Regional analysis on Green and Blue Infrastructure in South Muntenia Region, Romania

High-level Environmental Challenge Identification Report

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List of Acronyms

ACP	=	Authority for Certification and Payment (Ministry of Finance) (R)
ANAR	=	National Administration of Romanian Waters (R)
ANIF	=	National Agency for Land Improvement (R)
ANM	=	National Meteorological Administration (R)
ANRSC	=	National Regulatory Authority for Community Public Utilities Services (R)
BGI	=	Blue-Green Infrastructure
CPI	=	Consumer Prices Inflation
CPR	=	Common Provisions Regulations (on the European Regional Development Fund)
EBRD	=	European Bank for Reconstruction and Development
EC	=	European Commission
ERDF	=	European Regional Development Fund
EU	=	European Union
EUSDR	=	EU Strategy for the Danube Region
FC	=	Cohesion Fund (R)
FEDR	=	European Regional Development Fund (R)
FEPAM	=	European Fund for Fishing and Maritime Affairs (R)
FSE+	=	European Social Fund+ (R)
FTJ	=	Just Transition Fund (R)
GBI	=	Green-Blue Infrastructure
GDP	=	Gross Domestic Product
GI	=	Green Infrastructure
GIS	=	Geographic Information System
HB	=	Hydrographic Basins
IPPC	=	Integrated Pollution Prevention and Control
IPSS	=	Palmer Drought Severity Index
JTF	=	Just Transition Fund
MAES	=	Mapping and Assessment of Ecosystems and their Services
MCA	=	Multi-Criteria Assessment
MIEP	=	Ministry of the Investments and European Projects
MMAP	=	Ministry of Environment, Water and Forests (R)
NGO	=	Non-Governmental Organization
OP	=	Operational Programme
PAP	=	Aquaculture and Fishing Programme (R)
PMBH	=	River Basin Management Plan
PNRR	=	National Recovery and Resilience Plan (R)
POAT	=	OP Technical Assistance (R)
POCIDIF	=	OP Intelligent Growth, Digitalization, Financing Instruments (R)
PODD	=	Sustainable Development Operational Programme (R)
POEO	=	OP Education and Occupation (R)

POIDS	=	OP Inclusion and Social Dignity (R)
POIM	=	Large infrastructure Operational Programme (R)
POR	=	Regional Operational Programme (R)
POS	=	OP Health (R)
POT	=	OP Transport (R)
POTJ	=	OP for a Just Transition (R)
RLMCA	=	Local Air Quality Monitoring Network (R)
RNMCA	=	National Air Quality Monitoring Network (R)
ROMSILVA	=	National Directorate of Forests (R)
RON	=	Romanian Leu
ROP	=	Regional Operational Programme
SMROP	=	South-Muntenia Regional Operational Programme
ROWATERS	=	National Administration of Romanian Waters
SEVESO	=	Directive for prevention of major accidents involving dangerous substances
SIDT	=	Territory Integrated Development Strategies (R)
SM	=	South-Muntenia
SMRDA	=	South-Muntenia Regional Development Agency
SNEGICA	=	National System for Integrated Air Quality Assessment and Management (R)
SO	=	Strategic Objectives
SRT	=	Strategy of Territory Regionalization (R)
STAS	=	State Standard
STS	=	Special Telecommunications Service (R)
TOR	=	Terms of Reference
UAT	=	Territorial Administrative Units (R)
VOC	=	Volatile Organic Compounds

Acronyms with (R) are Romanian acronyms translated to English

1 INTRODUCTION

1.1 Context of the assignment

In the framework of a systematic approach to addressing environmental challenges—in the form of a regional analysis with a focus on functional urban areas—by the South-Muntenia Regional Development Agency (SM RDA), the current assignment intends to guide the SM RDA and the cities/counties in SM region to take a broader strategic view of environmental challenges.

Following the submission of the Inception report (Task 1), this report is focusing on a high-level identification of environmental challenges in the region, with focus on the current general situation and needs. This report, anchored in Task 2, precedes Task 3 - Elaboration of the Regional Analysis with the Pipeline for regional Green and Blue Infrastructure projects.

1.2 Objectives of environmental challenges identification

The overall objective of this report is the identification of key regional environmental challenges, together with a description of the region's main policies and initiatives, a review of EC guidelines in the context of BGI, and a preliminary financial analysis of municipal budgets. Environmental issues are defined broadly to include those affecting human health, ecosystems, natural resources, or the global environment.

By assessing the main environmental challenges, an overview is to be attained to determine the most applicable types of green and blue infrastructure—given the human and financial resources constraints—that comply with EC and SM Regional Operational Programme 2021-2027 guidelines and conditions.

In this respect, the report gives an answer to the question of what problem it is intended to solve (the drivers) and what preconditions are set (the barriers) to design and implement BGI.

1.3 Approach to environmental challenges identification

The approach to the task is to first conduct a field visit (see *Site Visit Report*) to the counties to discuss their main environmental issues and the ways they are addressing these—including proposed blue and green interventions that could be included in the ROP. This is important both for the stakeholders to create better understanding of what green and blue infrastructure is and how it can be applied, and for the consultants to create a better understanding of the challenges facing the stakeholders.

Based on these discussions and other collected data for each of the aspects (environmental aspects, institutional & policy, social, gender and economic inclusion, and economics & finance) a comprehensive overview is produced of the main challenges facing the region.

To filter potential solution paths for eligibility, an analysis of relevant EC documents and guidelines as well as local regulations identifies the main criteria under which green and blue infrastructure

projects could be co-financed from EU funds, especially under the SM Regional Operational Programme 2021-2027, given the constraint of municipal budgets.

1.4 Reading guide

Chapter 2 provides the activities performed during this task and a high-level scoping of the data collected and reviewed for the analysis.

Chapter 3 discusses the key findings for each of the themes, i.e., environmental aspects, institutional & policy, social, gender and economic inclusion, and economics & finance and the constraints from institutional, policy and financial point of view.

Chapter 4 provides an overview of the next steps to follow in this project, together with the overall approach following the conclusions and recommendations.

2 PROJECT ACTIVITIES RELATED TO TASK 2

2.1 Activities

A summary of the key Task 2 activities is presented in Table 1 below.

Table 1. Project activities to date

Date	Summary of activities
20th September 2021	Field visits: *Calarasi County Council* with participants from: - Calarasi County Council - Calarasi City Hall - Oltenita City Hall and *Ialomita County Council* with participants from: - Ialomita County Council - Slobozia City Hall - Fetesti City Hall
21st September 2021	Field visits: *Teleorman County Council* with participants from: - Teleorman County Council - Alexandria City Hall and *Comana Monastery (Comana commune, Giurgiu County*) with participants from: - Giurgiu County Council - Comana City Hall
22nd September 2021	Field visits: *Dambovita County Council* with participants from: - Dambovita County Council - Targoviste City Hall - Prahova County Council - Ploiesti City Hall and *Pitesti City Hall* with participants from: - Arges County Council - Pitesti City Hall Site Visits Report
28th September 2021	Provided input on BGI to SM RDA for conference with EC and MIEP representatives
9th October 2021	Draft High-level environmental challenge identification Report
27th October 2021	2nd Stakeholder Workshop (part of Task 3 as per the ToR)

2.2 Data acquisition

2.2.1 Environmental aspects

The environment is a key driving element in current and future developments of any given region. To have a good regional understanding, it is very important to have a good overview of the current status of all environmental factors combined with legal and strategic approaches.

To identify the environmental challenges that SM Region is facing, the following relevant data from national, regional, and local level was analysed:

- Legislation in force
  - Emergency Ordinance no. 195/22.12.2005 on environmental protection;
  - Law no. 104/15.06.2011 on ambient air quality;
  - Water law no. 107/25.09.1996;
  - Law no. 575/22.10.2001 on the approval of the National Spatial Planning Plan - Section V Natural risk areas;
  - Order of the Minister of Environment and Forests no. 3299/28.08.2012 for the approval of the methodology for conducting and reporting inventories on emissions of pollutants into the atmosphere;
  - Order of the Minister of Environment and Forests 1206/2015 of 11 August 2015 for the approval of the lists with the administrative-territorial units drawn up following the classification of the areas and agglomerations provided in annex no. 2 to Law no. 104/2011 on ambient air quality;
  - Order no. 743/12.12.2008 for approving the list of localities by counties where there are sources of nitrates from agricultural activities.
- Environmental plans and programs at national, regional, and local level
  - **Annual Reports on the state of environment** issued by the Environmental Protection Agencies for the counties Arges, Dambovita, Prahova, Ialomita, Calarsi, Giurgiu and Teleorman;
  - **"Plan for maintaining air quality in Argeș County"** - *https://www.cjarges.ro/planul-de-mentinere-a-calitatii-aerului-in-judetul-arges*
  - **"Plan for maintaining air quality in Prahova County 2019-2023"** - *https://www.cjph.ro/files/Documente/Strategii-programe/Plan_Aer_2018-2022.pdf*
  - **"Plan for maintaining air quality in Dâmbovița County, 2019-2023"** - *http://apmdb.anpm.ro/calitatea-aerului-inconjurator/-/asset_publisher/DoFtkgbg2SXM/content/gestionarea-calitatii-aerului-inconjurator-planul-de-mentinere-a-calitatii-aerului-in-judetul-dambovita*
  - **"Plan for maintaining air quality in Călărași County, 2019-2023"** - *https://www.calarasi.ro/pds/Planul%20de%20men%C5%A3inere%20a%20calit%C4%83%C5%A3ii%20aerului.pdf*

- **" Plan for maintaining air quality in Teleorman County, 2020-2024"** - *http://www.cjteleorman.ro/planaer/PLAN%20MENTINERE%20CALITATE%20AER%20TELEORMAN%20%20REFACUT%20%2024%20%2011%202020.pdf*
- **"Air Quality Maintenance Plan 2019-2023 - Ialomița** - *http://cjialomita.ro/despre-noi/programe-si-strategii/*
- **" Plan for maintaining air quality in Giurgiu County, 2018-2022"** - *https://cjgiurgiu.ro/wp-content/uploads/2020/11/Hotarare-plan-calitatea-aer.pdf*.
- National plan of risk management of disaster;
- River Basin Management Plan (PMBH) for Arges – Vedea and Buzau – Ialomita hydrographical basins;
- Flood Risk Management Plans for Arges – Vedea and Buzau – Ialomita hydrographical basins;
- Fire Risk in Romania: mapping and evaluation methods;
- Zoning Map of Maximum Frost Depths;
- Zoning map of the ground snow load;

- Other relevant documents and references at regional and local level:
  - Atmospheric Emission Inventories by the National Environmental Protection Agency to identify the main sources of emissions;
  - National Air Quality Monitoring Network (RNMCA) and Local Air Quality Monitoring Network (RLMCA);
  - Air Quality Maintenance Plans;
  - Local Register of Green Spaces
  - Spatial Planning Plan

2.2.2 Policy and Institutional aspects

To ensure comprehensive and relevant data for the regional analyses under this assignment, we have undertaken a screening on the relevant horizontal and sectorial policies and strategic documents identified at EU, national, regional, and local level. For this purpose, both direct and indirect data collection sources and methods were used.

Below, we have summarized the list with key strategic, regulatory, or informative documents grouped according to their sourcing, with the link to the public location, and highlighting their relevance for the analyses:

1. TOR references

   EC's "*Guidance on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure",* an important tool in the assessment of projects under this assignment as it provides definition, criteria, and illustration of EU-level green and blue infrastructure.

https://ec.europa.eu/environment/nature/ecosystems/pdf/SWD_2019_193_F1_STAFF_WORKING_PAPER_EN_V4_P1_1024680.PDF

- **SM Regional Operational Programme (SM ROP) 2021-2027 excerpts**: the specific *objective b(vii) Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution* – the scope of this analyses for identifying the relevant BGI project proposals pipeline
- **Green Deal - EU 2030 biodiversity strategy –** is key in assessing the environmental challenges and objectives as well as in defining the proposed interventions within the BGI projects, considering the protected areas and species in the project areas
  Biodiversity strategy for 2030 (europa.eu)
- **EBRD Green Cities Framework –** a platform for helping cities to invest in sustainable infrastructures, built around three key pillars: Green City action Plans, Sustainable Infrastructure Investment, and Capacity Building, offering a repository of effective policy tools, and best-practices examples.

2. Documents provided by SM RDA:
   - version 2 of ROP SM 2021-2027 (Blue & Green infrastructure section & Environmental chapter)
   - list with documents regarding Blue Green Infrastructure
   - a similar project example, SM Regional Development Plan 2021-2027,
   - database with nominated representatives to attend the interviews and participate in the development of initiatives with a regional impact – annex to the *Inception Report.*

3. Strategic documents (EU, national, regional, local, sectorial) available on public official websites of the relevant institutions:
   - The **EU Cohesion Policy**'s key legislative acts relevant to understanding the ROP funding overarching governance (through the European Regional Development Fund - ERDF):
     - ***Regulation (EU) 2021/1058*** *of the European Parliament and of the Council of 24 June 2021 on the* ***European Regional Development Fund*** *and on the Cohesion Fund;*
     - ***Regulation (EU) 2021/1060*** *of the European Parliament and of the Council of 24 June 2021 laying down* ***common provisions on the European Regional Development Fund****, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy* ***(CPR);***
     - ***The Inter-Ministry Partnership Agreement for the 2021-2027 Financing period****,* establishing the mechanism for ensuring the complementarities and synergies between the EU programmes, funds, and other instruments, and of the

coordination and monitoring of Romania's participation to the programs and initiatives managed by the EC at central level;

- **Climate policy and the 'EU Taxonomy' Regulation,** that lays the grounds and the upcoming technical screening criteria for the financing flows direction towards green investments as well as the monitoring and disclosure requirements related to the investments impact on the environment;
- **The National Strategy for Sustainable Development** – with the 2030 sustainable development objectives and targets to which all the regional, local, or sectorial strategy and investments should contribute;
- **The National Plan for Resilience and Recovery** (*PLANUL NAȚIONAL DE REDRESARE ȘI REZILIENȚĂ (PNRR)*) – the latest national strategic document approved by EU that will support the implementation by 2026 of crucial investment and reform measures put forward by Romania to emerge stronger from the COVID-19 pandemic, expected to contribute in the areas of sustainability of public finances and the pension system, healthcare, public administration, business environment, education, and green and digital transition;
- **Key Operational Programs Drafts** - mainly ROP and the Sustainable Development Operation Program (PODD acronym in Romanian), that could ensure the funding complementarity in achieving the public authorities sustainable development objectives, focussing on different priorities for investment, while avoiding double financing;
- **South Muntenia Integrated Territorial Strategy 2021-2027 –** offering a strategic framework for the development of the integrated territory development strategies elaborated by the county residences municipalities and the county councils according to art. 23 of the CPR, as well as a list of operations to be supported;
- **SM RDA Regional Development Plan 2021-2027 –** derived from and supporting the regional Development Strategy;
- **Smart Specialization Strategy for SM (RIS3) 2021-2027** – areas of priority for innovation are defined also in relation to addressing the environment challenges and smart region development;
- **A Practical Guide for the Territory Integrated Development Strategy**, developed by SM RDA for the Municipalities and Country Councils, in accordance with article 29 of the Common Provisions Regulation (CPR);
- **Other strategic documents available at the County Council and Municipality level**: Development Strategies, Urban Mobility Plans, Environmental Plans, Waste Management Plans, Energy Efficiency Plans, Air Quality Plans, Land Plans) - *on the official websites of the 7 country councils and targeted main cities* – needed to be considered by the public authorities to align the objectives of the proposed BGI projects to the targets set in the relevant strategic documents;
- **Institutional governance and organizational charts** - *on the official websites of the 7 country councils and targeted main cities.*
    - **Other reference national regulations, including for establishing the organization and functioning of the local public administrations:**

- ***Law 315/2004*** for the regional development, the basis for the regional development plan elaboration and for defining the institutional roles and responsibilities in the management of the regional programs;
- Law no. 500/2021 (*Legea nr. 500/2002*) regarding the public financing: setting rules and responsibilities related to the public funds' establishment, administration, engagement, and use – these provisions are relevant for the economic and finance experts analyses when considering the indebt limits for the public authorities;
- Government ordinance no 109/2011 (*OUG nr. 109/2011)* regarding corporate governance of the public enterprises;
- Law no. 292/2018 (*Legea nr. 292/2018)* regarding the impact assessment of some public and private projects on environment;
- Government ordinance no. 57/2019 (*OUG nr. 57/2019)* regarding the Administrative Code regulating the general framework for the public administrations' organization and functioning.
    - **Other EU and national sectorial policies, strategies and related law packages that had been punctually referred to in the environmental analyses chapter:**
        - **National Strategy for Climate Changes:**

          Annex 1 to the Government Decision no. 739/2016v - National strategy on climate change and economic growth based on low emissions (*Strategia națională privind schimbările climatice și creșterea economică bazată pe emisii reduse);*

          Annex 2 to the Government Decision no. 739/2016 - National Action Plan for the implementation of the National Strategy on Climate Change and Growth based on low carbon for the period 2016-2020 (*Planul național de acțiune pentru implementarea Strategiei naționale privind schimbările climatice și creșterea economică bazată pe emisii reduse de carbon pentru perioada 2016-2020.*
        - **Water policy** with the Water Framework Directive, the River Basin Management Plans, the Floods Directive, the EU Drought policy, the EU water Blueprint – with the related initiatives undertaken at national level under the responsibility of the Ministry of Environment;
        - **Forestry policy** with the related initiatives undertaken at national level under the responsibility of the Ministry of Environment, Water and Forests
        - **Air quality policy and Directive** as transposed in the national Law 124/2011;
        - **National Strategy and Action Plan for the Contaminated Sites Management and related legislation**;
        - The EU Strategy for the Danube Region and *EUSDR.*

4. **Questionnaires** related to environmental, institutional, and social challenges were distributed among stakeholders, and the initial responses were collected during 23-25 August 2021, were processed, and integrated in the Key findings' summary presented in the **Inception Report**. This is a valuable source of information as it completes the as-is analyses with the reality check in the territory.

5. **Direct feedback from workshop exercises, as well as presentations and ad-hoc interviews with the stakeholders during the workshops and sites visits** – centralized in the meeting notes. This is a valuable source of information as it completes the as-is analyses with the reality check in the territory. At the same time this was an excellent opportunity to explore different BGI concepts and typologies by matching them and shaping them according to the local challenges and opportunities, validated with the local authorities and SM RDA representatives, covering wide areas of expertise, responsibilities and decision making-authority.

The analyses result in key high-level findings presented in section 3, and they provide insights to be considered while developing the BGI pipeline (Task 3). Moreover, some documents are for reference or information only: e.g. A Practical Guide for the Territory Integrated Development Strategy developed by SM RDA for the country councils and municipality administrations. The preliminary outcome of the analyses will be integrated in the conclusions and recommendations sections of this report.

Upon the definition of the final project proposals to be included in the pipeline to be provided under Task 3, the policy and institutional analyses shall be completed with the final recommendations for the areas of further priority actions.

2.2.3 Stakeholder and Social, Gender & Economic inclusion

Stakeholder mapping was conducted through consultation with the RDA, and a Stakeholder Engagement Plan was already prepared in Task 1. Stakeholder engagement throughout the project will comply with national requirements, in specific the Constitution of Romania, Law no. 544/2001 on free access to information of public interest, Law No. 86/2000 for the ratification of the Convention for the Access to Information, the Public's Participation in the decision-making process and access to Justice in aspects related to the Environment, signed in Aarhus on 25 June 1998 (the Convention in Aarhus), EBRD Performance Requirement 10: Information Disclosure and Stakeholder Engagement and EU Guidance for Stakeholder Consultation.

Stakeholder survey through questionnaire, feedback from online meetings, insights from site visits discussions represents valuable first-source information related to stakeholders' engagement, social, gender and economic inclusion, which informs the present analysis.

Throughout the process of interaction with stakeholders, an environment will exist where diversity, gender equality, inclusion, and the views of various groups of citizens are given adequate consideration.

2.2.4 Economics and Finance

Data on the financial budget execution (revenues and expenditures), balance sheet and existent debts was collected from the municipalities' websites for the period 2018-2020 for all the municipalities to be analysed, respectively Pitesti, Calarasi, Târgoviste, Giurgiu, Slobozia, Ploiesti and Alexandria. Where the information was not available as part of the municipality's public information, the needed data was collected directly from the municipality.

2.3 High level scoping

2.3.1 Environmental aspects

Based on the assessment of all information available for SM Region, in this section was drafted a detailed analysis of the environmental factors as air, soil, water, biodiversity and ecosystems and climate adaption, as it is now.

2.3.1.1 Air

The identification of the main air emission sources is based on the Inventories of Air Emissions prepared by the National Agency for Environmental Protection. The main sources of air pollution in the South Muntenia Region include:

- Mobile sources (linear sources) represented by:
    - Road traffic on the main arteries (county roads, European roads, highway);
    - Traffic on secondary arteries (local streets, communal roads);
    - Mobile equipment and machinery in the manufacturing industry and in construction

Main specific pollutants emitted: nitrogen oxides, sulfur oxides, carbon oxides, lead, suspended particles, cadmium, nickel.

- Surface sources represented by:
    - Residential heating / food preparation;
    - Institutional-commercial heating;
    - Agricultural activities-degraded lands.

The main specific pollutants emitted: suspended particles (PM 2.5, PM 10), SO2, CO, but also heavy metals such as Pb, As, Cd, Ni.

- Stationary sources represented by:
    - installations that fall under the scope of the Industrial Emissions Directive transposed into Romanian legislation by Law no. 278/2013. Chapter II of this Directive is intended for specific provisions applicable to installations and activities in the field of integrated pollution prevention and control (IPPC);
    - installations and activities using organic solvents and which, with the advent of Directive 2010/75 / EU of the European Parliament on industrial emissions, Directive

1999/13 / EC on the establishment of measures to reduce emissions of volatile organic compounds (VOCs) is an integral part of it (Chapter V);

- non-IPPC installations (wastewater collection, treatment, and storage; asphalt and precast concrete mixing plants);
- installations covered by the VOC Directive in petrol - petrol distribution stations;
- installations covered by the SEVESO Directive on the control of major-accident hazards involving dangerous substances.

At national level, air quality can be estimated from the results of measurements made through the monitoring network and from the annual inventory of pollutant emissions into the atmosphere.
Air quality monitoring is provided by the National System for Integrated Air Quality Assessment and Management (SNEGICA) through the National Air Quality Monitoring Network, hereinafter referred to as (RNMCA) which is managed by the central public authority for environmental protection, according to art. 4 of Law no. 104 / 2011 (updated) on ambient air quality.

At county level, air quality assessment is provided by the Local Air Quality Monitoring Network (RLMCA) which is part of the National Air Quality Monitoring Network (RNMCA). Air quality monitoring in the South Muntenia Region is performed through 28 automatic stations located in the most relevant areas of the administrative territory of the county (see Figure 1).

In accordance with the provisions of article 42 of Law no. 104 of 15 June 2011 on ambient air quality for the management of ambient air quality for sulfur dioxide, nitrogen dioxide, nitrogen oxides, particulate matter, PM10 and PM2.5, lead, benzene, carbon monoxide, arsenic, cadmium, nickel, benzo (a) pyrene, in each zone or agglomeration areas are classified that are classified in management regimes according to the result of the assessment of ambient air quality.

By the orders of the central environmental authority no. 1206 of August 11, 2015 and no. 598 of June 20, 2018 regarding the approval of the lists with the administrative-territorial units drawn up following the classification in areas management regimes in the areas and agglomerations provided in annex no. 2 to Law no. 104/2011, most counties in the South Muntenia region are included in the Regime II air quality management.
Regime II air quality management has the following meanings: levels for sulfur dioxide, nitrogen dioxide, nitrogen oxides, PM10 and PM2.5 suspended particles, lead, benzene, carbon monoxide, arsenic, cadmium, nickel, benzo (a) pyrene are lower than the limit values or target values set by Law 104 of 15 June 2011 on ambient air quality.

In areas and agglomerations classified under regime II, a plan for maintaining the air quality should be prepared a. The plan to maintain the air quality represents a set of measures that the activity holder(s) must implement, so that the level of pollutants is kept below the limit values or, as the case may be, the target values, as set out in Annex no. 3 of Law no. 104/2011, with subsequent amendments. The County Councils represent the competent public administration authority to

initiate the elaboration of an Air Quality Maintenance Plan, according to the provisions of article 21 of Law no. 104 from 15.06.2011.

The following figure shows the location of the monitoring stations in the southern region of Muntenia.

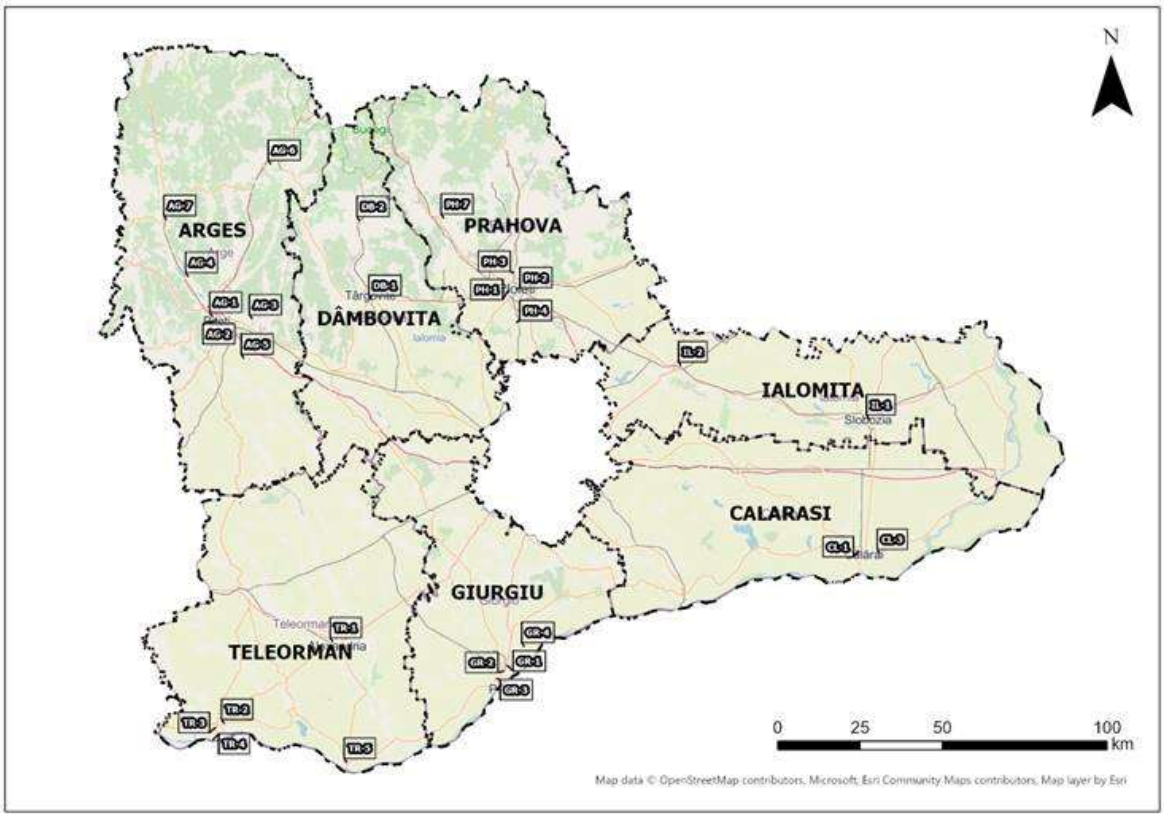

Figure 1: Air monitoring stations - South Muntenia Region (2021 – Consultant assessment based on calitateaaerului.ro)

A detailed analysis was done for each county in order to have a deep understanding on the air quality status. Based on the information available in the air quality monitoring plans, the next tables present a summary with the most relevant data.

Arges County - data based on six automatic monitoring stations.

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
AG 1 - traffic	**Pitesti,** Bd. Bălcescu, bloc.I.5, sc D	SO2, NO, NO2, NOx, CO, Benzen, toluene, etilenbenzen, o-m-p-xilen, PM10 (continuous and gravimetric), Pb, Cd, Ni, AS No meteo station envisaged.	Non-Industrial combustion plants (apartment heating system form nearby) Combustion for energy and heating production plants Fuels distribution	10-100 m	In 2018, through 6 monitoring stations were recorded exceeding the daily concentrations of PM10 dust fraction limit value according to Law 104/2011 of 50 µg / m3 The gravimetric determinations performed in parallel registered 20 exceedances of the limit value according to Law 104/2011 of 50 µg / m3. The annual average concentrations of PM10 for 2018 did not exceed the limit value for human health protection of 40 µg / m3 in none of the 5 monitoring points. None of the automatic air quality monitoring stations recorded exceedances of the limit value / target value for the other pollutants monitored according to Law no. 104/2011 on ambient air quality.	Moderate	Arges County is included in the Management regime II for nitrogen dioxide and nitrogen oxides (NO2 / NOX), suspended particles (PM10 and PM2.5), benzene (C6H6), nickel (Ni), sulphur dioxide (SO2), carbon monoxide (CO), lead (Pb), arsenic (As), Cadmium (Cd), excepting the municipality of Pitești which is included in the first management regime for suspended particles (PM10)	Arges County Council has developed the "Air Quality Maintenance Plan in Arges County, 2018-2022". The plan was approved by the County Council Decision no. 140 of 27.05.2020 https://www.cjarges.ro/planul-de-mentinere-a-calitatii-aerului-in-judetul-arges	The following types of measures are proposed in the plan: - Improving the transport infrastructure (restoration of local roads, modernization of county roads) - Efficiency of lighting networks - Energy efficiency of residential buildings - Execution / rehabilitation of parks - Arrangement of green spaces and bike lanes Consolidation of degraded lands
AG 2 - urban	**Pitesti**, Strada Victoriei nr.20	SO2, NO, NO2, NOx, CO, Benzene, toluene, ethylene benzene, o-m-p-xylene, PM10 (continuous and gravimetric), PM2.5, ozone, Pb, Cd, Ni, AS Climatic parameters: temperatures, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation	Apartment heating plants in nearby flats	1-5 km					
AG 3 - suburban	**Calinesti**, Valea Măru lui School Yard	SO2, NO, NO2, NOx, CO, Benzene, toluene, ethylene benzene, o-m-p-xylene, PM10 (continuous and gravimetric), PM2.5, ozone, Pb, Cd, Ni, AS	Non-industrial combustion plants: domestic heating, solid fuel Car traffic	1-5 km		Good			
AG 4 - suburban	**Coltesti**	SO2, NO, NO2, NOx, CO, Benzene, toluene, ethylene benzene, o-m-p-xylene, PM10 (continuous and gravimetric), PM2.5, ozone, Pb, Cd, Ni, As Climatic parameters: temperatures, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation	Non-industrial combustion plants: domestic heating, solid fuel Car traffic	1-5 km					
AG 5 - industrial	**Oarja**	SO2, NO, NO2, NOx, CO, Benzene, toluene, ethylene benzene, o-m-p-xylene, PM10 (continuous), PM2.5, ozone Climatic parameters: temperatures, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation	Fuel distribution and storage Non-industrial combustion plants (domestic heating - solid fuel) Car traffic	100m- 1 km					
AG 6 - industrial	**Campulung**	SO2, NO, NO2, NOx, CO, PM10 (continuous and gravimetric), Pb, Cd, Ni, AS Climatic parameters: temperatures, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation	Production processes (cement and lime industry) Non-industrial combustion plants Car traffic	100m- 1 km					

Călărași County – data based on three monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
CL 1 - traffic	Călărași, Street Prelungirea Călărași	SO2, NO, NO2, NOx, CO, PM10 Benzene, Toluene, O-xylene, Ethylbenzene, m, -xylene, p - xylene	monitors the influence of traffic on air quality	10-100 m	At none of the automatic air quality monitoring stations there were exceedances of the limit value / target value for the other pollutants monitored according to Law no. 104/2011 on ambient air quality	Good	Călărași County is included in the management regime II Class II air quality management has the following meanings: levels for sulphur dioxide, nitrogen dioxide, nitrogen oxides, PM10 and PM2.5 suspended particles, lead, benzene, carbon monoxide, arsenic, cadmium, nickel, benzo (a) pyrene are lower than the limit values or target values set by Law 104 of 15 June 2011 on ambient air quality.	Călărași County Council elaborated the "Air Quality Maintenance Plan in Călărași County, 2019-2023". The plan was approved by the County Council Decision no. 153 / 29.08.2019 https://www.calarasi.ro/pds/Planul%20de%20men%C5%A3inere%20a%20calit%C4%83%C5%A3ii%20aerului.pdf	Installation of heating systems that use renewable energy including replacement and completion of classic heating systems Rehabilitation of collective blocks and public buildings Expansion of the natural gas distribution network in the proposed development areas Modernization of the transport infrastructure (modernization / rehabilitation of county and local roads, completion of the construction of a Danube-Bucharest canal and the Argeș riverbed) Awareness campaigns on waste incineration outside authorized incineration plants Flood protection projects (bank consolidation): - Iezer shore accumulation as the Monastery; - Left bank Boșneagu, Borcea arm right bank km 48- km 49.5, - Danube left bank km 425 + 50- km 426 + 00, left bank Ciovănești area km 393 + 400- km394 + 500 - Tourist development of the Borcea-Călărași arm tourist agreement port - Improving the safety of navigability on the Danube in the cross-border region Călărași-Silistra-arm Borcea, km 95 - Preventing and combating the effects of natural hazards (extinguishing and improving the infrastructure for protection against soil erosion; extending and improving land improvement works in rural areas) - Extension of forested areas and forest curtains, mainly at the level of degraded and unproductive lands in rural areas - Implementation of Management Plans for Natura 2000 sites
CL 2 – fond urban	Calarași, Street Tudor Vladmirescu	SO2, NO, NO2, NOx,CO, Ozon, PM10, Benzen, Toluen, o-xilen, Etilbenzen, m-xilen, p – xilen . Meteorological parameters wind direction, wind speed, air temperature, air pressure, solar radiation, relative humidity, precipitation)	monitors the influence of urban settlement	1-5 km					
CL 3 – rural fund	Commune Modelu, Steet Aurora no.2	SO2, NO, NO2, NOx, CO, Ozon , PM10,PM2.5, NH3, Meteorological parameters wind direction, wind speed, air temperature, air pressure, solar radiation, relative humidity, precipitation)	monitors the influence of rural settlement	1-5 km					

Note: EPM Călăraşi ensured, until May 2012, the monitoring of air quality in the Călăraşi area through four automatic stations, two of OPSIS type (Chiciuşi DSV) and two belonging to the National Air Quality Monitoring Network (CL1 and CL2). In 2014, due to technical problems with the analysers and insufficient funds allocated to remedy the defects in all analysers, the air quality monitoring stations CL-1 and CL-2 were shut down.

Dâmbovița County – data based on two monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
DB 1 - industrial	Targoviste, Street General Ion Emanoil Florescu FN	Sulphur dioxide (SO2), nitrogen oxides (NOx, NO, NO2), carbon monoxide (CO), ozone (O3), particulate matter (PM10), Pb (in the PM10 fraction), As (in the PM10 fraction), Cd (in the PM10 fraction), Ni (in the PM10 fraction), meteorological parameters.	-	100 m – 1 km	At the DB1 station It did not exceed the values required for the protection of human health At DB2 Station there was not enough data captured to verify the compliance with the limit values and assessment thresholds established by Law 104/2011 on air quality	Good	Dâmbovița County is included in the management regime II for nitrogen dioxide and nitrogen oxides (NO2 / NOX), suspended particles (PM10, PM2,5), benzene (C6H6), nickel (Ni), sulfur dioxide (SO2), carbon monoxide (CO), lead (Pb), arsenic (As)	Dâmbovița County Council elaborated the "Air Quality Maintenance Plan in Dâmbovița County, 2019-2023". The plan was approved by the County Council Decision no. 17 / 29.02.2020 http://apmdb.anpm.ro/calitatea-aerului-inconjurator/-/asset_publisher/DoFtkgbg2SXM/content/gestionarea-calitatii-aerului-inconjurator-planul-de-mentinere-a-calitatii-aerului-in-judetul-dambovita	The following types of measures are proposed to maintain air quality in the plan: ▪ Modernization / rehabilitation of county roads (DJ401A, DJ722, DJ713) ▪ Modernization / rehabilitation of roads of local interest ▪ Expansion of the public natural gas supply network
DB 2 - industrial	Fieni, Street Teilor no. 20	Sulfur dioxide (SO2), nitrogen oxides (NOx, NO, NO2), carbon monoxide (CO), ozone (O3), particulate matter (PM10), Pb (in the PM10 fraction), As (in the PM10 fraction), Cd (in the PM10 fraction), Ni (in the PM10 fraction), meteorological parameters	-	100 m – 1 km					

Giurgiu County – data based on four monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
GR1 - traffic	on Bucharest Road, at the entrance to Giurgiu	sulphur dioxide (SO2); nitrogen oxides (NO / NOx / NO2); carbon monoxide (CO); volatile organic compounds (VOC-benzene, ethylbenzene, m-xylene, o-xylene, p-xylene, toluene); suspended powders (PM10); lead (Pb).	The influence of traffic on DJ503	10-100 m	For NO2 In 2019, there were 19 exceedances of the limit value per hour, of which 7 exceedances were recorded at station GR1 and 12 exceedances at station GR2. High values were recorded in the cold period, being favoured by weather conditions: calm, fog, which made it difficult to disperse nitrogen dioxide into the atmosphere. The main potential sources of NO2 pollution in Giurgiu County are residential heating and car traffic. For PM10 In 2019, 31 exceedances of the daily limit value for health protection were registered, measurements performed by the gravimetric method - the standardized method, at the stations on the territory of Giurgiu municipality. Of these, 16 overtaking were recorded at GR1 station, 12 overtaking at GR2 station and 3 overtaking at GR3 station. The annual limit value for PM10 has not been exceeded. The other indicators met the allowed limit values The largest contribution is from the energy sector, agriculture, and road traffic.	Moderate	Giurgiu County is included in the management regime II nitrogen dioxide and nitrogen oxides (NO2 / NOX), suspended particles (PM10, PM2.5), benzene (C6H6), nickel (Ni), sulphur dioxide (SO2), carbon monoxide (CO), lead (Pb), arsenic (As)	Giurgiu County Council has developed the "Air Quality Maintenance Plan in Giurgiu County, 2018-2022". The plan was approved by the County Council Decision no. 145 / 27.11.2018 https://cjgiurgiu.ro/wp-content/uploads/2020/11/Hotarare-plan-calitatea-aer.pdf	▪ Campaigns for control and monitoring of industrial activities in rural areas and implementation of specific measures by types of activity to keep the air quality indicator below the limit value ▪ Reducing energy consumption in the industrial sector ▪ Extension of forest curtains to protect road transport routes and green spaces ▪ Restoration of degraded lands by afforestation Colibași, Oinașu, other areas ▪ Implementation of Management Plans for Natura 2000 sites ▪ Installation of heating systems using renewable energy, including replacement / completion of conventional heating systems ▪ Expansion of the natural gas distribution network ▪ • Implementation of the Local Strategy for thermal energy supply of Giurgiu Municipality ▪ Implementation of the Action Plan for Sustainable Energy of Giurgiu Municipality ▪ Increasing sustainable mobility at urban and rural levels ▪ Modernization of local roads
GR 2 - urban	Elevilor Park, adjacent to Transylvania Street	sulphur dioxide (SO2); nitrogen oxides (NO / NOx / NO2); carbon monoxide (CO), ozone (O3); volatile organic compounds (VOC-benzene, ethylbenzene, m -xylene, o-xylene, pxylene, toluene); suspended powders (PM10); lead (Pb); weather parameters (wind direction, wind speed, air pressure, precipitation, relative humidity, solar radiation, air temperature).	The station is located in an area not directly exposed to local industry traffic and activity	1-5 km		Good			
GR 3 - industrial	in the yard of the Giurgiu weather station	sulphur dioxide (SO2); nitrogen oxides (NO / NOx / NO2); carbon monoxide (CO); suspended powders (PM10); lead (Pb); weather parameters (wind direction, wind speed, air pressure, precipitation, relative humidity, solar radiation, air temperature).	Giurgiu Municipality district heating plant	100 m – 1 km					
GR 4 - rural	Brănișteа village, Oinacu commune	sulphur dioxide (SO2); nitrogen oxides (NO / NOx / NO2); carbon monoxide (CO), ozone (O3); volatile organic compounds (VOC benzene, ethylbenzene, m -xylene, o-xylene, pxylene, toluene); suspended powders (PM2.5); weather parameters (wind direction, wind speed, air pressure, precipitation, relative humidity, solar radiation, air temperature).	Traffic on DN5 Agriculture Commercial activities On the territory of the commune, there are no economic activities with industrial character and in the field of services	1-5 km					

Ialomita County – data based on two monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
IL 1 – urban fund	In Slobozia EPM HQ	SO2, NOx, CO, O3, PM10, COV, NH3, Pb Wind direction and speed, temperature, relative humidity, atmospheric pressure, solar radiation, precipitation	monitors the influence of urban settlement and road traffic	1-5 km	The average annual concentrations of gravimetric PM 10 did not exceed the annual limit value for the protection of human health of 40 μg / m3, according to Law 104/2011, in any of the 2 monitoring points. There were 23 overtaking at the IL-1 station and 12 overtaking at the IL-2 Station of the average daily volume, according to Law 104/2011 For the other air quality indicators, the automatic monitoring stations did not identify exceedances of the limit values and assessment thresholds for public health. The industrial sector is the main source of emissions for Pb, d, Ni, As and SO2 and suspended particles. In terms of NOx and CO emissions, the transport sector plays a major role. In the case of nezene and its compounds, the commercial / residential field is the main cause of emissions.	Good	Ialomița County falls under management regime II for nitrogen dioxide and nitrogen oxides (NO2 / NOX), suspended particles (PM10, PM2.5), benzene (C6H6), nickel (Ni), sulphur dioxide (SO2), carbon monoxide (CO), lead (Pb), arsenic (As)	The "Air Quality Maintenance Plan 2019-2023. The plan was approved by the Decision of the Ialomița County Council no. 151 / 31.08.2020 http://cjialomita.ro/despre-noi/programe-si-strategii/	Modernization and rehabilitation of roads Realization of local mobility plans Awareness campaigns on the causes and risks of air pollution Expansion of gas networks Elaboration and implementation of Green Spaces Registers Afforestation works and realization of green curtains along the roads with heavy road traffic (DN21, A2, DN2) Maintenance and protection of natural areas, parks, and green spaces
IL 2 - industrial	inside S.C. EXPUR S.A., Urziceni municipality	SO2, NOx, CO, O3, PM10, COV,Pb Wind direction and speed, temperature, relative humidity, atmospheric pressure, solar radiation, precipitation	Traffic District Heating Plant	100 m - 1 km					

Prahova County – data based on six automatic monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
PH 1 - traffic	**Ploiest**i – EPM Prahova HQ (Street Gheorghe Grigore Cantacuzino no. 306)	SO2, NO, NO2, NOx, CO, PM10, metal (din PM10), benzen, toluen, etilbenzen, o, m, p – xilen	Industrial combustion plants and road traffic	10-100 m Urban area with residential function Resident and transit population in the perimeter	At none of the automatic air quality monitoring stations there were exceedances of the limit value / target value for most of the pollutants monitored according to Law no. 104/2011 on ambient air quality, except for SO2 which exceeded the hourly average values for SO2 (at PH5-Bariera Bucureşti, where there were 2 exceedances and the automatic monitoring station PH6-Mihai Bravu, where there was an exceed)	Poor	Prahova County is included in the management regime II for nitrogen dioxide and nitrogen oxides (NO2 / NOX), suspended particles (PM10 and PM2.5), benzene (C6H6), nickel (Ni), sulphur dioxide (SO2) , carbon monoxide (CO), lead (Pb), arsenic (As), Cadmium (Cd), except for the municipality of Ploieşti which is under management regime I for suspended particles (PM10), nitrogen dioxide and nitrogen oxides (NO2 / NOX) and benzene and the municipality of Brazi which is under management regime I for nitrogen dioxide and oxides of nitrogen and benzene	Prahova County Council has developed the "Plan for maintaining air quality in Prahova County 2019-2023". The plan was approved by the Decision of the County Council no. 103 / 28.08.2019 https://www.cjph.ro/files/Documente/Strategii-programe/Plan_Aer_2018-2022.pdf	The following types of measures are proposed to maintain air quality in the plan: ▪ Expansion of gas networks ▪ Efficiency and modernization of lighting networks ▪ Modernization / rehabilitation of roads ▪ Renewal of the car park - public transport ▪ Arrangement of green spaces and promenade areas ▪ Control and monitoring campaigns for industrial activity
PH 2 – urban	**Ploiesti** - Victoriei Square	SO2, NO, NO2, NOx, CO, O3, PM2.5, PM10, metale (din PM10), benzen, toluen, etilbenzen, o, m, p – xilen	Non-industrial combustion plants Burns in the processing industry Production processes Use of solvents Road traffic and other mobile sources	1-5 km Urban area with mixed function, residential, commercial and industrial Resident and transit population in the area of representation					
PH 3 - Suburban	City Hall Blejoi - Street Ploiești-Văleni 1003	SO2, NO, NO2, NOx, CO, O3, PM10, metals (from PM10), benzen, toluen, etilbenzen, o, m, p –xilen.	Non-industrial combustion plants Burns in the processing industry, in the processing industry and for the production of electricity and heat Processes of production, processing and distribution of fossil fuels, use of solvents, tartar and waste disposal, agriculture, road traffic and other mobile sources	1-5 km Suburban area with mixed function, residential, agricultural and industrial Resident and transit population in the area of representation		Good			
PH 4 - industrial	City Hall Brazi - Street Teilor, No. 45	benzen, toluen, etilbenzen, o, m, p – xilen, SO2, NO, NO2, NOx, CO, O3, PM10, metals (din PM10)	Non-industrial combustion plants Burns in the processing industry, in the processing industry and for the production of electricity and heat Processes of production, processing and distribution of fossil fuels, road traffic and other mobile sources	100 m- 1 km Urban area with mixed residential and industrial function Population residing and in transit in the area of representation		Poor			
PH 5 - traffic	Ploiesti, București Boulevard	SO2, NO, NO2, NOx, CO, PM10, metals (from PM10), benzen, toluen, etilbenzen, o, m, p – xilen	Industrial combustion plants and road traffic	10-100 m Urban area with residential and commercial function Residential population in transit in the perimeter					
PH 6 - industrial	Ploiesti, Street Mihai Bravu	benzen, toluen, etilbenzen, o, m, p – xilen, SO2, NO, NO2, NOx, CO, O3, PM10, metals (from PM10), mp-xilen, 1,3-butadiena	Non-industrial combustion plants Burns in the processing industry, production processes, processing and distribution of fossil fuels, road traffic and other mobile sources	100 m -1 km Mixed urban area residential and industrial function Resident population and transit in the area of representation					

Teleorman County – data based on five monitoring stations

Station type	Location	Measured pollutants	The main emission sources near the stations	Monitoring station coverage area	Average annual concentrations	Current state of air quality	Classification of the county	Situation of elaboration of Air Quality Plans	Types of measures proposed
TR 1 – urban fund	Alexandria. EPM HQ Teleorman	SO2, NO, NOX, NO2, O3, CO, BTEX (benzen, toluen, etilbenzen, m-xilen, p-xilen, o-xilen), suspended powders (PM10). Measured meteorological parameters: temperature, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation	Traffic on DJ504 Traffic on DN6	1-5 km	In 2019, at the automatic air quality monitoring stations, there were no exceedances of the limit value / target value for the monitored pollutants according to Law no. 104/2011 on ambient air quality.	Good	Teleorman County is included in the management regime II. Class II air quality management has the following meanings: levels for sulphur dioxide, nitrogen dioxide, nitrogen oxides, PM10 and PM2.5 suspended particles, lead, benzene, carbon monoxide, arsenic, cadmium, nickel, benzo (a) pyrene are lower than the limit values or target values set by Law 104 of 15 June 2011 on ambient air quality	Teleorman County Council has developed the "Air Quality Maintenance Plan in Teleorman County, 2020-2024". The plan was approved by the County Council Decision no. 23 / 28.01.2021 http://www.cjteleorman.ro/planaer/PLAN%20de%20MENTINERE%20CALITATE%20AER%20TELEORMAN%20%20final.pdf	Modernization and rehabilitation of roads Realization of local mobility plans Awareness campaigns on the causes and risks of air pollution Expansion of gas networks Elaboration and implementation of Green Spaces Registers Afforestation works and green curtains along roads with heavy road traffic Maintenance and protection of natural areas, parks and green spaces
TR 2 - traffic	on DN 51A that connects Turnu Măgurele municipality with Zimnicea city, at the exit from Turnu Măgurele municipality	Monitored pollutants: SO2, NO, NOX, NO2, O3, CO, suspended powders (PM10). Measured meteorological parameters: temperature, wind speed, wind direction, relative humidity, atmospheric pressure, solar radiation, precipitation.	Traffic on DN51A	10-100 m					
TR 3 – urban fund	Turnu Magurele, Street Calea Dunării, near Turnu Măgurele City Hall	Monitored pollutants: SO2, NO, NOx, NO2, O3, CO, suspended powders (PM10, PM2.5)	Traffic on DJ 504 Traffic on l DN51A	1-5 km					
TR 4 - industrial	in Turnu Măgurele, Street Portului, near the SC Donau Chem SRL plant	Monitored pollutants: SO2, NO, NOx, NO2, O3, CO, NH3, suspended powders (PM10) and meteorological parameters: temperature, wind speed, wind direction, precipitation, solar radiation, relative humidity, atmospheric pressure.	The chemical plant Traffic on DJ52	100 m – 1 km					
TR 5 – urban fund	in Zimnicea, Street Imparatul Traian	Monitored pollutants: SO2, NO, NOx, NO2, O3, CO, H2S, suspended powders (PM10, PM2.5) and meteorological parameters: temperature, wind speed, wind direction, precipitation, solar radiation, relative humidity, atmospheric pressure.	Traffic on DN5C Traffic on DN51A, DN51	1-5 km					

The overall conclusion for the air quality in SM Region is that the status is good in all the counties, with little differences. The annual average imposed by L 104/2011 to protect the human health in all components: NO2, PM10, SO2, CO, O3 and heavy metals was not reached at all.
There are some isolated cases in reaching the daily limit for PM10 in Targoviste and Fieni, Urziceni si Slobozia, Calarasi, Giurgiu, Alexandria and Turnu Magurele. These situations are generated by the industrial activity combined with meteorological special conditions (high air pressure and lack of wind, fog, etc). Other similar situations are for O3 in Ialomita and Teleroman.

Despite the overall good quality of the air, the environmental agencies imposed specific measures in permitting instruction activities in order to mitigate the effects of old equipment's when the renewing permitting process allowed to take this decision.

We should underline some measures that can be considered for the future activities:

- improving road infrastructure in order to reduce emissions of dust particles into the atmosphere;
- replacement in households and by economic agents of solid and liquid fuels with natural gas;
- extension of green areas;
- use of renewable energy resources.

For the South Muntenia Region, the emissions of pollutants discharged into the atmosphere have a downward trend as a result of gradual implementation of sustainable development principles and the adoption of environmental policies such as:

- production of electricity by partial replacement of fossil fuels with alternative sources: wind energy, energy produced in the fields of photovoltaic panels, etc.;
- reducing the sulphur content of fuels and fuels and partial replacement of diesel fuels with biodiesel;
- replacing heating of households in rural areas (traditional wood stoves) with modernized stoves that use pellets as fuel and have high combustion efficiencies and low pollutant emissions;
- extension of the natural gas network;
- the introduction into operation of vehicles provided with electrically powered motors;
- the provision of economic-financial mechanisms to allow the replacement of installations with significant polluting effect on the environment with less polluting ones;
- provision of installations for retaining, capturing, storing pollutants (e.g., capturing and storing carbon at large combustion plants - IMA, electrostatic filters, low NOx burners, scrubbers, etc.).
- realization of reforestation programs and creation of green spaces;
- air pollution risk awareness campaigns;
- modernization / rehabilitation of county roads and local roads;
- infrastructure for alternative transport (routes for cyclists, electric public transport).

2.3.1.2 Soil

The monitoring of the soil quality in the forest fund is performed by the National Institute for Research - Development in Forestry through its territorial branch, the monitoring of the soil quality from the land fund is performed through Offices of Pedological and Agrochemical Studies.

The Local Agency for Environmental Protection monitors the quality of potentially polluted soils by landfills, car traffic, large industrial units.

Also, from monitoring and records of other institutions on the territory of the county, areas have been identified that have erosion, landslides and which require ecological reconstruction works for the polluted soils.

The best lands for agriculture are found in the southern part of the region, in the counties of Ialomiţa, Teleorman and Călăraşi. In terms of soil quality, it is affected to a greater or lesser extent by various restrictions. These restrictions are determined either by natural factors (climate, landforms, building characteristics, etc.), or by anthropogenic agricultural and industrial actions. In general, the pressures on the quality status of the soils in the South Muntenia region are determined by:

- **Land use change**. The factors that determine the changes are the variations of the population density and the urban expansion. Land use through urban expansion is irreversible and leads to soil waterproofing, as a result of land cover with housing, transport and infrastructure networks, commercial areas. The expansion of urban areas at the level of the 7 counties is relatively constant during the years 2010-2019.

- Use of **chemical fertilizers and plant protection products (phytosanitary)-** Compared to the EU member states, Romania is far from being "saturated" with phytosanitary products, the average consumption in our country per hectare of arable land decreasing in the period 1999 - 2010, from 357.508 tons / ha, to 113.03 tons / ha active substance / ha. The quantities applied per hectare were higher, considering that not all the crops established in different periods were treated. Reducing phytosanitary products consumption and the decrease in treated crops and land was determined by reorganization and restructuring of agricultural properties, along with growing prices for phytosanitary treatments.

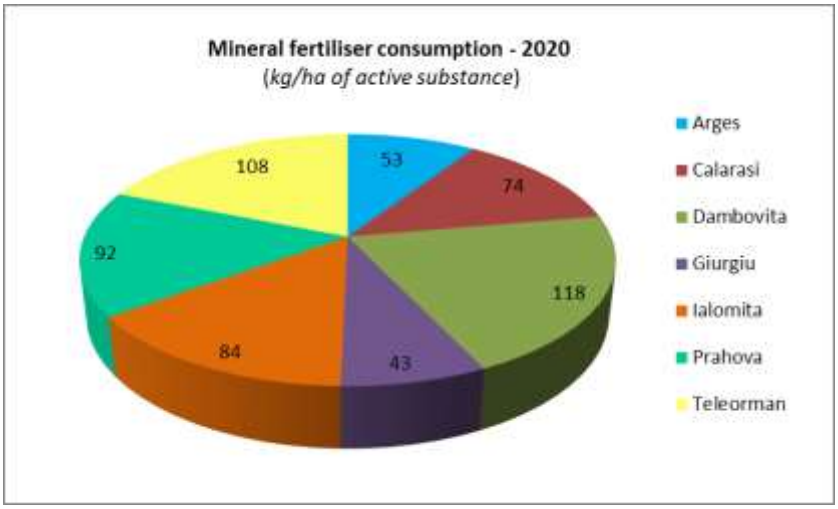

Figure 2 Status of mineral fertiliser consumption at SM Region level – 2020 (source of data: NIS online tempo)

Mineral fertilizer consumption refers to the use of chemical fertilizer based on nitrogen (N), phosphorus (P) and potassium (K) nutrients. The quantities used are reported annually at county level (unit of measure: Tons 100% active substance). The National Institute of Statistics also collects data annually on the agricultural area (ha) on which mineral fertilizers are applied. The figure above shows the average amount of chemical fertilizers per hectare used in agriculture in 2020. In Dâmbovița and Teleorman counties the consumption exceeds 100 kg a.s. / ha (a.s. = active substance), while in Giurgiu and Arges counties is half at about 50 kg a.s./ha.

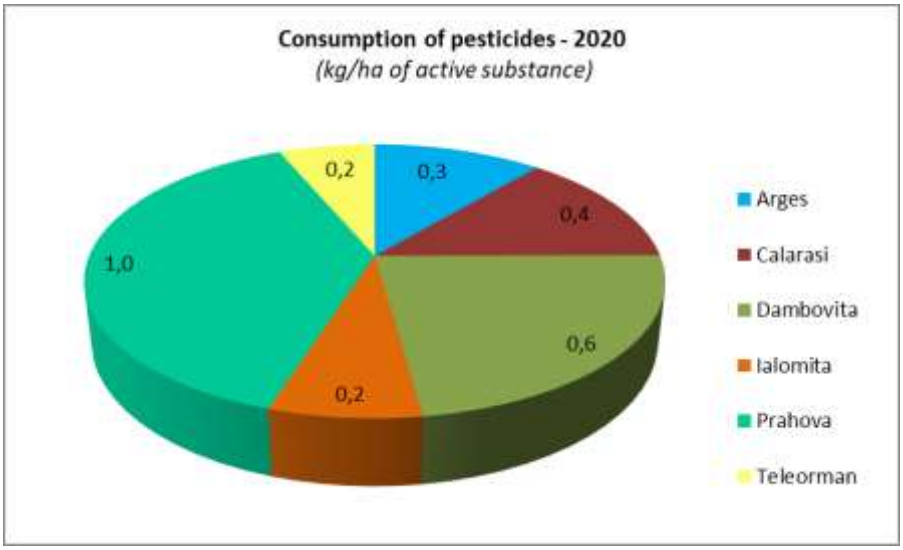

Figure 3 Status of pesticides consumption at SM Region level – 2020 (source of data: NIS online tempo) Note: Giurgiu <0.01 kg/ha a.s.

The consumption of pesticides is presented as kg a.s./ha (average value at county level) and took into account the number of insecticides, fungicides and herbicides used and the cropland surface

where the product was applied. For 2020, there is a more intense use of pesticides in the counties such as Prahova (1.0 kg s.a./ha) and Dâmbovița (0.6 kg s.a./ha) compared to the rest of the region.

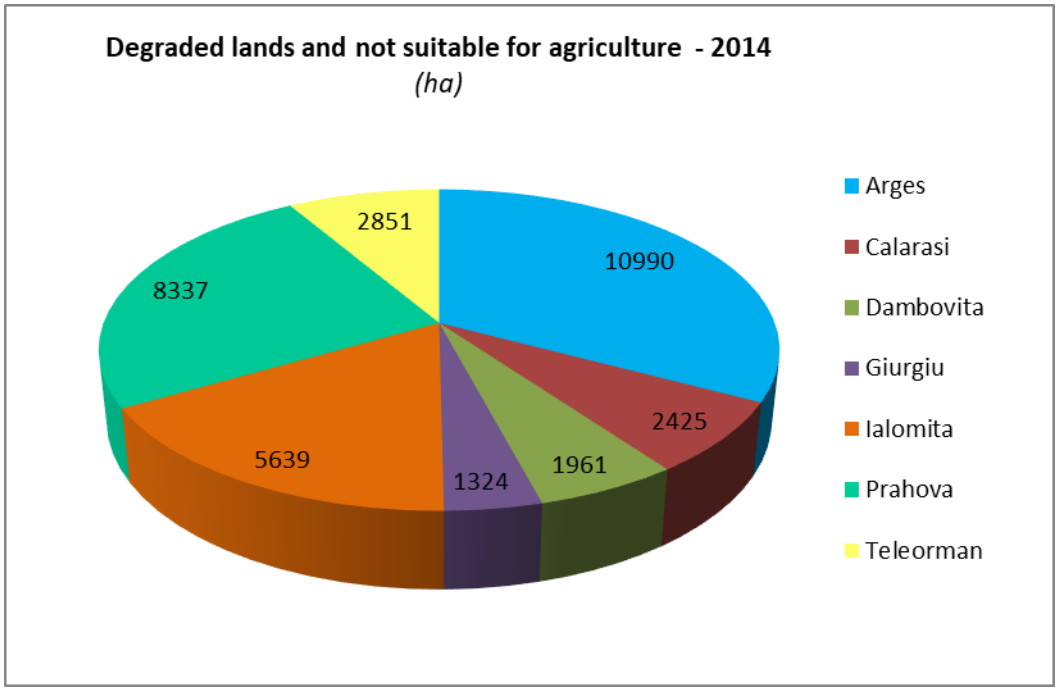

Figure 4 Status of degraded lands and non-sustainable for agriculture at SM Region level (source of data: NIS online tempo)

The indicator refers to lands with intense land degradation and no capability to support crop production. Argeș and Prahova counties have the largest areas with land degradation due to erosion and landslides in the high hills area (Sub-Carpathians). For Ialomita County a large percent of the non-productive lands is represented by lands affected by salinization (with natural saline soils) which are located in the northeast part in Lower Danube Floodplain.

- **Soils affected by zootechnical residues** - manure from pigs and birds (the six large animal and bird breeding complexes plus six others small zootechnical complexes in Argeș County), as well as sludge from sewage treatment plants, spread on soil without pre-treatment, is a potential source of soil pollution and may harm its proper exploitation. These situations were not reported in any county of the region. Having in view that WWTP sludge in treated before applying it on sites there is no significant risk for this item. The future of the sludge management will be to convert a waste into a subproduct or even raw materials
- **Polluting activities in the industrial sector** – it should be mentioned here those in the oil industry (extraction, fuel storage, sludge deposits in Argeș, Dâmbovița and Prahova counties), exploitation of useful mineral substances (mining, quarries, gravel pits - located mainly in minor riverbeds or in the terrace areas of the rivers Argeş, Dâmboviţa and Ialomiţa)'

The legal framework in the management of contaminated sites is represented by Law no. 74/2019. The inventory of contaminated sites is a tool of contaminated land management, made since 2008 and updated annually depending on the pollution degree of the land. Some of them have been decontaminated and greened through compliance programs or funded projects for decontamination and greening.

Sites historically contaminated come from the oil extraction industry, the oil processing industry, chemical industry (manufacture of chemical fertilizers) and coal extractive industry.
For the moment there is no information available are local, regional, or national level on the current status of the contaminated sited. Based on the new legislation promoted, this inventory is under elaboration. Even in the Annual Environmental Status Reports issued for each county in the SM Region the information on contaminated sites is not homogeneous. For Giurgiu and Teleorman the reported dates are for 2007 – 2014. In Giurgiu report there is no information available on contaminated sited and for rest it is mentioned that part of the potential contaminated sites is under evaluation and other part were already rehabilitated.

- **Accidental pollution** - In the period 2018-2019, no accidental pollution was reported. Usually, the main causes of these pollutions were technical failures and advanced corrosion of wells and pipelines belonging to economic operators in the region operating in the field of oil extraction and pipeline transport.
- **Improper storage of waste. -** According to the Plan for the protection of soil and water against nitrate pollution from sources agricultural, all town halls had to draw up such a plan. It is about the pollution caused by animal / farming dejections that are not properly stored.

Although it is subject to pollution like any other environmental factor, the soil recovers harder and harder compared to water and air, because the self-cleaning processes are much slower, thus requiring more attention both now and in the future.

2.3.1.3 Water

From a hydrological point of view, the South Muntenia Region belongs to BH Argeș-Vedea and BH Buzău Ialomița. The data and information available for water quality and water resources are provided at the level of water basins and/or at the national level. Starting in page 33, an overview per Hydrographic Basin (HB) can be seen containing the following information:

- Territorial distribution
- Hydrography
- Water resources
- Bodies of water delimited at the level of the hydrographic basin
- Point sources of significant pollution of surface water bodies
- Diffuse sources of pollution of surface water bodies

- Significant hydro morphological pressures surface water bodies
- Anthropogenic pressures of surface water bodies
- Sources of pollution of groundwater bodies

The following figures show different maps concerning environmental data and factors, used in the overall assessment of environmental challenges in the region.

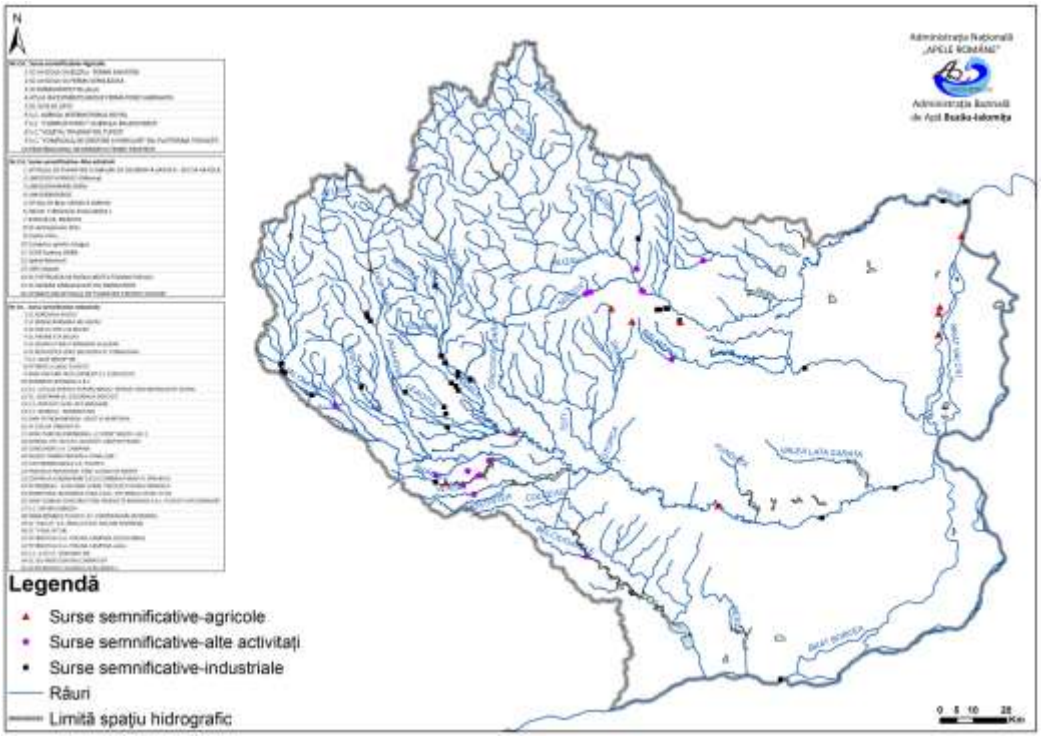

Figure 5: Potentially significant sources of pollution - industrial and agricultural in the Buzău - Ialomiţa hydrographic area (source: Buzău-Ialomița Water Management Plan 2016)

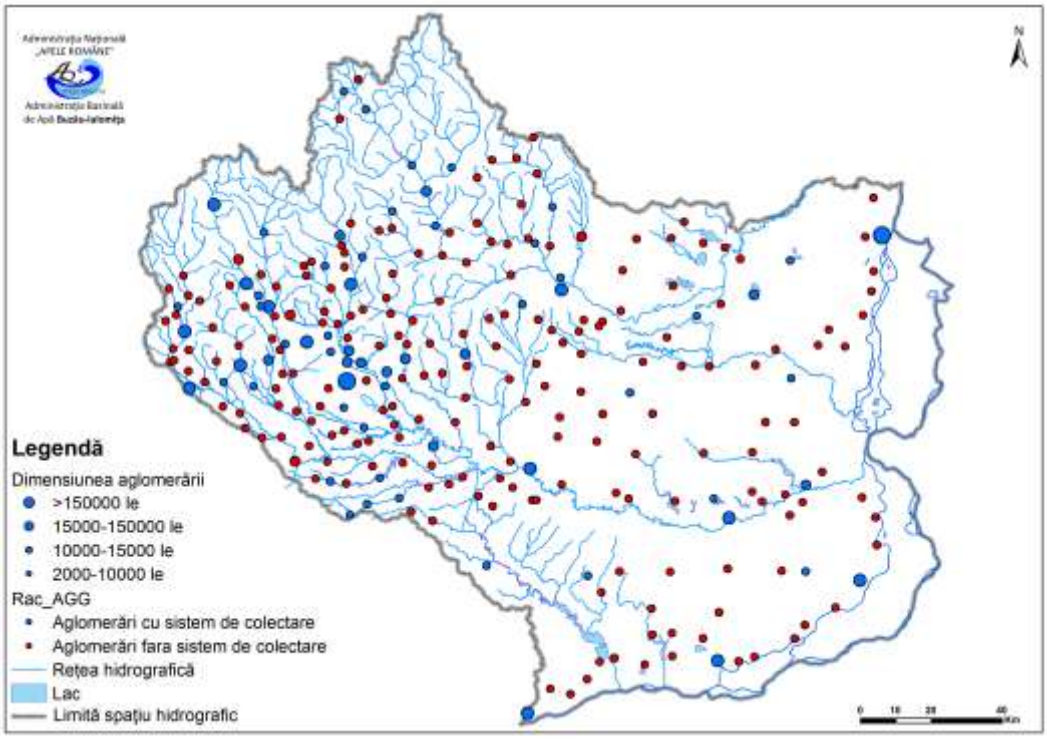

Figure 6: Human agglomerations (> 2000 l.e.) with collection systems from the Buzău – Ialomiţa hydrographic space (source: Buzău-Ialomița Water Management Plan 2016)

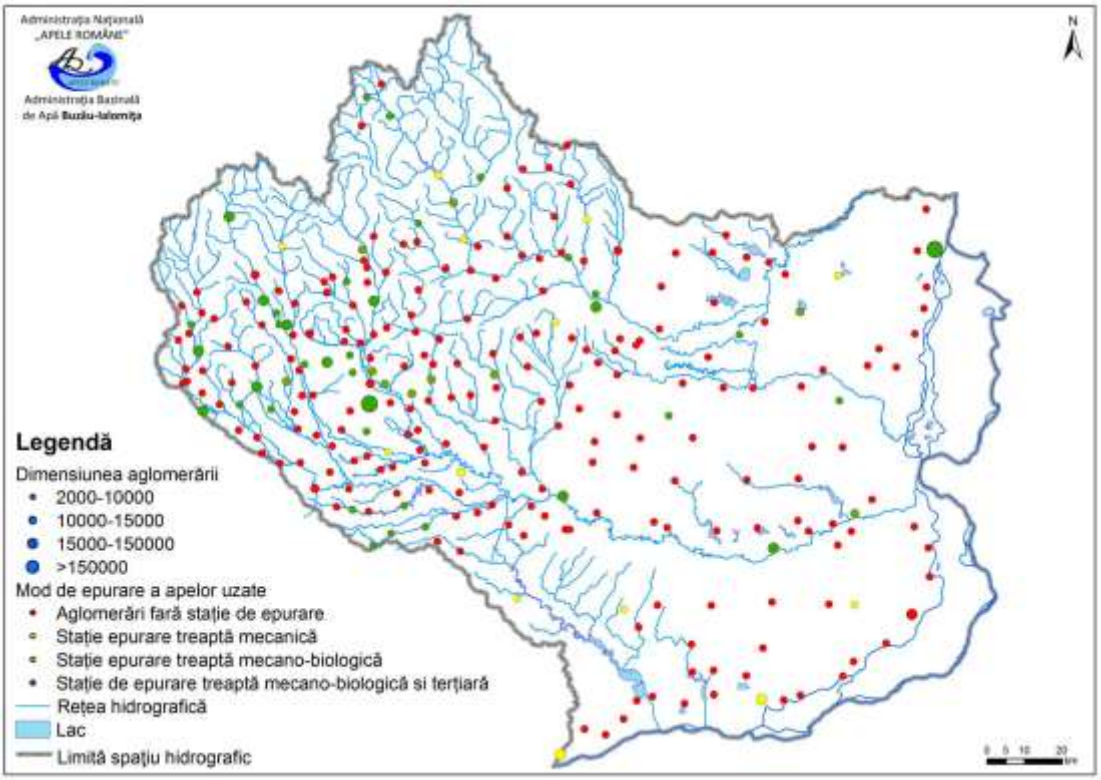

Figure 7: Human agglomerations (> 2000 l.e.) with treatment plants from the Buzău - Ialomiţa hydrographic space (source: Buzău-Ialomița Water Management Plan - 2016)

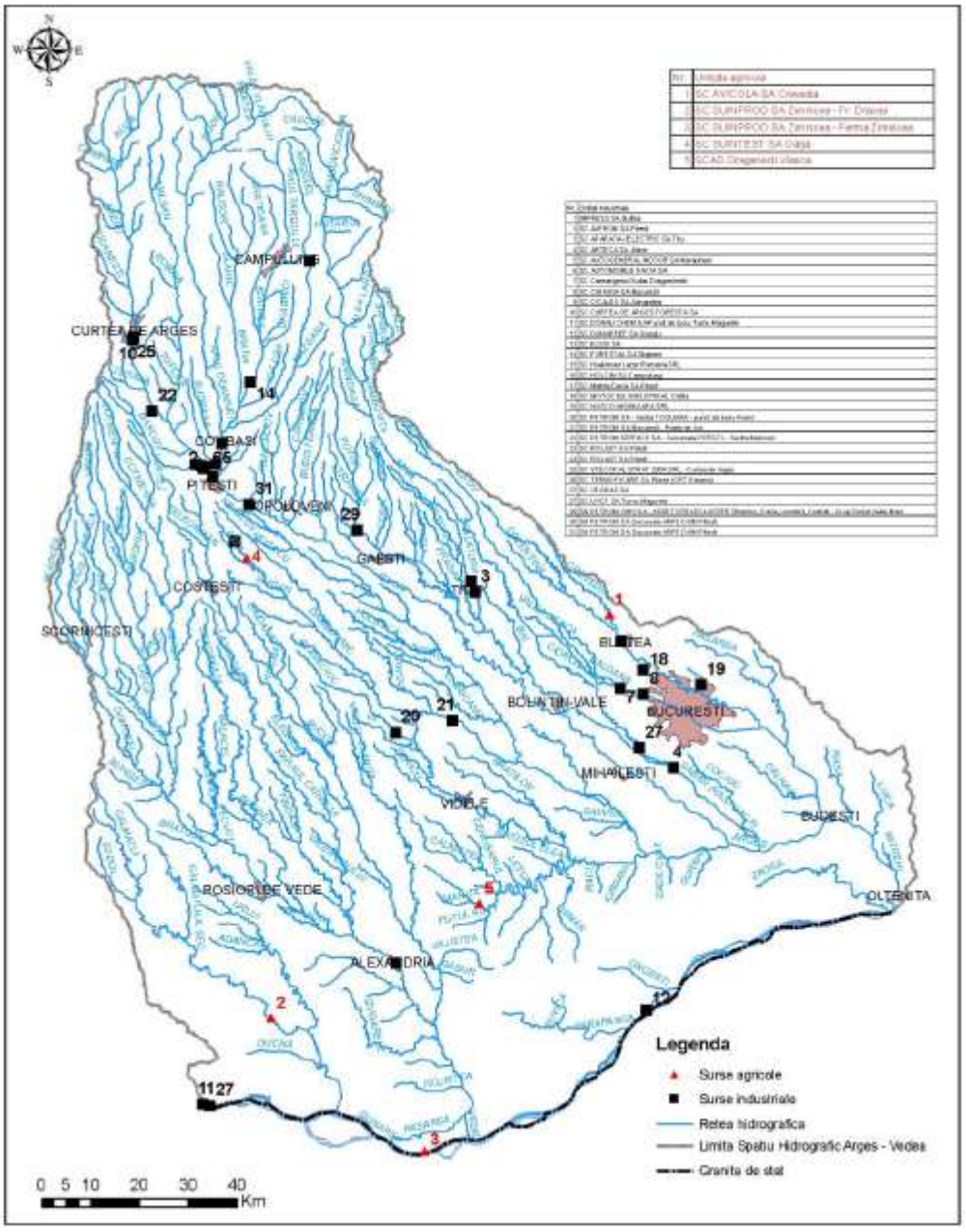

Figure 8: Significant point sources of industrial and agricultural pollution in the Arges Vedea Hydrographic Space (source: Argeș-Vedea Water Management Plan 2016)

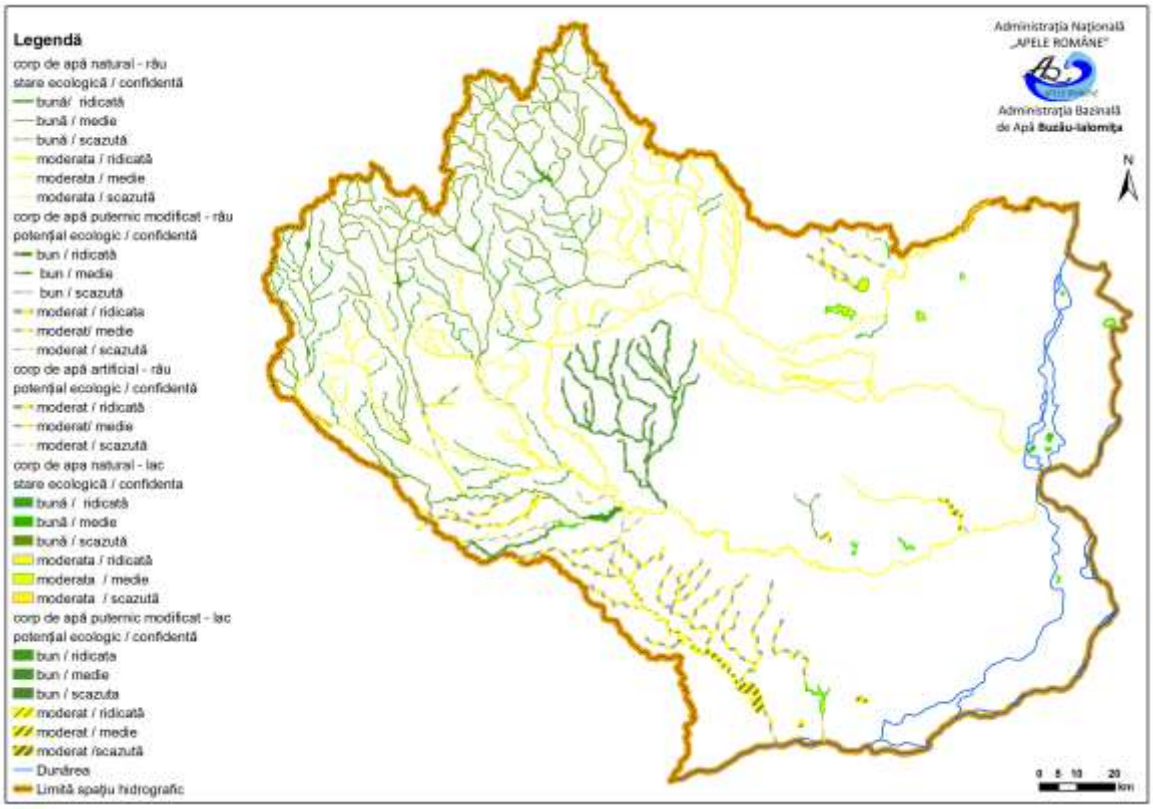

Figure 9: The ecological status and the ecological potential of the surface water bodies at the level of the Buzău-Ialomița hydrographic space (source: Buzău-Ialomița Water Management Plan - 2016)

A detailed analysis on the current status of the water bodies was issued for each hydrographical basin that covers SM Region and there is presented below:

Hydrographic Basin Buzău – Ialomița

Territorial distribution	Hydrography	Water resources	Bodies of water delimited at the level of the hydrographic basin	Point sources of significant pollution of surface water bodies
From an administrative point of view, the Buzău-Ialomiţa hydrographic area includes territories from 9 counties, respectively: Călăraşi, Dâmboviţa, Prahova, Ilfov, Ialomiţa, Braşov, Covasna, Buzău and Brăila	The total surface of the Buzău-Ialomița hydrographic space is 26,470.64 km2 representing a share of 11.11% of the country's surface. The hydrographic network includes a number of 266 cadastral watercourses (of which 8 have areas less than 10 km2), with a total length of 6,062 km and an average density of 0.23 km / km2. On the Romanian territory, the space hydrographic Buzău-Ialomița. includes the sub-basins: Ialomița with 142 codified tributaries, Buzău with 102 codified tributaries, Călmățui with 4 codified tributaries, Mostiștea with 13 codified tributaries and Berza (without tributaries). The length of the Danube River afferent to the Buzău-Ialomița hydrographic space is 560 km and the Siret River 72 km (Nămoloasa sector - discharge into the Danube River). The Ialomița River flows through Târgoviște	The total surface water resources in the Buzău-Ialomița hydrographic area (without the Danube river) amount to about 4331.697 million m3 / year, of which the usable resources are approx. 1406.45mil.m3 / year. These represent about 33% of the total resources and are formed mainly by the rivers Ialomiţa, Buzău, Călmăţui, Mostiştea, Berza and their tributaries. For the Danube River, the total water resources are about 195807.2 million m3 / year, of which the usable ones are approx. 55517.55 mil.m3 / year (representing 28% of the theoretical resources). Compared to the population of the basin, the specific usable resource is 603.12 m3 / place / year, and the specific resource calculated at the theoretically available stock (multiannual average) amounts to 1857.55 m3 / place / year. The water resources located in the Buzău-Ialomița hydrographic area can be considered sufficient and unevenly distributed in time and space. In the Buzău-Ialomița hydrographic space, the theoretical underground resources (without the Danube River) are estimated at 1182.3 million m3, of which the usable underground resources are 675 million m3 (representing 57% of the theoretical resources). For the Danube River, the theoretical underground resources are estimated at 1,545.5 million m3, of which the usable underground resources are 329.55 million m3 (representing 21% of the theoretical resources). The South Muntenia region has a rather poor endowment regarding the drinking water supply installations. At the level of 2018 out of the 567 localities of the region, only approximately 75.13% have drinking water supply installations. The lowest share has the rolling areas, especially the counties of Giurgiu (35.29%) and Teleorman (47.83%).	At the level of BH Buzău-Ialomița, a number of 168 surface water bodies are delimited, classified in the following categories: 18 heavily modified rivers, 10 accumulation lakes and 13 artificial water bodies. Of the 168 surface water bodies, 30 water bodies (approx. 18.5%) are non-permanent water bodies, of which 28 are rivers. On the territory administered by ABA Buzău-Ialomiţa, a number of 18 groundwater bodies were identified, delimited. Most groundwater bodies were delimited in the meadow areas of the Prahova, Ialomiţa and Danube rivers, being developed in porous-permeable alluvial deposits, of Quaternary age. Being located close to the surface of the land, they have a free level.	At the level of the Buzău-Ialomița hydrographic space, a number of 1111 water users have been inventoried who use the surface water resources as a receiver of the discharged waters. The analysis of potentially significant point sources of pollution, taking into account the criteria mentioned above, resulted in a total of 260 potentially significant point sources (99 urban, 87 industrial, 7 agricultural and 67 other pressures). In BH Buzău-Ialomița, there are 171 human agglomerations (more than 2,000 l.e.) that do not yet have endowment with treatment plants and a number of 172 human agglomerations that do not have endowment with collection systems In 2019, 94 potentially significant identified industrial and agricultural point sources were identified, 32 have installations that fall under the IED Directive. There are also 62 industrial and agricultural units, other than the units covered by the FDI Directive.

Diffuse sources of pollution of surface water bodies	Significant hydromorphological pressures surface water bodies	Anthropogenic pressures of surface water bodies	Sources of pollution of groundwater bodies
At the level of the Buzău-Ialomița hydrographic space, the phenomenon of diffuse pollution is accentuated due to the fact that at the end of 2019, only a percentage of 49.01% of the equivalent population (of agglomerations larger than 2,000 l.e.) was connected to centralized sewerage and treatment systems. Agglomerations that do not benefit from wastewater collection systems as well as without collection systems contribute to diffuse pollution. The biggest polluting factor in the South Muntenia region is ammonium In the period 2016-2019, the situation regarding the endowment with systems was found sewerage and wastewater treatment plants of urban agglomerations, which led to reducing the effects of diffuse pollution from urban pollution sources / human agglomerations. In 2019, at the level of the Buzău-Ialomița hydrographic space, no units were identified as potentially significant diffuse pressures. At the level of 2018, the South Muntenia region registered a low level of endowment also in the case of public sewerage systems, of only 26.10%, thus being on the 5th place at national level. This is due to the fact that investments in rural areas are lower than in urban areas, hence the significant differences between urban and rural areas in terms of the degree of endowment of sewerage systems. Thus, in the urban environment, the public sewerage installations were present in proportion of 95.83%, the counties that did not reach the maximum being Dâmbovița and Ialomița, while in the rural area the percentage was only in 19.65% of the communes of the region, the several of them from Argeș and Prahova counties. The pollution sources identified at BH level are presented in the maps below	• Transverse dam works located on the water body The most important accumulations at the level of the Buzău-Ialomița hydrographic space are represented by: Bolboci (Prahova county), Pucioasa (Dambovita county), Măneciu (Prahova county), Paltinu (Prahova county), Cândești (Prahova county), Fundulea (Calarasi county) , Frăsinet (Calarasi county), Gurbănești (Calarasi county), Iezer (Calarasi county), etc. • Works along the river - dams, agricultural and fishing facilities, shore deregulation and consolidation works, meandering. At the level of the Buzău-Ialomița hydrographic space, the regularizations have a total length of 237.61km, and the dams have a total length of 1264.36km. The most important regularization and dam works are located on the rivers Prahova, Ialomița, Danube River-sector related to A.B.A. Buzau-Ialomita, etc. • Samples and restitutions / derivatives - water intakes, use restitutions (discharges), derivatives with effects on minimum flow, riverbed and biota stability; The largest share of pressures is diffuse pressures, as in the case of potentially significant pressures from human settlements without collection systems and from agriculture.	Accidental pollution At the level of the Buzău-Ialomița hydrographic space, a number of 221 water users have been identified that can produce accidental pollution, users who have elaborated their own Plans for preventing and combating accidental pollution. In 2019, there was 1 accidental pollution of surface watercourses with oil product (Prahoba river). The phenomena had a local / basin impact, and due to the short duration of the pollutant nature, the length of the affected section and the inertia of the communities in the structure of aquatic biocenoses, the effects of the phenomena in question were reduced only to the local change of physico-chemical indicators. without long-term inducing a significant change in aquatic biodiversity Extraction of ballast and sand from minor riverbeds Logging Invasive species - at national level, a project funded by the European Regional Development Fund through POIM is underway, which aims to identify and propitiate invasive alien species, control measures and eradicate priority species	Ialomita County The potential sources of pollution are represented by the discharges of wastewater from the population and industry (eg: chemical, food, etc.) from human settlements Slobozia and Ţăndărei Intensive agriculture In Ialomita county there are groundwater bodies for which there is a risk of not reaching good chemical status Prahova County Pollution sources are represented by the industrial platforms Petrobrazi, Astra Română, Petrotel, Vega and other industrial areas in the city of Ploieşti, as well as landfills and hazardous substances (landfills, oil depots from various industrial sites, etc.) and networks sewerage. Also, human settlements that do not have wastewater collection systems. The most important sources of historical pollution are represented by the oil processing plants and refineries, located in the southern and eastern part of Ploieşti. The causes of pollution have been over the years determined by the inadequate maintenance of transport and processing facilities, negligence in the handling of petroleum products, landslides due to earthquakes; and one of the initial causes was the intensive bombing of the refinery area during World War II Groundwater sources of pollution: • Industrial activities • Urban agglomerations and the impact of sewerage systems • Agriculture activities and the impact of chemicals used • Old unsecured drills • Unauthorised drills

Current status of water quality at the level of BH Buzau Ialomita

- At the level of the Buzău-Ialomița hydrographic space, the number of monitoring sections with surveillance program for natural rivers, strongly modified rivers and artificial water bodies is 33 sections, in which the biological, physico-chemical parameters were monitored, as well as priority substances. According to these monitoring for the main water bodies in the counties under analysis, the following conclusions can be drawn:
- The surface water bodies delimited on the Prahova River and the Ialomița river have According to the results of monitoring the quality status of the surface water bodies in the Ialomita basin, it can be concluded that more than half of their length is in good ecological condition, the rest having moderate ecological status.
- The underground water body ROIL14 / Gimbăşani-Sudiţi from Slobozia area, Fetesti (Ialomita county) presents the risk of not reaching good chemical condition. The chemical state of the underground water body ROIL14 Gimbăşani-Sudiţi (in 2013) is poor at NH4 due to the fact that the polluted surface (50%) represents more than 20% of the surface of the entire underground water body

Hydrographic Basin Argeș-Vedea

Territorial distribution	Hydrography	Water resources	Bodies of water delimited at the level of the hydrographic basin
From an administrative point of view, the Argeș-Vedea hydrographic area includes territories from 7 counties and Bucharest, respectively: Argeş, Giurgiu, Teleorman, Ilfov and smaller parts of Dâmboviţa, Olt and Călăraşi counties.	The total surface of the Argeș-Vedea hydrographic space is 21543.20 km2 representing a weight of 9.04% of the country's surface. The hydrographic network comprises a number of 274 cadastral watercourses, with a total length of 7039 km and an average density of 0.33. km / km2. On the Romanian territory, the hydrographic space Argeș-Vedea includes the sub-basins: Argeș with 178 codified tributaries, Vedea with 81 codified tributaries, Călmățui with 10 codified tributaries. The length of the river The Danube afferent to the Argeș-Vedea hydrographic space is 172 km. There are another 5 watercourses in the Danube basin. The Argeş River (L = 350 km, F = 12,550 km2) is formed upstream of the Vidraru accumulation lake, under the ridge of the Făgăraş Mountains, from where the two rivers Capra and Buda spring, which by their union give rise to the Argeş river, rivers that currently flows into Lake Vidraru. The main tributaries, in the order of the formation of the river basin are: Vâlsan (L = 79 km, F = 348 km2), Râul Doamnei, which also has the highest flow contribution (L = 107 km, F = 1,836 km2), Râul Târgului (L = 72 km, F = 1,096 km2), Neajlovul (L = 186 km, F = 3,720 km2) and crosses Comana Park (Giurgiu County), Săbar (Răstoaca) (L = 174 km, F = 1,346 km2) and Dâmboviţa River - with the longest length (L = 286 km, F = 2,824 km2).	The total surface water resources in the Argeș-Vedea hydrographic area amount to approx. 2365 mil.m3 / year, of which the usable resources are approx. 1741 mil.m3 / year. These represent approx. 66% of the total resources and are formed mainly by the rivers Argeș and Vedea and their tributaries. In the Argeș-Vedea hydrographic space there are 19 important accumulation lakes (with an area larger than 0.5 km2), which have a complex use and amount to a useful volume of 603.16 million m3. Compared to the population of the basin, the specific usable resource is about 437 m3 / place / year, and the specific resource calculated at the theoretically available stock (multiannual average) amounts to about 594 m3 / place / year. The water resources located in the Argeș-Vedea hydrographic area can be considered sufficient and unevenly distributed in time and space. In the Argeș-Vedea hydrographic space, the theoretical underground resources (without the Danube River) are estimated at 1228 mil.m3, of which the usable underground resources are 1037.012 mil.m3 (representing about 84% of the theoretical resources). The year 2019 was a normal year in terms of the amount of total water resource from inland rivers, the average annual stock being approximately equal to the average multiannual value calculated over the long term	A number of 178 surface water bodies, classified in the following categories: • 109 natural water bodies, of which 108 river water bodies, 1 lake water body; • 44 heavily modified bodies of water, of which: 25 bodies of water, rivers, 19 accumulation lakes; • 25 artificial water bodies (all river water bodies - canals and derivations). Of the 178 surface water bodies, 40 water bodies (about 22.47%) are non-permanent water bodies, all being in the category of rivers.

Point sources of significant pollution of surface water bodies	Diffuse sources of pollution of surface water bodies	Significant hydromorphological pressures surface water bodies	Anthropogenic pressures of surface water bodies
At the level of the Argeș-Vedea hydrographic space, a number of 236 water users have been inventoried who use the surface water resources as a receiver of the discharged waters. Following the analysis of potentially significant point sources of pollution, taking into account the criteria mentioned above, resulted a total of 86 potentially significant point sources (63 urban and 23 aquaculture). At the level of the Argeș-Vedea hydrographic space, it existed in 2019: - a number of 274 human agglomerations (> 2,000 l.e.), with a total organic load of 4,260,596 l.e., considered potentially significant pressures. - 207 human agglomerations (greater than 2,000 l.e.) that do not yet have endowment with treatment plants and a number of 205 human agglomerations that do not have endowment with collection systems. In the Argeș-Vedea hydrographic space there are a number of 3 human agglomerations (with less than 2,000 le), which are equipped with centralized collection systems and a number of 3 human agglomerations (with less than 2,000 le) with stations purification. According to the BiH Management Plan updated in 2021 during periods of heavy rains, there were no events exceeding the capacity of wastewater and stormwater collection systems. At the level of the Argeș-Vedea river basin, in 2019, following the analysis of the results regarding the ecological state / potential, the magnitude of the pressure in relation to the limits over which the pressures can be called potentially significant (European Directives presenting these limits and substances and groups of substances potentially significant sources of pollution in these categories have not been identified, which means the lack of significant	A number of 205 agglomerations of more than 2,000 l.e. which do not benefit from wastewater collection systems, as well as a number of 51 agglomerations of less than 2,000 l.e. without collection systems, considered potentially significant pressures for water bodies that do not meet environmental objectives. In the period 2016-2019, the situation regarding the endowment with sewerage systems and wastewater treatment plants of urban agglomerations was found, which led to the reduction of the effects of diffuse pollution from urban pollution sources / human agglomerations. Improper management of household waste at the locality level is a source of diffuse local pollution. Also, the way of collecting / disposing of the sludge coming from the treatment plants can lead to the pollution of the water resources. The development of urban areas requires more attention in terms of household waste collection by building environmentally friendly landfills and eliminating uncontrolled landfilling, often found on the banks of rivers and lakes. Diffuse pressures due to agricultural activities are difficult to quantify. Diffuse agricultural pressures affect both the quality of surface water and especially the quality of groundwater. By applying mathematical models, the quantities of pollutants emitted by diffuse pollution sources can be estimated. The main potentially significant pressures - sources of diffuse pollution industrial activities are represented by industrial sites and warehouses: raw material depots, finished products, auxiliary products, non-compliant waste storage, units that produce accidental diffuse pollution, abandoned industrial sites, etc. At the level of the Argeș-Vedea hydrographic space, in 2019, following the analysis of the results regarding the ecological state / potential and the types of sources that can be associated with the type of impact, no potentially significant sources of pollution from the above-mentioned categories were identified. which means lack of significant ones.	- Transversal dam works located on the water body The most important accumulations at the level of the Argeș-Vedea hydrographic space from the South Muntenia Region are represented by: Vidraru (Arges county), Pecineagu (Dambovita county), and Râușor (Arges county) -Works along the river - dams, fishing facilities, shore regularization and consolidation works, meandering At the level of the Argeș-Vedea hydrographic space, the regularizations have a total length of 642 km, and the dams have a total length of 437 km. The most important regularization and dam works are located on the Dâmbovița, Vedea and Călmățui rivers. At the level of the Argeș-Vedea hydrographic space, the number of branches and canals is 24, these having a total length of 208 km, their purpose being to supplement the tributary flow for certain accumulations, as well as to ensure the water requirement for the afferent localities, producing significant changes. the flows of the watercourses on which it operates. The most important branches are: Argeș / Dâmbovița and Ilfov / Dâmbovița. -Samples and restitutions / derivations - water intakes, use restitutions (discharges), derivations with effects on the minimum flow, stability of the riverbed and biota. at the level of the hydrographic space Argeș-Vedea is 5 for the use of water supply of the population. Along with these pressures, a series of hydrological alterations have also been identified, which represent changes in the flow regime due to the use of water for energy production or water supply for the population.	**Accidental pollution** At the level of the Argeș-Vedea hydrographic space, a number of 236 water users have been identified that can produce accidental pollution, users who have elaborated their own Plans for preventing and combating accidental pollution. In 2020, there were 9 accidental pollutions of surface watercourses with crude oil, gasoline, insufficiently treated wastewater. The phenomena had a local / basin impact, and due to the short duration of the pollutant nature, the length of the affected section and the inertia of the communities in the structure of aquatic biocenoses, the effects of the phenomena in question were reduced only to the local change of physico-chemical indicators. without long-term inducing a significant change in aquatic biodiversity. **Fishing and aquaculture activities** At the level of 2019, at the level of the Argeș-Vedea hydrographic space, a number of 99 potentially significant pressures in relation to fish farming were inventoried, coming from point sources and diffuse sources, related to a number of 31 water bodies. **Extraction of ballast and sand from minor riverbeds** **Logging** **Invasive species** Groundwater sources of pollution: • Industrial activities; • Urban agglomerations and the impact of sewerage systems; • Agriculture activities and the impact of chemicals used; • Old unsecured drills; • Unauthorised drills.

Current status of water quality at the level of BH Arges – Vedea

At the level of the Arges - Vedea hydrographic space, the number of monitoring sections with surveillance program for natural rivers, strongly modified rivers and artificial water bodies is 42 sections, in which the biological, physico-chemical parameters were monitored, as well as priority substances. According to these monitoring for the main water bodies in the counties under analysis, the following conclusions can be drawn:

- The surface water bodies delimited on the Arges river and Vedea river have based to the results of monitoring the quality status of the surface water bodies in the hydrographic basin, it can be concluded that more than half of their length is in good ecological condition, the rest having moderate ecological status.
- All groundwater bodies (were identified 11 underground water bodies) are concluded as being in a good status. There parameters were assessed form quantitative and chemical status perspective

Assessing the quality parameters of the surface water, based on the statistical data available on National Institute for Statistic site, we summarise the status of the water bodies in the following figures:

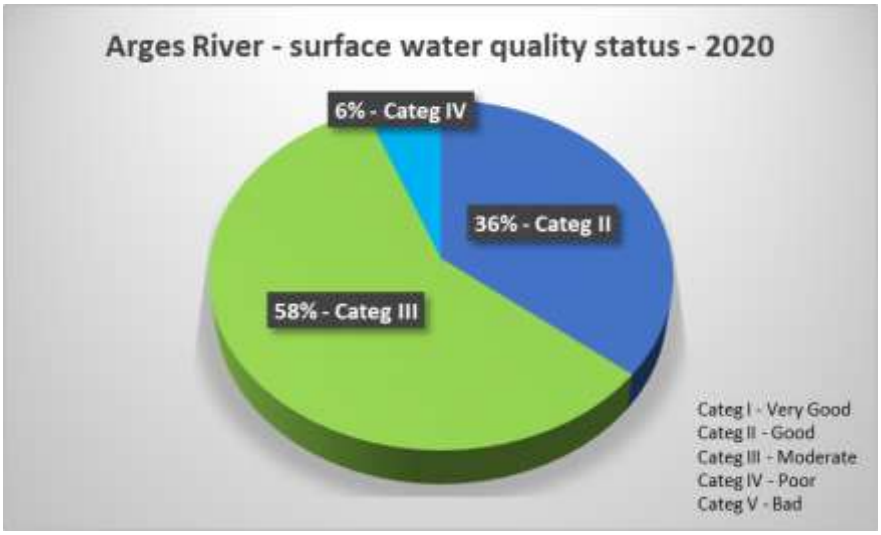

Figure 10 Quality status of the surface water in the hydrographical basins – 2020 (source of data: NIS online tempo)

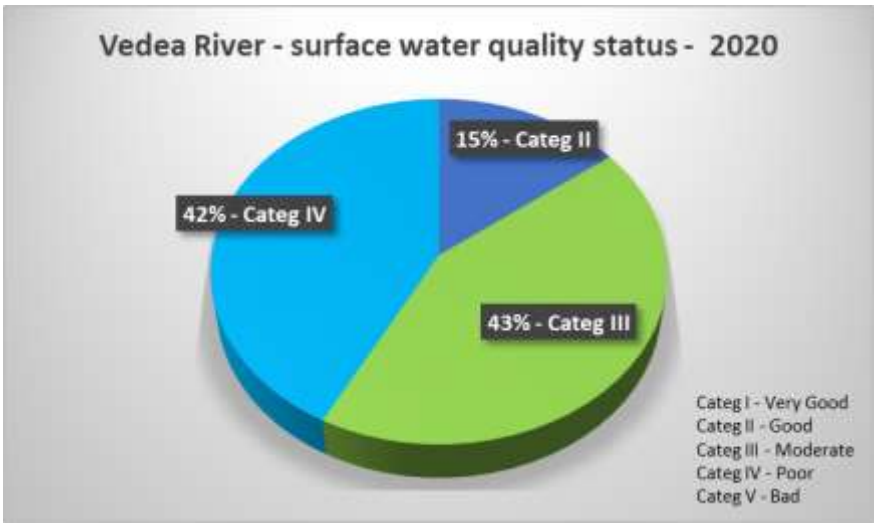

Figure 11 Quality status of the surface water in the hydrographical basins – 2020 (source of data: NIS online tempo)

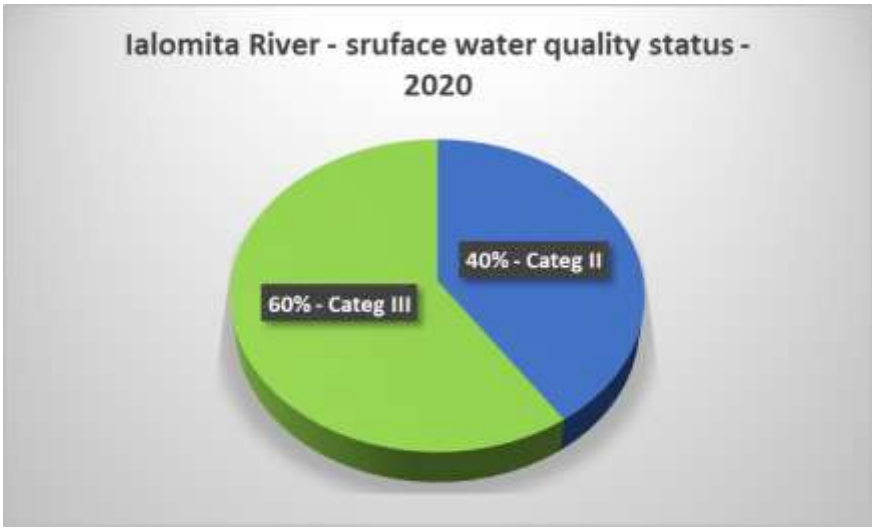

Figure 12 Quality status of the surface water in the hydrographical basins – 2020 (source of data: NIS online tempo)

For the SM Region the water resources are used to supply water for all the settlements, but not all of them have a compliant sewage system and wastewater treatment facilities. Evaluating the National Institute of Statistic information for 2020 we have summarized the situation of urban and rural localities with current water utilities, as in the figure below:

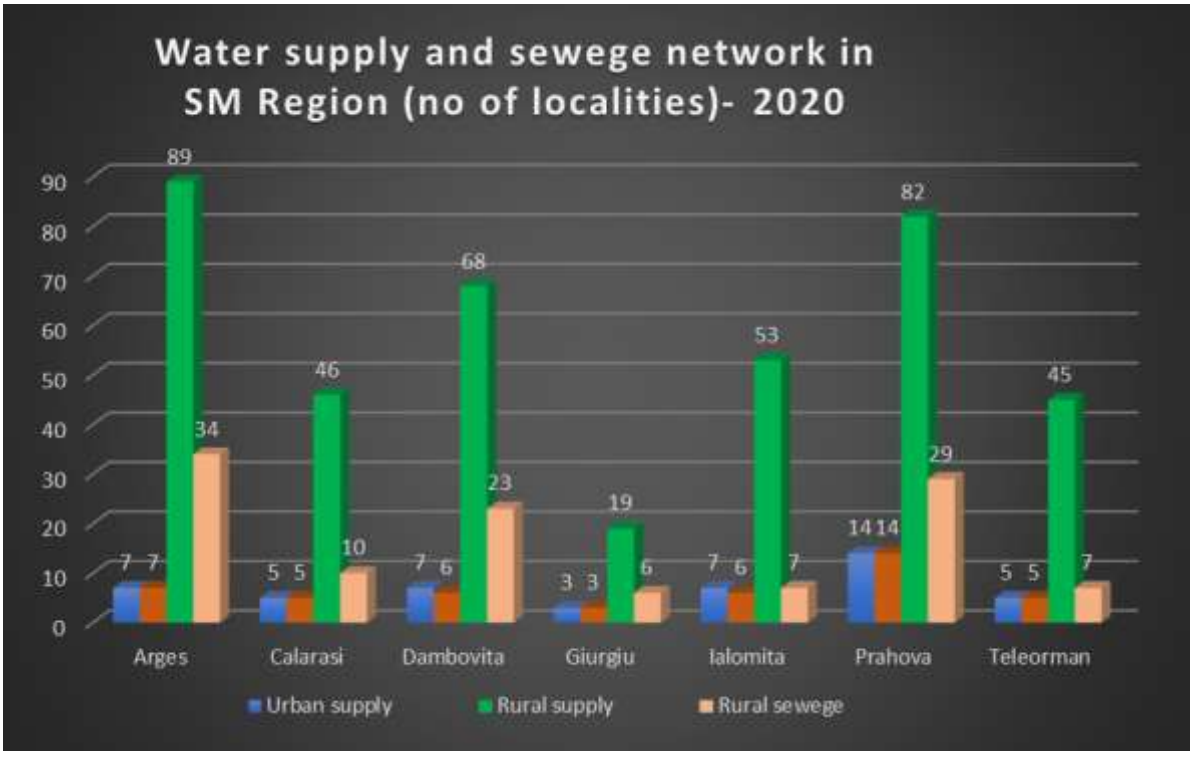

Figure 13 – Status of water supply and sewage network in SM Region 2020 (source of data: NIS online tempo)

The impact on environment of the discharged treated wastewaters into the rivers is continuously monitored by Regional Water Operators and the Romanian Waters local administrations.

Future trends in improving the water quality are:

- Satisfying the drinking water requirements necessary for the urban and rural population by continuing the works on the objectives being implemented for the creation of new water sources, saving water, reducing losses to users and distribution networks, efficient use of water.
- Improving and developing the infrastructure of centralized water supply systems and sewerage systems in urban localities.
- Extension of water supply services in a centralized system in rural localities.
- Improving water quality by setting new technologies, expanding and building new urban wastewater treatment plants;
- Rainwater management systems to be implemented in all urban areas.

2.3.1.4 Biodiversity and ecosystems

The natural protected areas, Natura 2000 sites and declared natural monuments sites in the region comprise a wide variety of ecosystems, rare plants and animals, special landforms, fossiliferous points and various geological sites. In the counties as Dâmbovița, Teleorman and Ialomița, protected areas sites do not exceed 0.5% of their surface. Most extensive sites have areas of 2400-3500 ha, such as the Iezerul reservation in Călărași, which occupies a surface of 2877 ha.

Many natural protected areas and natural monuments are of great phytogeographical importance. Thus, they are protected in different reserves: alder (Sinaia Forest), an interesting mixture of characteristic species forest-steppe and beech forests in Ciornuleasa Forest (Călăraşi County) etc. Other reservations have been declared for the protection of some southern plants. For example, in the Comana forest (Giurgiu County), out of the 1,201 identified plant species, almost 20% have southern origins: sub-Mediterranean (146 species), Pontic and Pontic-Mediterranean (66 species), Balkan and Balkan-Mediterranean (23 species). Among the geological and geomorphological protected sites, important is the Salt Mountain Reserve from Slănic - Prahova.

Within SM Region there are about 74 natural protected areas officially declared:

- 3 National Parks (Piatra Craiului, Bucegi, Comana)
- 32 SPA - Council Directive 2009/147/EC on the conservation of wild birds
- 39 SCI - Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

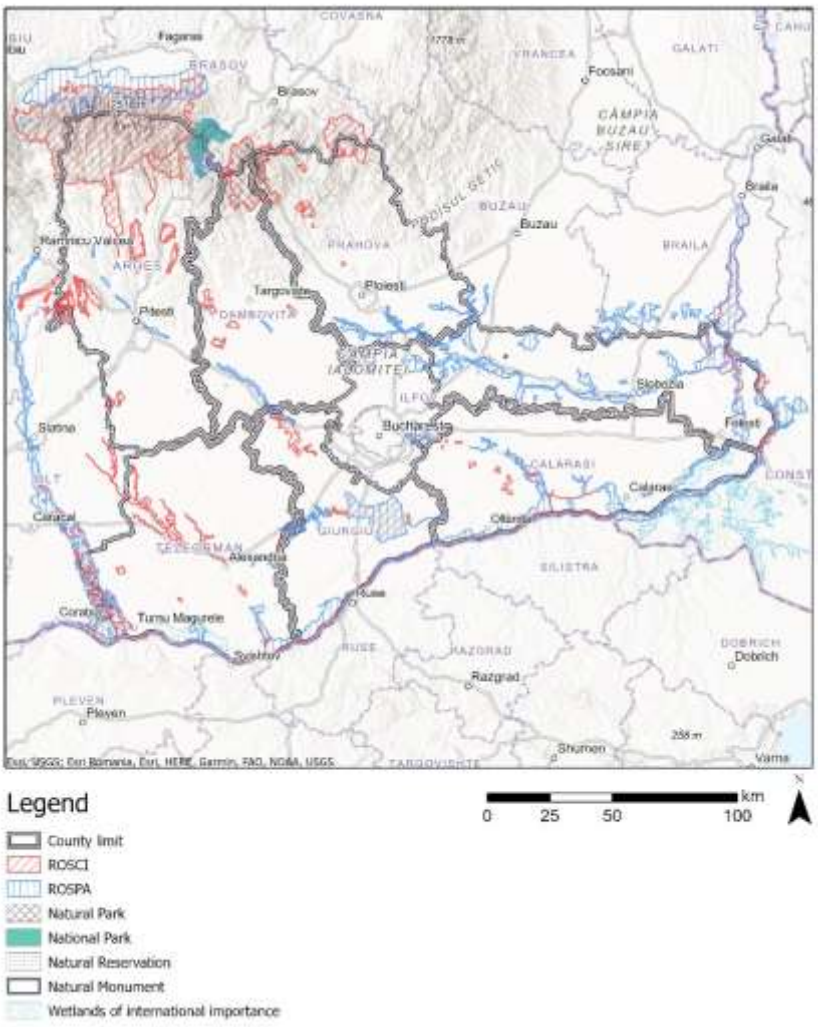

Figure 14: South Muntenia Region Protected Areas Map (Consultant approach)

Part of these natural protected areas have Management Plans issued and approved at central level, other have regulations and other part do not have specific regulations.

In Romania, according to the third national report on Conservation of Biological Diversity issued in 2005, a fairly large number of alien species are recorded invasive. Thus, the report mentions 112 species of exotic trees, of which only 6 are considered invasive alien species - *Acer negundo, Ailanthus altisima, Amorpha fruticosa, Cytisus scoparius, Fraxinus americana si Fraxinus pennsylvanica*.

Acacia plantations (*Robinia pseudacacia*) have been severely affected in the last 5 years by two species of acacia mining lepidoptera originating in North America, and the ornamental chestnut is deeply affected everywhere in the country by the larvae of the gracilariid microlepidoptera Cameraria ohridella, native in the area the former Yugoslavia.

At the level of SM Region (meaning the counties: Prahova County) there are no statistical data regarding the type and number of species introduced (allotones), to their evolution or the areas they cover, so it is difficult to estimate impact on biodiversity.

Within the process of regulation, respectively of approving the development plans of territory, in case of approval of reforestation projects on degraded lands or in case of issuing the environmental permit for projects related to green spaces, Environmental Authorities imposes conditions to prevent the planting of invasive species, as mentioned in the list of invasive species of European Community (http://www.europe-aliens.org), requirement transposed by Ministerial Order no. 979/2009 on the introduction of non - native species and interventions on invasive species.

Unfortunately, this control cannot be extended to private properties, especially those located in or near the neighbourhood inside protected natural areas, in which case landowners can plant any exotic species they consider.

The plant species of North American origin, ***Ambrosia artemisiifolia***, is reported as invasive plant in Romania since 1908, being present in SM Region, including the municipalities areas where it develops mainly on the lands related to the railways or those not cared for by the public domain administrator, but in small populations.
After 1990 many agricultural lands were abandoned, deforestation took place in the forestry sector as well ragweed has spread widely in the spontaneous flora, including invading agricultural crops.

Ecological knowledge of forests, management measures are the most common means in guiding interventions to avoid the gradual degradation of forestry ecosystems by harvesting forest products, to maintain their capacity and environmental conservatives. The forest is now considered a biological barrier against pollution, but it is often very severely affected by pollution.

Forest owners, regardless of the form of ownership, have an obligation to comply the forest regime according to the legal provisions. Forests near disadvantaged rural areas are being cut down illegal. This fact is given by the social status of the respective community.
Forest departments promotes increased competitiveness through implementation European criteria for sustainable forest management, which consist of:

- the corresponding maintenance and improvement of the forest resources, as well as of the contribution to the global carbon circuit;
- maintaining the health and vitality of forest ecosystems;
- increasing the productive potential, respectively maintaining and encouraging the productive functions of forests (wood and non-wood products);
- maintaining, preserving and properly enhancing forest biodiversity;
- maintaining and properly improving the protection functions in the management
- forests (especially protection of soil, water and localities).

Moreover, green areas within the cities of the SM Region have a great variance confirmed by the statistical data available for 2020. In the images below we present the status for each county.

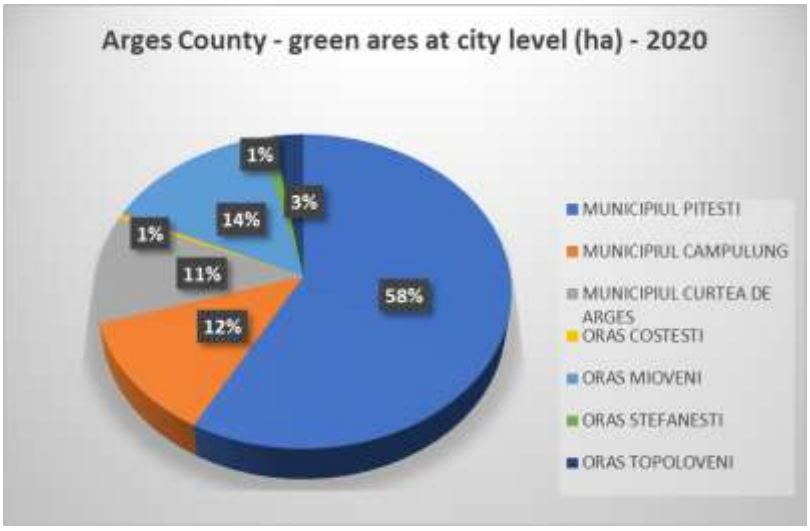

Figure 15 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

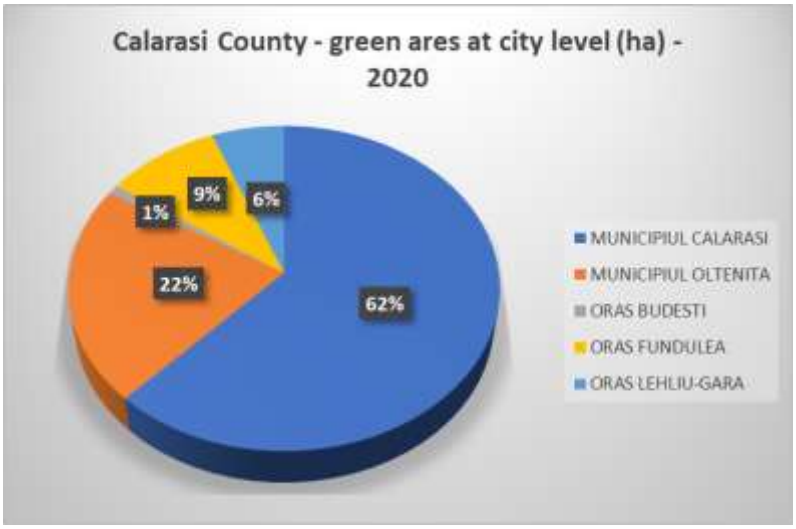

Figure 16 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

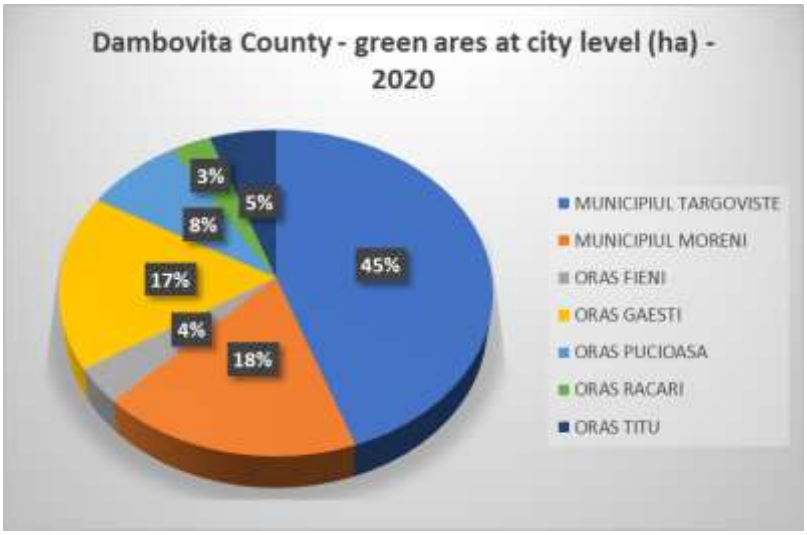

Figure 17 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

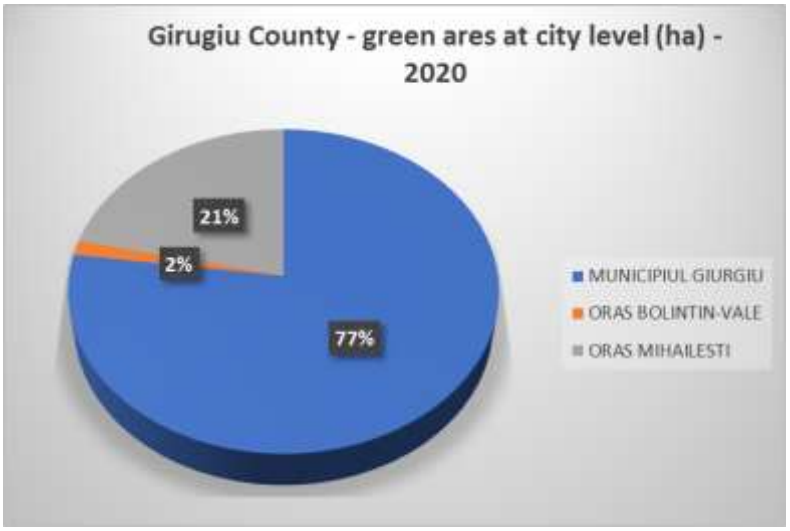

Figure 18 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

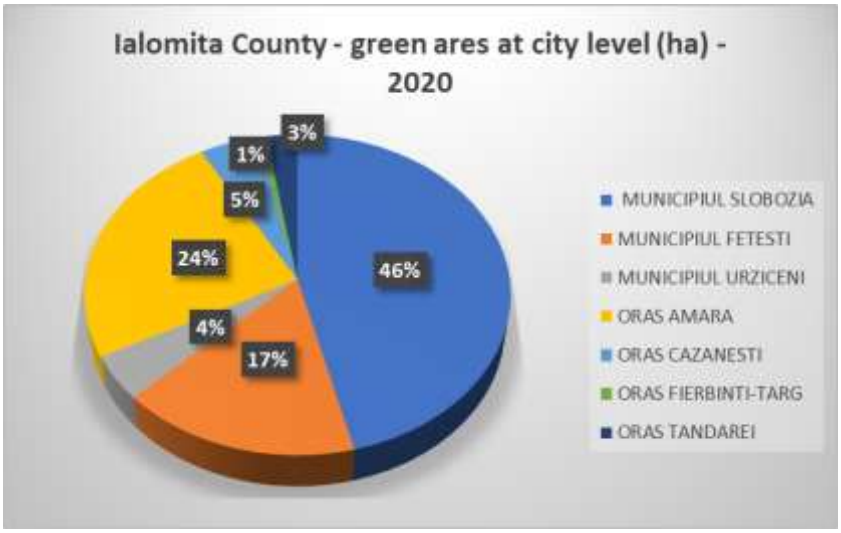

Figure 19 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

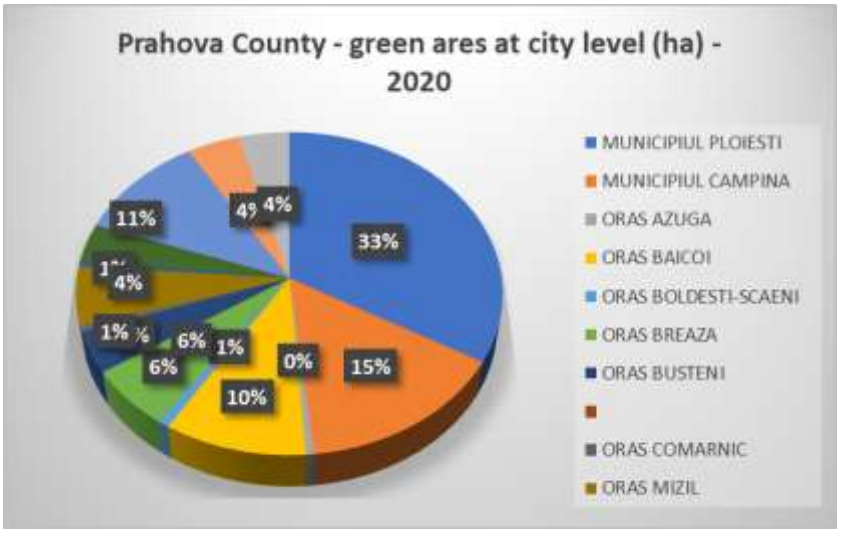

Figure 20 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

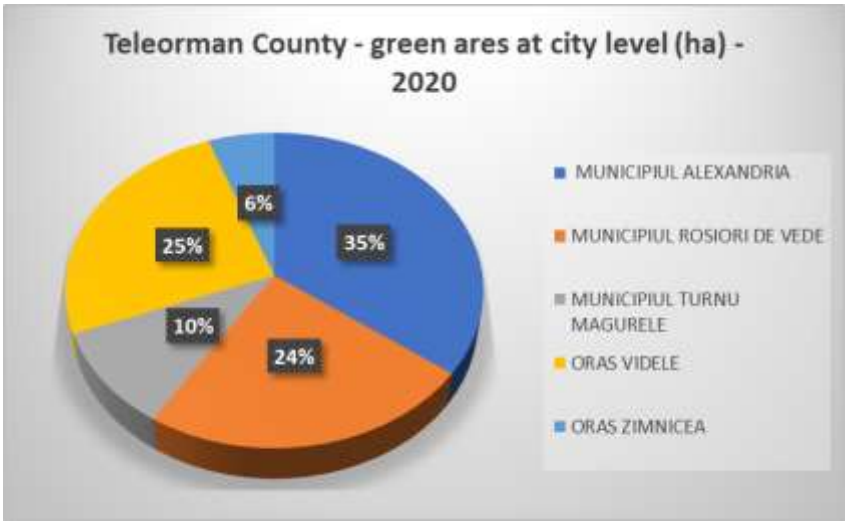

Figure 21 Green area surface available in the county in the SM Region – 2020 (source of data: NIS online tempo)

2.3.1.5 Climate adaptation

Integrated to the temperate-continental climate, South Muntenia region benefits from all the climatic types developed altitudinal, from the low meadow climate of the plain, to that of hills and plateaus and to the mountains.

The main climate characteristics are:

- Air annual average temperature of about 11°C with differences between north part of the region covered by mountains and the south border of Danube River flooding plain;
- Annual average precipitation is about 600 mm, with great variance due to the altitude of the different parts of the region.

Despite all global efforts to reduce greenhouse gas emissions, the global average temperature will continue to rise in the next period and measures are needed as urgent as possible to adapt to the effects of climate change.

The SM Region analysis on climate adaptation was issued based on the available information stated by the environmental protection agencies for all counties of the region and also on studies and strategies at local and national level.

Disruption of environmental factors, in a drastic way, has a direct effect on evolution of living beings, initially on their ability to adapt and later on their ability to adapt survival mechanism, which may, in extreme cases, be a factor in the elimination of certain species from trophic networks with drastic consequences on the evolution of biodiversity at local level and with impact at general level.

To prevent this decline in biodiversity at the national level as an integrated part of global biodiversity, threats must be considered, opportunities, recommendations, and adaptation measures in this regard. Activities such as deforestation and overexploitation of grassland can intensify the effects of climate change.

Other climate change effects are flash floods with important impact in the north part of the region (Ialomita River Basin) and severe droughts in the south part of the region.

The types of the following disaster were investigated:

- Natural hazards as: meteorological (storms, floods, droughts, freezing), forest fires, avalanches, landslides and earthquakes.
- Technological hazards as: pollution caused by accidents, public utilities failure.

The risk is the mathematical estimation of the probability of human loss and damage population health, material and environmental damage, social and psychological damage, on a reference period, respectively future and in each area, for a certain type of event of risk. Risk is defined as the product between the probability of occurrence of the event and its impact.
The vulnerability is the characteristics and circumstances of a community, system or good that make the respective community to be susceptible to the harmful effects of a hazard.

Most forest fires are triggered by the human factor, but without a favorable climate for burning (high temperatures, due to a significant long-term water deficit and wind intensifications), the number of fires would be much lower. Because of this, weather conditions are the most important factor in forest fires, and climate change is helping to increase these conditions.

Most technological accidents are caused by human error or malfunction of installations. According to the Annual Reports on the current state of the environment, in the last 5 years in the counties of the South Muntenia Region there have been no accidents caused by climatic factors leading to a significant pollution of water, soil or air. All these have been evaluated based on the information available at county level (See chapter 3)

Observation regarding the data:

The data and information available for water quality and water resources were at the level of water basins and/or at the national level. It was not possible to collect detailed data and information at county level or city level. For drought and landslides, the information was extracted from the maps for Romania. There are no data at county level.

In the annual reports on state of environmental factors, elaborated by the local agencies for environmental protection, the information is not presented in a unitary way for each county. The process for inventorying contaminated sites is ongoing. There is no very accurate data on degraded or unproductive land surfaces.

2.3.2 Site visit

It is to be noted that beside the analysis of the strategic information, the experts team performed site visits together with local authorities and RDA South Muntenia representatives. Detailed information is presented in the site visits report, appendices to this report (see Appendix, section 5.1) .

2.3.3 Policy and Institutional aspects

The aim of this regional analysis is to identify the main types of green and blue infrastructure projects, which could be co-financed from EU funds, *especially under the SM Regional Operational Programme 2021-2027, specific objective b(vii) Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution*.

In identifying the relevant BGI projects, the public authorities have **challenges in finding the right and balanced approach to address**:

- the social pressure related to the public administrations' commitments to citizens for actions with immediate results sometimes have driven more focus on solving punctual priorities with less long-term or holistic perspective required by a sustainable urban development (e.g. in Calarasi, the extension of the residential areas ensures the access to utilities, quality and safety of services, including also new public recreational areas, while for creating extended environmental benefits and opportunities for tourism and economic development , additional BGI structures would need to be included in the next public investments to ensure also green connectivity with the old town, accompanied also by green landscaping by the private investors, that currently have no such obligation related to the construction sites.
- the funds scarcity challenge, aiming to secure the EU funds for the most stringent investments
- the environmental challenges
- the regional perspective and the cooperation approach, rather than the current local-centred approach
- the mindset shift from the short-term to long-term perspective, related to the sustainable development of their territories and communities.

Thus, understanding the context of the relevant policy and institutional aspects that define the framework for the BGI projects funding and implementation, will support the public authorities in addressing the above challenges through the BGI projects as a common and effective paradigm.

As such, a top-down analysis has been deployed, based on the identified relevant EU and national policies and strategic documents, as well as related legislation, which should be completed by a grass-root analysis. The scope is to match the overarching concepts, policies, regulations and integrated planning perspective with the local needs, challenges, expectations, and operationalization capacity, as well as to identify areas of optimization.

The collected data is ensuring the needed information to assess the relevant policies and strategies, as well as the institutional capacity needed to enable the beneficiaries identify the relevant BGI projects and to successfully apply for funds.

2.3.4 Stakeholder and Social, Gender & Economic inclusion

The context and environmental challenges faced at present in the project counties are related to economic, social and gender challenges in the project area. These include public health affected by poor air condition and lack of space for recreational activities, increased incidence of domestic violence due to Covid-19 epidemiological restrictions[1], limited connectivity of humans with blue and green nature and fauna, economic vulnerability of the agriculture sector to natural disasters such as droughts and floods, vulnerability, and flood risks in specific residential areas in cities such as Calarasi, Slobozia and other locations.

Based on the site visits conducted on 20-22 September, the BGI interventions will address the identified environmental challenges and will have a significant positive economic, social and gender impact in the project locations.

Addressing such environmental challenges as flooding will benefit the entire population in the affected areas, hence it will have a particular positive impact on the poor and vulnerable, especially the poor elderly, single-headed families, families with disabled people. Since the poor are more vulnerable due to economic constraints, flooding usually acts as an amplifier of poverty, while poverty increases flood vulnerability.

From a gender and social perspective, rehabilitation and creation of BGI infrastructure specifically in such locations as Comana or others in the proximity of large urban places, will benefit the local population and the inhabitants from cities, who can bring their families to connect with nature. Green and blue areas have particular significance for urban families in the times of Covid pandemic as alternatives to evade from urban apartments, thus preventing psycho-emotional stress, a factor contributing to family violence[2] which had exponentially increased worldwide, including in Romania.

From an economic perspective, improved floods and drought management, which could be implemented under ROP-funded projects, would reduce economic losses in agriculture as one of the most affected sectors, as well as losses at household level and losses at community level.

In all project locations, the BGI infrastructure will have a high positive social and economic impact as it will respond to pressing environmental and social challenges, will create space for recreation, connect people with nature, boost economic activities in the area, benefit small entrepreneurs offering services related to recreation, food trade and entertainment.

[1] https://www.rri.ro/en_gb/covid_19_and_gender_violence-2629972

[2] https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-violence-against-women

Stakeholder engagement

There are clear systems built at regional level involving all key stakeholders according to the law provisions, as well as additional guidelines prepared by SM RDA for the county councils and municipalities. Most of the projects identified so far are local. However, the positive impacts of BGI would be much amplified if joint regional project proposals would be identified /considered, also creating a network effect for enhanced cooperation between cities / counties. In addition, multi-disciplinary representation needs to be strengthened, keeping an enabling environment for interested stakeholders to engage and support the project. From a gender perspective, the gender composition of stakeholders is representative.

2.3.5 Economics and Finance

The objective of the assignment is to assist South-Muntenia Regional Development Agency through a very broad financial analysis of municipal budgets, in order to determine the municipalities' capacity to implement green and blue infrastructure projects, which could be co-financed from EU funds, especially under the SM Regional Operational Programme 2021-2027.

The municipalities subject of the broad financial analysis are Pitesti, Calarasi, Targoviste, Giurgiu, Slobozia, Ploiesti and Alexandria, the capital cities of each county part of SM region.

The assignment involves the preparation of a financial model for each municipality and the analysis that will provide a broad but concise view on the municipalities' financial capacity and indebtness level, considering the need to assure municipalities' sustainable development and the availability of financial resources for projects (co)financing.

A financial model in Excel has been prepared with multiple sheets having the following structure:

- "Model Overview" containing an outline of the financial model and its spreadsheets;
- "Control Panel" containing the main assumptions related to loans;
- "Macro-Economic Scenario" containing the macroeconomic scenario based on the forecast from National Commission for Strategy and Prognosis for the period 2021 – 2025 issued on August 2021 regarding inflation, Euro exchange rate and GDP growth rate.
- "Budgetary Execution" containing the historical budgetary executions presented for the previous 3 years, respectively 2018-2020;
- "Budgetary Forecast" containing dynamics assumptions related to main budgetary revenues and expenditures;
- "Budgetary Projection" presenting the forecast for the main budgetary elements, namely the revenues and expenditures;
- "Investment Plan" presenting the forecast of investments per categories;
- "Loans" presenting the forecast of loans of the municipality, including principal repayments, commissions, and interests;

- "Cash Flow" presenting the evolution of the cash flow generated by the operations of the local authority;
- "Indebtness" presenting the evolution of the indebtness level of the municipality.
- Sheet "Reporting" containing the financial statements and municipality's main ratios;

The structure of the financial model prepared for each municipality is presented in Figure 22 below:

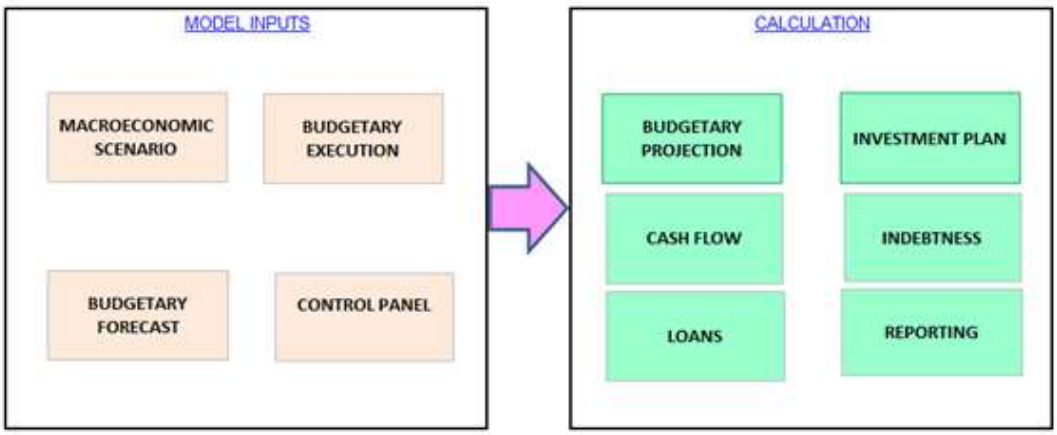

Figure 22: Structure of the Financial Model

Data on the financial budget execution (revenues and expenditures), balance sheet and existent debts was collected from the municipalities' websites for the period 2018-2020 for all the municipalities to be analyzed, respectively Pitesti, Calarasi, Targoviste, Giurgiu, Slobozia, Ploiesti and Alexandria. Where the information was not available as part of the municipality's public information, the needed data was collected directly from the municipality.

The model presents the financial summary on the revenues and expenditures and the main financial indicators regarding the debts and current surplus. The financial model is available both in English and Romanian. The analysis for Targoviste municipality is included as an example in Appendix 5.5.

As discussed and agreed with the RDA SM*, the final data and results will be included in the Final Report - Regional analysis on green and blue infrastructure*. This approach was decided in order to correlate the analysis under the PISSA with the results of another Technical Assistance project for SM RDA, regarding the establishment of a fund for municipalities to develop and finance projects.

2.3.6 Review of EC's guidelines and other (local) policies

In assessing the relevant policies and strategies, as well as the institutional capacity needed to enable the beneficiaries identify the relevant BGI projects and to successfully apply for funds, the following 3 steps are key:

1. Acknowledge what the BGI concept is, according to EC's guidelines and according to the scientific community and the related policies and best practices promoters like EBRD and consulting companies like Ramboll, and how it responds to the beneficiaries' context.
2. Define the eligibility criteria for the BGI projects funding from the SM ROP 2021-2027 and the complementary financing sources, as well as the regional integrated planning approach.
3. Asses the Institutional framework and capacity: legal and administrative, technical, and financing.

1. **The first important aspect - what is the BGI concept?**

In this respect, the ***EC guidance on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure*** contributes to establishing a strategic framework to support EU-level green and blue infrastructure projects to maximise the benefits provided.

The European Commission adopted an EU strategy on green infrastructure in 2013 to enhance economic benefits by attracting greater investment in Europe's natural capital. According to the EU strategy, *green infrastructure (GI) is a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services*. *It incorporates biodiversity-rich terrestrial and aquatic ecosystems on land and at sea; hence green and blue infrastructure (GBI, or BGI)*. On land, BGI is present in both rural and urban settings. In addition to providing a key tool to halt and reverse the loss of biodiversity, green and blue infrastructure provides a *multiplicity of benefits* in a simultaneous and cost-efficient way. The delivery of those benefits is maximised when the network of green and blue spaces is planned at a strategic level.

Green and blue infrastructure should also be seen as a bridging concept to facilitate communication and understanding across disciplines, coordinate groups of stakeholders, and build consensus around particular policy issues, with a view to serve a variety of societal goals. To this aim, it should be developed with the *active involvement of all stakeholders*.

In order to encourage the scaling-up of investments in EU-level BGI projects, the EC guidance document sets out criteria to identify those projects, provides examples of such projects and of the benefits ensued and provides information on the relevant existing EU funding sources and supporting tools.

This document is an important tool in the assessment of projects under this assignment as it provides definition, criteria, and illustration of EU-level green and blue infrastructure. Furthermore, it contains information on EU financing instruments available to further support such projects, as well as scientific and technical tools and instruments to support the design of projects.

In addition to the facets of BGI concept - a strategically planned network, biodiversity-rich natural and semi-natural areas with other environmental features, that are designed and managed to deliver a wide range of ecosystem services - BGI should fulfil the following cumulative criteria:

- Conservation and/or enhancement of multiple ecosystems services at a significant scale
- Contribution to the goals of the Nature Directives
- Strategic approach.

The tools provided in the guidance document (e.g., Mapping and Assessment of Ecosystems and their Services (MAES) & Geospatial methodological guidelines, data, and tools) had been used, as available or similar, and should be further used for identifying project types that could be co-financed from EU funds, especially under the **SM Regional Operational Programme 2021-2027**.

The EC guidelines is also a good source of information for the regional BGI projects located in the Danube basin. As such, the regional planning could benefit of The DANUBEPARKS project results as inspiration for the regional approach at SM region level.

The Guide also makes an overview of the European Commission proposals for the EU Multi-annual Financial Framework 2021- 2027 providing new opportunities for supporting GI:

- The new LIFE programme, which includes new 'strategic nature projects', which aim at strengthening the integration of nature and biodiversity in other policies through a more coordinated and strategic approach. This should provide major opportunities for supporting EU level GI projects. 'Strategic integrated projects' for other policies, e.g., water, will also provide further funding opportunities;
- Cohesion policy, including the proposed Regulation on the European territorial cooperation goal (Interreg), which aims at fostering cross-border, transnational, maritime and inter-regional cooperation;
- The new EU Common Agricultural Policy, putting greater emphasis on environment and climate, and the role given to Member States to design CAP strategic plans, which will be an opportunity to foster EU-level green and blue infrastructure projects;
- The new European Maritime and Fisheries Fund, relevant as regards costal and marine green and blue infrastructure;
- The new Framework Programme for Research and Innovation, Horizon Europe, investing on enhancing knowledge and demonstrating solutions to preserve and restore biodiversity and ecosystems. With a view to contributing to establishing a strategic framework for EU level green and blue infrastructure, the Commission services intend to revisit and update this guidance within three years in the light of the experience gained and of the new EU Multiannual Financial Framework 2021-2027.

Based on the EC's guidelines, EBRD Green City framework and Ramboll's experience and expertise, ***a preliminary list with key BGI typologies, fit for the beneficiaries' identified challenges and context, was created and shared with the RDA and local authorities during the site***

visit. *The final list will be further completed and included in the Regional analysis on green and blue infrastructure*.

2. **The second key aspect - to define the eligibility criteria for the BGI projects** funding from the SM ROP 2021-2027 and the complementary financing sources, as well as the integrated regional planning approach

The SM ROP 2021-2027 ensures the implementation of the strategic vision for a sustainable development of the region, complementing the directions, actions and priorities set forth in the strategic programming documents: SM Regional Development Plan 2021-2027; Smart Specialization Strategy for SM (RIS3) 2021-2027; SM Integrated Territorial Strategy 2021-2027.

The envisaged investments shall follow the strategic objectives that are corresponding to the **2021-2027 EU Cohesion Policy 5 policy objectives (OP-s)** supporting growth for the period 2021-2027:
OP1. A more competitive and smarter Europe
OP2. A greener, low-carbon transitioning towards a net zero carbon economy
OP3. A more connected Europe by enhancing mobility
OP4. A more social and inclusive Europe
OP5. Europe closer to citizens by fostering the sustainable and integrated development of all types of territories

Out the 6 strategic objectives (SO) of SM RDA, SM SO 2 envisages *Stimulation of the region transition to a zero emissions economy through the energy efficiency increase, environment protection enhancement and urban mobility increase.*

Thus, SM SO 2 fits into the EU *OP2 - A greener, low-carbon transitioning towards a net zero carbon economy* that aims at a „More ecological Europe with, reduced carbon emissions through the advancement of the green and just transition, of the green and blue infrastructures, of the circular economy, of the adaptation to the climate change and the risk prevention and mitigation'', the Strategic Objective (SO) *b(vii) Enhancing protection and preservation of nature, biodiversity and green infrastructure, including in urban areas, and reducing all forms of pollution,* according to the key strategic documents at regional level, while contributing to the continuation and augmentation of the strategic vision of ROP 2014 – 2020.

To better define the context of the BGI projects' eligibility funding under the SM ROP 2021-2027, the **SM ROP financing program context** is presented below.

The legislative package for the 2021-2027 Cohesion Policy published on 30 June 2021, comprises:

- *Regulation (EU) 2021/1056 of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund*

- Regulation (EU) 2021/1057 of the European Parliament and of the Council of 24 June 2021 establishing the European Social Fund Plus (ESF+) and repealing Regulation (EU) No 1296/2013
- *Regulation (EU) 2021/1058 of the European Parliament and of the Council of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund*
- *Regulation (EU) 2021/1059 of the European Parliament and of the Council of 24 June 2021 on specific provisions for the European territorial cooperation goal (Interreg) supported by the European Regional Development Fund and external financing instruments*
- *Regulation (EU) 2021/1060 of the European Parliament and of the Council of 24 June 2021 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy.*

The Main Funds and priorities

- The European Regional Development Fund (ERDF or FEDR acronym in Romanian) will support investments all 5 policy objectives, but 1 and 2 are the main priorities
- The European Social Fund+ (FSE+) main priority is 4
- The Cohesion Fund (FC) supports policy objectives 2 and 3
- The Just Transition Fund (FTJ) provides support under dedicated specific objectives (*art. 8 of JTF regulation)*
- The European Fund for Fishing and Maritime Affairs (FEPAM) supports objectives 2 and 5.
- There are also the Interreg programs for territory cooperation that have **2 additional policy objectives** at their disposal (*art. 14, Interreg regulation*): "A better cooperation governance" and "A safer and more secure Europe".

The architecture of the Operational Programs from the Cohesion Policy and the Common Agricultural / Fishing Policy for 2021-2027 for Romania is given in the table below – the budget is *estimated*, as the programs are not yet approved by the EC.

Table 2: Architecture of the Operational Programs from the Cohesion Policy and the Common Agricultural / Fishing Policy for 2021-2027

Operational Programme (OP)*	Policy Objective	Budget (EUR) *estimated*	Fund	Management Authority
OP Intelligent Growth, Digitalization, Financing Instruments (POCIDIF)	OP 1	*1,615*	ERDF	MIEP
OP Health (POS)	OP 1, OP 4	*2,8*	ERDF, ESF+	MIEP
OP Education and Occupation (POEO)	OP 4	*3,297*	ESF+	MIEP

OP Inclusion and Social Dignity (POIDS)	OP 4, OP 5	*2,9*	ERDF, ESF+	MIEP
OP Sustainable Development (PODD)	OP 2	*3,9*	ERDF, CF	MIEP
OP Transport (POT)	OP 3	*4,898*	ERDF, CF	Ministry of Transport and Infrastructure
8 Regional Operational Programmes (PORs)	OP 1, OP 2, OP 3 ,OP 4, OP 5	*9*	ERDF	**Regional Development Agencies (RDA)**
Aquaculture and Fishing Program (PAP)	OP 2, OP 5	*0,162*	FEPAM	Ministry of Agriculture and Rural Development
OP for a Just Transition (POTJ)	OS FTJ	*1,766*	FTJ	MIEP
OP Technical Assistance (POAT)	-	*0,682*	ERDF, ESF+	

*Acronyms are in Romanian

The Regional Operational Program that is under SM RDA coordination has 6 priority areas of investment as shown below, plus technical assistance.

Table 3: Priority investment areas of SM ROP 2021-2027

Priority investment area	**OP supported**
PI 1 - A competitive region through innovation, digitalisation, and dynamic enterprises	OP1
PI 2 - A region with environmentally friendly cities	OP2
PI 3 - A region with sustainable urban mobility	OP2
PI 4 - A more accessible region	OP3
PI 5 - An educated region	OP4
PI 6 - An attractive region	OP5
PI 7 – Technical Assistance - Ensuring the functioning of the ROP management system	

The green and blue infrastructure projects that address the OP 2, especially b(vii) Enhancing protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reducing all forms of pollution, could be co-financed from **ROP**, under the *PI 2 - „A region with environmentally friendly cities"*.

The **Sustainable Development Operational Programme (PODD)** should also be looked at by the local authorities when planning their investments from the EU funds. These provisions are also relevant in the analysis of the BGI projects considering that, related to the biodiversity and green infrastructure, PODD will finance, for example, the biodiversity conservation in Natura 2000 areas.

As well, direct measures for floods and drought management are subject to PODD, and the related policies and plans should be considered for **potential synergies and partnerships**, as shown in the PODD summary below.

Table 4: PODD Summary

PODD Priority investment area	Eligible actions	Eligible Beneficiaries	OP supported
AP1. Energy efficiency, smart energy systems and networks	Energy efficiency optimization for private enterprises Smart energy and storage systems and networks	enterprises with +1.000 tep/y consumption distribution operators	OP2
AP2. Water and wastewater infrastructure development and transition to a circular economy	Water and wastewater sector investments for compliance with environmental directives Efficient waste management for an accelerated transition to circular economy (selective collection)	IDAs through Regional operators, ANRSC IDAs through County Councils / Municipalities, Central and Local Public Authorities	OP2
AP3. Environment protection through biodiversity conservation, air quality and contaminated sites restoration	Biodiversity conservation for ensuring environmental directive conformity Air quality monitoring optimization Preliminary and detailed investigation on contaminated sites and risk evaluation	Central Environmental Authorities and Agencies / ROWATERS / R&D Institutes / Universities / NGOs / protected areas administrators / ROMSILVA / Central and Local Public Authorities and related entities Ministry of Environment Ministry of Environment, Central and Local Public Authorities and related relevant entities	OP2
AP4. Advancing climate change adaptation,	Floods and droughts management	MMAP, ANAR, ANM, ROMSILVA, ANIF, NGOs, Local Public Administrations, and partnerships.	OP2

prevention, and risk management	Costal erosion prevention Risk management	Min. of Environment, National Meteorology Agency, National Land reclamation Agency and similar structures / MoI / Emergency Situation General Inspectorate and similar structures, STS

At the same time, additional proposals of the European Commission for the EU Multi-annual Financial Framework 2021- 2027 providing **new opportunities for supporting GI** are depicted in the *EC Guidelines on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure*.

Since the ROP is financed by the ERDF, the provisions of the following EU Regulations are applicable:

- ***Regulation (EU) 2021/1058*** *of the European Parliament and of the Council of 24 June 2021 on the* ***European Regional Development Fund*** *and on the Cohesion Fund*
- ***Regulation (EU) 2021/1060*** *of the European Parliament and of the Council of 24 June 2021 laying down* ***common provisions on the European Regional Development Fund****, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy* ***(CPR).***

Some key highlights to support the regional perspective undertaken in the current analysis are set down in art. 11 Sustainable urban development of the EU 2021/150 Regulation:

- *To address economic, environmental, climate, demographic and social challenges, the ERDF shall support integrated territorial development based on territorial or community-led local development strategies in accordance with Article 29 or 32 of Regulation (EU) 2021/1060, respectively, that are focused on urban areas, including functional urban areas ('sustainable urban development') within programmes under both goals referred to in Article 5(2) of that Regulation.*
- *Special attention shall be given to tackling environmental and climate challenges, in particular the transition towards a climate-neutral economy by 2050, to harnessing the potential of digital technologies for innovation purposes, and to support the development of functional urban areas. In this context, sustainable urban development resources programmed under priorities corresponding to PO 1 and 2 shall count towards the thematic concentration requirements under Article 4.*

Moreover, under CPR art.28 și 29, the integrated territory development is meant to be supported by the Integrated Territory Development Strategies (SIDT). Thus, SM RDA approach through SM ROP 2021-2027 continues the trend, respectively financing of the territory development projects based on SIDT, that shall encompass Strategic Objectives from at least 2 Priority objectives and that shall be aligned to CPR requirements in art. 29.

This new approach of SM RDA regarding the elaboration of next-gen integrated development regional policies with a significant sustainability component, that is so clearly applied to the current analysis, is anchored in the SM Regional Development Plan for 2021-2027, that ensures alignment to the European strategic documents such as *Green Deal* and 2023 Sustainable Development Agenda, as well as to the national strategic documents like PNRR, the National Sustainable Development Strategy and to the national sectorial development policies.

3. **The third key aspect - the Institutional framework and capacity analysis**

The overall map of Roles and accountability related to the Financing programs for 2021-2027 is presented in the Authority Matrix below issued by MIPE (Figure 23).

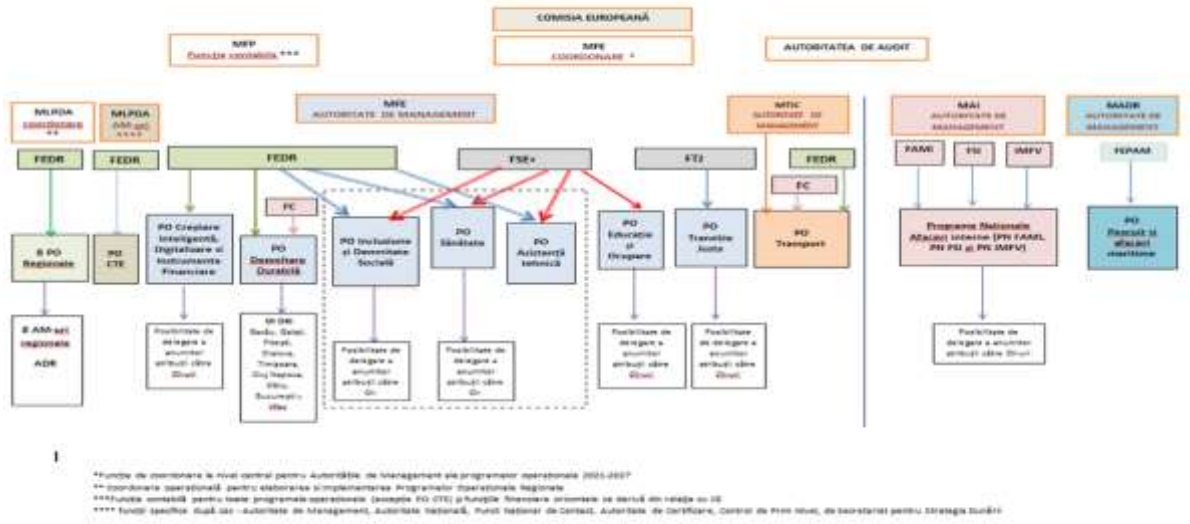

Figure 23: Roles and accountability related to financing programs 2021-2027

Specifically, the SM RDA, established according to law 315/2004, shall transit from the current role of Intermediate Organism for ROP 2014 – 2020 to the **Management Authority** role for ROP 2021 – 2027, under the coordination of the Ministry for Public Works, Development and Administration, according to the overall Funds management matrix presented above.

At SM RDA level, the envisaged institutional framework for the next programming period is based on the **lessons learnt**, including **decentralization** of the implementation and **better cooperation with and between the beneficiaries**, with the aim to **enhance the leadership and the accountability** in implementing the EU funds at regional and local level, while capturing as accurately as possible the **development needs** of the region. The RDA approach is best illustrated by the current assignment, with a focus on BGI.

Institutional capacity needs to be reinforced, both at regional and local level, regarding *projects identification, preparation, contracting, implementation and maintenance*, in order to make the most of the allocated EU funds, in terms of *sustainable* benefits for both people and environment. Also, **awareness** must be raised at the level of local authorities, regarding the new challenges, targets and opportunities, related to green and blue infrastructure.

So far, from direct interactions with the final beneficiaries during site visits and workshops, we have identified that the BGI concept and related specific knowledge is not enough familiar to the beneficiaries.
Also, the current organizational structure at the Beneficiaries level do not foresee a Project Implementation Unit with a multi-disciplinary representation, that would be critical for such BGI projects of significant complexity, both from technical and functional interdependencies perspective.

As a general note regarding the institutional capacity, it is to be mentioned also that, according to the Partnership Agreement, the Technical Assistance funds included in ROP budgets shall be used in addition to the specific measures to strengthen and increase the administrative capacity of the Beneficiaries of ROP. Although such measures had been previously implemented, they didn't fully reach the proposed objectives, enhancing such measures remaining still a challenge in all Member States, including in Romania.

3 KEY FINDINGS

3.1 Environmental aspects

A summary of environmental aspects is included in the following tables, for each county. The key findings outlined here are based on the analysis performed in section 2.3.1.

3.1.1 Argeș County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Argeș County	The air quality in Arges County is generally good except for Pitesti, where the material particles (PM10 and PM2.5) concentration periodically exceeds the upper assessment thresholds for the population's health. The main cause of these exceedances being the road traffic and the energy sector. Areas with sensitivity in terms of exposure of the population to emissions of air pollutants are outlined especially in the vicinity of industrial sites and high traffic arteries. To maintain air quality, an Air Quality Maintenance Plan has been developed which includes a series of measures aimed at: Improving the transport infrastructure (rehabilitation of local roads, modernization of county roads) Efficiency of lighting networks increasing the energy efficiency of buildings Execution / rehabilitation of parks Arrangement of green spaces and bike lanes Consolidation of degraded lands The implementation period of the measures being: 2020-2024	Argeș County covers an area of 686,200 ha, of which 336871 ha are agricultural land (viticultural area 867 ha, orchard area 20317 ha, pastures and hayfields 141403 ha and arable land 173784 ha). More than half of the county's agricultural area is arable land (52%). In the last 5 years there has been an increase in the area of agricultural land and a decrease in the areas occupied by pastures and vineyards. The surface of constructions and non-productive degraded lands has increased in the last 5 years (represents 4% of the total surface of agricultural lands) and the surface covered by forests has also decreased. The results of the soil quality monitoring have highlighted that in some areas there are erosions, landslides and that require ecological reconstruction works of polluted soils. In Arges County, the surface arranged for ameliorating and combating soil erosion was at the level of 2018 of approximately 69,005 hectares, 48% of the regional total and 10.1% of the total surface of the county. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	Arges County is crossed by a lot of valleys and rivers from the hydrographic basin of the rivers Argeș, and Vedea, the length of the main rivers being about 1,000 km. The water resources of Argeș Vedea Water Basin (included Argeș county) can be considered sufficient and unevenly distributed in time and space. The most important source of pollution for these rivers is the low degree of wastewater collection and inadequate treatment of waste water. The Arges River is in good chemical condition. Regarding the ecological potential, the Arges river presents a moderate ecological potential in the northern part (upstream and downstream of the Vidraru accumulation) and a poor ecological potential in the southern part (entrance to the Mihailesti accumulation). These sectors of the river are classified as heavily modified bodies of water. In these areas were also delimited areas vulnerable to nutrients. The water resources located in the Argeș-Vedea Water Basin can be considered sufficient and unevenly distributed in time and space.	**Green space** The average per capita of green space is below the county and national average. According to the green space register, in Pitești there are 361.69 hectares of green space, resulting in an area of 20.63 sqm / inhabitant. This also includes the green spaces between the blocks. The necessary, according to the legislative regulations, would be 434.43 ha of green space to ensure 26 sq m / inhabitant for the population forecasted for 2030 (167,090 inhabitants). Therefore, in Pitești we need a minimum of 72.74 ha of green space in addition to what we have now. The information can be found in the presentation of the PUG, on the website of Pitești City Hall. There is no information available on degraded green spaces. There is no database with the evolution in space and time of invasive species. **Nature 2000 sites** According to the Annual Report of the state of the environment made by APM Arges, the existing natural habitats on the territory of Arges County have the state of conservation B (good condition). There is no information available on the fragmentation and reduction of natural habitat areas. Practicing anthropic activities, as well as non-integration of measures from management plans to urban planning documents lead to environmental degradation	**Landslides** In Argeș county are listed with the risk of landslides 5 localities in urban areas (Câmpulung Muscel, Curtea de Argeș, Mioveni, Ștefănești, Topoloveni) and 36 communes (Arefu, Bălilești, Bârla, Berevoiești, Boteni, Buzoiești, Călinești, Căteasca, Cetățeni, Corbeni, Corbi, Coșești, Cotmeana, Dâmbovicioara, Domnești, Drăganu, Godeni, Hârtiești, Izvoru, Lunca Corbului, Mălureni, Mărăcineni, Merișani, Micești, Mihăești, Mușătești, Nucșoara, Popești, Râca, Recea, Stolnici, Suseni, Țițești, Uda, Vlădești, Vulturești). The population vulnerable to landslides counts 127,089 inhabitants in urban areas and 126,681 inhabitants in rural areas, which means 20.05% of the population of Argeș County in urban areas and 19.99% of the population of Argeș county in rural areas. The smallest surface with drainage works in the southern Muntenia region is in Argeș County (1,205 ha). **Drought** According to the map with soil moisture reserve made by the National Meteorological Agency, Arges County is affected by strong pedological drought in the south (Stolnici) and the north (Curtea de Arges and Campulung). **Flooding** The area with significant potential for floods on the river Arges is downstream of Pitesti. The Arges Vedea Basin Administration proposed measures to reduce the risk of floods such as maintaining forests in the perimeters of reservoirs, improving forest management, restoring the attenuation capacity of Prundu and Golesti lakes. The most affected localities by floods are: Mioveni, Costești, Topoloveni, Botești, Ciomăgești, Cotmeana, Drăganu, Izvoru, Lunca Corbului, Negrași, Priboien, Rătești, Recea, Săpata, Stolnici, Ștefan cel Mare, Teiu, Ungheni, Vedea. In Pitesti City, the rainwater collection network is undersized, in the period with heavy rainfall there is an increased risk of floods in the urban area (affecting streets and buildings).

					Earthquakes Areas exposed to seismic risk of destructive and violent degree: Piteşti , Câmpulung , Curtea de Argeş Costeşti , Mioveni , Topoloveni. **Freezing** According to STAS 6054 77: Maximum Frost Depths, the areas with the highest frost depth 90-100 cm is located in Pitesti (90 -100 cm). In the rest of the county, the frost depth is between 70-80 cm. The zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005 at 122 meteorological stations of the National Meteorological Administration. According to this evaluation for Arges County, the most exposed areas are: Coibași, Costești, Câmpulung, Topoloveni **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (source Fire risk in Romania: mapping and evaluation methods, Barbu I, 2018) shows that Argeș County has a moderate risk if we refer to the number of fires in the forestry directorates and a low risk if we refer to the number of fires /10000 ha of forest.

3.1.2 Călărași County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate change**
Călărași County	At the level of Călărași County, the air quality is good. Areas with sensitivity in terms of population exposure are outlined especially in the vicinity of high-emission industrial targets (thermal power plants), arteries with heavy traffic and in the vicinity of areas with agricultural activities (intensive breeding of birds and pigs and the use of chemical fertilizers on agricultural land) At the level of Călărași Municipality, there were not identified critical areas in terms of air pollution. The results of the air quality monitoring showed that occasionally there are exceedances of the allowed limit values for the PM10 and CO concentration (Oltenița City).	Călăraşi County is a predominantly agricultural county, the agricultural land being mainly (84% of the total area of the county), the share of other land categories being very small. There are no insignificant changes in the surface of urban localities in Calarasi County, so one cannot talk about a significative urban expansion. The area occupied by constructions and transport infrastructure is small. As a share, it remained approximately constant in the period 2010-2014. The surface of the degraded and unproductive lands is approximately 0.48% of the total surface of the county. At the level of Călăraşi County, there are 52 localities identified and approved according to the joint Order of the Ministry of Environment and Sustainable Development, respectively to the Minister of Agriculture and Rural Development, 1.552/ 743/2008 for approving the list of localities by counties where there are sources of nitrates from agricultural activities. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	The water resources of Buzău Ialomiţa Water Basin (included Călăraşi County) can be considered sufficient and unevenly distributed in time and space. According to monitoring results data from 2017-2019, it was found that groundwater bodies and surface water bodies are in good chemical condition. The main watercourses that cross the territory of Calarasi county are: Arges River, Dambovita River, Danube River. The most important source of pollution for these rivers is the low degree of wastewater collection and inadequate treatment of wastewater.	**Green space** The average per capita of green space is below the county and national average. There is no information available on degraded green spaces. There is no database with the evolution in space and time of invasive species. **Forests** According to the current data at the level of the Calarasi Forestry Directorate, the entire Calarasi County has a deficit of forest vegetation, being the most county deficit in terms of the share of areas covered with forest in the total area of the county (4%). **Nature 2000 sites** According to the Annual Report of the state of the environment prepared by APM Calarasi, the existing natural habitats on the territory of Călăraşi County have the state of conservation B (good condition). There is no information available on the fragmentation and reduction of natural habitat areas.	**Flooding** Floods produced during with abundant precipitation period - on the Borcea Channel (Danube River) area (Călărași City) and on Argeș River. Lack of a rainwater drainage system in the urban area (Oltenița City, Călărași City) leads to flooding of streets and homes. **Landslides** According to the NATIONAL LAND PLANNING PLAN SECTION V - NATURAL RISK AREAS Landslides (L575 / 2001) in Calarasi County there were not identified areas with landslides. **Drought** The zoning map of the Romanian territory from the point of view of the Palmer Index for Drought Severity (IPSS) indicates that the Buzau-Ialomita hydrographic area (including Călărași County) is one of the most exposed areas to drought. **Earthquakes** Areas exposed to seismic risk of destructive and violent degree: Călărași, Oltenița, Budești, Fundulea, Lehliu-Gară. **Freezing** According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Calarasi County is 70-80 cm. According to the zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005, the most exposed areas are: Lehliu Gară, Fundulea, Oltenița, Călărași **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Călărași County has a low risk if we refer to the number of fires in the forestry directorates and a moderate risk if we refer to the number of fires /10000 ha of forest.

3.1.3 Dâmbovița County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Dâmbovița County	At the level of Dâmbovița County, the air quality is good. To maintain air quality, an Air Quality Maintenance Plan has been developed, which includes a series of measures aimed at: - Modernization / rehabilitation of county roads (DJ401A, DJ722, DJ713); - Modernization / rehabilitation of roads of local interest; - Expansion of the public natural gas supply network.	More than 61% of the county's surface is represented by agricultural lands, 5% of constructions, 29% forests and other lands with forest vegetation, 2% roads and railways, 2% waters and 1% unproductive lands. In the last 5 years there have been no major changes in land use. Out of the total area of mapped agricultural lands, over 40% are affected by landslides, over 50% have soils eroded by water and have deep erosions. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	The most important source of pollution for these rivers is the low degree of wastewater collection and inadequate treatment of wastewater. The water resources located in the Buzau Ialomita Water Basin can be considered sufficient and unevenly distributed in time and space. In Dâmbovița County, a series of investments have been implemented for the protection of surface and groundwater. Also, basic measures have been provided in order to ensure the drinking water infrastructure for the implementation of the provisions of Directive 98/83 / EC on the quality of drinking water, for the implementation the requirements of Directive 91/271 / EEC on urban wastewater treatment, as amended by Directive 98/15 / EC and for the protection of waters against pollution and overexploitation.	According to the data provided by the local councils in the urban areas of Dam bovita County, as a result of the elaboration of the Local Register of Green Spaces, the surface of green spaces was at the level of 2019 of 4745707.57 sqm. The surface of green spaces in Targoviste Municipality is 210.8 ha, representing 23.25 m2 / inhabitant, being below the recommended European limit. The forests occupy approximately 29% of the total area of the county. According to the data presented in the annual report with the state of the environment, at the level of 2019, 2 perimeters with degraded land had been identified: in the commune of Vulcana Pandele - 60 ha and in the commune of Șotânga 32.6 ha. These areas have entered the forest regeneration program. Considering its geographical position, Dâmboviţa County has a rich biological diversity. In the absence of specialized studies, it is not known exactly the number of habitat types in the county and their conservation status. There is currently no national database containing invasive species and the most harmful invasive species.	**Landslides** The area's most prone to landslides in Dâmbovița County, according to Annex 6 of the National Spatial Planning Plan - Section V Natural Risk Areas, approved by Law 575/2001, are located in the upper basin of the Ialomita River. In Dâmbovița County there are active landslide areas in Moreni municipality and Pucioasa and Fieni cities, as well as in 19 communes (Aninoasa,Bărbulețu, Bezdead,Brănești, Cândești,Doicești, Hulubești,Ludești, Moțăeni, Ocnița, Pietroșița, Pucheni Runcu, Șotânga, Tătărani, Valea Lungă, Văleni Dâmbovița,Vișinești, Vulcana Băi). The population vulnerable to landslides numbers 41,959 inhabitants in urban areas and 72,252 inhabitants in rural areas, which means 8.08% of the population of Dâmbovița County in urban areas and 13.91% of the population of Dâmbovița County in rural areas **Flooding** The areas with significant risk of floods are: Ialomița River - omidu sector of the Dridu accumulation, downstream of Târgoviste (125 km), Vulcana River (21.3 km), Bizdidel River (22.8 km), Ocnita River (6.7 km), Cricov River - downstream Visinesti (77.6 km). The most affected localities of floods are: Târgoviște, Găești, Moreni, Pucioasa, Titu, Băleni, Bărbulețu, Bezdead, Brănești, Bucșani Cobia, Comișani, Conțești, Cornești, Costeștii din Vale, Crângurile, Dărmănești, Dragra, Dragodana, Finta, Glodeni, Gura Ocniței, Gura Șuții, IL Caragiale, Iedera, Malu cu Flori, Mănești Moroeni, Odobești, Petrești, Potlogi, Produlești, Răzvad Runcu, Șotânga, Tătărani, Uliești, Ulmi, Valea Lungă, Valea Mare, Văuri Vişina, Vişinești. The space bordering the Ialomiţa river (major riverbed, 2-3 m terrace) is exposed to overflows and the action of destructive riverbed processes: alluvium, deep erosion and lateral erosion. The floods can damage the agricultural lands and the constructions on the meadow terrace, the hydrotechnical arrangements (small dams, thresholds, embankments) and the bridges can be destroyed. On the territory of Dambovita County, the Buzau - Ialomita Water Basin Administration proposed measures to reduce the risks of floods downstream of Pucioasa until the accumulation of Dridu. These measures include: maintaining areas of natural flooding, securing the Pucioasa accumulation, rehabilitating the Pascov-Ialomita derivation, arranging the Bizdidel and Vulcana rivers, afforestation works in the Sotanga improvement perimeter (S = 9.91 ha), correction works of torrents to reduce runoff on slopes and retain alluvium / sediment in the upper Ialomita Basin. **Drought** From the point of view of the pedological drought, in Dambovita County there is an extreme pedological drought. This is present in the half of the county, meaning the south one. Localities with impact are: Gaesti, Ionesti, Corbii Mari, Titu, Lunguletu, Racri, Cojasca, Baleni, Cornesti, Targoviste. **Erosion** According to the data of the Buzau-Ialomița Water Basin Administration (presented in the Report on the state of the environment, prepared by APM Dâmbovița), in 2014, the banks of the following rivers and streams were

affected by erosion, applicable to this study: Ialomița, Ialomicioara, Vulcana, Bizdidel and Cricovul Dulce.

According to the same report, in Dâmboviţa County the localities affected by shore erosions are: Valea Lungă, Runcu, Moțăeni, Râul Alb, Cândești, Vulcana Băi, Iederea and Bezdead. The annual environmental report for Dambovita County does not indicate areas at risk of erosion.

Earthquakes

Areas exposed to seismic risk of destructive and violent degree: Târgoviște, Fieni, Găești, Moreni, Pucioasa, Titu.

Freezing

According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Dâmboviţa County is generally 70-80 cm. In the northern and northeastern part of the county, the frost depth is 90-100 cm.

According to the zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005, the most exposed areas are: Răcari, Pucioasa, Moreni.

Forest Fire

Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Dâmboviţa County has a low risk if we refer to the number of fires in the forestry directorates.

3.1.4 Giurgiu County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Giurgiu County	At the level of 2019, in Giurgiu City there were occasional exceedances of the daily limit values for PM10 and of the hourly limit values for NO2. The few registered exceedances, not having a permanent character, do not constitute a source of concern. Thus, there is no major risk of the population being exposed to concentrations that exceed the safety limit. The largest contribution of air pollutions has the energy sector, agriculture and road traffic. For the period 2011-2019 there is a downward trend in the values recorded for sulfur dioxide and carbon monoxide, due to the improvement of the quality of fuels used - connecting the population to the natural gas network. However, there is the same trend of increasing the average values recorded for nitrogen dioxide and dust in suspension - the fraction PM10, due in particular to the increase in the number of vehicles in Giurgiu County, but also as a result of the intensification of road transport in the Giurgiu area. Giurgiu County Council has developed the "Air Quality Maintenance Plan in Giurgiu County, 2018-2022". This plan includes the following measures: • Campaigns for control and monitoring of industrial activities in rural areas and implementation of specific measures by types of activity to keep the air quality indicator below the limit value; • Reducing energy consumption in the industrial sector; • Extension of forest curtains to protect road transport routes and green spaces; • Restoration of degraded lands by afforestation Colibași, Oinașu, other areas; • Implementation of Management Plans for Natura 2000 sites; • Installation of heating systems using renewable energy, including replacement / completion of conventional heating systems; • Expansion of the natural gas distribution network; • Implementation of the Local Strategy for thermal energy supply of Giurgiu Municipality; • Implementation of the Action Plan for Sustainable Energy of Giurgiu Municipality; • Increasing sustainable mobility at urban and rural levels; • Modernization of local roads.	The administrative area of Giurgiu County is 354,488 ha, the largest areas are occupied by arable land (261,161 ha) and pastures (11,904 ha). The agricultural area is about 275,910 ha, being represented by arable land (73.2%), pastures (3.3%), hayfields (0.02%), vineyards (0.96%) and orchards (0.44%). Most agricultural lands fall into the category of fertile soils and moderate fertility. In the Giurgiu County, point pollution is predominant, determined mainly by the deposition of dusts and suspensions resulting from industrial activities and traffic. APM Giurgiu has carried out since 2008 a preliminary inventory of contaminated / potentially contaminated sites at county level, which is constantly updated. It largely includes objectives belonging to the extractive industry and the energy and chemical industries. At the end of 2019 it looks like this: 224 contaminated / potentially contaminated sites of which: 2 contaminated sites, 40 potentially contaminated sites and 182 remedied / greened sites. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	The water resources available for Giurgiu County are the Danube River (on a total length of 76 Km) and Argeş River. On the territory of Giurgiu County there are 8 overlapping bodies of groundwater managed by the Argeș Vedea Water Basin Administration and the Dobrogea Litoral Water Basin Administration. The chemical condition of these water bodies is considered to be good. The majority of surface water bodies have good chemical status and moderate ecological potential. The main source of pollution is human agglomerations. Giurgiu County has a low degree of domestic wastewater collection (only 14,81 % of localities benefit from sewerage networks, only 9.8% of rural areas benefit from sewerage networks). In Giurgiu County, a series of investments have been implemented for the protection of surface and groundwater. Also, basic measures have been provided in order to ensure the drinking water infrastructure for the implementation of the provisions of Directive 98/83 / EC on the quality of drinking water, for the implementation the requirements of Directive 91/271 / EEC on urban wastewater treatment, as amended by Directive 98/15 / EC and for the protection of waters against pollution and overexploitation.	In Giurgiu County, the forests are located in the Burnaz Plain and in the Danube Meadow. At the level of 2019, the area occupied by the forest is 32,895 ha. There is no available information regarding the situation of habitat fragmentation, the situation of invasive species and the state of conservation of natural habitats on the territory of Giurgiu County. On the territory of Giurgiu County there is a protected natural area of international interest, namely the Comana Natural Park, recognized as a Ramsar site. The Park is under the administration of Romsilva. This protected area has an elaborate management plan, which is being approved. The current challenges for the Comana Park are replacement of pastures with arable land, urban expansion, intensive agriculture, intensive grazing, poaching, motor sports, invasive species, inadequate waste storage.	**Flooding** The areas at risk of floods are: Bolintin-Vale, Bolintin-Deal, Bucșani, Bulbucata, Călugăreni, Clejani, Colibași, Comana, Crevedia Mare, Floresti-Stoenești, Găiseni, Ghimpați, Gostinari, Hotarele, Iepurești, Joița, Letca Nouă, Mârșa, Mihai Bravu, Ogrezeni, Roata de Jos, Schitu, Singureni, Stoenești, Ulmi, Valea Dragului, Vărăști, Vânătorii Mici. In the city of Giurgiu, some of the rainwater retention basins are located very close to the blocks of flats and without having at least a suitable fence, especially a buffer green space planted with trees and shrubs. There are areas without rainwater drainage with a special impact on important road arteries, which sometimes leads to flooding of streets. **Drought** According to current data (Annual Environmental Report for Giurgiu County), at the level of 2019, an area of 4799 ha affected by drought was identified. There are not available on the location of these lands. **Erosion** At the county level there is an area of 1,890 ha arranged with works to combat soil erosion. There are not available on the location of these lands. **Landslides** In Giurgiu County, an area with low risk of landslides was identified, in Daia locality. **Earthquakes** Areas exposed to seismic risk of destructive and violent degree: Giurgiu, Bolintin-Vale, Mihăilești. **Freezing** According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Giurgiu County is generally 70-80 cm.

					According to the zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005, the most exposed areas are: Giurgiu, Mihăilești, Bolintin-Vale, **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Giurgiu County has a low risk if we refer to the number of fires in the forestry directorates and a low risk if we refer to the number of fires /10000 ha of forest.

3.1.5 Ialomita County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Ialomita County	In general, the air quality is good. In Slobozia, the average annual concentrations of gravimetric PM10 did not exceed the annual limit. Occasionally PM10 exceeds the daily limit value. The few registered exceedances, not having a permanent character, do not constitute a source of concern. Ialomita County Council implemented a Plan to maintain air quality. This plan included the following measures: - Modernization and rehabilitation of roads; - Realization of some local mobility plans; - Awareness campaigns on the causes and risks of air pollution; - Expansion of gas networks; - Elaboration and implementation of Green Spaces Registers; - Afforestation works and construction of green curtains along roads with heavy road traffic (DN21, A2, DN2); - Maintenance and protection of natural areas, parks and green space.	The agricultural area represents 84% of the county's territory, of which most consists of arable land (94.1%), followed by meadows (4.7%). Most agricultural lands fall into the category of fertile soils and moderate fertility. In 2014, the areas occupied by land degraded and unproductive amounted to 5639 ha (located especially in Gura Ialomita, Giurgeni, Jilavele, Făcăeni, Borduşani). No information is available on land areas affected by drought, erosion or historical pollution. In the Ialomita County, point pollution is predominant, determined mainly by the deposition of dusts and suspensions resulting from agriculture, industrial activities and traffic. The list of potentially contaminated sites in 2014 included 10 potentially contaminated sites in the oil industry with small areas affected (ex. Urziceni, Grindu, Cocora, Căzănești, Reviga). This list is currently being updated as a result of legislative changes and the approval in 2020 of the methodology for inventorying potentially contaminated and contaminated sites. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	In Ialomița County, surface water resources come from inland rivers (including natural lakes) and the Danube River. The county is included in the Buzău-Ialomița river basin / space. From the point of view of the average water resource, the analyzed area is part of the most deficient category, at country level. According to the results of monitoring the quality status of the surface water bodies in the Ialomita basin, it can be concluded that more than half of their length is in good ecological condition, the rest having moderate ecological status. The main source of pollution is human agglomerations. Ialomita County has a low degree of domestic wastewater collection of domestic wastewater collection (only 19.7% of localities benefit from sewerage networks, 85.75% from rural areas and 11.86% from rural areas). In the case of natural lakes, the main cause of pollution is the eutrophication process favored by agricultural and leisure activities that take place nearby. The chemical state of the underground water body ROIL14 Gimbăşani-Sudiţi (in 2013) is poor at NH4, due to the fact that the polluted surface (50%) represents more than 20% of the surface of the entire underground water body. In Ialomița County, a series of investments have been implemented for the protection of surface and groundwater. Also, basic measures have been provided in order to ensure the drinking water infrastructure for the implementation of the provisions of Directive 98/83 / EC on the quality of drinking water, for the implementation the requirements of Directive 91/271 / EEC on urban wastewater treatment, as amended by Directive 98/15 / EC and for the protection of waters against pollution and overexploitation.	At national level, Ialomița County is located in the first counties considered deficient in forests, the area of the forest fund representing 5.5% of its total area. In what is concerning the health status of the forests, 98.4% of their area is estimated to be favorable. The remaining 1.6% are in an unfavorable situation, the reason being the abusive logging due to non-administration of the entire private forest fund. In urban areas, green space is below the recommended limit level at European level (for example: Țăndărei, Slobozia, Fetesti, Urziceni). **Natura 2000 sites** There is no information available on the fragmentation and reduction of natural habitat areas. Practicing anthropic activities, as well as non-integration of measures from management plans to urban planning documents lead to environmental degradation.	**Flooding** Floods with significant damage occurred in 2006 and 2010 on the Danube River and the Borcea Channel, in 2007 and 2014 on the Prahova and Ialomița rivers and in 2013 (2 floods) and 2014 on the Danube River and the Borcea Channel. The Ialomița river meadow in the lower sector is one of the strongest areas affected by floods, both by the frequency of these phenomena and by the extent of the damage registered in the localities that are in the meadow, roads, agriculture, etc. The most affected localities by flooding are: Urziceni, Fetești, Ion Roată. The localities of Fetesti and Slobozia have undersized sewerage networks and during the period of abundant rainfall these networks cannot take over the entire amount of rainwater. **Landslides** The localities affected by landslides are: Marsilieni, Borduşelu, Orezu, Copuzu, Crăsanii de Jos, Platonești, Săveni, Buiești. **Drought** From the point of view of the pedological drought in Ialomita county, extreme pedological drought is manifested. Due to its geographical position (eastern part of Romanian Plain) Ialomita County is entirely affected by drought. In the last twenty years a considerable part of the irrigation systems have been degraded or destroyed, so that in 2016 the agricultural area irrigated with at least one watering was 7% of the used capacity. **Earthquakes** Areas exposed to seismic risk of destructive and violent degree: Slobozia, Fetești, Urziceni, Țăndărei **Freezing** According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Ialomita County is generally 70-80 cm.

					According to the zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005, the most exposed areas are: Căzănești, Fetești, Fierbinți-Târg, Grivița, Slobozia, Urziceni, Țăndărei, Amara **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Ialomița County has a low risk if we refer to the number of fires in the forestry directorates and a moderate risk if we refer to the number of fires /10000 ha of forest.

3.1.6 Prahova County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Prahova County	The air quality is generally good, except in the area of City Ploiesti (where the concentration of PM10, benzene, NO2 exceeds the allowed limit value) and Commune Brazi (where the concentration of NO2 and benzene exceeds the allowed limit value). Prahova County Council has developed the "Air Quality Maintenance Plan in Prahova County, 2019-2023". This plan includes the following measures: • Expansion of the gas network; • Efficiency and modernization of lighting networks; • Modernization / rehabilitation of roads; • Renewal of the car park - public transport; • Arrangement of green spaces and promenade areas; • Control and monitoring campaigns for industrial activity.	The total surface of the county is 471600 ha, out of which 57% is represented by agricultural lands, 32% forests, 5% constructions, 2% roads and railways, 2% waters, 2% degraded lands (as a result of the erosion phenomena at the surface or depth, pollution with petroleum products, pollution from quarries). In 2019, following the update of the list of sites, 4 contaminated sites (3 sites in Valea Călugărească and an abandoned orphan site - deposit of oil residues - Vega Ploiesti Area) and 8 potentially contaminated sites (7 from the mining industry and one belonging to Ploiesti City Hall - East Ploiesti Belt) were identified.	The majority of surface water bodies in Prahova County have poor chemical status and moderate ecological potential. In the case of surface waters bodies, pollution problems occur on watercourses that cross the area of oil scaffolding (due to pollution by salts and petroleum product) as well as due to the discharge of insufficiently treated wastewater. The water resources of Buzău-Ialomița Water Basin (included Prahova County) can be considered sufficient and unevenly distributed in time and space.	The surface of the protected natural areas represents approximately 7.5% of the total surface of the county. Areas with a deficit of forest vegetation and afforestation availability are found in the southern part of Prahova County, corresponding to the areas of "forest plain" and "forest-steppe", degraded pastures and meadows, other arable lands affected by various forms of degradation, located mainly in the high and hilly plain area of the county, all in various forms of ownership. The south-eastern area of Prahova County (Ploiești Prahova Growth Pole) has major deficiencies in terms of green space.	**Flooding** Areas with a significant risk of flooding: Prahova River – upstream of the locality Comarnic. Telega River, Vărbilău River- upstream of the locality. Areas with a significant risk of flooding: Ploiești, Boldești-Scăieni, Busteni, Comarnic, Slănic, Adunați, Aluniș, Brazi, Dumbrava, Filipeștii de Târg, Gura Vitioarei, Mănești, Provița de Sus, Râfov, Scorțeni, Starchioju, Ștefești, Vărbilău On the territory of Prahova County, the Buzau - Ialomita Water Basin Administration proposed measures to reduce the risks of floods on Prahova, Vărbilău and Telega Rivers. **Landslides** In Prahova County, were identified the following areas affected by landslides: Câmpina, Azuga, Băicoi, Boldești-Scăeni, Breaza high, Comarnic, Sinaia, Slănic high, Vălenii de Munte, Urlați, Adunați, Aluniș high, Apostolache, Ariceștii Zelet Bălțești, Bănești, Bertea, Brebu, Bucov, Călugăreni, Cărbunești, Ceptura, Chiojdeanca, Cornu, Cosminele, Drajna, Filipeștii de Pădure, Fântânele, Gornet, Gornet Cricov, Gura Vadului, Gura Vitioarei, Iordăchur, Iz , Păcureți, Păulești, Plopu, Podenii Noi, Poiana Câmpina, Posești, Predeal Sărari, Provița de Jos, Provița de Sus, Salcia, Sângeru, Scorțeni, Secăria, Starchiojd, Surani, Șoimari, Șotrile, Ștefești, Talea, Târgșoru V , Telega, Valea Călugărească, Valea Doftanei, Vărbilau, Vâlcănești. **Drought** The zoning map of Romania's territory in terms of the Palmer Drought Severity Index (IPSS) indicates that the territory of Prahova County is exposed to extreme drought. South part of the county is mainly affected. Localities with severe drought are: Filipeștii de Pădure, Arceștii Rahtivanii, Targusoru Vechi, Sirna, Gorgota, Olari, Valea Călugărească, Dumbrava, Cornu, Păulești, Boldești, Blejoi **Earthquakes**

					Areas exposed to seismic risk of destructive and violent degree: Ploiești, Breaza, Bușteni, Comarnic, Mizil, Plopeni, Urlați, Vălenii de Munte. **Freezing** According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Prahova County is generally 80-90 cm. In the northern part of the county, the frost depth is 90-100 cm. According to the zoning map of the ground snow load was elaborated based on the statistical analysis of the maximum annual maximum values of the ground snow load registered until 2005, the most exposed areas are: Comarnic, Azuga, Ploiești, Plopeni, Breaza, Băicoi, Sinaia, Vălenii de Munte, Urlați, Bușteni, Slănic-Prahova, Câmpina, Cheia. **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Prahova County has a low risk if we refer to the number of fires in the forestry directorates.

3.1.7 Teleorman County

County	Environmental Issues				
	Air	**Soil**	**Water**	**Biodiversity**	**Climate Change**
Teleorman County	The air quality is generally good. Teleorman County Council has developed the "Air Quality Maintenance Plan in Teleorman County, 2020-2024". The plan included the following measures: • Modernization and rehabilitation of roads; • Realization of local mobility plans; • Awareness campaigns on the causes and risks of air pollution; • Expansion of gas networks; • Elaboration and implementation of Green Spaces Registers; • Afforestation works and construction of green curtains along roads with heavy road traffic; • Maintenance and protection of natural areas, parks and green spaces.	Most of the total area of Teleorman County is the agricultural area (85.99% of the total area of the county). Non-agricultural land represents 14.01% of the total area of the county. In Teleorman County, drought and the phenomenon of desertification are some of the most important factors that affect the quality of soils. At the county level, about 100,000 ha affected by the drought were identified. In Teleorman County, approximately 61 contaminated sites have been identified so far, occupying an area of 106 ha of land. Contamination is associated with activities in the extractive industry and the chemical industry. The county is included in the list of localities where there are sources of nitrates from agricultural activities.	From a hydrographic point of view, the territory of Teleorman county belongs to the Argeș - Vedea river basin, which is crossed by the Vedea River, the Teleorman river and to the south by the Danube River. Most surface water bodies have moderate or poor ecological potential. The main source of pollution for surface water is the discharge of insufficiently treated wastewater and the low degree of collection of domestic wastewaters. From all the counties in the South Muntenia Region, Teleorman County has the lowest degree of wastewater collection (only 12.37% of localities benefit from sewerage networks). The water resources of Argeș-Vedea Water Basin (including Teleorman County) can be considered sufficient and unevenly distributed in time and space.	**Forests** The total surface of the forest fund of the county is of 27186 ha, representing 4.69% of the surface of the county. **Protected Areas** On the entire territory of Teleorman County there are a number of 5 protected natural areas of national interest and 7 natural monuments. They have a total area of 1,782 ha, which represents approximately 0.30% of the total area of the county. In Teleorman County there are 6 areas of avifaunistic protection from the Natura 2000 Network, that occupy an area of 38,596.12 hectares, representing 6.66% of the total area of Teleorman County. Of these, the natural area with the largest area is the Olt-Danube Confluence, the 14,672 hectares representing 2.5% of the county's area. At the level of Teleorman County, there are also 9 sites of community interest, with a total area of 23,023.6 hectares, an amount that represents 3.97% of the county's area. One of the most representative natural areas "Natura 2000" is the Vedea River, with an area of 7,261.6 hectares in Teleorman County. No information is available regarding the situation of habitat fragmentation, the situation of invasive species and the state of conservation of natural habitats on the territory of Teleorman County. **Green spaces** According to the calculations resulting from the inventory of green spaces in Alexandria and the reporting of the area of green spaces to the number of inhabitants, it resulted in an area of green spaces belonging to a inhabitant of 25.81 sqm/ inhabitant (slightly below the European norm).	**Flooding** The localities affected by the floods are: Alexandria, Videle, Băbăița, Blejești, Botoroaga, Brânceni, Bujoreni, Călinești, Cosmești, Crevenicu, Didești, Drăcșenei, Drăgănești-Vlașca, Frumoasa, Gălățeni, Gratia, Măștii, Necșești, Orbeasca, Poeni, Poroschia, Radoiești, Răsmirești, Săceni, Sârbeni, Scrioaștea, Siliștea, Stejaru, Știorobăneasa, Talpa, Tătărăștii de Sus, Trivalea-Moșteni, Țigănești, Vârtoape, Vedea, Vedea. **Landslides** In Teleorman County there were identified several areas with low-risk for landslides: Lisa, Plopii Slăvitești, Segarcea-Vale, Slobozia Mândra. **Drought** The zoning map of Romania's territory in terms of the Palmer Drought Severity Index (IPSS) indicates that the territory of Teleorman County is exposed to extreme drought. Due to its geographical position (southern part of Romanian Plain) Teleorman County is entirely affected. **Earthquakes** Areas exposed to seismic risk of destructive and violent degree: Alexandria, Roșiorii de Vede, Turnu Măgurele, Zimnicea. **Freezing** According to STAS 6054 77 Maximum Freezing Depths, the freezing depth in Teleorman County is generally 70-80 cm In the northern part of the county, the frost depth is 80-90 cm. The snow load zoning map based on the statistical analysis of the maximum annual ground snow load values recorded up to 2005 shows that the most exposed areas are: Alexandria, Roșiorii de Vede, Videle and Zimnicea. **Forest Fire** Hierarchy of forest directorates by risk classes, based on different characteristics of fires (*source: Fire Risk in Romania: mapping and evaluation methods, Barbu I, 2018*) shows that Teleorman County has a low risk if we refer to the number of fires in the forestry directorates and a low risk if we refer to the number of fires /10000 ha of forest.

3.1.8 Key highlights for all counties

According to the information presented in the Environmental Annual Reports issued by the Environmental Protection Agencies, for the 7 counties in the South Muntenia Region, the following can be concluded:

- **air quality is good** in most counties of the South-Muntenia Region, the concentration of pollutants emitted into the atmosphere is generally in line with the values established by current legislation, **except**: *Pitesti* (PM10 concentrations, PM2.5 upper threshold for human health assessment), *Ploiești* (the level of NOx, NO2, PM10, PM2.5 and Benzene concentrations exceed the upper assessment threshold for human health) and *Brazi* (the level of NOx, NO2 and Benzene concentrations exceed the upper assessment threshold for human health);
- sensitivity areas in terms of population exposure are outlined especially in the surroundings of high-emission industrial plants (district heating plants), roads with heavy traffic and around the areas with agricultural activities (intensive breeding of birds and pigs and the use of chemical fertilizers for agricultural land);
- in the northern counties of the region, emissions of air pollutants come from the oil industry, automotive industry, construction materials industry and metallurgical industry, while in the south of the region, pollution is generated by agricultural activities (intensive farming of poultry and pigs and the use of chemical fertilizers in agricultural) and specific production processes activities in chemical industry economic units, the mining industry, and the food industry;
- the largest regional contribution to atmospheric emissions comes from the *energy and transport* sectors, followed by *industry* in the northern part of the region and *agriculture* in the southern part of the region;
- all urban areas of the region act as **heat islands** and cause heat stress to all living creatures, both humans and animals. The heat stress is affecting the urban ecosystems and vegetation;
- **water bodies' ecological status varies significantly** along the 2 hydrographical basins in the South Muntenia Region. There are great quantities of groundwater with an overall good status in Arges-Vedea Hydrographic Basin, but a moderate status in Ialomita-Buzau Hydrographic Basin. *Riverbeds need restauration for preventing erosions and floods,* while old hydro-technical channels need to be restored;
- **soil** is one of the natural resources that suffers a **significant anthropic impact** all over the South Muntenia Region. Based on its geography, the soils in the *northern part* of the region are impacted by the *industrial activities* (oil, urbanization, land use, farming etc.) and *landslides*, while in the *southern part* the impact is generated mainly by the *heavy agriculture practices and droughts*;
- **climate change** effects are confirmed in the South Muntenia Region by increased **heavy rains and flash floods**, causing severe damages and even lost lives, *landslides* mainly in

the northern part with a higher altitude, and *droughts* more present in the southern part of the region. The strategies and projects developed in the last years were meant to mitigate the climate change effect.

Green areas within the cities of the SM Region have a great variance confirmed by the statistical data available for 2020. In the images below we present the status for each county.

At county level, the data confirms that Giurgiu County has the lowest green areas and future investments in transforming its cities with the BGI concept will have a positive impact on human health, better air quality and livable cities. For Ialomita and Dambovita counties, the areas are almost equal, but there is still plenty of needs to increase the greens spaces within the cities. The same approach is to apply to Calarasi and Teleorman counties. Prahova is in top of the green areas surface due to the large number of cities (14). The summary of these figures is presented below.

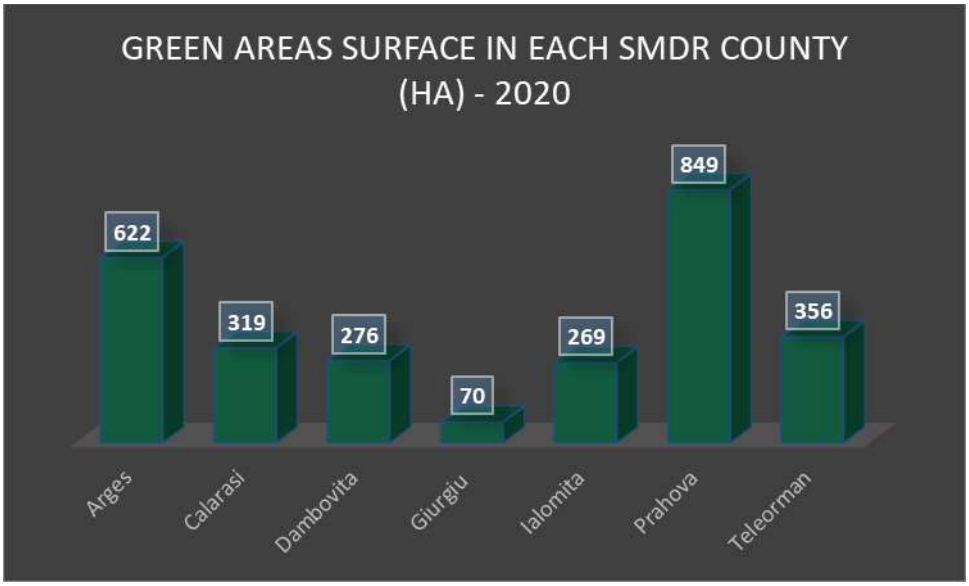

Figure 24 SM Region status of green areas surface

However, considering that the European green space average indicator is 26 m^2 per capita (inhabitant), it is evident that the counties are still far from this threshold. See figure below.

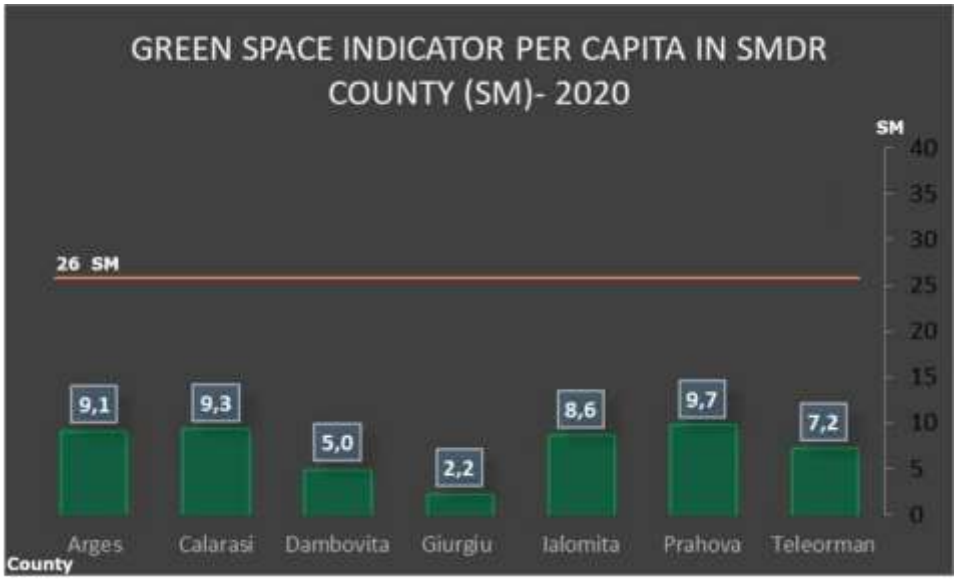

Figure 25 SM Region Green space indicator per capita

The main conclusion is that BGI intervention would represent a great opportunity in real improvement of this important indicator for making the cities more liveable and environmentally friendly.

The principles of the policy governing the protection of ambient air quality in the counties of the South Muntenia Region are:

- the health of the population takes precedence; it must be protected against the danger of disease due to air pollution;
- application of the "polluter pays" principle;
- raising awareness and changing the behavior of economic agents regarding the promotion of the best available techniques and good management practices in order to reduce air pollution;
- raising public awareness.

Based on the above, the **overall conclusions and recommendations** are as follows:

- There is *real concern* from the authorities for solving environmental problems, confirmed by the strategic planning for each environment sector (air quality, water management resources, soil protection and climate change adaptation).
- We strongly recommend that these efforts should be driven by promoting BGI concepts to reach a sustainable infrastructure that will have as main benefit liveable cities and nature protection.
- There have been only minor actions in setting up *green space's inventories* at the level of the cities, to establish new areas, to maintain the existing ones and even improve their ecological status implementing BGI solutions.

- More institutional efforts should be focused on *degraded lands,* which usually have a bad ownership status, making technical or environmental solutions difficult to apply.
- The *integrated approach* of the environment should be considered as a Blue-green concept that refers to the use of *blue* elements, like *rivers, canals, ponds, wetlands, floodplains, water treatment facilities*, and *green* elements, such as *trees, forests, fields and parks*, in urban and land-use planning.
- Future urban planning strategies should be focused on an integrated approach of BGI concept drafting digital orthophotos updated in real time with the territorial changes (any new investment, any extension of road or buildings, any rehabilitation). A main benefit should be to *increase or at least maintain the green spaces* of the cities.
- All these proposed measures will have a positive impact both on improving air quality and GHG reduction.

3.2 Policy and Institutional aspects

The key findings are as follows:

- Upon the progressive engagement with the beneficiaries under this assignment, there is now a better understanding of the BGI concept and applicability at regional and local level context, enabling a better foundation for the identified new project ideas. Nevertheless, there is a *lack of in-depth technical knowledge* at beneficiaries' level to develop the project idea and this could be mitigated through technical assistance for the elaboration of the project application, as well as for the project implementation. It is recommended that the beneficiaries will *actively use the list with key BGI typologies* prepared, based on the EC's guidelines, EBRD Green City framework and Ramboll's experience and expertise, when defining the BGI project proposals to be funded.
- As well, the sectorial policy relevant aspects should be considered during the project planning phase, both in terms of applicable restrictions or requirements for intervention (e.g. related to project areas that are part or neighbouring to protected areas, including Natura 2000 sites and/or for contaminated or degraded sites, and/or interventions to the river flows and/or banks that are under the Romanian Waters administration) as well as for obtaining the needed permits, authorisations, or establishing partnerships.
- Regarding the *integrated regional planning / regional BGI projects*, although there are clear systems at regional level involving relevant key stakeholders, as well as additional guidelines prepared by SM RDA for the county councils and municipalities, still it was noticed that beneficiaries generally remained focused on individual projects at local level. However, we trust that more knowledge on enhanced common benefits of BGI will generate several regional project proposals, creating a network effect for enhanced cooperation between counties.
- As such, *regional cooperation* should be approached considering two folds:
    - To address in a *unitary approach* similar problems, challenges, or opportunities
    - To work in a *strategic and coordinated way* at local level, considering a holistic view and an *integrated master-planning approach at river basin level*, given the impact that actions/lack of actions in an area could have on another area; for example, *green and / or blue corridors* could solve environmental challenges, but also ensure connectivity and create social-economic benefits – *e.g. Ialomita river basin across Dambovita, Ialomita and Calarasi Counties.*
- To enable the implementation of regional projects, *partnerships* should be established between the Local and County Councils structures, to maximize the funding and synchronize the implementation. Following the integrated approach of the environmental, social and economic challenges, as well as considering the regional perspective, *all complementary investments and funding sources* should be considered. This requires a holistic planning and a phased and well-coordinated execution, submitting the right project proposals to the corresponding funding programs.
- While the SM RDA has the capacity to elaborate, approve, monitor and control the program implementation, *capacity building* is still needed at beneficiary level. A Project

Implementation Unit should be established at the level of the beneficiary with a multi-disciplinary representation from all departments of the organization and clear governance and cooperation mechanism. Identifying a best practice to replicate would be recommended, as well as contracting technical assistance for capacity building.

- *Urban developments* should always consider the green and blue perspectives. An example is Calarasi residential area expansion to the North, where private investors have no additional obligation of certain green accompanying measures. As well, a *more systemic, long-term approach centred on BGI* is needed for the public spaces that are under the municipality ownership.
- All projects should be accompanied by *public participation, awareness, and civic responsibility* measures, including awareness campaigns encouraging people to preserve a clean environment, campaigns with participation of youth and the general public to collect waste and clean the riverbanks, and other similar educational campaigns.
- Regarding the *technical and legal pre-requisites* for the BGI projects, in addition to the strategic planning documents available at the beneficiary level, a thorough review of the relevant studies availability and relevance to fundament and support the project initiatives is recommended, as well as consequent planning for contracting such preliminary studies, as needed, by each beneficiary for each project proposal.
- As well, the *digitization* of the topographic elements, and other relevant physical networks should be assessed and planned as needed.
- An area of attention should be related to the *ownership of the land* where the BGI projects interventions are foreseen. Where there is private ownership, expropriation procedures should be started as early as possible once the project is pre-approved, while where another state institution owns a certain land, the legal mean for transferring ownership/administration rights should be pursued (e.g., from Romanian Waters for the riverbanks interventions).

3.3 Stakeholder and Social, Gender & Economic inclusion

A Stakeholder Engagement Plan was developed to guide the process during project implementation. The stakeholder engagement approach complies with the relevant national legislation, EBRD Policy Requirements and EU guidance related to stakeholder engagement and information disclosure. From a gender perspective, the gender composition of stakeholders is representative. At beneficiary level, multi-disciplinary representation needs to be strengthened, keeping an enabling environment for interested stakeholders to engage and support the project.

Overall, addressing the identified environmental challenges will have a significant positive social impact and will benefit a wide range of groups of population. For example, improved flood management is expected to better protect disadvantaged categories and the poor, the elderly, families with children, families with disabled persons, who are usually more defenceless to disasters.

The BGI infrastructure can successfully contribute to social and family cohesion, by providing outdoor spaces to "re-charge" and re-connect, which is specifically important for people living in urban localities in times of Covid.

3.4 Economics and Finance

As discussed, and agreed with SM RDA, the financial analysis is deferred to the Final Report. However, as an example, the findings of the analysis for Targoviste municipality are included in Appendix 5.5.

In summary, the financial assessment for Targoviste municipality revealed the following:

- It might be considered that around 60% of municipality's total revenues are based on steady regular revenues that come from own revenue sources. Subsidies, grants, and any other type of transfer represent the remaining 40% at the level of 2020 and can be considered heterogenous sources as they depend on state budget, County Council, or other external organization.
- The operating expenditures represented 80% from total expenditures in 2020, leaving space for 20% to be spent on capital expenditures.
- Targoviste municipality registered in all years a current surplus, also covering the operating expenditures and loans repayment from recurring, operating, and current revenues, except for year 2020.
- The municipality succeeded to balance its accounts in all years and in 2020 registered net surplus.
- The maximum level of 30% indebtness as established by the Public Finance Law is far from being reached, as the municipality's maximum indebtness level reaches around 11% in 2021.
- Targoviste municipality has the capacity in the following period for (co)financing investment projects. However, it should be considered that only 60% of the municipality's revenues are constant from one year to another and that in 2020 the municipality could not cover entirely the loans repayment from own funding sources.

4 NEXT STEPS

This report marks the end of what can be considered the project initiation phase, consisting of the inception activities (reported in the inception report) and the overall identification of the key environmental challenges within the South-Muntenia Region. The latter has been extensively reported in the previous chapters, from a high-level scoping appraisal to the key findings supporting the current work.

The overall approach followed in this project has already been introduced in the inception report and can be seen in the diagram below.

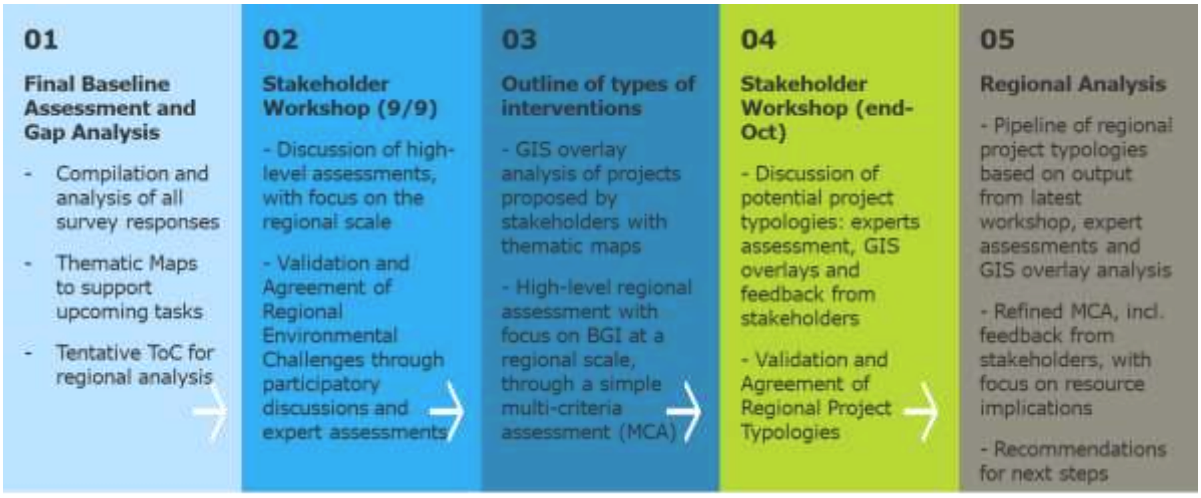

Figure 26. Approach and steps to follow, from final Inception Report to the Regional Analysis

The approach going forward as the project enters its final phase (Task 3) will continue relying on a combination of expert assessments based on the data and information collected (which is expected to continue throughout the project as more interactions with local stakeholders take place), the development of maps to account for the regional lens and to support overlay analyses, and the outreach activities with key stakeholders, as well as a close communication with SM RDA.

While completing this report, there are some key elements requiring attention as Task 3 kicks off:

- Outreach activities will continue being fundamental for achieving the objectives of this project. In this regard, the workshop that took place on the 27 October has served in obtaining insights from stakeholders. These insights and feedback will be used by Ramboll when identifying and characterizing the pipeline for regional projects as per the ToR.
- The pipeline for regional projects (part of Task 3) will focus on types of interventions or projects (e.g., project typologies), including policy and strategic actions. The time horizon for the pipeline is in the order of 5-7 years.
- The project typologies (or types of interventions) will be linked to an assessment of the necessary resources or pre-conditions that need to be in place for the interventions to be feasible. This can include capacity building implications or more generic resources needed to have in place at local level.

- Ramboll will aim at developing a set of criteria built around the main components of BGI (e.g., multi-functionality), so that the regional analysis (final report in this project) is developed in a coherent manner, in line with the expected funding opportunities linked to the ROP. To do this, Ramboll envisages a multi-criteria assessment (MCA) as an important tool that can ensure the regional lens. To undertake this MCA, it will be crucial to have good quality geospatial data, as it is the backbone of overlay analyses. If data is not available, Ramboll will discuss with SM RDA a course of action.

5 APPENDICES

5.1 Targoviste municipality financial analysis

5.1.1 Macroeconomic assumptions

The macroeconomic scenarios used for the analysis are based on the National Commission for Strategy and Prognosis latest forecast for the period 2021 – 2025 issued on August 2021. There are 3 macroeconomic scenarios:

- Base case scenario with a probability of 60%;
- Optimistic scenario with a probability of 20%;
- Pessimistic scenario with a probability of 20%;

The main assumptions included in the financial analysis are presented in the following table.

Table 5: Main assumptions financial analysis

Macroeconomic scenario	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Optimistic (probability 20%)											
Nominal GDP (billions RON)	1.175	1.245	1.320	1.399	1.483	1.572	1.667	1.767	1.873	1.985	2.104
Real GDP Growth, %	7,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %	6,0 %
Romanian inflation (CPI change), %	5,0 %	2,5 %	2,5 %	2,5 %	2,5 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %
Monthly inflation (equally each month)	0,4 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %	0,2 %
RON/EURO average (nominal)	4,92	4,40	4,20	4,20	4,00	4,00	4,00	4,00	4,00	4,00	4,00
Real RON wages (%growth)	2,9 %	4,0 %	5,0 %	5,5 %	5,5 %	5,5 %	5,5 %	5,5 %	5,5 %	5,5 %	5,5 %
Base case											

(probability 60%)											
Nominal GDP (billions RON)	1.175	1.277	1.387	1.499	1.610	1.674	1.741	1.810	1.883	1.958	2.037
Real GDP Growth, %	7,0%	4,9%	5,3%	5,0%	4,5%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%
Romanian inflation (CPI change), %	5,0%	3,1%	2,8%	2,5%	2,4%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%
Monthly inflation (equally each month)	0,4%	0,3%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
RON/EURO average (nominal)	4,92	4,98	5,03	5,08	5,13	5,00	5,00	5,00	5,00	5,00	5,00
Real RON wages (%growth)	2,9%	3,4%	4,5%	5,0%	4,7%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%
Pessimistic (Probability 20%)											
Nominal GDP (billions RON)	1.175	1.210	1.246	1.284	1.316	1.342	1.369	1.396	1.424	1.453	1.482
Real GDP Growth, %	7,0%	3,0%	3,0%	3,0%	2,5%	2,0%	2,0%	2,0%	2,0%	2,0%	2,0%
Romanian inflation (CPI change), %	5,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%	4,0%
Monthly inflation (equally each month)	0,4%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%	0,3%
RON/EURO average (nominal)	4,92	5,10	5,10	5,10	5,20	5,20	5,30	5,40	5,50	5,70	5,70

Real RON wages (%growth)	2,9 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %	2,0 %

As it can be seen the main elements forecasted in the model are:

- Nominal GDP (Million RON)
- Real GDP Growth, %
- Romanian inflation (CPI change), %
- Monthly inflation
- RON/EURO average (nominal)
- Real RON wages (% growth)

These elements have been forecasted according to the latest National Commission for Strategy and Prognosis available forecast for the period 2021 – 2025 for the base case scenario and afterwards have been kept constant for the rest of the projection period. The other two scenarios present variations to the base case scenario, considering two different tendencies in the macroeconomic indicators' evolution.

5.1.2 Budgetary Projection

The budgetary projection is based on the following elements included in the financial analysis model:

- The budgetary execution provided by the municipality for the years 2018-2020 as a starting basis for the forecast;
- The macroeconomic elements presented in the scenario above;
- The real term increases included in the sheet "Budgetary Forecast".

The scope of the budgetary projection is to assess the municipality's indebtedness level for the following ten years under "business as usual", forecasting the revenues and expenditures using the base case scenario and considering only the existent projects of the municipality, without any new major project or real term increases on revenues and expenditures.

This conservative approach is mainly considered as the information on the new projects to be designed and implemented by the municipalities as part of SMROPSM and BGI is limited in this phase.

A more detailed analysis should be carried at a later stage under the technical and financial requirements of SMROPSM or for the municipality's credit approval by a financing institution.
Some key assumptions are presented in the following lines:

- The share from income tax revenues have been increased with the real term GDP increase as well as the yearly inflation rate for the projection period;

- All the revenues have been forecasted with the inflation rate for the duration of the analysis period. This does not refer to any additional capital costs which will arise in the future, and are presented in their own separate spreadsheet presenting the loans;
- All the municipality's expenditures have been increased only with the yearly inflation due to current constraints on the real term increase of the personnel costs and in line with the conservative approach.

All the financial models are currently in progress, in different stages of development, considering the volume of data to be processed. In the draft version of the present report, Targoviste municipality analysis is presented in the next chapter to better understand the level of detail needed for the analysis. In the final version of the report, and once feedback has been collected from EBRD and SM RDA, the data and findings for all seven municipalities will be presented accordingly.

5.1.3 Investments

Based on the information presented by Targoviste municipality, the following projects are currently under implementation at local level under POR 2014-2020:

- Education: Rehabilitation and modernization of secondary schools "Mihai Viteazu", "Tudor Vladimirescu" and "Matei Basarab", and kindergarten "Raza de soare";
- Urban transport: Purchasing ecologic vehicles and improvement of road infrastructure for local urban transportation;
- Energy efficiency: Thermal rehabilitation of residential buildings
- Public lighting: Improving the energy efficiency of the public lighting system in Targoviste
- Leisure activities: Conversion of land near "Complexul Turistic de Natatie Targoviste" to recreation facility and building the public park "UM Gara".

As the sources of financing for these projects are established under ROP, the project financial details (both costs and revenues) were not included in the financial model as the designated grant sources are contracted and the needed financial co-financing included through the municipality's loans. The benefits of included these financial details in the financial model is limited for the scope of the assessment, considering that the external financing sources are designated to the projects.
Also related to investments, it has to be stated that on top of these planned investment there are also a number of minimal investments which are forecasted from the historic ones included in the budgetary executions for 2018-2020, presented in the table below:

Table 6: Minimal investment expenditures

Minimal Investment Expenditures (million RON)	2018	2019	2020
out of which, by classification:	Total inv. year	Total inv. year	Total inv. year
-Public authorities	395	318	157
- Other general public services	40	0	11
- General transfers between different levels of government	0	0	0
- Defense	519	1.316	356
- Public order and national safety	0	0	0
- Education	1.522	6.693	3.355
- Health	404	93	41
- Culture, religion and recreation	880	496	575
- Insurance and social assistance	774	5.525	7.317
- Housing, services and public development	4.034	6.375	5.696
- Environmental protection	1.899	1.171	294
- General economic, commercial and labour actions	0	0	0
- Agriculture, forrestry, fishing and hunting	0	0	0
- Transportation	5.893	11.258	8.129
- Other economic activities	0	0	0

These are to be forecasted with the inflation.

5.1.4 Loans

The following information regarding the loans contracted were considered based on the financial statements of Targoviste municipality:

Table 7: Contracted loans

Loan							
Name of the lending institution (RON)	**BRD**	**CEC**	**CEC**	**CEC**	**BCR**	**Transilvania**	**Transilvania**
Date of loan contracting	16.09.2011	29.12.2015	13.09.2016	28.06.2019	13.09.2019	08.10.2019	08.10.2019

Value (RON)	18.358.435	17.944.804	16.315.393	11.567.850	65.000.000	370.000	447.000
Interest rate	3,3%	2,8%	2,2%	3,5%	4,9%	3,6%	3,6%
Disbursement value	18.358.435	17.944.804	16.315.393	11.567.850	63.253.575	165.155	115.005
Grace period (years)	3	2	0	0	2	2	2
Repayment period left (years)	4	5	6	6	11	1	1
Loan balance at the end of 2020 (RON)	7.037.400	12.595.628	11.758.895	8.997.217	63.253.575	165.155	115.005

The loans have been forecasted accordingly and automatically taken into the cash flow and into the calculation of the indebtness level of Targoviste municipality.

5.1.5 Financial Summary

The structure of municipality's revenues and expenditures is analyzed to understand the current budgetary mix of funding sources and spending areas.

Targoviste municipality's revenues for 2018-2020 are presented in the table below:

Table 8: Targoviste municipality's revenues for 2018-2020

	2018	2019	2020
Total revenues	**175.649**	**229.986**	**242.109**
Recurring Revenues	**151.822**	**200.063**	**197.218**
of which:			
Own Recurring Revenues	96.768	118.811	142.007
- Direct local taxes and fees	30.977	32.104	33.494
- Rents and leases	4.017	4.030	3.331
- Share from personal income tax	56.509	76.352	97.326
- Equalization fund from Income tax	2.270	877	1.190
- Other own recurring revenues	2.995	5.448	6.666
Transfers from state or other central budgets	55.053	81.253	55.210
- Earmarked subsidies	33.379	22.652	36.461

- Equalization fund from other budgets	21.674	58.601	18.750
Other Operating Revenues	**5.539**	**5.664**	**5.376**
of which:			
Own Operating Revenues	5.539	5.664	5.376
- Indirect local taxes and fees	3.920	3.676	3.454
- Proceeds from subordinated companies (related to profit)	196	-	-
- Proceeds from public institutions (related to services and surpluses)	1.424	1.987	1.921
Other subsidies and transfers	-	-	-
Current Revenues	**1.429**	**1.741**	**1.038**
of which:			
Own Current Revenues	-	-	0
Donations and Sponsorships	58	75	161
Other transfers	1.370	1.666	877
Short Terms Loans to cover temporary deficits	-	-	-
Other Sources for Financing Investments	8.303	17.679	34.471
of which:			
Own sources	1.109	968	324
Subsidies from state or other central budgets	6.878	9.109	12.385
Grants (EU or other organizations)	316	7.601	21.763
Other extraordinary revenues	8.556	4.840	4.006
of which:			
- Other own revenues	8.556	4.840	4.006
- Other subsidies and transfers	-	-	-

The recurring revenues represent 82% of the total revenues, with the municipality's own recurring revenues having 59% and transfers from state budget 23% of total revenues in 2020. It can be observed a steady increase of own recurring revenues in the period 2018-2020, while the transfers from state budget amount varies in the years.

The most important budget source for Targoviste municipality is the share from personal income tax, representing 40% of total revenues, followed by the direct local taxes with 14% in total revenues.

Other important funding sources in 2020 were funds for financing investments, respectively through grants with 9% and subsidies from state budgets representing 5% of total revenues.

Other funding sources, as indirect local taxes and proceeds from companies and institutions, donations and other transfers and extraordinary revenues represent 4% of total revenues.

Hence, it might be considered that around 60% of municipality's total revenues are based on steady regular revenues that come from own revenue sources. Subsidies, grants, and any other type of transfer represent the remaining 40% at the level of 2020 and can be considered heterogenous sources as they depend on state budget, County Council or other external organization.

Targoviste municipality's expenditures for the period 2018-2020 are presented in the table below.

Table 9: Targoviste municipality expenditures 2018-2020

	2018	2019	2020
Total expenditures	**175.648.820**	**229.986.289**	**241.912.578**
Staff expenditures	65.373.068	86.178.344	88.933.210
Goods and services	61.932.086	75.864.481	67.646.190
Interests	2.144.395	2.115.839	3.643.476
Subsidies	1.321.474	5.227.883	2.299.848
Reserve account	-	-	-
Transfers between administration units	-	-	-
Other transfers - operating expenditures	1.680.233	728.000	1.166.000
Other transfers -capital expenditures	-	-	-
External funds financing project	10.318.741	10.738.382	16.085.414
Social assistance	12.447.066	14.098.213	30.513.464
Other expenditures	4.061.365	4.653.186	4.052.215
Capital expenditures	9.779.838	22.292.975	19.562.205
Non-financial assets	444.467	92.931	52.054
Financial assets	1.435.333	2.496.000	-
Loan reimbursement	5.281.565	6.223.054	8.565.313
Payments made in prior years	(570.811)	(722.999)	(606.811)

The municipality budget is spent between 65 to 72% to cover personnel costs and goods and services for the activities and institutions under its subordination. Another important operating expenditure is distributed to social assistance, between 6 to 13% of the total expenditure.

The expenditures on projects with foreign financing represents 5 to 7 % of the total expenditures. These expenditures are financed from grants or subsidies received. The capital expenditures on fixed assets is between 6 to 10% of total expenditures and distributed mainly to the education, social assistance and housing and public development chapters. Around 6% of the budget was used for loan reimbursement.

The operating expenditures represented 80% from total expenditures in 2020, leaving space for 20% to be spent on capital expenditures.

In the table below is presented the distribution of the total expenditure on the spending chapters.

Table 10: Distribution of the total expenditure on the spending chapters

	2018	2019	2020
Total expenditures	**175.648.820**	**229.986.289**	**241.912.578**
Public authorities and external actions	17.337.277	19.012.839	20.137.118
Other general public services	6.794.230	8.019.360	10.567.661
Transactions regarding public debt and loans	2.301.661	2.227.872	3.707.625
General transfers between different levels of administration	-	-	-
Defense	7.462.163	9.814.345	10.021.418
Public order and national security	-	-	-
Education	17.064.078	31.994.962	34.280.000
Health	6.090.915	7.555.897	7.585.766
Culture, recreation and religion	22.856.114	28.044.041	23.305.586
Insurance and social assistance	40.627.712	57.000.143	61.298.544
Housing, services and public development	16.999.091	23.858.230	36.868.309
Environment protection	21.077.831	25.339.827	23.195.617
General economic, commercial and work actions	-	-	-
Agriculture and silviculture	-	-	-
Transport	17.037.748	17.118.773	10.944.934
Other economic activities	-	-	-

The local expenditure for Insurance and social assistance represents 25%, followed by Education chapter and Housing, services and public development with 15% and Culture, recreation and religion and Environment protection with 10%. Another 8% of the total expenditure is distributed to public authorities and external actions chapter. Hence, around 82% of the budget is distributed to these six main activities.

The overview on the municipality's revenues and expenditures, including the current and net surplus is presented below.

Table 11_ Overview Targoviste municipality's revenues and expenditures

Financial Summary (RON thousand)	2018	2019	2020
Current Revenues	158.790	207.468	203.632
Own revenues considered by MoF	111.973	130.282	151.713
Operating expenditures	141.958	178.275	188.229
Other Current Expenditures	7.583	8.451	12.273
Capital Revenue	16.859	22.518	38.477
Capital Expenditures	26.108	43.260	41.410
Total Revenues	**175.649**	**229.986**	**242.109**
Current Surplus (Deficit)	16.832	29.193	15.402
Net Surplus (Deficit)	0	0	197

Targoviste municipality registered in all years a current surplus, also covering the operating expenditures and loans repayment from recurring, operating, and current revenues, except for year 2020.

The municipality succeeded to balance its accounts in all years and in 2020 registered net surplus.

5.1.6 Indebtness level

The graphic presenting the evolution of the indebtness level for Targoviste municipality is presented below:

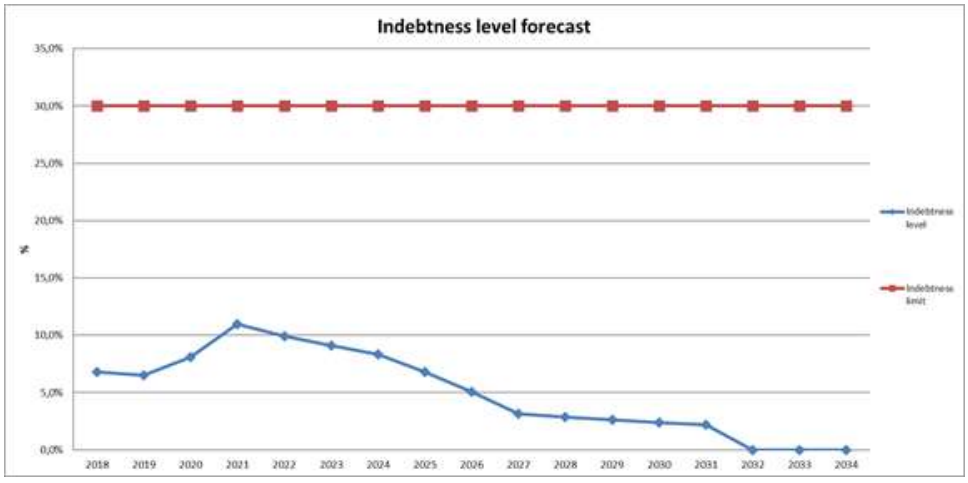

Figure 11: Evolution indebtness level Targoviste municipality

It can be seen that the maximum level of 30% indebtness as established by the Public Finance Law is far from being reached as the municipality's maximum indebtness level reaches around 11% in 2021.

In the table below are presented the revenues considered at the indebtness level calculation and the debt service value for the period 2018-2020 and the forecast for the following years under a "business as usual" scenario.

Table 12: Revenues considered at the indebtness level calculation and the debt service value for the period 2018-2020 and forecast for the following years under a "business as usual" scenario

	Revenues considered at calculation of 30% limit	Loans	Indebtness level (max 30%)
2018	111.973	7.583	6,77%
2019	130.282	8.451	6,49%
2020	151.713	12.273	8,09%
2021	162.299	17.772	10,95%
2022	171.061	16.982	9,93%
2023	181.1	16.478	9,10%
2024	191.875	15.974	8,33%
2025	202.794	13.739	6,77%
2026	212.589	10.807	5,08%
2027	222.928	7.018	3,15%
2028	233.845	6.737	2,88%

Targoviste municipality has the financial capacity to contract loans in the following period for co-financing infrastructure projects, i.e. BGI projects.

However, it should be considered that only 60% of the municipality's revenues are constant from one year to another and that in 2020 the municipality could not cover entirely the loans repayment from own funding sources.

5.1.7 Reporting

The main financial indicators calculated in the financial model are:

- Current surplus/Current revenue
- Current surplus/Debt service
- Debt service/Own revenue
- Total net debt /Current surplus
- Total Debt/Current surplus

The evolution of these indicators for the period 2018-2020 is presented in the following table for each municipality:

Table 13: Evolution of main financial indicators for the period 2018-2020

	2018	2019	2020
Current surplus/Current revenue	10,6%	14,1%	7,6%
Current surplus/Debt service	2,22	3,45	1,25
Debt service/Own revenue	6,8%	6,5%	8,1%
Total net debt /Current surplus	2,54	1,84	5,20
Total Debt/Current surplus	2,62	1,87	5,44

All the indicators are in the required range for the period 2018-2020.

5.2 Field Visit Report – separate document

Field Visits Report 20-22 September 2021

REGIONAL ANALYSIS ON GREEN AND BLUE INFRASTRUCTURE IN SOUTH MUNTENIA REGION, ROMANIA

Project name	**REGIONAL ANALYSIS ON GREEN AND BLUE INFRASTRUCTURE IN SOUTH MUNTENIA REGION, ROMANIA**
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Recipient	**South – Muntenia Regional Development Agency**
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Checked by	**Alvaro Fonseca**
Approved by	**Silviu Stoica**
Description	**This Field Visits Report presents the main findings during the site visit of the project area.**
Acknowledgements	**The Consultants very much appreciate the information that has been provided by the Client during this field visit.**

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1. Introduction

As part of Task 2: High-level environmental challenge identification, the Consultant participated in a three-day field visit during September 20-22, 2021. The objective of the field visits was to gain first-hand insights in the local situation and have direct interaction with stakeholders to increase mutual understanding of the challenges and how to address them.

The lesson learned from this experience is that whereas online meetings/workshops are efficient for preparing for decision making, decision making itself requires intensive multidisciplinary collaboration between all stakeholders involved, and face to face consultations; multiple-day field visit sessions are very suitable for that. Figure 1 shows an overview of the areas visited/discussed.

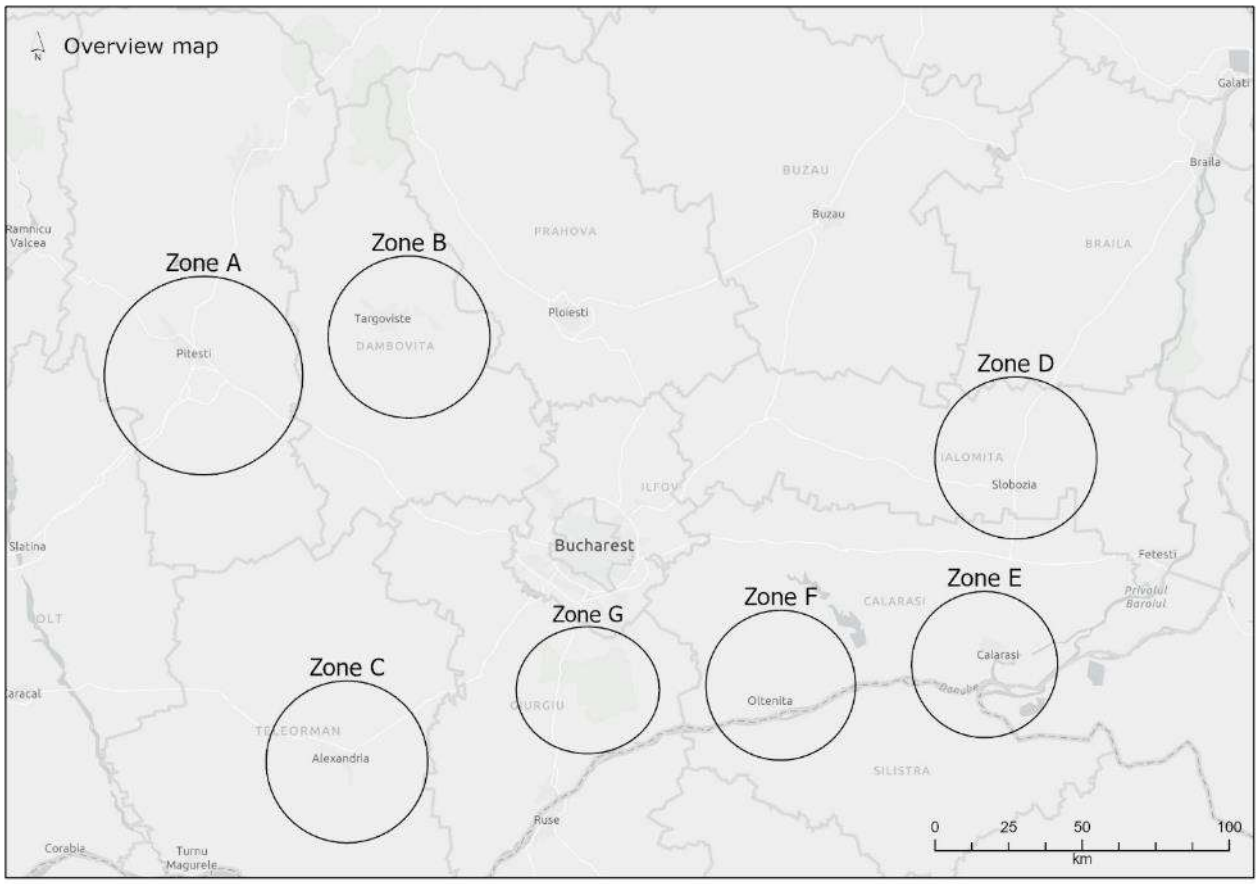


Figure 1 - Overview of zones or areas visited during the site visit (see section 2.3 for details)

2. Field visit program

The field visits took place in accordance with the plan previously established with RDA SM, EBRD and stakeholders, as follows:

Day 1 – September 20th, 2021

- Călărași City, Călărași county
- Slobozia town, Ialomița county

The following attended the Working Meeting:

Local authorities	RDA Representatives	Consultant Experts
Călărași County Headquarters of Călărași County Council with representatives from Călărași County Council, Călărași City Hall and Oltenita City Hall *Fetesti City Hall* *Ialomița County* Headquarters of Ialomița County Council with representatives from Ialomița County Council, Slobozia City Hall and the Water supply Company	Mrs. Luminita Zezeanu-Management Authority ROP Director together with a representative of the local office of RDA SM have been present.	On behalf of the Consultant the following experts have participated: Koen Broersma - DTL, Carmen Stefan-Strategic Planning Expert, Eugenia Ganea - Stakeholder Engagement Expert & Social, Gender and Economic Inclusion Expert, Gabriela Musat- Environment Expert and Sabina Preda-Project Coordinator (local)

Day 2 – September 21st, 2021

- Alexandria City, Teleorman County
- Comana Commune, Giurgiu County

The following attended the Working Meeting:

Local authorities	RDA Representatives	Consultant Experts
Teleorman County Headquarters of Teleorman County Council with representatives from Teleorman County Council and Alexandria City Hall *Giurgiu County* Comana Monastery with representatives from Giurgiu County Council and Comana City Hall	Mrs. Luminita Zezeanu-Management Authority ROP Director together with a representative of the local office of RDA SM have been present.	Koen Broersma - DTL, Eugenia Ganea - Stakeholder Engagement Expert & Social, Gender and Economic Inclusion Expert and Sabina Preda-Project Coordinator (local)

Day 3 – September 22nd, 2021

- Pitești City, Argeș County
- Târgoviște City, Dâmbovița

The following attended the Working Meeting:

Local authorities	RDA Representatives	Consultant Experts
Arges County		

Headquarters of Pitești City Hall with representatives from Pitești City Hall, *Dâmbovița County* Headquarters of Dambovita County Council with representatives from Dambovita County Council, Targoviste City Hall Prahova County Council and Ploiesti City Hall	Mrs. Luminita Zezeanu-Management Authority ROP Director together with a representative of the local office of RDA SM have been present.	On behalf of the Consultant the following experts have participated: Koen Broersma - DTL, Carmen Stefan-Strategic Planning Expert, Eugenia Ganea - Stakeholder Engagement Expert & Social, Gender and Economic Inclusion Expert, Gabriela Musat- Environment Expert and Sabina Preda-Project Coordinator (local)

During these meeting, the local authorities presented the environmental problems they face and the strategic actions to solve them (see section 2.1). Site visits were also made to identify areas with environmental problems that could be integrated into the blue-green infrastructure. Maps with the identified areas are shown in section 2.3.

2.1 Main Findings

2.1.1 Călărași City, Călărași County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Călărași City, Călărași County	**Air** At the level of Călărași Municipality, they were not identified critical areas in terms of air pollution. The results of the air quality monitoring carried out in the previous years showed that occasionally there are exceedances of the allowed limit values for the PM10 concentration. These exceedances are determined by the heavy traffic (on Prelungirea Călărași Street) and the use for the production of thermal energy in the living spaces of some primary fuels (wood, coal). **Water Quality** For the municipality of Călăraşi, the water source is the Danube (surface source). The treatment plant was rehabilitated, but in the past, they had problems with water quality. **Flooding** Floods produced during heavy rainfall - in the Borcea Channel area Lack of a rainwater drainage system in the urban area leads to flooding of streets and homes **Green space**	Rainwater collection system for water discharge in the existing retention pond This also includes works to consolidate the shore of the pond, planting **shelterbelts**, landscaping of the area (in the vicinity of the proposed park in the area -that currently benefits funds through ROP)	In the western part of Călărași	
		Green corridors connecting the southern part with the western part of the city and flood reduction works on the bank of the Borcea Channel	south-western part of Călărași	Currently, a tourist port and spaces for promenades are proposed. Water Basin Administration (WBA) proposed another type of works for the rehabilitation of the riverbanks on this channel. There are land areas that are owned by WBA

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	The average per capita of green space is below the county and national average.	Green corridors and parks in the residential area that is being expanded	In the north	

2.1.2 Oltenita City, Călărași County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Oltenita City, Călărași County	**Air** The results of the air quality monitoring carried out in 2014 showed that occasionally there are exceedances of the allowed limit values for the PM10 and CO concentration. These exceedances are determined by the heavy traffic (on DJ41/DN11), wind erosion and thermal power plant. **Flooding** Floods produced during heavy rainfall – Argeș River (in the west part of the city) Lack of a rainwater drainage system in the urban area leads to flooding of streets and homes	Works to reduce the risk of floods Shelterbelts Network around the town Redirecting traffic from the central area, arranging pedestrian areas and green spaces to link the center to proposed agreement areas on the banks of the river Arges (in the west) Rainwater drainage systems in the urban area (current	In the western part of the city West Center of the city to the west	ABA proposed for this area - consolidation of the Oltenita-Surlari - Doribantu defense line Measures taken into account in the Air Quality Maintenance Plan for Călărași County The air modeling results presented in this plan show that in the absence of inadequate measures there will be exceedances of the

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
		problem: flooding the street and houses)		assessment threshold values for PM

Note: Oltenita not visited, the authorities presented the environmental aspects during the working meeting.

2.1.3 Slobozia, Ialomița County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Slobozia, Ialomița County	**Flooding** The rainwater network is undersized, old pumps, urban area flooding **Lack of water resources** The area is affected by drought, groundwater pollution **Natural Protected Area** Elimination/reduction of pressures on the natural protected are (uncontrolled tourism, inadequate storage of waste, use of improper bicycle access ways)	Solving the deficiencies of the water infrastructure - especially of the rainwater collection system Rainwater retention tanks and the use of rainwater for irrigation of green spaces *Integration of the protected area (Ialomița Corridor) in the urban area* Routes for cyclists and pedestrian paths that connect the following cities: Fetesti, Tandarei, Slobozia Construction of a pedestrian passage for crossing the river Camping area, picnic and agreement Water transport infrastructure (boat point, recreation routes pedestrian access roads)	3 parks (Parcul Ialomița, Parcul Mare and along Bulevardul Matei Basarab) and retention basin/pump near Strada Răzoare Ialomița Corridor	Proposals within the limits of the Natura 2000 sites (ROSCI 0152-Ialomița Corridor and ROSPA0290–Ialomița Corridor) Nature 2000 Sites Management Plan is not approved.

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
		spaces for the enhancement of flora and fauna – tourist attraction points (benches, intelligent lighting using renewable energy)		

2.1.4 Fetesti, Ialomița County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Fetesti, Ialomița County	**Flooding** Lack of a stormwater drainage system in the urban area leads to flooding of streets and homes **Green space** The average per capita of green space is below the county and national average	Rainwater collection systems (there is currently no divider system for rainwater and wastewater collection) Creating green spaces (current problem: lack of green spaces)		

Note: Fetesti not visited, the authorities presented the environmental aspects during the working meeting.

2.1.5 Alexandria City, Teleorman County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Alexandria City, Teleorman County	**Degraded land** Soil degradation is related to soil erosion phenomena of surface or	Expanded green spaces and create shelterbelts along Vedea river	Eastern part of Alexandria along the banks of Vedea River	In Alexandria City, a park was designed on a land that was used in the past

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	depth. Soil degradation also occurs by the deposition of alluvium during the overflow of the river Vedea. The lack of tree plantations, shelterbelts on the slopes and shrubs cause these phenomena. **Flooding** The city of Alexandria is located in the flood zone of the river Vedea.. In the buildable area of the municipality there are no special problems regarding the location of the constructions, except for the areas in the immediate vicinity of the Vedea River.	Rehabilitation and consolidation of the Vedea River protection dam		by a military unit. The project was funded by the Regional Operational Program. Total area of planted spaces = 17 972.00 m² Arges-Vedea Water Basin Administration proposed in the flood risk management plan measures for reduce flooding risk on Vedea River.

2.1.6 Comana Commune, Giurgiu County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Comana Commune, Giurgiu County	**Natural Protected Area – Comana Park** Too low water level in the park. The main pressures that threaten the conservation status of	Improving the management of the protected area - Creating an infrastructure for non-motorized sports (eg bicycle routes) - Control of invasive species	At the edge of Comana park in areas of sustainable development	According to the provisions of the General Urban Plan of Aduna Copaceni Commune, in the northern part of the Comana natural park (at a

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	species and natural habitats are: - Invasive species - Uncontrolled tourism - degradation of the area, improperly stored waste - Motor sports- can severely affect biodiversity through intense noise, vibration due to intense combustion engines, exhaust fumes, projector lights, and travel speed of vehicles, traces of wheels on the ground and the human presence, all disturbing, alerting and scaring the species in the areas of reproduction or feeding, especially of birds, during the nesting period. - Intensive agriculture - soil degradation Following the implementation of the project, the number of tourists in the area is expected to increase. The access of tourists to an infrastructure that allows them to practice non-motorized sports could have positive effects on the management of the protected area. Comana Monastery, which is located within the protected area, has	- Controlled tourism with visitor centre with viewing platforms - Parking and camping area across the road Higher level of the dam to increase/beter manage water level in the park		distance of about 3 km from the park boundary) it is proposed to build an airport.

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	been rehabilitated through the Regional Operational Program. For this protected area, a management plan was developed in 2018 but this plan is not yet approved, which makes it difficult to apply the necessary measures to eliminate pressures and reduce their impact on species and natural habitats.			

2.1.7 Târgoviște, Dâmbovița County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Târgoviște	**Air** According to the information provided by the city hall, the material particles are the main pollutants in Târgoviște Municipality, but they do not exceed the daily limit value for the protection of human health. Green space Targoviste City Hall has not yet completed the Green Space Inventory. The average per capita of green space is below the	Integration of Ialomița River in Târgoviște and creation of permeable green spaces along the riverbed The project proposes: - Regularization of river - Expanding green spaces and creating agreement areas -Promenade area -Bikes routes -Creation of an island - Fantasy Island 30	From the North (above Mihai Bravu Street to Gimnazului Street)	

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	county and national average **Landscape** On the Ialomița river there are areas with spontaneous vegetation and the riverbanks are affected by erosion.	ha (arrangement with picnic areas, green space) - Facilitating water sports - Beaches - pedestrian walkways for crossing the river		

2.1.8 Pitești, Argeș County

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
Pitești	**Air** Occasionally the PM10 concentration exceeds the upper assessment thresholds for human health. According to the Air Quality Plan prepared for Arges County by the Arges County Council, Pitești locality, the concentration of pollutants PM10, PM2.5, benzene, NO2, NOx exceeds the upper assessment threshold for the population's health	Rehabilitation of the rainwater collection canal (the canal collects water from the DJ 703 area and from the slopes) Rehabilitation of the Zoo (The surface of the garden is 12 ha of which only 8 ha are arranged and 4 ha is degraded land)	west west	The Zoo is located in the Trivale Forest, the rainwater collection channel passes through the Trivale Forest / Trivale Park

Area	Environmental Issues	Projects proposed for solving environmental problems	Project location	Remarks
	Flooding The water network is undersized, it cannot take over the entire amount of rainwater collected from the Trivale Park area and the adjacent road (west part of the city), so there are floods in the urban area.			

2.2 Common findings and remarks on institutional aspects

2.2.1 Governance structure

According to art. 244 of the Administrative Code, the local and/or county council have established a public administrator role, to ensure modern public management, following the corporate governance model, and the segregation of the political level from the executive one. The public administrators present at the discussions proved to be professionals with technical, administrative and managerial knowledge and experience.

It is clear that the public administrator is working closely with all relevant stakeholders in their organizations, such us the Chief Architect, Investments / Project management Department, Economic Department in the City Halls, respectively Direction for Strategic Programs and Investments, Urbanism Division of the County Councils.

However, a dedicated multidisciplinary Projects Implementation Unit would ensure higher efficiency and governance at the institutional level, while being a driver for creating a true network effect between the public administrations and also with other key stakeholders like RDA and Romanian Waters etc.

Identifying a best practice to replicate would be recommended, as well as contracting technical assistance for capacity building.

- Complementarity between funding programs – as per the 2021-2027 Funding program analyses and continuity of the previous investments (finalized, under-implementation or to be implemented from the previous financing multi-annual framework) – an updated list from the Beneficiaries would be recommended to be consulted during the actual projects proposals planning for 2021-2027 ROP Program

Additional initiatives to support: e.g. for PODD (Sustainable Development Operational Program) the projects will be financed if part of a Smart City/Smart Village strategies – such strategies to be elaborated through specialized services for the elaboration of Smart cities/ smart villages strategies, additional to or part of the Local Development Strategies.

2.2.2 Regional Cooperation

Regional Cooperation has two folds:

- To address in a unitary approach similar problems, challenges or opportunities
- To work in a strategic and coordinated way at each area level with a holistic view and an integrated master-planning approach at river basin level, considering the impact that an area / actions or lack of actions in the area could have on another area or the benefits of an overall connectivity through green corridors could generate to solve environmental challenges and create social-economic benefits – e.g. Ialomița river basin across Dambovita, Ialomița and Călărași Counties

To enable the implementation of regional projects, partnerships should be established between the Local and County Councils structure to maximize the funding and synchronize the implementation.
Thus, clear responsibilities should be set, land ownership clarification, co-financing rules and participation, funds allocation on the priority investments under each party responsibility as well the further governance, operation and ownership on the created infrastructures as a result of the projects funded by ROP. As well a very well-coordinated planning of the preliminary actions should be considered (e.g. eventual land expropriations procedures or land ownership transfer from Romanian Waters as per case etc).

2.2.3 Initiatives connected to the European Velo Route network

All visited stakeholders mentioned initiatives related to developing bike-trails along the blue-green corridors envisaged in their project proposals. Especially Fetesti and Călărași Town-Hall representatives referred to the connection to the European Euro Velo 6 cycle route or Danube Route.
Thus, a regional approach would be beneficial by establishing a Regional Cycle Route Development Strategy for the unitary development of the cycle network across the South-Muntenia counties, incorporating unitary standards as well as promotion strategies to generate economic growth in the region, by following the European framework example and by inspiring from other similar initiatives in the European countries.

2.2.4 Integrated and long-term planning perspective

Even if some proposed investments are being priorities according to the urgent needs especially related to the social development and population retention or attraction as well as social inclusion challenges, however, an integrated and long-term planning perspective should be considered at this very moment with phased further investments on the roadmap and related pre-requisite included in the requirements of the current project proposal. An example is Călărași residential area expansion in the North area, where the land is ceased to private investors with no additional obligation of certain green accompanying measures.
As well, for the public spaces that are under the municipality ownership, a more systemic and programmatic approach centered on BGI creating new green spaces but also connecting the new areas and impact with the old city is needed to be incorporated as a strategic long-term vision.

2.2.5 Driving public participation, awareness and civic responsibility accompanying measures

All projects should be accompanied by a set of public participation, awareness and civic responsibility measures.

2.2.6 Thorough review of the relevant studies to fundament and support the project initiatives

A thorough review of the relevant studies' availability and relevance to fundament and support the project initiatives is recommended as well as consequent planning for contracting such preliminary studies, as needed.

As well, the digitization of the topographic elements, and other relevant physical networks should be assessed and planned as needed.

2.3 Maps

2.3.1 Zone A, Pitești City, Arges County

HIGH LEVEL CHALLENGES

Reducing the risk of Flooding

The water network is undersized, it cannot take over the entire amount of rainwater collected from the Trivale Park area and the adjacent road (west part of the city), so there are floods in the urban area.

Degraded lands

Improve soil quality and afforestation

Improve air quality

Occasionally the PM10 concentration exceeds the upper assessment thresholds for human health.

Zone A – Pitești City, Argeș County

Photo site visit – 22 September 2021			Project proposed
1 – Rainwater collection channel (in the western part of Pitești City) 	**2** -Rainwater collection channel (in the western part of Pitești City) 	**3** -Rainwater collection channel (in the western part of Pitești City) 	**AG 1 – Improve the reainwater collection sytem** Rehabilitation of the rainwater collection channel (the canal collects water from the DJ 703 area and from the slopes) and integrating the channel in Trivale Park
4 – Rainwater collection channel (in the western part of Pitești City) 	**5** – Rainwater collection channel (in the western part of Pitești City) 	**6** – Rainwater collection channel (in the western part of Pitești City) 	
			**AG 2 – Zoo rehabilitation** Rehabilitation of the Zoo (The surface of the garden is 12 ha of which only 8 ha are arranged and 4 ha is degraded land)

2.3.2 Zone B, Târgoviște City, Dâmbovița County

HIGH LEVEL CHALLENGES

Expansion of Green Space

Lack of green spacey - The average per capita of green space is below the county and national average

Landscape improvemets

On the Ialomita river there are areas with spontaneous vegetation and the river banks are affected by erosion

Zone B – Târgoviște City, Dâmbovița County

Photo site visit – 22 September 2021			Project proposed
1 – Ialomita River (the intersection with Mihai Bravu street) 	**2** – Ialomita River 	**3** – Ialomita River – bank consolidation works made for road protection 	**DB 1 – Integration of Ialomita River in Târgoviște and creation of permeable green spaces along the riverbed** The project proposes: - Regularization of river - Expanding green spaces and creating agreement areas -Promenade area -Bikes routes -Creation of an island - Fantasy Island 30 ha (arranged with picnic areas, green space) - Facilitating water sports - Beaches - Pedestrian walkways for crossing the river
4 – Banks of Ialomita River in the vecinity of Chindiei Lake 	**5** – Ialomita River (the intersection with Mihai Bravu street) 	**6** – Ialomita River (the intersection with Gimnaziului Street) 	
DB 1 – Project Layout 			

2.3.3 Zone C, Alexandria City, Teleorman County

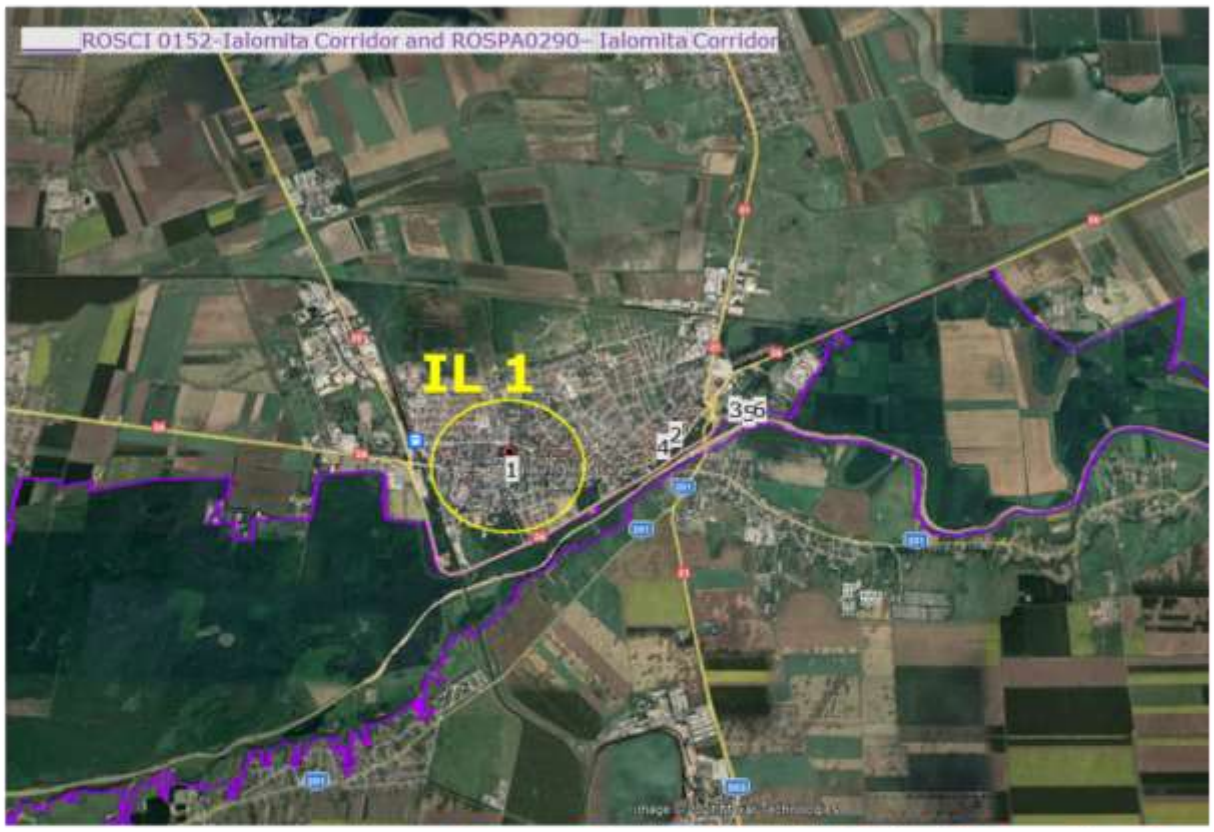
HIGH LEVEL CHALLENGES

- Reduction of degraded land areas along the Vedea River
- Floods risk reduction- Vedea River
- expanding areas with green space and creating forest curtains to improve air quality

Zone C – Alexandria City, Teleorman County

Photo site visit – 21 September 2021	Project proposed
  **Forest Vedea Park** 	**TL1- Expended green spaces and shelterbelts creation** **TL 2 - Rehabilitation and consolidation of the Vedea river protection dam** (*according to Sustainable Strategy 2014-2023*)

2.3.4 Zone D, Slobozia and and downstream Ialomița river



HIGH LEVEL CHALLENGES

Reducing the risk of Flooding

The rainwater network is undersized, old pumps, urban area flooding

Improving the Water resources management

The area is affected by drought, groundwater pollution

Natural Protected Area

Elimination/reduction of pressures on the natural protected are (uncontrolled tourism, inadequate storage of waste, use of improper bicycle access ways)

Zone D – Slobozia City, Ialomița County

Photo site visit – 20 September 2021

1 – Rainwater collection and discharge system

2 – Intersection of Soseaua de Centera with Gura Podului Street

3 - Treated wastewater discharge area

4 – Ialomita River (intersection with the Gura Podului Street)

5 – Ialomita River in the vecinity of treated wastewater discharge area

6 – Bank River Ialomita in the vecinity of treated wastewater discharge area

IL 2 - Ialomita Corridor Project Layout

Project proposed

IL 1 –Rehabilitation of Rainwater collection System

Solving the deficiencies of the water infrastructure - especially of the rainwater collection system

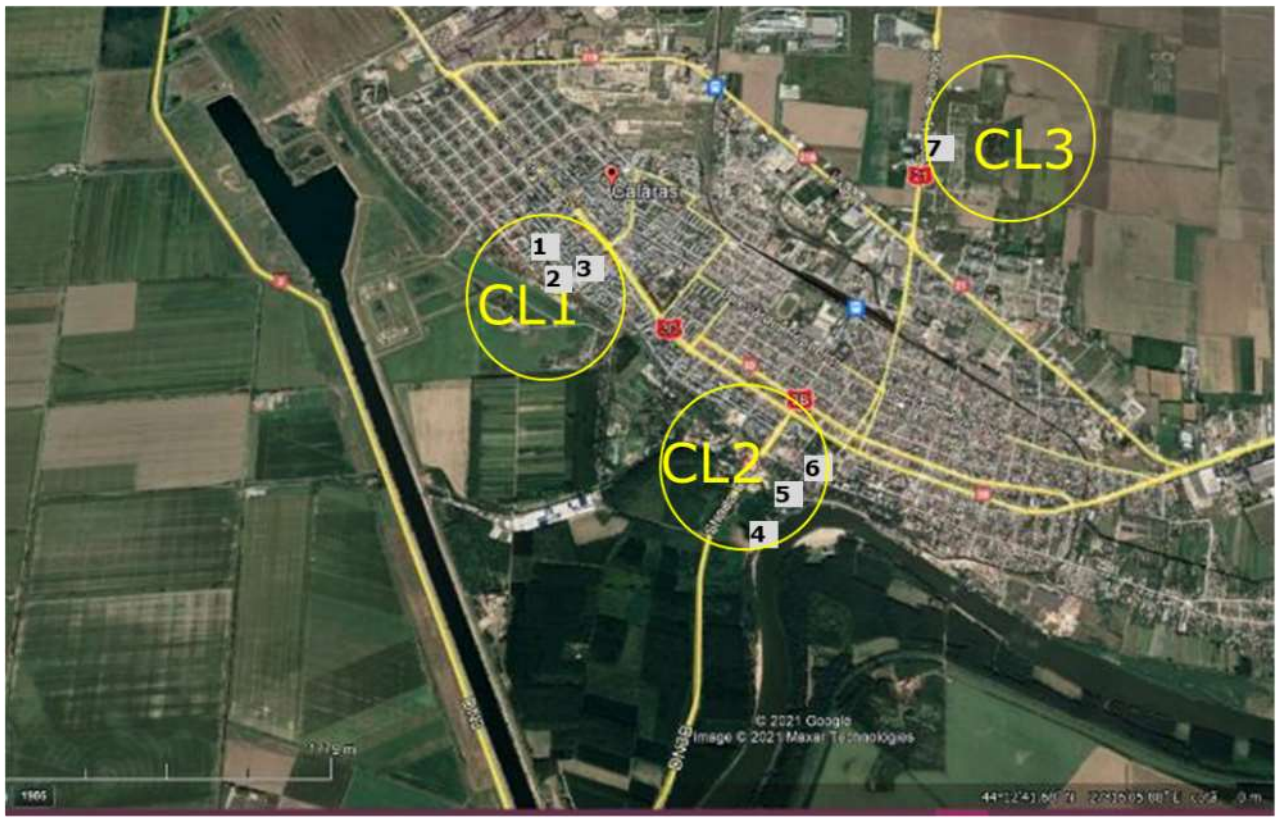
Rainwater retention tanks and the use of rainwater for irrigation of green spaces

IL 2 – Ialomita Corridor Project

The project includes:

- Routes for cyclists and pedestrian paths that connect the following cities: Fetesti, Tandarei, Slobozia
- Construction of a pedestrian passage for crossing the river
- Camping area, picnic and agreement
- Water transport infrastructure (boat point, recreation routes pedestrian access roads)
- Spaces for the enhancement of flora and fauna – tourist attraction points (benches, intelligent lighting using renewable energy

2.3.5 Zone E, Călărași City, Călărași County



HIGH LEVEL CHALLENGES

Reducing the risk of Flooding

Floods produced during heavy rainfall - in the Borcea Channel area
Lack of a rainwater drainage system in the urban area leads to flooding of streets and homes

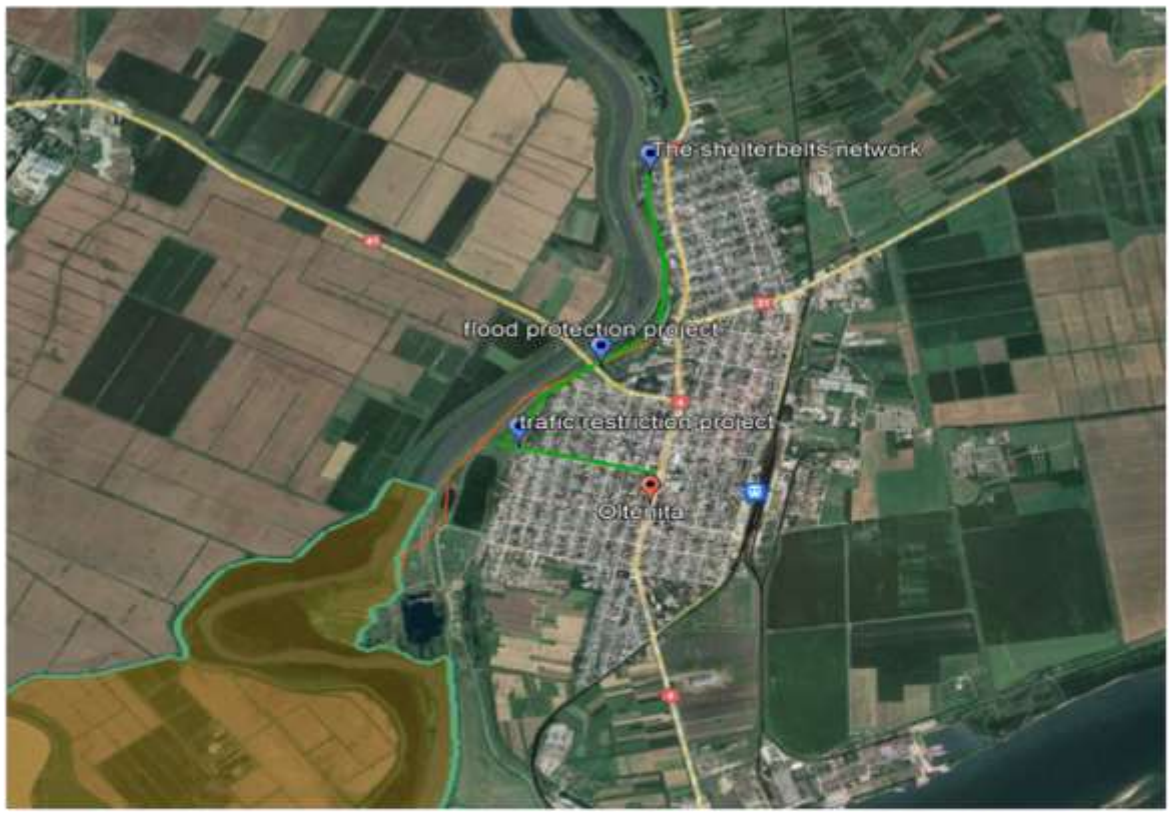
Expansion of green space

The average per capita of green space is below the county and national average.

Zone E - Călărași City, Călărași County

Photo site visit – 20 September 2021			Project proposed
1 - Iezer Lake (south part) Stormwater collected from urban area is discharged in Iezer Lake 	**2** - Iezer Lake (south – east part) 	**3** - Iezer Lake shore *Degraded land, improperly stored waste* 	**CL 1 – Iezer Lake Project** Rainwater collection system for water discharge in the existing retention pond This also includes works to consolidate the shore of the pond, planting **shelterbelts**, landscaping of the area (in the vicinity of the proposed park in the area -that currently benefits funds through ROP)
4 – Bank of the Borcea Channel (south-east part) 	**5** – Bank of the Borcea Channel (north part) 	**6** – Bank of the Borcea Channel (east part) 	**CL2 – Green Corridors conecting Iezer Lake to Borcea Channel** Green corridors connecting the southern part with the western part of the city and flood reduction works on the bank of the Borcea Channel
7 – New residential neighborhood (in the north part of the city) 			**CL 3 - Expanded Green Space Area in the new residential neighborhood** Green corridors and parks in the residential area that is being expanded

2.3.6 Zone F, Oltenita, Călărași County



HIGH LEVEL CHALENGES

Reducing the risk of Flooding

Floods produced during heavy rainfall – Argeș River (in the west part of the city)

Lack of a rainwater drainage system in the urban area leads to flooding of streets and homes

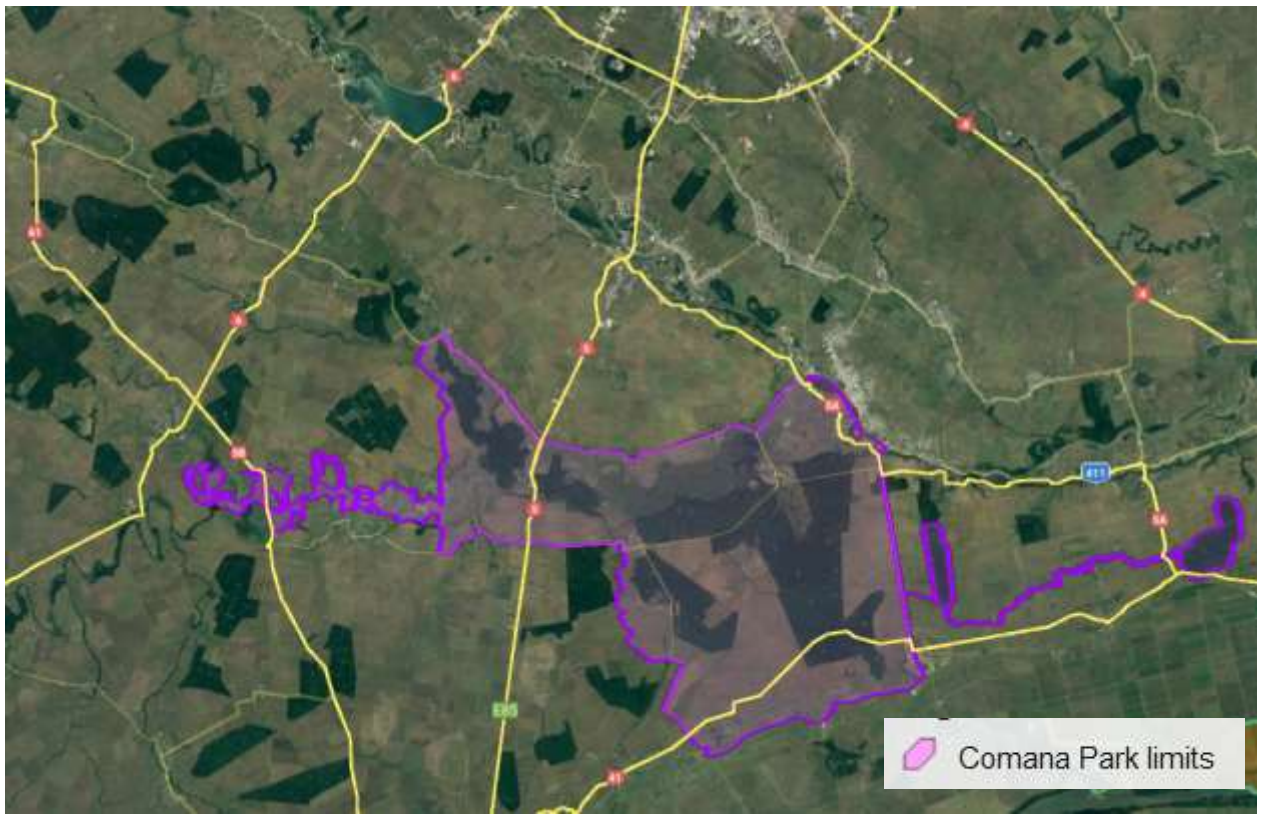
Air quality improvement

The results of the air quality monitoring carried out in 2014 showed that occasionally there are exceedances of the allowed limit values for the PM10 and CO concentration.

Zone F – Oltenița, Călărași County

Project proposed
CL 4 – Measures for reducing flood risks Works to reduce flood risks Redirecting traffic from the central area, arranging pedestrian areas and green spaces to link the center to proposed agreement areas on the banks of the river Arges (in the west) Rainwater drainage systems in the urban area (current problem: flooding of streets and houses)
CL 5 – Air quality improvement Redirecting traffic from the central area, arranging pedestrian areas and green spaces to link the center to proposed agreement areas on the banks of the river Arges (in the west)

2.3.7 Zone G, Comana, Giurgiu County



HIGH LEVEL CHALENGES
Reduce the main pressures that threaten the conservation status of species and natural habitats

Zone G – Comana Park, Giurgiu County

Photo site visit – 21 September 2021	Project proposed
 **Comana Lake**  **Comana Monastery**  **Neajlov Rivver**	**GR 1 –Improving the management of the protected area** • Creating an infrastructure for non-motorized sports (eg bicycle routes) • Control of invasive species • Controlled tourism

3. Photo Library – Site visits

3.1 Zone E, Călărași County – September 20th, 2021















Photo – Călărași City, Călărași County, 20th September 2021

Borcea Channel

3.2 Zone D, Slobozia, Ialomița County – September 20th, 2021












Photo – Slobozia City, Ialomița County, 20th September 2021

Ialomita River, Wastewater discharge point

Photo – Slobozia City, Ialomița County, 20th September 2021

Ialomita River (Coridorul Ialomitei – Natura 2000 site)

Photo – Slobozia City, Ialomița County, 20th September 2021

Working meeting

Photo – Slobozia City, Ialomița County, 20th September 2021

Rainwater Collated and Discharged System

3.3 Zone C, Alexandria, Teleorman County – September 21st, 2021













Photo – Alexandria City, Teleorman County, 21st September 2021

Park Vedea Site Visit

3.4 Zone G, Comana, Giurgiu County – September 21st, 2021














Photo – Comana, Giurgiu County, 21st September 2021

Comana Park Site Visit















Photo – Comana, Giurgiu County, 21st September 2021

Comana Park Site visit






Photo – Comana Commubneity, Giurgiu County, 21st September 2021

Comana Park Site Visit

3.5 Zone B, Târgoviste, Dambovita County – September 22nd, 2021















Photo – Targoviste City, Dambovita County, 22nd September 2021

Ialomita River

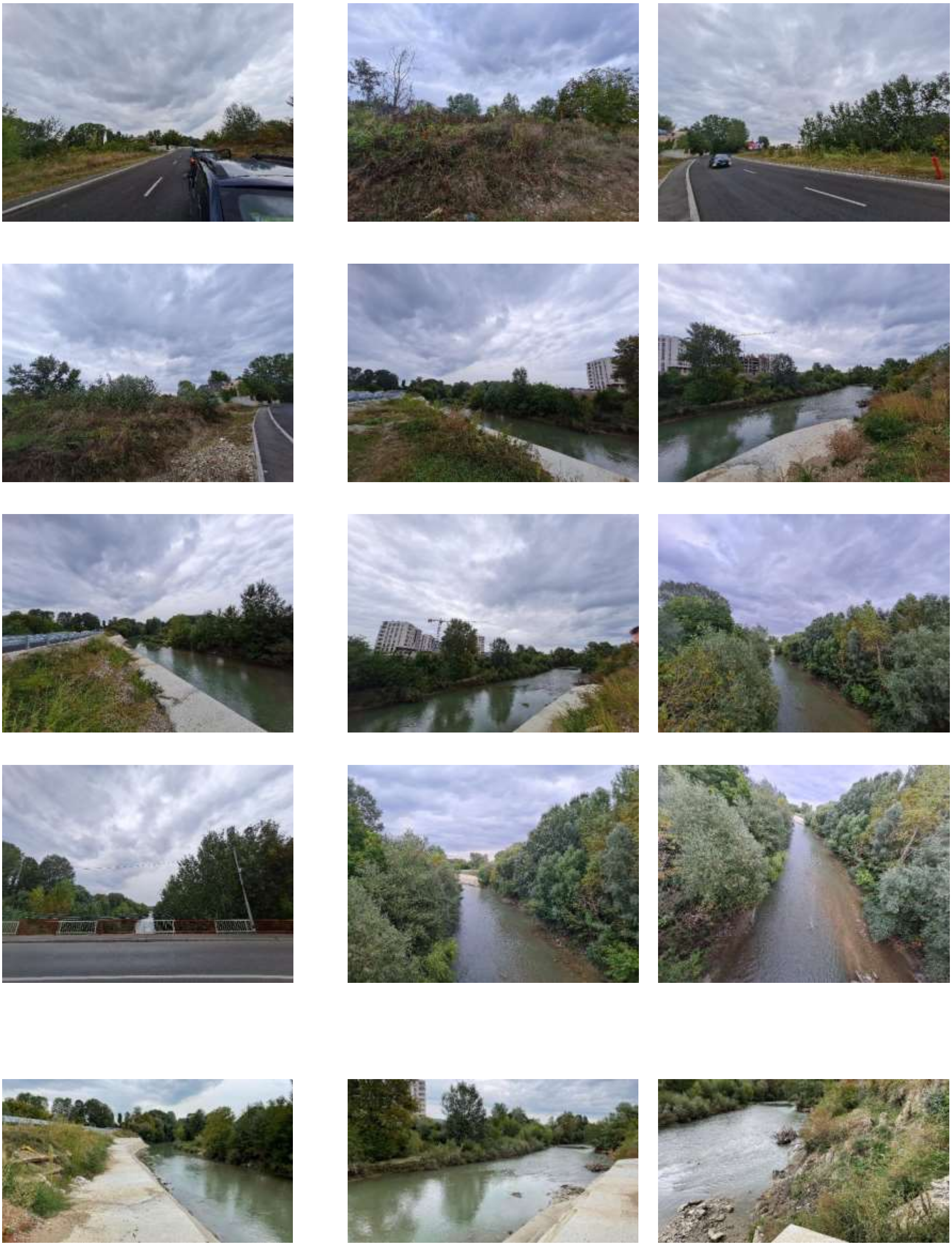


Photo – Targoviste City, Dambovita County, 22nd September 2021
Ialomita River

Photo – Targoviste City, Dambovita County, 22nd September 2021

Ialomita River

3.6 Zone A, Pitești, Arges County – September 22nd, 2021















Photo – Pitești City, Argeș County, 22nd September 2021

Stormwater channel – Trivale Park

The water network is undersized, it cannot take over the entire amount of rainwater collected from the Trivale Park area and the adjacent road (west part of the city), so there are floods in the urban area.









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Working Meeting