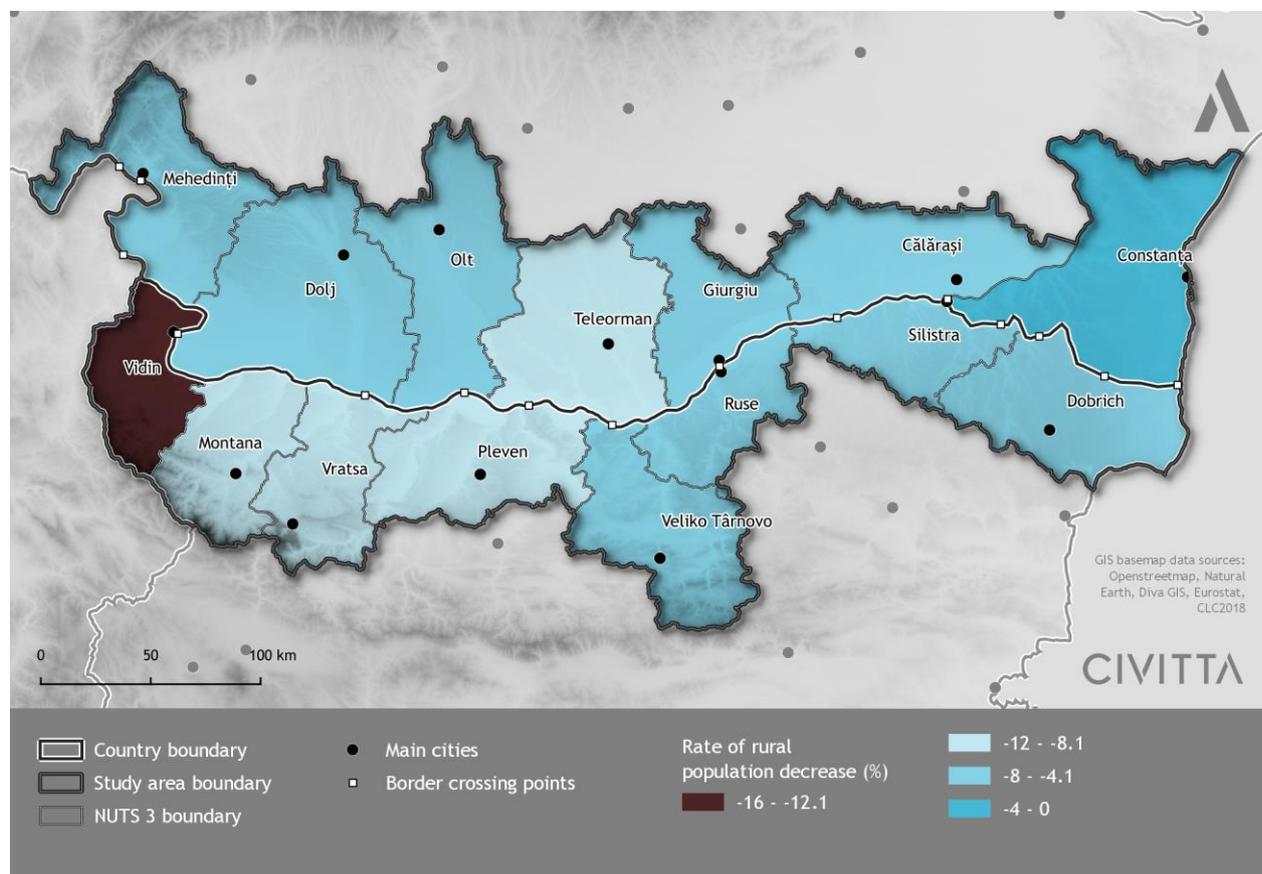
MAP 46 RATE OF URBAN POPULATION DECREASE 2012-2018 (%)



Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation



MAP 47 RATE OF RURAL POPULATION DECREASE 2012-2018 (%)



Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria

6.1.1. POPULATION PROJECTIONS BY 2060 - TO BE ANALYSED

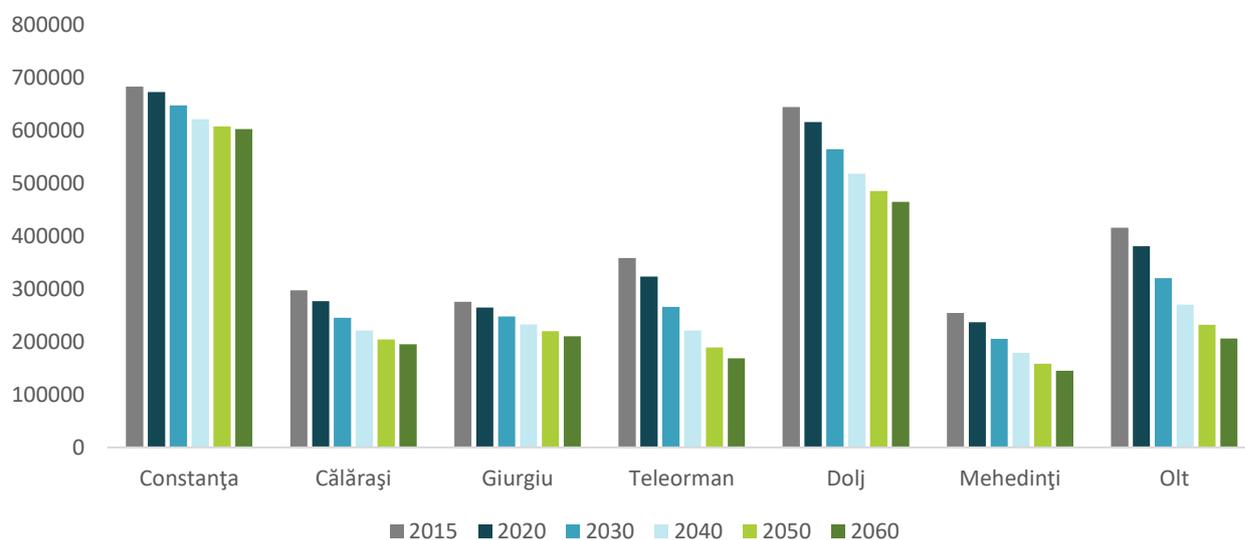
Demographic projections (the population perspective projections) are calculations done under settled in advance conditions for the future development of the fertility, mortality and migration. They give an idea for the population development during the projected period. Different scenarios for the population projections are used depending on the expected social-economic development of the country. The two countries have made these studies for the population projection, Romania until 2060, Bulgaria until 2080. In this study, data was chosen for both countries, in order to have a comparable situation.

The scenarios include an optimistic one, with a relative acceleration and in which the country demographic development will be accompanied by the favourable social-economic processes, a pessimistic one, with a relative delay and in which the prognosis on population development is done under the hypothesis for unfavourable social-economic processes in the country and a constant scenario in which the forecast is prepared according to the EU regulations on the member states demographic and social-economic development. For the entire area, all the three scenarios predict a decrease in the number of inhabitants, but with different thresholds in function of each perspective. What also must be taken into consideration is that planning for accurate population growth is often an in- exact science even under ideal circumstances.



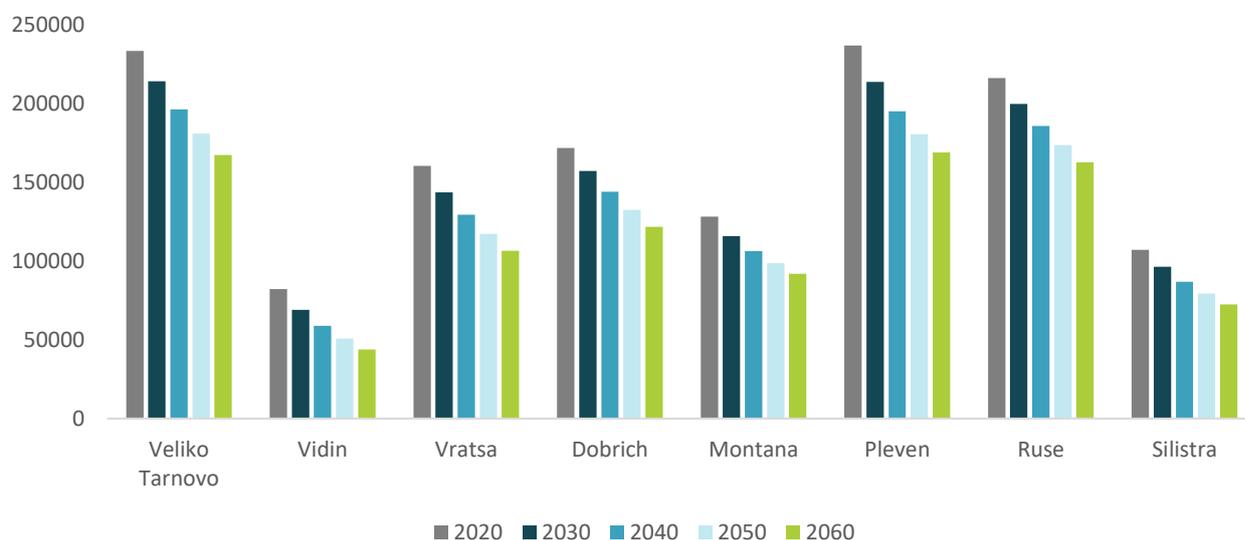
OPTIMISTIC SCENARIO

FIGURE 64 POPULATION PROJECTION BY 2060-OPTIMISTIC SCENARIO ROMANIA



Source: National Statistics Institute

FIGURE 65 POPULATION PROJECTION BY 2060-OPTIMISTIC SCENARIO BULGARIA



Source: National Statistics Institute

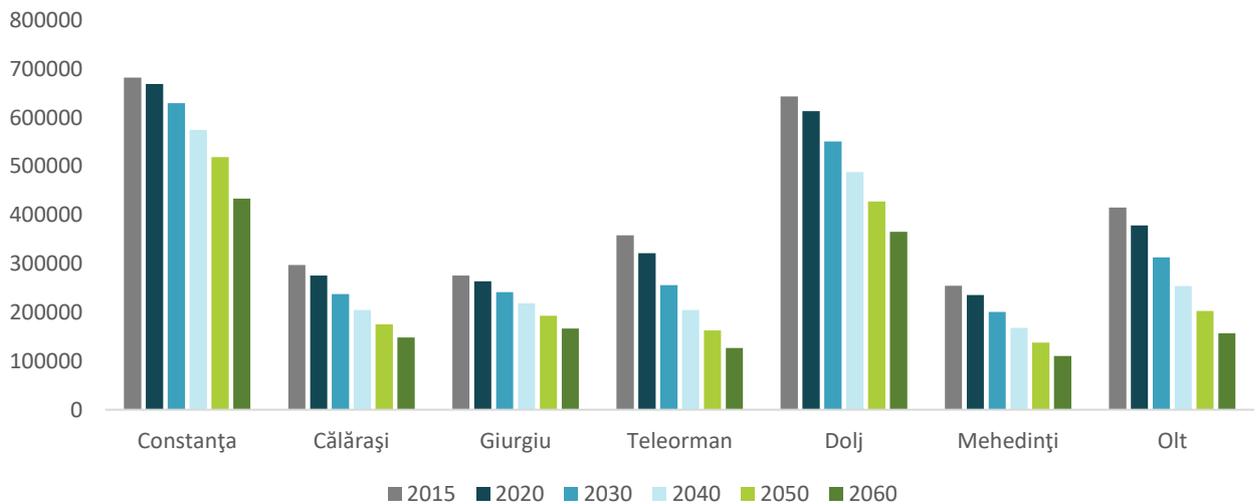
What can be stated from the two predictions, is that in both countries the population number will be decreasing until 2040-2050 but will stagnate afterwards. Constanța will lose approximately 11% of the population by 2060, but it is going to be the county with the lowest percentage of decrease, since counties such as Olt will lose about 50% of the population or Mehedinți which will lose 42%. On the Bulgarian side, the percentages even in the optimistic scenario are quite high, Ruse District will lose the least, about 29%, but there will be districts



such as Vidin which will lose almost 52% of their population in 40 years from now. The average loss in terms of population will be of 35% for the Romanian side and 31% on the Bulgarian border and this will be due mainly to the counties that cannot find the right solutions and policies to increase fertility, to offer better opportunities in order to stop also migration in the area.

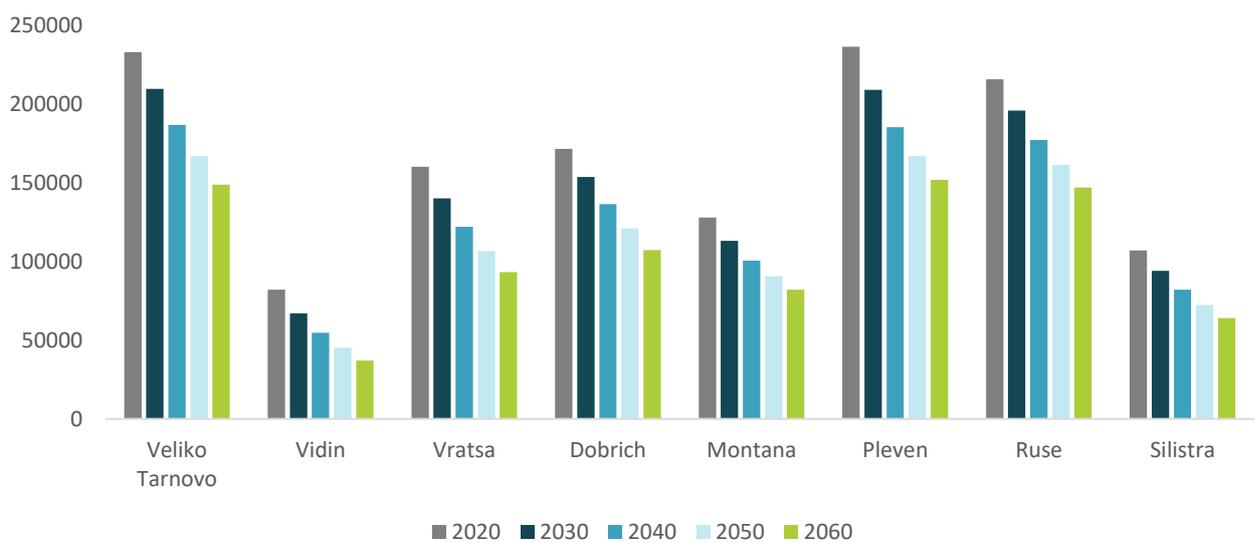
PESSIMISTIC SCENARIO

FIGURE 66 POPULATION PROJECTION BY 2060-PESSIMISTIC SCENARIO ROMANIA



Source: National Statistics Institute

FIGURE 67 POPULATION PROJECTION BY 2060- PESSIMISTIC SCENARIO BULGARIA



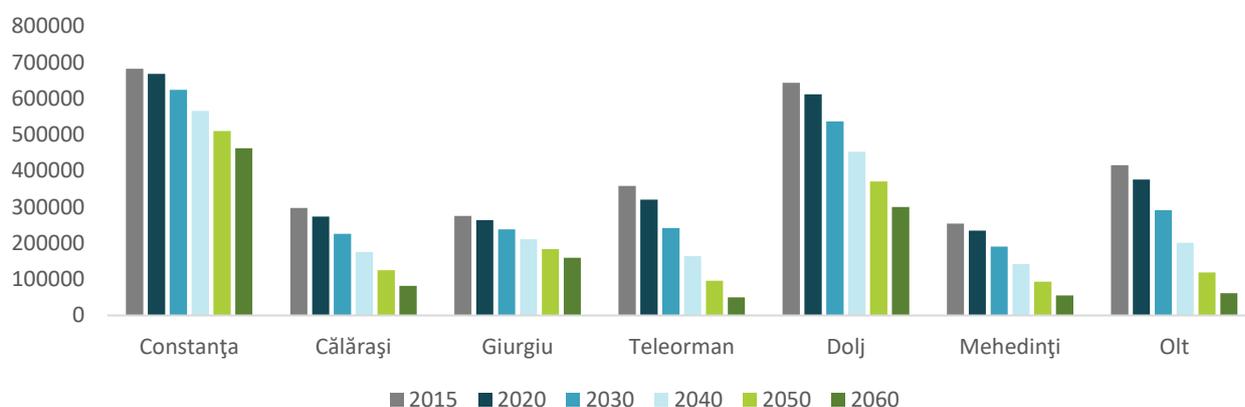
Source: National Statistics Institute



In terms of the pessimist scenario, the situation shows a continuous decline, which would not stop after 2040-2050, but will continue even after 2060. For Romania, counties such as Teleorman will lose almost 86% of the population, getting to 49,742 inhabitants and Olt who will lose about 85% of the population, with a total of 61,876 inhabitants. Even Constanța will face a difficult situation by losing 32% of its population. In Bulgaria, the most affected district will be Vidin, which will lose about 55% of its population by 2060. The least affected one will be Ruse with 31%. On an average, both countries will have to deal with a shrinking population and with the necessity to avoid depopulation through very specific measures. The average depopulation rate will be of 64% for Romania and 39% for Bulgaria.

CONSTANT SCENARIO

FIGURE 68 POPULATION PROJECTION BY 2060-CONSTANT SCENARIO ROMANIA



Source: National Statistics Institute

FIGURE 69 POPULATION PROJECTION BY 2060-CONSTANT SCENARIO BULGARIA



Source: National Statistics Institute



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The constant scenario is closer to the pessimistic one. The population will be shrinking in all counties and districts, with an average of 50% for Romania and 36% for Bulgaria. The same counties Teleorman (64%), Olt (62%) and districts Vidin (52%) and Vratsa (39%) have the highest tendency of depopulation. What is to be taken into account is that the constant scenario is the one that is closest to the European tendency and all relevant policies should consider this type of scenario, a scenario that shows the need for more concern towards incentives for stimulating birth, for improving health and the quality of life and to offer the necessary conditions for stopping migration phenomenon, especially the international one.

6.2. AGEING POPULATION/LIFE EXPECTANCY

The world's population is ageing due to several concomitant factors. This is particularly true for countries characterised by low fertility rates and an increase in life expectancy. These demographic trends are progressively transforming the traditional population age pyramid into a tree-shaped form. It is true that this phenomenon should show us the developments in the health care sectors and the socio-economic progress, but in the mean time they put various problems to the policy makers, in order to support the ageing population throughout the years (e.g. sustainability of pension systems, threatened by the contemporary increase in the number of retirees and the drop in the size of the working-age population).

The degree of the demographic ageing shows the number of old people (over 65 years) that correspond to 100 young people (under 15 years). As it is illustrated by Map 42, the highest rates are in Vidin, with more than 245 old people to 100 young ones. Also, Montana, Pleven, Veliko Tarnovo and Ruse overpass 180 old people to 100 young ones. In Romania, the highest rate is in Teleorman, with more than 195 old people and lowest rate is in Călărași, Giurgiu, Dolj, with less than 140 old people to 100 young ones.



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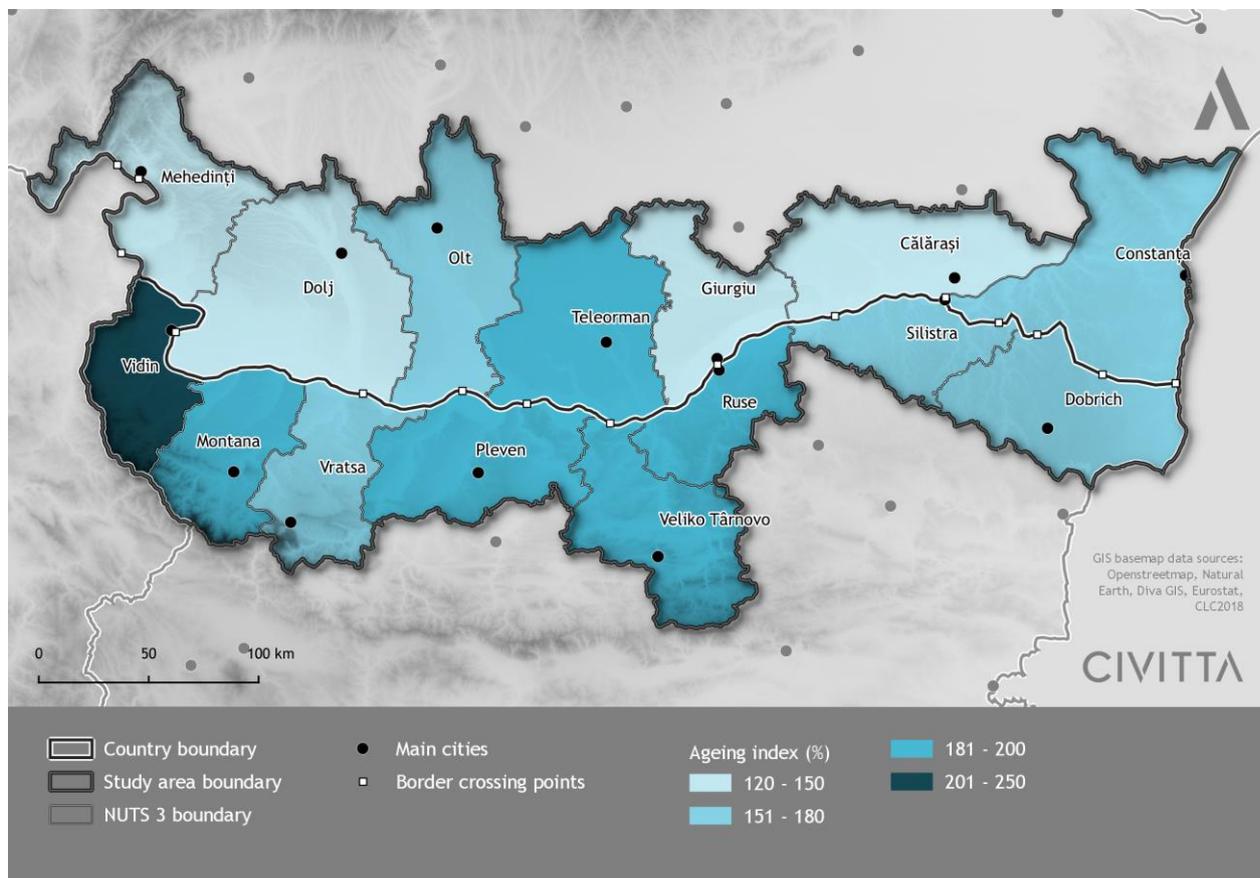


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MAP 48 AGEING INDEX 2018 (%)

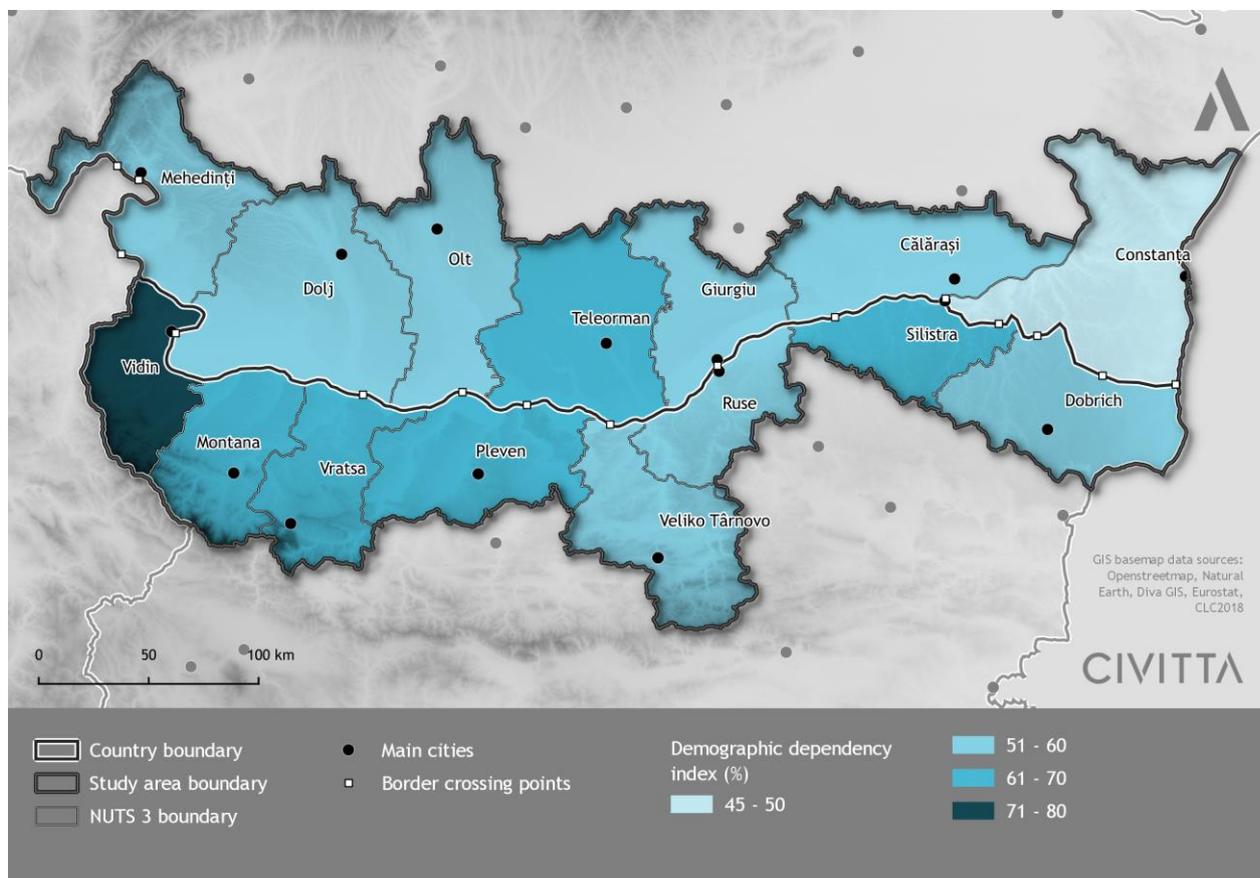


Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation

The demographic dependency index shows the relationship between young and old people on one side and adults on the other side, but it does not take into consideration the increasing longevity. The first group is the dependent one in comparison to the other that should support them. The main utility of this index is to assess the economic impact of the increasing dependent population and to be able for the policy makers to take the best decisions when implementing specific policies. As we can see from Map 43, the highest values are in Vidin, with more than 71% and on the opposite side, we have Constanța with almost 49%. The average for the districts on the Bulgarian side is of 62% and for the counties on the Romanian side is of 55%. This means that the economic burden on a medium and long term will be higher in Bulgaria and there is a need in both countries for better demographic incentives.



MAP 49 DEMOGRAPHIC DEPENDENCY INDEX 2018 (%)



Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation

The average life expectancy is an important indicator that gives information on the standard of living and the quality of life in a given territorial area. It is an aggregated indicator that includes aspects like the healthcare standards that are present in the region, the accessibility of healthcare services and facilities, the level of physical activity, the health risk factors such as tobacco and alcohol consumption, the general awareness of the components of a healthy diet, etc. For Bulgaria, the life expectancy at birth recorded over the last years, was of over 74 years, and for Romania, over 75, showing an increase from the previous period.

TABLE 25 LIFE EXPECTANCY 2016-2018 BULGARIA, YEARS

DISTRICTS	2016-2018		
	Total	Male	Female
Veliko Tarnovo	74,20	70,78	77,85
Vidin	72,86	69,68	76,41
Vratsa	72,78	69,53	76,37



DISTRICTS	2016-2018		
	Total	Male	Female
Dobrich	73,36	69,63	77,35
Montana	72,75	69,42	76,43
Pleven	74,12	70,66	77,86
Ruse	74,52	71,06	78,16
Silistra	73,73	69,73	78,21

Source: The National Institute of Statistics - Bulgaria

TABLE 26 LIFE EXPECTANCY 2016-2018 ROMANIA, YEARS

COUNTIES	2016-2018		
	Total	Male	Female
Constanta	75,29	71,85	78,76
Călărași	73,92	70,26	77,81
Giurgiu	73,97	70,21	77,98
Teleorman	74,58	70,88	78,66
Dolj	74,84	71,37	78,41
Mehedinți	74,95	71,94	78,08
Olt	74,69	71,16	78,47

Source: The National Institute of Statistics - Romania, own calculation

At the European level, life expectancy at birth was estimated to be 80,9 years in 2017, reaching 83,5 years for women and 78,3 years for men, a difference of 5,2 years between the sexes. Ruse (74,52 years), Veliko Tarnovo (74,20 years) and Pleven (73,47 years) recorded life expectancy levels that were close and even above the national averages, but under the European average. With regard to the Romanian counties, Constanta (75,29 years) Mehedinți (74,95 years), Dolj (74,84 years) and Teleorman (74,58 years) reached the highest values, but still under the European average. All the counties/districts in the cross-border area registered lower values than the European average in terms of male and female life expectancy. The highest male life expectancy values are registered in Veliko Tarnovo (70,79) for Bulgaria and Mehedinți (71,94)



for Romania, and the highest female life expectancy values are registered in Silistra (78,21) for Bulgaria and Constanța (78,76) for Romania.

The most important contribution to the increase in life expectancy at birth was a decrease of mortality in adult and older ages and, to a smaller extent, in young ages. Also, there is a need to compare men and women life expectancy, and the life expectancy for women in both countries is higher than for men, with almost 7 years between the two categories.

6.3. NATURAL MOVEMENT

The numerical evolution of the population is conditioned, in part, by the natural movement of the population, defined by the relationship between birth rate and mortality rate.

6.3.1. BIRTH RATE

The average birth rate in the Romania-Bulgaria cross-border area is 8.14‰. On the Romanian side, 5 of the counties exceed the cross-border area's average, four of the counties are very close to the national average of 9‰ and 3 are very close to the European average of 9.9‰. Of the highest values, which exceed the national average, were registered in Constanța (9.9‰) and Călărași (9.02‰). While at European level the birth rate has been constantly decreasing during the last few years, some of the Romanian counties registered an increase - more precisely Constanța, Mehedinți and Olt. The increase does not come especially from the local policies or socio-economic status of the counties, but more from the national policies and incentives to support birth and families, as well as corresponding to the ethnicity and religion of the inhabitants. As regards the Bulgarian districts in the cross-border area, similar to the other analyses, Vidin (6.91‰) is lagging behind the European (9.9‰), cross-border (8.14‰) and national (8.9‰) averages. On the other hand, Vratsa registered the highest value, with 8.46‰. Looking at the dynamics of the birth rate between 2012-2018, three districts - Ruse, Vidin and Vratsa, registered increases. This could mean, for example, that even though Vidin has a low birth rate, efforts are being made to improve the situation, either through local/ regional strategies, but also with the help of the national level. Unfortunately, in the case of Bulgaria, the national average is decreasing from one year to another.



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MAP 50 BIRTH RATE 2018 (%)

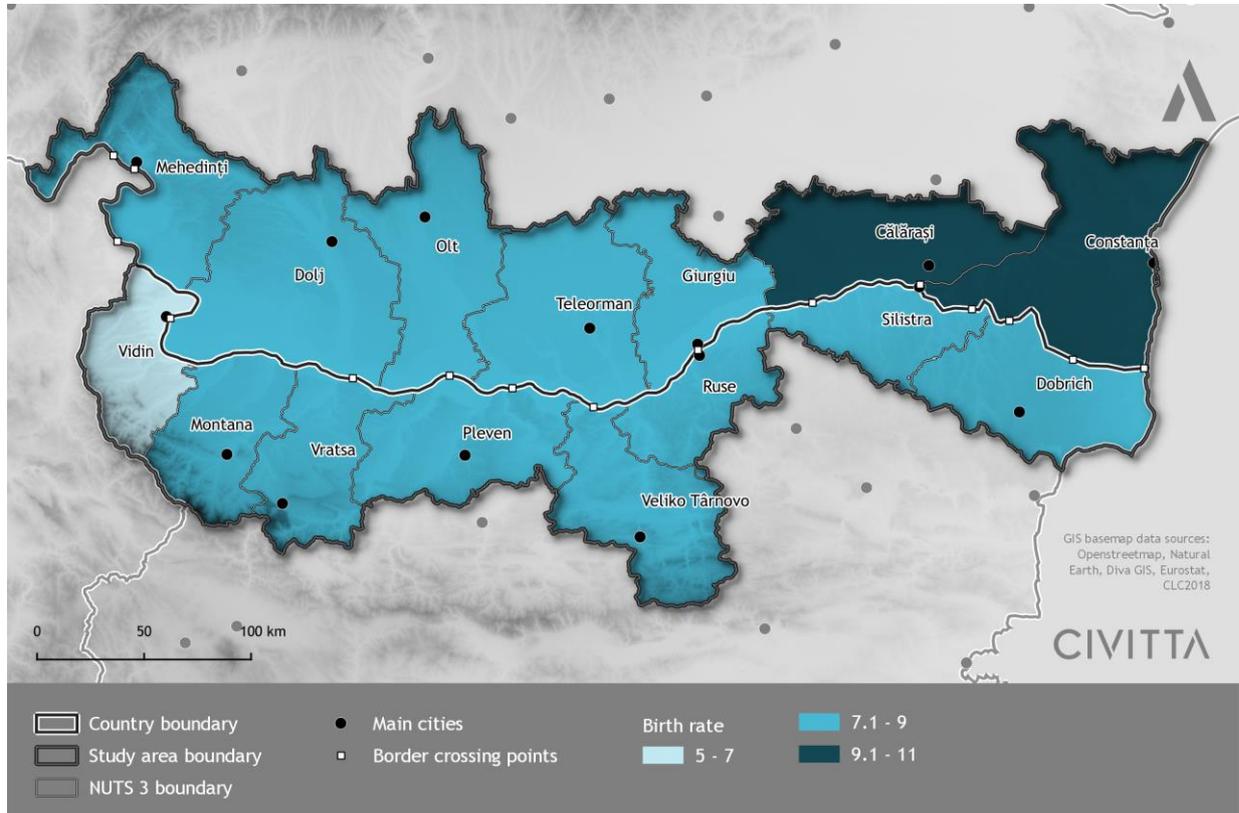
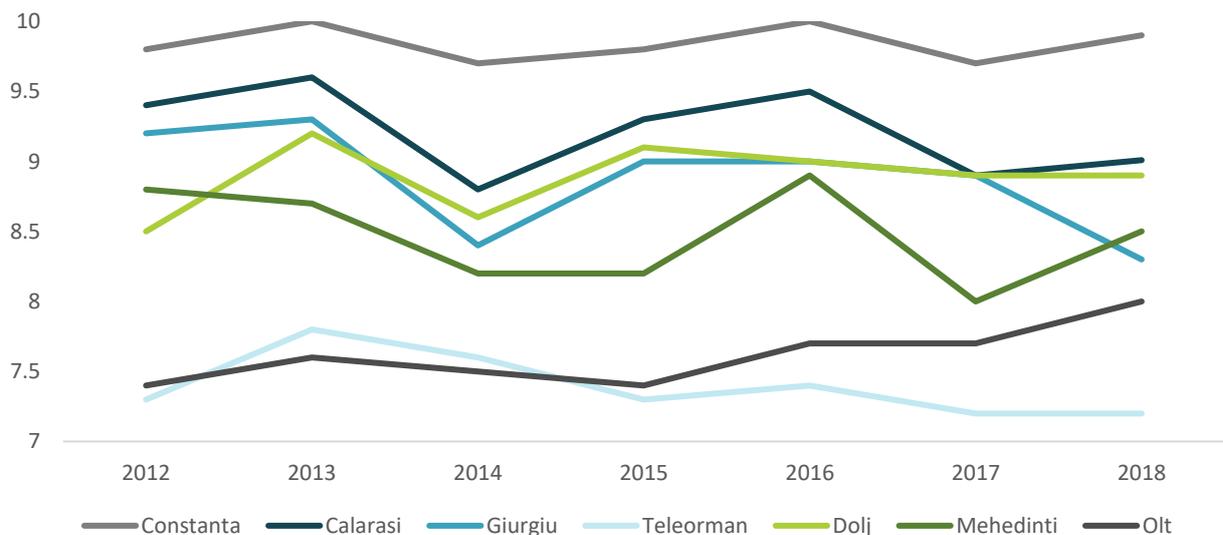


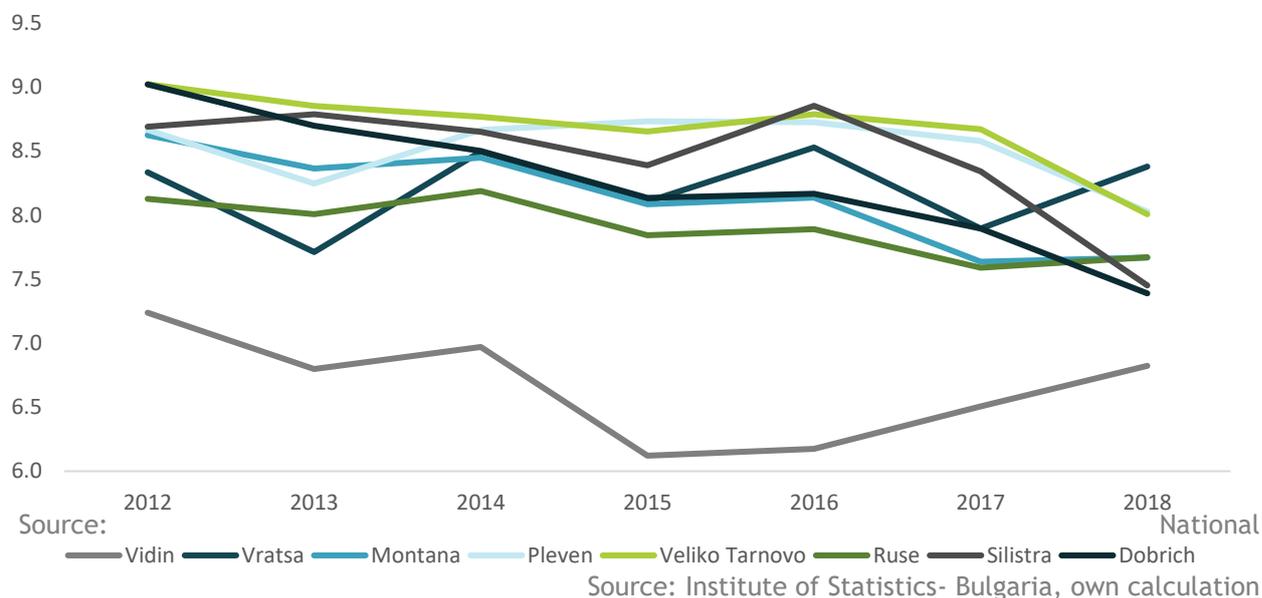
FIGURE 70 BIRTH RATE DYNAMICS IN ROMANIA 2012-2018



Source: The National Institute of Statistics - Romania, own calculation



FIGURE 71 BIRTH RATE DYNAMICS IN BULGARIA 2012-2018



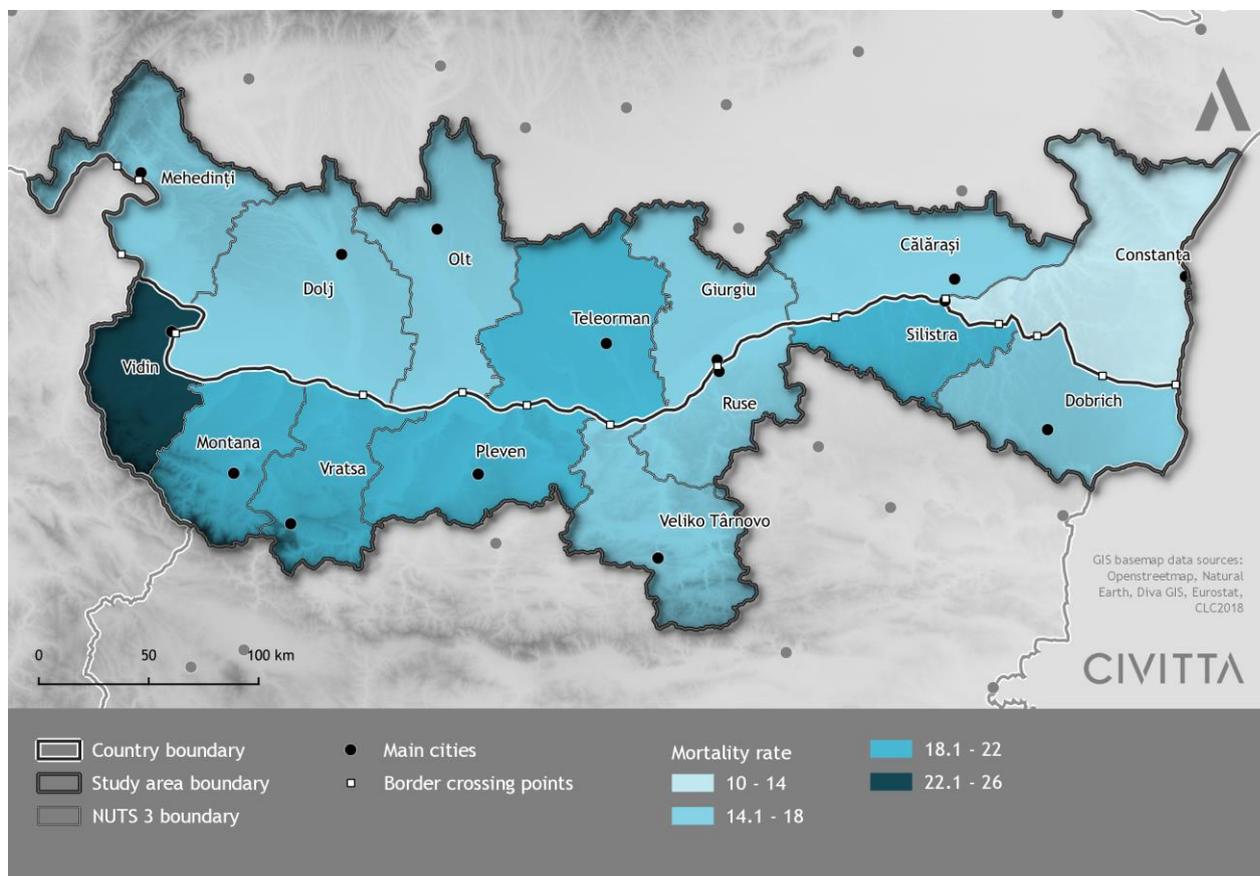
6.3.2. DEATH RATE

When comparing the death rates, Vidin reaches a maximum of 23.48‰ for Bulgaria (very high rate in comparison to the European level of 10.2‰, the CBC average of 17.52‰, the national average of 15.4‰ and the Bulgarian side of the cross-border territory average of 19.28‰) and Teleorman 18.37‰ for Romania (also very high in comparison to the European average of 10.2‰, the national average of 11.8‰, but close to the Romanian side of the cross-border area average of 15.51‰). The lowest rates were registered in Dobrich for Bulgaria, with a value of 16.73‰, and Constanța, for Romania, with a value of 12.38‰. Bulgaria is also the country with the highest death rate at the European level, the analysed districts illustrating part of the overall national situation. Bulgaria is followed by Romania in the European ranking.

In terms of mortality, for the Bulgarian districts, according to the National Institute of Statistics, in 2018 the main causes of death were related to the circulatory system (especially cerebrovascular diseases and heart diseases), followed by neoplasms (especially malign neoplasms). In the case of Romania, the latest data available is from 2016, and it also indicates the cardiovascular diseases as the main cause of mortality (especially in Mehedinți, Dolj, Olt, Teleorman and Giurgiu counties), together with neoplasms, especially in Giurgiu and Constanța counties. The situation in Romania and Bulgaria follows the European trend in terms of the main causes of death (heart diseases, cerebrovascular diseases and neoplasms).



MAP 51 DEATH RATE 2018 (%o)



Source: Source: Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation

6.3.3. NATURAL GROWTH RATE

The natural growth rate comes from the difference between birth and death rate but also has its roots and causes in the life expectancy. The European Union natural growth rate average is at 0.7 ‰, the cross-border area average is at -9.41 ‰, the Romanian side of the cross-border area average is at -6.98 ‰, and the Bulgarian side's average is almost double, namely -11.54 ‰.

Constanța has the highest rate of -2.48‰ on the Romanian side and Dobrich (-9.29‰), on the Bulgarian side. At the bottom rank Teleorman (-11.19‰) and Vidin with -16.57% (Map 46). It should be noticed that all the natural growth rates in the cross-border area have negative values. This means that the number of deaths exceeds the number of births, and on a long term, cumulated also with a negative migration rate, the depopulation effect will be stronger. There are large differences in numbers between the two countries, showing that the depopulation in Bulgaria tends to be stronger and might have serious consequences on a longer term.



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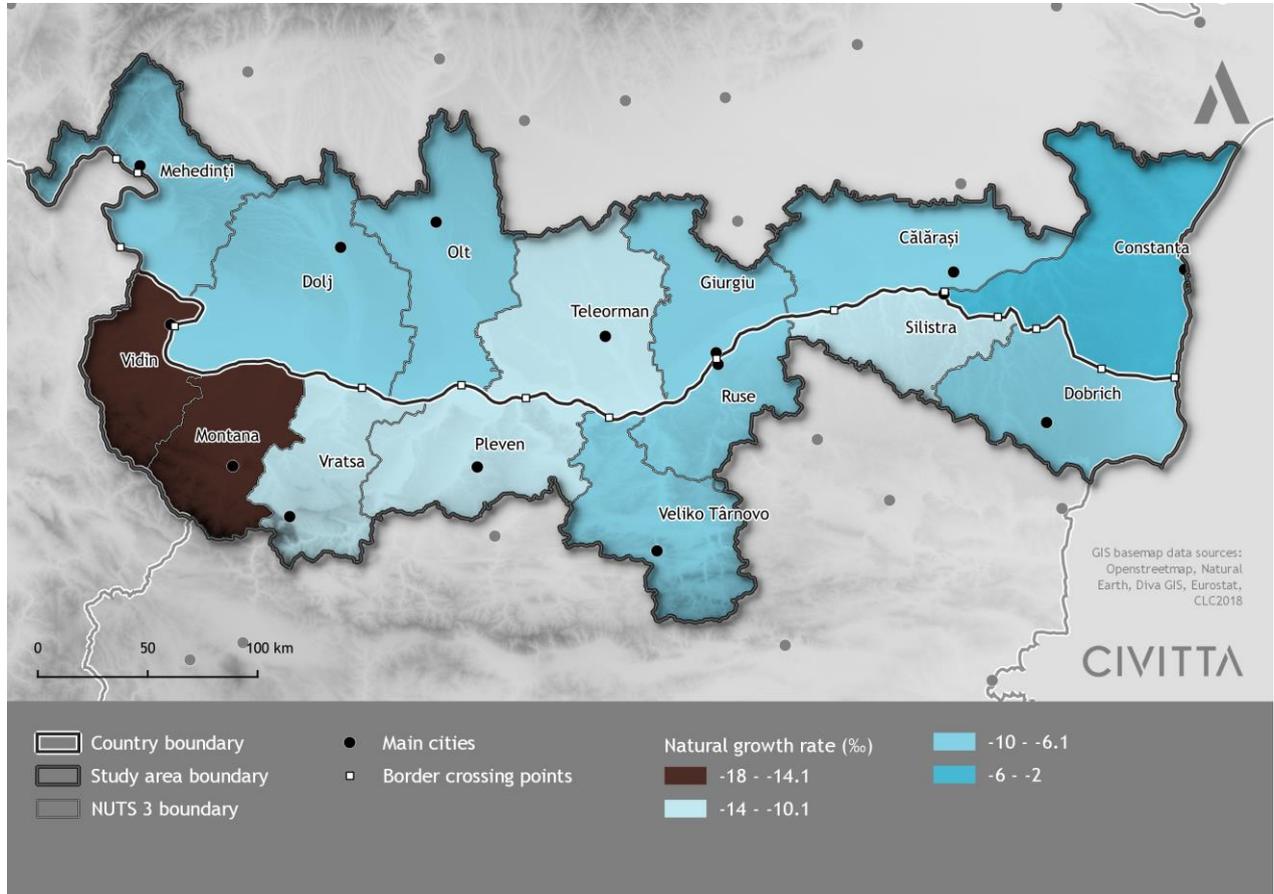


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MAP 52 NATURAL GROWTH RATE 2018(‰)



Source: Source: Source: The National Institute of Statistics - Romania, The National Institute of Statistics - Bulgaria, own calculation



6.4. FERTILITY RATES

Compared to the birth rate, which calculates the number of births per thousand of population per year, the fertility rate is the ratio between the number of live-births in a year and the female population aged 15 to 49 years at the 1st of July from the current statistics of the respective year, and is expressed by the number of live-births by 1000 women of fertile age (15 to 49 years) in the case of the indicator for Romania.

In the case of Bulgarian, the total fertility rate is the sum of the age-specific fertility rates for the reference year. It represents the mean number of children that would be born alive to a woman during her lifetime if she were to pass through her childbearing years conforming to the fertility rates by age of a given year, rate that is used also at the European level.

There is clear decrease in terms of fertility rate after 1990 and the fall of the Communism, especially after the exclusion of some demographic policies, such as the abortion prohibition in Romania. It is not possible to compare Romanian data to the European average and to the Bulgarian data, as they follow different calculation methodologies. As we can see from the Table 15, the Romanian average has decreased from 56.2‰ in 1990 to 35.1‰ in 2018. The current highest rate is registered in Constanța, with 35.1‰ and the lowest in Teleorman with 30.2‰. Nevertheless, the rates are similar and comparable to the national fertility rate.

TABLE 27 NUMBER OF BORN ALIVE CHILDREN PER 1000 WOMEN AT FERTILE AGE ROMANIA 1990-2018

COUNTY	NUMBER OF BORN ALIVE CHILDREN / ‰ WOMEN AT FERTILE AGE					
	1990	2000	2010	2013	2015	2018
Romanian average	56.2	39.7	37.2	38.2	36.8	35.1
Constanța	52.8	36.3	40.2	38.5	38.1	35.4
Călărași	64.8	46.7	41.2	39	37.7	34.7
Giurgiu	62.8	44.3	39.7	38.6	36.8	34.8
Teleorman	57.6	41	33.7	34.8	32.4	30.2
Dolj	53.9	42	34.8	37.3	36.7	33.4
Mehedinți	60.6	39.6	35	35.6	33.4	31.3
Olt	57.7	42	31.3	31.1	30	31.7

Source: The National Institute of Statistics- Romania

In Bulgaria, there was a decrease at the national level during the years following 1990, but after 2010, we can observe a stability tendency in terms of total fertility rate, as well as an increase in some cases, such as in Vratsa from 1,46 to 1,81 live births per woman, Pleven from 1,56 to 1,71 live births per woman or Veliko Tarnovo from 1,19 to 1,34 live births per woman. Compared to the European level of 1,59 live births per woman, the Bulgarian districts show similar values to the European trend.



Still, the rates are low, and this can be a serious issue for the depopulation in the cross-border area.

TABLE 28 TOTAL FERTILITY RATE 2010-2018 BULGARIA

DISTRICT	TOTAL FERTILITY RATE 2010-2018			
	2010	2013	2015	2018
Bulgarian average	1,49	1,48	1,53	1,56
Vidin	1,50	1,51	1,41	1,68
Vratsa	1,46	1,53	1,65	1,81
Montana	1,52	1,74	1,70	1,67
Pleven	1,56	1,65	1,78	1,71
Veliko Tarnovo	1,19	1,39	1,36	1,34
Ruse	1,34	1,39	1,38	1,41
Silistra	1,49	1,69	1,65	1,55
Dobrich	1,44	1,56	1,50	1,44

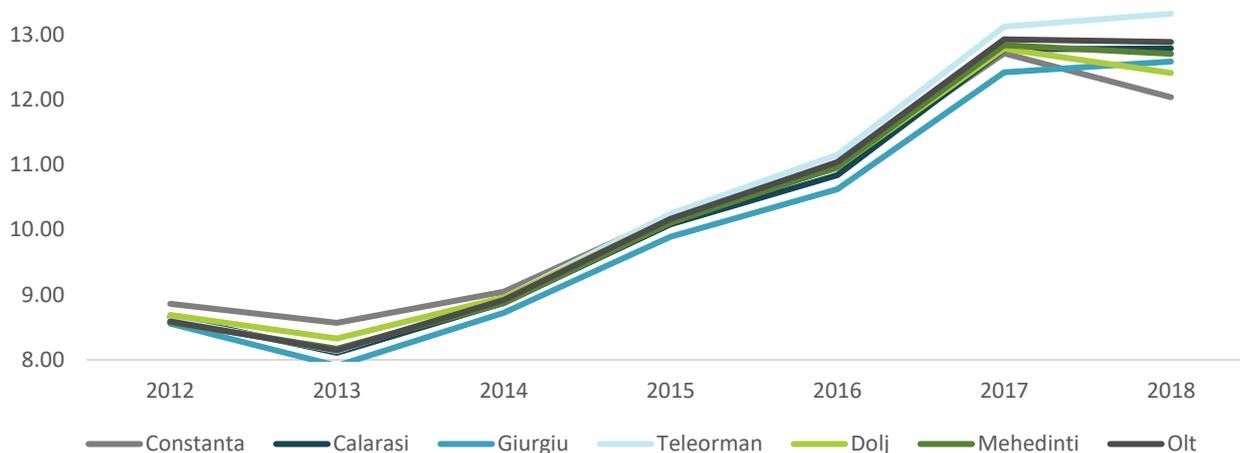
Source: The National Institute of Statistics - Bulgaria



6.5. MIGRATION TRENDS

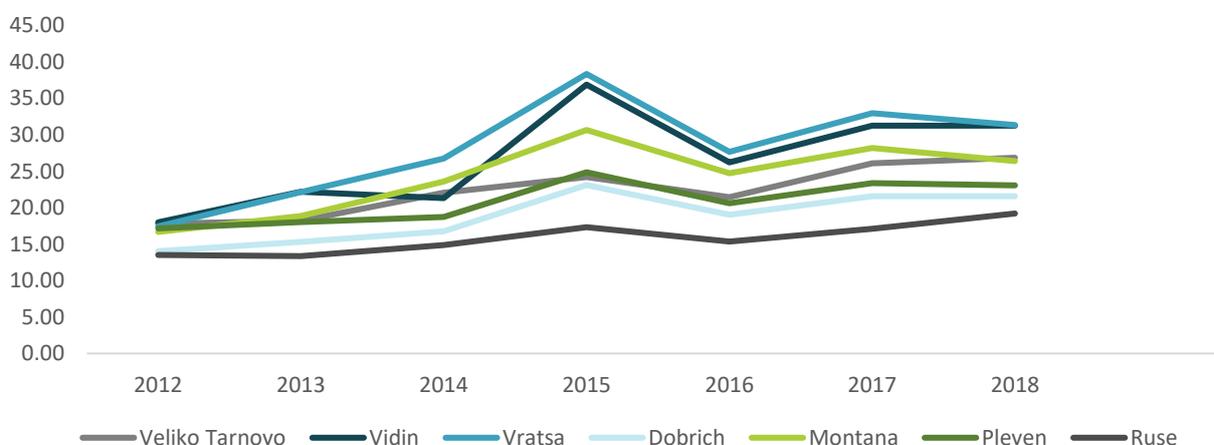
In recent years, both Romania and Bulgaria have undergone major changes in terms of migration, with a large number of populations leaving the resident county/district and moving mainly to the main cities or in most of the cases to the capital cities Sofia and Bucharest. Just after the EU accession of the two countries, residents from Romania and Bulgaria started migrating abroad for better jobs and better life conditions. Eurostat estimated that only in 2007, more than one million people migrated abroad from the two countries. And this phenomenon did not stop at that period but continued over the following years. Romania was the fifth country in the European Union in 2018 in terms of number of people emigrating from the country (231,661 people according to EUROSTAT), Bulgaria registered only 33,225.

FIGURE 72 EMIGRATION 2012-2018 ROMANIAN COUNTIES %



Source: The National Institute of Statistics- Romania, own calculation

FIGURE 66 EMIGRATION 2012-2018 BULGARIAN COUNTIES %

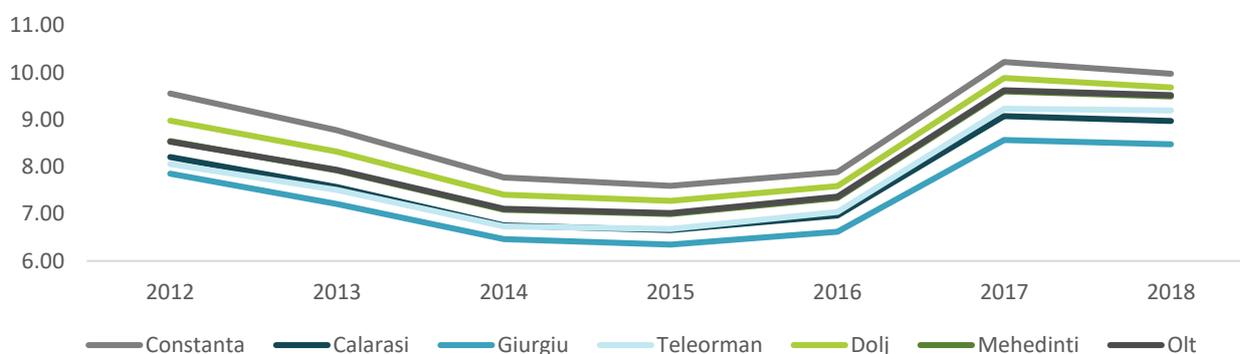


Source: The National Institute of Statistics- Bulgaria, own calculation



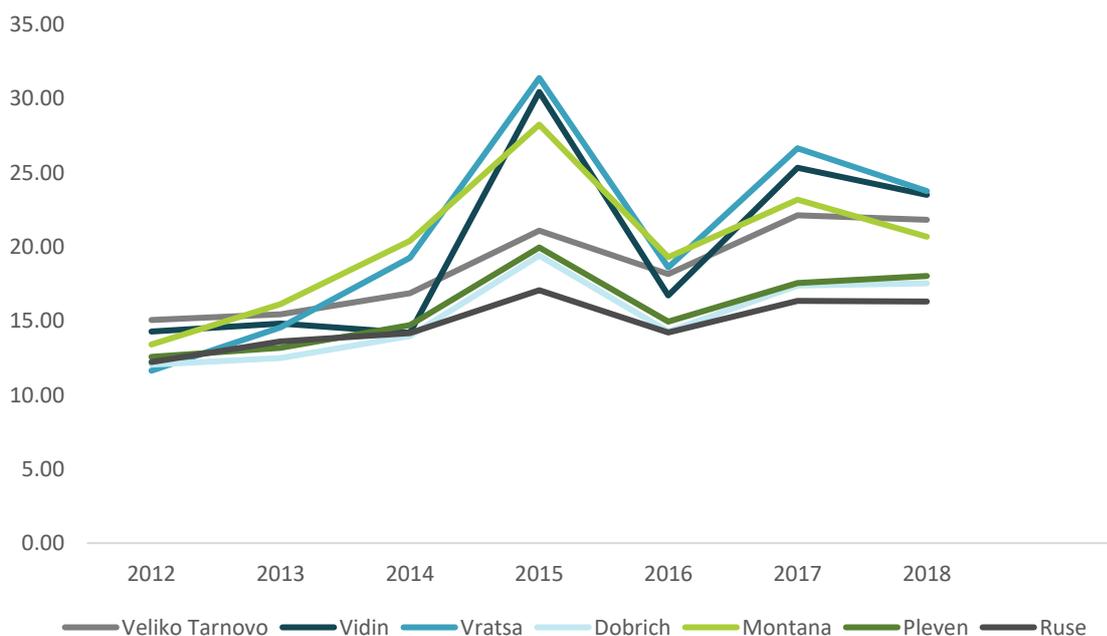
As it can be observed from Figures 65 and 66, in the Romanian counties there has been an increasing tendency of emigration, with the lowest point in 2013 and a peak in 2017, while in the Bulgarian districts, there is a peak of emigration in 2015 and 2017 and the lowest point in 2012. What we can also observe, is that the rates are much higher on the Bulgarian side, compared to the Romanian one. In the chart, there are included both those who left the country and those who left for another city in the same country, still there is a quite strong phenomenon that influences the net migration. Considering also the international data, we can state that for Bulgaria the internal migration is stronger, while in the case of Romania, the international migration is stronger.

FIGURE 67 IMMIGRATION IN THE ROMANIAN COUNTIES 2012-2018 %



Source: The National Institute of Statistics- Romania, own calculation

FIGURE 68 IMMIGRATION IN THE BULGARIAN DISTRICTS 2012-2018%



Source: The National Institute of Statistics- Bulgaria, own calculation

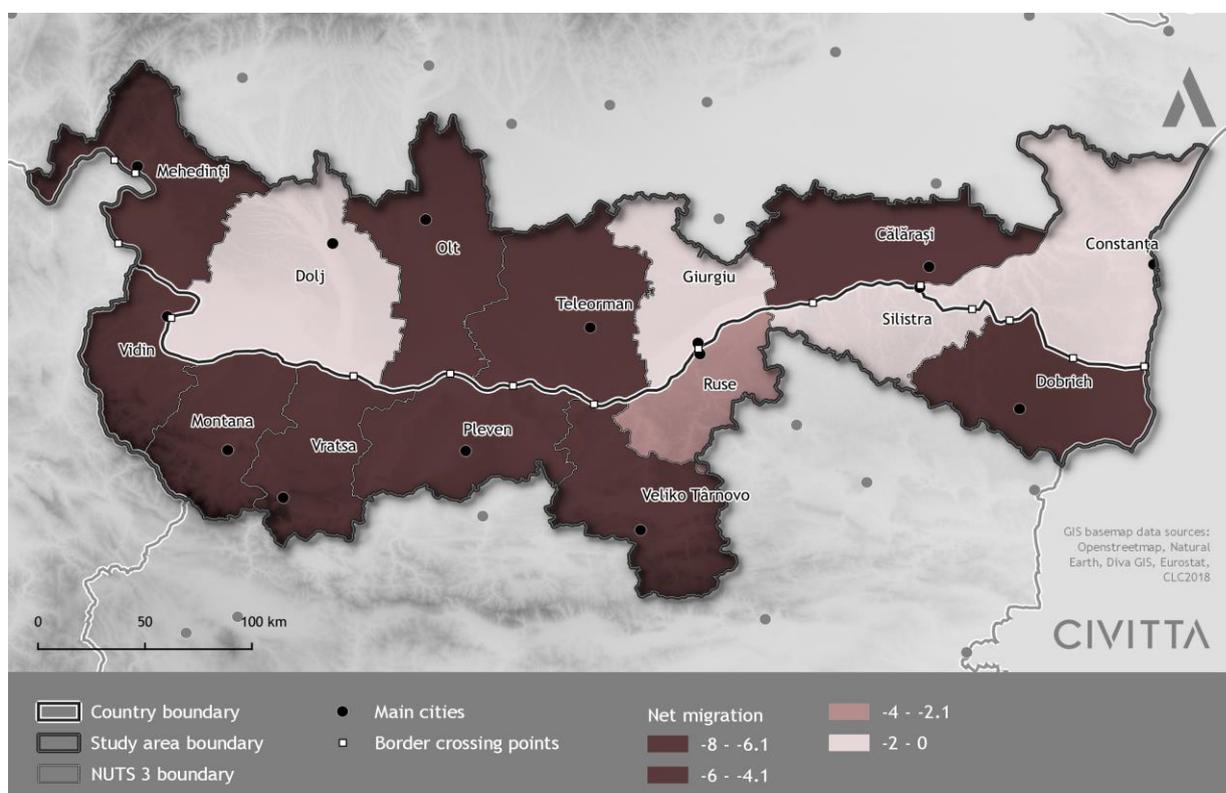


In terms of immigration, we can see that Constanța is the most attractive county on the Romanian side of the cross-border territory, while on the Bulgarian side, Vratsa has the highest scores. However, the emigration is also strong in Vratsa, leading to a negative net migration.

In terms of net migration, all the counties and districts register negative values, with the lowest ones in Vidin of -7.73%, Teleorman -7.62% and in Vratsa -7.57%. All these three districts/counties lack in attractiveness for their residents, as well as for other people that might be interested in moving here. These values show us that immigration is low, and won't help counteracting the depopulation phenomenon. There is need for measures to improve the attractiveness of the area (economic but also cultural and touristic for instance, in order to create incentives for secondary residences).

On the other hand, counties such as Giurgiu (-0.79%), Dolj (-1.03%), Constanța (-1.15%) and Ruse (-2.89%) show better perspectives for improving their attractiveness for future residents.

MAP 53 NET MIGRATION 2018 (‰)





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6.6. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

The Romania-Bulgaria cross-border area shows some essential demographic issues, in line with the national trends, more precisely: depopulation, strong outward migration, ageing and low fertility rates.

As the analysis shows a constant population decrease, especially along the Danube River, with the highest value in Vidin, decrease that has been constant in the district ever since after-the World War II. On the Romanian side, the county with the highest value of depopulation is Teleorman, a county that fails to offer socio-economic conditions to attract or to stabilise its residents.

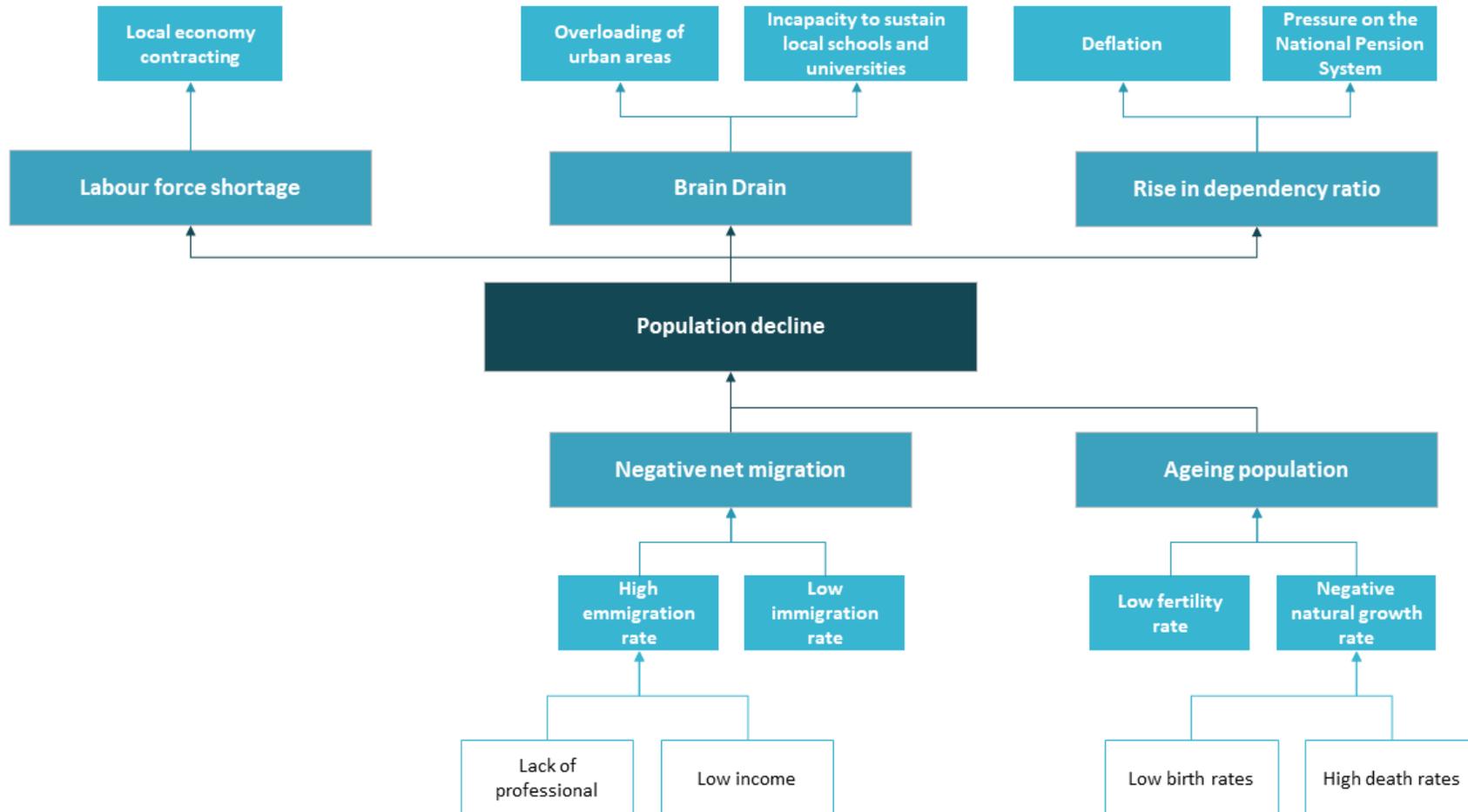
The trend of migration from rural to urban areas is also present in most of the cross-border area. For example, Constanța registered a positive evolution of the rural population, as inhabitants move from the big cities to the rural bordering areas but continue to commute daily to the urban areas in the county, especially to Constanța and Mangalia.

The negative natural growth rate is a common issue for the entire European territory. In the Romania-Bulgaria cross-border area, this is one of the causes for the population decline and possible future depopulation. The demographic dependency index is also weighing heavily on the population dynamics in the area, with a high value of 71% in Vidin and a lower one of 49% in Constanța, foreseeing serious economic consequences on a long term, and a serious economic burden on the young generation.

The most serious issue of the Romania-Bulgaria cross-border territory in terms of population evolution remains the migration phenomena and the general net migration trend. There is a significant population migration either to the more developed urban areas inside the cross-border area or outside the cross-border area (with specific differences for the two countries, Bulgaria mostly internal migration and Romania mostly international migration, especially qualified and unqualified workforce emigration to western EU countries).

In this context, and considering the population dynamics scenarios for 2060, where in all the cases the population of the cross-border area is decreasing, there is need for urgent and integrated measures to fight the demographic decline. The pessimist population scenario estimates that Teleorman will lose almost 86% of the population, Olt will lose about 85% and Vidin almost 55%. There is need for stronger policies for increasing birth rates and attracting youth and families, stronger economic policies and better policies for counteracting the emigration phenomenon.

PROBLEM TREE

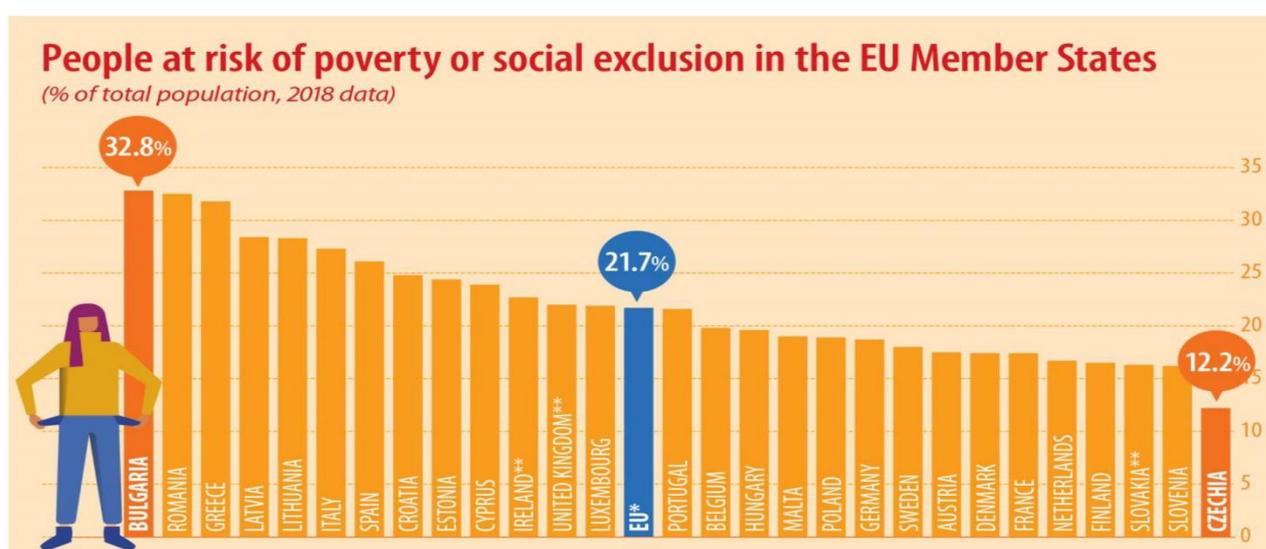


7. HUMAN CAPITAL AND COMMUNITY DEVELOPMENT

7.1. POVERTY AND PURCHASING POWER

Regions geographically located in the Romania-Bulgaria cross-border region are among the poorest in the European Union. According to the data from Eurostat, the cross-border region falls in the category of regions with more than a third of the population at risk of poverty or social exclusion.

FIGURE 73 AT RISK OF POVERTY OR SOCIAL EXCLUSION (AROPE) IN THE RO-BG CROSS-BORDER AREA, 2018



Source: Eurostat

According to the ESPON TiPSE¹¹⁶ project, 4 counties in the Romanian cross-border area (Mehedinți, Ilt, Teleorman and Călărași) and 4 counties in the Bulgarian cross-border area (Vidin, Vratsa, Montana and Pleven) recorded some of the highest percentages of population in households with less than 60% of the national median equivalized disposable income in Europe, between 30% and 63.4%.

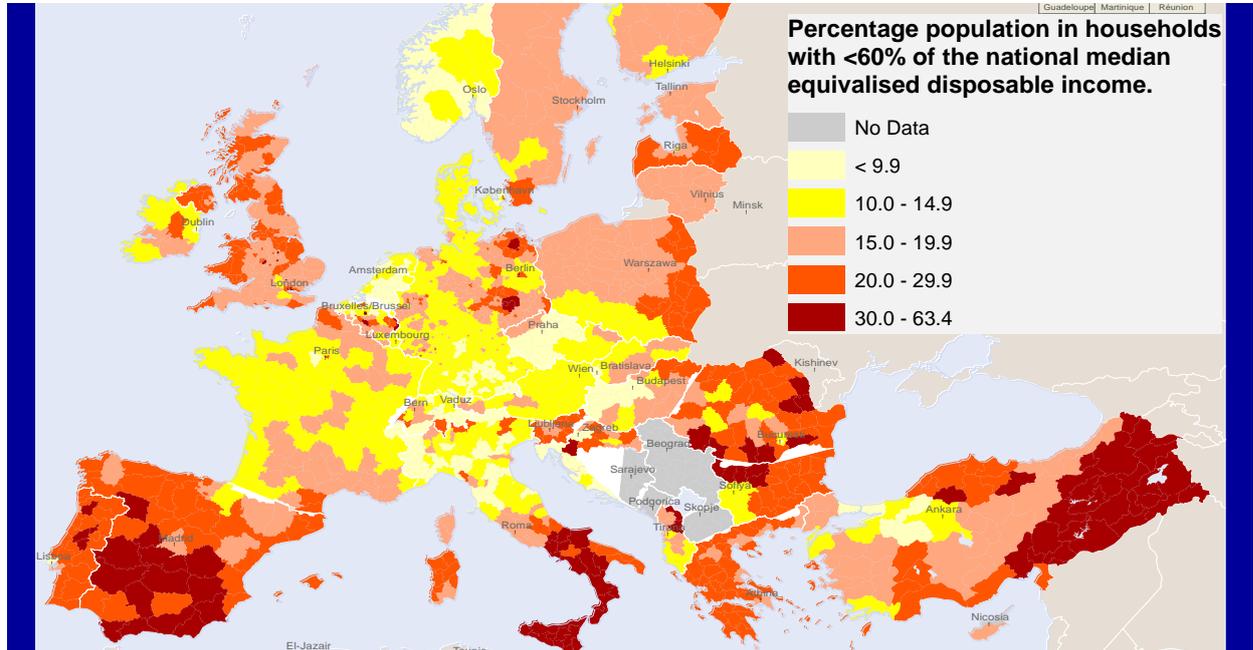
The salary situation is particularly concerning, because the average monthly net income reported by the National Institutes of Statistics in the two countries is up to 5 times smaller than the EU 28 average reported by Eurostat. The same source shows that Romania and Bulgaria have the lowest average net incomes in the whole EU 28, namely 555,79 euros and respectively 453,925 euros per month.

Compared to the national average, all Romanian cross-border counties have lower values, with the most concerning situations in Teleorman, followed by Călărași and Mehedinți. In the Bulgarian cross-border area, Vidin registered the lowest value of this indicator, similarly below the national average, while in Montana, Pleven and Silistra the situation is the same as in the rest of Bulgaria. The highest average monthly net income was reported in Vratsa, which together with Veliko Tarnovo, Ruse and Dobrich recorded values above the national average.

¹¹⁶ <https://www.espon.eu/tipse>

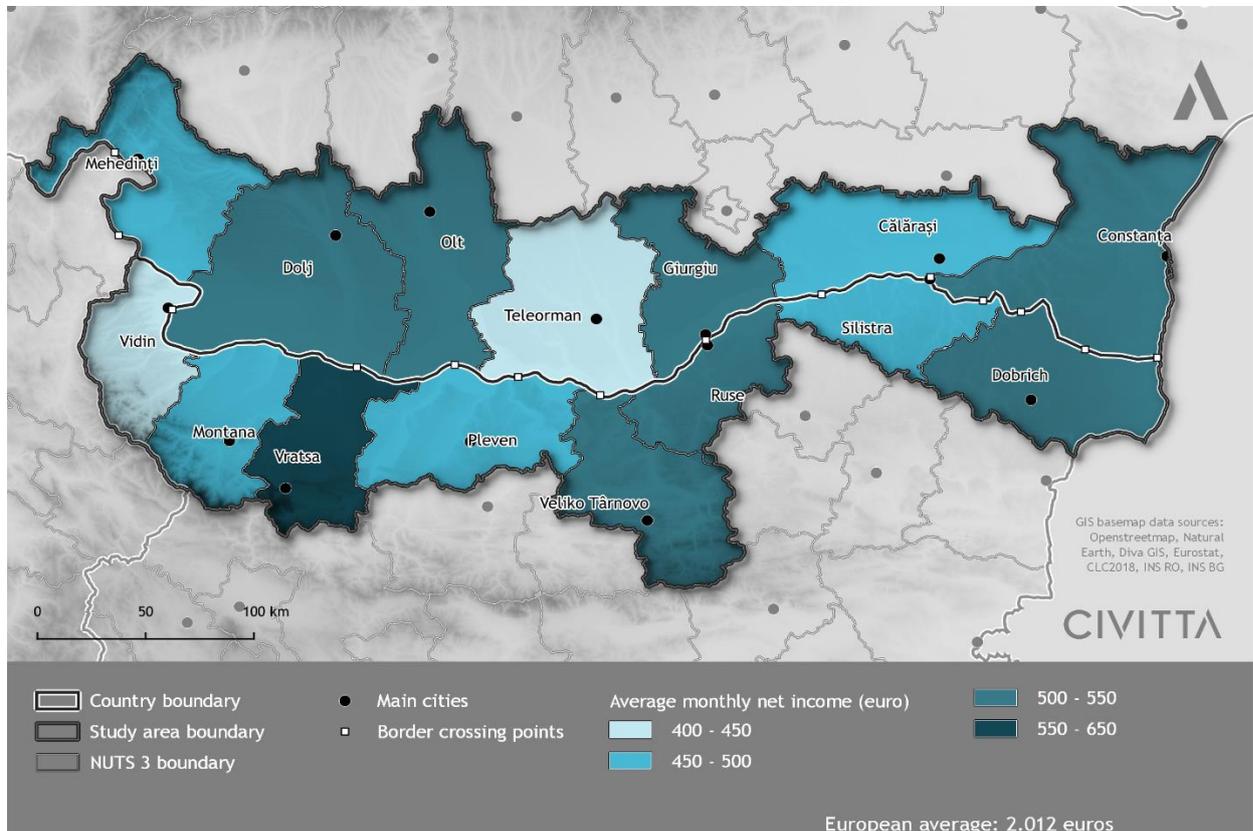


MAP 54 PERCENTAGE OF POPULATION IN HOUSEHOLDS WITH <60% OF THE NATIONAL MEDIAN EQUIVALIZED DISPOSABLE INCOME IN EUROPE



Source: ESPON TiPSE Project

MAP 55 AVERAGE MONTHLY NET INCOME IN THE ROMANIA-BULGARIA CROSS-BORDER AREA, 2018



European average: 2.012 euros

Source: NIS Romania, NIS Bulgaria



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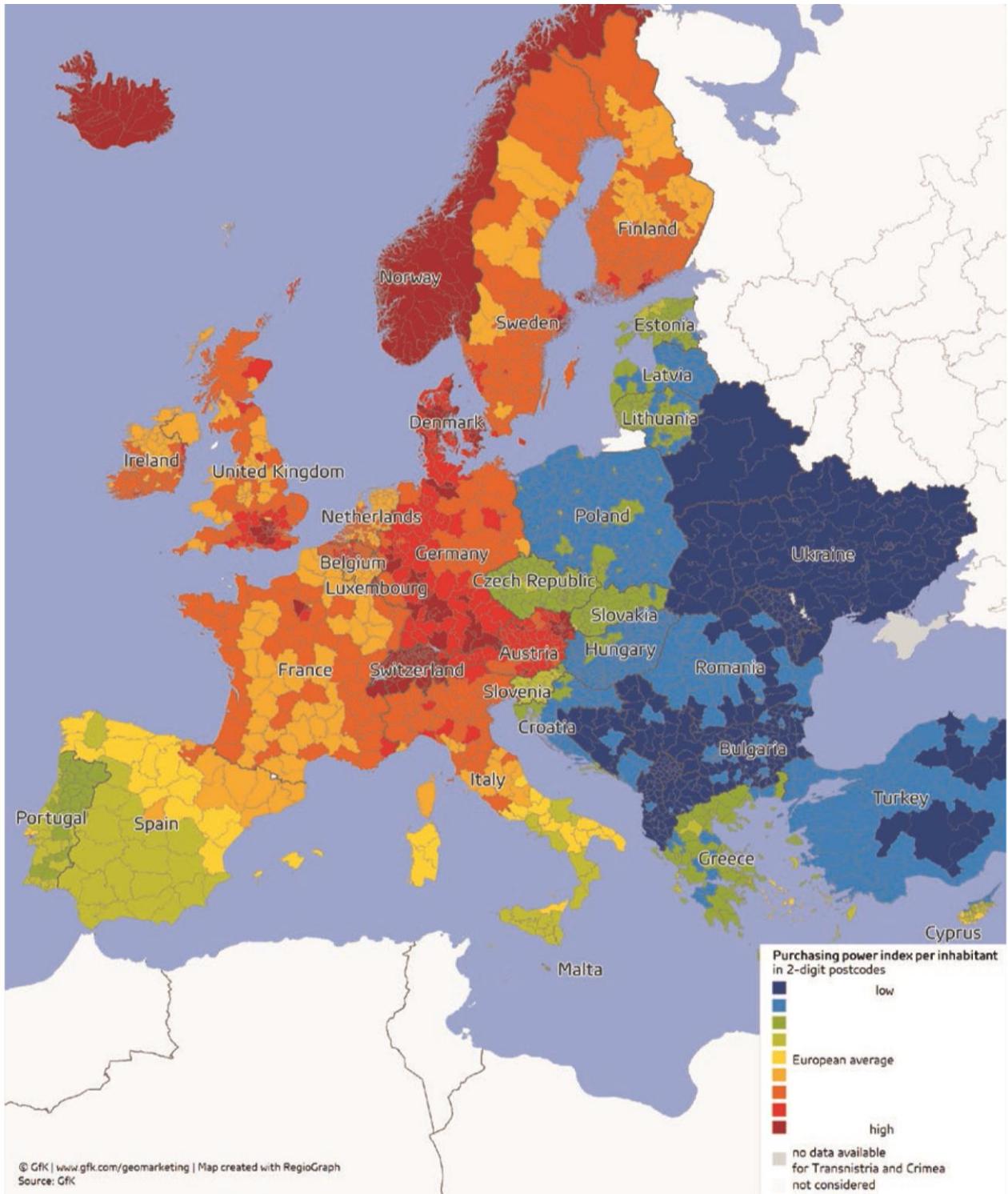


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FIGURE 74 PURCHASING POWER IN EUROPE, 2018



EUROPEAN RETAIL IN 2019 | 4

Source: EUROPEAN RETAIL IN 2019. GfK study on key retail indicators: 2018 review and 2019 forecast



In terms of purchasing power, the Romania-Bulgaria cross-border area has amongst the lowest values in Europe regarding the purchasing power index per inhabitant, situation which is specific to Eastern-European countries. At county level, only Dolj, Constanța and Ruse have a better situation compared to the other counties from the cross-border area, recording the second lowest value at EU level. Although in Bulgaria the purchasing power is similar throughout the country, in Romania the cross-border counties are amongst the poorest as shown by this indicator. The situation is partially due to the high rise of the consumer price in the past year (+4.1% in Romania alone)¹¹⁷.

7.2. LABOUR FORCE

Social cohesion depends to high extent on the territory's population and its participation in the economic activities. The area's ability to build resilience in the face of economic shocks and transformations is determined by multiple factors, among which the labour market flexibility and structure, as well as the level of skills and competences.

7.2.1. LABOUR RESOURCES

In 2013, the labour resources in the cross-border area - that part of the population with physical and intellectual traits that allow it to perform a productive work in one economic activity, and includes the working age population, able to perform an economic activity, and the population above and under working age which are still working - was of 3.3 mil. people, representing 14.5% of Romania's labour resources (2.02 mil. people), and 20.4% of Bulgaria's labour resources (1.27 mil. people). By 2018, the labour resources decreased by -9.3% in the cross-border area to under 3 mil. people (2.99 mil.). There are significant differences among the Romanian and the Bulgarian cross-border areas: while the Romanian side contributes more to the overall cross-border area labour resources, the number of people decreased drastically, by -13.2% between 2013 and 2018, following a similar pattern to the national situation; on the Bulgarian side, the labour resources decreased as well, but at a lower speed, by -3.6%, however in a more severe manner than in the overall Bulgarian labour market (-1.2% decrease). This is currently an important issue to be tackled, as it is not necessarily a contextual situation, but an overarching trend in the past three decades, Romania losing 23.3% of its working age population due to external outmigration (World Bank Report, 2018¹¹⁸). In addition, human capital availability and strong labour market conditions are an enabling factor of the knowledge economy. However, in the post-crisis period, the Eastern European regions who already had a low incidence of knowledge economy, are facing a decline in population and difficult labour market conditions, with Romanian and Bulgarian regions making no exception¹¹⁹.

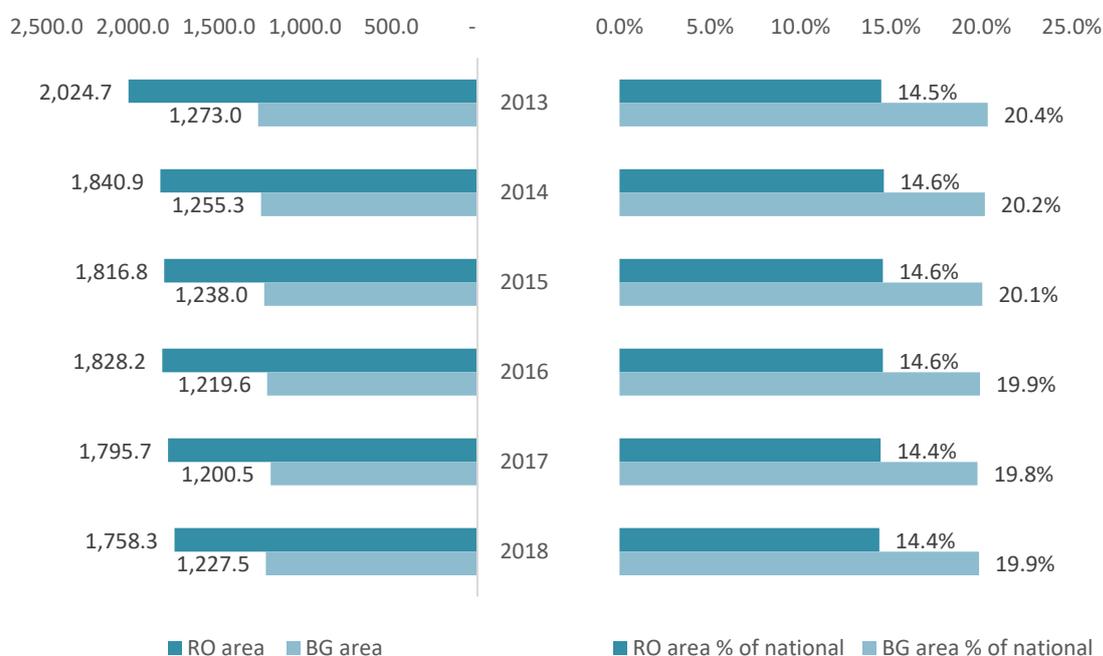
¹¹⁷ EUROPEAN RETAIL IN 2019. GfK study on key retail indicators: 2018 review and 2019 forecast <https://geodata.gfk.com/landingpages/european-retail-in-2019/>

¹¹⁸ World Bank, 2018, *Romania Systematic Country Diagnostic, Background note - Migration* <http://documents.worldbank.org/curated/en/210481530907970911/pdf/128064-SCD-PUBLIC-P160439-RomaniaSCDBackgroundNoteMigration.pdf>

¹¹⁹ ESPON, 2019, *State of the European Territory*, pg. 22



FIGURE 75 LABOUR RESOURCES IN THE CROSS-BORDER AREA (THOUSAND PERSONS) AND % OF THE NATIONAL TOTAL

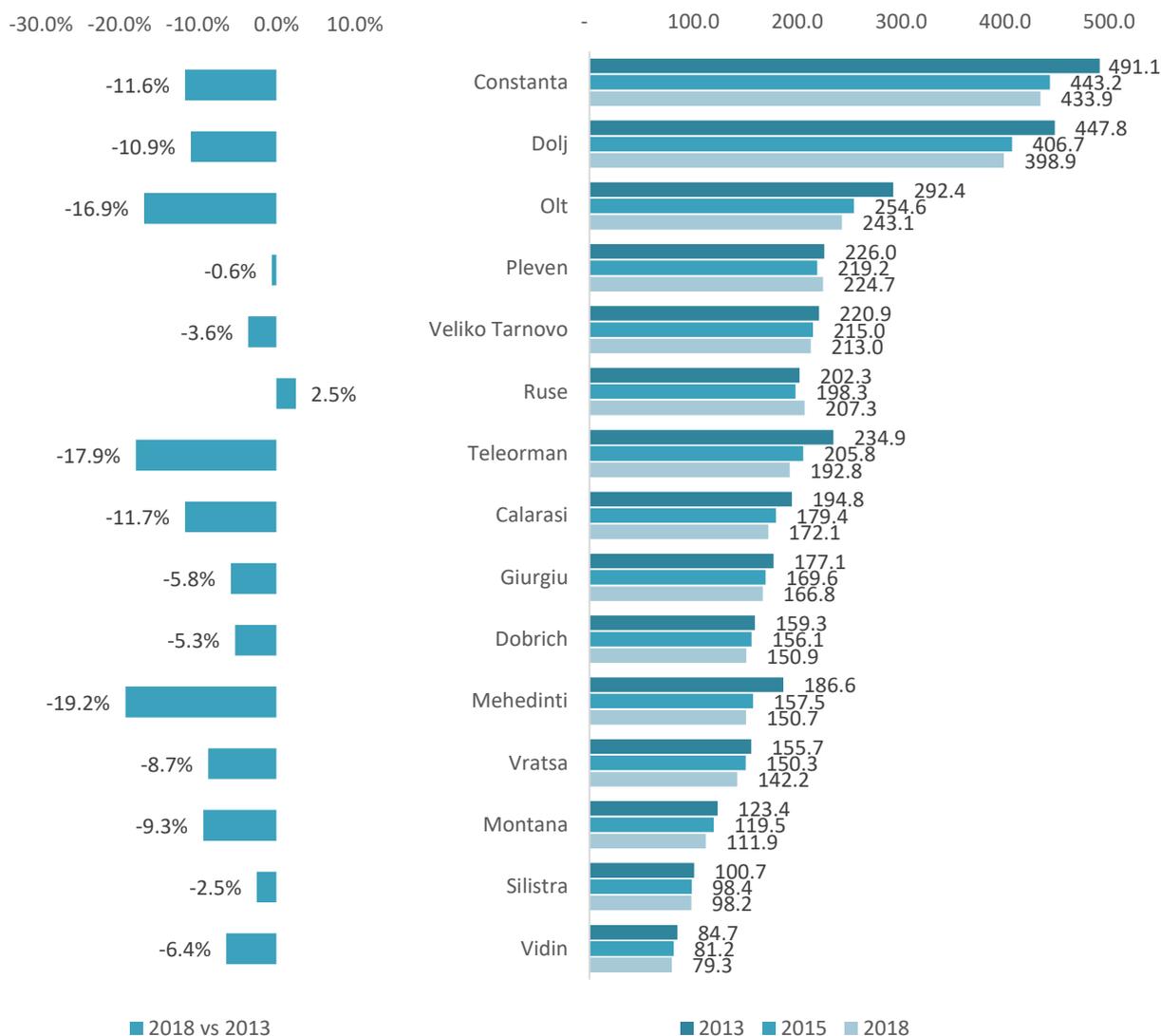


Source: Tempo INS, NSI, own calculation

In all counties and districts in the Romanian cross-border area, the labour resources decreased over the period, the most severe decline rates being identified in Mehedinți (-19.2%), Teleorman (-17.9%), and Olt (-16.9%). Overall, in the Bulgarian districts the decrease was lower than in the Romanian counties - in Montana, the district with the highest decline, the rate was -9.3%, and for Vratsa -8.7%, while Ruse was the only district in the cross-border area where the labour resources increased (by 2.5% between 2013 and 2018). Even in this case, the most labour resources are found in the Romanian counties, Constanta and Dolj, despite the decline (around 10-11% decrease).



FIGURE 76 LABOUR RESOURCES IN THE CROSS-BORDER AREA COUNTIES/DISTRICTS, THOUSAND PERSONS



Source: Tempo INS, NSI, own calculation

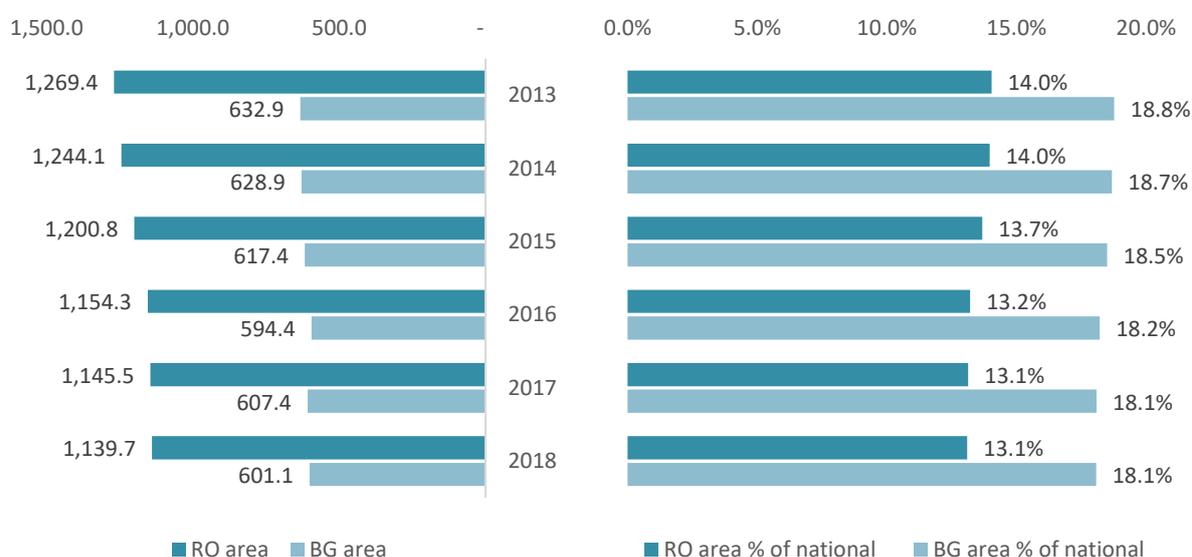
7.2.2. ACTIVE POPULATION

The active population, which is the potential supply of labour force comprising the employed and the unemployed population, amounts 1.74 mil people in 2018 in the cross-border area, with nearly 8.5% less than in 2013 (1.9 mil people in 2013). On both sides of the frontier the active population declined, but the phenomenon is more pronounced on the Romanian side, where this segment of the population decreased by -10.2% between 2013 and 2018, from 1.27 mil to 1.14 mil, most probably driven by external migration. Compared with the active population in Romania, the decrease rate is more than double (-3.8% decrease at national level in Romania), claiming significant attention from the policy makers. On the Bulgarian side, the decrease was lower, of -5%, from 0.63 mil to 0.6 mil, and in permanent decline year over year, and four times more acute than at the national level (-1.3% overall decrease).



Aside from the decline in the active population, which is nevertheless worrying in the context of the labour market’s ability to sustain economic growth, there is another mention to be made: the difference between the labour resources and the active population, considering the 0.23 mil pupils and students, yields a figure of nearly 1 mil people that are dependent on other types of revenues, such as social aid, or are involved in informal economic activities (e.g. subsistence agriculture). Such a situation claims consistent and coordinated measures to decrease their dependence ratio and to ensure their transition and activation into the labour market.

FIGURE 77 LABOUR FORCE (ECONOMICALLY ACTIVE POPULATION) IN THE CROSS-BORDER AREA (THOUSAND PERSONS) AND % OF NATIONAL TOTAL

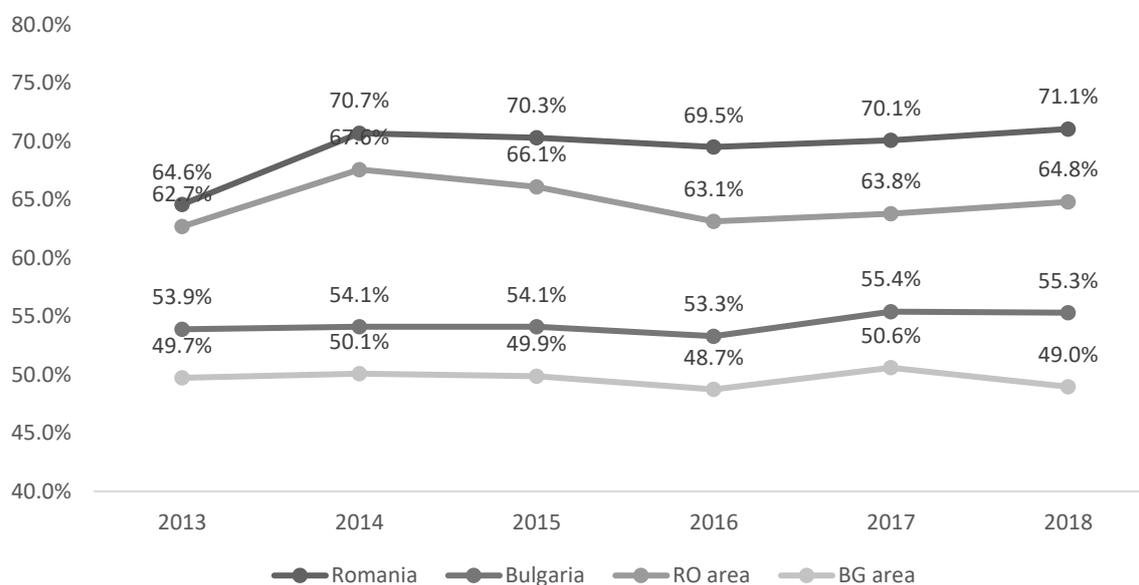


Source: Tempo INS, NSI, own calculation

Despite the decline, with 64.8% in 2018, the activity rate in the Romanian cross-border area, which is the ratio between the active population and the labour resources, is superior on the Romanian side of the cross-border area in all years compared both to the Bulgarian side (49%). However, on both sides of the cross-border area, the activity rate is considerably lower than in each national economy - 71.1% in Romania and 55.3% in Bulgaria in 2018.



FIGURE 78 ACTIVITY RATE IN THE CROSS-BORDER AREA AND AT THE NATIONAL LEVEL, %

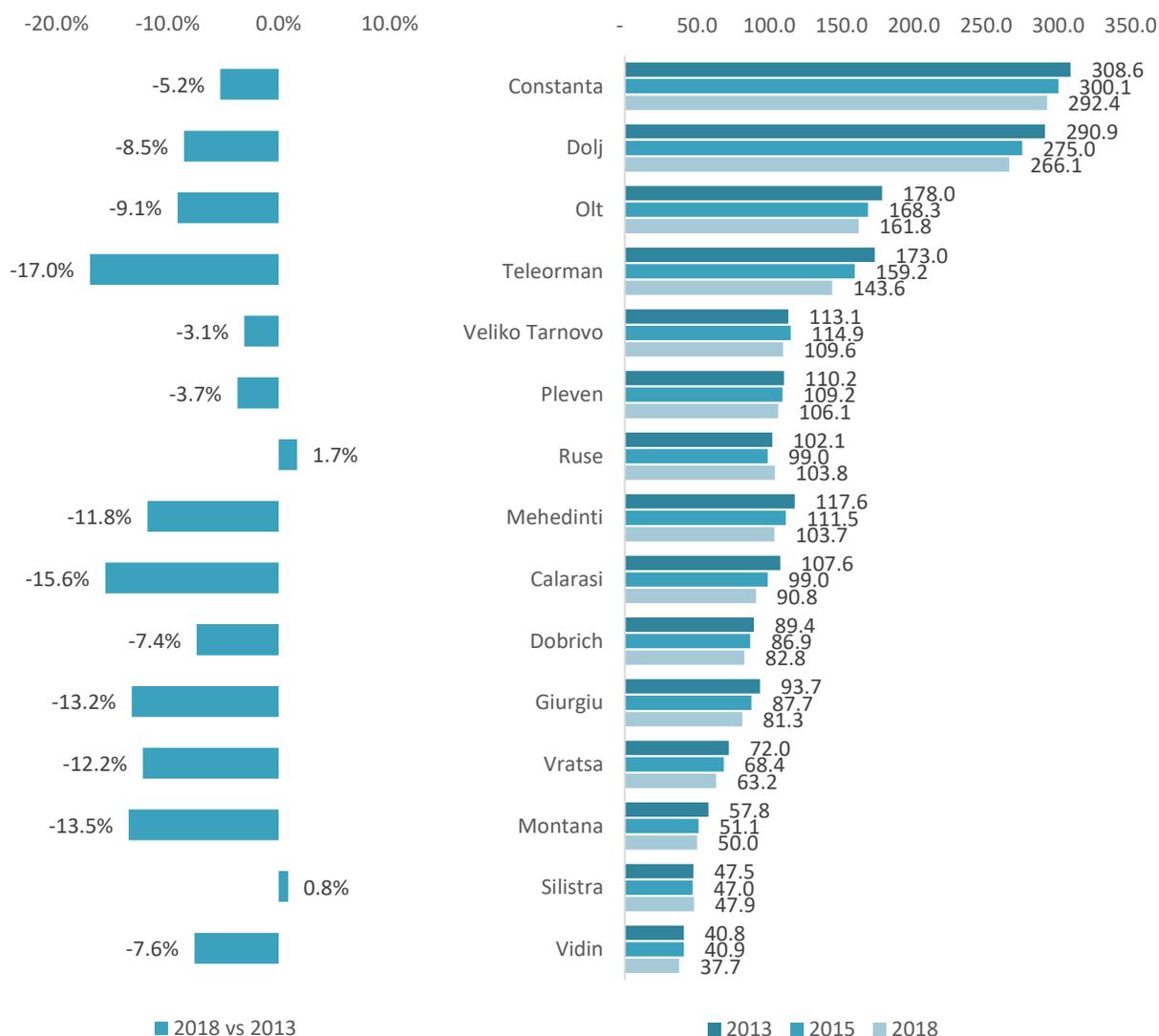


Source: Tempo INS, NSI, own calculation

The active population is highest in Constanta and Dolj, the counties with the largest cities in the area, counting 292.4 thousand people in Constanta and 266.1 thousand people in Dolj. Despite their economic activity, the active population declined in these two counties, as it was the case in almost all counties and districts in the cross-border area. The most abrupt decline between 2013 and 2018 took place in Teleorman (-17%), Călărași (-15.6%), and Giurgiu (-13.2%). In the Bulgarian side, we notice more stability, with decrease rates ranging between -3% and -13%. Two districts had a positive evolution of the active population - Silistra (0.8%) and Ruse (1.7%) between 2013 and 2018.



FIGURE 79 LABOUR FORCE (ECONOMICALLY ACTIVE POPULATION) IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS AND GROWTH RATE, THOUSAND PERSONS

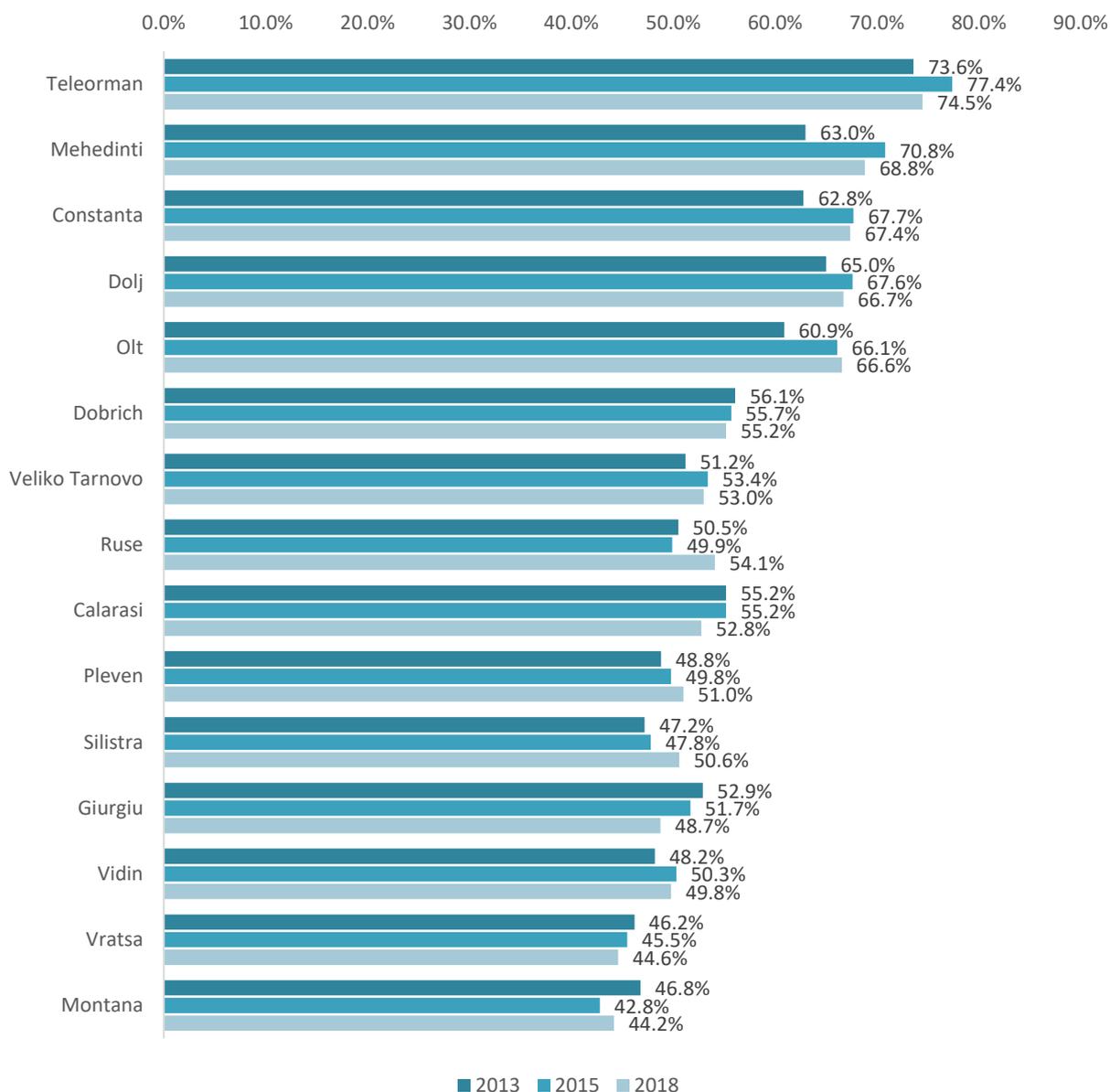


Source: Tempo INS, NSI, own calculation

In 2018, the counties which rank highest in the activity rate at the cross-border area level are also in the Romanian side, reaching 74.5% in Teleorman, between 60-70% in Mehedinti, Constanta, Dolj and Olt, but also less than 50% in most Bulgarian districts (in Montana 44.2%, Vratsa 44.6%).



FIGURE 80 ACTIVITY RATE IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS, %



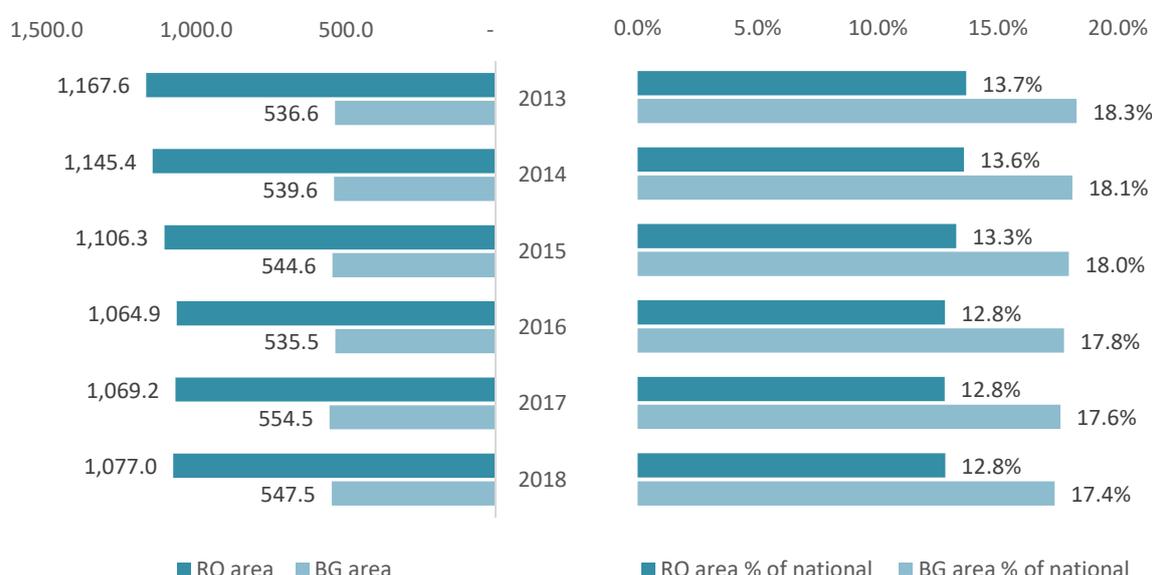
Source: Tempo INS, NSI, own calculation



7.2.3. EMPLOYED POPULATION

The employed population - that segment of the labour resources having a revenue-generating activity - amounted to 1.7 mil. people in the cross-border area in 2013 but declined to 1.62 mil. people in 2018 (-4.7%). This decreasing trend in the area was mainly due to the decline in the employed population on the Romanian side, which lowered by -7.8% between the two reference years. On the Bulgarian side, this indicator improved by 2%, from 0.53 mil. employed people in 2013 to 0.55 mil. people in 2018. The situation on the two sides of the frontier is consistent with the trend in the national labour markets.

FIGURE 81 EMPLOYED POPULATION IN THE CROSS-BORDER AREA (THOUSAND PERSONS) AND % OF THE NATIONAL TOTAL

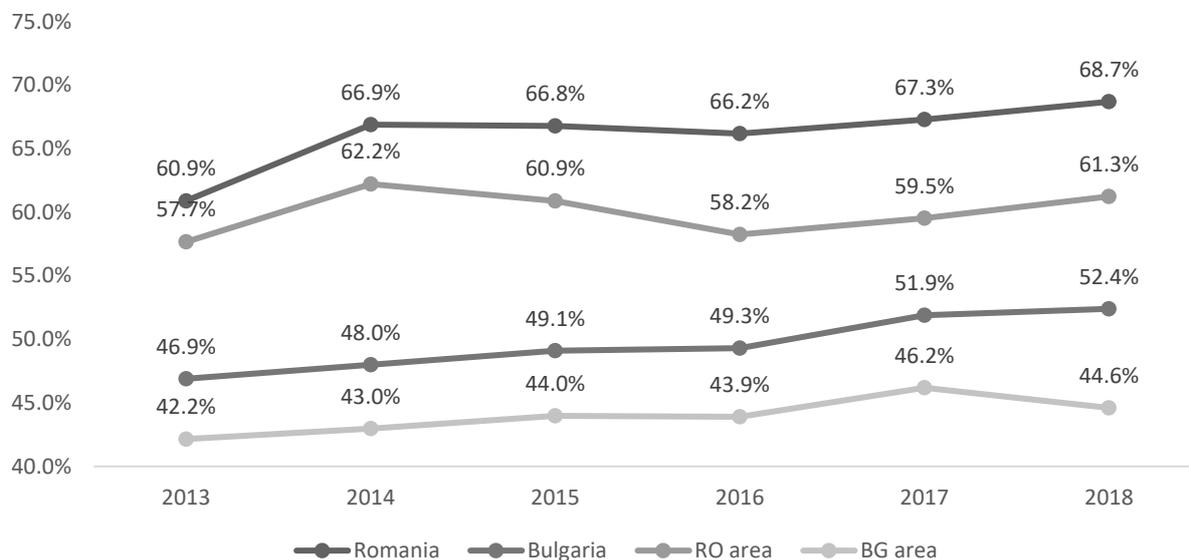


Source: Tempo INS, NSI, own calculation

The employment rate, which is the ratio between the employed population and the labour resources, improved on both sides of the cross-border area. Overall, the employment rate maintained around 52-54%, with small variations along the period - an increase in 2014 to 54.4%, followed by a decline down to 52.5% in 2016 and another increase to 54.4% in 2018. On the Romanian side, it fluctuated every year - in 2014 it had the highest value (of 62.2%) and declined gradually until 2016, then increased to 61.3% in 2018. On the Bulgarian side, the employment rate is overall lower, but continuously improving, from 42.2% in 2013 to 46.2% in 2017, declining to 44.6% in 2018. Nevertheless, the employment rate remains low, especially comparing it to the EU28 level in 2018 of 73.1%, claiming for measures to improve the availability of jobs and the mobility of workers in the cross-border area.



FIGURE 82 EMPLOYMENT RATE IN THE CROSS-BORDER AREA AND AT THE NATIONAL LEVEL, %

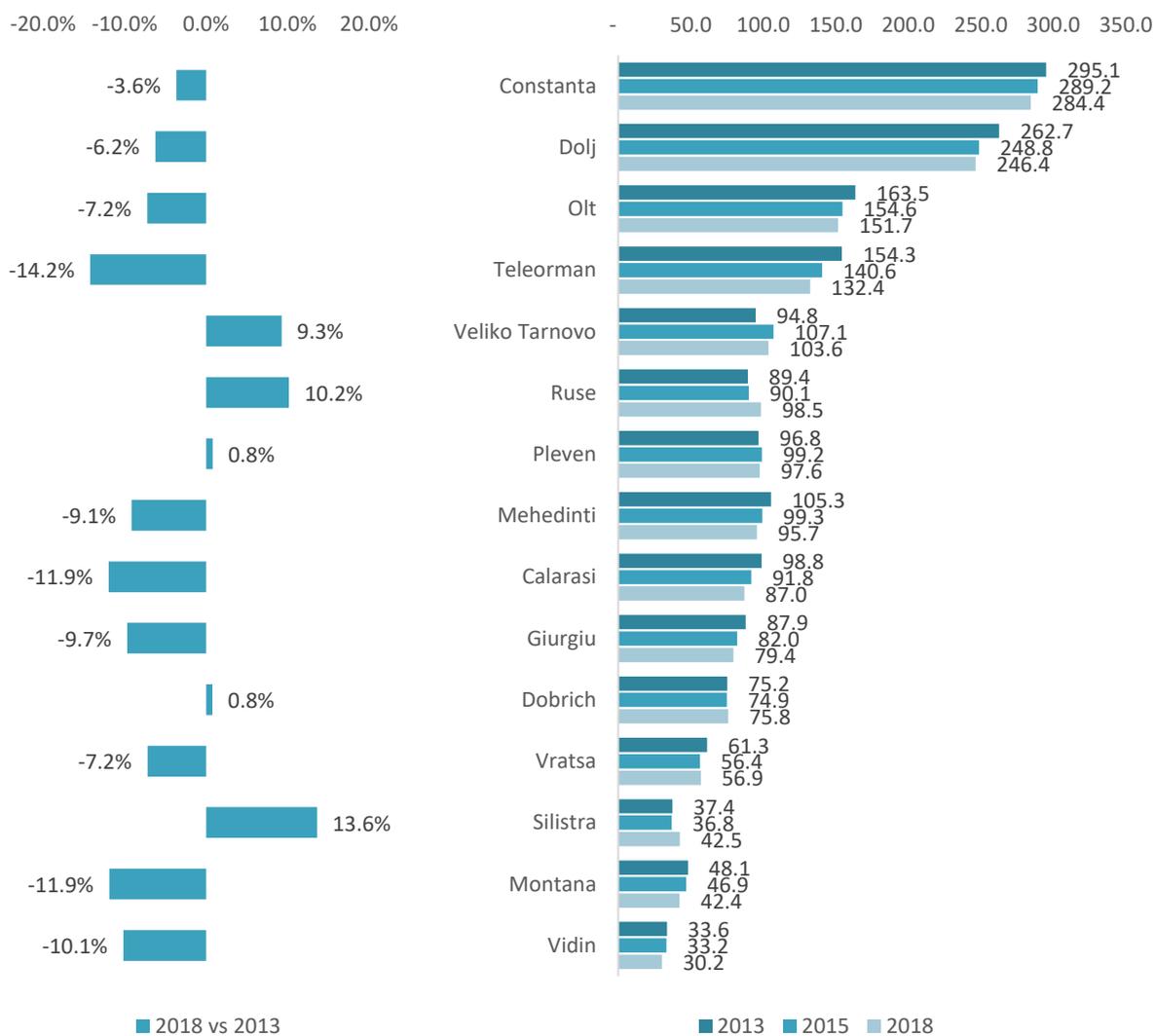


Source: Tempo INS, NSI, own calculation

The employed population increased in five Bulgarian districts (Silistra, Ruse, Veliko Tarnovo, Dobrich and Pleven) between 2013 and 2018, whereas in all Romanian counties it decreased, most drastically in Teleorman (by -14.2%).



FIGURE 83 EMPLOYED POPULATION IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS, THOUSAND PERSONS

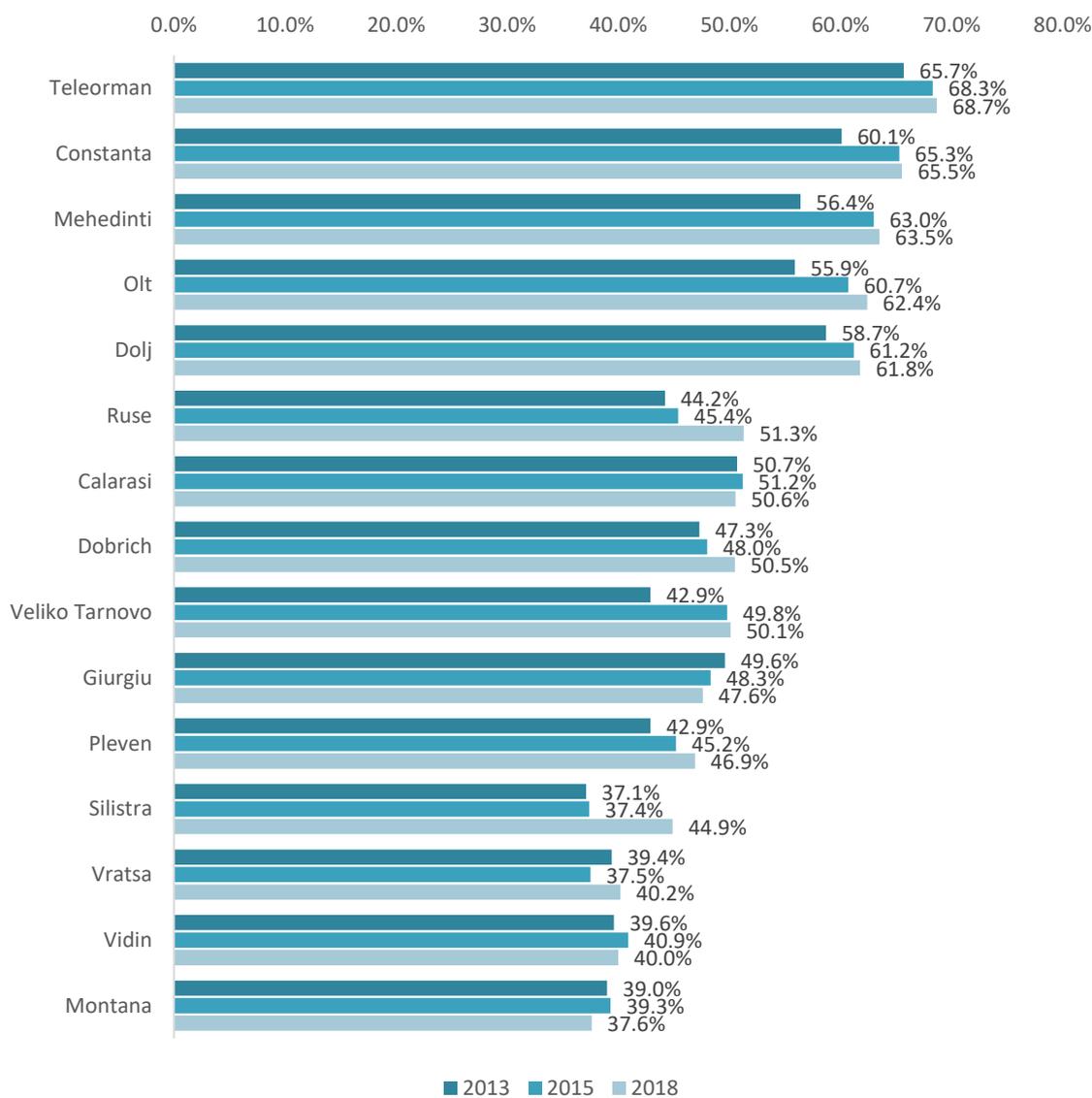


Source: Tempo INS, NSI, own calculation

At the county/district level, the employment rate incurs high differences, with Teleorman, Constanta and Mehedinți maintaining their value over 60%, while Montana has the lowest employment rate, of 37.6% in 2018. Six out of the fifteen NUTS3 areas covered by the analysis have less than 50% employment rate.



FIGURE 84 EMPLOYMENT RATE IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS, %



Source: Tempo INS, NSI, own calculation



7.2.4. UNEMPLOYMENT

The unemployed population registered the most significant change, declining continuously from 198 thousand people in 2013 in the cross-border area to 115.9 thousand people in 2018 (-41.5% decrease). This tendency was mostly observed on the Bulgarian side, where it nearly halved (-44.7%), from 96.2 thousand people in 2013 to 53.2 thousand people in 2018. The decrease is comparable to the national level situation, Bulgaria improving its unemployment level and reducing the number of unemployed people from over 400 thousand people in 2013 to a little under 200 thousand unemployed people in 2018 (60% decrease). While most decline at the national level in Bulgaria was achieved due to an economic growth in the large cities and wealthiest regions (e.g. Sofia, Bourgas), some active labour market policies implemented at the national level produced effects in the cross-border districts, too. These policies, coupled with a diversification of funding sources (state budget, dedicated operational programmes, donors), have included: labour mediation aimed to improve the efficiency and quality of intermediary services and to promote an integrated approach to problems of the unemployed; programmes dedicated to the re-activation of the youth, disabled and economically disadvantaged minorities through incentives provided to employers were also implemented and yielded a certain success ratio¹²⁰ (European Parliament, 2017). Such efforts should be however continued and further improved in order to tackle the differences in opportunities available between the northern part of the country and the most effervescent regions. According to the National Employment Agency¹²¹, similar active labour market measures (e.g. labour mediation, professional requalification) have been implemented in Romania as well. On the Romanian side of the cross-border area, the number of unemployed people decreased by nearly 40% (-38.4% decrease), a slightly lower decline rate than the number of unemployed in Romania (-43.6% over the same period). What is however stunning is that each of the two sides of the cross-border area hold over 21% (in the case of Romania) and over 30% (in the case of Bulgaria) of the total unemployed population in the respective country.

¹²⁰ Directorate-General for Internal Policies, 2017, *Bulgaria, Recent Developments in Employment and Social Affairs*

[http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/607358/IPOL_IDA\(2017\)607358_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/IDAN/2017/607358/IPOL_IDA(2017)607358_EN.pdf)

¹²¹ Agenția Națională pentru Ocuparea Forței de Muncă din România (ANOFM), Rapoarte de activitate 2015-2018. Available at: <https://www.anofm.ro/index.html?agentie=&categ=1&subcateg=7> (multiple documents)



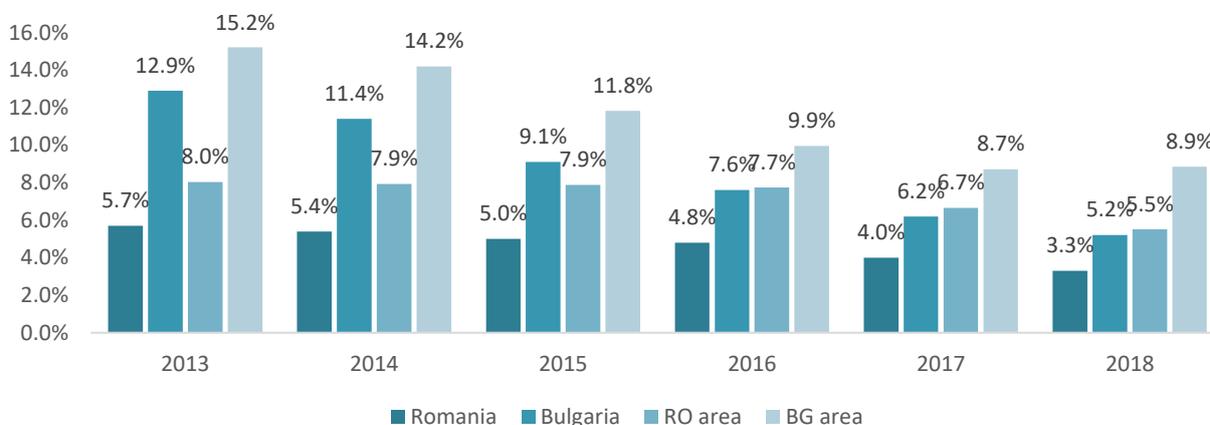
FIGURE 85 UNEMPLOYED POPULATION IN THE CROSS-BORDER AREA (THOUSAND PERSONS) (LEFT) AND % OF THE NATIONAL TOTAL (RIGHT)



Source: Tempo INS, NSI, own calculation

The unemployment rate had significant levels in the Bulgarian cross-border area, reaching 15.2% in 2013, gradually reducing to 8.9% in 2018. Compared to the Bulgarian national unemployment rate of 5.2% in 2018, this figure is just above, requiring more attention with respect to interventions aimed at increasing employability. The same is observed on the Romanian side of the cross-border area, which had 8% of its active population unemployed in 2013 and reduced it to 5.5% in 2018. These values are still low, compared to the national level situation, where it declined from 5.7% to 3.3%. Overall, the cross-border area has an unemployment rate of 6.7% in 2018, down from 10.4% in 2013, comparable to the EU28 average of 6.6% as of the end of 2018. The progress achieved at the cross-border area level and on each side indicates that, despite the poorer performance compared to the respective national level, the area has a significant number of working-age population available to be employed.

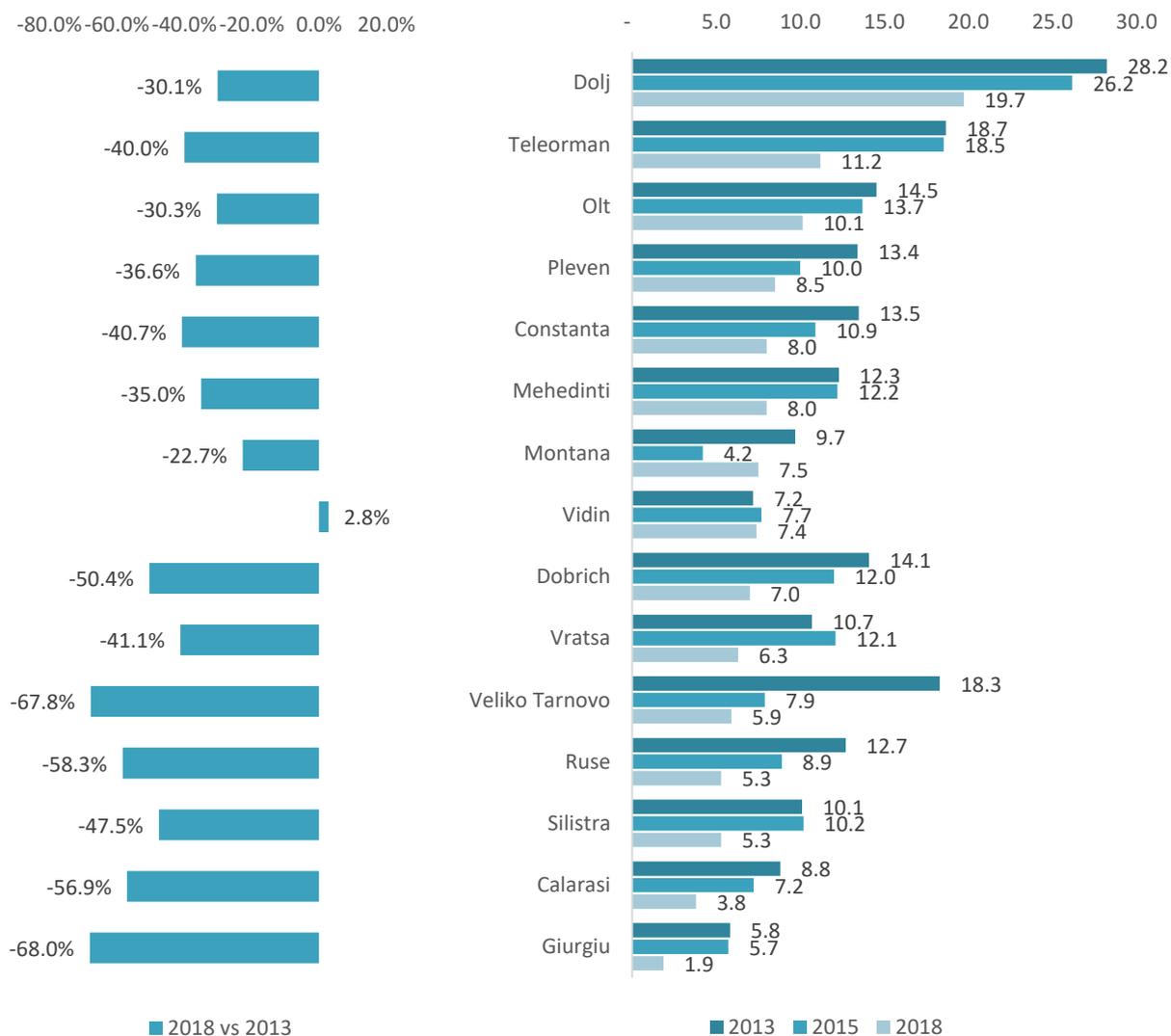
FIGURE 86 UNEMPLOYMENT RATE AT THE NATIONAL LEVEL AND IN THE CROSS-BORDER AREA, %



Source: Tempo INS, NSI, own calculation



FIGURE 87 UNEMPLOYED POPULATION IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS, THOUSAND PERSONS

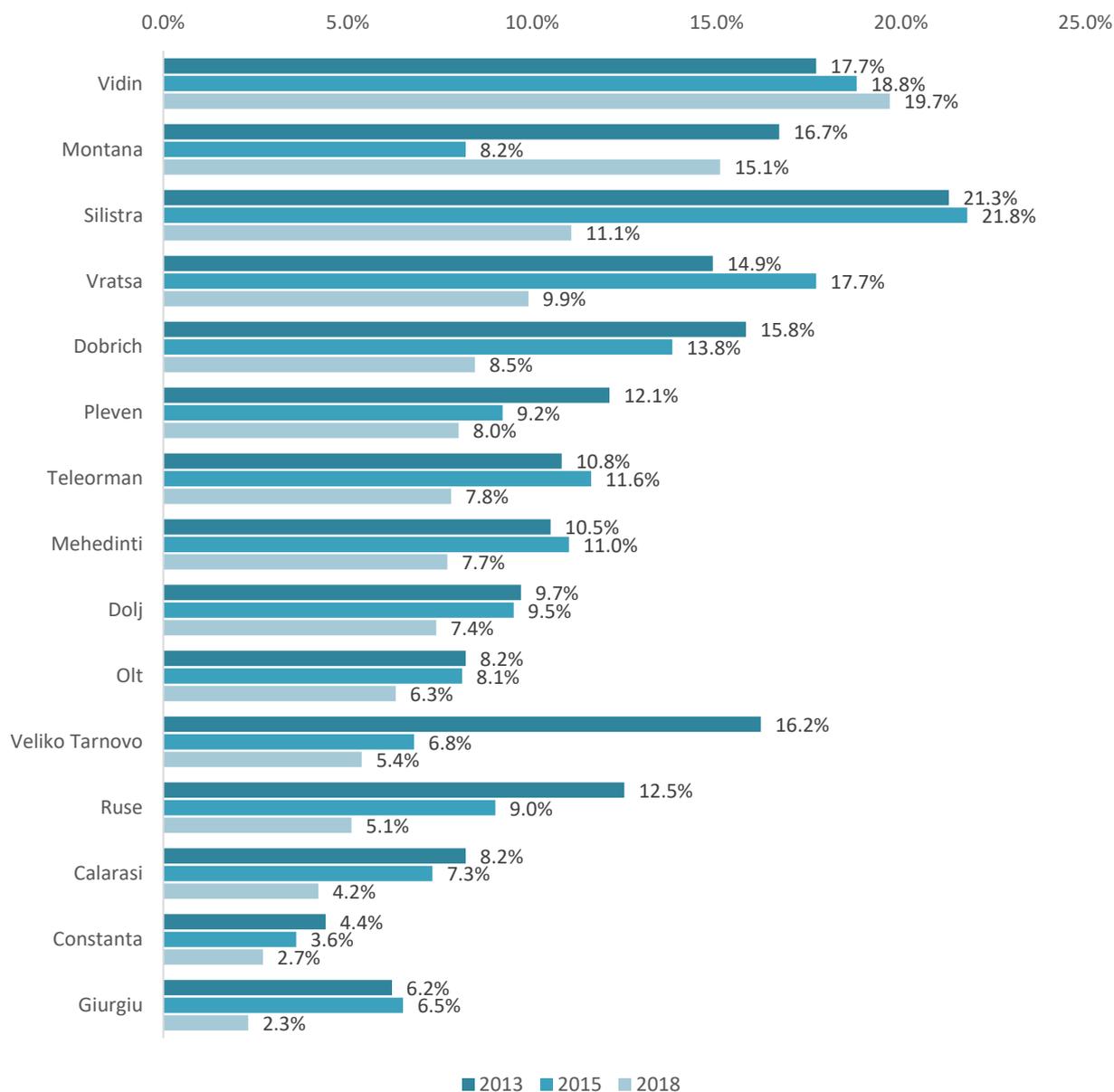


Source: Tempo INS, NSI, own calculation

In 2018, the highest unemployment rate was found in Vidin, where the unemployed accounted for 19.7% of the active population, a rate which has increased slowly between 2012 and 2018. At the opposite end, Constanta has the lowest unemployment rate, of 2.3%, which has decreased over time. Veliko Tarnovo and Ruse are two of the districts where unemployment rate more than halved between 2013 and 2018, due to the increased attractiveness of the area and the opening of new foreign production units. In the past three years (2017-2019), the unemployment rate had an even positive evolution in all Romanian counties from the cross-border area. As such, in Constanța, Călărași and Giurgiu, the counties with the lowest unemployment, it dropped by 1-1.5% between 2017 and 2019, while in those counties where the unemployment rate was more severe, it decreased by 3-4%, reaching a minimum of 6.7% in Dolj and Mehedinți.



FIGURE 88 UNEMPLOYMENT RATE IN THE CROSS-BORDER AREA BY COUNTIES AND DISTRICTS, %



Source: Tempo INS, NSI, own calculation



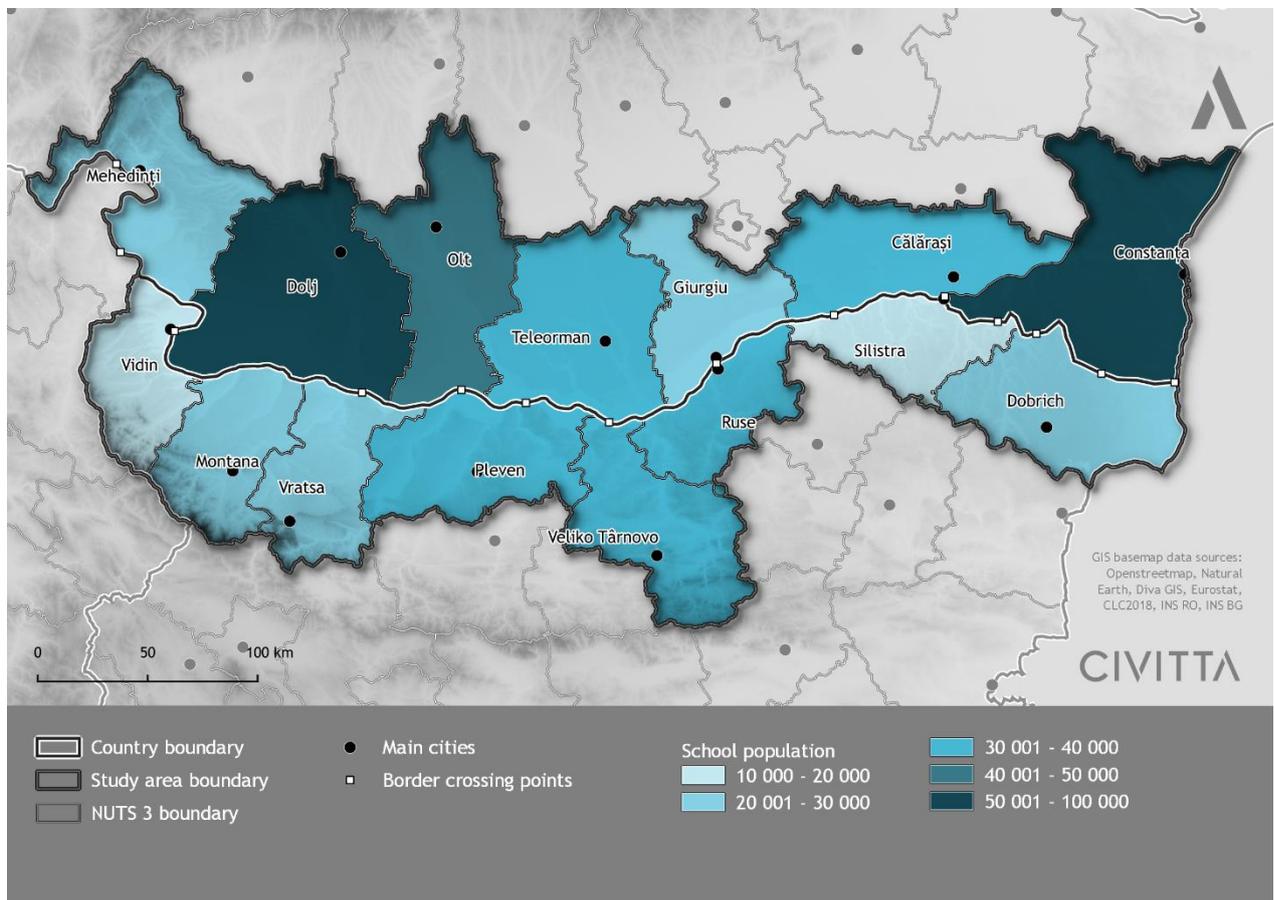
7.3. EDUCATION

Education is a key public service for a territory as it enables the social mobility and the development of competencies and abilities for the economic development of the region. The labour market needs a stable flow of well-trained people in order to maintain and increase their competitiveness on the local, national and European market. A sound educational system that is responsive to the labour market requests is thus essential for both the livelihoods (revenue, career, social valorisation, etc.) of local citizens and for the economic development of companies in a region.

In the cross-border region there has been a constant decrease in population in all districts, with highest depopulation rates in Vidin and lowest in Constanța, as described in Chapter 6 Demographic Change. The demographic factor has led to the decrease of school-age population (3-23 years old) and, implicitly, of school population, with strong negative impact on the sustainability of the educational system and on the labour market due to a lower workforce.

In comparison to the Bulgarian cross-border side, in the Romanian cross-border area there are more pupils enrolled in the primary, secondary and high school levels. Constanta, Dolj and Olt counties distance themselves with the most school population, while Vidin and Silistra are at the other end, with the lowest numbers of pupils.

MAP 56 POPULATION ENROLLED IN EDUCATION (PRIMARY, SECONDARY AND HIGH SCHOOL) IN THE CROSS-BORDER COUNTIES, 2018



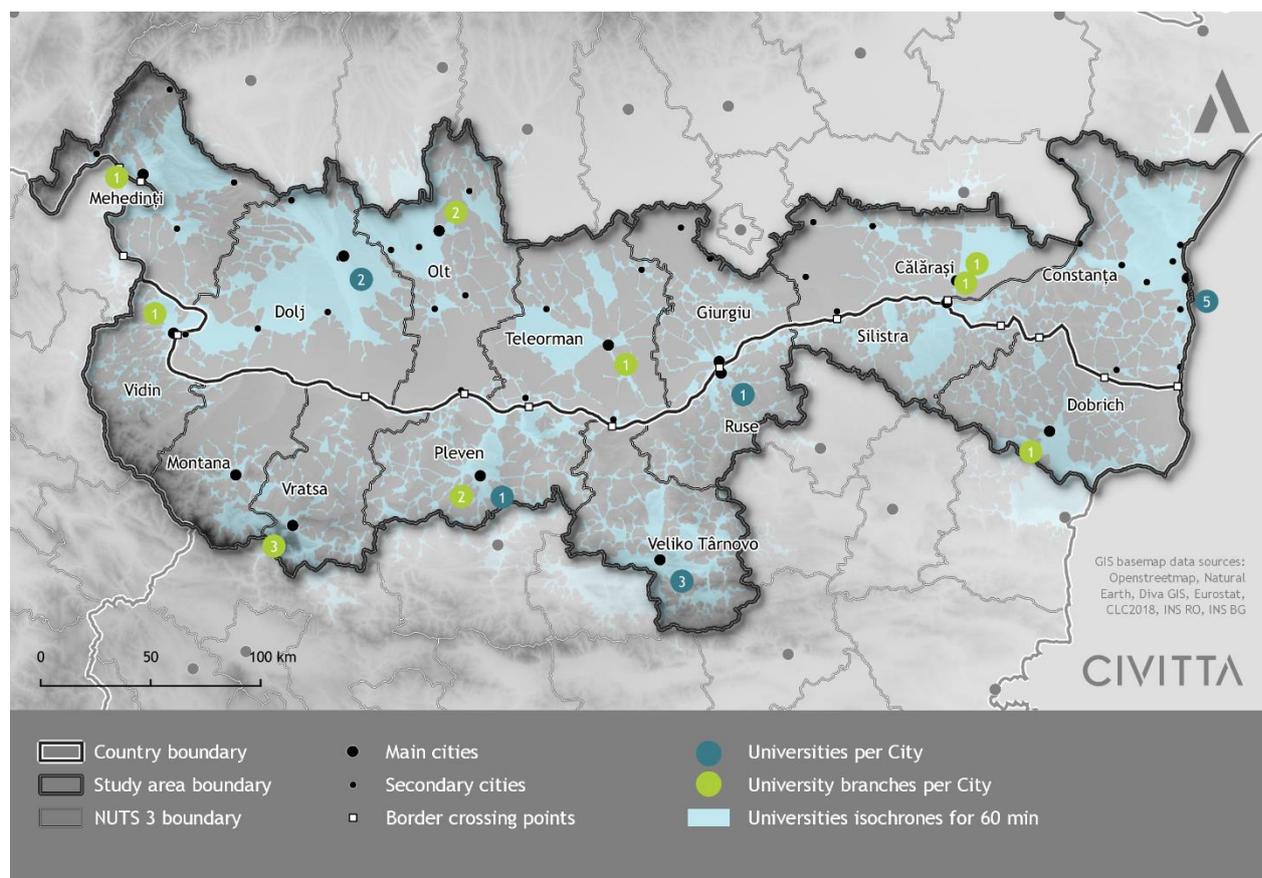
Source: NIS Romania, NIS Bulgaria



The development of faculties/universities seems to have stopped in recent years. Constanta, Dolj, Pleven, Ruse and Veliko Tarnovo as regional urban centres, concentrate higher education infrastructure. Constanta has had 3 public universities and two private ones, while Dolj has 2 public universities and one private higher education institution which was closed in 2015. In Bulgaria, Veliko Tarnovo has 3 universities, Ruse one and Pleven one, while in the other districts like Vidin, Vratsa and Silistra there are local subsidiaries of universities from other cities. Giurgiu, Montana and Dobrich do not benefit from such infrastructure and therefore have no enrolled students on their territory, as they migrate to cities with higher education units.

The proximity of capital cities - Bucharest and Sofia - is also a strong factor that discourages the development of local higher education structures. Nevertheless, their presence is an indication of the local demand. Because only Constanta, Craiova (Dolj), Pleven, Ruse and Veliko Tarnovo have self-standing universities that have their seat there, it is obvious that the most common answer to the demand is that universities based outside the area open local subsidiaries/faculties in the other cross-border counties in order to be closer to the students and to tap additional student resources.

MAP 57 UNIVERSITIES IN THE CROSS-BORDER AREA, 2019



Source: University websites, www.openrouteservice.org



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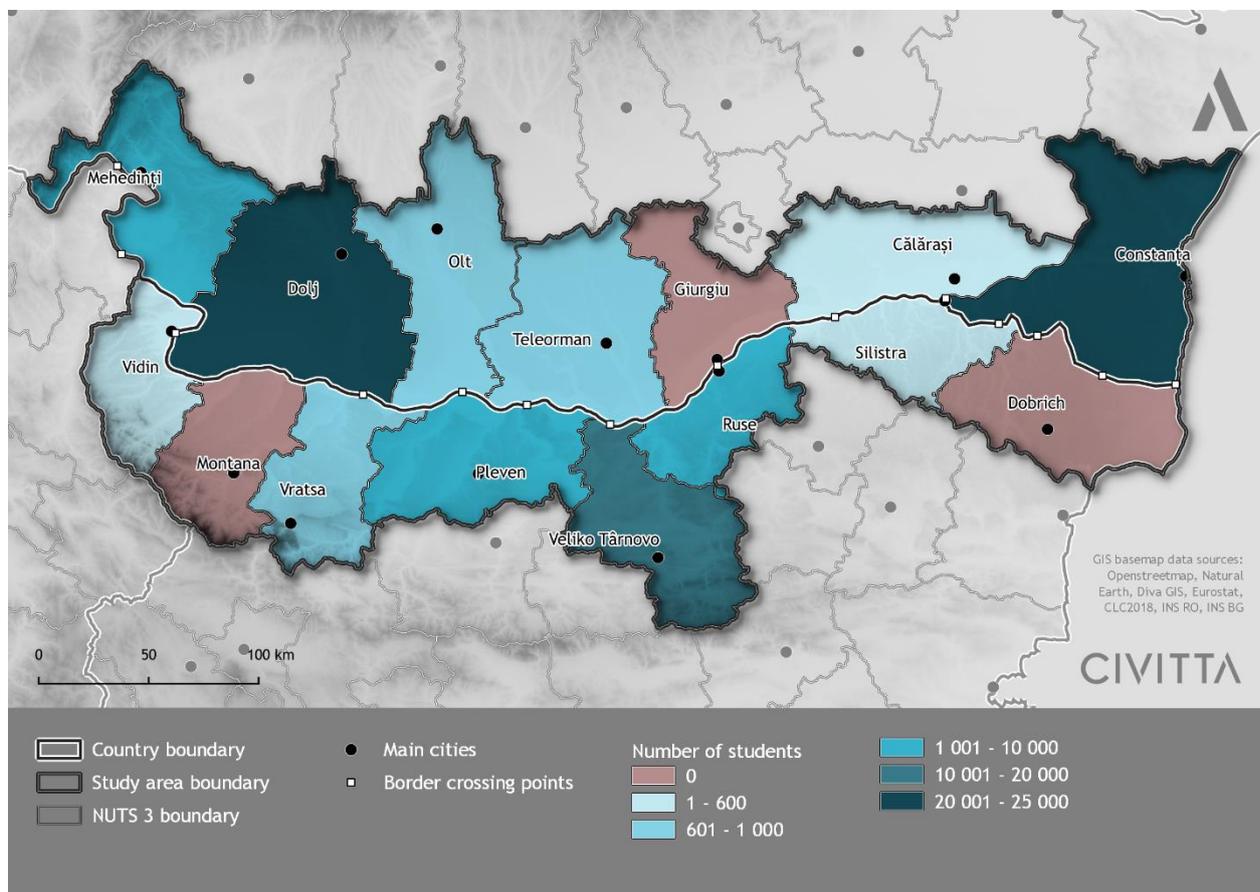


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MAP 58 NUMBER OF STUDENTS ENROLLED IN FACULTIES/UNIVERSITIES IN THE CROSS-BORDER AREA, 2018



Source: NIS Romania, NIS Bulgaria

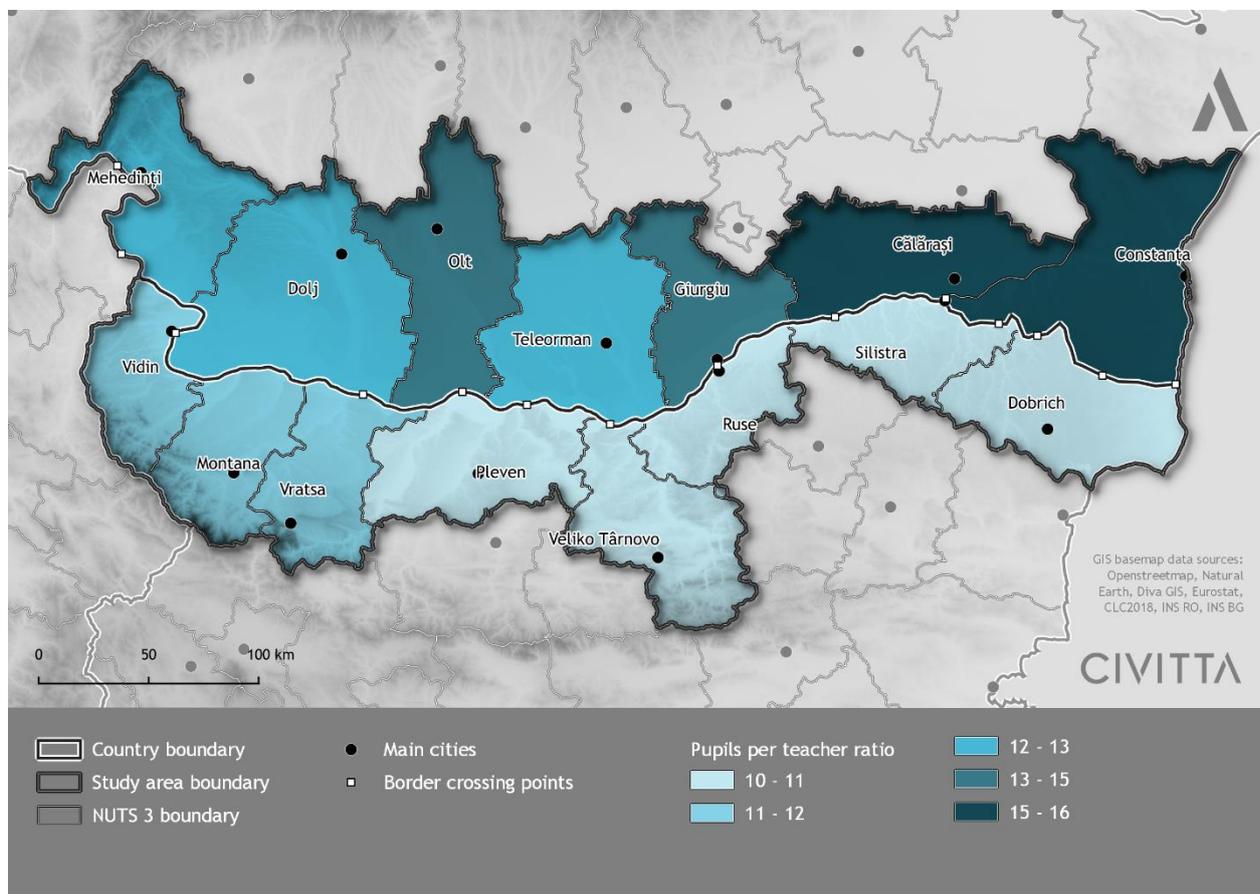
In 2017, 38.5% out of the European citizens were students. In the same year, in the Romania-Bulgaria cross-border area, however, there were only 2.11% persons enrolled in tertiary education out of the entire population. The most students as number were registered in Constanța, Dolj and Veliko Tarnovo. However, when calculating the percentage of students out of the total number of inhabitants, the highest value was registered in Veliko Tarnovo -7%, while Constanța, Dolj and Ruse all have around 3%. Giurgiu, Montana and Dobrich do not benefit from such infrastructure and therefore have no enrolled students.

The counties/districts of Dolj, Constanța, Pleven and Veliko Tarnovo, which are home to the biggest cities in the cross-border area, are also concentrating the higher numbers of teaching staff, while the lowest number of teachers has been recorded in Giurgiu and Vidin.

The number of pupils per teacher in the cross-border area varies from 10 in Veliko Tarnovo up to 16 in Constanța and Călărași, while in the European Union, in 2017, there were on average 12.2 pupils per teacher in secondary and upper secondary education and 14.7 in primary education. In general, the Bulgarian districts have a more favourable teacher distribution, allowing proper attention for all children in their learning process. Although the situation in Bulgaria was similar to Romania, starting 2016 - 2017 there has been a significant decrease in the pupils/ teacher ratio due to the decrease of school population and increase of teaching staff, while in Romania these two values both registered a decrease.



MAP 59 THE PUPILS/TEACHER RATIO (PRIMARY, SECONDARY AND HIGHSCHOOL) IN THE CROSS-BORDER COUNTIES, 2018



Source: NIS Romania, NIS Bulgaria

In 2011, in the European Union, 99% of the people aged 15 and above were considered literate. Both Romania and Bulgaria are below this value, with similar rates of literacy: 98,6 (RO) respectively 98,4 (BG). Considering the increased access to education, which is now more available than ever, Europeans aged 16-35 register the highest literacy scores, while older citizens (36-45, 46-55 and 56-65) record lower literacy values.

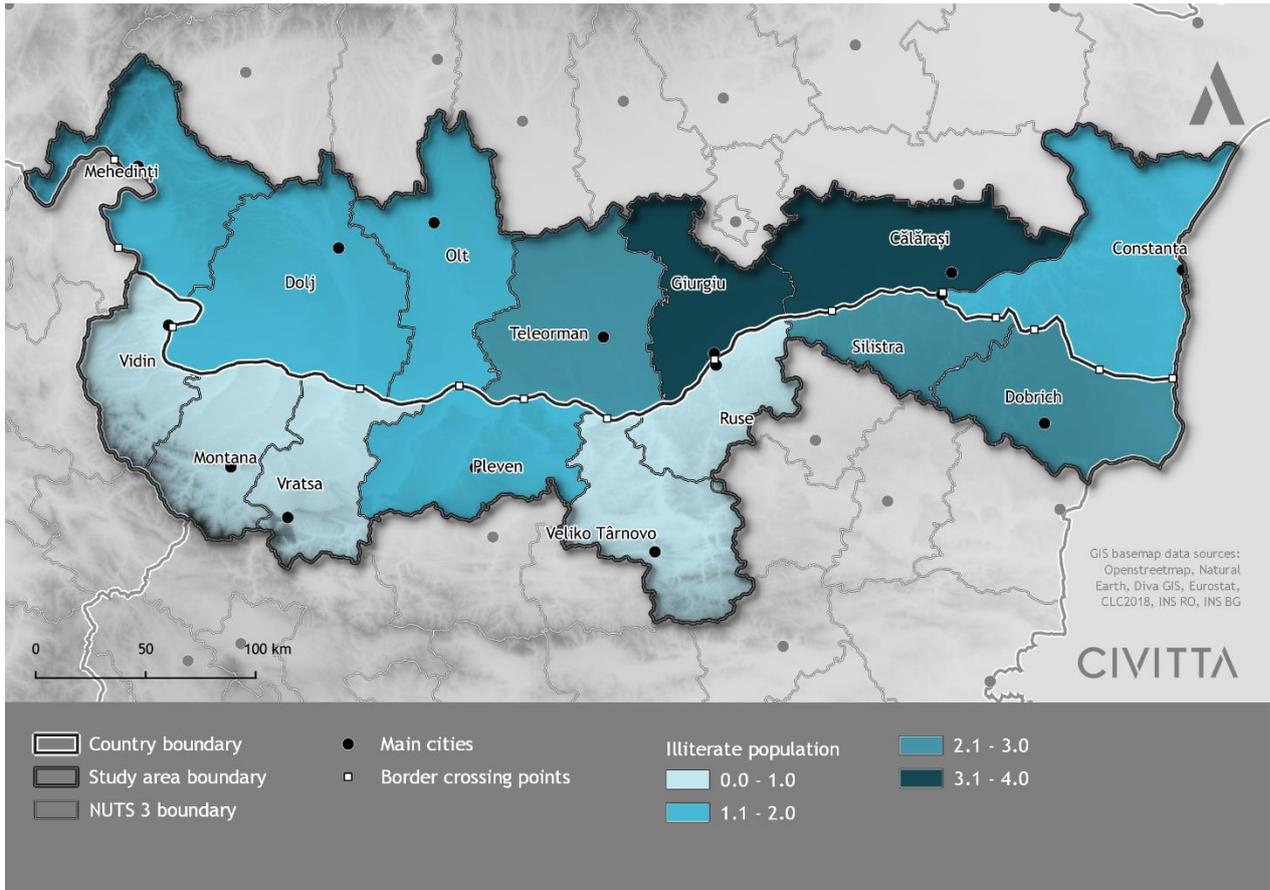
The illiteracy rate is worrying, especially on the Romanian side of the cross-border area. According to the 2011 National Population and Household Census, the 1st, 2nd and 4th counties in term of highest rate of illiteracy in Romania are located in the cross-border area (Călărași - 3.61% of the total population, Giurgiu - 3.19% and Teleorman - 2.43%), compared to a national illiteracy rate of 1.36%.

The other Romanian counties in the cross-border region also display illiteracy rates higher than 1% of the resident population of 10 years and older. Even though, this represents strong decreases since the last general survey in 2002, the figures in absolute level are indicative of the risk of social exclusion and of the lack of alternatives that affect many people in these counties, as illiteracy is an epiphenomenon for a wider lack of access to education and the social values attached to it.



In Bulgaria, two of the districts (Dobrich and Silistra) are above the national percentage of illiterate population (1.17%). This is due to the fact that these two districts are rural, with a higher number of ethnic minority groups, among which this indicator is traditionally high. All other districts rank well in comparison with the national figure.

MAP 60 PROPORTION OF ILLITERATE POPULATION IN THE CROSS-BORDER COUNTIES, 2011



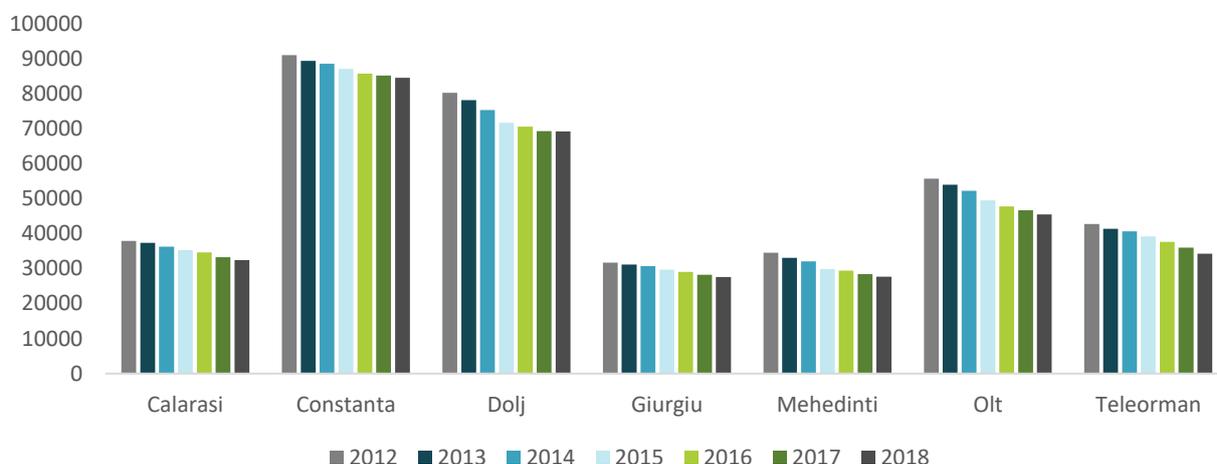
Source: Population and household census

On the Romanian side of the cross-border area, the school population included in the 2018-2019 school year 469,767 pupils and students, representing 13.2% of the total school population in Romania. The academic enrolled population in the Romanian cross-border area dropped by 10.6% between 2012 and 2018, thus continuing the decrease tendency from the 2008 - 2012 period. However, in the last five years the decrease rate of school population was lower by almost 8% compared to the previous programming period. Per NUTS 3 level, the highest decrease of school population - between 17% and 19% - was registered in the western part of the Romanian cross-border area, namely in Teleorman, Mehedinți and Olt, while in Constanța and Dolj counties - which have the highest number of pupils and students in the Romanian cross-border area - the decrease was the lowest, about 5% in each.

The situation is different compared to the 2008 - 2012 period, when the most urbanized counties - Constanta and Dolj - were losing school population at a higher rate due to emigration and school abandonment. Nowadays, the natural change has led to the ageing of the more depopulated areas and this has become the main factor of school population decrease.



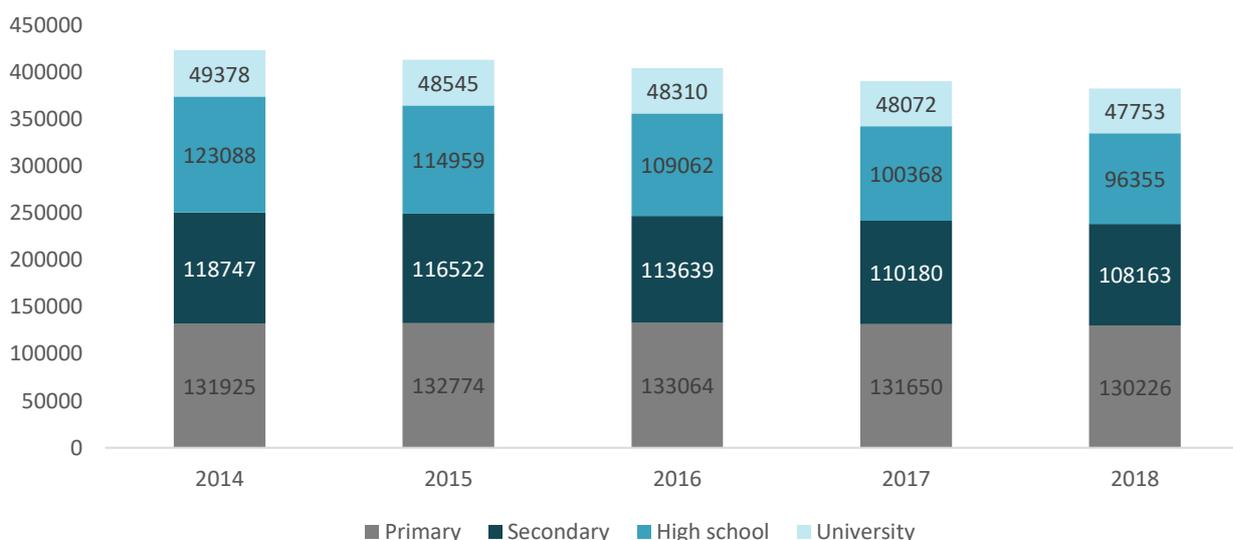
FIGURE 89 THE EVOLUTION OF THE POPULATION ENROLLED IN EDUCATION (PRIMARY, SECONDARY AND HIGH SCHOOL) 2014-2018 IN THE ROMANIAN CROSS-BORDER COUNTIES



Source: NIS Romania

Per education level, in the Romanian cross-border area there was a constant decrease in the number of students since 2014. The same tendency was registered in pupils enrolled in pre-school, primary, secondary and high school education levels, with biggest differences between 2018 and 2012 in high school and secondary school population. Here the decrease is rather linked to the general demographic decrease. The pre-school availability and quality of services is important as it is a key for allowing parents to pursue their economic activity.

FIGURE 90 THE EVOLUTION OF THE POPULATION ENROLLED IN EDUCATION 2014-2018 IN THE ROMANIAN CROSS-BORDER COUNTIES, EVOLUTION BY EDUCATION LEVELS

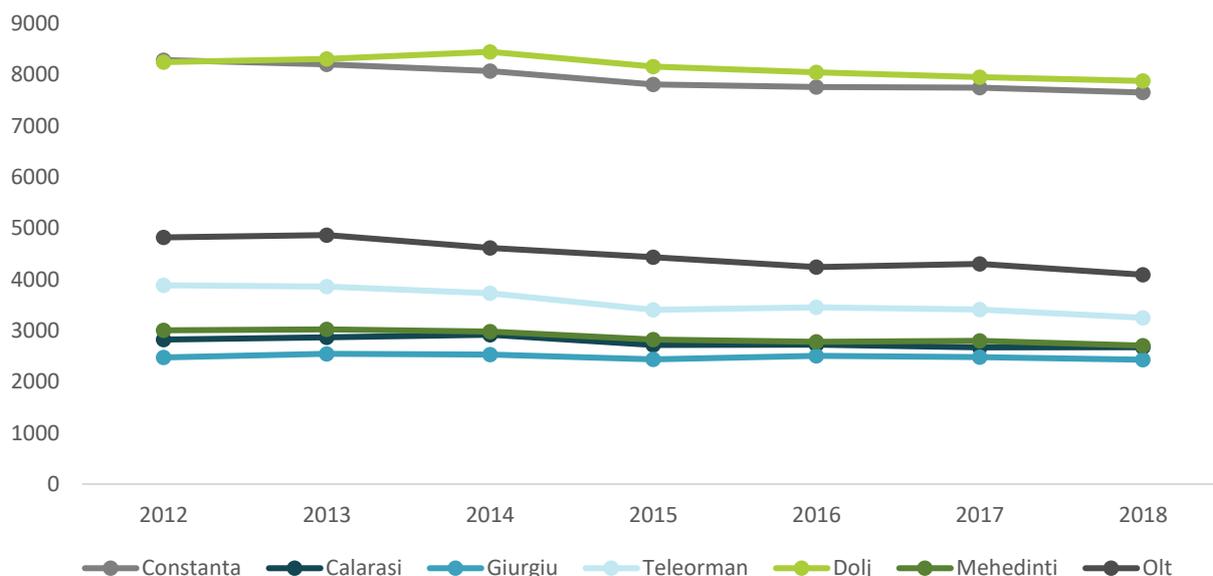


Source: NIS Romania



The teaching staff in the Romanian area decreased by approximately by 10% in a constant manner between 2012 and 2018, a natural situation - since the school population has been decreasing as well. While this tendency was present in all counties, the ones that lost the most teachers are Olt (18%) and Teleorman (20%), the same that lost the most pupils.

FIGURE 91 THE EVOLUTION OF THE TEACHING STAFF 2012-2018 IN THE ROMANIAN CROSS-BORDER COUNTIES



Source: NIS Romania

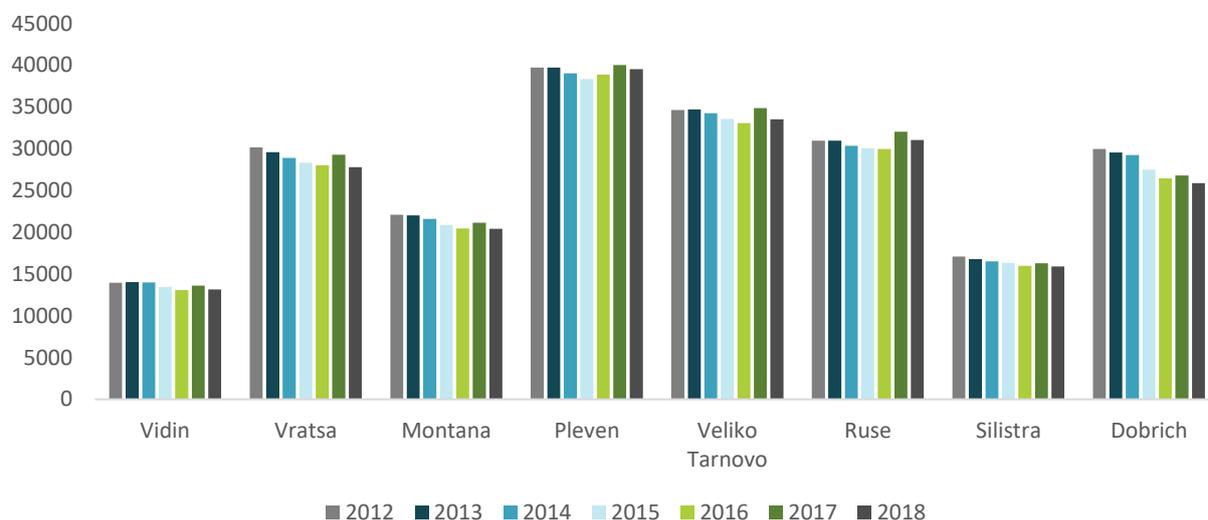
In the Bulgarian cross-border area, the data allowed us to measure the fluctuation in primary, secondary and high school levels. In the 2018 - 2019 academic year, there were 207,372 pupils, 5.43% fewer than in 2012 - 2013. Per NUTS 3 level, higher decrease rates - between 7% and 8.5% were registered in Vratsa, Montana and Silistra, while in Pleven and Ruse (the number of pupils is highest in the Bulgarian cross-border area) the decrease in school population in the past 7 years was insignificant, below 0.5%.

Meanwhile, in the Bulgarian cross-border area, there has been a decrease of almost 10,000 students in the 2013 - 2017 period, and of almost 10,000 pupils in the secondary level education in the same timeframe. The situation is less concerning in the primary education level, where there has been a slighter decrease, of approximately 3,000 pupils. However, the high schools were the only ones to register an increase in school population over the past years.

In the Bulgarian cross-border area, the situation regarding the teaching staff was completely different than in the Romanian side, with increases in every district, contrary to the decrease phenomena which took place in the 2007 - 2012 period. Per total, the number of teachers increased by 20%, with highest increase rates in Ruse (32%), Veliko Tarnovo (28%) and Pleven (27%).

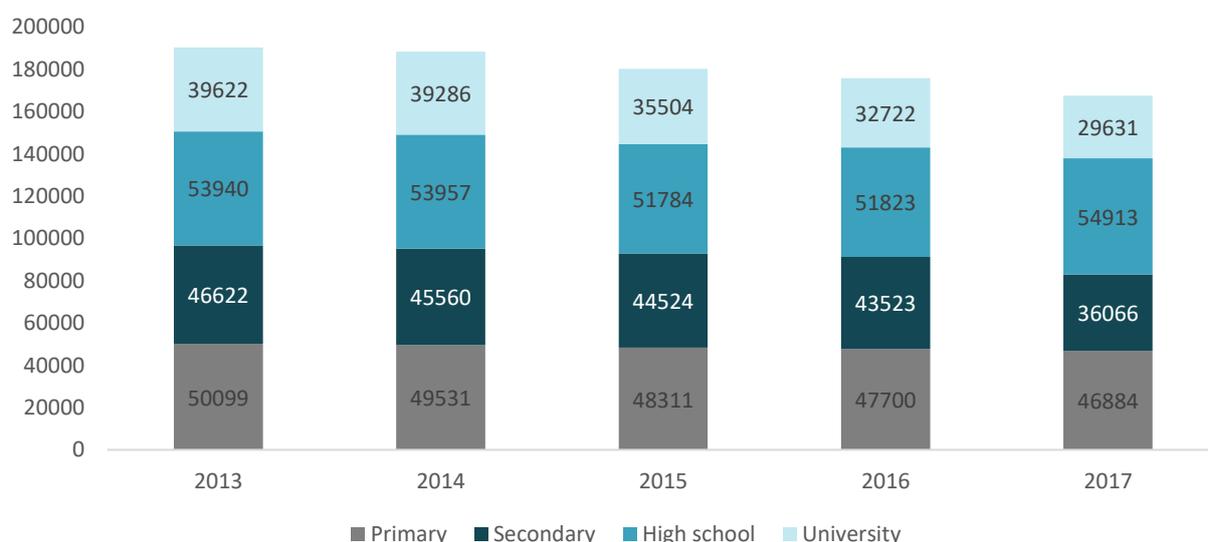


FIGURE 92 THE EVOLUTION OF THE POPULATION ENROLLED IN EDUCATION (PRIMARY, SECONDARY AND HIGH SCHOOL) 2014-2018 IN THE BULGARIAN CROSS-BORDER COUNTIES



Source: NIS Bulgaria

FIGURE 93 THE EVOLUTION OF THE POPULATION ENROLLED IN EDUCATION 2013-2017 IN THE BULGARIAN CROSS-BORDER COUNTIES, EVOLUTION BY EDUCATION LEVELS



Source: NIS Bulgaria



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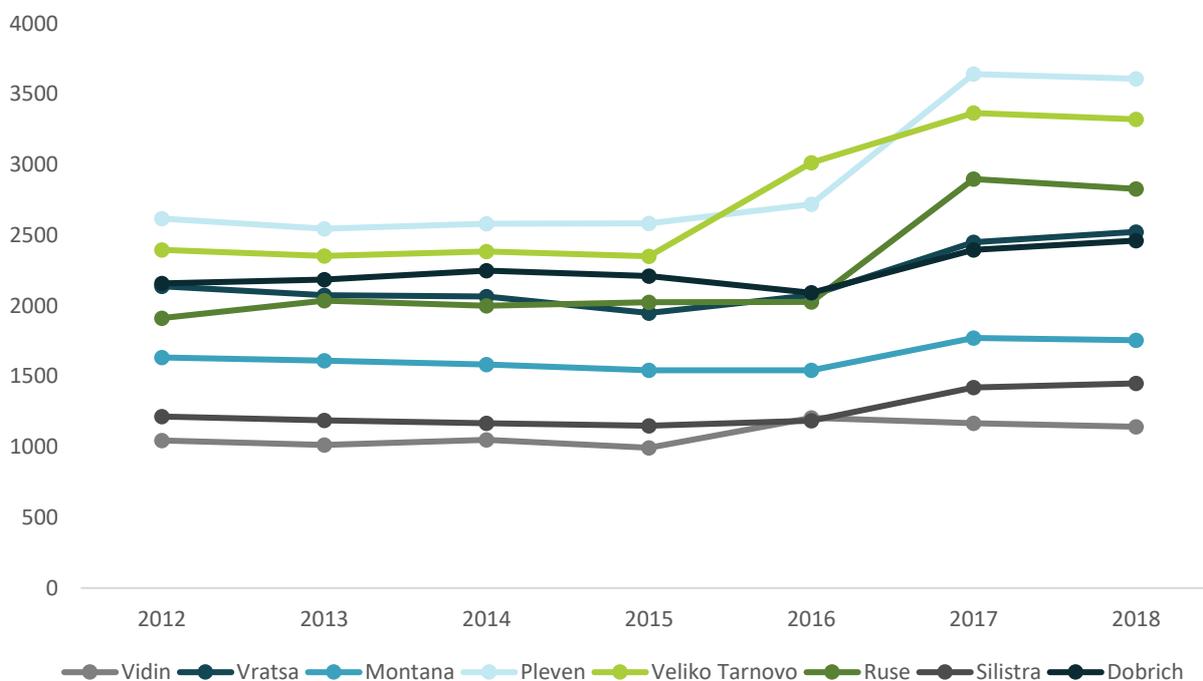


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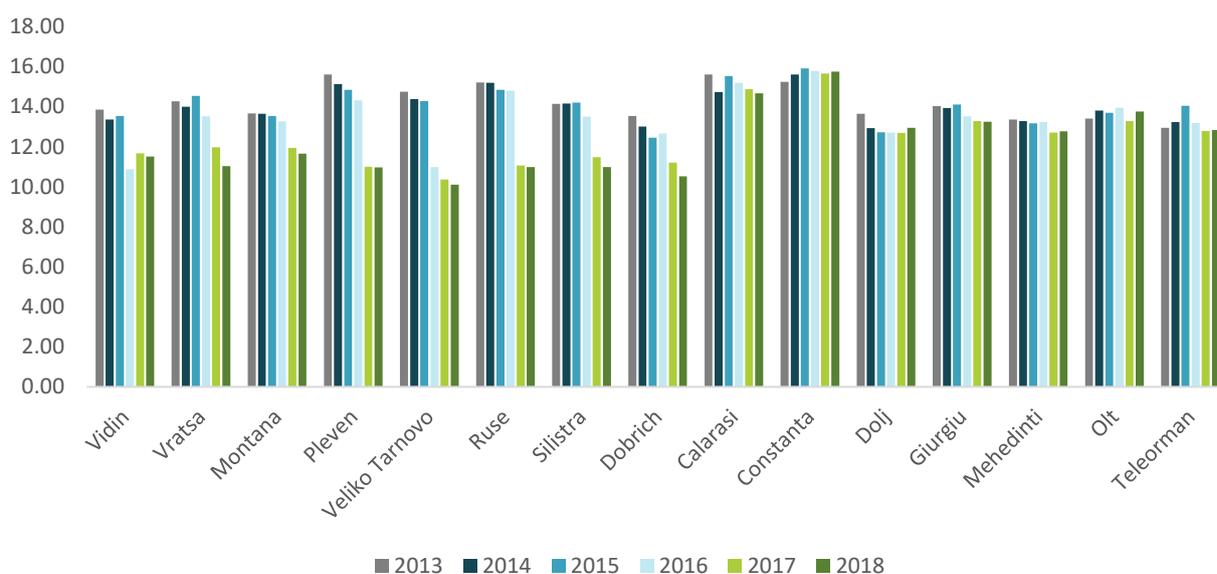
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FIGURE 94 THE EVOLUTION OF THE TEACHING STAFF 2012-2018 IN THE BULGARIAN CROSS-BORDER COUNTIES



Source: NIS Bulgaria

FIGURE 95 THE EVOLUTION OF PUPILS/TEACHER RATIO (PRIMARY, SECONDARY AND HIGHSCHOOL) 2013-2018 IN THE CROSS-BORDER COUNTIES



Source: NIS Romania, NIS Bulgaria



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7.4. HEALTH-CARE SERVICES

Good and sustainable social services like healthcare and the availability of utilities are important components of the quality of life of the residents in a territory. If healthcare is not available or not accessible, the social cohesion of a territory is at high risk of social tension and migration. The attractiveness for investments and tourism depends also of these services.

The preventive approach, which prevails in the healthcare public policy field in the European Union, can represent a solution to the financing difficulties that the big healthcare facilities face. It can also ensure healthcare spending economies on the medium and long term. Nevertheless, in order to have effective preventive measures, firstly there should be a health network that serves the entire area.

In terms of hospital accessibility, the Romanian territory is better equipped due to the fact that the health institutions have a wider distribution throughout the territory, therefore more urban and rural areas are situated within a 60 minutes range of a hospital. On the other hand, in Bulgaria the health infrastructure is concentrated in several urban polls, therefore it is less accessible in a 60 minutes timeframe.

Indicators like the availability of hospital beds per 1000 inhabitants and the agglomeration of physicians are quite different throughout the districts and the counties located in the cross-border area. For example, in Bulgaria, there are more hospital beds available for the same population - with two exceptions - Vidin and Dobrich - while in Romania only Dolj is as well-equipped as the neighbouring country. Given the fact that in the EU 28 the average number of hospital beds per 1000 inhabitants is 5.04, the situation is not concerning in all districts or counties, therefore, interventions regarding hospital infrastructure should be prioritised in the areas which scored below this average.

Regarding the number of populations per physician, Bulgaria has again a more favourable situation with as low as 100 persons per doctor, while in some Romanian counties such as Constanța and Dolj the situation is critical, with physicians having on average between 3.000 and 6.000 patients.



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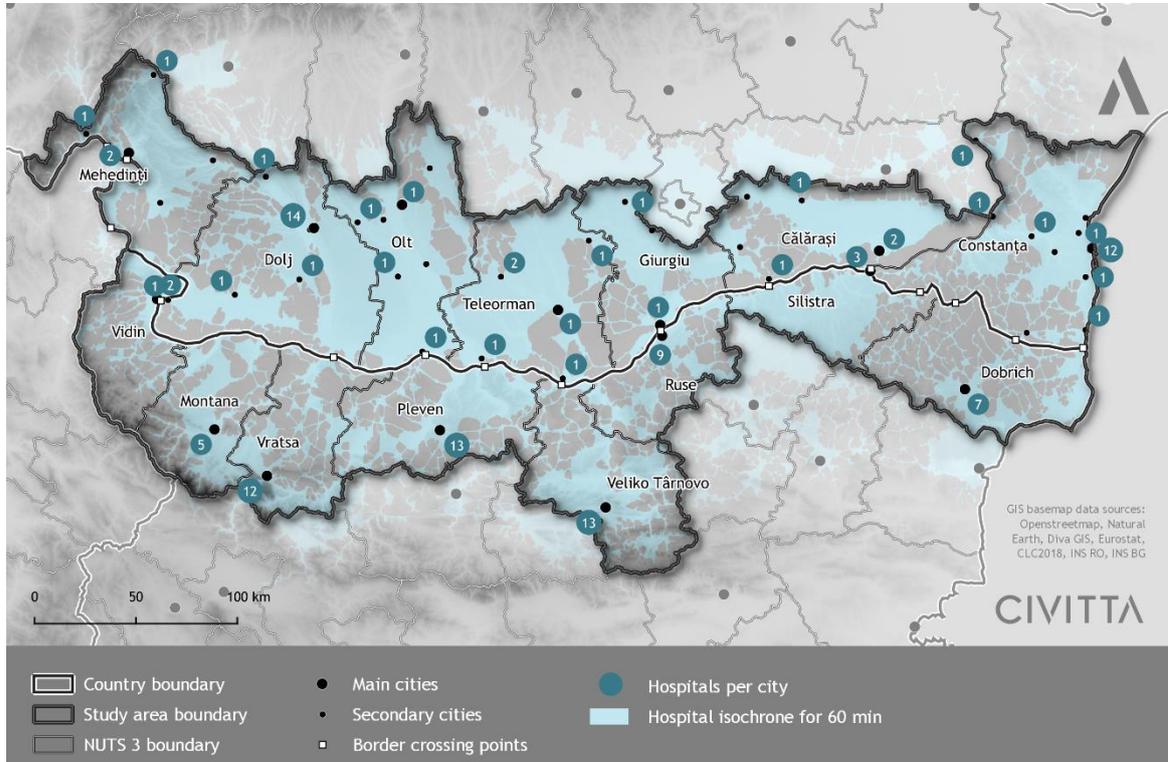


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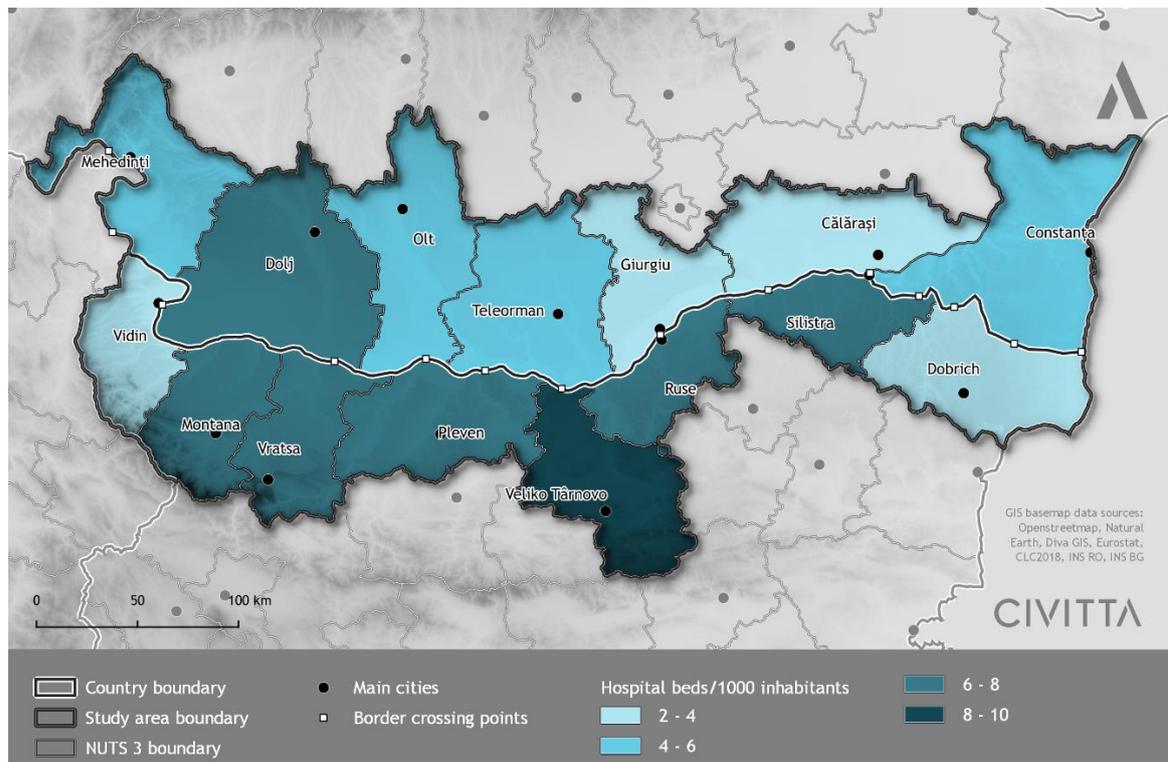
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MAP 61 HOSPITALS IN THE CROSS-BORDER AREA, 2019



Source: Hospitals websites, www.openrouteservice.org

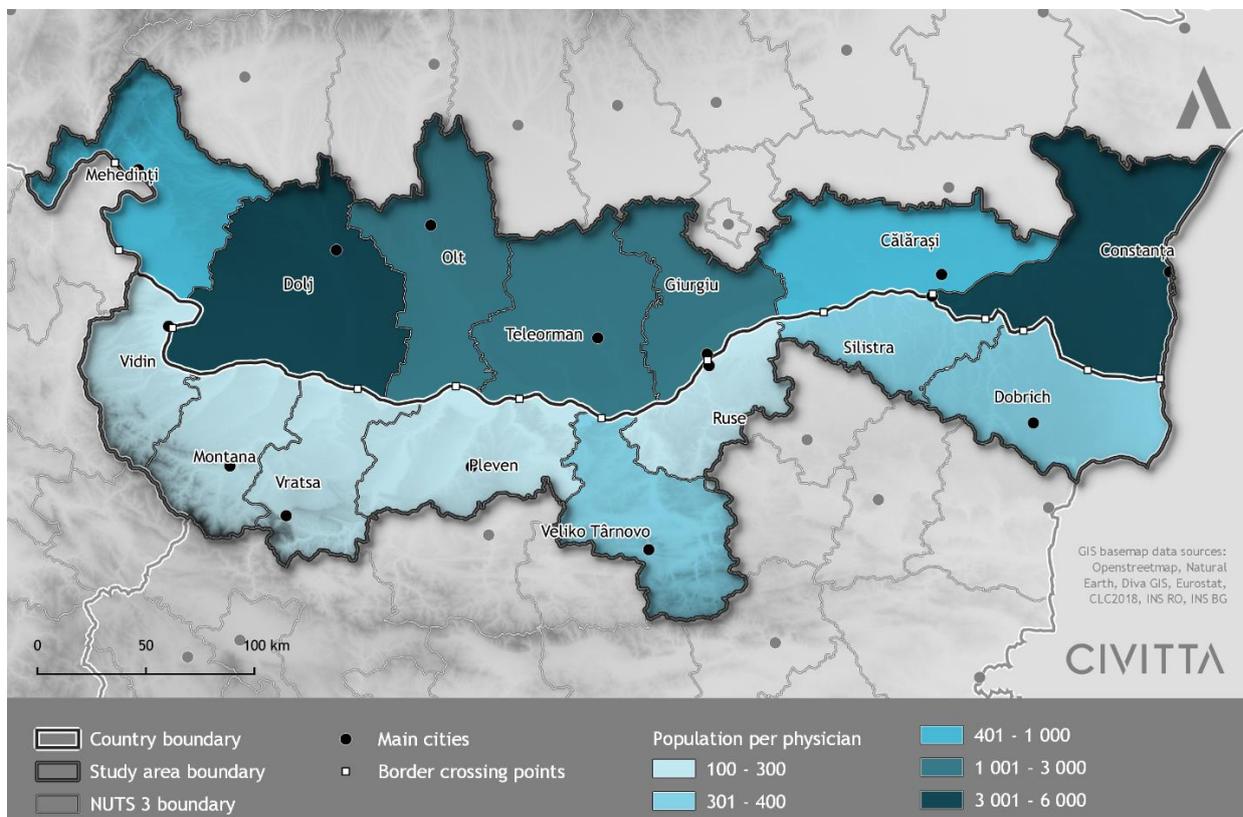
MAP 62 HOSPITAL BEDS PER 1 000 INHABITANTS IN THE CROSS-BORDER AREA, 2017



Source: INS Romania, NIS Bulgaria



MAP 63 POPULATION PER PHYSICIAN IN THE CROSS-BORDER AREA, 2018



In terms of emergency medical care, in each Romanian county there is one main emergency hospital, located in the biggest city that is the county seat, as well as a county ambulance service with the main purpose to provide medical care emergency care and assisted medical transport, respectively emergency consultations at home which is spread in the other urban centres as well.

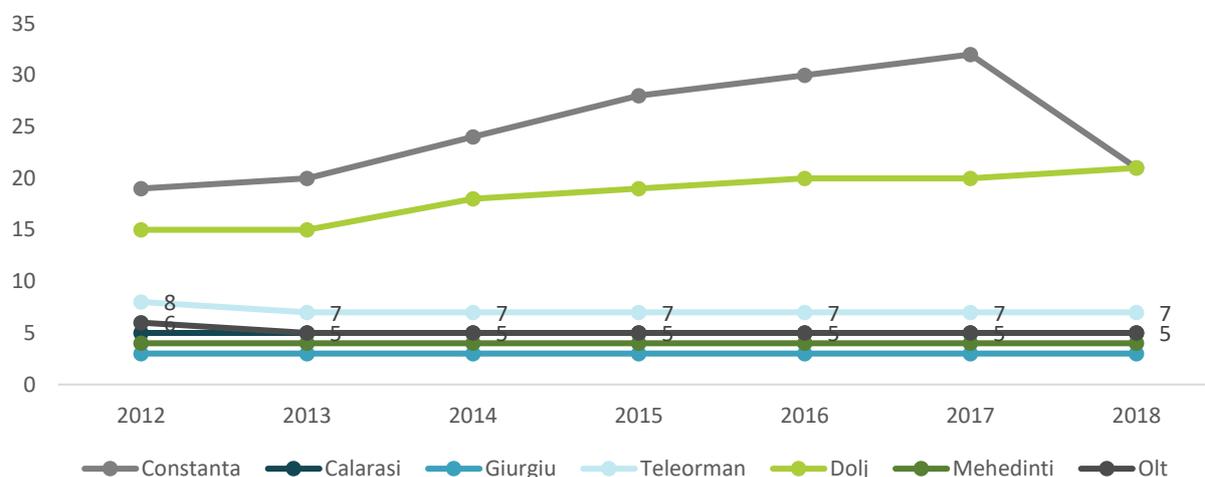
Bulgaria has instituted an Emergency Medical Care (EMC) System which contains ambulatory and non-ambulatory structures that are responsible for managing emergency events. The EMC centres located in every Bulgarian district in the main city, while their subsidiaries (SEMC) which are responsible for triage and limited medical care as well as mobile emergency tasks, are an important healthcare service especially in rural areas where no other emergency medical facilities are available.

In both Romania and Bulgaria the emergency medical care is confronted with on one hand with infrastructure problems such an insufficiency of such establishments, a shortage of equipment and medical staff due to low wages and hard working conditions especially in remote areas and on the other hand, with overcrowding due to the lack of information that citizens possess as to when the emergency health system should be used.

In the Romanian cross-border area, after 1990, the economic transition and the economic failure of big industrial plants developed in the Communist period put a lot of stress on the public healthcare system through a complex set of phenomena: decrease of healthcare contributions of big industrial facilities, uncertain central government's financing, different reform plans (i.e. the creation of the family doctor system) that were implemented with mixed results, migration of the urban population (in the 90s to the countryside, in the 2000s to Western Europe) and finally the development of the private healthcare sector in the area.



FIGURE 96 THE EVOLUTION OF THE NUMBER OF HOSPITALS IN THE ROMANIAN CROSS-BORDER AREA, 2012-2018



Source: NIS Romania

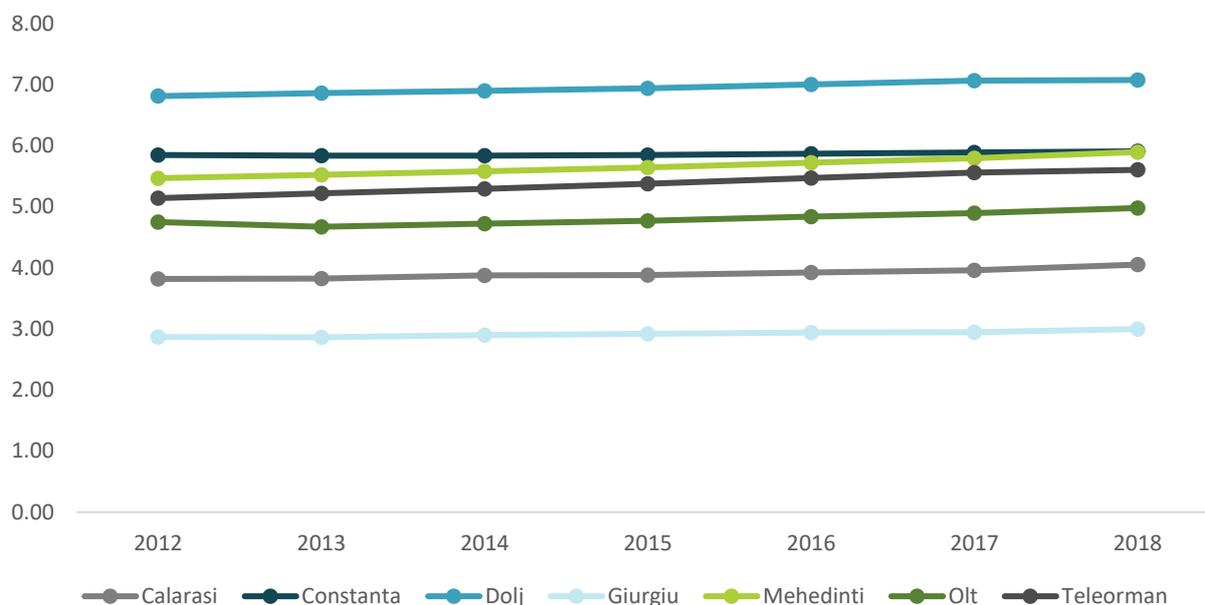
In the Romanian cross-border area, in Olt and Teleorman counties, the number of hospitals decreased by 1 in 2013, and after that year, the value was constant. On the other hand, in Dolj and Constanța, the number of hospitals increased significantly between 2012 and 2017. One particular situation is in Constanța county, where the number of hospitals increased by 13 in 2017 compared to 2012 due to the rise of the private sector, and then, in 2018, the number of these newly established hospitals was half-cleared. The other counties didn't register any changes in the number of hospitals throughout the years.

In the Romanian cross-border area, the number of public hospital beds available per 1000 inhabitants showed a constant increase in the 2012 - 2018 period in all counties. While the cross-border area median is 5.53 - under the national average of 5.98 - counties like Teleorman, Mehedinți, Constanța and Dolj are performing better, while in Olt, Călărași and Giurgiu the number of public hospital beds available per 1000 inhabitants has alarming low values. Overall, while there are some deficiencies in the healthcare infrastructure, the situation is better compared to 2012.

Because the number of hospitals remained the same in the majority of the Romanian counties in the 2012 - 2018 period, the slight increase of the hospital beds/1000 inhabitant's indicator is not due to health establishments upgrade, but to population decrease. On the other hand, in Dolj and Constanța, where new hospitals were created, the number of beds/1000 inhabitants increased due to the development of the private sector. However, the private hospitals usually have higher costs than public facilities so it is advised that public hospitals should be upgraded in order to have enough capacity for citizen demand.

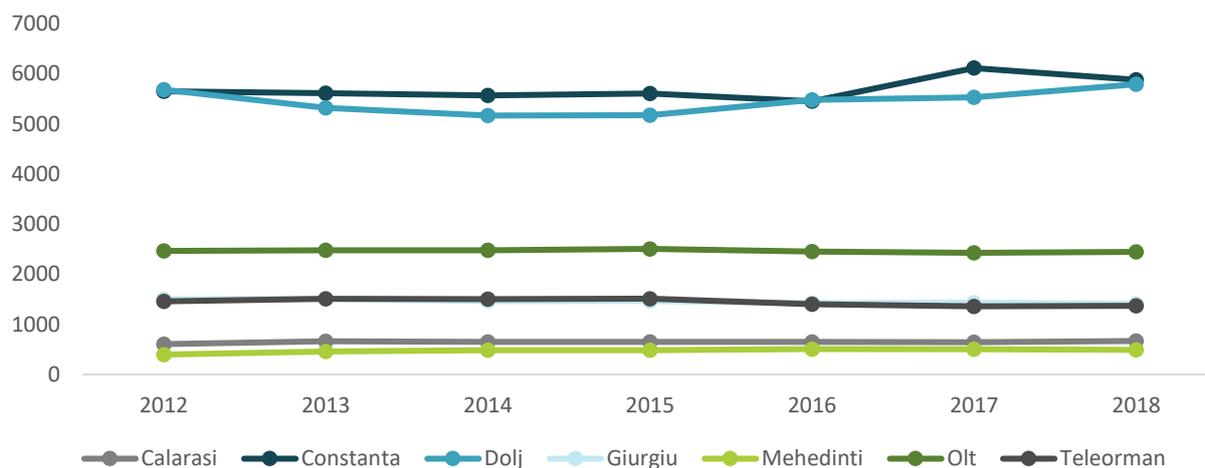


FIGURE 97 THE EVOLUTION OF THE NUMBER OF HOSPITAL BEDS/1000 INHABITANTS IN THE ROMANIAN CROSS-BORDER AREA, 2012-2018



Source: NIS Romania

FIGURE 98 THE NUMBER OF POPULATION PER PHYSICIAN (FAMILY DOCTOR) IN THE ROMANIAN CROSS-BORDER AREA, 2012-2018



source: INS Romania

In the Romanian cross-border-area, in 2018, on average there were 1625 people per physician (family doctor), value which is below the national health limits of 2000 - 3000 people per physician. However, the situation differs from county to county. While physicians in Mehedinți and Călărași are the least crowded, with fewer than 1000 patients each, the same medical

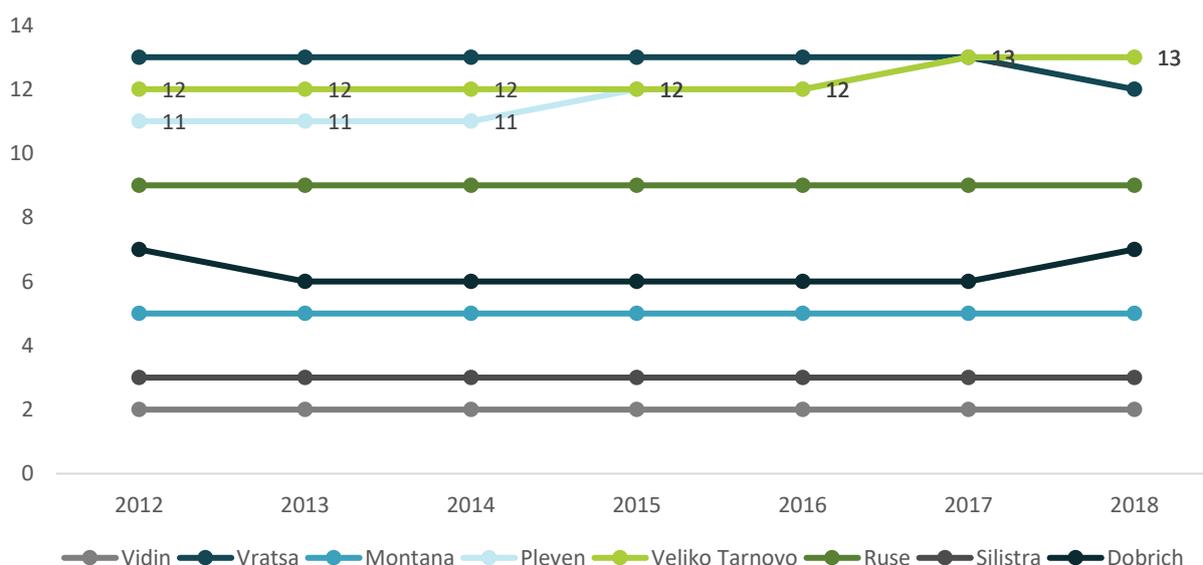


personnel in Dolj and Constanța is overcrowded, with almost 6.000 inhabitants each. The situation is alarming because this value is considerably higher than the national average and health system limits.

While in all counties the value of this indicator is approximately the same in 2018 as in 2012, in Mehedinți, physicians gained 20 more patients throughout the years. However, the situation is not worrying since the least inhabitants per physician in the entire cross-border area have been registered here.

The number of hospitals remained mostly the same in the majority of the Bulgarian districts in the 2012 - 2018 period. However, there were few exceptions - in Pleven and Veliko Tarnovo, one or two more hospitals were created, and, on the other hand, in Dobrich one hospital was closed.

FIGURE 99 THE EVOLUTION OF THE NUMBER OF HEALTH ESTABLISHMENTS FOR HOSPITAL AID IN THE BULGARIAN CROSS-BORDER AREA, 2012-2018

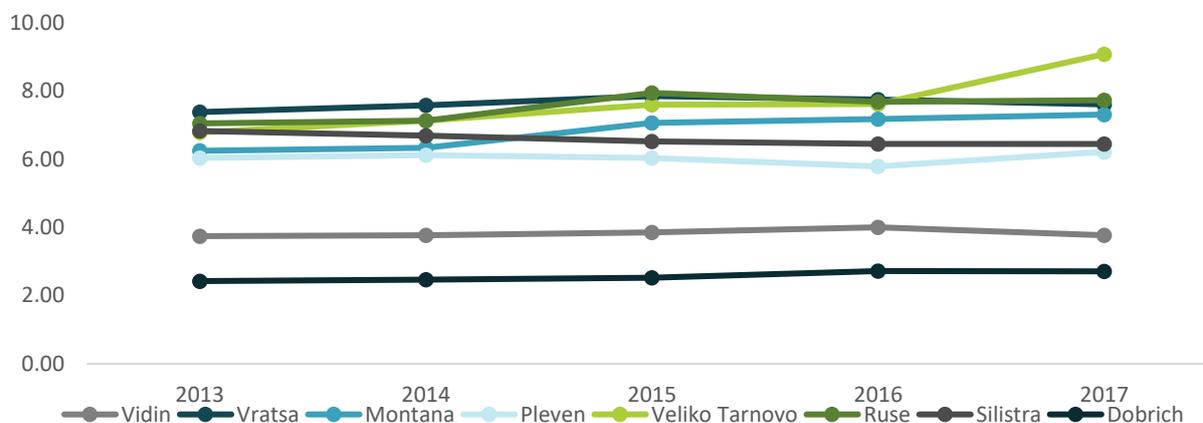


Source: NIS Bulgaria

In Bulgaria, the number of beds per inhabitant remained approximately constant in the 2012 - 2020 period, with growth rates below 0.5 beds/inhabitant recorded in most districts. Only in Montana this indicator increased by 1, while Silistra was the only district where the value of this indicator decreased with 0.38 beds/inh. Given the fact that the population decreased constantly, the situation of this indicator is not alarming in all Bulgarian districts, with Veliko Tarnovo having the highest value in the entire cross-border area. However, immediate action from public administrations for the upgrade of hospitals should be taken in Dobrich and Vidin where the number of hospital beds per 1.000 inhabitants is below 4.



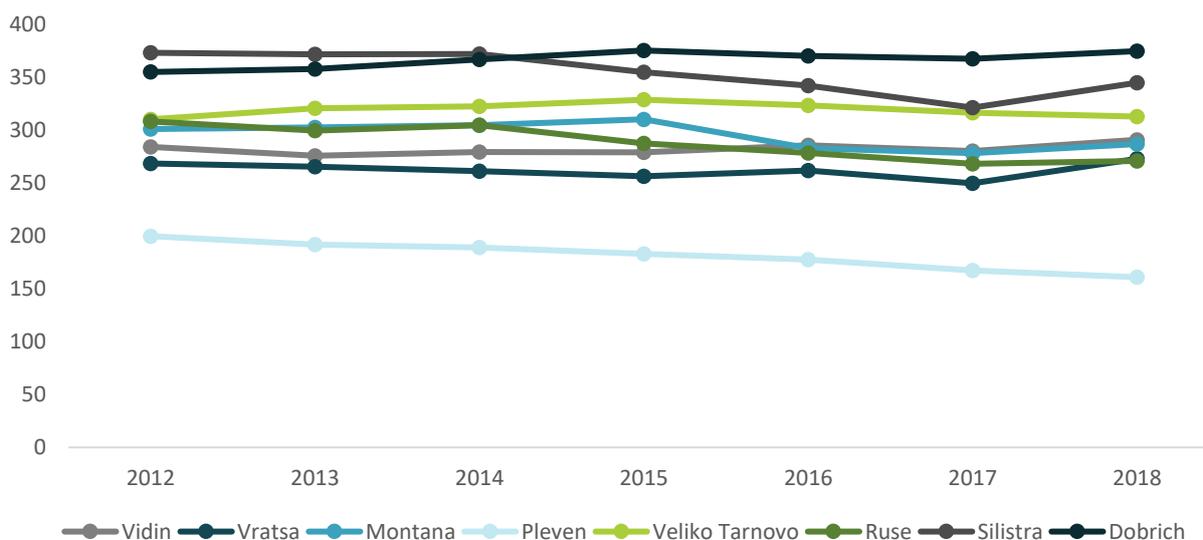
FIGURE 100 THE EVOLUTION OF THE NUMBER OF HOSPITAL BEDS/1000 INHABITANTS IN THE BULGARIAN CROSS-BORDER AREA, 2013-2017



Source: NSI Bulgaria

In the Bulgarian cross-border area the situation is different than in the Romanian side, with an average of 290 inhabitants per physician in 2018 - value slightly smaller than in 2012. The lowest number of inhabitants per physician was in Pleven, while the highest was in Dobrich (which registered the highest increase of this indicator in the 2012 - 2018 period) and Silistra (which registered a decrease in the same period).

FIGURE 101 THE NUMBER OF POPULATION PER PHYSICIAN IN THE BULGARIAN CROSS-BORDER AREA, 2012-2018



Source: NSI Bulgaria



7.5. EMERGENCY RESPONSE

In both Romania and Bulgaria, the national strategic frameworks for emergency response systems have 4 main horizontal categories: management systems; training, information and communication; operational capacity and humanitarian. In both countries, an integrated approach was the main guideline for the planning and operationalization of the national emergency response. This helps ensuring a fast and dynamic coordination of all dedicated structures, from central governance level up to local administration and implementing units (e.g. ambulances of fire trucks).

In emergency response, there is a clear understanding on the roles that each component of the system has, ensuring a top-bottom distribution of responsibility which offers a better situation overview therefore a better coordination and a better, faster response to all types of risks and threats. On the other hand, training, information and communication is of high importance as major events occur in unexpected moments and have a high degree of unpredictability, therefore specialists have to act on what was previously learned.

There is a fourth dimension, however, which regards participation in international humanitarian activities due to the intrinsically humanitarian character of the civil protection concept itself and to the fact that Romania and Bulgaria are members of NATO and the European Union - both being structures where countries help each other in crisis situations.

In strategic documents regarding this matter, objectives become more detailed as strategies become more specific in order to ensure a proper operationalization.

In Romania, while the National Defence Strategy is more concerned with training decision makers, the Emergency Prevention Strategy takes over the responsibility of local communities and is further operationalized by Local Intervention Plans of the General Inspectorate for Emergency Situations. On the other hand, the National Communication and Public Information Strategy for Emergency Situations aims to operationalize only communication-based objectives within the strategic framework.

In Bulgaria, there is a national Disaster Protection Act which aims to improve the system and connect all legislative acts governing specific disaster risks, through which a Disaster Risk Reduction platform was created together with other relevant national institutions. This platform created the Disaster Risk Reduction Strategy which aims to create a framework for emergency response as well as ensure multi stakeholder engagement and clear protocols, all in an open system. These goals are operationalized not only at national level, but by the Regional Directorates for Safety and Civil Protection as well through Local Disaster Protection Plans.

The fundamental objective of the national emergency response system strategies is to consolidate the capacity of specialized agencies and local governments for national prevention of emergency situations and for their management. Therefore, capacity building is the ultimate component of emergency response systems. At this level, some level of decentralization is necessary in order to ensure the fastness of responses. As the General Inspectorate for Emergency Situations GIES (RO) and Directorate General for Fire Safety and Civil Protection DGFSCP (BG) exert specific functions in the defence of life, property and the environment against fire and disasters and is responsible for implementing measures for civil protection and emergency management, it has a dedicated strategy that has only operational capacity objectives.



A good example of cross-border scientific and practical cooperation in this matter is "The Danube cross-border system for earthquake alert" (DACEA) created in the 2010 - 2013 period. The Romanian and Bulgarian institutions created an early warning system comprising the seven Romanian counties and eight Bulgarian provinces located along the Danube that are part of the cross-border area. The system was designed to exploit the specific characteristics of earthquakes originating in the Vrancea area of Romania, which tend to have depths epicentres.

The main factors that will mark emergency management in the next 10 years and will have a strong impact on it regard: the risk of Danube flooding, an increased regularity emergency situations arising from natural causes; aging and demographic decline; community service requirement on the increase; concentration of population in urban hubs; decrease collective solidarity; emergence of new technologies that lead to a potential risk of producing large-scale emergencies, intensity and complexity increased, other risks referring to medical or industrial hazards etc.

Therefore, the main need of the local DGFs and DGFSCPs in this economic, political, social and technological context is the need to adapt the dynamic of emergency response action, ensuring a multidisciplinary approach to risk, integration of measures for: extrication, pyrotechnics, search and rescue in hostile environments of life, qualified first aid. This requirement must be achieved by strengthening the role of pillar for emergencies, more efficient use of available human resources, very good equipment, introduction of new technologies into current activity, strengthen administrative capacity and modernization of the intervention procedures.

The main lines of action that need to be consolidated and developed within the local DGFs and DGFSCPs that came up from an institutional analysis regard the following areas: prevention, preparedness, response, human resources, logistics and administrative capacity.

7.6. HOUSING

Housing is an important aspect of social cohesion as it is a key factor in the quality of life of residents. Although the population decreased throughout the cross-border area, the housing surface increased in all counties and districts.

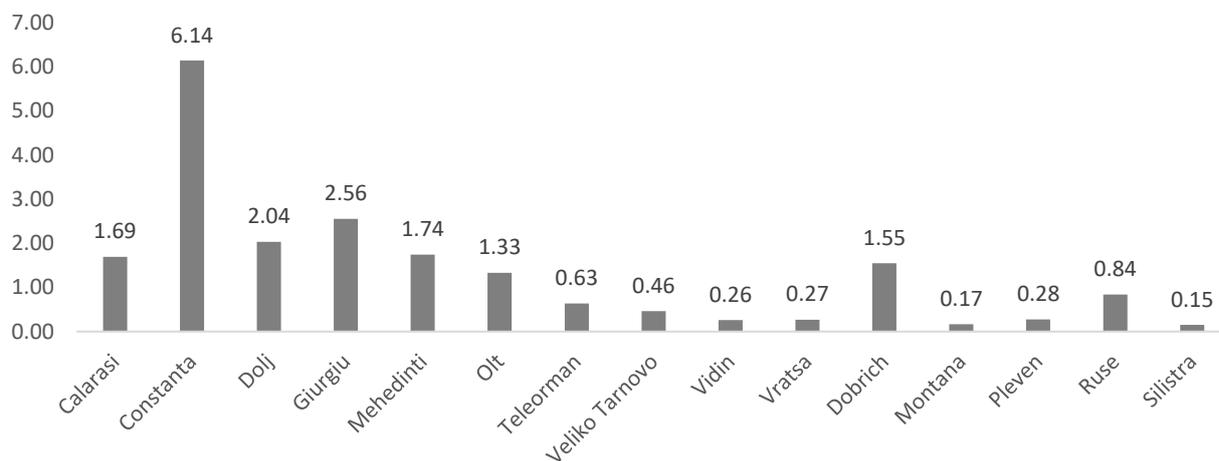
In the Romanian area, the housing surface (m²) increased by 2.8% in the 2013 - 2018 period, with highest growth rates in Constanța and Giurgiu counties, and the lowest in Teleorman. In Bulgaria, the overall growth rate of the housing surface between 2013 and 2018 was smaller than in Romania - only 0.58% - with higher values in Dobrich and Ruse and smallest in Silistra.

The evolution of the housing surface (m²) available per inhabitant shows a deepening gap between the more urbanized counties (Dolj, Constanța, Olt, Pleven and Veliko Tarnovo) and the more rural ones (Giurgiu, Călărași, Mehedinți).

Even though housing surfaces varies between the counties, in the more rural ones, the distribution of the population on housing units is less dense, the availability of housing space for population being more important in the urban counties.



FIGURE 102 THE EVOLUTION OF HOUSING SURFACE (%m²) IN THE CROSS-BORDER AREA, 2013-2018



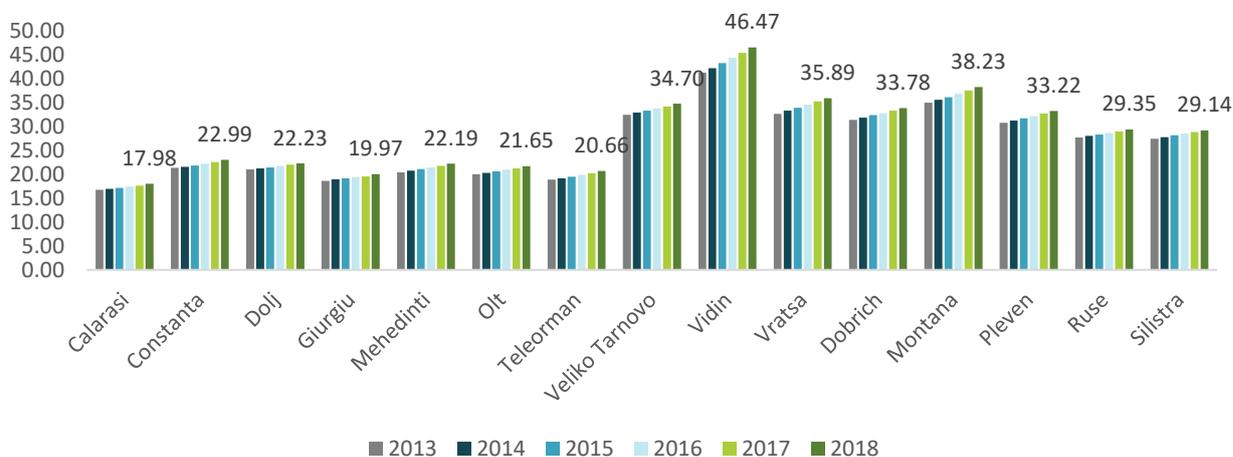
Source: NSI Bulgaria

The number of square meters available per inhabitant in the EU 28 is on average of 42,56 m² - both Romania and Bulgaria having less housing space available for their citizens: 19,35 m² (RO) respectively 31,39 m² (BG). According to Eurostat, in 2017, over 15 % of the EU 28 population lived in overcrowded homes, with the highest rates in Romania (47% of citizens) and Bulgaria (42% of citizens).

Comparing the two countries, the average of floor space available per inhabitant is generally larger in the Bulgarian cross-border area (35,16 m²) than in the Romanian side (21,09m²). Moreover, Constanța, which has the largest number of square meters per inhabitant amongst the Romanian cross-border counties, still registered a lower value than Silistra, which has the lowest value for this indicator in Bulgarian area. The growth rate of number of square meters per inhabitant has been higher in Bulgaria, each of the eight counties registering growth from 1.35 sqm/inh (Ruse) up to 4.32 sqm/inh (Vidin), while the 7 Romanian counties registered growth of only 1.02 sqm/inh (Călărași) up to 1.54 sqm/inh (Teleorman) in the 2012 - 2018 period.

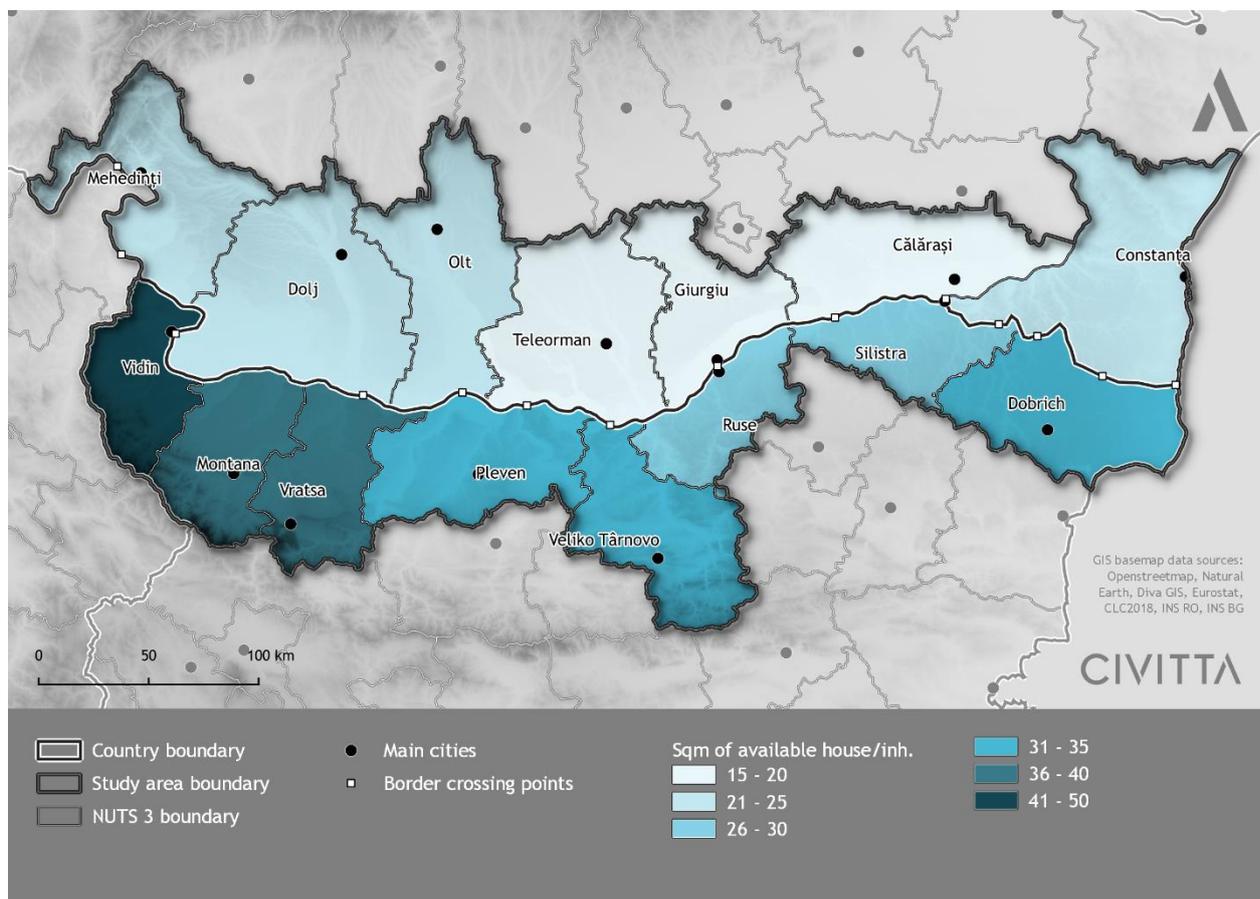


FIGURE 103 THE EVOLUTION OF THE NUMBER OF SQUARE METERS OF AVAILABLE HOUSE PER INHABITANT IN THE CROSS-BORDER AREA, 2013-2018



Source: NIS Romania, NIS Bulgaria

MAP 64 SQUARE METERS OF AVAILABLE HOUSE PER INHABITANT IN THE CROSS-BORDER AREA, 2018



Source: NIS Romania, NIS Bulgaria



The disparity between urban and rural area in terms of housing provision is in part due to the Communist period legacy of big apartment blocks quarters in the main industrial cities and its policy of ignoring the rural area for housing in view of the rapid and forced urbanization. Both the 90s and the 2000s periods (with its periods of economic growth and decline) only accentuated this reality of the distribution of housing space in the population of the Romanian cross-border counties, increasing thus the territorial disparities within the cross-border area with the associated risk of poverty, social exclusion and emigration.

Although the number of square meters per inhabitants register a constant rise, the housing fund in the Bulgarian cross-border area remained more or less constant in the 2013 - 2019 period, with small growths between 0.21% (Silistra) and 1,81 (Dobrich).

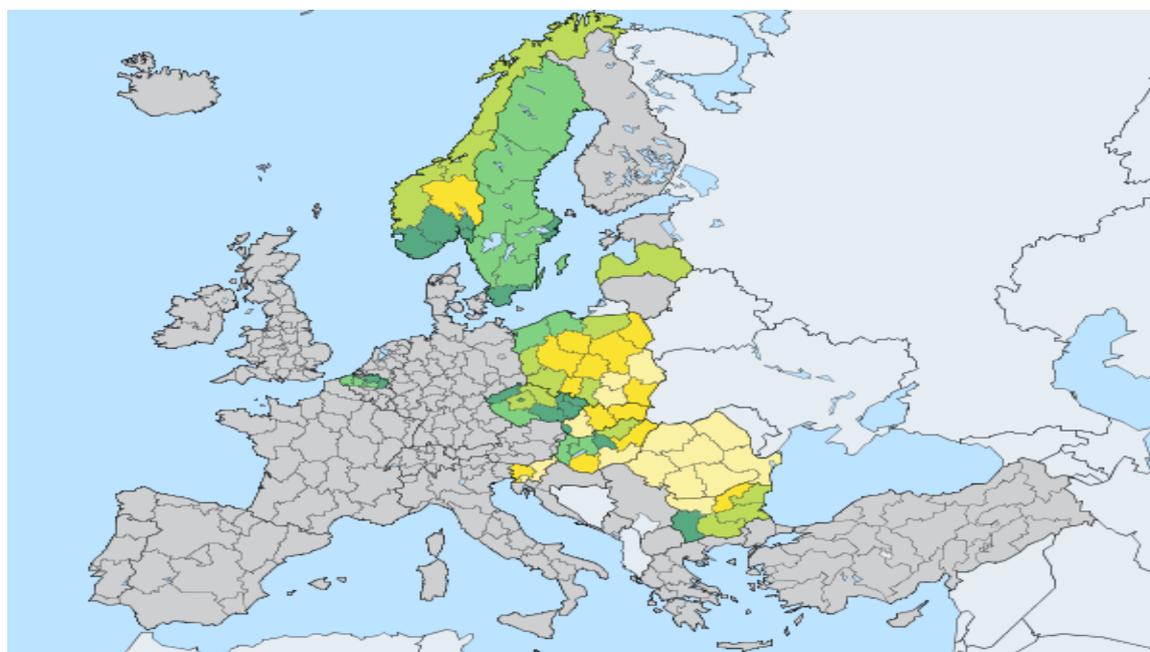
7.7. ACCESS TO UTILITIES/URBAN EQUIPMENT

Wastewater from households and industry represents a significant pressure on the aquatic environment because of the loads of organic matter and nutrients, as well as hazardous substances. With high levels of the population in EU member countries living in urban agglomerations, a significant fraction of urban wastewater is collected by sewers connected to public wastewater treatment plants. The level of treatment before discharge and the sensitivity of the receiving waters determine the scale of the impacts on aquatic ecosystems. The proportion of the population connected to urban wastewater treatment plants and the types of treatments used are seen as proxy indicators of the level of purification and the potential for improvement of the water environment.

In the EU, the main objective of the Urban Wastewater Treatment Directive (91/271/EEC) and equivalent national legislation for non-EU countries, is to protect the environment from the adverse effects of wastewater discharges. Meeting the requirements of the Urban Wastewater Treatment Directive is the baseline for water pollution coming from urban areas. Also, the EU Cohesion Policy supports sustainable growth by promoting water and waste management, environmentally friendly and innovative clean technologies, as well as measures targeted at the protection of air, biodiversity and nature. Through these investments, the Funds play an important role in boosting the implementation of EU environmental policies.



MAP 65 POPULATION CONNECTED TO WASTEWATER COLLECTION AND TREATMENT SYSTEMS BY NUTS2 REGIONS



Legend

30.4 - 59.6

59.6 - 70.8

70.8 - 78.36

78.36 - 85.0

85.0 - 101.16

Not available

Source: Eurostat

As can be seen in the map above, according to Eurostat data, with small exceptions, on the Romanian territory approximately half of the population is connected to wastewater collection and treatment systems. Bulgaria, on the other hand, has areas where access to these utilities is much higher. The data provided by Eurostat show the situation in both countries, compared to the other regions of Europe. In the Romania-Bulgaria cross-border region, equipment and infrastructure are insufficient, especially in the rural area. Thus, the water distribution and sewage systems as well as the drinking water networks cover approximate 50% of the population in the cross-border counties. Many localities do not have a working wastewater treatment system yet, leading to considerable negative effects on the water quality in the Danube Basin. In Romania, it constitutes almost 30% of the total basin area of the Danube, while in the Bulgarian sector, the watercourse it represents 53.26%.

The population connected to the sewerage systems in 2018 represented 52.7% of the resident population of Romania, while in Bulgaria it represented 99.5%. At the same time, the population connected to the public wastewater treatment plants represented 51.4% of the resident population of Romania, while in Bulgaria it represented 63.9%. Also, regarding the population connected to public drinking water systems, it represents 69.2% in case of Romania and 76.2% in the case of Bulgaria.



TABLE 29 POPULATION HAVING HOUSES CONNECTED TO PUBLIC FACILITIES/NETWORKS FOR SEWAGE, WASTEWATER TREATMENT AND DRINKING WATER (%), BULGARIA - ROMANIA, 2018

COUNTY / DISTRICT	RATE OF POPULATION CONNECTED TO PUBLIC SEWAGE SYSTEMS	RATE OF POPULATION BEING CONNECTED TO PUBLIC WASTEWATER TREATMENT PLANTS	RATE OF POPULATION CONNECTED TO PUBLIC DRINKING WATER SYSTEMS
Constanța	60.8	54.4	75.4
Călărași	25.1	24.9	47.8
Giurgiu	27.3	27.3	35.5
Teleorman	22.5	22.5	30.9
Dolj	37.9	37.9	45.6
Mehedinți	43.1	41.9	63.5
Olt	26.9	26.9	40.7
Romania	52.7	51.4	69.2
Vidin	99.8	0.5	57.6
Montana	98.3	35.5	59.9
Vratsa	99.6	51.2	57.6
Pleven	100.0	53.1	56.8
Veliko Tarnovo	99.8	60.2	68.4
Ruse	100.0	68.7	68.7
Silistra	100.0	44.4	51.5
Dobrich	99.9	70.9	70.9
Bulgaria	99.5	63.9	76.2

Source: NIS Romania / NIS Bulgaria

The increases were determined by the connection of the population to the newly constructed sewerage networks, respectively by the commissioning of new wastewater treatment plants.

The table above indicates the differences that affect the different Romanian counties in the cross-border area in terms of access of the population to the main urban utilities' networks. All the counties, with the notable exception of Constanța, rank, for all 3 types of utilities, under the national average. Some of them are even worryingly low: less than 40% of the population of Călărași, Giurgiu, Olt, Dolj and Teleorman is connected to sewage and wastewater treatment.



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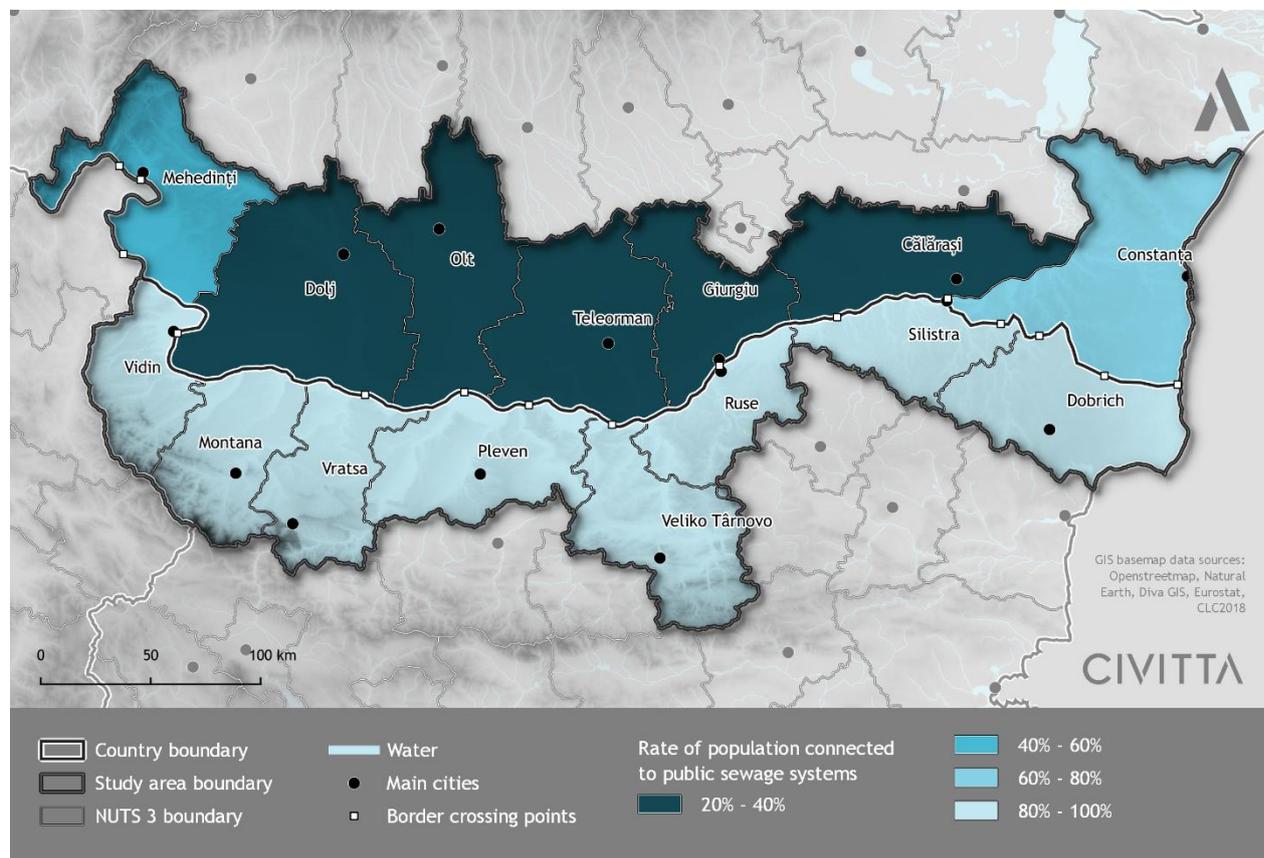


GOVERNMENT OF ROMANIA



GOVERNMENT OF BULGARIA

MAP 66 RATE OF POPULATION CONNECTED TO PUBLIC SEWAGE SYSTEMS, BULGARIA - ROMANIA AREAS, 2018



Source: NIS Romania / NIS Bulgaria

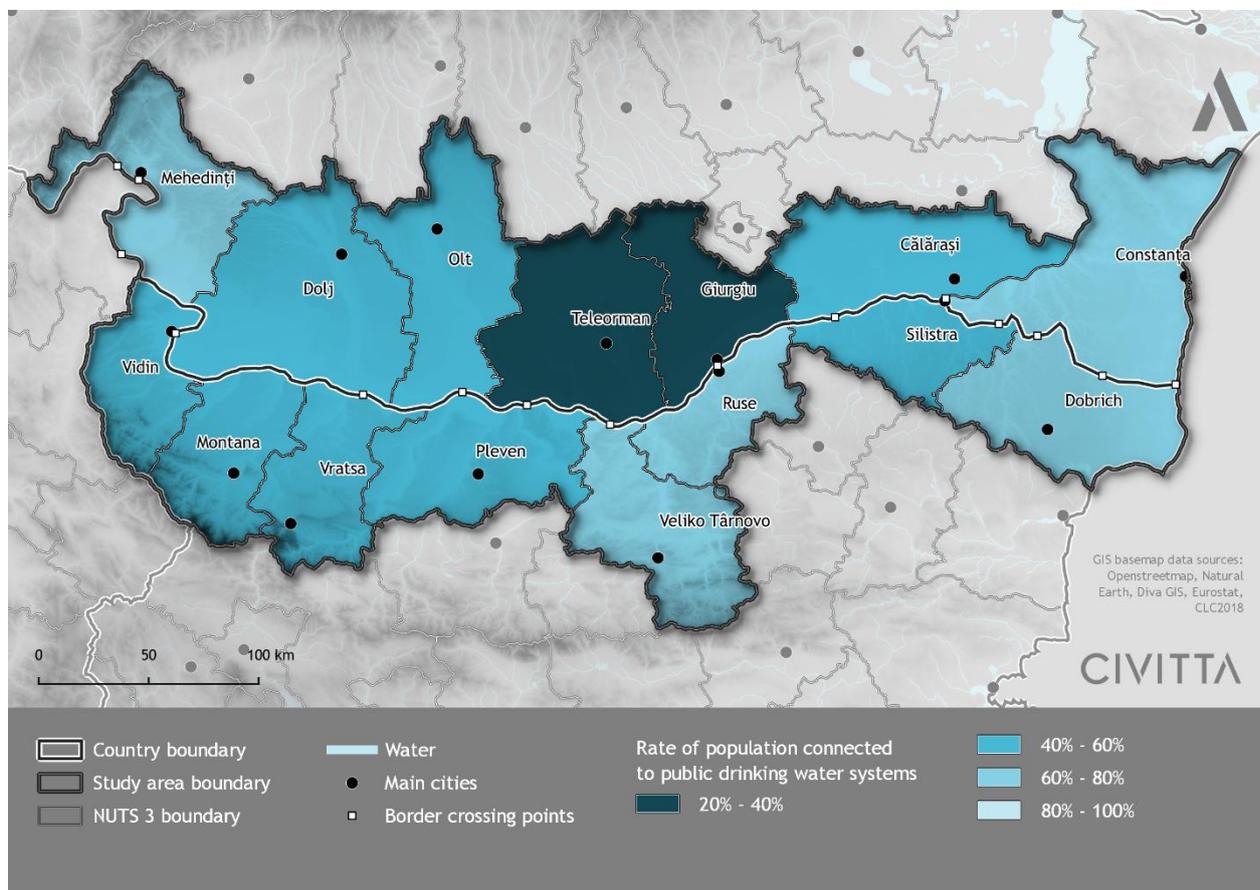
Regarding the access of the population in the main urban utilities networks of the Bulgarian districts in the cross-border area, it can be observed that from the point of view of the population connected to the public sewage systems, all the districts are above the national average (99.5%).

Most people in the EU have good access to high quality drinking water. According to a report by the European Environment Agency (2016)¹²², more than 98.5% of tests carried out on drinking water samples between 2011 and 2013, met EU standards. The EU Drinking Water Directive sets minimum quality standards for water intended for human consumption (drinking, cooking, other domestic purposes), in order to protect us from contamination. According to the European Commission, access to better quality water could reduce bottled water consumption by 17%. Less bottled water would help people save money and have a positive impact on the environment, by reducing CO2 emissions and plastic waste.

¹²² <https://www.eea.europa.eu/publications/public-health-and-environmental-protection>



MAP 67 RATE OF POPULATION CONNECTED TO PUBLIC DRINKING WATER SYSTEMS, BULGARIA - ROMANIA AREAS, 2018



Source: NIS Romania / NIS Bulgaria

Safe and readily available water is important for public health, whether it is used for drinking, domestic use, food production or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost countries' economic growth and can contribute greatly to poverty reduction.

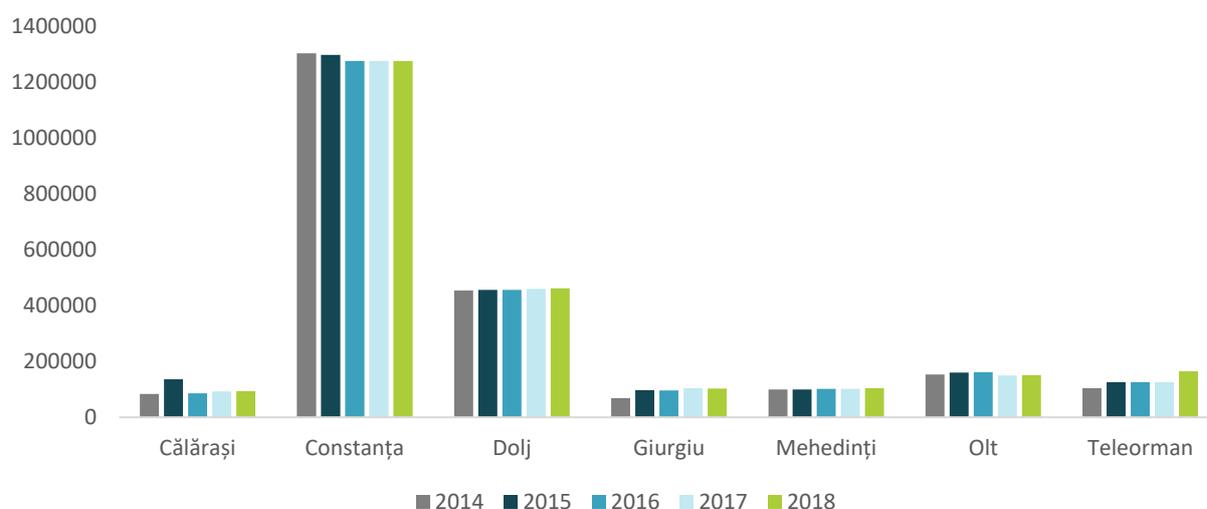
The access to public drinking water and other basic facilities are essential to both the attractiveness of a territory and for a sustainable socio-economic development. In an area with such important environmental assets the access to basic public utilities of the resident population is without doubt one of the first steps for ensuring quality of life (with its demographic stability corollary) and the protection of the environment. It can be seen that in terms of access to the public drinking-water systems, Teleorman (35.5%) and Giurgiu (30.9%) have the lowest rate of the connected population. At the same time, it can be observed that, all the county's and districts are below the national average regarding the population connected to public drinking-water systems, the most connected areas being represented by Mehedinți (63.5%), Veliko Tarnovo (68.4%), Ruse (68.7%), Dobrich (70.9%) and Constanța (with the highest rate at 75.4%).

According to INSSE data, the capacity of drinking water production facilities in Romania at national level was 187.04 c.m./day in 2018, having gone down by -4.93% compared to 2014 (when the average was of 196.74 c.m./day). However, at the county level, an increase in the



capacity of drinking water production facilities can be observed. There is an increase in these capacities especially for Dolj (from 454,526 c.m./day in 2014 to 462,182 c.m./day in 2018), Giurgiu (from 68,182 c.m./day in 2014 to 103,551 c.m./day in 2018), Mehedinți (from 99,697c.m./day in 2014 to 104,103 c.m./day in 2018) or Teleorman (from 104,471 c.m./day in 2014 to 164,703 c.m./day in 2018). The county with the highest capacity is Constanța (with 1,276,281 c.m./day in 2018), followed by Dolj (with 462,182 c.m./day in 2018).

FIGURE 104 EVOLUTION OF THE DRINKING WATER INSTALLATIONS CAPACITY AT COUNTY LEVEL IN ROMANIA, C.M./DAY, 2014-2018

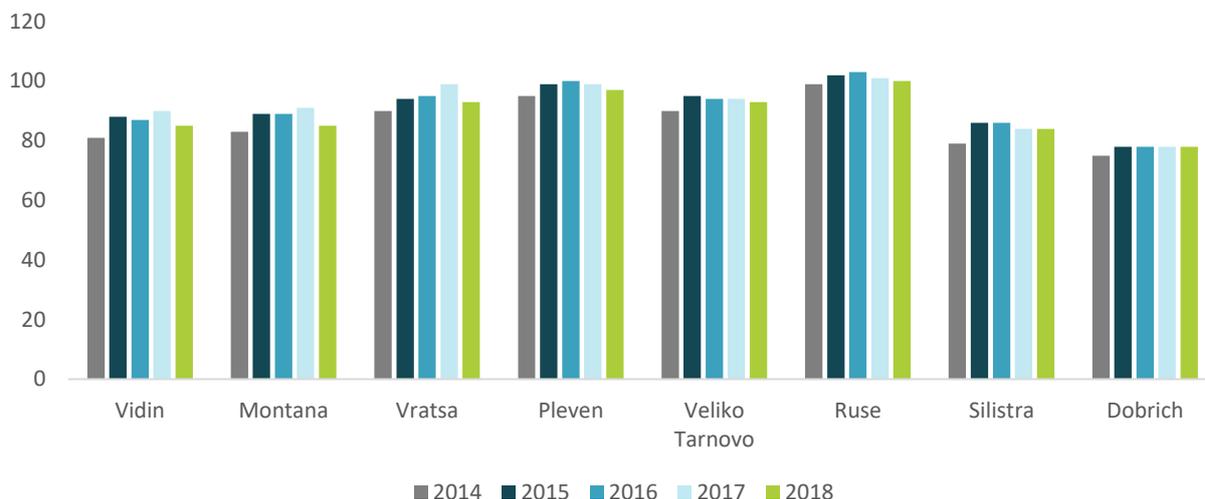


Source: NIS Romania / NIS Bulgaria

Regarding the capacity of drinking water production facilities in Bulgaria at national level, in 2018 was 99 l./day/cap, having gone up by 3.1% compared to 2014 (when the average was of 96 l./day/cap). There is an increase in these capacities especially for Silistra (from 79 l./day/cap in 2014 to 84 l./day/cap in 2018). The most consuming District is represented by Ruse (with 100 l./day/cap in 2018), followed by Plevan (with 97 l./day/cap in 2018).



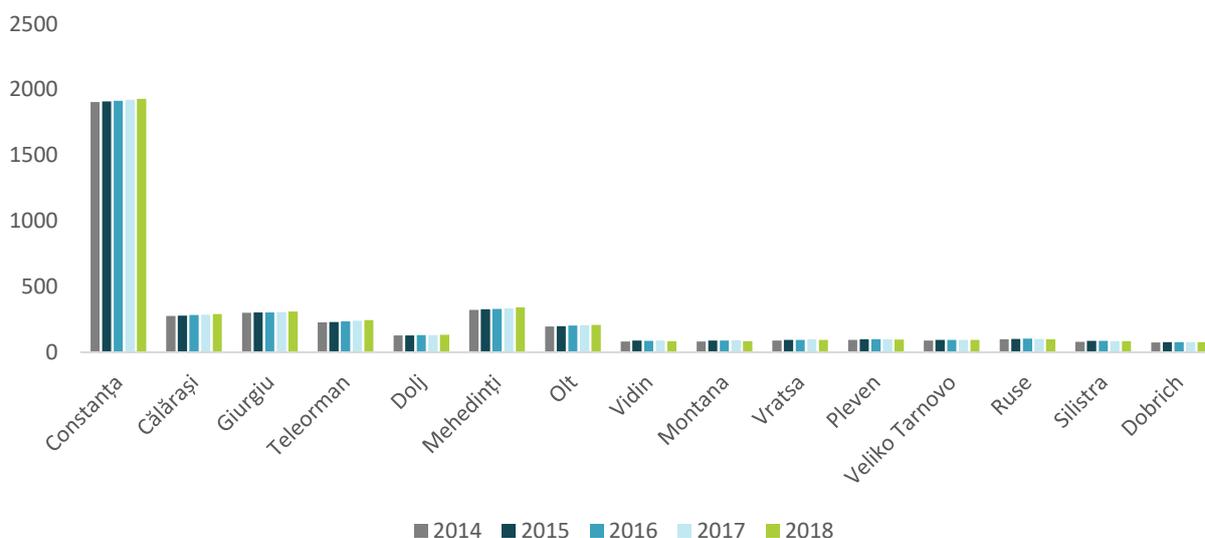
FIGURE 105 EVOLUTION OF THE DRINKING WATER INSTALLATIONS CAPACITY AT COUNTY LEVEL IN BULGARIA, L./DAY/PER CAP., 2014-2018



Source: NIS Romania / NIS Bulgaria

Regarding the drinking water installations capacity in Romania and Bulgaria per capita, it is observed that the Romanian counties have a higher consumption than the districts in Bulgaria. The highest values are recorded in Constanța and Mehedinți, while the lowest values are in Vidin and Dobrich.

FIGURE 106 EVOLUTION OF THE DRINKING WATER INSTALLATIONS CAPACITY IN ROMANIA - BULGARIA AREAS, L./DAY/PER CAP., 2014-2018

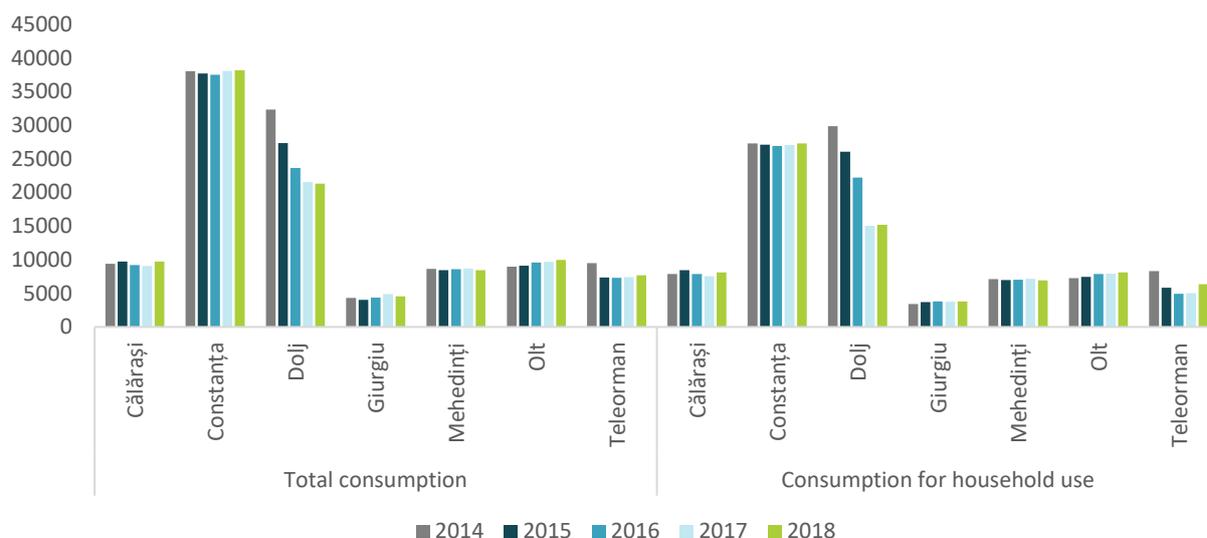


Source: NIS Romania / NIS Bulgaria



The analysis of water consumption data (INSSE) reveals that, in 2018, 75.8% of the water was consumed for the supply of households (75,797 m.c. consumption for household use). During the 2014-2018 period, the total water consumption at county level decreased by about -10% and the household consumption by -16%.

FIGURE 107 EVOLUTION OF WATER CONSUMPTION IN ROMANIA AREAS, THOUSAND, C.M, 2014-2018



Source: NIS Romania / NIS Bulgaria

In terms of access to public wastewater treatment plants, only Dobrich (70.9%) and Ruse (68.7%) are above the national average (63.9%). The lowest rate of population connected to public wastewater treatment plants, is registered in the territory of Bulgaria, in Vidin District by 0.5%. The connection and access to wastewater treatment plants is higher in percentage in the Bulgarian Districts compared to the Romanian counties, but it is considerably below the EU average in the cross-border region. In Romania, Constanța overpasses the national average, with almost 70% of the population connected to the WWTF, but all the other countries are below 50%. This affects the living standards, but also the overall health of the population and the water bodies pollution, due to the effluents that reach the water bodies.



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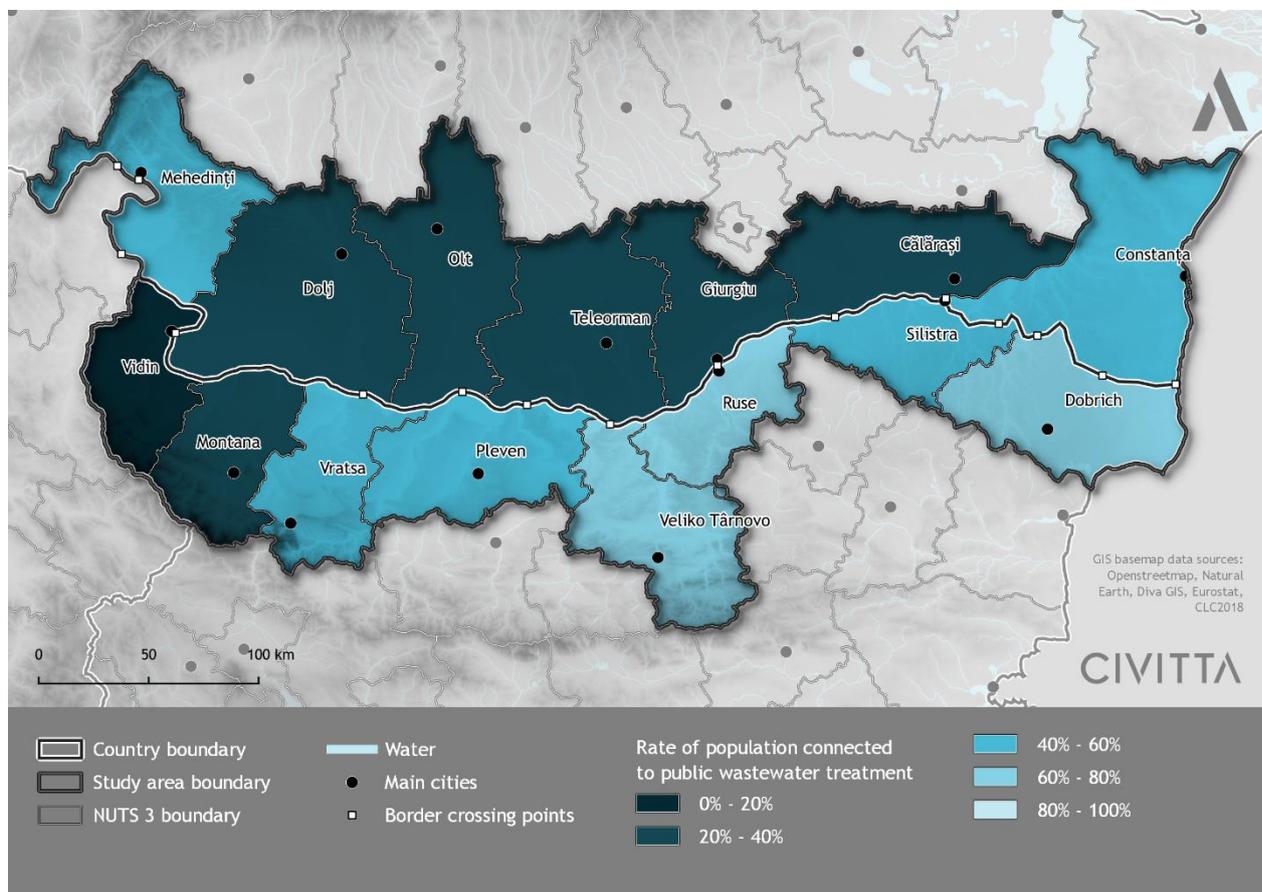


GOVERNMENT OF ROMANIA



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MAP 68 RATE OF POPULATION CONNECTED TO PUBLIC WASTEWATER TREATMENT PLANTS, BULGARIA - ROMANIA AREAS, 2018



Source: NIS Romania / NIS Bulgaria

The energy infrastructure allows both energy supply on the entire Romanian and Bulgarian territories and interconnection with neighbouring energy systems. The largest power plants in the cross-border area are the hydroelectric power station Iron Gates, (in Mehedinți County), the nuclear power plant in Cernavodă, (Constanța County) and the nuclear power plant in Kozlodui (in Vratsa District). The cross-border area Romania - Bulgaria, has high solar energy potential as well, with Constanta County and Dobrich District who have the potential of high wind energy. The cross-border area also has biomass energy potential, with Romanian area benefits form agricultural biomass and the Bulgarian area from forest biomass.

Diversified sources of obtaining hydro, thermal, nuclear and alternative power fosters the possibility to develop new energy capacities. The development of power plants using renewable sources may contribute to reaching the target to increase the power weight from renewable sources in the power end use. More details on energy can be found in Chapter III.



7.8. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

As shown by the demographic analysis (Chapter 6), the decrease of population due to aging is a phenomenon that has affected the Romania-Bulgaria cross-border area over the last years and is deeply rooted in a wider European tendency. In the struggle to attract young citizens, which represent a valuable workforce, regions are competing to offer better living conditions, well paid and diverse work opportunities and good public services. Therefore, territories which are successful in doing this gain more citizens, while others have to withstand a phenomenon of migration and severe ageing.

The social cohesion of the territory is also influenced in a detrimental manner by the poverty factor - the median net income and the median equivalent income being amongst the lowest in Europe. This situation is highly influenced by the country situation, Romania and Bulgaria registering the highest number of citizens in risk of poverty and social exclusion in EU.

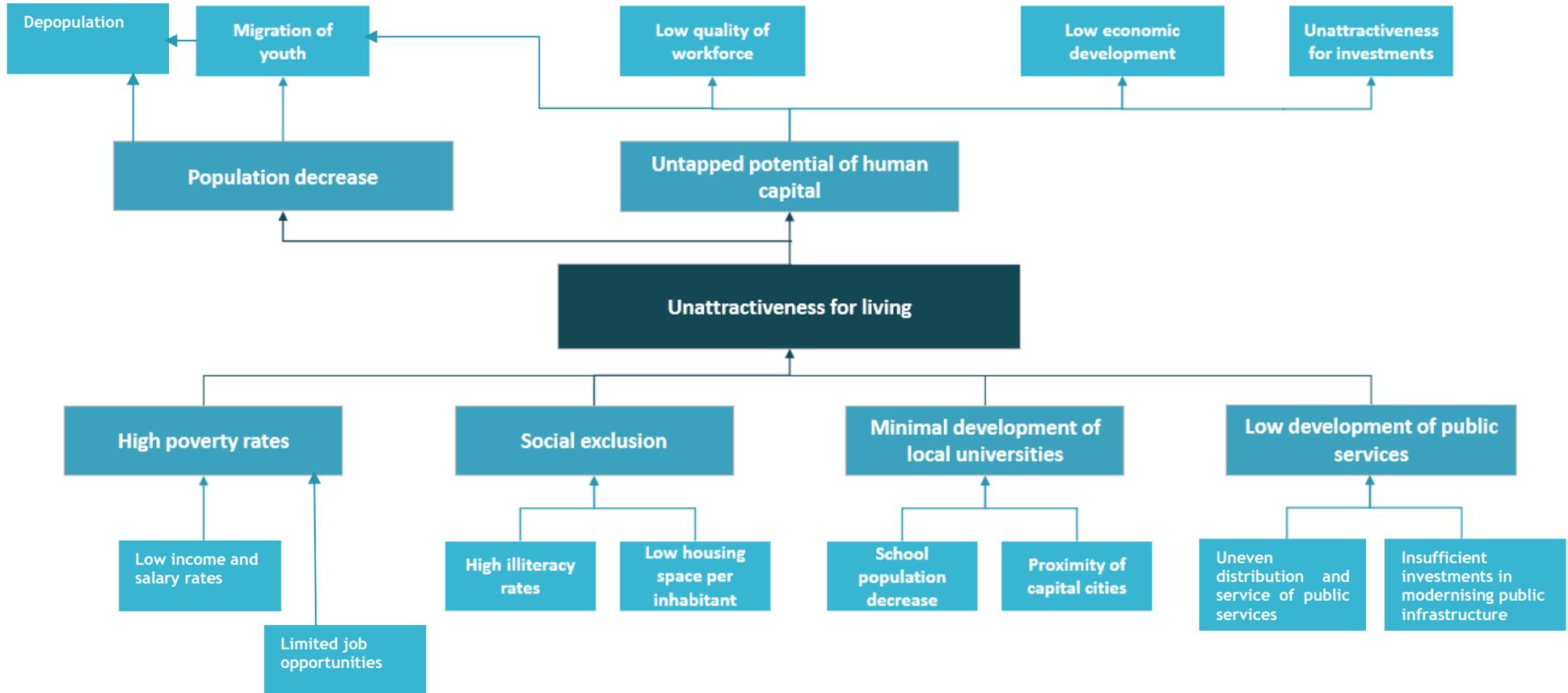
In the Romania-Bulgaria cross-border area, the school population and number of students has been decreasing in the 2012 - 2018 period. While some cities have developed as university centres, their student community is not an important part of the county population as youth prefer to study in capital cities which are close to the cross-border areas and have a wider range of specialisation as well as higher performance rates.

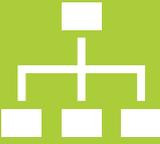
Regarding the provision of public services and a quality lifestyle, in the Romanian cross-border region, hospitals have a wider dispersion throughout the territory and are easily accessible to more areas but the infrastructure and the personnel are crowded when analysed “in per population” ratios. On the other hand, in the Bulgarian side, although hospitals are mostly grouped in fewer urban centres, there are more hospital beds available per 1000 inhabitants, while physicians have less patients on their portfolio.

Living conditions are also a factor that contribute negatively to the attractiveness of the whole cross-border area, as here citizens have a smaller housing space available per person (35 m² in Bulgaria and 21 m² in Romania) compared to the EU 28 average (42.56 m²).

In Romania, the situation regarding access to utilities is also concerning, being below the EU and Bulgarian average. The urban utilities' infrastructure in the cross-border area, both in Romania and in Bulgaria, is precarious and needs to be developed in order to meet European standards. There are similarities between the two cross-border areas in ensuring potable water for population, in Romania the rate of population connected to the central potable water systems is approximate 70%, while in the Bulgarian area the rate is approximate 75%. In terms of population connected to the public sewage system, the situation of the two sides of the cross-border area is different: the Romanian area reports lower percentages than the Bulgarian area, the difference being in some cases around 50%. There is also a significant difference between the two cross-border areas in terms of population connected to the public wastewater treatment plants: the Romanian area reports lower percentages, with some exception (Mehedinți and Constanța), than the Bulgarian area. The differences in access to utilities can also be due to the different reporting methodologies in the two countries.

PROBLEM TREE





GOVERNANCE



8. GOVERNANCE

The current chapter is dedicated to the concept of governance, regarded as a means of facilitating the development and implementation of cooperation initiatives between Romania and Bulgaria. The term of governance is preferred to government or administration, as it is a more comprehensive one and includes these concepts as well, while also providing an insight into the current trends and approaches in managing territorial specificities and flows.

The concept of territorial governance can be defined as “the formulation and implementation of public policies, programmes and projects for the development of a place/territory by:

- coordinating actions of actors and institutions,
- integrating policy sectors,
- mobilising stakeholder participation,
- being adaptive to changing contexts,
- identifying place-based/territorial specificities and impacts.”¹²³

This definition is relevant to the present analysis as it emphasizes the main needs of territorial management nowadays, with reference on the one hand, to the participation of local stakeholders in the development of a territory, and on the other hand, to the design of place-based approaches that can be more adequate to the local / regional / national specificities.

Considering the complexity and the extent of the Romania-Bulgaria cross-border area, there are numerous challenges that require cooperation and policy response, both in terms of fragmentation (comprising political, social, economic, geographic and cultural aspects) and interdependencies (with reference to the bidirectional flows of people, goods and information and the externalities of development). These challenges are similar to the ones identified in territories at European level¹²⁴, but they need a dedicated approach in which by promoting cooperation through territorial governance, a more efficient management of the area can be achieved. This cooperation does not refer only to the partnership between the two countries, but also to the involvement of other relevant stakeholders following the quintuple helix model. This model “provides the framework for innovation and sustainable territorial development by integrating: the academic system, the political system, the economic system, the community representatives, and the environment”¹²⁵, but there also needs to be a strategy to address the obstacles that could occur during these cooperation processes between multiple and different stakeholders.

Last but not least, the current chapter regards the Romania - Bulgaria cross-border area as a functional area in which the cooperation process has brought and could bring even more benefits from transforming the border into a source of development, rather than a barrier. These advantages could provide:

¹²³ ESPON, 2014. *Towards better territorial governance in Europe; a guide for practitioners, policy and decision makers based on contributions from the ESPON TANGO Project*. ESPON 2013 Programme

¹²⁴ ESPON, 2019. *State of the European territory*. ESPON 2020 Cooperation Programme

¹²⁵ Romanian Ministry of Regional Development and Public Administration, 2018. *Functional Areas in Member States of the Council of Europe. Preparatory Study for the 17th Session of the Council of Europe Conference of Ministers Responsible for Spatial Planning (CEMAT)*

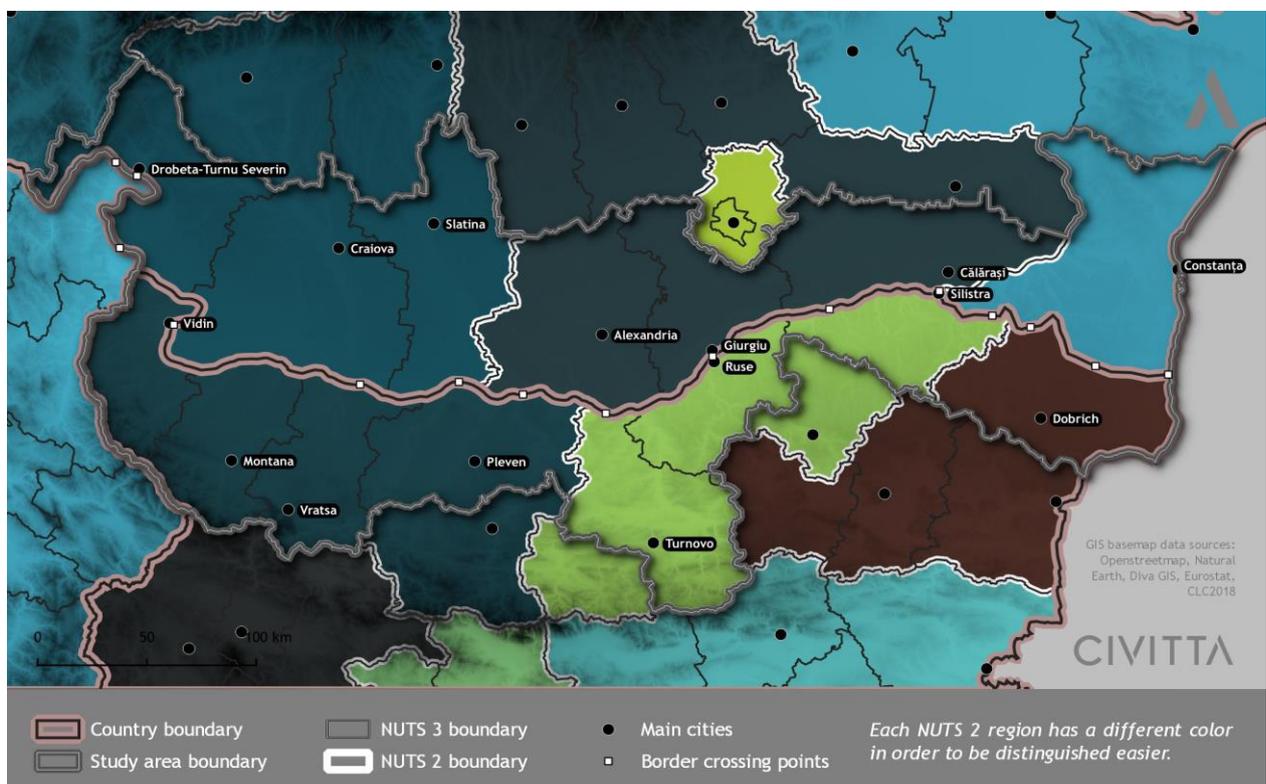


- An increase in critical mass for efficiency of investments;
- The development of more complex knowledge networks;
- The means to overcome peripherality both at European level and regarding inner-peripheralities;
- Complementarities in regional supply chains;
- An increase in international recognition as a cohesive territory with a strong identity;
- A better management of flows of people, goods and services that exceed the administrative boundaries;
- An opportunity to gather data and information at territorial level for an overview of the cross-border area.

8.1. THE ADMINISTRATIVE STRUCTURE

The Romania - Bulgaria cross-border area is composed of 15 NUTS 3 units in both countries, which are part of 6 larger NUTS 2 development regions. The NUTS 2 regions are not fully included in the programme area. As these development regions are responsible for the ERDF management, the difference between their full extent and the territory covered by the programme can represent an obstacle in planning and in the correlation with complementary programmes and sources of funding.

MAP 69 THE ROMANIA - BULGARIA CROSS-BORDER AREA



Source: By the author



Bulgaria and Romania are both centralized unitary states with only one intermediary level of administration units between the central government and the local/municipal authorities: the districts (oblasti) in Bulgaria and the counties (județe) in Romania. Even though both states have a similar communist past, their administrative systems show a series of differences, while they have also been subject to several transformations since the EU accession. These are factors that can constitute both obstacles and opportunities for cooperation between the two countries.

8.1.1. ROMANIA

Romania is a unitary state which is based on the principles of decentralisation and local autonomy as stated in the Romanian Constitution: “public administration in the territorial-administrative units is based on the principles of decentralisation, on local autonomy and deconcentrating public services”¹²⁶. However, few steps have been taken towards a higher level of decentralisation, the country being characterised by excessive territorial fragmentation, which on various occasions leads to an incapacity to support the provision of public services at local level and to the dependency on higher levels of administration.¹²⁷

In terms of regionalisation, Romania has not adopted in recent years any regulation regarding the decentralisation process. However, in 2004, previous to the EU accession, Law no. 315/2004 introduced eight **development regions**, that represent the NUTS 2 level in Romania. They do not represent a new level of administration, but they serve the purposes for ERDF management and statistical analysis and planning.

With regard to the administrative structure, Romania is divided into 41 **counties** (NUTS 3 level) which are administered by the County Council and a prefect, who is appointed by the central government to act as a representative of the government at local level and to revise the legality of acts adopted by the County Council. The counties are responsible for:

- *Own competencies:*
 - *Management of local airports;*
 - *Management of public and private domain of the County;*
 - *Management of cultural institutions of County interest;*
 - *Administration of public health units of the County;*
 - *Primary social services and specialised services for victims of domestic violence;*
 - *Issuing of permits / authorizations;*
 - *Medical care provided in local public health units;*
 - *Other competencies established by law.*
- *Shared competences with central public administration:*
 - *Management of road infrastructure of County interest;*
 - *Special education;*
 - *Medical care and social services for people with social problems;*
 - *Primary social services and specialised services for the child protection;*

¹²⁶ Romanian Constitution, Art. 120

¹²⁷ European Commission, 2018. *Public administration characteristics and performance in EU28: Romania*



- *Specialised social services for people with disabilities;*
- *Specialised social services for the elderly;*
- *Public community service of personal records;*
- *Agricultural consultancy at the county level;*
- *The financing of personnel costs for doctors and nurses, as well as medical and sanitary expenses in medical and social care units;*
- *Other competencies established by law.*
- *Delegated competences:*
 - *The County Council exercises competences delegated by central public administration authorities on payment of allowances for children and adults with disabilities.*¹²⁸

The local administration level in Romania is formed of **communes, towns and cities** (the LAU 2 level), which is the level where local autonomy is exercised. In total, in Romania there are 319 urban localities (towns and cities) and 2862 communes. They are governed by a Local Council and a Mayor which are directly elected by the people. The cities, towns and communes are responsible for:

- *Own competencies:*
 - *Management of public and private domain of the State;*
 - *Management of road infrastructure of local interest;*
 - *Management of local cultural institutions;*
 - *Administration of local public health units;*
 - *Water supply;*
 - *Sewerage and treatment of wastewater and pluvial waters;*
 - *Public lighting;*
 - *Sanitation;*
 - *Social services for child protection and for the elderly;*
 - *Social services and specialised services for victims of domestic violence;*
 - *Community health care;*
 - *Medical care provided in local public health units;*
 - *Local public passenger transport;*
 - *Issuing of permits / authorizations;*
 - *Other competences established by law.*
- *Shared competences with central public administration*
 - *The heat supply produced in a centralized system (district heating);*
 - *Construction of social housing for youth;*

¹²⁸ <https://portal.cor.europa.eu/divisionpowers/Pages/Romania.aspx> based on the Framework Law n°195/2006 on decentralisation, revised by GEO no. 42/2016



- *Pre-university education, excepting special education;*
- *Public order and safety;*
- *Granting of social assistance to people in need;*
- *Prevention and management of local emergencies;*
- *Medical care and social services to people with social problems;*
- *Social services for people with disabilities;*
- *Social services for the elderly;*
- *Public community services of personal records;*
- *Management of road infrastructure of the communes;*
- *The financing of personnel costs for doctors and nurses, as well as medical and sanitary expenses in medical and social care units;*
- *Urban planning and urbanism;*
- *Delegated competences:*
 - *Local government authorities exercise competences delegated by central public administration authorities on payment of allowances for children and adults with disabilities.¹²⁹*

In addition, the capital city of Bucharest has an equal status with the 41 counties and it is administered by the General Mayor and the General Council. The city of Bucharest is also divided into six districts, each with its own Local Council and Mayor.

TABLE 30 THE ADMINISTRATIVE STRUCTURE OF THE ROMANIAN AREA

ROMANIAN AREA		
NUTS 2 area	Counties	Local level
South - West	Mehedinți	2 cities, 3 towns, 61 communes
	Dolj	3 cities, 4 towns, 104 communes
	Olt	2 cities, 6 towns, 104 communes
South - Muntenia	Teleorman	3 cities, 2 towns, 92 communes
	Giurgiu	1 city, 2 towns, 51 communes
	Călărași	2 cities, 3 towns, 50 communes
South - East	Constanța	3 cities, 8 towns, 59 communes

¹²⁹ <https://portal.cor.europa.eu/divisionpowers/Pages/Romania.aspx> based on the Framework Law n°195/2006 on decentralisation, revised by GEO no. 42/2016



8.1.2. BULGARIA

Bulgaria is also a unitary state which recognises the principle of local self-government through its Constitution. Although it is still a highly centralised state, during past years Bulgaria has introduced or has debated several amendments and reforms of the national administrative system, varying from financial aspects to the revision of responsibilities, which aim to improve the overall level of decentralisation.

The territorial administration in Bulgaria is comprised of three levels - central, regional (districts) and municipal and it is composed of two NUTS 1 regions, six NUTS 2 level planning regions, 28 districts (NUTS 3 level), including the district of Sofia, and 265 municipalities (LAU 1 level). The main difference from the Romanian system is the lack of the LAU 2 level as an administrative layer. This could represent an obstacle in the cooperation of similar localities from both countries, but which do not have the same statute.

In Bulgaria, **districts** play a more statistical and administrative role as divisions of the central Government that oversee policy coordination. They are administrated by a Regional / District Governor, who is appointed by the central government and supported by a regional / district administration. The tasks of the Governors include:

- *The implementation of government policies in the region;*
- *The reconciliation of national and local interests;*
- *The preservation and protection of State property within the region;*
- *The observance of the law within the region and exercising administrative control;*
- *Control over the lawfulness of the acts and actions of the bodies of local self-government and local administration;*
- *Controlling the lawfulness of the acts and actions of government agencies, organisations and enterprises within the region;*
- *Organising the defence-mobilisation readiness of the population; supervise civil defence in the event of disasters and accidents, and assume responsibility for the protection of public order.*¹³⁰

Municipalities are the basic administrative territorial units of self-governance which over the years have acquired a series of competences complemented by a certain degree of financial autonomy since they can get involved in economic activities and levy taxes. In terms of governance, they are run by an elected Mayor, as the local chief executive, and an elected Council, as the local legislative body.¹³¹ Municipalities have competences in issues regarding:

- *Municipal property, municipal enterprises, municipal finances, taxes and fees, municipal administration;*
- *The organisation and development of the municipal territory and its component inhabited places;*
- *Education, including: pre-school, primary, basic and secondary;*
- *Health care, including: out-patient and hospital care, health prevention, community care and sanitation;*

¹³⁰ <https://portal.cor.europa.eu/divisionpowers/Pages/Bulgaria-Introduction.aspx> based on the Local Self-Government and Local Administration Act

¹³¹ European Commission, 2018. *Public administration characteristics and performance in EU28: Bulgaria*



- *Culture, including: community clubs, theatres, orchestras, libraries, museums and museum collections, amateur art, rituals, local traditions and customs;*
- *Public utilities and communal services, including: water and sewer, electricity, heating, telephone, streets and squares, parks and gardens, street lighting, green spaces, adjustment of river courses and gullies, domestic waste disposal, local public transport, local bath-houses, laundries, hotels, garages and cemeteries;*
- *Social assistance, including: social care and allowances, social housing, and other similar activities of local importance;*
- *Protection of the natural environment and rational use of the natural resources of local importance;*
- *Conservation of cultural, historic and architectural monuments of local importance, and*
- *Sports, recreation and tourism of local importance;¹³²*
- Emergency management.

TABLE 31 THE ADMINISTRATIVE STRUCTURE OF THE BULGARIAN AREA

BULGARIAN AREA		
NUTS 2 area	Districts	Municipalities
Severozapaden	Vidin	11 municipalities
	Montana	11 municipalities
	Vratsa	10 municipalities
	Pleven	11 municipalities
Severn tsentralen	Veliko Tarnovo	10 municipalities
	Ruse	8 municipalities
	Silistra	7 municipalities
Severoiztochen	Dobrich	8 municipalities

¹³² <https://portal.cor.europa.eu/divisionpowers/Pages/Bulgaria-Introduction.aspx> based on the Local Self-Government and Local Administration Act



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GOVERNMENT OF BULGARIA

8.2. DECENTRALISATION AND COOPERATION

In terms of **decentralisation**, as mentioned in the previous sections, both Romania and Bulgaria are highly centralised countries with a relative low local fiscal autonomy and a heavy dependence on central government subsidies and financial redistribution at national level. This aspect is also proven by the total share of central government expenditure, compared to the local government share, which in both countries in 2015 it amounted to approximately 70%, or the share of central government employment which in 2015 was 76.1% in Bulgaria and 42% in Romania¹³³. However, during the last years, the subject of decentralisation has been of great interest to both countries, especially in Bulgaria where a new administrative reform in this respect is currently being debated.

In addition, **horizontal cooperation** between public authorities from different sectors / administrative units or between public and private stakeholders, while still relatively limited, has been significantly increased in recent years. One example is the establishment of Local Action Groups as a means of association between different stakeholders in order to foster the development of mainly rural areas. According to the LAG Database of The European Network for Rural Development, in Bulgaria there are currently 72 LAGs, while in Romania the number is much higher, reaching the value of 261 entities¹³⁴, which also includes territories from the cross-border area and LAGs involved in cross-border cooperation initiatives in joint projects for preserving and promoting local traditions and activities (a more detailed analysis of the use of tools for integrated territorial development in Romania and Bulgaria is presented in the following section). What is more, both countries are developing the culture of association through other tools as well, such as inter-community development associations (IDAs) in Romania, which allow local and county authorities to cooperate in order to provide a more efficient management of public services or even of metropolitan areas. Similar instruments have also been identified in Bulgaria, in terms of associations established for the provision of common public services to citizens, such as Regional Waste Management Associations and the Water and Sewerage Associations.

Regarding the subject of stakeholder involvement, another important aspect is represented by **societal consultation** as an indicator of administration transparency and the level of integration of place-based approaches. In this respect, both countries have made significant progress in developing participatory processes in which the local community can express their opinion regarding local, regional or national initiatives, projects or public policies. However, the practice of involvement is still underdeveloped, both because of the methods used that indicate the lack of experience or interest from the public authorities to obtain relevant inputs, or because of the lack of trust from the stakeholders that their opinion is going to be taken into consideration and that tangible results are going to be provided.

All of these are indicative of the **level of trust** the community and the local stakeholders have in the government, as well as in the effectiveness of the governance process. Considering that the general opinion is usually of distrust towards all levels of government in Romania and Bulgaria, an enhanced cross-border cooperation could also favourably contribute to the capacity of public actors, and not only, in these countries.

¹³³ European Commission, 2018. *Public administration characteristics and performance in EU28: Bulgaria and Public administration characteristics and performance in EU28: Romania*

¹³⁴ https://enrd.ec.europa.eu/leader-clld/lag-database/_en



TABLE 32 INDICATORS OF GOVERNMENT PERFORMANCE IN ROMANIA

INDICATORS IN ROMANIA	EVOLUTION OF VALUES AND RANKINGS			
Access to government information (1-10)	Value 2014	EU28 rank	Value 2016	EU28 rank
	7.00	15	6.00	23
Transparency of government (0-100)	Value 2013	EU28 rank	Value 2015	EU28 rank
	16.57	28	23.57	27
Control of corruption (-2.5, +2.5)	Value 2010	EU28 rank	Value 2015	EU28 rank
	-0.22	28	-0.05	26
Societal consultation (1-10)	Value 2014	EU28 rank	Value 2016	EU28 rank
	3.00	26	4.00	23
Trust in government (%)	Value 2010	EU28 rank	Value 2016	EU28 rank
	12.00	28	24.00	19
Government effectiveness (-2.5, +2,5)	Value 2010	EU28 rank	Value 2015	EU28 rank
	-0.25	28	-0.04	28

Source: European Commission, 2018. Public administration characteristics and performance in EU28: Romania

TABLE 33 INDICATORS OF GOVERNMENT PERFORMANCE IN BULGARIA

INDICATORS IN BULGARIA	EVOLUTION OF VALUES AND RANKINGS			
Access to government information (1-10)	Value 2014	EU28 rank	Value 2016	EU28 rank
	7.00	15	7.00	16
Transparency of government (0-100)	Value 2013	EU28 rank	Value 2015	EU28 rank
	38.29	19	33.57	24
Control of corruption (-2.5, +2.5)	Value 2010	EU28 rank	Value 2015	EU28 rank
	-0.21	27	-0.31	28
Societal consultation (1-10)	Value 2014	EU28 rank	Value 2016	EU28 rank
	5.00	15	5.00	17
Trust in government (%)	Value 2010	EU28 rank	Value 2016	EU28 rank
	43.00	8	24.00	19
Government effectiveness (-2.5, +2,5)	Value 2010	EU28 rank	Value 2015	EU28 rank
	0.11	27	0.22	27

Source: European Commission, 2018. Public administration characteristics and performance in EU28: Bulgaria

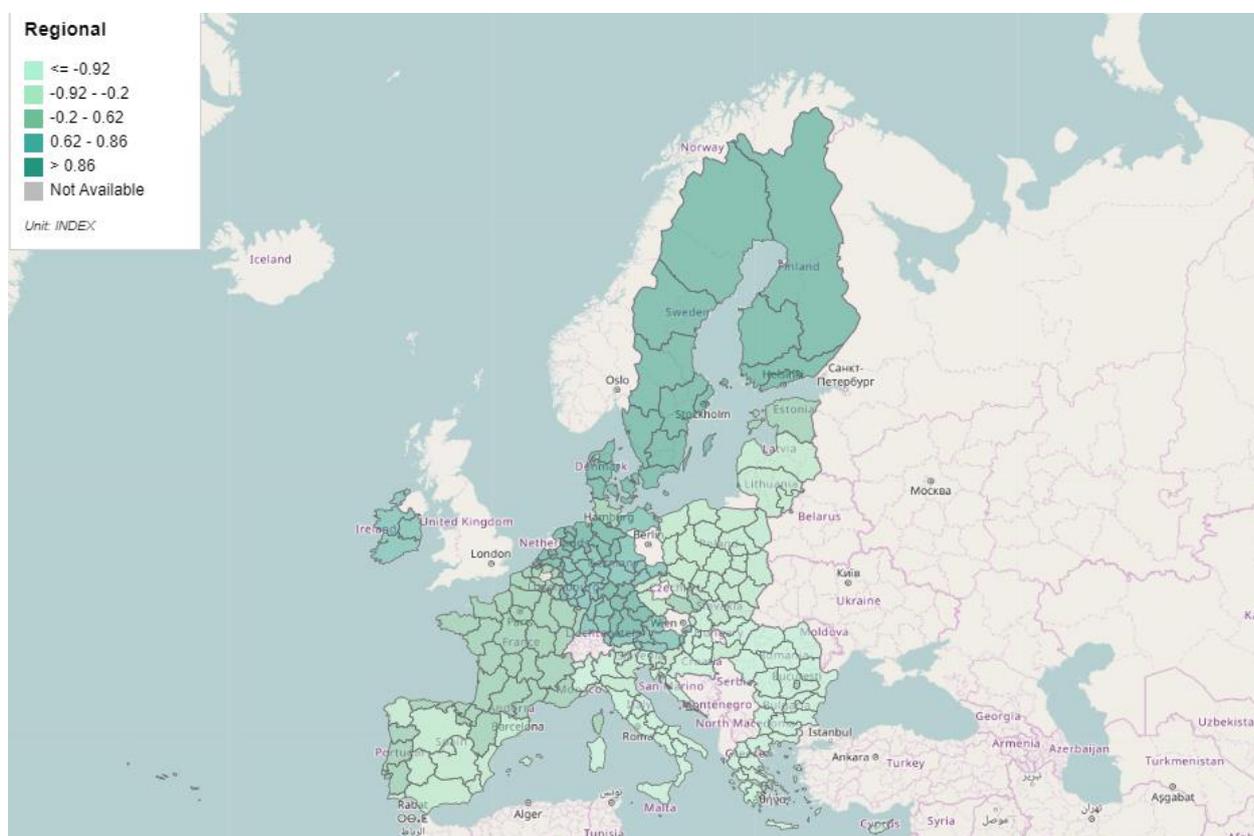
Analysing the indicators on quality of governance at national level, as well as a series of indexes at NUTS 2 level, compared to the European territory, Romania and Bulgaria and their development regions included in the cross-border area usually rank among the last ones at



European level. At regional level, the South-Muntenia region in Romania and Severn Tsentralen region in Bulgaria register slightly higher values regarding the overall quality of governance, the impartiality dimension, as well as the corruption dimension. This is due in part to the development level of the regions provided by the proximity of the capital city of Romania, Bucharest, and by the increased connectivity between the two countries through the Giurgiu - Ruse bridge.

The low quality of governance is hampering the development of regions with lower growth rates and its dimensions should be addressed by tailored measures, as “low quality government affects regional environmental performance and decisions on public investment and threatens inclusiveness and participation in the political process”¹³⁵. Consequently, administrative capacity can also be a determinant factor in the success of cross-border cooperation initiatives.

MAP 70 QUALITY OF INSTITUTIONS INDEX 2019, AT NUTS2 LEVEL

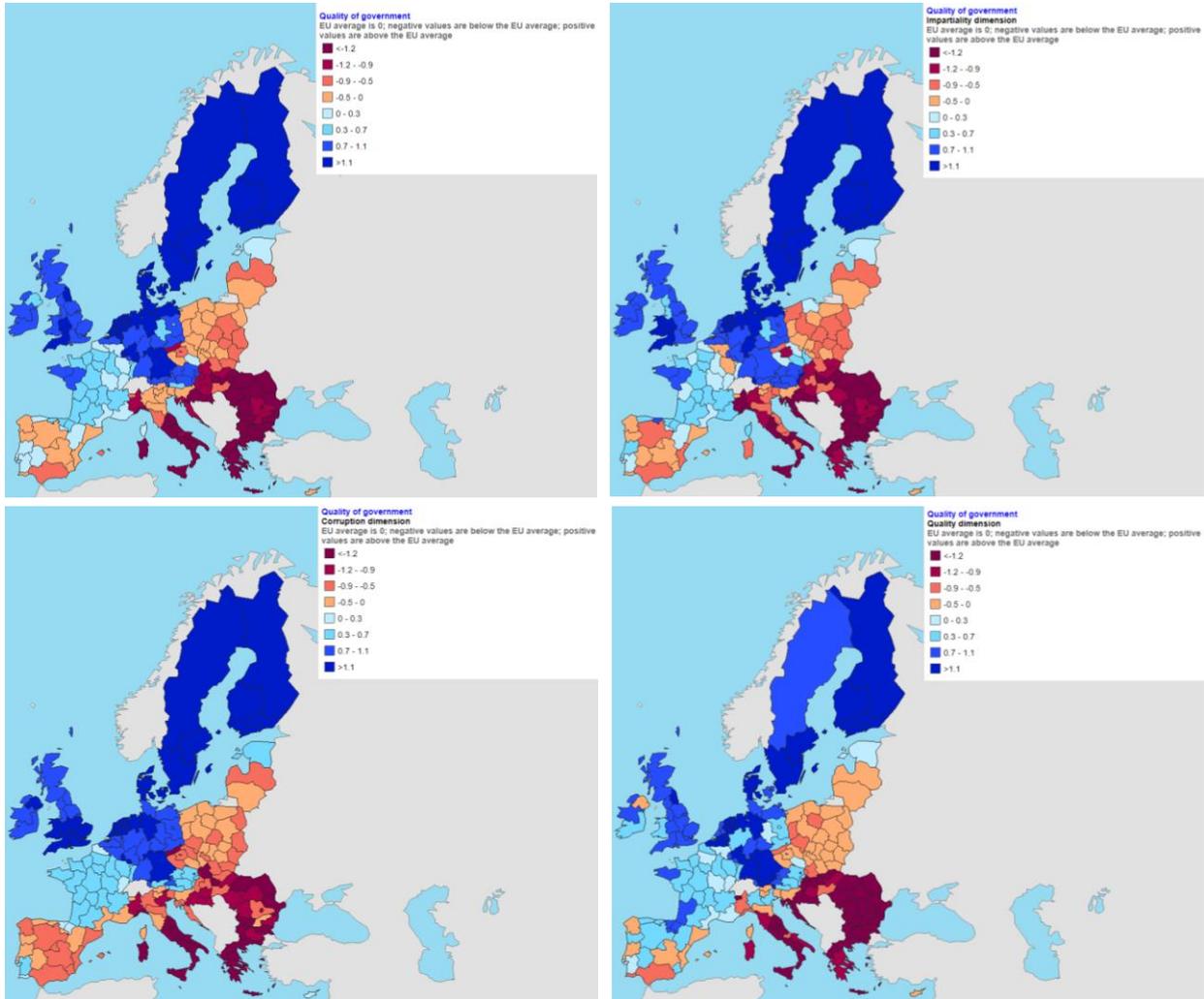


Source: <https://urban.jrc.ec.europa.eu/>

¹³⁵ European Commission, 2017. *My Region, My Europe, Our Future - Seventh report on economic, social and territorial cohesion*



MAP 71 QUALITY OF GOVERNANCE INDEX 2019 AND ITS CONSTITUENT DIMENSIONS (IMPARTIALITY, CORRUPTION AND QUALITY DIMENSIONS), AT NUTS 2 LEVEL



Source: https://ec.europa.eu/regional_policy/en/information/maps/quality_of_governance

With regard to the **cooperation dimension between Romania and Bulgaria**, this practice has been implemented mainly since the pre EU accession period, through programmes such as CBC Phare 1998-2006 and continued with the CBC Romania - Bulgaria 2007 - 2013, as well as by means of the Euroregions established between partners in the cross-border area (for example, “Dunărea 21”, “Giurgiu-Ruse”, “Dunărea de Sud” or “Danubius”).

The current programming period (2014-2020) has been marked by the access to the CBC Programme Interreg V-A Romania - Bulgaria whose goal was to “bring together people, communities and economies of the Romania-Bulgaria border region to participate in the joint development of a cooperative area, using its human, natural and environmental resources and advantages in a sustainable way”. The main three categories of beneficiaries of this programme were:

- *National (ministries/agencies and their regional structures, e.g. regional inspectorates), regional or local public authorities (e.g. counties/districts, municipalities etc.)*
- *Public sector operators (e.g. universities, schools, museums, theatres, libraries etc.)*
- *Non-governmental organizations (foundations, associations, chambers of commerce and industry, clusters, business/innovation support centres etc.)*¹³⁶

These categories indicate that the programme provided the opportunity for partnership and implementation of mutual projects by a great diversity of public and non-governmental stakeholders, therefore promoting the principles of horizontal cooperation. Regarding the territorial results, although there is a relatively equal distribution of funding among urban and rural areas, a series of NUTS 3 units benefited more from this programme, since they attracted over 2/3 of the entire budget available (Constanța, Dolj and Giurgiu in Romania and Ruse, Pleven and Dobrich in Bulgaria)¹³⁷. The main obstacle encountered in the cooperation process has been the presence of the river Danube, as it continues to act as a major physical barrier between the two countries because of the limited connectivity between its two banks.

In addition to the Interreg V-A Romania-Bulgaria Programme, interventions in the area could also be funded by a series of complementary programmes such as: Danube Transnational Programme, Black Sea Basin Programme 2014-2020, Interreg Europe 2014-2020 Programme, INTERREG Balkan-Mediterranean 2014-2020 Programme, Interreg-IPA CBC Romania-Serbia Programme or Interreg IPA-CBC Bulgaria-Serbia Programme. These have been supplemented by the national sources of funding available such as Operational Programmes, state and local budgets or private investments.

With regards to the **future policies**, a series of studies, reports, papers etc. have begun to underline future priorities for European territorial development, including cross-border areas. For example, the ESPON ETRF study (2019) proposes a framework for territorial cooperation that should provide a more comprehensive approach on territories with common challenges, opportunities and interdependencies across administrative borders and not only. This approach is based on three categories of cooperation: between places, between sectors and between groups of society, therefore promoting an inclusive and sustainable future development.

¹³⁶ ESPON, 2019. *Territorial Impact Assessment for Cross-Border Cooperation*, Targeted Analysis, ESPON 2020 Cooperation Programme

¹³⁷ Ibidem



TABLE 34 FRAMEWORK FOR TERRITORIAL COOPERATION

MEDIUM SCALE - COORDINATION OF POLICIES AND STRATEGIES FOR LARGER FUNCTIONAL AREAS OR GLOBAL INTEGRATION ZONES	ACTION LEVEL - COOPERATION ON CONCRETE IMPLEMENTATION ACTIONS E.G. IN LOCAL FUNCTIONAL AREAS
Cooperation between places	
<ul style="list-style-type: none"> • Maritime Spatial Planning • Accessibility • Transport • Energy • Integration with non-EU countries (in macro-regions) • Ecosystem services • Protected areas management • Catchment areas • Education 	<ul style="list-style-type: none"> • Social services • Labour market integration and jobs • Pedestrian border crossings between EU and non-EU • Mobility incl. green mobility • Public transport • Commuting (easing legal settings across borders, joint bus lines etc.) • Blue / green infrastructure • Waste management • Renewable energy • Transition town movement • Coastal development • Tourism • Capacity building • Spatial plans for cross-border areas • Digitalisation in planning • Statistics on local flows over international borders
Cooperation between sectors	
<ul style="list-style-type: none"> • Connectivity • Social affairs • Housing • Employment • Mobility • Nature protection • Hospitals • Education, training 	<ul style="list-style-type: none"> • Circular economy • Healthcare • Mobility • Housing • Regional waste management • Capacity building
Cooperation between groups of society	
<ul style="list-style-type: none"> • Education • Climate change adaptation 	<ul style="list-style-type: none"> • Green infrastructure • Cultural exchanges



MEDIUM SCALE - COORDINATION OF POLICIES AND STRATEGIES FOR LARGER FUNCTIONAL AREAS OR GLOBAL INTEGRATION ZONES	ACTION LEVEL - COOPERATION ON CONCRETE IMPLEMENTATION ACTIONS E.G. IN LOCAL FUNCTIONAL AREAS
<ul style="list-style-type: none"> Labour market integration 	<ul style="list-style-type: none"> Digitalisation Sharing economy (incl. car sharing, banks of time, temporary & flexible housing, co-housing/co-living) Shrinking communities (incl. declining border regions) Extreme weather events Silver society-ageing, public service for people over 70 Entrepreneurship in smart specialisation (quadruple helix) Public spaces Energy transition Non-motorised mobility Pre-schools

Source: ESPON ETRF (2019)

In addition, a more detailed perspective is offered by the Territorial Agenda 2030 which emphasizes that territorial challenges and opportunities at European level could be more efficiently addresses through a series of principles regarding societies and the environment at the same time. Such principles regard:

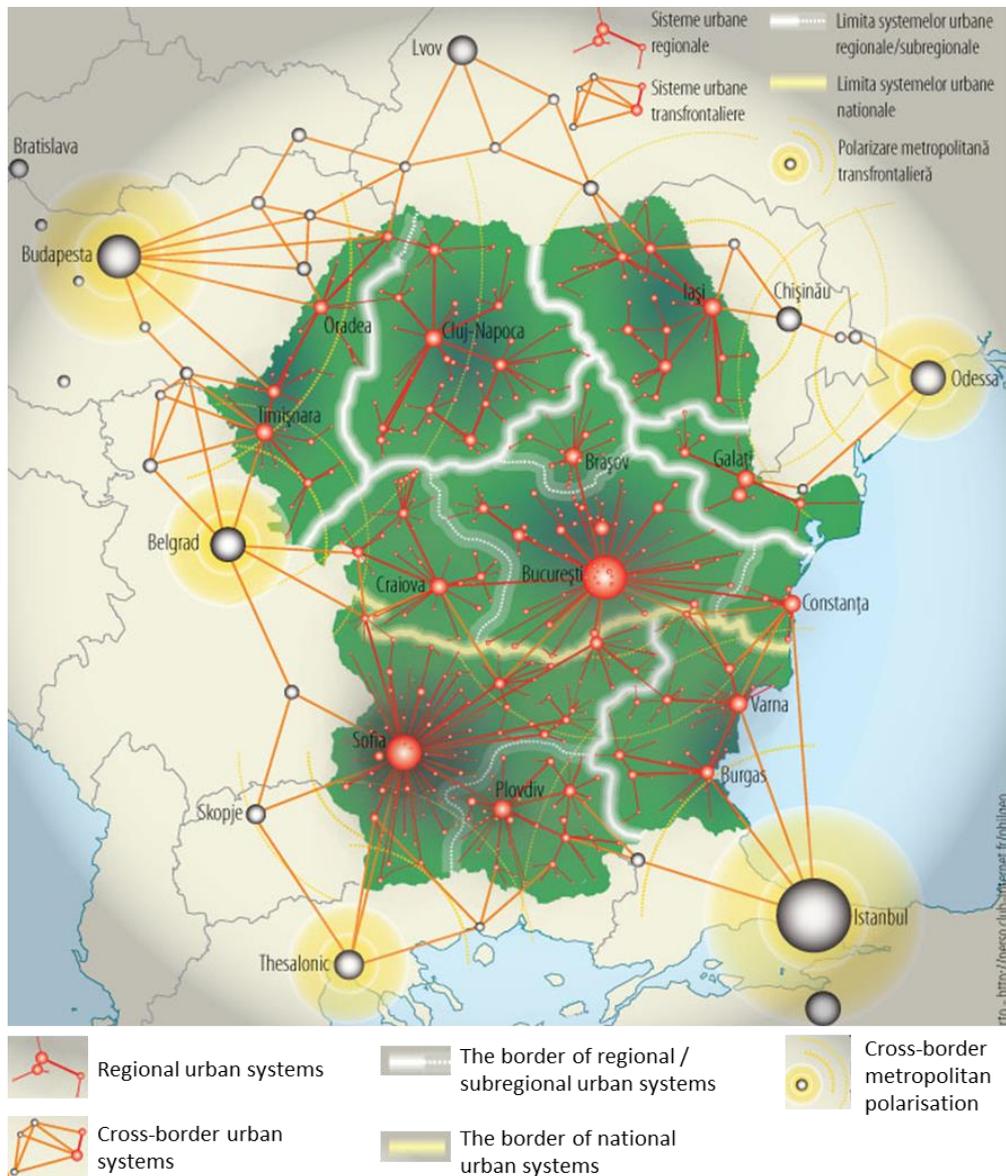
- the opportunity of cooperation in polycentric networks of cities and regions;
- the need for an integrated multilevel governance approach, focusing on place-based strategies;
- the necessity to correlate local, regional and national strategies with cross-border needs for partnership in order to reduce the obstacles in cooperation;
- the importance of the development of nature-based solutions and green infrastructure networks;
- the opportunity for the transition to a circular economy and the enhancement of innovation capacities;
- the need for a digital infrastructure with a low carbon footprint;
- the need to further develop the transport infrastructure and to explore new models for mobility as a service etc.



8.3. TERRITORIAL COOPERATION AND POLYCENTRIC DEVELOPMENT

The Romania - Bulgaria cross-border area is characterised by a certain level of cohesion, based on the territorial interdependencies between the two countries and can hence be considered and analysed as a functional area. The main development engines of the territory are the major urban centres which have the capacity to attract socio-economic development, while also influencing their surrounding territories. In this context, it is also important to identify the main internal and external poles that could support the development of the area through a **polycentric network**.

MAP 72 REGIONAL AND CROSS-BORDER URBAN SYSTEMS



Source: The Territorial Atlas of Romania, 2006



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There are four major urban centres connected to the Romania - Bulgaria cross-border area: Bucharest, Sofia, Belgrade and Istanbul. Their proximity determines the main directions of flows and exchanges of people and goods. At regional level, there are also several important cities that have influence over their metropolitan areas such as Constanța and Craiova in Romania and Ruse, Plevn, Dobrich and Veliko Tarnovo in Bulgaria.

A successful cooperation between the two countries could be measured in the amount of cross-border interactions, especially inside the network of cities and their surrounding territories. These interactions are dependent on the size and importance of the cities, as well as on their accessibility and the distance from each other. Unfortunately, the Romania - Bulgaria cross-border area is still not characterised by strong synergies, both because of the limited number of connections between the two countries over the Danube, as well as the low density of major urban centres¹³⁸. In order to increase the interconnectivity between Romania and Bulgaria, on the one hand it is important to develop new physical linkages between the most important cities and transport routes at national and regional level, while on the other hand, the role of small and medium sized cities and towns should be strengthened. This is particularly the case of pairing cities and towns on both sides of the Danube that are already developed or have the potential to establish new urban systems. Currently, the urban system formed by the cities of Giurgiu (Romania) and Ruse (Bulgaria) is the most important one - it is also the largest cross-border urban system in Europe, with more than 200.000 people living in these cities.

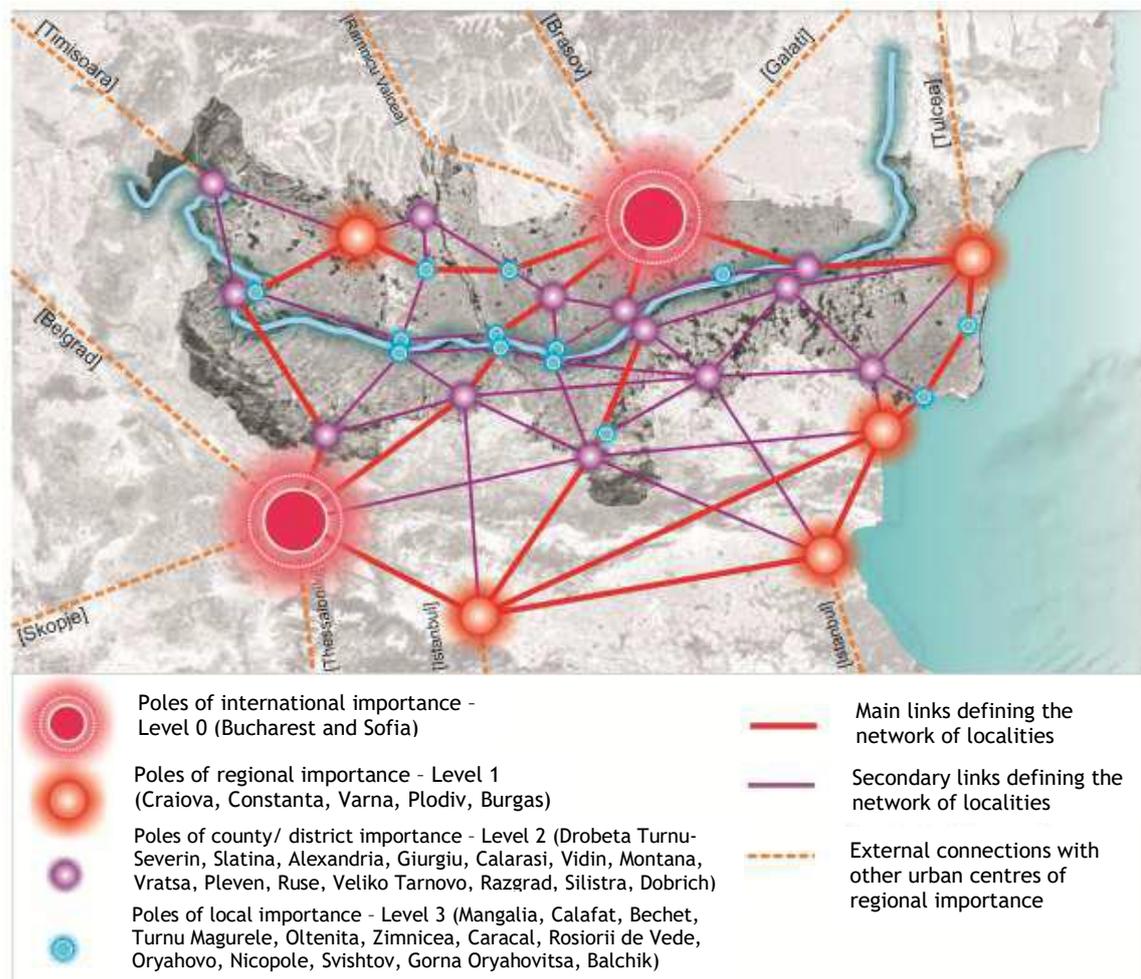
The SPATIAL¹³⁹ territorial analysis also looked at the potential for polycentric development of the cross-border territory and proposes a territorial development model based on the improvement of local and regional links between 4 types of development poles, as follows:

¹³⁸ SPATIAL *Common Strategy for Sustainable Territorial Development of the cross-border area Romania - Bulgaria (2015)*

¹³⁹ Idem ⁷⁵



MAP 73 TERRITORIAL DEVELOPMENT MODEL OF THE CROSS-BORDER AREA



Source: SPATIAL Common Strategy for Sustainable Territorial Development of the cross-border area Romania - Bulgaria (2015)

In this context, territorial cooperation should pursue¹⁴⁰:

- Increasing the economic competitiveness of the cross-border area by expanding the level of connectivity with the transport and power system of the European Union, achieved through operations aiming to improve Danube navigation and to modernize the harbour infrastructure;
- Strengthening the economic, social and territorial cohesion by developing the urban network of the cross-border area through operations meant to reanimate the cities and to improve connections between cities and surrounding rural areas;
- Providing sustainable development of the cross-border area, by valorising natural and cultural potential for tourism, through operations means to protect, restore or rebuild

¹⁴⁰ In accordance with the *SPATIAL Common Strategy for Sustainable Territorial Development of the cross-border area Romania - Bulgaria (2015)*

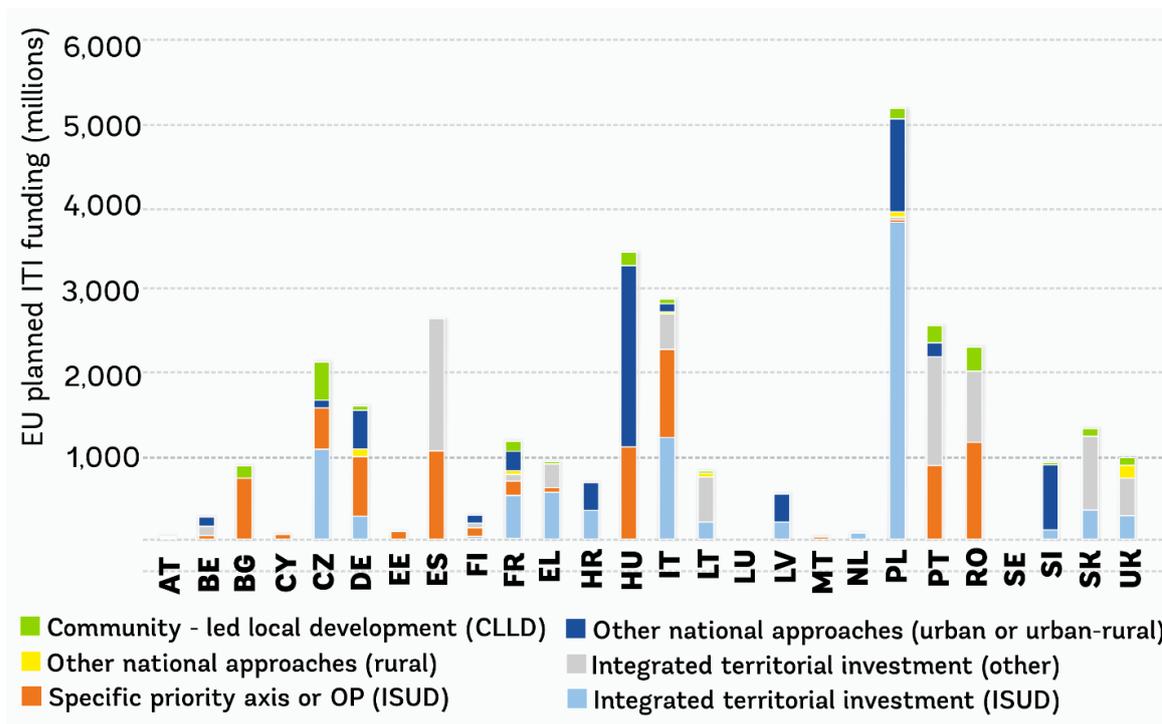


the environment of the Danube, along with operations to counteract the negative impact of climate change.

8.4. INTEGRATED TERRITORIAL DEVELOPMENT TOOLS

When speaking about a functional area as in the case of the cross-border territory, the instruments that promote integrated territorial development can play an important role, since they can provide the framework to foster cooperation between several stakeholders in key areas. During the 2014-2020 programming period, in Europe, sustainable urban development (SUD) has been implemented through dedicated Operational Programmes, dedicated Priority Axis and Integrated Territorial Investments which has also been an instrument that could be used for non-SUD situations, together with the Community-Led Local Development initiative (CLLD). The extent to which each of these instruments has been applied in Europe is different depending on the country, but a general tendency can be observed in the predominant use of the priority axis, followed by CLLD and ITI and with only a reduced NUMBER of Operational Programmes being prepared in Italy, Belgium and Sweden¹⁴¹.

FIGURE 108 ORGANIZATIONAL MODELS FOR INTER-JURISDICTIONAL AGREEMENT IN EU COUNTRIES



Source: European Parliament. 2019. Integrated Territorial Investments as an effective tool of the Cohesion Policy in Romania Catching-Up Regions Initiative. 2019

In the case of the Romania-Bulgaria cross-border area, a series of integrated development strategies were elaborated under a dedicated priority axis for SUD in 7 municipalities in Romania (Drobeta-Turnu Severin, Craiova, Slatina, Alexandria, Giurgiu, Călărași and Constanța) and 11 cities in Bulgaria (Vidin, Lom, Montana, Vratsa, Pleven, Svishtov, Ruse, Gorna Oryahovitsa,

¹⁴¹ Source: <https://urban.jrc.ec.europa.eu/strat-board/#/where>



Veliko Tarnovo, Silistra and Dobrich)¹⁴². In addition, as it has previously been mentioned, following the LEADER¹⁴³ initiative, the CLLD instrument has been implemented as a tool for developing predominantly rural Local Action Groups (LAGs) in the area, while in Romania, this tool has also been dedicated to marginalized communities in urban areas with more than 20,000 inhabitants, as in the case of Giurgiu municipality. Apart from these, no other instruments were used in the cross-border area for integrated territorial development.

In general, territorial tools have gained prominence in Cohesion policy as part of a shift to place-based policy-thinking and practice in order to address the multiple economic, environmental and social challenges confronting Europe. If sustainable urban development has been and is still going to be a major priority in the efficient development of the Romania-Bulgaria cross-border territory, it is important to analyse the opportunity for the implementation of other complementary tools.

In this context, ITI is a tool to implement territorial strategies in an integrated way. It is not an operation, nor a sub-priority of an Operational Programme. Instead, ITI allows Member States to implement Operational Programmes in a cross-cutting way and to draw on funding from several priority axes of one or more Operational Programmes to ensure the implementation of an integrated strategy for a specific territory¹⁴⁴.

The key elements of an ITI are:

- *a designated territory and an integrated territorial development strategy.*
- *a package of actions to be implemented.*
- *governance arrangements to manage the ITI.*¹⁴⁵

The only example regarding the implementation of the ITI tool in Romania or Bulgaria has been in the Danube Delta area, for which €1.3 billion were allocated to the ITI from various operational programmes. An integrated development strategy was elaborated in order to analyse and plan the required actions to address the complex challenges of the area and an inter-communal development association was established for the implementation of this strategy. Although the success of the ITI tool in Romania is still to be evaluated, a series of concerns already arise regarding the local capacity for integrated coordination of the strategy implementation, or the focus on the socio-economic aspects of the territory, rather than on the environmental ones.

At European level, the ITI operation for Gorizia, Mestna občina Nova Gorica and Občina Šempeter-Vrtojba in Italy and Slovenia is the only example of cross-border ITI, but the success of this initiative still needs to be evaluated. However, several challenges were encountered in the process of establishing a sole EGTC (European Grouping of Territorial Cooperation) as a single management body due to the fact that national management and control systems (both in Italy and Slovenia) were not yet ready to put in practice the 2014-2020 regulatory framework for EGTCs acting as sole beneficiary. In addition, critical impacts have also been met in the

¹⁴² Idem

¹⁴³ LEADER (Liaison Entre Actions pour le Développement de l'Economie Rurale - Links between the rural economy and development actions) is a local development method which has been used for 20 years to engage local actors in the design and delivery of strategies, decision-making and resource allocation for the development of their rural areas. In the 2014-2020 programming period, the LEADER method has been extended under the broader term Community-Led Local Development. (https://enrd.ec.europa.eu/leader-clld_en)

¹⁴⁴ Source: European Commission Factsheet on ITI

¹⁴⁵ Idem 17



implementation procedures since the Member States' application of the EGTC rules is too strict¹⁴⁶.

All in all, there are several advantages and disadvantages in the implementation of the ITI tool. The advantages cover a series of aspects such as:

- *The ITI as an instrument promoting the integrated use of Funds has the potential to lead to a better aggregate outcome for the same amount of public investment.*
- *Delegation of management of ITIs empowers the sub-regional actors (local/urban stakeholders) by ensuring their involvement in programme preparation and implementation.*
- *As an ITI has its various funding streams secured at its inception, there is greater certainty regarding the funding for integrated actions.*
- *ITI are an instrument designed for a place-based approach to development that can assist in unlocking the under-utilised potential contained at local, city and regional levels.*¹⁴⁷
- *ITI can foster cooperation across administrative boundaries, limiting fragmentation of EU funds, avoiding duplication of investments, and stimulating synergies and scale effects.*
- *Limiting competition over EU funds between municipalities targeted by ITI, encouraging information exchange about investment plans, mutual learning and increasing coordination of EU projects.*
- *Facilitating administrative capacity building at the local level and increasing the quality of EU projects and investments.*¹⁴⁸

Regarding the disadvantages of the ITI tool, they include:

- *Difficulty in deciding areas for which to use the ITI, and high competition between areas to secure funding.*
- *Can lead to snowballing and politicalization with more authorities attempting to secure ring-fenced funding packages.*
- *Requires adequate local capacity and a higher bureaucratic burden.*
- *May require more time in terms of developing the organizational set up when compared with other organizational models.*
- *May affect absorption, as there is little competition for funds.*
- *Lowers competitive drive and does not adequately rewards high performers.*¹⁴⁹

With regards to **the CLLD instrument**, it is a specific tool for use at sub-regional level, which is complementary to other development support at local level. *This is an instrument created to focus on small scale territories with a strong bottom-up approach and it can be funded by all ESI funds. CLLD is a method for involving partners at local level including the civil society and*

¹⁴⁶ Source: <https://portal.cor.europa.eu/egtc/CoRAactivities/Pages/%E2%80%9CTerritory-of-municipalities-Gorizia,-Mestna-ob%C4%8Dina-Nova-Gorica-and-Ob%C4%8Dina-%C5%A0empeter-Vrtojba%E2%80%9D.aspx>

¹⁴⁷ Idem 17

¹⁴⁸ Source: Romania Catching-Up Regions. 2019. Organizational models for inter-jurisdictional agreements

¹⁴⁹ Idem 21



*local economic actors in designing and implementing local integrated strategies that help their areas make a transition to a more sustainable future*¹⁵⁰.

The CLLD approach follows a general methodology which:

- *focuses on specific sub-regional territories.*
- *is community-led, by local action groups composed of representatives of local public and private socio-economic interests.*
- *is carried out through integrated and multi-sectoral area-based local development strategies, designed taking into consideration local needs and potential.*
- *includes innovative features in the local context, networking and, where appropriate, co-operation.*¹⁵¹

As mentioned before, the CLLD instrument is targeting the LAGs established under the LEADER initiative and not only. According to the LAG Database of The European Network for Rural Development, in Bulgaria there are currently 72 LAGs, while in Romania the number is much higher, reaching the value of 261 entities, which also includes territories from the cross-border area. The focus of rural CLLDs is to facilitate inter-jurisdictional cooperation and partnerships between relevant public and private stakeholders in order to address local development challenges. In addition, during the 2014-2020 programming period, in Romania, this instrument has been used for urban LAGs as well, with 22 urban LAGs being established throughout the country, out of 49 strategies submitted for approval.

At European level, there is also only one example of cross-border CLLD in the case of Interreg V A Italy-Austria which was built on existing LAGs established under LEADER. However, the success of the four CLLDs still needs to be evaluated in order to establish the opportunity of this instrument at cross-border level.

All in all, the implementation of CLLD instrument brings a series of benefits to local communities since it can contribute:

- *to develop integrated bottom-up approaches where there is a need to respond to territorial and local challenge.*
- *to build community capacity and stimulate innovation within communities and territories.*
- *to promote community ownership in increasing their participation.*¹⁵²

At the same time, several obstacles can interfere in the development and implementation of the CLLD instrument, such as:

- The bureaucratic burden and the complexity of the instrument which can be difficult to manage at local level.
- The lack of relevant data at local level if the target area does not follow administrative boundaries which can affect the process of identifying specific challenges and needs.

¹⁵⁰ Source: Interact. 2018. New territorial development tools and cooperation for the programming period 2014-2020

¹⁵¹ Source: European Commission Factsheet on CLLD

¹⁵² Source: Interact. 2018. New territorial development tools and cooperation for the programming period 2014-2020



- The integrated approach usually requires a more extensive financial and thematic coverage of the actions needed, which cannot be achieved only by smaller scale interventions, thus making it difficult to establish ambitious indicators.¹⁵³

In conclusion, the opportunity of using tools for integrated territorial development, such as ITI and CLLD, can bring several advantages to the Romania-Bulgaria cross-border area, as they can provide a specific framework for cooperation, as well as a place-based and integrated approach to local challenges. However, taking into consideration the insufficient experience at European level and the lack of examples in Romania and Bulgaria in applying these tools at cross-border level, their possible implementation can bring new challenges in adapting the European regulations both to the cross-border context, as well as to both national legal frameworks. The current Interreg Romania-Bulgaria Programme together with the European Commission tried promoting the establishment of an ITI in the Ruse-Giurgiu area in 2018, in time for it to be integrated in the future Programme. While interest from the stakeholders was shown, no action was taken. At the moment, there is no EGTC in place in the cross-border region (pre-requisite condition for an ITI/CLLD within a cross-border programme).

8.5. DIGITAL PUBLIC SERVICES

Last but not least, considering that nowadays, the transformation of public services through digitalisation is more and more present into the management of cities, regions and countries, this has become a major priority at European level when it comes to providing good quality territorial governance. The advantages of digitalisation and digital public services cover a wide range of areas from the increase in transparency and the simplification of administrative procedures, to the efficient provision of services in remote areas or areas with geographic specificities and to improvements in the interaction with citizens and businesses, while also reducing operating costs. However, digital transformation can be challenging, both in terms of the need for new technologies, as well as regarding the difficulties in re-skilling human resources, which can delay the process of implementation.

This is the case of Romania where even though the ICT Industry is growing at a very fast pace, the digital transformation process has severely fallen behind. This problem is caused on the one hand by the reluctance of public employees to re-think the process of governance, and on the other hand by the relatively high share of older population and of the population living in rural areas that do not have access to the internet.

TABLE 35 INDICATORS REGARDING SERVICE DELIVERY AND DIGITALISATION IN ROMANIA

INDICATORS IN ROMANIA	EVOLUTION OF VALUES AND RANKINGS			
	Value 2013	EU28 rank	Value 2015	EU28 rank
E-government users (%)	1.89	28	4.91	28
Online services (0-1)	Value 2010	EU28 rank	Value 2016	EU28 rank
	0.42	17	0.46	27
Ease of doing business (0-100)	Value 2011	EU28 rank	Value 2016	EU28 rank
	63.81	25	74.26	19

¹⁵³ In accordance with European Commission and European Policies Research Centre. 2017. Integrated territorial and urban strategies: how are ESIF adding value in 2014-2020? Final Report



Source: European Commission, 2018. Public administration characteristics and performance in EU28: Romania

At the same time, Bulgaria has been more preoccupied in recent years with introducing e-government services and progress in this area has been significantly more visible than in other sectors. This can be seen in the high percentage of e-government users, the extensive coverage of fixed broadband, including in districts in the cross-border area such as Silistra, Pleven, Ruse or Veliko Tarnovo, or in the overall percentage of e-government index at global level (based on the UN E-Government index, Map 71-71).

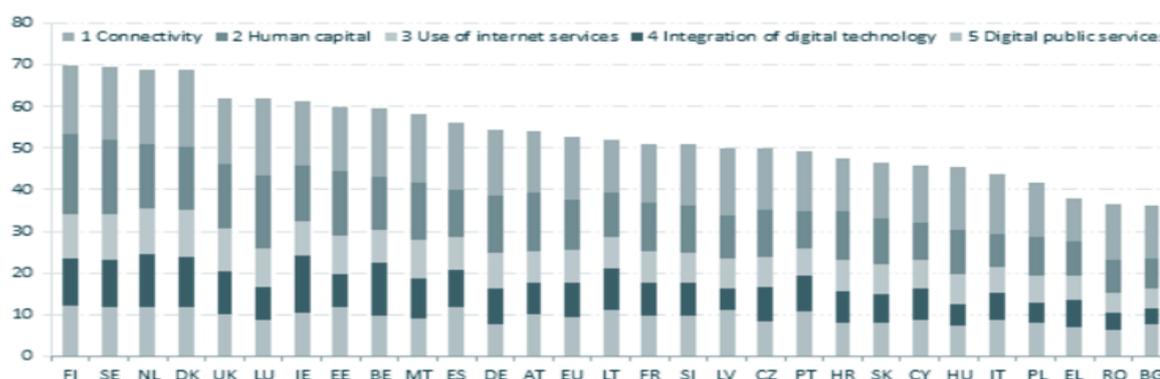
TABLE 36 INDICATORS REGARDING SERVICE DELIVERY AND DIGITALISATION IN BULGARIA

INDICATORS IN BULGARIA	EVOLUTION OF VALUES AND RANKINGS			
	Value 2013	EU28 rank	Value 2015	EU28 rank
E-government users (%)	8.47	26	9.11	9
	Value 2010	EU28 rank	Value 2016	EU28 rank
Online services (0-1)	0.41	20	0.57	24
	Value 2011	EU28 rank	Value 2016	EU28 rank
Ease of doing business (0-100)	68.07	19	73.51	20

Source: European Commission, 2018. Public administration characteristics and performance in EU28: Bulgaria

Even though both countries have taken significant steps in the implementation of the digital transformation process, which have, for example, results in the overall e-government index at global level (the UN E-Government index), they still occupy the last positions in the European rankings, weather it is regarding the value of the digital economy and society index, the share of individuals who used the internet for interaction with public authorities, or even the coverage of fixed broadband, especially in the counties from Romania. Considering the fact that digital public services and a digital economy can reduce the challenges of peripherality at European level as well as those of inner peripheries in the territory of the Romania - Bulgaria cross-border area, future governance of the target area could benefit from furtherly developing this sector through a stronger cooperation.

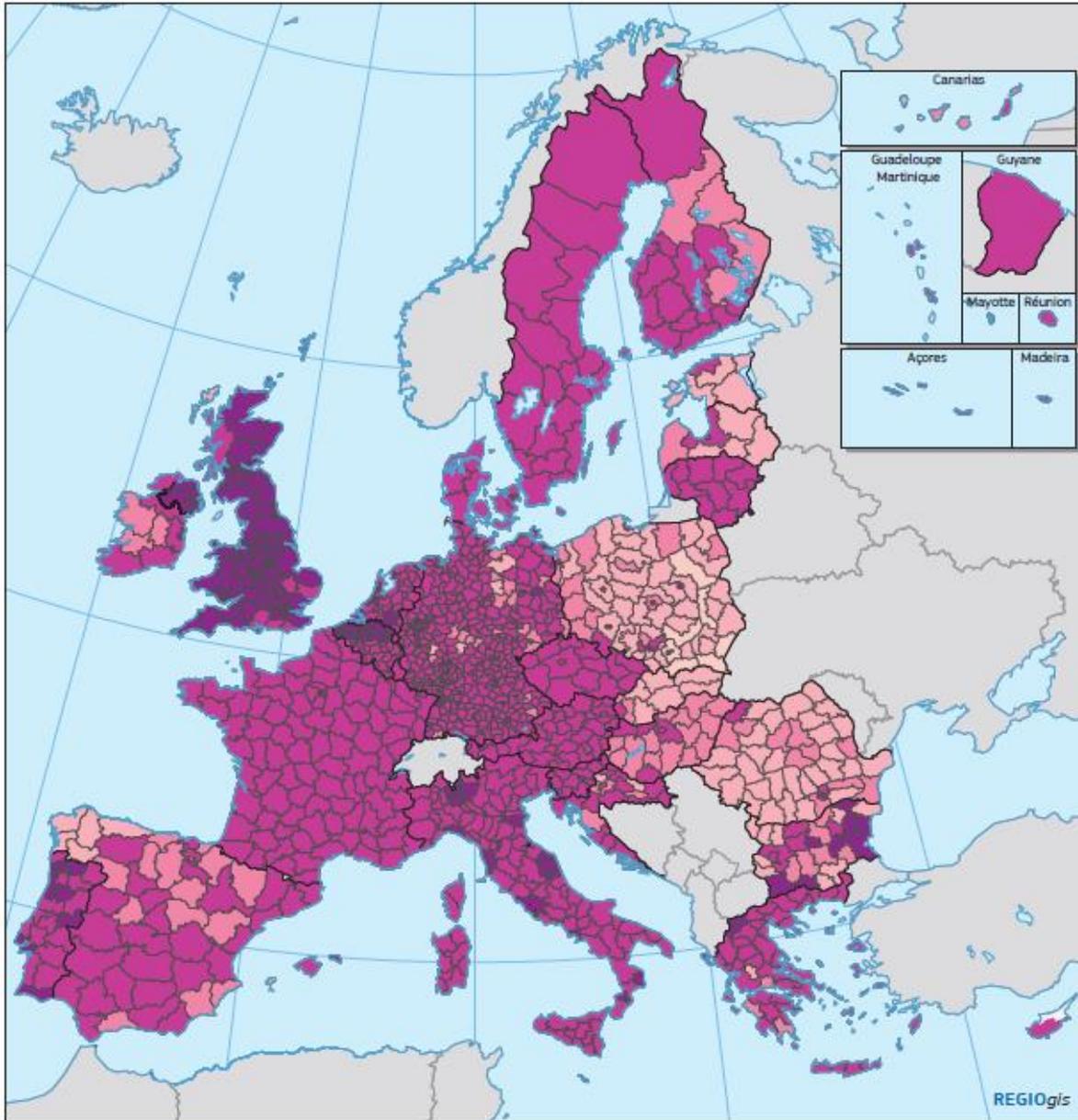
FIGURE 109 DIGITAL ECONOMY AND SOCIETY INDEX (DESI) 2019 RANKING



Source: <https://ec.europa.eu/digital-single-market/en/desi>



MAP 74 FIXED BROADBAND COVERAGE BY NUTS 2 REGION, 2016



Map 1.17 Fixed broadband coverage by NUTS 3 region, 2016

% of all households

- 0 – 35
- 35 – 65
- 65 – 95
- 95 – 100
- 100
- no data

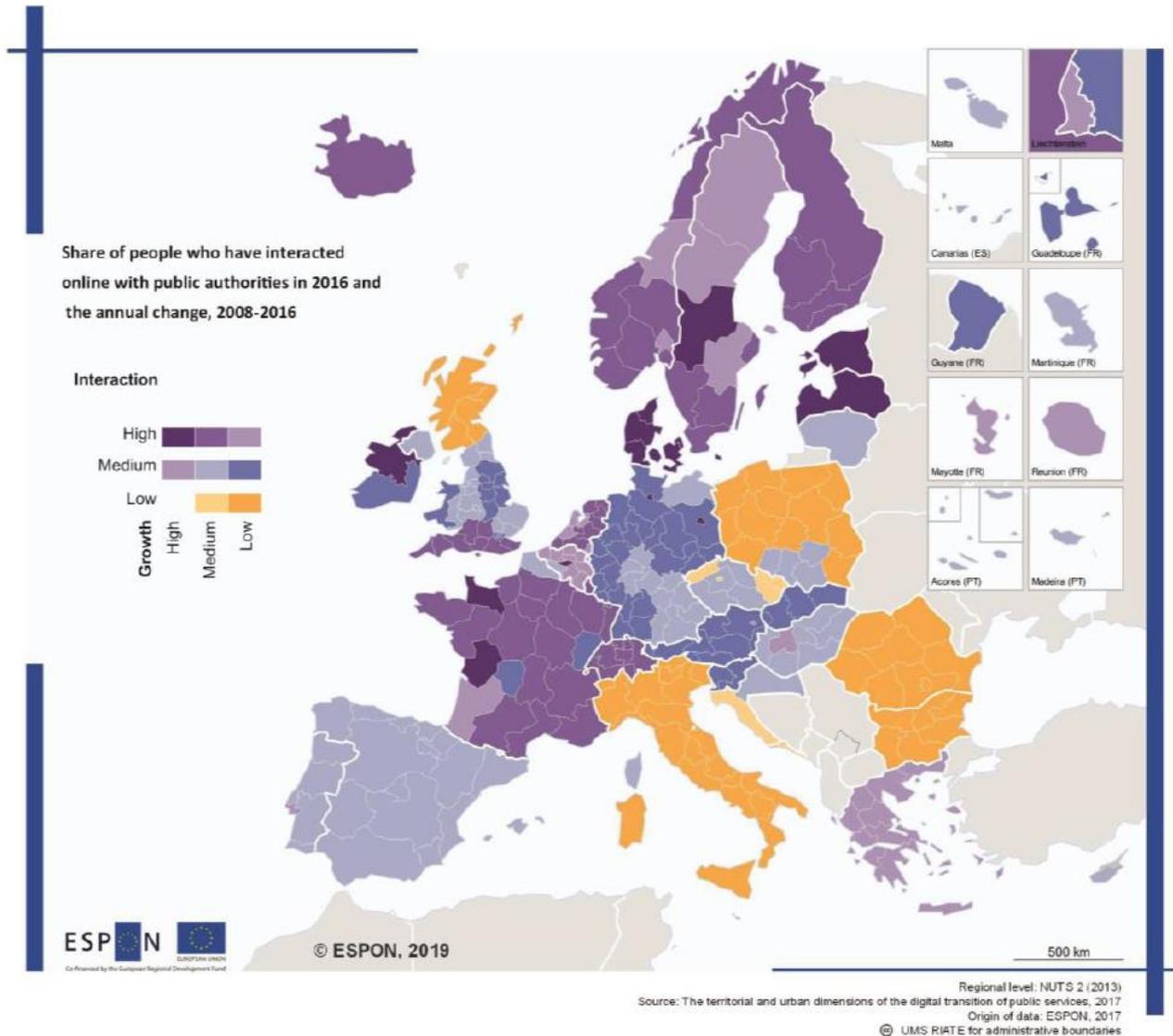
EU = 98%
Source: DG CONNECT, European Digital Progress Report 2017

0 500km

Source: European Commission, 2017. My Region, My Europe, Out Future - Seventh report on economic, social and territorial cohesion



MAP 75 SHARE OF INDIVIDUALS WHO USED THE INTERNET FOR INTERACTION WITH PUBLIC AUTHORITIES



Source: ESPON, 2019. *The territorial and urban dimensions of the digital transition of public service*, Policy Brief. ESPON 2020 Cooperation Programme



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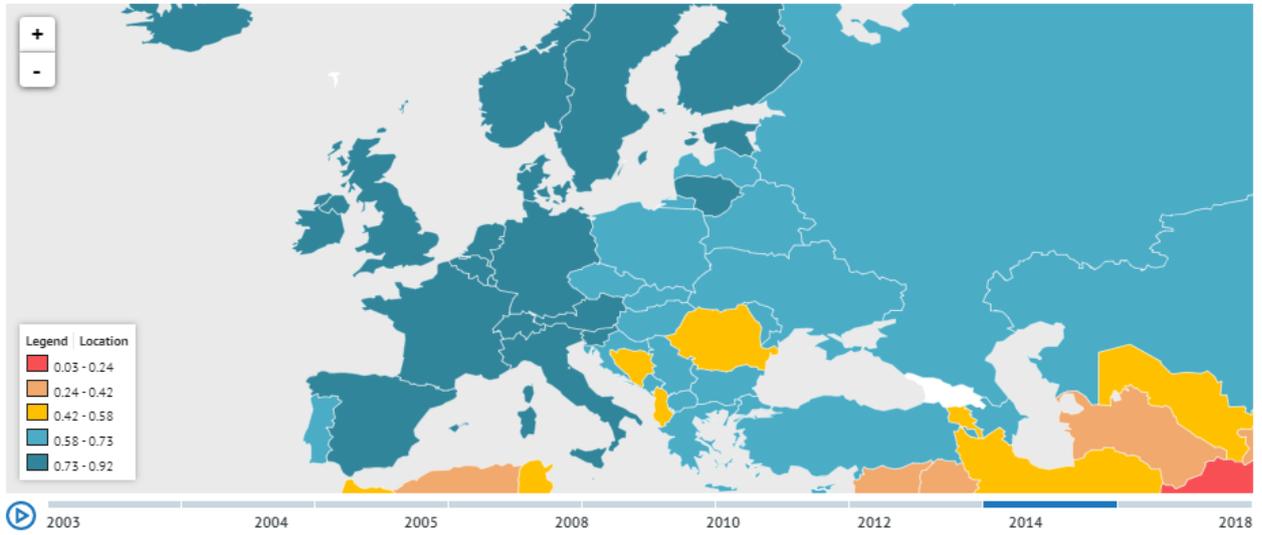


GOVERNMENT OF ROMANIA



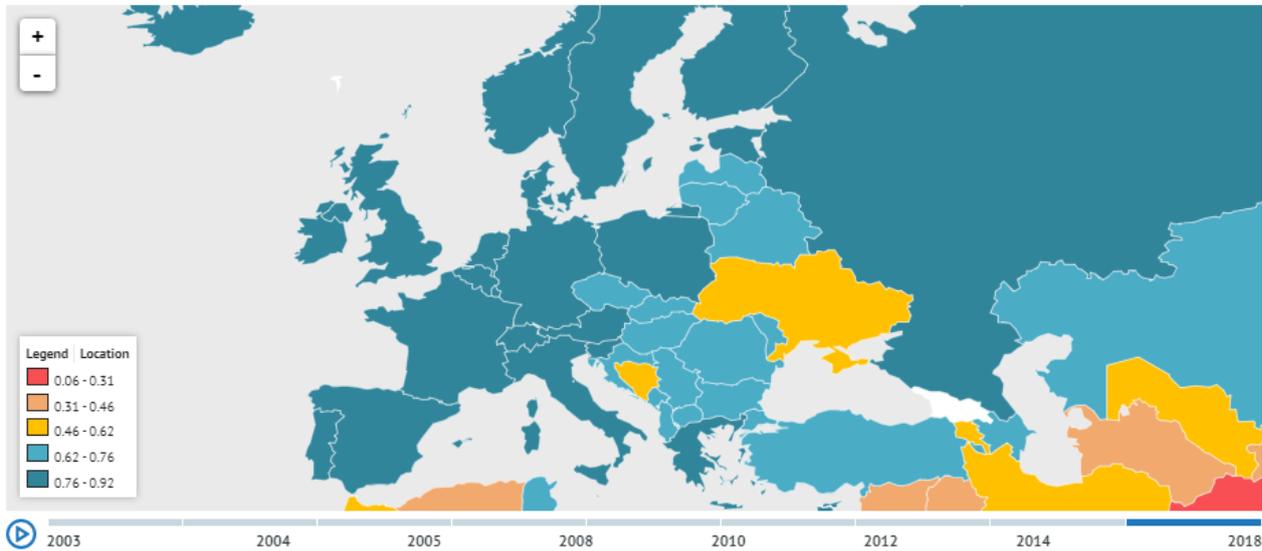
GOVERNMENT OF BULGARIA

MAP 76 UN E-GOVERNMENT INDEX, 2014



Source: <https://knoema.com/infographics/mctunlb/un-e-government-development-index>

MAP 77 UN E-GOVERNMENT INDEX, 2018



Source: <https://knoema.com/infographics/mctunlb/un-e-government-development-index>



8.6. CONCLUSIONS, TERRITORIAL CHALLENGES AND NEEDS

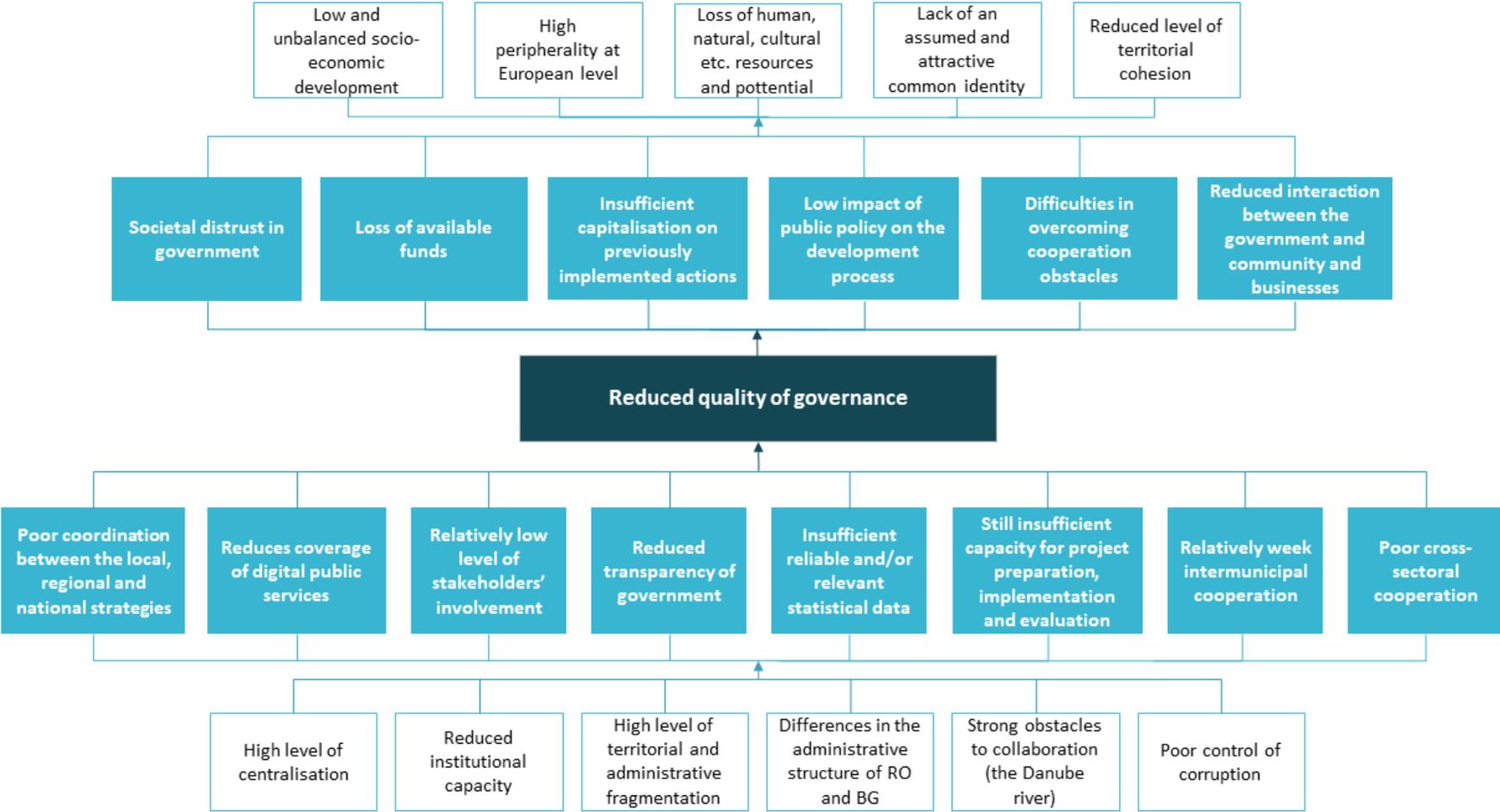
In conclusion, the Romania-Bulgaria cross-border area is characterized by a certain level of cohesion that is based on a series of bidirectional relations between the two countries. However, in order for this area to develop in an efficient manner, a series of territorial and administrative obstacles that hinder cooperation need to be overcome. These barriers cover a wide range of fields such as the differences in the administrative structures of Romania and Bulgaria that impose difficulties to similar units in their cooperation since they can have different statutes (for example, in Romania there are no LAU1 administrative units, while in Bulgaria there are no LAU2 administrative units). In addition, both Romania and Bulgaria are highly centralised countries, which determines numerous dependencies between the various administrative levels. This can be considered one of the causes or in direct relation with the reduced institutional capacity at local level which, combined with a relatively reduced level of stakeholder involvement and consultation and a reduced coverage of digital public services, has in turn determined a low level of trust in the government. These factors can be considered obstacles both in the horizontal cooperation between relevant stakeholders at local and regional level, as well as in the vertical coordination and complementarity with other regional / national / European policies and programmes.

Last but not least, the Romania-Bulgaria cross-border area is also characterised by a series of territorial challenges that also play a crucial role in facilitating or preventing a fruitful cooperation between the two countries. These challenges regard:

- A relatively reduced strength of the regional network of cities because of the barrier effect of the Danube river and the limited number of major urban centres
- Insufficient connections over the Danube river, especially in the areas of pairing cities of the two countries that could facilitate the link to the major national transport infrastructure;
- Insufficient development of small and medium sized cities that could influence the development of their surrounding territories
- The river Danube as one of the main obstacles in collaboration for all the stakeholders in the cross-border area
- The differences in the administrative structures of the two countries and the different statute of localities represent an obstacle in shared practices of spatial development
- Externalities of the uncontrolled development of capital cities and their surrounding territories that could affect valuable resources in the cross-border area (for example, natural, cultural, historic etc.)

It is of utmost importance that Romania and Bulgaria would cooperate to overcome these obstacles in order to develop a stronger and prosperous cross-border area. The advantages of further cooperation between the two countries are numerous and they can contribute to the development of a cohesive territory that can efficiently manage its resources and flows based on an extended critical mass and knowledge network, the reduction of inner and external peripheralities by means of an increased connectivity of the area, as well as to the increased socio-economic competitiveness of the territory through a stronger polycentric network of cities and related rural areas.

PROBLEM TREE



SECTION 2 - STAKEHOLDERS' CONSULTATION



9. STAKEHOLDERS' POINT OF VIEW

Stakeholders were consulted regarding the needs, potential and challenges of the cross-border territory, as well as potential objectives and priorities of the future Interreg Romania-Bulgaria programme, through two main instruments:

- Stakeholders' survey
- On-site working groups (stakeholders' workshops and focus groups)

9.1. THE STAKEHOLDERS' SURVEY

9.1.1. METHODOLOGY AND GENERAL INFORMATION¹⁵⁴

The survey was designed to collect the stakeholder's opinion regarding territorial needs, challenges, potentials and investment priorities, as well as to identify relevant potential projects for post-2020. The following analysis aims to provide a general overview on the survey findings and to contribute to the identification and description of the needs, challenges and potential of the eligible area of the Programme.

The questionnaire was sent to stakeholders from all counties/ districts in the cross-border area and included the following categories of respondents: public administration, business environment, NGOs, universities, research and development bodies and deconcentrated structures (culture, environment, business and economy, etc.).

The questionnaire was structured based on the preliminary literature review and data analysis. It included five main categories of questions:

- **General questions** - respondents were asked to give information including the institution/ organisation of origin (domain and location) and districts/ counties where their activity is carried out;
- **Needs of the programme area** - respondents were asked to rank different fields of investment that could be addressed by the future Interreg Romania-Bulgaria programme and to choose the top three problems in the field they indicated;
- **Potential of the programme area** - respondents were asked to rate different potential elements of the cross-border territory that could be addressed by the future Romania-Bulgaria Programme and the potential of different fields of intervention for cross-border public services (CPS);

¹⁵⁴ This analysis may be the case for some inherent limitations generally valid for survey research. Since surveys collect data during a given period, it is difficult to measure potential changes in the population, unless two or more identical surveys are done at different point in times. Another limitation of the survey is that it cannot provide strong evidence of cause and effect and consistent connections between them. Finally, the survey questions are standardized so that all the respondents can easily answer them. Hence, the answers received cannot be as detailed / in-depth as those received through other methods that allow the a more thorough analysis of the studied subject.



- **Potential priorities of Interreg Romania-Bulgaria Programme 2021-2027** - respondents were asked to choose the policy objectives they consider the first, second and third most important to be addressed through cross-border cooperation. For each option they were asked to choose the most relevant specific objectives (set up by the ERDF draft regulation);
- **Project ideas** - respondents were asked to provide a short overview of their project or strategic project idea and to select the ERDF policy objective their project responds to.

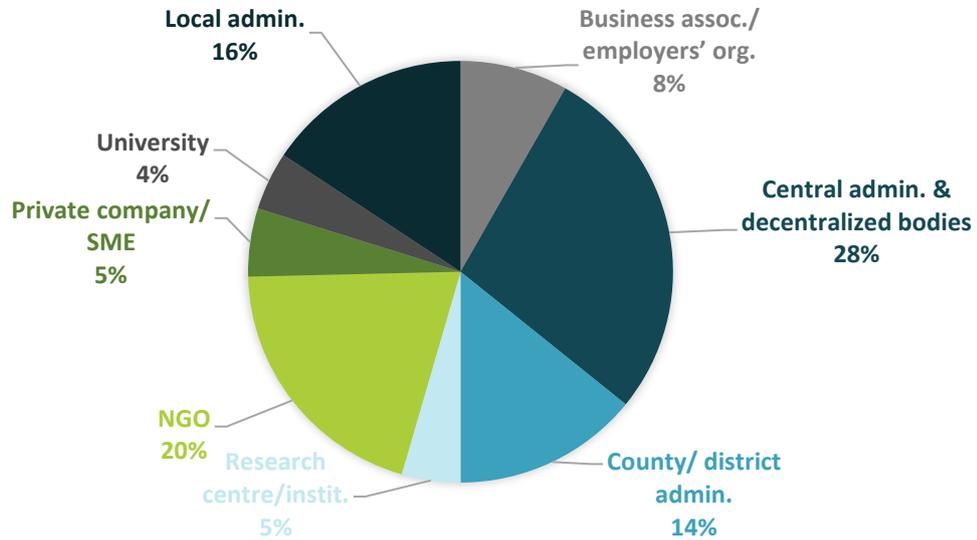
The results' analysis will follow the aforementioned structure and will try to highlight particularly those results providing relevant pointers for the future Interreg Romania-Bulgaria programme. Thus, the interpretation will consider the need for thematic concentration - the fact that at least 60% of the ERDF funding shall be allocated on a maximum of three of the policy objectives set out in CPR (POs 1-5) and that 15% of the ERDF shall be allocated on the Interreg-specific objectives of 'a better Interreg governance' / 'a safer and more secure Europe'¹⁵⁵. The analysis will also look at the respondents' interest in strategic projects and the opportunity for including SMEs as eligible beneficiaries for the first time in the programme's history only if GEBR revision will have a positive review in terms of state aid exemption of Interreg programmes.

The surveying period was 23 December 2019 - 21 January 2020. The stakeholder survey had 134 respondents, the majority representing public institutions and administration and the NGO sector. Most respondents came from central administration institutions and decentralized bodies (28% of all respondents), followed by the NGO sector and local administration. It is important to note that NGOs have a very broad representation among respondents, with 20% of the responses received. Business associations or employers' organizations had slightly higher rates of response than private companies, research or education centres, which have contributed with the smallest number of respondents. The SMEs rate of response was rather low, which could be explained by the fact that it is for the first time when they were addressed as there is the possibility to be included as eligible beneficiaries.

¹⁵⁵ According to draft regulations issued in May 2018.

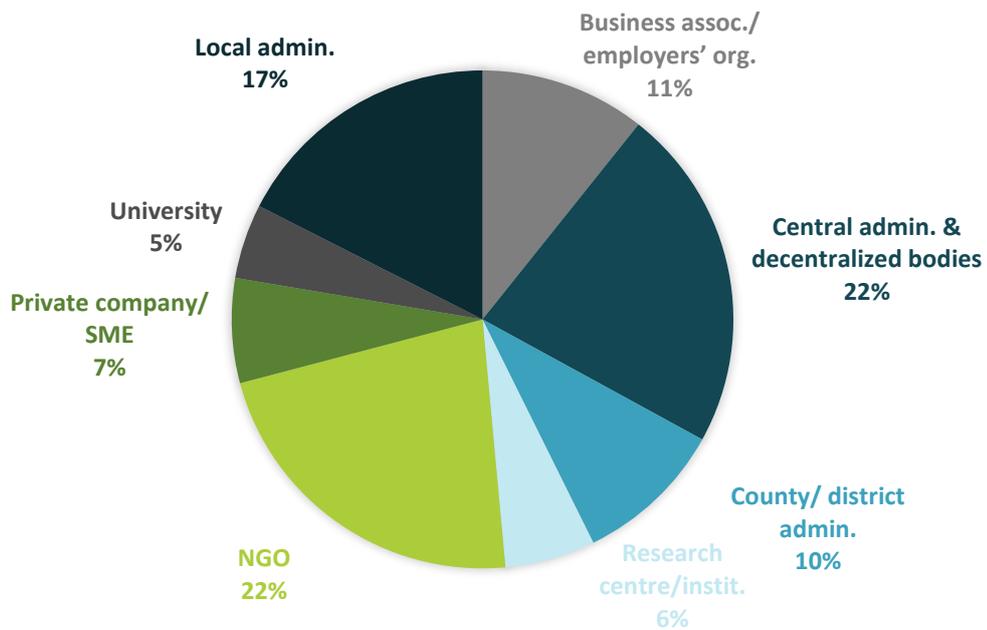


FIGURE 110 RESPONDENTS' INSTITUTION TYPE



During the data analysis process, it was noticed that several public institutions or NGOs answered the questionnaire several times, through different persons from different directions or units within the institutions/ organizations. Therefore, if we were to look at the type of organizations that responded to the survey, taking into account one response per institution / organization, the situation looks slightly different (see Figure 106).

FIGURE 111 RESPONDENTS' INSTITUTION TYPE



The institutions which provided more than one answer belong mostly to Central administration and decentralised bodies and County/ district administration. When comparing the situation to that of the total responses, the ranking stays mostly the same, the only change consisting of



Business association/ employers' organisation/ Chamber of Commerce/ other association of private companies and County/ district administration, which switched places.

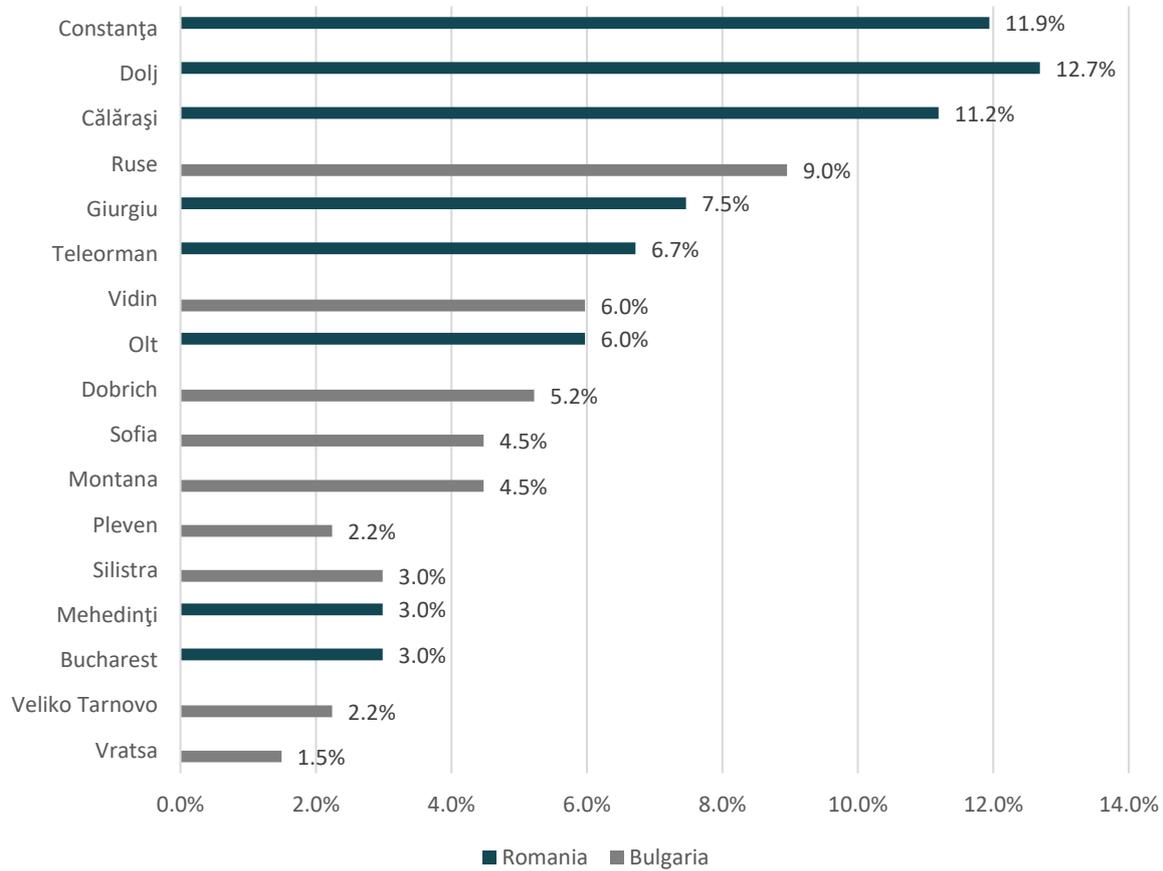
In order to ensure methodological correctness and accuracy, given that some institutions/ organisations provided more than one answer, through different affiliated bodies, special attention was given to these answers within the analysis, in order to check their influence on the overall results of the survey. Thus, wherever an important influence was noticed, this aspect was mentioned. Overall, the following main points were observed:

- Of the seven questions within the “Needs of the programme area” category we noticed similarities in answers in six of them. However, in four of the cases we didn't make any observations in the analysis since these answers were not statistically relevant and didn't changed the ranking of the responses at all.
- In the “Potential of the programme area” category the repetitive responses received made a visible contribution. Thus, in the first question, the answers contributed to higher percentages for “Renewable energy generation” and “Tourism potential”. In the second question of this category, the “Civil protection and disaster management” and “Environment protection” options were advantaged.
- Although the repetitive responses received were mainly directed towards the choice of PO2 and "A safer and more secure Europe", they did not significantly affect the ranking of the most important ERDF policy objectives.

Looking at the number of respondents, one can note that the Romanian respondents were considerably more than those from Bulgaria. The districts with the most responses from Romania are Dolj, Constanta and Călărași each of them with over 10% of the total responses, followed by Giurgiu, Teleorman and Olt. Mehedinți registered the lowest number of responses compared to the other Romanian counties. From Bulgaria, the most responses came from Ruse, Vidin and Dobrich, followed by Montana, Pleven and Silistra and Veliko Tarnovo. Vratsa ranked last in the overall ranking.



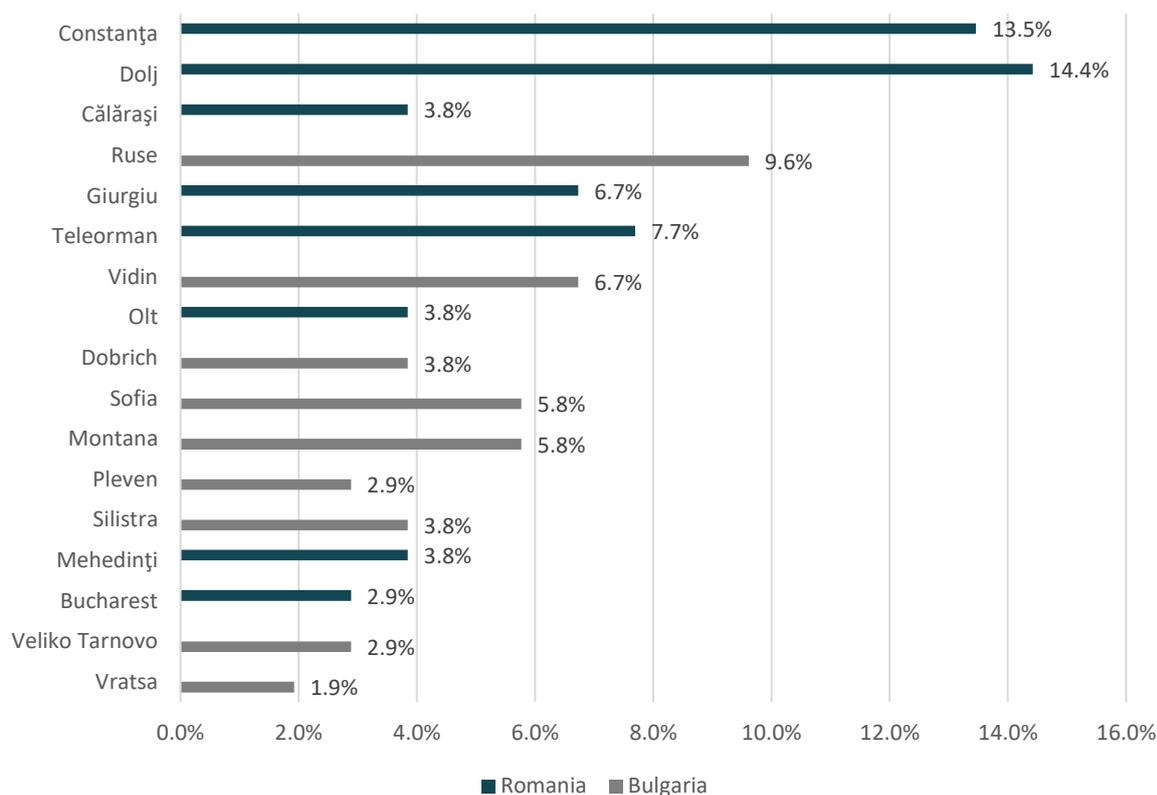
FIGURE 112 DISTRICT OF RESPONDENTS' INSTITUTION



Considering only one respondent per institution, the county/district ranking changes as follows:



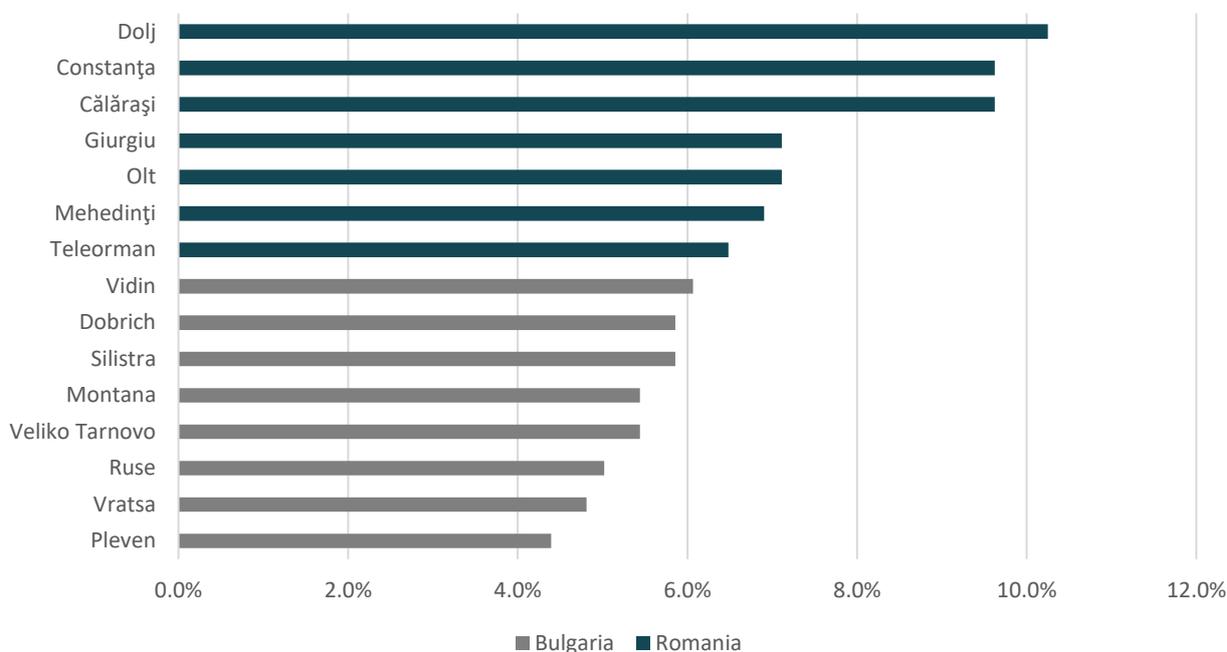
FIGURE 113 DISTRICT OF RESPONDENTS' INSTITUTION



Most of the respondents reported that their activity is undertaken in several counties/districts in the Romania-Bulgaria cross-border area. Since most respondents are from Romania, the predominantly territorial scope of their activities was also reported in Romania. The differences in number of respondents in each country are evened out, which indicates that within each country the respondents work in nearby counties/districts, as well as in their own. In Bulgaria, this tendency is even more pronounced, which shows either that the institutions in the region work more closely together, or that most Bulgarian respondents belong to centralised institutions.



FIGURE 114 RESPONDENTS' ACTIVITY LOCATION BY DISTRICT



9.1.2. NEEDS OF THE PROGRAMME AREA

The needs in the Romania-Bulgaria cross-border area is quite significant and the respondents' answers to the questions indicate the followings:

- The needs of the region are evaluated to be at about the same importance (very high) at a first glance;
- Each of the needs are considered important or very important for the region, with just some minor differences in terms of classification;
- All the needs are considered by more than 65% of the respondents to be important or very important.

Although “Innovation enterprises and human capital” is considered the most pressing category of needs to be addressed, with almost 50% of respondents rating it as “very important”, Environment and risks and Connectivity surpass it when considering both “important” and “very important” answers, with 75.6% and 79.3% respectively, compared to 72.5%. Considering that the respondents had to classify the needs expressed on a scale with five possible answers, from the least important to the most important, in analysing the data it is correct to refer to the percentage of the top two answers. These aspects indicated a slightly higher representativeness of the importance of “Connectivity” and “Environment and risks” among the respondents. At the same time, the fact that “Innovation, enterprises & human capital” was considered the most important with only few percentages more than the “Connectivity” and “Environment and risks” is not so important from a statistically point of view, although it shows a high awareness regarding the low performance of the cross-border territory when it comes to innovation

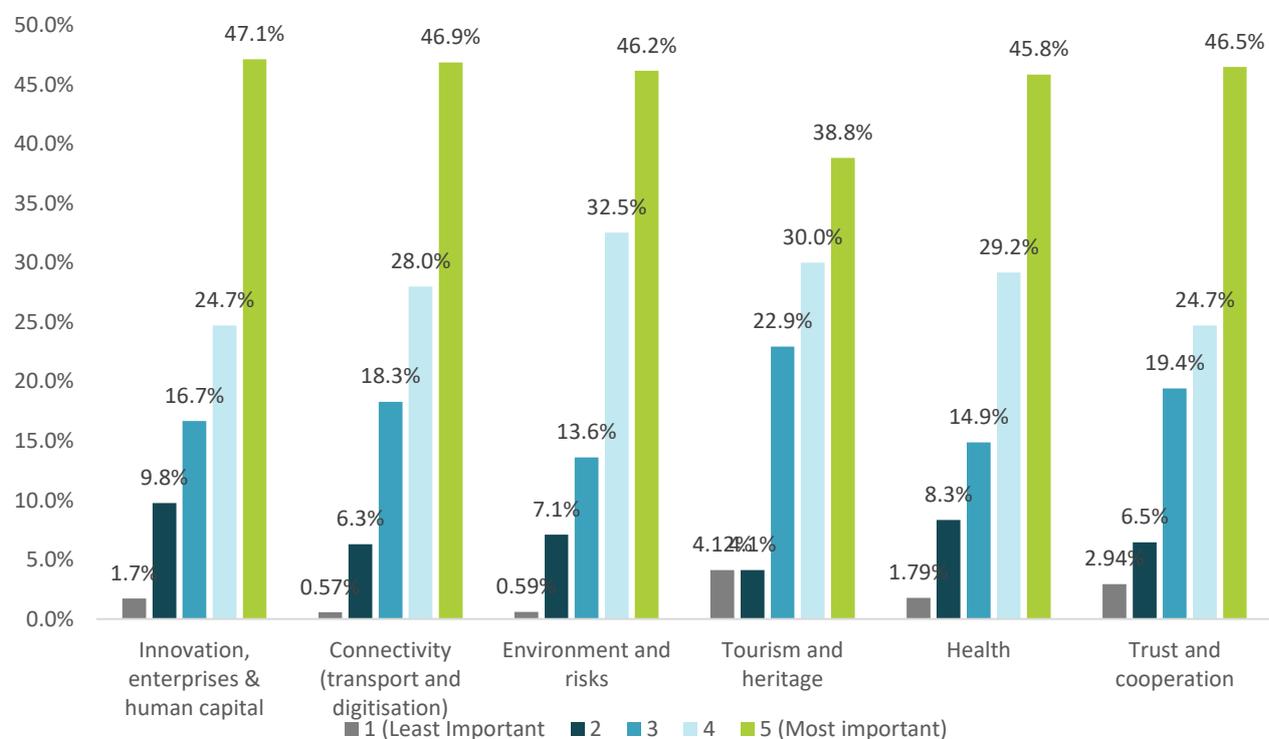


capacity. Although the “least important” option is very low among all the categories, Connectivity and Environment and risks reach the lowest level in this respect, with almost 0.6%.

However, as mentioned before, the scores of the needs are all rated high and quite similar. Even Tourism and heritage, the last ranked, is considered “important” and “very important” by 68,8% of respondents.

Looking at the responses coming from the same institutions, one can note the support for the fields of Trust and Cooperation and Environment and Risks, which raised the scores of these two categories.

FIGURE 115 FIELDS OF INVESTMENT NEEDS OF THE CROSS-BORDER TERRITORY TO BE ADDRESSED

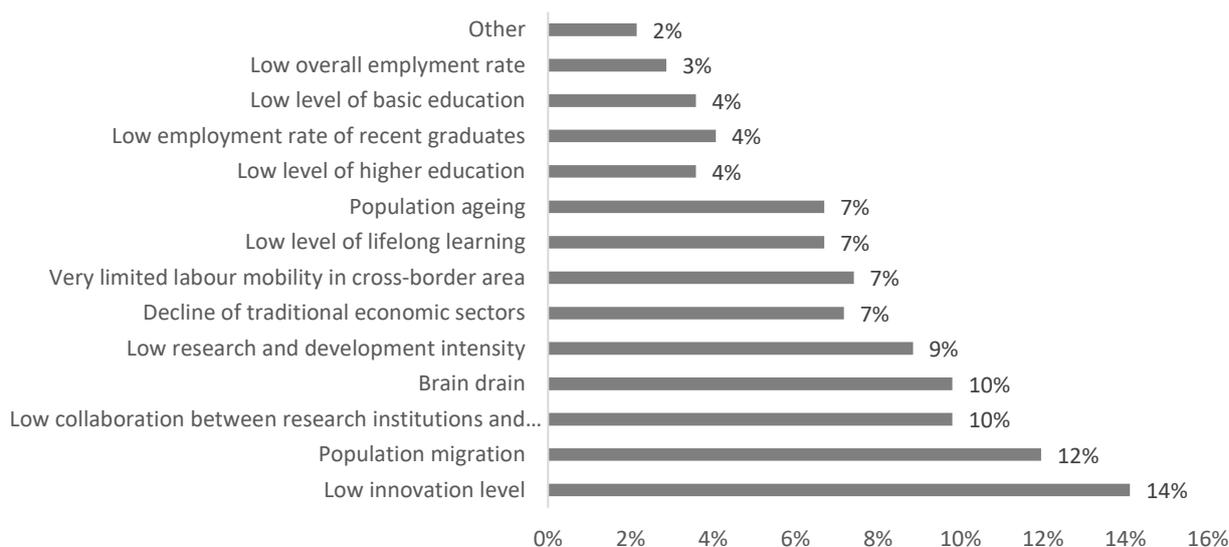


Respondents were asked to rate the top three problems in each field. In the field of **Innovation, enterprises and human capital** the most pressing needs were considered those related to the **low level of innovation and population migration** - which can also be associated to **brain-drain**. 14% and respectively 12% of respondents considered low innovation levels and lacking framework conditions for innovation and population migration the main issues in the field. On the third



place, low collaboration between research institutions and innovative companies and brain drain were chosen by 10% of the respondents, each.

FIGURE 116 TOP PROBLEMS IN THE FIELD OF INNOVATION, ENTERPRISES AND HUMAN CAPITAL



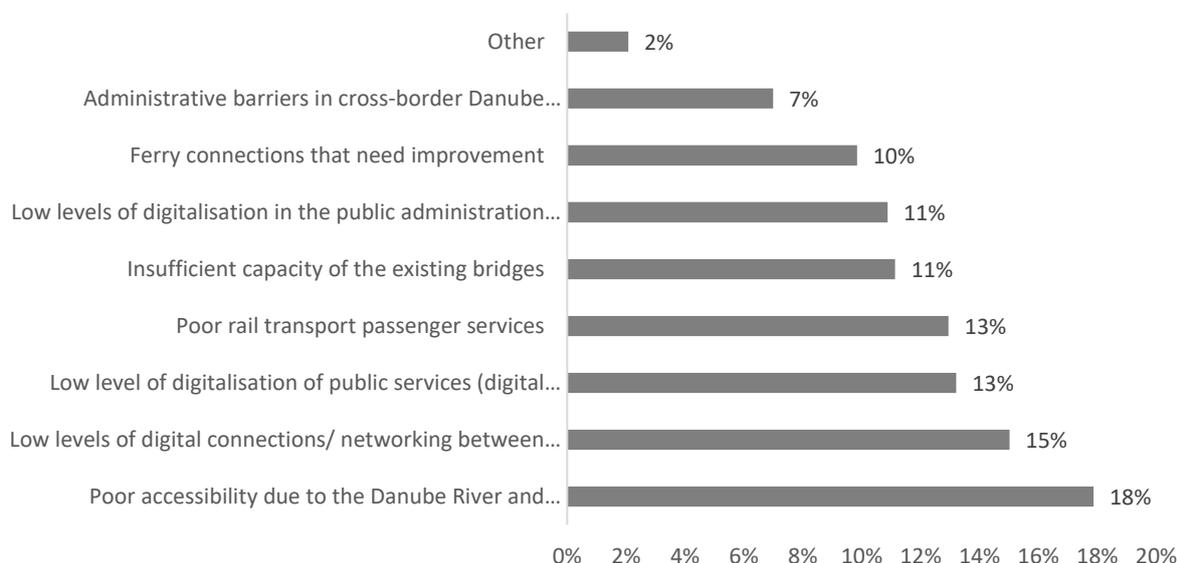
The top three needs regarding **connectivity** (transport and digitisation) were rated as following: poor accessibility due to the Danube River and insufficient crossing points by 18% respondents, low levels of digital connections/ networking between public institutions, business support entities, education and training facilities and citizens by 15% of respondents and low level of digitalisation of public services (digital public services for citizens and companies) by 13%.

As the first option refers to the poor accessibility in the cross-border area due to the Danube river, we have to underline that 11% of the respondents also opted for the insufficient capacity of existing bridges and 10% considered that the ferry connections need to be improved. Therefore, a total of 39% of the respondents referred to different aspects of a single problem, namely crossing the Danube river. The same is applicable in the case of digitalisation. Besides the low levels of digital connections/ networking between public institutions, business support entities, education and training facilities and citizens which amounts to 15%, respondents also opted for the low level of digitalisation of public services and the low level of digitalisation in the public sector with 13% respectively 11% of the answers. So, the issues related to digitization also account for 39% of total responses.

Among those who chose the “Other” option, answers highlighted the need for high speed roads to connect the territory and the need to modernise the existing roads.

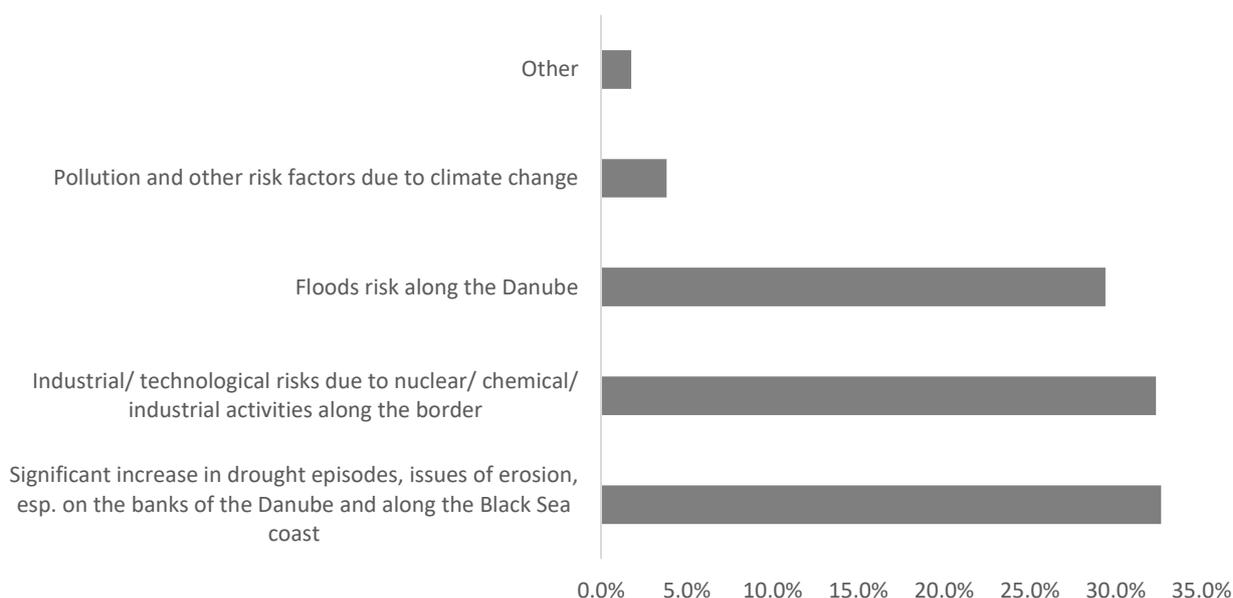


FIGURE 117 TOP PROBLEMS IN THE FIELD OF CONNECTIVITY



The top three needs in the field of **environment and risks** are concentrated on the effects of climate change and natural and industrial risks along the Danube and the Black Sea coast. The top three needs, with around 30% of responses each, are: significant increase in drought episodes, issues of erosion, esp. on the banks of the Danube and along the Black Sea coast (33%), Industrial/ technological risks due to nuclear/ chemical/ industrial activities along the border (32%), and Floods risk along the Danube (29%). Within the “Other” option were mentioned: deforestation, air pollution and uncontrolled treatment of land.

FIGURE 118 TOP PROBLEMS IN THE FIELD OF ENVIRONMENT AND RISK

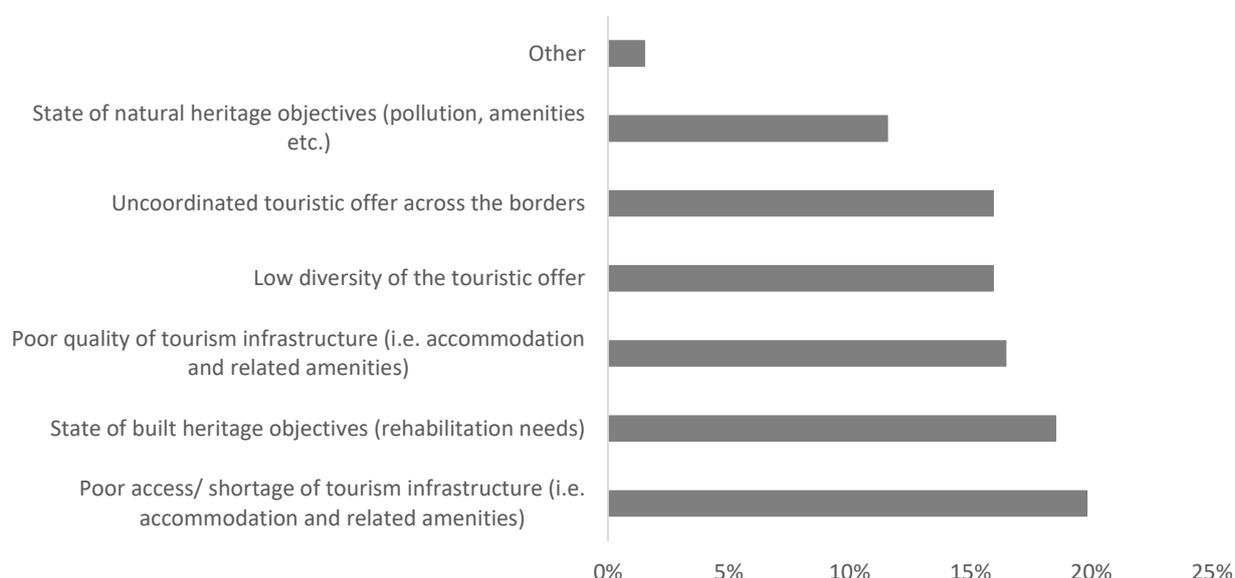




The top three needs in the field of **tourism and heritage** are related to infrastructure rather than the touristic offer. Almost 20% of respondents consider the poor access/ shortage of tourism infrastructure such as accommodation and related amenities as the main problem, followed by the state of built heritage objectives and poor quality of tourism infrastructure, with 18.1% and 16.6% of responses. Among the “Other” responses, the need for a better infrastructure connection between the touristic objectives was mentioned, together with the need of an enhanced awareness on the touristic potential.

Considering only one response per institution, the low diversity of touristic offer will overcome the poor quality of tourism infrastructure by one response.

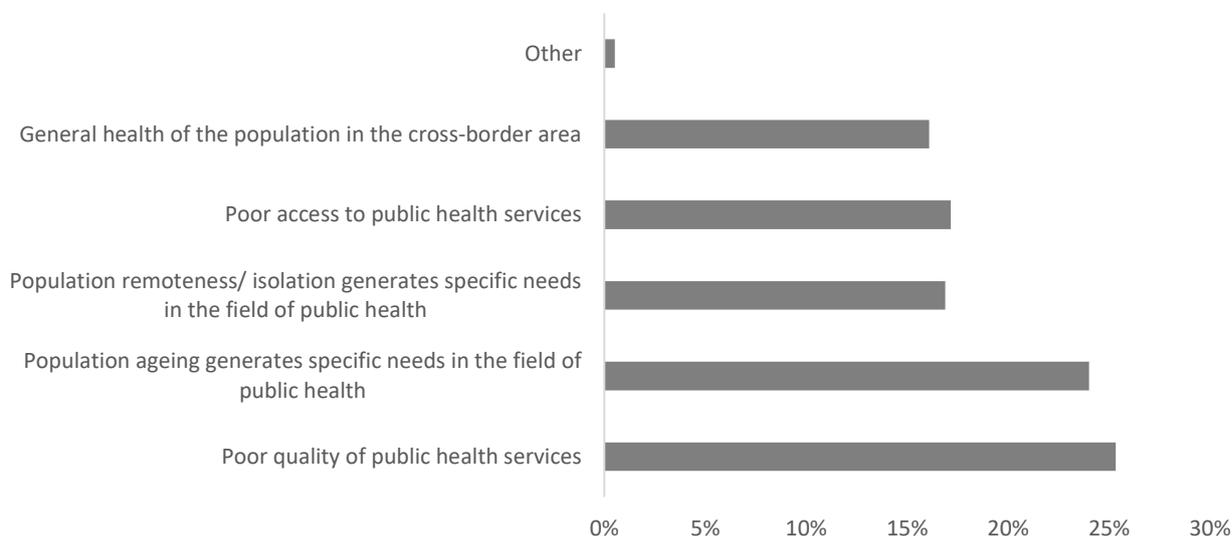
FIGURE 119 TOP PROBLEMS IN THE FIELD OF TOURISM AND HERITAGE



The top three needs in the field of **health** are: poor quality of public health services, population ageing and their specific health needs and the poor access to public health services. The top two needs are not problems of the cross-border area exclusively, but rather problems that can be noticed in both countries at national level. However, responses show a high socio-demographic risk perceived by the respondents, linking population ageing, remoteness and migration (mentioned before). These phenomena have the potential to increase and shape the need of social and health services, asking for tailored measures/ services.

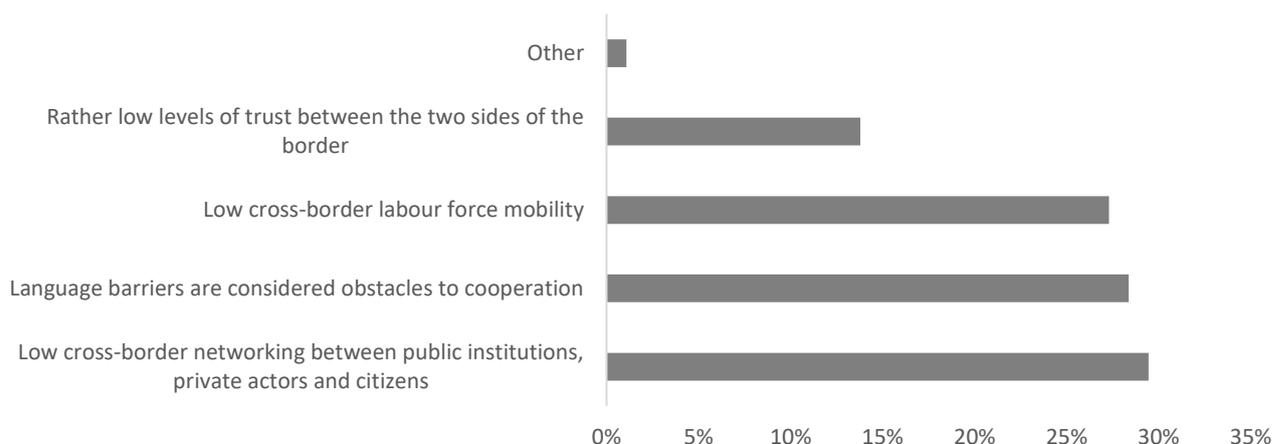


FIGURE 120 TOP PROBLEMS IN THE FIELD OF HEALTH



The top three needs in the field of **trust and cooperation** are: low cross-border networking between public institutions, private actors and citizens, language barriers and low cross-border labour force mobility. Language barriers are considered by respondents to be almost as pressing as the low level of networking between institutions and citizens across the border. Low cross-border labour force mobility is also at almost the same level with the first two.

FIGURE 121 TOP PROBLEMS IN THE FIELD OF TRUST AND COOPERATION

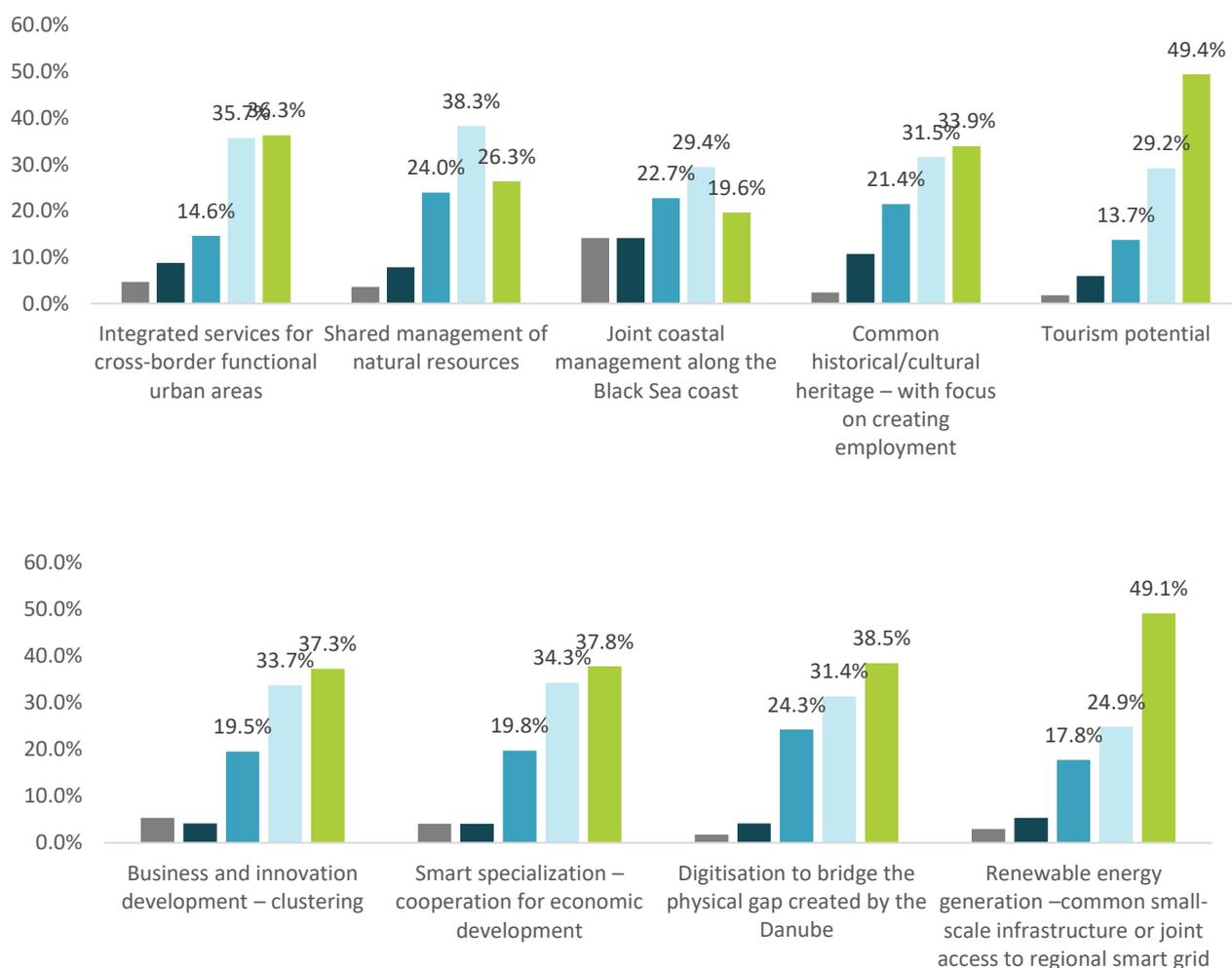




9.1.3. POTENTIAL OF THE PROGRAMME AREA

In order to identify the potential of the cross-border territory that could be addressed by the future Interreg Romania-Bulgaria Programme, the stakeholders were asked to select the most important elements based on their experience. The top two choices that came up from the survey are **tourism potential** and **renewable energy generation**. The following options registered similar scores. It should be noted that, while the tourism and heritage ranked fourth in terms of investment needs to be addressed, it is considered the main potential field to be valorised by the future Programme. On the other hand, joint coastal management along the Black Sea coast was perceived as the least important potential area to be addressed, although most of the respondents considered the significant increase in drought episodes and issues of erosion on the banks of the Danube and along the Black Sea coast as the top problem in the field of environment and risks.

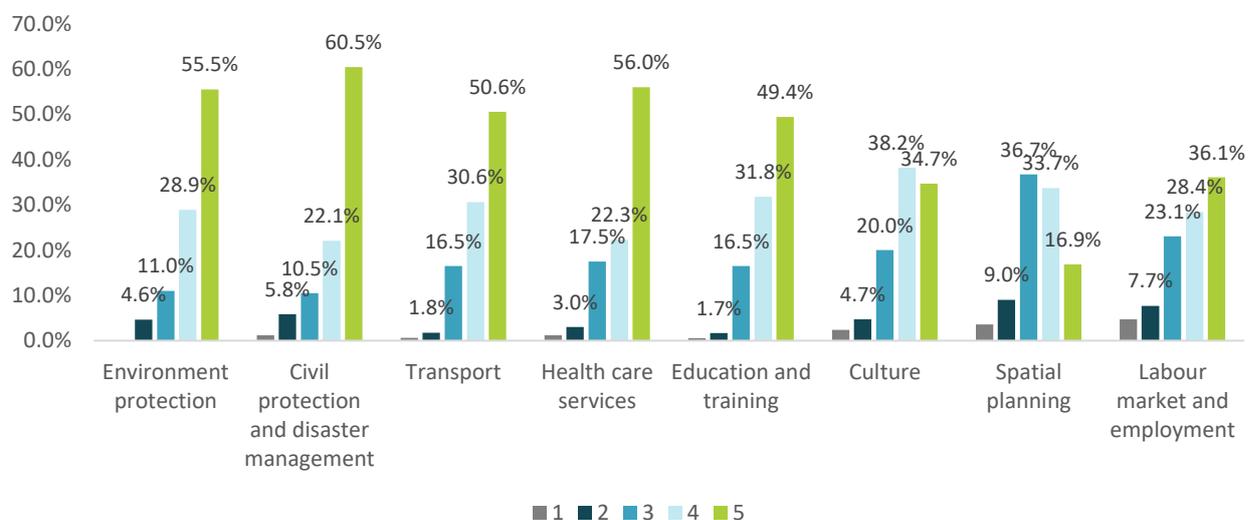
FIGURE 122 THE MOST IMPORTANT POTENTIAL AREAS OF THE CROSS-BORDER TERRITORY TO BE ADDRESSED





In terms of multiple responses coming from the same institution/ organisation, it was noted that several respondents coming from the same central public institutions chose in a significant number the renewable energy generation potential. Also, respondents coming from different county institutions opted in large numbers for tourism as the most important potential area to be addressed.

FIGURE 123 THE MOST IMPORTANT POTENTIAL FIELDS OF INTERVENTION FOR THE CROSS-BORDER PUBLIC SERVICES (CPS) TO BE ADDRESSED



Looking at the most important potential fields of interventions for the cross-border public services (CPS), the answers received for the first two fields are very balanced, placing environment protection and civil protection and disaster management on the first places. The third place is occupied by transport CPS, followed by health-care services.

As in the case of the needs of the programme area, having in mind the scale we applied within this question and the fact the we want to consider the most representative responses, correct is to refer to the percentage of the top two answers. In this regard, the environment protection is the top potential field of intervention for cross-border public services surpassing civil protection and disaster management. A key point to take into consideration is also that the repetitive answers received influenced the five points rating of the Civil protection and disaster management while the responses received for Environment protection have been more evenly distributed.

Both in the case of civil protection and disaster management and environment protection, several respondents coming from a couple of public institutions, both from the central and county/ district level, contributed to approximately 25% to their score.

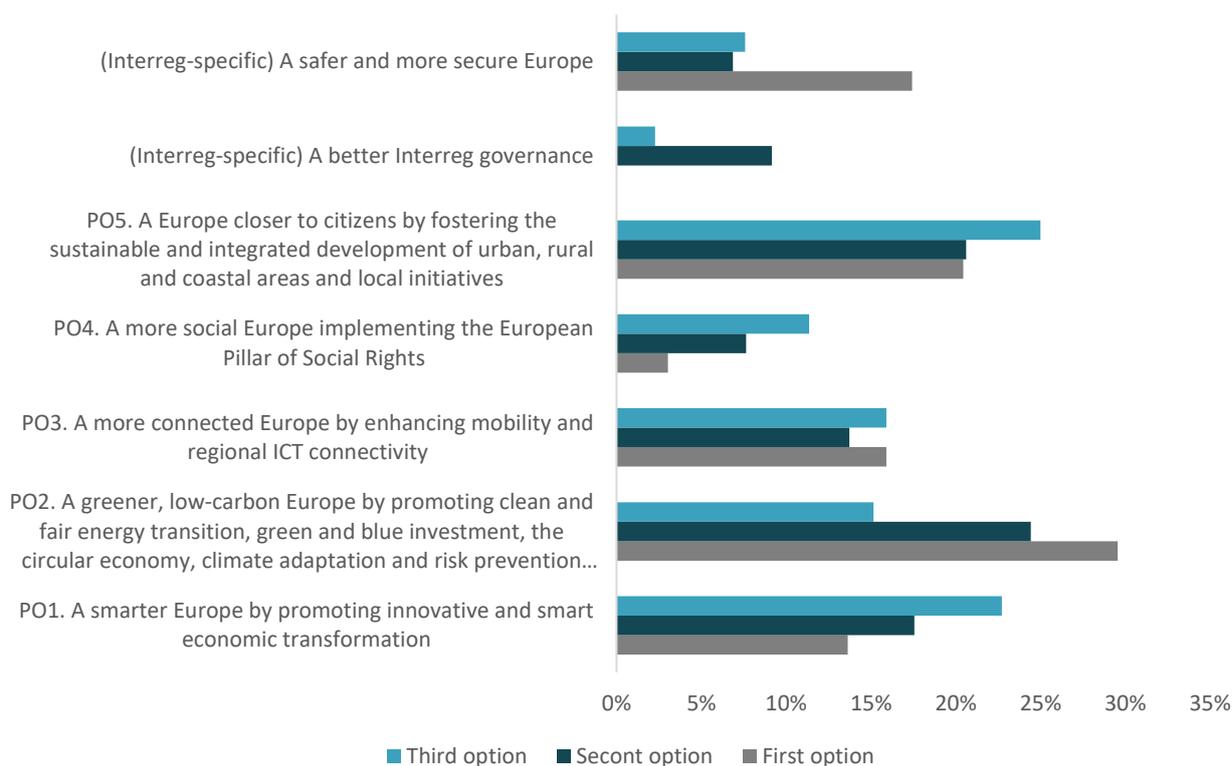


9.1.4. POTENTIAL PRIORITIES OF INTERREG V-A ROMANIA - BULGARIA PROGRAMME 2021 - 2027

The figure below shows which are the respondents' options when it comes to policy objectives set out in the draft Common Provisions Regulation (CPR). The respondents were asked to rank which is the first, second and third most important objective to be addressed by the future Interreg Romania-Bulgaria programme. **PO2. A greener, low-carbon Europe** received the most votes as the first most important policy to be addressed. The second most important policy objective is **PO5. A Europe close to citizens**, while **PO1. A smarter Europe** was considered the third most important.¹⁵⁶

It is important to note here that the responses received for (Interreg-specific) A safer and more secure Europe as the first option came largely from respondents from the same public institutions, both from central and county level. The similar answers received from these institutions also weighed considerably for PO2.

FIGURE 124 ERDF POLICY OBJECTIVES CONSIDERED FIRST, SECOND AND THIRD MOST IMPORTANT TO BE ADDRESSED



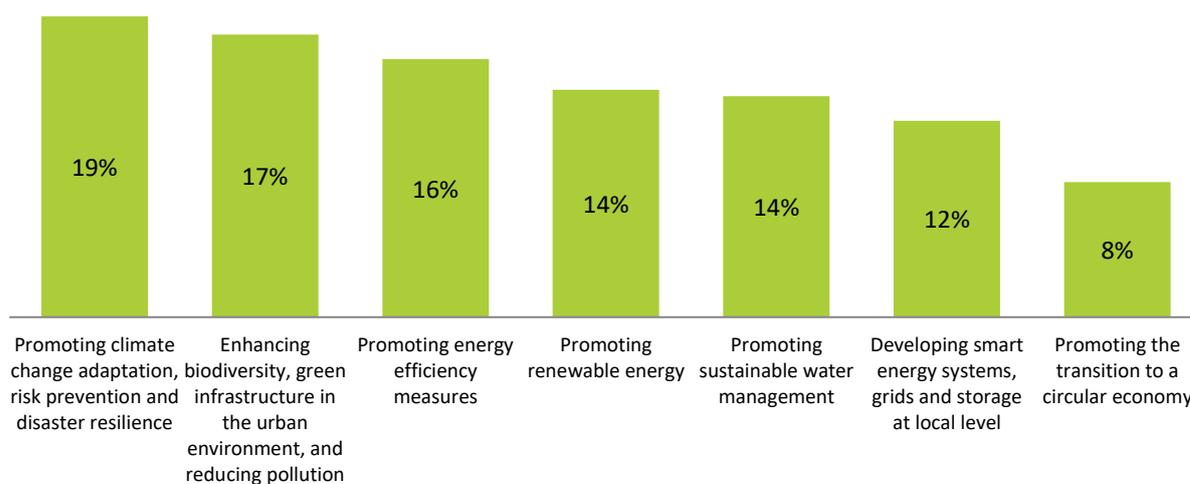
Next, respondents were asked to choose which are the most relevant specific objectives for each policy objective. The rankings below present the overall number of the responses per

¹⁵⁶ PO5 received most of the votes both as a second and third option. Thus, it was selected as the second most important policy objective and for the third most important PO was selected PO1, which ranked next.



objective. In the case of PO5. A Europe closer to citizens, since it has only one specific objective, namely Fostering the integrated social, economic and environmental development, cultural heritage and security in urban areas, there is no ranking of specific objectives/ priorities. The same applies to the Interreg-specific objective A safer and more secure Europe, for which at the moment the EU regulations haven't defined specific objectives.

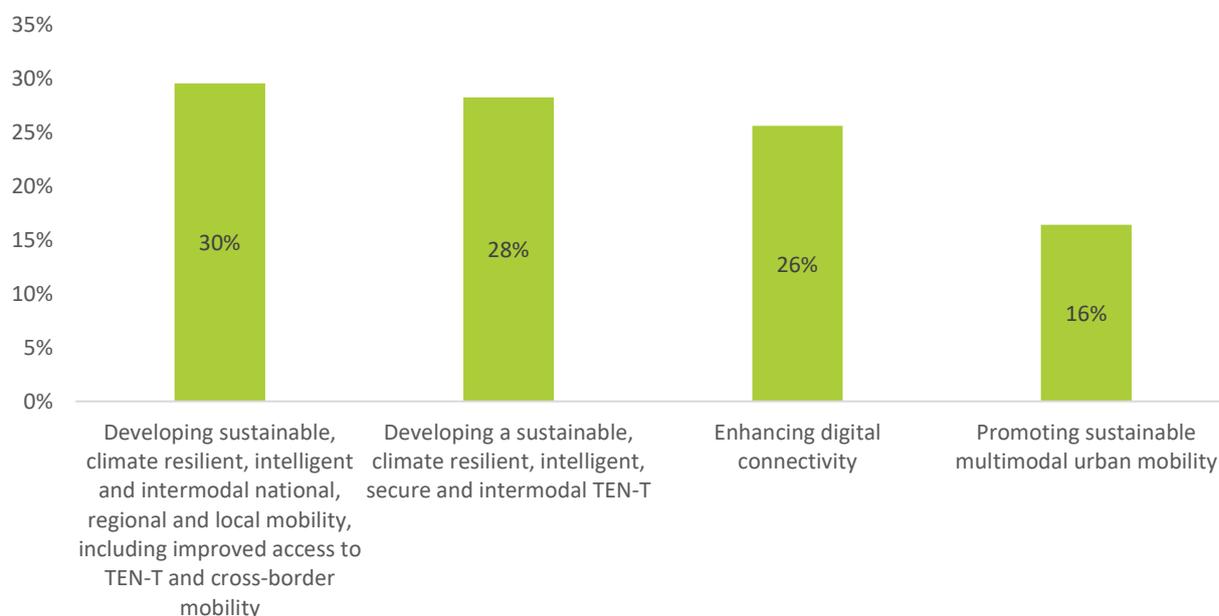
FIGURE 125 OVERALL SPECIFIC OBJECTIVES MOST RELEVANT FOR PO2. A GREENER, LOW-CARBON EUROPE



PO2 was chosen the first most important policy objective for the Romania-Bulgaria cross-border area. Within this objective, the specific objective chosen as the most relevant is the promotion of climate change adaptation, risk prevention and disaster resilience. This links to the top problems in the field of environment and risks, all of them being climate-change related. Also, the need for promoting energy-efficiency measures, the third specific objective selected by the respondents, may also be linked with the fact that the renewable energy generation was chosen as the second most important potential element of the cross-border territory to be addressed.



FIGURE 126 OVERALL SPECIFIC OBJECTIVES MOST RELEVANT FOR PO.3 A MORE CONNECTED EUROPE

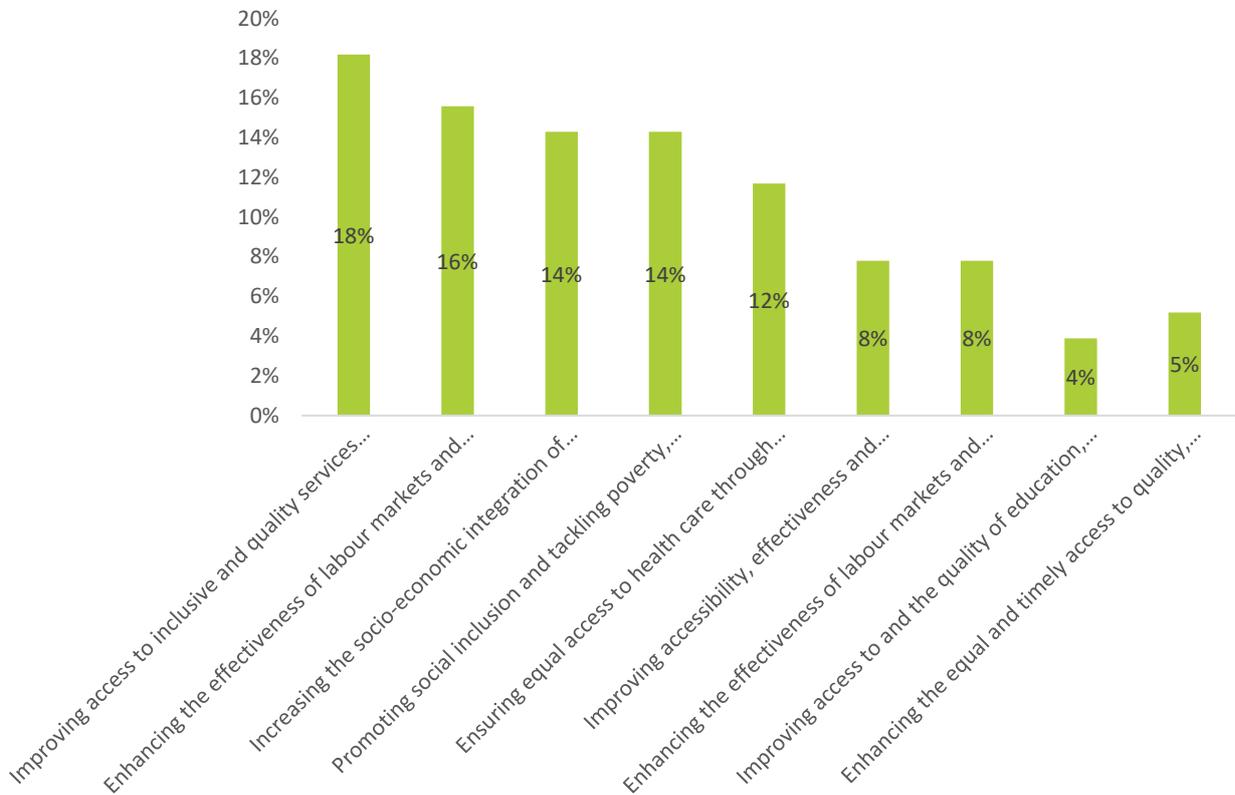


Regarding the specific objective of PO3 A more connected Europe, the first two options refer to improving the physical connectivity of the territory, both in terms of regional and local mobility and the TEN-T network. Digital connectivity ranks third, with 26% of the votes of the respondents who chose PO3.

Within PO4 A more social Europe, the first two options are targeting needs related to the development of human capital and labour force - the need for a greater access to quality public services, either we talk about access to quality education (first option) or access to quality employment. Also, the third and fourth options are targeting a single big issue - social inclusion of disadvantaged/ vulnerable groups.

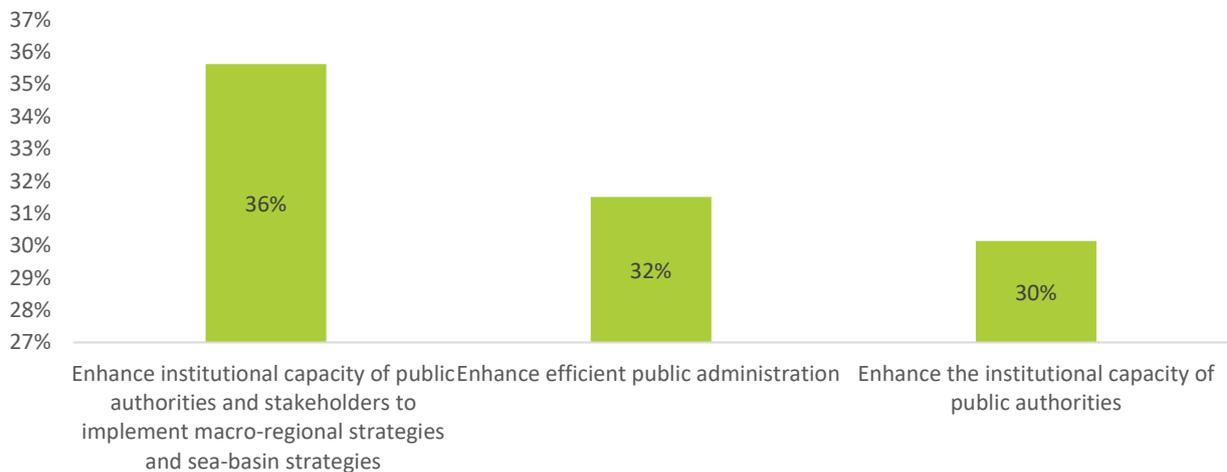


FIGURE 127 OVERALL SPECIFIC OBJECTIVES MOST RELEVANT FOR PO4 A MORE SOCIAL EUROPE



Finally, looking at the Interreg specific objective for a better governance, the specific objective considered the most relevant by respondents is the enhancing of institutional capacity of public authorities and stakeholders to implement macro-regional strategies and sea-basin strategies. The other two options are scoring closely, with 32% and 30% of the responses.

FIGURE 128 OVERALL SPECIFIC OBJECTIVES MOST RELEVANT FOR A BETTER INTERREG GOVERNANCE



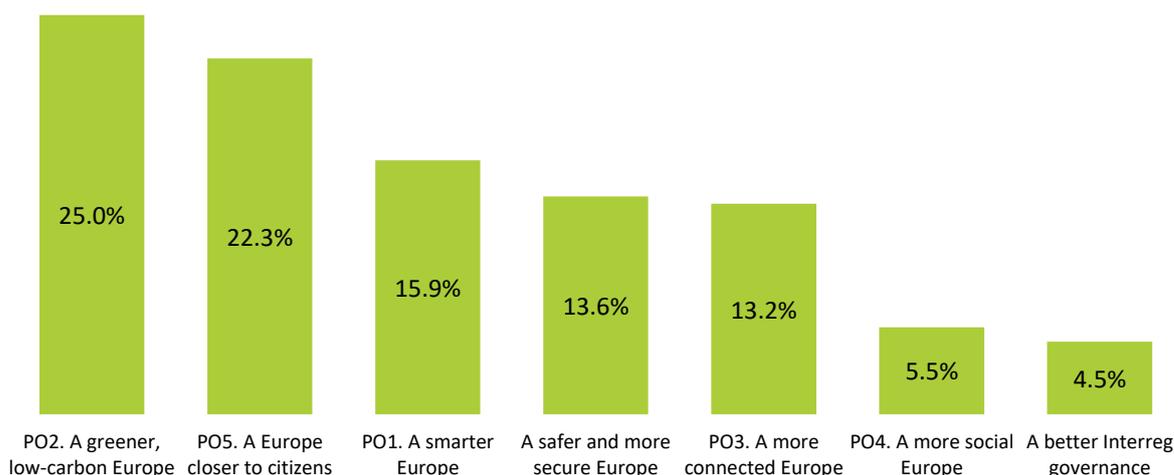


9.1.5. POTENTIAL INVOLVEMENT IN INTERREG V-A ROMANIA - BULGARIA PROGRAMME 2021 - 2027

More than 90% of respondents are considering applying for funding from the future Romania-Bulgaria Interreg programme. A quarter of the respondents are considering applying with projects under PO2 A greener, low carbon Europe, 22.3% under PO5 A Europe closer to citizens and 15.9% under PO1 A smarter Europe. These objectives strongly correlate with the needs and priorities identified in the previous sections.

Several identical responses were received from respondents within the same institutions. Considering only one response per institution, the ranking below would modify, PO3 advancing in front of A safer and more Secure Europe in terms of numbers of projects.

FIGURE 129 ERDF POLICY OBJECTIVE/-S THAT STAKEHOLDERS INTEND TO APPLY FOR (NO. OF PROJECTS, AS FRAMED BY RESPONDENTS)



PO2 A greener, low carbon Europe was the one objective to which stakeholders returned to repeatedly. It was evaluated consistently by stakeholders to be a top priority, in terms of needs, potential and projects. The number of stakeholders who want to apply for this objective is high and the project ideas are diverse, including projects in the areas of waste management, risk prevention, green infrastructure, food safety, air quality and training on climate related topics. From the projects framed by respondents within other POs, related elements/ ideas could be identified: green tourism or building rehabilitation and energy efficiency.

The objective with the second largest number of project ideas is PO5 A Europe closer to citizens, mainly because its link with tourism and heritage, an important potential of the Romania-Bulgaria cross-border territory. Many of the projects proposed for this objective refer to preserving and promoting the cultural heritage especially by digitization, diversifying the touristic offer, including the development of green tourism and green infrastructure.



The third objective chosen by stakeholders for prospective projects is PO1 A smarter Europe. Most of the projects proposed focus on research and innovation exchange in the Balkan area, smart agriculture, labour market integration, digitalisation and training centres.

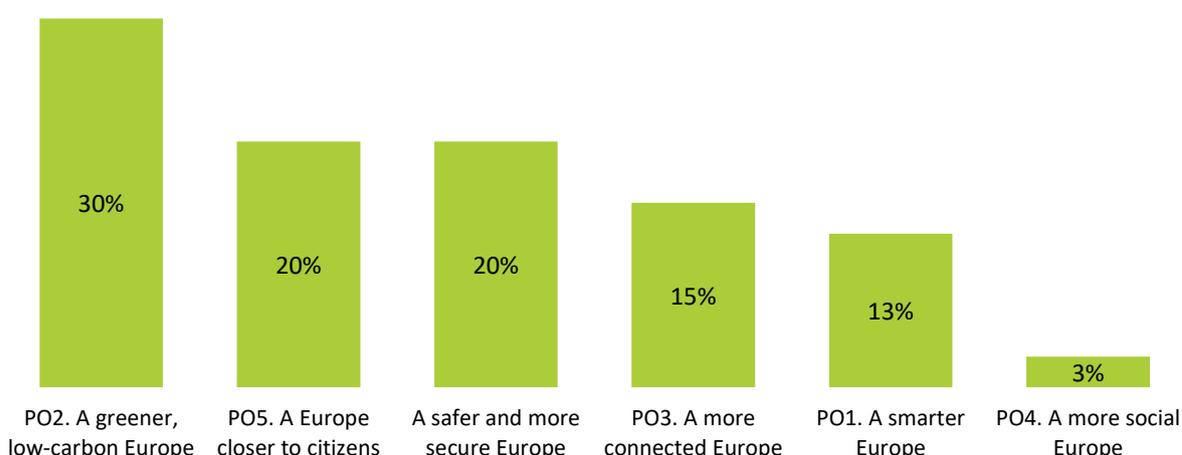
The rest of the proposed project ideas can be classified into the following themes:

- Safety-related projects such as navigation safety, road modernization, car safety systems, food safety system at the border, emergency intervention, border safety;
- Health and social services related projects such as a treatment centre for rare diseases, social services for older people, integrated measures to fight poverty, projects related to training and education: training centres, education on cultural and natural heritage or social work training;
- Capacity building for public institutions.

The interest in potential strategic projects is lower than the one for general project applications. However, 66.2% of the respondents would be interested to participate in such projects. The ranking per objectives shows that PO2 A greener, low carbon Europe and PO5 A Europe closer to citizens are again the favourites, together with the Interreg-specific objective A safer and more secure Europe and followed by PO3 A more connected Europe.

The vast majority of responses received for A safer and more secure Europe were received from respondents coming from the same public institution. The same respondents also contributed with almost half of the responses for PO2.

FIGURE 130 ERDF POLICY OBJECTIVE/-S THAT STAKEHOLDERS INTEND TO APPLY FOR A STRATEGIC PROJECT



As regards PO2, the strategic projects proposed are related to joint risk and emergency management. For PO5, stakeholders proposed common strategies for tourism and conservation of the Danube area. For A safer and more secure Europe, the projects proposed are related to border management, navigation safety or road traffic safety. For PO3, there are many projects proposing infrastructure such as roads, bridges, green transportation or digitalisation. Other



projects that may have strategic value are a centre of excellence for cancer treatment and joint training programs, for example in the field of tourism.

Considering their thematic scope, it is important to mention that some of the project proposals assigned to a policy objective by respondents may also match other POs. For example, some projects assigned to *A safer and more secure Europe* may also be distributed to other policy objectives like PO1, PO2 or PO3, while some projects assigned to PO5 could fall under PO2 (e.g. sustainable tourism) or the Interreg-specific objective A better Interreg governance (trainings, experience exchanges, pilot projects).

Moreover, it is for the first time when EU regulations provide such a compact set of policy objectives of the cohesion policy, encompassing a variety of specific objectives and possible actions. This, together with the fact that the EU regulations are not yet final, is the reason why it was difficult for respondents to clearly identify in which policy objective a project idea might fit in. This difficulty was also observed during the working groups.

9.2. SUMMARY OF THE WORKING GROUPS

6 working groups were organised during the elaboration of the Territorial Analysis, covering the entire cross-border territory: 4 stakeholder workshops in Giurgiu, Craiova, Vidin and Silistra and two stakeholders' focus groups in Pleven and Constanta. During the stakeholders' workshops, participants discussed the first findings of the stakeholders' survey, the needs and potentials that can be approached by the future Programme, potential projects, as well as a first selection and prioritization of the objectives to be tackled by the CBC Programme 2021-2027. During the focus groups, the selection and prioritization of the objectives to be tackled by the CBC Programme 2021-2027 was revisited, discussing the viability of the new policy objectives and their potential territorial impact.

Most needs, challenges and potential elements were in line with the findings of the thematic analysis based on desk research and with the results of the stakeholders' survey. Some of the main points highlighted during the discussions are synthesized below.

9.2.1. NEEDS AND CHALLENGES

- The Danube is not capitalized as an important touristic destination or route. Other segments are far better valorised in terms of tourism and navigation.
- Need for further road connections, the two bridges are not enough
- Long border-crossing time, discouraging commuting and freight transport.
- Not being part of the Schengen area limits cross-border cooperation
- Legislative differences between the two countries, hampering cross-border cooperation on the provision of public services (e.g. in the field of health-care, public transport)
- Lack of qualified workforce reduces the possibility to capitalize on economic opportunities
- Low economic exchanges within the area
- Administrative barriers to the exchange of students and workers (incl. doctors' right to practice)
- Aging population, brain drain; youth are leaving the region
- Weak access to touristic objectives
- Language barriers (especially in writing) - both in terms of understanding Romanian and Bulgarian and as regards English speakers
- The need to improve safety and predictability of transport along the Danube



- Both countries are extremely vulnerable to climate change and natural risks
- Lifelong learning is very low in both countries
- Silistra ferry barely used and frequency is very low
- Health care system is not well equipped
- Low effectiveness of the public administration bodies
- Outdated energy infrastructure based on coal, will raise the issue of transition to sustainable sources.

9.2.2. ASSETS

- Danube as transport corridor and natural heritage
- Common cultural heritage, traditions, history - e.g. joint development potential of the Dobrogea region or of cultural routes (e.g. citadels)
- Gastronomy
- Ethnic diversity and multiculturality
- Rich natural heritage
- The Black Sea coast as the main touristic area
- Potential for renewable energy
- Mature partnerships - strong partnerships building up since the early 2000's
- Universities and research centres in the territory, suitable for creating a research network
- Agricultural activities, together with research facilities in the field, that could support the development of up-to-date products and services
- B2B opportunities and active business bodies/ networks (e.g. through the Chambers of Commerce collaborating between the two countries)
- Good experience in risk prevention and emergency interventions that could be capitalized on and expanded at regional level

9.2.3. POSSIBLE PROJECTS AND INITIATIVES

- Supporting local research networks (Constanța - Craiova - Vidin - Ruse)
- Boosting tourism through festivals, common branding (ex. Dobrogea region)
- Cross-cycling lanes
- Facilities for yachts to boost tourism
- Observation and monitoring of natural environment: prevention of forest fires
- Cooperation in training staff for common interventions in emergency situations along the border
- Digitisation and digitalisation of public services
- Bench marking & bench learning - sharing practices within a domain or between domains
- Developing the Eurovelo 6 corridor
- Completing the regional railways (ex. Constanța - Varna)
- Study for cross-border mobility (including common protocols for mobility of workforce / commuting)
- Common surveillance and emergency intervention system along the Danube
- Common training facility for border police and other stakeholders active in ensuring the security of the Romania-Bulgaria border



- Common warning system on the cross-border region (ex. RO-Alert)
- Cross-border public transport
- Projects promoting/ supporting fishing tourism
- Social protection and inclusion projects for Roma and vulnerable groups.
- Touristic/ cultural routes - e.g. Military Historical Museum in Pleven and the municipality of Turnu Măgurele can cooperate in the rebuilding the old Roman road
- Nautical tourism centre promoting green tourism with activities such as kayak, cycling, yachting
- Sustainable tourism programme to support agritourism in traditional households
- Education centre providing training for tourism employees
- Promotion of local cuisine
- Seed bank to collect, store and promote local seeds
- Food-safety projects
- Trainings for local companies to implement circular economy projects
- Ring-roads to divert freight transport from cities, decreasing congestion and pollution (e.g. Silistra)
- Digital public services - platforms for companies, educational platforms etc.
- Support for electric vehicles - charging station network

9.2.4. POINTERS FOR THE PROGRAMME STRATEGY AND OBJECTIVES' PRIORITISATION

- OP1 generated debates, as research and innovation are not currently assets of the region. However, the objective was considered important in order to create jobs, to support regional economic development and to create regional innovation and entrepreneurship ecosystems. It should be analysed what would be the legal requirements or barrier to include SMEs as direct beneficiaries vs. including them as indirect beneficiaries, through business associations, Chambers of Commerce etc.
- OP2 was considered the most relevant for the Romania-Bulgaria cross-border area, as it includes safety, climate change adaptation, green infrastructure and green transport. Eligible interventions should also include sustainable tourism. OP2 is suitable for strategic projects.
- OP3 generated debates, as connectivity is of utmost importance for the cross-border territory; however, the necessary interventions (e.g. a new bridge) would entail large budgets and would probably not fit the programme. However, improving the connectivity should be considered.
- OP4 was considered important but was not necessarily chosen as a priority. However, education and labour force support were mentioned as important priorities for the area. On the other hand, with regard to health-care opinions were divided, respondents reclaiming the difficulties generated by the different legal frameworks.
- OP5 - there was a common understanding that it would be difficult to implement at cross-border level. It was considered that the development of the territorial strategy and the appointment of the implementing body would be too time consuming and would not allow for the proper implementation of projects. This objective was initially selected by stakeholders due to its links with tourism and heritage - it is to be seen where these interventions could be included.



- A better Interreg governance was not considered attractive at first, as there were no indications regarding the fields it could support. However, supporting cooperation and administrative capacity development is of utmost importance for the region.
- A safer Europe was considered a priority by national and local stakeholders in the field of public safety and emergency interventions. There is a significant experience, with good result of projects in the field, which should be capitalized on during the 2021-2027 programming period.
- Considering the Green Deal, participants highlighted the need and opportunity to invest in activities that are related to a healthy lifestyle (e.g. sport, etc.) and prevention.
- Pilot projects are considered beneficial in order to test and validate interventions.

9.3. CONCLUSION

Based on the analysis of the answers received within the survey, the discussions during the working groups, considering the project ideas received and the need for thematic concentration, it is important to notice that initiatives can be financed within different policy objectives, out of which the most opportunities stem from PO 2, PO 4 and from the Interreg-specific objective - a better Interreg governance.

These objectives can also cover interventions initially associated by respondents to the other policy objectives. For example, while PO1 was mentioned mainly with respect to jobs creation in order to fight migration and brain drain, labour force can be more broadly addressed through PO4. Similarly, sustainable tourism could be addressed within PO2 instead of PO5 and emergency response can be addressed through PO2 and A better Interreg governance.



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SECTION 3 - CONCLUSIONS AND RECOMMENDATIONS



10. TERRITORIAL DIAGNOSIS

10.1. SWOT ANALYSIS

SMARTER	
STRENGTHS	WEAKNESSES
<p>Good resources for economic diversification (agricultural land, tourism potential, water, traditions).</p> <p>Constant economic growth, although the region is still lagging behind.</p> <p>Labour cost competitiveness.</p> <p>Labour productivity has improved.</p> <p>The presence of universities and research centres/ institutes in the area, generating local development and laying the foundation for a future RDI ecosystem.</p>	<p>The framework conditions required to strengthen economic development based on innovation do not seem to be in place in the region¹⁵⁷.</p> <p>Outdated industrial assets - low modernization.</p> <p>Low development of SMEs, predominance of microenterprises, increasing vulnerability.</p> <p>Low level of collaboration between researchers and companies.</p> <p>Limited maturity of the innovation and entrepreneurial ecosystem.</p> <p>Higher share of employees in agriculture than in the national economies, but productivity remains low.</p> <p>Knowledge - intensive sectors are weakly developed, showing a decline in competitiveness despite the higher concentration of employees.</p> <p>Brain drain and population outmigration.</p> <p>The initiatives in the digitalisation of the public administration are rather isolated and insufficiently developed, each major city focusing on improving specific procedures rather than the entire business registration process</p> <p>Low levels of tourism development in counties/districts, except for the Black Sea coast.</p> <p>Tourist potential not valorised at its true value.</p> <p>Fragmented touristic offer.</p>
OPPORTUNITIES	THREATS
<p>Support for SME internationalization to strengthen their demand and widen their markets.</p>	<p>The low absorptive capacity and rigidity with respect to technological transformation.</p>

¹⁵⁷ European Commission, Border Orientation Paper



Improved integration of labour force in agro-based services.

Adoption of precision farming and other modern technologies to improve productivity and efficiency.

Closer rural-urban cooperation to strengthen rural connectivity and access to opportunities.

Promotion of workers upskilling in connection to current market demands.

Inclusion of SMEs in the lifelong learning agenda design.

European touristic and cultural routes along the Danube provide opportunities to capitalise on the area's untapped touristic potential.

National initiatives support local tourism (e.g. Holiday vouchers for Romania).

Increased attractiveness of larger cities further lowering the area's attractiveness; increasing polarization.

The long-term demotivation of inactive working age population to reintegrate on the labour market.

Unclear rules on state aid (thus insecurity for both beneficiaries and Programme). Financing in the area might be redirected from national funds, while the Programme creates the premises for such an approach (while strengthening the stakeholders via Interreg better Governance)

GREENER

STRENGTHS

Exceptional biological diversity - diversified protected areas.

Significant agricultural areas in both countries. Most of it on the Romanian border, 57.28% of the total area. These areas are important parts of the national agricultural activities.

High density of the river network.

Significant forestry areas.

Air quality that remains under the maximum concentration admitted, with the exception of PM10 and PM2,5.

The Romanian side is relatively rich in energy resources and the Bulgarian side is rich in minerals.

Constant efforts are being made to lower the climate change effects.

Potential for renewable energies.

WEAKNESSES

Low percentage of people connected to WWTP, which leads also to the pollution of the main water bodies.

Low rates of waste recycling, in some cases equal to 0. Missing strategies for solving this issue.

High quantity of generated waste.

A high number of high-risk industrial infrastructures and many of them situated in floodable areas.

High levels of PM10 and PM2.5 in the urban areas.

High degree of vulnerability to climate change.

Low response capacity in case of floods, seismic events and other natural hazards.

Increasing annual temperature.

Erosion of the seacoast and the Danube bank.

Decrease of productivity of the agricultural lands due to more frequent and longer periods of drought.

OPPORTUNITIES

Introducing new innovative technologies, equipment to improve the environment quality and solving especially the waste issue and the non-conformity with the European legislation.

THREATS

Irreversible damage in the natural environment and existing infrastructure.

Illegal logging in both countries.

Seismic risk and the probability of new strong seismic movements.



Accessing funds for improving the environmental quality and the connection to water and waste management facilities.

Evaluating vulnerability of settlements to different categories of hazards.

Promoting projects related to the protection of biodiversity and sustainable use of natural resources (special funds for supporting the creation and implementation of management plans in the Natura 2000 sites or for the creation of new protected areas).

Great potential in cooperative measures (e.g. joint planning, strategies, mapping) related to nature and landscape protection and promotion.

New national initiatives that would support the reduction of GHG emissions.

Reduction of the impact of climate change in natural environment through dedicated national and EU initiatives.

Increase of the adaptive capacity and support for preventive actions.

Awareness raising related to climate change (New European Green Deal).

Risks related to the pollution of waters and soils.

Significant future erosion of the beaches in the context of the rising sea level.

High flood risk in specific areas.

Protected areas are exposed to great risks because of illegal exploitations, tourism, constructions, and poaching.

European Commission infringement procedure on waste.

The reduction of GHG emissions could imply higher costs for the polluting enterprises, and limit the economic growth in itself.

Damage in the existing infrastructures because of floods and storms.

Harsher projected environmental and economic impacts induced by climate changes.

Coastal erosion will threaten tourist activities.

CONNECTED

STRENGTHS

The quality of main roads in the cross-border regions is generally good, especially on the Bulgarian side (less than 1.2% of main roads are still unpaved). Various Romanian county roads in the cross-border region are in the process of being upgraded.

Bulgaria is between the EU countries with the highest share of electrified railroads. In the cross-border region most Bulgarian railroads are electrified.

The recently modernized railway between Constanța and Bucharest ensures performant and competitive transport services (speed up to 160 km/h).

The hinterland connectivity of the port of Constanța greatly increased in the last year thanks to the new railway line and the A2 motorway.

Volumes of trade on the Danube within the Romania-Bulgaria cross-border territory have increased.

WEAKNESSES

Only two bridges are crossing the Danube within a distance of 470 km.

Most north-south railway lines within Romanian counties are not electrified dead ends that don't cross the border (line 800, 803, 801, 909, 908, 910).

The direct railway line between Bucharest and Giurgiu is not usable anymore since a bridge collapsed on its route.

The non-electrified railway line between Craiova and Vidin causes delays on the Craiova-Sofia (Orient East Med corridor) cross-border rail route.

There are only two cross-border railway links used for passenger transport, with only 1 train daily. Both routes can be travelled significantly faster by car.

Both Romania and Bulgaria have the lowest rankings in terms of road safety within the EU.

In the last years, the number of persons deceased or with heavy injuries from road accidents increased in Olt County (36%) and in the districts of Vidin (70%) and Veliko Tarnovo (27,6%).



Many cities in the cross-border region (ex. Silistra, Giurgiu, Slatina, Turnu Măgurele, etc) lack a beltway. In the absence of a belt, heavy traffic continues to pass through the city causing congestions and reducing road safety.

The Danube still acts like an important barrier in terms of territorial connectivity. The territory between Călărași and Giurgiu has the weakest access to border crossings by road.

Weak cross-border mobility between the twin cities along the Danube due to the lack of cross-border public transport and intermodal facilities

The values of road length / capita in the cross-border region lie much beyond the European average. Bulgarian districts have a less dens road network than the Romanian counterpart.

The depth of the Danube makes navigation difficult during draught periods. Most bottlenecks are between Turnu-Măgurele and Călărași.

Urban-rural gaps in terms of digital connectivity - the broadband coverage in rural areas is around 80% in Romania and Bulgaria (below the target of 100% for 2020).

OPPORTUNITIES

The Eurovelo 6 corridor from Nates to Constanța is mostly completed up to the Romania-Bulgaria border. Continuing the corridor within the cross-border territory could ensure a valuable influx of tourists in the region and thus strengthen the local economy. On the other hand, the corridor could also act as a local transport route linking various settlements along the Danube.

Given the TEN-T outline plan, accessibility potential by road is expected to increase by more than 40% in most districts: Ruse, Veliko Tarnovo, Pleven and Giurgiu.

Most countries within the Danube Basin region increased their GDP in the last years which can translate into an increased demand for transport along the Danube.

European Regional Development and Cohesion funds are still available for completing the TEN-T networks, especially for railways.

Various strategic planning documents include new bridges crossing the Danube. During the Spatial project a pre-feasibility study was prepared for a new bridge between Turnu Măgurele and Nikopol. Further analysis of the potential to increase the connectivity between both countries (in any kind

THREATS

The Bucharest - Giurgiu - Ruse - Dimitrovgrad - Alexandroupolis link (part of the Pan European corridor IX) was not included into a TEN-T core corridor, remaining a simple link within the TEN-T core network.

Given the TEN-T outline plan, accessibility potential by rail in the cross-border region is not expected to show a strong increase by 2030. Most improvements in the two countries lie outside the cross-border area.

Not being part of the Schengen has a strong negative impact on the cross-border flows of goods and passengers. Delays at the border crossing force transport service providers to choose other more efficient trade routes.

Motorisation rate of both countries continues to grow fast and the pressure on already congested road infrastructure increases.

Both countries have strong east-west transport routes which serve similar purposes, linking their ports at the Black Sea with Central Europe. There is a competition between the two main transport corridors: Orient-East Med and Rhine Danube (road and rail).



of transport) would serve for the proper planning and future investments.

SOCIAL	
STRENGTHS	WEAKNESSES
<p>Increase of life expectancy in both countries.</p> <p>Birth rates increased (Constanta, Mehedinți, Olt, Ruse, Vidin, Vratsa).</p> <p>Natural growth rate higher than the national average for some Romanian counties</p> <p>Constanta, Dolj, Plevne, Ruse and Veliko Tarnovo as regional urban centres, concentrate higher education infrastructure and serve the surrounding territory.</p> <p>In general, the Bulgarian districts have a more favourable teacher distribution, allowing proper attention for all children in their learning process.</p> <p>Per total, the number of teachers increased by 20% in Bulgaria in the 2013 - 2017 period.</p> <p>In almost all Bulgarian districts, there is a better ratio of hospital beds/ population than in Romania.</p> <p>Regarding the number of population per physician, Bulgaria has again a more favourable situation with 100 persons per doctor.</p> <p>In the Romanian cross-border area, the number of public hospital beds available per 1000 inhabitants showed a constant increase in the 2012 - 2018 period in all counties.</p> <p>In both countries, an integrated approach has been guiding the planning and operationalization of the national emergency response. This helps a fast and dynamic coordination of all dedicated structures, from the central level up to local administrations and the smallest implementing units (e.g. an ambulance or a fire truck).</p>	<p>Regions geographically located in the RO-BG cross-border area are among the poorest in the European Union.</p> <p>Migration of skilled labour force.</p> <p>Low demographic dynamism in all areas, especially for Bulgarian districts.</p> <p>High values for the ageing index in most of the areas.</p> <p>Rural Bulgarian areas are facing a massive depopulation phenomenon.</p> <p>Language barriers hamper cross-border mobility of the labour force and overall cross-border cooperation</p> <p>The academic enrolled population in the Romanian cross-border area dropped by 10.6% between 2012 and 2018.</p> <p>In the Bulgarian cross-border area, there has been a decrease of almost 10,000 students in the 2013 - 2017 period, and of almost 10,000 pupils in the secondary level education in the same timeframe.</p> <p>The teaching staff in the Romanian area decreased by approximately by 10% in a constant manner between 2012 and 2018.</p> <p>The development of faculties/universities has stopped in the recent years.</p> <p>The 1st, 2nd and 4th counties in term of highest rate of illiteracy in Romania are located in the cross-border region (Călărași, Giurgiu and Teleorman). In Bulgaria, two of the districts (Dobrich and Silistra) are above the national percentage of illiterate population.</p> <p>In some Romanian counties such as Constanța and Dolj the situation is critical, with physicians having on average between 3000 and 6000 patients.</p> <p>In Dobrich and Vidin, the number of hospital beds per 1.000 inhabitants is below 4.</p> <p>The emergency medical care is confronted on one hand with infrastructure problems (insufficient establishments), a shortage of equipment and medical staff due to low wages and hard working conditions especially in remote areas, and, on the other hand, with overcrowding due to the lack of</p>



	<p>information that citizens possess as to when the emergency health system should be used.</p> <p>The evolution of the housing surface (m²) available per inhabitant shows a deepening gap between the more urbanized counties (Dolj, Constanța, Olt, Pleven and Veliko Tarnovo) and the more rural ones (Giurgiu, Călărași, Mehedinți).</p>
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OPPORTUNITIES	THREATS
<p>New policies for supporting areas with high rates of depopulation.</p> <p>External migration as a source of bringing capital into the areas.</p> <p>Changes in the migration model to the rural areas - as a source for reconstructing the periurban areas.</p> <p>Dedicated operational programs that provide funding to support the development of public services such as education, health and social care.</p> <p>Implementation of compulsory health insurance and health cards leading to increased access to health services.</p>	<p>Lower incomes in comparison to the rest of the two countries which may lead to further emmigration of the young people in the upcoming years.</p> <p>The lack of polarisation/ interest centres within the area may lead to an even stronger depopulation phenomenon.</p> <p>The proximity of capital cities - Bucharest and Sofia - is also a strong factor that discourages the development of local higher education structures.</p> <p>The decrease in the number of children due to lower natality rates and migration leads to the ageing of the more depopulated areas and this is the main factor of school population decrease.</p> <p>Different legislative frameworks on the provision of healthcare services in Romania and Bulgaria (i.e. treating patients from another country) makes the development of joint cross-border public services difficult.</p> <p>The tendency of privatization of the public health system that may have an effect of increasing the costs of medical services and the transfer of doctors from public hospitals to private clinics.</p>

GOVERNANCE

STRENGTHS	WEAKNESSES
<p>The relatively long history of cooperation between Romania and Bulgaria that has enabled the improvement of the instruments and approaches promoted for collaboration.</p> <p>The long tradition of cooperation between a series of localities, such as Giurgiu and Ruse.</p> <p>The enhancement of participatory processes for involving relevant stakeholders in the development of the area.</p> <p>The tendencies in development of horizontal cooperation between different stakeholders by</p>	<p>The differences between the administrative systems in the two countries that represent an obstacle for example in the cooperation between LAU2 units which do not represent an administrative level in Bulgaria.</p> <p>The relatively high level of distrust in local and central government can discourage stakeholders from getting involved in the development process of the area.</p> <p>Relatively reduced coverage of digital public services, especially in Romania.</p>



means of collaborative structures (LAGs, IDAs etc.)

The existence of areas / localities with reduced administrative capacity and the lack of resources for implementing cooperation initiatives.

Legislative frameworks in the two countries hamper the cooperation and provision of cross-border public services, most notable examples being healthcare and public transport.

The language barrier represents an important obstacle to collaboration between stakeholders from Romania and Bulgaria.

OPPORTUNITIES	THREATS
<p>The continuity of cooperation programmes at European level.</p> <p>The existence of complementary programmes at European and at national level that could create synergies with actions implemented in the cross-border area.</p>	<p>The increased attractiveness of surrounding territories (such as the capital cities of Bucharest and Sofia) that could attract population and skilled labour force from the cross-border area.</p> <p>Difficulties that could hamper coordination between the local and national strategies and the development priorities of the cross-border area based on the level of stakeholders' involvement or the complexity and extent of the programme area.</p> <p>The high level of centralisation of the two states.</p>



10.2. TERRITORIAL DIAGNOSIS

Starting from the SPATIAL Project (Common Strategy for Sustainable Territorial Development of the cross-border area Romania-Bulgaria, funded by Romania-Bulgaria Cross-border Cooperation Programme 2007-2013)¹⁵⁸ many issues highlighted in the territorial diagnosis remain valid. The main urban agglomerations outside the cross-border area, Bucharest and Sofia, continue to polarize the territory, attracting people from the surroundings. Secondary poles haven't grown enough in order to foster a more polycentric region. Unfortunately, the growth of Sofia and Bucharest happened mostly at the expense of secondary centres and surrounding rural territories. Main cities in the cross-border region did not manage to capitalize on resources provided by their surroundings and functional urban areas. The urban fringe is still affected by urban sprawl and is therefore characterized by unsustainable growth patterns.

Population decline, fuelled by aging and emigration, is one of the core problems of the cross-border territory. Between 2012 and 2018 districts like Vidin and Montana lost more than 10% of their total population, Teleorman is also close to the 10% mark and most territories encounter heavy losses. Constanța is the only county with a slow decrease of populations (beyond 2%). However, population growth occurred mostly in metropolitan areas of larger cities like Constanța and Craiova, as a result of urban expansion/periurbanisation. Rural areas are mostly affected by depopulation, especially those on the Bulgarian side of the border. Even in an optimistic scenario, population might decline by approximately 33% in the cross-border region (even 52% in Vidin) by 2060. The Romania-Bulgaria cross-border region is losing population mostly due to migration towards larger cities in the surroundings (Bucharest and Sofia) or due to people moving abroad. Cities in the region are not attractive enough to retain the youth and the highly qualified professionals, which is reflected in the decrease of the number of students. As qualified workforce moves away, the districts and counties within the cross-border territory remain between the poorest in EU.

This accentuated socio-demographic decline endangers the future development of the Romania-Bulgaria cross-border area and calls for targeted interventions to maintain the current inhabitants (e.g. better public services provision, access to better-paid jobs, an improved quality of life etc.), to prevent outmigration and to attract diaspora and former inhabitants that left to larger cities (e.g. Bucharest, Sofia, Varna, etc.).

Even though the cross-border territory faces important socio-demographic challenges, the local economy grew at a fast rate over the last years. With a 40.7% growth of GDP / capita between 2012 and 2018, the cross-border region managed to grow faster than the EU28 average (12.7%). However, it is still lagging behind the other EU regions, and even behind the national averages and other regions in Romania and Bulgaria. Knowledge-intensive sectors are declining in terms of competitiveness, R&D&I levels and technological transfer are still reduced, and brain drain is limiting the economic development.

The Danube and the Black Sea remain the main assets of the Romania-Bulgaria cross-border territory, especially in terms of natural heritage. However, their potential is endangered by the landslides and high flood risk, especially on the Romanian bank of the Danube, soil erosion, particularly on the Black Sea Coast and various industrial risk factors along the Danube in Călărași and in the Giurgiu Ruse area.

The large diversity of touristic attractions in the Romania-Bulgaria cross-border area manages to attract an increasing number of tourists. By far the most attractive counties/ districts are Constanța and Dobrich, on the Black Sea coast. The seaside destinations are active mostly in the

¹⁵⁸ <http://spatial.mdrap.ro/projectresults>



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summer, with an average stay of 3.8 overnights in Constanța and 4.87 in Dobrich. The potential of the Danube as a tourist destination remains undercapitalized. The other counties and districts along the Danube account for only 17% of the total amount of overnight stays within the cross-border territory.

As regards the environment, the Romania-Bulgaria cross-border region continues to have low rates of waste recycling, in some cases equal to 0, and high quantities of generated waste. Also, air quality is worsening, especially in the urban areas where high levels of PM10 and PM2.5 remain a concern. On the other hand, both countries continue to capitalize on the natural resources of the region. The relatively high potential in wind and solar power generation ensures a high share of renewable energy for heating and domestic hot water production of residential buildings. The cross-border region is also important for the production of electricity. Each country has one nuclear power plant located along the Danube. In Romania, the Cernavodă (Constanța county) nuclear power plant, produces approximately 20% of the country's electricity, while in Bulgaria, the Kozloduy (Vratsa district) nuclear power plant generates about 35% of Bulgaria's electricity. These also imply significant technological risks.

The Romania-Bulgaria cross-border regions remains disconnected from the Core of Europe in terms of major transport infrastructure. The two thematic TEN-T corridors (Rhine Danube and Orient East Med) are still not completed. The only exception is the link between Constanța and Bucharest (highspeed rail and motorway). The north-south (Pan European Corridor IX) lost its priority status at national level and railroad transport in Romania was rerouted due to a bridge collapsing in 2005, which hasn't been repaired by now. Except for the Constanța-Bucharest line, other railway lines are either degraded or not electrified. Only two railways cross the border, but they can't compete with road traffic in terms of time, mostly due to the fact that the Romanian sections are not electrified while those on the Bulgarian territory need to be modernized. Both Eurovelo corridors passing the cross-border territory are incomplete. Within Eurovelo 6, the Romania-Bulgaria border region is the last missing link. Navigation on the Danube slightly increased, but there are still sever issues due to periodic drought when several segments are not navigable. The quality of multimodal facilities, port capacity and hinterland accessibility remain important challenges for Danube ports in the cross-border region.

Romania-Bulgaria cross-border region remains a territory of contrasts: the population decline and slow progress on infrastructure and public services development are paralleled by a trend of economic growth, the quality of environmental factors is worsening, while the sustainable energy share and potential is high, a tradition of cross-border cooperation, paralleled by a lack of trust in the administration and language barriers. Moreover, counties in the cross-border area share similar economic development challenges but do not have the internal resources to address them. Being relatively peripheral in their own national contexts and dominated by traditional industries undergoing transformation, both sides of the cross-border area need support to overcome their peripherality and to catch up with the rest of Europe.



10.3. KEY POINTERS FOR THE PROGRAMME STRATEGY

PO1 A smarter Europe - innovative and smart economic transformation

- Improve the framework conditions required to strengthen economic development based on innovation, by increasing cooperation between companies, the research environment, administration and civil society;
- Support the SME development and cooperation and the entrepreneurship as ways to create jobs and counteract migration and brain drain;
- Invest in workers upskilling in connection to current market demands and with the regional priorities on smart specialization;
- Support the economic transformation and modernisation of the area by encouraging the development and cooperation in promising sectors such as agri-food, circular economy, tourism etc. and through partnerships for manufacturing restructuring in declining areas;
- Focus on a few common sectors of activities/ common interests regarding local and regional economic development and promote a cluster approach;
- Define common cross-border products and services and support their access to the national and international markets;
- Analyse the potential for interregional innovation projects for the development/ contribution to European value chains;
- Take stock of existing digitalisation initiatives (especially in major cities) and promote a more systematic approach to digital public services, to benefit citizens and companies from both sides of the border.

PO2 A greener, low-carbon Europe

- Capitalize on and consolidate the current cooperation on risk prevention and rapid response management; increase the response capacity in case of floods, seismic events and other natural hazards;
- Develop joint climate change adaptation and mitigation strategies and measures, with a strong focus on sustainable and eco-friendly measures (e.g. flood plains and reforestation);
- Develop joint management and protection measures for the seacoast and the Danube banks;
- Develop cooperative measures (e.g. joint planning, strategies, mapping) related to nature and landscape protection and promotion;
- Counteract illegal activities affecting biodiversity, protected areas and environmental quality, such as illegal exploitations and poaching.
- Increase awareness and promote recycling and a responsible attitude towards the environment;
- Support learning and networking for sustainable local economic development activities capitalising on the local assets (agricultural land and tradition, biodiversity etc.) - e.g. in the fields of agri-food, sustainable tourism, circular economy

PO3 A more connected Europe - mobility and regional ICT connectivity

- Convert Danube from a barrier to a sustainable mobility and transport corridor, by improving navigability and water transport and connecting to the European routes - Eurovelo



- Further strengthen cross-border links, especially by renewing and completing the existing railway infrastructure (missing railway cross-border links);
- Improve road safety by joint measures and the further development of large infrastructure (bypasses, expressways/ highways)
- Improve cross-border mobility between the twin cities along the Danube by linking local public transport routes in these cities (support green public transport routes if possible) and by improving intermodality on connections between the twin cities
- Support in-land navigation and river management authorities, river users, investors and local authorities to better exploit Danube navigation (link to the EUSDR)
- Increase the digitalisation level of the border region through a commonly agreed cross-border strategy and action plan focusing on improving general conditions for joint e-solutions (e.g. education, health care, business support, cultural cooperation) and by reducing urban-rural gaps through the improvement of broadband access in rural, sparsely populated and remote areas.

PO4 A more social Europe - implementing the European Pillar of Social Rights

- Develop joint strategies to counteract emigration and brain drain;
- Improve cross-border labour mobility and education through cross-border traineeships or placements and student exchange programmes for young graduates and students;
- Improve cross-border education through joint education schemes and programmes, including digital tools and methods;
- Improve the insertion on labour market through supporting inter-regional partnerships between universities/ technical education units, the business environment and local authorities;
- Invest in workers upskilling in connection to current market demands and with the regional priorities on smart specialization;
- Develop entrepreneurial skills and an entrepreneurial culture through educational, networking and support activities;
- Increase multilingualism through more extensive and structured language-learning activities (including English learning) as a vector for building trust and an employment-boosting factor;
- Support healthcare systems in the area by tackling border obstacles to cross-border healthcare and developing joint investments and services (including e-health).

PO5 Europe closer to citizens

- Improve cooperation and cross-border mobility and exchanges between twin cities based on joint integrated strategies;
- Develop and implement joint integrated strategies for specific types of territories/ regions in the cross-border area, capitalising on the local assets and specific (e.g. Dobrogea, the Black Sea Coast);
- Consider the development of joint strategies for the development of the lagging rural areas;
- Develop cooperative measures (e.g. joint planning, strategies, mapping) related to nature and landscape protection and promotion;



- Define common cross-border products and services (touristic, but not only) and support their access to the national and international markets;
- Connect tourism development efforts with European initiatives, touristic and cultural routes along the Danube in order to increase the opportunities to capitalise on the area's untapped touristic potential.

[Interreg specific] A better Interreg governance

- Improve administrative and technical capacity for cooperation;
- Support the development of multi-stakeholder thematic networks/ partnerships in priority areas for the development of the cross-order territory (e.g. local economic development, tourism, heritage and culture, risk prevention and emergency response);
- Map and tackle border obstacles on the provision of cross-border public services and support the development of cross-border public services, including digital services;
- Test innovative approaches for cross-border governance and services that could overcome the legislative differences between the two countries;
- Improve governance and cooperation in the cross-border area through digitalisation (consider interoperability);
- Improve cross-border data collection - identify the sectors where important cross-border data is missing and support initiatives that would fill the gaps (e.g. in cooperation with national statistical offices, by supporting regional data portals etc.)

[Interreg specific] A safer and more secure Europe

- Capitalize on and consolidate the current cooperation on risk prevention and rapid response management;
- Counteract illegal activities affecting environmental quality, such as illegal exploitations and poaching;
- Increase rapid response capacities and further develop joint intervention procedures/ schemes.



11. PROGRAMME STRATEGIC GUIDELINES

11.1. PROGRAMME VISION

The vision for Interreg Romania-Bulgaria 2014-2020 saw the Romania-Bulgaria cross-border region as the potential Eastern gateway of the EU, reinforcing economic and political cooperation between the countries of Central and Western Europe and Asia. The vision was based on the potential to develop combined river and sea transport (the Danube and the Black Sea) or sea and road/railroad transport of goods, which could have become an important sector for the economy of the region, thus increasing its attractiveness for businesses and for foreign investments, capitalizing on its strategic location and the high availability of transport infrastructure, such as Pan-European transport corridors, roads and railroads, an international port, and international airports in its vicinity. However, the analysis shows that there is still much to be done in order to ensure a reliable and sustainable transport system, while key structural issues related to socio-demographic decline, the loss of human capital, ensuring the accessibility and quality of public services and economic transition affect both sides of the border. Moreover, the natural risks and the effects of the climate change due to the specificities of the territory encompassing the banks of the Danube and the Black Sea Coast add more pressure on the communities and the local authorities.

In this context, the proposed programme vision focuses on the reinforcement of the socio-economic fabric of the Romania-Bulgaria cross-border territory, through developing and retaining human capital, creating opportunities for personal and professional development, providing an attractive, safe and sustainable living environment and supporting innovation and entrepreneurship.

Last but not least, the current COVID-19 pandemic revealed the poor current state of health systems in both countries. Moreover, such pandemics clearly hamper the economic development in any region. The future Programme should consider to contribute to the reinforced preparedness in a joint context so that future similar events can be better approached, with smaller losses in terms of both human lives and economic development in the border area.

The vision builds on the polycentric development concept (see chapter 8.3.), which was also part of the 2014-2020 Programme's vision, proposing a network of key urban hubs along the Danube, with enhanced institutional collaboration and economic synergies that could start articulating a common development strategy in order to mutually strengthen the secondary and peripheral cities. The network of small and medium-sized cities, such as the twin cities along the Danube, is already developed across the region, which is a plus in terms of services provided to the rural areas around them or to the potential for better service provision and jobs creation. Improving connections between urban and rural areas and transforming small cities into support centres that provide services to the neighbouring villages with an emphasis on public services is a direction to be considered, as is the provision of digital public services to remote or peripheral areas. The cross-border area is still facing a dual challenge: on the one hand, in rural and small urban peripheral areas, the challenge is one of generating and capturing employment opportunities by exploiting regional assets more effectively, and improving access to opportunities elsewhere through improved connectivity (both physical and digital); on the other hand, in the urban hubs, the challenge is of upgrading competitiveness in order to reduce the gap to the European level and to deliver the value added commensurate to support upward wage pressure.



The Interreg Romania-Bulgaria 2021-2027 should also keep pursuing the objective of the Romania-Bulgaria Cross-Border Cooperation Programme 2014-2020 to foster the transition towards a “Consolidated” territorial cooperation programme, by gathering the stakeholders’ commitments through a common vision of the area’s territorial development priorities in the framework of the so called “Smart Cooperation or cooperation of second generation” that boosts cross-border services and transnational collaboration in areas such as health, transport, etc. along with strategic priorities such as growth, employment, research, innovation or sustainable development. A more strategic cooperation approach in the programme “maturation process” is necessary in order to compensate for the lack of critical mass that characterises many public and private activities within the Programme area.

TABLE 37 THE CONSOLIDATED TERRITORIAL COOPERATION CHARACTERISTICS

MOTIVATION	SCALE	TYPE OF BENEFICIARIES	GOVERNANCE STRUCTURES	MEASUREMENT	IMPACT
Continued reliance on external funding but emerging domestic commitments	A more strategic approach is emerging and attempts are made to coordinate efforts	Public authorities leading with some involvement from other sectors	Increasing levels of institutionalisation appointment of dedicated staff	Scope for using harder quantitative measures that focus outputs and results	Larger strategic impact

Source: ESPON, 2012, TERCO - European Territorial Cooperation as a Factor of Growth, Jobs and Quality of Life

Complementary, the economic development vision for the area is geared towards the development of critical mass and an original combination of activities and competences for the development of innovative products and services. Counties in the cross-border area share similar economic development challenges but do not have the internal resources to address them. Being relatively peripheral in their own national contexts and dominated by traditional industries facing intense international competition and, in some cases, decline, as well as low added value agriculture and services, the two economies face the need to diversify into more knowledge-based activities and to build critical mass around these. Some emerging activities can be built on expertise developed in traditional industries through the creation of cross-border clusters or networks to foster learning and innovation synergies in different fields, particularly based on the regional/ national smart specialization strategies. Nevertheless, the economic transformation should take into account the opportunities provided by the Green Deal and the shift towards circular economy should be considered.

In terms of connectivity, there are still several bottlenecks in the cross-border network, both in terms of road and railway transport. The region would benefit in addressing these bottlenecks, if possible. The railway transport is a priority, as it is the more sustainable solution. The realisation of the Eurovelo 6 route, connecting the cross-border territory to the rest of Europe along the Danube would also bring added value to the region.

From an environmental perspective, effective risk prevention mechanisms and actively fighting climate change would secure a resilient cross-border territory. Moreover, the natural and cultural heritage are to be promoted through sustainable tourism.



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Last but not least, modern and effective public administration is necessary in order to capitalize on the benefits of digitalization and working together with businesses, universities, the research environment and the civil society in order to improve the life of their community and to foster territorial cooperation.

In conclusion, the Romania-Bulgaria Interreg Programme 2021-2027 should aim to boost the **cooperation** in order to ensure the socio-economic development of the region, lifting it from the last places in the European rankings, and transforming it into a sustainable and competitive community, by capitalising in a responsible manner on the territorial specificities and the resources offered by the presence of the Danube and the Black Sea Coast.

11.2. SELECTION OF THEMATIC OBJECTIVES AND SPECIFIC OBJECTIVES

Due to the current situation generated by the COVID-19 pandemic and its potential consequences on the final regulations, as well as the negotiation process and the need to clarify on the legal requirements necessary to implement Policy Objective 5, the POs that will be financed under Interreg VI-A Romania-Bulgaria Programme will be selected on a later stage at the request of the Bulgarian partners.



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